



## Full wwPDB EM Validation Report ⓘ

Mar 5, 2026 – 04:05 PM UTC

PDB ID : 6EPD / pdb\_00006epd  
EMDB ID : EMD-3914  
Title : Substrate processing state 26S proteasome (SPS1)  
Authors : Guo, Q.; Lehmer, C.; Martinez-Sanchez, A.; Rudack, T.; Beck, F.; Hartmann, H.; Hipp, M.S.; Hartl, F.U.; Edbauer, D.; Baumeister, W.; Fernandez-Busnadiego, R.  
Deposited on : 2017-10-11  
Resolution : 15.40 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>  
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

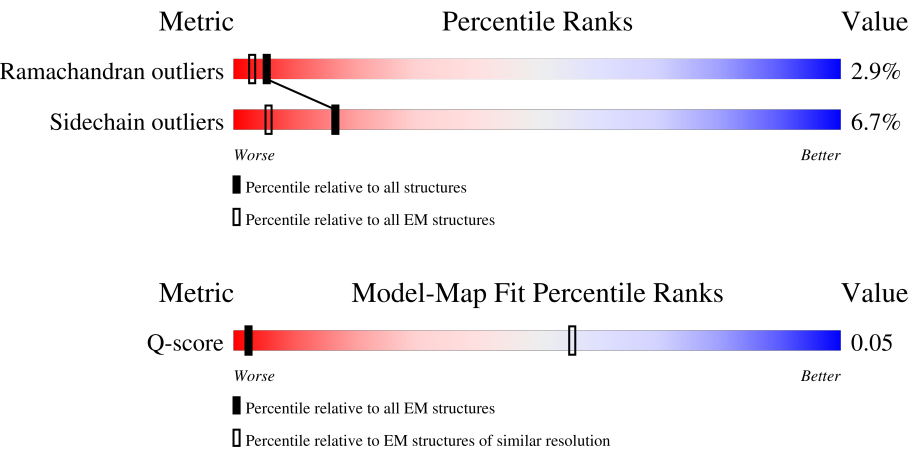
EMDB validation analysis : 0.0.1.dev132  
MolProbity : 4-5-2 with Phenix2.0  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
EM percentile statistics : 202505.v01 (Using data in the EMDb archive up until May 2025)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.49

# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:  
*ELECTRON MICROSCOPY*

The reported resolution of this entry is 15.40 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



| Metric                | Whole archive<br>(#Entries) | EM structures<br>(#Entries) | Similar EM resolution<br>(#Entries, resolution range(Å)) |
|-----------------------|-----------------------------|-----------------------------|--|
| Ramachandran outliers | 224038                      | 23583                       | -  |
| Sidechain outliers    | 223484                      | 23102                       | -  |
| Q-score               | -                           | 25397                       | 36 ( 14.90 - 15.90 )                                     |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion  $< 40\%$ ). The numeric value is given above the bar.

| Mol | Chain | Length | Quality of chain   |
|-----|-------|--------|--|
| 1   | A     | 246    | <div><div>13%</div><div>46%</div><div>48%</div><div>6%</div></div>             |
| 2   | B     | 234    | <div><div>10%</div><div>40%</div><div>53%</div><div>7%</div></div>             |
| 3   | C     | 261    | <div><div>10%</div><div>38%</div><div>53%</div><div>• 5%</div></div>           |
| 4   | D     | 254    | <div><div>12%</div><div>43%</div><div>47%</div><div>7%</div><div>•</div></div> |
| 5   | E     | 241    | <div><div>6%</div><div>44%</div><div>49%</div><div>•</div><div>•</div></div>   |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 6   | F     | 263    |                  |
| 7   | G     | 255    |                  |
| 8   | 1     | 238    |                  |
| 9   | 2     | 277    |                  |
| 10  | 3     | 205    |                  |
| 11  | 4     | 201    |                  |
| 12  | 5     | 263    |                  |
| 13  | 6     | 240    |                  |
| 14  | 7     | 263    |                  |
| 15  | W     | 377    |                  |
| 16  | V     | 310    |                  |
| 17  | T     | 353    |                  |
| 18  | Y     | 70     |                  |
| 19  | Z     | 908    |                  |
| 20  | N     | 953    |                  |
| 21  | S     | 530    |                  |
| 22  | P     | 456    |                  |
| 23  | Q     | 422    |                  |
| 24  | R     | 389    |                  |
| 25  | U     | 320    |                  |
| 26  | O     | 376    |                  |
| 27  | H     | 433    |                  |
| 28  | I     | 440    |                  |
| 29  | K     | 418    |                  |
| 30  | L     | 403    |                  |

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| Mol | Chain | Length | Quality of chain  |
|-----|-------|--------|---|
| 31  | M     | 442    | <div><div></div><div>9%</div><div>40%</div><div>47%</div><div>7%</div><div>6%</div></div> |
| 32  | J     | 406    | <div><div></div><div>16%</div><div>40%</div><div>55%</div><div></div></div>               |

## 2 Entry composition

There are 32 unique types of molecules in this entry. The entry contains 82757 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Proteasome subunit alpha type-6.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 1   | A     | 246      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 1920  | 1215 | 322 | 369 | 14 |         |       |

- Molecule 2 is a protein called Proteasome subunit alpha type-2.

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 2   | B     | 234      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 1828  | 1166 | 311 | 344 | 7 |         |       |

- Molecule 3 is a protein called Proteasome subunit alpha type-4.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 3   | C     | 249      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 1960  | 1238 | 337 | 374 | 11 |         |       |

- Molecule 4 is a protein called Proteasome subunit alpha type-7.

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 4   | D     | 246      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 1926  | 1209 | 340 | 371 | 6 |         |       |

- Molecule 5 is a protein called Proteasome subunit alpha type-5.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 5   | E     | 233      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 1778  | 1114 | 296 | 358 | 10 |         |       |

- Molecule 6 is a protein called Proteasome subunit alpha type-1.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 6   | F     | 238      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 1871  | 1170 | 337 | 353 | 11 |         |       |

- Molecule 7 is a protein called Proteasome subunit alpha type-3.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 7   | G     | 245      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 1912  | 1212 | 326 | 362 | 12 |         |       |

- Molecule 8 is a protein called Proteasome subunit beta type-6.

| Mol | Chain | Residues | Atoms |     |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|----|---------|-------|
| 8   | 1     | 202      | Total | C   | N   | O   | S  | 0       | 0     |
|     |       |          | 1516  | 948 | 259 | 297 | 12 |         |       |

- Molecule 9 is a protein called Proteasome subunit beta type-7.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 9   | 2     | 219      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 1651  | 1042 | 281 | 316 | 12 |         |       |

- Molecule 10 is a protein called Proteasome subunit beta type-3.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 10  | 3     | 205      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 1600  | 1018 | 266 | 296 | 20 |         |       |

- Molecule 11 is a protein called Proteasome subunit beta type-2.

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 11  | 4     | 196      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 1572  | 1007 | 267 | 289 | 9 |         |       |

- Molecule 12 is a protein called Proteasome subunit beta type-5.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 12  | 5     | 201      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1560  | 984 | 272 | 295 | 9 |         |       |

- Molecule 13 is a protein called Proteasome subunit beta type-1.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 13  | 6     | 213      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 1659  | 1050 | 284 | 315 | 10 |         |       |

- Molecule 14 is a protein called Proteasome subunit beta type-4.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 14  | 7     | 216      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 1686  | 1065 | 292 | 317 | 12 |         |       |

- Molecule 15 is a protein called 26S proteasome subunit S5a.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 15  | W     | 195      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1480  | 922 | 265 | 285 | 8 |         |       |

- Molecule 16 is a protein called Proteasome (Prosome, macropain) 26S subunit, non-ATPase, 14.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 16  | V     | 289      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 2272  | 1438 | 391 | 424 | 19 |         |       |

- Molecule 17 is a protein called Proteasome 26S subunit, non-ATPase 8.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 17  | T     | 263      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 2149  | 1390 | 351 | 398 | 10 |         |       |

- Molecule 18 is a protein called RCG28037.

| Mol | Chain | Residues | Atoms |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 18  | Y     | 24       | Total | C   | N  | O  | S | 0       | 0     |
|     |       |          | 199   | 120 | 34 | 44 | 1 |         |       |

- Molecule 19 is a protein called 26S proteasome non-ATPase regulatory subunit 2.

| Mol | Chain | Residues | Atoms |      |      |      |    | AltConf | Trace |
|-----|-------|----------|-------|------|------|------|----|---------|-------|
| 19  | Z     | 896      | Total | C    | N    | O    | S  | 0       | 0     |
|     |       |          | 6913  | 4342 | 1178 | 1346 | 47 |         |       |

- Molecule 20 is a protein called 26S proteasome non-ATPase regulatory subunit 1.

| Mol | Chain | Residues | Atoms |      |      |      |    | AltConf | Trace |
|-----|-------|----------|-------|------|------|------|----|---------|-------|
| 20  | N     | 905      | Total | C    | N    | O    | S  | 0       | 0     |
|     |       |          | 7082  | 4487 | 1193 | 1356 | 46 |         |       |

- Molecule 21 is a protein called Proteasome (Prosome, macropain) 26S subunit, non-ATPase, 3.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 21  | S     | 476      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3844  | 2438 | 685 | 707 | 14 |         |       |

- Molecule 22 is a protein called Proteasome (Prosome, macropain) 26S subunit, non-ATPase, 12.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 22  | P     | 456      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3706  | 2338 | 635 | 709 | 24 |         |       |

- Molecule 23 is a protein called 26S proteasome non-ATPase regulatory subunit 11.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 23  | Q     | 422      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3335  | 2116 | 567 | 639 | 13 |         |       |

- Molecule 24 is a protein called Proteasome (Prosome, macropain) 26S subunit, non-ATPase, 6.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 24  | R     | 389      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3204  | 2042 | 542 | 600 | 20 |         |       |

- Molecule 25 is a protein called Proteasome (Prosome, macropain) 26S subunit, non-ATPase, 7 (Predicted).

| Mol | Chain | Residues | Atoms |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 25  | U     | 288      | Total | C    | N   | O   | S | 0       | 0     |
|     |       |          | 2299  | 1470 | 395 | 428 | 6 |         |       |

- Molecule 26 is a protein called 26S proteasome non-ATPase regulatory subunit 13.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 26  | O     | 376      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3011  | 1918 | 514 | 564 | 15 |         |       |

- Molecule 27 is a protein called 26S proteasome regulatory subunit 7.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 27  | H     | 396      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3113  | 1960 | 546 | 589 | 18 |         |       |

- Molecule 28 is a protein called 26S proteasome regulatory subunit 4.



| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 28  | I     | 385      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3042  | 1913 | 516 | 598 | 15 |         |       |

- Molecule 29 is a protein called 26S proteasome regulatory subunit 6B.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 29  | K     | 391      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3125  | 1978 | 535 | 599 | 13 |         |       |

- Molecule 30 is a protein called Proteasome 26S subunit, ATPase 6.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 30  | L     | 389      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3098  | 1947 | 552 | 582 | 17 |         |       |

- Molecule 31 is a protein called 26S proteasome regulatory subunit 6A.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 31  | M     | 415      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3252  | 2038 | 561 | 635 | 18 |         |       |

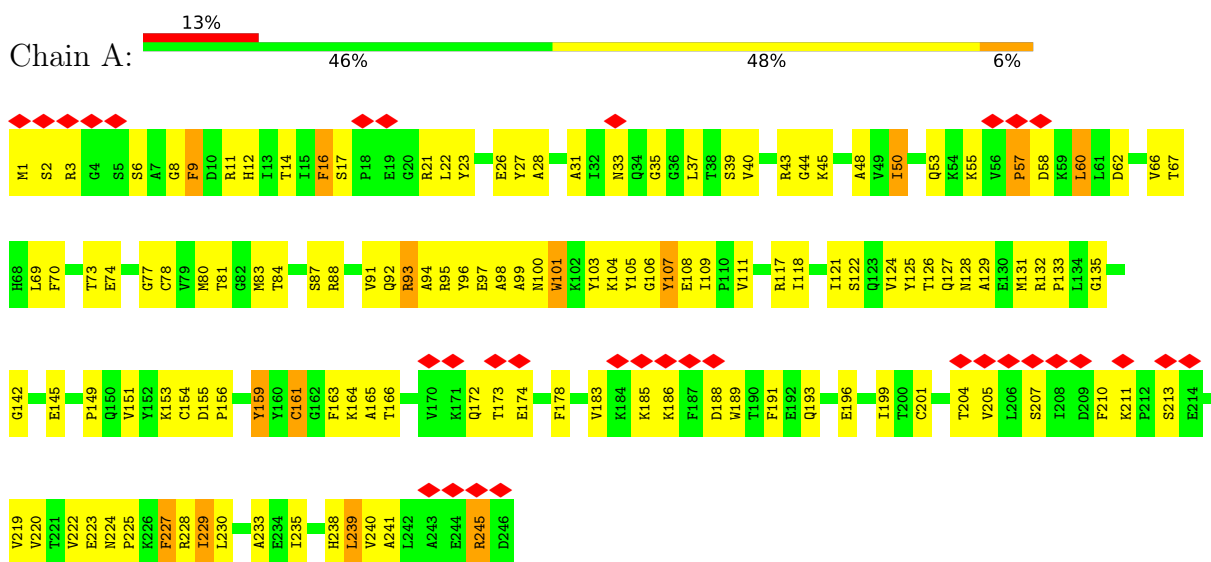
- Molecule 32 is a protein called 26S proteasome regulatory subunit 8.

| Mol | Chain | Residues | Atoms |      |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| 32  | J     | 406      | Total | C    | N   | O   | S  | 0       | 0     |
|     |       |          | 3194  | 2006 | 569 | 599 | 20 |         |       |

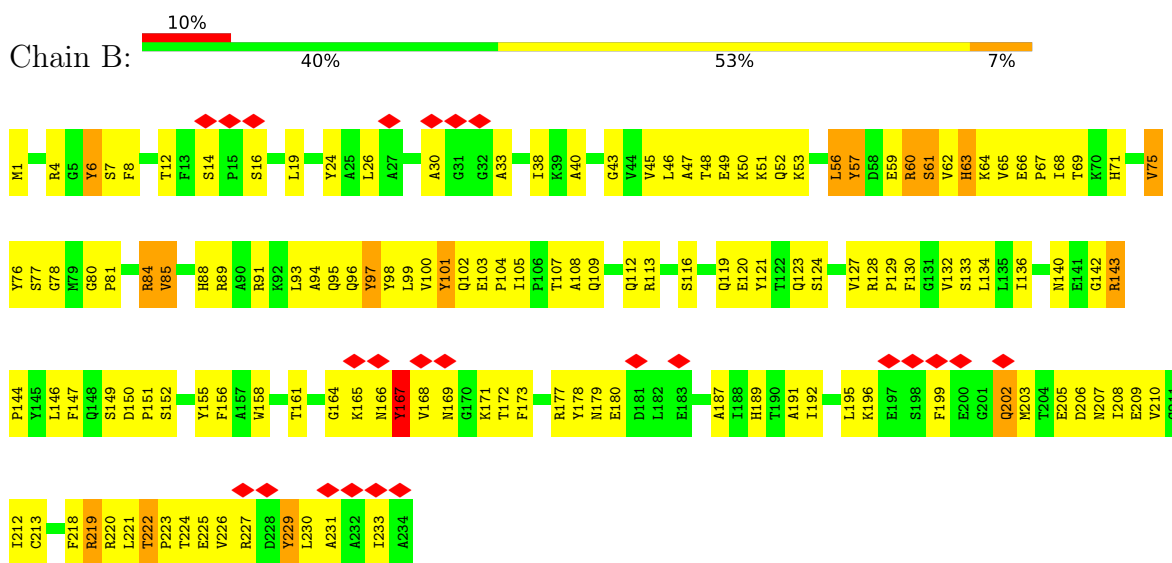
### 3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

#### • Molecule 1: Proteasome subunit alpha type-6

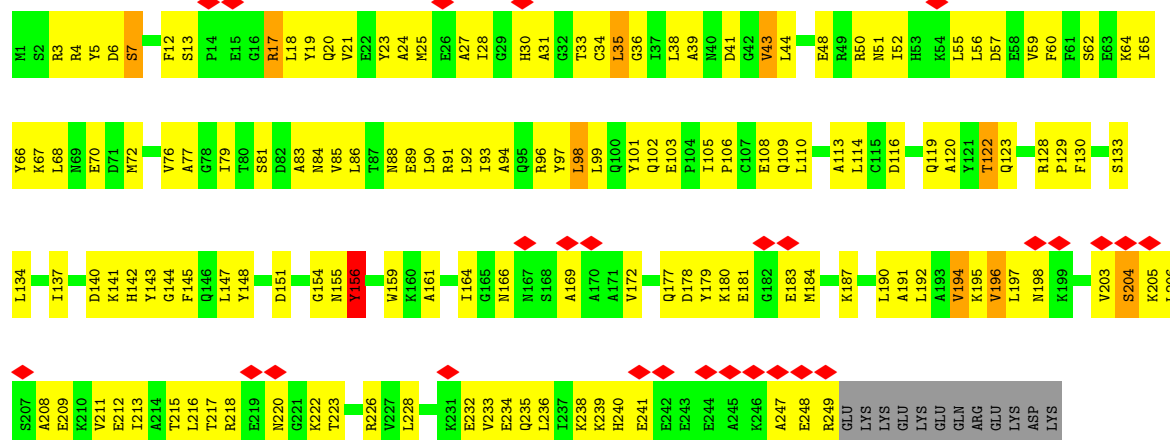


#### • Molecule 2: Proteasome subunit alpha type-2

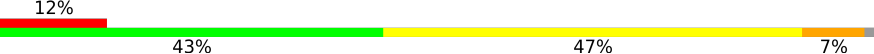


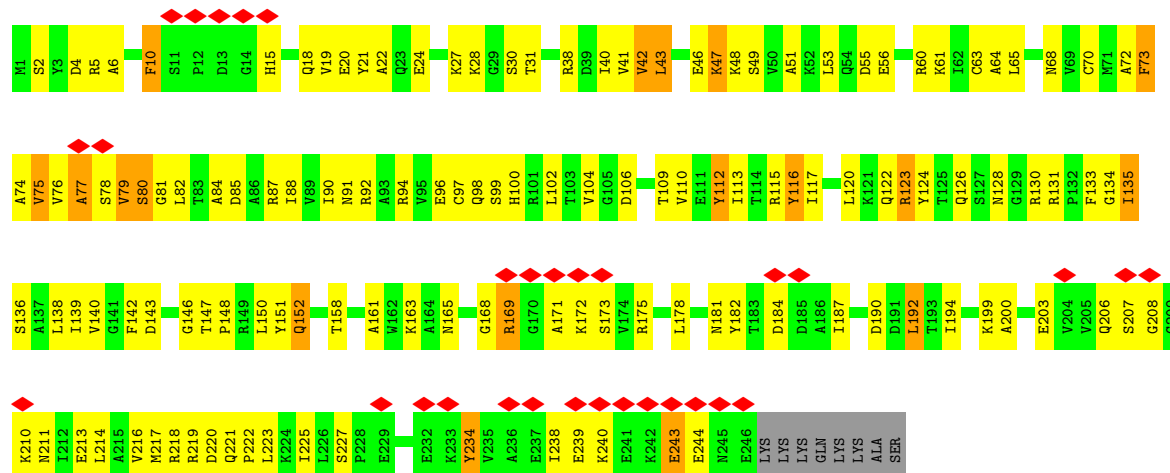
#### • Molecule 3: Proteasome subunit alpha type-4

Chain C: 

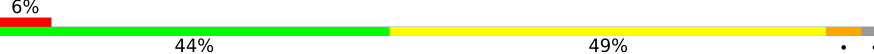


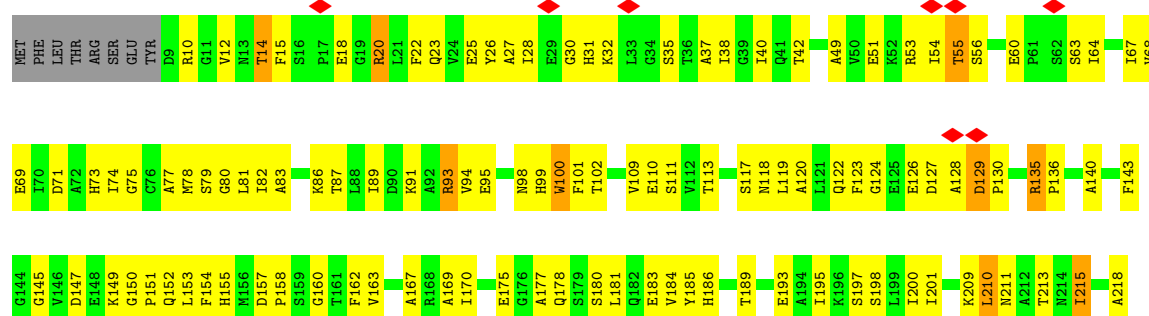
• Molecule 4: Proteasome subunit alpha type-7

Chain D: 



• Molecule 5: Proteasome subunit alpha type-5

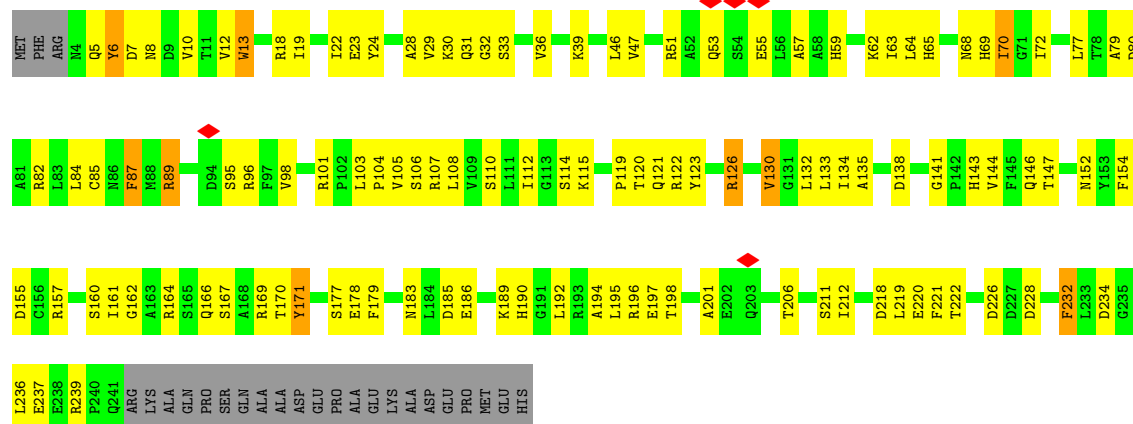
Chain E: 





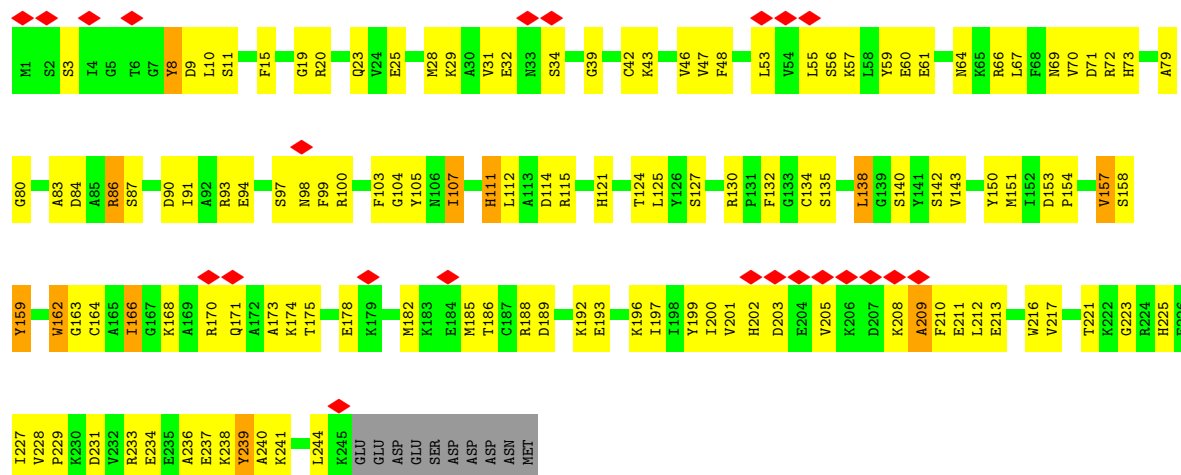
• Molecule 6: Proteasome subunit alpha type-1

Chain F: 46% 41% 10%



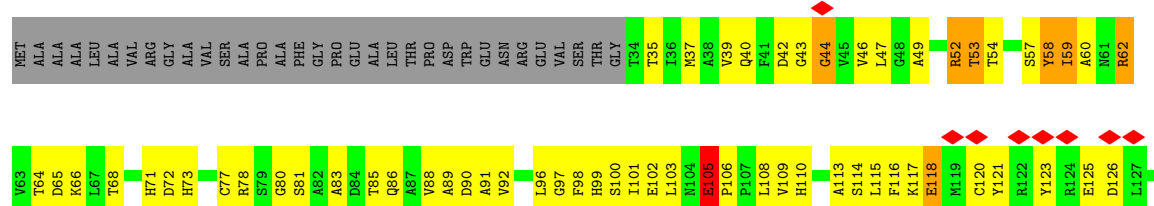
• Molecule 7: Proteasome subunit alpha type-3

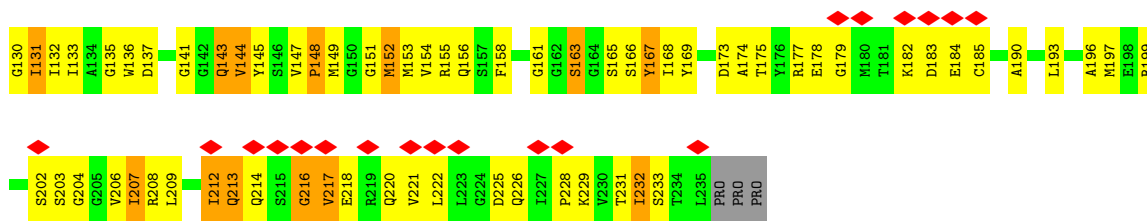
Chain G: 9% 46% 45%



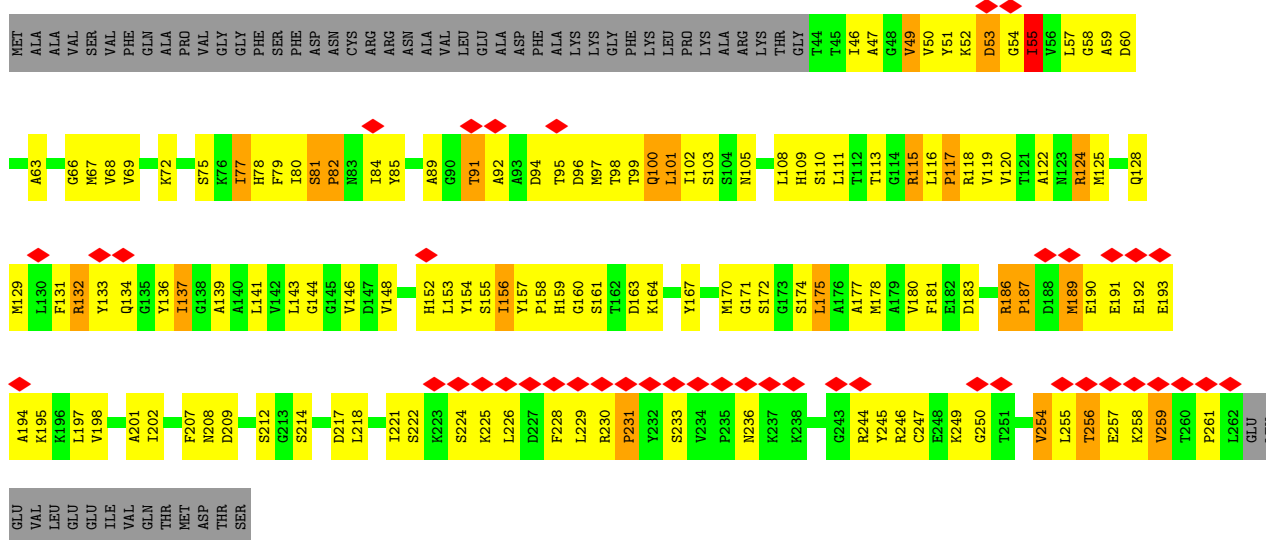
• Molecule 8: Proteasome subunit beta type-6

Chain 1: 11% 32% 45% 8% 15%

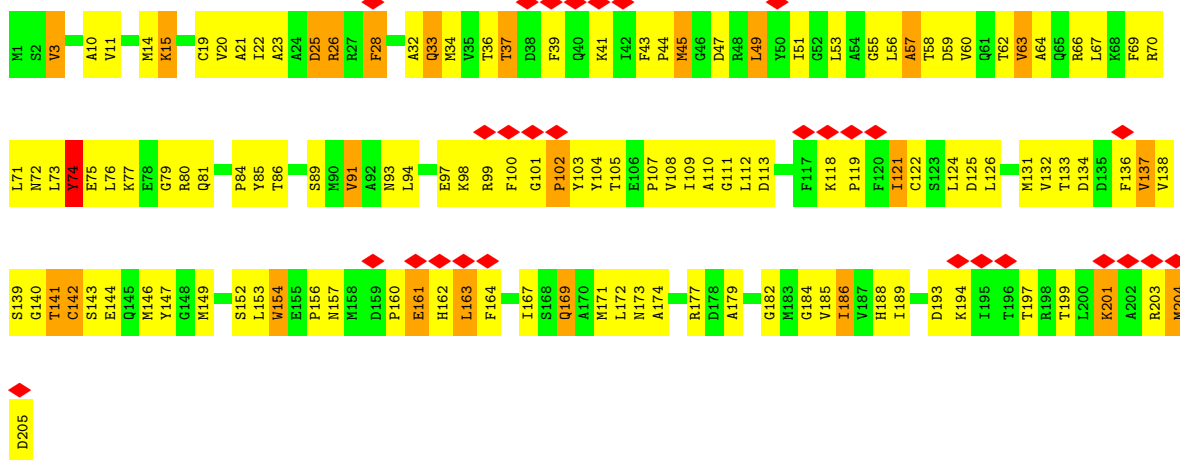




• Molecule 9: Proteasome subunit beta type-7



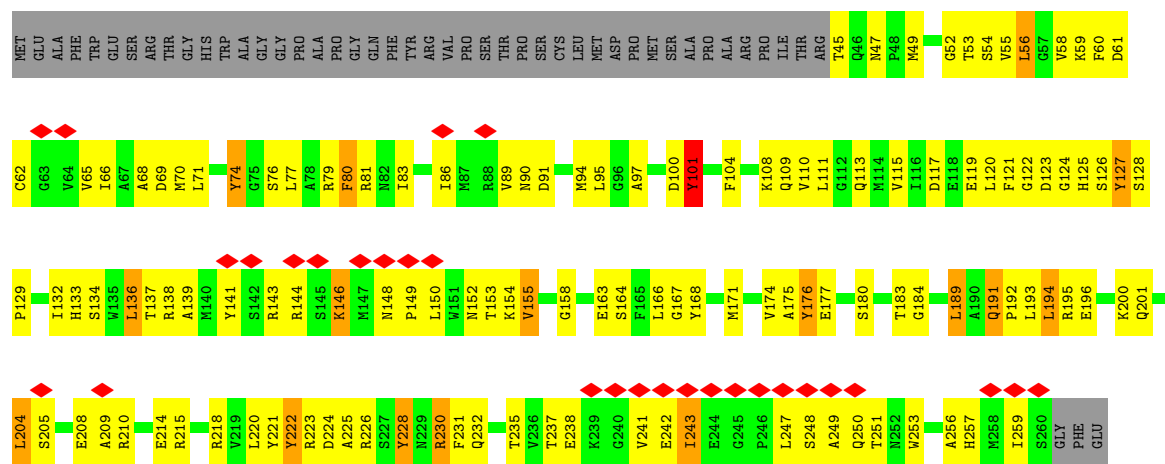
• Molecule 10: Proteasome subunit beta type-3



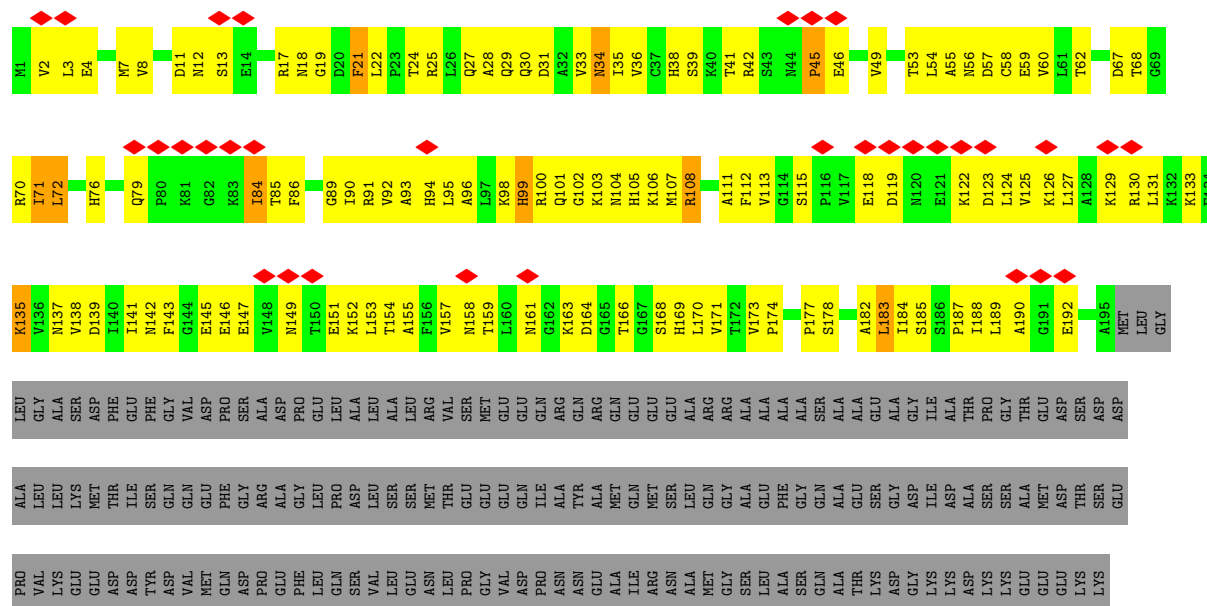
• Molecule 11: Proteasome subunit beta type-2







• Molecule 15: 26S proteasome subunit S5a

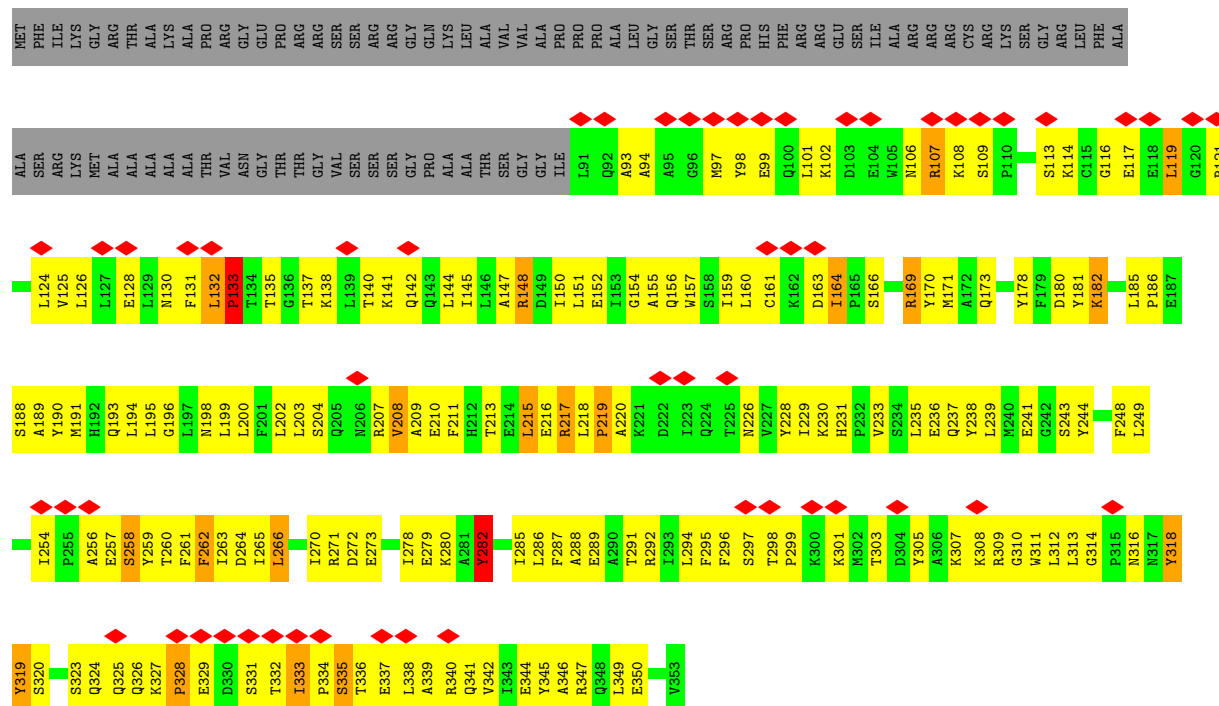


• Molecule 16: Proteasome (Prosome, macropain) 26S subunit, non-ATPase, 14

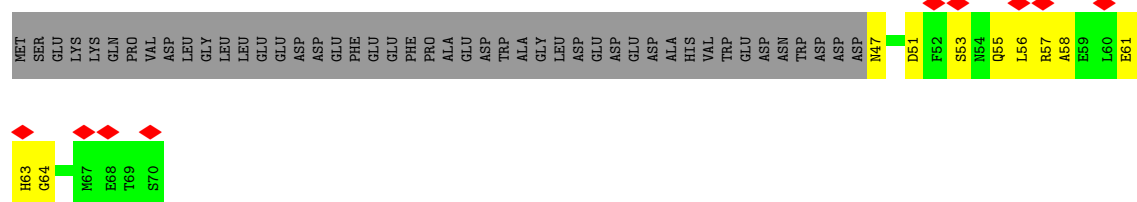




• Molecule 17: Proteasome 26S subunit, non-ATPase 8



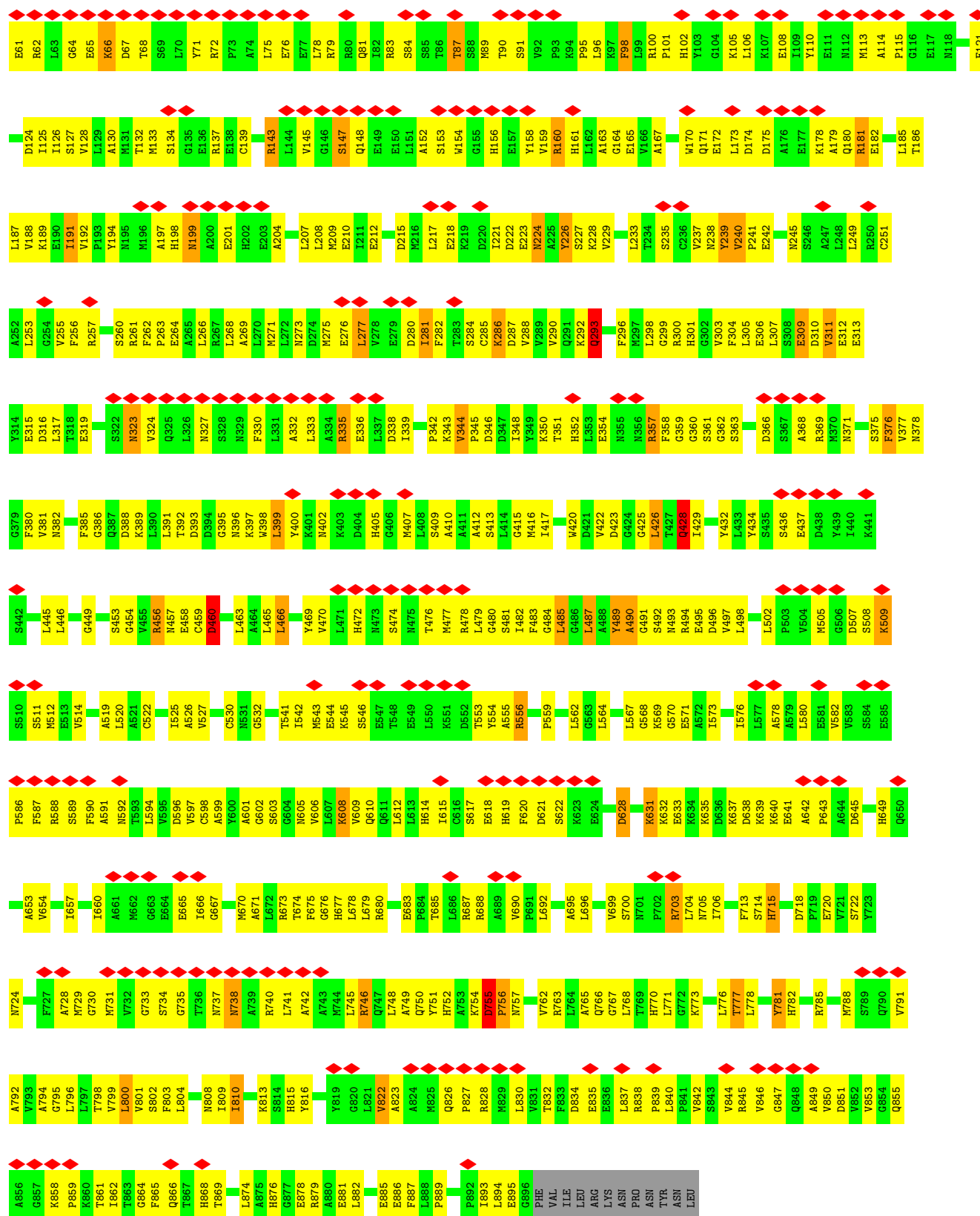
• Molecule 18: RCG28037

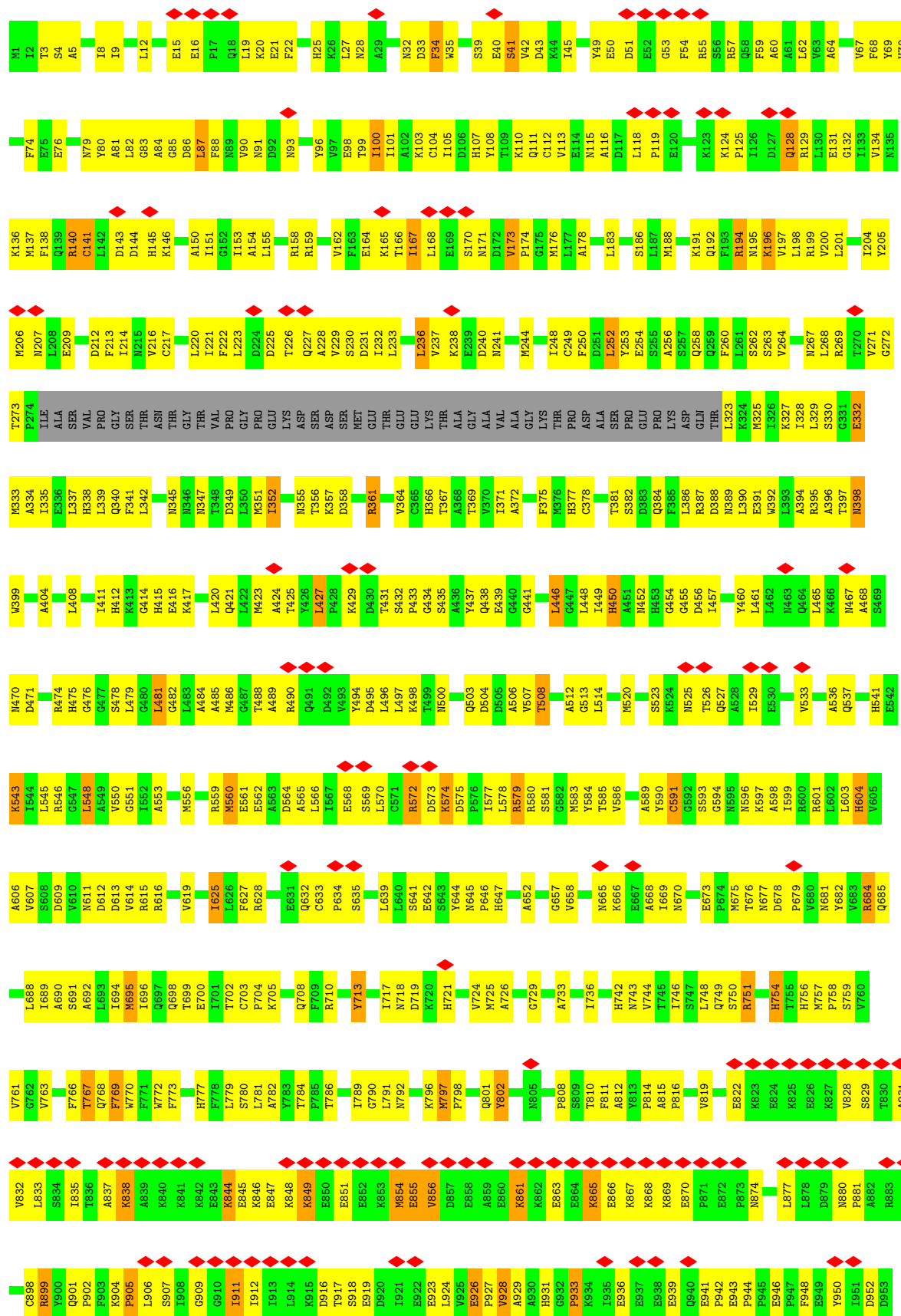


• Molecule 19: 26S proteasome non-ATPase regulatory subunit 2

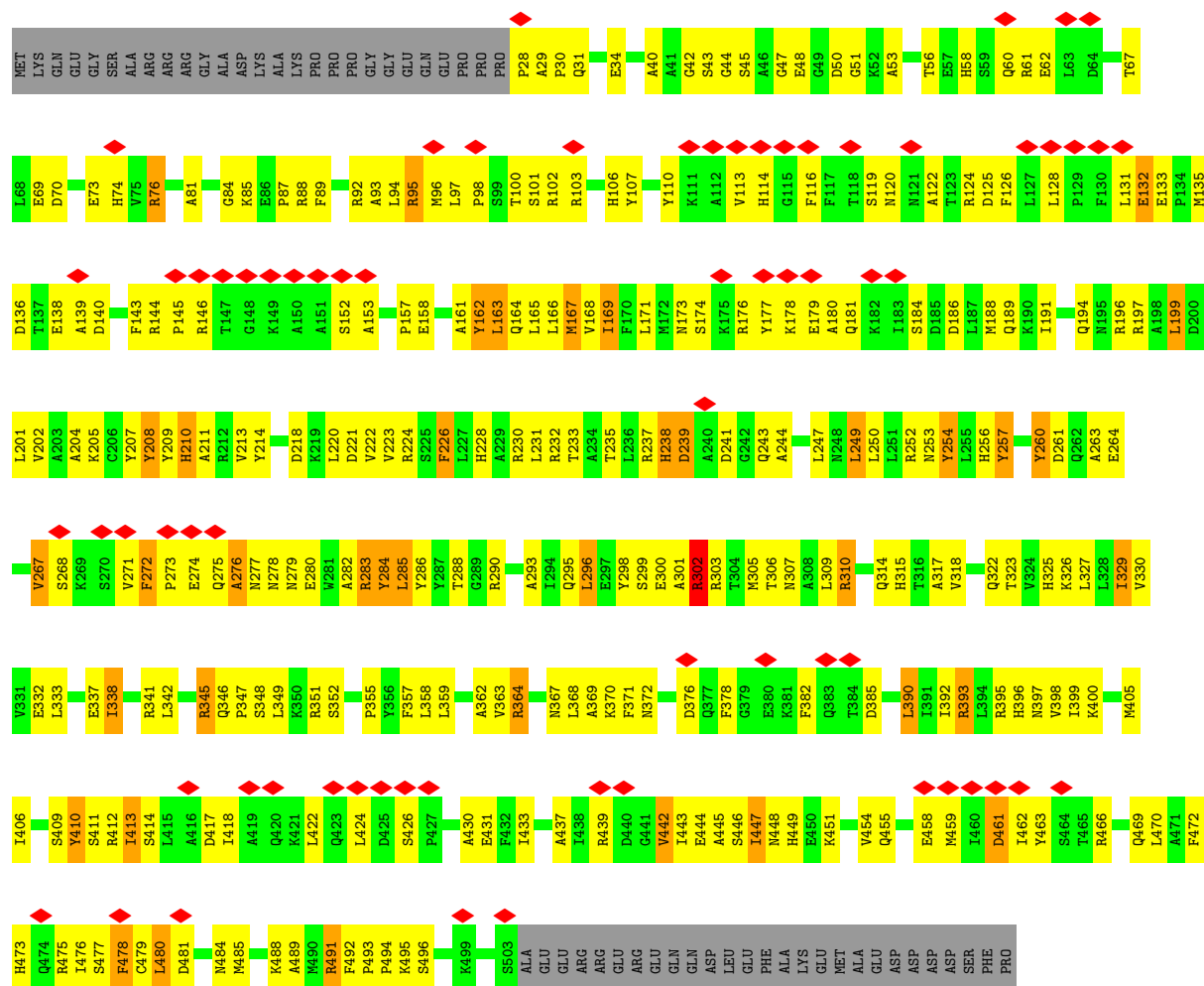




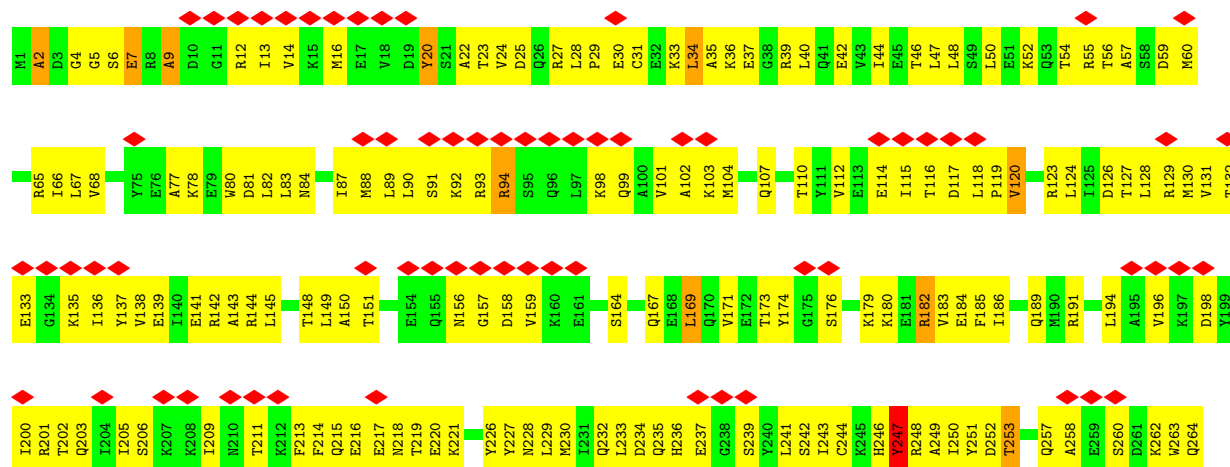


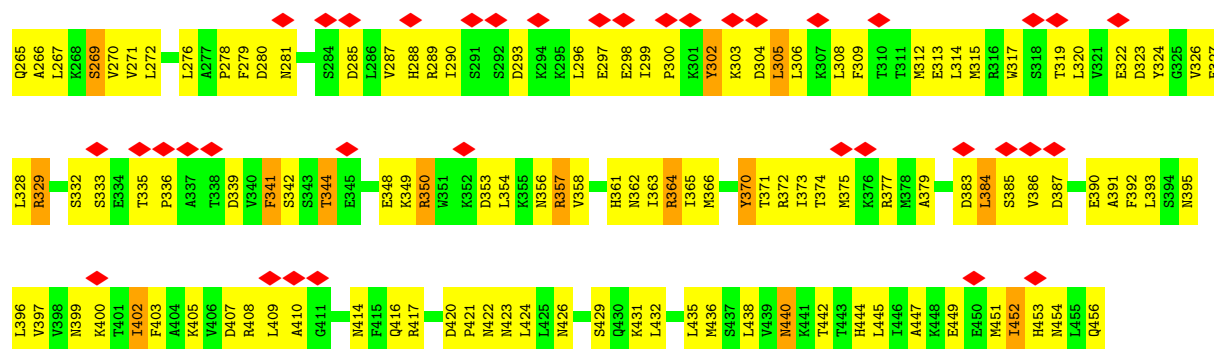


- Molecule 21: Proteasome (Prosome, macropain) 26S subunit, non-ATPase, 3

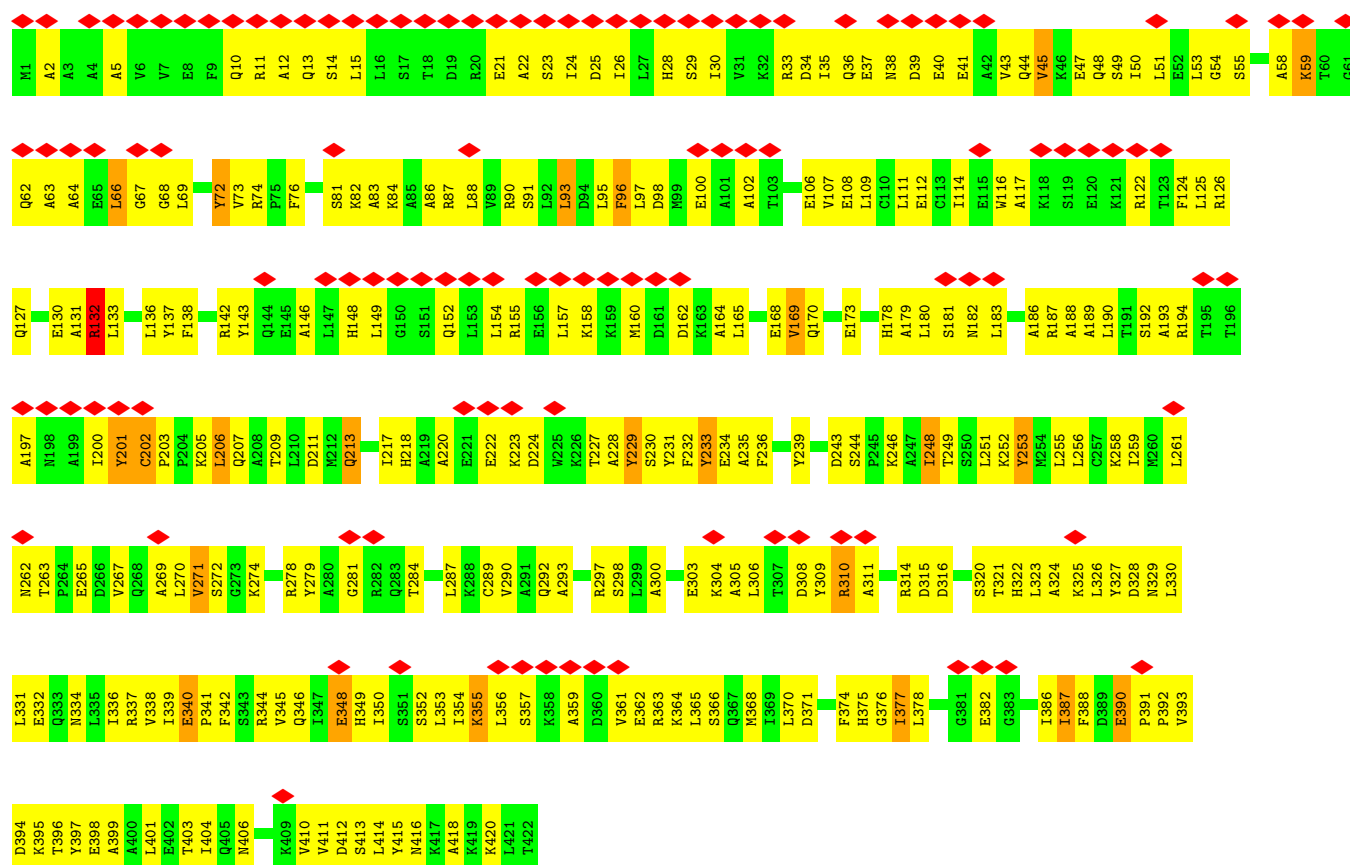


• Molecule 22: Proteasome (Prosome, macropain) 26S subunit, non-ATPase, 12

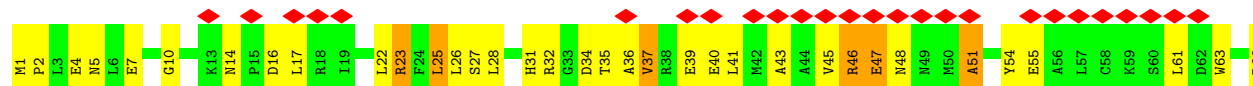


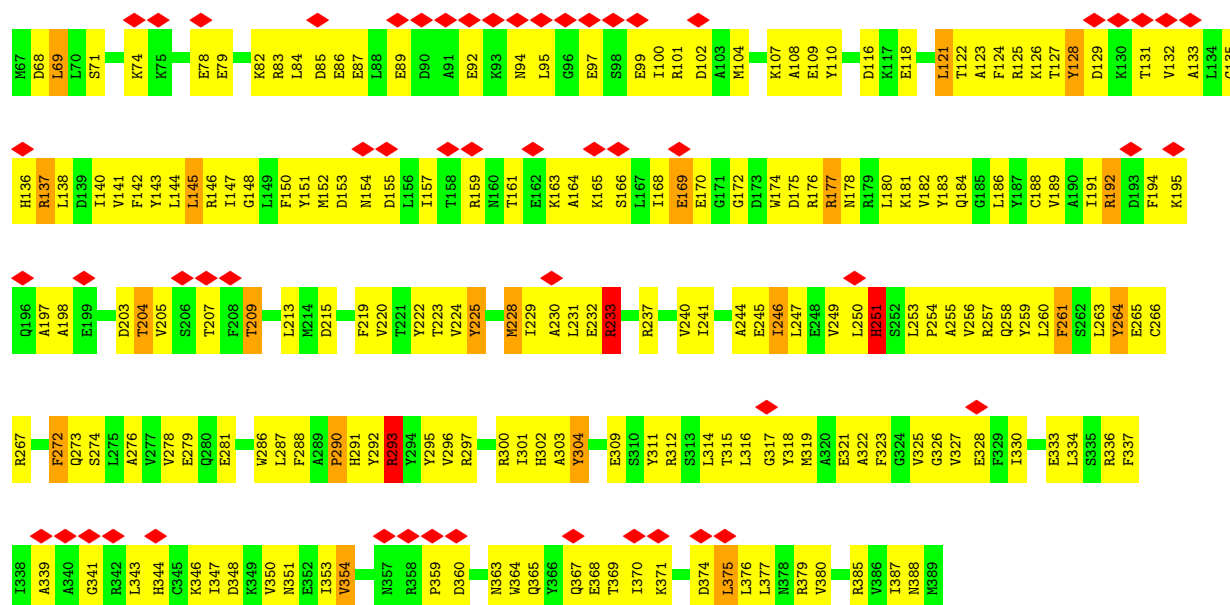


• Molecule 23: 26S proteasome non-ATPase regulatory subunit 11

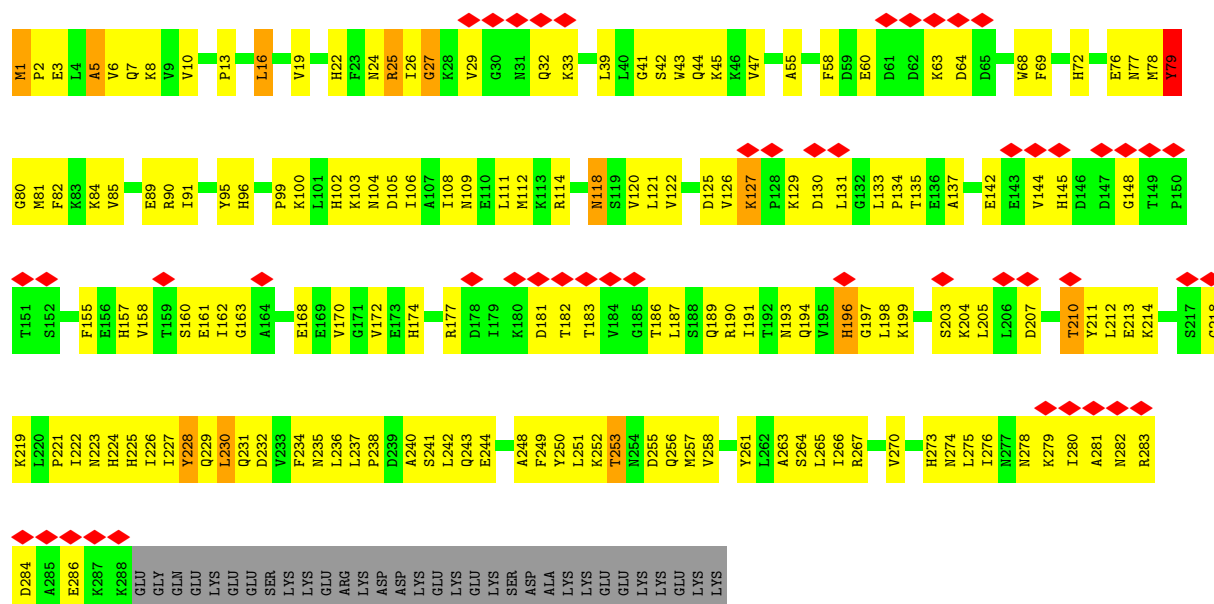


• Molecule 24: Proteasome (Prosome, macropain) 26S subunit, non-ATPase, 6



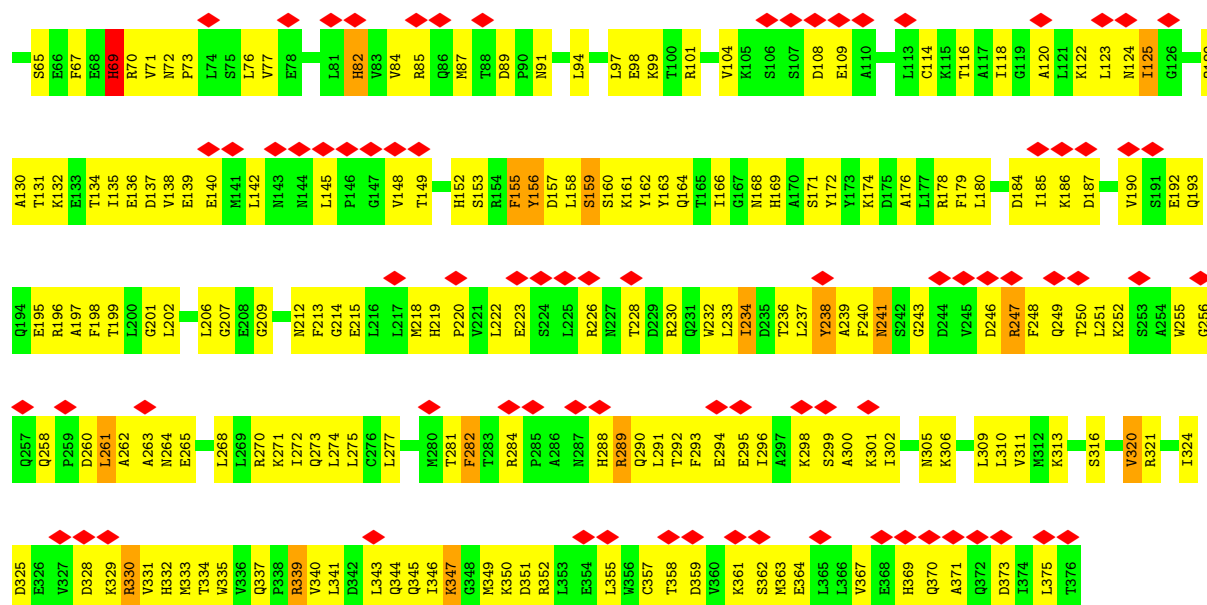


- Molecule 25: Proteasome (Prosome, macropain) 26S subunit, non-ATPase, 7 (Predicted)

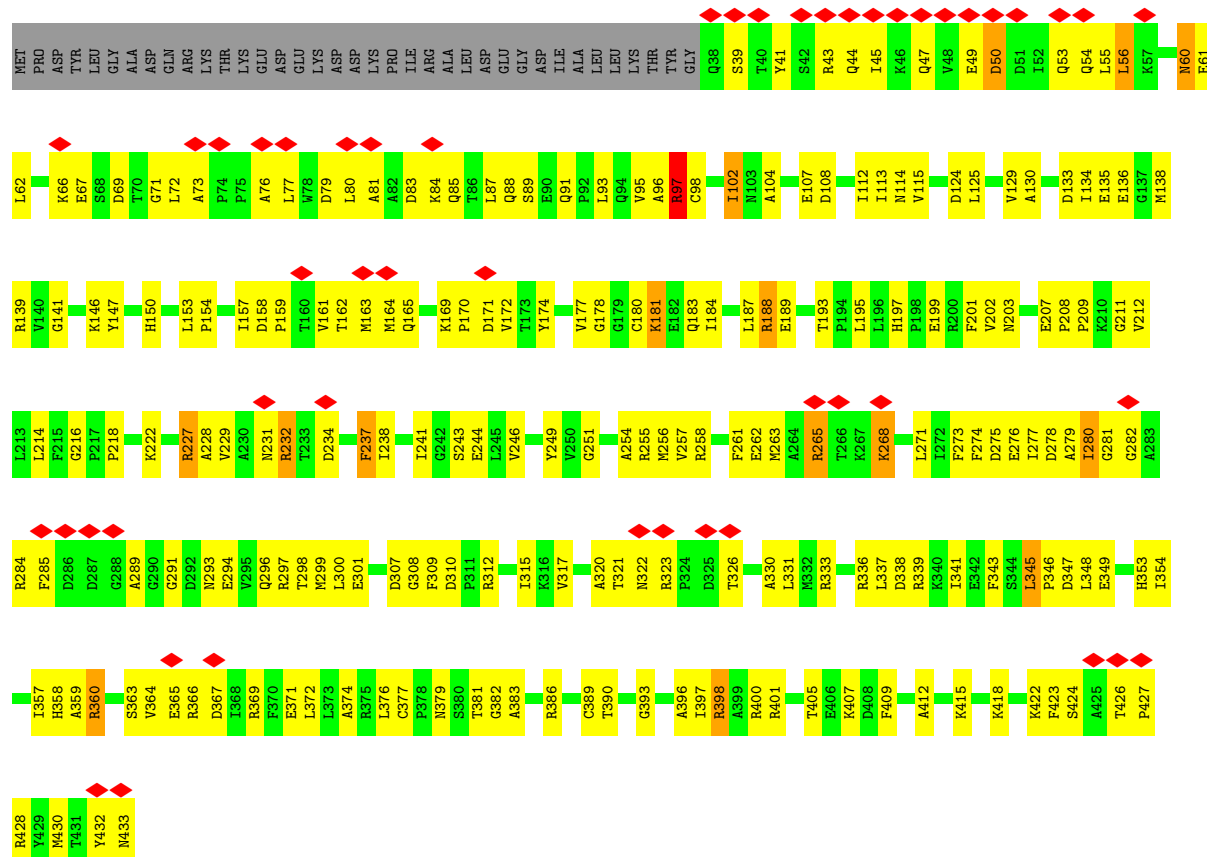


- Molecule 26: 26S proteasome non-ATPase regulatory subunit 13

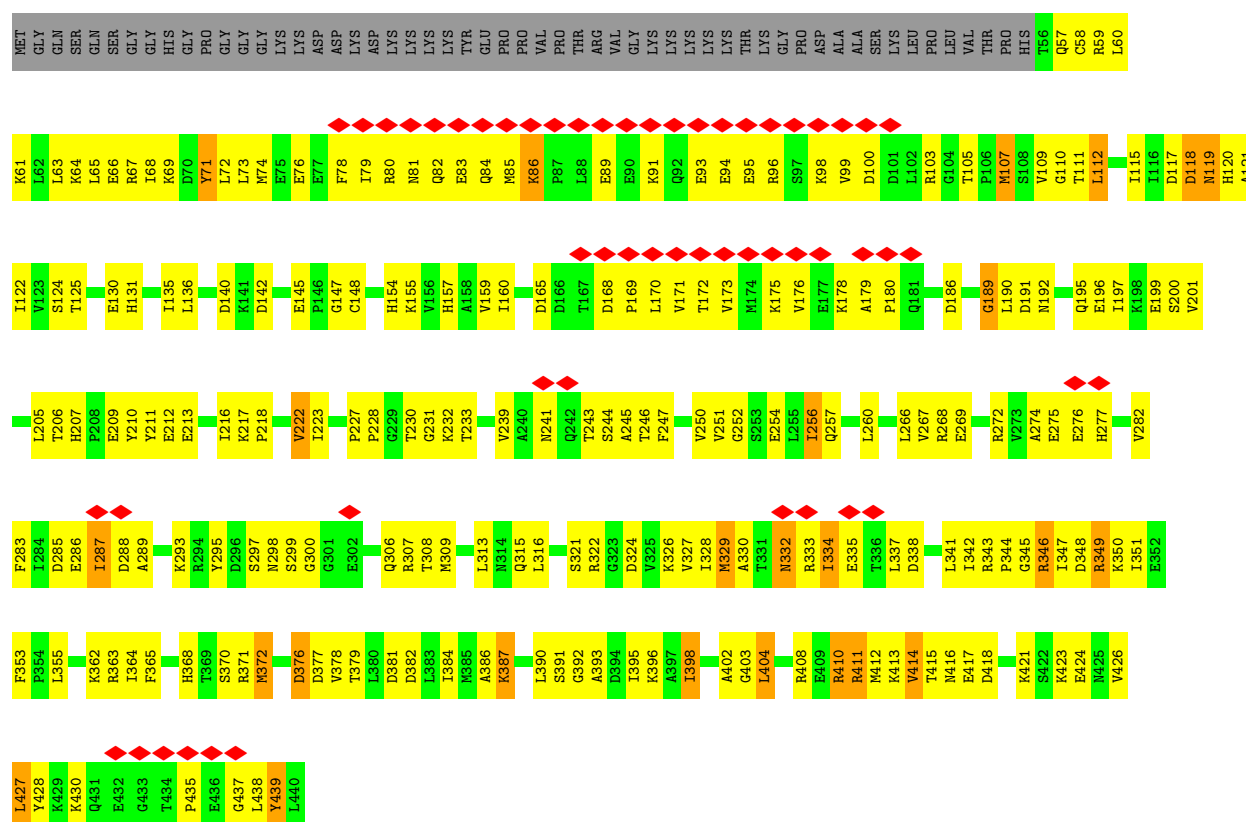




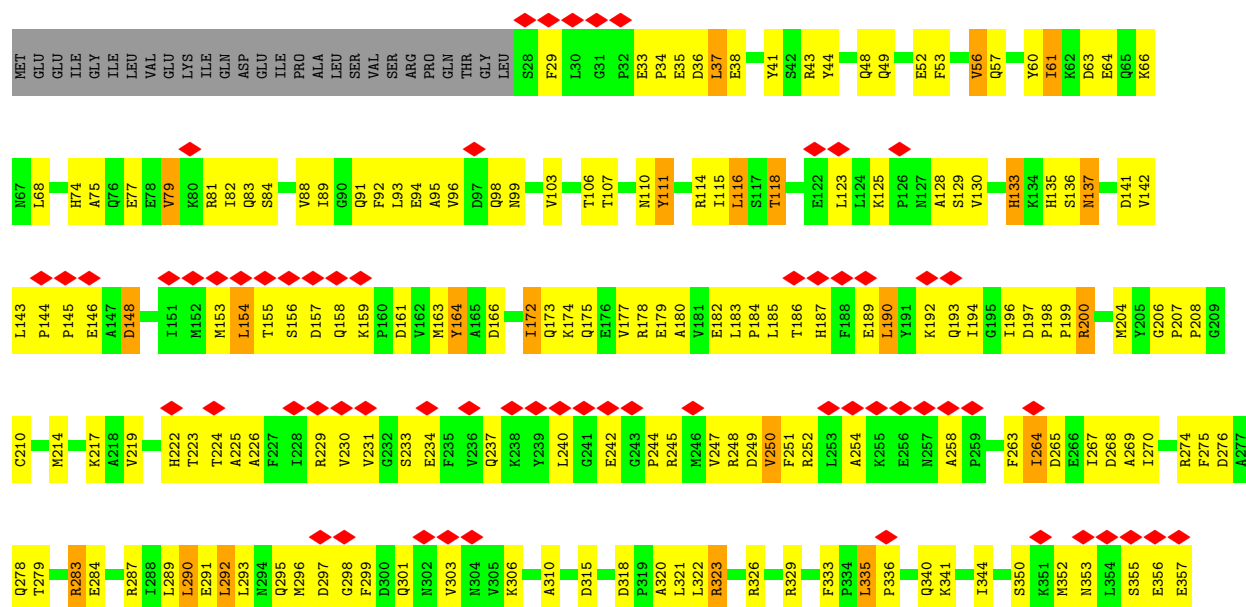
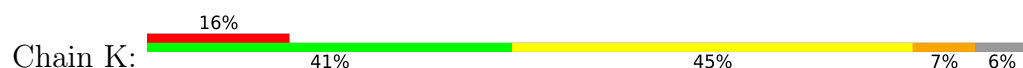
• Molecule 27: 26S proteasome regulatory subunit 7



• Molecule 28: 26S proteasome regulatory subunit 4

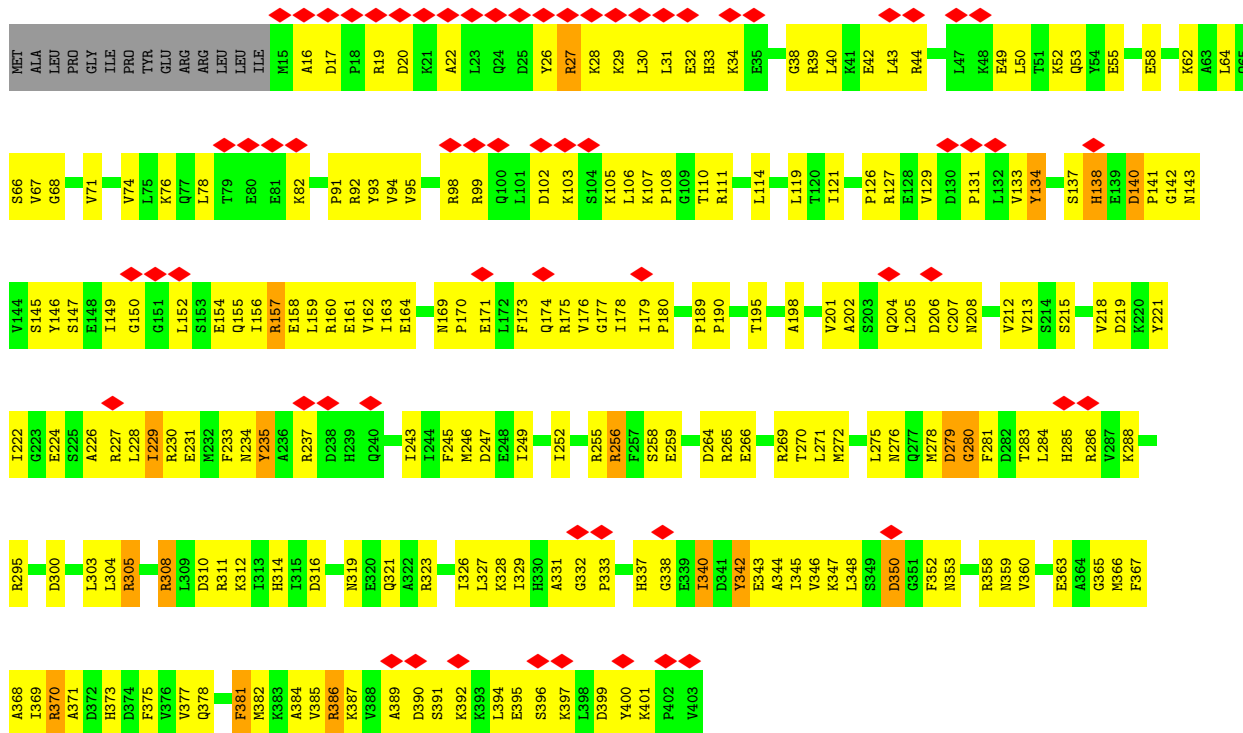
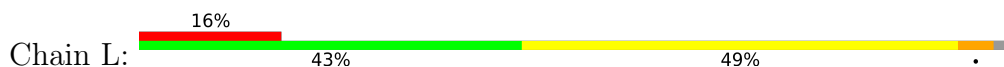


• Molecule 29: 26S proteasome regulatory subunit 6B

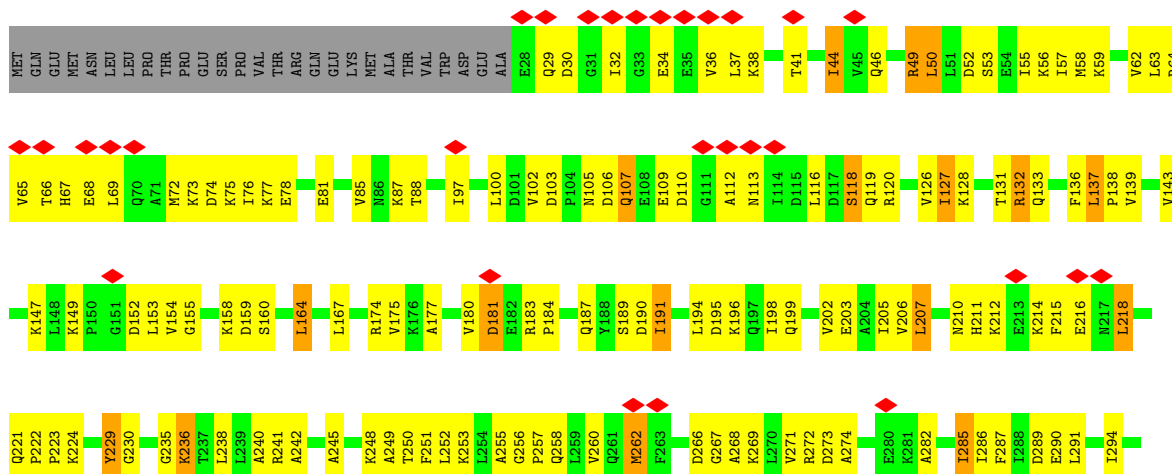




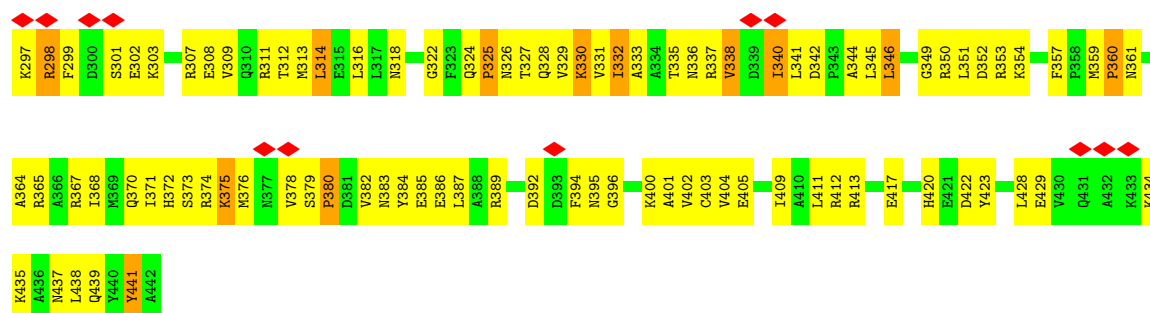
• Molecule 30: Proteasome 26S subunit, ATPase 6



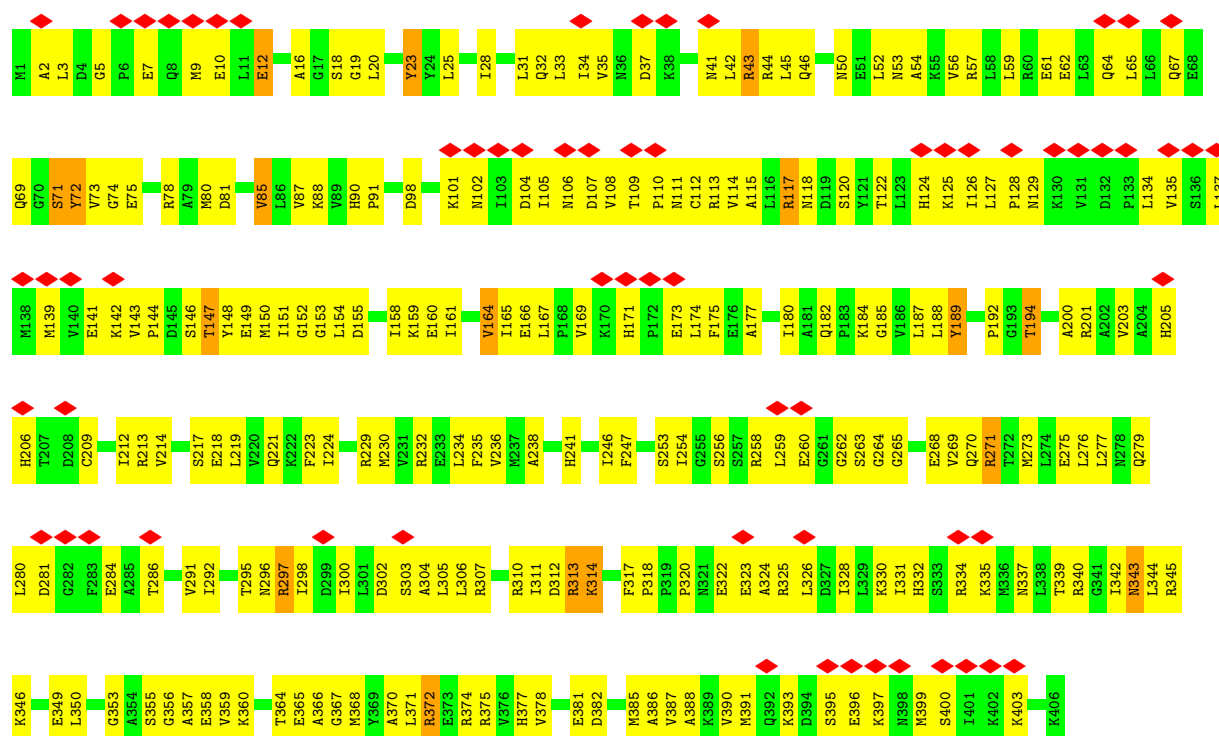
• Molecule 31: 26S proteasome regulatory subunit 6A







• Molecule 32: 26S proteasome regulatory subunit 8



## 4 Experimental information

| Property                             | Value                                   | Source    |
|--------------------------------------|---|-----------|
| EM reconstruction method             | SUBTOMOGRAM AVERAGING                   | Depositor |
| Imposed symmetry                     | POINT, C1                               | Depositor |
| Number of subtomograms used          | 2136                                    | Depositor |
| Resolution determination method      | FSC 0.143 CUT-OFF                       | Depositor |
| CTF correction method                | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope                           | FEI TITAN KRIOS                         | Depositor |
| Voltage (kV)                         | 300                                     | Depositor |
| Electron dose ( $e^-/\text{\AA}^2$ ) | 1.8                                     | Depositor |
| Minimum defocus (nm)                 | 5000                                    | Depositor |
| Maximum defocus (nm)                 | 7000                                    | Depositor |
| Magnification                        | 42000                                   | Depositor |
| Image detector                       | GATAN K2 SUMMIT (4k x 4k)               | Depositor |
| Maximum map value                    | 0.810                                   | Depositor |
| Minimum map value                    | -0.432                                  | Depositor |
| Average map value                    | -0.034                                  | Depositor |
| Map value standard deviation         | 0.175                                   | Depositor |
| Recommended contour level            | 0.4                                     | Depositor |
| Map size (Å)                         | 307.80002, 307.80002, 307.80002         | wwPDB     |
| Map dimensions                       | 90, 90, 90                              | wwPDB     |
| Map angles (°)                       | 90.0, 90.0, 90.0                        | wwPDB     |
| Pixel spacing (Å)                    | 3.4200003, 3.4200003, 3.4200003         | Depositor |

## 5 Model quality ⓘ

### 5.1 Standard geometry ⓘ

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Chain | Bond lengths |                   | Bond angles |                    |
|-----|-------|--------------|-------------------|-------------|--------------------|
|     |       | RMSZ         | $\# Z  > 5$       | RMSZ        | $\# Z  > 5$        |
| 1   | A     | 2.25         | 63/1954 (3.2%)    | 2.46        | 138/2638 (5.2%)    |
| 2   | B     | 2.29         | 59/1867 (3.2%)    | 2.48        | 132/2527 (5.2%)    |
| 3   | C     | 2.27         | 78/1990 (3.9%)    | 2.56        | 156/2680 (5.8%)    |
| 4   | D     | 2.22         | 69/1953 (3.5%)    | 2.50        | 125/2637 (4.7%)    |
| 5   | E     | 2.44         | 87/1806 (4.8%)    | 2.46        | 114/2439 (4.7%)    |
| 6   | F     | 2.28         | 63/1906 (3.3%)    | 2.42        | 110/2577 (4.3%)    |
| 7   | G     | 2.24         | 65/1947 (3.3%)    | 2.44        | 115/2620 (4.4%)    |
| 8   | 1     | 2.34         | 74/1542 (4.8%)    | 2.65        | 141/2089 (6.7%)    |
| 9   | 2     | 2.28         | 56/1679 (3.3%)    | 2.63        | 133/2271 (5.9%)    |
| 10  | 3     | 2.24         | 57/1629 (3.5%)    | 2.51        | 127/2195 (5.8%)    |
| 11  | 4     | 2.26         | 55/1604 (3.4%)    | 2.47        | 115/2170 (5.3%)    |
| 12  | 5     | 3.85         | 65/1592 (4.1%)    | 2.60        | 115/2152 (5.3%)    |
| 13  | 6     | 2.23         | 58/1690 (3.4%)    | 2.51        | 114/2278 (5.0%)    |
| 14  | 7     | 2.26         | 69/1720 (4.0%)    | 2.50        | 110/2327 (4.7%)    |
| 15  | W     | 2.26         | 64/1500 (4.3%)    | 2.59        | 140/2030 (6.9%)    |
| 16  | V     | 2.29         | 82/2315 (3.5%)    | 2.55        | 168/3129 (5.4%)    |
| 17  | T     | 2.35         | 91/2195 (4.1%)    | 2.60        | 201/2964 (6.8%)    |
| 18  | Y     | 2.21         | 8/201 (4.0%)      | 2.39        | 8/266 (3.0%)       |
| 19  | Z     | 2.33         | 296/7026 (4.2%)   | 2.59        | 564/9495 (5.9%)    |
| 20  | N     | 2.27         | 279/7206 (3.9%)   | 2.60        | 574/9738 (5.9%)    |
| 21  | S     | 2.35         | 162/3918 (4.1%)   | 2.56        | 296/5287 (5.6%)    |
| 22  | P     | 2.34         | 169/3754 (4.5%)   | 2.61        | 307/5049 (6.1%)    |
| 23  | Q     | 2.28         | 130/3381 (3.8%)   | 2.65        | 319/4558 (7.0%)    |
| 24  | R     | 2.28         | 124/3263 (3.8%)   | 2.56        | 256/4393 (5.8%)    |
| 25  | U     | 2.25         | 79/2344 (3.4%)    | 2.57        | 188/3178 (5.9%)    |
| 26  | O     | 2.33         | 141/3066 (4.6%)   | 2.59        | 252/4148 (6.1%)    |
| 27  | H     | 2.30         | 113/3166 (3.6%)   | 2.53        | 246/4275 (5.8%)    |
| 28  | I     | 2.29         | 118/3085 (3.8%)   | 2.53        | 249/4158 (6.0%)    |
| 29  | K     | 2.28         | 123/3178 (3.9%)   | 2.53        | 245/4290 (5.7%)    |
| 30  | L     | 2.35         | 133/3146 (4.2%)   | 2.57        | 234/4233 (5.5%)    |
| 31  | M     | 2.24         | 117/3293 (3.6%)   | 2.59        | 244/4436 (5.5%)    |
| 32  | J     | 2.31         | 136/3236 (4.2%)   | 2.53        | 239/4347 (5.5%)    |
| All | All   | 2.33         | 3283/84152 (3.9%) | 2.56        | 6475/113574 (5.7%) |

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1   | A     | 0                   | 8                   |
| 2   | B     | 0                   | 9                   |
| 3   | C     | 0                   | 4                   |
| 4   | D     | 0                   | 9                   |
| 5   | E     | 0                   | 5                   |
| 6   | F     | 0                   | 7                   |
| 7   | G     | 0                   | 7                   |
| 8   | 1     | 0                   | 6                   |
| 9   | 2     | 1                   | 6                   |
| 10  | 3     | 0                   | 1                   |
| 11  | 4     | 0                   | 10                  |
| 12  | 5     | 0                   | 11                  |
| 13  | 6     | 0                   | 5                   |
| 14  | 7     | 0                   | 9                   |
| 15  | W     | 0                   | 3                   |
| 16  | V     | 0                   | 7                   |
| 17  | T     | 0                   | 12                  |
| 18  | Y     | 0                   | 1                   |
| 19  | Z     | 0                   | 21                  |
| 20  | N     | 0                   | 16                  |
| 21  | S     | 0                   | 17                  |
| 22  | P     | 0                   | 10                  |
| 23  | Q     | 0                   | 8                   |
| 24  | R     | 0                   | 14                  |
| 25  | U     | 0                   | 6                   |
| 26  | O     | 0                   | 13                  |
| 27  | H     | 0                   | 9                   |
| 28  | I     | 0                   | 6                   |
| 29  | K     | 0                   | 9                   |
| 30  | L     | 0                   | 17                  |
| 31  | M     | 0                   | 5                   |
| 32  | J     | 0                   | 11                  |
| All | All   | 1                   | 282                 |

All (3283) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms  | Z      | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|--------|-------------|----------|
| 12  | 5     | 118 | LEU  | CA-CB  | 121.26 | 3.42        | 1.53     |
| 5   | E     | 101 | PHE  | CG-CD1 | 15.97  | 1.72        | 1.38     |

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| Mol | Chain | Res | Type | Atoms   | Z      | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|--------|-------------|----------|
| 5   | E     | 101 | PHE  | CG-CD2  | 15.89  | 1.72        | 1.38     |
| 28  | I     | 268 | ARG  | NE-CZ   | 12.59  | 1.46        | 1.33     |
| 19  | Z     | 683 | GLU  | C-O     | -12.42 | 1.18        | 1.23     |
| 5   | E     | 101 | PHE  | CD2-CE2 | 12.08  | 1.74        | 1.38     |
| 16  | V     | 199 | HIS  | CA-C    | -11.94 | 1.44        | 1.52     |
| 24  | R     | 325 | VAL  | CA-C    | -11.57 | 1.38        | 1.52     |
| 5   | E     | 213 | THR  | C-N     | 10.76  | 1.48        | 1.33     |
| 10  | 3     | 26  | ARG  | CA-C    | -10.62 | 1.39        | 1.52     |
| 5   | E     | 101 | PHE  | CE2-CZ  | 10.55  | 1.70        | 1.38     |
| 3   | C     | 55  | LEU  | CA-C    | -10.47 | 1.40        | 1.52     |
| 6   | F     | 157 | ARG  | CD-NE   | 10.37  | 1.60        | 1.46     |
| 22  | P     | 392 | PHE  | CA-C    | -10.32 | 1.39        | 1.52     |
| 32  | J     | 246 | ILE  | CA-C    | -10.23 | 1.40        | 1.52     |
| 15  | W     | 28  | ALA  | CA-C    | -10.16 | 1.39        | 1.52     |
| 19  | Z     | 7   | ASP  | N-CA    | -10.09 | 1.38        | 1.47     |
| 7   | G     | 216 | TRP  | CA-C    | -9.99  | 1.41        | 1.52     |
| 29  | K     | 323 | ARG  | CD-NE   | 9.97   | 1.60        | 1.46     |
| 19  | Z     | 720 | GLU  | CA-C    | -9.96  | 1.42        | 1.53     |
| 19  | Z     | 687 | ARG  | CD-NE   | 9.88   | 1.60        | 1.46     |
| 27  | H     | 322 | ASN  | C-N     | 9.88   | 1.43        | 1.33     |
| 21  | S     | 232 | ARG  | CD-NE   | 9.86   | 1.60        | 1.46     |
| 4   | D     | 60  | ARG  | CA-C    | 9.76   | 1.65        | 1.52     |
| 4   | D     | 131 | ARG  | NE-CZ   | 9.66   | 1.43        | 1.33     |
| 5   | E     | 101 | PHE  | CD1-CE1 | 9.66   | 1.67        | 1.38     |
| 19  | Z     | 845 | ARG  | CD-NE   | 9.66   | 1.59        | 1.46     |
| 13  | 6     | 101 | MET  | N-CA    | -9.62  | 1.34        | 1.46     |
| 20  | N     | 417 | LYS  | N-CA    | -9.58  | 1.34        | 1.46     |
| 19  | Z     | 683 | GLU  | CA-CB   | 9.58   | 1.59        | 1.52     |
| 19  | Z     | 770 | HIS  | CA-C    | -9.58  | 1.44        | 1.52     |
| 27  | H     | 199 | GLU  | CA-CB   | 9.55   | 1.68        | 1.53     |
| 5   | E     | 101 | PHE  | CE1-CZ  | 9.55   | 1.67        | 1.38     |
| 22  | P     | 28  | LEU  | N-CA    | -9.51  | 1.36        | 1.46     |
| 26  | O     | 345 | GLN  | CA-C    | -9.48  | 1.40        | 1.52     |
| 31  | M     | 285 | ILE  | N-CA    | -9.45  | 1.35        | 1.46     |
| 32  | J     | 213 | ARG  | NE-CZ   | 9.39   | 1.43        | 1.33     |
| 24  | R     | 63  | TRP  | NE1-CE2 | 9.38   | 1.47        | 1.37     |
| 5   | E     | 211 | ASN  | CA-C    | -9.32  | 1.40        | 1.52     |
| 19  | Z     | 680 | ARG  | NE-CZ   | 9.31   | 1.43        | 1.33     |
| 19  | Z     | 706 | ILE  | CA-C    | -9.31  | 1.41        | 1.52     |
| 19  | Z     | 100 | ARG  | CD-NE   | 9.30   | 1.59        | 1.46     |
| 28  | I     | 426 | VAL  | CA-C    | -9.28  | 1.41        | 1.52     |
| 17  | T     | 231 | HIS  | ND1-CE1 | 9.27   | 1.41        | 1.32     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 30  | L     | 249 | ILE  | CA-C    | -9.27 | 1.41        | 1.52     |
| 29  | K     | 366 | ARG  | N-CA    | -9.20 | 1.38        | 1.46     |
| 2   | B     | 67  | PRO  | CA-C    | -9.20 | 1.42        | 1.52     |
| 30  | L     | 150 | GLY  | CA-C    | -9.19 | 1.43        | 1.52     |
| 8   | 1     | 130 | GLY  | CA-C    | 9.18  | 1.61        | 1.52     |
| 7   | G     | 79  | ALA  | C-N     | 9.17  | 1.44        | 1.33     |
| 31  | M     | 367 | ARG  | CD-NE   | 9.17  | 1.59        | 1.46     |
| 32  | J     | 43  | ARG  | NE-CZ   | 9.13  | 1.43        | 1.33     |
| 20  | N     | 594 | GLY  | CA-C    | -9.12 | 1.39        | 1.51     |
| 32  | J     | 273 | MET  | CA-CB   | 9.11  | 1.67        | 1.53     |
| 15  | W     | 99  | HIS  | ND1-CE1 | 9.08  | 1.41        | 1.32     |
| 30  | L     | 156 | ILE  | CA-CB   | -9.07 | 1.42        | 1.54     |
| 2   | B     | 76  | TYR  | CA-C    | -9.07 | 1.41        | 1.52     |
| 22  | P     | 104 | MET  | N-CA    | -9.06 | 1.35        | 1.46     |
| 14  | 7     | 56  | LEU  | CA-C    | -9.05 | 1.41        | 1.52     |
| 19  | Z     | 181 | ARG  | CD-NE   | 9.04  | 1.58        | 1.46     |
| 4   | D     | 169 | ARG  | CD-NE   | 9.04  | 1.58        | 1.46     |
| 19  | Z     | 893 | ILE  | C-N     | 9.03  | 1.44        | 1.33     |
| 28  | I     | 351 | ILE  | CA-C    | -9.03 | 1.41        | 1.52     |
| 2   | B     | 187 | ALA  | CA-C    | -9.02 | 1.41        | 1.52     |
| 3   | C     | 109 | GLN  | C-N     | 9.00  | 1.45        | 1.33     |
| 26  | O     | 124 | ASN  | C-N     | 8.99  | 1.45        | 1.33     |
| 24  | R     | 159 | ARG  | NE-CZ   | 8.99  | 1.43        | 1.33     |
| 3   | C     | 155 | ASN  | N-CA    | -8.98 | 1.35        | 1.46     |
| 22  | P     | 333 | SER  | N-CA    | -8.96 | 1.39        | 1.47     |
| 31  | M     | 59  | LYS  | C-N     | 8.96  | 1.46        | 1.34     |
| 19  | Z     | 837 | LEU  | CA-C    | -8.95 | 1.43        | 1.53     |
| 12  | 5     | 159 | MET  | N-CA    | -8.95 | 1.34        | 1.47     |
| 25  | U     | 177 | ARG  | CD-NE   | 8.95  | 1.58        | 1.46     |
| 21  | S     | 395 | ARG  | CD-NE   | 8.91  | 1.58        | 1.46     |
| 14  | 7     | 59  | LYS  | CA-C    | -8.90 | 1.41        | 1.52     |
| 17  | T     | 292 | ARG  | N-CA    | -8.90 | 1.35        | 1.46     |
| 30  | L     | 82  | LYS  | CA-C    | -8.89 | 1.42        | 1.52     |
| 25  | U     | 223 | ASN  | CA-C    | -8.87 | 1.41        | 1.52     |
| 10  | 3     | 201 | LYS  | CA-CB   | 8.86  | 1.65        | 1.53     |
| 20  | N     | 96  | TYR  | CA-C    | -8.86 | 1.44        | 1.53     |
| 24  | R     | 293 | ARG  | CA-CB   | 8.84  | 1.67        | 1.53     |
| 20  | N     | 504 | ASP  | CA-CB   | 8.82  | 1.66        | 1.53     |
| 26  | O     | 321 | ARG  | NE-CZ   | 8.80  | 1.42        | 1.33     |
| 30  | L     | 40  | LEU  | CA-C    | -8.80 | 1.41        | 1.52     |
| 17  | T     | 164 | ILE  | N-CA    | -8.76 | 1.36        | 1.46     |
| 30  | L     | 204 | GLN  | N-CA    | -8.76 | 1.35        | 1.46     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 21  | S     | 74  | HIS  | ND1-CE1 | 8.76  | 1.41        | 1.32     |
| 22  | P     | 312 | MET  | C-N     | 8.75  | 1.45        | 1.33     |
| 26  | O     | 5   | PRO  | CA-C    | -8.68 | 1.38        | 1.52     |
| 31  | M     | 64  | ARG  | NE-CZ   | 8.67  | 1.42        | 1.33     |
| 14  | 7     | 138 | ARG  | NE-CZ   | 8.62  | 1.42        | 1.33     |
| 19  | Z     | 603 | SER  | CA-C    | -8.61 | 1.42        | 1.52     |
| 19  | Z     | 881 | GLU  | CA-C    | -8.61 | 1.41        | 1.52     |
| 20  | N     | 194 | ARG  | CD-NE   | 8.60  | 1.58        | 1.46     |
| 26  | O     | 220 | PRO  | C-N     | 8.60  | 1.44        | 1.33     |
| 25  | U     | 89  | GLU  | CA-CB   | 8.60  | 1.66        | 1.53     |
| 17  | T     | 342 | VAL  | C-N     | 8.59  | 1.44        | 1.33     |
| 19  | Z     | 67  | ASP  | N-CA    | -8.59 | 1.35        | 1.46     |
| 25  | U     | 160 | SER  | CA-C    | -8.57 | 1.42        | 1.52     |
| 21  | S     | 267 | VAL  | CA-C    | -8.57 | 1.41        | 1.52     |
| 20  | N     | 412 | HIS  | CA-CB   | 8.55  | 1.65        | 1.52     |
| 30  | L     | 305 | ARG  | NE-CZ   | 8.55  | 1.42        | 1.33     |
| 32  | J     | 375 | ARG  | NE-CZ   | 8.55  | 1.42        | 1.33     |
| 19  | Z     | 802 | SER  | C-N     | 8.54  | 1.44        | 1.33     |
| 4   | D     | 102 | LEU  | CA-CB   | 8.54  | 1.66        | 1.53     |
| 20  | N     | 112 | CYS  | N-CA    | -8.54 | 1.35        | 1.46     |
| 26  | O     | 270 | ARG  | NE-CZ   | 8.54  | 1.42        | 1.33     |
| 26  | O     | 172 | TYR  | C-N     | 8.53  | 1.45        | 1.33     |
| 22  | P     | 214 | PHE  | N-CA    | -8.52 | 1.36        | 1.46     |
| 29  | K     | 135 | HIS  | N-CA    | -8.52 | 1.39        | 1.47     |
| 29  | K     | 193 | GLN  | N-CA    | -8.52 | 1.36        | 1.46     |
| 1   | A     | 233 | ALA  | CA-C    | -8.52 | 1.42        | 1.52     |
| 1   | A     | 106 | GLY  | C-N     | 8.51  | 1.43        | 1.33     |
| 22  | P     | 82  | LEU  | CA-CB   | 8.49  | 1.66        | 1.53     |
| 19  | Z     | 395 | GLY  | C-N     | 8.49  | 1.44        | 1.33     |
| 26  | O     | 296 | ILE  | CA-C    | -8.48 | 1.42        | 1.52     |
| 27  | H     | 73  | ALA  | CA-C    | -8.48 | 1.42        | 1.52     |
| 5   | E     | 186 | HIS  | CE1-NE2 | 8.44  | 1.41        | 1.32     |
| 31  | M     | 210 | ASN  | CA-CB   | 8.44  | 1.67        | 1.53     |
| 15  | W     | 11  | ASP  | CA-C    | -8.43 | 1.41        | 1.52     |
| 23  | Q     | 309 | TYR  | N-CA    | -8.43 | 1.34        | 1.46     |
| 27  | H     | 60  | ASN  | CA-CB   | 8.43  | 1.66        | 1.53     |
| 21  | S     | 87  | PRO  | CA-C    | 8.42  | 1.60        | 1.52     |
| 26  | O     | 370 | GLN  | CA-C    | -8.41 | 1.41        | 1.52     |
| 22  | P     | 271 | VAL  | N-CA    | -8.40 | 1.36        | 1.46     |
| 4   | D     | 116 | TYR  | CA-C    | -8.40 | 1.42        | 1.52     |
| 25  | U     | 99  | PRO  | N-CD    | -8.39 | 1.36        | 1.47     |
| 21  | S     | 446 | SER  | CA-C    | -8.38 | 1.42        | 1.52     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 26  | O     | 163 | TYR  | C-N     | 8.38  | 1.45        | 1.33     |
| 19  | Z     | 130 | ALA  | CA-C    | -8.38 | 1.41        | 1.52     |
| 27  | H     | 81  | ALA  | CA-C    | -8.38 | 1.41        | 1.52     |
| 6   | F     | 55  | GLU  | C-N     | 8.37  | 1.45        | 1.33     |
| 27  | H     | 312 | ARG  | C-N     | 8.37  | 1.40        | 1.33     |
| 1   | A     | 94  | ALA  | N-CA    | -8.36 | 1.36        | 1.46     |
| 15  | W     | 133 | LYS  | C-N     | 8.34  | 1.45        | 1.33     |
| 27  | H     | 265 | ARG  | CZ-NH1  | 8.34  | 1.44        | 1.32     |
| 25  | U     | 212 | LEU  | CA-C    | 8.33  | 1.63        | 1.52     |
| 2   | B     | 105 | ILE  | CA-C    | -8.32 | 1.44        | 1.52     |
| 19  | Z     | 588 | ARG  | CZ-NH2  | 8.32  | 1.44        | 1.33     |
| 32  | J     | 32  | GLN  | C-N     | 8.32  | 1.45        | 1.33     |
| 11  | 4     | 182 | VAL  | CA-C    | -8.31 | 1.42        | 1.52     |
| 20  | N     | 773 | PHE  | C-N     | 8.30  | 1.42        | 1.34     |
| 26  | O     | 232 | TRP  | C-N     | 8.30  | 1.44        | 1.33     |
| 14  | 7     | 55  | VAL  | C-N     | 8.27  | 1.44        | 1.33     |
| 19  | Z     | 640 | LYS  | C-N     | 8.27  | 1.43        | 1.33     |
| 11  | 4     | 134 | TYR  | CA-C    | -8.25 | 1.42        | 1.52     |
| 30  | L     | 161 | GLU  | N-CA    | -8.24 | 1.36        | 1.46     |
| 1   | A     | 205 | VAL  | CA-CB   | -8.24 | 1.44        | 1.54     |
| 11  | 4     | 135 | GLY  | CA-C    | -8.24 | 1.41        | 1.52     |
| 20  | N     | 688 | LEU  | N-CA    | -8.24 | 1.36        | 1.46     |
| 16  | V     | 27  | THR  | CA-C    | -8.24 | 1.42        | 1.52     |
| 16  | V     | 68  | ARG  | NE-CZ   | 8.24  | 1.42        | 1.33     |
| 26  | O     | 97  | LEU  | CA-C    | -8.23 | 1.42        | 1.52     |
| 24  | R     | 110 | TYR  | N-CA    | -8.21 | 1.36        | 1.46     |
| 22  | P     | 118 | LEU  | N-CA    | -8.21 | 1.39        | 1.46     |
| 24  | R     | 250 | LEU  | N-CA    | -8.21 | 1.34        | 1.46     |
| 17  | T     | 148 | ARG  | CD-NE   | 8.20  | 1.57        | 1.46     |
| 31  | M     | 307 | ARG  | CD-NE   | 8.19  | 1.57        | 1.46     |
| 20  | N     | 911 | ILE  | CA-CB   | -8.19 | 1.43        | 1.54     |
| 19  | Z     | 301 | HIS  | ND1-CE1 | 8.18  | 1.40        | 1.32     |
| 8   | 1     | 213 | GLN  | C-N     | 8.18  | 1.43        | 1.33     |
| 5   | E     | 93  | ARG  | CZ-NH1  | 8.18  | 1.44        | 1.32     |
| 8   | 1     | 156 | GLN  | C-N     | -8.17 | 1.24        | 1.33     |
| 2   | B     | 210 | VAL  | C-N     | 8.17  | 1.42        | 1.33     |
| 28  | I     | 329 | MET  | CA-C    | -8.17 | 1.42        | 1.52     |
| 23  | Q     | 38  | ASN  | N-CA    | -8.16 | 1.39        | 1.46     |
| 9   | 2     | 115 | ARG  | CZ-NH1  | 8.15  | 1.44        | 1.32     |
| 32  | J     | 377 | HIS  | CA-C    | -8.15 | 1.42        | 1.52     |
| 17  | T     | 140 | THR  | C-N     | 8.15  | 1.44        | 1.33     |
| 20  | N     | 107 | HIS  | CB-CG   | 8.14  | 1.61        | 1.50     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 19  | Z     | 75  | LEU  | CA-C    | -8.14 | 1.41        | 1.52     |
| 30  | L     | 143 | ASN  | N-CA    | -8.14 | 1.35        | 1.46     |
| 20  | N     | 68  | PHE  | C-N     | 8.13  | 1.45        | 1.33     |
| 20  | N     | 946 | GLU  | CA-CB   | 8.12  | 1.66        | 1.53     |
| 20  | N     | 625 | ILE  | N-CA    | 8.11  | 1.56        | 1.46     |
| 30  | L     | 42  | GLU  | CA-C    | -8.10 | 1.42        | 1.52     |
| 27  | H     | 312 | ARG  | NE-CZ   | 8.09  | 1.42        | 1.33     |
| 23  | Q     | 28  | HIS  | ND1-CE1 | 8.09  | 1.40        | 1.32     |
| 29  | K     | 373 | ALA  | N-CA    | -8.09 | 1.36        | 1.46     |
| 30  | L     | 358 | ARG  | NE-CZ   | 8.09  | 1.42        | 1.33     |
| 30  | L     | 206 | ASP  | CA-CB   | 8.07  | 1.65        | 1.53     |
| 16  | V     | 46  | ARG  | CZ-NH1  | 8.06  | 1.44        | 1.32     |
| 26  | O     | 132 | LYS  | CA-CB   | 8.05  | 1.65        | 1.53     |
| 22  | P     | 30  | GLU  | CA-C    | -8.05 | 1.42        | 1.52     |
| 2   | B     | 64  | LYS  | C-N     | 8.05  | 1.43        | 1.33     |
| 5   | E     | 55  | THR  | N-CA    | -8.04 | 1.35        | 1.46     |
| 23  | Q     | 124 | PHE  | CA-C    | 8.04  | 1.63        | 1.52     |
| 5   | E     | 145 | GLY  | N-CA    | -8.03 | 1.36        | 1.45     |
| 12  | 5     | 225 | ARG  | CA-CB   | 8.03  | 1.65        | 1.53     |
| 21  | S     | 369 | ALA  | C-N     | 8.02  | 1.44        | 1.33     |
| 3   | C     | 180 | LYS  | CA-C    | 8.01  | 1.62        | 1.53     |
| 7   | G     | 64  | ASN  | CA-C    | 8.01  | 1.63        | 1.53     |
| 23  | Q     | 91  | SER  | CA-C    | -8.00 | 1.42        | 1.52     |
| 30  | L     | 246 | MET  | CA-C    | -7.99 | 1.43        | 1.52     |
| 12  | 5     | 123 | ARG  | NE-CZ   | 7.97  | 1.41        | 1.33     |
| 17  | T     | 109 | SER  | CA-C    | -7.97 | 1.43        | 1.52     |
| 30  | L     | 208 | ASN  | CA-C    | -7.97 | 1.42        | 1.52     |
| 9   | 2     | 171 | GLY  | CA-C    | -7.95 | 1.45        | 1.52     |
| 16  | V     | 87  | VAL  | CA-CB   | -7.95 | 1.44        | 1.53     |
| 13  | 6     | 221 | ARG  | CD-NE   | 7.95  | 1.57        | 1.46     |
| 20  | N     | 657 | GLY  | C-N     | 7.93  | 1.43        | 1.33     |
| 3   | C     | 90  | LEU  | C-N     | 7.93  | 1.44        | 1.33     |
| 16  | V     | 161 | ARG  | CD-NE   | 7.93  | 1.57        | 1.46     |
| 12  | 5     | 258 | TYR  | CA-C    | -7.92 | 1.42        | 1.52     |
| 25  | U     | 137 | ALA  | C-N     | 7.89  | 1.43        | 1.33     |
| 24  | R     | 83  | ARG  | CD-NE   | 7.88  | 1.57        | 1.46     |
| 9   | 2     | 95  | THR  | C-N     | 7.87  | 1.43        | 1.33     |
| 8   | 1     | 81  | SER  | CA-C    | -7.86 | 1.46        | 1.53     |
| 27  | H     | 197 | HIS  | CB-CG   | 7.86  | 1.61        | 1.50     |
| 30  | L     | 249 | ILE  | C-N     | 7.86  | 1.44        | 1.33     |
| 23  | Q     | 252 | LYS  | CA-C    | -7.85 | 1.42        | 1.52     |
| 23  | Q     | 66  | LEU  | CA-C    | -7.85 | 1.42        | 1.52     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 27  | H     | 243 | SER  | C-N     | 7.84  | 1.44        | 1.33     |
| 19  | Z     | 342 | PRO  | CA-CB   | -7.83 | 1.42        | 1.53     |
| 1   | A     | 62  | ASP  | CA-C    | -7.83 | 1.43        | 1.52     |
| 3   | C     | 50  | ARG  | NE-CZ   | 7.83  | 1.41        | 1.33     |
| 27  | H     | 60  | ASN  | CA-C    | -7.83 | 1.42        | 1.52     |
| 21  | S     | 338 | ILE  | CA-CB   | -7.82 | 1.47        | 1.54     |
| 24  | R     | 184 | GLN  | CA-C    | -7.82 | 1.42        | 1.52     |
| 29  | K     | 326 | ARG  | NE-CZ   | 7.82  | 1.41        | 1.33     |
| 21  | S     | 95  | ARG  | NE-CZ   | 7.80  | 1.41        | 1.33     |
| 21  | S     | 363 | VAL  | CA-CB   | 7.80  | 1.64        | 1.54     |
| 19  | Z     | 685 | THR  | CA-C    | -7.79 | 1.43        | 1.52     |
| 6   | F     | 130 | VAL  | C-N     | 7.79  | 1.40        | 1.33     |
| 10  | 3     | 81  | GLN  | CA-C    | -7.78 | 1.43        | 1.53     |
| 21  | S     | 28  | PRO  | N-CD    | 7.77  | 1.58        | 1.47     |
| 23  | Q     | 182 | ASN  | CA-C    | -7.77 | 1.43        | 1.53     |
| 19  | Z     | 762 | VAL  | CA-CB   | -7.77 | 1.44        | 1.54     |
| 21  | S     | 196 | ARG  | NE-CZ   | 7.75  | 1.41        | 1.33     |
| 3   | C     | 128 | ARG  | CD-NE   | 7.75  | 1.57        | 1.46     |
| 19  | Z     | 466 | LEU  | C-N     | 7.75  | 1.44        | 1.33     |
| 17  | T     | 261 | PHE  | N-CA    | -7.74 | 1.36        | 1.46     |
| 19  | Z     | 792 | ALA  | C-N     | 7.74  | 1.43        | 1.34     |
| 19  | Z     | 182 | GLU  | CA-CB   | 7.74  | 1.63        | 1.53     |
| 10  | 3     | 169 | GLN  | C-O     | -7.73 | 1.15        | 1.24     |
| 17  | T     | 326 | GLN  | C-N     | 7.72  | 1.44        | 1.33     |
| 24  | R     | 186 | LEU  | CA-CB   | 7.72  | 1.65        | 1.53     |
| 29  | K     | 237 | GLN  | CA-C    | -7.72 | 1.43        | 1.52     |
| 26  | O     | 193 | GLN  | CA-C    | -7.72 | 1.42        | 1.52     |
| 10  | 3     | 26  | ARG  | C-O     | 7.72  | 1.33        | 1.23     |
| 26  | O     | 168 | ASN  | CA-CB   | 7.72  | 1.62        | 1.52     |
| 19  | Z     | 688 | ARG  | NE-CZ   | 7.71  | 1.41        | 1.33     |
| 13  | 6     | 52  | SER  | CA-C    | -7.71 | 1.43        | 1.52     |
| 30  | L     | 74  | VAL  | CA-CB   | 7.71  | 1.62        | 1.53     |
| 4   | D     | 124 | TYR  | C-N     | 7.70  | 1.44        | 1.33     |
| 30  | L     | 295 | ARG  | CD-NE   | 7.70  | 1.57        | 1.46     |
| 17  | T     | 273 | GLU  | C-N     | 7.69  | 1.43        | 1.33     |
| 30  | L     | 127 | ARG  | CD-NE   | 7.69  | 1.57        | 1.46     |
| 32  | J     | 310 | ARG  | CD-NE   | 7.69  | 1.57        | 1.46     |
| 8   | 1     | 177 | ARG  | NE-CZ   | 7.69  | 1.41        | 1.33     |
| 13  | 6     | 138 | GLU  | CA-C    | -7.69 | 1.43        | 1.52     |
| 21  | S     | 396 | HIS  | CA-C    | -7.69 | 1.42        | 1.52     |
| 23  | Q     | 148 | HIS  | ND1-CE1 | 7.68  | 1.40        | 1.32     |
| 19  | Z     | 113 | MET  | C-N     | 7.68  | 1.42        | 1.33     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 21  | S     | 257 | TYR  | C-N     | 7.68  | 1.43        | 1.33     |
| 27  | H     | 189 | GLU  | CA-C    | -7.68 | 1.42        | 1.52     |
| 9   | 2     | 119 | VAL  | CA-CB   | -7.68 | 1.44        | 1.53     |
| 28  | I     | 110 | GLY  | N-CA    | -7.67 | 1.37        | 1.45     |
| 29  | K     | 389 | GLU  | C-N     | 7.67  | 1.44        | 1.33     |
| 11  | 4     | 107 | TYR  | CA-C    | -7.66 | 1.43        | 1.52     |
| 13  | 6     | 62  | ILE  | N-CA    | -7.66 | 1.36        | 1.46     |
| 20  | N     | 474 | ARG  | CD-NE   | 7.66  | 1.56        | 1.46     |
| 28  | I     | 322 | ARG  | NE-CZ   | 7.65  | 1.41        | 1.33     |
| 16  | V     | 58  | LEU  | N-CA    | -7.63 | 1.36        | 1.46     |
| 20  | N     | 155 | LEU  | CA-CB   | 7.63  | 1.65        | 1.53     |
| 32  | J     | 185 | GLY  | CA-C    | -7.63 | 1.46        | 1.52     |
| 7   | G     | 111 | HIS  | ND1-CE1 | 7.63  | 1.40        | 1.32     |
| 20  | N     | 55  | ARG  | CA-CB   | 7.62  | 1.65        | 1.53     |
| 22  | P     | 142 | ARG  | CA-C    | -7.62 | 1.42        | 1.52     |
| 7   | G     | 66  | ARG  | N-CA    | -7.62 | 1.37        | 1.46     |
| 13  | 6     | 75  | ASP  | CA-C    | -7.62 | 1.42        | 1.52     |
| 15  | W     | 42  | ARG  | NE-CZ   | 7.62  | 1.41        | 1.33     |
| 11  | 4     | 95  | ARG  | NE-CZ   | 7.61  | 1.41        | 1.33     |
| 28  | I     | 315 | GLN  | CA-CB   | 7.61  | 1.65        | 1.53     |
| 16  | V     | 279 | ASP  | C-N     | -7.61 | 1.24        | 1.34     |
| 11  | 4     | 193 | ASN  | CA-CB   | 7.61  | 1.65        | 1.53     |
| 19  | Z     | 366 | ASP  | CA-C    | -7.61 | 1.43        | 1.52     |
| 19  | Z     | 178 | LYS  | CA-C    | -7.60 | 1.42        | 1.52     |
| 30  | L     | 175 | ARG  | C-N     | 7.60  | 1.43        | 1.33     |
| 17  | T     | 107 | ARG  | CZ-NH1  | 7.59  | 1.43        | 1.32     |
| 32  | J     | 88  | LYS  | N-CA    | -7.58 | 1.36        | 1.46     |
| 32  | J     | 201 | ARG  | NE-CZ   | 7.58  | 1.41        | 1.33     |
| 26  | O     | 192 | GLU  | CA-C    | -7.57 | 1.43        | 1.52     |
| 8   | 1     | 225 | ASP  | CA-CB   | 7.57  | 1.66        | 1.53     |
| 30  | L     | 157 | ARG  | CD-NE   | 7.57  | 1.56        | 1.46     |
| 28  | I     | 282 | VAL  | CA-C    | -7.57 | 1.43        | 1.52     |
| 20  | N     | 144 | ASP  | N-CA    | -7.56 | 1.36        | 1.46     |
| 29  | K     | 61  | ILE  | CA-CB   | -7.56 | 1.45        | 1.54     |
| 5   | E     | 155 | HIS  | ND1-CE1 | 7.55  | 1.40        | 1.32     |
| 10  | 3     | 163 | LEU  | CA-C    | -7.55 | 1.43        | 1.52     |
| 24  | R     | 300 | ARG  | CZ-NH1  | 7.55  | 1.43        | 1.32     |
| 27  | H     | 146 | LYS  | CA-CB   | 7.55  | 1.64        | 1.54     |
| 20  | N     | 110 | LYS  | N-CA    | 7.54  | 1.55        | 1.46     |
| 19  | Z     | 576 | ILE  | C-N     | 7.54  | 1.43        | 1.33     |
| 26  | O     | 306 | LYS  | CA-C    | -7.54 | 1.43        | 1.52     |
| 30  | L     | 369 | ILE  | C-N     | 7.54  | 1.43        | 1.33     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 19  | Z     | 393 | ASP  | CA-C   | -7.54 | 1.42        | 1.52     |
| 1   | A     | 93  | ARG  | N-CA   | -7.53 | 1.37        | 1.46     |
| 4   | D     | 225 | ILE  | CA-CB  | -7.53 | 1.45        | 1.54     |
| 26  | O     | 247 | ARG  | NE-CZ  | 7.52  | 1.41        | 1.33     |
| 7   | G     | 203 | ASP  | N-CA   | -7.51 | 1.37        | 1.46     |
| 24  | R     | 198 | ALA  | N-CA   | -7.51 | 1.37        | 1.46     |
| 20  | N     | 688 | LEU  | C-N    | 7.50  | 1.43        | 1.33     |
| 27  | H     | 49  | GLU  | C-N    | 7.50  | 1.43        | 1.33     |
| 31  | M     | 119 | GLN  | CA-C   | -7.50 | 1.42        | 1.52     |
| 27  | H     | 372 | LEU  | CA-C   | -7.50 | 1.43        | 1.52     |
| 22  | P     | 365 | ILE  | CA-CB  | -7.50 | 1.44        | 1.54     |
| 30  | L     | 228 | LEU  | C-N    | 7.49  | 1.43        | 1.33     |
| 10  | 3     | 137 | VAL  | C-N    | 7.49  | 1.43        | 1.33     |
| 17  | T     | 342 | VAL  | CA-CB  | -7.49 | 1.43        | 1.54     |
| 14  | 7     | 90  | ASN  | CA-CB  | 7.49  | 1.63        | 1.53     |
| 32  | J     | 221 | GLN  | CA-C   | -7.49 | 1.43        | 1.52     |
| 24  | R     | 176 | ARG  | CZ-NH2 | 7.48  | 1.43        | 1.33     |
| 32  | J     | 137 | LEU  | CA-C   | -7.48 | 1.43        | 1.52     |
| 29  | K     | 369 | LYS  | C-N    | 7.47  | 1.37        | 1.33     |
| 23  | Q     | 26  | ILE  | CA-CB  | -7.46 | 1.44        | 1.54     |
| 4   | D     | 169 | ARG  | CA-C   | -7.46 | 1.43        | 1.53     |
| 12  | 5     | 108 | ALA  | CA-C   | 7.45  | 1.60        | 1.53     |
| 21  | S     | 51  | GLY  | CA-C   | 7.45  | 1.60        | 1.52     |
| 16  | V     | 212 | LEU  | CA-C   | -7.45 | 1.43        | 1.52     |
| 20  | N     | 57  | ARG  | CD-NE  | 7.45  | 1.56        | 1.46     |
| 10  | 3     | 76  | LEU  | C-N    | 7.44  | 1.43        | 1.33     |
| 19  | Z     | 34  | ARG  | CD-NE  | 7.42  | 1.56        | 1.46     |
| 30  | L     | 71  | VAL  | C-N    | 7.42  | 1.41        | 1.33     |
| 5   | E     | 209 | LYS  | C-N    | 7.42  | 1.44        | 1.33     |
| 12  | 5     | 107 | GLY  | CA-C   | -7.41 | 1.47        | 1.52     |
| 3   | C     | 172 | VAL  | N-CA   | -7.41 | 1.37        | 1.46     |
| 32  | J     | 234 | LEU  | C-N    | 7.41  | 1.43        | 1.33     |
| 20  | N     | 221 | ILE  | CA-CB  | 7.40  | 1.63        | 1.54     |
| 8   | 1     | 54  | THR  | CA-C   | -7.40 | 1.43        | 1.52     |
| 28  | I     | 124 | SER  | CA-C   | -7.39 | 1.44        | 1.52     |
| 11  | 4     | 37  | LYS  | CA-C   | -7.39 | 1.43        | 1.52     |
| 24  | R     | 79  | GLU  | CA-C   | -7.39 | 1.43        | 1.52     |
| 30  | L     | 394 | LEU  | CA-CB  | 7.39  | 1.65        | 1.53     |
| 12  | 5     | 181 | SER  | CA-CB  | 7.38  | 1.63        | 1.52     |
| 14  | 7     | 196 | GLU  | CA-CB  | 7.37  | 1.64        | 1.53     |
| 19  | Z     | 568 | GLY  | C-O    | -7.37 | 1.16        | 1.23     |
| 31  | M     | 409 | ILE  | N-CA   | -7.36 | 1.37        | 1.46     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 13  | 6     | 166 | GLY  | C-N     | 7.36  | 1.44        | 1.33     |
| 24  | R     | 228 | MET  | C-N     | 7.36  | 1.43        | 1.33     |
| 16  | V     | 161 | ARG  | CZ-NH2  | 7.36  | 1.43        | 1.33     |
| 9   | 2     | 154 | TYR  | CA-C    | -7.35 | 1.43        | 1.52     |
| 26  | O     | 282 | PHE  | N-CA    | -7.35 | 1.37        | 1.46     |
| 19  | Z     | 649 | HIS  | ND1-CE1 | 7.34  | 1.39        | 1.32     |
| 28  | I     | 390 | LEU  | CA-C    | -7.34 | 1.43        | 1.52     |
| 19  | Z     | 846 | VAL  | CA-C    | -7.34 | 1.44        | 1.52     |
| 16  | V     | 35  | SER  | N-CA    | -7.34 | 1.37        | 1.46     |
| 20  | N     | 227 | GLN  | CA-C    | -7.33 | 1.43        | 1.52     |
| 26  | O     | 61  | GLU  | C-O     | -7.33 | 1.15        | 1.24     |
| 8   | 1     | 135 | GLY  | C-N     | 7.33  | 1.41        | 1.33     |
| 28  | I     | 408 | ARG  | C-N     | 7.32  | 1.44        | 1.34     |
| 6   | F     | 107 | ARG  | CD-NE   | 7.32  | 1.56        | 1.46     |
| 7   | G     | 229 | PRO  | CA-CB   | 7.32  | 1.63        | 1.53     |
| 1   | A     | 6   | SER  | CA-C    | -7.32 | 1.44        | 1.52     |
| 3   | C     | 195 | LYS  | CA-CB   | -7.31 | 1.41        | 1.53     |
| 19  | Z     | 398 | TRP  | C-N     | 7.31  | 1.42        | 1.33     |
| 13  | 6     | 63  | HIS  | ND1-CE1 | 7.31  | 1.39        | 1.32     |
| 31  | M     | 120 | ARG  | CD-NE   | 7.30  | 1.56        | 1.46     |
| 27  | H     | 231 | ASN  | CA-CB   | 7.30  | 1.64        | 1.53     |
| 11  | 4     | 48  | GLY  | CA-C    | -7.29 | 1.47        | 1.52     |
| 11  | 4     | 95  | ARG  | CD-NE   | 7.29  | 1.56        | 1.46     |
| 25  | U     | 229 | GLN  | N-CA    | -7.29 | 1.36        | 1.46     |
| 29  | K     | 391 | ARG  | CD-NE   | 7.29  | 1.56        | 1.46     |
| 17  | T     | 196 | GLY  | CA-C    | -7.28 | 1.43        | 1.52     |
| 26  | O     | 35  | HIS  | ND1-CE1 | 7.28  | 1.39        | 1.32     |
| 5   | E     | 186 | HIS  | CG-CD2  | 7.28  | 1.43        | 1.35     |
| 6   | F     | 77  | LEU  | CA-CB   | 7.28  | 1.63        | 1.53     |
| 19  | Z     | 317 | LEU  | CA-C    | -7.27 | 1.43        | 1.52     |
| 2   | B     | 75  | VAL  | CA-C    | -7.27 | 1.44        | 1.52     |
| 19  | Z     | 519 | ALA  | CA-CB   | 7.27  | 1.64        | 1.53     |
| 3   | C     | 83  | ALA  | C-N     | 7.26  | 1.43        | 1.33     |
| 1   | A     | 132 | ARG  | NE-CZ   | 7.26  | 1.41        | 1.33     |
| 20  | N     | 471 | ASP  | CA-CB   | 7.26  | 1.62        | 1.53     |
| 15  | W     | 190 | ALA  | CA-C    | -7.26 | 1.42        | 1.52     |
| 17  | T     | 328 | PRO  | C-N     | 7.26  | 1.44        | 1.33     |
| 19  | Z     | 102 | HIS  | ND1-CE1 | 7.26  | 1.39        | 1.32     |
| 22  | P     | 232 | GLN  | CA-C    | -7.26 | 1.43        | 1.52     |
| 26  | O     | 263 | ALA  | N-CA    | 7.25  | 1.55        | 1.46     |
| 3   | C     | 64  | LYS  | N-CA    | -7.25 | 1.36        | 1.46     |
| 13  | 6     | 28  | ARG  | NE-CZ   | 7.25  | 1.41        | 1.33     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 19  | Z     | 673 | ARG  | CD-NE  | 7.25  | 1.56        | 1.46     |
| 22  | P     | 27  | ARG  | CZ-NH1 | 7.25  | 1.42        | 1.32     |
| 17  | T     | 193 | GLN  | CA-C   | -7.24 | 1.43        | 1.52     |
| 27  | H     | 97  | ARG  | NE-CZ  | 7.24  | 1.41        | 1.33     |
| 19  | Z     | 815 | HIS  | CA-CB  | 7.24  | 1.65        | 1.53     |
| 8   | 1     | 220 | GLN  | CA-C   | -7.24 | 1.44        | 1.52     |
| 19  | Z     | 688 | ARG  | CZ-NH1 | 7.24  | 1.42        | 1.32     |
| 9   | 2     | 54  | GLY  | CA-C   | -7.24 | 1.41        | 1.51     |
| 20  | N     | 394 | ALA  | CA-C   | -7.23 | 1.43        | 1.52     |
| 1   | A     | 191 | PHE  | CA-C   | -7.23 | 1.43        | 1.52     |
| 18  | Y     | 51  | ASP  | N-CA   | 7.23  | 1.55        | 1.46     |
| 22  | P     | 298 | GLU  | C-N    | 7.23  | 1.41        | 1.33     |
| 29  | K     | 258 | ALA  | CA-C   | -7.23 | 1.44        | 1.53     |
| 19  | Z     | 757 | ASN  | CA-C   | -7.22 | 1.43        | 1.52     |
| 4   | D     | 206 | GLN  | CA-C   | -7.22 | 1.43        | 1.52     |
| 20  | N     | 192 | GLN  | CA-CB  | 7.22  | 1.64        | 1.53     |
| 29  | K     | 335 | LEU  | C-N    | 7.22  | 1.40        | 1.33     |
| 20  | N     | 580 | ARG  | NE-CZ  | 7.22  | 1.41        | 1.33     |
| 19  | Z     | 559 | PRO  | CA-CB  | -7.21 | 1.43        | 1.53     |
| 22  | P     | 444 | HIS  | N-CA   | 7.21  | 1.55        | 1.46     |
| 27  | H     | 183 | GLN  | N-CA   | -7.21 | 1.37        | 1.46     |
| 19  | Z     | 527 | VAL  | N-CA   | -7.21 | 1.37        | 1.46     |
| 21  | S     | 232 | ARG  | NE-CZ  | 7.21  | 1.41        | 1.33     |
| 21  | S     | 135 | MET  | C-N    | 7.21  | 1.43        | 1.33     |
| 26  | O     | 310 | LEU  | CA-C   | -7.20 | 1.43        | 1.52     |
| 21  | S     | 462 | ILE  | CA-CB  | 7.19  | 1.64        | 1.54     |
| 5   | E     | 160 | GLY  | CA-C   | -7.19 | 1.43        | 1.51     |
| 31  | M     | 103 | ASP  | CA-C   | 7.19  | 1.61        | 1.52     |
| 29  | K     | 128 | ALA  | C-N    | 7.18  | 1.42        | 1.33     |
| 27  | H     | 280 | ILE  | CA-C   | 7.18  | 1.61        | 1.52     |
| 11  | 4     | 131 | ALA  | CA-C   | -7.17 | 1.43        | 1.52     |
| 22  | P     | 281 | ASN  | N-CA   | -7.17 | 1.37        | 1.46     |
| 6   | F     | 122 | ARG  | CA-C   | -7.17 | 1.43        | 1.52     |
| 19  | Z     | 592 | ASN  | CA-CB  | 7.17  | 1.64        | 1.53     |
| 28  | I     | 206 | THR  | N-CA   | 7.17  | 1.54        | 1.46     |
| 2   | B     | 227 | ARG  | C-N    | 7.16  | 1.43        | 1.33     |
| 23  | Q     | 310 | ARG  | CZ-NH1 | 7.16  | 1.42        | 1.32     |
| 24  | R     | 379 | ARG  | NE-CZ  | 7.15  | 1.41        | 1.33     |
| 10  | 3     | 28  | PHE  | CA-CB  | 7.15  | 1.64        | 1.53     |
| 11  | 4     | 119 | ASP  | CA-C   | -7.15 | 1.43        | 1.52     |
| 4   | D     | 43  | LEU  | C-N    | 7.15  | 1.41        | 1.33     |
| 7   | G     | 104 | GLY  | C-N    | 7.15  | 1.42        | 1.33     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 22  | P     | 405 | LYS  | CA-C    | -7.15 | 1.43        | 1.52     |
| 22  | P     | 205 | ILE  | N-CA    | -7.15 | 1.38        | 1.46     |
| 28  | I     | 348 | ASP  | C-N     | 7.15  | 1.42        | 1.33     |
| 10  | 3     | 37  | THR  | C-N     | 7.14  | 1.42        | 1.33     |
| 17  | T     | 350 | GLU  | CA-C    | -7.14 | 1.43        | 1.52     |
| 12  | 5     | 241 | ASP  | CA-CB   | 7.14  | 1.63        | 1.53     |
| 23  | Q     | 142 | ARG  | CD-NE   | 7.13  | 1.56        | 1.46     |
| 19  | Z     | 389 | LYS  | C-N     | 7.13  | 1.43        | 1.33     |
| 28  | I     | 171 | VAL  | CA-C    | -7.13 | 1.42        | 1.52     |
| 2   | B     | 219 | ARG  | CD-NE   | 7.13  | 1.56        | 1.46     |
| 15  | W     | 25  | ARG  | CD-NE   | 7.13  | 1.56        | 1.46     |
| 31  | M     | 164 | LEU  | CA-C    | -7.12 | 1.43        | 1.52     |
| 19  | Z     | 828 | ARG  | CZ-NH1  | 7.12  | 1.42        | 1.32     |
| 8   | 1     | 80  | GLY  | CA-C    | -7.12 | 1.41        | 1.51     |
| 28  | I     | 364 | ILE  | C-N     | 7.12  | 1.43        | 1.33     |
| 20  | N     | 777 | HIS  | ND1-CE1 | 7.12  | 1.39        | 1.32     |
| 5   | E     | 163 | VAL  | C-N     | 7.11  | 1.43        | 1.33     |
| 17  | T     | 204 | SER  | N-CA    | -7.11 | 1.37        | 1.46     |
| 29  | K     | 250 | VAL  | N-CA    | -7.11 | 1.38        | 1.46     |
| 31  | M     | 147 | LYS  | CA-CB   | 7.11  | 1.64        | 1.53     |
| 28  | I     | 84  | GLN  | C-N     | 7.11  | 1.42        | 1.33     |
| 30  | L     | 179 | ILE  | N-CA    | 7.10  | 1.51        | 1.46     |
| 8   | 1     | 44  | GLY  | C-N     | 7.10  | 1.42        | 1.33     |
| 19  | Z     | 840 | LEU  | C-N     | 7.10  | 1.40        | 1.33     |
| 32  | J     | 388 | ALA  | CA-C    | -7.10 | 1.43        | 1.52     |
| 3   | C     | 238 | LYS  | N-CA    | 7.09  | 1.54        | 1.46     |
| 25  | U     | 283 | ARG  | CD-NE   | 7.09  | 1.56        | 1.46     |
| 5   | E     | 154 | PHE  | CA-C    | -7.09 | 1.44        | 1.52     |
| 5   | E     | 56  | SER  | C-N     | -7.09 | 1.28        | 1.33     |
| 7   | G     | 134 | CYS  | CA-C    | -7.09 | 1.43        | 1.52     |
| 2   | B     | 47  | ALA  | CA-C    | -7.09 | 1.43        | 1.52     |
| 22  | P     | 257 | GLN  | CA-CB   | 7.09  | 1.64        | 1.53     |
| 23  | Q     | 155 | ARG  | CZ-NH1  | 7.09  | 1.42        | 1.32     |
| 31  | M     | 109 | GLU  | CA-C    | -7.09 | 1.43        | 1.52     |
| 16  | V     | 167 | MET  | CA-CB   | 7.08  | 1.64        | 1.53     |
| 32  | J     | 9   | MET  | N-CA    | -7.08 | 1.37        | 1.46     |
| 17  | T     | 292 | ARG  | CZ-NH1  | 7.08  | 1.42        | 1.32     |
| 24  | R     | 32  | ARG  | NE-CZ   | 7.08  | 1.40        | 1.33     |
| 20  | N     | 802 | TYR  | N-CA    | -7.07 | 1.36        | 1.45     |
| 24  | R     | 267 | ARG  | NE-CZ   | 7.07  | 1.40        | 1.33     |
| 27  | H     | 277 | ILE  | CA-CB   | 7.07  | 1.62        | 1.54     |
| 19  | Z     | 71  | TYR  | CA-C    | -7.06 | 1.44        | 1.52     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 24  | R     | 225 | TYR  | CA-CB   | 7.06  | 1.64        | 1.53     |
| 28  | I     | 333 | ARG  | C-N     | 7.06  | 1.41        | 1.33     |
| 19  | Z     | 96  | LEU  | N-CA    | -7.06 | 1.38        | 1.46     |
| 29  | K     | 178 | ARG  | CA-C    | -7.06 | 1.43        | 1.52     |
| 1   | A     | 241 | ALA  | CA-C    | -7.05 | 1.43        | 1.52     |
| 21  | S     | 73  | GLU  | C-N     | 7.05  | 1.43        | 1.33     |
| 29  | K     | 391 | ARG  | NE-CZ   | 7.04  | 1.40        | 1.33     |
| 12  | 5     | 230 | GLY  | CA-C    | -7.04 | 1.42        | 1.51     |
| 15  | W     | 170 | LEU  | CA-CB   | 7.04  | 1.64        | 1.53     |
| 31  | M     | 346 | LEU  | CA-CB   | 7.04  | 1.64        | 1.53     |
| 23  | Q     | 320 | SER  | CA-C    | -7.03 | 1.43        | 1.52     |
| 7   | G     | 93  | ARG  | CD-NE   | 7.03  | 1.56        | 1.46     |
| 19  | Z     | 474 | SER  | CA-C    | -7.03 | 1.42        | 1.52     |
| 20  | N     | 811 | PHE  | CA-C    | -7.03 | 1.44        | 1.52     |
| 23  | Q     | 338 | VAL  | CA-C    | 7.03  | 1.61        | 1.52     |
| 26  | O     | 288 | HIS  | CB-CG   | 7.03  | 1.59        | 1.50     |
| 28  | I     | 333 | ARG  | NE-CZ   | 7.03  | 1.40        | 1.33     |
| 17  | T     | 312 | LEU  | CA-C    | -7.03 | 1.45        | 1.53     |
| 8   | 1     | 155 | ARG  | NE-CZ   | 7.03  | 1.40        | 1.33     |
| 20  | N     | 140 | ARG  | NE-CZ   | 7.03  | 1.40        | 1.33     |
| 29  | K     | 248 | ARG  | NE-CZ   | 7.02  | 1.40        | 1.33     |
| 12  | 5     | 182 | GLY  | CA-C    | -7.02 | 1.45        | 1.51     |
| 21  | S     | 470 | LEU  | CA-C    | -7.01 | 1.43        | 1.52     |
| 22  | P     | 173 | THR  | CA-C    | -7.01 | 1.44        | 1.52     |
| 23  | Q     | 187 | ARG  | N-CA    | -7.01 | 1.37        | 1.46     |
| 24  | R     | 136 | HIS  | N-CA    | -7.01 | 1.37        | 1.46     |
| 31  | M     | 149 | LYS  | CA-C    | 7.01  | 1.62        | 1.52     |
| 1   | A     | 185 | LYS  | N-CA    | -7.01 | 1.36        | 1.46     |
| 14  | 7     | 53  | THR  | CA-C    | -7.01 | 1.44        | 1.52     |
| 31  | M     | 36  | VAL  | CA-CB   | -7.01 | 1.46        | 1.54     |
| 21  | S     | 325 | HIS  | ND1-CE1 | 7.01  | 1.39        | 1.32     |
| 26  | O     | 169 | HIS  | ND1-CE1 | 7.01  | 1.39        | 1.32     |
| 32  | J     | 281 | ASP  | CA-C    | -7.01 | 1.46        | 1.53     |
| 24  | R     | 37  | VAL  | C-O     | -7.00 | 1.16        | 1.24     |
| 2   | B     | 151 | PRO  | C-N     | 6.99  | 1.43        | 1.33     |
| 20  | N     | 254 | GLU  | CA-C    | -6.99 | 1.44        | 1.52     |
| 21  | S     | 157 | PRO  | C-N     | 6.99  | 1.43        | 1.33     |
| 19  | Z     | 173 | LEU  | CA-C    | -6.99 | 1.44        | 1.52     |
| 16  | V     | 68  | ARG  | CZ-NH1  | 6.99  | 1.42        | 1.32     |
| 32  | J     | 56  | VAL  | C-O     | -6.99 | 1.15        | 1.24     |
| 24  | R     | 274 | SER  | CA-CB   | 6.98  | 1.64        | 1.53     |
| 28  | I     | 426 | VAL  | CA-CB   | -6.98 | 1.45        | 1.54     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 15  | W     | 46  | GLU  | CA-C    | -6.98 | 1.46        | 1.52     |
| 16  | V     | 113 | HIS  | ND1-CE1 | 6.98  | 1.39        | 1.32     |
| 17  | T     | 107 | ARG  | CA-C    | 6.98  | 1.62        | 1.53     |
| 30  | L     | 67  | VAL  | C-N     | 6.98  | 1.43        | 1.33     |
| 13  | 6     | 126 | ARG  | CZ-NH2  | 6.97  | 1.42        | 1.33     |
| 9   | 2     | 245 | TYR  | CA-C    | -6.97 | 1.44        | 1.52     |
| 20  | N     | 868 | LYS  | N-CA    | -6.97 | 1.37        | 1.45     |
| 23  | Q     | 411 | VAL  | C-N     | 6.97  | 1.43        | 1.33     |
| 15  | W     | 100 | ARG  | CA-C    | -6.97 | 1.44        | 1.52     |
| 21  | S     | 475 | ARG  | N-CA    | -6.97 | 1.38        | 1.46     |
| 21  | S     | 341 | ARG  | NE-CZ   | 6.97  | 1.40        | 1.33     |
| 25  | U     | 196 | HIS  | CG-CD2  | 6.97  | 1.43        | 1.35     |
| 30  | L     | 353 | ASN  | CA-C    | -6.97 | 1.44        | 1.52     |
| 19  | Z     | 210 | GLU  | CA-C    | -6.96 | 1.44        | 1.52     |
| 20  | N     | 39  | SER  | CA-C    | -6.96 | 1.43        | 1.52     |
| 2   | B     | 85  | VAL  | CA-CB   | -6.96 | 1.45        | 1.54     |
| 22  | P     | 39  | ARG  | CZ-NH2  | 6.96  | 1.42        | 1.33     |
| 17  | T     | 244 | TYR  | N-CA    | -6.96 | 1.37        | 1.46     |
| 22  | P     | 263 | TRP  | NE1-CE2 | 6.96  | 1.45        | 1.37     |
| 19  | Z     | 57  | GLU  | C-N     | 6.95  | 1.43        | 1.33     |
| 17  | T     | 254 | ILE  | CA-CB   | 6.95  | 1.58        | 1.54     |
| 30  | L     | 386 | ARG  | CD-NE   | 6.95  | 1.55        | 1.46     |
| 31  | M     | 218 | LEU  | C-N     | 6.95  | 1.43        | 1.33     |
| 3   | C     | 223 | THR  | CA-C    | -6.95 | 1.44        | 1.52     |
| 24  | R     | 255 | ALA  | N-CA    | -6.95 | 1.38        | 1.46     |
| 32  | J     | 54  | ALA  | C-N     | 6.94  | 1.43        | 1.33     |
| 6   | F     | 206 | THR  | N-CA    | -6.94 | 1.36        | 1.45     |
| 21  | S     | 238 | HIS  | ND1-CE1 | 6.94  | 1.39        | 1.32     |
| 5   | E     | 23  | GLN  | N-CA    | -6.94 | 1.38        | 1.46     |
| 24  | R     | 143 | TYR  | N-CA    | -6.94 | 1.38        | 1.46     |
| 13  | 6     | 207 | ILE  | CA-C    | -6.94 | 1.44        | 1.52     |
| 19  | Z     | 850 | VAL  | CA-C    | -6.94 | 1.44        | 1.52     |
| 2   | B     | 71  | HIS  | CA-C    | -6.93 | 1.44        | 1.53     |
| 32  | J     | 52  | LEU  | C-N     | 6.93  | 1.43        | 1.33     |
| 28  | I     | 120 | HIS  | CA-C    | -6.93 | 1.44        | 1.52     |
| 8   | 1     | 136 | TRP  | NE1-CE2 | 6.93  | 1.45        | 1.37     |
| 19  | Z     | 60  | VAL  | CA-CB   | -6.93 | 1.45        | 1.54     |
| 19  | Z     | 773 | LYS  | C-N     | 6.93  | 1.39        | 1.33     |
| 25  | U     | 24  | ASN  | CA-C    | -6.93 | 1.43        | 1.52     |
| 25  | U     | 224 | HIS  | ND1-CE1 | 6.93  | 1.39        | 1.32     |
| 5   | E     | 169 | ALA  | N-CA    | -6.92 | 1.37        | 1.46     |
| 27  | H     | 393 | GLY  | CA-C    | 6.92  | 1.60        | 1.52     |

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| Mol | Chain | Res | Type | Atoms | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|-------|-------------|----------|
| 11  | 4     | 19  | ARG  | CD-NE | 6.92  | 1.55        | 1.46     |
| 27  | H     | 273 | PHE  | N-CA  | -6.92 | 1.37        | 1.46     |
| 17  | T     | 99  | GLU  | C-O   | -6.92 | 1.18        | 1.23     |
| 19  | Z     | 556 | ARG  | CA-CB | 6.92  | 1.64        | 1.53     |
| 17  | T     | 264 | ASP  | CA-C  | -6.92 | 1.44        | 1.52     |
| 25  | U     | 142 | GLU  | C-N   | 6.91  | 1.42        | 1.33     |
| 28  | I     | 424 | GLU  | CA-C  | -6.91 | 1.43        | 1.52     |
| 30  | L     | 50  | LEU  | C-N   | 6.91  | 1.42        | 1.33     |
| 8   | 1     | 177 | ARG  | CA-CB | 6.91  | 1.62        | 1.53     |
| 7   | G     | 60  | GLU  | CA-C  | -6.91 | 1.43        | 1.52     |
| 14  | 7     | 79  | ARG  | NE-CZ | 6.91  | 1.40        | 1.33     |
| 30  | L     | 159 | LEU  | N-CA  | -6.91 | 1.38        | 1.46     |
| 12  | 5     | 138 | ALA  | N-CA  | -6.91 | 1.37        | 1.46     |
| 20  | N     | 855 | GLU  | N-CA  | -6.91 | 1.37        | 1.46     |
| 28  | I     | 395 | ILE  | CA-C  | 6.91  | 1.61        | 1.52     |
| 22  | P     | 6   | SER  | C-N   | 6.90  | 1.43        | 1.33     |
| 23  | Q     | 48  | GLN  | C-N   | 6.90  | 1.43        | 1.33     |
| 5   | E     | 53  | ARG  | NE-CZ | 6.90  | 1.40        | 1.33     |
| 17  | T     | 211 | PHE  | CA-CB | 6.90  | 1.64        | 1.53     |
| 5   | E     | 147 | ASP  | CA-CB | 6.90  | 1.64        | 1.53     |
| 32  | J     | 307 | ARG  | CD-NE | 6.90  | 1.55        | 1.46     |
| 22  | P     | 290 | ILE  | CA-CB | 6.90  | 1.63        | 1.54     |
| 20  | N     | 330 | SER  | CA-C  | -6.89 | 1.43        | 1.52     |
| 23  | Q     | 322 | HIS  | CA-CB | 6.89  | 1.64        | 1.53     |
| 13  | 6     | 194 | THR  | CA-C  | 6.89  | 1.61        | 1.52     |
| 20  | N     | 465 | LEU  | C-N   | 6.89  | 1.43        | 1.33     |
| 21  | S     | 218 | ASP  | CA-C  | -6.89 | 1.44        | 1.52     |
| 19  | Z     | 14  | GLN  | CA-CB | 6.88  | 1.62        | 1.53     |
| 27  | H     | 360 | ARG  | CD-NE | 6.88  | 1.55        | 1.46     |
| 31  | M     | 387 | LEU  | N-CA  | -6.88 | 1.38        | 1.46     |
| 19  | Z     | 171 | GLN  | CA-C  | -6.88 | 1.44        | 1.52     |
| 23  | Q     | 67  | GLY  | C-N   | 6.88  | 1.42        | 1.33     |
| 26  | O     | 44  | PHE  | CA-CB | 6.88  | 1.64        | 1.53     |
| 32  | J     | 385 | MET  | CA-C  | -6.88 | 1.44        | 1.52     |
| 24  | R     | 82  | LYS  | CA-C  | -6.88 | 1.43        | 1.52     |
| 15  | W     | 13  | SER  | C-N   | 6.88  | 1.43        | 1.34     |
| 20  | N     | 772 | TRP  | CA-C  | -6.88 | 1.44        | 1.52     |
| 28  | I     | 260 | LEU  | CA-C  | -6.88 | 1.44        | 1.52     |
| 7   | G     | 228 | VAL  | CA-CB | -6.88 | 1.45        | 1.54     |
| 6   | F     | 169 | ARG  | CD-NE | 6.87  | 1.55        | 1.46     |
| 20  | N     | 143 | ASP  | C-N   | 6.87  | 1.43        | 1.34     |
| 30  | L     | 397 | LYS  | C-N   | 6.87  | 1.42        | 1.33     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 19  | Z     | 614 | HIS  | CE1-NE2 | -6.87 | 1.25        | 1.32     |
| 20  | N     | 575 | ASP  | CA-C    | 6.87  | 1.61        | 1.52     |
| 5   | E     | 74  | ILE  | CA-CB   | 6.87  | 1.64        | 1.54     |
| 12  | 5     | 153 | GLY  | C-N     | 6.87  | 1.42        | 1.33     |
| 19  | Z     | 713 | PHE  | CA-C    | -6.86 | 1.44        | 1.52     |
| 25  | U     | 76  | GLU  | CA-C    | -6.86 | 1.44        | 1.52     |
| 31  | M     | 269 | LYS  | CA-CB   | 6.86  | 1.64        | 1.53     |
| 4   | D     | 211 | ASN  | N-CA    | -6.86 | 1.38        | 1.46     |
| 22  | P     | 39  | ARG  | CD-NE   | 6.86  | 1.55        | 1.46     |
| 31  | M     | 97  | ILE  | CA-C    | -6.86 | 1.44        | 1.52     |
| 30  | L     | 32  | GLU  | CA-C    | -6.86 | 1.43        | 1.52     |
| 14  | 7     | 166 | LEU  | CA-CB   | 6.85  | 1.62        | 1.53     |
| 27  | H     | 418 | LYS  | C-N     | 6.85  | 1.42        | 1.33     |
| 2   | B     | 75  | VAL  | C-N     | 6.85  | 1.42        | 1.33     |
| 22  | P     | 179 | LYS  | C-N     | 6.85  | 1.42        | 1.33     |
| 10  | 3     | 174 | ALA  | C-N     | 6.85  | 1.42        | 1.33     |
| 30  | L     | 19  | ARG  | NE-CZ   | 6.85  | 1.40        | 1.33     |
| 8   | 1     | 206 | VAL  | CA-CB   | -6.85 | 1.45        | 1.54     |
| 20  | N     | 227 | GLN  | C-N     | 6.84  | 1.43        | 1.33     |
| 28  | I     | 241 | ASN  | CA-C    | -6.84 | 1.44        | 1.52     |
| 22  | P     | 94  | ARG  | NE-CZ   | 6.84  | 1.40        | 1.33     |
| 1   | A     | 37  | LEU  | CA-C    | -6.84 | 1.44        | 1.52     |
| 15  | W     | 18  | ASN  | N-CA    | 6.84  | 1.54        | 1.46     |
| 14  | 7     | 58  | VAL  | CA-C    | -6.83 | 1.43        | 1.52     |
| 21  | S     | 211 | ALA  | CA-CB   | 6.83  | 1.64        | 1.53     |
| 31  | M     | 342 | ASP  | CA-CB   | 6.83  | 1.64        | 1.52     |
| 16  | V     | 293 | THR  | C-N     | 6.83  | 1.42        | 1.33     |
| 29  | K     | 81  | ARG  | NE-CZ   | 6.83  | 1.40        | 1.33     |
| 5   | E     | 117 | SER  | C-N     | 6.82  | 1.43        | 1.34     |
| 8   | 1     | 73  | HIS  | CB-CG   | 6.82  | 1.59        | 1.50     |
| 11  | 4     | 85  | ARG  | CA-C    | -6.82 | 1.44        | 1.52     |
| 15  | W     | 141 | ILE  | CA-CB   | -6.82 | 1.46        | 1.54     |
| 21  | S     | 299 | SER  | CA-CB   | 6.82  | 1.64        | 1.53     |
| 25  | U     | 190 | ARG  | NE-CZ   | 6.82  | 1.40        | 1.33     |
| 13  | 6     | 101 | MET  | CA-C    | -6.82 | 1.44        | 1.52     |
| 19  | Z     | 315 | GLU  | CA-CB   | 6.82  | 1.63        | 1.53     |
| 10  | 3     | 85  | TYR  | C-N     | 6.81  | 1.42        | 1.33     |
| 14  | 7     | 176 | TYR  | CA-CB   | 6.81  | 1.61        | 1.53     |
| 21  | S     | 44  | GLY  | CA-C    | -6.81 | 1.44        | 1.52     |
| 31  | M     | 177 | ALA  | CA-C    | -6.81 | 1.44        | 1.52     |
| 6   | F     | 57  | ALA  | CA-C    | -6.81 | 1.43        | 1.52     |
| 20  | N     | 597 | LYS  | C-N     | 6.80  | 1.42        | 1.33     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 20  | N     | 366 | HIS  | ND1-CE1 | 6.80  | 1.39        | 1.32     |
| 8   | 1     | 83  | ALA  | N-CA    | -6.80 | 1.38        | 1.46     |
| 15  | W     | 91  | ARG  | NE-CZ   | 6.80  | 1.40        | 1.33     |
| 20  | N     | 351 | MET  | CA-C    | -6.80 | 1.44        | 1.52     |
| 28  | I     | 351 | ILE  | CA-CB   | -6.80 | 1.45        | 1.54     |
| 26  | O     | 186 | LYS  | CA-CB   | 6.79  | 1.62        | 1.53     |
| 27  | H     | 241 | ILE  | N-CA    | 6.79  | 1.54        | 1.46     |
| 29  | K     | 298 | GLY  | CA-C    | -6.79 | 1.44        | 1.52     |
| 20  | N     | 361 | ARG  | NE-CZ   | 6.78  | 1.40        | 1.33     |
| 1   | A     | 132 | ARG  | CA-C    | -6.78 | 1.45        | 1.53     |
| 26  | O     | 136 | GLU  | C-N     | 6.77  | 1.42        | 1.33     |
| 1   | A     | 238 | HIS  | ND1-CE1 | 6.77  | 1.39        | 1.32     |
| 14  | 7     | 139 | ALA  | N-CA    | 6.77  | 1.54        | 1.46     |
| 30  | L     | 198 | ALA  | N-CA    | -6.77 | 1.38        | 1.46     |
| 30  | L     | 387 | LYS  | N-CA    | -6.77 | 1.38        | 1.46     |
| 4   | D     | 234 | TYR  | C-N     | 6.77  | 1.42        | 1.33     |
| 19  | Z     | 58  | MET  | N-CA    | -6.77 | 1.38        | 1.46     |
| 22  | P     | 219 | THR  | C-N     | 6.76  | 1.42        | 1.33     |
| 22  | P     | 129 | ARG  | NE-CZ   | 6.76  | 1.40        | 1.33     |
| 25  | U     | 234 | PHE  | C-N     | 6.76  | 1.43        | 1.34     |
| 30  | L     | 76  | LYS  | CA-C    | -6.76 | 1.44        | 1.52     |
| 6   | F     | 82  | ARG  | C-N     | 6.76  | 1.43        | 1.33     |
| 28  | I     | 376 | ASP  | CA-C    | -6.76 | 1.45        | 1.53     |
| 30  | L     | 366 | MET  | N-CA    | -6.76 | 1.38        | 1.46     |
| 16  | V     | 238 | CYS  | CA-CB   | 6.75  | 1.64        | 1.53     |
| 5   | E     | 109 | VAL  | CA-CB   | -6.75 | 1.46        | 1.54     |
| 19  | Z     | 828 | ARG  | CA-C    | -6.75 | 1.44        | 1.52     |
| 30  | L     | 95  | VAL  | N-CA    | -6.75 | 1.38        | 1.46     |
| 13  | 6     | 58  | GLU  | N-CA    | -6.75 | 1.38        | 1.46     |
| 22  | P     | 374 | THR  | CA-C    | -6.75 | 1.44        | 1.53     |
| 3   | C     | 128 | ARG  | CA-C    | -6.75 | 1.44        | 1.52     |
| 25  | U     | 232 | ASP  | C-N     | 6.75  | 1.42        | 1.33     |
| 20  | N     | 377 | HIS  | ND1-CE1 | 6.75  | 1.39        | 1.32     |
| 17  | T     | 101 | LEU  | CA-C    | -6.74 | 1.44        | 1.52     |
| 9   | 2     | 152 | HIS  | N-CA    | -6.74 | 1.37        | 1.46     |
| 19  | Z     | 594 | LEU  | CA-C    | -6.74 | 1.44        | 1.52     |
| 29  | K     | 95  | ALA  | CA-C    | -6.74 | 1.44        | 1.52     |
| 12  | 5     | 237 | HIS  | C-N     | 6.74  | 1.42        | 1.33     |
| 15  | W     | 113 | VAL  | CA-C    | -6.74 | 1.44        | 1.52     |
| 19  | Z     | 416 | MET  | N-CA    | -6.74 | 1.37        | 1.46     |
| 28  | I     | 80  | ARG  | CD-NE   | 6.74  | 1.55        | 1.46     |
| 15  | W     | 111 | ALA  | N-CA    | -6.73 | 1.37        | 1.46     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 13  | 6     | 104 | HIS  | C-N     | 6.73  | 1.42        | 1.33     |
| 19  | Z     | 456 | ARG  | CD-NE   | 6.73  | 1.55        | 1.46     |
| 20  | N     | 580 | ARG  | CA-C    | -6.73 | 1.44        | 1.52     |
| 23  | Q     | 366 | SER  | CA-C    | -6.73 | 1.44        | 1.52     |
| 24  | R     | 168 | ILE  | CA-CB   | 6.73  | 1.62        | 1.54     |
| 32  | J     | 144 | PRO  | C-N     | 6.73  | 1.42        | 1.33     |
| 26  | O     | 289 | ARG  | NE-CZ   | 6.73  | 1.40        | 1.33     |
| 20  | N     | 232 | ILE  | C-N     | 6.73  | 1.42        | 1.33     |
| 29  | K     | 269 | ALA  | C-N     | 6.73  | 1.42        | 1.33     |
| 25  | U     | 265 | LEU  | C-N     | 6.72  | 1.42        | 1.33     |
| 29  | K     | 369 | LYS  | N-CA    | -6.72 | 1.37        | 1.46     |
| 20  | N     | 736 | ILE  | CA-CB   | -6.72 | 1.46        | 1.54     |
| 28  | I     | 267 | VAL  | N-CA    | -6.72 | 1.38        | 1.46     |
| 22  | P     | 250 | ILE  | CA-C    | -6.72 | 1.44        | 1.52     |
| 4   | D     | 100 | HIS  | ND1-CE1 | 6.72  | 1.39        | 1.32     |
| 9   | 2     | 124 | ARG  | CD-NE   | 6.72  | 1.55        | 1.46     |
| 30  | L     | 131 | PRO  | CA-CB   | -6.72 | 1.43        | 1.53     |
| 19  | Z     | 228 | LYS  | CA-C    | 6.72  | 1.61        | 1.52     |
| 25  | U     | 47  | VAL  | CA-C    | -6.71 | 1.44        | 1.52     |
| 8   | 1     | 133 | ILE  | N-CA    | -6.71 | 1.37        | 1.46     |
| 20  | N     | 129 | ARG  | NE-CZ   | 6.71  | 1.40        | 1.33     |
| 23  | Q     | 403 | THR  | C-N     | 6.71  | 1.42        | 1.33     |
| 32  | J     | 201 | ARG  | CA-C    | -6.71 | 1.44        | 1.52     |
| 2   | B     | 130 | PHE  | CA-C    | -6.71 | 1.44        | 1.53     |
| 5   | E     | 128 | ALA  | CA-C    | 6.71  | 1.61        | 1.52     |
| 28  | I     | 73  | LEU  | C-N     | 6.71  | 1.42        | 1.33     |
| 20  | N     | 593 | SER  | CA-C    | -6.71 | 1.44        | 1.52     |
| 20  | N     | 271 | VAL  | C-N     | 6.71  | 1.38        | 1.33     |
| 29  | K     | 88  | VAL  | C-N     | 6.71  | 1.42        | 1.33     |
| 21  | S     | 74  | HIS  | CA-CB   | 6.70  | 1.64        | 1.53     |
| 20  | N     | 3   | THR  | N-CA    | -6.70 | 1.35        | 1.45     |
| 20  | N     | 673 | GLU  | N-CA    | -6.70 | 1.39        | 1.46     |
| 32  | J     | 23  | TYR  | CA-C    | -6.70 | 1.44        | 1.52     |
| 3   | C     | 172 | VAL  | C-N     | 6.70  | 1.42        | 1.33     |
| 6   | F     | 6   | TYR  | CA-C    | -6.70 | 1.43        | 1.52     |
| 16  | V     | 46  | ARG  | CA-CB   | 6.70  | 1.63        | 1.53     |
| 19  | Z     | 376 | PHE  | C-N     | 6.70  | 1.42        | 1.34     |
| 27  | H     | 153 | LEU  | C-N     | 6.70  | 1.39        | 1.33     |
| 2   | B     | 220 | ARG  | CZ-NH2  | 6.70  | 1.42        | 1.33     |
| 15  | W     | 103 | LYS  | CA-CB   | 6.70  | 1.63        | 1.53     |
| 5   | E     | 99  | HIS  | ND1-CE1 | 6.69  | 1.39        | 1.32     |
| 19  | Z     | 25  | ASP  | N-CA    | -6.69 | 1.38        | 1.46     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 2   | B     | 51  | LYS  | N-CA    | -6.69 | 1.36        | 1.45     |
| 2   | B     | 219 | ARG  | NE-CZ   | 6.68  | 1.40        | 1.33     |
| 27  | H     | 256 | MET  | CA-CB   | 6.68  | 1.63        | 1.53     |
| 21  | S     | 315 | HIS  | CE1-NE2 | -6.68 | 1.25        | 1.32     |
| 26  | O     | 237 | LEU  | C-N     | 6.68  | 1.42        | 1.33     |
| 22  | P     | 167 | GLN  | CA-C    | -6.68 | 1.44        | 1.52     |
| 24  | R     | 343 | LEU  | N-CA    | -6.68 | 1.36        | 1.46     |
| 31  | M     | 183 | ARG  | CZ-NH1  | 6.68  | 1.42        | 1.32     |
| 13  | 6     | 137 | ILE  | N-CA    | -6.67 | 1.38        | 1.46     |
| 22  | P     | 440 | ASN  | C-N     | 6.67  | 1.43        | 1.33     |
| 29  | K     | 287 | ARG  | N-CA    | 6.67  | 1.54        | 1.46     |
| 27  | H     | 193 | THR  | C-N     | 6.67  | 1.42        | 1.34     |
| 20  | N     | 916 | ASP  | CA-CB   | 6.67  | 1.62        | 1.53     |
| 21  | S     | 426 | SER  | N-CA    | -6.67 | 1.39        | 1.45     |
| 31  | M     | 44  | ILE  | CA-C    | 6.67  | 1.61        | 1.52     |
| 13  | 6     | 165 | GLY  | C-N     | 6.67  | 1.43        | 1.33     |
| 29  | K     | 199 | PRO  | N-CA    | -6.67 | 1.40        | 1.46     |
| 17  | T     | 164 | ILE  | CA-C    | 6.66  | 1.58        | 1.52     |
| 32  | J     | 126 | ILE  | CA-CB   | -6.66 | 1.45        | 1.54     |
| 32  | J     | 313 | ARG  | CA-C    | -6.66 | 1.44        | 1.52     |
| 22  | P     | 297 | GLU  | C-N     | 6.66  | 1.42        | 1.33     |
| 7   | G     | 20  | ARG  | CD-NE   | 6.65  | 1.55        | 1.46     |
| 20  | N     | 272 | GLY  | CA-C    | -6.65 | 1.45        | 1.52     |
| 16  | V     | 115 | HIS  | CA-C    | 6.64  | 1.60        | 1.52     |
| 26  | O     | 161 | LYS  | CA-C    | -6.64 | 1.44        | 1.52     |
| 5   | E     | 178 | GLN  | C-N     | 6.64  | 1.43        | 1.34     |
| 14  | 7     | 91  | ASP  | CA-CB   | 6.64  | 1.63        | 1.53     |
| 20  | N     | 917 | THR  | N-CA    | -6.64 | 1.37        | 1.46     |
| 23  | Q     | 321 | THR  | CA-C    | 6.64  | 1.61        | 1.52     |
| 19  | Z     | 489 | TYR  | C-N     | 6.64  | 1.43        | 1.33     |
| 20  | N     | 931 | HIS  | ND1-CE1 | 6.64  | 1.39        | 1.32     |
| 27  | H     | 218 | PRO  | N-CD    | -6.64 | 1.38        | 1.47     |
| 9   | 2     | 256 | THR  | C-N     | 6.63  | 1.41        | 1.33     |
| 23  | Q     | 107 | VAL  | N-CA    | -6.63 | 1.38        | 1.46     |
| 29  | K     | 329 | ARG  | NE-CZ   | 6.63  | 1.40        | 1.33     |
| 30  | L     | 106 | LEU  | CA-C    | -6.63 | 1.43        | 1.52     |
| 24  | R     | 233 | ARG  | NE-CZ   | 6.63  | 1.40        | 1.33     |
| 21  | S     | 94  | LEU  | CA-CB   | 6.63  | 1.63        | 1.53     |
| 12  | 5     | 149 | TYR  | N-CA    | -6.62 | 1.38        | 1.46     |
| 16  | V     | 266 | THR  | CA-C    | 6.62  | 1.61        | 1.52     |
| 20  | N     | 141 | CYS  | CA-C    | -6.62 | 1.44        | 1.52     |
| 1   | A     | 228 | ARG  | NE-CZ   | 6.62  | 1.40        | 1.33     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 19  | Z     | 55  | GLU  | C-N     | 6.62  | 1.42        | 1.33     |
| 22  | P     | 290 | ILE  | N-CA    | -6.62 | 1.38        | 1.46     |
| 1   | A     | 12  | HIS  | ND1-CE1 | 6.61  | 1.39        | 1.32     |
| 22  | P     | 361 | HIS  | CA-CB   | 6.61  | 1.63        | 1.53     |
| 21  | S     | 210 | HIS  | ND1-CE1 | 6.61  | 1.39        | 1.32     |
| 15  | W     | 101 | GLN  | CA-CB   | 6.60  | 1.63        | 1.53     |
| 22  | P     | 265 | GLN  | N-CA    | -6.60 | 1.38        | 1.46     |
| 31  | M     | 271 | VAL  | N-CA    | -6.60 | 1.38        | 1.46     |
| 1   | A     | 111 | VAL  | N-CA    | 6.60  | 1.54        | 1.46     |
| 25  | U     | 227 | ILE  | CA-CB   | -6.60 | 1.46        | 1.54     |
| 22  | P     | 244 | CYS  | CA-C    | -6.60 | 1.44        | 1.52     |
| 26  | O     | 59  | LEU  | C-N     | 6.60  | 1.43        | 1.34     |
| 25  | U     | 158 | VAL  | CA-C    | -6.60 | 1.44        | 1.52     |
| 8   | 1     | 123 | TYR  | C-N     | 6.59  | 1.41        | 1.33     |
| 20  | N     | 5   | ALA  | C-N     | 6.59  | 1.43        | 1.33     |
| 9   | 2     | 191 | GLU  | CA-CB   | 6.59  | 1.64        | 1.53     |
| 10  | 3     | 66  | ARG  | CD-NE   | 6.58  | 1.55        | 1.46     |
| 10  | 3     | 193 | ASP  | N-CA    | -6.58 | 1.37        | 1.46     |
| 16  | V     | 115 | HIS  | N-CA    | -6.58 | 1.39        | 1.46     |
| 27  | H     | 107 | GLU  | C-N     | 6.58  | 1.41        | 1.33     |
| 3   | C     | 238 | LYS  | C-N     | 6.57  | 1.42        | 1.33     |
| 23  | Q     | 337 | ARG  | CD-NE   | 6.57  | 1.55        | 1.46     |
| 1   | A     | 239 | LEU  | C-N     | 6.57  | 1.41        | 1.33     |
| 15  | W     | 141 | ILE  | CA-C    | -6.57 | 1.44        | 1.52     |
| 19  | Z     | 89  | MET  | CA-C    | -6.57 | 1.44        | 1.52     |
| 19  | Z     | 617 | SER  | CA-C    | -6.57 | 1.44        | 1.52     |
| 27  | H     | 208 | PRO  | CA-C    | 6.57  | 1.58        | 1.52     |
| 22  | P     | 202 | THR  | N-CA    | 6.56  | 1.54        | 1.46     |
| 26  | O     | 159 | SER  | CA-C    | 6.56  | 1.61        | 1.52     |
| 6   | F     | 169 | ARG  | CA-C    | -6.56 | 1.43        | 1.52     |
| 15  | W     | 174 | PRO  | CA-C    | -6.55 | 1.47        | 1.52     |
| 28  | I     | 189 | GLY  | C-N     | 6.55  | 1.42        | 1.33     |
| 11  | 4     | 160 | LEU  | CA-C    | -6.55 | 1.44        | 1.52     |
| 19  | Z     | 31  | LYS  | CA-C    | -6.55 | 1.44        | 1.52     |
| 9   | 2     | 221 | ILE  | CA-C    | -6.55 | 1.44        | 1.52     |
| 28  | I     | 169 | PRO  | CA-C    | -6.55 | 1.42        | 1.52     |
| 9   | 2     | 153 | LEU  | CA-C    | -6.55 | 1.44        | 1.52     |
| 24  | R     | 153 | ASP  | CA-C    | -6.55 | 1.44        | 1.52     |
| 20  | N     | 81  | ALA  | N-CA    | -6.55 | 1.38        | 1.46     |
| 19  | Z     | 198 | HIS  | CG-CD2  | 6.54  | 1.43        | 1.35     |
| 20  | N     | 559 | ARG  | CZ-NH2  | 6.54  | 1.42        | 1.33     |
| 13  | 6     | 157 | TYR  | C-N     | 6.54  | 1.42        | 1.33     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 20  | N     | 173 | VAL  | C-N     | 6.54  | 1.41        | 1.33     |
| 4   | D     | 99  | SER  | CA-CB   | 6.54  | 1.63        | 1.53     |
| 15  | W     | 142 | ASN  | CA-C    | -6.54 | 1.45        | 1.52     |
| 17  | T     | 151 | LEU  | N-CA    | -6.54 | 1.37        | 1.46     |
| 31  | M     | 180 | VAL  | CA-CB   | -6.54 | 1.47        | 1.54     |
| 19  | Z     | 222 | ASP  | N-CA    | -6.54 | 1.38        | 1.46     |
| 27  | H     | 96  | ALA  | CA-C    | -6.54 | 1.44        | 1.53     |
| 9   | 2     | 110 | SER  | CA-C    | -6.53 | 1.44        | 1.52     |
| 12  | 5     | 68  | GLN  | CA-C    | -6.53 | 1.45        | 1.52     |
| 20  | N     | 233 | LEU  | CA-CB   | 6.53  | 1.63        | 1.53     |
| 27  | H     | 45  | ILE  | N-CA    | -6.53 | 1.38        | 1.46     |
| 32  | J     | 335 | LYS  | C-O     | -6.53 | 1.16        | 1.24     |
| 7   | G     | 174 | LYS  | CA-C    | -6.53 | 1.44        | 1.52     |
| 20  | N     | 199 | ARG  | CD-NE   | 6.53  | 1.55        | 1.46     |
| 11  | 4     | 146 | TYR  | CA-CB   | 6.53  | 1.63        | 1.53     |
| 24  | R     | 336 | ARG  | CZ-NH2  | 6.53  | 1.42        | 1.33     |
| 22  | P     | 416 | GLN  | CA-CB   | 6.52  | 1.63        | 1.53     |
| 27  | H     | 345 | LEU  | C-N     | 6.52  | 1.41        | 1.33     |
| 5   | E     | 195 | ILE  | C-O     | -6.52 | 1.16        | 1.24     |
| 20  | N     | 696 | ILE  | C-N     | 6.52  | 1.42        | 1.33     |
| 23  | Q     | 397 | TYR  | C-N     | 6.52  | 1.42        | 1.33     |
| 24  | R     | 354 | VAL  | C-N     | 6.52  | 1.42        | 1.33     |
| 32  | J     | 332 | HIS  | ND1-CE1 | 6.52  | 1.39        | 1.32     |
| 26  | O     | 179 | PHE  | C-N     | 6.51  | 1.42        | 1.33     |
| 30  | L     | 233 | PHE  | CA-CB   | 6.51  | 1.63        | 1.53     |
| 19  | Z     | 740 | ARG  | NE-CZ   | 6.51  | 1.40        | 1.33     |
| 27  | H     | 135 | GLU  | N-CA    | -6.51 | 1.36        | 1.46     |
| 21  | S     | 392 | ILE  | C-N     | 6.51  | 1.42        | 1.34     |
| 13  | 6     | 159 | ARG  | NE-CZ   | 6.51  | 1.40        | 1.33     |
| 16  | V     | 63  | ASP  | CA-C    | -6.51 | 1.44        | 1.52     |
| 24  | R     | 116 | ASP  | CA-CB   | 6.51  | 1.61        | 1.53     |
| 26  | O     | 157 | ASP  | N-CA    | -6.51 | 1.38        | 1.46     |
| 5   | E     | 35  | SER  | C-N     | 6.50  | 1.42        | 1.33     |
| 20  | N     | 579 | ARG  | N-CA    | -6.50 | 1.38        | 1.46     |
| 26  | O     | 37  | LEU  | C-N     | 6.50  | 1.42        | 1.33     |
| 32  | J     | 334 | ARG  | C-N     | 6.50  | 1.42        | 1.33     |
| 27  | H     | 197 | HIS  | CA-CB   | 6.50  | 1.59        | 1.53     |
| 26  | O     | 212 | ASN  | CA-C    | -6.50 | 1.44        | 1.52     |
| 23  | Q     | 344 | ARG  | CA-C    | -6.50 | 1.45        | 1.53     |
| 32  | J     | 209 | CYS  | CA-C    | -6.50 | 1.45        | 1.52     |
| 20  | N     | 546 | ARG  | CD-NE   | 6.49  | 1.55        | 1.46     |
| 20  | N     | 591 | CYS  | CA-C    | -6.49 | 1.44        | 1.52     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 19  | Z     | 339 | ILE  | C-N     | 6.49  | 1.42        | 1.33     |
| 7   | G     | 208 | LYS  | C-N     | 6.49  | 1.42        | 1.33     |
| 10  | 3     | 112 | LEU  | N-CA    | -6.49 | 1.38        | 1.46     |
| 30  | L     | 323 | ARG  | NE-CZ   | 6.49  | 1.40        | 1.33     |
| 19  | Z     | 313 | GLU  | CA-C    | -6.49 | 1.46        | 1.53     |
| 32  | J     | 232 | ARG  | CD-NE   | 6.48  | 1.55        | 1.46     |
| 10  | 3     | 21  | ALA  | N-CA    | -6.48 | 1.38        | 1.46     |
| 19  | Z     | 614 | HIS  | CD2-NE2 | 6.48  | 1.45        | 1.37     |
| 19  | Z     | 614 | HIS  | ND1-CE1 | 6.48  | 1.39        | 1.32     |
| 23  | Q     | 69  | LEU  | CA-CB   | 6.48  | 1.63        | 1.53     |
| 2   | B     | 158 | TRP  | C-N     | 6.48  | 1.43        | 1.33     |
| 3   | C     | 206 | LEU  | CA-C    | -6.48 | 1.44        | 1.52     |
| 23  | Q     | 62  | GLN  | C-O     | -6.48 | 1.16        | 1.23     |
| 21  | S     | 145 | PRO  | C-N     | 6.48  | 1.42        | 1.33     |
| 16  | V     | 233 | ASP  | N-CA    | 6.47  | 1.54        | 1.46     |
| 12  | 5     | 229 | SER  | C-N     | 6.47  | 1.43        | 1.33     |
| 14  | 7     | 55  | VAL  | N-CA    | -6.47 | 1.38        | 1.46     |
| 24  | R     | 336 | ARG  | CD-NE   | 6.47  | 1.55        | 1.46     |
| 10  | 3     | 89  | SER  | CA-CB   | 6.47  | 1.63        | 1.53     |
| 24  | R     | 232 | GLU  | CA-CB   | 6.47  | 1.62        | 1.53     |
| 25  | U     | 16  | LEU  | CA-C    | -6.47 | 1.44        | 1.52     |
| 23  | Q     | 263 | THR  | C-N     | -6.47 | 1.26        | 1.34     |
| 19  | Z     | 886 | GLU  | CA-C    | -6.47 | 1.44        | 1.52     |
| 20  | N     | 919 | GLU  | CA-C    | -6.47 | 1.44        | 1.52     |
| 26  | O     | 65  | SER  | CA-CB   | -6.46 | 1.43        | 1.53     |
| 23  | Q     | 149 | LEU  | C-N     | 6.46  | 1.41        | 1.33     |
| 4   | D     | 122 | GLN  | C-N     | 6.46  | 1.42        | 1.33     |
| 21  | S     | 412 | ARG  | NE-CZ   | 6.46  | 1.40        | 1.33     |
| 22  | P     | 156 | ASN  | CA-C    | -6.46 | 1.44        | 1.53     |
| 8   | 1     | 52  | ARG  | CA-C    | -6.46 | 1.44        | 1.52     |
| 14  | 7     | 230 | ARG  | NE-CZ   | 6.46  | 1.40        | 1.33     |
| 11  | 4     | 129 | PHE  | CA-C    | 6.45  | 1.60        | 1.52     |
| 22  | P     | 40  | LEU  | N-CA    | -6.45 | 1.38        | 1.46     |
| 21  | S     | 283 | ARG  | CD-NE   | 6.45  | 1.55        | 1.46     |
| 23  | Q     | 143 | TYR  | CA-C    | -6.45 | 1.44        | 1.52     |
| 11  | 4     | 170 | ARG  | CD-NE   | 6.45  | 1.55        | 1.46     |
| 14  | 7     | 177 | GLU  | CA-C    | -6.44 | 1.44        | 1.52     |
| 1   | A     | 11  | ARG  | CD-NE   | 6.44  | 1.55        | 1.46     |
| 30  | L     | 310 | ASP  | CA-C    | -6.44 | 1.46        | 1.53     |
| 30  | L     | 99  | ARG  | CD-NE   | 6.44  | 1.55        | 1.46     |
| 31  | M     | 437 | ASN  | CA-C    | -6.44 | 1.44        | 1.52     |
| 27  | H     | 211 | GLY  | CA-C    | -6.43 | 1.42        | 1.51     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 7   | G     | 227 | ILE  | C-N     | 6.43  | 1.40        | 1.33     |
| 24  | R     | 237 | ARG  | CD-NE   | 6.43  | 1.55        | 1.46     |
| 1   | A     | 103 | TYR  | CA-C    | -6.43 | 1.44        | 1.52     |
| 23  | Q     | 340 | GLU  | CA-C    | -6.43 | 1.44        | 1.52     |
| 26  | O     | 138 | VAL  | CA-C    | -6.43 | 1.43        | 1.52     |
| 14  | 7     | 104 | PHE  | CA-C    | -6.43 | 1.44        | 1.52     |
| 2   | B     | 19  | LEU  | C-N     | 6.42  | 1.42        | 1.33     |
| 4   | D     | 56  | GLU  | C-N     | 6.42  | 1.42        | 1.33     |
| 11  | 4     | 43  | LEU  | C-N     | 6.42  | 1.43        | 1.33     |
| 8   | 1     | 218 | GLU  | C-N     | 6.42  | 1.42        | 1.33     |
| 21  | S     | 315 | HIS  | ND1-CE1 | 6.42  | 1.39        | 1.32     |
| 24  | R     | 141 | VAL  | CA-CB   | -6.42 | 1.45        | 1.54     |
| 30  | L     | 107 | LYS  | CA-C    | 6.42  | 1.60        | 1.52     |
| 32  | J     | 137 | LEU  | C-N     | 6.42  | 1.42        | 1.33     |
| 14  | 7     | 136 | LEU  | C-N     | 6.41  | 1.42        | 1.33     |
| 21  | S     | 110 | TYR  | CA-CB   | 6.41  | 1.64        | 1.53     |
| 11  | 4     | 19  | ARG  | C-O     | -6.41 | 1.16        | 1.23     |
| 14  | 7     | 94  | MET  | C-N     | 6.41  | 1.42        | 1.33     |
| 21  | S     | 330 | VAL  | C-N     | 6.41  | 1.42        | 1.33     |
| 31  | M     | 314 | LEU  | C-N     | 6.41  | 1.42        | 1.34     |
| 10  | 3     | 64  | ALA  | CA-C    | -6.41 | 1.44        | 1.52     |
| 21  | S     | 120 | ASN  | CA-C    | -6.40 | 1.44        | 1.52     |
| 3   | C     | 96  | ARG  | CA-C    | -6.40 | 1.44        | 1.52     |
| 25  | U     | 10  | VAL  | CA-C    | -6.40 | 1.45        | 1.52     |
| 30  | L     | 300 | ASP  | CA-CB   | 6.40  | 1.63        | 1.53     |
| 7   | G     | 53  | LEU  | CA-C    | 6.40  | 1.61        | 1.52     |
| 4   | D     | 53  | LEU  | CA-C    | -6.40 | 1.45        | 1.53     |
| 21  | S     | 274 | GLU  | N-CA    | -6.40 | 1.38        | 1.46     |
| 32  | J     | 90  | HIS  | ND1-CE1 | 6.40  | 1.39        | 1.32     |
| 21  | S     | 205 | LYS  | CA-C    | -6.39 | 1.44        | 1.52     |
| 10  | 3     | 204 | MET  | CA-CB   | 6.39  | 1.64        | 1.53     |
| 24  | R     | 375 | LEU  | CA-C    | -6.39 | 1.44        | 1.52     |
| 28  | I     | 322 | ARG  | CZ-NH1  | 6.39  | 1.41        | 1.32     |
| 17  | T     | 296 | PHE  | CA-C    | -6.39 | 1.45        | 1.52     |
| 31  | M     | 230 | GLY  | CA-C    | -6.39 | 1.42        | 1.51     |
| 7   | G     | 47  | VAL  | C-N     | 6.39  | 1.42        | 1.33     |
| 24  | R     | 22  | LEU  | C-N     | 6.39  | 1.42        | 1.33     |
| 28  | I     | 169 | PRO  | N-CA    | 6.39  | 1.55        | 1.47     |
| 28  | I     | 363 | ARG  | C-N     | 6.39  | 1.42        | 1.33     |
| 1   | A     | 178 | PHE  | N-CA    | -6.39 | 1.38        | 1.46     |
| 19  | Z     | 296 | PHE  | C-N     | 6.38  | 1.42        | 1.33     |
| 20  | N     | 613 | ASP  | CA-C    | 6.38  | 1.60        | 1.52     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 21  | S     | 277 | ASN  | CA-CB   | 6.38  | 1.63        | 1.53     |
| 26  | O     | 332 | HIS  | CA-C    | -6.38 | 1.45        | 1.52     |
| 21  | S     | 362 | ALA  | C-N     | 6.38  | 1.42        | 1.33     |
| 23  | Q     | 305 | ALA  | C-N     | 6.38  | 1.42        | 1.33     |
| 29  | K     | 172 | ILE  | C-N     | 6.38  | 1.42        | 1.34     |
| 31  | M     | 67  | HIS  | CA-CB   | 6.38  | 1.63        | 1.53     |
| 29  | K     | 336 | PRO  | CA-CB   | 6.38  | 1.61        | 1.53     |
| 4   | D     | 15  | HIS  | CG-ND1  | 6.38  | 1.45        | 1.38     |
| 12  | 5     | 227 | ALA  | C-N     | 6.38  | 1.42        | 1.33     |
| 22  | P     | 350 | ARG  | C-N     | 6.38  | 1.42        | 1.33     |
| 5   | E     | 157 | ASP  | C-N     | 6.38  | 1.40        | 1.34     |
| 5   | E     | 94  | VAL  | CA-C    | -6.37 | 1.44        | 1.52     |
| 28  | I     | 212 | GLU  | C-N     | 6.37  | 1.42        | 1.33     |
| 17  | T     | 142 | GLN  | CA-CB   | 6.37  | 1.63        | 1.53     |
| 26  | O     | 46  | GLN  | CA-C    | -6.37 | 1.44        | 1.52     |
| 21  | S     | 303 | ARG  | NE-CZ   | 6.37  | 1.40        | 1.33     |
| 19  | Z     | 386 | GLY  | CA-C    | -6.37 | 1.43        | 1.51     |
| 8   | 1     | 130 | GLY  | C-N     | 6.37  | 1.42        | 1.33     |
| 24  | R     | 385 | ARG  | N-CA    | -6.37 | 1.38        | 1.46     |
| 26  | O     | 94  | LEU  | C-N     | 6.37  | 1.42        | 1.33     |
| 26  | O     | 324 | ILE  | CA-C    | -6.37 | 1.44        | 1.52     |
| 23  | Q     | 50  | ILE  | CA-CB   | -6.36 | 1.46        | 1.54     |
| 1   | A     | 17  | SER  | C-O     | 6.36  | 1.29        | 1.24     |
| 20  | N     | 421 | GLN  | C-O     | 6.36  | 1.31        | 1.24     |
| 28  | I     | 81  | ASN  | CA-C    | -6.36 | 1.44        | 1.52     |
| 20  | N     | 366 | HIS  | CA-CB   | 6.35  | 1.63        | 1.53     |
| 30  | L     | 105 | LYS  | CA-C    | 6.35  | 1.61        | 1.52     |
| 19  | Z     | 785 | ARG  | NE-CZ   | 6.35  | 1.40        | 1.33     |
| 3   | C     | 154 | GLY  | C-N     | 6.35  | 1.42        | 1.33     |
| 21  | S     | 329 | ILE  | C-N     | 6.35  | 1.41        | 1.33     |
| 22  | P     | 226 | TYR  | N-CA    | -6.35 | 1.38        | 1.46     |
| 23  | Q     | 178 | HIS  | ND1-CE1 | 6.35  | 1.39        | 1.32     |
| 28  | I     | 210 | TYR  | CA-C    | -6.35 | 1.44        | 1.52     |
| 5   | E     | 198 | SER  | C-N     | 6.35  | 1.42        | 1.33     |
| 29  | K     | 287 | ARG  | CD-NE   | 6.35  | 1.55        | 1.46     |
| 32  | J     | 229 | ARG  | NE-CZ   | 6.35  | 1.40        | 1.33     |
| 22  | P     | 201 | ARG  | CZ-NH1  | 6.34  | 1.41        | 1.32     |
| 30  | L     | 367 | PHE  | CA-CB   | 6.34  | 1.63        | 1.53     |
| 11  | 4     | 171 | PHE  | CA-C    | -6.34 | 1.45        | 1.52     |
| 20  | N     | 668 | ALA  | CA-C    | -6.34 | 1.44        | 1.52     |
| 5   | E     | 20  | ARG  | NE-CZ   | 6.34  | 1.40        | 1.33     |
| 3   | C     | 41  | ASP  | CA-C    | -6.34 | 1.45        | 1.52     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 23  | Q     | 106 | GLU  | CA-CB  | 6.33  | 1.63        | 1.53     |
| 12  | 5     | 209 | GLU  | C-N    | 6.33  | 1.42        | 1.33     |
| 20  | N     | 849 | LYS  | N-CA   | -6.33 | 1.38        | 1.46     |
| 29  | K     | 252 | ARG  | NE-CZ  | 6.33  | 1.40        | 1.33     |
| 22  | P     | 379 | ALA  | N-CA   | -6.33 | 1.38        | 1.46     |
| 5   | E     | 49  | ALA  | CA-C   | -6.33 | 1.45        | 1.52     |
| 5   | E     | 64  | ILE  | N-CA   | -6.33 | 1.39        | 1.46     |
| 29  | K     | 34  | PRO  | N-CA   | -6.33 | 1.39        | 1.47     |
| 32  | J     | 107 | ASP  | C-N    | 6.33  | 1.42        | 1.33     |
| 11  | 4     | 155 | ARG  | CZ-NH2 | 6.32  | 1.41        | 1.33     |
| 22  | P     | 252 | ASP  | C-N    | 6.32  | 1.42        | 1.33     |
| 3   | C     | 76  | VAL  | CA-C   | -6.32 | 1.44        | 1.52     |
| 23  | Q     | 87  | ARG  | NE-CZ  | 6.32  | 1.40        | 1.33     |
| 26  | O     | 340 | VAL  | CA-C   | -6.32 | 1.45        | 1.52     |
| 29  | K     | 366 | ARG  | CZ-NH2 | 6.32  | 1.41        | 1.33     |
| 19  | Z     | 152 | ALA  | C-N    | 6.32  | 1.42        | 1.34     |
| 10  | 3     | 118 | LYS  | CA-CB  | 6.31  | 1.62        | 1.53     |
| 19  | Z     | 409 | SER  | CA-CB  | 6.31  | 1.64        | 1.53     |
| 21  | S     | 257 | TYR  | CA-C   | -6.31 | 1.44        | 1.52     |
| 27  | H     | 369 | ARG  | CD-NE  | 6.31  | 1.55        | 1.46     |
| 14  | 7     | 228 | TYR  | CA-CB  | 6.31  | 1.64        | 1.53     |
| 16  | V     | 216 | MET  | N-CA   | -6.31 | 1.38        | 1.46     |
| 21  | S     | 43  | SER  | CA-C   | -6.31 | 1.44        | 1.52     |
| 26  | O     | 209 | GLY  | C-N    | 6.31  | 1.41        | 1.33     |
| 31  | M     | 174 | ARG  | NE-CZ  | 6.31  | 1.40        | 1.33     |
| 17  | T     | 241 | GLU  | C-N    | 6.31  | 1.41        | 1.33     |
| 19  | Z     | 145 | VAL  | CA-C   | -6.31 | 1.44        | 1.52     |
| 25  | U     | 276 | ILE  | N-CA   | -6.30 | 1.39        | 1.46     |
| 5   | E     | 100 | TRP  | N-CA   | -6.30 | 1.38        | 1.46     |
| 21  | S     | 491 | ARG  | CZ-NH1 | 6.30  | 1.41        | 1.32     |
| 31  | M     | 56  | LYS  | C-N    | 6.30  | 1.41        | 1.33     |
| 22  | P     | 287 | VAL  | CA-C   | -6.30 | 1.44        | 1.52     |
| 24  | R     | 292 | TYR  | CA-C   | -6.30 | 1.43        | 1.52     |
| 2   | B     | 104 | PRO  | CA-C   | -6.30 | 1.45        | 1.52     |
| 19  | Z     | 56  | LEU  | CA-C   | -6.30 | 1.44        | 1.52     |
| 20  | N     | 74  | PHE  | N-CA   | -6.30 | 1.38        | 1.46     |
| 22  | P     | 248 | ARG  | NE-CZ  | 6.30  | 1.40        | 1.33     |
| 19  | Z     | 290 | VAL  | C-N    | 6.29  | 1.41        | 1.33     |
| 20  | N     | 564 | ASP  | CA-C   | -6.29 | 1.44        | 1.52     |
| 11  | 4     | 156 | ALA  | CA-C   | -6.29 | 1.44        | 1.52     |
| 16  | V     | 225 | TRP  | CA-CB  | 6.29  | 1.63        | 1.53     |
| 28  | I     | 342 | ILE  | CA-CB  | -6.29 | 1.47        | 1.54     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 5   | E     | 149 | LYS  | N-CA    | -6.29 | 1.37        | 1.46     |
| 16  | V     | 287 | HIS  | N-CA    | -6.29 | 1.38        | 1.46     |
| 17  | T     | 210 | GLU  | N-CA    | -6.29 | 1.38        | 1.46     |
| 17  | T     | 333 | ILE  | N-CA    | -6.29 | 1.38        | 1.46     |
| 19  | Z     | 588 | ARG  | N-CA    | -6.29 | 1.38        | 1.46     |
| 4   | D     | 244 | GLU  | C-N     | 6.29  | 1.42        | 1.33     |
| 9   | 2     | 197 | LEU  | C-N     | 6.29  | 1.41        | 1.33     |
| 20  | N     | 128 | GLN  | CA-C    | -6.29 | 1.44        | 1.52     |
| 24  | R     | 347 | ILE  | C-N     | 6.29  | 1.43        | 1.33     |
| 19  | Z     | 478 | ARG  | CZ-NH2  | 6.28  | 1.41        | 1.33     |
| 28  | I     | 330 | ALA  | CA-C    | -6.28 | 1.45        | 1.52     |
| 1   | A     | 48  | ALA  | CA-C    | -6.28 | 1.45        | 1.52     |
| 16  | V     | 199 | HIS  | ND1-CE1 | 6.28  | 1.38        | 1.32     |
| 23  | Q     | 278 | ARG  | NE-CZ   | 6.28  | 1.40        | 1.33     |
| 32  | J     | 214 | VAL  | C-O     | -6.28 | 1.17        | 1.24     |
| 22  | P     | 324 | TYR  | C-N     | 6.28  | 1.41        | 1.33     |
| 22  | P     | 16  | MET  | CA-CB   | 6.28  | 1.63        | 1.53     |
| 32  | J     | 112 | CYS  | CA-CB   | 6.28  | 1.61        | 1.53     |
| 4   | D     | 218 | ARG  | NE-CZ   | 6.28  | 1.40        | 1.33     |
| 19  | Z     | 785 | ARG  | C-O     | -6.28 | 1.16        | 1.24     |
| 30  | L     | 305 | ARG  | N-CA    | -6.27 | 1.38        | 1.45     |
| 30  | L     | 224 | GLU  | C-N     | 6.27  | 1.42        | 1.34     |
| 20  | N     | 721 | HIS  | CA-CB   | 6.27  | 1.63        | 1.53     |
| 28  | I     | 160 | ILE  | C-N     | 6.27  | 1.40        | 1.32     |
| 13  | 6     | 55  | ARG  | CA-C    | 6.26  | 1.61        | 1.52     |
| 13  | 6     | 65  | ARG  | NE-CZ   | 6.26  | 1.40        | 1.33     |
| 22  | P     | 81  | ASP  | C-N     | 6.26  | 1.42        | 1.33     |
| 23  | Q     | 213 | GLN  | C-N     | 6.26  | 1.42        | 1.34     |
| 19  | Z     | 589 | SER  | CA-CB   | 6.26  | 1.63        | 1.53     |
| 19  | Z     | 592 | ASN  | CA-C    | -6.26 | 1.44        | 1.52     |
| 20  | N     | 647 | HIS  | ND1-CE1 | 6.26  | 1.38        | 1.32     |
| 19  | Z     | 5   | GLY  | C-N     | 6.26  | 1.43        | 1.33     |
| 24  | R     | 39  | GLU  | CA-CB   | 6.26  | 1.63        | 1.53     |
| 13  | 6     | 53  | ASP  | N-CA    | -6.26 | 1.38        | 1.46     |
| 19  | Z     | 781 | TYR  | CA-CB   | 6.26  | 1.63        | 1.53     |
| 23  | Q     | 111 | LEU  | N-CA    | 6.26  | 1.53        | 1.46     |
| 26  | O     | 178 | ARG  | C-N     | 6.26  | 1.42        | 1.33     |
| 29  | K     | 414 | HIS  | CA-C    | -6.26 | 1.45        | 1.52     |
| 30  | L     | 31  | LEU  | CA-C    | -6.26 | 1.44        | 1.52     |
| 31  | M     | 120 | ARG  | CZ-NH1  | 6.26  | 1.41        | 1.32     |
| 2   | B     | 95  | GLN  | CA-C    | -6.25 | 1.44        | 1.52     |
| 21  | S     | 161 | ALA  | C-N     | 6.25  | 1.42        | 1.33     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 6   | F     | 197 | GLU  | CA-CB   | 6.25  | 1.63        | 1.53     |
| 7   | G     | 73  | HIS  | N-CA    | -6.25 | 1.39        | 1.46     |
| 12  | 5     | 180 | ILE  | CA-C    | 6.25  | 1.59        | 1.52     |
| 10  | 3     | 104 | TYR  | CA-CB   | 6.25  | 1.62        | 1.53     |
| 19  | Z     | 64  | GLY  | CA-C    | 6.25  | 1.59        | 1.52     |
| 20  | N     | 107 | HIS  | CE1-NE2 | -6.25 | 1.26        | 1.32     |
| 20  | N     | 141 | CYS  | CA-CB   | 6.25  | 1.63        | 1.53     |
| 9   | 2     | 246 | ARG  | NE-CZ   | 6.25  | 1.40        | 1.33     |
| 17  | T     | 258 | SER  | CA-CB   | 6.25  | 1.64        | 1.53     |
| 22  | P     | 422 | ASN  | CA-C    | -6.24 | 1.44        | 1.52     |
| 11  | 4     | 61  | GLN  | C-N     | 6.24  | 1.42        | 1.33     |
| 15  | W     | 29  | GLN  | CA-CB   | 6.24  | 1.63        | 1.53     |
| 17  | T     | 331 | SER  | CA-C    | 6.24  | 1.59        | 1.52     |
| 25  | U     | 263 | ALA  | CA-CB   | 6.24  | 1.63        | 1.53     |
| 19  | Z     | 446 | LEU  | N-CA    | -6.24 | 1.38        | 1.46     |
| 27  | H     | 381 | THR  | N-CA    | -6.24 | 1.38        | 1.46     |
| 28  | I     | 272 | ARG  | NE-CZ   | 6.24  | 1.40        | 1.33     |
| 16  | V     | 141 | VAL  | C-N     | 6.24  | 1.42        | 1.33     |
| 7   | G     | 135 | SER  | CA-C    | -6.24 | 1.45        | 1.52     |
| 19  | Z     | 137 | ARG  | CZ-NH2  | 6.24  | 1.41        | 1.33     |
| 19  | Z     | 849 | ALA  | C-N     | 6.24  | 1.41        | 1.33     |
| 22  | P     | 438 | LEU  | N-CA    | -6.24 | 1.38        | 1.46     |
| 26  | O     | 293 | PHE  | CA-C    | -6.24 | 1.44        | 1.52     |
| 19  | Z     | 344 | VAL  | C-N     | 6.23  | 1.41        | 1.34     |
| 21  | S     | 461 | ASP  | CA-C    | -6.23 | 1.44        | 1.52     |
| 23  | Q     | 350 | ILE  | CA-C    | -6.23 | 1.44        | 1.52     |
| 20  | N     | 420 | LEU  | C-N     | 6.23  | 1.42        | 1.33     |
| 32  | J     | 374 | ARG  | CZ-NH1  | 6.23  | 1.41        | 1.32     |
| 10  | 3     | 41  | LYS  | CA-C    | -6.22 | 1.44        | 1.52     |
| 31  | M     | 269 | LYS  | CA-C    | -6.22 | 1.44        | 1.52     |
| 32  | J     | 400 | SER  | CA-C    | -6.22 | 1.44        | 1.52     |
| 19  | Z     | 688 | ARG  | CD-NE   | 6.22  | 1.54        | 1.46     |
| 19  | Z     | 846 | VAL  | C-N     | 6.22  | 1.41        | 1.33     |
| 26  | O     | 156 | TYR  | C-N     | 6.22  | 1.42        | 1.33     |
| 19  | Z     | 436 | SER  | C-N     | 6.22  | 1.42        | 1.33     |
| 29  | K     | 367 | PRO  | N-CD    | 6.22  | 1.56        | 1.47     |
| 5   | E     | 119 | LEU  | CA-C    | -6.21 | 1.44        | 1.52     |
| 23  | Q     | 194 | ARG  | CD-NE   | 6.21  | 1.54        | 1.46     |
| 31  | M     | 196 | LYS  | N-CA    | -6.21 | 1.38        | 1.46     |
| 10  | 3     | 70  | ARG  | CZ-NH1  | 6.21  | 1.41        | 1.32     |
| 11  | 4     | 108 | ASP  | N-CA    | -6.21 | 1.38        | 1.45     |
| 21  | S     | 326 | LYS  | CA-C    | -6.21 | 1.44        | 1.52     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 26  | O     | 288 | HIS  | CG-CD2 | 6.21  | 1.42        | 1.35     |
| 27  | H     | 275 | ASP  | C-N    | 6.21  | 1.41        | 1.33     |
| 32  | J     | 367 | GLY  | N-CA   | -6.21 | 1.37        | 1.45     |
| 21  | S     | 342 | LEU  | C-O    | -6.21 | 1.16        | 1.24     |
| 15  | W     | 171 | VAL  | CA-C   | -6.20 | 1.45        | 1.52     |
| 12  | 5     | 191 | SER  | CA-CB  | 6.20  | 1.62        | 1.53     |
| 13  | 6     | 134 | TYR  | N-CA   | -6.20 | 1.38        | 1.46     |
| 7   | G     | 170 | ARG  | CD-NE  | 6.20  | 1.54        | 1.46     |
| 24  | R     | 205 | VAL  | C-N    | 6.20  | 1.42        | 1.33     |
| 26  | O     | 195 | GLU  | CA-C   | -6.20 | 1.44        | 1.52     |
| 29  | K     | 204 | MET  | N-CA   | -6.20 | 1.38        | 1.46     |
| 14  | 7     | 97  | ALA  | C-N    | 6.19  | 1.41        | 1.33     |
| 23  | Q     | 222 | GLU  | CA-C   | -6.19 | 1.44        | 1.52     |
| 27  | H     | 129 | VAL  | CA-C   | -6.19 | 1.46        | 1.53     |
| 20  | N     | 90  | VAL  | C-N    | 6.19  | 1.42        | 1.33     |
| 21  | S     | 351 | ARG  | CZ-NH1 | 6.19  | 1.41        | 1.32     |
| 27  | H     | 171 | ASP  | N-CA   | -6.19 | 1.38        | 1.46     |
| 32  | J     | 270 | GLN  | N-CA   | -6.19 | 1.38        | 1.46     |
| 32  | J     | 320 | PRO  | CA-C   | -6.19 | 1.43        | 1.52     |
| 7   | G     | 217 | VAL  | N-CA   | -6.19 | 1.38        | 1.46     |
| 16  | V     | 232 | GLN  | N-CA   | -6.19 | 1.38        | 1.46     |
| 30  | L     | 288 | LYS  | N-CA   | -6.19 | 1.38        | 1.46     |
| 7   | G     | 193 | GLU  | CA-C   | -6.18 | 1.44        | 1.52     |
| 13  | 6     | 34  | PHE  | CA-CB  | 6.18  | 1.64        | 1.53     |
| 20  | N     | 205 | TYR  | CA-CB  | 6.18  | 1.62        | 1.53     |
| 20  | N     | 244 | MET  | CA-C   | -6.18 | 1.44        | 1.52     |
| 22  | P     | 171 | VAL  | CA-C   | -6.18 | 1.45        | 1.52     |
| 30  | L     | 256 | ARG  | CA-CB  | 6.18  | 1.63        | 1.53     |
| 25  | U     | 2   | PRO  | N-CA   | -6.18 | 1.39        | 1.47     |
| 32  | J     | 268 | GLU  | N-CA   | -6.18 | 1.38        | 1.46     |
| 23  | Q     | 116 | TRP  | CA-C   | -6.18 | 1.44        | 1.52     |
| 30  | L     | 208 | ASN  | CA-CB  | 6.18  | 1.63        | 1.53     |
| 1   | A     | 17  | SER  | N-CA   | -6.18 | 1.41        | 1.46     |
| 20  | N     | 551 | GLY  | N-CA   | 6.18  | 1.53        | 1.45     |
| 27  | H     | 71  | GLY  | N-CA   | 6.18  | 1.53        | 1.45     |
| 27  | H     | 258 | ARG  | NE-CZ  | 6.18  | 1.39        | 1.33     |
| 25  | U     | 226 | ILE  | C-O    | -6.17 | 1.17        | 1.24     |
| 28  | I     | 438 | LEU  | CA-C   | 6.17  | 1.60        | 1.52     |
| 22  | P     | 104 | MET  | CA-C   | -6.17 | 1.45        | 1.52     |
| 19  | Z     | 878 | GLU  | CA-C   | -6.17 | 1.44        | 1.53     |
| 23  | Q     | 398 | GLU  | CA-C   | -6.17 | 1.45        | 1.52     |
| 29  | K     | 245 | ARG  | N-CA   | -6.17 | 1.38        | 1.46     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 21  | S     | 264 | GLU  | CA-C   | -6.17 | 1.44        | 1.52     |
| 21  | S     | 143 | PHE  | CA-C   | -6.17 | 1.45        | 1.52     |
| 1   | A     | 28  | ALA  | CA-CB  | 6.17  | 1.63        | 1.53     |
| 29  | K     | 336 | PRO  | CA-C   | 6.17  | 1.58        | 1.52     |
| 20  | N     | 918 | SER  | CA-C   | -6.17 | 1.45        | 1.53     |
| 21  | S     | 405 | MET  | CA-C   | -6.17 | 1.44        | 1.52     |
| 25  | U     | 225 | HIS  | N-CA   | -6.17 | 1.39        | 1.46     |
| 19  | Z     | 362 | GLY  | CA-C   | -6.16 | 1.43        | 1.51     |
| 22  | P     | 196 | VAL  | C-N    | 6.16  | 1.42        | 1.33     |
| 20  | N     | 828 | VAL  | CA-CB  | -6.16 | 1.46        | 1.54     |
| 5   | E     | 75  | GLY  | CA-C   | -6.16 | 1.46        | 1.52     |
| 6   | F     | 177 | SER  | CA-CB  | 6.16  | 1.63        | 1.53     |
| 24  | R     | 265 | GLU  | C-N    | 6.16  | 1.42        | 1.33     |
| 17  | T     | 99  | GLU  | N-CA   | -6.16 | 1.41        | 1.47     |
| 19  | Z     | 478 | ARG  | CD-NE  | 6.16  | 1.54        | 1.46     |
| 6   | F     | 18  | ARG  | C-N    | 6.16  | 1.42        | 1.33     |
| 21  | S     | 199 | LEU  | C-N    | 6.16  | 1.42        | 1.33     |
| 26  | O     | 70  | ARG  | CA-C   | -6.16 | 1.45        | 1.52     |
| 28  | I     | 307 | ARG  | C-N    | 6.16  | 1.42        | 1.33     |
| 30  | L     | 256 | ARG  | NE-CZ  | 6.16  | 1.39        | 1.33     |
| 3   | C     | 113 | ALA  | N-CA   | -6.15 | 1.39        | 1.46     |
| 25  | U     | 148 | GLY  | CA-C   | -6.15 | 1.43        | 1.51     |
| 27  | H     | 330 | ALA  | CA-CB  | 6.15  | 1.63        | 1.53     |
| 31  | M     | 253 | LYS  | C-N    | 6.15  | 1.42        | 1.33     |
| 4   | D     | 147 | THR  | CA-C   | -6.15 | 1.46        | 1.53     |
| 25  | U     | 95  | TYR  | C-N    | 6.15  | 1.42        | 1.33     |
| 2   | B     | 191 | ALA  | C-N    | 6.15  | 1.41        | 1.33     |
| 6   | F     | 5   | GLN  | CA-C   | 6.15  | 1.59        | 1.52     |
| 12  | 5     | 165 | LYS  | CA-CB  | -6.15 | 1.44        | 1.53     |
| 23  | Q     | 350 | ILE  | C-N    | 6.15  | 1.42        | 1.33     |
| 20  | N     | 232 | ILE  | C-O    | -6.15 | 1.17        | 1.24     |
| 4   | D     | 151 | TYR  | CA-C   | -6.14 | 1.45        | 1.52     |
| 10  | 3     | 108 | VAL  | CA-C   | -6.14 | 1.48        | 1.53     |
| 19  | Z     | 301 | HIS  | CB-CG  | -6.14 | 1.41        | 1.50     |
| 10  | 3     | 125 | ASP  | CA-C   | -6.14 | 1.45        | 1.52     |
| 11  | 4     | 35  | MET  | CA-C   | 6.14  | 1.60        | 1.52     |
| 30  | L     | 227 | ARG  | CZ-NH1 | 6.14  | 1.41        | 1.32     |
| 19  | Z     | 148 | GLN  | N-CA   | -6.14 | 1.38        | 1.46     |
| 19  | Z     | 261 | ARG  | NE-CZ  | 6.14  | 1.39        | 1.33     |
| 20  | N     | 894 | MET  | N-CA   | -6.14 | 1.38        | 1.46     |
| 24  | R     | 169 | GLU  | CA-CB  | 6.14  | 1.63        | 1.53     |
| 25  | U     | 172 | VAL  | C-N    | 6.14  | 1.42        | 1.33     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 16  | V     | 207 | TYR  | CA-CB   | 6.14  | 1.62        | 1.53     |
| 27  | H     | 323 | ARG  | NE-CZ   | 6.14  | 1.39        | 1.33     |
| 29  | K     | 293 | LEU  | N-CA    | -6.14 | 1.39        | 1.46     |
| 30  | L     | 384 | ALA  | C-N     | 6.14  | 1.41        | 1.33     |
| 31  | M     | 374 | ARG  | CA-CB   | 6.14  | 1.62        | 1.53     |
| 22  | P     | 92  | LYS  | CA-C    | -6.13 | 1.45        | 1.52     |
| 15  | W     | 137 | ASN  | CA-C    | -6.13 | 1.45        | 1.52     |
| 17  | T     | 341 | GLN  | C-N     | 6.13  | 1.41        | 1.34     |
| 23  | Q     | 365 | LEU  | CA-C    | -6.13 | 1.44        | 1.52     |
| 23  | Q     | 395 | LYS  | CA-CB   | 6.13  | 1.62        | 1.53     |
| 27  | H     | 323 | ARG  | CA-CB   | 6.13  | 1.62        | 1.54     |
| 16  | V     | 215 | LYS  | N-CA    | -6.13 | 1.39        | 1.46     |
| 16  | V     | 224 | SER  | CA-C    | -6.13 | 1.44        | 1.52     |
| 6   | F     | 106 | SER  | C-N     | 6.13  | 1.42        | 1.33     |
| 19  | Z     | 532 | GLY  | C-N     | 6.13  | 1.42        | 1.33     |
| 30  | L     | 119 | LEU  | CA-C    | -6.13 | 1.46        | 1.53     |
| 12  | 5     | 214 | LEU  | C-N     | 6.12  | 1.42        | 1.33     |
| 21  | S     | 337 | GLU  | N-CA    | 6.12  | 1.53        | 1.45     |
| 32  | J     | 56  | VAL  | CA-C    | -6.12 | 1.44        | 1.52     |
| 32  | J     | 74  | GLY  | CA-C    | -6.12 | 1.46        | 1.52     |
| 6   | F     | 122 | ARG  | CZ-NH2  | 6.12  | 1.41        | 1.33     |
| 23  | Q     | 24  | ILE  | CA-C    | -6.12 | 1.45        | 1.52     |
| 25  | U     | 196 | HIS  | C-N     | 6.12  | 1.41        | 1.33     |
| 32  | J     | 67  | GLN  | C-N     | -6.12 | 1.27        | 1.33     |
| 19  | Z     | 163 | ALA  | CA-CB   | -6.12 | 1.43        | 1.53     |
| 19  | Z     | 227 | SER  | C-N     | 6.12  | 1.42        | 1.33     |
| 20  | N     | 196 | LYS  | C-N     | 6.12  | 1.41        | 1.33     |
| 23  | Q     | 62  | GLN  | CA-CB   | 6.12  | 1.62        | 1.52     |
| 28  | I     | 338 | ASP  | CA-CB   | 6.12  | 1.62        | 1.53     |
| 32  | J     | 212 | ILE  | CA-C    | -6.12 | 1.45        | 1.52     |
| 14  | 7     | 201 | GLN  | N-CA    | 6.12  | 1.52        | 1.46     |
| 21  | S     | 417 | ASP  | CA-CB   | 6.12  | 1.62        | 1.53     |
| 26  | O     | 369 | HIS  | ND1-CE1 | 6.12  | 1.38        | 1.32     |
| 32  | J     | 357 | ALA  | N-CA    | -6.12 | 1.39        | 1.46     |
| 2   | B     | 65  | VAL  | CA-CB   | -6.11 | 1.46        | 1.54     |
| 21  | S     | 176 | ARG  | N-CA    | -6.11 | 1.38        | 1.46     |
| 26  | O     | 373 | ASP  | C-N     | 6.11  | 1.41        | 1.33     |
| 28  | I     | 257 | GLN  | CA-C    | -6.11 | 1.44        | 1.52     |
| 32  | J     | 358 | GLU  | CA-C    | -6.11 | 1.45        | 1.52     |
| 7   | G     | 192 | LYS  | CA-C    | -6.11 | 1.45        | 1.52     |
| 13  | 6     | 162 | PHE  | C-N     | 6.11  | 1.42        | 1.33     |
| 23  | Q     | 310 | ARG  | CD-NE   | 6.11  | 1.54        | 1.46     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 27  | H     | 39  | SER  | CA-CB   | 6.11  | 1.62        | 1.53     |
| 10  | 3     | 139 | SER  | CA-C    | -6.11 | 1.45        | 1.52     |
| 11  | 4     | 51  | GLY  | N-CA    | -6.11 | 1.36        | 1.45     |
| 29  | K     | 237 | GLN  | N-CA    | -6.11 | 1.39        | 1.46     |
| 19  | Z     | 866 | GLN  | N-CA    | -6.10 | 1.38        | 1.46     |
| 23  | Q     | 349 | HIS  | ND1-CE1 | 6.10  | 1.38        | 1.32     |
| 23  | Q     | 413 | SER  | C-N     | 6.10  | 1.42        | 1.33     |
| 24  | R     | 322 | ALA  | CA-C    | -6.10 | 1.45        | 1.52     |
| 19  | Z     | 417 | ILE  | C-O     | -6.10 | 1.17        | 1.24     |
| 28  | I     | 355 | LEU  | CA-CB   | 6.10  | 1.62        | 1.53     |
| 29  | K     | 94  | GLU  | N-CA    | -6.10 | 1.39        | 1.46     |
| 20  | N     | 196 | LYS  | CA-C    | -6.10 | 1.44        | 1.52     |
| 22  | P     | 123 | ARG  | CZ-NH2  | 6.10  | 1.41        | 1.33     |
| 15  | W     | 123 | ASP  | N-CA    | -6.10 | 1.39        | 1.46     |
| 20  | N     | 604 | HIS  | ND1-CE1 | 6.10  | 1.38        | 1.32     |
| 19  | Z     | 643 | PRO  | C-N     | 6.09  | 1.42        | 1.33     |
| 24  | R     | 136 | HIS  | ND1-CE1 | 6.09  | 1.38        | 1.32     |
| 28  | I     | 411 | ARG  | N-CA    | -6.09 | 1.38        | 1.46     |
| 32  | J     | 12  | GLU  | CA-CB   | 6.09  | 1.61        | 1.53     |
| 20  | N     | 91  | ASN  | CA-CB   | 6.09  | 1.62        | 1.53     |
| 23  | Q     | 100 | GLU  | CA-CB   | 6.09  | 1.62        | 1.53     |
| 10  | 3     | 98  | LYS  | C-N     | 6.09  | 1.41        | 1.33     |
| 19  | Z     | 305 | LEU  | N-CA    | -6.09 | 1.39        | 1.46     |
| 30  | L     | 365 | GLY  | CA-C    | -6.09 | 1.44        | 1.51     |
| 4   | D     | 72  | ALA  | C-N     | 6.09  | 1.41        | 1.33     |
| 26  | O     | 18  | GLN  | CA-C    | -6.09 | 1.44        | 1.52     |
| 14  | 7     | 215 | ARG  | CD-NE   | 6.09  | 1.54        | 1.46     |
| 17  | T     | 263 | ILE  | C-N     | 6.09  | 1.41        | 1.33     |
| 21  | S     | 126 | PHE  | CA-C    | -6.09 | 1.44        | 1.52     |
| 21  | S     | 237 | ARG  | NE-CZ   | 6.09  | 1.39        | 1.33     |
| 20  | N     | 115 | ASN  | C-N     | 6.08  | 1.43        | 1.33     |
| 10  | 3     | 53  | LEU  | N-CA    | -6.08 | 1.38        | 1.46     |
| 3   | C     | 128 | ARG  | NE-CZ   | 6.08  | 1.39        | 1.33     |
| 13  | 6     | 45  | GLU  | C-N     | 6.08  | 1.42        | 1.33     |
| 10  | 3     | 122 | CYS  | C-N     | 6.08  | 1.41        | 1.33     |
| 12  | 5     | 65  | PHE  | C-N     | 6.08  | 1.41        | 1.33     |
| 19  | Z     | 768 | LEU  | C-N     | 6.08  | 1.41        | 1.33     |
| 31  | M     | 268 | ALA  | CA-C    | -6.08 | 1.45        | 1.52     |
| 5   | E     | 68  | VAL  | N-CA    | -6.07 | 1.39        | 1.46     |
| 8   | 1     | 131 | ILE  | C-N     | 6.07  | 1.42        | 1.33     |
| 19  | Z     | 49  | ASP  | CA-CB   | 6.07  | 1.62        | 1.53     |
| 7   | G     | 233 | ARG  | NE-CZ   | 6.07  | 1.39        | 1.33     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 32  | J     | 268 | GLU  | CA-C    | -6.07 | 1.45        | 1.52     |
| 7   | G     | 69  | ASN  | C-N     | 6.07  | 1.41        | 1.33     |
| 22  | P     | 384 | LEU  | CA-C    | -6.07 | 1.45        | 1.52     |
| 3   | C     | 59  | VAL  | N-CA    | -6.07 | 1.39        | 1.46     |
| 8   | 1     | 47  | LEU  | CA-CB   | 6.07  | 1.65        | 1.53     |
| 2   | B     | 45  | VAL  | CA-C    | -6.07 | 1.45        | 1.52     |
| 7   | G     | 178 | GLU  | CA-CB   | 6.07  | 1.62        | 1.53     |
| 7   | G     | 193 | GLU  | C-N     | 6.07  | 1.41        | 1.33     |
| 21  | S     | 106 | HIS  | ND1-CE1 | 6.07  | 1.38        | 1.32     |
| 21  | S     | 282 | ALA  | C-N     | 6.06  | 1.41        | 1.33     |
| 21  | S     | 396 | HIS  | ND1-CE1 | 6.06  | 1.38        | 1.32     |
| 6   | F     | 135 | ALA  | N-CA    | -6.06 | 1.38        | 1.46     |
| 14  | 7     | 248 | SER  | C-N     | 6.06  | 1.43        | 1.33     |
| 19  | Z     | 605 | ASN  | CA-C    | -6.06 | 1.45        | 1.52     |
| 13  | 6     | 201 | LEU  | N-CA    | 6.06  | 1.53        | 1.46     |
| 17  | T     | 152 | GLU  | C-N     | 6.06  | 1.41        | 1.33     |
| 8   | 1     | 65  | ASP  | C-N     | 6.05  | 1.42        | 1.33     |
| 19  | Z     | 796 | LEU  | CA-C    | -6.05 | 1.44        | 1.52     |
| 23  | Q     | 114 | ILE  | CA-CB   | -6.05 | 1.47        | 1.54     |
| 4   | D     | 115 | ARG  | C-N     | 6.05  | 1.42        | 1.33     |
| 30  | L     | 311 | ARG  | CZ-NH1  | 6.05  | 1.41        | 1.32     |
| 5   | E     | 234 | LEU  | C-O     | -6.05 | 1.17        | 1.24     |
| 14  | 7     | 195 | ARG  | NE-CZ   | 6.05  | 1.39        | 1.33     |
| 16  | V     | 292 | MET  | C-O     | -6.05 | 1.17        | 1.24     |
| 20  | N     | 849 | LYS  | CA-CB   | 6.05  | 1.63        | 1.53     |
| 32  | J     | 112 | CYS  | C-N     | 6.05  | 1.41        | 1.33     |
| 16  | V     | 208 | ARG  | CD-NE   | 6.05  | 1.54        | 1.46     |
| 25  | U     | 102 | HIS  | ND1-CE1 | 6.05  | 1.38        | 1.32     |
| 9   | 2     | 159 | HIS  | N-CA    | -6.05 | 1.39        | 1.46     |
| 22  | P     | 4   | GLY  | N-CA    | 6.05  | 1.51        | 1.45     |
| 16  | V     | 150 | SER  | C-N     | 6.04  | 1.41        | 1.33     |
| 24  | R     | 257 | ARG  | NE-CZ   | 6.04  | 1.39        | 1.33     |
| 3   | C     | 232 | GLU  | CA-C    | -6.04 | 1.44        | 1.52     |
| 20  | N     | 589 | ALA  | N-CA    | -6.04 | 1.39        | 1.46     |
| 26  | O     | 234 | ILE  | C-N     | 6.04  | 1.41        | 1.33     |
| 27  | H     | 360 | ARG  | NE-CZ   | 6.04  | 1.39        | 1.33     |
| 15  | W     | 102 | GLY  | N-CA    | -6.04 | 1.36        | 1.45     |
| 16  | V     | 78  | SER  | C-O     | -6.04 | 1.16        | 1.23     |
| 19  | Z     | 147 | SER  | C-N     | 6.04  | 1.42        | 1.33     |
| 26  | O     | 277 | LEU  | C-N     | 6.04  | 1.42        | 1.33     |
| 20  | N     | 867 | LYS  | C-N     | 6.04  | 1.41        | 1.33     |
| 29  | K     | 89  | ILE  | CA-CB   | 6.04  | 1.61        | 1.54     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 11  | 4     | 153 | ARG  | CD-NE   | 6.04  | 1.54        | 1.46     |
| 20  | N     | 601 | ARG  | CD-NE   | 6.04  | 1.54        | 1.46     |
| 20  | N     | 801 | GLN  | CA-C    | -6.03 | 1.45        | 1.52     |
| 26  | O     | 91  | ASN  | CA-CB   | 6.03  | 1.62        | 1.53     |
| 4   | D     | 123 | ARG  | CD-NE   | 6.03  | 1.54        | 1.46     |
| 6   | F     | 8   | ASN  | N-CA    | -6.03 | 1.38        | 1.46     |
| 15  | W     | 3   | LEU  | CA-C    | -6.03 | 1.45        | 1.53     |
| 26  | O     | 339 | ARG  | CA-C    | -6.03 | 1.45        | 1.52     |
| 19  | Z     | 81  | GLN  | C-N     | 6.03  | 1.41        | 1.33     |
| 22  | P     | 247 | TYR  | CA-C    | -6.03 | 1.45        | 1.52     |
| 29  | K     | 75  | ALA  | N-CA    | -6.02 | 1.39        | 1.46     |
| 16  | V     | 240 | HIS  | ND1-CE1 | 6.02  | 1.38        | 1.32     |
| 19  | Z     | 458 | GLU  | N-CA    | -6.02 | 1.38        | 1.46     |
| 22  | P     | 221 | LYS  | N-CA    | -6.02 | 1.39        | 1.46     |
| 22  | P     | 312 | MET  | CA-C    | -6.02 | 1.44        | 1.52     |
| 30  | L     | 373 | HIS  | ND1-CE1 | 6.02  | 1.38        | 1.32     |
| 19  | Z     | 171 | GLN  | C-N     | 6.02  | 1.42        | 1.33     |
| 14  | 7     | 81  | ARG  | NE-CZ   | 6.01  | 1.39        | 1.33     |
| 30  | L     | 26  | TYR  | CA-CB   | 6.01  | 1.62        | 1.53     |
| 22  | P     | 370 | TYR  | CA-C    | -6.01 | 1.45        | 1.52     |
| 5   | E     | 118 | ASN  | CA-C    | -6.01 | 1.44        | 1.52     |
| 31  | M     | 212 | LYS  | CA-C    | -6.01 | 1.44        | 1.52     |
| 7   | G     | 142 | SER  | C-N     | 6.01  | 1.41        | 1.33     |
| 21  | S     | 476 | ILE  | C-N     | 6.01  | 1.41        | 1.33     |
| 31  | M     | 85  | VAL  | C-N     | 6.01  | 1.41        | 1.33     |
| 10  | 3     | 142 | CYS  | CA-CB   | 6.00  | 1.63        | 1.53     |
| 14  | 7     | 204 | LEU  | N-CA    | -6.00 | 1.39        | 1.46     |
| 22  | P     | 93  | ARG  | CA-C    | -6.00 | 1.45        | 1.52     |
| 9   | 2     | 89  | ALA  | N-CA    | -6.00 | 1.38        | 1.45     |
| 17  | T     | 215 | LEU  | N-CA    | -6.00 | 1.39        | 1.46     |
| 29  | K     | 106 | THR  | C-N     | 6.00  | 1.42        | 1.33     |
| 13  | 6     | 206 | PHE  | C-N     | 6.00  | 1.41        | 1.33     |
| 13  | 6     | 223 | CYS  | CA-C    | -6.00 | 1.45        | 1.52     |
| 17  | T     | 163 | ASP  | N-CA    | -6.00 | 1.38        | 1.46     |
| 17  | T     | 209 | ALA  | CA-C    | -6.00 | 1.45        | 1.52     |
| 25  | U     | 196 | HIS  | ND1-CE1 | 6.00  | 1.38        | 1.32     |
| 25  | U     | 205 | LEU  | N-CA    | -6.00 | 1.39        | 1.46     |
| 1   | A     | 43  | ARG  | NE-CZ   | 6.00  | 1.39        | 1.33     |
| 20  | N     | 632 | GLN  | N-CA    | -6.00 | 1.38        | 1.46     |
| 29  | K     | 274 | ARG  | CZ-NH2  | 6.00  | 1.41        | 1.33     |
| 31  | M     | 340 | ILE  | C-N     | 6.00  | 1.41        | 1.33     |
| 6   | F     | 104 | PRO  | CA-C    | -5.99 | 1.44        | 1.52     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 8   | 1     | 232 | ILE  | CA-C    | -5.99 | 1.45        | 1.52     |
| 19  | Z     | 801 | VAL  | CA-CB   | 5.99  | 1.61        | 1.53     |
| 21  | S     | 103 | ARG  | CA-C    | -5.99 | 1.45        | 1.52     |
| 29  | K     | 173 | GLN  | C-N     | 5.99  | 1.41        | 1.33     |
| 20  | N     | 41  | SER  | CA-CB   | 5.99  | 1.62        | 1.53     |
| 11  | 4     | 32  | HIS  | CA-C    | -5.99 | 1.45        | 1.52     |
| 30  | L     | 39  | ARG  | CD-NE   | 5.99  | 1.54        | 1.46     |
| 30  | L     | 328 | LYS  | CA-C    | -5.99 | 1.45        | 1.52     |
| 16  | V     | 235 | SER  | CA-C    | -5.99 | 1.45        | 1.52     |
| 23  | Q     | 271 | VAL  | C-N     | 5.99  | 1.43        | 1.33     |
| 28  | I     | 59  | ARG  | CZ-NH1  | 5.99  | 1.41        | 1.32     |
| 27  | H     | 277 | ILE  | CA-C    | -5.98 | 1.45        | 1.52     |
| 16  | V     | 183 | HIS  | CE1-NE2 | -5.98 | 1.26        | 1.32     |
| 19  | Z     | 674 | THR  | C-N     | 5.98  | 1.41        | 1.33     |
| 23  | Q     | 403 | THR  | CA-CB   | 5.98  | 1.62        | 1.53     |
| 27  | H     | 249 | TYR  | CA-C    | -5.98 | 1.45        | 1.52     |
| 1   | A     | 101 | TRP  | N-CA    | -5.98 | 1.39        | 1.46     |
| 5   | E     | 51  | GLU  | CA-CB   | -5.98 | 1.44        | 1.53     |
| 13  | 6     | 40  | LEU  | CA-C    | -5.98 | 1.45        | 1.52     |
| 23  | Q     | 40  | GLU  | N-CA    | -5.98 | 1.38        | 1.46     |
| 31  | M     | 380 | PRO  | CA-C    | -5.98 | 1.44        | 1.52     |
| 22  | P     | 24  | VAL  | C-N     | 5.98  | 1.42        | 1.33     |
| 27  | H     | 307 | ASP  | C-N     | 5.98  | 1.41        | 1.33     |
| 29  | K     | 414 | HIS  | ND1-CE1 | 5.98  | 1.38        | 1.32     |
| 32  | J     | 318 | PRO  | N-CD    | -5.98 | 1.39        | 1.47     |
| 19  | Z     | 667 | GLY  | CA-C    | -5.98 | 1.45        | 1.52     |
| 26  | O     | 157 | ASP  | CA-C    | 5.98  | 1.60        | 1.52     |
| 32  | J     | 75  | GLU  | C-N     | 5.98  | 1.39        | 1.33     |
| 3   | C     | 30  | HIS  | CA-C    | -5.97 | 1.45        | 1.53     |
| 9   | 2     | 77  | ILE  | C-N     | 5.97  | 1.42        | 1.33     |
| 19  | Z     | 358 | PHE  | N-CA    | -5.97 | 1.39        | 1.46     |
| 24  | R     | 101 | ARG  | CZ-NH1  | 5.97  | 1.41        | 1.32     |
| 8   | 1     | 118 | GLU  | C-N     | 5.97  | 1.41        | 1.33     |
| 19  | Z     | 703 | ARG  | NE-CZ   | 5.97  | 1.39        | 1.33     |
| 32  | J     | 296 | ASN  | C-N     | 5.97  | 1.40        | 1.33     |
| 4   | D     | 192 | LEU  | N-CA    | -5.97 | 1.39        | 1.46     |
| 19  | Z     | 735 | GLY  | C-N     | 5.97  | 1.41        | 1.33     |
| 21  | S     | 260 | TYR  | C-N     | 5.97  | 1.41        | 1.33     |
| 24  | R     | 32  | ARG  | C-N     | 5.97  | 1.41        | 1.33     |
| 26  | O     | 85  | ARG  | CD-NE   | 5.96  | 1.54        | 1.46     |
| 21  | S     | 445 | ALA  | C-O     | -5.96 | 1.16        | 1.23     |
| 22  | P     | 391 | ALA  | N-CA    | -5.96 | 1.39        | 1.46     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 20  | N     | 141 | CYS  | C-N     | 5.96  | 1.41        | 1.33     |
| 25  | U     | 280 | ILE  | CA-C    | -5.96 | 1.45        | 1.52     |
| 26  | O     | 45  | VAL  | C-N     | 5.96  | 1.41        | 1.33     |
| 28  | I     | 396 | LYS  | CA-CB   | 5.96  | 1.62        | 1.53     |
| 27  | H     | 317 | VAL  | CA-C    | -5.96 | 1.45        | 1.52     |
| 29  | K     | 382 | SER  | CA-CB   | 5.96  | 1.62        | 1.53     |
| 14  | 7     | 154 | LYS  | C-N     | 5.96  | 1.41        | 1.33     |
| 20  | N     | 195 | ASN  | CA-C    | -5.95 | 1.45        | 1.52     |
| 28  | I     | 209 | GLU  | C-N     | 5.95  | 1.41        | 1.33     |
| 14  | 7     | 77  | LEU  | C-N     | 5.95  | 1.41        | 1.33     |
| 14  | 7     | 180 | SER  | CA-C    | -5.95 | 1.45        | 1.52     |
| 1   | A     | 77  | GLY  | CA-C    | -5.95 | 1.47        | 1.52     |
| 28  | I     | 393 | ALA  | CA-C    | 5.95  | 1.60        | 1.52     |
| 20  | N     | 209 | GLU  | CA-CB   | 5.95  | 1.62        | 1.53     |
| 21  | S     | 89  | PHE  | C-N     | 5.95  | 1.41        | 1.33     |
| 1   | A     | 188 | ASP  | C-N     | 5.94  | 1.42        | 1.33     |
| 26  | O     | 196 | ARG  | CD-NE   | 5.94  | 1.54        | 1.46     |
| 32  | J     | 328 | ILE  | C-N     | 5.94  | 1.41        | 1.33     |
| 14  | 7     | 253 | TRP  | NE1-CE2 | 5.94  | 1.44        | 1.37     |
| 19  | Z     | 194 | TYR  | C-N     | 5.94  | 1.41        | 1.33     |
| 22  | P     | 99  | GLN  | C-N     | 5.94  | 1.41        | 1.33     |
| 6   | F     | 63  | ILE  | CA-CB   | -5.94 | 1.46        | 1.54     |
| 14  | 7     | 61  | ASP  | CA-C    | -5.94 | 1.45        | 1.52     |
| 23  | Q     | 44  | GLN  | CA-C    | -5.94 | 1.45        | 1.52     |
| 25  | U     | 6   | VAL  | CA-C    | -5.94 | 1.45        | 1.52     |
| 32  | J     | 302 | ASP  | CA-C    | -5.94 | 1.45        | 1.52     |
| 16  | V     | 37  | ALA  | CA-C    | -5.94 | 1.45        | 1.52     |
| 19  | Z     | 823 | ALA  | CA-C    | -5.94 | 1.45        | 1.52     |
| 20  | N     | 952 | ASP  | C-N     | 5.94  | 1.41        | 1.33     |
| 3   | C     | 196 | VAL  | CA-CB   | 5.94  | 1.62        | 1.54     |
| 5   | E     | 74  | ILE  | C-O     | -5.94 | 1.18        | 1.24     |
| 20  | N     | 901 | GLN  | CA-C    | -5.94 | 1.46        | 1.52     |
| 22  | P     | 454 | ASN  | N-CA    | -5.94 | 1.38        | 1.46     |
| 3   | C     | 50  | ARG  | CZ-NH2  | 5.93  | 1.41        | 1.33     |
| 6   | F     | 105 | VAL  | C-N     | 5.93  | 1.41        | 1.33     |
| 1   | A     | 227 | PHE  | CA-CB   | 5.93  | 1.62        | 1.53     |
| 19  | Z     | 269 | ALA  | CA-CB   | 5.93  | 1.62        | 1.53     |
| 30  | L     | 269 | ARG  | NE-CZ   | 5.93  | 1.39        | 1.33     |
| 15  | W     | 25  | ARG  | C-N     | 5.93  | 1.41        | 1.33     |
| 20  | N     | 846 | LYS  | CA-C    | -5.93 | 1.45        | 1.53     |
| 22  | P     | 130 | MET  | C-N     | 5.93  | 1.40        | 1.34     |
| 4   | D     | 130 | ARG  | CZ-NH1  | 5.93  | 1.41        | 1.32     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 16  | V     | 104 | ARG  | NE-CZ  | 5.93  | 1.39        | 1.33     |
| 17  | T     | 307 | LYS  | N-CA   | 5.93  | 1.53        | 1.46     |
| 29  | K     | 234 | GLU  | C-N    | 5.93  | 1.41        | 1.33     |
| 32  | J     | 150 | MET  | N-CA   | -5.93 | 1.39        | 1.46     |
| 7   | G     | 72  | ARG  | CA-C   | 5.92  | 1.59        | 1.52     |
| 19  | Z     | 127 | SER  | C-N    | 5.92  | 1.41        | 1.33     |
| 20  | N     | 388 | ASP  | CA-C   | 5.92  | 1.60        | 1.52     |
| 26  | O     | 162 | TYR  | N-CA   | 5.92  | 1.53        | 1.46     |
| 6   | F     | 154 | PHE  | C-N    | 5.92  | 1.43        | 1.33     |
| 21  | S     | 122 | ALA  | CA-CB  | 5.92  | 1.61        | 1.53     |
| 32  | J     | 188 | LEU  | CA-C   | -5.92 | 1.45        | 1.52     |
| 23  | Q     | 165 | LEU  | C-N    | 5.92  | 1.42        | 1.34     |
| 8   | 1     | 209 | LEU  | CA-CB  | 5.92  | 1.62        | 1.53     |
| 10  | 3     | 203 | ARG  | CD-NE  | 5.92  | 1.54        | 1.46     |
| 14  | 7     | 53  | THR  | C-N    | 5.92  | 1.41        | 1.33     |
| 4   | D     | 60  | ARG  | NE-CZ  | 5.92  | 1.39        | 1.33     |
| 21  | S     | 478 | PHE  | C-N    | 5.92  | 1.41        | 1.33     |
| 29  | K     | 399 | PHE  | CA-C   | -5.92 | 1.45        | 1.52     |
| 30  | L     | 74  | VAL  | C-N    | 5.92  | 1.41        | 1.33     |
| 14  | 7     | 189 | LEU  | N-CA   | -5.92 | 1.39        | 1.46     |
| 3   | C     | 134 | LEU  | CA-C   | -5.91 | 1.45        | 1.52     |
| 12  | 5     | 217 | ARG  | NE-CZ  | 5.91  | 1.39        | 1.33     |
| 13  | 6     | 115 | ILE  | CA-CB  | -5.91 | 1.47        | 1.54     |
| 19  | Z     | 601 | ALA  | CA-C   | -5.91 | 1.45        | 1.52     |
| 20  | N     | 749 | GLN  | N-CA   | -5.91 | 1.38        | 1.46     |
| 19  | Z     | 782 | HIS  | CG-CD2 | -5.91 | 1.29        | 1.35     |
| 32  | J     | 134 | LEU  | C-N    | 5.91  | 1.41        | 1.33     |
| 19  | Z     | 239 | TYR  | CA-CB  | 5.91  | 1.61        | 1.53     |
| 11  | 4     | 181 | ARG  | CA-C   | -5.91 | 1.45        | 1.52     |
| 14  | 7     | 249 | ALA  | C-N    | 5.91  | 1.41        | 1.33     |
| 6   | F     | 147 | THR  | N-CA   | -5.91 | 1.38        | 1.46     |
| 11  | 4     | 153 | ARG  | CZ-NH1 | 5.91  | 1.41        | 1.32     |
| 10  | 3     | 49  | LEU  | CA-C   | -5.90 | 1.44        | 1.52     |
| 26  | O     | 226 | ARG  | CD-NE  | 5.90  | 1.54        | 1.46     |
| 19  | Z     | 110 | TYR  | N-CA   | -5.90 | 1.39        | 1.46     |
| 19  | Z     | 251 | CYS  | C-N    | 5.90  | 1.41        | 1.33     |
| 29  | K     | 416 | PHE  | C-O    | -5.90 | 1.19        | 1.24     |
| 16  | V     | 54  | MET  | C-O    | -5.90 | 1.17        | 1.23     |
| 16  | V     | 85  | GLU  | N-CA   | -5.90 | 1.39        | 1.46     |
| 29  | K     | 154 | LEU  | CA-C   | -5.90 | 1.45        | 1.52     |
| 6   | F     | 192 | LEU  | CA-C   | -5.90 | 1.45        | 1.52     |
| 19  | Z     | 696 | LEU  | N-CA   | -5.90 | 1.39        | 1.46     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 30  | L     | 278 | MET  | C-N    | 5.90  | 1.42        | 1.33     |
| 30  | L     | 308 | ARG  | CD-NE  | 5.90  | 1.54        | 1.46     |
| 16  | V     | 247 | GLU  | C-N    | 5.90  | 1.41        | 1.33     |
| 31  | M     | 167 | LEU  | CA-C   | -5.90 | 1.45        | 1.52     |
| 31  | M     | 290 | GLU  | C-N    | 5.90  | 1.42        | 1.33     |
| 6   | F     | 120 | THR  | CA-CB  | 5.89  | 1.63        | 1.53     |
| 14  | 7     | 110 | VAL  | CA-CB  | 5.89  | 1.61        | 1.54     |
| 16  | V     | 139 | ARG  | CA-C   | -5.89 | 1.45        | 1.52     |
| 28  | I     | 297 | SER  | N-CA   | -5.89 | 1.39        | 1.46     |
| 32  | J     | 377 | HIS  | CA-CB  | 5.89  | 1.62        | 1.53     |
| 29  | K     | 290 | LEU  | CA-C   | -5.89 | 1.45        | 1.52     |
| 14  | 7     | 127 | TYR  | CA-CB  | 5.89  | 1.62        | 1.53     |
| 19  | Z     | 45  | LEU  | N-CA   | -5.89 | 1.39        | 1.46     |
| 32  | J     | 42  | LEU  | CA-C   | -5.89 | 1.45        | 1.52     |
| 10  | 3     | 39  | PHE  | N-CA   | -5.89 | 1.39        | 1.46     |
| 19  | Z     | 722 | SER  | CA-C   | -5.89 | 1.44        | 1.52     |
| 20  | N     | 815 | ALA  | C-N    | 5.89  | 1.40        | 1.33     |
| 29  | K     | 341 | LYS  | C-O    | 5.89  | 1.31        | 1.24     |
| 17  | T     | 218 | LEU  | CA-C   | -5.89 | 1.45        | 1.52     |
| 26  | O     | 67  | PHE  | C-O    | -5.89 | 1.17        | 1.24     |
| 12  | 5     | 200 | ARG  | CD-NE  | 5.88  | 1.54        | 1.46     |
| 32  | J     | 175 | PHE  | C-N    | 5.88  | 1.41        | 1.33     |
| 22  | P     | 200 | ILE  | N-CA   | -5.88 | 1.39        | 1.46     |
| 2   | B     | 109 | GLN  | CA-C   | -5.88 | 1.45        | 1.52     |
| 19  | Z     | 287 | ASP  | C-N    | 5.88  | 1.41        | 1.33     |
| 23  | Q     | 87  | ARG  | CZ-NH1 | 5.88  | 1.41        | 1.32     |
| 30  | L     | 314 | HIS  | CA-C   | -5.88 | 1.45        | 1.52     |
| 24  | R     | 47  | GLU  | CA-CB  | 5.88  | 1.63        | 1.53     |
| 29  | K     | 226 | ALA  | CA-C   | -5.88 | 1.45        | 1.52     |
| 19  | Z     | 336 | GLU  | C-N    | 5.88  | 1.41        | 1.33     |
| 25  | U     | 68  | TRP  | CA-CB  | 5.88  | 1.63        | 1.53     |
| 26  | O     | 98  | GLU  | C-N    | 5.88  | 1.41        | 1.33     |
| 29  | K     | 192 | LYS  | CA-C   | -5.88 | 1.45        | 1.52     |
| 32  | J     | 85  | VAL  | N-CA   | -5.88 | 1.39        | 1.46     |
| 4   | D     | 140 | VAL  | CA-C   | -5.87 | 1.45        | 1.52     |
| 10  | 3     | 186 | ILE  | C-N    | 5.87  | 1.41        | 1.33     |
| 26  | O     | 364 | GLU  | C-N    | 5.87  | 1.42        | 1.33     |
| 28  | I     | 268 | ARG  | N-CA   | 5.87  | 1.53        | 1.46     |
| 32  | J     | 271 | ARG  | CZ-NH1 | 5.87  | 1.41        | 1.32     |
| 15  | W     | 30  | GLN  | N-CA   | -5.87 | 1.39        | 1.46     |
| 23  | Q     | 2   | ALA  | N-CA   | -5.87 | 1.39        | 1.46     |
| 26  | O     | 218 | MET  | CA-CB  | 5.87  | 1.62        | 1.53     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 20  | N     | 330 | SER  | CA-CB   | 5.87  | 1.63        | 1.53     |
| 20  | N     | 603 | LEU  | CA-C    | -5.87 | 1.45        | 1.52     |
| 26  | O     | 361 | LYS  | CA-C    | -5.87 | 1.45        | 1.52     |
| 20  | N     | 684 | ARG  | CD-NE   | 5.87  | 1.54        | 1.46     |
| 17  | T     | 160 | LEU  | C-N     | 5.86  | 1.42        | 1.33     |
| 7   | G     | 86  | ARG  | NE-CZ   | 5.86  | 1.39        | 1.33     |
| 22  | P     | 117 | ASP  | C-N     | 5.86  | 1.43        | 1.34     |
| 27  | H     | 284 | ARG  | CA-CB   | 5.86  | 1.61        | 1.53     |
| 16  | V     | 138 | GLU  | N-CA    | 5.86  | 1.53        | 1.46     |
| 28  | I     | 63  | LEU  | C-N     | 5.86  | 1.41        | 1.33     |
| 19  | Z     | 494 | ARG  | CA-C    | -5.86 | 1.45        | 1.52     |
| 2   | B     | 89  | ARG  | NE-CZ   | 5.86  | 1.39        | 1.33     |
| 3   | C     | 4   | ARG  | NE-CZ   | 5.86  | 1.39        | 1.33     |
| 20  | N     | 628 | ARG  | CA-CB   | 5.86  | 1.62        | 1.53     |
| 32  | J     | 254 | ILE  | CA-C    | -5.86 | 1.45        | 1.52     |
| 17  | T     | 324 | GLN  | N-CA    | -5.85 | 1.38        | 1.46     |
| 20  | N     | 347 | ASN  | CA-C    | -5.85 | 1.45        | 1.52     |
| 22  | P     | 264 | GLN  | CA-CB   | 5.85  | 1.62        | 1.53     |
| 4   | D     | 214 | LEU  | CA-C    | -5.85 | 1.45        | 1.52     |
| 9   | 2     | 181 | PHE  | N-CA    | 5.85  | 1.53        | 1.46     |
| 10  | 3     | 204 | MET  | C-N     | 5.85  | 1.41        | 1.33     |
| 14  | 7     | 163 | GLU  | CA-C    | -5.85 | 1.45        | 1.52     |
| 16  | V     | 68  | ARG  | CD-NE   | 5.85  | 1.54        | 1.46     |
| 20  | N     | 833 | LEU  | CA-CB   | 5.85  | 1.62        | 1.53     |
| 8   | 1     | 39  | VAL  | CA-CB   | -5.85 | 1.46        | 1.54     |
| 3   | C     | 197 | LEU  | CA-C    | -5.85 | 1.45        | 1.52     |
| 10  | 3     | 91  | VAL  | CA-CB   | -5.85 | 1.46        | 1.54     |
| 19  | Z     | 128 | VAL  | C-N     | 5.85  | 1.41        | 1.33     |
| 20  | N     | 366 | HIS  | C-O     | -5.85 | 1.17        | 1.24     |
| 20  | N     | 533 | VAL  | CA-CB   | -5.85 | 1.46        | 1.54     |
| 22  | P     | 304 | ASP  | C-N     | 5.85  | 1.41        | 1.33     |
| 23  | Q     | 297 | ARG  | CZ-NH2  | 5.85  | 1.41        | 1.33     |
| 26  | O     | 70  | ARG  | NE-CZ   | 5.85  | 1.39        | 1.33     |
| 9   | 2     | 194 | ALA  | CA-C    | 5.85  | 1.60        | 1.52     |
| 19  | Z     | 52  | LEU  | N-CA    | 5.85  | 1.53        | 1.46     |
| 27  | H     | 369 | ARG  | CA-C    | -5.85 | 1.45        | 1.52     |
| 3   | C     | 88  | ASN  | N-CA    | -5.84 | 1.39        | 1.46     |
| 6   | F     | 219 | LEU  | CA-C    | -5.84 | 1.45        | 1.52     |
| 4   | D     | 175 | ARG  | CD-NE   | 5.84  | 1.54        | 1.46     |
| 16  | V     | 158 | ASP  | N-CA    | -5.84 | 1.38        | 1.45     |
| 30  | L     | 33  | HIS  | CE1-NE2 | -5.84 | 1.26        | 1.32     |
| 4   | D     | 142 | PHE  | CA-C    | -5.84 | 1.45        | 1.52     |

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| Mol | Chain | Res | Type | Atoms | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|-------|-------------|----------|
| 8   | 1     | 117 | LYS  | C-N   | 5.84  | 1.41        | 1.33     |
| 20  | N     | 705 | LYS  | C-N   | 5.84  | 1.41        | 1.33     |
| 22  | P     | 139 | GLU  | C-O   | 5.84  | 1.30        | 1.24     |
| 28  | I     | 276 | GLU  | C-N   | 5.84  | 1.41        | 1.33     |
| 22  | P     | 167 | GLN  | N-CA  | -5.84 | 1.39        | 1.46     |
| 3   | C     | 90  | LEU  | CA-C  | -5.84 | 1.45        | 1.52     |
| 12  | 5     | 107 | GLY  | N-CA  | -5.84 | 1.37        | 1.45     |
| 26  | O     | 364 | GLU  | N-CA  | 5.84  | 1.53        | 1.46     |
| 10  | 3     | 99  | ARG  | NE-CZ | 5.83  | 1.39        | 1.33     |
| 27  | H     | 268 | LYS  | CA-C  | -5.83 | 1.45        | 1.52     |
| 31  | M     | 195 | ASP  | C-O   | -5.83 | 1.17        | 1.24     |
| 31  | M     | 298 | ARG  | NE-CZ | 5.83  | 1.39        | 1.33     |
| 3   | C     | 6   | ASP  | CA-C  | -5.83 | 1.45        | 1.52     |
| 16  | V     | 196 | LEU  | CA-CB | 5.83  | 1.62        | 1.53     |
| 19  | Z     | 752 | HIS  | N-CA  | 5.83  | 1.53        | 1.46     |
| 20  | N     | 42  | VAL  | CA-C  | -5.83 | 1.45        | 1.52     |
| 21  | S     | 186 | ASP  | CA-C  | -5.83 | 1.46        | 1.52     |
| 24  | R     | 16  | ASP  | CA-CB | 5.83  | 1.64        | 1.53     |
| 32  | J     | 378 | VAL  | CA-CB | 5.83  | 1.59        | 1.53     |
| 8   | 1     | 208 | ARG  | NE-CZ | 5.83  | 1.39        | 1.33     |
| 23  | Q     | 368 | MET  | CA-CB | 5.83  | 1.62        | 1.53     |
| 28  | I     | 67  | ARG  | NE-CZ | 5.83  | 1.39        | 1.33     |
| 28  | I     | 362 | LYS  | CA-C  | 5.83  | 1.60        | 1.52     |
| 8   | 1     | 64  | THR  | CA-C  | -5.83 | 1.47        | 1.52     |
| 26  | O     | 55  | GLY  | CA-C  | -5.83 | 1.45        | 1.52     |
| 11  | 4     | 15  | VAL  | CA-C  | -5.83 | 1.45        | 1.52     |
| 14  | 7     | 49  | MET  | N-CA  | 5.83  | 1.53        | 1.46     |
| 22  | P     | 393 | LEU  | C-N   | 5.83  | 1.41        | 1.33     |
| 25  | U     | 69  | PHE  | C-O   | -5.83 | 1.16        | 1.23     |
| 6   | F     | 183 | ASN  | N-CA  | -5.83 | 1.38        | 1.45     |
| 21  | S     | 43  | SER  | N-CA  | -5.83 | 1.39        | 1.46     |
| 24  | R     | 71  | SER  | CA-CB | 5.83  | 1.62        | 1.53     |
| 32  | J     | 345 | ARG  | C-N   | 5.83  | 1.41        | 1.33     |
| 7   | G     | 31  | VAL  | CA-C  | -5.82 | 1.45        | 1.52     |
| 7   | G     | 86  | ARG  | CD-NE | 5.82  | 1.54        | 1.46     |
| 19  | Z     | 724 | ASN  | C-N   | 5.82  | 1.41        | 1.33     |
| 32  | J     | 350 | LEU  | CA-CB | 5.82  | 1.62        | 1.53     |
| 29  | K     | 287 | ARG  | CA-C  | -5.82 | 1.45        | 1.52     |
| 3   | C     | 35  | LEU  | CA-C  | -5.82 | 1.45        | 1.52     |
| 13  | 6     | 34  | PHE  | N-CA  | -5.82 | 1.39        | 1.46     |
| 5   | E     | 177 | ALA  | C-N   | 5.82  | 1.41        | 1.33     |
| 20  | N     | 199 | ARG  | NE-CZ | 5.82  | 1.39        | 1.33     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 29  | K     | 137 | ASN  | CA-CB   | 5.82  | 1.63        | 1.53     |
| 20  | N     | 329 | LEU  | CA-C    | -5.81 | 1.45        | 1.52     |
| 22  | P     | 322 | GLU  | C-N     | 5.81  | 1.41        | 1.33     |
| 24  | R     | 364 | TRP  | NE1-CE2 | 5.81  | 1.43        | 1.37     |
| 25  | U     | 194 | GLN  | C-N     | 5.81  | 1.41        | 1.33     |
| 20  | N     | 200 | VAL  | C-N     | 5.81  | 1.41        | 1.34     |
| 21  | S     | 364 | ARG  | NE-CZ   | 5.81  | 1.39        | 1.33     |
| 28  | I     | 233 | THR  | N-CA    | -5.81 | 1.39        | 1.46     |
| 2   | B     | 172 | THR  | CA-C    | -5.81 | 1.45        | 1.52     |
| 20  | N     | 950 | TYR  | N-CA    | 5.81  | 1.53        | 1.46     |
| 22  | P     | 120 | VAL  | N-CA    | -5.81 | 1.39        | 1.46     |
| 30  | L     | 338 | GLY  | C-N     | 5.81  | 1.41        | 1.33     |
| 17  | T     | 203 | LEU  | N-CA    | -5.81 | 1.39        | 1.46     |
| 26  | O     | 295 | GLU  | N-CA    | -5.81 | 1.39        | 1.46     |
| 27  | H     | 66  | LYS  | CA-CB   | 5.81  | 1.62        | 1.53     |
| 27  | H     | 371 | GLU  | C-N     | 5.81  | 1.41        | 1.33     |
| 4   | D     | 75  | VAL  | N-CA    | -5.80 | 1.39        | 1.46     |
| 16  | V     | 151 | VAL  | C-N     | 5.80  | 1.41        | 1.33     |
| 21  | S     | 368 | LEU  | C-N     | 5.80  | 1.41        | 1.33     |
| 21  | S     | 459 | MET  | C-N     | 5.80  | 1.39        | 1.33     |
| 26  | O     | 320 | VAL  | C-O     | -5.80 | 1.18        | 1.23     |
| 30  | L     | 147 | SER  | C-N     | 5.80  | 1.41        | 1.33     |
| 3   | C     | 120 | ALA  | CA-C    | -5.80 | 1.45        | 1.52     |
| 21  | S     | 371 | PHE  | C-N     | 5.80  | 1.41        | 1.33     |
| 3   | C     | 23  | TYR  | C-N     | 5.80  | 1.41        | 1.34     |
| 19  | Z     | 476 | THR  | N-CA    | 5.80  | 1.53        | 1.46     |
| 25  | U     | 187 | LEU  | N-CA    | -5.80 | 1.39        | 1.46     |
| 26  | O     | 142 | LEU  | CA-C    | -5.80 | 1.45        | 1.52     |
| 3   | C     | 68  | LEU  | N-CA    | -5.80 | 1.39        | 1.46     |
| 5   | E     | 220 | VAL  | N-CA    | -5.80 | 1.39        | 1.46     |
| 9   | 2     | 153 | LEU  | N-CA    | -5.80 | 1.39        | 1.46     |
| 19  | Z     | 532 | GLY  | N-CA    | 5.80  | 1.52        | 1.45     |
| 20  | N     | 855 | GLU  | C-N     | 5.80  | 1.41        | 1.33     |
| 32  | J     | 124 | HIS  | ND1-CE1 | 5.80  | 1.38        | 1.32     |
| 19  | Z     | 344 | VAL  | CA-C    | 5.80  | 1.57        | 1.52     |
| 20  | N     | 721 | HIS  | CA-C    | -5.80 | 1.45        | 1.52     |
| 24  | R     | 23  | ARG  | NE-CZ   | 5.80  | 1.39        | 1.33     |
| 26  | O     | 313 | LYS  | CA-CB   | 5.80  | 1.62        | 1.53     |
| 15  | W     | 60  | VAL  | N-CA    | -5.79 | 1.40        | 1.46     |
| 21  | S     | 290 | ARG  | CZ-NH2  | 5.79  | 1.41        | 1.33     |
| 9   | 2     | 47  | ALA  | CA-C    | -5.79 | 1.45        | 1.52     |
| 29  | K     | 175 | GLN  | CA-CB   | 5.79  | 1.62        | 1.53     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 7   | G     | 213 | GLU  | CA-C    | -5.79 | 1.45        | 1.52     |
| 20  | N     | 62  | LEU  | CB-CG   | 5.79  | 1.65        | 1.53     |
| 21  | S     | 485 | MET  | CA-C    | -5.79 | 1.45        | 1.52     |
| 24  | R     | 35  | THR  | N-CA    | -5.79 | 1.39        | 1.46     |
| 10  | 3     | 63  | VAL  | C-N     | 5.79  | 1.41        | 1.33     |
| 10  | 3     | 102 | PRO  | C-N     | 5.79  | 1.41        | 1.33     |
| 28  | I     | 247 | PHE  | CA-CB   | 5.79  | 1.61        | 1.53     |
| 8   | 1     | 58  | TYR  | CA-C    | -5.78 | 1.45        | 1.52     |
| 22  | P     | 2   | ALA  | CA-C    | -5.78 | 1.45        | 1.52     |
| 24  | R     | 66  | ASP  | CA-C    | -5.78 | 1.44        | 1.53     |
| 31  | M     | 257 | PRO  | CA-C    | -5.78 | 1.42        | 1.52     |
| 31  | M     | 438 | LEU  | C-N     | 5.78  | 1.41        | 1.33     |
| 20  | N     | 578 | LEU  | CA-C    | -5.78 | 1.45        | 1.52     |
| 31  | M     | 50  | LEU  | CA-C    | -5.78 | 1.45        | 1.52     |
| 3   | C     | 226 | ARG  | NE-CZ   | 5.78  | 1.39        | 1.33     |
| 27  | H     | 423 | PHE  | C-N     | 5.78  | 1.41        | 1.33     |
| 19  | Z     | 301 | HIS  | CD2-NE2 | 5.78  | 1.44        | 1.37     |
| 6   | F     | 46  | LEU  | CA-C    | 5.78  | 1.59        | 1.52     |
| 14  | 7     | 210 | ARG  | CZ-NH1  | 5.77  | 1.40        | 1.32     |
| 25  | U     | 163 | GLY  | C-N     | 5.77  | 1.40        | 1.33     |
| 30  | L     | 366 | MET  | CA-CB   | 5.77  | 1.62        | 1.53     |
| 32  | J     | 400 | SER  | C-N     | 5.77  | 1.41        | 1.33     |
| 16  | V     | 162 | LEU  | N-CA    | 5.77  | 1.53        | 1.46     |
| 19  | Z     | 161 | HIS  | CA-CB   | 5.77  | 1.62        | 1.53     |
| 21  | S     | 220 | LEU  | CA-C    | -5.77 | 1.45        | 1.52     |
| 21  | S     | 393 | ARG  | CD-NE   | 5.77  | 1.54        | 1.46     |
| 19  | Z     | 815 | HIS  | N-CA    | -5.77 | 1.39        | 1.46     |
| 21  | S     | 76  | ARG  | NE-CZ   | 5.77  | 1.39        | 1.33     |
| 21  | S     | 413 | ILE  | C-N     | 5.77  | 1.41        | 1.33     |
| 1   | A     | 55  | LYS  | CA-C    | -5.77 | 1.45        | 1.52     |
| 28  | I     | 180 | PRO  | N-CA    | -5.77 | 1.40        | 1.47     |
| 30  | L     | 227 | ARG  | CA-CB   | 5.77  | 1.62        | 1.53     |
| 16  | V     | 84  | VAL  | CA-C    | -5.77 | 1.45        | 1.52     |
| 17  | T     | 316 | ASN  | CA-C    | -5.77 | 1.45        | 1.52     |
| 28  | I     | 414 | VAL  | CA-C    | -5.77 | 1.45        | 1.52     |
| 20  | N     | 396 | ALA  | CA-CB   | 5.76  | 1.62        | 1.53     |
| 23  | Q     | 228 | ALA  | C-N     | 5.76  | 1.41        | 1.33     |
| 9   | 2     | 91  | THR  | CA-C    | -5.76 | 1.45        | 1.52     |
| 21  | S     | 449 | HIS  | CG-ND1  | 5.76  | 1.44        | 1.38     |
| 22  | P     | 24  | VAL  | C-O     | -5.76 | 1.16        | 1.24     |
| 2   | B     | 113 | ARG  | CZ-NH2  | 5.76  | 1.41        | 1.33     |
| 4   | D     | 135 | ILE  | N-CA    | -5.76 | 1.39        | 1.46     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 5   | E     | 184 | VAL  | C-N     | 5.76  | 1.41        | 1.33     |
| 22  | P     | 421 | PRO  | C-N     | 5.76  | 1.41        | 1.33     |
| 29  | K     | 135 | HIS  | ND1-CE1 | 5.76  | 1.38        | 1.32     |
| 29  | K     | 265 | ASP  | CA-C    | -5.76 | 1.45        | 1.52     |
| 9   | 2     | 217 | ASP  | CA-CB   | 5.76  | 1.61        | 1.53     |
| 10  | 3     | 44  | PRO  | N-CA    | -5.76 | 1.40        | 1.47     |
| 20  | N     | 51  | ASP  | CA-C    | -5.76 | 1.45        | 1.52     |
| 20  | N     | 851 | GLU  | CA-C    | 5.76  | 1.60        | 1.52     |
| 21  | S     | 489 | ALA  | N-CA    | -5.76 | 1.39        | 1.46     |
| 32  | J     | 180 | ILE  | N-CA    | -5.76 | 1.39        | 1.46     |
| 17  | T     | 114 | LYS  | N-CA    | -5.76 | 1.39        | 1.46     |
| 20  | N     | 395 | ARG  | C-O     | -5.76 | 1.17        | 1.24     |
| 5   | E     | 237 | VAL  | C-N     | 5.75  | 1.40        | 1.33     |
| 10  | 3     | 142 | CYS  | N-CA    | -5.75 | 1.38        | 1.46     |
| 23  | Q     | 189 | ALA  | N-CA    | -5.75 | 1.39        | 1.46     |
| 17  | T     | 207 | ARG  | NE-CZ   | 5.75  | 1.39        | 1.33     |
| 11  | 4     | 167 | LEU  | CA-CB   | 5.75  | 1.62        | 1.53     |
| 23  | Q     | 127 | GLN  | CA-C    | -5.75 | 1.45        | 1.52     |
| 23  | Q     | 211 | ASP  | C-N     | 5.75  | 1.41        | 1.33     |
| 32  | J     | 387 | VAL  | C-N     | 5.75  | 1.41        | 1.33     |
| 13  | 6     | 143 | GLU  | C-N     | 5.75  | 1.41        | 1.33     |
| 30  | L     | 44  | ARG  | CD-NE   | 5.75  | 1.54        | 1.46     |
| 23  | Q     | 142 | ARG  | CZ-NH2  | 5.75  | 1.41        | 1.33     |
| 30  | L     | 50  | LEU  | N-CA    | -5.75 | 1.39        | 1.46     |
| 31  | M     | 126 | VAL  | N-CA    | -5.75 | 1.39        | 1.46     |
| 1   | A     | 213 | SER  | C-N     | 5.75  | 1.41        | 1.33     |
| 7   | G     | 157 | VAL  | CA-C    | 5.75  | 1.59        | 1.52     |
| 21  | S     | 144 | ARG  | NE-CZ   | 5.75  | 1.39        | 1.33     |
| 19  | Z     | 485 | LEU  | N-CA    | -5.74 | 1.39        | 1.46     |
| 28  | I     | 285 | ASP  | CA-CB   | 5.74  | 1.61        | 1.53     |
| 3   | C     | 20  | GLN  | N-CA    | -5.74 | 1.39        | 1.46     |
| 5   | E     | 91  | LYS  | C-N     | 5.74  | 1.41        | 1.34     |
| 24  | R     | 364 | TRP  | N-CA    | -5.74 | 1.39        | 1.46     |
| 29  | K     | 279 | THR  | N-CA    | -5.74 | 1.39        | 1.46     |
| 30  | L     | 295 | ARG  | NE-CZ   | 5.74  | 1.39        | 1.33     |
| 2   | B     | 123 | GLN  | CA-C    | 5.74  | 1.60        | 1.52     |
| 7   | G     | 56  | SER  | CA-C    | -5.74 | 1.45        | 1.52     |
| 23  | Q     | 371 | ASP  | C-N     | 5.74  | 1.41        | 1.33     |
| 23  | Q     | 391 | PRO  | CA-CB   | -5.74 | 1.46        | 1.54     |
| 26  | O     | 91  | ASN  | CA-C    | -5.74 | 1.45        | 1.52     |
| 29  | K     | 284 | GLU  | CA-CB   | -5.74 | 1.44        | 1.53     |
| 14  | 7     | 223 | ARG  | CZ-NH2  | 5.74  | 1.41        | 1.33     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 23  | Q     | 229 | TYR  | CA-C   | -5.74 | 1.45        | 1.52     |
| 31  | M     | 87  | LYS  | C-N    | 5.74  | 1.41        | 1.33     |
| 2   | B     | 51  | LYS  | C-N    | 5.74  | 1.41        | 1.33     |
| 20  | N     | 471 | ASP  | CA-C   | -5.74 | 1.47        | 1.53     |
| 30  | L     | 304 | LEU  | C-N    | 5.74  | 1.42        | 1.33     |
| 7   | G     | 70  | VAL  | CA-C   | 5.73  | 1.59        | 1.52     |
| 15  | W     | 33  | VAL  | N-CA   | -5.73 | 1.39        | 1.46     |
| 20  | N     | 171 | ASN  | N-CA   | -5.73 | 1.38        | 1.45     |
| 21  | S     | 302 | ARG  | CA-C   | -5.73 | 1.45        | 1.52     |
| 22  | P     | 114 | GLU  | N-CA   | -5.73 | 1.39        | 1.46     |
| 32  | J     | 322 | GLU  | CA-C   | -5.73 | 1.45        | 1.52     |
| 13  | 6     | 64  | THR  | N-CA   | -5.73 | 1.38        | 1.46     |
| 15  | W     | 163 | LYS  | CA-CB  | 5.73  | 1.61        | 1.53     |
| 19  | Z     | 610 | GLN  | N-CA   | -5.73 | 1.39        | 1.46     |
| 21  | S     | 81  | ALA  | N-CA   | -5.73 | 1.38        | 1.45     |
| 28  | I     | 254 | GLU  | C-N    | 5.73  | 1.41        | 1.34     |
| 30  | L     | 22  | ALA  | CA-C   | -5.73 | 1.45        | 1.52     |
| 20  | N     | 392 | TRP  | C-N    | 5.73  | 1.41        | 1.33     |
| 16  | V     | 277 | LYS  | CA-CB  | 5.73  | 1.62        | 1.53     |
| 31  | M     | 107 | GLN  | C-O    | 5.73  | 1.31        | 1.24     |
| 23  | Q     | 298 | SER  | CA-C   | -5.73 | 1.45        | 1.52     |
| 23  | Q     | 410 | VAL  | CA-C   | -5.73 | 1.45        | 1.52     |
| 19  | Z     | 147 | SER  | CA-C   | -5.72 | 1.45        | 1.52     |
| 3   | C     | 194 | VAL  | N-CA   | -5.72 | 1.39        | 1.46     |
| 20  | N     | 490 | ARG  | CD-NE  | 5.72  | 1.54        | 1.46     |
| 32  | J     | 169 | VAL  | CA-C   | -5.72 | 1.45        | 1.52     |
| 22  | P     | 228 | ASN  | C-N    | 5.72  | 1.41        | 1.33     |
| 26  | O     | 77  | VAL  | C-N    | 5.72  | 1.41        | 1.33     |
| 28  | I     | 81  | ASN  | C-N    | 5.72  | 1.40        | 1.33     |
| 12  | 5     | 97  | ASN  | N-CA   | -5.72 | 1.40        | 1.46     |
| 20  | N     | 718 | ASN  | C-N    | 5.72  | 1.41        | 1.33     |
| 21  | S     | 176 | ARG  | NE-CZ  | 5.72  | 1.39        | 1.33     |
| 25  | U     | 114 | ARG  | CD-NE  | 5.72  | 1.54        | 1.46     |
| 30  | L     | 38  | GLY  | CA-C   | -5.72 | 1.45        | 1.52     |
| 5   | E     | 140 | ALA  | C-N    | 5.72  | 1.41        | 1.33     |
| 21  | S     | 165 | LEU  | CA-C   | -5.72 | 1.45        | 1.52     |
| 32  | J     | 203 | VAL  | CA-CB  | 5.72  | 1.61        | 1.54     |
| 11  | 4     | 93  | ARG  | CZ-NH2 | 5.71  | 1.40        | 1.33     |
| 30  | L     | 176 | VAL  | N-CA   | -5.71 | 1.39        | 1.46     |
| 2   | B     | 161 | THR  | CA-CB  | -5.71 | 1.43        | 1.53     |
| 19  | Z     | 257 | ARG  | NE-CZ  | 5.71  | 1.39        | 1.33     |
| 23  | Q     | 202 | CYS  | CA-CB  | 5.71  | 1.62        | 1.53     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 8   | 1     | 90  | ASP  | C-N     | 5.71  | 1.41        | 1.33     |
| 16  | V     | 61  | PHE  | CA-C    | -5.71 | 1.45        | 1.52     |
| 25  | U     | 82  | PHE  | CA-CB   | 5.71  | 1.62        | 1.53     |
| 1   | A     | 135 | GLY  | N-CA    | -5.71 | 1.37        | 1.45     |
| 25  | U     | 214 | LYS  | C-N     | 5.71  | 1.41        | 1.33     |
| 5   | E     | 227 | HIS  | CA-C    | -5.71 | 1.45        | 1.52     |
| 8   | 1     | 49  | ALA  | CA-C    | -5.71 | 1.45        | 1.52     |
| 13  | 6     | 127 | ARG  | NE-CZ   | 5.70  | 1.39        | 1.33     |
| 15  | W     | 127 | LEU  | N-CA    | 5.70  | 1.53        | 1.46     |
| 19  | Z     | 276 | GLU  | CA-C    | -5.70 | 1.45        | 1.52     |
| 22  | P     | 89  | LEU  | C-N     | 5.70  | 1.41        | 1.33     |
| 31  | M     | 255 | ALA  | N-CA    | -5.70 | 1.39        | 1.46     |
| 11  | 4     | 92  | LEU  | CA-CB   | 5.70  | 1.62        | 1.53     |
| 19  | Z     | 749 | ALA  | C-N     | 5.70  | 1.41        | 1.33     |
| 22  | P     | 28  | LEU  | C-N     | 5.70  | 1.41        | 1.33     |
| 25  | U     | 144 | VAL  | CA-C    | -5.70 | 1.45        | 1.52     |
| 17  | T     | 182 | LYS  | CA-CB   | 5.70  | 1.63        | 1.53     |
| 21  | S     | 325 | HIS  | C-N     | 5.70  | 1.41        | 1.33     |
| 28  | I     | 300 | GLY  | CA-C    | -5.70 | 1.45        | 1.52     |
| 9   | 2     | 91  | THR  | C-N     | 5.70  | 1.41        | 1.33     |
| 11  | 4     | 71  | ASN  | C-O     | -5.70 | 1.17        | 1.24     |
| 12  | 5     | 247 | SER  | CA-C    | -5.70 | 1.45        | 1.52     |
| 17  | T     | 152 | GLU  | C-O     | 5.70  | 1.30        | 1.24     |
| 23  | Q     | 289 | CYS  | CA-CB   | 5.70  | 1.62        | 1.53     |
| 28  | I     | 412 | MET  | CA-C    | -5.70 | 1.45        | 1.53     |
| 3   | C     | 105 | ILE  | CA-C    | 5.70  | 1.58        | 1.52     |
| 27  | H     | 357 | ILE  | CA-C    | -5.70 | 1.45        | 1.52     |
| 30  | L     | 145 | SER  | CA-C    | -5.70 | 1.45        | 1.52     |
| 26  | O     | 350 | LYS  | C-N     | 5.69  | 1.41        | 1.33     |
| 2   | B     | 143 | ARG  | CD-NE   | 5.69  | 1.54        | 1.46     |
| 1   | A     | 219 | VAL  | N-CA    | -5.69 | 1.39        | 1.46     |
| 3   | C     | 30  | HIS  | ND1-CE1 | 5.69  | 1.38        | 1.32     |
| 29  | K     | 184 | PRO  | CA-CB   | -5.69 | 1.45        | 1.53     |
| 30  | L     | 312 | LYS  | CA-C    | -5.69 | 1.45        | 1.53     |
| 5   | E     | 60  | GLU  | CA-C    | -5.69 | 1.46        | 1.52     |
| 12  | 5     | 145 | MET  | C-N     | 5.69  | 1.41        | 1.33     |
| 22  | P     | 115 | ILE  | N-CA    | -5.69 | 1.39        | 1.46     |
| 31  | M     | 291 | LEU  | C-N     | 5.69  | 1.41        | 1.33     |
| 8   | 1     | 66  | LYS  | CA-C    | -5.69 | 1.45        | 1.52     |
| 17  | T     | 270 | ILE  | C-N     | 5.68  | 1.41        | 1.33     |
| 20  | N     | 200 | VAL  | CA-CB   | 5.68  | 1.61        | 1.54     |
| 22  | P     | 83  | LEU  | N-CA    | 5.68  | 1.53        | 1.46     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 27  | H     | 43  | ARG  | CZ-NH2  | 5.68  | 1.40        | 1.33     |
| 27  | H     | 139 | ARG  | C-N     | 5.68  | 1.40        | 1.33     |
| 25  | U     | 218 | GLY  | C-N     | 5.68  | 1.41        | 1.33     |
| 13  | 6     | 101 | MET  | C-N     | 5.68  | 1.41        | 1.33     |
| 19  | Z     | 803 | PHE  | CA-CB   | 5.68  | 1.64        | 1.53     |
| 21  | S     | 439 | ARG  | CZ-NH1  | 5.68  | 1.40        | 1.32     |
| 31  | M     | 112 | ALA  | C-N     | 5.68  | 1.41        | 1.33     |
| 11  | 4     | 77  | PRO  | N-CA    | -5.68 | 1.40        | 1.47     |
| 20  | N     | 931 | HIS  | CA-C    | -5.68 | 1.45        | 1.52     |
| 1   | A     | 229 | ILE  | C-N     | 5.68  | 1.41        | 1.33     |
| 24  | R     | 118 | GLU  | CA-CB   | 5.68  | 1.62        | 1.53     |
| 25  | U     | 96  | HIS  | CA-C    | -5.68 | 1.45        | 1.52     |
| 32  | J     | 192 | PRO  | CA-C    | -5.67 | 1.47        | 1.53     |
| 11  | 4     | 163 | CYS  | C-N     | 5.67  | 1.41        | 1.33     |
| 19  | Z     | 358 | PHE  | C-N     | 5.67  | 1.40        | 1.33     |
| 21  | S     | 125 | ASP  | C-N     | 5.67  | 1.41        | 1.33     |
| 11  | 4     | 110 | HIS  | ND1-CE1 | 5.67  | 1.38        | 1.32     |
| 23  | Q     | 102 | ALA  | CA-C    | -5.67 | 1.45        | 1.53     |
| 30  | L     | 396 | SER  | N-CA    | -5.67 | 1.39        | 1.46     |
| 14  | 7     | 158 | GLY  | C-N     | 5.67  | 1.41        | 1.33     |
| 16  | V     | 132 | SER  | N-CA    | -5.67 | 1.39        | 1.46     |
| 27  | H     | 178 | GLY  | N-CA    | -5.67 | 1.38        | 1.45     |
| 30  | L     | 195 | THR  | N-CA    | -5.67 | 1.39        | 1.46     |
| 4   | D     | 173 | SER  | N-CA    | 5.67  | 1.53        | 1.46     |
| 25  | U     | 41  | GLY  | N-CA    | 5.67  | 1.50        | 1.45     |
| 31  | M     | 375 | LYS  | CA-CB   | 5.67  | 1.62        | 1.53     |
| 14  | 7     | 137 | THR  | CA-C    | -5.66 | 1.45        | 1.52     |
| 19  | Z     | 456 | ARG  | NE-CZ   | 5.66  | 1.39        | 1.33     |
| 28  | I     | 275 | GLU  | CA-CB   | 5.66  | 1.62        | 1.53     |
| 12  | 5     | 78  | ARG  | CZ-NH1  | 5.66  | 1.40        | 1.32     |
| 24  | R     | 174 | TRP  | NE1-CE2 | 5.66  | 1.43        | 1.37     |
| 31  | M     | 409 | ILE  | C-N     | 5.66  | 1.41        | 1.33     |
| 6   | F     | 24  | TYR  | CA-C    | -5.66 | 1.45        | 1.52     |
| 7   | G     | 87  | SER  | C-N     | 5.66  | 1.41        | 1.34     |
| 19  | Z     | 281 | ILE  | C-N     | 5.66  | 1.41        | 1.33     |
| 20  | N     | 478 | SER  | C-N     | 5.66  | 1.41        | 1.33     |
| 1   | A     | 183 | VAL  | C-N     | 5.66  | 1.41        | 1.33     |
| 12  | 5     | 102 | GLY  | CA-C    | -5.66 | 1.44        | 1.51     |
| 21  | S     | 494 | PRO  | N-CA    | -5.66 | 1.40        | 1.47     |
| 24  | R     | 241 | ILE  | C-O     | -5.66 | 1.18        | 1.24     |
| 26  | O     | 359 | ASP  | CA-C    | -5.66 | 1.45        | 1.52     |
| 30  | L     | 171 | GLU  | N-CA    | 5.66  | 1.53        | 1.46     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 32  | J     | 166 | GLU  | CA-CB   | 5.66  | 1.62        | 1.53     |
| 19  | Z     | 512 | MET  | CA-C    | -5.65 | 1.45        | 1.52     |
| 24  | R     | 46  | ARG  | CA-CB   | 5.65  | 1.62        | 1.53     |
| 2   | B     | 43  | GLY  | N-CA    | -5.65 | 1.39        | 1.45     |
| 20  | N     | 475 | HIS  | N-CA    | -5.65 | 1.39        | 1.46     |
| 23  | Q     | 112 | GLU  | CA-C    | -5.65 | 1.45        | 1.52     |
| 24  | R     | 249 | VAL  | CA-C    | -5.65 | 1.44        | 1.52     |
| 31  | M     | 203 | GLU  | C-O     | 5.65  | 1.30        | 1.24     |
| 20  | N     | 140 | ARG  | CD-NE   | 5.65  | 1.54        | 1.46     |
| 5   | E     | 37  | ALA  | CA-C    | -5.65 | 1.45        | 1.52     |
| 8   | 1     | 228 | PRO  | CA-CB   | 5.65  | 1.61        | 1.53     |
| 22  | P     | 252 | ASP  | N-CA    | -5.65 | 1.39        | 1.46     |
| 19  | Z     | 179 | ALA  | CA-C    | -5.65 | 1.46        | 1.52     |
| 29  | K     | 146 | GLU  | C-N     | 5.65  | 1.41        | 1.33     |
| 23  | Q     | 106 | GLU  | C-N     | 5.64  | 1.41        | 1.33     |
| 27  | H     | 84  | LYS  | CA-CB   | 5.64  | 1.62        | 1.53     |
| 31  | M     | 303 | LYS  | CA-C    | -5.64 | 1.45        | 1.53     |
| 6   | F     | 13  | TRP  | CA-CB   | 5.64  | 1.63        | 1.53     |
| 7   | G     | 28  | MET  | N-CA    | -5.64 | 1.39        | 1.46     |
| 20  | N     | 268 | LEU  | CA-CB   | -5.64 | 1.44        | 1.53     |
| 28  | I     | 427 | LEU  | CA-CB   | 5.64  | 1.62        | 1.53     |
| 27  | H     | 300 | LEU  | C-N     | 5.64  | 1.41        | 1.34     |
| 9   | 2     | 120 | VAL  | CA-CB   | -5.64 | 1.47        | 1.54     |
| 32  | J     | 20  | LEU  | N-CA    | 5.64  | 1.53        | 1.46     |
| 22  | P     | 5   | GLY  | CA-C    | 5.64  | 1.59        | 1.51     |
| 1   | A     | 104 | LYS  | C-N     | 5.64  | 1.41        | 1.33     |
| 2   | B     | 177 | ARG  | NE-CZ   | 5.64  | 1.39        | 1.33     |
| 5   | E     | 135 | ARG  | CZ-NH1  | 5.64  | 1.40        | 1.32     |
| 23  | Q     | 73  | VAL  | C-N     | 5.64  | 1.42        | 1.33     |
| 2   | B     | 178 | TYR  | C-N     | 5.63  | 1.41        | 1.33     |
| 3   | C     | 79  | ILE  | CA-C    | -5.63 | 1.46        | 1.52     |
| 29  | K     | 144 | PRO  | CA-C    | 5.63  | 1.57        | 1.52     |
| 16  | V     | 276 | GLY  | C-N     | 5.63  | 1.41        | 1.33     |
| 19  | Z     | 569 | LYS  | CA-CB   | 5.63  | 1.62        | 1.53     |
| 28  | I     | 111 | THR  | N-CA    | -5.63 | 1.39        | 1.46     |
| 20  | N     | 340 | GLN  | N-CA    | -5.63 | 1.39        | 1.46     |
| 27  | H     | 377 | CYS  | CA-CB   | 5.63  | 1.63        | 1.53     |
| 8   | 1     | 147 | VAL  | N-CA    | -5.63 | 1.41        | 1.46     |
| 9   | 2     | 139 | ALA  | N-CA    | -5.63 | 1.39        | 1.46     |
| 13  | 6     | 215 | TYR  | N-CA    | -5.63 | 1.39        | 1.46     |
| 14  | 7     | 235 | THR  | N-CA    | -5.63 | 1.39        | 1.46     |
| 29  | K     | 133 | HIS  | CD2-NE2 | 5.63  | 1.44        | 1.37     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 20  | N     | 514 | LEU  | C-N    | 5.63  | 1.41        | 1.33     |
| 32  | J     | 180 | ILE  | C-N    | 5.63  | 1.41        | 1.33     |
| 16  | V     | 54  | MET  | C-N    | 5.62  | 1.39        | 1.33     |
| 19  | Z     | 731 | MET  | N-CA   | -5.62 | 1.39        | 1.46     |
| 31  | M     | 402 | VAL  | N-CA   | -5.62 | 1.39        | 1.46     |
| 17  | T     | 137 | THR  | C-N    | 5.62  | 1.41        | 1.34     |
| 26  | O     | 2   | LYS  | C-N    | 5.62  | 1.41        | 1.33     |
| 9   | 2     | 143 | LEU  | CA-C   | -5.62 | 1.45        | 1.53     |
| 24  | R     | 116 | ASP  | CA-C   | -5.62 | 1.45        | 1.52     |
| 30  | L     | 284 | LEU  | CA-CB  | 5.62  | 1.60        | 1.53     |
| 32  | J     | 372 | ARG  | C-N    | 5.62  | 1.41        | 1.34     |
| 29  | K     | 242 | GLU  | C-N    | 5.62  | 1.41        | 1.33     |
| 20  | N     | 770 | TRP  | CA-C   | -5.62 | 1.45        | 1.52     |
| 27  | H     | 428 | ARG  | C-N    | 5.62  | 1.40        | 1.33     |
| 19  | Z     | 746 | ARG  | CZ-NH1 | 5.62  | 1.40        | 1.32     |
| 29  | K     | 392 | TYR  | CA-C   | -5.62 | 1.45        | 1.52     |
| 9   | 2     | 49  | VAL  | C-N    | 5.61  | 1.41        | 1.33     |
| 20  | N     | 699 | THR  | CA-C   | -5.61 | 1.45        | 1.52     |
| 26  | O     | 345 | GLN  | N-CA   | -5.61 | 1.39        | 1.46     |
| 26  | O     | 363 | MET  | N-CA   | -5.61 | 1.39        | 1.46     |
| 31  | M     | 412 | ARG  | N-CA   | 5.61  | 1.53        | 1.46     |
| 32  | J     | 269 | VAL  | CA-C   | -5.61 | 1.45        | 1.52     |
| 16  | V     | 198 | ARG  | NE-CZ  | 5.61  | 1.39        | 1.33     |
| 20  | N     | 128 | GLN  | N-CA   | -5.61 | 1.39        | 1.46     |
| 11  | 4     | 161 | ARG  | CD-NE  | 5.61  | 1.54        | 1.46     |
| 19  | Z     | 480 | GLY  | N-CA   | -5.61 | 1.39        | 1.45     |
| 29  | K     | 275 | PHE  | C-N    | 5.61  | 1.41        | 1.33     |
| 31  | M     | 37  | LEU  | C-N    | 5.61  | 1.41        | 1.33     |
| 32  | J     | 117 | ARG  | NE-CZ  | 5.61  | 1.39        | 1.33     |
| 19  | Z     | 30  | GLY  | C-N    | 5.61  | 1.41        | 1.33     |
| 27  | H     | 214 | LEU  | C-N    | 5.61  | 1.40        | 1.33     |
| 19  | Z     | 756 | PRO  | C-N    | 5.61  | 1.41        | 1.33     |
| 22  | P     | 445 | LEU  | N-CA   | -5.61 | 1.39        | 1.46     |
| 12  | 5     | 72  | ILE  | C-N    | 5.61  | 1.40        | 1.33     |
| 19  | Z     | 591 | ALA  | N-CA   | -5.61 | 1.39        | 1.46     |
| 21  | S     | 306 | THR  | C-N    | 5.61  | 1.41        | 1.33     |
| 29  | K     | 310 | ALA  | CA-C   | -5.61 | 1.45        | 1.52     |
| 6   | F     | 160 | SER  | N-CA   | -5.60 | 1.39        | 1.46     |
| 10  | 3     | 197 | THR  | N-CA   | -5.60 | 1.39        | 1.46     |
| 24  | R     | 279 | GLU  | CA-CB  | 5.60  | 1.62        | 1.53     |
| 22  | P     | 77  | ALA  | CA-C   | -5.60 | 1.45        | 1.52     |
| 30  | L     | 93  | TYR  | C-N    | 5.60  | 1.40        | 1.33     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 26  | O     | 291 | LEU  | C-N     | 5.60  | 1.41        | 1.33     |
| 28  | I     | 120 | HIS  | ND1-CE1 | 5.60  | 1.38        | 1.32     |
| 9   | 2     | 225 | LYS  | CA-C    | -5.60 | 1.48        | 1.52     |
| 12  | 5     | 179 | ARG  | C-N     | 5.60  | 1.40        | 1.33     |
| 26  | O     | 35  | HIS  | N-CA    | -5.60 | 1.39        | 1.46     |
| 29  | K     | 310 | ALA  | N-CA    | -5.60 | 1.38        | 1.45     |
| 14  | 7     | 125 | HIS  | ND1-CE1 | 5.60  | 1.38        | 1.32     |
| 17  | T     | 229 | ILE  | CA-C    | 5.60  | 1.60        | 1.52     |
| 22  | P     | 92  | LYS  | N-CA    | -5.60 | 1.39        | 1.46     |
| 23  | Q     | 168 | GLU  | N-CA    | -5.60 | 1.39        | 1.46     |
| 32  | J     | 229 | ARG  | CD-NE   | 5.60  | 1.54        | 1.46     |
| 7   | G     | 94  | GLU  | CA-C    | -5.59 | 1.45        | 1.52     |
| 20  | N     | 647 | HIS  | CB-CG   | 5.59  | 1.57        | 1.50     |
| 24  | R     | 191 | ILE  | CB-CG1  | 5.59  | 1.64        | 1.53     |
| 27  | H     | 336 | ARG  | CZ-NH1  | 5.59  | 1.40        | 1.32     |
| 30  | L     | 245 | PHE  | C-N     | 5.59  | 1.41        | 1.33     |
| 11  | 4     | 134 | TYR  | C-N     | 5.59  | 1.40        | 1.33     |
| 19  | Z     | 496 | ASP  | N-CA    | 5.59  | 1.53        | 1.46     |
| 21  | S     | 310 | ARG  | N-CA    | -5.59 | 1.39        | 1.46     |
| 19  | Z     | 143 | ARG  | CA-CB   | 5.59  | 1.62        | 1.53     |
| 20  | N     | 229 | VAL  | N-CA    | -5.59 | 1.39        | 1.46     |
| 20  | N     | 240 | ASP  | C-N     | 5.59  | 1.40        | 1.33     |
| 21  | S     | 454 | VAL  | C-N     | 5.59  | 1.41        | 1.33     |
| 23  | Q     | 274 | LYS  | C-N     | 5.59  | 1.42        | 1.33     |
| 27  | H     | 188 | ARG  | CD-NE   | 5.59  | 1.54        | 1.46     |
| 32  | J     | 146 | SER  | N-CA    | -5.59 | 1.38        | 1.46     |
| 20  | N     | 470 | ASN  | N-CA    | -5.59 | 1.39        | 1.46     |
| 20  | N     | 810 | THR  | C-N     | 5.59  | 1.41        | 1.33     |
| 32  | J     | 276 | LEU  | CA-C    | -5.59 | 1.45        | 1.52     |
| 15  | W     | 104 | ASN  | C-N     | 5.59  | 1.41        | 1.33     |
| 17  | T     | 349 | LEU  | CA-C    | 5.59  | 1.60        | 1.52     |
| 22  | P     | 185 | PHE  | CA-C    | -5.59 | 1.45        | 1.52     |
| 20  | N     | 361 | ARG  | CZ-NH1  | 5.58  | 1.40        | 1.32     |
| 8   | 1     | 113 | ALA  | CA-C    | -5.58 | 1.45        | 1.52     |
| 19  | Z     | 532 | GLY  | CA-C    | -5.58 | 1.45        | 1.52     |
| 24  | R     | 143 | TYR  | CA-C    | 5.58  | 1.60        | 1.52     |
| 26  | O     | 32  | LYS  | CA-C    | -5.58 | 1.45        | 1.52     |
| 32  | J     | 313 | ARG  | NE-CZ   | 5.58  | 1.39        | 1.33     |
| 5   | E     | 232 | GLU  | CA-C    | -5.58 | 1.45        | 1.52     |
| 14  | 7     | 56  | LEU  | CA-CB   | 5.58  | 1.63        | 1.53     |
| 19  | Z     | 815 | HIS  | C-O     | -5.58 | 1.17        | 1.24     |
| 10  | 3     | 80  | ARG  | CD-NE   | 5.58  | 1.54        | 1.46     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 32  | J     | 78  | ARG  | NE-CZ   | 5.58  | 1.39        | 1.33     |
| 32  | J     | 292 | ILE  | N-CA    | -5.58 | 1.39        | 1.46     |
| 1   | A     | 31  | ALA  | N-CA    | -5.58 | 1.39        | 1.46     |
| 11  | 4     | 54  | VAL  | CA-CB   | -5.58 | 1.46        | 1.54     |
| 19  | Z     | 618 | GLU  | CA-C    | -5.58 | 1.45        | 1.52     |
| 20  | N     | 758 | PRO  | CA-C    | 5.58  | 1.60        | 1.52     |
| 21  | S     | 296 | LEU  | N-CA    | -5.58 | 1.39        | 1.46     |
| 22  | P     | 288 | HIS  | ND1-CE1 | 5.58  | 1.38        | 1.32     |
| 24  | R     | 94  | ASN  | CA-CB   | 5.58  | 1.61        | 1.53     |
| 28  | I     | 196 | GLU  | CA-CB   | 5.58  | 1.61        | 1.53     |
| 29  | K     | 414 | HIS  | CE1-NE2 | 5.58  | 1.38        | 1.32     |
| 32  | J     | 324 | ALA  | C-N     | 5.58  | 1.41        | 1.34     |
| 3   | C     | 247 | ALA  | C-N     | 5.57  | 1.41        | 1.33     |
| 6   | F     | 126 | ARG  | CA-C    | -5.57 | 1.46        | 1.53     |
| 22  | P     | 159 | VAL  | N-CA    | -5.57 | 1.40        | 1.46     |
| 25  | U     | 257 | MET  | C-N     | 5.57  | 1.41        | 1.33     |
| 12  | 5     | 228 | TYR  | N-CA    | -5.57 | 1.39        | 1.46     |
| 18  | Y     | 63  | HIS  | CG-ND1  | 5.57  | 1.44        | 1.38     |
| 26  | O     | 292 | THR  | N-CA    | -5.57 | 1.39        | 1.45     |
| 16  | V     | 264 | LYS  | N-CA    | -5.57 | 1.39        | 1.45     |
| 17  | T     | 313 | LEU  | CA-C    | -5.57 | 1.45        | 1.52     |
| 24  | R     | 266 | CYS  | CA-CB   | 5.57  | 1.61        | 1.53     |
| 26  | O     | 104 | VAL  | CA-CB   | 5.57  | 1.62        | 1.54     |
| 30  | L     | 28  | LYS  | N-CA    | -5.57 | 1.39        | 1.46     |
| 3   | C     | 17  | ARG  | CD-NE   | 5.57  | 1.54        | 1.46     |
| 20  | N     | 812 | ALA  | N-CA    | -5.57 | 1.39        | 1.46     |
| 22  | P     | 305 | LEU  | CA-C    | 5.57  | 1.59        | 1.52     |
| 23  | Q     | 223 | LYS  | C-N     | 5.57  | 1.41        | 1.33     |
| 27  | H     | 372 | LEU  | CB-CG   | 5.57  | 1.64        | 1.53     |
| 32  | J     | 365 | GLU  | C-N     | 5.57  | 1.41        | 1.33     |
| 5   | E     | 158 | PRO  | CA-C    | -5.57 | 1.43        | 1.52     |
| 23  | Q     | 246 | LYS  | N-CA    | -5.57 | 1.39        | 1.46     |
| 25  | U     | 283 | ARG  | C-N     | 5.57  | 1.41        | 1.33     |
| 6   | F     | 226 | ASP  | N-CA    | -5.56 | 1.38        | 1.46     |
| 5   | E     | 185 | TYR  | C-N     | 5.56  | 1.42        | 1.33     |
| 20  | N     | 885 | MET  | N-CA    | -5.56 | 1.40        | 1.45     |
| 22  | P     | 293 | ASP  | C-N     | 5.56  | 1.41        | 1.33     |
| 24  | R     | 102 | ASP  | CA-CB   | 5.56  | 1.61        | 1.53     |
| 26  | O     | 330 | ARG  | CZ-NH1  | 5.56  | 1.40        | 1.32     |
| 26  | O     | 339 | ARG  | N-CA    | -5.56 | 1.39        | 1.46     |
| 32  | J     | 5   | GLY  | CA-C    | -5.56 | 1.44        | 1.51     |
| 17  | T     | 213 | THR  | CB-OG1  | -5.56 | 1.34        | 1.43     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 23  | Q     | 14  | SER  | CA-C    | -5.56 | 1.45        | 1.52     |
| 29  | K     | 178 | ARG  | CD-NE   | 5.56  | 1.54        | 1.46     |
| 31  | M     | 372 | HIS  | ND1-CE1 | 5.56  | 1.38        | 1.32     |
| 32  | J     | 295 | THR  | N-CA    | -5.56 | 1.38        | 1.45     |
| 6   | F     | 101 | ARG  | CD-NE   | 5.56  | 1.54        | 1.46     |
| 16  | V     | 271 | ALA  | C-N     | 5.56  | 1.41        | 1.33     |
| 21  | S     | 494 | PRO  | C-N     | 5.56  | 1.41        | 1.33     |
| 22  | P     | 403 | PHE  | CA-C    | -5.56 | 1.45        | 1.52     |
| 24  | R     | 281 | GLU  | CA-CB   | 5.56  | 1.62        | 1.53     |
| 6   | F     | 69  | HIS  | CE1-NE2 | 5.55  | 1.38        | 1.32     |
| 25  | U     | 251 | LEU  | CA-CB   | 5.55  | 1.61        | 1.53     |
| 24  | R     | 379 | ARG  | C-N     | 5.55  | 1.41        | 1.33     |
| 30  | L     | 121 | ILE  | C-O     | -5.55 | 1.18        | 1.24     |
| 14  | 7     | 257 | HIS  | C-N     | 5.55  | 1.42        | 1.33     |
| 19  | Z     | 715 | HIS  | ND1-CE1 | 5.55  | 1.38        | 1.32     |
| 20  | N     | 642 | GLU  | C-N     | 5.55  | 1.41        | 1.33     |
| 5   | E     | 69  | GLU  | CA-C    | -5.55 | 1.46        | 1.52     |
| 10  | 3     | 157 | ASN  | CA-C    | -5.55 | 1.45        | 1.52     |
| 20  | N     | 523 | SER  | CA-C    | -5.55 | 1.45        | 1.52     |
| 22  | P     | 191 | ARG  | NE-CZ   | 5.55  | 1.39        | 1.33     |
| 8   | 1     | 62  | ARG  | CD-NE   | 5.55  | 1.54        | 1.46     |
| 8   | 1     | 89  | ALA  | C-O     | 5.55  | 1.30        | 1.24     |
| 19  | Z     | 6   | ARG  | NE-CZ   | 5.55  | 1.39        | 1.33     |
| 19  | Z     | 198 | HIS  | N-CA    | -5.55 | 1.39        | 1.46     |
| 19  | Z     | 879 | ARG  | CZ-NH1  | 5.54  | 1.40        | 1.32     |
| 23  | Q     | 218 | HIS  | ND1-CE1 | 5.54  | 1.38        | 1.32     |
| 13  | 6     | 85  | HIS  | C-N     | 5.54  | 1.38        | 1.33     |
| 20  | N     | 543 | LYS  | C-N     | 5.54  | 1.40        | 1.33     |
| 23  | Q     | 64  | ALA  | CA-C    | -5.54 | 1.45        | 1.52     |
| 25  | U     | 213 | GLU  | N-CA    | -5.54 | 1.39        | 1.46     |
| 32  | J     | 25  | LEU  | CA-C    | -5.54 | 1.45        | 1.52     |
| 21  | S     | 332 | GLU  | CA-C    | 5.54  | 1.59        | 1.52     |
| 20  | N     | 566 | LEU  | CA-C    | -5.54 | 1.45        | 1.52     |
| 21  | S     | 455 | GLN  | N-CA    | -5.54 | 1.39        | 1.46     |
| 23  | Q     | 142 | ARG  | NE-CZ   | 5.54  | 1.39        | 1.33     |
| 31  | M     | 249 | ALA  | CA-CB   | 5.54  | 1.63        | 1.53     |
| 8   | 1     | 46  | VAL  | C-N     | 5.54  | 1.41        | 1.33     |
| 32  | J     | 180 | ILE  | CA-CB   | -5.54 | 1.48        | 1.54     |
| 25  | U     | 183 | THR  | C-N     | 5.54  | 1.41        | 1.33     |
| 15  | W     | 49  | VAL  | N-CA    | -5.53 | 1.39        | 1.46     |
| 17  | T     | 193 | GLN  | C-O     | -5.53 | 1.17        | 1.24     |
| 20  | N     | 174 | PRO  | CA-CB   | -5.53 | 1.47        | 1.54     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 22  | P     | 356 | ASN  | CA-CB  | 5.53  | 1.62        | 1.53     |
| 29  | K     | 298 | GLY  | C-N    | 5.53  | 1.41        | 1.33     |
| 14  | 7     | 230 | ARG  | CZ-NH2 | 5.53  | 1.40        | 1.33     |
| 20  | N     | 269 | ARG  | NE-CZ  | 5.53  | 1.39        | 1.33     |
| 12  | 5     | 135 | VAL  | CA-C   | -5.53 | 1.45        | 1.52     |
| 12  | 5     | 228 | TYR  | CA-CB  | 5.53  | 1.61        | 1.53     |
| 13  | 6     | 139 | GLY  | C-O    | 5.53  | 1.29        | 1.23     |
| 22  | P     | 285 | ASP  | CA-CB  | 5.53  | 1.61        | 1.53     |
| 26  | O     | 178 | ARG  | CZ-NH2 | 5.53  | 1.40        | 1.33     |
| 30  | L     | 243 | ILE  | C-N    | 5.53  | 1.40        | 1.33     |
| 5   | E     | 113 | THR  | N-CA   | 5.53  | 1.53        | 1.46     |
| 21  | S     | 84  | GLY  | C-N    | 5.53  | 1.41        | 1.33     |
| 32  | J     | 72  | TYR  | CA-CB  | 5.53  | 1.61        | 1.53     |
| 4   | D     | 31  | THR  | CA-C   | -5.53 | 1.45        | 1.52     |
| 4   | D     | 60  | ARG  | CZ-NH2 | 5.53  | 1.40        | 1.33     |
| 4   | D     | 113 | ILE  | N-CA   | -5.53 | 1.39        | 1.46     |
| 6   | F     | 30  | LYS  | N-CA   | -5.53 | 1.39        | 1.46     |
| 17  | T     | 181 | TYR  | C-N    | 5.53  | 1.41        | 1.33     |
| 18  | Y     | 61  | GLU  | N-CA   | -5.53 | 1.39        | 1.46     |
| 24  | R     | 177 | ARG  | CA-C   | -5.53 | 1.45        | 1.52     |
| 3   | C     | 235 | GLN  | CA-C   | 5.53  | 1.59        | 1.52     |
| 16  | V     | 214 | GLN  | CA-C   | -5.53 | 1.45        | 1.52     |
| 20  | N     | 164 | GLU  | N-CA   | -5.53 | 1.39        | 1.46     |
| 32  | J     | 346 | LYS  | CA-CB  | 5.53  | 1.61        | 1.53     |
| 24  | R     | 69  | LEU  | N-CA   | -5.52 | 1.39        | 1.46     |
| 31  | M     | 383 | ASN  | CA-CB  | 5.52  | 1.61        | 1.53     |
| 19  | Z     | 495 | GLU  | CA-C   | 5.52  | 1.59        | 1.52     |
| 19  | Z     | 794 | ALA  | N-CA   | -5.52 | 1.39        | 1.46     |
| 23  | Q     | 33  | ARG  | NE-CZ  | 5.52  | 1.39        | 1.33     |
| 24  | R     | 14  | ASN  | CA-CB  | 5.52  | 1.61        | 1.53     |
| 24  | R     | 55  | GLU  | C-N    | 5.52  | 1.40        | 1.33     |
| 4   | D     | 192 | LEU  | C-N    | 5.52  | 1.41        | 1.33     |
| 6   | F     | 122 | ARG  | CD-NE  | 5.52  | 1.53        | 1.46     |
| 9   | 2     | 132 | ARG  | NE-CZ  | 5.52  | 1.39        | 1.33     |
| 19  | Z     | 79  | ARG  | NE-CZ  | 5.52  | 1.39        | 1.33     |
| 19  | Z     | 335 | ARG  | CD-NE  | 5.52  | 1.53        | 1.46     |
| 20  | N     | 490 | ARG  | CZ-NH1 | 5.52  | 1.40        | 1.32     |
| 21  | S     | 276 | ALA  | C-N    | 5.52  | 1.40        | 1.33     |
| 26  | O     | 52  | GLN  | CD-NE2 | 5.52  | 1.44        | 1.33     |
| 27  | H     | 382 | GLY  | C-N    | -5.52 | 1.26        | 1.33     |
| 4   | D     | 38  | ARG  | CD-NE  | 5.52  | 1.53        | 1.46     |
| 30  | L     | 157 | ARG  | N-CA   | -5.52 | 1.39        | 1.46     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 19  | Z     | 233 | LEU  | C-N     | 5.51  | 1.41        | 1.33     |
| 24  | R     | 145 | LEU  | CB-CG   | 5.51  | 1.64        | 1.53     |
| 24  | R     | 222 | TYR  | C-O     | -5.51 | 1.17        | 1.24     |
| 30  | L     | 26  | TYR  | CB-CG   | 5.51  | 1.63        | 1.51     |
| 31  | M     | 351 | LEU  | CA-CB   | 5.51  | 1.62        | 1.53     |
| 3   | C     | 34  | CYS  | C-N     | 5.51  | 1.41        | 1.33     |
| 16  | V     | 40  | LYS  | CA-C    | -5.51 | 1.45        | 1.52     |
| 17  | T     | 117 | GLU  | N-CA    | -5.51 | 1.39        | 1.46     |
| 19  | Z     | 360 | GLY  | N-CA    | -5.51 | 1.37        | 1.45     |
| 20  | N     | 450 | HIS  | CA-C    | -5.51 | 1.45        | 1.52     |
| 21  | S     | 398 | VAL  | CA-CB   | -5.51 | 1.48        | 1.54     |
| 31  | M     | 30  | ASP  | CA-CB   | 5.51  | 1.62        | 1.53     |
| 19  | Z     | 84  | SER  | CA-C    | -5.51 | 1.44        | 1.52     |
| 5   | E     | 98  | ASN  | CA-CB   | 5.50  | 1.61        | 1.53     |
| 22  | P     | 236 | HIS  | ND1-CE1 | 5.50  | 1.38        | 1.32     |
| 29  | K     | 175 | GLN  | N-CA    | 5.50  | 1.53        | 1.46     |
| 23  | Q     | 224 | ASP  | CA-C    | -5.50 | 1.46        | 1.53     |
| 12  | 5     | 223 | THR  | CA-C    | -5.50 | 1.45        | 1.52     |
| 17  | T     | 294 | LEU  | C-N     | 5.50  | 1.40        | 1.33     |
| 26  | O     | 337 | GLN  | N-CA    | -5.50 | 1.38        | 1.45     |
| 20  | N     | 216 | VAL  | N-CA    | -5.50 | 1.40        | 1.46     |
| 20  | N     | 271 | VAL  | N-CA    | -5.50 | 1.40        | 1.46     |
| 22  | P     | 102 | ALA  | C-N     | 5.50  | 1.41        | 1.33     |
| 24  | R     | 176 | ARG  | N-CA    | -5.50 | 1.39        | 1.46     |
| 25  | U     | 109 | ASN  | CA-C    | 5.50  | 1.59        | 1.52     |
| 26  | O     | 85  | ARG  | NE-CZ   | 5.50  | 1.39        | 1.33     |
| 3   | C     | 220 | ASN  | CA-CB   | 5.50  | 1.62        | 1.53     |
| 7   | G     | 228 | VAL  | N-CA    | -5.50 | 1.39        | 1.46     |
| 23  | Q     | 132 | ARG  | N-CA    | -5.50 | 1.39        | 1.46     |
| 31  | M     | 289 | ASP  | CA-CB   | 5.50  | 1.59        | 1.53     |
| 31  | M     | 389 | ARG  | CZ-NH1  | 5.50  | 1.40        | 1.32     |
| 28  | I     | 189 | GLY  | N-CA    | -5.50 | 1.37        | 1.45     |
| 28  | I     | 417 | GLU  | C-N     | 5.50  | 1.41        | 1.33     |
| 29  | K     | 194 | ILE  | CA-CB   | 5.50  | 1.61        | 1.54     |
| 7   | G     | 211 | GLU  | CA-C    | -5.49 | 1.46        | 1.52     |
| 15  | W     | 54  | LEU  | C-N     | 5.49  | 1.40        | 1.33     |
| 20  | N     | 57  | ARG  | CZ-NH2  | 5.49  | 1.40        | 1.33     |
| 30  | L     | 295 | ARG  | CZ-NH2  | 5.49  | 1.40        | 1.33     |
| 3   | C     | 249 | ARG  | CD-NE   | 5.49  | 1.53        | 1.46     |
| 11  | 4     | 93  | ARG  | N-CA    | 5.49  | 1.53        | 1.46     |
| 15  | W     | 27  | GLN  | CA-CB   | 5.49  | 1.62        | 1.53     |
| 24  | R     | 295 | TYR  | C-N     | 5.49  | 1.40        | 1.33     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 15  | W     | 135 | LYS  | CA-C    | -5.49 | 1.45        | 1.52     |
| 28  | I     | 332 | ASN  | C-N     | 5.49  | 1.40        | 1.33     |
| 1   | A     | 88  | ARG  | NE-CZ   | 5.49  | 1.39        | 1.33     |
| 1   | A     | 154 | CYS  | CA-C    | -5.49 | 1.46        | 1.52     |
| 7   | G     | 48  | PHE  | CA-C    | -5.49 | 1.46        | 1.52     |
| 21  | S     | 224 | ARG  | CA-C    | -5.49 | 1.45        | 1.52     |
| 22  | P     | 183 | VAL  | CA-C    | -5.49 | 1.45        | 1.52     |
| 26  | O     | 207 | GLY  | CA-C    | -5.49 | 1.47        | 1.52     |
| 4   | D     | 24  | GLU  | C-N     | 5.49  | 1.41        | 1.34     |
| 12  | 5     | 118 | LEU  | N-CA    | 5.49  | 1.52        | 1.46     |
| 19  | Z     | 51  | GLN  | C-N     | 5.49  | 1.41        | 1.33     |
| 19  | Z     | 497 | VAL  | C-N     | 5.49  | 1.41        | 1.33     |
| 15  | W     | 72  | LEU  | N-CA    | -5.48 | 1.39        | 1.46     |
| 23  | Q     | 293 | ALA  | C-N     | 5.48  | 1.41        | 1.33     |
| 11  | 4     | 25  | ILE  | CA-C    | -5.48 | 1.46        | 1.52     |
| 15  | W     | 130 | ARG  | NE-CZ   | 5.48  | 1.39        | 1.33     |
| 21  | S     | 256 | HIS  | ND1-CE1 | 5.48  | 1.38        | 1.32     |
| 22  | P     | 263 | TRP  | CA-C    | -5.48 | 1.45        | 1.52     |
| 31  | M     | 351 | LEU  | C-N     | 5.48  | 1.41        | 1.33     |
| 1   | A     | 94  | ALA  | C-N     | 5.48  | 1.41        | 1.33     |
| 19  | Z     | 894 | LEU  | CA-C    | -5.48 | 1.45        | 1.52     |
| 27  | H     | 360 | ARG  | CZ-NH2  | 5.48  | 1.40        | 1.33     |
| 1   | A     | 128 | ASN  | CB-CG   | 5.48  | 1.65        | 1.52     |
| 19  | Z     | 687 | ARG  | CA-C    | -5.48 | 1.45        | 1.52     |
| 13  | 6     | 160 | ASP  | CA-CB   | 5.48  | 1.63        | 1.53     |
| 14  | 7     | 95  | LEU  | C-N     | 5.48  | 1.40        | 1.32     |
| 26  | O     | 195 | GLU  | CA-CB   | 5.48  | 1.61        | 1.53     |
| 27  | H     | 165 | GLN  | CA-CB   | 5.48  | 1.62        | 1.53     |
| 30  | L     | 134 | TYR  | CA-CB   | 5.48  | 1.61        | 1.53     |
| 3   | C     | 23  | TYR  | CA-CB   | 5.48  | 1.62        | 1.53     |
| 13  | 6     | 159 | ARG  | CD-NE   | 5.47  | 1.53        | 1.46     |
| 15  | W     | 138 | VAL  | C-O     | -5.47 | 1.18        | 1.24     |
| 19  | Z     | 342 | PRO  | C-N     | 5.47  | 1.41        | 1.33     |
| 20  | N     | 28  | ASN  | C-O     | -5.47 | 1.17        | 1.24     |
| 20  | N     | 895 | THR  | CA-C    | 5.47  | 1.59        | 1.52     |
| 2   | B     | 172 | THR  | C-N     | 5.47  | 1.41        | 1.33     |
| 8   | 1     | 68  | THR  | CA-C    | -5.47 | 1.46        | 1.52     |
| 20  | N     | 751 | ARG  | CA-C    | 5.47  | 1.60        | 1.52     |
| 24  | R     | 376 | LEU  | CA-CB   | 5.47  | 1.61        | 1.53     |
| 26  | O     | 20  | ALA  | N-CA    | -5.47 | 1.39        | 1.46     |
| 26  | O     | 241 | ASN  | C-N     | 5.47  | 1.41        | 1.33     |
| 13  | 6     | 180 | VAL  | N-CA    | -5.47 | 1.40        | 1.46     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 17  | T     | 159 | ILE  | CA-C   | -5.47 | 1.45        | 1.52     |
| 13  | 6     | 204 | ASP  | CA-C   | -5.47 | 1.45        | 1.52     |
| 17  | T     | 198 | ASN  | N-CA   | -5.47 | 1.39        | 1.46     |
| 24  | R     | 155 | ASP  | N-CA   | -5.47 | 1.39        | 1.46     |
| 28  | I     | 382 | ASP  | C-N    | 5.47  | 1.41        | 1.33     |
| 12  | 5     | 208 | VAL  | CA-C   | -5.47 | 1.46        | 1.52     |
| 17  | T     | 235 | LEU  | CA-CB  | 5.47  | 1.61        | 1.53     |
| 22  | P     | 383 | ASP  | N-CA   | -5.47 | 1.38        | 1.46     |
| 3   | C     | 228 | LEU  | N-CA   | 5.46  | 1.52        | 1.46     |
| 12  | 5     | 120 | ARG  | CD-NE  | 5.46  | 1.53        | 1.46     |
| 25  | U     | 162 | ILE  | CA-C   | -5.46 | 1.46        | 1.52     |
| 10  | 3     | 188 | HIS  | CG-ND1 | 5.46  | 1.44        | 1.38     |
| 12  | 5     | 159 | MET  | SD-CE  | 5.46  | 1.93        | 1.79     |
| 20  | N     | 411 | ILE  | C-O    | 5.46  | 1.30        | 1.24     |
| 20  | N     | 606 | ALA  | N-CA   | -5.46 | 1.39        | 1.46     |
| 31  | M     | 309 | VAL  | CA-CB  | 5.46  | 1.61        | 1.54     |
| 32  | J     | 118 | ASN  | CA-CB  | 5.46  | 1.60        | 1.53     |
| 2   | B     | 199 | PHE  | CA-CB  | 5.46  | 1.61        | 1.53     |
| 6   | F     | 69  | HIS  | C-N    | 5.46  | 1.41        | 1.33     |
| 6   | F     | 72  | ILE  | C-O    | -5.46 | 1.18        | 1.24     |
| 7   | G     | 138 | LEU  | C-N    | 5.46  | 1.41        | 1.33     |
| 8   | 1     | 168 | ILE  | N-CA   | -5.46 | 1.39        | 1.46     |
| 22  | P     | 397 | VAL  | C-O    | -5.46 | 1.17        | 1.24     |
| 22  | P     | 402 | ILE  | CA-C   | -5.46 | 1.46        | 1.52     |
| 20  | N     | 51  | ASP  | C-O    | 5.46  | 1.30        | 1.24     |
| 31  | M     | 350 | ARG  | C-N    | 5.46  | 1.41        | 1.33     |
| 10  | 3     | 33  | GLN  | CA-C   | -5.45 | 1.45        | 1.52     |
| 12  | 5     | 235 | LEU  | CA-CB  | 5.45  | 1.60        | 1.53     |
| 15  | W     | 113 | VAL  | C-N    | 5.45  | 1.40        | 1.33     |
| 19  | Z     | 209 | MET  | N-CA   | -5.45 | 1.39        | 1.46     |
| 19  | Z     | 235 | SER  | N-CA   | -5.45 | 1.39        | 1.46     |
| 21  | S     | 302 | ARG  | NE-CZ  | 5.45  | 1.39        | 1.33     |
| 23  | Q     | 377 | ILE  | N-CA   | -5.45 | 1.39        | 1.46     |
| 17  | T     | 291 | THR  | C-N    | 5.45  | 1.40        | 1.33     |
| 22  | P     | 452 | ILE  | C-N    | 5.45  | 1.41        | 1.33     |
| 19  | Z     | 849 | ALA  | CA-C   | -5.45 | 1.45        | 1.52     |
| 24  | R     | 48  | ASN  | CA-CB  | 5.45  | 1.60        | 1.53     |
| 25  | U     | 222 | ILE  | N-CA   | -5.45 | 1.39        | 1.46     |
| 28  | I     | 100 | ASP  | C-N    | 5.45  | 1.41        | 1.33     |
| 28  | I     | 342 | ILE  | N-CA   | -5.45 | 1.41        | 1.46     |
| 29  | K     | 115 | ILE  | CA-CB  | -5.45 | 1.48        | 1.54     |
| 30  | L     | 131 | PRO  | C-N    | 5.45  | 1.41        | 1.33     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 3   | C     | 236 | LEU  | C-N    | 5.45  | 1.40        | 1.33     |
| 14  | 7     | 100 | ASP  | C-N    | 5.45  | 1.41        | 1.33     |
| 20  | N     | 22  | PHE  | CA-C   | -5.45 | 1.45        | 1.52     |
| 20  | N     | 395 | ARG  | NE-CZ  | 5.45  | 1.39        | 1.33     |
| 24  | R     | 138 | LEU  | C-N    | 5.45  | 1.41        | 1.33     |
| 26  | O     | 263 | ALA  | C-N    | 5.45  | 1.41        | 1.33     |
| 29  | K     | 234 | GLU  | N-CA   | -5.45 | 1.39        | 1.46     |
| 31  | M     | 29  | GLN  | N-CA   | -5.45 | 1.39        | 1.46     |
| 3   | C     | 154 | GLY  | CA-C   | -5.45 | 1.44        | 1.51     |
| 30  | L     | 142 | GLY  | C-N    | 5.45  | 1.41        | 1.33     |
| 9   | 2     | 156 | ILE  | C-N    | 5.45  | 1.41        | 1.33     |
| 14  | 7     | 215 | ARG  | NE-CZ  | 5.45  | 1.39        | 1.33     |
| 22  | P     | 315 | MET  | N-CA   | -5.45 | 1.39        | 1.46     |
| 29  | K     | 81  | ARG  | CD-NE  | 5.45  | 1.53        | 1.46     |
| 31  | M     | 73  | LYS  | N-CA   | -5.45 | 1.39        | 1.46     |
| 1   | A     | 69  | LEU  | CA-CB  | 5.44  | 1.61        | 1.53     |
| 19  | Z     | 72  | ARG  | N-CA   | -5.44 | 1.42        | 1.46     |
| 19  | Z     | 68  | THR  | C-N    | 5.44  | 1.40        | 1.33     |
| 19  | Z     | 299 | GLY  | CA-C   | -5.44 | 1.46        | 1.52     |
| 20  | N     | 111 | GLN  | CA-C   | -5.44 | 1.46        | 1.52     |
| 23  | Q     | 106 | GLU  | N-CA   | -5.44 | 1.40        | 1.46     |
| 1   | A     | 121 | ILE  | N-CA   | -5.44 | 1.39        | 1.46     |
| 2   | B     | 134 | LEU  | CB-CG  | 5.44  | 1.64        | 1.53     |
| 5   | E     | 78  | MET  | CA-C   | -5.44 | 1.46        | 1.52     |
| 16  | V     | 264 | LYS  | C-N    | 5.44  | 1.41        | 1.33     |
| 20  | N     | 199 | ARG  | CZ-NH2 | 5.44  | 1.40        | 1.33     |
| 20  | N     | 475 | HIS  | C-N    | 5.44  | 1.41        | 1.33     |
| 20  | N     | 763 | VAL  | C-O    | -5.44 | 1.17        | 1.24     |
| 26  | O     | 358 | THR  | N-CA   | -5.44 | 1.39        | 1.46     |
| 29  | K     | 396 | ALA  | C-N    | 5.44  | 1.40        | 1.33     |
| 30  | L     | 19  | ARG  | CZ-NH1 | 5.44  | 1.40        | 1.32     |
| 30  | L     | 129 | VAL  | CA-C   | -5.44 | 1.46        | 1.52     |
| 32  | J     | 366 | ALA  | C-N    | 5.44  | 1.40        | 1.33     |
| 2   | B     | 196 | LYS  | CA-CB  | 5.44  | 1.61        | 1.53     |
| 5   | E     | 147 | ASP  | CA-C   | -5.44 | 1.47        | 1.53     |
| 16  | V     | 193 | ILE  | N-CA   | -5.44 | 1.39        | 1.46     |
| 31  | M     | 396 | GLY  | CA-C   | -5.44 | 1.46        | 1.52     |
| 8   | 1     | 190 | ALA  | C-N    | 5.44  | 1.41        | 1.33     |
| 20  | N     | 390 | LEU  | CA-C   | -5.44 | 1.45        | 1.52     |
| 6   | F     | 170 | THR  | N-CA   | -5.43 | 1.39        | 1.46     |
| 20  | N     | 742 | HIS  | CB-CG  | 5.43  | 1.57        | 1.50     |
| 22  | P     | 209 | ILE  | C-O    | -5.43 | 1.18        | 1.24     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 30  | L     | 180 | PRO  | CA-CB   | -5.43 | 1.46        | 1.54     |
| 31  | M     | 318 | ASN  | CA-CB   | 5.43  | 1.61        | 1.53     |
| 13  | 6     | 200 | ARG  | NE-CZ   | 5.43  | 1.39        | 1.33     |
| 14  | 7     | 126 | SER  | CA-CB   | 5.43  | 1.61        | 1.53     |
| 19  | Z     | 375 | SER  | CA-C    | 5.43  | 1.59        | 1.52     |
| 20  | N     | 541 | HIS  | ND1-CE1 | 5.43  | 1.38        | 1.32     |
| 26  | O     | 272 | ILE  | N-CA    | -5.43 | 1.40        | 1.46     |
| 30  | L     | 149 | ILE  | C-N     | 5.43  | 1.40        | 1.33     |
| 20  | N     | 533 | VAL  | C-N     | 5.43  | 1.40        | 1.33     |
| 24  | R     | 151 | TYR  | N-CA    | -5.43 | 1.39        | 1.46     |
| 30  | L     | 92  | ARG  | CD-NE   | 5.43  | 1.53        | 1.46     |
| 32  | J     | 349 | GLU  | C-O     | -5.43 | 1.17        | 1.24     |
| 17  | T     | 108 | LYS  | CA-C    | -5.43 | 1.45        | 1.52     |
| 20  | N     | 391 | GLU  | C-N     | 5.43  | 1.40        | 1.33     |
| 22  | P     | 423 | ASN  | CA-CB   | 5.43  | 1.61        | 1.53     |
| 20  | N     | 91  | ASN  | C-N     | 5.43  | 1.41        | 1.33     |
| 20  | N     | 754 | HIS  | CE1-NE2 | -5.43 | 1.27        | 1.32     |
| 21  | S     | 106 | HIS  | CA-CB   | 5.43  | 1.61        | 1.53     |
| 22  | P     | 191 | ARG  | CZ-NH2  | 5.43  | 1.40        | 1.33     |
| 22  | P     | 234 | ASP  | CA-C    | -5.43 | 1.45        | 1.52     |
| 30  | L     | 256 | ARG  | CA-C    | -5.43 | 1.45        | 1.52     |
| 5   | E     | 210 | LEU  | C-N     | 5.42  | 1.41        | 1.33     |
| 5   | E     | 226 | PHE  | N-CA    | -5.42 | 1.39        | 1.46     |
| 10  | 3     | 160 | PRO  | C-O     | -5.42 | 1.17        | 1.24     |
| 26  | O     | 186 | LYS  | N-CA    | -5.42 | 1.39        | 1.46     |
| 32  | J     | 71  | SER  | C-N     | 5.42  | 1.41        | 1.33     |
| 3   | C     | 248 | GLU  | CA-C    | -5.42 | 1.46        | 1.52     |
| 14  | 7     | 136 | LEU  | N-CA    | -5.42 | 1.39        | 1.46     |
| 27  | H     | 107 | GLU  | CA-C    | -5.42 | 1.45        | 1.52     |
| 7   | G     | 170 | ARG  | C-N     | 5.42  | 1.41        | 1.33     |
| 16  | V     | 237 | HIS  | ND1-CE1 | 5.42  | 1.38        | 1.32     |
| 23  | Q     | 192 | SER  | CA-C    | -5.42 | 1.45        | 1.52     |
| 15  | W     | 17  | ARG  | N-CA    | -5.42 | 1.39        | 1.46     |
| 21  | S     | 47  | GLY  | CA-C    | -5.42 | 1.46        | 1.52     |
| 24  | R     | 344 | HIS  | CD2-NE2 | 5.42  | 1.43        | 1.37     |
| 19  | Z     | 853 | VAL  | C-N     | 5.41  | 1.42        | 1.33     |
| 20  | N     | 905 | PRO  | C-N     | 5.41  | 1.41        | 1.33     |
| 19  | Z     | 457 | ASN  | C-N     | 5.41  | 1.41        | 1.33     |
| 2   | B     | 101 | TYR  | CA-C    | -5.41 | 1.45        | 1.52     |
| 8   | 1     | 44  | GLY  | CA-C    | 5.41  | 1.59        | 1.51     |
| 14  | 7     | 54  | SER  | CA-CB   | 5.41  | 1.61        | 1.53     |
| 17  | T     | 312 | LEU  | CA-CB   | 5.41  | 1.61        | 1.53     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 24  | R     | 312 | ARG  | CZ-NH1  | 5.41  | 1.40        | 1.32     |
| 30  | L     | 190 | PRO  | CA-C    | -5.41 | 1.46        | 1.52     |
| 4   | D     | 100 | HIS  | C-O     | -5.41 | 1.17        | 1.24     |
| 8   | 1     | 102 | GLU  | C-N     | 5.41  | 1.41        | 1.33     |
| 9   | 2     | 164 | LYS  | N-CA    | -5.41 | 1.38        | 1.45     |
| 19  | Z     | 413 | SER  | CA-C    | 5.41  | 1.60        | 1.52     |
| 27  | H     | 333 | ARG  | CA-CB   | 5.41  | 1.60        | 1.53     |
| 23  | Q     | 186 | ALA  | CA-CB   | 5.41  | 1.61        | 1.53     |
| 9   | 2     | 67  | MET  | CA-C    | -5.41 | 1.45        | 1.52     |
| 11  | 4     | 132 | HIS  | ND1-CE1 | 5.41  | 1.38        | 1.32     |
| 14  | 7     | 134 | SER  | C-O     | 5.41  | 1.30        | 1.24     |
| 19  | Z     | 632 | LYS  | CA-C    | -5.41 | 1.45        | 1.52     |
| 20  | N     | 386 | LEU  | C-N     | 5.41  | 1.41        | 1.33     |
| 29  | K     | 116 | LEU  | CA-CB   | 5.41  | 1.61        | 1.53     |
| 21  | S     | 397 | ASN  | C-N     | 5.40  | 1.40        | 1.33     |
| 20  | N     | 337 | LEU  | CA-C    | -5.40 | 1.46        | 1.52     |
| 20  | N     | 751 | ARG  | NE-CZ   | 5.40  | 1.39        | 1.33     |
| 21  | S     | 369 | ALA  | C-O     | -5.40 | 1.17        | 1.24     |
| 22  | P     | 198 | ASP  | CA-C    | -5.40 | 1.47        | 1.53     |
| 20  | N     | 577 | ILE  | CA-CB   | -5.40 | 1.47        | 1.54     |
| 13  | 6     | 230 | ILE  | C-N     | 5.40  | 1.40        | 1.33     |
| 1   | A     | 8   | GLY  | N-CA    | -5.40 | 1.37        | 1.45     |
| 19  | Z     | 218 | GLU  | CA-C    | 5.40  | 1.59        | 1.52     |
| 19  | Z     | 222 | ASP  | C-N     | 5.40  | 1.40        | 1.33     |
| 20  | N     | 598 | ALA  | C-N     | 5.40  | 1.40        | 1.33     |
| 23  | Q     | 281 | GLY  | N-CA    | -5.40 | 1.37        | 1.45     |
| 29  | K     | 174 | LYS  | C-N     | 5.40  | 1.41        | 1.33     |
| 31  | M     | 330 | LYS  | N-CA    | -5.40 | 1.39        | 1.45     |
| 8   | 1     | 53  | THR  | CA-C    | -5.40 | 1.45        | 1.52     |
| 3   | C     | 177 | GLN  | N-CA    | -5.39 | 1.39        | 1.46     |
| 8   | 1     | 199 | ARG  | NE-CZ   | 5.39  | 1.39        | 1.33     |
| 14  | 7     | 218 | ARG  | CD-NE   | 5.39  | 1.53        | 1.46     |
| 19  | Z     | 695 | ALA  | CA-CB   | 5.39  | 1.61        | 1.53     |
| 20  | N     | 159 | ARG  | CD-NE   | 5.39  | 1.53        | 1.46     |
| 26  | O     | 159 | SER  | C-N     | 5.39  | 1.41        | 1.34     |
| 1   | A     | 163 | PHE  | CA-C    | -5.39 | 1.46        | 1.52     |
| 22  | P     | 260 | SER  | N-CA    | -5.39 | 1.40        | 1.46     |
| 16  | V     | 227 | GLU  | CA-CB   | 5.39  | 1.61        | 1.53     |
| 21  | S     | 298 | TYR  | N-CA    | -5.39 | 1.39        | 1.46     |
| 19  | Z     | 249 | LEU  | C-N     | 5.39  | 1.41        | 1.33     |
| 4   | D     | 187 | ILE  | C-O     | -5.39 | 1.17        | 1.24     |
| 9   | 2     | 59  | ALA  | C-N     | 5.39  | 1.40        | 1.33     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 12  | 5     | 144 | ASN  | CA-C   | 5.39  | 1.59        | 1.52     |
| 21  | S     | 352 | SER  | N-CA   | -5.39 | 1.39        | 1.46     |
| 32  | J     | 337 | ASN  | N-CA   | -5.39 | 1.39        | 1.45     |
| 7   | G     | 130 | ARG  | NE-CZ  | 5.38  | 1.39        | 1.33     |
| 15  | W     | 24  | THR  | N-CA   | -5.38 | 1.39        | 1.45     |
| 19  | Z     | 98  | PHE  | CA-C   | -5.38 | 1.45        | 1.52     |
| 20  | N     | 115 | ASN  | CA-C   | -5.38 | 1.45        | 1.52     |
| 32  | J     | 391 | MET  | CA-C   | -5.38 | 1.46        | 1.52     |
| 4   | D     | 128 | ASN  | CA-C   | -5.38 | 1.45        | 1.52     |
| 7   | G     | 197 | ILE  | N-CA   | -5.38 | 1.40        | 1.46     |
| 14  | 7     | 149 | PRO  | N-CA   | -5.38 | 1.40        | 1.47     |
| 20  | N     | 835 | ILE  | CB-CG1 | 5.38  | 1.64        | 1.53     |
| 31  | M     | 331 | VAL  | CA-C   | -5.38 | 1.45        | 1.52     |
| 31  | M     | 350 | ARG  | CA-C   | -5.38 | 1.47        | 1.52     |
| 32  | J     | 399 | MET  | CA-CB  | 5.38  | 1.61        | 1.53     |
| 5   | E     | 183 | GLU  | C-N    | 5.38  | 1.41        | 1.33     |
| 6   | F     | 201 | ALA  | CA-C   | -5.38 | 1.45        | 1.52     |
| 13  | 6     | 154 | VAL  | N-CA   | -5.38 | 1.38        | 1.46     |
| 21  | S     | 280 | GLU  | N-CA   | 5.38  | 1.52        | 1.46     |
| 29  | K     | 283 | ARG  | C-O    | -5.38 | 1.17        | 1.24     |
| 29  | K     | 289 | LEU  | CA-CB  | 5.38  | 1.61        | 1.53     |
| 2   | B     | 229 | TYR  | CA-C   | -5.38 | 1.45        | 1.52     |
| 5   | E     | 235 | GLU  | C-N    | 5.38  | 1.41        | 1.33     |
| 6   | F     | 28  | ALA  | N-CA   | -5.38 | 1.39        | 1.46     |
| 27  | H     | 97  | ARG  | CD-NE  | 5.38  | 1.53        | 1.46     |
| 8   | 1     | 166 | SER  | C-N    | 5.38  | 1.41        | 1.33     |
| 18  | Y     | 56  | LEU  | C-N    | 5.38  | 1.41        | 1.33     |
| 20  | N     | 165 | LYS  | CA-C   | -5.38 | 1.46        | 1.53     |
| 25  | U     | 84  | LYS  | CA-C   | -5.38 | 1.45        | 1.52     |
| 17  | T     | 226 | ASN  | N-CA   | 5.38  | 1.53        | 1.46     |
| 17  | T     | 272 | ASP  | CA-C   | -5.38 | 1.45        | 1.52     |
| 20  | N     | 16  | GLU  | CA-C   | -5.38 | 1.47        | 1.52     |
| 22  | P     | 303 | LYS  | CA-C   | 5.38  | 1.59        | 1.52     |
| 32  | J     | 260 | GLU  | C-N    | 5.38  | 1.41        | 1.33     |
| 21  | S     | 393 | ARG  | NE-CZ  | 5.37  | 1.39        | 1.33     |
| 24  | R     | 263 | LEU  | CA-C   | -5.37 | 1.45        | 1.52     |
| 1   | A     | 108 | GLU  | CA-CB  | 5.37  | 1.62        | 1.53     |
| 6   | F     | 32  | GLY  | CA-C   | -5.37 | 1.45        | 1.52     |
| 19  | Z     | 7   | ASP  | CA-C   | -5.37 | 1.48        | 1.52     |
| 20  | N     | 191 | LYS  | N-CA   | -5.37 | 1.39        | 1.46     |
| 20  | N     | 848 | LYS  | N-CA   | -5.37 | 1.39        | 1.46     |
| 23  | Q     | 53  | LEU  | C-O    | -5.37 | 1.17        | 1.24     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 5   | E     | 73  | HIS  | CA-CB   | 5.37  | 1.62        | 1.53     |
| 14  | 7     | 177 | GLU  | C-N     | 5.37  | 1.39        | 1.33     |
| 20  | N     | 898 | CYS  | CA-CB   | 5.37  | 1.62        | 1.53     |
| 21  | S     | 114 | HIS  | ND1-CE1 | 5.37  | 1.38        | 1.32     |
| 28  | I     | 252 | GLY  | N-CA    | -5.37 | 1.38        | 1.45     |
| 21  | S     | 277 | ASN  | N-CA    | 5.37  | 1.52        | 1.45     |
| 29  | K     | 141 | ASP  | CA-CB   | 5.37  | 1.61        | 1.53     |
| 31  | M     | 302 | GLU  | CA-CB   | 5.37  | 1.62        | 1.53     |
| 31  | M     | 351 | LEU  | CA-C    | -5.37 | 1.46        | 1.52     |
| 9   | 2     | 174 | SER  | C-N     | 5.37  | 1.41        | 1.34     |
| 27  | H     | 184 | ILE  | N-CA    | -5.37 | 1.40        | 1.46     |
| 30  | L     | 19  | ARG  | C-N     | 5.37  | 1.41        | 1.34     |
| 5   | E     | 143 | PHE  | N-CA    | -5.37 | 1.39        | 1.46     |
| 9   | 2     | 180 | VAL  | C-N     | 5.37  | 1.41        | 1.33     |
| 22  | P     | 93  | ARG  | CZ-NH2  | 5.37  | 1.40        | 1.33     |
| 25  | U     | 42  | SER  | C-N     | 5.37  | 1.40        | 1.33     |
| 12  | 5     | 187 | VAL  | N-CA    | -5.36 | 1.40        | 1.46     |
| 29  | K     | 224 | THR  | CA-C    | -5.36 | 1.45        | 1.52     |
| 30  | L     | 363 | GLU  | CA-CB   | 5.36  | 1.62        | 1.53     |
| 13  | 6     | 87  | ASP  | C-N     | 5.36  | 1.41        | 1.33     |
| 19  | Z     | 348 | ILE  | CA-C    | -5.36 | 1.46        | 1.52     |
| 32  | J     | 50  | ASN  | C-N     | 5.36  | 1.41        | 1.33     |
| 12  | 5     | 239 | ARG  | NE-CZ   | 5.36  | 1.39        | 1.33     |
| 19  | Z     | 354 | GLU  | CA-C    | -5.36 | 1.45        | 1.52     |
| 22  | P     | 14  | VAL  | N-CA    | -5.36 | 1.39        | 1.46     |
| 22  | P     | 372 | ARG  | NE-CZ   | 5.36  | 1.39        | 1.33     |
| 22  | P     | 400 | LYS  | C-N     | 5.36  | 1.41        | 1.33     |
| 23  | Q     | 11  | ARG  | CZ-NH2  | 5.36  | 1.40        | 1.33     |
| 28  | I     | 430 | LYS  | CA-CB   | 5.36  | 1.61        | 1.53     |
| 31  | M     | 337 | ARG  | CZ-NH2  | 5.36  | 1.40        | 1.33     |
| 12  | 5     | 69  | HIS  | CA-C    | -5.36 | 1.45        | 1.52     |
| 19  | Z     | 509 | LYS  | C-N     | 5.36  | 1.40        | 1.33     |
| 27  | H     | 407 | LYS  | CA-CB   | 5.36  | 1.61        | 1.53     |
| 31  | M     | 345 | LEU  | N-CA    | -5.36 | 1.39        | 1.46     |
| 3   | C     | 198 | ASN  | CA-CB   | 5.36  | 1.61        | 1.53     |
| 4   | D     | 133 | PHE  | CA-CB   | 5.36  | 1.63        | 1.54     |
| 21  | S     | 466 | ARG  | CZ-NH1  | 5.36  | 1.40        | 1.32     |
| 28  | I     | 298 | ASN  | CA-CB   | 5.36  | 1.62        | 1.53     |
| 31  | M     | 274 | ALA  | C-N     | 5.36  | 1.41        | 1.33     |
| 31  | M     | 307 | ARG  | NE-CZ   | 5.36  | 1.39        | 1.33     |
| 32  | J     | 382 | ASP  | N-CA    | -5.36 | 1.39        | 1.46     |
| 7   | G     | 107 | ILE  | N-CA    | -5.35 | 1.41        | 1.47     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 20  | N     | 132 | GLY  | C-N     | 5.35  | 1.40        | 1.33     |
| 8   | 1     | 185 | CYS  | C-N     | 5.35  | 1.41        | 1.34     |
| 16  | V     | 194 | HIS  | CA-CB   | 5.35  | 1.61        | 1.53     |
| 20  | N     | 490 | ARG  | CZ-NH2  | 5.35  | 1.40        | 1.33     |
| 23  | Q     | 29  | SER  | C-N     | 5.35  | 1.40        | 1.33     |
| 30  | L     | 154 | GLU  | N-CA    | -5.35 | 1.39        | 1.46     |
| 30  | L     | 295 | ARG  | CA-CB   | 5.35  | 1.61        | 1.53     |
| 28  | I     | 82  | GLN  | CA-CB   | 5.35  | 1.60        | 1.53     |
| 28  | I     | 408 | ARG  | NE-CZ   | 5.35  | 1.39        | 1.33     |
| 20  | N     | 231 | ASP  | C-N     | 5.35  | 1.40        | 1.33     |
| 9   | 2     | 137 | ILE  | C-N     | 5.35  | 1.41        | 1.33     |
| 19  | Z     | 400 | TYR  | CA-C    | -5.35 | 1.45        | 1.52     |
| 20  | N     | 51  | ASP  | CA-CB   | 5.35  | 1.61        | 1.53     |
| 22  | P     | 237 | GLU  | CA-CB   | 5.35  | 1.61        | 1.53     |
| 22  | P     | 341 | PHE  | CA-C    | -5.35 | 1.45        | 1.52     |
| 19  | Z     | 45  | LEU  | CB-CG   | 5.34  | 1.64        | 1.53     |
| 5   | E     | 54  | ILE  | CA-C    | -5.34 | 1.45        | 1.53     |
| 15  | W     | 22  | LEU  | CA-C    | -5.34 | 1.46        | 1.53     |
| 18  | Y     | 58  | ALA  | CA-C    | -5.34 | 1.45        | 1.52     |
| 25  | U     | 210 | THR  | CA-C    | -5.34 | 1.46        | 1.52     |
| 31  | M     | 63  | LEU  | CA-CB   | 5.34  | 1.61        | 1.53     |
| 19  | Z     | 165 | GLU  | C-N     | 5.34  | 1.39        | 1.34     |
| 2   | B     | 128 | ARG  | CZ-NH2  | 5.34  | 1.40        | 1.33     |
| 7   | G     | 107 | ILE  | CA-C    | -5.34 | 1.47        | 1.52     |
| 15  | W     | 17  | ARG  | C-N     | 5.34  | 1.41        | 1.33     |
| 22  | P     | 142 | ARG  | CZ-NH1  | 5.34  | 1.40        | 1.32     |
| 24  | R     | 296 | VAL  | CA-C    | -5.34 | 1.46        | 1.52     |
| 27  | H     | 363 | SER  | CA-C    | -5.33 | 1.46        | 1.52     |
| 6   | F     | 155 | ASP  | CA-CB   | 5.33  | 1.60        | 1.53     |
| 6   | F     | 185 | ASP  | CA-C    | 5.33  | 1.59        | 1.52     |
| 24  | R     | 164 | ALA  | CA-C    | -5.33 | 1.45        | 1.52     |
| 31  | M     | 207 | LEU  | CA-CB   | 5.33  | 1.61        | 1.53     |
| 8   | 1     | 78  | ARG  | N-CA    | -5.33 | 1.39        | 1.46     |
| 12  | 5     | 234 | ASN  | CA-CB   | 5.33  | 1.64        | 1.54     |
| 20  | N     | 330 | SER  | C-N     | 5.33  | 1.39        | 1.33     |
| 21  | S     | 88  | ARG  | CZ-NH1  | 5.33  | 1.40        | 1.32     |
| 21  | S     | 136 | ASP  | C-N     | 5.33  | 1.40        | 1.33     |
| 26  | O     | 222 | LEU  | CA-C    | 5.33  | 1.59        | 1.52     |
| 10  | 3     | 143 | SER  | C-N     | 5.33  | 1.39        | 1.33     |
| 28  | I     | 154 | HIS  | ND1-CE1 | 5.33  | 1.37        | 1.32     |
| 32  | J     | 314 | LYS  | CA-CB   | 5.33  | 1.62        | 1.53     |
| 4   | D     | 4   | ASP  | CA-CB   | -5.33 | 1.46        | 1.53     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 25  | U     | 106 | ILE  | C-N    | 5.33  | 1.41        | 1.33     |
| 25  | U     | 278 | ASN  | N-CA   | -5.33 | 1.39        | 1.46     |
| 30  | L     | 284 | LEU  | CA-C   | -5.33 | 1.46        | 1.52     |
| 7   | G     | 93  | ARG  | CZ-NH2 | 5.33  | 1.40        | 1.33     |
| 20  | N     | 206 | MET  | N-CA   | -5.33 | 1.39        | 1.46     |
| 20  | N     | 556 | MET  | CA-C   | -5.33 | 1.45        | 1.52     |
| 21  | S     | 101 | SER  | C-N    | 5.33  | 1.41        | 1.33     |
| 31  | M     | 286 | ILE  | CA-CB  | -5.33 | 1.47        | 1.53     |
| 2   | B     | 171 | LYS  | CA-C   | -5.32 | 1.46        | 1.52     |
| 4   | D     | 38  | ARG  | NE-CZ  | 5.32  | 1.39        | 1.33     |
| 20  | N     | 695 | MET  | C-N    | 5.32  | 1.40        | 1.33     |
| 23  | Q     | 88  | LEU  | C-N    | 5.32  | 1.40        | 1.33     |
| 27  | H     | 147 | TYR  | CZ-OH  | 5.32  | 1.49        | 1.38     |
| 29  | K     | 83  | GLN  | N-CA   | -5.32 | 1.40        | 1.46     |
| 31  | M     | 336 | ASN  | CA-CB  | 5.32  | 1.61        | 1.53     |
| 19  | Z     | 766 | GLN  | N-CA   | 5.32  | 1.53        | 1.46     |
| 26  | O     | 71  | VAL  | CA-C   | -5.32 | 1.46        | 1.52     |
| 8   | 1     | 108 | LEU  | CA-C   | -5.32 | 1.46        | 1.53     |
| 12  | 5     | 156 | MET  | CA-CB  | 5.32  | 1.62        | 1.53     |
| 25  | U     | 196 | HIS  | N-CA   | -5.32 | 1.39        | 1.46     |
| 27  | H     | 333 | ARG  | CZ-NH1 | 5.32  | 1.40        | 1.32     |
| 8   | 1     | 77  | CYS  | CA-C   | -5.32 | 1.46        | 1.52     |
| 20  | N     | 808 | PRO  | CA-C   | -5.32 | 1.46        | 1.52     |
| 32  | J     | 273 | MET  | CA-C   | -5.32 | 1.45        | 1.52     |
| 23  | Q     | 209 | THR  | CA-C   | 5.32  | 1.59        | 1.52     |
| 26  | O     | 306 | LYS  | C-O    | -5.32 | 1.17        | 1.24     |
| 28  | I     | 71  | TYR  | CZ-OH  | 5.32  | 1.49        | 1.38     |
| 12  | 5     | 185 | PHE  | C-N    | 5.32  | 1.41        | 1.33     |
| 29  | K     | 406 | VAL  | CA-CB  | 5.32  | 1.61        | 1.54     |
| 19  | Z     | 268 | LEU  | CA-CB  | 5.31  | 1.61        | 1.53     |
| 22  | P     | 306 | LEU  | CA-C   | -5.31 | 1.46        | 1.52     |
| 31  | M     | 365 | ARG  | CZ-NH2 | 5.31  | 1.40        | 1.33     |
| 6   | F     | 12  | VAL  | C-O    | -5.31 | 1.18        | 1.24     |
| 24  | R     | 297 | ARG  | CD-NE  | 5.31  | 1.53        | 1.46     |
| 30  | L     | 138 | HIS  | CG-ND1 | 5.31  | 1.44        | 1.38     |
| 14  | 7     | 152 | ASN  | CA-C   | 5.31  | 1.58        | 1.52     |
| 26  | O     | 251 | LEU  | CA-C   | -5.31 | 1.45        | 1.52     |
| 29  | K     | 143 | LEU  | CA-C   | 5.31  | 1.57        | 1.52     |
| 31  | M     | 420 | HIS  | CA-C   | -5.31 | 1.45        | 1.52     |
| 3   | C     | 181 | GLU  | CA-CB  | 5.31  | 1.59        | 1.53     |
| 7   | G     | 100 | ARG  | N-CA   | -5.31 | 1.39        | 1.46     |
| 19  | Z     | 47  | GLU  | CA-CB  | 5.31  | 1.62        | 1.53     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 19  | Z     | 763 | ARG  | CZ-NH2 | 5.31  | 1.40        | 1.33     |
| 1   | A     | 98  | ALA  | CA-C   | -5.31 | 1.46        | 1.52     |
| 3   | C     | 3   | ARG  | NE-CZ  | 5.31  | 1.38        | 1.33     |
| 6   | F     | 178 | GLU  | N-CA   | -5.31 | 1.39        | 1.46     |
| 18  | Y     | 55  | GLN  | CA-CB  | -5.31 | 1.45        | 1.53     |
| 30  | L     | 202 | ALA  | C-N    | -5.31 | 1.27        | 1.33     |
| 4   | D     | 219 | ARG  | NE-CZ  | 5.30  | 1.38        | 1.33     |
| 9   | 2     | 98  | THR  | CA-C   | 5.30  | 1.59        | 1.52     |
| 21  | S     | 69  | GLU  | CA-CB  | 5.30  | 1.61        | 1.53     |
| 25  | U     | 221 | PRO  | CA-C   | -5.30 | 1.45        | 1.52     |
| 27  | H     | 317 | VAL  | N-CA   | -5.30 | 1.40        | 1.46     |
| 7   | G     | 186 | THR  | C-N    | 5.30  | 1.41        | 1.34     |
| 9   | 2     | 160 | GLY  | CA-C   | -5.30 | 1.45        | 1.51     |
| 22  | P     | 67  | LEU  | CA-CB  | 5.30  | 1.61        | 1.53     |
| 19  | Z     | 838 | ARG  | CD-NE  | 5.30  | 1.53        | 1.46     |
| 20  | N     | 45  | ILE  | CA-CB  | -5.30 | 1.47        | 1.54     |
| 20  | N     | 263 | SER  | N-CA   | -5.30 | 1.39        | 1.46     |
| 20  | N     | 394 | ALA  | C-N    | 5.30  | 1.40        | 1.33     |
| 20  | N     | 676 | THR  | N-CA   | 5.30  | 1.52        | 1.46     |
| 21  | S     | 128 | LEU  | N-CA   | -5.30 | 1.41        | 1.46     |
| 21  | S     | 252 | ARG  | CZ-NH1 | 5.30  | 1.40        | 1.32     |
| 22  | P     | 89  | LEU  | CA-C   | -5.30 | 1.45        | 1.52     |
| 25  | U     | 191 | ILE  | CA-CB  | -5.30 | 1.47        | 1.54     |
| 31  | M     | 367 | ARG  | CZ-NH1 | 5.30  | 1.40        | 1.32     |
| 32  | J     | 98  | ASP  | CA-CB  | 5.30  | 1.62        | 1.53     |
| 5   | E     | 110 | GLU  | CA-C   | -5.30 | 1.46        | 1.52     |
| 6   | F     | 6   | TYR  | N-CA   | -5.30 | 1.39        | 1.46     |
| 22  | P     | 124 | LEU  | C-O    | -5.30 | 1.17        | 1.24     |
| 24  | R     | 293 | ARG  | CZ-NH1 | 5.30  | 1.40        | 1.32     |
| 4   | D     | 150 | LEU  | C-N    | 5.30  | 1.41        | 1.33     |
| 6   | F     | 146 | GLN  | C-N    | 5.30  | 1.41        | 1.33     |
| 32  | J     | 374 | ARG  | CA-CB  | 5.30  | 1.62        | 1.53     |
| 3   | C     | 144 | GLY  | C-N    | 5.30  | 1.40        | 1.33     |
| 19  | Z     | 463 | LEU  | CA-C   | -5.30 | 1.45        | 1.52     |
| 20  | N     | 325 | MET  | C-N    | 5.30  | 1.40        | 1.33     |
| 22  | P     | 270 | VAL  | C-N    | 5.30  | 1.40        | 1.33     |
| 24  | R     | 274 | SER  | C-N    | 5.30  | 1.40        | 1.33     |
| 26  | O     | 226 | ARG  | CA-C   | -5.30 | 1.45        | 1.52     |
| 28  | I     | 266 | LEU  | C-N    | 5.30  | 1.40        | 1.33     |
| 29  | K     | 114 | ARG  | NE-CZ  | 5.30  | 1.38        | 1.33     |
| 1   | A     | 172 | GLN  | N-CA   | -5.29 | 1.40        | 1.46     |
| 11  | 4     | 116 | TYR  | CA-C   | -5.29 | 1.46        | 1.52     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 28  | I     | 285 | ASP  | N-CA    | -5.29 | 1.39        | 1.46     |
| 32  | J     | 387 | VAL  | N-CA    | 5.29  | 1.52        | 1.46     |
| 9   | 2     | 124 | ARG  | NE-CZ   | 5.29  | 1.38        | 1.33     |
| 17  | T     | 297 | SER  | C-N     | 5.29  | 1.39        | 1.33     |
| 21  | S     | 390 | LEU  | N-CA    | -5.29 | 1.39        | 1.46     |
| 22  | P     | 309 | PHE  | CA-CB   | 5.29  | 1.61        | 1.53     |
| 24  | R     | 5   | ASN  | CA-C    | -5.29 | 1.45        | 1.52     |
| 22  | P     | 88  | MET  | N-CA    | -5.29 | 1.40        | 1.46     |
| 5   | E     | 155 | HIS  | CD2-NE2 | -5.29 | 1.32        | 1.37     |
| 31  | M     | 258 | GLN  | CA-CB   | 5.29  | 1.61        | 1.53     |
| 1   | A     | 80  | MET  | N-CA    | -5.29 | 1.39        | 1.46     |
| 3   | C     | 108 | GLU  | CA-C    | -5.29 | 1.46        | 1.52     |
| 8   | 1     | 86  | GLN  | CA-C    | -5.29 | 1.46        | 1.52     |
| 19  | Z     | 445 | LEU  | C-O     | -5.29 | 1.17        | 1.24     |
| 20  | N     | 159 | ARG  | C-N     | 5.29  | 1.40        | 1.33     |
| 20  | N     | 767 | THR  | CA-CB   | 5.29  | 1.61        | 1.53     |
| 20  | N     | 854 | MET  | C-N     | 5.29  | 1.41        | 1.33     |
| 28  | I     | 364 | ILE  | N-CA    | -5.29 | 1.40        | 1.46     |
| 30  | L     | 163 | ILE  | CA-CB   | -5.29 | 1.47        | 1.54     |
| 32  | J     | 10  | GLU  | CA-C    | -5.29 | 1.46        | 1.52     |
| 5   | E     | 118 | ASN  | C-N     | 5.28  | 1.41        | 1.34     |
| 13  | 6     | 193 | LEU  | C-N     | 5.28  | 1.40        | 1.33     |
| 19  | Z     | 178 | LYS  | N-CA    | -5.28 | 1.40        | 1.46     |
| 19  | Z     | 240 | VAL  | N-CA    | -5.28 | 1.40        | 1.46     |
| 19  | Z     | 317 | LEU  | CB-CG   | 5.28  | 1.64        | 1.53     |
| 23  | Q     | 213 | GLN  | CA-C    | 5.28  | 1.59        | 1.52     |
| 23  | Q     | 314 | ARG  | NE-CZ   | 5.28  | 1.38        | 1.33     |
| 31  | M     | 441 | TYR  | C-N     | 5.28  | 1.40        | 1.33     |
| 17  | T     | 288 | ALA  | C-O     | -5.28 | 1.18        | 1.24     |
| 24  | R     | 302 | HIS  | C-N     | 5.28  | 1.40        | 1.33     |
| 1   | A     | 60  | LEU  | CB-CG   | 5.28  | 1.64        | 1.53     |
| 12  | 5     | 187 | VAL  | CA-C    | -5.28 | 1.46        | 1.52     |
| 22  | P     | 377 | ARG  | CZ-NH1  | 5.28  | 1.40        | 1.32     |
| 26  | O     | 99  | LYS  | N-CA    | -5.28 | 1.40        | 1.46     |
| 27  | H     | 339 | ARG  | CD-NE   | 5.28  | 1.53        | 1.46     |
| 27  | H     | 428 | ARG  | CA-C    | -5.28 | 1.45        | 1.52     |
| 29  | K     | 310 | ALA  | C-N     | 5.28  | 1.40        | 1.33     |
| 5   | E     | 79  | SER  | C-N     | 5.28  | 1.41        | 1.33     |
| 20  | N     | 670 | ASN  | C-O     | -5.28 | 1.18        | 1.24     |
| 21  | S     | 480 | LEU  | CA-C    | -5.28 | 1.46        | 1.52     |
| 26  | O     | 334 | THR  | CA-C    | -5.28 | 1.45        | 1.52     |
| 26  | O     | 346 | ILE  | C-N     | 5.28  | 1.40        | 1.33     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 28  | I     | 207 | HIS  | CA-CB  | 5.28  | 1.59        | 1.53     |
| 17  | T     | 131 | PHE  | N-CA   | -5.28 | 1.39        | 1.46     |
| 19  | Z     | 665 | GLU  | C-N    | 5.28  | 1.40        | 1.33     |
| 19  | Z     | 770 | HIS  | C-O    | -5.28 | 1.20        | 1.23     |
| 21  | S     | 285 | LEU  | CA-C   | 5.28  | 1.59        | 1.52     |
| 27  | H     | 44  | GLN  | C-N    | 5.28  | 1.40        | 1.33     |
| 32  | J     | 150 | MET  | CA-CB  | 5.28  | 1.61        | 1.53     |
| 32  | J     | 81  | ASP  | C-N    | 5.27  | 1.41        | 1.33     |
| 4   | D     | 40  | ILE  | N-CA   | -5.27 | 1.39        | 1.46     |
| 17  | T     | 248 | PHE  | CA-CB  | 5.27  | 1.61        | 1.53     |
| 8   | 1     | 207 | ILE  | CA-C   | -5.27 | 1.46        | 1.52     |
| 20  | N     | 116 | ALA  | CA-C   | -5.27 | 1.45        | 1.52     |
| 24  | R     | 164 | ALA  | N-CA   | -5.27 | 1.40        | 1.46     |
| 27  | H     | 396 | ALA  | C-N    | 5.27  | 1.40        | 1.33     |
| 30  | L     | 247 | ASP  | CA-C   | -5.27 | 1.46        | 1.52     |
| 32  | J     | 127 | LEU  | C-N    | 5.27  | 1.37        | 1.33     |
| 2   | B     | 191 | ALA  | CA-C   | -5.27 | 1.46        | 1.52     |
| 19  | Z     | 357 | ARG  | NE-CZ  | 5.27  | 1.38        | 1.33     |
| 22  | P     | 66  | ILE  | N-CA   | -5.27 | 1.39        | 1.46     |
| 27  | H     | 432 | TYR  | C-N    | 5.27  | 1.40        | 1.33     |
| 8   | 1     | 222 | LEU  | C-N    | 5.26  | 1.40        | 1.33     |
| 22  | P     | 203 | GLN  | C-N    | 5.26  | 1.40        | 1.33     |
| 16  | V     | 154 | LYS  | C-N    | 5.26  | 1.40        | 1.33     |
| 1   | A     | 11  | ARG  | CZ-NH1 | 5.26  | 1.40        | 1.32     |
| 2   | B     | 151 | PRO  | CA-CB  | 5.26  | 1.61        | 1.53     |
| 11  | 4     | 98  | TYR  | C-N    | 5.26  | 1.40        | 1.33     |
| 21  | S     | 181 | GLN  | CA-CB  | 5.26  | 1.61        | 1.53     |
| 29  | K     | 180 | ALA  | CA-CB  | -5.26 | 1.45        | 1.53     |
| 3   | C     | 79  | ILE  | N-CA   | -5.26 | 1.40        | 1.46     |
| 6   | F     | 98  | VAL  | C-N    | 5.26  | 1.41        | 1.34     |
| 10  | 3     | 26  | ARG  | CD-NE  | 5.26  | 1.53        | 1.46     |
| 11  | 4     | 142 | ILE  | N-CA   | 5.26  | 1.52        | 1.46     |
| 19  | Z     | 6   | ARG  | CZ-NH1 | 5.26  | 1.40        | 1.32     |
| 21  | S     | 96  | MET  | CA-CB  | 5.26  | 1.61        | 1.53     |
| 22  | P     | 332 | SER  | CA-C   | -5.26 | 1.46        | 1.52     |
| 27  | H     | 203 | ASN  | C-O    | -5.26 | 1.18        | 1.24     |
| 27  | H     | 326 | THR  | CA-CB  | -5.26 | 1.46        | 1.53     |
| 15  | W     | 8   | VAL  | C-N    | 5.26  | 1.40        | 1.33     |
| 20  | N     | 553 | ALA  | CA-C   | -5.26 | 1.46        | 1.52     |
| 20  | N     | 886 | PRO  | CA-C   | 5.26  | 1.59        | 1.52     |
| 22  | P     | 324 | TYR  | C-O    | 5.26  | 1.30        | 1.24     |
| 17  | T     | 217 | ARG  | CZ-NH2 | 5.26  | 1.40        | 1.33     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 25  | U     | 207 | ASP  | C-N    | 5.25  | 1.40        | 1.33     |
| 30  | L     | 78  | LEU  | C-N    | 5.25  | 1.40        | 1.33     |
| 3   | C     | 83  | ALA  | CA-C   | -5.25 | 1.46        | 1.52     |
| 5   | E     | 129 | ASP  | CA-CB  | 5.25  | 1.61        | 1.53     |
| 12  | 5     | 116 | ARG  | N-CA   | -5.25 | 1.39        | 1.46     |
| 19  | Z     | 882 | LEU  | N-CA   | -5.25 | 1.39        | 1.45     |
| 20  | N     | 689 | ILE  | N-CA   | 5.25  | 1.52        | 1.46     |
| 30  | L     | 265 | ARG  | C-N    | 5.25  | 1.40        | 1.33     |
| 3   | C     | 218 | ARG  | CD-NE  | 5.25  | 1.53        | 1.46     |
| 6   | F     | 162 | GLY  | C-N    | 5.25  | 1.41        | 1.33     |
| 19  | Z     | 847 | GLY  | CA-C   | -5.25 | 1.45        | 1.51     |
| 24  | R     | 137 | ARG  | CA-C   | -5.25 | 1.46        | 1.52     |
| 26  | O     | 301 | LYS  | CA-C   | -5.25 | 1.46        | 1.53     |
| 2   | B     | 102 | GLN  | C-N    | 5.25  | 1.41        | 1.33     |
| 7   | G     | 239 | TYR  | CZ-OH  | 5.25  | 1.49        | 1.38     |
| 20  | N     | 116 | ALA  | C-N    | 5.25  | 1.41        | 1.33     |
| 25  | U     | 85  | VAL  | C-O    | -5.25 | 1.18        | 1.24     |
| 31  | M     | 240 | ALA  | CA-CB  | 5.25  | 1.61        | 1.53     |
| 2   | B     | 144 | PRO  | CA-CB  | -5.25 | 1.46        | 1.53     |
| 3   | C     | 89  | GLU  | N-CA   | -5.25 | 1.40        | 1.46     |
| 16  | V     | 136 | LEU  | CB-CG  | 5.25  | 1.64        | 1.53     |
| 19  | Z     | 161 | HIS  | N-CA   | -5.25 | 1.40        | 1.46     |
| 28  | I     | 96  | ARG  | NE-CZ  | 5.25  | 1.38        | 1.33     |
| 2   | B     | 38  | ILE  | CB-CG1 | 5.25  | 1.64        | 1.53     |
| 12  | 5     | 236 | TYR  | CA-CB  | 5.25  | 1.60        | 1.53     |
| 24  | R     | 293 | ARG  | CA-C   | -5.25 | 1.46        | 1.52     |
| 27  | H     | 276 | GLU  | C-N    | 5.25  | 1.40        | 1.33     |
| 1   | A     | 126 | THR  | N-CA   | -5.25 | 1.40        | 1.46     |
| 15  | W     | 183 | LEU  | C-N    | 5.25  | 1.40        | 1.34     |
| 21  | S     | 85  | LYS  | CA-C   | -5.25 | 1.45        | 1.52     |
| 31  | M     | 441 | TYR  | CA-CB  | 5.25  | 1.60        | 1.53     |
| 5   | E     | 218 | ALA  | CA-C   | -5.24 | 1.46        | 1.52     |
| 11  | 4     | 29  | LYS  | CA-CB  | 5.24  | 1.59        | 1.52     |
| 24  | R     | 204 | THR  | C-N    | 5.24  | 1.40        | 1.34     |
| 28  | I     | 98  | LYS  | N-CA   | -5.24 | 1.40        | 1.46     |
| 32  | J     | 312 | ASP  | CA-CB  | 5.24  | 1.61        | 1.53     |
| 21  | S     | 445 | ALA  | N-CA   | -5.24 | 1.39        | 1.46     |
| 24  | R     | 10  | GLY  | CA-C   | -5.24 | 1.46        | 1.52     |
| 26  | O     | 250 | THR  | N-CA   | -5.24 | 1.39        | 1.46     |
| 26  | O     | 329 | LYS  | C-N    | 5.24  | 1.41        | 1.33     |
| 31  | M     | 110 | ASP  | C-N    | 5.24  | 1.41        | 1.33     |
| 2   | B     | 213 | CYS  | N-CA   | -5.24 | 1.39        | 1.46     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 4   | D     | 123 | ARG  | CA-C   | -5.24 | 1.46        | 1.52     |
| 9   | 2     | 189 | MET  | CA-C   | 5.24  | 1.59        | 1.52     |
| 12  | 5     | 163 | TRP  | C-N    | 5.24  | 1.39        | 1.33     |
| 21  | S     | 103 | ARG  | CZ-NH1 | 5.24  | 1.40        | 1.32     |
| 22  | P     | 314 | LEU  | CA-CB  | 5.24  | 1.60        | 1.53     |
| 26  | O     | 97  | LEU  | C-N    | 5.24  | 1.40        | 1.33     |
| 4   | D     | 190 | ASP  | CA-C   | -5.24 | 1.46        | 1.52     |
| 7   | G     | 135 | SER  | N-CA   | -5.24 | 1.39        | 1.46     |
| 16  | V     | 49  | VAL  | CA-CB  | 5.24  | 1.60        | 1.54     |
| 19  | Z     | 124 | ASP  | C-N    | 5.24  | 1.40        | 1.33     |
| 19  | Z     | 188 | VAL  | C-N    | 5.24  | 1.41        | 1.33     |
| 25  | U     | 256 | GLN  | CA-CB  | 5.24  | 1.61        | 1.53     |
| 30  | L     | 58  | GLU  | C-N    | 5.24  | 1.41        | 1.34     |
| 14  | 7     | 47  | ASN  | N-CA   | -5.24 | 1.41        | 1.46     |
| 23  | Q     | 146 | ALA  | C-N    | 5.24  | 1.40        | 1.33     |
| 20  | N     | 560 | MET  | C-O    | -5.24 | 1.17        | 1.24     |
| 20  | N     | 657 | GLY  | C-O    | -5.24 | 1.17        | 1.23     |
| 24  | R     | 365 | GLN  | C-O    | -5.24 | 1.17        | 1.24     |
| 30  | L     | 91  | PRO  | N-CD   | -5.24 | 1.40        | 1.47     |
| 1   | A     | 21  | ARG  | NE-CZ  | 5.23  | 1.38        | 1.33     |
| 11  | 4     | 182 | VAL  | N-CA   | -5.23 | 1.40        | 1.46     |
| 13  | 6     | 141 | ASP  | CA-CB  | 5.23  | 1.62        | 1.53     |
| 15  | W     | 25  | ARG  | NE-CZ  | 5.23  | 1.38        | 1.33     |
| 24  | R     | 374 | ASP  | C-N    | 5.23  | 1.41        | 1.33     |
| 32  | J     | 325 | ARG  | N-CA   | -5.23 | 1.39        | 1.46     |
| 1   | A     | 117 | ARG  | CZ-NH2 | 5.23  | 1.40        | 1.33     |
| 5   | E     | 197 | SER  | N-CA   | -5.23 | 1.40        | 1.46     |
| 15  | W     | 135 | LYS  | C-N    | 5.23  | 1.40        | 1.33     |
| 18  | Y     | 58  | ALA  | C-N    | 5.23  | 1.40        | 1.33     |
| 20  | N     | 743 | ASN  | CG-ND2 | 5.23  | 1.44        | 1.33     |
| 24  | R     | 339 | ALA  | CA-CB  | 5.23  | 1.61        | 1.53     |
| 27  | H     | 297 | ARG  | NE-CZ  | 5.23  | 1.38        | 1.33     |
| 28  | I     | 195 | GLN  | CA-C   | -5.23 | 1.45        | 1.52     |
| 30  | L     | 352 | PHE  | C-O    | -5.23 | 1.17        | 1.23     |
| 29  | K     | 210 | CYS  | C-N    | 5.23  | 1.40        | 1.33     |
| 31  | M     | 313 | MET  | C-N    | 5.23  | 1.41        | 1.33     |
| 22  | P     | 326 | VAL  | C-N    | 5.23  | 1.40        | 1.33     |
| 22  | P     | 348 | GLU  | C-N    | 5.23  | 1.40        | 1.33     |
| 25  | U     | 181 | ASP  | N-CA   | -5.23 | 1.40        | 1.46     |
| 29  | K     | 38  | GLU  | C-N    | 5.23  | 1.40        | 1.33     |
| 29  | K     | 186 | THR  | CA-CB  | 5.23  | 1.61        | 1.53     |
| 17  | T     | 185 | LEU  | N-CA   | -5.23 | 1.40        | 1.46     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 28  | I     | 125 | THR  | C-N     | 5.23  | 1.41        | 1.33     |
| 6   | F     | 164 | ARG  | CZ-NH2  | 5.22  | 1.40        | 1.33     |
| 23  | Q     | 122 | ARG  | C-N     | 5.22  | 1.41        | 1.34     |
| 29  | K     | 386 | ALA  | N-CA    | -5.22 | 1.39        | 1.46     |
| 21  | S     | 488 | LYS  | CA-C    | -5.22 | 1.46        | 1.52     |
| 22  | P     | 349 | LYS  | N-CA    | -5.22 | 1.40        | 1.46     |
| 20  | N     | 536 | ALA  | CA-C    | 5.22  | 1.59        | 1.52     |
| 20  | N     | 744 | VAL  | CA-C    | -5.22 | 1.46        | 1.52     |
| 17  | T     | 299 | PRO  | C-N     | 5.22  | 1.41        | 1.33     |
| 22  | P     | 317 | TRP  | N-CA    | -5.22 | 1.40        | 1.46     |
| 26  | O     | 153 | SER  | C-N     | 5.22  | 1.40        | 1.33     |
| 17  | T     | 256 | ALA  | C-O     | 5.22  | 1.30        | 1.23     |
| 18  | Y     | 64  | GLY  | N-CA    | -5.22 | 1.39        | 1.45     |
| 26  | O     | 180 | LEU  | C-N     | 5.22  | 1.40        | 1.33     |
| 28  | I     | 213 | GLU  | CA-C    | -5.22 | 1.46        | 1.52     |
| 28  | I     | 228 | PRO  | CA-C    | -5.22 | 1.46        | 1.52     |
| 8   | 1     | 132 | ILE  | C-N     | 5.21  | 1.40        | 1.33     |
| 15  | W     | 106 | LYS  | CA-CB   | 5.21  | 1.61        | 1.53     |
| 29  | K     | 390 | ASN  | CA-C    | -5.21 | 1.45        | 1.52     |
| 14  | 7     | 77  | LEU  | CA-C    | 5.21  | 1.60        | 1.53     |
| 19  | Z     | 666 | ILE  | N-CA    | -5.21 | 1.40        | 1.46     |
| 11  | 4     | 187 | GLY  | C-N     | 5.21  | 1.40        | 1.33     |
| 19  | Z     | 654 | VAL  | C-N     | 5.21  | 1.41        | 1.34     |
| 19  | Z     | 679 | LEU  | C-N     | 5.21  | 1.40        | 1.33     |
| 9   | 2     | 109 | HIS  | ND1-CE1 | 5.21  | 1.37        | 1.32     |
| 9   | 2     | 161 | SER  | CA-CB   | 5.21  | 1.61        | 1.53     |
| 24  | R     | 314 | LEU  | N-CA    | -5.21 | 1.39        | 1.45     |
| 4   | D     | 207 | SER  | CA-C    | -5.21 | 1.45        | 1.52     |
| 8   | 1     | 131 | ILE  | N-CA    | -5.21 | 1.40        | 1.46     |
| 14  | 7     | 204 | LEU  | C-N     | 5.21  | 1.41        | 1.33     |
| 22  | P     | 269 | SER  | CA-C    | 5.21  | 1.59        | 1.52     |
| 25  | U     | 79  | TYR  | CA-CB   | 5.21  | 1.61        | 1.53     |
| 27  | H     | 367 | ASP  | N-CA    | -5.21 | 1.39        | 1.46     |
| 29  | K     | 164 | TYR  | CB-CG   | 5.21  | 1.63        | 1.51     |
| 32  | J     | 128 | PRO  | CA-C    | -5.21 | 1.47        | 1.52     |
| 19  | Z     | 304 | PHE  | CG-CD1  | 5.21  | 1.49        | 1.38     |
| 19  | Z     | 741 | LEU  | C-N     | 5.21  | 1.41        | 1.33     |
| 28  | I     | 346 | ARG  | CZ-NH2  | 5.21  | 1.40        | 1.33     |
| 29  | K     | 63  | ASP  | CA-C    | -5.21 | 1.45        | 1.52     |
| 2   | B     | 88  | HIS  | ND1-CE1 | 5.21  | 1.37        | 1.32     |
| 24  | R     | 178 | ASN  | N-CA    | -5.21 | 1.39        | 1.46     |
| 26  | O     | 243 | GLY  | C-N     | 5.21  | 1.40        | 1.33     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 30  | L     | 312 | LYS  | CA-CB   | 5.21  | 1.62        | 1.53     |
| 31  | M     | 417 | GLU  | CA-CB   | 5.21  | 1.60        | 1.53     |
| 5   | E     | 124 | GLY  | CA-C    | -5.20 | 1.44        | 1.51     |
| 29  | K     | 154 | LEU  | C-N     | 5.20  | 1.40        | 1.33     |
| 29  | K     | 251 | PHE  | CA-CB   | 5.20  | 1.61        | 1.53     |
| 19  | Z     | 741 | LEU  | CA-CB   | 5.20  | 1.61        | 1.53     |
| 29  | K     | 303 | VAL  | CA-C    | -5.20 | 1.45        | 1.52     |
| 31  | M     | 49  | ARG  | C-N     | 5.20  | 1.41        | 1.33     |
| 31  | M     | 160 | SER  | C-O     | -5.20 | 1.18        | 1.23     |
| 14  | 7     | 83  | ILE  | CA-C    | -5.20 | 1.44        | 1.52     |
| 19  | Z     | 590 | PHE  | CA-CB   | 5.20  | 1.61        | 1.53     |
| 20  | N     | 579 | ARG  | NE-CZ   | 5.20  | 1.38        | 1.33     |
| 22  | P     | 216 | GLU  | CA-C    | 5.20  | 1.59        | 1.52     |
| 32  | J     | 221 | GLN  | N-CA    | -5.20 | 1.39        | 1.46     |
| 4   | D     | 194 | ILE  | C-N     | 5.20  | 1.41        | 1.34     |
| 9   | 2     | 132 | ARG  | C-N     | 5.20  | 1.40        | 1.33     |
| 9   | 2     | 174 | SER  | CA-C    | 5.20  | 1.59        | 1.53     |
| 21  | S     | 400 | LYS  | CA-CB   | 5.20  | 1.61        | 1.53     |
| 10  | 3     | 103 | TYR  | C-N     | 5.20  | 1.40        | 1.33     |
| 20  | N     | 8   | ILE  | CA-C    | -5.20 | 1.46        | 1.52     |
| 28  | I     | 299 | SER  | CA-C    | -5.20 | 1.45        | 1.52     |
| 3   | C     | 249 | ARG  | CZ-NH2  | 5.20  | 1.40        | 1.33     |
| 12  | 5     | 76  | ASP  | CA-C    | -5.20 | 1.46        | 1.52     |
| 20  | N     | 420 | LEU  | CA-C    | -5.20 | 1.46        | 1.52     |
| 2   | B     | 202 | GLN  | N-CA    | -5.19 | 1.39        | 1.45     |
| 3   | C     | 110 | LEU  | CA-C    | -5.19 | 1.46        | 1.52     |
| 24  | R     | 328 | GLU  | N-CA    | -5.19 | 1.40        | 1.46     |
| 29  | K     | 44  | TYR  | CA-C    | -5.19 | 1.46        | 1.52     |
| 10  | 3     | 69  | PHE  | C-N     | 5.19  | 1.40        | 1.33     |
| 17  | T     | 341 | GLN  | CA-CB   | 5.19  | 1.62        | 1.53     |
| 27  | H     | 61  | GLU  | CA-CB   | 5.19  | 1.61        | 1.53     |
| 28  | I     | 293 | LYS  | C-N     | 5.19  | 1.40        | 1.33     |
| 30  | L     | 82  | LYS  | CA-CB   | 5.19  | 1.61        | 1.53     |
| 32  | J     | 206 | HIS  | CA-C    | 5.19  | 1.59        | 1.52     |
| 2   | B     | 61  | SER  | N-CA    | -5.19 | 1.39        | 1.46     |
| 4   | D     | 110 | VAL  | N-CA    | -5.19 | 1.40        | 1.46     |
| 19  | Z     | 105 | LYS  | C-N     | 5.19  | 1.40        | 1.33     |
| 7   | G     | 43  | LYS  | C-N     | 5.19  | 1.40        | 1.33     |
| 8   | 1     | 52  | ARG  | NE-CZ   | 5.19  | 1.38        | 1.33     |
| 12  | 5     | 241 | ASP  | N-CA    | -5.19 | 1.39        | 1.45     |
| 16  | V     | 172 | HIS  | ND1-CE1 | 5.19  | 1.37        | 1.32     |
| 20  | N     | 131 | GLU  | CA-CB   | 5.19  | 1.61        | 1.53     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 7   | G     | 115 | ARG  | NE-CZ  | 5.19  | 1.38        | 1.33     |
| 8   | 1     | 105 | GLU  | C-N    | 5.19  | 1.39        | 1.33     |
| 13  | 6     | 154 | VAL  | CA-C   | 5.19  | 1.58        | 1.52     |
| 20  | N     | 856 | VAL  | CA-CB  | -5.19 | 1.47        | 1.54     |
| 29  | K     | 385 | LEU  | C-N    | 5.19  | 1.41        | 1.34     |
| 11  | 4     | 70  | ARG  | CZ-NH1 | 5.18  | 1.40        | 1.32     |
| 13  | 6     | 171 | MET  | CA-CB  | 5.18  | 1.61        | 1.53     |
| 16  | V     | 282 | ARG  | CZ-NH1 | 5.18  | 1.40        | 1.32     |
| 17  | T     | 301 | LYS  | CA-CB  | 5.18  | 1.61        | 1.53     |
| 21  | S     | 56  | THR  | N-CA   | -5.18 | 1.39        | 1.46     |
| 24  | R     | 377 | LEU  | C-N    | 5.18  | 1.40        | 1.33     |
| 27  | H     | 136 | GLU  | CA-CB  | 5.18  | 1.61        | 1.53     |
| 27  | H     | 365 | GLU  | CA-C   | -5.18 | 1.46        | 1.52     |
| 28  | I     | 175 | LYS  | CA-C   | -5.18 | 1.46        | 1.52     |
| 29  | K     | 296 | MET  | CA-C   | 5.18  | 1.59        | 1.52     |
| 30  | L     | 108 | PRO  | C-N    | 5.18  | 1.40        | 1.33     |
| 15  | W     | 133 | LYS  | CA-C   | -5.18 | 1.46        | 1.52     |
| 15  | W     | 184 | ILE  | N-CA   | -5.18 | 1.40        | 1.46     |
| 19  | Z     | 132 | THR  | C-N    | 5.18  | 1.41        | 1.34     |
| 21  | S     | 268 | SER  | N-CA   | -5.18 | 1.40        | 1.46     |
| 22  | P     | 242 | SER  | C-N    | 5.18  | 1.40        | 1.33     |
| 26  | O     | 294 | GLU  | N-CA   | -5.18 | 1.39        | 1.46     |
| 27  | H     | 374 | ALA  | C-N    | 5.18  | 1.41        | 1.34     |
| 28  | I     | 244 | SER  | CA-CB  | 5.18  | 1.61        | 1.53     |
| 5   | E     | 81  | LEU  | C-N    | 5.18  | 1.40        | 1.33     |
| 19  | Z     | 432 | TYR  | C-N    | 5.18  | 1.40        | 1.33     |
| 23  | Q     | 236 | PHE  | CA-CB  | 5.18  | 1.61        | 1.53     |
| 24  | R     | 165 | LYS  | N-CA   | -5.18 | 1.40        | 1.46     |
| 25  | U     | 121 | LEU  | CA-CB  | 5.18  | 1.61        | 1.53     |
| 15  | W     | 177 | PRO  | C-N    | 5.18  | 1.41        | 1.33     |
| 21  | S     | 306 | THR  | CA-C   | 5.18  | 1.59        | 1.52     |
| 24  | R     | 297 | ARG  | CZ-NH2 | 5.18  | 1.40        | 1.33     |
| 27  | H     | 301 | GLU  | CA-C   | -5.18 | 1.45        | 1.52     |
| 15  | W     | 55  | ALA  | N-CA   | -5.18 | 1.39        | 1.46     |
| 19  | Z     | 714 | SER  | C-N    | 5.18  | 1.41        | 1.33     |
| 23  | Q     | 256 | LEU  | N-CA   | -5.18 | 1.40        | 1.46     |
| 27  | H     | 159 | PRO  | CA-C   | -5.18 | 1.47        | 1.52     |
| 19  | Z     | 126 | ILE  | CA-C   | -5.17 | 1.46        | 1.52     |
| 20  | N     | 378 | CYS  | CA-C   | -5.17 | 1.46        | 1.52     |
| 25  | U     | 255 | ASP  | CA-CB  | 5.17  | 1.61        | 1.53     |
| 29  | K     | 199 | PRO  | C-O    | 5.17  | 1.30        | 1.23     |
| 10  | 3     | 126 | LEU  | C-N    | 5.17  | 1.40        | 1.33     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 19  | Z     | 436 | SER  | CA-CB  | 5.17  | 1.62        | 1.53     |
| 20  | N     | 845 | GLU  | N-CA   | -5.17 | 1.39        | 1.46     |
| 21  | S     | 322 | GLN  | CA-CB  | 5.17  | 1.61        | 1.53     |
| 23  | Q     | 399 | ALA  | CA-C   | -5.17 | 1.46        | 1.52     |
| 24  | R     | 334 | LEU  | CB-CG  | 5.17  | 1.63        | 1.53     |
| 3   | C     | 151 | ASP  | CA-CB  | 5.17  | 1.60        | 1.54     |
| 8   | 1     | 175 | THR  | N-CA   | -5.17 | 1.40        | 1.46     |
| 24  | R     | 330 | ILE  | C-N    | 5.17  | 1.41        | 1.33     |
| 1   | A     | 3   | ARG  | CZ-NH2 | 5.17  | 1.40        | 1.33     |
| 1   | A     | 44  | GLY  | CA-C   | -5.17 | 1.45        | 1.52     |
| 2   | B     | 4   | ARG  | NE-CZ  | 5.17  | 1.38        | 1.33     |
| 5   | E     | 99  | HIS  | N-CA   | 5.17  | 1.52        | 1.46     |
| 8   | 1     | 165 | SER  | CA-C   | 5.17  | 1.59        | 1.52     |
| 20  | N     | 361 | ARG  | CZ-NH2 | 5.17  | 1.40        | 1.33     |
| 20  | N     | 441 | GLY  | CA-C   | -5.17 | 1.45        | 1.52     |
| 28  | I     | 103 | ARG  | CD-NE  | 5.17  | 1.53        | 1.46     |
| 30  | L     | 126 | PRO  | C-N    | 5.17  | 1.40        | 1.33     |
| 6   | F     | 164 | ARG  | CZ-NH1 | 5.17  | 1.40        | 1.32     |
| 16  | V     | 208 | ARG  | NE-CZ  | 5.17  | 1.38        | 1.33     |
| 22  | P     | 375 | MET  | CA-C   | -5.17 | 1.46        | 1.52     |
| 24  | R     | 145 | LEU  | CA-C   | 5.17  | 1.59        | 1.52     |
| 31  | M     | 120 | ARG  | NE-CZ  | 5.17  | 1.38        | 1.33     |
| 3   | C     | 238 | LYS  | CA-C   | 5.17  | 1.59        | 1.52     |
| 24  | R     | 219 | PHE  | C-N    | 5.17  | 1.40        | 1.33     |
| 26  | O     | 35  | HIS  | C-N    | 5.17  | 1.41        | 1.34     |
| 4   | D     | 46  | GLU  | C-N    | 5.16  | 1.41        | 1.33     |
| 9   | 2     | 207 | PHE  | N-CA   | -5.16 | 1.40        | 1.46     |
| 17  | T     | 138 | LYS  | CA-C   | -5.16 | 1.45        | 1.52     |
| 27  | H     | 398 | ARG  | C-O    | -5.16 | 1.18        | 1.24     |
| 29  | K     | 287 | ARG  | CZ-NH2 | 5.16  | 1.40        | 1.33     |
| 29  | K     | 395 | LEU  | CA-C   | -5.16 | 1.46        | 1.53     |
| 16  | V     | 66  | THR  | C-O    | -5.16 | 1.17        | 1.24     |
| 27  | H     | 366 | ARG  | CZ-NH1 | 5.16  | 1.40        | 1.32     |
| 32  | J     | 64  | GLN  | CA-C   | 5.16  | 1.59        | 1.52     |
| 32  | J     | 304 | ALA  | N-CA   | -5.16 | 1.40        | 1.46     |
| 15  | W     | 59  | GLU  | N-CA   | 5.16  | 1.52        | 1.46     |
| 17  | T     | 342 | VAL  | N-CA   | -5.16 | 1.40        | 1.46     |
| 20  | N     | 679 | PRO  | C-N    | 5.16  | 1.40        | 1.33     |
| 22  | P     | 226 | TYR  | CA-CB  | 5.16  | 1.61        | 1.53     |
| 23  | Q     | 40  | GLU  | C-N    | 5.16  | 1.40        | 1.33     |
| 28  | I     | 256 | ILE  | C-O    | -5.16 | 1.18        | 1.24     |
| 30  | L     | 94  | VAL  | CA-C   | -5.16 | 1.46        | 1.52     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 27  | H     | 98  | CYS  | N-CA   | -5.16 | 1.39        | 1.46     |
| 31  | M     | 429 | GLU  | C-N    | 5.16  | 1.40        | 1.33     |
| 28  | I     | 423 | LYS  | CA-C   | -5.16 | 1.46        | 1.52     |
| 31  | M     | 354 | LYS  | N-CA   | -5.16 | 1.40        | 1.46     |
| 2   | B     | 143 | ARG  | CZ-NH1 | 5.16  | 1.40        | 1.32     |
| 3   | C     | 226 | ARG  | C-N    | 5.16  | 1.40        | 1.33     |
| 9   | 2     | 226 | LEU  | N-CA   | 5.16  | 1.52        | 1.46     |
| 19  | Z     | 641 | GLU  | CA-C   | -5.16 | 1.46        | 1.53     |
| 27  | H     | 212 | VAL  | CA-CB  | 5.16  | 1.62        | 1.54     |
| 30  | L     | 207 | CYS  | C-N    | 5.16  | 1.40        | 1.33     |
| 30  | L     | 370 | ARG  | CZ-NH1 | 5.16  | 1.40        | 1.32     |
| 4   | D     | 56  | GLU  | C-O    | -5.15 | 1.17        | 1.24     |
| 4   | D     | 79  | VAL  | CA-CB  | 5.15  | 1.59        | 1.54     |
| 9   | 2     | 186 | ARG  | NE-CZ  | 5.15  | 1.38        | 1.33     |
| 16  | V     | 136 | LEU  | C-N    | 5.15  | 1.40        | 1.33     |
| 21  | S     | 176 | ARG  | CZ-NH2 | 5.15  | 1.40        | 1.33     |
| 26  | O     | 264 | ASN  | CA-CB  | 5.15  | 1.62        | 1.53     |
| 7   | G     | 228 | VAL  | CA-C   | -5.15 | 1.47        | 1.52     |
| 12  | 5     | 93  | VAL  | N-CA   | -5.15 | 1.40        | 1.46     |
| 19  | Z     | 729 | MET  | CA-CB  | 5.15  | 1.61        | 1.53     |
| 20  | N     | 757 | MET  | N-CA   | -5.15 | 1.42        | 1.46     |
| 21  | S     | 100 | THR  | C-N    | 5.15  | 1.40        | 1.33     |
| 24  | R     | 163 | LYS  | CA-C   | -5.15 | 1.46        | 1.52     |
| 28  | I     | 65  | LEU  | C-O    | -5.15 | 1.18        | 1.24     |
| 31  | M     | 417 | GLU  | CA-C   | -5.15 | 1.46        | 1.52     |
| 3   | C     | 183 | GLU  | CA-CB  | -5.15 | 1.45        | 1.53     |
| 19  | Z     | 292 | LYS  | N-CA   | -5.15 | 1.40        | 1.46     |
| 20  | N     | 197 | VAL  | CA-C   | -5.15 | 1.46        | 1.52     |
| 21  | S     | 300 | GLU  | C-N    | 5.15  | 1.40        | 1.33     |
| 25  | U     | 45  | LYS  | C-N    | 5.15  | 1.40        | 1.33     |
| 29  | K     | 366 | ARG  | C-N    | -5.15 | 1.26        | 1.33     |
| 4   | D     | 115 | ARG  | CD-NE  | 5.15  | 1.53        | 1.46     |
| 20  | N     | 256 | ALA  | CA-CB  | 5.15  | 1.61        | 1.53     |
| 21  | S     | 74  | HIS  | CA-C   | -5.15 | 1.46        | 1.52     |
| 21  | S     | 418 | ILE  | C-N    | 5.15  | 1.40        | 1.33     |
| 25  | U     | 5   | ALA  | C-N    | 5.15  | 1.40        | 1.33     |
| 28  | I     | 173 | VAL  | CA-C   | -5.15 | 1.46        | 1.52     |
| 17  | T     | 235 | LEU  | CA-C   | -5.15 | 1.46        | 1.52     |
| 13  | 6     | 61  | SER  | CA-C   | 5.14  | 1.59        | 1.52     |
| 20  | N     | 119 | PRO  | CA-C   | -5.14 | 1.46        | 1.52     |
| 24  | R     | 154 | ASN  | N-CA   | 5.14  | 1.52        | 1.46     |
| 32  | J     | 258 | ARG  | CZ-NH2 | 5.14  | 1.40        | 1.33     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 1   | A     | 14  | THR  | CA-CB   | 5.14  | 1.62        | 1.53     |
| 9   | 2     | 224 | SER  | CA-C    | -5.14 | 1.45        | 1.52     |
| 32  | J     | 353 | GLY  | CA-C    | -5.14 | 1.44        | 1.51     |
| 8   | 1     | 148 | PRO  | N-CA    | -5.14 | 1.40        | 1.47     |
| 19  | Z     | 834 | ASP  | CA-C    | -5.14 | 1.46        | 1.52     |
| 1   | A     | 223 | GLU  | C-O     | 5.14  | 1.30        | 1.24     |
| 11  | 4     | 102 | LEU  | CA-C    | -5.14 | 1.46        | 1.52     |
| 11  | 4     | 184 | ASP  | C-O     | -5.14 | 1.17        | 1.24     |
| 14  | 7     | 177 | GLU  | N-CA    | -5.14 | 1.39        | 1.46     |
| 19  | Z     | 102 | HIS  | CD2-NE2 | -5.14 | 1.32        | 1.37     |
| 25  | U     | 249 | PHE  | CA-C    | -5.14 | 1.46        | 1.52     |
| 31  | M     | 189 | SER  | N-CA    | -5.14 | 1.40        | 1.46     |
| 32  | J     | 19  | GLY  | N-CA    | -5.14 | 1.39        | 1.45     |
| 20  | N     | 217 | CYS  | CA-CB   | 5.14  | 1.61        | 1.53     |
| 22  | P     | 28  | LEU  | CA-C    | -5.14 | 1.46        | 1.52     |
| 26  | O     | 294 | GLU  | CG-CD   | 5.14  | 1.64        | 1.52     |
| 3   | C     | 164 | ILE  | N-CA    | 5.13  | 1.52        | 1.46     |
| 14  | 7     | 125 | HIS  | C-O     | -5.13 | 1.17        | 1.24     |
| 19  | Z     | 224 | ASN  | CG-ND2  | 5.13  | 1.44        | 1.33     |
| 20  | N     | 100 | ILE  | CB-CG1  | 5.13  | 1.63        | 1.53     |
| 20  | N     | 387 | ARG  | CD-NE   | 5.13  | 1.53        | 1.46     |
| 22  | P     | 320 | LEU  | CA-CB   | 5.13  | 1.61        | 1.53     |
| 20  | N     | 154 | ALA  | C-N     | 5.13  | 1.40        | 1.33     |
| 20  | N     | 615 | ARG  | NE-CZ   | 5.13  | 1.38        | 1.33     |
| 22  | P     | 167 | GLN  | C-N     | 5.13  | 1.41        | 1.33     |
| 23  | Q     | 258 | LYS  | CA-C    | -5.13 | 1.46        | 1.52     |
| 24  | R     | 233 | ARG  | CZ-NH2  | 5.13  | 1.40        | 1.33     |
| 26  | O     | 139 | GLU  | N-CA    | -5.13 | 1.40        | 1.46     |
| 9   | 2     | 193 | GLU  | N-CA    | -5.13 | 1.40        | 1.46     |
| 13  | 6     | 172 | LEU  | N-CA    | -5.13 | 1.39        | 1.46     |
| 20  | N     | 334 | ALA  | N-CA    | -5.13 | 1.40        | 1.46     |
| 26  | O     | 274 | LEU  | CA-C    | -5.13 | 1.46        | 1.52     |
| 32  | J     | 57  | ARG  | CD-NE   | 5.13  | 1.53        | 1.46     |
| 4   | D     | 161 | ALA  | CA-C    | -5.13 | 1.46        | 1.52     |
| 8   | 1     | 39  | VAL  | CA-C    | -5.13 | 1.46        | 1.52     |
| 15  | W     | 183 | LEU  | CA-C    | -5.13 | 1.45        | 1.52     |
| 26  | O     | 30  | THR  | C-O     | -5.13 | 1.18        | 1.24     |
| 5   | E     | 22  | PHE  | C-N     | 5.12  | 1.40        | 1.33     |
| 19  | Z     | 277 | LEU  | CA-CB   | 5.12  | 1.61        | 1.53     |
| 31  | M     | 196 | LYS  | CA-C    | -5.12 | 1.46        | 1.52     |
| 32  | J     | 403 | LYS  | C-N     | 5.12  | 1.41        | 1.33     |
| 5   | E     | 32  | LYS  | CA-CB   | 5.12  | 1.61        | 1.53     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 7   | G     | 25  | GLU  | CA-C    | -5.12 | 1.46        | 1.52     |
| 17  | T     | 292 | ARG  | NE-CZ   | 5.12  | 1.38        | 1.33     |
| 22  | P     | 270 | VAL  | CA-CB   | -5.12 | 1.48        | 1.54     |
| 4   | D     | 163 | LYS  | C-N     | 5.12  | 1.40        | 1.33     |
| 13  | 6     | 120 | SER  | C-O     | -5.12 | 1.18        | 1.24     |
| 19  | Z     | 228 | LYS  | C-N     | -5.12 | 1.27        | 1.33     |
| 20  | N     | 186 | SER  | C-N     | 5.12  | 1.40        | 1.33     |
| 22  | P     | 196 | VAL  | N-CA    | 5.12  | 1.53        | 1.46     |
| 25  | U     | 232 | ASP  | CA-C    | -5.12 | 1.45        | 1.52     |
| 7   | G     | 173 | ALA  | C-O     | -5.12 | 1.18        | 1.24     |
| 8   | 1     | 132 | ILE  | CA-C    | -5.12 | 1.46        | 1.52     |
| 15  | W     | 39  | SER  | CA-C    | -5.12 | 1.46        | 1.52     |
| 19  | Z     | 316 | ASP  | C-N     | 5.12  | 1.40        | 1.33     |
| 20  | N     | 546 | ARG  | NE-CZ   | 5.12  | 1.38        | 1.33     |
| 29  | K     | 240 | LEU  | CA-CB   | 5.12  | 1.60        | 1.53     |
| 15  | W     | 70  | ARG  | CA-C    | -5.12 | 1.46        | 1.52     |
| 19  | Z     | 309 | GLU  | CA-C    | 5.12  | 1.59        | 1.52     |
| 24  | R     | 137 | ARG  | CZ-NH2  | 5.12  | 1.40        | 1.33     |
| 8   | 1     | 91  | ALA  | CA-C    | -5.11 | 1.46        | 1.52     |
| 15  | W     | 70  | ARG  | CZ-NH1  | 5.11  | 1.40        | 1.32     |
| 21  | S     | 448 | ASN  | CA-C    | -5.11 | 1.46        | 1.52     |
| 22  | P     | 55  | ARG  | C-N     | 5.11  | 1.40        | 1.33     |
| 13  | 6     | 86  | GLY  | N-CA    | -5.11 | 1.39        | 1.45     |
| 20  | N     | 377 | HIS  | CD2-NE2 | 5.11  | 1.43        | 1.37     |
| 10  | 3     | 59  | ASP  | C-N     | 5.11  | 1.40        | 1.33     |
| 19  | Z     | 397 | LYS  | CA-C    | 5.11  | 1.59        | 1.52     |
| 21  | S     | 211 | ALA  | C-N     | 5.11  | 1.40        | 1.33     |
| 29  | K     | 366 | ARG  | CZ-NH1  | 5.11  | 1.40        | 1.32     |
| 25  | U     | 118 | ASN  | CA-CB   | 5.11  | 1.62        | 1.53     |
| 32  | J     | 16  | ALA  | CA-C    | -5.11 | 1.46        | 1.52     |
| 2   | B     | 103 | GLU  | CA-C    | -5.11 | 1.46        | 1.52     |
| 4   | D     | 120 | LEU  | N-CA    | -5.11 | 1.40        | 1.46     |
| 6   | F     | 195 | LEU  | C-O     | -5.11 | 1.18        | 1.24     |
| 7   | G     | 212 | LEU  | CA-C    | -5.11 | 1.46        | 1.52     |
| 17  | T     | 220 | ALA  | C-N     | 5.11  | 1.41        | 1.33     |
| 21  | S     | 209 | TYR  | C-N     | 5.11  | 1.40        | 1.33     |
| 23  | Q     | 361 | VAL  | C-N     | 5.11  | 1.40        | 1.33     |
| 19  | Z     | 242 | GLU  | C-O     | 5.11  | 1.29        | 1.24     |
| 19  | Z     | 649 | HIS  | C-O     | -5.11 | 1.17        | 1.24     |
| 22  | P     | 397 | VAL  | N-CA    | -5.11 | 1.40        | 1.46     |
| 23  | Q     | 132 | ARG  | NE-CZ   | 5.11  | 1.38        | 1.33     |
| 30  | L     | 337 | HIS  | CA-C    | -5.11 | 1.45        | 1.52     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 20  | N     | 167 | ILE  | CB-CG1 | 5.10  | 1.63        | 1.53     |
| 32  | J     | 305 | LEU  | C-N    | 5.10  | 1.41        | 1.33     |
| 23  | Q     | 97  | LEU  | C-O    | -5.10 | 1.18        | 1.24     |
| 27  | H     | 56  | LEU  | CA-CB  | 5.10  | 1.61        | 1.53     |
| 19  | Z     | 366 | ASP  | C-N    | 5.10  | 1.40        | 1.33     |
| 4   | D     | 98  | GLN  | CA-C   | -5.10 | 1.46        | 1.52     |
| 13  | 6     | 136 | ILE  | CA-C   | -5.10 | 1.46        | 1.52     |
| 15  | W     | 17  | ARG  | CZ-NH1 | 5.10  | 1.39        | 1.32     |
| 19  | Z     | 730 | GLY  | N-CA   | -5.10 | 1.39        | 1.45     |
| 26  | O     | 252 | LYS  | CA-CB  | 5.10  | 1.62        | 1.53     |
| 28  | I     | 112 | LEU  | N-CA   | -5.10 | 1.40        | 1.46     |
| 14  | 7     | 61  | ASP  | CA-CB  | 5.10  | 1.60        | 1.53     |
| 19  | Z     | 791 | VAL  | CA-C   | -5.10 | 1.45        | 1.52     |
| 32  | J     | 109 | THR  | N-CA   | -5.10 | 1.41        | 1.45     |
| 12  | 5     | 251 | VAL  | N-CA   | 5.10  | 1.52        | 1.46     |
| 1   | A     | 125 | TYR  | CA-C   | -5.09 | 1.46        | 1.52     |
| 5   | E     | 87  | THR  | N-CA   | -5.09 | 1.40        | 1.46     |
| 17  | T     | 282 | TYR  | CA-CB  | 5.09  | 1.62        | 1.53     |
| 26  | O     | 290 | GLN  | C-N    | 5.09  | 1.41        | 1.33     |
| 28  | I     | 98  | LYS  | C-N    | 5.09  | 1.40        | 1.33     |
| 26  | O     | 131 | THR  | CA-C   | -5.09 | 1.46        | 1.52     |
| 29  | K     | 360 | LEU  | C-O    | 5.09  | 1.30        | 1.24     |
| 5   | E     | 185 | TYR  | CZ-OH  | 5.09  | 1.48        | 1.38     |
| 20  | N     | 356 | THR  | C-O    | -5.09 | 1.18        | 1.24     |
| 2   | B     | 168 | VAL  | N-CA   | -5.09 | 1.40        | 1.46     |
| 3   | C     | 31  | ALA  | CA-C   | -5.09 | 1.46        | 1.52     |
| 4   | D     | 203 | GLU  | C-N    | 5.09  | 1.40        | 1.33     |
| 8   | 1     | 167 | TYR  | C-N    | 5.09  | 1.40        | 1.33     |
| 9   | 2     | 250 | GLY  | CA-C   | -5.09 | 1.45        | 1.51     |
| 17  | T     | 295 | PHE  | CA-C   | -5.09 | 1.46        | 1.53     |
| 26  | O     | 7   | PHE  | CA-CB  | 5.09  | 1.61        | 1.53     |
| 27  | H     | 289 | ALA  | CA-C   | -5.09 | 1.47        | 1.53     |
| 28  | I     | 382 | ASP  | N-CA   | -5.09 | 1.40        | 1.46     |
| 29  | K     | 263 | PHE  | C-N    | 5.09  | 1.40        | 1.33     |
| 19  | Z     | 530 | CYS  | CA-CB  | 5.09  | 1.62        | 1.53     |
| 26  | O     | 252 | LYS  | CA-C   | -5.09 | 1.45        | 1.52     |
| 3   | C     | 234 | GLU  | C-N    | 5.09  | 1.40        | 1.33     |
| 4   | D     | 175 | ARG  | NE-CZ  | 5.09  | 1.38        | 1.33     |
| 19  | Z     | 412 | ALA  | N-CA   | 5.09  | 1.52        | 1.46     |
| 27  | H     | 55  | LEU  | C-N    | 5.09  | 1.40        | 1.33     |
| 27  | H     | 174 | TYR  | N-CA   | 5.09  | 1.52        | 1.46     |
| 2   | B     | 116 | SER  | C-N    | 5.08  | 1.40        | 1.33     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 23  | Q     | 30  | ILE  | CA-C   | -5.08 | 1.46        | 1.52     |
| 23  | Q     | 406 | ASN  | N-CA   | -5.08 | 1.40        | 1.46     |
| 26  | O     | 129 | GLN  | CA-C   | -5.08 | 1.46        | 1.52     |
| 10  | 3     | 162 | HIS  | CA-C   | -5.08 | 1.46        | 1.52     |
| 14  | 7     | 238 | GLU  | C-N    | 5.08  | 1.40        | 1.33     |
| 20  | N     | 137 | MET  | CA-C   | -5.08 | 1.46        | 1.52     |
| 21  | S     | 124 | ARG  | CD-NE  | 5.08  | 1.53        | 1.46     |
| 5   | E     | 167 | ALA  | N-CA   | -5.08 | 1.40        | 1.46     |
| 8   | 1     | 101 | ILE  | C-O    | -5.08 | 1.18        | 1.24     |
| 12  | 5     | 123 | ARG  | CZ-NH2 | 5.08  | 1.40        | 1.33     |
| 19  | Z     | 143 | ARG  | CZ-NH1 | 5.08  | 1.39        | 1.32     |
| 19  | Z     | 545 | LYS  | CA-C   | -5.08 | 1.46        | 1.52     |
| 20  | N     | 583 | MET  | C-O    | -5.08 | 1.18        | 1.24     |
| 23  | Q     | 272 | SER  | C-N    | 5.08  | 1.40        | 1.33     |
| 24  | R     | 125 | ARG  | NE-CZ  | 5.08  | 1.38        | 1.33     |
| 24  | R     | 387 | ILE  | CA-C   | -5.08 | 1.46        | 1.52     |
| 28  | I     | 392 | GLY  | N-CA   | 5.08  | 1.52        | 1.45     |
| 3   | C     | 43  | VAL  | CA-C   | -5.08 | 1.46        | 1.52     |
| 15  | W     | 187 | PRO  | C-N    | -5.08 | 1.29        | 1.33     |
| 22  | P     | 65  | ARG  | CZ-NH2 | 5.08  | 1.40        | 1.33     |
| 1   | A     | 207 | SER  | C-N    | 5.08  | 1.40        | 1.33     |
| 4   | D     | 192 | LEU  | CA-CB  | 5.08  | 1.61        | 1.53     |
| 10  | 3     | 118 | LYS  | N-CA   | -5.08 | 1.41        | 1.46     |
| 22  | P     | 313 | GLU  | CA-C   | -5.08 | 1.46        | 1.52     |
| 23  | Q     | 334 | ASN  | CA-C   | -5.08 | 1.46        | 1.52     |
| 29  | K     | 52  | GLU  | C-N    | 5.08  | 1.40        | 1.33     |
| 19  | Z     | 189 | LYS  | N-CA   | 5.08  | 1.52        | 1.45     |
| 21  | S     | 135 | MET  | CA-C   | -5.08 | 1.46        | 1.52     |
| 26  | O     | 42  | LEU  | N-CA   | -5.08 | 1.40        | 1.46     |
| 30  | L     | 133 | VAL  | C-N    | 5.08  | 1.40        | 1.33     |
| 7   | G     | 39  | GLY  | C-N    | 5.07  | 1.40        | 1.33     |
| 20  | N     | 474 | ARG  | CZ-NH1 | 5.07  | 1.39        | 1.32     |
| 21  | S     | 358 | LEU  | CA-C   | 5.07  | 1.59        | 1.52     |
| 28  | I     | 365 | PHE  | CA-CB  | 5.07  | 1.61        | 1.53     |
| 30  | L     | 189 | PRO  | C-N    | 5.07  | 1.39        | 1.33     |
| 6   | F     | 101 | ARG  | CZ-NH2 | 5.07  | 1.40        | 1.33     |
| 16  | V     | 177 | THR  | C-N    | 5.07  | 1.40        | 1.33     |
| 26  | O     | 256 | GLY  | C-N    | 5.07  | 1.40        | 1.33     |
| 3   | C     | 209 | GLU  | CA-C   | 5.07  | 1.59        | 1.52     |
| 7   | G     | 127 | SER  | C-O    | 5.07  | 1.30        | 1.24     |
| 8   | 1     | 58  | TYR  | CA-CB  | 5.07  | 1.61        | 1.53     |
| 11  | 4     | 116 | TYR  | CZ-OH  | 5.07  | 1.48        | 1.38     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 17  | T     | 126 | LEU  | C-N     | 5.07  | 1.40        | 1.33     |
| 17  | T     | 310 | GLY  | C-O     | -5.07 | 1.17        | 1.24     |
| 19  | Z     | 494 | ARG  | CZ-NH2  | 5.07  | 1.40        | 1.33     |
| 20  | N     | 225 | ASP  | CA-C    | 5.07  | 1.59        | 1.52     |
| 16  | V     | 161 | ARG  | N-CA    | -5.07 | 1.39        | 1.46     |
| 24  | R     | 36  | ALA  | CA-C    | -5.07 | 1.46        | 1.52     |
| 5   | E     | 40  | ILE  | CA-CB   | 5.07  | 1.61        | 1.54     |
| 8   | 1     | 97  | GLY  | CA-C    | -5.07 | 1.46        | 1.52     |
| 12  | 5     | 223 | THR  | C-N     | 5.07  | 1.40        | 1.33     |
| 12  | 5     | 224 | TYR  | CA-C    | -5.07 | 1.46        | 1.52     |
| 16  | V     | 64  | ASP  | N-CA    | -5.07 | 1.40        | 1.46     |
| 19  | Z     | 582 | VAL  | CA-CB   | -5.07 | 1.48        | 1.54     |
| 20  | N     | 267 | ASN  | CA-C    | -5.07 | 1.46        | 1.52     |
| 14  | 7     | 60  | PHE  | N-CA    | -5.07 | 1.39        | 1.46     |
| 19  | Z     | 715 | HIS  | CA-CB   | 5.07  | 1.62        | 1.53     |
| 19  | Z     | 828 | ARG  | NE-CZ   | 5.07  | 1.38        | 1.33     |
| 20  | N     | 572 | ARG  | NE-CZ   | 5.07  | 1.38        | 1.33     |
| 22  | P     | 214 | PHE  | CA-C    | 5.07  | 1.59        | 1.52     |
| 22  | P     | 339 | ASP  | N-CA    | -5.07 | 1.39        | 1.46     |
| 22  | P     | 357 | ARG  | CD-NE   | 5.07  | 1.53        | 1.46     |
| 27  | H     | 79  | ASP  | C-N     | 5.07  | 1.40        | 1.33     |
| 9   | 2     | 137 | ILE  | N-CA    | -5.06 | 1.40        | 1.46     |
| 20  | N     | 150 | ALA  | N-CA    | 5.06  | 1.52        | 1.46     |
| 21  | S     | 363 | VAL  | N-CA    | -5.06 | 1.40        | 1.46     |
| 21  | S     | 426 | SER  | CA-CB   | 5.06  | 1.60        | 1.53     |
| 22  | P     | 16  | MET  | C-O     | -5.06 | 1.18        | 1.24     |
| 29  | K     | 320 | ALA  | N-CA    | -5.06 | 1.40        | 1.46     |
| 16  | V     | 223 | LYS  | N-CA    | -5.06 | 1.40        | 1.46     |
| 23  | Q     | 233 | TYR  | N-CA    | -5.06 | 1.40        | 1.46     |
| 25  | U     | 174 | HIS  | CD2-NE2 | 5.06  | 1.43        | 1.37     |
| 28  | I     | 368 | HIS  | ND1-CE1 | 5.06  | 1.37        | 1.32     |
| 6   | F     | 79  | ALA  | C-N     | 5.06  | 1.41        | 1.34     |
| 17  | T     | 236 | GLU  | CA-C    | -5.06 | 1.46        | 1.52     |
| 6   | F     | 239 | ARG  | NE-CZ   | 5.06  | 1.38        | 1.33     |
| 20  | N     | 685 | GLN  | N-CA    | -5.06 | 1.40        | 1.46     |
| 8   | 1     | 106 | PRO  | CA-C    | 5.06  | 1.56        | 1.52     |
| 24  | R     | 309 | GLU  | N-CA    | 5.06  | 1.52        | 1.46     |
| 28  | I     | 155 | LYS  | CA-CB   | 5.06  | 1.61        | 1.53     |
| 16  | V     | 76  | PRO  | C-N     | 5.06  | 1.40        | 1.33     |
| 23  | Q     | 329 | ASN  | C-N     | 5.06  | 1.40        | 1.33     |
| 26  | O     | 116 | THR  | CA-C    | -5.06 | 1.46        | 1.52     |
| 31  | M     | 299 | PHE  | CA-CB   | 5.06  | 1.61        | 1.53     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 8   | 1     | 185 | CYS  | CA-C    | -5.05 | 1.46        | 1.52     |
| 19  | Z     | 154 | TRP  | C-N     | 5.05  | 1.40        | 1.33     |
| 19  | Z     | 700 | SER  | C-N     | 5.05  | 1.40        | 1.33     |
| 20  | N     | 330 | SER  | N-CA    | -5.05 | 1.39        | 1.46     |
| 22  | P     | 280 | ASP  | CA-C    | -5.05 | 1.48        | 1.53     |
| 26  | O     | 14  | SER  | C-N     | 5.05  | 1.41        | 1.33     |
| 32  | J     | 141 | GLU  | C-N     | 5.05  | 1.40        | 1.33     |
| 7   | G     | 201 | VAL  | CA-C    | -5.05 | 1.46        | 1.52     |
| 20  | N     | 70  | HIS  | CA-C    | -5.05 | 1.46        | 1.52     |
| 28  | I     | 239 | VAL  | CA-CB   | -5.05 | 1.47        | 1.54     |
| 12  | 5     | 132 | ARG  | CA-C    | -5.05 | 1.46        | 1.52     |
| 19  | Z     | 181 | ARG  | NE-CZ   | 5.05  | 1.38        | 1.33     |
| 10  | 3     | 84  | PRO  | CA-C    | -5.05 | 1.46        | 1.52     |
| 13  | 6     | 184 | ASN  | N-CA    | -5.05 | 1.39        | 1.46     |
| 19  | Z     | 286 | LYS  | CA-CB   | 5.05  | 1.61        | 1.53     |
| 21  | S     | 162 | TYR  | CA-CB   | 5.05  | 1.61        | 1.53     |
| 22  | P     | 329 | ARG  | CZ-NH1  | 5.05  | 1.39        | 1.32     |
| 23  | Q     | 68  | GLY  | CA-C    | -5.05 | 1.46        | 1.52     |
| 23  | Q     | 397 | TYR  | N-CA    | -5.05 | 1.40        | 1.46     |
| 24  | R     | 131 | THR  | C-N     | 5.05  | 1.40        | 1.33     |
| 26  | O     | 18  | GLN  | CA-CB   | 5.05  | 1.62        | 1.53     |
| 26  | O     | 123 | LEU  | C-N     | 5.05  | 1.40        | 1.33     |
| 28  | I     | 371 | ARG  | NE-CZ   | 5.05  | 1.38        | 1.33     |
| 31  | M     | 311 | ARG  | CA-C    | 5.05  | 1.59        | 1.52     |
| 17  | T     | 213 | THR  | C-N     | 5.05  | 1.40        | 1.33     |
| 8   | 1     | 196 | ALA  | CA-CB   | 5.05  | 1.61        | 1.53     |
| 29  | K     | 393 | ILE  | CA-C    | -5.05 | 1.46        | 1.52     |
| 16  | V     | 306 | THR  | C-O     | -5.04 | 1.18        | 1.24     |
| 20  | N     | 781 | LEU  | C-N     | 5.04  | 1.40        | 1.34     |
| 24  | R     | 278 | VAL  | N-CA    | -5.04 | 1.40        | 1.46     |
| 26  | O     | 219 | HIS  | CE1-NE2 | -5.04 | 1.27        | 1.32     |
| 20  | N     | 485 | ALA  | N-CA    | -5.04 | 1.39        | 1.46     |
| 22  | P     | 267 | LEU  | CA-CB   | 5.04  | 1.61        | 1.53     |
| 27  | H     | 365 | GLU  | N-CA    | -5.04 | 1.40        | 1.46     |
| 29  | K     | 183 | LEU  | N-CA    | -5.04 | 1.42        | 1.46     |
| 6   | F     | 114 | SER  | CA-C    | -5.04 | 1.46        | 1.52     |
| 7   | G     | 234 | GLU  | N-CA    | 5.04  | 1.52        | 1.46     |
| 23  | Q     | 187 | ARG  | CD-NE   | 5.04  | 1.53        | 1.46     |
| 27  | H     | 341 | ILE  | CA-C    | -5.04 | 1.46        | 1.52     |
| 28  | I     | 74  | MET  | CA-C    | -5.04 | 1.46        | 1.52     |
| 12  | 5     | 187 | VAL  | CA-CB   | 5.04  | 1.63        | 1.55     |
| 6   | F     | 123 | TYR  | CA-CB   | 5.04  | 1.60        | 1.53     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 21  | S     | 422 | LEU  | CB-CG   | 5.04  | 1.63        | 1.53     |
| 27  | H     | 112 | ILE  | CA-C    | -5.04 | 1.46        | 1.52     |
| 31  | M     | 434 | LYS  | CA-CB   | 5.04  | 1.61        | 1.53     |
| 3   | C     | 129 | PRO  | N-CA    | -5.04 | 1.41        | 1.47     |
| 26  | O     | 161 | LYS  | CA-CB   | 5.04  | 1.61        | 1.53     |
| 31  | M     | 59  | LYS  | CA-CB   | 5.04  | 1.61        | 1.53     |
| 6   | F     | 212 | ILE  | CA-C    | -5.04 | 1.46        | 1.52     |
| 19  | Z     | 303 | VAL  | C-N     | 5.04  | 1.40        | 1.34     |
| 20  | N     | 944 | PRO  | N-CD    | -5.04 | 1.40        | 1.47     |
| 21  | S     | 84  | GLY  | N-CA    | -5.04 | 1.38        | 1.45     |
| 24  | R     | 16  | ASP  | C-N     | 5.04  | 1.39        | 1.33     |
| 2   | B     | 71  | HIS  | ND1-CE1 | 5.03  | 1.37        | 1.32     |
| 13  | 6     | 112 | THR  | CA-C    | -5.03 | 1.46        | 1.52     |
| 15  | W     | 139 | ASP  | CA-CB   | 5.03  | 1.61        | 1.53     |
| 16  | V     | 192 | LEU  | N-CA    | -5.03 | 1.40        | 1.46     |
| 24  | R     | 318 | TYR  | C-N     | 5.03  | 1.40        | 1.33     |
| 28  | I     | 85  | MET  | CA-C    | 5.03  | 1.58        | 1.52     |
| 30  | L     | 283 | THR  | C-N     | 5.03  | 1.40        | 1.33     |
| 9   | 2     | 230 | ARG  | NE-CZ   | 5.03  | 1.38        | 1.33     |
| 19  | Z     | 233 | LEU  | N-CA    | -5.03 | 1.40        | 1.46     |
| 19  | Z     | 876 | HIS  | ND1-CE1 | 5.03  | 1.37        | 1.32     |
| 21  | S     | 222 | VAL  | CA-CB   | -5.03 | 1.47        | 1.53     |
| 29  | K     | 397 | LYS  | CA-C    | -5.03 | 1.46        | 1.52     |
| 25  | U     | 105 | ASP  | CB-CG   | 5.03  | 1.64        | 1.52     |
| 29  | K     | 43  | ARG  | C-N     | 5.03  | 1.40        | 1.33     |
| 14  | 7     | 133 | HIS  | ND1-CE1 | 5.03  | 1.37        | 1.32     |
| 19  | Z     | 608 | LYS  | CA-C    | -5.03 | 1.46        | 1.52     |
| 28  | I     | 421 | LYS  | CA-C    | -5.03 | 1.46        | 1.52     |
| 32  | J     | 205 | HIS  | CG-CD2  | 5.03  | 1.41        | 1.35     |
| 32  | J     | 393 | LYS  | C-N     | 5.03  | 1.40        | 1.33     |
| 12  | 5     | 135 | VAL  | CA-CB   | -5.03 | 1.48        | 1.54     |
| 19  | Z     | 208 | LEU  | CA-C    | 5.03  | 1.59        | 1.52     |
| 20  | N     | 339 | LEU  | N-CA    | -5.03 | 1.40        | 1.46     |
| 23  | Q     | 64  | ALA  | C-N     | 5.03  | 1.40        | 1.33     |
| 26  | O     | 160 | SER  | C-N     | 5.03  | 1.40        | 1.33     |
| 27  | H     | 353 | HIS  | C-N     | 5.03  | 1.40        | 1.33     |
| 31  | M     | 262 | MET  | CA-C    | -5.03 | 1.45        | 1.52     |
| 1   | A     | 2   | SER  | C-O     | -5.02 | 1.17        | 1.23     |
| 4   | D     | 146 | GLY  | N-CA    | 5.02  | 1.52        | 1.45     |
| 21  | S     | 139 | ALA  | C-N     | 5.02  | 1.40        | 1.33     |
| 23  | Q     | 239 | TYR  | N-CA    | 5.02  | 1.52        | 1.46     |
| 28  | I     | 411 | ARG  | CZ-NH1  | 5.02  | 1.39        | 1.32     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 29  | K     | 141 | ASP  | C-N    | 5.02  | 1.40        | 1.33     |
| 4   | D     | 134 | GLY  | CA-C   | -5.02 | 1.44        | 1.51     |
| 9   | 2     | 214 | SER  | CA-CB  | 5.02  | 1.62        | 1.53     |
| 11  | 4     | 56  | PHE  | C-N    | 5.02  | 1.40        | 1.33     |
| 15  | W     | 45  | PRO  | CA-C   | -5.02 | 1.45        | 1.52     |
| 31  | M     | 199 | GLN  | N-CA   | -5.02 | 1.40        | 1.46     |
| 23  | Q     | 326 | LEU  | N-CA   | -5.02 | 1.40        | 1.46     |
| 23  | Q     | 341 | PRO  | CA-C   | 5.02  | 1.58        | 1.52     |
| 28  | I     | 245 | ALA  | CA-C   | -5.02 | 1.46        | 1.52     |
| 29  | K     | 323 | ARG  | CA-CB  | 5.02  | 1.61        | 1.53     |
| 32  | J     | 297 | ARG  | CD-NE  | 5.02  | 1.53        | 1.46     |
| 3   | C     | 27  | ALA  | C-N    | -5.02 | 1.27        | 1.33     |
| 20  | N     | 250 | PHE  | C-N    | 5.02  | 1.40        | 1.33     |
| 31  | M     | 299 | PHE  | CG-CD1 | 5.02  | 1.49        | 1.38     |
| 19  | Z     | 101 | PRO  | N-CD   | 5.02  | 1.54        | 1.47     |
| 20  | N     | 338 | HIS  | C-N    | 5.02  | 1.40        | 1.33     |
| 20  | N     | 652 | ALA  | N-CA   | -5.02 | 1.40        | 1.46     |
| 30  | L     | 127 | ARG  | CA-CB  | 5.02  | 1.61        | 1.53     |
| 6   | F     | 36  | VAL  | C-O    | -5.01 | 1.19        | 1.24     |
| 16  | V     | 49  | VAL  | CA-C   | 5.01  | 1.58        | 1.52     |
| 19  | Z     | 608 | LYS  | N-CA   | -5.01 | 1.40        | 1.46     |
| 31  | M     | 322 | GLY  | C-N    | 5.01  | 1.40        | 1.33     |
| 10  | 3     | 189 | ILE  | CA-C   | -5.01 | 1.46        | 1.52     |
| 20  | N     | 158 | ARG  | C-N    | 5.01  | 1.40        | 1.33     |
| 31  | M     | 338 | VAL  | C-N    | -5.01 | 1.27        | 1.33     |
| 1   | A     | 78  | CYS  | N-CA   | -5.01 | 1.39        | 1.45     |
| 22  | P     | 117 | ASP  | C-O    | -5.01 | 1.19        | 1.23     |
| 20  | N     | 204 | ILE  | CA-CB  | 5.01  | 1.60        | 1.54     |
| 23  | Q     | 126 | ARG  | NE-CZ  | 5.01  | 1.38        | 1.33     |
| 29  | K     | 37  | LEU  | CA-CB  | 5.01  | 1.61        | 1.53     |
| 30  | L     | 308 | ARG  | CZ-NH1 | 5.01  | 1.39        | 1.32     |
| 4   | D     | 63  | CYS  | C-O    | 5.01  | 1.30        | 1.23     |
| 20  | N     | 214 | ILE  | CB-CG1 | 5.01  | 1.63        | 1.53     |
| 22  | P     | 328 | LEU  | CA-C   | -5.01 | 1.46        | 1.52     |
| 22  | P     | 431 | LYS  | C-N    | 5.01  | 1.40        | 1.33     |
| 31  | M     | 374 | ARG  | CD-NE  | 5.01  | 1.53        | 1.46     |
| 21  | S     | 201 | LEU  | C-N    | 5.00  | 1.40        | 1.33     |
| 19  | Z     | 745 | LEU  | CA-C   | -5.00 | 1.46        | 1.52     |
| 21  | S     | 177 | TYR  | CA-CB  | 5.00  | 1.61        | 1.53     |
| 26  | O     | 134 | THR  | CA-C   | -5.00 | 1.46        | 1.52     |
| 27  | H     | 400 | ARG  | CZ-NH2 | 5.00  | 1.40        | 1.33     |
| 7   | G     | 125 | LEU  | N-CA   | -5.00 | 1.40        | 1.46     |

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| Mol | Chain | Res | Type | Atoms  | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|-------|-------------|----------|
| 12  | 5     | 258 | TYR  | CA-CB  | 5.00  | 1.61        | 1.53     |
| 20  | N     | 615 | ARG  | CD-NE  | 5.00  | 1.53        | 1.46     |
| 22  | P     | 94  | ARG  | CZ-NH1 | 5.00  | 1.39        | 1.32     |
| 23  | Q     | 178 | HIS  | CA-CB  | 5.00  | 1.61        | 1.53     |
| 30  | L     | 348 | LEU  | CA-C   | -5.00 | 1.46        | 1.52     |

All (6475) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms    | Z      | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|--------|-------------|----------|
| 23  | Q     | 53  | LEU  | CA-C-N   | 14.32  | 138.03      | 120.14   |
| 23  | Q     | 53  | LEU  | C-N-CA   | 14.32  | 138.03      | 120.14   |
| 20  | N     | 225 | ASP  | CA-CB-CG | 13.89  | 126.49      | 112.60   |
| 31  | M     | 138 | PRO  | N-CA-CB  | 13.27  | 112.12      | 103.23   |
| 29  | K     | 182 | GLU  | N-CA-C   | 12.88  | 125.41      | 111.36   |
| 20  | N     | 131 | GLU  | CA-C-N   | 12.67  | 134.05      | 119.98   |
| 20  | N     | 131 | GLU  | C-N-CA   | 12.67  | 134.05      | 119.98   |
| 17  | T     | 254 | ILE  | N-CA-CB  | 12.45  | 120.16      | 110.45   |
| 17  | T     | 163 | ASP  | CA-C-N   | 12.37  | 128.03      | 120.24   |
| 17  | T     | 163 | ASP  | C-N-CA   | 12.37  | 128.03      | 120.24   |
| 27  | H     | 154 | PRO  | N-CA-CB  | 12.31  | 110.09      | 103.19   |
| 25  | U     | 127 | LYS  | CA-C-O   | -11.97 | 109.84      | 119.66   |
| 15  | W     | 188 | ILE  | N-CA-C   | -11.84 | 101.83      | 113.20   |
| 20  | N     | 236 | LEU  | CA-C-N   | 11.74  | 135.36      | 120.56   |
| 20  | N     | 236 | LEU  | C-N-CA   | 11.74  | 135.36      | 120.56   |
| 31  | M     | 395 | ASN  | CA-C-N   | 11.72  | 132.99      | 119.98   |
| 31  | M     | 395 | ASN  | C-N-CA   | 11.72  | 132.99      | 119.98   |
| 31  | M     | 210 | ASN  | CA-CB-CG | -11.70 | 100.90      | 112.60   |
| 12  | 5     | 197 | VAL  | N-CA-C   | 11.61  | 122.45      | 110.72   |
| 14  | 7     | 153 | THR  | N-CA-C   | -11.61 | 96.15       | 111.71   |
| 24  | R     | 197 | ALA  | CA-C-N   | 11.46  | 135.63      | 120.28   |
| 24  | R     | 197 | ALA  | C-N-CA   | 11.46  | 135.63      | 120.28   |
| 27  | H     | 309 | PHE  | CA-CB-CG | -11.45 | 102.35      | 113.80   |
| 14  | 7     | 80  | PHE  | CA-CB-CG | 11.41  | 125.21      | 113.80   |
| 22  | P     | 91  | SER  | CA-C-N   | 11.40  | 135.27      | 120.44   |
| 22  | P     | 91  | SER  | C-N-CA   | 11.40  | 135.27      | 120.44   |
| 12  | 5     | 118 | LEU  | N-CA-C   | -11.30 | 98.96       | 111.28   |
| 30  | L     | 375 | PHE  | CA-CB-CG | -11.26 | 102.54      | 113.80   |
| 28  | I     | 91  | LYS  | CA-C-O   | -11.22 | 109.04      | 120.82   |
| 19  | Z     | 253 | LEU  | CA-C-N   | 11.21  | 132.42      | 119.98   |
| 19  | Z     | 253 | LEU  | C-N-CA   | 11.21  | 132.42      | 119.98   |
| 20  | N     | 792 | ASN  | CA-CB-CG | 11.19  | 123.79      | 112.60   |
| 24  | R     | 288 | PHE  | CA-CB-CG | -10.78 | 103.02      | 113.80   |

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| Mol | Chain | Res | Type | Atoms     | Z      | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|--------|-------------|----------|
| 29  | K     | 130 | VAL  | CA-C-O    | -10.78 | 107.31      | 120.78   |
| 17  | T     | 291 | THR  | N-CA-C    | -10.77 | 100.68      | 114.04   |
| 31  | M     | 392 | ASP  | CA-CB-CG  | 10.77  | 123.36      | 112.60   |
| 27  | H     | 161 | VAL  | N-CA-C    | 10.72  | 121.55      | 110.72   |
| 32  | J     | 139 | MET  | N-CA-C    | 10.70  | 122.69      | 111.14   |
| 17  | T     | 114 | LYS  | N-CA-C    | -10.69 | 102.43      | 114.62   |
| 10  | 3     | 142 | CYS  | CA-C-N    | 10.69  | 134.97      | 120.54   |
| 10  | 3     | 142 | CYS  | C-N-CA    | 10.69  | 134.97      | 120.54   |
| 22  | P     | 145 | LEU  | CA-C-N    | 10.62  | 134.50      | 120.28   |
| 22  | P     | 145 | LEU  | C-N-CA    | 10.62  | 134.50      | 120.28   |
| 30  | L     | 340 | ILE  | CA-C-N    | 10.61  | 137.72      | 120.63   |
| 30  | L     | 340 | ILE  | C-N-CA    | 10.61  | 137.72      | 120.63   |
| 10  | 3     | 45  | MET  | CA-C-N    | 10.59  | 130.40      | 120.34   |
| 10  | 3     | 45  | MET  | C-N-CA    | 10.59  | 130.40      | 120.34   |
| 29  | K     | 79  | VAL  | CA-C-N    | 10.54  | 135.46      | 120.28   |
| 29  | K     | 79  | VAL  | C-N-CA    | 10.54  | 135.46      | 120.28   |
| 8   | 1     | 98  | PHE  | CA-CB-CG  | -10.53 | 103.27      | 113.80   |
| 9   | 2     | 75  | SER  | CA-C-N    | 10.52  | 141.63      | 121.54   |
| 9   | 2     | 75  | SER  | C-N-CA    | 10.52  | 141.63      | 121.54   |
| 31  | M     | 105 | ASN  | CA-CB-CG  | -10.48 | 102.12      | 112.60   |
| 27  | H     | 154 | PRO  | CA-C-O    | -10.47 | 113.36      | 120.90   |
| 29  | K     | 91  | GLN  | N-CA-C    | -10.38 | 93.14       | 109.23   |
| 14  | 7     | 121 | PHE  | CA-C-N    | 10.35  | 131.46      | 119.98   |
| 14  | 7     | 121 | PHE  | C-N-CA    | 10.35  | 131.46      | 119.98   |
| 12  | 5     | 69  | HIS  | CA-CB-CG  | -10.34 | 103.46      | 113.80   |
| 8   | 1     | 64  | THR  | N-CA-C    | -10.34 | 98.73       | 113.21   |
| 19  | Z     | 586 | PRO  | CA-C-N    | 10.34  | 135.17      | 120.28   |
| 19  | Z     | 586 | PRO  | C-N-CA    | 10.34  | 135.17      | 120.28   |
| 31  | M     | 190 | ASP  | N-CA-C    | -10.30 | 101.03      | 114.31   |
| 2   | B     | 96  | GLN  | CA-C-N    | 10.28  | 134.06      | 120.28   |
| 2   | B     | 96  | GLN  | C-N-CA    | 10.28  | 134.06      | 120.28   |
| 9   | 2     | 207 | PHE  | CA-CB-CG  | 10.28  | 124.08      | 113.80   |
| 25  | U     | 155 | PHE  | CA-CB-CG  | -10.28 | 103.53      | 113.80   |
| 13  | 6     | 104 | HIS  | CA-CB-CG  | 10.27  | 124.06      | 113.80   |
| 21  | S     | 97  | LEU  | CA-C-N    | 10.24  | 130.53      | 119.87   |
| 21  | S     | 97  | LEU  | C-N-CA    | 10.24  | 130.53      | 119.87   |
| 25  | U     | 196 | HIS  | CB-CG-ND1 | 10.21  | 138.02      | 122.70   |
| 12  | 5     | 201 | GLY  | N-CA-C    | 10.18  | 126.58      | 113.24   |
| 21  | S     | 249 | LEU  | CA-C-N    | 10.14  | 133.87      | 120.28   |
| 21  | S     | 249 | LEU  | C-N-CA    | 10.14  | 133.87      | 120.28   |
| 25  | U     | 104 | ASN  | CA-CB-CG  | -10.14 | 102.46      | 112.60   |
| 22  | P     | 200 | ILE  | N-CA-C    | 10.13  | 120.15      | 110.42   |

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| Mol | Chain | Res | Type | Atoms      | Z      | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|--------|-------------|----------|
| 21  | S     | 448 | ASN  | CA-CB-CG   | -10.13 | 102.47      | 112.60   |
| 19  | Z     | 90  | THR  | N-CA-C     | -10.12 | 99.26       | 114.64   |
| 12  | 5     | 64  | ALA  | N-CA-C     | -10.10 | 91.96       | 108.41   |
| 3   | C     | 143 | TYR  | N-CA-C     | -10.06 | 101.78      | 114.56   |
| 1   | A     | 222 | VAL  | CA-C-N     | 10.00  | 133.44      | 120.44   |
| 1   | A     | 222 | VAL  | C-N-CA     | 10.00  | 133.44      | 120.44   |
| 11  | 4     | 56  | PHE  | CA-CB-CG   | -10.00 | 103.80      | 113.80   |
| 7   | G     | 57  | LYS  | N-CA-C     | -9.99  | 101.33      | 112.72   |
| 15  | W     | 99  | HIS  | CB-CG-CD2  | -9.98  | 118.22      | 131.20   |
| 21  | S     | 378 | PHE  | CA-CB-CG   | -9.97  | 103.83      | 113.80   |
| 28  | I     | 142 | ASP  | CA-C-N     | 9.97   | 133.64      | 120.28   |
| 28  | I     | 142 | ASP  | C-N-CA     | 9.97   | 133.64      | 120.28   |
| 4   | D     | 61  | LYS  | N-CA-C     | -9.96  | 101.13      | 113.38   |
| 19  | Z     | 429 | ILE  | N-CA-C     | -9.95  | 103.65      | 113.20   |
| 19  | Z     | 175 | ASP  | N-CA-C     | -9.93  | 99.31       | 113.21   |
| 14  | 7     | 133 | HIS  | CA-CB-CG   | 9.89   | 123.69      | 113.80   |
| 19  | Z     | 185 | LEU  | CA-C-N     | 9.88   | 133.69      | 120.65   |
| 19  | Z     | 185 | LEU  | C-N-CA     | 9.88   | 133.69      | 120.65   |
| 21  | S     | 271 | VAL  | N-CA-C     | -9.86  | 103.84      | 112.12   |
| 32  | J     | 147 | THR  | CA-C-N     | 9.85   | 134.47      | 120.28   |
| 32  | J     | 147 | THR  | C-N-CA     | 9.85   | 134.47      | 120.28   |
| 21  | S     | 378 | PHE  | CA-C-N     | 9.85   | 131.06      | 120.03   |
| 21  | S     | 378 | PHE  | C-N-CA     | 9.85   | 131.06      | 120.03   |
| 4   | D     | 133 | PHE  | CA-CB-CG   | -9.84  | 103.96      | 113.80   |
| 21  | S     | 114 | HIS  | CA-CB-CG   | -9.83  | 103.97      | 113.80   |
| 12  | 5     | 241 | ASP  | CA-CB-CG   | -9.82  | 102.78      | 112.60   |
| 20  | N     | 944 | PRO  | CA-C-N     | 9.82   | 129.90      | 119.78   |
| 20  | N     | 944 | PRO  | C-N-CA     | 9.82   | 129.90      | 119.78   |
| 19  | Z     | 260 | SER  | N-CA-C     | -9.79  | 101.56      | 112.72   |
| 2   | B     | 84  | ARG  | NE-CZ-NH1  | 9.77   | 131.27      | 121.50   |
| 12  | 5     | 65  | PHE  | CA-CB-CG   | -9.76  | 104.04      | 113.80   |
| 5   | E     | 77  | ALA  | N-CA-C     | -9.73  | 94.47       | 109.95   |
| 20  | N     | 678 | ASP  | CA-CB-CG   | 9.72   | 122.33      | 112.60   |
| 8   | 1     | 203 | SER  | N-CA-C     | -9.72  | 99.77       | 114.16   |
| 21  | S     | 230 | ARG  | N-CA-CB    | 9.72   | 125.35      | 110.28   |
| 21  | S     | 338 | ILE  | N-CA-C     | -9.70  | 98.55       | 108.15   |
| 9   | 2     | 152 | HIS  | CA-CB-CG   | 9.69   | 123.49      | 113.80   |
| 21  | S     | 367 | ASN  | CA-CB-CG   | 9.69   | 122.29      | 112.60   |
| 16  | V     | 171 | GLY  | O-C-N      | 9.69   | 131.49      | 122.19   |
| 21  | S     | 228 | HIS  | CG-CD2-NE2 | 9.68   | 116.88      | 107.20   |
| 17  | T     | 338 | LEU  | CA-C-N     | 9.67   | 133.24      | 120.28   |
| 17  | T     | 338 | LEU  | C-N-CA     | 9.67   | 133.24      | 120.28   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 13  | 6     | 197 | ARG  | NE-CZ-NH2 | -9.65 | 110.51      | 119.20   |
| 23  | Q     | 83  | ALA  | CA-C-N    | 9.64  | 134.16      | 120.28   |
| 23  | Q     | 83  | ALA  | C-N-CA    | 9.64  | 134.16      | 120.28   |
| 19  | Z     | 795 | GLY  | O-C-N     | -9.61 | 112.96      | 122.18   |
| 19  | Z     | 683 | GLU  | CB-CA-C   | 9.60  | 119.35      | 111.00   |
| 5   | E     | 154 | PHE  | CA-CB-CG  | -9.58 | 104.22      | 113.80   |
| 1   | A     | 145 | GLU  | CA-C-O    | -9.56 | 110.79      | 120.82   |
| 21  | S     | 253 | ASN  | CA-CB-CG  | 9.55  | 122.15      | 112.60   |
| 27  | H     | 343 | PHE  | N-CA-C    | -9.54 | 94.45       | 109.23   |
| 29  | K     | 35  | GLU  | CA-C-N    | 9.54  | 133.83      | 120.29   |
| 29  | K     | 35  | GLU  | C-N-CA    | 9.54  | 133.83      | 120.29   |
| 9   | 2     | 228 | PHE  | CA-CB-CG  | -9.51 | 104.29      | 113.80   |
| 6   | F     | 101 | ARG  | N-CA-C    | -9.50 | 95.56       | 110.10   |
| 19  | Z     | 343 | LYS  | N-CA-C    | 9.50  | 121.63      | 111.28   |
| 4   | D     | 84  | ALA  | N-CA-C    | 9.50  | 121.63      | 111.28   |
| 29  | K     | 107 | THR  | N-CA-C    | -9.50 | 101.37      | 113.72   |
| 11  | 4     | 108 | ASP  | CA-CB-CG  | 9.50  | 122.10      | 112.60   |
| 20  | N     | 550 | VAL  | CA-C-N    | 9.46  | 131.96      | 120.14   |
| 20  | N     | 550 | VAL  | C-N-CA    | 9.46  | 131.96      | 120.14   |
| 32  | J     | 343 | ASN  | CA-CB-CG  | 9.45  | 122.05      | 112.60   |
| 22  | P     | 449 | GLU  | CA-C-O    | 9.44  | 130.83      | 119.97   |
| 26  | O     | 187 | ASP  | CA-CB-CG  | 9.38  | 121.98      | 112.60   |
| 32  | J     | 325 | ARG  | NE-CZ-NH2 | -9.38 | 110.76      | 119.20   |
| 30  | L     | 255 | ARG  | CA-C-N    | 9.35  | 133.16      | 120.54   |
| 30  | L     | 255 | ARG  | C-N-CA    | 9.35  | 133.16      | 120.54   |
| 7   | G     | 15  | PHE  | CA-CB-CG  | 9.35  | 123.15      | 113.80   |
| 9   | 2     | 81  | SER  | CA-C-O    | -9.35 | 107.36      | 120.16   |
| 20  | N     | 198 | LEU  | CA-C-O    | -9.34 | 110.64      | 120.55   |
| 27  | H     | 76  | ALA  | CA-C-N    | 9.34  | 132.79      | 120.28   |
| 27  | H     | 76  | ALA  | C-N-CA    | 9.34  | 132.79      | 120.28   |
| 1   | A     | 70  | PHE  | CA-CB-CG  | -9.33 | 104.47      | 113.80   |
| 12  | 5     | 181 | SER  | CA-C-N    | 9.33  | 128.79      | 121.61   |
| 12  | 5     | 181 | SER  | C-N-CA    | 9.33  | 128.79      | 121.61   |
| 26  | O     | 35  | HIS  | CA-CB-CG  | 9.31  | 123.11      | 113.80   |
| 28  | I     | 342 | ILE  | CA-C-O    | 9.31  | 126.72      | 119.46   |
| 3   | C     | 129 | PRO  | CA-C-N    | 9.31  | 134.02      | 120.90   |
| 3   | C     | 129 | PRO  | C-N-CA    | 9.31  | 134.02      | 120.90   |
| 19  | Z     | 191 | ILE  | CA-C-N    | 9.27  | 127.75      | 120.33   |
| 19  | Z     | 191 | ILE  | C-N-CA    | 9.27  | 127.75      | 120.33   |
| 5   | E     | 71  | ASP  | N-CA-C    | -9.27 | 95.95       | 108.74   |
| 1   | A     | 183 | VAL  | CA-C-N    | 9.26  | 132.69      | 120.28   |
| 1   | A     | 183 | VAL  | C-N-CA    | 9.26  | 132.69      | 120.28   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 30  | L     | 55  | GLU  | CA-C-O      | 9.25  | 130.23      | 120.42   |
| 5   | E     | 56  | SER  | N-CA-C      | -9.25 | 97.52       | 108.25   |
| 12  | 5     | 118 | LEU  | N-CA-CB     | 9.25  | 123.72      | 110.12   |
| 31  | M     | 328 | GLN  | OE1-CD-NE2  | 9.23  | 131.83      | 122.60   |
| 27  | H     | 201 | PHE  | CA-CB-CG    | -9.20 | 104.60      | 113.80   |
| 22  | P     | 78  | LYS  | N-CA-C      | -9.19 | 104.14      | 114.62   |
| 29  | K     | 252 | ARG  | CA-C-O      | -9.19 | 110.68      | 120.42   |
| 12  | 5     | 196 | GLY  | N-CA-C      | 9.17  | 125.65      | 113.37   |
| 9   | 2     | 105 | ASN  | CA-CB-CG    | 9.16  | 121.76      | 112.60   |
| 27  | H     | 307 | ASP  | CA-CB-CG    | 9.16  | 121.76      | 112.60   |
| 9   | 2     | 52  | LYS  | N-CA-C      | -9.15 | 100.87      | 111.03   |
| 20  | N     | 926 | GLU  | CA-C-O      | -9.14 | 107.64      | 120.16   |
| 3   | C     | 239 | LYS  | CA-C-N      | 9.14  | 133.27      | 120.29   |
| 3   | C     | 239 | LYS  | C-N-CA      | 9.14  | 133.27      | 120.29   |
| 30  | L     | 98  | ARG  | NE-CZ-NH1   | 9.12  | 130.62      | 121.50   |
| 20  | N     | 4   | SER  | CA-C-N      | 9.12  | 135.94      | 120.72   |
| 20  | N     | 4   | SER  | C-N-CA      | 9.12  | 135.94      | 120.72   |
| 21  | S     | 28  | PRO  | CA-N-CD     | -9.10 | 99.25       | 112.00   |
| 8   | 1     | 53  | THR  | N-CA-CB     | 9.10  | 125.87      | 110.49   |
| 20  | N     | 699 | THR  | CA-C-N      | 9.10  | 132.47      | 120.28   |
| 20  | N     | 699 | THR  | C-N-CA      | 9.10  | 132.47      | 120.28   |
| 30  | L     | 58  | GLU  | N-CA-CB     | 9.10  | 123.62      | 110.16   |
| 24  | R     | 363 | ASN  | N-CA-C      | 9.09  | 120.79      | 111.07   |
| 11  | 4     | 6   | GLY  | CA-C-O      | -9.07 | 113.31      | 121.47   |
| 17  | T     | 190 | TYR  | N-CA-C      | -9.07 | 101.53      | 112.59   |
| 22  | P     | 44  | ILE  | CA-C-N      | 9.07  | 132.43      | 120.28   |
| 22  | P     | 44  | ILE  | C-N-CA      | 9.07  | 132.43      | 120.28   |
| 4   | D     | 75  | VAL  | N-CA-CB     | 9.06  | 126.19      | 111.23   |
| 21  | S     | 299 | SER  | N-CA-C      | 9.06  | 120.76      | 111.07   |
| 10  | 3     | 157 | ASN  | N-CA-C      | -9.05 | 96.10       | 108.86   |
| 13  | 6     | 106 | ASN  | CA-CB-CG    | 9.05  | 121.65      | 112.60   |
| 20  | N     | 446 | LEU  | CA-C-N      | 9.03  | 130.00      | 119.98   |
| 20  | N     | 446 | LEU  | C-N-CA      | 9.03  | 130.00      | 119.98   |
| 12  | 5     | 63  | LEU  | N-CA-C      | 9.02  | 121.92      | 109.11   |
| 22  | P     | 30  | GLU  | CA-C-N      | 9.02  | 133.10      | 120.29   |
| 22  | P     | 30  | GLU  | C-N-CA      | 9.02  | 133.10      | 120.29   |
| 20  | N     | 345 | ASN  | CA-CB-CG    | -9.02 | 103.58      | 112.60   |
| 30  | L     | 371 | ALA  | CA-C-N      | 9.02  | 138.77      | 121.54   |
| 30  | L     | 371 | ALA  | C-N-CA      | 9.02  | 138.77      | 121.54   |
| 4   | D     | 211 | ASN  | CA-C-O      | 9.01  | 128.36      | 119.08   |
| 31  | M     | 211 | HIS  | ND1-CE1-NE2 | 9.00  | 117.40      | 108.40   |
| 2   | B     | 43  | GLY  | N-CA-C      | -8.99 | 102.32      | 111.85   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 28  | I     | 342 | ILE  | N-CA-C    | -8.99 | 104.57      | 113.20   |
| 28  | I     | 222 | VAL  | N-CA-C    | -8.98 | 94.99       | 107.75   |
| 14  | 7     | 144 | ARG  | NE-CZ-NH2 | 8.98  | 127.28      | 119.20   |
| 26  | O     | 55  | GLY  | CA-C-N    | 8.96  | 133.01      | 120.29   |
| 26  | O     | 55  | GLY  | C-N-CA    | 8.96  | 133.01      | 120.29   |
| 20  | N     | 454 | GLY  | N-CA-C    | 8.96  | 124.52      | 114.67   |
| 28  | I     | 398 | ILE  | O-C-N     | 8.92  | 131.02      | 121.83   |
| 12  | 5     | 73  | VAL  | N-CA-C    | -8.90 | 94.75       | 107.75   |
| 26  | O     | 239 | ALA  | CA-C-N    | 8.90  | 132.54      | 120.44   |
| 26  | O     | 239 | ALA  | C-N-CA    | 8.90  | 132.54      | 120.44   |
| 32  | J     | 370 | ALA  | CA-C-N    | 8.88  | 131.99      | 120.44   |
| 32  | J     | 370 | ALA  | C-N-CA    | 8.88  | 131.99      | 120.44   |
| 6   | F     | 232 | PHE  | CA-C-N    | 8.87  | 132.17      | 120.28   |
| 6   | F     | 232 | PHE  | C-N-CA    | 8.87  | 132.17      | 120.28   |
| 10  | 3     | 149 | MET  | N-CA-C    | 8.87  | 121.03      | 111.36   |
| 23  | Q     | 259 | ILE  | N-CA-CB   | 8.86  | 122.59      | 110.54   |
| 31  | M     | 67  | HIS  | CA-CB-CG  | -8.85 | 104.95      | 113.80   |
| 15  | W     | 130 | ARG  | CA-C-N    | 8.85  | 132.85      | 120.29   |
| 15  | W     | 130 | ARG  | C-N-CA    | 8.85  | 132.85      | 120.29   |
| 13  | 6     | 95  | ILE  | CA-C-N    | 8.84  | 132.12      | 120.28   |
| 13  | 6     | 95  | ILE  | C-N-CA    | 8.84  | 132.12      | 120.28   |
| 8   | 1     | 229 | LYS  | N-CA-CB   | 8.84  | 125.66      | 110.81   |
| 15  | W     | 122 | LYS  | CA-C-N    | 8.84  | 131.93      | 120.44   |
| 15  | W     | 122 | LYS  | C-N-CA    | 8.84  | 131.93      | 120.44   |
| 24  | R     | 177 | ARG  | NE-CZ-NH2 | -8.83 | 111.25      | 119.20   |
| 19  | Z     | 76  | GLU  | N-CA-CB   | 8.81  | 123.08      | 110.12   |
| 19  | Z     | 301 | HIS  | CA-C-N    | 8.81  | 129.76      | 119.98   |
| 19  | Z     | 301 | HIS  | C-N-CA    | 8.81  | 129.76      | 119.98   |
| 16  | V     | 75  | MET  | CA-C-N    | 8.81  | 129.35      | 119.83   |
| 16  | V     | 75  | MET  | C-N-CA    | 8.81  | 129.35      | 119.83   |
| 17  | T     | 280 | LYS  | CA-C-N    | 8.81  | 131.89      | 120.44   |
| 17  | T     | 280 | LYS  | C-N-CA    | 8.81  | 131.89      | 120.44   |
| 14  | 7     | 132 | ILE  | CA-C-O    | -8.80 | 111.52      | 120.85   |
| 19  | Z     | 454 | GLY  | CA-C-N    | 8.80  | 132.58      | 120.35   |
| 19  | Z     | 454 | GLY  | C-N-CA    | 8.80  | 132.58      | 120.35   |
| 3   | C     | 99  | LEU  | N-CA-C    | -8.80 | 101.66      | 111.07   |
| 20  | N     | 481 | LEU  | CA-C-N    | 8.80  | 129.74      | 119.98   |
| 20  | N     | 481 | LEU  | C-N-CA    | 8.80  | 129.74      | 119.98   |
| 21  | S     | 364 | ARG  | N-CA-C    | 8.80  | 120.48      | 111.07   |
| 26  | O     | 274 | LEU  | CA-C-N    | 8.79  | 132.78      | 120.29   |
| 26  | O     | 274 | LEU  | C-N-CA    | 8.79  | 132.78      | 120.29   |
| 1   | A     | 201 | CYS  | N-CA-C    | 8.79  | 120.86      | 111.28   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 15  | W     | 19  | GLY  | CA-C-N     | 8.79  | 132.41      | 120.54   |
| 15  | W     | 19  | GLY  | C-N-CA     | 8.79  | 132.41      | 120.54   |
| 19  | Z     | 628 | ASP  | CA-CB-CG   | -8.79 | 103.81      | 112.60   |
| 31  | M     | 327 | THR  | N-CA-C     | -8.79 | 102.69      | 113.41   |
| 20  | N     | 677 | ASN  | CA-CB-CG   | -8.78 | 103.82      | 112.60   |
| 19  | Z     | 242 | GLU  | CA-C-O     | -8.77 | 110.14      | 118.73   |
| 31  | M     | 195 | ASP  | CA-C-N     | 8.77  | 132.03      | 120.28   |
| 31  | M     | 195 | ASP  | C-N-CA     | 8.77  | 132.03      | 120.28   |
| 24  | R     | 150 | PHE  | O-C-N      | 8.77  | 131.10      | 122.07   |
| 7   | G     | 132 | PHE  | CA-CB-CG   | -8.76 | 105.04      | 113.80   |
| 5   | E     | 213 | THR  | N-CA-C     | -8.76 | 101.69      | 114.39   |
| 19  | Z     | 763 | ARG  | NE-CZ-NH2  | -8.74 | 111.34      | 119.20   |
| 31  | M     | 56  | LYS  | CA-C-N     | 8.72  | 132.41      | 120.46   |
| 31  | M     | 56  | LYS  | C-N-CA     | 8.72  | 132.41      | 120.46   |
| 26  | O     | 271 | LYS  | CA-C-N     | 8.72  | 132.41      | 120.46   |
| 26  | O     | 271 | LYS  | C-N-CA     | 8.72  | 132.41      | 120.46   |
| 24  | R     | 124 | PHE  | CA-CB-CG   | -8.72 | 105.08      | 113.80   |
| 17  | T     | 200 | LEU  | CA-C-N     | 8.70  | 131.75      | 120.44   |
| 17  | T     | 200 | LEU  | C-N-CA     | 8.70  | 131.75      | 120.44   |
| 12  | 5     | 110 | ASP  | CA-CB-CG   | 8.70  | 121.30      | 112.60   |
| 28  | I     | 168 | ASP  | CA-C-N     | 8.70  | 128.41      | 119.19   |
| 28  | I     | 168 | ASP  | C-N-CA     | 8.70  | 128.41      | 119.19   |
| 20  | N     | 34  | PHE  | CA-C-N     | 8.69  | 132.29      | 120.38   |
| 20  | N     | 34  | PHE  | C-N-CA     | 8.69  | 132.29      | 120.38   |
| 14  | 7     | 200 | LYS  | CA-C-O     | -8.69 | 111.34      | 120.55   |
| 21  | S     | 318 | VAL  | CA-C-N     | 8.69  | 129.59      | 119.94   |
| 21  | S     | 318 | VAL  | C-N-CA     | 8.69  | 129.59      | 119.94   |
| 22  | P     | 143 | ALA  | N-CA-C     | 8.69  | 120.75      | 111.28   |
| 30  | L     | 39  | ARG  | CA-C-N     | 8.69  | 131.92      | 120.28   |
| 30  | L     | 39  | ARG  | C-N-CA     | 8.69  | 131.92      | 120.28   |
| 13  | 6     | 126 | ARG  | CA-C-N     | 8.68  | 131.91      | 120.28   |
| 13  | 6     | 126 | ARG  | C-N-CA     | 8.68  | 131.91      | 120.28   |
| 32  | J     | 221 | GLN  | N-CA-C     | -8.67 | 94.38       | 108.52   |
| 15  | W     | 149 | ASN  | OD1-CG-ND2 | 8.67  | 131.27      | 122.60   |
| 11  | 4     | 123 | ALA  | N-CA-C     | -8.67 | 102.72      | 113.38   |
| 20  | N     | 476 | GLY  | CA-C-N     | 8.66  | 129.38      | 119.94   |
| 20  | N     | 476 | GLY  | C-N-CA     | 8.66  | 129.38      | 119.94   |
| 27  | H     | 271 | LEU  | CA-C-O     | -8.65 | 110.72      | 120.32   |
| 17  | T     | 336 | THR  | CA-C-N     | 8.65  | 131.68      | 120.44   |
| 17  | T     | 336 | THR  | C-N-CA     | 8.65  | 131.68      | 120.44   |
| 19  | Z     | 671 | ALA  | CA-C-N     | 8.65  | 132.57      | 120.29   |
| 19  | Z     | 671 | ALA  | C-N-CA     | 8.65  | 132.57      | 120.29   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 20  | N     | 916 | ASP  | CA-CB-CG    | -8.65 | 103.95      | 112.60   |
| 11  | 4     | 153 | ARG  | CA-C-N      | 8.64  | 133.53      | 120.82   |
| 11  | 4     | 153 | ARG  | C-N-CA      | 8.64  | 133.53      | 120.82   |
| 25  | U     | 64  | ASP  | CA-CB-CG    | 8.64  | 121.24      | 112.60   |
| 16  | V     | 64  | ASP  | N-CA-C      | -8.62 | 101.20      | 112.41   |
| 19  | Z     | 591 | ALA  | CA-C-N      | 8.62  | 132.20      | 120.38   |
| 19  | Z     | 591 | ALA  | C-N-CA      | 8.62  | 132.20      | 120.38   |
| 7   | G     | 135 | SER  | N-CA-C      | -8.62 | 95.35       | 109.40   |
| 29  | K     | 193 | GLN  | N-CA-C      | 8.62  | 120.67      | 111.28   |
| 19  | Z     | 51  | GLN  | OE1-CD-NE2  | 8.60  | 131.20      | 122.60   |
| 10  | 3     | 58  | THR  | CA-C-N      | 8.60  | 133.38      | 120.31   |
| 10  | 3     | 58  | THR  | C-N-CA      | 8.60  | 133.38      | 120.31   |
| 14  | 7     | 174 | VAL  | N-CA-C      | -8.59 | 103.37      | 113.42   |
| 30  | L     | 145 | SER  | O-C-N       | 8.59  | 130.91      | 122.07   |
| 16  | V     | 145 | VAL  | N-CA-C      | -8.57 | 95.64       | 108.85   |
| 29  | K     | 344 | ILE  | CA-CB-CG1   | 8.56  | 124.96      | 110.40   |
| 1   | A     | 104 | LYS  | CA-C-N      | 8.56  | 132.44      | 120.29   |
| 1   | A     | 104 | LYS  | C-N-CA      | 8.56  | 132.44      | 120.29   |
| 24  | R     | 244 | ALA  | CA-C-N      | 8.55  | 131.55      | 120.44   |
| 24  | R     | 244 | ALA  | C-N-CA      | 8.55  | 131.55      | 120.44   |
| 22  | P     | 12  | ARG  | N-CA-C      | -8.54 | 102.86      | 113.28   |
| 19  | Z     | 156 | HIS  | CB-CG-CD2   | -8.54 | 120.11      | 131.20   |
| 19  | Z     | 346 | ASP  | CA-C-N      | 8.52  | 132.03      | 120.44   |
| 19  | Z     | 346 | ASP  | C-N-CA      | 8.52  | 132.03      | 120.44   |
| 23  | Q     | 270 | LEU  | CA-C-O      | -8.52 | 111.39      | 120.42   |
| 21  | S     | 397 | ASN  | N-CA-C      | 8.51  | 121.50      | 111.71   |
| 31  | M     | 349 | GLY  | CA-C-O      | 8.51  | 128.38      | 119.10   |
| 17  | T     | 194 | LEU  | N-CA-CB     | 8.51  | 122.62      | 110.12   |
| 14  | 7     | 242 | GLU  | CA-C-N      | 8.51  | 134.18      | 123.12   |
| 14  | 7     | 242 | GLU  | C-N-CA      | 8.51  | 134.18      | 123.12   |
| 31  | M     | 350 | ARG  | N-CA-C      | -8.51 | 101.62      | 112.93   |
| 16  | V     | 180 | ASN  | CA-C-N      | 8.50  | 132.01      | 120.54   |
| 16  | V     | 180 | ASN  | C-N-CA      | 8.50  | 132.01      | 120.54   |
| 31  | M     | 154 | VAL  | O-C-N       | 8.50  | 132.47      | 123.04   |
| 9   | 2     | 134 | GLN  | OE1-CD-NE2  | 8.49  | 131.09      | 122.60   |
| 20  | N     | 32  | ASN  | N-CA-C      | -8.49 | 104.05      | 114.75   |
| 25  | U     | 22  | HIS  | CE1-NE2-CD2 | -8.49 | 100.51      | 109.00   |
| 3   | C     | 103 | GLU  | O-C-N       | -8.49 | 115.22      | 121.84   |
| 1   | A     | 26  | GLU  | CA-C-N      | 8.49  | 133.21      | 120.31   |
| 1   | A     | 26  | GLU  | C-N-CA      | 8.49  | 133.21      | 120.31   |
| 20  | N     | 88  | PHE  | CA-CB-CG    | -8.49 | 105.31      | 113.80   |
| 13  | 6     | 201 | LEU  | CA-C-O      | 8.48  | 129.54      | 120.55   |

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| Mol | Chain | Res | Type | Atoms    | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|-------|-------------|----------|
| 31  | M     | 132 | ARG  | N-CA-CB  | 8.47  | 124.81      | 110.49   |
| 20  | N     | 645 | ASN  | CA-C-N   | 8.46  | 128.97      | 119.32   |
| 20  | N     | 645 | ASN  | C-N-CA   | 8.46  | 128.97      | 119.32   |
| 27  | H     | 104 | ALA  | N-CA-C   | -8.46 | 100.94      | 112.03   |
| 31  | M     | 36  | VAL  | CA-C-N   | 8.46  | 131.95      | 120.44   |
| 31  | M     | 36  | VAL  | C-N-CA   | 8.46  | 131.95      | 120.44   |
| 9   | 2     | 55  | ILE  | CA-C-O   | -8.45 | 110.22      | 120.78   |
| 17  | T     | 326 | GLN  | N-CA-C   | 8.45  | 120.49      | 111.28   |
| 31  | M     | 113 | ASN  | N-CA-C   | -8.45 | 103.47      | 112.93   |
| 26  | O     | 351 | ASP  | CA-C-N   | 8.44  | 132.28      | 120.29   |
| 26  | O     | 351 | ASP  | C-N-CA   | 8.44  | 132.28      | 120.29   |
| 25  | U     | 108 | ILE  | CA-C-N   | 8.44  | 131.59      | 120.28   |
| 25  | U     | 108 | ILE  | C-N-CA   | 8.44  | 131.59      | 120.28   |
| 1   | A     | 100 | ASN  | CA-C-N   | 8.41  | 131.55      | 120.28   |
| 1   | A     | 100 | ASN  | C-N-CA   | 8.41  | 131.55      | 120.28   |
| 13  | 6     | 46  | ASP  | CA-CB-CG | -8.41 | 104.19      | 112.60   |
| 25  | U     | 82  | PHE  | CB-CA-C  | -8.41 | 96.83       | 110.79   |
| 28  | I     | 227 | PRO  | CA-C-N   | 8.40  | 128.44      | 119.78   |
| 28  | I     | 227 | PRO  | C-N-CA   | 8.40  | 128.44      | 119.78   |
| 16  | V     | 44  | HIS  | CA-C-N   | 8.40  | 129.24      | 120.00   |
| 16  | V     | 44  | HIS  | C-N-CA   | 8.40  | 129.24      | 120.00   |
| 20  | N     | 427 | LEU  | CA-C-O   | -8.40 | 111.20      | 120.69   |
| 22  | P     | 251 | TYR  | CA-C-N   | 8.40  | 133.07      | 120.31   |
| 22  | P     | 251 | TYR  | C-N-CA   | 8.40  | 133.07      | 120.31   |
| 24  | R     | 191 | ILE  | N-CA-CB  | 8.39  | 121.31      | 110.57   |
| 11  | 4     | 95  | ARG  | CA-C-N   | 8.39  | 132.05      | 120.39   |
| 11  | 4     | 95  | ARG  | C-N-CA   | 8.39  | 132.05      | 120.39   |
| 16  | V     | 40  | LYS  | N-CA-CB  | 8.39  | 122.17      | 110.01   |
| 30  | L     | 149 | ILE  | CA-C-N   | 8.38  | 128.31      | 120.34   |
| 30  | L     | 149 | ILE  | C-N-CA   | 8.38  | 128.31      | 120.34   |
| 23  | Q     | 253 | TYR  | N-CA-C   | 8.38  | 120.50      | 111.36   |
| 12  | 5     | 118 | LEU  | CB-CA-C  | 8.38  | 124.70      | 110.79   |
| 3   | C     | 151 | ASP  | CA-C-N   | 8.37  | 129.08      | 120.04   |
| 3   | C     | 151 | ASP  | C-N-CA   | 8.37  | 129.08      | 120.04   |
| 27  | H     | 323 | ARG  | N-CA-C   | -8.38 | 100.59      | 108.13   |
| 17  | T     | 144 | LEU  | N-CA-C   | 8.37  | 120.41      | 111.28   |
| 25  | U     | 32  | GLN  | N-CA-C   | -8.37 | 101.93      | 112.90   |
| 25  | U     | 162 | ILE  | N-CA-C   | -8.37 | 95.99       | 108.46   |
| 9   | 2     | 103 | SER  | CA-C-N   | 8.37  | 131.49      | 120.28   |
| 9   | 2     | 103 | SER  | C-N-CA   | 8.37  | 131.49      | 120.28   |
| 21  | S     | 345 | ARG  | CA-C-N   | 8.37  | 130.02      | 120.06   |
| 21  | S     | 345 | ARG  | C-N-CA   | 8.37  | 130.02      | 120.06   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 19  | Z     | 688 | ARG  | NE-CZ-NH1  | -8.36 | 113.14      | 121.50   |
| 23  | Q     | 169 | VAL  | O-C-N      | 8.35  | 129.97      | 121.87   |
| 24  | R     | 17  | LEU  | O-C-N      | -8.35 | 114.12      | 123.48   |
| 8   | 1     | 216 | GLY  | CA-C-N     | 8.34  | 136.98      | 121.97   |
| 8   | 1     | 216 | GLY  | C-N-CA     | 8.34  | 136.98      | 121.97   |
| 19  | Z     | 861 | THR  | N-CA-C     | -8.34 | 96.38       | 109.72   |
| 26  | O     | 292 | THR  | CA-C-N     | 8.34  | 132.13      | 120.29   |
| 26  | O     | 292 | THR  | C-N-CA     | 8.34  | 132.13      | 120.29   |
| 17  | T     | 335 | SER  | CA-C-N     | 8.33  | 131.45      | 120.28   |
| 17  | T     | 335 | SER  | C-N-CA     | 8.33  | 131.45      | 120.28   |
| 3   | C     | 129 | PRO  | N-CA-CB    | 8.33  | 111.75      | 102.67   |
| 2   | B     | 71  | HIS  | CA-CB-CG   | 8.33  | 122.13      | 113.80   |
| 32  | J     | 377 | HIS  | CA-CB-CG   | 8.33  | 122.13      | 113.80   |
| 26  | O     | 134 | THR  | CA-C-N     | 8.32  | 131.86      | 120.46   |
| 26  | O     | 134 | THR  | C-N-CA     | 8.32  | 131.86      | 120.46   |
| 24  | R     | 166 | SER  | CA-C-N     | 8.32  | 132.10      | 120.29   |
| 24  | R     | 166 | SER  | C-N-CA     | 8.32  | 132.10      | 120.29   |
| 8   | 1     | 225 | ASP  | CA-C-N     | 8.32  | 131.43      | 120.28   |
| 8   | 1     | 225 | ASP  | C-N-CA     | 8.32  | 131.43      | 120.28   |
| 24  | R     | 92  | GLU  | CA-C-N     | 8.31  | 132.09      | 120.29   |
| 24  | R     | 92  | GLU  | C-N-CA     | 8.31  | 132.09      | 120.29   |
| 11  | 4     | 8   | GLN  | OE1-CD-NE2 | 8.29  | 130.90      | 122.60   |
| 22  | P     | 114 | GLU  | N-CA-C     | 8.29  | 120.10      | 111.14   |
| 30  | L     | 30  | LEU  | CA-C-N     | 8.29  | 131.39      | 120.28   |
| 30  | L     | 30  | LEU  | C-N-CA     | 8.29  | 131.39      | 120.28   |
| 29  | K     | 229 | ARG  | N-CA-C     | -8.29 | 95.78       | 108.96   |
| 16  | V     | 73  | PHE  | N-CA-C     | -8.29 | 96.80       | 109.14   |
| 24  | R     | 150 | PHE  | CA-C-O     | -8.29 | 112.12      | 120.82   |
| 27  | H     | 291 | GLY  | CA-C-N     | 8.29  | 132.21      | 120.28   |
| 27  | H     | 291 | GLY  | C-N-CA     | 8.29  | 132.21      | 120.28   |
| 14  | 7     | 237 | THR  | N-CA-C     | -8.28 | 94.76       | 108.76   |
| 22  | P     | 335 | THR  | CA-C-O     | -8.28 | 112.72      | 120.34   |
| 32  | J     | 357 | ALA  | CA-C-N     | 8.28  | 132.05      | 120.29   |
| 32  | J     | 357 | ALA  | C-N-CA     | 8.28  | 132.05      | 120.29   |
| 19  | Z     | 609 | VAL  | N-CA-CB    | 8.28  | 120.23      | 110.55   |
| 14  | 7     | 54  | SER  | O-C-N      | -8.27 | 113.92      | 123.27   |
| 31  | M     | 74  | ASP  | CA-C-N     | 8.26  | 132.02      | 120.29   |
| 31  | M     | 74  | ASP  | C-N-CA     | 8.26  | 132.02      | 120.29   |
| 28  | I     | 71  | TYR  | CA-C-N     | 8.25  | 132.01      | 120.29   |
| 28  | I     | 71  | TYR  | C-N-CA     | 8.25  | 132.01      | 120.29   |
| 29  | K     | 296 | MET  | CA-C-N     | 8.25  | 131.33      | 120.28   |
| 29  | K     | 296 | MET  | C-N-CA     | 8.25  | 131.33      | 120.28   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 23  | Q     | 10  | GLN  | CA-C-N      | 8.25  | 131.16      | 120.44   |
| 23  | Q     | 10  | GLN  | C-N-CA      | 8.25  | 131.16      | 120.44   |
| 2   | B     | 68  | ILE  | N-CA-C      | -8.24 | 102.82      | 110.82   |
| 19  | Z     | 369 | ARG  | N-CA-C      | -8.23 | 102.68      | 112.89   |
| 1   | A     | 129 | ALA  | N-CA-C      | -8.23 | 102.13      | 114.64   |
| 12  | 5     | 117 | LEU  | N-CA-C      | 8.23  | 121.37      | 111.82   |
| 24  | R     | 154 | ASN  | CA-CB-CG    | -8.23 | 104.37      | 112.60   |
| 32  | J     | 118 | ASN  | N-CA-C      | -8.23 | 104.25      | 112.97   |
| 14  | 7     | 109 | GLN  | CA-C-N      | 8.23  | 130.93      | 120.56   |
| 14  | 7     | 109 | GLN  | C-N-CA      | 8.23  | 130.93      | 120.56   |
| 22  | P     | 342 | SER  | N-CA-C      | -8.23 | 96.08       | 108.99   |
| 12  | 5     | 133 | ILE  | N-CA-C      | -8.22 | 96.28       | 108.45   |
| 17  | T     | 313 | LEU  | N-CA-C      | -8.22 | 101.87      | 112.23   |
| 7   | G     | 231 | ASP  | CA-CB-CG    | -8.21 | 104.39      | 112.60   |
| 11  | 4     | 78  | THR  | CA-C-N      | 8.21  | 131.28      | 120.28   |
| 11  | 4     | 78  | THR  | C-N-CA      | 8.21  | 131.28      | 120.28   |
| 9   | 2     | 50  | VAL  | CA-C-N      | 8.21  | 134.57      | 123.00   |
| 9   | 2     | 50  | VAL  | C-N-CA      | 8.21  | 134.57      | 123.00   |
| 20  | N     | 796 | LYS  | O-C-N       | 8.21  | 132.79      | 123.27   |
| 31  | M     | 211 | HIS  | CE1-NE2-CD2 | -8.21 | 100.79      | 109.00   |
| 23  | Q     | 108 | GLU  | CA-C-O      | -8.21 | 111.85      | 120.55   |
| 1   | A     | 104 | LYS  | N-CA-C      | 8.20  | 120.13      | 111.03   |
| 27  | H     | 397 | ILE  | N-CA-CB     | 8.20  | 122.88      | 110.58   |
| 16  | V     | 212 | LEU  | CA-C-N      | 8.20  | 131.93      | 120.29   |
| 16  | V     | 212 | LEU  | C-N-CA      | 8.20  | 131.93      | 120.29   |
| 6   | F     | 31  | GLN  | N-CA-CB     | 8.20  | 122.99      | 110.28   |
| 21  | S     | 390 | LEU  | CA-C-N      | 8.19  | 131.67      | 120.46   |
| 21  | S     | 390 | LEU  | C-N-CA      | 8.19  | 131.67      | 120.46   |
| 14  | 7     | 166 | LEU  | CA-C-N      | 8.18  | 128.30      | 122.33   |
| 14  | 7     | 166 | LEU  | C-N-CA      | 8.18  | 128.30      | 122.33   |
| 21  | S     | 249 | LEU  | O-C-N       | 8.18  | 130.79      | 122.12   |
| 1   | A     | 58  | ASP  | CA-CB-CG    | 8.18  | 120.78      | 112.60   |
| 11  | 4     | 32  | HIS  | CB-CG-CD2   | -8.18 | 120.57      | 131.20   |
| 2   | B     | 91  | ARG  | CD-NE-CZ    | -8.17 | 112.96      | 124.40   |
| 4   | D     | 131 | ARG  | CA-C-O      | -8.17 | 113.17      | 119.46   |
| 9   | 2     | 46  | ILE  | N-CA-C      | -8.17 | 95.68       | 107.77   |
| 27  | H     | 195 | LEU  | CB-CA-C     | -8.17 | 96.97       | 110.85   |
| 31  | M     | 258 | GLN  | CA-C-N      | 8.17  | 131.22      | 120.28   |
| 31  | M     | 258 | GLN  | C-N-CA      | 8.17  | 131.22      | 120.28   |
| 31  | M     | 211 | HIS  | N-CA-CB     | 8.16  | 121.60      | 110.42   |
| 26  | O     | 47  | ASP  | CA-C-O      | -8.16 | 108.98      | 120.16   |
| 16  | V     | 46  | ARG  | NE-CZ-NH2   | 8.16  | 126.54      | 119.20   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 20  | N     | 761 | VAL  | CA-C-N      | 8.15  | 129.03      | 119.98   |
| 20  | N     | 761 | VAL  | C-N-CA      | 8.15  | 129.03      | 119.98   |
| 12  | 5     | 200 | ARG  | CA-C-N      | 8.15  | 130.33      | 120.14   |
| 12  | 5     | 200 | ARG  | C-N-CA      | 8.15  | 130.33      | 120.14   |
| 26  | O     | 198 | PHE  | CA-CB-CG    | 8.15  | 121.95      | 113.80   |
| 12  | 5     | 67  | PHE  | CA-CB-CG    | 8.15  | 121.95      | 113.80   |
| 8   | 1     | 137 | ASP  | CA-C-N      | 8.14  | 128.58      | 120.52   |
| 8   | 1     | 137 | ASP  | C-N-CA      | 8.14  | 128.58      | 120.52   |
| 3   | C     | 216 | LEU  | N-CA-C      | -8.14 | 95.14       | 108.41   |
| 4   | D     | 109 | THR  | CA-C-N      | 8.14  | 131.61      | 120.46   |
| 4   | D     | 109 | THR  | C-N-CA      | 8.14  | 131.61      | 120.46   |
| 31  | M     | 357 | PHE  | CA-CB-CG    | -8.14 | 105.66      | 113.80   |
| 19  | Z     | 470 | VAL  | CA-C-N      | 8.14  | 131.18      | 120.28   |
| 19  | Z     | 470 | VAL  | C-N-CA      | 8.14  | 131.18      | 120.28   |
| 24  | R     | 31  | HIS  | CE1-NE2-CD2 | -8.13 | 100.87      | 109.00   |
| 25  | U     | 81  | MET  | CA-C-N      | 8.13  | 131.18      | 120.28   |
| 25  | U     | 81  | MET  | C-N-CA      | 8.13  | 131.18      | 120.28   |
| 16  | V     | 254 | ASN  | CA-C-N      | 8.13  | 131.17      | 120.28   |
| 16  | V     | 254 | ASN  | C-N-CA      | 8.13  | 131.17      | 120.28   |
| 32  | J     | 18  | SER  | CA-C-N      | 8.13  | 128.94      | 120.00   |
| 32  | J     | 18  | SER  | C-N-CA      | 8.13  | 128.94      | 120.00   |
| 19  | Z     | 405 | HIS  | CE1-NE2-CD2 | -8.13 | 100.87      | 109.00   |
| 20  | N     | 119 | PRO  | CA-C-N      | 8.13  | 131.51      | 120.38   |
| 20  | N     | 119 | PRO  | C-N-CA      | 8.13  | 131.51      | 120.38   |
| 6   | F     | 6   | TYR  | N-CA-C      | -8.12 | 102.41      | 113.30   |
| 20  | N     | 719 | ASP  | CA-CB-CG    | 8.12  | 120.72      | 112.60   |
| 25  | U     | 79  | TYR  | CA-C-N      | 8.12  | 128.93      | 120.00   |
| 25  | U     | 79  | TYR  | C-N-CA      | 8.12  | 128.93      | 120.00   |
| 30  | L     | 201 | VAL  | CA-C-N      | 8.12  | 131.82      | 120.29   |
| 30  | L     | 201 | VAL  | C-N-CA      | 8.12  | 131.82      | 120.29   |
| 12  | 5     | 148 | GLN  | N-CA-C      | 8.12  | 121.24      | 111.82   |
| 19  | Z     | 192 | VAL  | O-C-N       | -8.12 | 115.23      | 120.42   |
| 20  | N     | 498 | LYS  | CA-C-N      | 8.11  | 131.81      | 120.29   |
| 20  | N     | 498 | LYS  | C-N-CA      | 8.11  | 131.81      | 120.29   |
| 5   | E     | 200 | ILE  | N-CA-C      | 8.11  | 118.89      | 110.62   |
| 19  | Z     | 489 | TYR  | O-C-N       | -8.11 | 112.54      | 122.11   |
| 3   | C     | 183 | GLU  | N-CA-C      | 8.11  | 119.90      | 111.14   |
| 21  | S     | 437 | ALA  | N-CA-C      | 8.11  | 120.20      | 111.36   |
| 8   | 1     | 85  | THR  | CA-C-O      | 8.10  | 129.01      | 120.42   |
| 30  | L     | 321 | GLN  | CA-C-N      | 8.10  | 131.95      | 120.28   |
| 30  | L     | 321 | GLN  | C-N-CA      | 8.10  | 131.95      | 120.28   |
| 30  | L     | 264 | ASP  | N-CA-C      | 8.10  | 120.11      | 111.28   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 21  | S     | 50  | ASP  | CA-C-N    | 8.09  | 128.96      | 119.98   |
| 21  | S     | 50  | ASP  | C-N-CA    | 8.09  | 128.96      | 119.98   |
| 26  | O     | 185 | ILE  | CA-C-O    | 8.08  | 126.96      | 119.20   |
| 20  | N     | 548 | LEU  | N-CA-C    | 8.08  | 120.17      | 111.36   |
| 24  | R     | 178 | ASN  | CA-CB-CG  | -8.08 | 104.52      | 112.60   |
| 24  | R     | 301 | ILE  | CA-C-O    | -8.08 | 112.29      | 120.85   |
| 26  | O     | 240 | PHE  | CA-C-N    | 8.07  | 130.93      | 120.44   |
| 26  | O     | 240 | PHE  | C-N-CA    | 8.07  | 130.93      | 120.44   |
| 8   | 1     | 208 | ARG  | NE-CZ-NH2 | -8.07 | 111.94      | 119.20   |
| 22  | P     | 47  | LEU  | CA-C-N    | 8.07  | 131.74      | 120.29   |
| 22  | P     | 47  | LEU  | C-N-CA    | 8.07  | 131.74      | 120.29   |
| 32  | J     | 371 | LEU  | O-C-N     | 8.07  | 130.38      | 122.07   |
| 22  | P     | 420 | ASP  | CA-C-N    | 8.06  | 127.70      | 119.56   |
| 22  | P     | 420 | ASP  | C-N-CA    | 8.06  | 127.70      | 119.56   |
| 15  | W     | 95  | LEU  | CA-C-N    | 8.06  | 131.08      | 120.28   |
| 15  | W     | 95  | LEU  | C-N-CA    | 8.06  | 131.08      | 120.28   |
| 19  | Z     | 397 | LYS  | N-CA-C    | 8.06  | 119.98      | 111.03   |
| 22  | P     | 365 | ILE  | N-CA-CB   | 8.06  | 122.67      | 110.58   |
| 19  | Z     | 172 | GLU  | CA-C-O    | -8.06 | 112.21      | 121.72   |
| 13  | 6     | 60  | PHE  | CA-C-N    | 8.06  | 136.93      | 121.54   |
| 13  | 6     | 60  | PHE  | C-N-CA    | 8.06  | 136.93      | 121.54   |
| 31  | M     | 332 | ILE  | N-CA-C    | -8.05 | 96.84       | 108.11   |
| 6   | F     | 80  | ASP  | CA-CB-CG  | -8.05 | 104.55      | 112.60   |
| 24  | R     | 84  | LEU  | CA-C-O    | 8.05  | 129.08      | 120.55   |
| 22  | P     | 184 | GLU  | CA-C-O    | -8.04 | 112.02      | 120.55   |
| 30  | L     | 234 | ASN  | CA-C-N    | 8.04  | 131.06      | 120.28   |
| 30  | L     | 234 | ASN  | C-N-CA    | 8.04  | 131.06      | 120.28   |
| 20  | N     | 573 | ASP  | CA-CB-CG  | -8.04 | 104.56      | 112.60   |
| 24  | R     | 178 | ASN  | N-CA-CB   | 8.04  | 122.60      | 110.22   |
| 11  | 4     | 183 | ILE  | N-CA-C    | -8.04 | 95.79       | 108.81   |
| 32  | J     | 182 | GLN  | CA-C-N    | 8.04  | 128.53      | 119.93   |
| 32  | J     | 182 | GLN  | C-N-CA    | 8.04  | 128.53      | 119.93   |
| 4   | D     | 100 | HIS  | CB-CG-CD2 | -8.04 | 120.75      | 131.20   |
| 9   | 2     | 201 | ALA  | N-CA-C    | 8.03  | 120.12      | 111.36   |
| 2   | B     | 132 | VAL  | CA-CB-CG1 | 8.03  | 124.05      | 110.40   |
| 24  | R     | 104 | MET  | CA-C-N    | 8.03  | 130.87      | 120.44   |
| 24  | R     | 104 | MET  | C-N-CA    | 8.03  | 130.87      | 120.44   |
| 19  | Z     | 342 | PRO  | CA-C-N    | 8.02  | 131.03      | 120.28   |
| 19  | Z     | 342 | PRO  | C-N-CA    | 8.02  | 131.03      | 120.28   |
| 20  | N     | 450 | HIS  | CB-CG-CD2 | -8.02 | 120.77      | 131.20   |
| 20  | N     | 682 | TYR  | CA-C-N    | 8.02  | 131.81      | 120.42   |
| 20  | N     | 682 | TYR  | C-N-CA    | 8.02  | 131.81      | 120.42   |

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| Mol | Chain | Res | Type | Atoms    | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|-------|-------------|----------|
| 30  | L     | 55  | GLU  | O-C-N    | -8.02 | 113.01      | 122.15   |
| 13  | 6     | 103 | LYS  | CB-CA-C  | -8.02 | 97.48       | 110.79   |
| 31  | M     | 139 | VAL  | CA-C-N   | 8.02  | 136.40      | 121.97   |
| 31  | M     | 139 | VAL  | C-N-CA   | 8.02  | 136.40      | 121.97   |
| 31  | M     | 69  | LEU  | CA-C-N   | 8.01  | 131.66      | 120.29   |
| 31  | M     | 69  | LEU  | C-N-CA   | 8.01  | 131.66      | 120.29   |
| 4   | D     | 77  | ALA  | N-CA-CB  | 8.01  | 124.03      | 110.49   |
| 17  | T     | 138 | LYS  | CA-C-N   | 8.00  | 131.00      | 120.28   |
| 17  | T     | 138 | LYS  | C-N-CA   | 8.00  | 131.00      | 120.28   |
| 25  | U     | 241 | SER  | CA-C-N   | 8.00  | 136.83      | 121.54   |
| 25  | U     | 241 | SER  | C-N-CA   | 8.00  | 136.83      | 121.54   |
| 24  | R     | 219 | PHE  | CA-CB-CG | -8.00 | 105.80      | 113.80   |
| 19  | Z     | 106 | LEU  | CA-C-N   | 8.00  | 131.79      | 120.28   |
| 19  | Z     | 106 | LEU  | C-N-CA   | 8.00  | 131.79      | 120.28   |
| 19  | Z     | 677 | HIS  | CA-C-N   | 8.00  | 130.99      | 120.28   |
| 19  | Z     | 677 | HIS  | C-N-CA   | 8.00  | 130.99      | 120.28   |
| 26  | O     | 77  | VAL  | N-CA-CB  | 7.99  | 121.41      | 110.54   |
| 30  | L     | 229 | ILE  | CA-C-N   | 7.99  | 130.98      | 120.28   |
| 30  | L     | 229 | ILE  | C-N-CA   | 7.99  | 130.98      | 120.28   |
| 26  | O     | 219 | HIS  | CA-C-O   | -7.99 | 113.48      | 120.19   |
| 28  | I     | 428 | TYR  | CA-C-O   | 7.99  | 129.01      | 120.55   |
| 32  | J     | 264 | GLY  | CA-C-N   | 7.98  | 128.78      | 120.00   |
| 32  | J     | 264 | GLY  | C-N-CA   | 7.98  | 128.78      | 120.00   |
| 14  | 7     | 208 | GLU  | CB-CG-CD | -7.98 | 99.04       | 112.60   |
| 1   | A     | 97  | GLU  | CA-C-N   | 7.97  | 131.61      | 120.29   |
| 1   | A     | 97  | GLU  | C-N-CA   | 7.97  | 131.61      | 120.29   |
| 12  | 5     | 229 | SER  | CB-CA-C  | -7.96 | 97.40       | 110.14   |
| 26  | O     | 346 | ILE  | CA-C-N   | 7.96  | 130.79      | 120.44   |
| 26  | O     | 346 | ILE  | C-N-CA   | 7.96  | 130.79      | 120.44   |
| 20  | N     | 414 | GLY  | N-CA-C   | -7.96 | 101.66      | 111.45   |
| 28  | I     | 437 | GLY  | CA-C-N   | 7.96  | 130.94      | 120.28   |
| 28  | I     | 437 | GLY  | C-N-CA   | 7.96  | 130.94      | 120.28   |
| 25  | U     | 196 | HIS  | CA-C-N   | 7.96  | 128.98      | 119.99   |
| 25  | U     | 196 | HIS  | C-N-CA   | 7.96  | 128.98      | 119.99   |
| 1   | A     | 103 | TYR  | CA-C-O   | -7.95 | 112.51      | 120.70   |
| 9   | 2     | 174 | SER  | N-CA-C   | -7.95 | 101.77      | 112.26   |
| 4   | D     | 18  | GLN  | N-CA-C   | 7.95  | 119.94      | 111.28   |
| 16  | V     | 103 | GLY  | CA-C-N   | 7.95  | 131.43      | 120.39   |
| 16  | V     | 103 | GLY  | C-N-CA   | 7.95  | 131.43      | 120.39   |
| 20  | N     | 25  | HIS  | CA-C-N   | 7.94  | 131.57      | 120.29   |
| 20  | N     | 25  | HIS  | C-N-CA   | 7.94  | 131.57      | 120.29   |
| 13  | 6     | 84  | PHE  | CA-CB-CG | -7.93 | 105.87      | 113.80   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 26  | O     | 261 | LEU  | CA-C-N    | 7.93  | 130.91      | 120.28   |
| 26  | O     | 261 | LEU  | C-N-CA    | 7.93  | 130.91      | 120.28   |
| 11  | 4     | 73  | TYR  | CA-C-N    | 7.92  | 133.36      | 122.34   |
| 11  | 4     | 73  | TYR  | C-N-CA    | 7.92  | 133.36      | 122.34   |
| 19  | Z     | 778 | LEU  | N-CA-C    | 7.92  | 119.92      | 111.28   |
| 11  | 4     | 36  | PHE  | N-CA-C    | -7.92 | 104.77      | 114.75   |
| 31  | M     | 216 | GLU  | CA-C-N    | 7.92  | 130.74      | 120.44   |
| 31  | M     | 216 | GLU  | C-N-CA    | 7.92  | 130.74      | 120.44   |
| 12  | 5     | 210 | GLU  | N-CA-CB   | 7.91  | 121.75      | 110.12   |
| 19  | Z     | 128 | VAL  | CB-CA-C   | -7.91 | 101.84      | 111.97   |
| 20  | N     | 137 | MET  | CA-C-N    | 7.91  | 130.88      | 120.28   |
| 20  | N     | 137 | MET  | C-N-CA    | 7.91  | 130.88      | 120.28   |
| 26  | O     | 289 | ARG  | N-CA-CB   | 7.91  | 123.86      | 110.49   |
| 19  | Z     | 45  | LEU  | CA-C-N    | 7.91  | 130.88      | 120.28   |
| 19  | Z     | 45  | LEU  | C-N-CA    | 7.91  | 130.88      | 120.28   |
| 22  | P     | 288 | HIS  | CB-CG-CD2 | -7.91 | 120.92      | 131.20   |
| 16  | V     | 118 | PHE  | CA-CB-CG  | -7.90 | 105.90      | 113.80   |
| 8   | 1     | 161 | GLY  | N-CA-C    | -7.90 | 97.64       | 111.46   |
| 26  | O     | 70  | ARG  | NE-CZ-NH2 | 7.90  | 126.31      | 119.20   |
| 20  | N     | 439 | GLU  | CA-C-O    | -7.90 | 112.57      | 120.70   |
| 20  | N     | 115 | ASN  | N-CA-C    | 7.89  | 119.88      | 111.28   |
| 29  | K     | 370 | ILE  | N-CA-C    | -7.89 | 98.07       | 107.70   |
| 13  | 6     | 53  | ASP  | CA-C-O    | 7.89  | 129.73      | 120.66   |
| 21  | S     | 158 | GLU  | N-CA-C    | 7.88  | 119.95      | 111.36   |
| 1   | A     | 62  | ASP  | N-CA-C    | -7.88 | 97.05       | 109.50   |
| 14  | 7     | 139 | ALA  | O-C-N     | -7.88 | 113.77      | 122.12   |
| 24  | R     | 127 | THR  | N-CA-C    | 7.88  | 119.87      | 111.28   |
| 32  | J     | 223 | PHE  | CA-CB-CG  | -7.88 | 105.92      | 113.80   |
| 5   | E     | 201 | ILE  | CA-C-N    | 7.88  | 130.68      | 120.44   |
| 5   | E     | 201 | ILE  | C-N-CA    | 7.88  | 130.68      | 120.44   |
| 18  | Y     | 53  | SER  | N-CA-C    | -7.88 | 102.69      | 111.82   |
| 22  | P     | 348 | GLU  | CA-C-N    | 7.87  | 130.82      | 120.28   |
| 22  | P     | 348 | GLU  | C-N-CA    | 7.87  | 130.82      | 120.28   |
| 25  | U     | 255 | ASP  | CA-CB-CG  | -7.86 | 104.74      | 112.60   |
| 7   | G     | 114 | ASP  | CA-C-O    | -7.86 | 112.60      | 120.70   |
| 23  | Q     | 420 | LYS  | CA-C-N    | 7.85  | 130.80      | 120.28   |
| 23  | Q     | 420 | LYS  | C-N-CA    | 7.85  | 130.80      | 120.28   |
| 19  | Z     | 826 | GLN  | O-C-N     | -7.85 | 116.36      | 121.85   |
| 19  | Z     | 305 | LEU  | N-CA-C    | 7.85  | 119.47      | 111.07   |
| 20  | N     | 670 | ASN  | CA-C-N    | 7.84  | 130.79      | 120.28   |
| 20  | N     | 670 | ASN  | C-N-CA    | 7.84  | 130.79      | 120.28   |
| 8   | 1     | 155 | ARG  | CA-C-N    | 7.84  | 133.54      | 122.72   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | 1     | 155 | ARG  | C-N-CA      | 7.84  | 133.54      | 122.72   |
| 22  | P     | 215 | GLN  | N-CA-CB     | 7.84  | 121.64      | 110.12   |
| 28  | I     | 324 | ASP  | N-CA-C      | -7.84 | 103.78      | 112.72   |
| 28  | I     | 297 | SER  | N-CA-CB     | 7.84  | 121.64      | 110.12   |
| 30  | L     | 155 | GLN  | CA-C-N      | 7.83  | 131.55      | 120.42   |
| 30  | L     | 155 | GLN  | C-N-CA      | 7.83  | 131.55      | 120.42   |
| 23  | Q     | 116 | TRP  | CB-CG-CD2   | -7.83 | 115.83      | 126.80   |
| 23  | Q     | 366 | SER  | CA-C-O      | 7.83  | 128.85      | 120.55   |
| 24  | R     | 380 | VAL  | N-CA-C      | 7.83  | 118.61      | 110.62   |
| 7   | G     | 99  | PHE  | CA-C-N      | 7.83  | 131.41      | 120.29   |
| 7   | G     | 99  | PHE  | C-N-CA      | 7.83  | 131.41      | 120.29   |
| 16  | V     | 170 | LEU  | CA-C-N      | 7.83  | 128.47      | 119.94   |
| 16  | V     | 170 | LEU  | C-N-CA      | 7.83  | 128.47      | 119.94   |
| 20  | N     | 612 | ASP  | O-C-N       | 7.83  | 130.13      | 122.07   |
| 24  | R     | 264 | TYR  | CA-C-N      | 7.82  | 132.20      | 120.31   |
| 24  | R     | 264 | TYR  | C-N-CA      | 7.82  | 132.20      | 120.31   |
| 14  | 7     | 54  | SER  | N-CA-C      | -7.82 | 96.49       | 109.24   |
| 11  | 4     | 147 | TYR  | N-CA-C      | 7.82  | 119.71      | 111.03   |
| 30  | L     | 373 | HIS  | CE1-NE2-CD2 | -7.82 | 101.18      | 109.00   |
| 5   | E     | 82  | ILE  | N-CA-C      | 7.82  | 118.59      | 110.62   |
| 20  | N     | 585 | THR  | N-CA-C      | 7.81  | 119.79      | 111.28   |
| 31  | M     | 67  | HIS  | CE1-NE2-CD2 | -7.81 | 101.19      | 109.00   |
| 30  | L     | 373 | HIS  | CG-CD2-NE2  | 7.80  | 115.00      | 107.20   |
| 1   | A     | 205 | VAL  | CA-C-O      | -7.80 | 112.90      | 121.17   |
| 12  | 5     | 235 | LEU  | N-CA-C      | -7.79 | 96.03       | 108.73   |
| 14  | 7     | 184 | GLY  | O-C-N       | -7.79 | 117.35      | 123.27   |
| 20  | N     | 815 | ALA  | CA-C-O      | -7.78 | 112.83      | 119.76   |
| 8   | 1     | 226 | GLN  | N-CA-C      | -7.78 | 102.80      | 111.28   |
| 24  | R     | 272 | PHE  | CA-CB-CG    | -7.78 | 106.03      | 113.80   |
| 15  | W     | 56  | ASN  | CA-CB-CG    | 7.77  | 120.37      | 112.60   |
| 27  | H     | 255 | ARG  | NE-CZ-NH2   | -7.77 | 112.21      | 119.20   |
| 3   | C     | 155 | ASN  | CA-CB-CG    | -7.77 | 104.83      | 112.60   |
| 15  | W     | 38  | HIS  | CA-CB-CG    | 7.77  | 121.57      | 113.80   |
| 29  | K     | 265 | ASP  | N-CA-C      | 7.77  | 119.38      | 111.07   |
| 15  | W     | 98  | LYS  | N-CA-C      | 7.77  | 119.75      | 111.28   |
| 30  | L     | 396 | SER  | N-CA-C      | -7.76 | 103.87      | 112.72   |
| 3   | C     | 13  | SER  | O-C-N       | -7.76 | 112.39      | 121.32   |
| 24  | R     | 25  | LEU  | CA-C-N      | 7.76  | 132.11      | 120.31   |
| 24  | R     | 25  | LEU  | C-N-CA      | 7.76  | 132.11      | 120.31   |
| 13  | 6     | 177 | ASP  | CA-C-N      | 7.76  | 132.10      | 120.31   |
| 13  | 6     | 177 | ASP  | C-N-CA      | 7.76  | 132.10      | 120.31   |
| 19  | Z     | 770 | HIS  | N-CA-C      | -7.76 | 102.35      | 113.21   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 20  | N     | 906 | LEU  | CA-C-N      | 7.76  | 131.31      | 120.29   |
| 20  | N     | 906 | LEU  | C-N-CA      | 7.76  | 131.31      | 120.29   |
| 25  | U     | 43  | TRP  | O-C-N       | 7.76  | 131.72      | 123.42   |
| 30  | L     | 33  | HIS  | ND1-CE1-NE2 | 7.76  | 116.16      | 108.40   |
| 23  | Q     | 227 | THR  | CA-C-N      | 7.76  | 130.53      | 120.44   |
| 23  | Q     | 227 | THR  | C-N-CA      | 7.76  | 130.53      | 120.44   |
| 20  | N     | 887 | ALA  | N-CA-CB     | 7.75  | 123.60      | 110.49   |
| 23  | Q     | 25  | ASP  | CA-CB-CG    | -7.75 | 104.85      | 112.60   |
| 24  | R     | 107 | LYS  | CA-C-N      | 7.75  | 130.67      | 120.28   |
| 24  | R     | 107 | LYS  | C-N-CA      | 7.75  | 130.67      | 120.28   |
| 26  | O     | 201 | GLY  | CA-C-O      | 7.75  | 128.88      | 120.66   |
| 26  | O     | 246 | ASP  | O-C-N       | -7.75 | 113.91      | 122.12   |
| 30  | L     | 365 | GLY  | CA-C-N      | 7.75  | 130.66      | 120.28   |
| 30  | L     | 365 | GLY  | C-N-CA      | 7.75  | 130.66      | 120.28   |
| 21  | S     | 241 | ASP  | CA-CB-CG    | 7.75  | 120.34      | 112.60   |
| 28  | I     | 337 | LEU  | O-C-N       | -7.74 | 114.21      | 122.96   |
| 19  | Z     | 212 | GLU  | CA-C-O      | -7.74 | 112.35      | 120.55   |
| 12  | 5     | 68  | GLN  | OE1-CD-NE2  | -7.74 | 114.86      | 122.60   |
| 20  | N     | 118 | LEU  | CA-C-O      | -7.74 | 109.56      | 120.16   |
| 17  | T     | 243 | SER  | CA-C-N      | 7.73  | 132.07      | 120.31   |
| 17  | T     | 243 | SER  | C-N-CA      | 7.73  | 132.07      | 120.31   |
| 3   | C     | 62  | SER  | N-CA-C      | -7.73 | 94.49       | 108.02   |
| 20  | N     | 192 | GLN  | CA-C-N      | 7.73  | 131.27      | 120.29   |
| 20  | N     | 192 | GLN  | C-N-CA      | 7.73  | 131.27      | 120.29   |
| 29  | K     | 333 | PHE  | CA-CB-CG    | -7.73 | 106.07      | 113.80   |
| 21  | S     | 223 | VAL  | CA-C-N      | 7.73  | 130.63      | 120.28   |
| 21  | S     | 223 | VAL  | C-N-CA      | 7.73  | 130.63      | 120.28   |
| 19  | Z     | 741 | LEU  | O-C-N       | 7.72  | 130.03      | 122.07   |
| 20  | N     | 134 | VAL  | CA-C-N      | 7.72  | 130.62      | 120.28   |
| 20  | N     | 134 | VAL  | C-N-CA      | 7.72  | 130.62      | 120.28   |
| 28  | I     | 81  | ASN  | N-CA-CB     | 7.72  | 121.70      | 110.20   |
| 5   | E     | 193 | GLU  | CA-C-N      | 7.71  | 130.62      | 120.28   |
| 5   | E     | 193 | GLU  | C-N-CA      | 7.71  | 130.62      | 120.28   |
| 9   | 2     | 171 | GLY  | CA-C-N      | 7.71  | 136.27      | 121.54   |
| 9   | 2     | 171 | GLY  | C-N-CA      | 7.71  | 136.27      | 121.54   |
| 27  | H     | 234 | ASP  | N-CA-C      | -7.71 | 101.58      | 111.92   |
| 20  | N     | 633 | CYS  | CA-C-N      | 7.71  | 127.76      | 119.28   |
| 20  | N     | 633 | CYS  | C-N-CA      | 7.71  | 127.76      | 119.28   |
| 14  | 7     | 226 | ARG  | N-CA-CB     | 7.71  | 122.01      | 110.29   |
| 29  | K     | 251 | PHE  | CA-CB-CG    | -7.70 | 106.10      | 113.80   |
| 31  | M     | 34  | GLU  | CA-C-N      | 7.70  | 131.37      | 120.28   |
| 31  | M     | 34  | GLU  | C-N-CA      | 7.70  | 131.37      | 120.28   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 29  | K     | 369 | LYS  | CA-C-N      | 7.70  | 129.67      | 121.97   |
| 29  | K     | 369 | LYS  | C-N-CA      | 7.70  | 129.67      | 121.97   |
| 30  | L     | 275 | LEU  | CA-C-O      | -7.70 | 112.73      | 120.82   |
| 20  | N     | 757 | MET  | O-C-N       | -7.70 | 114.30      | 120.38   |
| 29  | K     | 230 | VAL  | N-CA-C      | -7.70 | 96.38       | 107.77   |
| 20  | N     | 205 | TYR  | CA-C-N      | 7.70  | 131.36      | 120.28   |
| 20  | N     | 205 | TYR  | C-N-CA      | 7.70  | 131.36      | 120.28   |
| 29  | K     | 267 | ILE  | CA-C-N      | 7.70  | 136.37      | 122.06   |
| 29  | K     | 267 | ILE  | C-N-CA      | 7.70  | 136.37      | 122.06   |
| 15  | W     | 169 | HIS  | CE1-NE2-CD2 | -7.69 | 101.31      | 109.00   |
| 19  | Z     | 874 | LEU  | N-CA-C      | 7.69  | 120.81      | 110.35   |
| 19  | Z     | 804 | LEU  | N-CA-C      | -7.69 | 97.72       | 109.41   |
| 26  | O     | 241 | ASN  | OD1-CG-ND2  | -7.69 | 114.91      | 122.60   |
| 25  | U     | 72  | HIS  | CA-C-N      | 7.69  | 130.58      | 120.28   |
| 25  | U     | 72  | HIS  | C-N-CA      | 7.69  | 130.58      | 120.28   |
| 17  | T     | 259 | TYR  | CA-C-O      | -7.68 | 111.13      | 119.97   |
| 23  | Q     | 154 | LEU  | CA-C-N      | 7.68  | 130.58      | 120.28   |
| 23  | Q     | 154 | LEU  | C-N-CA      | 7.68  | 130.58      | 120.28   |
| 24  | R     | 244 | ALA  | N-CA-C      | 7.68  | 120.73      | 111.82   |
| 30  | L     | 29  | LYS  | CA-C-O      | -7.68 | 112.40      | 120.55   |
| 22  | P     | 279 | PHE  | CA-CB-CG    | -7.68 | 106.12      | 113.80   |
| 8   | 1     | 202 | SER  | N-CA-C      | -7.68 | 103.22      | 112.59   |
| 4   | D     | 136 | SER  | CA-C-O      | 7.68  | 129.78      | 121.11   |
| 13  | 6     | 104 | HIS  | CB-CG-CD2   | -7.68 | 121.22      | 131.20   |
| 15  | W     | 155 | ALA  | CA-C-O      | 7.68  | 128.69      | 120.55   |
| 30  | L     | 344 | ALA  | CA-C-N      | 7.67  | 130.97      | 120.46   |
| 30  | L     | 344 | ALA  | C-N-CA      | 7.67  | 130.97      | 120.46   |
| 2   | B     | 12  | THR  | CA-C-N      | 7.67  | 131.60      | 120.71   |
| 2   | B     | 12  | THR  | C-N-CA      | 7.67  | 131.60      | 120.71   |
| 31  | M     | 214 | LYS  | N-CA-C      | 7.67  | 119.64      | 111.28   |
| 17  | T     | 131 | PHE  | N-CA-C      | -7.67 | 103.98      | 112.72   |
| 23  | Q     | 356 | LEU  | N-CA-C      | -7.67 | 98.29       | 108.34   |
| 23  | Q     | 255 | LEU  | CA-C-N      | 7.67  | 130.55      | 120.28   |
| 23  | Q     | 255 | LEU  | C-N-CA      | 7.67  | 130.55      | 120.28   |
| 19  | Z     | 324 | VAL  | N-CA-C      | -7.66 | 104.39      | 111.67   |
| 6   | F     | 221 | PHE  | CA-C-O      | -7.66 | 112.19      | 120.92   |
| 2   | B     | 14  | SER  | N-CA-C      | -7.66 | 98.58       | 110.14   |
| 3   | C     | 72  | MET  | CG-SD-CE    | -7.66 | 84.06       | 100.90   |
| 5   | E     | 211 | ASN  | CA-CB-CG    | -7.65 | 104.95      | 112.60   |
| 16  | V     | 74  | ALA  | CA-C-N      | 7.65  | 134.88      | 122.48   |
| 16  | V     | 74  | ALA  | C-N-CA      | 7.65  | 134.88      | 122.48   |
| 21  | S     | 325 | HIS  | CE1-NE2-CD2 | -7.65 | 101.35      | 109.00   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 19  | Z     | 830 | LEU  | N-CA-C     | -7.65 | 103.97      | 113.38   |
| 24  | R     | 189 | VAL  | O-C-N      | 7.64  | 129.59      | 121.87   |
| 11  | 4     | 161 | ARG  | CA-C-N     | 7.64  | 131.14      | 120.29   |
| 11  | 4     | 161 | ARG  | C-N-CA     | 7.64  | 131.14      | 120.29   |
| 19  | Z     | 338 | ASP  | CA-C-N     | 7.63  | 131.26      | 120.42   |
| 19  | Z     | 338 | ASP  | C-N-CA     | 7.63  | 131.26      | 120.42   |
| 19  | Z     | 164 | GLY  | CA-C-O     | -7.63 | 112.89      | 120.75   |
| 13  | 6     | 213 | ASP  | CA-C-N     | 7.63  | 130.03      | 120.72   |
| 13  | 6     | 213 | ASP  | C-N-CA     | 7.63  | 130.03      | 120.72   |
| 29  | K     | 292 | LEU  | O-C-N      | 7.63  | 130.21      | 122.12   |
| 20  | N     | 143 | ASP  | N-CA-CB    | 7.62  | 121.33      | 110.12   |
| 23  | Q     | 96  | PHE  | CA-CB-CG   | 7.62  | 121.42      | 113.80   |
| 19  | Z     | 293 | GLN  | OE1-CD-NE2 | 7.62  | 130.22      | 122.60   |
| 19  | Z     | 498 | LEU  | CA-C-N     | 7.62  | 130.48      | 120.28   |
| 19  | Z     | 498 | LEU  | C-N-CA     | 7.62  | 130.48      | 120.28   |
| 3   | C     | 238 | LYS  | CA-C-N     | 7.61  | 130.48      | 120.28   |
| 3   | C     | 238 | LYS  | C-N-CA     | 7.61  | 130.48      | 120.28   |
| 17  | T     | 349 | LEU  | N-CA-C     | 7.61  | 119.66      | 111.36   |
| 19  | Z     | 198 | HIS  | N-CA-CB    | 7.61  | 122.08      | 110.28   |
| 12  | 5     | 196 | GLY  | CA-C-N     | 7.60  | 131.22      | 120.42   |
| 12  | 5     | 196 | GLY  | C-N-CA     | 7.60  | 131.22      | 120.42   |
| 20  | N     | 240 | ASP  | O-C-N      | -7.60 | 113.86      | 122.91   |
| 19  | Z     | 285 | CYS  | N-CA-C     | -7.60 | 102.94      | 111.07   |
| 31  | M     | 404 | VAL  | CA-C-O     | -7.60 | 112.79      | 120.85   |
| 22  | P     | 429 | SER  | N-CA-C     | 7.60  | 119.56      | 111.28   |
| 24  | R     | 122 | THR  | N-CA-C     | 7.60  | 119.35      | 111.14   |
| 5   | E     | 12  | VAL  | N-CA-C     | -7.59 | 103.83      | 111.88   |
| 25  | U     | 274 | ASN  | CA-C-N     | 7.59  | 130.31      | 120.44   |
| 25  | U     | 274 | ASN  | C-N-CA     | 7.59  | 130.31      | 120.44   |
| 26  | O     | 109 | GLU  | CA-C-N     | 7.59  | 131.47      | 120.38   |
| 26  | O     | 109 | GLU  | C-N-CA     | 7.59  | 131.47      | 120.38   |
| 1   | A     | 50  | ILE  | CB-CA-C    | 7.59  | 121.41      | 110.33   |
| 17  | T     | 262 | PHE  | CA-CB-CG   | -7.59 | 106.21      | 113.80   |
| 27  | H     | 331 | LEU  | N-CA-C     | -7.59 | 102.96      | 112.90   |
| 20  | N     | 167 | ILE  | CA-CB-CG1  | 7.58  | 123.30      | 110.40   |
| 2   | B     | 233 | ILE  | N-CA-C     | 7.58  | 120.85      | 109.17   |
| 23  | Q     | 88  | LEU  | N-CA-CB    | 7.58  | 121.00      | 110.01   |
| 22  | P     | 25  | ASP  | N-CA-C     | -7.58 | 103.10      | 111.36   |
| 26  | O     | 309 | LEU  | O-C-N      | -7.58 | 113.51      | 122.15   |
| 23  | Q     | 388 | PHE  | CA-CB-CG   | 7.58  | 121.38      | 113.80   |
| 19  | Z     | 285 | CYS  | CA-C-N     | 7.57  | 130.43      | 120.28   |
| 19  | Z     | 285 | CYS  | C-N-CA     | 7.57  | 130.43      | 120.28   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 32  | J     | 343 | ASN  | N-CA-CB    | 7.57  | 122.66      | 110.77   |
| 16  | V     | 287 | HIS  | CG-CD2-NE2 | 7.57  | 114.77      | 107.20   |
| 4   | D     | 211 | ASN  | CA-CB-CG   | -7.57 | 105.03      | 112.60   |
| 24  | R     | 253 | LEU  | CA-C-O     | -7.57 | 109.79      | 120.16   |
| 20  | N     | 86  | ASP  | N-CA-C     | -7.56 | 99.09       | 110.28   |
| 2   | B     | 223 | PRO  | N-CA-CB    | 7.56  | 110.77      | 103.51   |
| 20  | N     | 57  | ARG  | CA-C-N     | 7.56  | 130.26      | 120.44   |
| 20  | N     | 57  | ARG  | C-N-CA     | 7.56  | 130.26      | 120.44   |
| 6   | F     | 5   | GLN  | N-CA-C     | -7.55 | 102.98      | 114.16   |
| 8   | 1     | 136 | TRP  | CA-C-N     | 7.55  | 131.71      | 122.42   |
| 8   | 1     | 136 | TRP  | C-N-CA     | 7.55  | 131.71      | 122.42   |
| 25  | U     | 182 | THR  | O-C-N      | 7.55  | 130.73      | 122.05   |
| 31  | M     | 374 | ARG  | CA-C-N     | 7.55  | 131.01      | 120.29   |
| 31  | M     | 374 | ARG  | C-N-CA     | 7.55  | 131.01      | 120.29   |
| 30  | L     | 281 | PHE  | CA-CB-CG   | -7.55 | 106.25      | 113.80   |
| 11  | 4     | 32  | HIS  | CB-CG-ND1  | 7.54  | 134.02      | 122.70   |
| 19  | Z     | 803 | PHE  | N-CA-C     | -7.54 | 97.14       | 108.99   |
| 2   | B     | 80  | GLY  | CA-C-N     | 7.54  | 127.42      | 119.05   |
| 2   | B     | 80  | GLY  | C-N-CA     | 7.54  | 127.42      | 119.05   |
| 22  | P     | 133 | GLU  | CA-C-O     | -7.54 | 112.48      | 120.63   |
| 27  | H     | 165 | GLN  | OE1-CD-NE2 | 7.54  | 130.14      | 122.60   |
| 7   | G     | 202 | HIS  | CA-CB-CG   | 7.54  | 121.34      | 113.80   |
| 24  | R     | 34  | ASP  | CA-C-N     | 7.54  | 130.71      | 120.38   |
| 24  | R     | 34  | ASP  | C-N-CA     | 7.54  | 130.71      | 120.38   |
| 19  | Z     | 621 | ASP  | N-CA-C     | -7.54 | 96.34       | 108.55   |
| 27  | H     | 61  | GLU  | CA-C-N     | 7.53  | 130.23      | 120.44   |
| 27  | H     | 61  | GLU  | C-N-CA     | 7.53  | 130.23      | 120.44   |
| 31  | M     | 78  | GLU  | O-C-N      | 7.53  | 130.10      | 122.12   |
| 19  | Z     | 599 | ALA  | CA-C-N     | 7.53  | 131.13      | 120.28   |
| 19  | Z     | 599 | ALA  | C-N-CA     | 7.53  | 131.13      | 120.28   |
| 29  | K     | 84  | SER  | CA-C-N     | 7.53  | 136.06      | 122.13   |
| 29  | K     | 84  | SER  | C-N-CA     | 7.53  | 136.06      | 122.13   |
| 17  | T     | 261 | PHE  | CA-CB-CG   | 7.53  | 121.33      | 113.80   |
| 20  | N     | 260 | PHE  | CA-CB-CG   | -7.53 | 106.28      | 113.80   |
| 17  | T     | 181 | TYR  | CA-C-O     | 7.52  | 126.98      | 119.08   |
| 18  | Y     | 64  | GLY  | CA-C-N     | 7.52  | 130.36      | 120.28   |
| 18  | Y     | 64  | GLY  | C-N-CA     | 7.52  | 130.36      | 120.28   |
| 20  | N     | 446 | LEU  | N-CA-C     | 7.52  | 119.48      | 111.28   |
| 23  | Q     | 251 | LEU  | CA-C-N     | 7.52  | 130.22      | 120.44   |
| 23  | Q     | 251 | LEU  | C-N-CA     | 7.52  | 130.22      | 120.44   |
| 22  | P     | 233 | LEU  | CA-C-N     | 7.52  | 131.74      | 120.31   |
| 22  | P     | 233 | LEU  | C-N-CA     | 7.52  | 131.74      | 120.31   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 17  | T     | 117 | GLU  | N-CA-C      | -7.52 | 102.00      | 112.45   |
| 9   | 2     | 190 | GLU  | N-CA-C      | -7.51 | 97.63       | 108.60   |
| 15  | W     | 38  | HIS  | CA-C-N      | 7.51  | 130.35      | 120.28   |
| 15  | W     | 38  | HIS  | C-N-CA      | 7.51  | 130.35      | 120.28   |
| 20  | N     | 138 | PHE  | CA-CB-CG    | 7.51  | 121.31      | 113.80   |
| 26  | O     | 345 | GLN  | N-CA-C      | 7.51  | 119.55      | 111.36   |
| 3   | C     | 52  | ILE  | N-CA-C      | -7.51 | 105.69      | 112.90   |
| 13  | 6     | 106 | ASN  | N-CA-C      | 7.51  | 119.55      | 111.36   |
| 19  | Z     | 615 | ILE  | O-C-N       | -7.51 | 114.29      | 121.87   |
| 20  | N     | 759 | SER  | N-CA-C      | 7.51  | 119.54      | 111.36   |
| 29  | K     | 57  | GLN  | N-CA-CB     | 7.51  | 121.16      | 110.12   |
| 29  | K     | 133 | HIS  | CE1-NE2-CD2 | -7.51 | 101.49      | 109.00   |
| 26  | O     | 258 | GLN  | CA-C-O      | -7.50 | 114.41      | 119.29   |
| 17  | T     | 171 | MET  | CA-C-N      | 7.50  | 130.34      | 120.28   |
| 17  | T     | 171 | MET  | C-N-CA      | 7.50  | 130.34      | 120.28   |
| 20  | N     | 941 | GLU  | O-C-N       | -7.50 | 112.69      | 121.32   |
| 25  | U     | 118 | ASN  | CA-C-N      | 7.50  | 131.48      | 120.90   |
| 25  | U     | 118 | ASN  | C-N-CA      | 7.50  | 131.48      | 120.90   |
| 20  | N     | 867 | LYS  | O-C-N       | -7.50 | 114.85      | 123.33   |
| 24  | R     | 148 | GLY  | CA-C-N      | 7.50  | 131.71      | 120.31   |
| 24  | R     | 148 | GLY  | C-N-CA      | 7.50  | 131.71      | 120.31   |
| 26  | O     | 213 | PHE  | CA-CB-CG    | -7.50 | 106.30      | 113.80   |
| 27  | H     | 174 | TYR  | CA-CB-CG    | -7.50 | 100.40      | 113.90   |
| 8   | 1     | 40  | GLN  | CA-C-N      | 7.50  | 132.22      | 121.50   |
| 8   | 1     | 40  | GLN  | C-N-CA      | 7.50  | 132.22      | 121.50   |
| 32  | J     | 337 | ASN  | CA-CB-CG    | -7.50 | 105.11      | 112.60   |
| 19  | Z     | 363 | SER  | O-C-N       | 7.49  | 131.39      | 122.85   |
| 22  | P     | 31  | CYS  | CA-C-N      | 7.49  | 130.31      | 120.28   |
| 22  | P     | 31  | CYS  | C-N-CA      | 7.49  | 130.31      | 120.28   |
| 5   | E     | 228 | MET  | CA-C-N      | 7.49  | 131.50      | 120.87   |
| 5   | E     | 228 | MET  | C-N-CA      | 7.49  | 131.50      | 120.87   |
| 26  | O     | 206 | LEU  | CA-C-N      | 7.49  | 127.21      | 120.10   |
| 26  | O     | 206 | LEU  | C-N-CA      | 7.49  | 127.21      | 120.10   |
| 7   | G     | 186 | THR  | N-CA-C      | -7.48 | 98.92       | 109.69   |
| 21  | S     | 346 | GLN  | N-CA-C      | 7.48  | 123.89      | 113.57   |
| 22  | P     | 362 | ASN  | CA-C-N      | 7.48  | 130.70      | 120.46   |
| 22  | P     | 362 | ASN  | C-N-CA      | 7.48  | 130.70      | 120.46   |
| 30  | L     | 391 | SER  | CA-C-N      | 7.48  | 130.30      | 120.28   |
| 30  | L     | 391 | SER  | C-N-CA      | 7.48  | 130.30      | 120.28   |
| 20  | N     | 356 | THR  | CA-C-N      | 7.47  | 130.30      | 120.28   |
| 20  | N     | 356 | THR  | C-N-CA      | 7.47  | 130.30      | 120.28   |
| 29  | K     | 33  | GLU  | O-C-N       | -7.46 | 112.74      | 121.32   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 20  | N     | 207 | ASN  | OD1-CG-ND2  | 7.46  | 130.06      | 122.60   |
| 21  | S     | 228 | HIS  | CE1-NE2-CD2 | -7.46 | 101.54      | 109.00   |
| 20  | N     | 589 | ALA  | CA-C-O      | -7.46 | 113.02      | 120.70   |
| 21  | S     | 399 | ILE  | CA-C-N      | 7.46  | 130.28      | 120.28   |
| 21  | S     | 399 | ILE  | C-N-CA      | 7.46  | 130.28      | 120.28   |
| 26  | O     | 171 | SER  | CA-C-N      | 7.45  | 130.87      | 120.29   |
| 26  | O     | 171 | SER  | C-N-CA      | 7.45  | 130.87      | 120.29   |
| 19  | Z     | 556 | ARG  | CA-C-O      | -7.45 | 112.52      | 120.42   |
| 30  | L     | 373 | HIS  | N-CA-C      | -7.45 | 97.30       | 108.99   |
| 24  | R     | 63  | TRP  | N-CA-C      | -7.45 | 97.75       | 109.07   |
| 27  | H     | 91  | GLN  | N-CA-C      | -7.45 | 98.90       | 110.14   |
| 19  | Z     | 706 | ILE  | CA-C-N      | 7.44  | 130.25      | 120.28   |
| 19  | Z     | 706 | ILE  | C-N-CA      | 7.44  | 130.25      | 120.28   |
| 23  | Q     | 401 | LEU  | CA-C-N      | 7.44  | 130.25      | 120.28   |
| 23  | Q     | 401 | LEU  | C-N-CA      | 7.44  | 130.25      | 120.28   |
| 2   | B     | 219 | ARG  | NE-CZ-NH2   | -7.44 | 112.51      | 119.20   |
| 16  | V     | 266 | THR  | CA-C-N      | 7.43  | 128.09      | 119.47   |
| 16  | V     | 266 | THR  | C-N-CA      | 7.43  | 128.09      | 119.47   |
| 26  | O     | 73  | PRO  | N-CA-CB     | 7.43  | 110.64      | 103.51   |
| 27  | H     | 309 | PHE  | N-CA-C      | -7.43 | 103.20      | 111.82   |
| 7   | G     | 241 | LYS  | CA-C-N      | 7.42  | 130.23      | 120.28   |
| 7   | G     | 241 | LYS  | C-N-CA      | 7.42  | 130.23      | 120.28   |
| 13  | 6     | 35  | ASN  | N-CA-C      | -7.42 | 103.17      | 114.16   |
| 20  | N     | 942 | PRO  | N-CA-CB     | 7.42  | 109.81      | 103.35   |
| 22  | P     | 68  | VAL  | CA-C-N      | 7.42  | 130.23      | 120.28   |
| 22  | P     | 68  | VAL  | C-N-CA      | 7.42  | 130.23      | 120.28   |
| 7   | G     | 202 | HIS  | CB-CG-CD2   | -7.42 | 121.55      | 131.20   |
| 10  | 3     | 36  | THR  | N-CA-C      | -7.42 | 98.03       | 109.24   |
| 26  | O     | 282 | PHE  | CA-CB-CG    | -7.42 | 106.38      | 113.80   |
| 27  | H     | 77  | LEU  | N-CA-CB     | 7.41  | 121.02      | 110.12   |
| 9   | 2     | 152 | HIS  | CE1-NE2-CD2 | -7.41 | 101.59      | 109.00   |
| 11  | 4     | 171 | PHE  | CA-C-O      | -7.41 | 113.27      | 120.90   |
| 20  | N     | 12  | LEU  | CA-C-N      | 7.41  | 130.20      | 120.28   |
| 20  | N     | 12  | LEU  | C-N-CA      | 7.41  | 130.20      | 120.28   |
| 19  | Z     | 133 | MET  | N-CA-CB     | 7.40  | 121.75      | 110.28   |
| 21  | S     | 347 | PRO  | CA-C-O      | -7.40 | 108.46      | 119.34   |
| 26  | O     | 270 | ARG  | CA-C-O      | 7.39  | 128.26      | 120.42   |
| 4   | D     | 65  | LEU  | CA-C-N      | 7.39  | 134.36      | 122.10   |
| 4   | D     | 65  | LEU  | C-N-CA      | 7.39  | 134.36      | 122.10   |
| 23  | Q     | 170 | GLN  | CG-CD-NE2   | 7.38  | 127.48      | 116.40   |
| 23  | Q     | 387 | ILE  | N-CA-C      | -7.38 | 97.77       | 108.11   |
| 10  | 3     | 146 | MET  | CA-C-N      | 7.38  | 130.77      | 120.29   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 10  | 3     | 146 | MET  | C-N-CA      | 7.38  | 130.77      | 120.29   |
| 20  | N     | 754 | HIS  | CA-C-N      | 7.38  | 131.61      | 121.05   |
| 20  | N     | 754 | HIS  | C-N-CA      | 7.38  | 131.61      | 121.05   |
| 25  | U     | 196 | HIS  | CG-CD2-NE2  | 7.38  | 114.58      | 107.20   |
| 28  | I     | 277 | HIS  | CA-C-N      | 7.38  | 131.89      | 120.60   |
| 28  | I     | 277 | HIS  | C-N-CA      | 7.38  | 131.89      | 120.60   |
| 10  | 3     | 80  | ARG  | NE-CZ-NH2   | -7.38 | 112.56      | 119.20   |
| 17  | T     | 233 | VAL  | N-CA-CB     | -7.38 | 101.92      | 110.55   |
| 23  | Q     | 190 | LEU  | CA-C-N      | 7.38  | 130.03      | 120.44   |
| 23  | Q     | 190 | LEU  | C-N-CA      | 7.38  | 130.03      | 120.44   |
| 19  | Z     | 822 | VAL  | N-CA-C      | -7.38 | 101.88      | 110.21   |
| 26  | O     | 169 | HIS  | N-CA-C      | 7.38  | 119.40      | 111.36   |
| 20  | N     | 885 | MET  | CA-C-O      | -7.37 | 113.56      | 120.34   |
| 11  | 4     | 125 | ALA  | CB-CA-C     | -7.37 | 98.35       | 110.14   |
| 24  | R     | 315 | THR  | CA-C-N      | 7.37  | 130.16      | 120.28   |
| 24  | R     | 315 | THR  | C-N-CA      | 7.37  | 130.16      | 120.28   |
| 10  | 3     | 136 | PHE  | N-CA-C      | -7.37 | 101.34      | 113.50   |
| 22  | P     | 68  | VAL  | N-CA-C      | 7.37  | 118.16      | 110.72   |
| 31  | M     | 417 | GLU  | CA-C-O      | 7.37  | 128.46      | 120.43   |
| 5   | E     | 93  | ARG  | NE-CZ-NH2   | 7.36  | 125.83      | 119.20   |
| 19  | Z     | 273 | ASN  | N-CA-CB     | 7.36  | 122.94      | 110.49   |
| 20  | N     | 832 | VAL  | N-CA-C      | -7.36 | 103.11      | 110.62   |
| 32  | J     | 241 | HIS  | CE1-NE2-CD2 | -7.36 | 101.64      | 109.00   |
| 21  | S     | 239 | ASP  | CA-C-N      | 7.36  | 130.74      | 120.29   |
| 21  | S     | 239 | ASP  | C-N-CA      | 7.36  | 130.74      | 120.29   |
| 28  | I     | 211 | TYR  | N-CA-C      | 7.36  | 119.38      | 111.36   |
| 32  | J     | 110 | PRO  | CA-C-N      | 7.36  | 132.57      | 122.19   |
| 32  | J     | 110 | PRO  | C-N-CA      | 7.36  | 132.57      | 122.19   |
| 13  | 6     | 104 | HIS  | ND1-CE1-NE2 | 7.36  | 115.76      | 108.40   |
| 19  | Z     | 740 | ARG  | CA-C-N      | 7.35  | 130.00      | 120.44   |
| 19  | Z     | 740 | ARG  | C-N-CA      | 7.35  | 130.00      | 120.44   |
| 29  | K     | 371 | SER  | N-CA-C      | -7.35 | 98.49       | 108.86   |
| 13  | 6     | 104 | HIS  | CE1-NE2-CD2 | -7.35 | 101.65      | 109.00   |
| 9   | 2     | 46  | ILE  | CB-CA-C     | 7.35  | 120.34      | 110.42   |
| 12  | 5     | 166 | ARG  | CA-C-N      | 7.35  | 133.41      | 121.87   |
| 12  | 5     | 166 | ARG  | C-N-CA      | 7.35  | 133.41      | 121.87   |
| 9   | 2     | 146 | VAL  | CB-CA-C     | -7.35 | 101.04      | 111.40   |
| 21  | S     | 342 | LEU  | CA-C-N      | 7.35  | 130.12      | 120.28   |
| 21  | S     | 342 | LEU  | C-N-CA      | 7.35  | 130.12      | 120.28   |
| 26  | O     | 248 | PHE  | CA-CB-CG    | -7.35 | 106.45      | 113.80   |
| 31  | M     | 359 | MET  | N-CA-C      | -7.35 | 100.54      | 109.72   |
| 15  | W     | 94  | HIS  | CE1-NE2-CD2 | -7.35 | 101.65      | 109.00   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 27  | H     | 310 | ASP  | CA-C-N    | 7.34  | 128.34      | 120.11   |
| 27  | H     | 310 | ASP  | C-N-CA    | 7.34  | 128.34      | 120.11   |
| 29  | K     | 225 | ALA  | CA-C-N    | 7.34  | 131.84      | 120.75   |
| 29  | K     | 225 | ALA  | C-N-CA    | 7.34  | 131.84      | 120.75   |
| 13  | 6     | 65  | ARG  | N-CA-CB   | 7.34  | 120.71      | 110.07   |
| 23  | Q     | 95  | LEU  | CA-C-N    | 7.34  | 130.12      | 120.28   |
| 23  | Q     | 95  | LEU  | C-N-CA    | 7.34  | 130.12      | 120.28   |
| 32  | J     | 159 | LYS  | CA-C-N    | 7.34  | 130.71      | 120.29   |
| 32  | J     | 159 | LYS  | C-N-CA    | 7.34  | 130.71      | 120.29   |
| 32  | J     | 148 | TYR  | CA-C-N    | 7.34  | 130.43      | 120.38   |
| 32  | J     | 148 | TYR  | C-N-CA    | 7.34  | 130.43      | 120.38   |
| 3   | C     | 133 | SER  | N-CA-C    | -7.34 | 97.26       | 109.07   |
| 22  | P     | 445 | LEU  | CA-C-N    | 7.34  | 130.51      | 120.46   |
| 22  | P     | 445 | LEU  | C-N-CA    | 7.34  | 130.51      | 120.46   |
| 24  | R     | 86  | GLU  | N-CA-C    | 7.33  | 119.35      | 111.36   |
| 28  | I     | 327 | VAL  | CB-CA-C   | 7.33  | 121.55      | 110.62   |
| 20  | N     | 59  | PHE  | CA-C-N    | 7.33  | 130.10      | 120.28   |
| 20  | N     | 59  | PHE  | C-N-CA    | 7.33  | 130.10      | 120.28   |
| 32  | J     | 124 | HIS  | CA-CB-CG  | 7.33  | 121.13      | 113.80   |
| 19  | Z     | 256 | PHE  | CA-CB-CG  | -7.33 | 106.47      | 113.80   |
| 21  | S     | 345 | ARG  | N-CA-C    | 7.33  | 119.05      | 111.14   |
| 30  | L     | 180 | PRO  | N-CA-C    | 7.33  | 119.64      | 110.70   |
| 24  | R     | 302 | HIS  | CB-CG-CD2 | -7.32 | 121.68      | 131.20   |
| 20  | N     | 455 | GLY  | N-CA-C    | 7.32  | 121.76      | 112.83   |
| 21  | S     | 475 | ARG  | N-CA-CB   | 7.32  | 120.62      | 110.01   |
| 25  | U     | 60  | GLU  | N-CA-C    | -7.32 | 97.47       | 109.40   |
| 10  | 3     | 77  | LYS  | CA-C-N    | 7.32  | 130.39      | 120.44   |
| 10  | 3     | 77  | LYS  | C-N-CA    | 7.32  | 130.39      | 120.44   |
| 14  | 7     | 119 | GLU  | O-C-N     | 7.32  | 129.88      | 122.12   |
| 14  | 7     | 205 | SER  | N-CA-C    | -7.32 | 101.47      | 110.61   |
| 30  | L     | 174 | GLN  | N-CA-C    | 7.32  | 119.25      | 111.28   |
| 7   | G     | 221 | THR  | CA-C-N    | 7.31  | 132.50      | 122.19   |
| 7   | G     | 221 | THR  | C-N-CA    | 7.31  | 132.50      | 122.19   |
| 31  | M     | 273 | ASP  | CA-CB-CG  | -7.31 | 105.29      | 112.60   |
| 6   | F     | 33  | SER  | CA-C-N    | 7.31  | 131.25      | 120.87   |
| 6   | F     | 33  | SER  | C-N-CA    | 7.31  | 131.25      | 120.87   |
| 10  | 3     | 23  | ALA  | CA-C-N    | 7.31  | 133.30      | 122.99   |
| 10  | 3     | 23  | ALA  | C-N-CA    | 7.31  | 133.30      | 122.99   |
| 24  | R     | 188 | CYS  | CA-C-O    | -7.31 | 112.80      | 120.55   |
| 25  | U     | 223 | ASN  | CA-C-N    | 7.31  | 130.80      | 120.28   |
| 25  | U     | 223 | ASN  | C-N-CA    | 7.31  | 130.80      | 120.28   |
| 22  | P     | 442 | THR  | CA-C-N    | 7.30  | 130.80      | 120.28   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 22  | P     | 442 | THR  | C-N-CA     | 7.30  | 130.80      | 120.28   |
| 19  | Z     | 351 | THR  | O-C-N      | -7.30 | 114.55      | 122.07   |
| 21  | S     | 235 | THR  | N-CA-CB    | 7.30  | 120.97      | 110.16   |
| 11  | 4     | 106 | GLY  | O-C-N      | 7.30  | 129.23      | 123.61   |
| 21  | S     | 484 | ASN  | OD1-CG-ND2 | 7.30  | 129.90      | 122.60   |
| 19  | Z     | 446 | LEU  | CA-C-N     | 7.30  | 131.40      | 120.31   |
| 19  | Z     | 446 | LEU  | C-N-CA     | 7.30  | 131.40      | 120.31   |
| 25  | U     | 230 | LEU  | O-C-N      | 7.30  | 129.86      | 122.12   |
| 20  | N     | 815 | ALA  | CA-C-N     | 7.30  | 128.28      | 120.11   |
| 20  | N     | 815 | ALA  | C-N-CA     | 7.30  | 128.28      | 120.11   |
| 23  | Q     | 336 | ILE  | N-CA-CB    | 7.29  | 120.46      | 110.54   |
| 26  | O     | 176 | ALA  | CA-C-N     | 7.29  | 130.06      | 120.28   |
| 26  | O     | 176 | ALA  | C-N-CA     | 7.29  | 130.06      | 120.28   |
| 2   | B     | 101 | TYR  | N-CA-C     | 7.29  | 120.66      | 111.69   |
| 3   | C     | 217 | THR  | N-CA-C     | -7.29 | 96.66       | 109.06   |
| 22  | P     | 354 | LEU  | CA-C-N     | 7.29  | 129.92      | 120.44   |
| 22  | P     | 354 | LEU  | C-N-CA     | 7.29  | 129.92      | 120.44   |
| 23  | Q     | 84  | LYS  | CA-C-N     | 7.29  | 130.78      | 120.28   |
| 23  | Q     | 84  | LYS  | C-N-CA     | 7.29  | 130.78      | 120.28   |
| 31  | M     | 32  | ILE  | N-CA-C     | -7.29 | 97.62       | 108.85   |
| 13  | 6     | 35  | ASN  | OD1-CG-ND2 | 7.29  | 129.89      | 122.60   |
| 9   | 2     | 157 | TYR  | CA-CB-CG   | -7.29 | 100.78      | 113.90   |
| 15  | W     | 159 | THR  | CA-C-N     | 7.29  | 130.05      | 120.28   |
| 15  | W     | 159 | THR  | C-N-CA     | 7.29  | 130.05      | 120.28   |
| 22  | P     | 16  | MET  | N-CA-C     | 7.29  | 118.91      | 110.97   |
| 27  | H     | 104 | ALA  | CA-C-N     | 7.29  | 132.17      | 121.31   |
| 27  | H     | 104 | ALA  | C-N-CA     | 7.29  | 132.17      | 121.31   |
| 29  | K     | 380 | GLN  | OE1-CD-NE2 | 7.29  | 129.89      | 122.60   |
| 22  | P     | 205 | ILE  | CA-C-O     | -7.28 | 113.38      | 120.95   |
| 26  | O     | 137 | ASP  | N-CA-C     | 7.28  | 119.22      | 111.28   |
| 23  | Q     | 107 | VAL  | CA-C-O     | -7.28 | 113.38      | 120.95   |
| 8   | 1     | 60  | ALA  | CA-C-N     | 7.28  | 133.02      | 120.58   |
| 8   | 1     | 60  | ALA  | C-N-CA     | 7.28  | 133.02      | 120.58   |
| 23  | Q     | 66  | LEU  | N-CA-C     | 7.28  | 118.86      | 111.07   |
| 24  | R     | 367 | GLN  | CA-C-N     | 7.27  | 130.61      | 120.29   |
| 24  | R     | 367 | GLN  | C-N-CA     | 7.27  | 130.61      | 120.29   |
| 7   | G     | 47  | VAL  | CA-C-O     | 7.27  | 128.02      | 120.39   |
| 28  | I     | 392 | GLY  | O-C-N      | 7.27  | 130.20      | 122.28   |
| 31  | M     | 413 | ARG  | N-CA-C     | -7.27 | 103.44      | 111.36   |
| 20  | N     | 569 | SER  | CA-C-N     | 7.26  | 130.02      | 120.28   |
| 20  | N     | 569 | SER  | C-N-CA     | 7.26  | 130.02      | 120.28   |
| 26  | O     | 260 | ASP  | CA-C-N     | 7.26  | 130.60      | 120.29   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 26  | O     | 260 | ASP  | C-N-CA      | 7.26  | 130.60      | 120.29   |
| 25  | U     | 281 | ALA  | CA-C-N      | 7.26  | 129.88      | 120.44   |
| 25  | U     | 281 | ALA  | C-N-CA      | 7.26  | 129.88      | 120.44   |
| 19  | Z     | 835 | GLU  | CB-CG-CD    | -7.26 | 100.26      | 112.60   |
| 13  | 6     | 85  | HIS  | N-CA-CB     | 7.26  | 122.75      | 110.49   |
| 26  | O     | 281 | THR  | CA-C-O      | -7.26 | 113.22      | 120.70   |
| 11  | 4     | 24  | ASN  | CA-CB-CG    | -7.25 | 105.35      | 112.60   |
| 21  | S     | 70  | ASP  | O-C-N       | 7.25  | 129.92      | 122.09   |
| 21  | S     | 98  | PRO  | N-CA-CB     | 7.25  | 110.23      | 103.41   |
| 21  | S     | 173 | ASN  | CA-CB-CG    | -7.25 | 105.35      | 112.60   |
| 31  | M     | 222 | PRO  | N-CA-CB     | 7.25  | 110.11      | 103.08   |
| 10  | 3     | 14  | MET  | N-CA-C      | -7.25 | 97.14       | 109.24   |
| 25  | U     | 225 | HIS  | CA-CB-CG    | 7.25  | 121.05      | 113.80   |
| 2   | B     | 53  | LYS  | N-CA-C      | 7.24  | 121.42      | 112.58   |
| 16  | V     | 90  | VAL  | CA-CB-CG2   | 7.24  | 122.71      | 110.40   |
| 19  | Z     | 862 | ILE  | N-CA-CB     | 7.24  | 119.25      | 111.00   |
| 20  | N     | 890 | LYS  | N-CA-C      | -7.24 | 97.89       | 109.76   |
| 27  | H     | 333 | ARG  | O-C-N       | 7.24  | 128.13      | 121.04   |
| 9   | 2     | 72  | LYS  | O-C-N       | 7.23  | 131.77      | 123.31   |
| 28  | I     | 346 | ARG  | O-C-N       | 7.23  | 129.30      | 121.85   |
| 27  | H     | 115 | VAL  | N-CA-C      | -7.23 | 102.17      | 110.05   |
| 27  | H     | 296 | GLN  | N-CA-C      | 7.23  | 120.21      | 111.82   |
| 19  | Z     | 846 | VAL  | N-CA-C      | -7.23 | 97.02       | 108.95   |
| 19  | Z     | 405 | HIS  | ND1-CE1-NE2 | 7.22  | 115.62      | 108.40   |
| 4   | D     | 140 | VAL  | CA-CB-CG1   | 7.22  | 122.68      | 110.40   |
| 15  | W     | 100 | ARG  | CG-CD-NE    | -7.22 | 96.11       | 112.00   |
| 29  | K     | 396 | ALA  | CA-C-N      | 7.22  | 129.83      | 120.44   |
| 29  | K     | 396 | ALA  | C-N-CA      | 7.22  | 129.83      | 120.44   |
| 17  | T     | 218 | LEU  | CA-C-N      | 7.22  | 128.86      | 119.84   |
| 17  | T     | 218 | LEU  | C-N-CA      | 7.22  | 128.86      | 119.84   |
| 8   | 1     | 106 | PRO  | CA-C-O      | -7.22 | 110.10      | 120.56   |
| 20  | N     | 228 | ALA  | CA-C-N      | 7.22  | 130.67      | 120.42   |
| 20  | N     | 228 | ALA  | C-N-CA      | 7.22  | 130.67      | 120.42   |
| 20  | N     | 847 | GLU  | N-CA-C      | -7.22 | 103.45      | 112.90   |
| 21  | S     | 163 | LEU  | CA-C-N      | 7.21  | 129.95      | 120.28   |
| 21  | S     | 163 | LEU  | C-N-CA      | 7.21  | 129.95      | 120.28   |
| 19  | Z     | 391 | LEU  | CA-C-N      | 7.21  | 130.67      | 120.28   |
| 19  | Z     | 391 | LEU  | C-N-CA      | 7.21  | 130.67      | 120.28   |
| 3   | C     | 85  | VAL  | CB-CA-C     | 7.21  | 122.17      | 112.22   |
| 5   | E     | 94  | VAL  | CA-C-N      | 7.21  | 129.94      | 120.28   |
| 5   | E     | 94  | VAL  | C-N-CA      | 7.21  | 129.94      | 120.28   |
| 13  | 6     | 210 | ALA  | CA-C-O      | 7.21  | 128.19      | 120.55   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 11  | 4     | 74  | GLU  | N-CA-CB   | 7.20  | 122.86      | 111.91   |
| 20  | N     | 273 | THR  | CA-CB-OG1 | 7.20  | 120.41      | 109.60   |
| 32  | J     | 236 | VAL  | N-CA-CB   | 7.20  | 118.97      | 110.55   |
| 8   | 1     | 193 | LEU  | CA-C-N    | 7.19  | 130.50      | 120.29   |
| 8   | 1     | 193 | LEU  | C-N-CA    | 7.19  | 130.50      | 120.29   |
| 23  | Q     | 418 | ALA  | CA-C-N    | 7.19  | 129.92      | 120.28   |
| 23  | Q     | 418 | ALA  | C-N-CA    | 7.19  | 129.92      | 120.28   |
| 29  | K     | 182 | GLU  | CB-CA-C   | -7.19 | 98.63       | 110.85   |
| 20  | N     | 252 | LEU  | CA-C-N    | 7.19  | 130.50      | 120.29   |
| 20  | N     | 252 | LEU  | C-N-CA    | 7.19  | 130.50      | 120.29   |
| 24  | R     | 61  | LEU  | N-CA-CB   | 7.19  | 120.66      | 110.67   |
| 30  | L     | 55  | GLU  | N-CA-C    | -7.19 | 103.53      | 111.36   |
| 31  | M     | 138 | PRO  | CB-CA-C   | -7.19 | 104.86      | 111.40   |
| 20  | N     | 508 | THR  | CA-C-N    | 7.18  | 127.95      | 119.98   |
| 20  | N     | 508 | THR  | C-N-CA    | 7.18  | 127.95      | 119.98   |
| 7   | G     | 236 | ALA  | CA-C-O    | -7.18 | 112.81      | 120.42   |
| 21  | S     | 197 | ARG  | NE-CZ-NH2 | -7.18 | 112.74      | 119.20   |
| 19  | Z     | 139 | CYS  | CA-C-N    | 7.18  | 129.90      | 120.28   |
| 19  | Z     | 139 | CYS  | C-N-CA    | 7.18  | 129.90      | 120.28   |
| 31  | M     | 41  | THR  | CA-C-N    | 7.18  | 129.90      | 120.28   |
| 31  | M     | 41  | THR  | C-N-CA    | 7.18  | 129.90      | 120.28   |
| 2   | B     | 150 | ASP  | CA-C-N    | 7.18  | 126.88      | 119.56   |
| 2   | B     | 150 | ASP  | C-N-CA    | 7.18  | 126.88      | 119.56   |
| 15  | W     | 166 | THR  | N-CA-C    | -7.18 | 98.11       | 109.23   |
| 22  | P     | 395 | ASN  | CA-C-N    | 7.18  | 129.77      | 120.44   |
| 22  | P     | 395 | ASN  | C-N-CA    | 7.18  | 129.77      | 120.44   |
| 29  | K     | 365 | ALA  | N-CA-C    | 7.18  | 118.75      | 111.07   |
| 26  | O     | 325 | ASP  | CA-CB-CG  | -7.17 | 105.43      | 112.60   |
| 4   | D     | 218 | ARG  | NE-CZ-NH2 | -7.17 | 112.74      | 119.20   |
| 20  | N     | 704 | PRO  | CA-C-N    | 7.17  | 129.89      | 120.28   |
| 20  | N     | 704 | PRO  | C-N-CA    | 7.17  | 129.89      | 120.28   |
| 31  | M     | 434 | LYS  | CA-C-N    | 7.17  | 135.24      | 121.54   |
| 31  | M     | 434 | LYS  | C-N-CA    | 7.17  | 135.24      | 121.54   |
| 28  | I     | 297 | SER  | CB-CA-C   | -7.17 | 98.89       | 110.79   |
| 19  | Z     | 469 | TYR  | N-CA-C    | 7.16  | 120.13      | 111.82   |
| 21  | S     | 237 | ARG  | CB-CA-C   | -7.16 | 98.68       | 110.85   |
| 22  | P     | 436 | MET  | CA-C-N    | 7.16  | 130.45      | 120.29   |
| 22  | P     | 436 | MET  | C-N-CA    | 7.16  | 130.45      | 120.29   |
| 25  | U     | 122 | VAL  | O-C-N     | -7.16 | 114.73      | 123.10   |
| 27  | H     | 383 | ALA  | N-CA-C    | 7.16  | 119.08      | 111.28   |
| 9   | 2     | 122 | ALA  | N-CA-C    | 7.15  | 119.08      | 111.28   |
| 31  | M     | 65  | VAL  | N-CA-CB   | 7.15  | 121.31      | 110.58   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 22  | P     | 174 | TYR  | N-CA-C    | -7.15 | 102.51      | 112.45   |
| 19  | Z     | 546 | SER  | CA-C-N    | 7.14  | 129.73      | 120.44   |
| 19  | Z     | 546 | SER  | C-N-CA    | 7.14  | 129.73      | 120.44   |
| 20  | N     | 927 | PRO  | CA-C-N    | 7.14  | 134.83      | 121.97   |
| 20  | N     | 927 | PRO  | C-N-CA    | 7.14  | 134.83      | 121.97   |
| 29  | K     | 38  | GLU  | CA-C-O    | 7.14  | 128.12      | 120.55   |
| 19  | Z     | 457 | ASN  | CB-CA-C   | -7.14 | 99.62       | 110.90   |
| 17  | T     | 207 | ARG  | CD-NE-CZ  | -7.14 | 114.40      | 124.40   |
| 16  | V     | 235 | SER  | N-CA-C    | 7.14  | 118.71      | 111.07   |
| 22  | P     | 241 | LEU  | CA-C-N    | 7.14  | 130.43      | 120.29   |
| 22  | P     | 241 | LEU  | C-N-CA    | 7.14  | 130.43      | 120.29   |
| 29  | K     | 320 | ALA  | CA-C-N    | 7.14  | 130.43      | 120.29   |
| 29  | K     | 320 | ALA  | C-N-CA    | 7.14  | 130.43      | 120.29   |
| 17  | T     | 189 | ALA  | CA-C-N    | 7.13  | 134.01      | 122.67   |
| 17  | T     | 189 | ALA  | C-N-CA    | 7.13  | 134.01      | 122.67   |
| 5   | E     | 63  | SER  | CB-CA-C   | -7.13 | 98.73       | 110.85   |
| 6   | F     | 115 | LYS  | CA-C-O    | 7.13  | 127.98      | 120.42   |
| 13  | 6     | 173 | GLN  | O-C-N     | -7.13 | 113.12      | 121.32   |
| 17  | T     | 235 | LEU  | O-C-N     | -7.13 | 114.03      | 122.15   |
| 19  | Z     | 477 | MET  | CA-C-N    | 7.13  | 129.71      | 120.44   |
| 19  | Z     | 477 | MET  | C-N-CA    | 7.13  | 129.71      | 120.44   |
| 19  | Z     | 553 | THR  | CA-C-N    | 7.13  | 129.83      | 120.28   |
| 19  | Z     | 553 | THR  | C-N-CA    | 7.13  | 129.83      | 120.28   |
| 14  | 7     | 191 | GLN  | O-C-N     | -7.13 | 113.12      | 121.32   |
| 21  | S     | 488 | LYS  | N-CA-C    | 7.13  | 118.84      | 111.14   |
| 25  | U     | 286 | GLU  | CA-C-O    | 7.13  | 128.10      | 120.55   |
| 29  | K     | 129 | SER  | N-CA-C    | -7.13 | 101.12      | 110.53   |
| 27  | H     | 337 | LEU  | N-CA-CB   | 7.12  | 121.32      | 110.28   |
| 28  | I     | 353 | PHE  | CA-CB-CG  | -7.12 | 106.67      | 113.80   |
| 3   | C     | 192 | LEU  | CA-C-N    | 7.12  | 130.41      | 120.29   |
| 3   | C     | 192 | LEU  | C-N-CA    | 7.12  | 130.41      | 120.29   |
| 12  | 5     | 96  | ILE  | CA-CB-CG1 | 7.12  | 122.51      | 110.40   |
| 13  | 6     | 211 | GLU  | CA-C-N    | 7.12  | 130.54      | 120.28   |
| 13  | 6     | 211 | GLU  | C-N-CA    | 7.12  | 130.54      | 120.28   |
| 15  | W     | 67  | ASP  | CA-CB-CG  | -7.12 | 105.48      | 112.60   |
| 19  | Z     | 569 | LYS  | CA-C-N    | 7.12  | 127.85      | 119.94   |
| 19  | Z     | 569 | LYS  | C-N-CA    | 7.12  | 127.85      | 119.94   |
| 25  | U     | 229 | GLN  | CA-C-N    | 7.12  | 129.82      | 120.28   |
| 25  | U     | 229 | GLN  | C-N-CA    | 7.12  | 129.82      | 120.28   |
| 19  | Z     | 380 | PHE  | CA-CB-CG  | 7.12  | 120.92      | 113.80   |
| 14  | 7     | 125 | HIS  | CB-CG-CD2 | -7.12 | 121.95      | 131.20   |
| 17  | T     | 287 | PHE  | CA-CB-CG  | -7.12 | 106.68      | 113.80   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 3   | C     | 36  | GLY  | N-CA-C     | -7.12 | 99.01       | 111.46   |
| 26  | O     | 49  | CYS  | CA-C-N     | 7.12  | 130.53      | 120.28   |
| 26  | O     | 49  | CYS  | C-N-CA     | 7.12  | 130.53      | 120.28   |
| 4   | D     | 47  | LYS  | N-CA-CB    | 7.11  | 122.51      | 110.49   |
| 15  | W     | 124 | LEU  | N-CA-C     | 7.11  | 119.11      | 111.36   |
| 23  | Q     | 323 | LEU  | N-CA-CB    | 7.11  | 121.30      | 110.28   |
| 29  | K     | 190 | LEU  | CA-C-N     | 7.11  | 129.81      | 120.28   |
| 29  | K     | 190 | LEU  | C-N-CA     | 7.11  | 129.81      | 120.28   |
| 30  | L     | 366 | MET  | CA-C-N     | 7.11  | 129.80      | 120.28   |
| 30  | L     | 366 | MET  | C-N-CA     | 7.11  | 129.80      | 120.28   |
| 20  | N     | 736 | ILE  | N-CA-C     | 7.10  | 117.21      | 110.53   |
| 19  | Z     | 301 | HIS  | N-CA-CB    | 7.10  | 120.36      | 110.07   |
| 27  | H     | 315 | ILE  | N-CA-CB    | 7.10  | 121.21      | 111.41   |
| 30  | L     | 337 | HIS  | CG-CD2-NE2 | 7.10  | 114.30      | 107.20   |
| 4   | D     | 227 | SER  | CA-C-O     | -7.10 | 112.96      | 120.70   |
| 16  | V     | 139 | ARG  | O-C-N      | 7.10  | 131.45      | 122.93   |
| 20  | N     | 191 | LYS  | CA-C-N     | 7.10  | 129.66      | 120.44   |
| 20  | N     | 191 | LYS  | C-N-CA     | 7.10  | 129.66      | 120.44   |
| 31  | M     | 181 | ASP  | N-CA-C     | -7.09 | 95.69       | 110.80   |
| 32  | J     | 256 | SER  | N-CA-C     | -7.09 | 103.86      | 114.64   |
| 32  | J     | 360 | LYS  | CA-C-N     | 7.09  | 129.01      | 120.14   |
| 32  | J     | 360 | LYS  | C-N-CA     | 7.09  | 129.01      | 120.14   |
| 22  | P     | 229 | LEU  | O-C-N      | 7.09  | 129.64      | 122.12   |
| 28  | I     | 295 | TYR  | N-CA-C     | -7.09 | 104.78      | 113.50   |
| 30  | L     | 329 | ILE  | N-CA-C     | 7.09  | 117.85      | 110.62   |
| 13  | 6     | 103 | LYS  | N-CA-C     | 7.09  | 119.00      | 111.28   |
| 21  | S     | 473 | HIS  | CB-CA-C    | -7.09 | 99.03       | 110.79   |
| 20  | N     | 641 | SER  | CA-C-N     | 7.08  | 129.77      | 120.28   |
| 20  | N     | 641 | SER  | C-N-CA     | 7.08  | 129.77      | 120.28   |
| 17  | T     | 289 | GLU  | N-CA-CB    | 7.08  | 121.25      | 110.28   |
| 23  | Q     | 394 | ASP  | CA-C-N     | 7.08  | 129.77      | 120.28   |
| 23  | Q     | 394 | ASP  | C-N-CA     | 7.08  | 129.77      | 120.28   |
| 32  | J     | 364 | THR  | CA-C-N     | 7.08  | 130.34      | 120.29   |
| 32  | J     | 364 | THR  | C-N-CA     | 7.08  | 130.34      | 120.29   |
| 4   | D     | 213 | GLU  | N-CA-C     | -7.08 | 96.80       | 108.76   |
| 16  | V     | 36  | LEU  | N-CA-CB    | 7.08  | 120.52      | 110.12   |
| 22  | P     | 135 | LYS  | N-CA-C     | -7.08 | 103.21      | 112.41   |
| 16  | V     | 98  | MET  | CG-SD-CE   | -7.07 | 85.35       | 100.90   |
| 1   | A     | 109 | ILE  | CA-C-N     | 7.07  | 127.10      | 119.89   |
| 1   | A     | 109 | ILE  | C-N-CA     | 7.07  | 127.10      | 119.89   |
| 20  | N     | 756 | HIS  | CA-C-N     | 7.07  | 128.54      | 119.78   |
| 20  | N     | 756 | HIS  | C-N-CA     | 7.07  | 128.54      | 119.78   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 1   | A     | 229 | ILE  | CB-CA-C     | 7.06  | 121.36      | 110.83   |
| 23  | Q     | 55  | SER  | N-CA-C      | -7.06 | 103.58      | 111.28   |
| 31  | M     | 361 | ASN  | N-CA-C      | -7.06 | 100.60      | 110.35   |
| 26  | O     | 328 | ASP  | N-CA-C      | -7.06 | 104.54      | 113.72   |
| 30  | L     | 92  | ARG  | N-CA-C      | -7.06 | 100.03      | 110.48   |
| 22  | P     | 118 | LEU  | O-C-N       | -7.06 | 114.80      | 120.38   |
| 23  | Q     | 334 | ASN  | N-CA-CB     | 7.06  | 120.50      | 110.12   |
| 24  | R     | 316 | LEU  | O-C-N       | 7.06  | 129.60      | 122.12   |
| 10  | 3     | 104 | TYR  | CA-C-N      | 7.06  | 135.02      | 121.54   |
| 10  | 3     | 104 | TYR  | C-N-CA      | 7.06  | 135.02      | 121.54   |
| 11  | 4     | 99  | HIS  | CE1-NE2-CD2 | -7.05 | 101.94      | 109.00   |
| 15  | W     | 36  | VAL  | O-C-N       | -7.05 | 115.03      | 121.87   |
| 21  | S     | 466 | ARG  | CA-C-N      | 7.05  | 129.88      | 120.58   |
| 21  | S     | 466 | ARG  | C-N-CA      | 7.05  | 129.88      | 120.58   |
| 12  | 5     | 152 | MET  | O-C-N       | -7.05 | 114.69      | 123.01   |
| 30  | L     | 332 | GLY  | CA-C-N      | 7.05  | 126.87      | 119.05   |
| 30  | L     | 332 | GLY  | C-N-CA      | 7.05  | 126.87      | 119.05   |
| 32  | J     | 349 | GLU  | CA-C-O      | -7.05 | 112.95      | 120.42   |
| 3   | C     | 145 | PHE  | CA-CB-CG    | -7.04 | 106.75      | 113.80   |
| 22  | P     | 435 | LEU  | N-CA-C      | 7.04  | 119.04      | 111.36   |
| 28  | I     | 333 | ARG  | NE-CZ-NH1   | 7.04  | 128.54      | 121.50   |
| 29  | K     | 198 | PRO  | CA-C-N      | 7.04  | 128.45      | 120.85   |
| 29  | K     | 198 | PRO  | C-N-CA      | 7.04  | 128.45      | 120.85   |
| 32  | J     | 307 | ARG  | CA-C-N      | 7.04  | 126.87      | 119.05   |
| 32  | J     | 307 | ARG  | C-N-CA      | 7.04  | 126.87      | 119.05   |
| 16  | V     | 210 | ASN  | OD1-CG-ND2  | 7.04  | 129.64      | 122.60   |
| 29  | K     | 248 | ARG  | N-CA-CB     | 7.04  | 120.58      | 110.16   |
| 19  | Z     | 102 | HIS  | CA-C-N      | 7.04  | 129.71      | 120.28   |
| 19  | Z     | 102 | HIS  | C-N-CA      | 7.04  | 129.71      | 120.28   |
| 15  | W     | 149 | ASN  | CA-CB-CG    | -7.04 | 105.56      | 112.60   |
| 15  | W     | 169 | HIS  | ND1-CE1-NE2 | 7.04  | 115.44      | 108.40   |
| 14  | 7     | 55  | VAL  | N-CA-CB     | -7.04 | 102.20      | 110.64   |
| 31  | M     | 318 | ASN  | CA-CB-CG    | -7.03 | 105.57      | 112.60   |
| 20  | N     | 42  | VAL  | CA-C-N      | 7.03  | 129.58      | 120.44   |
| 20  | N     | 42  | VAL  | C-N-CA      | 7.03  | 129.58      | 120.44   |
| 19  | Z     | 792 | ALA  | CA-C-N      | 7.03  | 131.58      | 120.47   |
| 19  | Z     | 792 | ALA  | C-N-CA      | 7.03  | 131.58      | 120.47   |
| 27  | H     | 208 | PRO  | N-CA-CB     | 7.03  | 109.90      | 103.08   |
| 2   | B     | 77  | SER  | CA-C-N      | 7.03  | 129.87      | 122.63   |
| 2   | B     | 77  | SER  | C-N-CA      | 7.03  | 129.87      | 122.63   |
| 1   | A     | 96  | TYR  | CA-CB-CG    | -7.03 | 101.25      | 113.90   |
| 7   | G     | 189 | ASP  | CA-CB-CG    | -7.03 | 105.57      | 112.60   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 26  | O     | 251 | LEU  | CA-C-N      | 7.03  | 130.64      | 120.38   |
| 26  | O     | 251 | LEU  | C-N-CA      | 7.03  | 130.64      | 120.38   |
| 29  | K     | 142 | VAL  | O-C-N       | -7.03 | 115.45      | 122.97   |
| 16  | V     | 246 | LYS  | CA-C-O      | -7.03 | 113.10      | 120.55   |
| 24  | R     | 154 | ASN  | OD1-CG-ND2  | -7.02 | 115.58      | 122.60   |
| 3   | C     | 142 | HIS  | ND1-CE1-NE2 | 7.02  | 115.42      | 108.40   |
| 23  | Q     | 342 | PHE  | CA-CB-CG    | -7.02 | 106.78      | 113.80   |
| 19  | Z     | 733 | GLY  | CA-C-N      | 7.02  | 130.98      | 120.31   |
| 19  | Z     | 733 | GLY  | C-N-CA      | 7.02  | 130.98      | 120.31   |
| 6   | F     | 194 | ALA  | N-CA-C      | 7.02  | 119.01      | 111.36   |
| 3   | C     | 247 | ALA  | CA-C-N      | 7.02  | 129.56      | 120.44   |
| 3   | C     | 247 | ALA  | C-N-CA      | 7.02  | 129.56      | 120.44   |
| 22  | P     | 324 | TYR  | CA-C-N      | 7.02  | 127.73      | 119.94   |
| 22  | P     | 324 | TYR  | C-N-CA      | 7.02  | 127.73      | 119.94   |
| 31  | M     | 240 | ALA  | N-CA-C      | 7.02  | 118.58      | 111.07   |
| 8   | I     | 193 | LEU  | O-C-N       | -7.02 | 114.68      | 122.12   |
| 24  | R     | 370 | ILE  | CA-C-N      | 7.01  | 129.68      | 120.28   |
| 24  | R     | 370 | ILE  | C-N-CA      | 7.01  | 129.68      | 120.28   |
| 28  | I     | 274 | ALA  | O-C-N       | -7.01 | 114.68      | 122.12   |
| 28  | I     | 269 | GLU  | CA-C-N      | 7.01  | 130.24      | 120.29   |
| 28  | I     | 269 | GLU  | C-N-CA      | 7.01  | 130.24      | 120.29   |
| 3   | C     | 48  | GLU  | O-C-N       | -7.01 | 115.07      | 123.13   |
| 16  | V     | 234 | TYR  | N-CA-CB     | 7.01  | 120.53      | 110.16   |
| 21  | S     | 272 | PHE  | CA-CB-CG    | 7.01  | 120.81      | 113.80   |
| 25  | U     | 22  | HIS  | CG-CD2-NE2  | 7.01  | 114.21      | 107.20   |
| 29  | K     | 323 | ARG  | CD-NE-CZ    | -7.01 | 114.59      | 124.40   |
| 19  | Z     | 126 | ILE  | N-CA-C      | 7.00  | 117.79      | 110.72   |
| 32  | J     | 300 | ILE  | CA-C-O      | 7.00  | 126.84      | 119.91   |
| 12  | 5     | 139 | SER  | CA-C-N      | 7.00  | 130.23      | 120.29   |
| 12  | 5     | 139 | SER  | C-N-CA      | 7.00  | 130.23      | 120.29   |
| 20  | N     | 543 | LYS  | CB-CA-C     | -7.00 | 99.17       | 110.79   |
| 20  | N     | 931 | HIS  | CG-CD2-NE2  | 7.00  | 114.20      | 107.20   |
| 7   | G     | 199 | TYR  | N-CA-C      | 7.00  | 118.91      | 111.28   |
| 32  | J     | 265 | GLY  | N-CA-C      | -7.00 | 103.82      | 112.77   |
| 9   | 2     | 113 | THR  | CA-C-N      | 6.99  | 127.69      | 120.00   |
| 9   | 2     | 113 | THR  | C-N-CA      | 6.99  | 127.69      | 120.00   |
| 15  | W     | 57  | ASP  | CA-C-N      | 6.99  | 134.89      | 121.54   |
| 15  | W     | 57  | ASP  | C-N-CA      | 6.99  | 134.89      | 121.54   |
| 21  | S     | 168 | VAL  | N-CA-CB     | 6.99  | 120.05      | 110.54   |
| 9   | 2     | 209 | ASP  | CA-C-O      | -6.99 | 113.01      | 120.42   |
| 24  | R     | 48  | ASN  | CA-C-N      | 6.99  | 134.89      | 121.54   |
| 24  | R     | 48  | ASN  | C-N-CA      | 6.99  | 134.89      | 121.54   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 24  | R     | 334 | LEU  | CA-C-N     | 6.99  | 129.64      | 120.28   |
| 24  | R     | 334 | LEU  | C-N-CA     | 6.99  | 129.64      | 120.28   |
| 20  | N     | 635 | SER  | N-CA-C     | -6.99 | 103.75      | 111.36   |
| 23  | Q     | 287 | LEU  | CA-C-O     | -6.99 | 113.15      | 120.55   |
| 26  | O     | 4   | VAL  | CA-C-O     | -6.99 | 110.59      | 119.95   |
| 2   | B     | 57  | TYR  | CA-CB-CG   | -6.98 | 101.33      | 113.90   |
| 22  | P     | 314 | LEU  | N-CA-CB    | 6.98  | 120.46      | 109.71   |
| 22  | P     | 396 | LEU  | CA-C-N     | 6.98  | 130.34      | 120.42   |
| 22  | P     | 396 | LEU  | C-N-CA     | 6.98  | 130.34      | 120.42   |
| 30  | L     | 327 | LEU  | CA-C-N     | 6.98  | 129.64      | 120.28   |
| 30  | L     | 327 | LEU  | C-N-CA     | 6.98  | 129.64      | 120.28   |
| 30  | L     | 381 | PHE  | CA-CB-CG   | -6.98 | 106.82      | 113.80   |
| 2   | B     | 84  | ARG  | NE-CZ-NH2  | -6.98 | 112.92      | 119.20   |
| 3   | C     | 190 | LEU  | O-C-N      | -6.98 | 114.73      | 122.12   |
| 22  | P     | 159 | VAL  | CA-C-N     | 6.97  | 129.62      | 120.28   |
| 22  | P     | 159 | VAL  | C-N-CA     | 6.97  | 129.62      | 120.28   |
| 32  | J     | 125 | LYS  | N-CA-C     | -6.97 | 98.81       | 109.41   |
| 9   | 2     | 257 | GLU  | N-CA-C     | -6.97 | 97.75       | 108.76   |
| 16  | V     | 60  | GLU  | CA-C-N     | 6.97  | 132.82      | 122.99   |
| 16  | V     | 60  | GLU  | C-N-CA     | 6.97  | 132.82      | 122.99   |
| 30  | L     | 82  | LYS  | CA-C-O     | 6.97  | 127.63      | 120.24   |
| 29  | K     | 179 | GLU  | N-CA-C     | 6.97  | 118.53      | 111.07   |
| 32  | J     | 306 | LEU  | CA-C-N     | 6.97  | 130.79      | 120.83   |
| 32  | J     | 306 | LEU  | C-N-CA     | 6.97  | 130.79      | 120.83   |
| 24  | R     | 209 | THR  | N-CA-C     | -6.96 | 97.61       | 109.24   |
| 29  | K     | 270 | ILE  | N-CA-C     | -6.96 | 103.69      | 110.72   |
| 13  | 6     | 153 | PRO  | N-CA-C     | -6.96 | 98.13       | 112.47   |
| 19  | Z     | 671 | ALA  | N-CA-C     | 6.96  | 118.66      | 111.14   |
| 32  | J     | 164 | VAL  | N-CA-CB    | 6.96  | 119.48      | 110.57   |
| 17  | T     | 157 | TRP  | N-CA-CB    | 6.96  | 120.46      | 110.16   |
| 19  | Z     | 221 | ILE  | CA-C-N     | 6.96  | 129.91      | 120.38   |
| 19  | Z     | 221 | ILE  | C-N-CA     | 6.96  | 129.91      | 120.38   |
| 21  | S     | 207 | TYR  | CA-C-O     | -6.96 | 113.17      | 120.55   |
| 21  | S     | 208 | TYR  | N-CA-C     | 6.96  | 118.66      | 111.14   |
| 23  | Q     | 182 | ASN  | OD1-CG-ND2 | 6.96  | 129.56      | 122.60   |
| 26  | O     | 54  | ASP  | CA-C-O     | -6.96 | 110.83      | 119.38   |
| 26  | O     | 298 | LYS  | N-CA-CB    | 6.95  | 120.45      | 110.16   |
| 29  | K     | 223 | THR  | O-C-N      | 6.95  | 129.49      | 122.12   |
| 27  | H     | 158 | ASP  | O-C-N      | -6.95 | 114.29      | 120.48   |
| 20  | N     | 416 | GLU  | CA-C-N     | 6.95  | 130.16      | 120.29   |
| 20  | N     | 416 | GLU  | C-N-CA     | 6.95  | 130.16      | 120.29   |
| 31  | M     | 152 | ASP  | CA-CB-CG   | -6.95 | 105.65      | 112.60   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 14  | 7     | 243 | ILE  | CB-CA-C     | 6.95  | 121.10      | 110.96   |
| 15  | W     | 28  | ALA  | CA-C-N      | 6.95  | 130.28      | 120.28   |
| 15  | W     | 28  | ALA  | C-N-CA      | 6.95  | 130.28      | 120.28   |
| 20  | N     | 933 | PRO  | CA-C-N      | 6.95  | 131.24      | 120.75   |
| 20  | N     | 933 | PRO  | C-N-CA      | 6.95  | 131.24      | 120.75   |
| 32  | J     | 114 | VAL  | N-CA-CB     | -6.95 | 102.00      | 112.35   |
| 13  | 6     | 156 | SER  | O-C-N       | 6.94  | 130.57      | 122.17   |
| 3   | C     | 20  | GLN  | CA-C-N      | 6.94  | 129.31      | 120.56   |
| 3   | C     | 20  | GLN  | C-N-CA      | 6.94  | 129.31      | 120.56   |
| 25  | U     | 196 | HIS  | CB-CG-CD2   | -6.94 | 122.18      | 131.20   |
| 30  | L     | 52  | LYS  | N-CA-CB     | 6.94  | 120.32      | 110.12   |
| 27  | H     | 358 | HIS  | CA-C-N      | 6.94  | 129.58      | 120.28   |
| 27  | H     | 358 | HIS  | C-N-CA      | 6.94  | 129.58      | 120.28   |
| 23  | Q     | 270 | LEU  | N-CA-C      | 6.93  | 118.92      | 111.36   |
| 20  | N     | 371 | ILE  | N-CA-C      | 6.93  | 117.69      | 110.62   |
| 27  | H     | 134 | ILE  | N-CA-C      | -6.93 | 97.51       | 107.77   |
| 30  | L     | 215 | SER  | CA-C-O      | 6.93  | 127.80      | 118.38   |
| 19  | Z     | 778 | LEU  | CA-C-N      | 6.93  | 128.37      | 119.78   |
| 19  | Z     | 778 | LEU  | C-N-CA      | 6.93  | 128.37      | 119.78   |
| 22  | P     | 186 | ILE  | CA-C-N      | 6.93  | 129.45      | 120.44   |
| 22  | P     | 186 | ILE  | C-N-CA      | 6.93  | 129.45      | 120.44   |
| 20  | N     | 355 | ASN  | CA-C-N      | 6.93  | 130.12      | 120.29   |
| 20  | N     | 355 | ASN  | C-N-CA      | 6.93  | 130.12      | 120.29   |
| 20  | N     | 503 | GLN  | O-C-N       | -6.92 | 114.12      | 122.22   |
| 10  | 3     | 140 | GLY  | N-CA-C      | -6.92 | 99.35       | 111.46   |
| 19  | Z     | 204 | ALA  | O-C-N       | 6.92  | 129.20      | 122.07   |
| 20  | N     | 912 | ILE  | CA-C-N      | 6.92  | 132.16      | 121.85   |
| 20  | N     | 912 | ILE  | C-N-CA      | 6.92  | 132.16      | 121.85   |
| 22  | P     | 158 | ASP  | CA-C-N      | 6.92  | 130.28      | 120.53   |
| 22  | P     | 158 | ASP  | C-N-CA      | 6.92  | 130.28      | 120.53   |
| 23  | Q     | 54  | GLY  | N-CA-C      | -6.92 | 104.18      | 113.24   |
| 12  | 5     | 182 | GLY  | CA-C-O      | 6.92  | 127.59      | 121.57   |
| 25  | U     | 196 | HIS  | CE1-NE2-CD2 | -6.92 | 102.08      | 109.00   |
| 8   | 1     | 184 | GLU  | CA-C-N      | 6.91  | 129.54      | 120.28   |
| 8   | 1     | 184 | GLU  | C-N-CA      | 6.91  | 129.54      | 120.28   |
| 26  | O     | 163 | TYR  | N-CA-CB     | 6.91  | 120.39      | 110.16   |
| 19  | Z     | 449 | GLY  | CA-C-N      | 6.91  | 129.93      | 120.46   |
| 19  | Z     | 449 | GLY  | C-N-CA      | 6.91  | 129.93      | 120.46   |
| 21  | S     | 288 | THR  | CA-C-O      | 6.91  | 127.88      | 120.55   |
| 2   | B     | 156 | PHE  | N-CA-C      | -6.91 | 97.70       | 109.24   |
| 30  | L     | 326 | ILE  | CB-CA-C     | -6.91 | 102.82      | 112.14   |
| 9   | 2     | 129 | MET  | O-C-N       | 6.91  | 130.02      | 122.15   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 24  | R     | 327 | VAL  | N-CA-CB     | 6.90  | 119.40      | 110.57   |
| 20  | N     | 837 | ALA  | CA-C-N      | 6.90  | 130.22      | 120.28   |
| 20  | N     | 837 | ALA  | C-N-CA      | 6.90  | 130.22      | 120.28   |
| 21  | S     | 58  | HIS  | CA-CB-CG    | -6.90 | 106.90      | 113.80   |
| 22  | P     | 141 | GLU  | CA-C-N      | 6.90  | 129.53      | 120.28   |
| 22  | P     | 141 | GLU  | C-N-CA      | 6.90  | 129.53      | 120.28   |
| 32  | J     | 154 | LEU  | CA-C-N      | 6.90  | 129.52      | 120.28   |
| 32  | J     | 154 | LEU  | C-N-CA      | 6.90  | 129.52      | 120.28   |
| 17  | T     | 237 | GLN  | N-CA-CB     | 6.90  | 120.01      | 110.01   |
| 23  | Q     | 310 | ARG  | NE-CZ-NH2   | 6.90  | 125.41      | 119.20   |
| 15  | W     | 35  | ILE  | CA-C-N      | 6.89  | 129.91      | 120.46   |
| 15  | W     | 35  | ILE  | C-N-CA      | 6.89  | 129.91      | 120.46   |
| 23  | Q     | 390 | GLU  | N-CA-C      | -6.89 | 94.58       | 109.81   |
| 29  | K     | 208 | PRO  | N-CA-CB     | 6.89  | 109.35      | 103.35   |
| 17  | T     | 155 | ALA  | CA-C-N      | 6.89  | 130.08      | 120.29   |
| 17  | T     | 155 | ALA  | C-N-CA      | 6.89  | 130.08      | 120.29   |
| 19  | Z     | 494 | ARG  | CA-C-N      | 6.89  | 129.52      | 120.28   |
| 19  | Z     | 494 | ARG  | C-N-CA      | 6.89  | 129.52      | 120.28   |
| 20  | N     | 450 | HIS  | CE1-NE2-CD2 | -6.89 | 102.11      | 109.00   |
| 32  | J     | 102 | ASN  | O-C-N       | 6.89  | 131.88      | 122.37   |
| 16  | V     | 89  | PRO  | CA-C-N      | 6.89  | 129.38      | 120.56   |
| 16  | V     | 89  | PRO  | C-N-CA      | 6.89  | 129.38      | 120.56   |
| 3   | C     | 166 | ASN  | CA-C-N      | 6.89  | 132.81      | 122.68   |
| 3   | C     | 166 | ASN  | C-N-CA      | 6.89  | 132.81      | 122.68   |
| 19  | Z     | 412 | ALA  | CA-C-N      | 6.89  | 131.62      | 120.60   |
| 19  | Z     | 412 | ALA  | C-N-CA      | 6.89  | 131.62      | 120.60   |
| 3   | C     | 91  | ARG  | CB-CA-C     | -6.89 | 99.36       | 110.79   |
| 19  | Z     | 153 | SER  | N-CA-C      | 6.88  | 119.63      | 111.71   |
| 21  | S     | 347 | PRO  | CA-C-N      | 6.88  | 134.69      | 121.54   |
| 21  | S     | 347 | PRO  | C-N-CA      | 6.88  | 134.69      | 121.54   |
| 22  | P     | 363 | ILE  | N-CA-C      | 6.88  | 117.64      | 110.62   |
| 26  | O     | 35  | HIS  | CE1-NE2-CD2 | -6.88 | 102.12      | 109.00   |
| 29  | K     | 315 | ASP  | N-CA-C      | -6.88 | 104.45      | 112.92   |
| 19  | Z     | 620 | PHE  | N-CA-C      | -6.88 | 102.32      | 113.19   |
| 4   | D     | 96  | GLU  | CA-C-N      | 6.88  | 129.50      | 120.28   |
| 4   | D     | 96  | GLU  | C-N-CA      | 6.88  | 129.50      | 120.28   |
| 14  | 7     | 201 | GLN  | CA-C-O      | -6.88 | 111.99      | 118.73   |
| 5   | E     | 180 | SER  | N-CA-C      | -6.88 | 103.87      | 111.36   |
| 3   | C     | 92  | LEU  | CA-C-O      | -6.87 | 113.62      | 120.70   |
| 30  | L     | 265 | ARG  | CA-C-N      | 6.87  | 129.79      | 120.44   |
| 30  | L     | 265 | ARG  | C-N-CA      | 6.87  | 129.79      | 120.44   |
| 14  | 7     | 257 | HIS  | CE1-NE2-CD2 | -6.87 | 102.13      | 109.00   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 22  | P     | 137 | TYR  | CA-C-N      | 6.87  | 131.89      | 120.62   |
| 22  | P     | 137 | TYR  | C-N-CA      | 6.87  | 131.89      | 120.62   |
| 25  | U     | 72  | HIS  | ND1-CE1-NE2 | 6.87  | 115.27      | 108.40   |
| 28  | I     | 308 | THR  | CA-C-N      | 6.87  | 130.05      | 120.29   |
| 28  | I     | 308 | THR  | C-N-CA      | 6.87  | 130.05      | 120.29   |
| 29  | K     | 248 | ARG  | CB-CA-C     | -6.87 | 99.17       | 110.85   |
| 24  | R     | 170 | GLU  | N-CA-CB     | 6.87  | 119.97      | 110.01   |
| 32  | J     | 169 | VAL  | N-CA-C      | 6.87  | 116.99      | 110.53   |
| 6   | F     | 198 | THR  | CA-CB-OG1   | 6.87  | 119.90      | 109.60   |
| 22  | P     | 220 | GLU  | CA-C-N      | 6.87  | 129.37      | 120.44   |
| 22  | P     | 220 | GLU  | C-N-CA      | 6.87  | 129.37      | 120.44   |
| 17  | T     | 218 | LEU  | N-CA-C      | 6.87  | 124.98      | 109.81   |
| 8   | 1     | 65  | ASP  | CA-C-O      | -6.86 | 113.52      | 121.82   |
| 29  | K     | 161 | ASP  | N-CA-C      | -6.86 | 103.39      | 112.72   |
| 32  | J     | 292 | ILE  | CA-CB-CG1   | 6.86  | 122.06      | 110.40   |
| 25  | U     | 130 | ASP  | CA-CB-CG    | -6.86 | 105.74      | 112.60   |
| 27  | H     | 415 | LYS  | CA-C-N      | 6.86  | 130.16      | 120.42   |
| 27  | H     | 415 | LYS  | C-N-CA      | 6.86  | 130.16      | 120.42   |
| 32  | J     | 298 | ILE  | O-C-N       | 6.86  | 128.79      | 122.14   |
| 19  | Z     | 350 | LYS  | CB-CA-C     | -6.86 | 99.41       | 110.79   |
| 23  | Q     | 228 | ALA  | CA-C-O      | -6.86 | 113.62      | 120.82   |
| 26  | O     | 288 | HIS  | CB-CG-CD2   | -6.86 | 122.29      | 131.20   |
| 30  | L     | 215 | SER  | N-CA-C      | -6.86 | 103.61      | 113.21   |
| 4   | D     | 73  | PHE  | N-CA-C      | 6.86  | 120.30      | 109.81   |
| 16  | V     | 290 | VAL  | N-CA-CB     | 6.86  | 119.86      | 110.54   |
| 20  | N     | 143 | ASP  | O-C-N       | 6.86  | 129.39      | 122.12   |
| 10  | 3     | 73  | LEU  | O-C-N       | -6.85 | 114.34      | 122.15   |
| 19  | Z     | 497 | VAL  | CA-C-N      | 6.85  | 129.46      | 120.28   |
| 19  | Z     | 497 | VAL  | C-N-CA      | 6.85  | 129.46      | 120.28   |
| 20  | N     | 96  | TYR  | N-CA-C      | -6.85 | 102.30      | 111.96   |
| 24  | R     | 182 | VAL  | CB-CA-C     | -6.85 | 102.76      | 112.22   |
| 30  | L     | 310 | ASP  | N-CA-C      | -6.85 | 102.30      | 111.96   |
| 2   | B     | 71  | HIS  | CG-CD2-NE2  | 6.85  | 114.05      | 107.20   |
| 6   | F     | 146 | GLN  | O-C-N       | -6.85 | 115.15      | 123.30   |
| 26  | O     | 335 | TRP  | CA-C-N      | 6.85  | 132.46      | 122.94   |
| 26  | O     | 335 | TRP  | C-N-CA      | 6.85  | 132.46      | 122.94   |
| 20  | N     | 537 | GLN  | CA-C-N      | 6.85  | 129.45      | 120.28   |
| 20  | N     | 537 | GLN  | C-N-CA      | 6.85  | 129.45      | 120.28   |
| 23  | Q     | 203 | PRO  | CA-C-N      | 6.85  | 127.12      | 119.32   |
| 23  | Q     | 203 | PRO  | C-N-CA      | 6.85  | 127.12      | 119.32   |
| 31  | M     | 199 | GLN  | CA-C-O      | -6.85 | 113.29      | 120.55   |
| 10  | 3     | 34  | MET  | N-CA-C      | -6.84 | 103.63      | 113.21   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 28  | I     | 376 | ASP  | CA-C-O      | -6.84 | 115.30      | 121.67   |
| 29  | K     | 403 | TYR  | CA-C-N      | 6.84  | 129.45      | 120.28   |
| 29  | K     | 403 | TYR  | C-N-CA      | 6.84  | 129.45      | 120.28   |
| 31  | M     | 372 | HIS  | CA-CB-CG    | -6.84 | 106.96      | 113.80   |
| 2   | B     | 209 | GLU  | CB-CG-CD    | -6.84 | 100.97      | 112.60   |
| 28  | I     | 80  | ARG  | N-CA-C      | 6.84  | 118.74      | 111.28   |
| 26  | O     | 163 | TYR  | CA-C-N      | 6.84  | 129.45      | 120.28   |
| 26  | O     | 163 | TYR  | C-N-CA      | 6.84  | 129.45      | 120.28   |
| 26  | O     | 299 | SER  | CA-C-O      | 6.84  | 128.00      | 120.82   |
| 23  | Q     | 348 | GLU  | CA-C-N      | 6.84  | 129.33      | 120.44   |
| 23  | Q     | 348 | GLU  | C-N-CA      | 6.84  | 129.33      | 120.44   |
| 10  | 3     | 60  | VAL  | CA-CB-CG1   | 6.84  | 122.02      | 110.40   |
| 19  | Z     | 287 | ASP  | CA-CB-CG    | -6.84 | 105.76      | 112.60   |
| 19  | Z     | 568 | GLY  | CA-C-N      | 6.84  | 131.50      | 121.31   |
| 19  | Z     | 568 | GLY  | C-N-CA      | 6.84  | 131.50      | 121.31   |
| 21  | S     | 278 | ASN  | CA-C-N      | 6.83  | 129.32      | 120.44   |
| 21  | S     | 278 | ASN  | C-N-CA      | 6.83  | 129.32      | 120.44   |
| 5   | E     | 51  | GLU  | CA-C-O      | 6.83  | 128.26      | 120.54   |
| 20  | N     | 520 | MET  | CA-CB-CG    | -6.83 | 100.43      | 114.10   |
| 9   | 2     | 146 | VAL  | N-CA-CB     | 6.83  | 122.23      | 110.96   |
| 15  | W     | 115 | SER  | N-CA-C      | -6.83 | 102.07      | 108.22   |
| 19  | Z     | 361 | SER  | N-CA-C      | 6.83  | 118.88      | 109.18   |
| 24  | R     | 26  | LEU  | N-CA-C      | 6.83  | 119.75      | 111.82   |
| 20  | N     | 188 | MET  | O-C-N       | -6.83 | 114.56      | 122.89   |
| 25  | U     | 174 | HIS  | CE1-NE2-CD2 | -6.83 | 102.17      | 109.00   |
| 15  | W     | 188 | ILE  | O-C-N       | 6.83  | 128.81      | 121.78   |
| 3   | C     | 60  | PHE  | N-CA-C      | -6.83 | 97.22       | 108.76   |
| 23  | Q     | 50  | ILE  | N-CA-C      | -6.83 | 103.83      | 110.72   |
| 28  | I     | 61  | LYS  | CA-C-N      | 6.83  | 129.98      | 120.29   |
| 28  | I     | 61  | LYS  | C-N-CA      | 6.83  | 129.98      | 120.29   |
| 1   | A     | 50  | ILE  | N-CA-C      | -6.82 | 98.29       | 108.12   |
| 4   | D     | 199 | LYS  | CB-CA-C     | -6.82 | 99.46       | 110.79   |
| 11  | 4     | 99  | HIS  | CA-C-N      | 6.82  | 134.25      | 121.97   |
| 11  | 4     | 99  | HIS  | C-N-CA      | 6.82  | 134.25      | 121.97   |
| 31  | M     | 344 | ALA  | CA-C-N      | 6.82  | 129.98      | 120.29   |
| 31  | M     | 344 | ALA  | C-N-CA      | 6.82  | 129.98      | 120.29   |
| 6   | F     | 167 | SER  | N-CA-CB     | 6.82  | 120.85      | 110.28   |
| 11  | 4     | 97  | PRO  | CA-C-O      | -6.82 | 110.66      | 118.98   |
| 16  | V     | 172 | HIS  | CG-CD2-NE2  | 6.82  | 114.02      | 107.20   |
| 25  | U     | 203 | SER  | CA-C-N      | 6.82  | 129.98      | 120.29   |
| 25  | U     | 203 | SER  | C-N-CA      | 6.82  | 129.98      | 120.29   |
| 30  | L     | 212 | VAL  | CB-CA-C     | -6.82 | 101.71      | 111.19   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 22  | P     | 37  | GLU  | N-CA-C     | -6.82 | 103.92      | 111.36   |
| 27  | H     | 161 | VAL  | N-CA-CB    | -6.82 | 100.35      | 110.58   |
| 4   | D     | 217 | MET  | N-CA-C     | -6.82 | 98.66       | 109.23   |
| 32  | J     | 61  | GLU  | CA-C-N     | 6.82  | 130.10      | 120.28   |
| 32  | J     | 61  | GLU  | C-N-CA     | 6.82  | 130.10      | 120.28   |
| 12  | 5     | 62  | THR  | CA-CB-CG2  | 6.82  | 122.09      | 110.50   |
| 17  | T     | 349 | LEU  | CA-C-N     | 6.82  | 130.67      | 120.31   |
| 17  | T     | 349 | LEU  | C-N-CA     | 6.82  | 130.67      | 120.31   |
| 19  | Z     | 428 | GLN  | CA-C-N     | -6.82 | 114.45      | 122.36   |
| 19  | Z     | 428 | GLN  | C-N-CA     | -6.82 | 114.45      | 122.36   |
| 6   | F     | 178 | GLU  | O-C-N      | 6.82  | 130.65      | 122.27   |
| 29  | K     | 145 | PRO  | CA-C-N     | 6.82  | 129.74      | 120.54   |
| 29  | K     | 145 | PRO  | C-N-CA     | 6.82  | 129.74      | 120.54   |
| 20  | N     | 748 | LEU  | O-C-N      | 6.81  | 130.01      | 122.11   |
| 22  | P     | 258 | ALA  | CB-CA-C    | -6.81 | 100.14      | 110.90   |
| 20  | N     | 684 | ARG  | CA-C-N     | 6.81  | 129.70      | 120.44   |
| 20  | N     | 684 | ARG  | C-N-CA     | 6.81  | 129.70      | 120.44   |
| 27  | H     | 257 | VAL  | CB-CA-C    | -6.81 | 102.95      | 112.14   |
| 31  | M     | 120 | ARG  | N-CA-CB    | 6.81  | 119.98      | 109.97   |
| 19  | Z     | 423 | ASP  | N-CA-C     | -6.81 | 97.80       | 108.90   |
| 27  | H     | 85  | GLN  | OE1-CD-NE2 | 6.81  | 129.41      | 122.60   |
| 31  | M     | 154 | VAL  | CA-C-O     | -6.81 | 114.52      | 121.67   |
| 17  | T     | 270 | ILE  | CA-C-N     | 6.81  | 129.40      | 120.28   |
| 17  | T     | 270 | ILE  | C-N-CA     | 6.81  | 129.40      | 120.28   |
| 4   | D     | 49  | SER  | CA-C-N     | 6.80  | 129.68      | 120.63   |
| 4   | D     | 49  | SER  | C-N-CA     | 6.80  | 129.68      | 120.63   |
| 9   | 2     | 101 | LEU  | N-CA-C     | 6.80  | 118.70      | 111.28   |
| 3   | C     | 105 | ILE  | CA-C-N     | 6.80  | 126.56      | 119.76   |
| 3   | C     | 105 | ILE  | C-N-CA     | 6.80  | 126.56      | 119.76   |
| 10  | 3     | 173 | ASN  | CA-CB-CG   | -6.80 | 105.80      | 112.60   |
| 13  | 6     | 142 | GLU  | N-CA-C     | -6.80 | 98.31       | 109.40   |
| 3   | C     | 169 | ALA  | CA-C-N     | 6.80  | 129.95      | 120.29   |
| 3   | C     | 169 | ALA  | C-N-CA     | 6.80  | 129.95      | 120.29   |
| 27  | H     | 310 | ASP  | CA-C-O     | -6.80 | 112.78      | 120.46   |
| 17  | T     | 142 | GLN  | OE1-CD-NE2 | 6.80  | 129.40      | 122.60   |
| 20  | N     | 756 | HIS  | CB-CG-ND1  | 6.80  | 132.90      | 122.70   |
| 23  | Q     | 305 | ALA  | CA-C-N     | 6.80  | 129.39      | 120.28   |
| 23  | Q     | 305 | ALA  | C-N-CA     | 6.80  | 129.39      | 120.28   |
| 23  | Q     | 382 | GLU  | N-CA-C     | -6.80 | 106.87      | 114.62   |
| 25  | U     | 7   | GLN  | N-CA-C     | -6.80 | 105.93      | 114.56   |
| 26  | O     | 184 | ASP  | N-CA-C     | -6.80 | 98.19       | 108.52   |
| 2   | B     | 171 | LYS  | CA-C-O     | -6.80 | 113.22      | 120.42   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 15  | W     | 76  | HIS  | CE1-NE2-CD2 | -6.80 | 102.20      | 109.00   |
| 20  | N     | 241 | ASN  | CA-CB-CG    | -6.80 | 105.80      | 112.60   |
| 4   | D     | 110 | VAL  | O-C-N       | 6.79  | 128.46      | 121.87   |
| 19  | Z     | 167 | ALA  | CA-C-O      | -6.79 | 113.69      | 120.82   |
| 31  | M     | 222 | PRO  | N-CA-C      | -6.79 | 102.41      | 110.70   |
| 32  | J     | 165 | ILE  | N-CA-C      | 6.79  | 117.41      | 110.82   |
| 24  | R     | 155 | ASP  | O-C-N       | 6.79  | 129.42      | 122.09   |
| 28  | I     | 232 | LYS  | CA-C-N      | 6.79  | 129.38      | 120.28   |
| 28  | I     | 232 | LYS  | C-N-CA      | 6.79  | 129.38      | 120.28   |
| 30  | L     | 269 | ARG  | N-CA-C      | 6.79  | 118.68      | 111.28   |
| 19  | Z     | 469 | TYR  | CA-CB-CG    | -6.79 | 101.68      | 113.90   |
| 29  | K     | 372 | GLY  | CA-C-N      | 6.79  | 129.38      | 120.28   |
| 29  | K     | 372 | GLY  | C-N-CA      | 6.79  | 129.38      | 120.28   |
| 11  | 4     | 103 | LEU  | N-CA-CB     | 6.79  | 121.49      | 110.42   |
| 14  | 7     | 111 | LEU  | CA-C-N      | 6.79  | 127.46      | 120.00   |
| 14  | 7     | 111 | LEU  | C-N-CA      | 6.79  | 127.46      | 120.00   |
| 1   | A     | 233 | ALA  | N-CA-C      | 6.78  | 118.47      | 111.14   |
| 22  | P     | 386 | VAL  | N-CA-C      | 6.78  | 117.54      | 110.62   |
| 23  | Q     | 331 | LEU  | N-CA-C      | -6.78 | 103.89      | 111.28   |
| 30  | L     | 233 | PHE  | CA-CB-CG    | -6.78 | 107.02      | 113.80   |
| 20  | N     | 907 | SER  | CA-C-N      | 6.78  | 129.65      | 120.63   |
| 20  | N     | 907 | SER  | C-N-CA      | 6.78  | 129.65      | 120.63   |
| 19  | Z     | 844 | VAL  | N-CA-C      | -6.78 | 98.68       | 108.17   |
| 12  | 5     | 144 | ASN  | N-CA-CB     | 6.78  | 120.19      | 110.16   |
| 20  | N     | 128 | GLN  | OE1-CD-NE2  | -6.78 | 115.82      | 122.60   |
| 22  | P     | 127 | THR  | N-CA-CB     | 6.78  | 120.08      | 110.12   |
| 8   | 1     | 130 | GLY  | O-C-N       | 6.78  | 129.64      | 122.93   |
| 10  | 3     | 55  | GLY  | N-CA-C      | -6.78 | 97.12       | 113.18   |
| 10  | 3     | 154 | TRP  | CB-CG-CD1   | 6.78  | 137.06      | 126.90   |
| 7   | G     | 23  | GLN  | N-CA-C      | 6.77  | 118.66      | 111.28   |
| 23  | Q     | 173 | GLU  | O-C-N       | 6.77  | 129.30      | 122.12   |
| 13  | 6     | 154 | VAL  | N-CA-C      | -6.77 | 100.04      | 109.45   |
| 23  | Q     | 160 | MET  | CA-C-N      | 6.77  | 131.04      | 121.02   |
| 23  | Q     | 160 | MET  | C-N-CA      | 6.77  | 131.04      | 121.02   |
| 27  | H     | 412 | ALA  | CA-C-O      | -6.77 | 113.37      | 120.55   |
| 6   | F     | 141 | GLY  | CA-C-N      | 6.77  | 127.32      | 120.14   |
| 6   | F     | 141 | GLY  | C-N-CA      | 6.77  | 127.32      | 120.14   |
| 21  | S     | 397 | ASN  | CA-C-N      | 6.77  | 129.16      | 120.70   |
| 21  | S     | 397 | ASN  | C-N-CA      | 6.77  | 129.16      | 120.70   |
| 16  | V     | 64  | ASP  | CA-CB-CG    | -6.77 | 105.83      | 112.60   |
| 19  | Z     | 718 | ASP  | CA-CB-CG    | -6.77 | 105.83      | 112.60   |
| 20  | N     | 53  | GLY  | N-CA-C      | -6.77 | 104.42      | 115.46   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 25  | U     | 199 | LYS  | CA-C-N      | 6.77  | 127.49      | 119.98   |
| 25  | U     | 199 | LYS  | C-N-CA      | 6.77  | 127.49      | 119.98   |
| 4   | D     | 100 | HIS  | CB-CG-ND1   | 6.76  | 132.85      | 122.70   |
| 22  | P     | 50  | LEU  | CA-C-N      | 6.76  | 132.02      | 120.72   |
| 22  | P     | 50  | LEU  | C-N-CA      | 6.76  | 132.02      | 120.72   |
| 28  | I     | 119 | ASN  | N-CA-CB     | 6.76  | 121.92      | 110.49   |
| 20  | N     | 838 | LYS  | CA-C-N      | 6.76  | 129.34      | 120.28   |
| 20  | N     | 838 | LYS  | C-N-CA      | 6.76  | 129.34      | 120.28   |
| 20  | N     | 870 | GLU  | N-CA-C      | 6.76  | 121.95      | 112.75   |
| 23  | Q     | 74  | ARG  | CA-C-O      | -6.76 | 112.11      | 118.73   |
| 5   | E     | 54  | ILE  | CA-C-O      | -6.76 | 114.82      | 121.58   |
| 23  | Q     | 152 | GLN  | CA-C-N      | 6.76  | 129.88      | 120.29   |
| 23  | Q     | 152 | GLN  | C-N-CA      | 6.76  | 129.88      | 120.29   |
| 4   | D     | 135 | ILE  | CA-CB-CG1   | 6.75  | 121.88      | 110.40   |
| 21  | S     | 169 | ILE  | CA-C-N      | 6.75  | 130.58      | 120.31   |
| 21  | S     | 169 | ILE  | C-N-CA      | 6.75  | 130.58      | 120.31   |
| 29  | K     | 197 | ASP  | CA-C-O      | -6.75 | 114.24      | 119.71   |
| 29  | K     | 278 | GLN  | N-CA-C      | -6.75 | 102.96      | 113.02   |
| 19  | Z     | 301 | HIS  | CB-CG-CD2   | -6.75 | 122.42      | 131.20   |
| 20  | N     | 769 | PHE  | O-C-N       | -6.75 | 114.73      | 122.09   |
| 2   | B     | 223 | PRO  | N-CA-C      | -6.75 | 105.42      | 113.86   |
| 17  | T     | 170 | TYR  | CA-C-N      | 6.75  | 129.32      | 120.28   |
| 17  | T     | 170 | TYR  | C-N-CA      | 6.75  | 129.32      | 120.28   |
| 28  | I     | 140 | ASP  | CA-CB-CG    | 6.75  | 119.35      | 112.60   |
| 14  | 7     | 58  | VAL  | N-CA-C      | -6.75 | 98.46       | 109.12   |
| 26  | O     | 272 | ILE  | N-CA-CB     | 6.75  | 119.71      | 110.54   |
| 27  | H     | 202 | VAL  | N-CA-CB     | 6.75  | 120.70      | 110.58   |
| 23  | Q     | 164 | ALA  | CB-CA-C     | -6.74 | 99.39       | 110.85   |
| 20  | N     | 647 | HIS  | CB-CG-CD2   | -6.74 | 122.44      | 131.20   |
| 31  | M     | 229 | TYR  | O-C-N       | 6.74  | 131.33      | 123.17   |
| 19  | Z     | 770 | HIS  | ND1-CE1-NE2 | 6.74  | 115.14      | 108.40   |
| 32  | J     | 19  | GLY  | O-C-N       | -6.74 | 115.65      | 122.19   |
| 22  | P     | 110 | THR  | N-CA-CB     | 6.74  | 120.13      | 110.16   |
| 23  | Q     | 47  | GLU  | O-C-N       | 6.74  | 129.01      | 122.07   |
| 27  | H     | 93  | LEU  | N-CA-C      | -6.74 | 100.55      | 110.52   |
| 12  | 5     | 255 | HIS  | CE1-NE2-CD2 | -6.74 | 102.26      | 109.00   |
| 15  | W     | 21  | PHE  | N-CA-CB     | 6.74  | 121.40      | 110.42   |
| 25  | U     | 3   | GLU  | N-CA-C      | -6.74 | 104.37      | 112.59   |
| 11  | 4     | 37  | LYS  | CA-C-N      | 6.73  | 133.04      | 122.94   |
| 11  | 4     | 37  | LYS  | C-N-CA      | 6.73  | 133.04      | 122.94   |
| 21  | S     | 484 | ASN  | CA-CB-CG    | -6.73 | 105.87      | 112.60   |
| 32  | J     | 135 | VAL  | CB-CA-C     | -6.73 | 102.93      | 112.22   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 1   | A     | 219 | VAL  | CA-C-O     | -6.73 | 114.60      | 121.67   |
| 16  | V     | 155 | VAL  | CB-CA-C    | -6.73 | 100.50      | 110.33   |
| 20  | N     | 67  | VAL  | CA-C-O     | -6.73 | 113.72      | 120.85   |
| 10  | 3     | 177 | ARG  | CA-C-O     | -6.73 | 112.23      | 119.97   |
| 20  | N     | 928 | VAL  | N-CA-C     | 6.73  | 123.33      | 109.34   |
| 22  | P     | 65  | ARG  | CA-C-O     | 6.73  | 127.70      | 119.97   |
| 22  | P     | 236 | HIS  | N-CA-CB    | 6.73  | 120.11      | 110.16   |
| 19  | Z     | 327 | ASN  | CA-C-N     | 6.72  | 129.84      | 120.29   |
| 19  | Z     | 327 | ASN  | C-N-CA     | 6.72  | 129.84      | 120.29   |
| 22  | P     | 65  | ARG  | N-CA-C     | 6.72  | 119.62      | 111.82   |
| 8   | 1     | 110 | HIS  | CA-C-N     | 6.72  | 129.84      | 120.29   |
| 8   | 1     | 110 | HIS  | C-N-CA     | 6.72  | 129.84      | 120.29   |
| 17  | T     | 309 | ARG  | CB-CG-CD   | 6.72  | 126.76      | 111.30   |
| 28  | I     | 390 | LEU  | CA-C-N     | 6.72  | 134.38      | 121.54   |
| 28  | I     | 390 | LEU  | C-N-CA     | 6.72  | 134.38      | 121.54   |
| 29  | K     | 61  | ILE  | N-CA-CB    | 6.72  | 119.68      | 110.54   |
| 29  | K     | 291 | GLU  | CA-C-N     | 6.72  | 129.29      | 120.28   |
| 29  | K     | 291 | GLU  | C-N-CA     | 6.72  | 129.29      | 120.28   |
| 28  | I     | 416 | ASN  | CA-C-N     | 6.72  | 129.18      | 120.44   |
| 28  | I     | 416 | ASN  | C-N-CA     | 6.72  | 129.18      | 120.44   |
| 4   | D     | 5   | ARG  | N-CA-C     | -6.72 | 98.79       | 108.60   |
| 5   | E     | 198 | SER  | CB-CA-C    | -6.72 | 99.64       | 110.79   |
| 20  | N     | 226 | THR  | N-CA-C     | -6.72 | 104.56      | 112.89   |
| 29  | K     | 180 | ALA  | N-CA-C     | 6.72  | 118.39      | 111.14   |
| 31  | M     | 154 | VAL  | CA-C-N     | 6.71  | 127.38      | 120.60   |
| 31  | M     | 154 | VAL  | C-N-CA     | 6.71  | 127.38      | 120.60   |
| 7   | G     | 98  | ASN  | CA-C-N     | 6.71  | 129.16      | 120.44   |
| 7   | G     | 98  | ASN  | C-N-CA     | 6.71  | 129.16      | 120.44   |
| 30  | L     | 126 | PRO  | N-CA-C     | -6.71 | 101.82      | 111.22   |
| 12  | 5     | 110 | ASP  | CA-C-N     | 6.71  | 129.27      | 120.28   |
| 12  | 5     | 110 | ASP  | C-N-CA     | 6.71  | 129.27      | 120.28   |
| 27  | H     | 244 | GLU  | CA-C-O     | -6.71 | 113.31      | 120.42   |
| 13  | 6     | 67  | SER  | O-C-N      | -6.71 | 113.61      | 121.32   |
| 22  | P     | 250 | ILE  | CA-CB-CG2  | 6.71  | 121.90      | 110.50   |
| 23  | Q     | 259 | ILE  | CA-C-N     | 6.71  | 129.27      | 120.28   |
| 23  | Q     | 259 | ILE  | C-N-CA     | 6.71  | 129.27      | 120.28   |
| 23  | Q     | 261 | LEU  | CA-C-N     | 6.71  | 134.35      | 121.54   |
| 23  | Q     | 261 | LEU  | C-N-CA     | 6.71  | 134.35      | 121.54   |
| 31  | M     | 62  | VAL  | N-CA-C     | 6.71  | 117.46      | 110.62   |
| 28  | I     | 355 | LEU  | CA-C-O     | -6.71 | 113.11      | 120.69   |
| 30  | L     | 98  | ARG  | NH1-CZ-NH2 | -6.71 | 110.58      | 119.30   |
| 10  | 3     | 134 | ASP  | N-CA-C     | -6.70 | 98.31       | 109.24   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 25  | U     | 1   | MET  | CA-C-N    | 6.70  | 126.62      | 119.85   |
| 25  | U     | 1   | MET  | C-N-CA    | 6.70  | 126.62      | 119.85   |
| 6   | F     | 89  | ARG  | N-CA-CB   | 6.70  | 120.07      | 110.16   |
| 28  | I     | 207 | HIS  | CA-C-N    | 6.70  | 127.27      | 120.04   |
| 28  | I     | 207 | HIS  | C-N-CA    | 6.70  | 127.27      | 120.04   |
| 19  | Z     | 834 | ASP  | CA-CB-CG  | -6.70 | 105.90      | 112.60   |
| 20  | N     | 107 | HIS  | CA-C-N    | 6.70  | 129.25      | 120.28   |
| 20  | N     | 107 | HIS  | C-N-CA    | 6.70  | 129.25      | 120.28   |
| 21  | S     | 30  | PRO  | CA-C-O    | -6.70 | 109.50      | 119.34   |
| 28  | I     | 288 | ASP  | CA-C-O    | 6.70  | 126.13      | 118.97   |
| 29  | K     | 60  | TYR  | CA-C-N    | 6.70  | 129.63      | 120.46   |
| 29  | K     | 60  | TYR  | C-N-CA    | 6.70  | 129.63      | 120.46   |
| 20  | N     | 85  | GLY  | CA-C-N    | 6.69  | 130.38      | 120.87   |
| 20  | N     | 85  | GLY  | C-N-CA    | 6.69  | 130.38      | 120.87   |
| 23  | Q     | 355 | LYS  | CA-C-O    | 6.69  | 130.08      | 120.51   |
| 20  | N     | 646 | PRO  | N-CA-CB   | 6.69  | 110.89      | 103.26   |
| 22  | P     | 107 | GLN  | CB-CA-C   | -6.69 | 99.48       | 110.85   |
| 22  | P     | 144 | ARG  | NE-CZ-NH1 | 6.69  | 128.19      | 121.50   |
| 29  | K     | 166 | ASP  | N-CA-CB   | 6.69  | 120.32      | 110.56   |
| 2   | B     | 207 | ASN  | N-CA-C    | -6.69 | 105.75      | 114.04   |
| 32  | J     | 141 | GLU  | N-CA-C    | 6.69  | 118.65      | 111.36   |
| 19  | Z     | 776 | LEU  | N-CA-C    | 6.68  | 120.69      | 112.54   |
| 19  | Z     | 399 | LEU  | CA-C-O    | -6.68 | 113.99      | 121.00   |
| 19  | Z     | 505 | MET  | CA-C-O    | 6.68  | 125.80      | 118.65   |
| 20  | N     | 227 | GLN  | N-CA-C    | 6.68  | 118.56      | 111.28   |
| 20  | N     | 796 | LYS  | CA-C-O    | -6.68 | 113.31      | 121.06   |
| 19  | Z     | 161 | HIS  | CA-C-O    | -6.68 | 113.81      | 120.82   |
| 19  | Z     | 457 | ASN  | N-CA-C    | 6.68  | 118.35      | 111.14   |
| 24  | R     | 61  | LEU  | N-CA-C    | -6.68 | 105.42      | 113.97   |
| 30  | L     | 344 | ALA  | O-C-N     | -6.68 | 115.04      | 122.12   |
| 13  | 6     | 187 | ASN  | CA-C-N    | 6.67  | 131.25      | 120.30   |
| 13  | 6     | 187 | ASN  | C-N-CA    | 6.67  | 131.25      | 120.30   |
| 19  | Z     | 400 | TYR  | CA-C-N    | 6.67  | 129.22      | 120.28   |
| 19  | Z     | 400 | TYR  | C-N-CA    | 6.67  | 129.22      | 120.28   |
| 19  | Z     | 159 | VAL  | CA-CB-CG2 | 6.67  | 121.74      | 110.40   |
| 21  | S     | 48  | GLU  | CA-C-N    | 6.67  | 127.21      | 119.94   |
| 21  | S     | 48  | GLU  | C-N-CA    | 6.67  | 127.21      | 119.94   |
| 21  | S     | 113 | VAL  | N-CA-CB   | 6.67  | 122.39      | 111.45   |
| 28  | I     | 322 | ARG  | NE-CZ-NH2 | -6.67 | 113.20      | 119.20   |
| 10  | 3     | 89  | SER  | CA-C-N    | 6.67  | 129.11      | 120.44   |
| 10  | 3     | 89  | SER  | C-N-CA    | 6.67  | 129.11      | 120.44   |
| 5   | E     | 189 | THR  | O-C-N     | -6.67 | 116.62      | 123.29   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 30  | L     | 27  | ARG  | CA-C-O      | -6.67 | 113.48      | 120.55   |
| 28  | I     | 333 | ARG  | NE-CZ-NH2   | -6.66 | 113.20      | 119.20   |
| 24  | R     | 322 | ALA  | CA-C-N      | 6.66  | 129.50      | 120.44   |
| 24  | R     | 322 | ALA  | C-N-CA      | 6.66  | 129.50      | 120.44   |
| 16  | V     | 306 | THR  | CA-C-O      | -6.66 | 113.49      | 120.55   |
| 19  | Z     | 375 | SER  | N-CA-CB     | 6.66  | 119.73      | 110.07   |
| 22  | P     | 300 | PRO  | N-CA-CB     | 6.66  | 110.24      | 103.25   |
| 30  | L     | 279 | ASP  | N-CA-CB     | 6.66  | 121.75      | 110.49   |
| 1   | A     | 1   | MET  | CG-SD-CE    | -6.66 | 86.25       | 100.90   |
| 2   | B     | 112 | GLN  | CA-C-N      | 6.66  | 129.75      | 120.29   |
| 2   | B     | 112 | GLN  | C-N-CA      | 6.66  | 129.75      | 120.29   |
| 8   | 1     | 114 | SER  | CA-C-N      | 6.66  | 129.74      | 120.29   |
| 8   | 1     | 114 | SER  | C-N-CA      | 6.66  | 129.74      | 120.29   |
| 24  | R     | 107 | LYS  | O-C-N       | 6.66  | 129.18      | 122.12   |
| 6   | F     | 185 | ASP  | CA-CB-CG    | -6.66 | 105.94      | 112.60   |
| 11  | 4     | 99  | HIS  | ND1-CE1-NE2 | 6.66  | 115.06      | 108.40   |
| 20  | N     | 372 | ALA  | N-CA-C      | 6.66  | 118.62      | 111.36   |
| 25  | U     | 111 | LEU  | CA-C-O      | 6.66  | 127.56      | 120.70   |
| 19  | Z     | 37  | GLY  | CA-C-N      | 6.65  | 130.20      | 120.82   |
| 19  | Z     | 37  | GLY  | C-N-CA      | 6.65  | 130.20      | 120.82   |
| 19  | Z     | 859 | PRO  | CB-CA-C     | 6.65  | 120.01      | 111.56   |
| 22  | P     | 266 | ALA  | N-CA-C      | 6.65  | 118.32      | 111.14   |
| 23  | Q     | 142 | ARG  | N-CA-CB     | 6.65  | 117.80      | 110.35   |
| 32  | J     | 111 | ASN  | CA-CB-CG    | 6.65  | 119.25      | 112.60   |
| 25  | U     | 174 | HIS  | ND1-CE1-NE2 | 6.65  | 115.05      | 108.40   |
| 11  | 4     | 103 | LEU  | O-C-N       | -6.65 | 115.64      | 123.22   |
| 15  | W     | 31  | ASP  | CA-C-N      | 6.64  | 129.18      | 120.28   |
| 15  | W     | 31  | ASP  | C-N-CA      | 6.64  | 129.18      | 120.28   |
| 1   | A     | 173 | THR  | N-CA-C      | 6.64  | 118.52      | 111.28   |
| 19  | Z     | 262 | PHE  | N-CA-C      | 6.64  | 124.49      | 109.81   |
| 19  | Z     | 554 | TYR  | CA-C-N      | 6.64  | 129.18      | 120.28   |
| 19  | Z     | 554 | TYR  | C-N-CA      | 6.64  | 129.18      | 120.28   |
| 3   | C     | 25  | MET  | CA-C-N      | 6.64  | 129.72      | 120.29   |
| 3   | C     | 25  | MET  | C-N-CA      | 6.64  | 129.72      | 120.29   |
| 3   | C     | 108 | GLU  | N-CA-CB     | 6.64  | 119.88      | 110.12   |
| 11  | 4     | 65  | GLN  | CA-C-N      | 6.64  | 129.18      | 120.28   |
| 11  | 4     | 65  | GLN  | C-N-CA      | 6.64  | 129.18      | 120.28   |
| 19  | Z     | 742 | ALA  | CA-C-N      | 6.64  | 129.18      | 120.28   |
| 19  | Z     | 742 | ALA  | C-N-CA      | 6.64  | 129.18      | 120.28   |
| 6   | F     | 69  | HIS  | CE1-NE2-CD2 | -6.64 | 102.36      | 109.00   |
| 12  | 5     | 201 | GLY  | CA-C-O      | -6.64 | 113.23      | 120.40   |
| 13  | 6     | 47  | PHE  | N-CA-C      | -6.64 | 103.80      | 114.09   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 31  | M     | 191 | ILE  | CB-CA-C     | 6.64  | 119.38      | 110.42   |
| 17  | T     | 305 | TYR  | CA-C-N      | 6.63  | 129.17      | 120.28   |
| 17  | T     | 305 | TYR  | C-N-CA      | 6.63  | 129.17      | 120.28   |
| 19  | Z     | 637 | LYS  | N-CA-C      | 6.63  | 118.17      | 111.07   |
| 30  | L     | 160 | ARG  | CA-C-N      | 6.63  | 129.70      | 120.29   |
| 30  | L     | 160 | ARG  | C-N-CA      | 6.63  | 129.70      | 120.29   |
| 10  | 3     | 133 | THR  | CA-CB-OG1   | 6.63  | 119.54      | 109.60   |
| 23  | Q     | 114 | ILE  | CB-CA-C     | -6.63 | 103.20      | 112.14   |
| 1   | A     | 83  | MET  | CA-C-N      | 6.62  | 130.38      | 120.31   |
| 1   | A     | 83  | MET  | C-N-CA      | 6.62  | 130.38      | 120.31   |
| 27  | H     | 257 | VAL  | CA-CB-CG1   | 6.62  | 121.66      | 110.40   |
| 25  | U     | 207 | ASP  | CA-CB-CG    | -6.62 | 105.98      | 112.60   |
| 30  | L     | 230 | ARG  | N-CA-C      | 6.62  | 118.50      | 111.28   |
| 8   | 1     | 117 | LYS  | CA-C-N      | 6.62  | 129.15      | 120.28   |
| 8   | 1     | 117 | LYS  | C-N-CA      | 6.62  | 129.15      | 120.28   |
| 19  | Z     | 484 | GLY  | CA-C-N      | 6.62  | 129.04      | 120.44   |
| 19  | Z     | 484 | GLY  | C-N-CA      | 6.62  | 129.04      | 120.44   |
| 28  | I     | 342 | ILE  | CA-C-N      | 6.62  | 129.59      | 120.39   |
| 28  | I     | 342 | ILE  | C-N-CA      | 6.62  | 129.59      | 120.39   |
| 20  | N     | 357 | LYS  | CA-C-N      | 6.62  | 129.44      | 120.44   |
| 20  | N     | 357 | LYS  | C-N-CA      | 6.62  | 129.44      | 120.44   |
| 23  | Q     | 54  | GLY  | CA-C-N      | 6.62  | 129.15      | 120.28   |
| 23  | Q     | 54  | GLY  | C-N-CA      | 6.62  | 129.15      | 120.28   |
| 6   | F     | 194 | ALA  | CA-C-N      | 6.61  | 129.14      | 120.28   |
| 6   | F     | 194 | ALA  | C-N-CA      | 6.61  | 129.14      | 120.28   |
| 12  | 5     | 170 | LEU  | N-CA-CB     | 6.61  | 119.69      | 109.97   |
| 15  | W     | 108 | ARG  | CD-NE-CZ    | -6.61 | 115.14      | 124.40   |
| 19  | Z     | 638 | ASP  | N-CA-C      | 6.61  | 118.49      | 111.28   |
| 19  | Z     | 801 | VAL  | N-CA-CB     | 6.61  | 118.16      | 110.82   |
| 5   | E     | 67  | ILE  | O-C-N       | -6.61 | 115.36      | 123.10   |
| 24  | R     | 129 | ASP  | O-C-N       | 6.61  | 128.88      | 122.07   |
| 28  | I     | 110 | GLY  | N-CA-C      | -6.61 | 101.45      | 111.10   |
| 19  | Z     | 576 | ILE  | CA-C-N      | 6.61  | 129.44      | 120.38   |
| 19  | Z     | 576 | ILE  | C-N-CA      | 6.61  | 129.44      | 120.38   |
| 20  | N     | 366 | HIS  | ND1-CE1-NE2 | 6.61  | 115.01      | 108.40   |
| 20  | N     | 213 | PHE  | N-CA-C      | 6.61  | 120.55      | 112.23   |
| 8   | 1     | 161 | GLY  | CA-C-O      | 6.60  | 126.09      | 120.94   |
| 19  | Z     | 224 | ASN  | CA-CB-CG    | 6.60  | 119.20      | 112.60   |
| 20  | N     | 412 | HIS  | CE1-NE2-CD2 | -6.60 | 102.40      | 109.00   |
| 24  | R     | 223 | THR  | CA-C-O      | -6.60 | 113.89      | 120.82   |
| 3   | C     | 33  | THR  | CB-CA-C     | 6.60  | 120.57      | 109.48   |
| 27  | H     | 282 | GLY  | N-CA-C      | -6.60 | 103.53      | 112.57   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 28  | I     | 411 | ARG  | N-CA-C      | -6.60 | 99.78       | 110.20   |
| 8   | 1     | 116 | PHE  | CA-C-O      | 6.60  | 127.41      | 120.42   |
| 7   | G     | 143 | VAL  | N-CA-C      | -6.59 | 105.70      | 113.42   |
| 26  | O     | 37  | LEU  | CA-C-N      | 6.59  | 129.65      | 120.29   |
| 26  | O     | 37  | LEU  | C-N-CA      | 6.59  | 129.65      | 120.29   |
| 32  | J     | 339 | THR  | N-CA-C      | -6.59 | 99.05       | 109.07   |
| 20  | N     | 412 | HIS  | ND1-CE1-NE2 | 6.59  | 114.99      | 108.40   |
| 27  | H     | 164 | MET  | N-CA-C      | 6.59  | 118.47      | 111.28   |
| 12  | 5     | 207 | GLN  | N-CA-C      | -6.59 | 98.66       | 109.40   |
| 21  | S     | 349 | LEU  | N-CA-C      | -6.59 | 103.56      | 112.26   |
| 26  | O     | 272 | ILE  | CA-C-N      | 6.59  | 129.11      | 120.28   |
| 26  | O     | 272 | ILE  | C-N-CA      | 6.59  | 129.11      | 120.28   |
| 9   | 2     | 170 | MET  | N-CA-C      | -6.59 | 98.23       | 109.24   |
| 19  | Z     | 840 | LEU  | CA-C-O      | -6.59 | 113.50      | 120.88   |
| 20  | N     | 136 | LYS  | CB-CA-C     | -6.59 | 99.86       | 110.79   |
| 6   | F     | 85  | CYS  | CA-C-N      | 6.58  | 129.10      | 120.28   |
| 6   | F     | 85  | CYS  | C-N-CA      | 6.58  | 129.10      | 120.28   |
| 25  | U     | 249 | PHE  | CA-C-N      | 6.58  | 129.10      | 120.28   |
| 25  | U     | 249 | PHE  | C-N-CA      | 6.58  | 129.10      | 120.28   |
| 3   | C     | 3   | ARG  | CA-C-O      | 6.58  | 127.05      | 119.35   |
| 23  | Q     | 207 | GLN  | CA-C-O      | 6.58  | 127.39      | 120.42   |
| 30  | L     | 74  | VAL  | CA-CB-CG2   | -6.58 | 99.22       | 110.40   |
| 6   | F     | 143 | HIS  | CG-CD2-NE2  | 6.58  | 113.78      | 107.20   |
| 12  | 5     | 185 | PHE  | N-CA-C      | -6.58 | 104.43      | 114.16   |
| 24  | R     | 79  | GLU  | O-C-N       | 6.58  | 129.09      | 122.12   |
| 7   | G     | 91  | ILE  | CB-CA-C     | -6.57 | 103.15      | 112.22   |
| 8   | 1     | 175 | THR  | CB-CA-C     | 6.57  | 122.02      | 110.85   |
| 17  | T     | 327 | LYS  | CA-C-O      | -6.57 | 111.97      | 118.34   |
| 4   | D     | 30  | SER  | CA-C-N      | 6.57  | 134.09      | 121.54   |
| 4   | D     | 30  | SER  | C-N-CA      | 6.57  | 134.09      | 121.54   |
| 10  | 3     | 113 | ASP  | CA-CB-CG    | 6.57  | 119.17      | 112.60   |
| 16  | V     | 229 | LEU  | CA-C-N      | 6.57  | 130.16      | 120.90   |
| 16  | V     | 229 | LEU  | C-N-CA      | 6.57  | 130.16      | 120.90   |
| 20  | N     | 449 | ILE  | CA-CB-CG1   | 6.57  | 121.57      | 110.40   |
| 28  | I     | 300 | GLY  | N-CA-C      | -6.57 | 103.57      | 112.57   |
| 3   | C     | 119 | GLN  | CA-C-N      | 6.57  | 129.08      | 120.28   |
| 3   | C     | 119 | GLN  | C-N-CA      | 6.57  | 129.08      | 120.28   |
| 29  | K     | 407 | ILE  | CA-C-O      | 6.57  | 127.81      | 120.85   |
| 15  | W     | 27  | GLN  | N-CA-CB     | 6.56  | 120.45      | 110.28   |
| 20  | N     | 398 | ASN  | CA-C-N      | 6.56  | 129.73      | 120.28   |
| 20  | N     | 398 | ASN  | C-N-CA      | 6.56  | 129.73      | 120.28   |
| 24  | R     | 147 | ILE  | N-CA-C      | 6.56  | 116.72      | 110.42   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 19  | Z     | 564 | LEU  | CA-C-N      | 6.56  | 129.07      | 120.28   |
| 19  | Z     | 564 | LEU  | C-N-CA      | 6.56  | 129.07      | 120.28   |
| 19  | Z     | 201 | GLU  | CA-C-N      | 6.56  | 129.60      | 120.29   |
| 19  | Z     | 201 | GLU  | C-N-CA      | 6.56  | 129.60      | 120.29   |
| 21  | S     | 472 | PHE  | CA-C-N      | 6.56  | 129.07      | 120.28   |
| 21  | S     | 472 | PHE  | C-N-CA      | 6.56  | 129.07      | 120.28   |
| 27  | H     | 43  | ARG  | NE-CZ-NH2   | -6.56 | 113.30      | 119.20   |
| 1   | A     | 129 | ALA  | CA-C-N      | 6.55  | 129.36      | 120.38   |
| 1   | A     | 129 | ALA  | C-N-CA      | 6.55  | 129.36      | 120.38   |
| 12  | 5     | 80  | THR  | O-C-N       | -6.55 | 115.56      | 123.16   |
| 16  | V     | 214 | GLN  | N-CA-C      | 6.55  | 118.50      | 111.36   |
| 1   | A     | 122 | SER  | CA-C-N      | 6.55  | 129.59      | 120.29   |
| 1   | A     | 122 | SER  | C-N-CA      | 6.55  | 129.59      | 120.29   |
| 5   | E     | 38  | ILE  | N-CA-CB     | 6.55  | 120.45      | 111.41   |
| 19  | Z     | 687 | ARG  | NE-CZ-NH1   | 6.55  | 128.05      | 121.50   |
| 3   | C     | 109 | GLN  | CA-C-N      | 6.55  | 128.96      | 120.44   |
| 3   | C     | 109 | GLN  | C-N-CA      | 6.55  | 128.96      | 120.44   |
| 20  | N     | 371 | ILE  | CA-CB-CG1   | 6.55  | 121.54      | 110.40   |
| 27  | H     | 298 | THR  | CA-C-N      | 6.55  | 128.96      | 120.44   |
| 27  | H     | 298 | THR  | C-N-CA      | 6.55  | 128.96      | 120.44   |
| 28  | I     | 298 | ASN  | CA-CB-CG    | 6.55  | 119.15      | 112.60   |
| 5   | E     | 175 | GLU  | CA-C-N      | 6.55  | 127.25      | 119.98   |
| 5   | E     | 175 | GLU  | C-N-CA      | 6.55  | 127.25      | 119.98   |
| 26  | O     | 219 | HIS  | ND1-CE1-NE2 | 6.55  | 114.95      | 108.40   |
| 26  | O     | 262 | ALA  | CA-C-O      | -6.55 | 113.61      | 120.55   |
| 14  | 7     | 155 | VAL  | CA-C-O      | 6.55  | 126.73      | 120.25   |
| 23  | Q     | 117 | ALA  | CA-C-N      | 6.55  | 129.59      | 120.29   |
| 23  | Q     | 117 | ALA  | C-N-CA      | 6.55  | 129.59      | 120.29   |
| 27  | H     | 207 | GLU  | CA-C-O      | -6.55 | 114.71      | 120.60   |
| 2   | B     | 49  | GLU  | N-CA-CB     | 6.54  | 120.54      | 109.87   |
| 14  | 7     | 222 | TYR  | CA-CB-CG    | -6.54 | 102.12      | 113.90   |
| 20  | N     | 880 | ASN  | CA-C-N      | 6.54  | 128.02      | 119.84   |
| 20  | N     | 880 | ASN  | C-N-CA      | 6.54  | 128.02      | 119.84   |
| 23  | Q     | 322 | HIS  | ND1-CE1-NE2 | 6.54  | 114.94      | 108.40   |
| 24  | R     | 123 | ALA  | CA-C-N      | 6.54  | 129.58      | 120.29   |
| 24  | R     | 123 | ALA  | C-N-CA      | 6.54  | 129.58      | 120.29   |
| 24  | R     | 273 | GLN  | OE1-CD-NE2  | 6.54  | 129.14      | 122.60   |
| 30  | L     | 345 | ILE  | CA-C-O      | -6.54 | 114.15      | 120.95   |
| 10  | 3     | 185 | VAL  | CA-CB-CG2   | -6.54 | 99.29       | 110.40   |
| 14  | 7     | 55  | VAL  | N-CA-C      | 6.54  | 116.69      | 110.74   |
| 28  | I     | 209 | GLU  | CB-CA-C     | -6.54 | 100.61      | 110.88   |
| 3   | C     | 17  | ARG  | CA-C-N      | 6.53  | 130.62      | 120.75   |

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| Mol | Chain | Res | Type | Atoms    | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|-------|-------------|----------|
| 3   | C     | 17  | ARG  | C-N-CA   | 6.53  | 130.62      | 120.75   |
| 12  | 5     | 152 | MET  | N-CA-C   | -6.53 | 99.88       | 110.20   |
| 15  | W     | 12  | ASN  | CA-C-O   | 6.53  | 126.24      | 119.05   |
| 19  | Z     | 317 | LEU  | N-CA-C   | 6.53  | 118.06      | 111.07   |
| 24  | R     | 267 | ARG  | N-CA-CB  | 6.53  | 121.52      | 110.87   |
| 5   | E     | 79  | SER  | CA-C-N   | 6.53  | 127.45      | 121.31   |
| 5   | E     | 79  | SER  | C-N-CA   | 6.53  | 127.45      | 121.31   |
| 10  | 3     | 161 | GLU  | N-CA-C   | -6.53 | 100.82      | 110.48   |
| 13  | 6     | 196 | ASP  | CA-C-N   | 6.53  | 129.03      | 120.28   |
| 13  | 6     | 196 | ASP  | C-N-CA   | 6.53  | 129.03      | 120.28   |
| 28  | I     | 289 | ALA  | N-CA-C   | 6.53  | 120.35      | 112.38   |
| 27  | H     | 422 | LYS  | N-CA-C   | -6.53 | 100.31      | 110.17   |
| 21  | S     | 357 | PHE  | CA-CB-CG | 6.53  | 120.33      | 113.80   |
| 23  | Q     | 292 | GLN  | CA-C-N   | 6.53  | 129.02      | 120.28   |
| 23  | Q     | 292 | GLN  | C-N-CA   | 6.53  | 129.02      | 120.28   |
| 23  | Q     | 362 | GLU  | CB-CG-CD | -6.53 | 101.51      | 112.60   |
| 26  | O     | 120 | ALA  | CA-C-N   | 6.53  | 129.56      | 120.29   |
| 26  | O     | 120 | ALA  | C-N-CA   | 6.53  | 129.56      | 120.29   |
| 19  | Z     | 290 | VAL  | CA-C-N   | 6.52  | 132.84      | 120.97   |
| 19  | Z     | 290 | VAL  | C-N-CA   | 6.52  | 132.84      | 120.97   |
| 19  | Z     | 809 | ILE  | CA-C-O   | 6.52  | 128.71      | 120.75   |
| 24  | R     | 339 | ALA  | CA-C-O   | -6.52 | 113.98      | 120.70   |
| 25  | U     | 235 | ASN  | N-CA-C   | 6.52  | 119.39      | 111.82   |
| 22  | P     | 22  | ALA  | CA-C-N   | 6.52  | 129.02      | 120.28   |
| 22  | P     | 22  | ALA  | C-N-CA   | 6.52  | 129.02      | 120.28   |
| 26  | O     | 223 | GLU  | N-CA-C   | 6.52  | 118.05      | 111.07   |
| 7   | G     | 151 | MET  | CA-C-N   | 6.52  | 131.68      | 123.14   |
| 7   | G     | 151 | MET  | C-N-CA   | 6.52  | 131.68      | 123.14   |
| 12  | 5     | 182 | GLY  | O-C-N    | -6.52 | 117.63      | 123.37   |
| 19  | Z     | 14  | GLN  | CA-C-N   | 6.52  | 128.24      | 120.09   |
| 19  | Z     | 14  | GLN  | C-N-CA   | 6.52  | 128.24      | 120.09   |
| 19  | Z     | 750 | GLN  | N-CA-CB  | 6.52  | 119.46      | 110.01   |
| 20  | N     | 652 | ALA  | CA-C-N   | 6.52  | 129.01      | 120.28   |
| 20  | N     | 652 | ALA  | C-N-CA   | 6.52  | 129.01      | 120.28   |
| 21  | S     | 70  | ASP  | CA-C-O   | -6.52 | 113.99      | 120.70   |
| 22  | P     | 246 | HIS  | CA-CB-CG | -6.52 | 107.28      | 113.80   |
| 23  | Q     | 416 | ASN  | O-C-N    | 6.52  | 128.78      | 122.07   |
| 16  | V     | 251 | LEU  | CA-C-N   | 6.51  | 129.01      | 120.28   |
| 16  | V     | 251 | LEU  | C-N-CA   | 6.51  | 129.01      | 120.28   |
| 26  | O     | 89  | ASP  | CA-C-O   | -6.51 | 113.50      | 119.62   |
| 28  | I     | 159 | VAL  | O-C-N    | 6.51  | 129.78      | 122.68   |
| 6   | F     | 95  | SER  | CA-C-O   | 6.51  | 127.32      | 120.42   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 25  | U     | 228 | TYR  | N-CA-CB     | 6.51  | 119.80      | 110.16   |
| 31  | M     | 106 | ASP  | N-CA-C      | -6.51 | 105.34      | 113.55   |
| 7   | G     | 138 | LEU  | N-CA-C      | -6.51 | 98.37       | 109.24   |
| 23  | Q     | 326 | LEU  | N-CA-C      | 6.51  | 118.37      | 111.28   |
| 27  | H     | 339 | ARG  | CA-C-N      | 6.51  | 132.16      | 123.05   |
| 27  | H     | 339 | ARG  | C-N-CA      | 6.51  | 132.16      | 123.05   |
| 9   | 2     | 175 | LEU  | CA-C-N      | 6.51  | 129.53      | 120.29   |
| 9   | 2     | 175 | LEU  | C-N-CA      | 6.51  | 129.53      | 120.29   |
| 3   | C     | 90  | LEU  | N-CA-C      | 6.51  | 118.37      | 111.28   |
| 15  | W     | 41  | THR  | CA-CB-OG1   | 6.51  | 119.36      | 109.60   |
| 23  | Q     | 152 | GLN  | OE1-CD-NE2  | 6.51  | 129.11      | 122.60   |
| 27  | H     | 426 | THR  | CA-CB-OG1   | 6.51  | 119.36      | 109.60   |
| 3   | C     | 204 | SER  | CA-C-N      | 6.50  | 133.96      | 121.54   |
| 3   | C     | 204 | SER  | C-N-CA      | 6.50  | 133.96      | 121.54   |
| 17  | T     | 278 | ILE  | N-CA-C      | -6.50 | 102.92      | 111.05   |
| 9   | 2     | 131 | PHE  | N-CA-C      | 6.50  | 119.36      | 111.82   |
| 12  | 5     | 193 | TYR  | N-CA-CB     | 6.50  | 121.33      | 110.41   |
| 25  | U     | 284 | ASP  | CA-C-N      | 6.50  | 128.99      | 120.28   |
| 25  | U     | 284 | ASP  | C-N-CA      | 6.50  | 128.99      | 120.28   |
| 28  | I     | 254 | GLU  | CB-CG-CD    | -6.50 | 101.55      | 112.60   |
| 20  | N     | 99  | THR  | CA-C-N      | 6.50  | 128.88      | 120.56   |
| 20  | N     | 99  | THR  | C-N-CA      | 6.50  | 128.88      | 120.56   |
| 20  | N     | 698 | GLN  | N-CA-C      | -6.50 | 97.78       | 108.76   |
| 20  | N     | 829 | SER  | N-CA-C      | 6.50  | 118.02      | 111.07   |
| 23  | Q     | 330 | LEU  | CA-C-N      | 6.50  | 128.99      | 120.28   |
| 23  | Q     | 330 | LEU  | C-N-CA      | 6.50  | 128.99      | 120.28   |
| 25  | U     | 102 | HIS  | CA-C-O      | 6.50  | 128.79      | 121.51   |
| 6   | F     | 122 | ARG  | CA-C-O      | -6.49 | 114.48      | 121.56   |
| 30  | L     | 401 | LYS  | CA-C-O      | -6.49 | 113.63      | 119.86   |
| 20  | N     | 83  | GLY  | N-CA-C      | 6.49  | 120.52      | 112.73   |
| 22  | P     | 169 | LEU  | CA-C-O      | -6.49 | 113.67      | 120.55   |
| 29  | K     | 210 | CYS  | N-CA-C      | -6.49 | 105.40      | 113.38   |
| 27  | H     | 359 | ALA  | O-C-N       | 6.48  | 128.99      | 122.12   |
| 1   | A     | 240 | VAL  | CA-C-N      | 6.48  | 129.50      | 120.29   |
| 1   | A     | 240 | VAL  | C-N-CA      | 6.48  | 129.50      | 120.29   |
| 17  | T     | 328 | PRO  | N-CA-CB     | 6.48  | 110.06      | 103.25   |
| 22  | P     | 249 | ALA  | CA-C-N      | 6.48  | 129.34      | 120.46   |
| 22  | P     | 249 | ALA  | C-N-CA      | 6.48  | 129.34      | 120.46   |
| 23  | Q     | 59  | LYS  | CA-C-N      | 6.48  | 133.37      | 121.70   |
| 23  | Q     | 59  | LYS  | C-N-CA      | 6.48  | 133.37      | 121.70   |
| 25  | U     | 63  | LYS  | CA-C-O      | 6.48  | 127.44      | 120.24   |
| 6   | F     | 143 | HIS  | CE1-NE2-CD2 | -6.48 | 102.52      | 109.00   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 20  | N     | 456 | ASP  | O-C-N       | 6.48  | 129.54      | 122.15   |
| 23  | Q     | 311 | ALA  | CA-C-N      | 6.48  | 128.96      | 120.28   |
| 23  | Q     | 311 | ALA  | C-N-CA      | 6.48  | 128.96      | 120.28   |
| 16  | V     | 48  | GLY  | CA-C-N      | 6.48  | 134.12      | 122.13   |
| 16  | V     | 48  | GLY  | C-N-CA      | 6.48  | 134.12      | 122.13   |
| 20  | N     | 769 | PHE  | CA-CB-CG    | 6.48  | 120.28      | 113.80   |
| 25  | U     | 100 | LYS  | O-C-N       | 6.48  | 130.35      | 123.42   |
| 4   | D     | 99  | SER  | CA-C-N      | 6.48  | 128.96      | 120.28   |
| 4   | D     | 99  | SER  | C-N-CA      | 6.48  | 128.96      | 120.28   |
| 19  | Z     | 180 | GLN  | CB-CG-CD    | -6.48 | 101.59      | 112.60   |
| 23  | Q     | 336 | ILE  | CB-CA-C     | -6.48 | 103.40      | 112.14   |
| 9   | 2     | 258 | LYS  | CA-C-N      | 6.47  | 129.36      | 122.11   |
| 9   | 2     | 258 | LYS  | C-N-CA      | 6.47  | 129.36      | 122.11   |
| 20  | N     | 221 | ILE  | N-CA-C      | 6.47  | 116.62      | 110.53   |
| 20  | N     | 390 | LEU  | CA-C-N      | 6.47  | 128.96      | 120.28   |
| 20  | N     | 390 | LEU  | C-N-CA      | 6.47  | 128.96      | 120.28   |
| 24  | R     | 128 | TYR  | CA-C-N      | 6.47  | 128.86      | 120.44   |
| 24  | R     | 128 | TYR  | C-N-CA      | 6.47  | 128.86      | 120.44   |
| 19  | Z     | 544 | GLU  | CA-C-N      | 6.47  | 128.85      | 120.44   |
| 19  | Z     | 544 | GLU  | C-N-CA      | 6.47  | 128.85      | 120.44   |
| 28  | I     | 287 | ILE  | CB-CA-C     | -6.47 | 105.97      | 113.22   |
| 32  | J     | 171 | HIS  | ND1-CE1-NE2 | 6.47  | 114.87      | 108.40   |
| 1   | A     | 164 | LYS  | N-CA-C      | -6.47 | 104.31      | 111.36   |
| 13  | 6     | 95  | ILE  | CB-CA-C     | 6.47  | 121.15      | 112.22   |
| 20  | N     | 64  | ALA  | CA-C-N      | 6.47  | 128.95      | 120.28   |
| 20  | N     | 64  | ALA  | C-N-CA      | 6.47  | 128.95      | 120.28   |
| 20  | N     | 724 | VAL  | CB-CA-C     | -6.47 | 102.13      | 112.16   |
| 23  | Q     | 107 | VAL  | O-C-N       | 6.47  | 128.15      | 121.87   |
| 28  | I     | 82  | GLN  | OE1-CD-NE2  | 6.47  | 129.07      | 122.60   |
| 1   | A     | 201 | CYS  | O-C-N       | 6.47  | 128.97      | 122.12   |
| 14  | 7     | 104 | PHE  | CA-CB-CG    | -6.47 | 107.33      | 113.80   |
| 28  | I     | 109 | VAL  | CA-C-N      | 6.46  | 128.33      | 121.48   |
| 28  | I     | 109 | VAL  | C-N-CA      | 6.46  | 128.33      | 121.48   |
| 30  | L     | 259 | GLU  | N-CA-C      | -6.46 | 102.60      | 110.88   |
| 10  | 3     | 66  | ARG  | NE-CZ-NH2   | 6.46  | 125.02      | 119.20   |
| 21  | S     | 317 | ALA  | CA-C-N      | 6.46  | 129.64      | 120.53   |
| 21  | S     | 317 | ALA  | C-N-CA      | 6.46  | 129.64      | 120.53   |
| 8   | 1     | 88  | VAL  | CA-C-N      | 6.46  | 129.47      | 120.29   |
| 8   | 1     | 88  | VAL  | C-N-CA      | 6.46  | 129.47      | 120.29   |
| 15  | W     | 129 | LYS  | CA-C-N      | 6.46  | 128.94      | 120.28   |
| 15  | W     | 129 | LYS  | C-N-CA      | 6.46  | 128.94      | 120.28   |
| 20  | N     | 748 | LEU  | CA-C-O      | -6.46 | 114.02      | 120.80   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 21  | S     | 58  | HIS  | CA-C-N      | 6.46  | 128.84      | 120.44   |
| 21  | S     | 58  | HIS  | C-N-CA      | 6.46  | 128.84      | 120.44   |
| 22  | P     | 150 | ALA  | N-CA-C      | 6.46  | 117.98      | 111.07   |
| 21  | S     | 278 | ASN  | N-CA-C      | 6.46  | 118.32      | 111.28   |
| 20  | N     | 145 | HIS  | CE1-NE2-CD2 | -6.46 | 102.55      | 109.00   |
| 2   | B     | 142 | GLY  | N-CA-C      | -6.45 | 105.97      | 115.72   |
| 7   | G     | 46  | VAL  | CA-C-O      | -6.45 | 113.44      | 120.67   |
| 19  | Z     | 642 | ALA  | CA-C-N      | 6.45  | 126.38      | 119.28   |
| 19  | Z     | 642 | ALA  | C-N-CA      | 6.45  | 126.38      | 119.28   |
| 24  | R     | 207 | THR  | N-CA-C      | -6.45 | 98.88       | 109.40   |
| 31  | M     | 249 | ALA  | CA-C-O      | -6.45 | 114.55      | 121.45   |
| 13  | 6     | 203 | LYS  | O-C-N       | -6.45 | 115.28      | 122.12   |
| 20  | N     | 874 | ASN  | CA-C-N      | 6.45  | 129.25      | 120.54   |
| 20  | N     | 874 | ASN  | C-N-CA      | 6.45  | 129.25      | 120.54   |
| 32  | J     | 161 | ILE  | CA-C-O      | -6.45 | 114.01      | 120.85   |
| 2   | B     | 195 | LEU  | CA-C-N      | 6.45  | 129.44      | 120.29   |
| 2   | B     | 195 | LEU  | C-N-CA      | 6.45  | 129.44      | 120.29   |
| 24  | R     | 136 | HIS  | O-C-N       | 6.45  | 128.95      | 122.12   |
| 32  | J     | 171 | HIS  | N-CA-CB     | 6.45  | 123.11      | 110.61   |
| 32  | J     | 184 | LYS  | N-CA-C      | -6.45 | 97.07       | 110.80   |
| 6   | F     | 64  | LEU  | CA-C-N      | 6.44  | 131.00      | 122.30   |
| 6   | F     | 64  | LEU  | C-N-CA      | 6.44  | 131.00      | 122.30   |
| 23  | Q     | 149 | LEU  | CA-C-N      | 6.44  | 127.09      | 120.00   |
| 23  | Q     | 149 | LEU  | C-N-CA      | 6.44  | 127.09      | 120.00   |
| 12  | 5     | 226 | ASP  | O-C-N       | 6.44  | 129.05      | 122.09   |
| 20  | N     | 341 | PHE  | CA-CB-CG    | 6.44  | 120.24      | 113.80   |
| 22  | P     | 253 | THR  | CA-C-O      | -6.44 | 113.47      | 120.17   |
| 30  | L     | 40  | LEU  | CA-C-N      | 6.44  | 129.44      | 120.29   |
| 30  | L     | 40  | LEU  | C-N-CA      | 6.44  | 129.44      | 120.29   |
| 32  | J     | 158 | ILE  | O-C-N       | -6.44 | 115.19      | 121.83   |
| 8   | 1     | 73  | HIS  | ND1-CE1-NE2 | 6.44  | 114.84      | 108.40   |
| 17  | T     | 145 | ILE  | CA-CB-CG1   | 6.44  | 121.35      | 110.40   |
| 23  | Q     | 376 | GLY  | CA-C-O      | 6.44  | 127.33      | 121.47   |
| 26  | O     | 152 | HIS  | CA-CB-CG    | 6.44  | 120.24      | 113.80   |
| 28  | I     | 324 | ASP  | CA-C-N      | 6.44  | 129.19      | 120.63   |
| 28  | I     | 324 | ASP  | C-N-CA      | 6.44  | 129.19      | 120.63   |
| 5   | E     | 93  | ARG  | N-CA-CB     | 6.44  | 119.35      | 110.01   |
| 19  | Z     | 830 | LEU  | CB-CA-C     | -6.44 | 98.45       | 109.65   |
| 15  | W     | 149 | ASN  | CA-C-N      | 6.44  | 129.85      | 120.71   |
| 15  | W     | 149 | ASN  | C-N-CA      | 6.44  | 129.85      | 120.71   |
| 17  | T     | 106 | ASN  | N-CA-C      | -6.44 | 98.94       | 108.79   |
| 19  | Z     | 573 | ILE  | CA-C-N      | 6.44  | 129.43      | 120.29   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 19  | Z     | 573 | ILE  | C-N-CA      | 6.44  | 129.43      | 120.29   |
| 31  | M     | 76  | ILE  | CA-C-N      | 6.44  | 128.91      | 120.28   |
| 31  | M     | 76  | ILE  | C-N-CA      | 6.44  | 128.91      | 120.28   |
| 2   | B     | 169 | ASN  | OD1-CG-ND2  | 6.43  | 129.03      | 122.60   |
| 3   | C     | 241 | GLU  | N-CA-CB     | 6.43  | 119.58      | 110.12   |
| 8   | 1     | 163 | SER  | N-CA-CB     | 6.43  | 121.36      | 110.49   |
| 8   | 1     | 197 | MET  | N-CA-C      | 6.43  | 118.09      | 111.14   |
| 15  | W     | 53  | THR  | N-CA-C      | -6.43 | 99.23       | 109.59   |
| 15  | W     | 119 | ASP  | CA-C-N      | 6.43  | 129.97      | 120.90   |
| 15  | W     | 119 | ASP  | C-N-CA      | 6.43  | 129.97      | 120.90   |
| 20  | N     | 769 | PHE  | N-CA-C      | -6.43 | 104.12      | 114.09   |
| 21  | S     | 74  | HIS  | CE1-NE2-CD2 | -6.43 | 102.57      | 109.00   |
| 27  | H     | 114 | ASN  | CA-C-N      | 6.43  | 130.15      | 120.95   |
| 27  | H     | 114 | ASN  | C-N-CA      | 6.43  | 130.15      | 120.95   |
| 19  | Z     | 20  | ALA  | N-CA-C      | 6.43  | 121.61      | 113.25   |
| 30  | L     | 99  | ARG  | NE-CZ-NH1   | 6.43  | 127.93      | 121.50   |
| 31  | M     | 308 | GLU  | CA-C-N      | 6.43  | 129.27      | 120.46   |
| 31  | M     | 308 | GLU  | C-N-CA      | 6.43  | 129.27      | 120.46   |
| 1   | A     | 178 | PHE  | CA-CB-CG    | -6.43 | 107.37      | 113.80   |
| 8   | 1     | 183 | ASP  | CA-C-N      | 6.43  | 128.89      | 120.28   |
| 8   | 1     | 183 | ASP  | C-N-CA      | 6.43  | 128.89      | 120.28   |
| 16  | V     | 295 | ASN  | O-C-N       | 6.43  | 128.93      | 122.12   |
| 20  | N     | 902 | PRO  | N-CA-C      | -6.43 | 106.32      | 114.35   |
| 23  | Q     | 395 | LYS  | O-C-N       | -6.43 | 115.31      | 122.12   |
| 23  | Q     | 328 | ASP  | CA-CB-CG    | -6.42 | 106.17      | 112.60   |
| 31  | M     | 155 | GLY  | N-CA-C      | -6.42 | 103.38      | 112.37   |
| 26  | O     | 97  | LEU  | O-C-N       | 6.42  | 128.69      | 122.07   |
| 32  | J     | 175 | PHE  | CA-CB-CG    | -6.42 | 107.38      | 113.80   |
| 3   | C     | 222 | LYS  | O-C-N       | 6.42  | 131.14      | 123.24   |
| 11  | 4     | 107 | TYR  | O-C-N       | -6.42 | 115.66      | 123.30   |
| 17  | T     | 254 | ILE  | CB-CA-C     | -6.42 | 105.59      | 114.00   |
| 19  | Z     | 690 | VAL  | CA-C-O      | -6.42 | 111.35      | 119.95   |
| 9   | 2     | 170 | MET  | CA-C-N      | 6.42  | 127.10      | 121.58   |
| 9   | 2     | 170 | MET  | C-N-CA      | 6.42  | 127.10      | 121.58   |
| 13  | 6     | 203 | LYS  | CB-CA-C     | -6.42 | 100.14      | 110.79   |
| 21  | S     | 220 | LEU  | N-CA-CB     | -6.42 | 101.10      | 110.53   |
| 20  | N     | 50  | GLU  | CA-C-N      | 6.42  | 131.24      | 122.19   |
| 20  | N     | 50  | GLU  | C-N-CA      | 6.42  | 131.24      | 122.19   |
| 8   | 1     | 217 | VAL  | N-CA-CB     | 6.42  | 121.81      | 111.23   |
| 20  | N     | 575 | ASP  | CA-CB-CG    | -6.42 | 106.19      | 112.60   |
| 21  | S     | 376 | ASP  | N-CA-C      | 6.41  | 118.07      | 111.14   |
| 3   | C     | 141 | LYS  | CB-CA-C     | -6.41 | 100.14      | 110.79   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 27  | H     | 389 | CYS  | N-CA-C     | -6.41 | 104.22      | 111.14   |
| 14  | 7     | 69  | ASP  | CA-CB-CG   | 6.41  | 119.01      | 112.60   |
| 14  | 7     | 155 | VAL  | N-CA-C     | 6.41  | 117.33      | 107.78   |
| 29  | K     | 130 | VAL  | O-C-N      | 6.41  | 130.58      | 122.57   |
| 14  | 7     | 243 | ILE  | N-CA-C     | -6.41 | 98.51       | 107.80   |
| 15  | W     | 174 | PRO  | CA-C-N     | 6.41  | 125.98      | 119.19   |
| 15  | W     | 174 | PRO  | C-N-CA     | 6.41  | 125.98      | 119.19   |
| 25  | U     | 207 | ASP  | CA-C-O     | 6.41  | 127.34      | 120.55   |
| 20  | N     | 222 | PHE  | N-CA-C     | 6.41  | 117.92      | 111.07   |
| 23  | Q     | 25  | ASP  | N-CA-C     | 6.41  | 118.26      | 111.28   |
| 29  | K     | 376 | ASN  | N-CA-C     | -6.41 | 104.38      | 111.36   |
| 19  | Z     | 192 | VAL  | CA-C-O     | -6.40 | 114.40      | 118.69   |
| 22  | P     | 20  | TYR  | CB-CG-CD2  | -6.40 | 111.20      | 120.80   |
| 29  | K     | 323 | ARG  | CA-C-N     | 6.40  | 126.74      | 119.83   |
| 29  | K     | 323 | ARG  | C-N-CA     | 6.40  | 126.74      | 119.83   |
| 14  | 7     | 125 | HIS  | CB-CG-ND1  | 6.40  | 132.30      | 122.70   |
| 28  | I     | 306 | GLN  | O-C-N      | 6.40  | 128.90      | 122.12   |
| 6   | F     | 112 | ILE  | CA-C-N     | 6.40  | 128.13      | 120.14   |
| 6   | F     | 112 | ILE  | C-N-CA     | 6.40  | 128.13      | 120.14   |
| 8   | 1     | 53  | THR  | N-CA-C     | -6.39 | 97.18       | 110.80   |
| 20  | N     | 201 | LEU  | N-CA-CB    | 6.39  | 120.07      | 110.22   |
| 15  | W     | 79  | GLN  | CA-C-O     | -6.39 | 114.53      | 119.71   |
| 21  | S     | 62  | GLU  | CA-C-N     | 6.39  | 128.85      | 120.28   |
| 21  | S     | 62  | GLU  | C-N-CA     | 6.39  | 128.85      | 120.28   |
| 25  | U     | 196 | HIS  | ND1-CG-CD2 | -6.39 | 99.71       | 106.10   |
| 27  | H     | 238 | ILE  | N-CA-CB    | 6.39  | 119.90      | 111.40   |
| 19  | Z     | 487 | LEU  | CA-C-N     | 6.39  | 129.13      | 120.44   |
| 19  | Z     | 487 | LEU  | C-N-CA     | 6.39  | 129.13      | 120.44   |
| 20  | N     | 361 | ARG  | CD-NE-CZ   | -6.39 | 115.45      | 124.40   |
| 21  | S     | 191 | ILE  | N-CA-C     | 6.39  | 117.14      | 110.62   |
| 21  | S     | 42  | GLY  | O-C-N      | 6.39  | 128.32      | 122.19   |
| 24  | R     | 32  | ARG  | CA-C-O     | 6.39  | 127.31      | 119.97   |
| 2   | B     | 120 | GLU  | CA-C-N     | 6.38  | 130.01      | 120.31   |
| 2   | B     | 120 | GLU  | C-N-CA     | 6.38  | 130.01      | 120.31   |
| 5   | E     | 27  | ALA  | CA-C-N     | 6.38  | 129.21      | 120.46   |
| 5   | E     | 27  | ALA  | C-N-CA     | 6.38  | 129.21      | 120.46   |
| 11  | 4     | 96  | THR  | O-C-N      | -6.38 | 114.72      | 121.30   |
| 24  | R     | 388 | ASN  | CA-CB-CG   | 6.38  | 118.98      | 112.60   |
| 21  | S     | 146 | ARG  | N-CA-CB    | -6.38 | 100.74      | 110.12   |
| 9   | 2     | 225 | LYS  | N-CA-C     | -6.38 | 104.28      | 113.21   |
| 30  | L     | 205 | LEU  | N-CA-C     | 6.38  | 118.03      | 111.14   |
| 31  | M     | 395 | ASN  | N-CA-C     | -6.38 | 100.53      | 110.17   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 32  | J     | 391 | MET  | CB-CA-C     | -6.38 | 100.86      | 110.88   |
| 9   | 2     | 52  | LYS  | CA-C-N      | 6.38  | 133.73      | 121.54   |
| 9   | 2     | 52  | LYS  | C-N-CA      | 6.38  | 133.73      | 121.54   |
| 8   | 1     | 121 | TYR  | CA-C-N      | 6.38  | 129.11      | 120.44   |
| 8   | 1     | 121 | TYR  | C-N-CA      | 6.38  | 129.11      | 120.44   |
| 15  | W     | 151 | GLU  | CA-C-N      | 6.38  | 130.01      | 120.31   |
| 15  | W     | 151 | GLU  | C-N-CA      | 6.38  | 130.01      | 120.31   |
| 9   | 2     | 128 | GLN  | CA-C-O      | 6.38  | 127.31      | 120.55   |
| 21  | S     | 124 | ARG  | CA-C-N      | 6.38  | 129.76      | 120.71   |
| 21  | S     | 124 | ARG  | C-N-CA      | 6.38  | 129.76      | 120.71   |
| 24  | R     | 46  | ARG  | N-CA-CB     | 6.38  | 121.72      | 111.65   |
| 27  | H     | 162 | THR  | CA-C-N      | 6.38  | 129.34      | 120.29   |
| 27  | H     | 162 | THR  | C-N-CA      | 6.38  | 129.34      | 120.29   |
| 31  | M     | 66  | THR  | CA-C-O      | 6.38  | 127.31      | 120.55   |
| 32  | J     | 388 | ALA  | N-CA-C      | 6.38  | 117.89      | 111.07   |
| 1   | A     | 118 | ILE  | N-CA-CB     | 6.37  | 119.21      | 110.54   |
| 19  | Z     | 399 | LEU  | N-CA-CB     | 6.37  | 119.21      | 109.91   |
| 20  | N     | 952 | ASP  | CB-CA-C     | -6.37 | 99.04       | 110.70   |
| 28  | I     | 136 | LEU  | N-CA-C      | -6.37 | 98.69       | 108.76   |
| 17  | T     | 202 | LEU  | CA-C-N      | 6.37  | 128.82      | 120.28   |
| 17  | T     | 202 | LEU  | C-N-CA      | 6.37  | 128.82      | 120.28   |
| 2   | B     | 206 | ASP  | N-CA-C      | -6.37 | 104.13      | 112.41   |
| 1   | A     | 9   | PHE  | CA-C-N      | 6.37  | 129.68      | 120.38   |
| 1   | A     | 9   | PHE  | C-N-CA      | 6.37  | 129.68      | 120.38   |
| 20  | N     | 54  | PHE  | N-CA-C      | -6.37 | 99.36       | 109.23   |
| 22  | P     | 248 | ARG  | N-CA-C      | 6.37  | 119.03      | 111.71   |
| 29  | K     | 219 | VAL  | CA-C-N      | 6.37  | 128.81      | 120.28   |
| 29  | K     | 219 | VAL  | C-N-CA      | 6.37  | 128.81      | 120.28   |
| 30  | L     | 152 | LEU  | CA-C-N      | 6.37  | 130.88      | 120.63   |
| 30  | L     | 152 | LEU  | C-N-CA      | 6.37  | 130.88      | 120.63   |
| 13  | 6     | 168 | ALA  | N-CA-CB     | 6.37  | 121.25      | 110.49   |
| 21  | S     | 322 | GLN  | CA-C-O      | -6.37 | 113.80      | 120.55   |
| 29  | K     | 189 | GLU  | CA-C-N      | 6.37  | 128.81      | 120.28   |
| 29  | K     | 189 | GLU  | C-N-CA      | 6.37  | 128.81      | 120.28   |
| 1   | A     | 53  | GLN  | O-C-N       | 6.36  | 130.15      | 122.96   |
| 19  | Z     | 876 | HIS  | CE1-NE2-CD2 | -6.36 | 102.64      | 109.00   |
| 21  | S     | 325 | HIS  | ND1-CE1-NE2 | 6.36  | 114.76      | 108.40   |
| 23  | Q     | 340 | GLU  | CA-C-O      | -6.36 | 112.49      | 118.73   |
| 32  | J     | 109 | THR  | CA-C-O      | -6.36 | 114.65      | 120.50   |
| 1   | A     | 98  | ALA  | CA-C-N      | 6.36  | 129.32      | 120.29   |
| 1   | A     | 98  | ALA  | C-N-CA      | 6.36  | 129.32      | 120.29   |
| 17  | T     | 99  | GLU  | CA-C-N      | 6.36  | 129.13      | 120.54   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 17  | T     | 99  | GLU  | C-N-CA      | 6.36  | 129.13      | 120.54   |
| 24  | R     | 85  | ASP  | CA-CB-CG    | 6.36  | 118.96      | 112.60   |
| 28  | I     | 99  | VAL  | CA-C-O      | -6.36 | 114.33      | 120.95   |
| 30  | L     | 350 | ASP  | CA-C-O      | -6.36 | 114.46      | 121.33   |
| 28  | I     | 334 | ILE  | N-CA-C      | -6.36 | 106.31      | 112.29   |
| 20  | N     | 506 | ALA  | N-CA-C      | 6.36  | 118.78      | 111.02   |
| 24  | R     | 364 | TRP  | N-CA-C      | -6.36 | 104.35      | 111.28   |
| 26  | O     | 85  | ARG  | O-C-N       | -6.36 | 115.38      | 122.12   |
| 9   | 2     | 78  | HIS  | N-CA-C      | -6.36 | 98.37       | 108.73   |
| 20  | N     | 438 | GLN  | N-CA-CB     | 6.36  | 119.57      | 110.16   |
| 4   | D     | 19  | VAL  | CA-C-O      | -6.35 | 114.12      | 120.85   |
| 14  | 7     | 71  | LEU  | CB-CA-C     | -6.35 | 97.85       | 109.54   |
| 16  | V     | 166 | ASN  | CA-CB-CG    | 6.35  | 118.95      | 112.60   |
| 17  | T     | 262 | PHE  | CA-C-N      | 6.35  | 129.16      | 120.46   |
| 17  | T     | 262 | PHE  | C-N-CA      | 6.35  | 129.16      | 120.46   |
| 20  | N     | 241 | ASN  | CA-C-N      | 6.35  | 129.31      | 120.29   |
| 20  | N     | 241 | ASN  | C-N-CA      | 6.35  | 129.31      | 120.29   |
| 21  | S     | 293 | ALA  | CA-C-N      | 6.35  | 129.16      | 120.46   |
| 21  | S     | 293 | ALA  | C-N-CA      | 6.35  | 129.16      | 120.46   |
| 26  | O     | 82  | HIS  | CG-CD2-NE2  | 6.35  | 113.55      | 107.20   |
| 2   | B     | 140 | ASN  | O-C-N       | 6.35  | 130.51      | 123.33   |
| 32  | J     | 276 | LEU  | CA-C-N      | 6.35  | 129.96      | 120.31   |
| 32  | J     | 276 | LEU  | C-N-CA      | 6.35  | 129.96      | 120.31   |
| 16  | V     | 103 | GLY  | CA-C-O      | -6.35 | 111.76      | 119.06   |
| 17  | T     | 261 | PHE  | N-CA-C      | 6.35  | 118.20      | 111.28   |
| 19  | Z     | 460 | ASP  | N-CA-C      | 6.35  | 123.84      | 109.81   |
| 22  | P     | 396 | LEU  | N-CA-C      | 6.35  | 117.86      | 111.07   |
| 19  | Z     | 425 | GLY  | N-CA-C      | -6.35 | 101.96      | 110.97   |
| 24  | R     | 31  | HIS  | ND1-CE1-NE2 | 6.35  | 114.75      | 108.40   |
| 2   | B     | 151 | PRO  | N-CD-CG     | 6.34  | 112.72      | 103.20   |
| 8   | 1     | 183 | ASP  | O-C-N       | -6.34 | 115.54      | 122.07   |
| 17  | T     | 159 | ILE  | N-CA-C      | 6.34  | 117.13      | 110.72   |
| 20  | N     | 369 | THR  | N-CA-C      | 6.34  | 118.20      | 111.28   |
| 20  | N     | 627 | PHE  | CA-C-N      | 6.34  | 129.11      | 120.54   |
| 20  | N     | 627 | PHE  | C-N-CA      | 6.34  | 129.11      | 120.54   |
| 32  | J     | 42  | LEU  | CA-C-N      | 6.34  | 128.78      | 120.28   |
| 32  | J     | 42  | LEU  | C-N-CA      | 6.34  | 128.78      | 120.28   |
| 4   | D     | 124 | TYR  | CB-CG-CD2   | -6.34 | 111.29      | 120.80   |
| 6   | F     | 218 | ASP  | N-CA-C      | -6.34 | 105.58      | 113.38   |
| 17  | T     | 135 | THR  | N-CA-C      | -6.34 | 98.86       | 109.07   |
| 1   | A     | 240 | VAL  | CA-C-O      | 6.34  | 127.32      | 120.47   |
| 16  | V     | 53  | VAL  | O-C-N       | -6.34 | 116.18      | 122.97   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 19  | Z     | 567 | LEU  | N-CA-CB     | 6.34  | 119.41      | 109.83   |
| 10  | 3     | 85  | TYR  | CB-CG-CD2   | 6.34  | 130.31      | 120.80   |
| 24  | R     | 79  | GLU  | CA-C-O      | -6.34 | 113.83      | 120.55   |
| 27  | H     | 348 | LEU  | CA-C-N      | 6.34  | 129.29      | 120.29   |
| 27  | H     | 348 | LEU  | C-N-CA      | 6.34  | 129.29      | 120.29   |
| 30  | L     | 275 | LEU  | CB-CA-C     | -6.34 | 100.93      | 110.88   |
| 2   | B     | 165 | LYS  | CA-C-N      | 6.34  | 131.68      | 122.36   |
| 2   | B     | 165 | LYS  | C-N-CA      | 6.34  | 131.68      | 122.36   |
| 25  | U     | 170 | VAL  | N-CA-C      | 6.34  | 117.08      | 110.62   |
| 26  | O     | 52  | GLN  | N-CA-CB     | 6.34  | 119.54      | 110.16   |
| 9   | 2     | 224 | SER  | N-CA-C      | -6.33 | 104.60      | 112.90   |
| 16  | V     | 306 | THR  | O-C-N       | 6.33  | 128.83      | 122.12   |
| 19  | Z     | 478 | ARG  | NE-CZ-NH2   | -6.33 | 113.50      | 119.20   |
| 19  | Z     | 645 | ASP  | CA-C-N      | 6.33  | 128.77      | 120.28   |
| 19  | Z     | 645 | ASP  | C-N-CA      | 6.33  | 128.77      | 120.28   |
| 21  | S     | 382 | PHE  | O-C-N       | 6.33  | 128.83      | 122.12   |
| 24  | R     | 246 | ILE  | CA-CB-CG1   | 6.33  | 121.17      | 110.40   |
| 32  | J     | 375 | ARG  | NE-CZ-NH2   | -6.33 | 113.50      | 119.20   |
| 19  | Z     | 125 | ILE  | CA-C-N      | 6.33  | 129.41      | 120.42   |
| 19  | Z     | 125 | ILE  | C-N-CA      | 6.33  | 129.41      | 120.42   |
| 19  | Z     | 675 | PHE  | CA-C-O      | -6.33 | 113.84      | 120.55   |
| 24  | R     | 351 | ASN  | N-CA-C      | -6.33 | 105.49      | 113.72   |
| 28  | I     | 68  | ILE  | CA-C-N      | 6.33  | 128.76      | 120.28   |
| 28  | I     | 68  | ILE  | C-N-CA      | 6.33  | 128.76      | 120.28   |
| 32  | J     | 393 | LYS  | CB-CA-C     | -6.33 | 100.94      | 110.88   |
| 32  | J     | 206 | HIS  | ND1-CE1-NE2 | 6.33  | 114.73      | 108.40   |
| 14  | 7     | 122 | GLY  | O-C-N       | -6.33 | 116.11      | 122.19   |
| 17  | T     | 155 | ALA  | O-C-N       | 6.33  | 128.83      | 122.12   |
| 8   | 1     | 97  | GLY  | N-CA-C      | -6.33 | 105.14      | 112.73   |
| 15  | W     | 126 | LYS  | CA-C-N      | 6.33  | 128.76      | 120.28   |
| 15  | W     | 126 | LYS  | C-N-CA      | 6.33  | 128.76      | 120.28   |
| 22  | P     | 293 | ASP  | N-CA-CB     | 6.33  | 119.37      | 109.69   |
| 7   | G     | 140 | SER  | O-C-N       | 6.32  | 130.46      | 123.25   |
| 17  | T     | 99  | GLU  | N-CA-C      | -6.32 | 104.36      | 113.21   |
| 19  | Z     | 160 | ARG  | NE-CZ-NH1   | -6.32 | 115.18      | 121.50   |
| 3   | C     | 12  | PHE  | N-CA-CB     | 6.32  | 119.26      | 109.97   |
| 20  | N     | 411 | ILE  | CA-C-O      | 6.32  | 127.52      | 120.95   |
| 21  | S     | 89  | PHE  | N-CA-C      | -6.32 | 105.61      | 113.38   |
| 2   | B     | 179 | ASN  | OD1-CG-ND2  | 6.32  | 128.92      | 122.60   |
| 22  | P     | 344 | THR  | N-CA-C      | -6.32 | 99.12       | 108.79   |
| 31  | M     | 143 | VAL  | CA-C-O      | 6.32  | 127.43      | 120.48   |
| 19  | Z     | 159 | VAL  | CA-C-O      | -6.32 | 114.38      | 120.95   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 32  | J     | 35  | VAL  | N-CA-C      | 6.32  | 118.95      | 111.05   |
| 23  | Q     | 376 | GLY  | N-CA-C      | -6.32 | 102.45      | 111.42   |
| 24  | R     | 317 | GLY  | N-CA-C      | -6.32 | 105.17      | 112.50   |
| 27  | H     | 73  | ALA  | CA-C-N      | 6.32  | 126.88      | 120.38   |
| 27  | H     | 73  | ALA  | C-N-CA      | 6.32  | 126.88      | 120.38   |
| 2   | B     | 43  | GLY  | O-C-N       | -6.31 | 118.06      | 123.43   |
| 7   | G     | 196 | LYS  | CA-C-N      | 6.31  | 129.11      | 120.46   |
| 7   | G     | 196 | LYS  | C-N-CA      | 6.31  | 129.11      | 120.46   |
| 19  | Z     | 266 | LEU  | N-CA-C      | 6.31  | 117.96      | 111.14   |
| 19  | Z     | 556 | ARG  | O-C-N       | 6.31  | 129.35      | 122.15   |
| 20  | N     | 895 | THR  | CA-C-N      | 6.31  | 129.89      | 120.17   |
| 20  | N     | 895 | THR  | C-N-CA      | 6.31  | 129.89      | 120.17   |
| 21  | S     | 256 | HIS  | O-C-N       | 6.31  | 129.35      | 122.15   |
| 32  | J     | 155 | ASP  | CA-C-N      | 6.31  | 128.74      | 120.28   |
| 32  | J     | 155 | ASP  | C-N-CA      | 6.31  | 128.74      | 120.28   |
| 12  | 5     | 148 | GLN  | CA-C-N      | 6.31  | 128.74      | 120.28   |
| 12  | 5     | 148 | GLN  | C-N-CA      | 6.31  | 128.74      | 120.28   |
| 19  | Z     | 755 | ASP  | O-C-N       | -6.31 | 114.06      | 121.32   |
| 11  | 4     | 163 | CYS  | N-CA-C      | -6.31 | 104.32      | 111.07   |
| 3   | C     | 191 | ALA  | CA-C-N      | 6.31  | 128.73      | 120.28   |
| 3   | C     | 191 | ALA  | C-N-CA      | 6.31  | 128.73      | 120.28   |
| 3   | C     | 84  | ASN  | CA-CB-CG    | -6.31 | 106.29      | 112.60   |
| 13  | 6     | 124 | TYR  | CA-CB-CG    | 6.31  | 125.25      | 113.90   |
| 20  | N     | 425 | THR  | N-CA-CB     | 6.30  | 119.39      | 110.12   |
| 27  | H     | 93  | LEU  | CA-C-N      | 6.30  | 131.88      | 123.05   |
| 27  | H     | 93  | LEU  | C-N-CA      | 6.30  | 131.88      | 123.05   |
| 7   | G     | 8   | TYR  | O-C-N       | 6.30  | 130.86      | 122.41   |
| 3   | C     | 13  | SER  | CA-C-N      | 6.30  | 126.21      | 119.28   |
| 3   | C     | 13  | SER  | C-N-CA      | 6.30  | 126.21      | 119.28   |
| 19  | Z     | 115 | PRO  | CA-C-N      | 6.30  | 126.97      | 119.98   |
| 19  | Z     | 115 | PRO  | C-N-CA      | 6.30  | 126.97      | 119.98   |
| 19  | Z     | 388 | ASP  | N-CA-C      | -6.30 | 105.23      | 113.17   |
| 2   | B     | 80  | GLY  | CA-C-O      | -6.30 | 112.51      | 121.52   |
| 3   | C     | 99  | LEU  | CA-C-O      | 6.30  | 127.44      | 120.82   |
| 19  | Z     | 670 | MET  | CA-C-N      | 6.30  | 129.01      | 120.44   |
| 19  | Z     | 670 | MET  | C-N-CA      | 6.30  | 129.01      | 120.44   |
| 28  | I     | 107 | MET  | N-CA-C      | -6.30 | 99.43       | 109.76   |
| 32  | J     | 377 | HIS  | ND1-CE1-NE2 | 6.30  | 114.70      | 108.40   |
| 7   | G     | 124 | THR  | CA-C-N      | 6.30  | 129.23      | 120.29   |
| 7   | G     | 124 | THR  | C-N-CA      | 6.30  | 129.23      | 120.29   |
| 21  | S     | 210 | HIS  | CA-C-O      | -6.30 | 113.87      | 120.55   |
| 22  | P     | 167 | GLN  | OE1-CD-NE2  | 6.30  | 128.90      | 122.60   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 25  | U     | 218 | GLY  | N-CA-C      | -6.30 | 103.06      | 114.46   |
| 19  | Z     | 113 | MET  | CA-C-N      | 6.30  | 127.55      | 120.06   |
| 19  | Z     | 113 | MET  | C-N-CA      | 6.30  | 127.55      | 120.06   |
| 19  | Z     | 304 | PHE  | N-CA-CB     | 6.30  | 119.92      | 110.22   |
| 19  | Z     | 434 | TYR  | N-CA-CB     | 6.30  | 121.48      | 111.66   |
| 12  | 5     | 192 | VAL  | CA-C-N      | 6.29  | 133.86      | 121.58   |
| 12  | 5     | 192 | VAL  | C-N-CA      | 6.29  | 133.86      | 121.58   |
| 29  | K     | 402 | ALA  | N-CA-CB     | 6.29  | 119.37      | 110.12   |
| 32  | J     | 53  | ASN  | CA-CB-CG    | 6.29  | 118.89      | 112.60   |
| 3   | C     | 70  | GLU  | N-CA-C      | -6.29 | 105.36      | 113.16   |
| 4   | D     | 192 | LEU  | N-CA-C      | 6.29  | 118.22      | 111.36   |
| 20  | N     | 675 | MET  | CG-SD-CE    | -6.29 | 87.05       | 100.90   |
| 31  | M     | 337 | ARG  | N-CA-C      | -6.29 | 100.10      | 108.34   |
| 1   | A     | 142 | GLY  | N-CA-C      | -6.29 | 102.72      | 111.09   |
| 5   | E     | 186 | HIS  | CE1-NE2-CD2 | -6.29 | 102.71      | 109.00   |
| 13  | 6     | 222 | ILE  | N-CA-C      | -6.29 | 99.36       | 108.17   |
| 16  | V     | 44  | HIS  | CE1-NE2-CD2 | -6.29 | 102.71      | 109.00   |
| 21  | S     | 296 | LEU  | N-CA-CB     | 6.29  | 121.12      | 110.49   |
| 32  | J     | 25  | LEU  | N-CA-C      | 6.29  | 119.12      | 111.82   |
| 19  | Z     | 741 | LEU  | CA-C-O      | -6.29 | 114.22      | 120.82   |
| 22  | P     | 234 | ASP  | N-CA-C      | -6.29 | 104.53      | 111.82   |
| 22  | P     | 414 | ASN  | OD1-CG-ND2  | 6.29  | 128.89      | 122.60   |
| 28  | I     | 207 | HIS  | CA-CB-CG    | 6.29  | 120.09      | 113.80   |
| 12  | 5     | 68  | GLN  | CA-C-O      | 6.29  | 128.26      | 121.16   |
| 25  | U     | 114 | ARG  | NE-CZ-NH1   | 6.29  | 127.79      | 121.50   |
| 16  | V     | 206 | ASN  | N-CA-C      | -6.28 | 99.92       | 109.85   |
| 24  | R     | 229 | ILE  | CB-CA-C     | -6.28 | 103.93      | 111.97   |
| 19  | Z     | 95  | PRO  | CB-CA-C     | -6.28 | 102.51      | 111.68   |
| 23  | Q     | 248 | ILE  | CA-C-N      | 6.28  | 128.70      | 120.28   |
| 23  | Q     | 248 | ILE  | C-N-CA      | 6.28  | 128.70      | 120.28   |
| 9   | 2     | 159 | HIS  | CA-CB-CG    | 6.28  | 120.08      | 113.80   |
| 19  | Z     | 368 | ALA  | N-CA-CB     | 6.28  | 121.13      | 111.46   |
| 32  | J     | 87  | VAL  | CA-C-N      | 6.28  | 132.03      | 123.11   |
| 32  | J     | 87  | VAL  | C-N-CA      | 6.28  | 132.03      | 123.11   |
| 19  | Z     | 226 | TYR  | O-C-N       | 6.28  | 128.78      | 122.12   |
| 19  | Z     | 489 | TYR  | CB-CG-CD2   | -6.28 | 111.38      | 120.80   |
| 30  | L     | 174 | GLN  | CA-C-N      | 6.28  | 128.60      | 120.44   |
| 30  | L     | 174 | GLN  | C-N-CA      | 6.28  | 128.60      | 120.44   |
| 31  | M     | 224 | LYS  | CA-C-O      | 6.28  | 126.70      | 119.35   |
| 1   | A     | 210 | PHE  | CA-CB-CG    | 6.28  | 120.08      | 113.80   |
| 8   | 1     | 153 | MET  | CG-SD-CE    | -6.28 | 87.09       | 100.90   |
| 23  | Q     | 183 | LEU  | CA-C-O      | -6.28 | 111.56      | 120.16   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 28  | I     | 211 | TYR  | CA-C-N      | 6.28  | 128.98      | 120.44   |
| 28  | I     | 211 | TYR  | C-N-CA      | 6.28  | 128.98      | 120.44   |
| 29  | K     | 254 | ALA  | CB-CA-C     | -6.28 | 100.37      | 110.79   |
| 30  | L     | 92  | ARG  | N-CA-CB     | 6.28  | 119.83      | 110.29   |
| 28  | I     | 410 | ARG  | N-CA-CB     | 6.28  | 121.10      | 110.49   |
| 29  | K     | 182 | GLU  | O-C-N       | 6.28  | 129.31      | 122.15   |
| 32  | J     | 87  | VAL  | O-C-N       | 6.28  | 130.04      | 123.26   |
| 32  | J     | 37  | ASP  | CA-C-N      | 6.27  | 129.31      | 120.28   |
| 32  | J     | 37  | ASP  | C-N-CA      | 6.27  | 129.31      | 120.28   |
| 32  | J     | 368 | MET  | O-C-N       | 6.27  | 129.30      | 122.15   |
| 17  | T     | 93  | ALA  | CA-C-N      | 6.27  | 133.52      | 121.54   |
| 17  | T     | 93  | ALA  | C-N-CA      | 6.27  | 133.52      | 121.54   |
| 17  | T     | 258 | SER  | N-CA-C      | -6.27 | 97.44       | 110.80   |
| 24  | R     | 71  | SER  | CA-C-N      | 6.27  | 129.20      | 120.29   |
| 24  | R     | 71  | SER  | C-N-CA      | 6.27  | 129.20      | 120.29   |
| 24  | R     | 368 | GLU  | N-CA-C      | 6.27  | 118.20      | 111.36   |
| 25  | U     | 114 | ARG  | NE-CZ-NH2   | -6.27 | 113.56      | 119.20   |
| 28  | I     | 435 | PRO  | N-CA-C      | 6.27  | 121.48      | 111.26   |
| 28  | I     | 60  | LEU  | O-C-N       | -6.27 | 115.47      | 122.12   |
| 19  | Z     | 478 | ARG  | NE-CZ-NH1   | 6.27  | 127.77      | 121.50   |
| 16  | V     | 66  | THR  | N-CA-CB     | 6.27  | 120.70      | 110.17   |
| 19  | Z     | 75  | LEU  | N-CA-C      | 6.27  | 120.66      | 112.89   |
| 19  | Z     | 855 | GLN  | N-CA-C      | 6.27  | 119.08      | 110.24   |
| 4   | D     | 81  | GLY  | CA-C-N      | 6.27  | 133.51      | 121.54   |
| 4   | D     | 81  | GLY  | C-N-CA      | 6.27  | 133.51      | 121.54   |
| 23  | Q     | 50  | ILE  | CA-C-N      | 6.27  | 128.59      | 120.44   |
| 23  | Q     | 50  | ILE  | C-N-CA      | 6.27  | 128.59      | 120.44   |
| 23  | Q     | 303 | GLU  | CA-CB-CG    | 6.26  | 126.63      | 114.10   |
| 7   | G     | 209 | ALA  | N-CA-C      | -6.26 | 97.46       | 110.80   |
| 30  | L     | 20  | ASP  | CA-C-N      | 6.26  | 128.67      | 120.28   |
| 30  | L     | 20  | ASP  | C-N-CA      | 6.26  | 128.67      | 120.28   |
| 31  | M     | 272 | ARG  | NE-CZ-NH1   | -6.26 | 115.24      | 121.50   |
| 6   | F     | 98  | VAL  | CA-CB-CG2   | 6.26  | 121.04      | 110.40   |
| 11  | 4     | 75  | LEU  | N-CA-C      | -6.26 | 100.10      | 108.74   |
| 21  | S     | 224 | ARG  | N-CA-C      | 6.26  | 118.10      | 111.28   |
| 23  | Q     | 206 | LEU  | CA-C-N      | 6.26  | 129.18      | 120.29   |
| 23  | Q     | 206 | LEU  | C-N-CA      | 6.26  | 129.18      | 120.29   |
| 26  | O     | 362 | SER  | CA-C-N      | 6.26  | 128.67      | 120.28   |
| 26  | O     | 362 | SER  | C-N-CA      | 6.26  | 128.67      | 120.28   |
| 22  | P     | 361 | HIS  | CG-CD2-NE2  | 6.26  | 113.46      | 107.20   |
| 8   | 1     | 71  | HIS  | CE1-NE2-CD2 | -6.26 | 102.74      | 109.00   |
| 20  | N     | 770 | TRP  | CD2-CE2-CZ2 | -6.26 | 116.14      | 122.40   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 19  | Z     | 62  | ARG  | CA-CB-CG    | 6.25  | 126.61      | 114.10   |
| 20  | N     | 3   | THR  | CA-CB-OG1   | 6.25  | 118.98      | 109.60   |
| 24  | R     | 127 | THR  | CA-C-N      | 6.25  | 128.57      | 120.44   |
| 24  | R     | 127 | THR  | C-N-CA      | 6.25  | 128.57      | 120.44   |
| 30  | L     | 202 | ALA  | CA-C-N      | 6.25  | 128.91      | 120.65   |
| 30  | L     | 202 | ALA  | C-N-CA      | 6.25  | 128.91      | 120.65   |
| 13  | 6     | 129 | PHE  | CA-C-O      | -6.25 | 111.59      | 120.16   |
| 30  | L     | 157 | ARG  | CA-C-N      | 6.25  | 128.66      | 120.28   |
| 30  | L     | 157 | ARG  | C-N-CA      | 6.25  | 128.66      | 120.28   |
| 32  | J     | 205 | HIS  | ND1-CE1-NE2 | 6.25  | 114.65      | 108.40   |
| 7   | G     | 39  | GLY  | O-C-N       | 6.25  | 130.83      | 122.70   |
| 21  | S     | 226 | PHE  | CA-CB-CG    | -6.25 | 107.55      | 113.80   |
| 21  | S     | 461 | ASP  | N-CA-CB     | 6.25  | 121.06      | 110.49   |
| 23  | Q     | 346 | GLN  | CA-C-N      | 6.25  | 129.30      | 120.42   |
| 23  | Q     | 346 | GLN  | C-N-CA      | 6.25  | 129.30      | 120.42   |
| 26  | O     | 82  | HIS  | CE1-NE2-CD2 | -6.25 | 102.75      | 109.00   |
| 8   | 1     | 102 | GLU  | N-CA-C      | 6.25  | 118.17      | 111.36   |
| 17  | T     | 279 | GLU  | CA-C-N      | 6.25  | 129.81      | 120.31   |
| 17  | T     | 279 | GLU  | C-N-CA      | 6.25  | 129.81      | 120.31   |
| 19  | Z     | 882 | LEU  | O-C-N       | -6.25 | 115.44      | 122.75   |
| 20  | N     | 476 | GLY  | CA-C-O      | 6.25  | 127.15      | 120.40   |
| 2   | B     | 230 | LEU  | CA-C-O      | 6.25  | 127.17      | 120.55   |
| 16  | V     | 99  | LEU  | N-CA-CB     | 6.25  | 119.30      | 110.12   |
| 27  | H     | 349 | GLU  | O-C-N       | 6.25  | 129.27      | 122.15   |
| 31  | M     | 205 | ILE  | N-CA-C      | 6.25  | 116.88      | 110.82   |
| 26  | O     | 116 | THR  | N-CA-C      | 6.25  | 118.17      | 111.36   |
| 20  | N     | 103 | LYS  | CA-C-N      | 6.24  | 128.56      | 120.44   |
| 20  | N     | 103 | LYS  | C-N-CA      | 6.24  | 128.56      | 120.44   |
| 20  | N     | 421 | GLN  | N-CA-C      | 6.24  | 117.88      | 111.14   |
| 21  | S     | 315 | HIS  | ND1-CE1-NE2 | 6.24  | 114.64      | 108.40   |
| 26  | O     | 174 | LYS  | N-CA-C      | 6.24  | 118.08      | 111.28   |
| 16  | V     | 176 | GLN  | CA-C-N      | 6.24  | 129.79      | 120.31   |
| 16  | V     | 176 | GLN  | C-N-CA      | 6.24  | 129.79      | 120.31   |
| 26  | O     | 296 | ILE  | CA-C-N      | 6.24  | 128.55      | 120.44   |
| 26  | O     | 296 | ILE  | C-N-CA      | 6.24  | 128.55      | 120.44   |
| 20  | N     | 742 | HIS  | CE1-NE2-CD2 | -6.24 | 102.76      | 109.00   |
| 31  | M     | 55  | ILE  | CA-C-O      | -6.24 | 114.24      | 120.85   |
| 1   | A     | 11  | ARG  | CA-C-O      | -6.24 | 113.94      | 120.55   |
| 1   | A     | 17  | SER  | CA-C-O      | -6.24 | 114.64      | 120.94   |
| 17  | T     | 334 | PRO  | N-CA-C      | -6.24 | 104.15      | 114.75   |
| 19  | Z     | 197 | ALA  | CA-C-O      | 6.24  | 127.37      | 120.82   |
| 7   | G     | 236 | ALA  | CA-C-N      | 6.23  | 128.63      | 120.28   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 7   | G     | 236 | ALA  | C-N-CA      | 6.23  | 128.63      | 120.28   |
| 10  | 3     | 162 | HIS  | CA-C-N      | 6.23  | 129.14      | 120.29   |
| 10  | 3     | 162 | HIS  | C-N-CA      | 6.23  | 129.14      | 120.29   |
| 17  | T     | 266 | LEU  | CA-C-N      | 6.23  | 128.63      | 120.28   |
| 17  | T     | 266 | LEU  | C-N-CA      | 6.23  | 128.63      | 120.28   |
| 19  | Z     | 34  | ARG  | CA-C-N      | 6.23  | 128.63      | 120.28   |
| 19  | Z     | 34  | ARG  | C-N-CA      | 6.23  | 128.63      | 120.28   |
| 24  | R     | 364 | TRP  | CA-C-O      | -6.23 | 113.94      | 120.55   |
| 27  | H     | 297 | ARG  | N-CA-CB     | 6.23  | 119.38      | 110.16   |
| 20  | N     | 424 | ALA  | N-CA-CB     | 6.23  | 119.22      | 109.94   |
| 21  | S     | 228 | HIS  | N-CA-C      | 6.23  | 117.74      | 111.07   |
| 24  | R     | 145 | LEU  | CA-C-N      | 6.23  | 128.63      | 120.28   |
| 24  | R     | 145 | LEU  | C-N-CA      | 6.23  | 128.63      | 120.28   |
| 31  | M     | 75  | LYS  | CA-C-N      | 6.23  | 129.27      | 120.42   |
| 31  | M     | 75  | LYS  | C-N-CA      | 6.23  | 129.27      | 120.42   |
| 23  | Q     | 43  | VAL  | CA-CB-CG2   | -6.23 | 99.81       | 110.40   |
| 2   | B     | 102 | GLN  | N-CA-C      | -6.23 | 104.98      | 112.58   |
| 15  | W     | 22  | LEU  | CA-C-O      | -6.23 | 114.23      | 120.64   |
| 20  | N     | 43  | ASP  | O-C-N       | -6.23 | 115.66      | 122.07   |
| 20  | N     | 263 | SER  | CA-C-N      | 6.23  | 129.26      | 120.42   |
| 20  | N     | 263 | SER  | C-N-CA      | 6.23  | 129.26      | 120.42   |
| 20  | N     | 676 | THR  | CA-C-N      | 6.23  | 129.78      | 120.31   |
| 20  | N     | 676 | THR  | C-N-CA      | 6.23  | 129.78      | 120.31   |
| 24  | R     | 41  | LEU  | CA-C-N      | 6.23  | 128.63      | 120.28   |
| 24  | R     | 41  | LEU  | C-N-CA      | 6.23  | 128.63      | 120.28   |
| 26  | O     | 166 | ILE  | CB-CA-C     | -6.23 | 104.00      | 111.97   |
| 20  | N     | 488 | THR  | N-CA-C      | -6.22 | 104.58      | 111.36   |
| 20  | N     | 777 | HIS  | N-CA-C      | 6.22  | 118.87      | 111.71   |
| 29  | K     | 295 | GLN  | CA-C-N      | 6.22  | 129.24      | 120.28   |
| 29  | K     | 295 | GLN  | C-N-CA      | 6.22  | 129.24      | 120.28   |
| 32  | J     | 167 | LEU  | CA-C-O      | -6.22 | 112.63      | 118.73   |
| 15  | W     | 76  | HIS  | ND1-CE1-NE2 | 6.22  | 114.62      | 108.40   |
| 22  | P     | 29  | PRO  | CA-C-N      | 6.22  | 128.90      | 120.44   |
| 22  | P     | 29  | PRO  | C-N-CA      | 6.22  | 128.90      | 120.44   |
| 16  | V     | 287 | HIS  | ND1-CG-CD2  | -6.22 | 99.88       | 106.10   |
| 1   | A     | 224 | ASN  | CA-CB-CG    | -6.22 | 106.38      | 112.60   |
| 4   | D     | 63  | CYS  | CA-C-O      | 6.22  | 127.81      | 120.66   |
| 20  | N     | 525 | ASN  | CA-CB-CG    | -6.22 | 106.38      | 112.60   |
| 21  | S     | 261 | ASP  | CB-CA-C     | -6.22 | 101.12      | 110.88   |
| 22  | P     | 55  | ARG  | N-CA-CB     | -6.22 | 101.37      | 110.26   |
| 27  | H     | 338 | ASP  | N-CA-CB     | 6.22  | 121.00      | 110.49   |
| 11  | 4     | 129 | PHE  | CB-CG-CD1   | 6.22  | 131.27      | 120.70   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 16  | V     | 121 | TRP  | N-CA-CB   | 6.22  | 119.22      | 109.83   |
| 27  | H     | 246 | VAL  | CA-CB-CG1 | -6.22 | 99.83       | 110.40   |
| 21  | S     | 153 | ALA  | CA-C-O    | -6.21 | 114.91      | 120.56   |
| 24  | R     | 259 | TYR  | O-C-N     | -6.21 | 115.67      | 122.07   |
| 12  | 5     | 159 | MET  | N-CA-CB   | 6.21  | 122.79      | 111.11   |
| 19  | Z     | 245 | ASN  | CA-C-O    | -6.21 | 113.84      | 120.42   |
| 20  | N     | 352 | ILE  | N-CA-CB   | 6.21  | 117.82      | 110.55   |
| 22  | P     | 67  | LEU  | CA-C-N    | 6.21  | 129.24      | 120.42   |
| 22  | P     | 67  | LEU  | C-N-CA    | 6.21  | 129.24      | 120.42   |
| 25  | U     | 189 | GLN  | CA-C-N    | 6.21  | 128.60      | 120.28   |
| 25  | U     | 189 | GLN  | C-N-CA    | 6.21  | 128.60      | 120.28   |
| 27  | H     | 197 | HIS  | CA-C-N    | 6.21  | 126.33      | 119.87   |
| 27  | H     | 197 | HIS  | C-N-CA    | 6.21  | 126.33      | 119.87   |
| 31  | M     | 136 | PHE  | N-CA-C    | -6.21 | 99.09       | 108.96   |
| 2   | B     | 220 | ARG  | N-CA-C    | -6.21 | 98.27       | 108.76   |
| 22  | P     | 91  | SER  | N-CA-C    | 6.21  | 118.13      | 111.36   |
| 24  | R     | 302 | HIS  | CA-C-O    | -6.21 | 113.97      | 120.55   |
| 25  | U     | 174 | HIS  | CA-C-N    | 6.21  | 129.11      | 120.29   |
| 25  | U     | 174 | HIS  | C-N-CA    | 6.21  | 129.11      | 120.29   |
| 27  | H     | 249 | TYR  | N-CA-C    | -6.21 | 99.59       | 109.59   |
| 21  | S     | 355 | PRO  | N-CA-CB   | 6.21  | 110.09      | 103.39   |
| 26  | O     | 265 | GLU  | CA-C-N    | 6.21  | 128.51      | 120.44   |
| 26  | O     | 265 | GLU  | C-N-CA    | 6.21  | 128.51      | 120.44   |
| 30  | L     | 49  | GLU  | CA-C-N    | 6.21  | 128.60      | 120.28   |
| 30  | L     | 49  | GLU  | C-N-CA    | 6.21  | 128.60      | 120.28   |
| 19  | Z     | 803 | PHE  | O-C-N     | 6.20  | 130.34      | 123.33   |
| 21  | S     | 100 | THR  | CA-CB-OG1 | 6.20  | 118.90      | 109.60   |
| 21  | S     | 120 | ASN  | CA-CB-CG  | 6.20  | 118.80      | 112.60   |
| 23  | Q     | 315 | ASP  | N-CA-C    | 6.20  | 118.04      | 111.28   |
| 30  | L     | 189 | PRO  | O-C-N     | 6.20  | 128.78      | 121.46   |
| 32  | J     | 371 | LEU  | CA-C-O    | -6.20 | 114.31      | 120.82   |
| 9   | 2     | 60  | ASP  | CA-CB-CG  | 6.20  | 118.80      | 112.60   |
| 21  | S     | 107 | TYR  | CA-C-O    | 6.20  | 126.99      | 120.42   |
| 25  | U     | 248 | ALA  | N-CA-C    | 6.20  | 118.84      | 111.71   |
| 3   | C     | 21  | VAL  | CB-CA-C   | -6.20 | 104.03      | 111.97   |
| 3   | C     | 235 | GLN  | N-CA-C    | -6.20 | 104.60      | 111.36   |
| 16  | V     | 88  | ASP  | CA-C-N    | 6.20  | 125.82      | 119.56   |
| 16  | V     | 88  | ASP  | C-N-CA    | 6.20  | 125.82      | 119.56   |
| 22  | P     | 103 | LYS  | CA-C-N    | 6.20  | 128.87      | 120.44   |
| 22  | P     | 103 | LYS  | C-N-CA    | 6.20  | 128.87      | 120.44   |
| 28  | I     | 66  | GLU  | CA-C-N    | 6.20  | 129.10      | 120.29   |
| 28  | I     | 66  | GLU  | C-N-CA    | 6.20  | 129.10      | 120.29   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 31  | M     | 133 | GLN  | N-CA-C      | -6.20 | 99.98       | 109.65   |
| 32  | J     | 135 | VAL  | CA-CB-CG2   | 6.20  | 120.94      | 110.40   |
| 14  | 7     | 62  | CYS  | N-CA-C      | -6.20 | 100.77      | 109.69   |
| 20  | N     | 392 | TRP  | CD2-CE2-CZ2 | -6.20 | 116.20      | 122.40   |
| 26  | O     | 309 | LEU  | CA-C-N      | 6.20  | 129.09      | 120.29   |
| 26  | O     | 309 | LEU  | C-N-CA      | 6.20  | 129.09      | 120.29   |
| 1   | A     | 199 | ILE  | CA-C-N      | 6.20  | 128.58      | 120.28   |
| 1   | A     | 199 | ILE  | C-N-CA      | 6.20  | 128.58      | 120.28   |
| 4   | D     | 148 | PRO  | N-CA-C      | 6.20  | 120.94      | 111.15   |
| 20  | N     | 733 | ALA  | CA-C-N      | 6.20  | 128.50      | 120.44   |
| 20  | N     | 733 | ALA  | C-N-CA      | 6.20  | 128.50      | 120.44   |
| 31  | M     | 333 | ALA  | N-CA-C      | -6.20 | 99.62       | 109.23   |
| 3   | C     | 106 | PRO  | O-C-N       | 6.20  | 130.53      | 123.10   |
| 17  | T     | 342 | VAL  | CA-C-N      | 6.20  | 128.37      | 120.56   |
| 17  | T     | 342 | VAL  | C-N-CA      | 6.20  | 128.37      | 120.56   |
| 23  | Q     | 229 | TYR  | O-C-N       | 6.19  | 128.45      | 122.07   |
| 28  | I     | 345 | GLY  | N-CA-C      | -6.19 | 106.70      | 115.43   |
| 31  | M     | 183 | ARG  | NE-CZ-NH2   | 6.19  | 124.78      | 119.20   |
| 31  | M     | 189 | SER  | N-CA-C      | -6.19 | 103.83      | 112.25   |
| 2   | B     | 88  | HIS  | CG-CD2-NE2  | 6.19  | 113.39      | 107.20   |
| 11  | 4     | 134 | TYR  | N-CA-C      | -6.19 | 98.90       | 109.24   |
| 30  | L     | 222 | ILE  | CB-CA-C     | 6.19  | 119.26      | 110.84   |
| 19  | Z     | 826 | GLN  | OE1-CD-NE2  | 6.19  | 128.79      | 122.60   |
| 32  | J     | 390 | VAL  | CA-C-N      | 6.19  | 128.49      | 120.44   |
| 32  | J     | 390 | VAL  | C-N-CA      | 6.19  | 128.49      | 120.44   |
| 31  | M     | 160 | SER  | N-CA-C      | -6.19 | 97.34       | 108.48   |
| 5   | E     | 238 | ILE  | CA-C-N      | 6.19  | 128.57      | 120.28   |
| 5   | E     | 238 | ILE  | C-N-CA      | 6.19  | 128.57      | 120.28   |
| 27  | H     | 50  | ASP  | CA-C-N      | 6.19  | 128.85      | 120.44   |
| 27  | H     | 50  | ASP  | C-N-CA      | 6.19  | 128.85      | 120.44   |
| 1   | A     | 174 | GLU  | CA-C-N      | 6.19  | 129.07      | 120.29   |
| 1   | A     | 174 | GLU  | C-N-CA      | 6.19  | 129.07      | 120.29   |
| 13  | 6     | 43  | ALA  | N-CA-CB     | 6.18  | 122.20      | 111.13   |
| 22  | P     | 214 | PHE  | CA-CB-CG    | -6.18 | 107.61      | 113.80   |
| 23  | Q     | 203 | PRO  | CA-C-O      | -6.18 | 111.59      | 120.56   |
| 28  | I     | 218 | PRO  | CA-C-N      | 6.18  | 126.15      | 120.21   |
| 28  | I     | 218 | PRO  | C-N-CA      | 6.18  | 126.15      | 120.21   |
| 28  | I     | 247 | PHE  | CA-C-O      | 6.18  | 127.08      | 120.46   |
| 31  | M     | 57  | ILE  | CB-CA-C     | -6.18 | 103.79      | 112.14   |
| 19  | Z     | 417 | ILE  | CA-C-O      | -6.18 | 114.52      | 120.95   |
| 22  | P     | 114 | GLU  | CB-CA-C     | -6.18 | 101.13      | 110.90   |
| 22  | P     | 303 | LYS  | CA-C-N      | 6.18  | 128.56      | 120.28   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 22  | P     | 303 | LYS  | C-N-CA     | 6.18  | 128.56      | 120.28   |
| 19  | Z     | 143 | ARG  | CA-C-N     | 6.18  | 129.07      | 120.29   |
| 19  | Z     | 143 | ARG  | C-N-CA     | 6.18  | 129.07      | 120.29   |
| 21  | S     | 92  | ARG  | O-C-N      | -6.18 | 115.48      | 121.85   |
| 26  | O     | 355 | LEU  | N-CA-C     | -6.18 | 104.62      | 111.36   |
| 32  | J     | 115 | ALA  | N-CA-C     | -6.18 | 100.12      | 109.95   |
| 19  | Z     | 65  | GLU  | CA-C-N     | 6.18  | 133.34      | 121.54   |
| 19  | Z     | 65  | GLU  | C-N-CA     | 6.18  | 133.34      | 121.54   |
| 24  | R     | 68  | ASP  | CA-C-N     | 6.18  | 128.56      | 120.28   |
| 24  | R     | 68  | ASP  | C-N-CA     | 6.18  | 128.56      | 120.28   |
| 7   | G     | 72  | ARG  | N-CA-C     | -6.18 | 103.31      | 113.50   |
| 11  | 4     | 44  | LEU  | N-CA-C     | -6.18 | 98.92       | 109.24   |
| 21  | S     | 305 | MET  | CA-C-O     | 6.18  | 127.10      | 120.55   |
| 29  | K     | 200 | ARG  | CA-C-N     | 6.18  | 127.51      | 120.53   |
| 29  | K     | 200 | ARG  | C-N-CA     | 6.18  | 127.51      | 120.53   |
| 29  | K     | 222 | HIS  | CB-CG-CD2  | -6.18 | 123.17      | 131.20   |
| 5   | E     | 63  | SER  | N-CA-CB    | 6.18  | 119.30      | 110.16   |
| 9   | 2     | 156 | ILE  | CA-CB-CG1  | 6.18  | 120.90      | 110.40   |
| 31  | M     | 177 | ALA  | CA-C-O     | 6.18  | 126.97      | 120.42   |
| 31  | M     | 428 | LEU  | N-CA-C     | 6.18  | 118.09      | 111.36   |
| 7   | G     | 114 | ASP  | CA-CB-CG   | -6.17 | 106.42      | 112.60   |
| 20  | N     | 666 | LYS  | O-C-N      | 6.17  | 128.66      | 122.12   |
| 21  | S     | 34  | GLU  | N-CA-C     | 6.17  | 118.01      | 111.28   |
| 29  | K     | 136 | SER  | CA-C-N     | 6.17  | 133.34      | 121.54   |
| 29  | K     | 136 | SER  | C-N-CA     | 6.17  | 133.34      | 121.54   |
| 26  | O     | 4   | VAL  | CA-C-N     | 6.17  | 126.07      | 119.28   |
| 26  | O     | 4   | VAL  | C-N-CA     | 6.17  | 126.07      | 119.28   |
| 28  | I     | 86  | LYS  | CA-C-O     | -6.17 | 111.70      | 120.16   |
| 10  | 3     | 57  | ALA  | N-CA-C     | -6.17 | 97.66       | 110.80   |
| 13  | 6     | 124 | TYR  | CA-C-N     | 6.17  | 131.02      | 120.72   |
| 13  | 6     | 124 | TYR  | C-N-CA     | 6.17  | 131.02      | 120.72   |
| 17  | T     | 121 | ARG  | CA-C-N     | 6.17  | 129.16      | 120.28   |
| 17  | T     | 121 | ARG  | C-N-CA     | 6.17  | 129.16      | 120.28   |
| 17  | T     | 308 | LYS  | CA-C-N     | 6.17  | 129.68      | 120.31   |
| 17  | T     | 308 | LYS  | C-N-CA     | 6.17  | 129.68      | 120.31   |
| 19  | Z     | 380 | PHE  | CA-C-N     | 6.17  | 130.41      | 120.30   |
| 19  | Z     | 380 | PHE  | C-N-CA     | 6.17  | 130.41      | 120.30   |
| 20  | N     | 565 | ALA  | CA-C-O     | 6.17  | 127.09      | 120.55   |
| 21  | S     | 271 | VAL  | CA-C-O     | -6.17 | 114.73      | 120.34   |
| 27  | H     | 133 | ASP  | N-CA-C     | -6.17 | 104.36      | 113.61   |
| 3   | C     | 159 | TRP  | CG-CD2-CE3 | -6.16 | 127.74      | 133.90   |
| 23  | Q     | 269 | ALA  | CB-CA-C    | -6.16 | 101.20      | 110.88   |

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| Mol | Chain | Res | Type | Atoms    | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|-------|-------------|----------|
| 25  | U     | 270 | VAL  | N-CA-CB  | -6.16 | 103.34      | 110.55   |
| 29  | K     | 382 | SER  | O-C-N    | 6.16  | 129.18      | 122.15   |
| 31  | M     | 100 | LEU  | CA-C-N   | 6.16  | 133.31      | 121.54   |
| 31  | M     | 100 | LEU  | C-N-CA   | 6.16  | 133.31      | 121.54   |
| 4   | D     | 192 | LEU  | CA-C-N   | 6.16  | 128.54      | 120.28   |
| 4   | D     | 192 | LEU  | C-N-CA   | 6.16  | 128.54      | 120.28   |
| 10  | 3     | 138 | VAL  | N-CA-C   | -6.16 | 98.89       | 108.44   |
| 17  | T     | 230 | LYS  | O-C-N    | -6.16 | 115.01      | 122.22   |
| 19  | Z     | 770 | HIS  | CA-CB-CG | 6.16  | 119.96      | 113.80   |
| 12  | 5     | 105 | ALA  | N-CA-C   | 6.16  | 117.98      | 110.41   |
| 21  | S     | 40  | ALA  | CA-C-N   | 6.16  | 128.53      | 120.28   |
| 21  | S     | 40  | ALA  | C-N-CA   | 6.16  | 128.53      | 120.28   |
| 29  | K     | 264 | ILE  | O-C-N    | 6.16  | 130.95      | 122.88   |
| 29  | K     | 335 | LEU  | CA-C-O   | -6.16 | 111.72      | 120.16   |
| 30  | L     | 176 | VAL  | O-C-N    | 6.16  | 127.95      | 121.91   |
| 21  | S     | 442 | VAL  | N-CA-CB  | 6.16  | 121.39      | 111.23   |
| 7   | G     | 143 | VAL  | CB-CA-C  | 6.16  | 117.59      | 110.88   |
| 10  | 3     | 152 | SER  | CA-C-N   | 6.16  | 129.67      | 120.31   |
| 10  | 3     | 152 | SER  | C-N-CA   | 6.16  | 129.67      | 120.31   |
| 19  | Z     | 804 | LEU  | O-C-N    | -6.16 | 114.51      | 122.94   |
| 21  | S     | 125 | ASP  | CA-CB-CG | -6.16 | 106.44      | 112.60   |
| 26  | O     | 333 | MET  | N-CA-CB  | 6.16  | 120.45      | 110.42   |
| 4   | D     | 220 | ASP  | CA-CB-CG | -6.15 | 106.45      | 112.60   |
| 9   | 2     | 125 | MET  | CA-C-N   | 6.15  | 128.53      | 120.28   |
| 9   | 2     | 125 | MET  | C-N-CA   | 6.15  | 128.53      | 120.28   |
| 15  | W     | 145 | GLU  | CA-C-N   | 6.15  | 128.52      | 120.28   |
| 15  | W     | 145 | GLU  | C-N-CA   | 6.15  | 128.52      | 120.28   |
| 18  | Y     | 62  | LYS  | N-CA-CB  | 6.15  | 119.16      | 110.12   |
| 19  | Z     | 12  | GLN  | CB-CG-CD | -6.15 | 102.14      | 112.60   |
| 29  | K     | 287 | ARG  | CA-C-N   | 6.15  | 128.89      | 120.46   |
| 29  | K     | 287 | ARG  | C-N-CA   | 6.15  | 128.89      | 120.46   |
| 5   | E     | 183 | GLU  | CB-CA-C  | -6.15 | 101.19      | 110.90   |
| 25  | U     | 213 | GLU  | N-CA-CB  | 6.15  | 119.26      | 110.16   |
| 2   | B     | 81  | PRO  | CA-C-N   | 6.15  | 128.52      | 120.28   |
| 2   | B     | 81  | PRO  | C-N-CA   | 6.15  | 128.52      | 120.28   |
| 23  | Q     | 244 | SER  | CA-C-N   | 6.15  | 125.77      | 119.56   |
| 23  | Q     | 244 | SER  | C-N-CA   | 6.15  | 125.77      | 119.56   |
| 2   | B     | 168 | VAL  | CA-C-N   | 6.15  | 129.65      | 120.31   |
| 2   | B     | 168 | VAL  | C-N-CA   | 6.15  | 129.65      | 120.31   |
| 24  | R     | 346 | LYS  | N-CA-C   | -6.14 | 99.98       | 109.14   |
| 28  | I     | 381 | ASP  | CA-C-O   | -6.14 | 114.04      | 120.55   |
| 28  | I     | 412 | MET  | N-CA-C   | -6.14 | 101.12      | 109.54   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 8   | 1     | 116 | PHE  | CA-CB-CG   | 6.14  | 119.94      | 113.80   |
| 22  | P     | 335 | THR  | O-C-N      | -6.14 | 117.17      | 121.65   |
| 24  | R     | 276 | ALA  | CA-C-N     | 6.14  | 128.88      | 120.46   |
| 24  | R     | 276 | ALA  | C-N-CA     | 6.14  | 128.88      | 120.46   |
| 28  | I     | 96  | ARG  | N-CA-C     | 6.14  | 117.97      | 111.28   |
| 29  | K     | 340 | GLN  | CB-CA-C    | -6.14 | 98.88       | 110.67   |
| 23  | Q     | 130 | GLU  | CA-C-N     | 6.14  | 128.51      | 120.28   |
| 23  | Q     | 130 | GLU  | C-N-CA     | 6.14  | 128.51      | 120.28   |
| 24  | R     | 177 | ARG  | NE-CZ-NH1  | 6.14  | 127.64      | 121.50   |
| 2   | B     | 225 | GLU  | N-CA-C     | 6.14  | 118.05      | 111.36   |
| 10  | 3     | 72  | ASN  | OD1-CG-ND2 | 6.14  | 128.74      | 122.60   |
| 8   | 1     | 65  | ASP  | N-CA-C     | 6.13  | 119.87      | 110.36   |
| 9   | 2     | 212 | SER  | O-C-N      | 6.13  | 129.14      | 122.15   |
| 23  | Q     | 339 | ILE  | N-CA-C     | 6.13  | 116.92      | 110.72   |
| 27  | H     | 177 | VAL  | CA-C-O     | 6.13  | 127.28      | 120.59   |
| 8   | 1     | 106 | PRO  | N-CA-C     | 6.13  | 118.18      | 110.70   |
| 6   | F     | 7   | ASP  | CB-CA-C    | -6.13 | 99.81       | 110.17   |
| 12  | 5     | 108 | ALA  | CA-C-N     | 6.13  | 129.83      | 120.82   |
| 12  | 5     | 108 | ALA  | C-N-CA     | 6.13  | 129.83      | 120.82   |
| 16  | V     | 92  | GLN  | OE1-CD-NE2 | 6.13  | 128.73      | 122.60   |
| 27  | H     | 347 | ASP  | N-CA-CB    | 6.13  | 119.87      | 110.49   |
| 30  | L     | 381 | PHE  | CA-C-N     | 6.13  | 128.41      | 120.44   |
| 30  | L     | 381 | PHE  | C-N-CA     | 6.13  | 128.41      | 120.44   |
| 17  | T     | 339 | ALA  | CA-C-N     | 6.13  | 131.45      | 122.63   |
| 17  | T     | 339 | ALA  | C-N-CA     | 6.13  | 131.45      | 122.63   |
| 19  | Z     | 657 | ILE  | N-CA-CB    | 6.13  | 118.88      | 110.54   |
| 20  | N     | 174 | PRO  | CA-C-O     | -6.13 | 114.44      | 121.98   |
| 29  | K     | 217 | LYS  | CA-C-N     | 6.13  | 128.49      | 120.28   |
| 29  | K     | 217 | LYS  | C-N-CA     | 6.13  | 128.49      | 120.28   |
| 4   | D     | 79  | VAL  | CA-C-N     | 6.13  | 133.24      | 121.54   |
| 4   | D     | 79  | VAL  | C-N-CA     | 6.13  | 133.24      | 121.54   |
| 16  | V     | 297 | VAL  | CA-C-O     | -6.13 | 114.36      | 120.85   |
| 19  | Z     | 28  | SER  | CA-C-O     | 6.13  | 125.26      | 118.52   |
| 27  | H     | 113 | ILE  | N-CA-C     | -6.13 | 99.43       | 108.99   |
| 30  | L     | 170 | PRO  | N-CD-CG    | 6.13  | 112.39      | 103.20   |
| 5   | E     | 74  | ILE  | CA-C-N     | 6.12  | 126.41      | 122.18   |
| 5   | E     | 74  | ILE  | C-N-CA     | 6.12  | 126.41      | 122.18   |
| 23  | Q     | 197 | ALA  | CA-C-N     | 6.12  | 133.24      | 121.54   |
| 23  | Q     | 197 | ALA  | C-N-CA     | 6.12  | 133.24      | 121.54   |
| 16  | V     | 175 | ARG  | NE-CZ-NH1  | -6.12 | 115.38      | 121.50   |
| 20  | N     | 35  | TRP  | CA-C-N     | 6.12  | 128.40      | 120.44   |
| 20  | N     | 35  | TRP  | C-N-CA     | 6.12  | 128.40      | 120.44   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 19  | Z     | 273 | ASN  | OD1-CG-ND2  | 6.12  | 128.72      | 122.60   |
| 19  | Z     | 543 | MET  | CA-C-N      | 6.12  | 128.98      | 120.29   |
| 19  | Z     | 543 | MET  | C-N-CA      | 6.12  | 128.98      | 120.29   |
| 13  | 6     | 152 | ASP  | N-CA-C      | -6.12 | 98.93       | 109.15   |
| 25  | U     | 22  | HIS  | ND1-CE1-NE2 | 6.12  | 114.52      | 108.40   |
| 13  | 6     | 166 | GLY  | N-CA-C      | -6.12 | 98.68       | 113.18   |
| 23  | Q     | 290 | VAL  | N-CA-C      | 6.12  | 116.90      | 110.72   |
| 27  | H     | 251 | GLY  | CA-C-N      | 6.12  | 128.98      | 120.29   |
| 27  | H     | 251 | GLY  | C-N-CA      | 6.12  | 128.98      | 120.29   |
| 31  | M     | 159 | ASP  | CA-C-N      | 6.12  | 132.54      | 121.89   |
| 31  | M     | 159 | ASP  | C-N-CA      | 6.12  | 132.54      | 121.89   |
| 19  | Z     | 346 | ASP  | CA-CB-CG    | 6.12  | 118.72      | 112.60   |
| 19  | Z     | 738 | ASN  | OD1-CG-ND2  | -6.12 | 116.48      | 122.60   |
| 20  | N     | 107 | HIS  | N-CA-C      | -6.12 | 104.61      | 111.28   |
| 31  | M     | 372 | HIS  | ND1-CE1-NE2 | 6.12  | 114.52      | 108.40   |
| 1   | A     | 159 | TYR  | CB-CA-C     | -6.11 | 101.36      | 110.16   |
| 3   | C     | 31  | ALA  | CA-C-N      | 6.11  | 133.39      | 121.41   |
| 3   | C     | 31  | ALA  | C-N-CA      | 6.11  | 133.39      | 121.41   |
| 16  | V     | 25  | VAL  | CA-CB-CG2   | 6.11  | 120.79      | 110.40   |
| 20  | N     | 569 | SER  | CA-C-O      | -6.11 | 114.07      | 120.55   |
| 31  | M     | 32  | ILE  | CA-C-N      | 6.11  | 127.98      | 120.22   |
| 31  | M     | 32  | ILE  | C-N-CA      | 6.11  | 127.98      | 120.22   |
| 17  | T     | 314 | GLY  | CA-C-N      | 6.11  | 127.48      | 119.84   |
| 17  | T     | 314 | GLY  | C-N-CA      | 6.11  | 127.48      | 119.84   |
| 19  | Z     | 280 | ASP  | N-CA-CB     | 6.11  | 119.21      | 110.16   |
| 31  | M     | 260 | VAL  | N-CA-CB     | 6.11  | 119.67      | 110.13   |
| 10  | 3     | 108 | VAL  | CA-C-N      | 6.11  | 129.40      | 120.91   |
| 10  | 3     | 108 | VAL  | C-N-CA      | 6.11  | 129.40      | 120.91   |
| 12  | 5     | 126 | GLU  | O-C-N       | -6.11 | 115.64      | 122.12   |
| 19  | Z     | 156 | HIS  | CB-CG-ND1   | 6.11  | 131.87      | 122.70   |
| 20  | N     | 168 | LEU  | N-CA-C      | -6.11 | 105.65      | 113.23   |
| 27  | H     | 141 | GLY  | N-CA-C      | -6.11 | 100.32      | 110.95   |
| 20  | N     | 40  | GLU  | CA-C-O      | 6.11  | 127.23      | 120.82   |
| 8   | 1     | 92  | VAL  | N-CA-CB     | 6.11  | 118.85      | 110.54   |
| 10  | 3     | 34  | MET  | CA-C-O      | 6.11  | 126.69      | 118.38   |
| 20  | N     | 237 | VAL  | CA-C-N      | 6.11  | 128.75      | 120.44   |
| 20  | N     | 237 | VAL  | C-N-CA      | 6.11  | 128.75      | 120.44   |
| 26  | O     | 273 | GLN  | OE1-CD-NE2  | 6.11  | 128.71      | 122.60   |
| 8   | 1     | 54  | THR  | N-CA-C      | -6.11 | 98.95       | 108.90   |
| 19  | Z     | 687 | ARG  | NE-CZ-NH2   | -6.11 | 113.71      | 119.20   |
| 19  | Z     | 800 | LEU  | N-CA-C      | -6.11 | 100.37      | 109.83   |
| 26  | O     | 3   | ASP  | N-CA-CB     | -6.11 | 100.17      | 110.49   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 20  | N     | 729 | GLY  | O-C-N       | -6.10 | 116.27      | 122.19   |
| 20  | N     | 909 | GLY  | N-CA-C      | -6.10 | 98.72       | 113.18   |
| 26  | O     | 311 | VAL  | CA-C-O      | -6.10 | 114.60      | 120.95   |
| 31  | M     | 184 | PRO  | N-CA-C      | 6.10  | 120.06      | 111.33   |
| 31  | M     | 266 | ASP  | CA-CB-CG    | -6.10 | 106.50      | 112.60   |
| 10  | 3     | 171 | MET  | CA-C-N      | 6.10  | 128.46      | 120.28   |
| 10  | 3     | 171 | MET  | C-N-CA      | 6.10  | 128.46      | 120.28   |
| 12  | 5     | 69  | HIS  | CE1-NE2-CD2 | -6.10 | 102.90      | 109.00   |
| 22  | P     | 304 | ASP  | CA-C-O      | 6.10  | 127.02      | 120.55   |
| 24  | R     | 304 | TYR  | CA-C-N      | 6.10  | 128.37      | 120.44   |
| 24  | R     | 304 | TYR  | C-N-CA      | 6.10  | 128.37      | 120.44   |
| 9   | 2     | 81  | SER  | O-C-N       | -6.10 | 114.31      | 121.32   |
| 10  | 3     | 163 | LEU  | CA-C-N      | 6.10  | 128.45      | 120.28   |
| 10  | 3     | 163 | LEU  | C-N-CA      | 6.10  | 128.45      | 120.28   |
| 19  | Z     | 282 | PHE  | N-CA-CB     | 6.10  | 119.19      | 110.16   |
| 19  | Z     | 526 | ALA  | N-CA-C      | 6.10  | 117.93      | 111.28   |
| 23  | Q     | 38  | ASN  | CA-CB-CG    | 6.10  | 118.70      | 112.60   |
| 30  | L     | 208 | ASN  | CA-CB-CG    | 6.10  | 118.70      | 112.60   |
| 19  | Z     | 815 | HIS  | CB-CG-CD2   | -6.10 | 123.27      | 131.20   |
| 26  | O     | 50  | PHE  | CA-C-N      | 6.10  | 128.45      | 120.28   |
| 26  | O     | 50  | PHE  | C-N-CA      | 6.10  | 128.45      | 120.28   |
| 24  | R     | 133 | ALA  | CA-C-N      | 6.10  | 128.95      | 120.29   |
| 24  | R     | 133 | ALA  | C-N-CA      | 6.10  | 128.95      | 120.29   |
| 30  | L     | 219 | ASP  | CA-CB-CG    | 6.10  | 118.70      | 112.60   |
| 5   | E     | 18  | GLU  | CB-CA-C     | -6.09 | 101.31      | 110.88   |
| 11  | 4     | 27  | GLN  | CB-CG-CD    | -6.09 | 102.24      | 112.60   |
| 19  | Z     | 354 | GLU  | N-CA-C      | 6.09  | 117.92      | 111.28   |
| 9   | 2     | 247 | CYS  | N-CA-C      | -6.09 | 97.82       | 110.80   |
| 14  | 7     | 174 | VAL  | CA-C-N      | 6.09  | 133.18      | 121.54   |
| 14  | 7     | 174 | VAL  | C-N-CA      | 6.09  | 133.18      | 121.54   |
| 19  | Z     | 359 | GLY  | N-CA-C      | -6.09 | 104.97      | 112.77   |
| 23  | Q     | 290 | VAL  | CA-C-N      | 6.09  | 128.44      | 120.28   |
| 23  | Q     | 290 | VAL  | C-N-CA      | 6.09  | 128.44      | 120.28   |
| 28  | I     | 227 | PRO  | CA-C-O      | -6.09 | 111.72      | 120.56   |
| 28  | I     | 413 | LYS  | O-C-N       | -6.09 | 116.86      | 123.26   |
| 30  | L     | 392 | LYS  | CA-C-N      | 6.09  | 128.44      | 120.28   |
| 30  | L     | 392 | LYS  | C-N-CA      | 6.09  | 128.44      | 120.28   |
| 31  | M     | 81  | GLU  | O-C-N       | 6.09  | 128.58      | 122.12   |
| 3   | C     | 122 | THR  | CA-C-O      | 6.09  | 126.98      | 119.97   |
| 12  | 5     | 62  | THR  | N-CA-CB     | 6.09  | 120.79      | 110.49   |
| 20  | N     | 639 | LEU  | CA-C-N      | 6.09  | 128.44      | 120.28   |
| 20  | N     | 639 | LEU  | C-N-CA      | 6.09  | 128.44      | 120.28   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 29  | K     | 36  | ASP  | CA-CB-CG    | -6.09 | 106.51      | 112.60   |
| 32  | J     | 359 | VAL  | N-CA-CB     | 6.09  | 117.68      | 110.55   |
| 21  | S     | 372 | ASN  | CA-CB-CG    | -6.09 | 106.51      | 112.60   |
| 32  | J     | 377 | HIS  | CE1-NE2-CD2 | -6.09 | 102.91      | 109.00   |
| 6   | F     | 186 | GLU  | N-CA-CB     | 6.09  | 119.17      | 110.16   |
| 21  | S     | 176 | ARG  | N-CA-C      | -6.09 | 99.78       | 109.76   |
| 23  | Q     | 47  | GLU  | CA-C-O      | -6.09 | 114.43      | 120.82   |
| 26  | O     | 192 | GLU  | N-CA-CB     | 6.09  | 119.17      | 110.16   |
| 9   | 2     | 261 | PRO  | CA-C-O      | -6.09 | 114.57      | 122.12   |
| 17  | T     | 346 | ALA  | CA-C-N      | 6.09  | 128.93      | 120.29   |
| 17  | T     | 346 | ALA  | C-N-CA      | 6.09  | 128.93      | 120.29   |
| 26  | O     | 53  | GLY  | N-CA-C      | 6.09  | 120.41      | 112.25   |
| 31  | M     | 57  | ILE  | CA-C-O      | 6.09  | 127.28      | 120.95   |
| 32  | J     | 81  | ASP  | CA-CB-CG    | -6.09 | 106.51      | 112.60   |
| 19  | Z     | 402 | ASN  | CA-C-N      | 6.08  | 131.85      | 121.87   |
| 19  | Z     | 402 | ASN  | C-N-CA      | 6.08  | 131.85      | 121.87   |
| 20  | N     | 931 | HIS  | CE1-NE2-CD2 | -6.08 | 102.92      | 109.00   |
| 23  | Q     | 97  | LEU  | N-CA-C      | 6.08  | 117.99      | 111.36   |
| 1   | A     | 27  | TYR  | CB-CG-CD1   | 6.08  | 129.92      | 120.80   |
| 13  | 6     | 160 | ASP  | CA-CB-CG    | 6.08  | 118.68      | 112.60   |
| 15  | W     | 155 | ALA  | N-CA-C      | 6.08  | 117.91      | 111.28   |
| 1   | A     | 39  | SER  | CA-C-O      | -6.08 | 113.67      | 120.66   |
| 22  | P     | 138 | VAL  | O-C-N       | 6.08  | 128.04      | 121.90   |
| 24  | R     | 244 | ALA  | CB-CA-C     | -6.08 | 98.99       | 110.67   |
| 24  | R     | 326 | GLY  | CA-C-N      | 6.08  | 128.34      | 120.56   |
| 24  | R     | 326 | GLY  | C-N-CA      | 6.08  | 128.34      | 120.56   |
| 21  | S     | 47  | GLY  | N-CA-C      | 6.08  | 120.03      | 112.73   |
| 11  | 4     | 132 | HIS  | CE1-NE2-CD2 | -6.08 | 102.92      | 109.00   |
| 11  | 4     | 181 | ARG  | CA-C-O      | -6.08 | 114.27      | 120.71   |
| 23  | Q     | 125 | LEU  | CA-C-N      | 6.08  | 128.43      | 120.28   |
| 23  | Q     | 125 | LEU  | C-N-CA      | 6.08  | 128.43      | 120.28   |
| 24  | R     | 89  | GLU  | N-CA-C      | 6.08  | 117.70      | 111.14   |
| 25  | U     | 193 | ASN  | CA-CB-CG    | 6.08  | 118.68      | 112.60   |
| 27  | H     | 383 | ALA  | CB-CA-C     | -6.08 | 100.70      | 110.79   |
| 11  | 4     | 5   | ILE  | CA-CB-CG1   | 6.08  | 120.73      | 110.40   |
| 19  | Z     | 592 | ASN  | N-CA-CB     | 6.08  | 119.17      | 110.06   |
| 20  | N     | 456 | ASP  | CA-C-O      | -6.08 | 113.98      | 120.42   |
| 22  | P     | 452 | ILE  | CA-C-N      | 6.08  | 130.76      | 122.07   |
| 22  | P     | 452 | ILE  | C-N-CA      | 6.08  | 130.76      | 122.07   |
| 30  | L     | 370 | ARG  | NE-CZ-NH2   | 6.08  | 124.67      | 119.20   |
| 1   | A     | 74  | GLU  | N-CA-C      | 6.07  | 117.90      | 111.28   |
| 4   | D     | 6   | ALA  | N-CA-C      | -6.07 | 102.35      | 110.55   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 30  | L     | 213 | VAL  | N-CA-CB     | 6.07  | 119.60      | 110.13   |
| 16  | V     | 287 | HIS  | CB-CG-ND1   | 6.07  | 131.81      | 122.70   |
| 19  | Z     | 256 | PHE  | O-C-N       | 6.07  | 129.07      | 122.15   |
| 27  | H     | 45  | ILE  | CA-C-N      | 6.07  | 128.42      | 120.28   |
| 27  | H     | 45  | ILE  | C-N-CA      | 6.07  | 128.42      | 120.28   |
| 31  | M     | 153 | LEU  | N-CA-C      | -6.07 | 98.62       | 108.52   |
| 31  | M     | 405 | GLU  | CA-C-N      | 6.07  | 128.33      | 120.44   |
| 31  | M     | 405 | GLU  | C-N-CA      | 6.07  | 128.33      | 120.44   |
| 25  | U     | 111 | LEU  | O-C-N       | -6.07 | 115.53      | 122.09   |
| 19  | Z     | 781 | TYR  | CA-C-N      | 6.07  | 128.41      | 120.28   |
| 19  | Z     | 781 | TYR  | C-N-CA      | 6.07  | 128.41      | 120.28   |
| 20  | N     | 129 | ARG  | NH1-CZ-NH2  | 6.07  | 127.19      | 119.30   |
| 16  | V     | 221 | HIS  | CE1-NE2-CD2 | -6.07 | 102.93      | 109.00   |
| 30  | L     | 114 | LEU  | N-CA-C      | -6.07 | 100.27      | 109.85   |
| 11  | 4     | 117 | TYR  | N-CA-C      | -6.06 | 98.75       | 109.06   |
| 32  | J     | 275 | GLU  | CB-CA-C     | -6.06 | 100.54      | 110.85   |
| 6   | F     | 234 | ASP  | CA-C-O      | 6.06  | 127.86      | 121.19   |
| 7   | G     | 240 | ALA  | CA-C-O      | -6.06 | 114.12      | 120.55   |
| 16  | V     | 36  | LEU  | CB-CA-C     | -6.06 | 100.73      | 110.79   |
| 30  | L     | 94  | VAL  | N-CA-C      | -6.06 | 99.68       | 108.17   |
| 9   | 2     | 163 | ASP  | CA-CB-CG    | 6.06  | 118.66      | 112.60   |
| 19  | Z     | 229 | VAL  | CA-C-N      | 6.06  | 128.40      | 120.28   |
| 19  | Z     | 229 | VAL  | C-N-CA      | 6.06  | 128.40      | 120.28   |
| 23  | Q     | 5   | ALA  | CA-C-O      | -6.06 | 114.66      | 120.90   |
| 31  | M     | 139 | VAL  | CA-C-O      | -6.06 | 114.15      | 121.54   |
| 7   | G     | 244 | LEU  | O-C-N       | 6.06  | 128.54      | 122.12   |
| 25  | U     | 69  | PHE  | N-CA-C      | -6.06 | 99.12       | 109.24   |
| 5   | E     | 229 | PHE  | O-C-N       | 6.05  | 130.28      | 122.89   |
| 19  | Z     | 592 | ASN  | OD1-CG-ND2  | -6.05 | 116.55      | 122.60   |
| 21  | S     | 496 | SER  | N-CA-CB     | 6.05  | 119.02      | 110.12   |
| 25  | U     | 196 | HIS  | ND1-CE1-NE2 | 6.05  | 114.45      | 108.40   |
| 28  | I     | 96  | ARG  | NE-CZ-NH2   | -6.05 | 113.75      | 119.20   |
| 1   | A     | 173 | THR  | CA-C-N      | 6.05  | 128.88      | 120.29   |
| 1   | A     | 173 | THR  | C-N-CA      | 6.05  | 128.88      | 120.29   |
| 23  | Q     | 33  | ARG  | CA-C-N      | 6.05  | 129.22      | 120.38   |
| 23  | Q     | 33  | ARG  | C-N-CA      | 6.05  | 129.22      | 120.38   |
| 7   | G     | 112 | LEU  | CA-C-O      | 6.05  | 126.83      | 120.42   |
| 24  | R     | 302 | HIS  | O-C-N       | 6.05  | 128.53      | 122.12   |
| 15  | W     | 125 | VAL  | CA-C-N      | 6.05  | 128.38      | 120.28   |
| 15  | W     | 125 | VAL  | C-N-CA      | 6.05  | 128.38      | 120.28   |
| 16  | V     | 284 | LEU  | CA-C-N      | 6.05  | 128.88      | 120.29   |
| 16  | V     | 284 | LEU  | C-N-CA      | 6.05  | 128.88      | 120.29   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 2   | B     | 78  | GLY  | CA-C-N      | 6.05  | 129.46      | 120.87   |
| 2   | B     | 78  | GLY  | C-N-CA      | 6.05  | 129.46      | 120.87   |
| 17  | T     | 133 | PRO  | CA-C-N      | 6.05  | 130.92      | 120.58   |
| 17  | T     | 133 | PRO  | C-N-CA      | 6.05  | 130.92      | 120.58   |
| 19  | Z     | 571 | GLU  | CA-C-N      | 6.05  | 128.99      | 120.28   |
| 19  | Z     | 571 | GLU  | C-N-CA      | 6.05  | 128.99      | 120.28   |
| 21  | S     | 250 | LEU  | CA-C-O      | -6.05 | 114.14      | 120.55   |
| 21  | S     | 454 | VAL  | N-CA-C      | -6.05 | 99.76       | 108.53   |
| 22  | P     | 218 | ASN  | OD1-CG-ND2  | 6.05  | 128.65      | 122.60   |
| 31  | M     | 77  | LYS  | CA-C-O      | -6.05 | 114.14      | 120.55   |
| 28  | I     | 228 | PRO  | CA-C-O      | -6.04 | 114.55      | 121.56   |
| 5   | E     | 93  | ARG  | NE-CZ-NH1   | -6.04 | 115.46      | 121.50   |
| 8   | 1     | 174 | ALA  | CA-C-O      | -6.04 | 114.01      | 120.42   |
| 20  | N     | 500 | ASN  | CA-C-N      | 6.04  | 128.38      | 120.28   |
| 20  | N     | 500 | ASN  | C-N-CA      | 6.04  | 128.38      | 120.28   |
| 24  | R     | 28  | LEU  | CB-CA-C     | 6.04  | 122.08      | 110.17   |
| 24  | R     | 141 | VAL  | CA-C-N      | 6.04  | 128.38      | 120.28   |
| 24  | R     | 141 | VAL  | C-N-CA      | 6.04  | 128.38      | 120.28   |
| 4   | D     | 172 | LYS  | CB-CG-CD    | 6.04  | 125.20      | 111.30   |
| 20  | N     | 434 | GLY  | O-C-N       | 6.04  | 130.56      | 122.70   |
| 21  | S     | 119 | SER  | O-C-N       | 6.04  | 129.71      | 122.94   |
| 22  | P     | 236 | HIS  | CG-CD2-NE2  | 6.04  | 113.24      | 107.20   |
| 28  | I     | 245 | ALA  | CB-CA-C     | 6.04  | 119.50      | 109.53   |
| 29  | K     | 278 | GLN  | CA-C-N      | 6.04  | 132.00      | 122.94   |
| 29  | K     | 278 | GLN  | C-N-CA      | 6.04  | 132.00      | 122.94   |
| 29  | K     | 389 | GLU  | N-CA-C      | -6.04 | 104.81      | 111.82   |
| 32  | J     | 284 | GLU  | N-CA-C      | -6.04 | 97.93       | 110.80   |
| 24  | R     | 251 | HIS  | CB-CG-CD2   | -6.04 | 123.35      | 131.20   |
| 29  | K     | 295 | GLN  | CA-C-O      | -6.04 | 114.02      | 120.42   |
| 2   | B     | 101 | TYR  | CA-C-N      | 6.04  | 131.44      | 122.74   |
| 2   | B     | 101 | TYR  | C-N-CA      | 6.04  | 131.44      | 122.74   |
| 13  | 6     | 167 | SER  | CA-C-O      | -6.04 | 113.35      | 120.60   |
| 19  | Z     | 207 | LEU  | O-C-N       | -6.04 | 115.72      | 122.12   |
| 20  | N     | 702 | THR  | N-CA-C      | -6.04 | 106.89      | 114.56   |
| 30  | L     | 328 | LYS  | O-C-N       | -6.04 | 115.72      | 122.12   |
| 32  | J     | 104 | ASP  | N-CA-C      | -6.04 | 97.94       | 110.80   |
| 19  | Z     | 472 | HIS  | CE1-NE2-CD2 | -6.04 | 102.96      | 109.00   |
| 22  | P     | 57  | ALA  | CA-C-O      | -6.04 | 114.15      | 120.55   |
| 26  | O     | 260 | ASP  | CA-CB-CG    | -6.04 | 106.56      | 112.60   |
| 29  | K     | 408 | LYS  | N-CA-CB     | 6.04  | 120.69      | 110.49   |
| 32  | J     | 230 | MET  | N-CA-C      | -6.04 | 105.92      | 113.28   |
| 8   | 1     | 105 | GLU  | CA-C-N      | 6.04  | 126.60      | 120.38   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | 1     | 105 | GLU  | C-N-CA      | 6.04  | 126.60      | 120.38   |
| 19  | Z     | 388 | ASP  | CA-C-N      | 6.04  | 128.97      | 120.28   |
| 19  | Z     | 388 | ASP  | C-N-CA      | 6.04  | 128.97      | 120.28   |
| 20  | N     | 267 | ASN  | CA-CB-CG    | 6.04  | 118.64      | 112.60   |
| 25  | U     | 142 | GLU  | N-CA-C      | -6.04 | 98.68       | 108.52   |
| 28  | I     | 118 | ASP  | CA-CB-CG    | 6.04  | 118.64      | 112.60   |
| 32  | J     | 213 | ARG  | CA-C-N      | 6.04  | 131.05      | 123.14   |
| 32  | J     | 213 | ARG  | C-N-CA      | 6.04  | 131.05      | 123.14   |
| 10  | 3     | 173 | ASN  | OD1-CG-ND2  | 6.03  | 128.63      | 122.60   |
| 25  | U     | 25  | ARG  | CA-C-N      | 6.03  | 128.28      | 120.56   |
| 25  | U     | 25  | ARG  | C-N-CA      | 6.03  | 128.28      | 120.56   |
| 31  | M     | 285 | ILE  | CB-CA-C     | 6.03  | 119.56      | 110.63   |
| 23  | Q     | 310 | ARG  | NE-CZ-NH1   | -6.03 | 115.47      | 121.50   |
| 24  | R     | 23  | ARG  | NE-CZ-NH2   | -6.03 | 113.77      | 119.20   |
| 32  | J     | 108 | VAL  | CA-C-O      | 6.03  | 128.32      | 120.78   |
| 3   | C     | 116 | ASP  | N-CA-CB     | 6.03  | 118.98      | 110.12   |
| 5   | E     | 186 | HIS  | ND1-CE1-NE2 | 6.03  | 114.43      | 108.40   |
| 11  | 4     | 29  | LYS  | CA-C-N      | 6.03  | 128.96      | 120.28   |
| 11  | 4     | 29  | LYS  | C-N-CA      | 6.03  | 128.96      | 120.28   |
| 17  | T     | 298 | THR  | CA-C-N      | 6.03  | 125.58      | 119.19   |
| 17  | T     | 298 | THR  | C-N-CA      | 6.03  | 125.58      | 119.19   |
| 22  | P     | 431 | LYS  | CA-C-O      | -6.03 | 114.16      | 120.55   |
| 23  | Q     | 138 | PHE  | N-CA-CB     | 6.03  | 119.08      | 110.16   |
| 20  | N     | 423 | MET  | CA-C-N      | 6.03  | 128.68      | 120.54   |
| 20  | N     | 423 | MET  | C-N-CA      | 6.03  | 128.68      | 120.54   |
| 27  | H     | 81  | ALA  | CA-C-N      | 6.03  | 128.36      | 120.28   |
| 27  | H     | 81  | ALA  | C-N-CA      | 6.03  | 128.36      | 120.28   |
| 4   | D     | 169 | ARG  | NE-CZ-NH1   | 6.03  | 127.53      | 121.50   |
| 7   | G     | 153 | ASP  | CA-C-N      | 6.03  | 126.14      | 119.87   |
| 7   | G     | 153 | ASP  | C-N-CA      | 6.03  | 126.14      | 119.87   |
| 11  | 4     | 99  | HIS  | CB-CG-CD2   | -6.03 | 123.36      | 131.20   |
| 20  | N     | 19  | LEU  | CB-CA-C     | -6.03 | 100.60      | 110.85   |
| 29  | K     | 187 | HIS  | CE1-NE2-CD2 | -6.03 | 102.97      | 109.00   |
| 14  | 7     | 259 | ILE  | CB-CA-C     | -6.03 | 104.17      | 112.24   |
| 17  | T     | 344 | GLU  | N-CA-C      | 6.03  | 117.85      | 111.28   |
| 32  | J     | 87  | VAL  | CA-C-O      | -6.03 | 114.06      | 120.39   |
| 26  | O     | 190 | VAL  | N-CA-C      | -6.02 | 104.48      | 110.62   |
| 30  | L     | 350 | ASP  | N-CA-C      | -6.02 | 99.91       | 109.07   |
| 2   | B     | 169 | ASN  | CA-C-N      | 6.02  | 126.67      | 119.98   |
| 2   | B     | 169 | ASN  | C-N-CA      | 6.02  | 126.67      | 119.98   |
| 17  | T     | 173 | GLN  | O-C-N       | 6.02  | 128.50      | 122.12   |
| 21  | S     | 74  | HIS  | ND1-CE1-NE2 | 6.02  | 114.42      | 108.40   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 29  | K     | 182 | GLU  | CA-C-O    | -6.02 | 114.04      | 120.42   |
| 4   | D     | 240 | LYS  | N-CA-CB   | 6.02  | 118.97      | 110.12   |
| 6   | F     | 157 | ARG  | NE-CZ-NH1 | -6.02 | 115.48      | 121.50   |
| 21  | S     | 235 | THR  | CA-CB-OG1 | 6.02  | 118.63      | 109.60   |
| 24  | R     | 2   | PRO  | CA-C-N    | 6.02  | 128.95      | 120.28   |
| 24  | R     | 2   | PRO  | C-N-CA    | 6.02  | 128.95      | 120.28   |
| 25  | U     | 108 | ILE  | N-CA-C    | -6.02 | 104.48      | 110.62   |
| 29  | K     | 161 | ASP  | CA-CB-CG  | -6.02 | 106.58      | 112.60   |
| 30  | L     | 352 | PHE  | CA-CB-CG  | -6.02 | 107.78      | 113.80   |
| 5   | E     | 186 | HIS  | N-CA-C    | -6.02 | 99.99       | 109.50   |
| 6   | F     | 166 | GLN  | CA-C-N    | 6.02  | 129.46      | 120.31   |
| 6   | F     | 166 | GLN  | C-N-CA    | 6.02  | 129.46      | 120.31   |
| 7   | G     | 32  | GLU  | CA-C-N    | 6.02  | 129.46      | 120.31   |
| 7   | G     | 32  | GLU  | C-N-CA    | 6.02  | 129.46      | 120.31   |
| 23  | Q     | 364 | LYS  | N-CA-CB   | 6.02  | 119.07      | 110.16   |
| 16  | V     | 278 | GLN  | N-CA-CB   | 6.02  | 120.66      | 110.49   |
| 20  | N     | 115 | ASN  | CB-CA-C   | -6.02 | 100.80      | 110.79   |
| 20  | N     | 831 | ALA  | N-CA-C    | 6.02  | 117.84      | 111.28   |
| 28  | I     | 316 | LEU  | O-C-N     | -6.02 | 114.59      | 122.59   |
| 17  | T     | 150 | ILE  | CA-C-N    | 6.01  | 131.66      | 121.14   |
| 17  | T     | 150 | ILE  | C-N-CA    | 6.01  | 131.66      | 121.14   |
| 28  | I     | 199 | GLU  | N-CA-CB   | 6.01  | 119.22      | 110.26   |
| 29  | K     | 249 | ASP  | CA-C-O    | -6.01 | 114.51      | 120.82   |
| 29  | K     | 355 | SER  | O-C-N     | -6.01 | 114.85      | 122.43   |
| 3   | C     | 66  | TYR  | O-C-N     | -6.01 | 115.42      | 123.23   |
| 20  | N     | 581 | SER  | CA-C-N    | 6.01  | 126.65      | 119.98   |
| 20  | N     | 581 | SER  | C-N-CA    | 6.01  | 126.65      | 119.98   |
| 29  | K     | 125 | LYS  | CA-C-O    | -6.01 | 111.93      | 120.16   |
| 30  | L     | 62  | LYS  | CB-CG-CD  | 6.01  | 125.13      | 111.30   |
| 5   | E     | 158 | PRO  | CA-C-O    | 6.01  | 126.47      | 118.90   |
| 16  | V     | 218 | LEU  | CB-CA-C   | -6.01 | 99.51       | 110.63   |
| 20  | N     | 448 | LEU  | N-CA-CB   | 6.01  | 118.72      | 110.01   |
| 32  | J     | 122 | THR  | CA-C-N    | 6.01  | 129.29      | 120.82   |
| 32  | J     | 122 | THR  | C-N-CA    | 6.01  | 129.29      | 120.82   |
| 21  | S     | 406 | ILE  | N-CA-CB   | 6.01  | 119.59      | 110.58   |
| 20  | N     | 484 | ALA  | CB-CA-C   | -6.00 | 101.41      | 110.90   |
| 28  | I     | 362 | LYS  | CA-C-N    | 6.00  | 128.82      | 120.29   |
| 28  | I     | 362 | LYS  | C-N-CA    | 6.00  | 128.82      | 120.29   |
| 2   | B     | 57  | TYR  | N-CA-CB   | 6.00  | 121.19      | 110.80   |
| 12  | 5     | 187 | VAL  | CA-C-O    | 6.00  | 127.64      | 121.28   |
| 17  | T     | 238 | TYR  | CA-C-O    | 6.00  | 127.12      | 120.82   |
| 19  | Z     | 631 | LYS  | CA-C-N    | 6.00  | 128.93      | 120.28   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 19  | Z     | 631 | LYS  | C-N-CA     | 6.00  | 128.93      | 120.28   |
| 20  | N     | 808 | PRO  | CB-CA-C    | 6.00  | 118.01      | 110.27   |
| 22  | P     | 13  | ILE  | CB-CA-C    | -6.00 | 104.15      | 112.02   |
| 29  | K     | 74  | HIS  | O-C-N      | 6.00  | 128.49      | 122.12   |
| 30  | L     | 27  | ARG  | O-C-N      | 6.00  | 128.48      | 122.12   |
| 4   | D     | 48  | LYS  | N-CA-C     | -6.00 | 105.92      | 113.72   |
| 20  | N     | 681 | ASN  | CA-C-N     | 6.00  | 128.32      | 120.28   |
| 20  | N     | 681 | ASN  | C-N-CA     | 6.00  | 128.32      | 120.28   |
| 2   | B     | 38  | ILE  | O-C-N      | 6.00  | 129.68      | 123.20   |
| 6   | F     | 96  | ARG  | NH1-CZ-NH2 | -6.00 | 111.50      | 119.30   |
| 7   | G     | 98  | ASN  | O-C-N      | -6.00 | 115.76      | 122.12   |
| 23  | Q     | 357 | SER  | N-CA-C     | -6.00 | 101.12      | 110.42   |
| 26  | O     | 53  | GLY  | CA-C-O     | -6.00 | 115.08      | 122.82   |
| 31  | M     | 266 | ASP  | N-CA-CB    | 6.00  | 119.54      | 110.30   |
| 20  | N     | 84  | ALA  | N-CA-C     | -6.00 | 104.82      | 111.36   |
| 24  | R     | 374 | ASP  | CA-C-N     | 6.00  | 128.81      | 120.29   |
| 24  | R     | 374 | ASP  | C-N-CA     | 6.00  | 128.81      | 120.29   |
| 27  | H     | 386 | ARG  | NE-CZ-NH2  | 6.00  | 124.60      | 119.20   |
| 29  | K     | 48  | GLN  | CB-CA-C    | -6.00 | 101.47      | 110.88   |
| 10  | 3     | 25  | ASP  | N-CA-C     | -6.00 | 99.23       | 109.24   |
| 20  | N     | 366 | HIS  | CA-C-N     | 5.99  | 128.23      | 120.44   |
| 20  | N     | 366 | HIS  | C-N-CA     | 5.99  | 128.23      | 120.44   |
| 23  | Q     | 410 | VAL  | O-C-N      | -5.99 | 115.66      | 121.83   |
| 25  | U     | 125 | ASP  | CA-C-N     | 5.99  | 128.93      | 120.42   |
| 25  | U     | 125 | ASP  | C-N-CA     | 5.99  | 128.93      | 120.42   |
| 31  | M     | 298 | ARG  | NE-CZ-NH2  | -5.99 | 113.81      | 119.20   |
| 3   | C     | 28  | ILE  | CA-C-N     | 5.99  | 127.63      | 120.14   |
| 3   | C     | 28  | ILE  | C-N-CA     | 5.99  | 127.63      | 120.14   |
| 10  | 3     | 161 | GLU  | CA-C-N     | 5.99  | 128.31      | 120.28   |
| 10  | 3     | 161 | GLU  | C-N-CA     | 5.99  | 128.31      | 120.28   |
| 13  | 6     | 182 | PHE  | N-CA-CB    | 5.99  | 119.00      | 110.13   |
| 16  | V     | 22  | ALA  | CB-CA-C    | -5.99 | 101.52      | 110.50   |
| 21  | S     | 241 | ASP  | CA-C-N     | 5.99  | 126.63      | 119.98   |
| 21  | S     | 241 | ASP  | C-N-CA     | 5.99  | 126.63      | 119.98   |
| 26  | O     | 118 | ILE  | N-CA-CB    | 5.99  | 119.57      | 110.58   |
| 32  | J     | 259 | LEU  | N-CA-C     | -5.99 | 105.73      | 113.16   |
| 20  | N     | 457 | ILE  | N-CA-C     | 5.99  | 118.58      | 111.09   |
| 32  | J     | 173 | GLU  | CA-C-N     | 5.99  | 128.22      | 120.44   |
| 32  | J     | 173 | GLU  | C-N-CA     | 5.99  | 128.22      | 120.44   |
| 19  | Z     | 71  | TYR  | CB-CG-CD1  | 5.99  | 129.78      | 120.80   |
| 1   | A     | 230 | LEU  | N-CA-C     | 5.98  | 117.80      | 111.28   |
| 17  | T     | 144 | LEU  | CA-C-N     | 5.98  | 128.66      | 120.46   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 17  | T     | 144 | LEU  | C-N-CA      | 5.98  | 128.66      | 120.46   |
| 6   | F     | 115 | LYS  | O-C-N       | -5.98 | 115.33      | 122.15   |
| 7   | G     | 121 | HIS  | CB-CG-ND1   | 5.98  | 131.67      | 122.70   |
| 19  | Z     | 96  | LEU  | N-CA-C      | 5.98  | 117.47      | 111.07   |
| 21  | S     | 409 | SER  | CA-C-O      | 5.98  | 127.28      | 121.00   |
| 30  | L     | 378 | GLN  | OE1-CD-NE2  | 5.98  | 128.58      | 122.60   |
| 3   | C     | 98  | LEU  | CA-C-N      | 5.98  | 128.22      | 120.44   |
| 3   | C     | 98  | LEU  | C-N-CA      | 5.98  | 128.22      | 120.44   |
| 9   | 2     | 132 | ARG  | NE-CZ-NH2   | -5.98 | 113.82      | 119.20   |
| 20  | N     | 513 | GLY  | CA-C-N      | 5.98  | 128.22      | 120.44   |
| 20  | N     | 513 | GLY  | C-N-CA      | 5.98  | 128.22      | 120.44   |
| 20  | N     | 543 | LYS  | N-CA-C      | 5.98  | 117.80      | 111.28   |
| 24  | R     | 219 | PHE  | N-CA-C      | 5.98  | 117.80      | 111.28   |
| 25  | U     | 120 | VAL  | N-CA-C      | -5.98 | 99.87       | 108.42   |
| 16  | V     | 298 | GLN  | CA-C-O      | -5.98 | 114.54      | 120.70   |
| 21  | S     | 144 | ARG  | CA-C-N      | 5.98  | 126.50      | 120.04   |
| 21  | S     | 144 | ARG  | C-N-CA      | 5.98  | 126.50      | 120.04   |
| 21  | S     | 168 | VAL  | CB-CA-C     | -5.98 | 104.07      | 112.14   |
| 28  | I     | 69  | LYS  | CA-C-N      | 5.98  | 128.78      | 120.29   |
| 28  | I     | 69  | LYS  | C-N-CA      | 5.98  | 128.78      | 120.29   |
| 7   | G     | 59  | TYR  | CB-CG-CD1   | 5.98  | 129.77      | 120.80   |
| 9   | 2     | 58  | GLY  | O-C-N       | -5.98 | 118.30      | 123.80   |
| 15  | W     | 7   | MET  | CA-C-O      | -5.98 | 113.86      | 120.38   |
| 22  | P     | 370 | TYR  | CB-CA-C     | -5.98 | 101.22      | 110.78   |
| 31  | M     | 116 | LEU  | N-CA-C      | -5.98 | 104.64      | 112.41   |
| 9   | 2     | 82  | PRO  | CA-C-O      | -5.98 | 109.72      | 120.60   |
| 25  | U     | 72  | HIS  | CE1-NE2-CD2 | -5.98 | 103.02      | 109.00   |
| 10  | 3     | 144 | GLU  | CA-C-O      | 5.97  | 128.99      | 121.58   |
| 12  | 5     | 82  | GLY  | CA-C-N      | 5.97  | 127.31      | 119.84   |
| 12  | 5     | 82  | GLY  | C-N-CA      | 5.97  | 127.31      | 119.84   |
| 27  | H     | 320 | ALA  | CB-CA-C     | -5.97 | 100.51      | 110.19   |
| 28  | I     | 368 | HIS  | CE1-NE2-CD2 | -5.97 | 103.03      | 109.00   |
| 32  | J     | 9   | MET  | CA-C-N      | 5.97  | 129.77      | 120.75   |
| 32  | J     | 9   | MET  | C-N-CA      | 5.97  | 129.77      | 120.75   |
| 20  | N     | 936 | GLU  | CA-C-N      | 5.97  | 131.75      | 122.49   |
| 20  | N     | 936 | GLU  | C-N-CA      | 5.97  | 131.75      | 122.49   |
| 31  | M     | 382 | VAL  | CA-C-N      | 5.97  | 130.61      | 122.19   |
| 31  | M     | 382 | VAL  | C-N-CA      | 5.97  | 130.61      | 122.19   |
| 3   | C     | 50  | ARG  | N-CA-C      | -5.97 | 105.98      | 113.20   |
| 26  | O     | 332 | HIS  | CA-CB-CG    | 5.97  | 119.77      | 113.80   |
| 32  | J     | 127 | LEU  | CA-C-O      | -5.97 | 114.14      | 120.23   |
| 8   | 1     | 99  | HIS  | CB-CG-CD2   | -5.97 | 123.44      | 131.20   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 14  | 7     | 208 | GLU  | N-CA-CB    | 5.97  | 118.89      | 110.12   |
| 20  | N     | 60  | ALA  | N-CA-CB    | 5.97  | 118.89      | 110.12   |
| 22  | P     | 157 | GLY  | N-CA-C     | -5.97 | 106.94      | 114.16   |
| 24  | R     | 104 | MET  | N-CA-C     | 5.97  | 117.78      | 111.28   |
| 1   | A     | 45  | LYS  | N-CA-C     | -5.96 | 106.98      | 114.56   |
| 11  | 4     | 174 | ASN  | OD1-CG-ND2 | 5.96  | 128.56      | 122.60   |
| 19  | Z     | 582 | VAL  | CB-CA-C    | -5.96 | 104.09      | 112.14   |
| 30  | L     | 143 | ASN  | CA-C-N     | 5.96  | 132.17      | 122.69   |
| 30  | L     | 143 | ASN  | C-N-CA     | 5.96  | 132.17      | 122.69   |
| 20  | N     | 498 | LYS  | CA-C-O     | 5.96  | 126.87      | 120.55   |
| 21  | S     | 252 | ARG  | N-CA-CB    | 5.96  | 118.88      | 110.12   |
| 29  | K     | 164 | TYR  | N-CA-C     | -5.96 | 104.36      | 111.69   |
| 8   | 1     | 35  | THR  | CA-CB-CG2  | -5.96 | 100.37      | 110.50   |
| 21  | S     | 102 | ARG  | CA-C-N     | 5.96  | 128.19      | 120.44   |
| 21  | S     | 102 | ARG  | C-N-CA     | 5.96  | 128.19      | 120.44   |
| 32  | J     | 80  | MET  | CG-SD-CE   | -5.96 | 87.79       | 100.90   |
| 6   | F     | 220 | GLU  | N-CA-C     | -5.96 | 101.19      | 110.42   |
| 27  | H     | 382 | GLY  | CA-C-O     | 5.96  | 126.85      | 120.30   |
| 5   | E     | 235 | GLU  | CA-C-N     | 5.96  | 128.26      | 120.28   |
| 5   | E     | 235 | GLU  | C-N-CA     | 5.96  | 128.26      | 120.28   |
| 24  | R     | 45  | VAL  | CA-C-N     | 5.96  | 131.44      | 122.68   |
| 24  | R     | 45  | VAL  | C-N-CA     | 5.96  | 131.44      | 122.68   |
| 29  | K     | 233 | SER  | CA-C-N     | 5.96  | 128.75      | 120.29   |
| 29  | K     | 233 | SER  | C-N-CA     | 5.96  | 128.75      | 120.29   |
| 8   | 1     | 109 | VAL  | CA-CB-CG2  | -5.95 | 100.28      | 110.40   |
| 19  | Z     | 410 | ALA  | O-C-N      | 5.95  | 128.20      | 122.07   |
| 23  | Q     | 12  | ALA  | CA-C-N     | 5.95  | 128.54      | 120.44   |
| 23  | Q     | 12  | ALA  | C-N-CA     | 5.95  | 128.54      | 120.44   |
| 1   | A     | 67  | THR  | CA-C-O     | -5.95 | 114.64      | 121.19   |
| 6   | F     | 28  | ALA  | O-C-N      | 5.95  | 129.18      | 122.22   |
| 28  | I     | 283 | PHE  | O-C-N      | -5.95 | 116.25      | 123.27   |
| 7   | G     | 47  | VAL  | N-CA-CB    | 5.95  | 119.62      | 111.41   |
| 19  | Z     | 580 | LEU  | O-C-N      | 5.95  | 128.93      | 122.15   |
| 19  | Z     | 653 | ALA  | N-CA-C     | 5.95  | 117.77      | 111.28   |
| 20  | N     | 559 | ARG  | N-CA-C     | -5.95 | 106.18      | 113.50   |
| 22  | P     | 23  | THR  | N-CA-C     | 5.95  | 117.77      | 111.28   |
| 28  | I     | 350 | LYS  | CB-CA-C    | -5.95 | 99.48       | 109.48   |
| 30  | L     | 368 | ALA  | CA-C-N     | 5.95  | 128.61      | 120.46   |
| 30  | L     | 368 | ALA  | C-N-CA     | 5.95  | 128.61      | 120.46   |
| 24  | R     | 233 | ARG  | CA-C-O     | -5.95 | 112.90      | 118.73   |
| 32  | J     | 370 | ALA  | CB-CA-C    | -5.95 | 100.92      | 110.79   |
| 20  | N     | 665 | ASN  | CA-CB-CG   | -5.95 | 106.65      | 112.60   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 24  | R     | 316 | LEU  | CA-C-N     | 5.95  | 126.54      | 119.94   |
| 24  | R     | 316 | LEU  | C-N-CA     | 5.95  | 126.54      | 119.94   |
| 25  | U     | 196 | HIS  | N-CA-C     | 5.95  | 118.55      | 111.71   |
| 31  | M     | 272 | ARG  | O-C-N      | 5.95  | 128.93      | 122.15   |
| 14  | 7     | 90  | ASN  | N-CA-CB    | 5.95  | 120.34      | 110.47   |
| 21  | S     | 214 | TYR  | CA-C-N     | 5.95  | 128.25      | 120.28   |
| 21  | S     | 214 | TYR  | C-N-CA     | 5.95  | 128.25      | 120.28   |
| 21  | S     | 76  | ARG  | CD-NE-CZ   | -5.94 | 116.08      | 124.40   |
| 3   | C     | 93  | ILE  | O-C-N      | 5.94  | 127.95      | 121.83   |
| 6   | F     | 179 | PHE  | CA-CB-CG   | -5.94 | 107.86      | 113.80   |
| 8   | 1     | 231 | THR  | CA-C-N     | 5.94  | 132.67      | 121.97   |
| 8   | 1     | 231 | THR  | C-N-CA     | 5.94  | 132.67      | 121.97   |
| 20  | N     | 79  | ASN  | CA-CB-CG   | -5.94 | 106.66      | 112.60   |
| 20  | N     | 644 | TYR  | CA-C-O     | -5.94 | 114.22      | 120.58   |
| 23  | Q     | 300 | ALA  | N-CA-CB    | 5.94  | 118.86      | 110.12   |
| 24  | R     | 140 | ILE  | CA-C-N     | 5.94  | 129.86      | 120.47   |
| 24  | R     | 140 | ILE  | C-N-CA     | 5.94  | 129.86      | 120.47   |
| 5   | E     | 215 | ILE  | CA-CB-CG1  | 5.94  | 120.50      | 110.40   |
| 4   | D     | 112 | TYR  | N-CA-C     | -5.94 | 104.72      | 111.07   |
| 24  | R     | 99  | GLU  | N-CA-CB    | 5.94  | 118.68      | 110.07   |
| 29  | K     | 315 | ASP  | CA-CB-CG   | 5.94  | 118.54      | 112.60   |
| 2   | B     | 203 | MET  | N-CA-C     | -5.94 | 99.33       | 109.24   |
| 19  | Z     | 801 | VAL  | O-C-N      | 5.94  | 129.49      | 122.66   |
| 29  | K     | 385 | LEU  | CA-C-O     | 5.94  | 126.71      | 120.42   |
| 3   | C     | 5   | TYR  | CA-C-N     | 5.93  | 132.34      | 122.73   |
| 3   | C     | 5   | TYR  | C-N-CA     | 5.93  | 132.34      | 122.73   |
| 15  | W     | 125 | VAL  | CB-CA-C    | -5.93 | 104.13      | 112.14   |
| 23  | Q     | 278 | ARG  | O-C-N      | 5.93  | 128.18      | 122.07   |
| 28  | I     | 363 | ARG  | NH1-CZ-NH2 | -5.93 | 111.58      | 119.30   |
| 1   | A     | 94  | ALA  | CA-C-N     | 5.93  | 128.23      | 120.28   |
| 1   | A     | 94  | ALA  | C-N-CA     | 5.93  | 128.23      | 120.28   |
| 5   | E     | 26  | TYR  | N-CA-CB    | 5.93  | 119.47      | 110.28   |
| 5   | E     | 86  | LYS  | N-CA-C     | 5.93  | 118.53      | 111.71   |
| 10  | 3     | 131 | MET  | N-CA-C     | -5.93 | 99.23       | 108.90   |
| 13  | 6     | 201 | LEU  | CB-CA-C    | -5.93 | 100.94      | 110.79   |
| 20  | N     | 692 | ALA  | CA-C-N     | 5.93  | 128.23      | 120.28   |
| 20  | N     | 692 | ALA  | C-N-CA     | 5.93  | 128.23      | 120.28   |
| 25  | U     | 252 | LYS  | N-CA-C     | 5.93  | 117.75      | 111.28   |
| 26  | O     | 343 | LEU  | CA-C-N     | 5.93  | 128.71      | 120.29   |
| 26  | O     | 343 | LEU  | C-N-CA     | 5.93  | 128.71      | 120.29   |
| 27  | H     | 299 | MET  | CB-CA-C    | -5.93 | 101.57      | 110.88   |
| 3   | C     | 194 | VAL  | CA-C-N     | 5.93  | 128.23      | 120.28   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 3   | C     | 194 | VAL  | C-N-CA      | 5.93  | 128.23      | 120.28   |
| 14  | 7     | 139 | ALA  | CA-C-O      | 5.93  | 126.84      | 120.55   |
| 23  | Q     | 327 | TYR  | O-C-N       | 5.93  | 128.18      | 122.07   |
| 28  | I     | 365 | PHE  | CA-C-N      | 5.93  | 128.23      | 120.28   |
| 28  | I     | 365 | PHE  | C-N-CA      | 5.93  | 128.23      | 120.28   |
| 31  | M     | 385 | GLU  | CA-C-N      | 5.93  | 128.51      | 120.44   |
| 31  | M     | 385 | GLU  | C-N-CA      | 5.93  | 128.51      | 120.44   |
| 11  | 4     | 94  | SER  | N-CA-C      | 5.93  | 119.78      | 112.54   |
| 6   | F     | 112 | ILE  | N-CA-CB     | 5.93  | 118.60      | 110.54   |
| 24  | R     | 136 | HIS  | CG-CD2-NE2  | 5.93  | 113.13      | 107.20   |
| 32  | J     | 177 | ALA  | N-CA-C      | 5.93  | 117.74      | 111.28   |
| 2   | B     | 66  | GLU  | CB-CG-CD    | 5.92  | 122.67      | 112.60   |
| 9   | 2     | 217 | ASP  | CA-CB-CG    | -5.92 | 106.67      | 112.60   |
| 19  | Z     | 181 | ARG  | N-CA-C      | 5.92  | 118.50      | 111.33   |
| 19  | Z     | 330 | PHE  | N-CA-C      | 5.92  | 118.43      | 111.02   |
| 23  | Q     | 332 | GLU  | CA-C-N      | 5.92  | 128.14      | 120.44   |
| 23  | Q     | 332 | GLU  | C-N-CA      | 5.92  | 128.14      | 120.44   |
| 6   | F     | 8   | ASN  | CA-CB-CG    | -5.92 | 106.68      | 112.60   |
| 19  | Z     | 275 | MET  | CA-C-N      | 5.92  | 128.22      | 120.28   |
| 19  | Z     | 275 | MET  | C-N-CA      | 5.92  | 128.22      | 120.28   |
| 6   | F     | 121 | GLN  | CB-CG-CD    | -5.92 | 102.53      | 112.60   |
| 10  | 3     | 33  | GLN  | OE1-CD-NE2  | -5.92 | 116.68      | 122.60   |
| 10  | 3     | 62  | THR  | O-C-N       | 5.92  | 128.40      | 122.12   |
| 28  | I     | 157 | HIS  | ND1-CE1-NE2 | 5.92  | 114.32      | 108.40   |
| 23  | Q     | 131 | ALA  | N-CA-C      | -5.92 | 104.83      | 111.28   |
| 27  | H     | 379 | ASN  | CA-CB-CG    | 5.92  | 118.52      | 112.60   |
| 29  | K     | 399 | PHE  | CA-CB-CG    | 5.92  | 119.72      | 113.80   |
| 23  | Q     | 239 | TYR  | CA-C-N      | 5.92  | 128.21      | 120.28   |
| 23  | Q     | 239 | TYR  | C-N-CA      | 5.92  | 128.21      | 120.28   |
| 28  | I     | 213 | GLU  | CB-CG-CD    | -5.92 | 102.54      | 112.60   |
| 27  | H     | 54  | GLN  | CA-C-N      | 5.92  | 129.30      | 120.31   |
| 27  | H     | 54  | GLN  | C-N-CA      | 5.92  | 129.30      | 120.31   |
| 32  | J     | 117 | ARG  | N-CA-C      | -5.92 | 98.88       | 108.52   |
| 2   | B     | 94  | ALA  | CA-C-N      | 5.91  | 129.30      | 120.31   |
| 2   | B     | 94  | ALA  | C-N-CA      | 5.91  | 129.30      | 120.31   |
| 3   | C     | 33  | THR  | CA-CB-OG1   | 5.91  | 118.47      | 109.60   |
| 16  | V     | 83  | SER  | CA-C-N      | 5.91  | 128.82      | 120.42   |
| 16  | V     | 83  | SER  | C-N-CA      | 5.91  | 128.82      | 120.42   |
| 19  | Z     | 84  | SER  | O-C-N       | -5.91 | 114.76      | 122.39   |
| 19  | Z     | 777 | THR  | CA-CB-CG2   | -5.91 | 100.45      | 110.50   |
| 20  | N     | 895 | THR  | N-CA-C      | -5.91 | 99.76       | 109.40   |
| 21  | S     | 458 | GLU  | N-CA-C      | 5.91  | 119.05      | 110.42   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | 1     | 209 | LEU  | CA-C-N      | 5.91  | 132.39      | 122.87   |
| 8   | 1     | 209 | LEU  | C-N-CA      | 5.91  | 132.39      | 122.87   |
| 30  | L     | 218 | VAL  | O-C-N       | 5.91  | 128.90      | 122.63   |
| 31  | M     | 333 | ALA  | CA-C-O      | 5.91  | 127.92      | 121.06   |
| 9   | 2     | 212 | SER  | CA-C-O      | -5.91 | 114.16      | 120.42   |
| 10  | 3     | 77  | LYS  | CB-CG-CD    | 5.91  | 124.89      | 111.30   |
| 11  | 4     | 138 | LEU  | CA-C-N      | 5.91  | 128.20      | 120.28   |
| 11  | 4     | 138 | LEU  | C-N-CA      | 5.91  | 128.20      | 120.28   |
| 23  | Q     | 26  | ILE  | CA-C-N      | 5.91  | 128.20      | 120.28   |
| 23  | Q     | 26  | ILE  | C-N-CA      | 5.91  | 128.20      | 120.28   |
| 23  | Q     | 33  | ARG  | NE-CZ-NH1   | -5.91 | 115.59      | 121.50   |
| 1   | A     | 22  | LEU  | CA-C-N      | 5.91  | 128.12      | 120.44   |
| 1   | A     | 22  | LEU  | C-N-CA      | 5.91  | 128.12      | 120.44   |
| 21  | S     | 204 | ALA  | N-CA-CB     | 5.91  | 118.80      | 110.12   |
| 2   | B     | 129 | PRO  | CA-C-O      | -5.91 | 113.98      | 122.31   |
| 16  | V     | 172 | HIS  | CE1-NE2-CD2 | -5.91 | 103.09      | 109.00   |
| 17  | T     | 211 | PHE  | CA-C-O      | -5.91 | 114.62      | 120.82   |
| 19  | Z     | 737 | ASN  | OD1-CG-ND2  | 5.91  | 128.50      | 122.60   |
| 3   | C     | 24  | ALA  | CA-C-N      | 5.90  | 128.19      | 120.28   |
| 3   | C     | 24  | ALA  | C-N-CA      | 5.90  | 128.19      | 120.28   |
| 4   | D     | 208 | GLY  | CA-C-O      | -5.90 | 116.09      | 122.47   |
| 15  | W     | 102 | GLY  | CA-C-N      | 5.90  | 128.19      | 120.28   |
| 15  | W     | 102 | GLY  | C-N-CA      | 5.90  | 128.19      | 120.28   |
| 22  | P     | 392 | PHE  | CA-C-N      | 5.90  | 128.67      | 120.29   |
| 22  | P     | 392 | PHE  | C-N-CA      | 5.90  | 128.67      | 120.29   |
| 24  | R     | 231 | LEU  | N-CA-CB     | 5.90  | 120.25      | 110.63   |
| 7   | G     | 182 | MET  | CA-C-N      | 5.90  | 128.19      | 120.28   |
| 7   | G     | 182 | MET  | C-N-CA      | 5.90  | 128.19      | 120.28   |
| 14  | 7     | 119 | GLU  | CA-C-N      | 5.90  | 128.67      | 120.29   |
| 14  | 7     | 119 | GLU  | C-N-CA      | 5.90  | 128.67      | 120.29   |
| 29  | K     | 370 | ILE  | CA-C-O      | 5.90  | 124.61      | 120.66   |
| 5   | E     | 28  | ILE  | CA-C-N      | 5.90  | 129.28      | 120.31   |
| 5   | E     | 28  | ILE  | C-N-CA      | 5.90  | 129.28      | 120.31   |
| 21  | S     | 493 | PRO  | N-CA-CB     | 5.90  | 108.80      | 103.08   |
| 30  | L     | 198 | ALA  | CA-C-N      | 5.90  | 128.67      | 120.29   |
| 30  | L     | 198 | ALA  | C-N-CA      | 5.90  | 128.67      | 120.29   |
| 4   | D     | 203 | GLU  | CB-CA-C     | -5.90 | 101.62      | 110.88   |
| 5   | E     | 82  | ILE  | CA-C-N      | 5.90  | 128.18      | 120.28   |
| 5   | E     | 82  | ILE  | C-N-CA      | 5.90  | 128.18      | 120.28   |
| 17  | T     | 294 | LEU  | N-CA-C      | -5.90 | 105.27      | 112.88   |
| 11  | 4     | 27  | GLN  | O-C-N       | -5.90 | 114.56      | 122.22   |
| 19  | Z     | 381 | VAL  | N-CA-CB     | 5.90  | 121.44      | 110.77   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 10  | 3     | 177 | ARG  | CA-C-N    | 5.89  | 129.27      | 120.31   |
| 10  | 3     | 177 | ARG  | C-N-CA    | 5.89  | 129.27      | 120.31   |
| 14  | 7     | 238 | GLU  | N-CA-CB   | 5.89  | 120.24      | 110.52   |
| 20  | N     | 611 | ASN  | N-CA-C    | -5.89 | 98.67       | 108.75   |
| 27  | H     | 279 | ALA  | N-CA-C    | -5.89 | 98.67       | 108.34   |
| 30  | L     | 272 | MET  | CB-CA-C   | -5.89 | 101.01      | 110.79   |
| 32  | J     | 2   | ALA  | N-CA-C    | -5.89 | 103.42      | 111.56   |
| 1   | A     | 220 | VAL  | CB-CA-C   | 5.89  | 117.74      | 110.73   |
| 8   | 1     | 152 | MET  | N-CA-CB   | 5.89  | 120.45      | 110.49   |
| 11  | 4     | 183 | ILE  | CA-CB-CG2 | -5.89 | 100.48      | 110.50   |
| 20  | N     | 105 | ILE  | CA-C-N    | 5.89  | 128.66      | 120.29   |
| 20  | N     | 105 | ILE  | C-N-CA    | 5.89  | 128.66      | 120.29   |
| 20  | N     | 725 | MET  | CA-C-N    | 5.89  | 128.18      | 120.28   |
| 20  | N     | 725 | MET  | C-N-CA    | 5.89  | 128.18      | 120.28   |
| 24  | R     | 129 | ASP  | CA-C-N    | 5.89  | 129.73      | 121.24   |
| 24  | R     | 129 | ASP  | C-N-CA    | 5.89  | 129.73      | 121.24   |
| 32  | J     | 200 | ALA  | O-C-N     | 5.89  | 128.37      | 122.12   |
| 7   | G     | 202 | HIS  | CB-CG-ND1 | 5.89  | 131.54      | 122.70   |
| 20  | N     | 700 | GLU  | CA-C-N    | 5.89  | 132.57      | 121.97   |
| 20  | N     | 700 | GLU  | C-N-CA    | 5.89  | 132.57      | 121.97   |
| 13  | 6     | 115 | ILE  | N-CA-C    | 5.89  | 116.63      | 110.62   |
| 16  | V     | 269 | GLN  | CA-C-N    | 5.89  | 128.17      | 120.28   |
| 16  | V     | 269 | GLN  | C-N-CA    | 5.89  | 128.17      | 120.28   |
| 32  | J     | 37  | ASP  | CA-CB-CG  | 5.89  | 118.49      | 112.60   |
| 29  | K     | 295 | GLN  | O-C-N     | 5.89  | 128.86      | 122.15   |
| 29  | K     | 416 | PHE  | CA-C-N    | 5.89  | 128.17      | 120.28   |
| 29  | K     | 416 | PHE  | C-N-CA    | 5.89  | 128.17      | 120.28   |
| 2   | B     | 8   | PHE  | CA-CB-CG  | -5.89 | 107.91      | 113.80   |
| 16  | V     | 174 | PRO  | N-CA-CB   | 5.89  | 109.11      | 103.52   |
| 19  | Z     | 389 | LYS  | CA-C-N    | 5.89  | 128.09      | 120.44   |
| 19  | Z     | 389 | LYS  | C-N-CA    | 5.89  | 128.09      | 120.44   |
| 19  | Z     | 733 | GLY  | N-CA-C    | 5.89  | 119.79      | 112.73   |
| 20  | N     | 438 | GLN  | CA-C-N    | 5.89  | 128.45      | 120.44   |
| 20  | N     | 438 | GLN  | C-N-CA    | 5.89  | 128.45      | 120.44   |
| 21  | S     | 276 | ALA  | N-CA-C    | -5.89 | 98.26       | 110.80   |
| 22  | P     | 52  | LYS  | N-CA-CB   | 5.89  | 119.41      | 110.28   |
| 23  | Q     | 205 | LYS  | CA-C-N    | 5.89  | 128.65      | 120.29   |
| 23  | Q     | 205 | LYS  | C-N-CA    | 5.89  | 128.65      | 120.29   |
| 26  | O     | 248 | PHE  | O-C-N     | 5.89  | 128.13      | 122.07   |
| 6   | F     | 22  | ILE  | CA-C-O    | -5.88 | 114.61      | 120.85   |
| 6   | F     | 171 | TYR  | CB-CG-CD1 | -5.88 | 111.97      | 120.80   |
| 17  | T     | 154 | GLY  | CA-C-O    | 5.88  | 127.36      | 121.00   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 21  | S     | 53  | ALA  | N-CA-CB     | 5.88  | 118.60      | 110.07   |
| 21  | S     | 116 | PHE  | CA-CB-CG    | -5.88 | 107.92      | 113.80   |
| 9   | 2     | 155 | SER  | CA-C-N      | 5.88  | 131.33      | 122.98   |
| 9   | 2     | 155 | SER  | C-N-CA      | 5.88  | 131.33      | 122.98   |
| 10  | 3     | 94  | LEU  | CA-C-O      | -5.88 | 114.18      | 120.42   |
| 20  | N     | 136 | LYS  | N-CA-CB     | 5.88  | 118.77      | 110.12   |
| 24  | R     | 374 | ASP  | CA-CB-CG    | -5.88 | 106.72      | 112.60   |
| 32  | J     | 206 | HIS  | CE1-NE2-CD2 | -5.88 | 103.12      | 109.00   |
| 2   | B     | 218 | PHE  | CA-C-O      | 5.88  | 127.57      | 120.81   |
| 9   | 2     | 198 | VAL  | CA-C-N      | 5.88  | 128.64      | 120.29   |
| 9   | 2     | 198 | VAL  | C-N-CA      | 5.88  | 128.64      | 120.29   |
| 26  | O     | 344 | GLN  | CB-CG-CD    | -5.88 | 102.60      | 112.60   |
| 27  | H     | 279 | ALA  | N-CA-CB     | 5.88  | 120.00      | 110.77   |
| 29  | K     | 287 | ARG  | CA-C-O      | -5.88 | 114.32      | 120.55   |
| 30  | L     | 53  | GLN  | CA-C-N      | 5.88  | 128.09      | 120.44   |
| 30  | L     | 53  | GLN  | C-N-CA      | 5.88  | 128.09      | 120.44   |
| 20  | N     | 76  | GLU  | CA-C-N      | 5.88  | 128.08      | 120.44   |
| 20  | N     | 76  | GLU  | C-N-CA      | 5.88  | 128.08      | 120.44   |
| 24  | R     | 240 | VAL  | N-CA-C      | 5.88  | 116.06      | 110.53   |
| 1   | A     | 35  | GLY  | O-C-N       | 5.88  | 127.89      | 122.19   |
| 3   | C     | 140 | ASP  | CA-C-O      | 5.88  | 128.32      | 121.44   |
| 6   | F     | 195 | LEU  | O-C-N       | -5.88 | 115.89      | 122.12   |
| 7   | G     | 159 | TYR  | CA-C-N      | 5.88  | 126.54      | 120.60   |
| 7   | G     | 159 | TYR  | C-N-CA      | 5.88  | 126.54      | 120.60   |
| 11  | 4     | 88  | LEU  | CA-C-N      | 5.88  | 128.16      | 120.28   |
| 11  | 4     | 88  | LEU  | C-N-CA      | 5.88  | 128.16      | 120.28   |
| 19  | Z     | 98  | PHE  | CA-CB-CG    | 5.88  | 119.68      | 113.80   |
| 22  | P     | 440 | ASN  | CA-CB-CG    | 5.88  | 118.48      | 112.60   |
| 5   | E     | 111 | SER  | CA-C-O      | -5.88 | 114.32      | 120.55   |
| 8   | 1     | 120 | CYS  | O-C-N       | 5.88  | 128.35      | 122.12   |
| 12  | 5     | 123 | ARG  | NE-CZ-NH2   | -5.88 | 113.91      | 119.20   |
| 20  | N     | 100 | ILE  | N-CA-CB     | 5.88  | 118.09      | 110.57   |
| 21  | S     | 492 | PHE  | CA-C-O      | -5.88 | 112.97      | 118.73   |
| 22  | P     | 215 | GLN  | CB-CA-C     | -5.88 | 101.04      | 110.79   |
| 9   | 2     | 202 | ILE  | CA-C-N      | 5.88  | 128.15      | 120.28   |
| 9   | 2     | 202 | ILE  | C-N-CA      | 5.88  | 128.15      | 120.28   |
| 21  | S     | 93  | ALA  | CA-C-N      | 5.88  | 128.43      | 120.44   |
| 21  | S     | 93  | ALA  | C-N-CA      | 5.88  | 128.43      | 120.44   |
| 26  | O     | 349 | MET  | CG-SD-CE    | -5.88 | 87.97       | 100.90   |
| 2   | B     | 63  | HIS  | CE1-NE2-CD2 | -5.87 | 103.13      | 109.00   |
| 13  | 6     | 117 | ALA  | N-CA-C      | 5.87  | 117.68      | 111.28   |
| 26  | O     | 130 | ALA  | N-CA-CB     | 5.87  | 118.85      | 110.16   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 23  | Q     | 259 | ILE  | N-CA-C      | -5.87 | 104.63      | 110.62   |
| 28  | I     | 415 | THR  | CA-CB-OG1   | 5.87  | 118.41      | 109.60   |
| 28  | I     | 424 | GLU  | CA-C-O      | -5.87 | 114.33      | 120.55   |
| 32  | J     | 128 | PRO  | N-CA-C      | -5.87 | 107.93      | 114.92   |
| 27  | H     | 263 | MET  | CA-C-N      | 5.87  | 128.62      | 120.29   |
| 27  | H     | 263 | MET  | C-N-CA      | 5.87  | 128.62      | 120.29   |
| 12  | 5     | 210 | GLU  | CA-C-O      | -5.87 | 114.33      | 120.55   |
| 16  | V     | 308 | VAL  | N-CA-CB     | 5.87  | 118.08      | 110.57   |
| 32  | J     | 238 | ALA  | CA-C-N      | 5.87  | 128.62      | 120.29   |
| 32  | J     | 238 | ALA  | C-N-CA      | 5.87  | 128.62      | 120.29   |
| 1   | A     | 151 | VAL  | N-CA-CB     | 5.87  | 119.80      | 111.82   |
| 5   | E     | 124 | GLY  | CA-C-N      | 5.87  | 128.46      | 120.54   |
| 5   | E     | 124 | GLY  | C-N-CA      | 5.87  | 128.46      | 120.54   |
| 16  | V     | 306 | THR  | CA-CB-OG1   | 5.87  | 118.40      | 109.60   |
| 19  | Z     | 722 | SER  | CA-C-O      | -5.87 | 113.22      | 119.97   |
| 19  | Z     | 751 | TYR  | N-CA-CB     | 5.87  | 118.84      | 110.16   |
| 25  | U     | 266 | ILE  | CB-CA-C     | 5.87  | 120.32      | 112.22   |
| 30  | L     | 176 | VAL  | CB-CA-C     | -5.87 | 104.46      | 111.97   |
| 31  | M     | 128 | LYS  | N-CA-C      | -5.87 | 99.62       | 109.07   |
| 32  | J     | 65  | LEU  | CA-C-O      | -5.87 | 114.33      | 120.55   |
| 32  | J     | 232 | ARG  | N-CA-C      | 5.87  | 117.47      | 111.14   |
| 32  | J     | 253 | SER  | N-CA-C      | -5.87 | 106.03      | 112.72   |
| 8   | 1     | 144 | VAL  | CA-CB-CG1   | -5.86 | 100.43      | 110.40   |
| 14  | 7     | 59  | LYS  | N-CA-C      | -5.86 | 98.70       | 108.32   |
| 15  | W     | 90  | ILE  | N-CA-C      | -5.86 | 104.79      | 110.42   |
| 3   | C     | 57  | ASP  | CA-CB-CG    | 5.86  | 118.46      | 112.60   |
| 19  | Z     | 284 | SER  | CA-C-N      | 5.86  | 128.06      | 120.44   |
| 19  | Z     | 284 | SER  | C-N-CA      | 5.86  | 128.06      | 120.44   |
| 3   | C     | 77  | ALA  | N-CA-CB     | 5.86  | 119.97      | 110.77   |
| 20  | N     | 541 | HIS  | ND1-CE1-NE2 | 5.86  | 114.26      | 108.40   |
| 21  | S     | 94  | LEU  | O-C-N       | 5.86  | 128.42      | 122.09   |
| 25  | U     | 27  | GLY  | CA-C-N      | 5.86  | 130.49      | 122.34   |
| 25  | U     | 27  | GLY  | C-N-CA      | 5.86  | 130.49      | 122.34   |
| 29  | K     | 292 | LEU  | CA-C-N      | 5.86  | 128.41      | 120.44   |
| 29  | K     | 292 | LEU  | C-N-CA      | 5.86  | 128.41      | 120.44   |
| 6   | F     | 157 | ARG  | NE-CZ-NH2   | 5.86  | 124.47      | 119.20   |
| 19  | Z     | 114 | ALA  | O-C-N       | -5.86 | 115.18      | 120.92   |
| 23  | Q     | 308 | ASP  | CA-C-N      | 5.86  | 130.50      | 120.72   |
| 23  | Q     | 308 | ASP  | C-N-CA      | 5.86  | 130.50      | 120.72   |
| 6   | F     | 134 | ILE  | N-CA-CB     | 5.86  | 118.06      | 111.21   |
| 14  | 7     | 194 | LEU  | CA-C-O      | -5.86 | 114.21      | 120.42   |
| 19  | Z     | 215 | ASP  | CB-CA-C     | -5.86 | 97.96       | 110.32   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 19  | Z     | 392 | THR  | N-CA-CB     | 5.86  | 119.24      | 110.22   |
| 28  | I     | 121 | ALA  | N-CA-C      | -5.86 | 100.17      | 109.07   |
| 32  | J     | 209 | CYS  | N-CA-C      | -5.86 | 100.64      | 109.95   |
| 1   | A     | 21  | ARG  | NE-CZ-NH2   | 5.86  | 124.47      | 119.20   |
| 2   | B     | 146 | LEU  | CA-C-O      | 5.86  | 128.12      | 120.21   |
| 28  | I     | 148 | CYS  | CA-C-O      | -5.86 | 114.79      | 121.58   |
| 29  | K     | 247 | VAL  | N-CA-C      | 5.85  | 116.59      | 110.62   |
| 17  | T     | 338 | LEU  | CA-C-O      | -5.85 | 113.24      | 119.97   |
| 7   | G     | 225 | HIS  | CE1-NE2-CD2 | -5.85 | 103.15      | 109.00   |
| 12  | 5     | 206 | LEU  | N-CA-C      | -5.85 | 104.82      | 111.14   |
| 22  | P     | 250 | ILE  | CA-C-N      | 5.85  | 128.12      | 120.28   |
| 22  | P     | 250 | ILE  | C-N-CA      | 5.85  | 128.12      | 120.28   |
| 8   | 1     | 71  | HIS  | CB-CG-CD2   | -5.85 | 123.60      | 131.20   |
| 19  | Z     | 198 | HIS  | ND1-CE1-NE2 | 5.85  | 114.25      | 108.40   |
| 28  | I     | 272 | ARG  | CA-C-N      | 5.85  | 128.47      | 120.46   |
| 28  | I     | 272 | ARG  | C-N-CA      | 5.85  | 128.47      | 120.46   |
| 29  | K     | 374 | ASP  | CA-CB-CG    | -5.85 | 106.75      | 112.60   |
| 29  | K     | 376 | ASN  | O-C-N       | -5.85 | 115.48      | 122.15   |
| 1   | A     | 87  | SER  | CB-CA-C     | -5.84 | 101.70      | 110.88   |
| 5   | E     | 149 | LYS  | CA-C-O      | 5.84  | 126.35      | 119.28   |
| 7   | G     | 238 | LYS  | CA-C-O      | -5.84 | 114.36      | 120.55   |
| 8   | 1     | 221 | VAL  | CA-CB-CG1   | -5.84 | 100.46      | 110.40   |
| 22  | P     | 451 | MET  | O-C-N       | 5.84  | 128.81      | 122.15   |
| 29  | K     | 207 | PRO  | CA-C-N      | 5.84  | 125.80      | 119.78   |
| 29  | K     | 207 | PRO  | C-N-CA      | 5.84  | 125.80      | 119.78   |
| 29  | K     | 367 | PRO  | CA-C-O      | -5.84 | 114.73      | 121.86   |
| 19  | Z     | 311 | VAL  | N-CA-C      | 5.84  | 119.26      | 113.71   |
| 25  | U     | 33  | LYS  | N-CA-CB     | 5.84  | 120.29      | 110.77   |
| 27  | H     | 193 | THR  | CA-C-O      | -5.84 | 113.18      | 118.79   |
| 1   | A     | 23  | TYR  | CB-CA-C     | -5.84 | 101.71      | 110.88   |
| 17  | T     | 218 | LEU  | CA-C-O      | -5.84 | 112.16      | 120.16   |
| 17  | T     | 260 | THR  | CA-C-N      | 5.84  | 128.10      | 120.28   |
| 17  | T     | 260 | THR  | C-N-CA      | 5.84  | 128.10      | 120.28   |
| 22  | P     | 213 | PHE  | CA-C-N      | 5.84  | 128.11      | 120.28   |
| 22  | P     | 213 | PHE  | C-N-CA      | 5.84  | 128.11      | 120.28   |
| 31  | M     | 392 | ASP  | CA-C-O      | 5.84  | 128.09      | 120.21   |
| 7   | G     | 105 | TYR  | N-CA-CB     | 5.84  | 120.78      | 111.56   |
| 20  | N     | 104 | CYS  | O-C-N       | -5.84 | 116.06      | 122.07   |
| 20  | N     | 669 | ILE  | CA-C-N      | 5.84  | 128.10      | 120.28   |
| 20  | N     | 669 | ILE  | C-N-CA      | 5.84  | 128.10      | 120.28   |
| 20  | N     | 484 | ALA  | CA-C-N      | 5.84  | 130.47      | 120.72   |
| 20  | N     | 484 | ALA  | C-N-CA      | 5.84  | 130.47      | 120.72   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 19  | Z     | 479 | LEU  | O-C-N      | 5.83  | 128.31      | 122.12   |
| 21  | S     | 325 | HIS  | CG-CD2-NE2 | 5.83  | 113.03      | 107.20   |
| 22  | P     | 180 | LYS  | CA-C-N     | 5.83  | 128.10      | 120.28   |
| 22  | P     | 180 | LYS  | C-N-CA     | 5.83  | 128.10      | 120.28   |
| 15  | W     | 79  | GLN  | CA-C-N     | 5.83  | 125.94      | 119.87   |
| 15  | W     | 79  | GLN  | C-N-CA     | 5.83  | 125.94      | 119.87   |
| 24  | R     | 256 | VAL  | CA-C-O     | -5.83 | 114.67      | 120.85   |
| 26  | O     | 277 | LEU  | N-CA-CB    | 5.83  | 118.70      | 110.12   |
| 30  | L     | 347 | LYS  | N-CA-C     | 5.83  | 117.64      | 111.28   |
| 32  | J     | 57  | ARG  | CA-C-N     | 5.83  | 128.10      | 120.28   |
| 32  | J     | 57  | ARG  | C-N-CA     | 5.83  | 128.10      | 120.28   |
| 32  | J     | 343 | ASN  | CA-C-N     | 5.83  | 129.18      | 120.31   |
| 32  | J     | 343 | ASN  | C-N-CA     | 5.83  | 129.18      | 120.31   |
| 26  | O     | 316 | SER  | CA-C-N     | 5.83  | 128.45      | 120.46   |
| 26  | O     | 316 | SER  | C-N-CA     | 5.83  | 128.45      | 120.46   |
| 26  | O     | 370 | GLN  | CA-C-N     | 5.83  | 132.68      | 121.54   |
| 26  | O     | 370 | GLN  | C-N-CA     | 5.83  | 132.68      | 121.54   |
| 28  | I     | 154 | HIS  | CA-CB-CG   | 5.83  | 119.63      | 113.80   |
| 30  | L     | 226 | ALA  | CA-C-N     | 5.83  | 128.57      | 120.29   |
| 30  | L     | 226 | ALA  | C-N-CA     | 5.83  | 128.57      | 120.29   |
| 17  | T     | 173 | GLN  | CA-C-N     | -5.83 | 112.47      | 120.28   |
| 17  | T     | 173 | GLN  | C-N-CA     | -5.83 | 112.47      | 120.28   |
| 22  | P     | 35  | ALA  | N-CA-C     | 5.83  | 117.63      | 111.28   |
| 12  | 5     | 83  | PRO  | O-C-N      | 5.83  | 130.51      | 122.64   |
| 17  | T     | 190 | TYR  | CA-CB-CG   | -5.83 | 103.41      | 113.90   |
| 17  | T     | 342 | VAL  | O-C-N      | 5.83  | 127.76      | 121.87   |
| 22  | P     | 364 | ARG  | NE-CZ-NH1  | -5.83 | 115.67      | 121.50   |
| 22  | P     | 397 | VAL  | CA-C-N     | 5.83  | 128.70      | 120.42   |
| 22  | P     | 397 | VAL  | C-N-CA     | 5.83  | 128.70      | 120.42   |
| 27  | H     | 169 | LYS  | CB-CA-C    | -5.83 | 101.47      | 110.62   |
| 29  | K     | 175 | GLN  | OE1-CD-NE2 | 5.83  | 128.43      | 122.60   |
| 10  | 3     | 194 | LYS  | CB-CG-CD   | 5.83  | 124.70      | 111.30   |
| 19  | Z     | 493 | ASN  | CA-CB-CG   | 5.83  | 118.43      | 112.60   |
| 20  | N     | 230 | SER  | N-CA-C     | 5.83  | 117.63      | 111.28   |
| 21  | S     | 301 | ALA  | N-CA-C     | 5.83  | 117.63      | 111.28   |
| 23  | Q     | 23  | SER  | CA-C-N     | 5.83  | 128.44      | 120.46   |
| 23  | Q     | 23  | SER  | C-N-CA     | 5.83  | 128.44      | 120.46   |
| 25  | U     | 197 | GLY  | CA-C-N     | 5.83  | 128.09      | 120.28   |
| 25  | U     | 197 | GLY  | C-N-CA     | 5.83  | 128.09      | 120.28   |
| 10  | 3     | 199 | THR  | N-CA-C     | -5.82 | 99.91       | 109.40   |
| 12  | 5     | 89  | THR  | N-CA-C     | -5.82 | 100.20      | 109.23   |
| 28  | I     | 342 | ILE  | CB-CA-C    | 5.82  | 116.47      | 110.70   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 31  | M     | 153 | LEU  | N-CA-CB    | 5.82  | 119.69      | 110.55   |
| 32  | J     | 275 | GLU  | CA-C-N     | 5.82  | 128.36      | 120.44   |
| 32  | J     | 275 | GLU  | C-N-CA     | 5.82  | 128.36      | 120.44   |
| 9   | 2     | 117 | PRO  | N-CA-C     | 5.82  | 124.46      | 112.47   |
| 12  | 5     | 141 | LEU  | CB-CA-C    | -5.82 | 101.74      | 110.88   |
| 21  | S     | 213 | VAL  | CA-CB-CG2  | 5.82  | 120.30      | 110.40   |
| 25  | U     | 58  | PHE  | N-CA-C     | -5.82 | 98.60       | 108.26   |
| 30  | L     | 247 | ASP  | CA-CB-CG   | 5.82  | 118.42      | 112.60   |
| 31  | M     | 97  | ILE  | N-CA-C     | 5.82  | 116.00      | 110.53   |
| 2   | B     | 40  | ALA  | CA-C-N     | 5.82  | 132.89      | 123.93   |
| 2   | B     | 40  | ALA  | C-N-CA     | 5.82  | 132.89      | 123.93   |
| 19  | Z     | 41  | LYS  | O-C-N      | 5.82  | 130.07      | 122.97   |
| 32  | J     | 174 | LEU  | CA-C-N     | 5.82  | 129.16      | 120.31   |
| 32  | J     | 174 | LEU  | C-N-CA     | 5.82  | 129.16      | 120.31   |
| 12  | 5     | 223 | THR  | CA-CB-OG1  | 5.82  | 118.33      | 109.60   |
| 23  | Q     | 21  | GLU  | CB-CG-CD   | -5.82 | 102.71      | 112.60   |
| 32  | J     | 34  | ILE  | CA-C-O     | -5.82 | 114.90      | 120.95   |
| 19  | Z     | 526 | ALA  | CA-C-O     | -5.82 | 114.39      | 120.55   |
| 21  | S     | 164 | GLN  | CA-C-N     | 5.82  | 128.07      | 120.28   |
| 21  | S     | 164 | GLN  | C-N-CA     | 5.82  | 128.07      | 120.28   |
| 25  | U     | 77  | ASN  | OD1-CG-ND2 | 5.82  | 128.41      | 122.60   |
| 25  | U     | 121 | LEU  | N-CA-C     | -5.82 | 98.93       | 108.41   |
| 28  | I     | 94  | GLU  | CA-C-N     | 5.82  | 128.07      | 120.28   |
| 28  | I     | 94  | GLU  | C-N-CA     | 5.82  | 128.07      | 120.28   |
| 23  | Q     | 412 | ASP  | CA-CB-CG   | 5.81  | 118.41      | 112.60   |
| 31  | M     | 67  | HIS  | CG-CD2-NE2 | 5.81  | 113.01      | 107.20   |
| 10  | 3     | 57  | ALA  | N-CA-CB    | 5.81  | 120.31      | 110.49   |
| 19  | Z     | 323 | ASN  | CA-CB-CG   | 5.81  | 118.41      | 112.60   |
| 20  | N     | 705 | LYS  | O-C-N      | 5.81  | 128.28      | 122.12   |
| 21  | S     | 194 | GLN  | OE1-CD-NE2 | 5.81  | 128.41      | 122.60   |
| 21  | S     | 235 | THR  | N-CA-C     | -5.81 | 105.02      | 111.36   |
| 27  | H     | 222 | LYS  | N-CA-C     | 5.81  | 117.70      | 111.36   |
| 28  | I     | 384 | ILE  | CA-CB-CG1  | 5.81  | 120.28      | 110.40   |
| 32  | J     | 385 | MET  | CA-C-O     | 5.81  | 126.58      | 120.42   |
| 15  | W     | 13  | SER  | N-CA-C     | 5.81  | 117.83      | 110.33   |
| 16  | V     | 173 | GLU  | CA-C-O     | -5.81 | 112.34      | 117.98   |
| 29  | K     | 276 | ASP  | CA-CB-CG   | -5.81 | 106.79      | 112.60   |
| 7   | G     | 168 | LYS  | CA-C-O     | 5.81  | 126.09      | 119.18   |
| 29  | K     | 110 | ASN  | CB-CG-ND2  | -5.81 | 107.69      | 116.40   |
| 31  | M     | 394 | PHE  | CA-CB-CG   | -5.81 | 107.99      | 113.80   |
| 32  | J     | 325 | ARG  | NH1-CZ-NH2 | 5.81  | 126.85      | 119.30   |
| 20  | N     | 449 | ILE  | N-CA-C     | 5.81  | 116.58      | 110.72   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 20  | N     | 811 | PHE  | CA-C-N      | 5.81  | 132.25      | 121.62   |
| 20  | N     | 811 | PHE  | C-N-CA      | 5.81  | 132.25      | 121.62   |
| 22  | P     | 81  | ASP  | CB-CA-C     | -5.81 | 101.15      | 110.79   |
| 24  | R     | 43  | ALA  | CA-C-O      | -5.81 | 114.40      | 120.55   |
| 26  | O     | 34  | TRP  | CA-C-N      | 5.81  | 128.34      | 120.44   |
| 26  | O     | 34  | TRP  | C-N-CA      | 5.81  | 128.34      | 120.44   |
| 2   | B     | 102 | GLN  | OE1-CD-NE2  | 5.80  | 128.40      | 122.60   |
| 9   | 2     | 118 | ARG  | NE-CZ-NH2   | -5.80 | 113.98      | 119.20   |
| 17  | T     | 337 | GLU  | N-CA-C      | -5.80 | 104.86      | 111.07   |
| 21  | S     | 247 | LEU  | O-C-N       | -5.80 | 115.97      | 122.12   |
| 27  | H     | 73  | ALA  | O-C-N       | -5.80 | 114.64      | 121.32   |
| 27  | H     | 274 | PHE  | CA-CB-CG    | -5.80 | 108.00      | 113.80   |
| 3   | C     | 28  | ILE  | CA-C-O      | -5.80 | 114.92      | 120.95   |
| 26  | O     | 219 | HIS  | CE1-NE2-CD2 | -5.80 | 103.20      | 109.00   |
| 29  | K     | 183 | LEU  | CA-C-O      | -5.80 | 113.04      | 118.73   |
| 19  | Z     | 369 | ARG  | N-CA-CB     | 5.80  | 119.86      | 110.40   |
| 21  | S     | 166 | LEU  | CA-C-N      | 5.80  | 127.98      | 120.44   |
| 21  | S     | 166 | LEU  | C-N-CA      | 5.80  | 127.98      | 120.44   |
| 23  | Q     | 352 | SER  | CA-C-N      | 5.80  | 128.33      | 120.44   |
| 23  | Q     | 352 | SER  | C-N-CA      | 5.80  | 128.33      | 120.44   |
| 24  | R     | 161 | THR  | CA-C-N      | 5.80  | 128.05      | 120.28   |
| 24  | R     | 161 | THR  | C-N-CA      | 5.80  | 128.05      | 120.28   |
| 32  | J     | 268 | GLU  | CA-C-N      | 5.80  | 128.41      | 120.46   |
| 32  | J     | 268 | GLU  | C-N-CA      | 5.80  | 128.41      | 120.46   |
| 11  | 4     | 31  | ASP  | CA-CB-CG    | -5.80 | 106.80      | 112.60   |
| 26  | O     | 255 | TRP  | CB-CG-CD2   | -5.80 | 118.68      | 126.80   |
| 27  | H     | 89  | SER  | N-CA-CB     | 5.80  | 119.17      | 110.53   |
| 21  | S     | 180 | ALA  | O-C-N       | -5.80 | 115.97      | 122.12   |
| 9   | 2     | 208 | ASN  | CA-C-O      | -5.80 | 114.28      | 120.42   |
| 13  | 6     | 180 | VAL  | N-CA-C      | 5.80  | 115.98      | 110.53   |
| 16  | V     | 113 | HIS  | CE1-NE2-CD2 | -5.80 | 103.20      | 109.00   |
| 3   | C     | 31  | ALA  | CA-C-O      | -5.79 | 114.66      | 121.44   |
| 10  | 3     | 188 | HIS  | CE1-NE2-CD2 | -5.79 | 103.21      | 109.00   |
| 16  | V     | 284 | LEU  | N-CA-C      | -5.79 | 105.05      | 111.36   |
| 23  | Q     | 394 | ASP  | N-CA-C      | -5.79 | 100.26      | 109.07   |
| 26  | O     | 199 | THR  | CA-C-N      | 5.79  | 128.04      | 120.28   |
| 26  | O     | 199 | THR  | C-N-CA      | 5.79  | 128.04      | 120.28   |
| 29  | K     | 265 | ASP  | CA-CB-CG    | -5.79 | 106.81      | 112.60   |
| 32  | J     | 73  | VAL  | CA-C-N      | 5.79  | 129.04      | 122.67   |
| 32  | J     | 73  | VAL  | C-N-CA      | 5.79  | 129.04      | 122.67   |
| 2   | B     | 52  | GLN  | N-CA-C      | -5.79 | 104.88      | 112.41   |
| 13  | 6     | 156 | SER  | CA-C-O      | -5.79 | 114.35      | 120.55   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 16  | V     | 176 | GLN  | CA-C-O      | -5.79 | 113.56      | 120.10   |
| 16  | V     | 242 | GLU  | CA-C-N      | 5.79  | 128.32      | 120.44   |
| 16  | V     | 242 | GLU  | C-N-CA      | 5.79  | 128.32      | 120.44   |
| 19  | Z     | 530 | CYS  | CA-C-N      | 5.79  | 132.60      | 121.54   |
| 19  | Z     | 530 | CYS  | C-N-CA      | 5.79  | 132.60      | 121.54   |
| 21  | S     | 491 | ARG  | NE-CZ-NH1   | 5.79  | 127.29      | 121.50   |
| 22  | P     | 34  | LEU  | CA-C-N      | 5.79  | 128.04      | 120.28   |
| 22  | P     | 34  | LEU  | C-N-CA      | 5.79  | 128.04      | 120.28   |
| 29  | K     | 166 | ASP  | N-CA-C      | -5.79 | 105.80      | 112.92   |
| 10  | 3     | 89  | SER  | N-CA-C      | 5.79  | 117.59      | 111.28   |
| 24  | R     | 341 | GLY  | CA-C-O      | 5.79  | 125.46      | 118.86   |
| 27  | H     | 232 | ARG  | CA-C-N      | 5.79  | 128.51      | 120.29   |
| 27  | H     | 232 | ARG  | C-N-CA      | 5.79  | 128.51      | 120.29   |
| 30  | L     | 304 | LEU  | CA-C-N      | 5.79  | 129.11      | 120.83   |
| 30  | L     | 304 | LEU  | C-N-CA      | 5.79  | 129.11      | 120.83   |
| 8   | 1     | 137 | ASP  | CA-C-O      | -5.79 | 114.46      | 121.00   |
| 2   | B     | 189 | HIS  | ND1-CE1-NE2 | 5.79  | 114.19      | 108.40   |
| 10  | 3     | 184 | GLY  | CA-C-N      | 5.79  | 132.38      | 121.97   |
| 10  | 3     | 184 | GLY  | C-N-CA      | 5.79  | 132.38      | 121.97   |
| 20  | N     | 381 | THR  | N-CA-C      | -5.79 | 106.26      | 113.38   |
| 20  | N     | 690 | ALA  | N-CA-C      | -5.79 | 105.06      | 111.36   |
| 21  | S     | 220 | LEU  | N-CA-C      | -5.79 | 106.39      | 113.50   |
| 22  | P     | 151 | THR  | CA-C-N      | 5.79  | 128.39      | 120.46   |
| 22  | P     | 151 | THR  | C-N-CA      | 5.79  | 128.39      | 120.46   |
| 22  | P     | 270 | VAL  | CA-C-N      | 5.78  | 128.38      | 120.46   |
| 22  | P     | 270 | VAL  | C-N-CA      | 5.78  | 128.38      | 120.46   |
| 22  | P     | 272 | LEU  | N-CA-C      | 5.78  | 117.58      | 111.28   |
| 25  | U     | 26  | ILE  | N-CA-CB     | 5.78  | 117.97      | 110.57   |
| 29  | K     | 297 | ASP  | CA-C-N      | 5.78  | 126.36      | 120.00   |
| 29  | K     | 297 | ASP  | C-N-CA      | 5.78  | 126.36      | 120.00   |
| 6   | F     | 47  | VAL  | N-CA-C      | -5.78 | 100.08      | 108.17   |
| 19  | Z     | 182 | GLU  | O-C-N       | -5.78 | 115.81      | 120.38   |
| 23  | Q     | 72  | TYR  | N-CA-C      | 5.78  | 117.66      | 111.36   |
| 20  | N     | 901 | GLN  | CA-C-N      | 5.78  | 126.87      | 120.45   |
| 20  | N     | 901 | GLN  | C-N-CA      | 5.78  | 126.87      | 120.45   |
| 30  | L     | 359 | ASN  | O-C-N       | -5.78 | 115.16      | 122.27   |
| 7   | G     | 11  | SER  | N-CA-C      | -5.78 | 100.28      | 109.07   |
| 27  | H     | 227 | ARG  | CA-C-N      | 5.78  | 128.50      | 120.29   |
| 27  | H     | 227 | ARG  | C-N-CA      | 5.78  | 128.50      | 120.29   |
| 9   | 2     | 102 | ILE  | CA-C-N      | 5.78  | 128.02      | 120.28   |
| 9   | 2     | 102 | ILE  | C-N-CA      | 5.78  | 128.02      | 120.28   |
| 24  | R     | 180 | LEU  | CA-C-N      | 5.78  | 128.02      | 120.28   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 24  | R     | 180 | LEU  | C-N-CA     | 5.78  | 128.02      | 120.28   |
| 28  | I     | 322 | ARG  | N-CA-CB    | 5.78  | 120.69      | 111.56   |
| 30  | L     | 319 | ASN  | N-CA-C     | -5.78 | 101.63      | 109.95   |
| 7   | G     | 171 | GLN  | N-CA-C     | 5.78  | 117.66      | 111.36   |
| 22  | P     | 414 | ASN  | CB-CG-OD1  | -5.78 | 109.25      | 120.80   |
| 11  | 4     | 76  | SER  | CA-C-N     | 5.77  | 126.24      | 120.52   |
| 11  | 4     | 76  | SER  | C-N-CA     | 5.77  | 126.24      | 120.52   |
| 32  | J     | 135 | VAL  | N-CA-CB    | 5.77  | 119.24      | 110.58   |
| 6   | F     | 211 | SER  | N-CA-C     | -5.77 | 99.60       | 109.24   |
| 17  | T     | 135 | THR  | CA-C-O     | -5.77 | 114.09      | 120.38   |
| 23  | Q     | 33  | ARG  | NH1-CZ-NH2 | 5.77  | 126.80      | 119.30   |
| 28  | I     | 327 | VAL  | N-CA-C     | -5.77 | 100.17      | 108.48   |
| 29  | K     | 318 | ASP  | O-C-N      | -5.77 | 116.06      | 121.72   |
| 5   | E     | 155 | HIS  | CB-CG-CD2  | -5.77 | 123.70      | 131.20   |
| 7   | G     | 25  | GLU  | CA-C-N     | 5.77  | 128.48      | 120.29   |
| 7   | G     | 25  | GLU  | C-N-CA     | 5.77  | 128.48      | 120.29   |
| 20  | N     | 87  | LEU  | CA-C-O     | -5.77 | 114.84      | 121.19   |
| 20  | N     | 828 | VAL  | O-C-N      | 5.77  | 127.47      | 121.87   |
| 22  | P     | 395 | ASN  | CB-CA-C    | -5.77 | 101.04      | 110.85   |
| 26  | O     | 17  | GLY  | N-CA-C     | -5.77 | 106.99      | 115.30   |
| 32  | J     | 331 | ILE  | CB-CA-C    | -5.77 | 104.35      | 112.14   |
| 19  | Z     | 649 | HIS  | CG-CD2-NE2 | 5.77  | 112.97      | 107.20   |
| 19  | Z     | 688 | ARG  | NE-CZ-NH2  | 5.77  | 124.39      | 119.20   |
| 28  | I     | 206 | THR  | CA-C-O     | -5.77 | 114.77      | 120.82   |
| 8   | 1     | 141 | GLY  | CA-C-N     | 5.77  | 132.71      | 121.41   |
| 8   | 1     | 141 | GLY  | C-N-CA     | 5.77  | 132.71      | 121.41   |
| 11  | 4     | 18  | ASP  | CA-CB-CG   | 5.77  | 118.37      | 112.60   |
| 20  | N     | 249 | CYS  | N-CA-CB    | 5.77  | 118.69      | 110.16   |
| 25  | U     | 218 | GLY  | CA-C-N     | 5.77  | 132.55      | 121.54   |
| 25  | U     | 218 | GLY  | C-N-CA     | 5.77  | 132.55      | 121.54   |
| 30  | L     | 169 | ASN  | CA-C-N     | 5.77  | 126.27      | 120.04   |
| 30  | L     | 169 | ASN  | C-N-CA     | 5.77  | 126.27      | 120.04   |
| 5   | E     | 210 | LEU  | N-CA-CB    | -5.76 | 101.01      | 109.95   |
| 17  | T     | 147 | ALA  | CA-C-N     | 5.76  | 128.58      | 120.28   |
| 17  | T     | 147 | ALA  | C-N-CA     | 5.76  | 128.58      | 120.28   |
| 17  | T     | 188 | SER  | N-CA-CB    | 5.76  | 120.23      | 110.49   |
| 23  | Q     | 316 | ASP  | CA-CB-CG   | 5.76  | 118.36      | 112.60   |
| 16  | V     | 257 | LYS  | CB-CA-C    | -5.76 | 101.05      | 110.85   |
| 15  | W     | 173 | VAL  | CA-C-N     | 5.76  | 123.81      | 119.66   |
| 15  | W     | 173 | VAL  | C-N-CA     | 5.76  | 123.81      | 119.66   |
| 15  | W     | 185 | SER  | CB-CA-C    | -5.76 | 99.97       | 110.63   |
| 21  | S     | 102 | ARG  | NE-CZ-NH2  | -5.76 | 114.01      | 119.20   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 21  | S     | 396 | HIS  | CG-CD2-NE2 | 5.76  | 112.96      | 107.20   |
| 23  | Q     | 14  | SER  | CA-C-N     | 5.76  | 128.28      | 120.44   |
| 23  | Q     | 14  | SER  | C-N-CA     | 5.76  | 128.28      | 120.44   |
| 23  | Q     | 22  | ALA  | CA-C-N     | 5.76  | 129.07      | 120.31   |
| 23  | Q     | 22  | ALA  | C-N-CA     | 5.76  | 129.07      | 120.31   |
| 29  | K     | 275 | PHE  | N-CA-C     | -5.76 | 97.76       | 108.02   |
| 17  | T     | 265 | ILE  | CA-C-O     | -5.76 | 114.96      | 120.95   |
| 19  | Z     | 770 | HIS  | CA-C-O     | 5.76  | 126.21      | 118.38   |
| 20  | N     | 101 | ILE  | CB-CA-C    | -5.76 | 104.60      | 111.97   |
| 22  | P     | 84  | ASN  | CB-CA-C    | -5.76 | 101.23      | 110.79   |
| 25  | U     | 256 | GLN  | CA-C-N     | 5.76  | 128.47      | 120.29   |
| 25  | U     | 256 | GLN  | C-N-CA     | 5.76  | 128.47      | 120.29   |
| 28  | I     | 59  | ARG  | CA-C-N     | 5.76  | 128.00      | 120.28   |
| 28  | I     | 59  | ARG  | C-N-CA     | 5.76  | 128.00      | 120.28   |
| 29  | K     | 110 | ASN  | N-CA-C     | -5.76 | 100.31      | 109.76   |
| 32  | J     | 73  | VAL  | N-CA-C     | -5.76 | 99.34       | 107.75   |
| 29  | K     | 344 | ILE  | CB-CA-C    | 5.76  | 119.91      | 112.14   |
| 31  | M     | 194 | LEU  | O-C-N      | 5.76  | 129.94      | 122.40   |
| 20  | N     | 784 | THR  | O-C-N      | -5.76 | 115.90      | 121.94   |
| 23  | Q     | 284 | THR  | CA-C-O     | 5.76  | 126.52      | 120.42   |
| 25  | U     | 231 | GLN  | N-CA-CB    | 5.76  | 119.08      | 110.22   |
| 20  | N     | 943 | GLU  | CA-C-N     | 5.75  | 126.31      | 120.38   |
| 20  | N     | 943 | GLU  | C-N-CA     | 5.75  | 126.31      | 120.38   |
| 8   | 1     | 101 | ILE  | N-CA-CB    | 5.75  | 117.93      | 110.57   |
| 22  | P     | 417 | ARG  | NE-CZ-NH2  | -5.75 | 114.02      | 119.20   |
| 23  | Q     | 86  | ALA  | CA-C-N     | 5.75  | 127.99      | 120.28   |
| 23  | Q     | 86  | ALA  | C-N-CA     | 5.75  | 127.99      | 120.28   |
| 17  | T     | 141 | LYS  | N-CA-C     | 5.75  | 118.29      | 111.33   |
| 20  | N     | 708 | GLN  | OE1-CD-NE2 | -5.75 | 116.85      | 122.60   |
| 20  | N     | 717 | ILE  | CB-CA-C    | -5.75 | 104.38      | 112.14   |
| 22  | P     | 426 | ASN  | CA-CB-CG   | -5.75 | 106.85      | 112.60   |
| 23  | Q     | 76  | PHE  | CA-C-N     | 5.75  | 127.99      | 120.28   |
| 23  | Q     | 76  | PHE  | C-N-CA     | 5.75  | 127.99      | 120.28   |
| 32  | J     | 356 | GLY  | CA-C-N     | 5.75  | 127.99      | 120.28   |
| 32  | J     | 356 | GLY  | C-N-CA     | 5.75  | 127.99      | 120.28   |
| 15  | W     | 159 | THR  | O-C-N      | 5.75  | 129.34      | 122.27   |
| 3   | C     | 156 | TYR  | CA-CB-CG   | 5.75  | 124.25      | 113.90   |
| 5   | E     | 119 | LEU  | O-C-N      | -5.75 | 115.20      | 122.27   |
| 5   | E     | 130 | PRO  | O-C-N      | 5.75  | 129.64      | 122.22   |
| 6   | F     | 152 | ASN  | CA-CB-CG   | 5.75  | 118.35      | 112.60   |
| 7   | G     | 10  | LEU  | N-CA-CB    | -5.75 | 102.17      | 110.56   |
| 12  | 5     | 236 | TYR  | CB-CA-C    | -5.75 | 100.88      | 110.19   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 14  | 7     | 176 | TYR  | N-CA-C      | -5.75 | 99.16       | 108.41   |
| 23  | Q     | 193 | ALA  | N-CA-C      | 5.75  | 117.22      | 111.07   |
| 29  | K     | 264 | ILE  | CA-C-O      | -5.75 | 113.94      | 120.66   |
| 32  | J     | 279 | GLN  | OE1-CD-NE2  | 5.75  | 128.35      | 122.60   |
| 32  | J     | 390 | VAL  | CA-C-O      | 5.75  | 126.94      | 120.85   |
| 12  | 5     | 146 | VAL  | CB-CA-C     | 5.75  | 120.15      | 112.22   |
| 23  | Q     | 91  | SER  | CA-C-N      | 5.75  | 127.98      | 120.28   |
| 23  | Q     | 91  | SER  | C-N-CA      | 5.75  | 127.98      | 120.28   |
| 30  | L     | 252 | ILE  | N-CA-C      | -5.75 | 106.15      | 113.22   |
| 32  | J     | 397 | LYS  | N-CA-C      | 5.75  | 117.54      | 111.28   |
| 17  | T     | 156 | GLN  | OE1-CD-NE2  | 5.75  | 128.34      | 122.60   |
| 13  | 6     | 161 | SER  | O-C-N       | -5.74 | 116.47      | 123.19   |
| 24  | R     | 367 | GLN  | O-C-N       | 5.74  | 128.21      | 122.12   |
| 30  | L     | 382 | MET  | CA-C-N      | 5.74  | 127.98      | 120.28   |
| 30  | L     | 382 | MET  | C-N-CA      | 5.74  | 127.98      | 120.28   |
| 13  | 6     | 179 | GLN  | O-C-N       | -5.74 | 116.03      | 122.12   |
| 4   | D     | 20  | GLU  | N-CA-CB     | 5.74  | 118.66      | 110.16   |
| 19  | Z     | 158 | TYR  | N-CA-CB     | 5.74  | 118.66      | 110.16   |
| 19  | Z     | 313 | GLU  | CB-CG-CD    | -5.74 | 102.84      | 112.60   |
| 20  | N     | 198 | LEU  | CA-C-N      | 5.74  | 128.44      | 120.29   |
| 20  | N     | 198 | LEU  | C-N-CA      | 5.74  | 128.44      | 120.29   |
| 20  | N     | 271 | VAL  | N-CA-CB     | 5.74  | 118.35      | 110.54   |
| 20  | N     | 545 | LEU  | O-C-N       | -5.74 | 116.04      | 122.12   |
| 25  | U     | 213 | GLU  | CB-CA-C     | -5.74 | 101.09      | 110.85   |
| 8   | 1     | 99  | HIS  | CE1-NE2-CD2 | -5.74 | 103.26      | 109.00   |
| 10  | 3     | 167 | ILE  | N-CA-CB     | 5.74  | 120.46      | 110.65   |
| 20  | N     | 568 | GLU  | N-CA-C      | 5.74  | 117.61      | 111.36   |
| 22  | P     | 220 | GLU  | N-CA-C      | 5.74  | 118.27      | 111.33   |
| 25  | U     | 237 | LEU  | N-CA-C      | 5.74  | 122.49      | 109.81   |
| 30  | L     | 92  | ARG  | NE-CZ-NH2   | 5.74  | 124.36      | 119.20   |
| 30  | L     | 227 | ARG  | O-C-N       | 5.74  | 128.69      | 122.15   |
| 30  | L     | 345 | ILE  | CA-C-N      | 5.74  | 128.57      | 120.42   |
| 30  | L     | 345 | ILE  | C-N-CA      | 5.74  | 128.57      | 120.42   |
| 31  | M     | 194 | LEU  | CA-C-O      | -5.74 | 114.88      | 121.54   |
| 19  | Z     | 102 | HIS  | O-C-N       | -5.74 | 115.22      | 122.27   |
| 28  | I     | 145 | GLU  | CA-C-N      | 5.74  | 126.22      | 120.14   |
| 28  | I     | 145 | GLU  | C-N-CA      | 5.74  | 126.22      | 120.14   |
| 28  | I     | 418 | ASP  | CA-C-O      | -5.74 | 114.47      | 120.55   |
| 29  | K     | 333 | PHE  | CB-CA-C     | -5.74 | 98.87       | 110.17   |
| 30  | L     | 17  | ASP  | CA-C-N      | 5.74  | 125.59      | 119.28   |
| 30  | L     | 17  | ASP  | C-N-CA      | 5.74  | 125.59      | 119.28   |
| 31  | M     | 78  | GLU  | CA-C-O      | -5.74 | 114.47      | 120.55   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 31  | M     | 351 | LEU  | CA-C-O    | 5.74  | 126.52      | 120.33   |
| 28  | I     | 170 | LEU  | CA-C-N    | 5.73  | 129.70      | 120.30   |
| 28  | I     | 170 | LEU  | C-N-CA    | 5.73  | 129.70      | 120.30   |
| 14  | 7     | 150 | LEU  | N-CA-C    | -5.73 | 101.14      | 110.20   |
| 17  | T     | 161 | CYS  | N-CA-CB   | 5.73  | 119.91      | 110.39   |
| 20  | N     | 746 | ILE  | O-C-N     | -5.73 | 116.67      | 123.03   |
| 27  | H     | 129 | VAL  | CA-C-N    | 5.73  | 128.82      | 120.51   |
| 27  | H     | 129 | VAL  | C-N-CA    | 5.73  | 128.82      | 120.51   |
| 8   | 1     | 136 | TRP  | CA-CB-CG  | 5.73  | 124.49      | 113.60   |
| 20  | N     | 816 | PRO  | CA-C-N    | 5.73  | 129.24      | 120.82   |
| 20  | N     | 816 | PRO  | C-N-CA    | 5.73  | 129.24      | 120.82   |
| 21  | S     | 174 | SER  | CA-C-N    | 5.73  | 130.30      | 122.34   |
| 21  | S     | 174 | SER  | C-N-CA    | 5.73  | 130.30      | 122.34   |
| 22  | P     | 218 | ASN  | CA-C-O    | 5.73  | 126.62      | 120.55   |
| 26  | O     | 311 | VAL  | CA-C-N    | 5.73  | 127.96      | 120.28   |
| 26  | O     | 311 | VAL  | C-N-CA    | 5.73  | 127.96      | 120.28   |
| 3   | C     | 222 | LYS  | CA-C-O    | -5.73 | 114.41      | 121.11   |
| 14  | 7     | 204 | LEU  | N-CA-C    | -5.73 | 106.19      | 112.72   |
| 19  | Z     | 61  | GLU  | CA-C-N    | 5.73  | 129.02      | 120.31   |
| 19  | Z     | 61  | GLU  | C-N-CA    | 5.73  | 129.02      | 120.31   |
| 13  | 6     | 65  | ARG  | NE-CZ-NH2 | 5.73  | 124.35      | 119.20   |
| 13  | 6     | 162 | PHE  | CA-CB-CG  | 5.72  | 119.52      | 113.80   |
| 16  | V     | 77  | GLN  | N-CA-CB   | 5.72  | 119.15      | 110.45   |
| 16  | V     | 230 | THR  | CB-CA-C   | 5.72  | 118.92      | 109.70   |
| 27  | H     | 102 | ILE  | N-CA-C    | -5.72 | 99.98       | 108.45   |
| 28  | I     | 195 | GLN  | CA-C-N    | 5.72  | 127.95      | 120.28   |
| 28  | I     | 195 | GLN  | C-N-CA    | 5.72  | 127.95      | 120.28   |
| 28  | I     | 347 | ILE  | CB-CA-C   | -5.72 | 101.90      | 111.29   |
| 4   | D     | 190 | ASP  | CA-C-N    | 5.72  | 128.42      | 120.29   |
| 4   | D     | 190 | ASP  | C-N-CA    | 5.72  | 128.42      | 120.29   |
| 19  | Z     | 489 | TYR  | CB-CG-CD1 | 5.72  | 129.38      | 120.80   |
| 19  | Z     | 763 | ARG  | N-CA-C    | -5.72 | 100.04      | 108.79   |
| 20  | N     | 411 | ILE  | O-C-N     | -5.72 | 116.32      | 121.87   |
| 2   | B     | 50  | LYS  | N-CA-CB   | 5.72  | 118.72      | 110.20   |
| 10  | 3     | 98  | LYS  | CA-C-N    | 5.72  | 128.22      | 120.38   |
| 10  | 3     | 98  | LYS  | C-N-CA    | 5.72  | 128.22      | 120.38   |
| 9   | 2     | 236 | ASN  | CA-CB-CG  | 5.72  | 118.32      | 112.60   |
| 10  | 3     | 199 | THR  | N-CA-CB   | 5.72  | 120.78      | 110.83   |
| 17  | T     | 239 | LEU  | CA-C-N    | 5.72  | 128.41      | 120.29   |
| 17  | T     | 239 | LEU  | C-N-CA    | 5.72  | 128.41      | 120.29   |
| 20  | N     | 9   | ILE  | CB-CA-C   | -5.72 | 104.42      | 112.14   |
| 2   | B     | 78  | GLY  | N-CA-C    | -5.72 | 105.26      | 111.21   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 23  | Q     | 43  | VAL  | N-CA-C     | 5.72  | 115.85      | 110.30   |
| 32  | J     | 105 | ILE  | CB-CA-C    | 5.72  | 116.80      | 110.62   |
| 10  | 3     | 147 | TYR  | CB-CA-C    | -5.72 | 101.13      | 110.85   |
| 12  | 5     | 194 | ALA  | O-C-N      | -5.72 | 116.06      | 122.12   |
| 14  | 7     | 138 | ARG  | CA-C-N     | 5.72  | 127.94      | 120.28   |
| 14  | 7     | 138 | ARG  | C-N-CA     | 5.72  | 127.94      | 120.28   |
| 19  | Z     | 482 | ILE  | O-C-N      | -5.72 | 116.10      | 121.87   |
| 20  | N     | 389 | ASN  | N-CA-CB    | -5.72 | 102.33      | 110.79   |
| 22  | P     | 158 | ASP  | CA-CB-CG   | -5.72 | 106.88      | 112.60   |
| 22  | P     | 317 | TRP  | CA-CB-CG   | 5.72  | 124.46      | 113.60   |
| 24  | R     | 258 | GLN  | CA-C-N     | 5.72  | 127.87      | 120.44   |
| 24  | R     | 258 | GLN  | C-N-CA     | 5.72  | 127.87      | 120.44   |
| 24  | R     | 343 | LEU  | CA-C-O     | -5.72 | 115.05      | 121.40   |
| 5   | E     | 238 | ILE  | N-CA-C     | 5.71  | 118.23      | 111.09   |
| 14  | 7     | 89  | VAL  | N-CA-C     | -5.71 | 99.52       | 108.95   |
| 21  | S     | 451 | LYS  | N-CA-C     | -5.71 | 107.55      | 114.75   |
| 29  | K     | 99  | ASN  | OD1-CG-ND2 | 5.71  | 128.31      | 122.60   |
| 29  | K     | 192 | LYS  | CA-C-N     | 5.71  | 127.94      | 120.28   |
| 29  | K     | 192 | LYS  | C-N-CA     | 5.71  | 127.94      | 120.28   |
| 3   | C     | 197 | LEU  | CA-C-N     | 5.71  | 127.87      | 120.44   |
| 3   | C     | 197 | LEU  | C-N-CA     | 5.71  | 127.87      | 120.44   |
| 3   | C     | 212 | GLU  | CB-CG-CD   | -5.71 | 102.89      | 112.60   |
| 24  | R     | 230 | ALA  | N-CA-C     | 5.71  | 117.31      | 111.14   |
| 3   | C     | 166 | ASN  | CA-CB-CG   | 5.71  | 118.31      | 112.60   |
| 14  | 7     | 129 | PRO  | N-CD-CG    | 5.71  | 111.77      | 103.20   |
| 16  | V     | 181 | LEU  | O-C-N      | -5.71 | 116.15      | 122.09   |
| 19  | Z     | 186 | THR  | N-CA-CB    | 5.71  | 118.25      | 109.91   |
| 19  | Z     | 410 | ALA  | N-CA-C     | 5.71  | 117.18      | 111.07   |
| 19  | Z     | 798 | THR  | N-CA-C     | 5.71  | 118.28      | 111.71   |
| 24  | R     | 290 | PRO  | N-CA-C     | -5.71 | 100.70      | 112.47   |
| 25  | U     | 228 | TYR  | CA-CB-CG   | 5.71  | 124.18      | 113.90   |
| 30  | L     | 141 | PRO  | N-CA-CB    | 5.71  | 110.36      | 103.45   |
| 14  | 7     | 143 | ARG  | CA-C-O     | -5.71 | 114.37      | 120.42   |
| 19  | Z     | 755 | ASP  | CA-CB-CG   | -5.71 | 106.89      | 112.60   |
| 4   | D     | 117 | ILE  | O-C-N      | -5.71 | 116.33      | 121.87   |
| 20  | N     | 68  | PHE  | N-CA-C     | 5.71  | 117.50      | 111.28   |
| 22  | P     | 119 | PRO  | CA-C-N     | 5.71  | 128.53      | 120.42   |
| 22  | P     | 119 | PRO  | C-N-CA     | 5.71  | 128.53      | 120.42   |
| 27  | H     | 67  | GLU  | CA-C-O     | -5.71 | 113.73      | 120.81   |
| 27  | H     | 79  | ASP  | N-CA-CB    | 5.71  | 118.51      | 110.12   |
| 12  | 5     | 228 | TYR  | N-CA-C     | -5.71 | 99.11       | 108.41   |
| 17  | T     | 325 | GLN  | OE1-CD-NE2 | 5.71  | 128.31      | 122.60   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 26  | O     | 367 | VAL  | O-C-N       | 5.71  | 127.71      | 121.83   |
| 28  | I     | 328 | ILE  | N-CA-C      | -5.71 | 100.12      | 108.11   |
| 21  | S     | 295 | GLN  | OE1-CD-NE2  | -5.71 | 116.89      | 122.60   |
| 30  | L     | 316 | ASP  | O-C-N       | 5.71  | 129.66      | 123.10   |
| 31  | M     | 72  | MET  | CA-C-N      | 5.71  | 127.92      | 120.28   |
| 31  | M     | 72  | MET  | C-N-CA      | 5.71  | 127.92      | 120.28   |
| 2   | B     | 166 | ASN  | CA-CB-CG    | -5.70 | 106.90      | 112.60   |
| 3   | C     | 18  | LEU  | CA-C-N      | 5.70  | 128.39      | 120.29   |
| 3   | C     | 18  | LEU  | C-N-CA      | 5.70  | 128.39      | 120.29   |
| 8   | 1     | 42  | ASP  | N-CA-C      | -5.70 | 98.65       | 110.80   |
| 22  | P     | 37  | GLU  | N-CA-CB     | 5.70  | 118.60      | 110.16   |
| 26  | O     | 357 | CYS  | CB-CA-C     | -5.70 | 101.93      | 110.88   |
| 30  | L     | 52  | LYS  | CA-C-N      | 5.70  | 128.49      | 120.28   |
| 30  | L     | 52  | LYS  | C-N-CA      | 5.70  | 128.49      | 120.28   |
| 2   | B     | 38  | ILE  | N-CA-CB     | 5.70  | 119.85      | 111.52   |
| 21  | S     | 371 | PHE  | CA-CB-CG    | -5.70 | 108.10      | 113.80   |
| 5   | E     | 80  | GLY  | O-C-N       | -5.70 | 117.60      | 123.19   |
| 9   | 2     | 244 | ARG  | NE-CZ-NH2   | 5.70  | 124.33      | 119.20   |
| 11  | 4     | 154 | GLU  | CA-C-O      | -5.70 | 115.28      | 121.44   |
| 16  | V     | 290 | VAL  | CA-C-N      | 5.70  | 127.92      | 120.28   |
| 16  | V     | 290 | VAL  | C-N-CA      | 5.70  | 127.92      | 120.28   |
| 29  | K     | 301 | GLN  | CA-C-O      | 5.70  | 128.32      | 121.65   |
| 30  | L     | 94  | VAL  | N-CA-CB     | 5.70  | 119.00      | 111.25   |
| 2   | B     | 229 | TYR  | CA-C-N      | 5.70  | 127.92      | 120.28   |
| 2   | B     | 229 | TYR  | C-N-CA      | 5.70  | 127.92      | 120.28   |
| 4   | D     | 171 | ALA  | N-CA-C      | 5.70  | 117.49      | 111.28   |
| 5   | E     | 200 | ILE  | O-C-N       | -5.70 | 116.34      | 121.87   |
| 11  | 4     | 119 | ASP  | CB-CA-C     | -5.70 | 99.91       | 109.48   |
| 14  | 7     | 223 | ARG  | O-C-N       | 5.70  | 128.65      | 122.15   |
| 23  | Q     | 262 | ASN  | OD1-CG-ND2  | 5.70  | 128.30      | 122.60   |
| 25  | U     | 145 | HIS  | ND1-CE1-NE2 | 5.70  | 114.10      | 108.40   |
| 26  | O     | 40  | GLN  | CA-C-N      | 5.70  | 128.27      | 120.46   |
| 26  | O     | 40  | GLN  | C-N-CA      | 5.70  | 128.27      | 120.46   |
| 10  | 3     | 111 | GLY  | O-C-N       | -5.70 | 118.12      | 123.48   |
| 16  | V     | 118 | PHE  | N-CA-CB     | 5.70  | 120.85      | 111.62   |
| 20  | N     | 205 | TYR  | CB-CA-C     | -5.70 | 101.33      | 110.79   |
| 25  | U     | 234 | PHE  | CA-CB-CG    | -5.70 | 108.10      | 113.80   |
| 28  | I     | 230 | THR  | N-CA-C      | -5.70 | 106.18      | 113.02   |
| 23  | Q     | 391 | PRO  | CA-C-N      | 5.70  | 125.98      | 119.83   |
| 23  | Q     | 391 | PRO  | C-N-CA      | 5.70  | 125.98      | 119.83   |
| 23  | Q     | 406 | ASN  | CA-C-O      | 5.70  | 126.46      | 120.42   |
| 26  | O     | 214 | GLY  | CA-C-O      | 5.70  | 126.62      | 120.75   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 32  | J     | 85  | VAL  | CA-CB-CG2 | 5.70  | 120.08      | 110.40   |
| 10  | 3     | 93  | ASN  | N-CA-CB   | 5.69  | 119.11      | 110.28   |
| 11  | 4     | 183 | ILE  | CA-CB-CG1 | 5.69  | 120.08      | 110.40   |
| 19  | Z     | 5   | GLY  | N-CA-C    | 5.69  | 123.50      | 115.30   |
| 23  | Q     | 230 | SER  | CA-C-N    | 5.69  | 127.91      | 120.28   |
| 23  | Q     | 230 | SER  | C-N-CA    | 5.69  | 127.91      | 120.28   |
| 26  | O     | 249 | GLN  | N-CA-CB   | 5.69  | 119.11      | 110.28   |
| 31  | M     | 236 | LYS  | CB-CA-C   | -5.69 | 101.94      | 110.88   |
| 20  | N     | 21  | GLU  | CB-CA-C   | -5.69 | 101.17      | 110.85   |
| 20  | N     | 408 | LEU  | CA-C-N    | 5.69  | 126.30      | 119.98   |
| 20  | N     | 408 | LEU  | C-N-CA    | 5.69  | 126.30      | 119.98   |
| 3   | C     | 19  | TYR  | N-CA-C    | -5.69 | 105.16      | 111.36   |
| 6   | F     | 192 | LEU  | CA-C-N    | 5.69  | 128.37      | 120.29   |
| 6   | F     | 192 | LEU  | C-N-CA    | 5.69  | 128.37      | 120.29   |
| 24  | R     | 301 | ILE  | CA-C-N    | 5.69  | 127.91      | 120.28   |
| 24  | R     | 301 | ILE  | C-N-CA    | 5.69  | 127.91      | 120.28   |
| 25  | U     | 82  | PHE  | CA-C-N    | 5.69  | 128.96      | 120.31   |
| 25  | U     | 82  | PHE  | C-N-CA    | 5.69  | 128.96      | 120.31   |
| 5   | E     | 126 | GLU  | CA-C-N    | 5.69  | 132.40      | 121.54   |
| 5   | E     | 126 | GLU  | C-N-CA    | 5.69  | 132.40      | 121.54   |
| 16  | V     | 148 | ILE  | CA-C-N    | 5.69  | 130.22      | 120.72   |
| 16  | V     | 148 | ILE  | C-N-CA    | 5.69  | 130.22      | 120.72   |
| 27  | H     | 294 | GLU  | CA-C-N    | 5.69  | 127.73      | 120.56   |
| 27  | H     | 294 | GLU  | C-N-CA    | 5.69  | 127.73      | 120.56   |
| 29  | K     | 244 | PRO  | CA-C-N    | 5.69  | 127.90      | 120.28   |
| 29  | K     | 244 | PRO  | C-N-CA    | 5.69  | 127.90      | 120.28   |
| 19  | Z     | 227 | SER  | N-CA-CB   | 5.69  | 118.48      | 110.12   |
| 22  | P     | 57  | ALA  | CA-C-N    | 5.69  | 128.95      | 120.31   |
| 22  | P     | 57  | ALA  | C-N-CA    | 5.69  | 128.95      | 120.31   |
| 23  | Q     | 235 | ALA  | N-CA-CB   | 5.69  | 118.48      | 110.12   |
| 6   | F     | 19  | ILE  | CA-C-N    | 5.68  | 128.36      | 120.29   |
| 6   | F     | 19  | ILE  | C-N-CA    | 5.68  | 128.36      | 120.29   |
| 9   | 2     | 79  | PHE  | CA-CB-CG  | -5.68 | 108.12      | 113.80   |
| 15  | W     | 96  | ALA  | CA-C-N    | 5.68  | 127.90      | 120.28   |
| 15  | W     | 96  | ALA  | C-N-CA    | 5.68  | 127.90      | 120.28   |
| 19  | Z     | 748 | LEU  | N-CA-C    | -5.68 | 105.08      | 111.28   |
| 20  | N     | 372 | ALA  | CA-C-N    | 5.68  | 128.95      | 120.31   |
| 20  | N     | 372 | ALA  | C-N-CA    | 5.68  | 128.95      | 120.31   |
| 20  | N     | 948 | PHE  | N-CA-C    | -5.68 | 105.55      | 112.88   |
| 22  | P     | 363 | ILE  | O-C-N     | 5.68  | 127.39      | 121.87   |
| 24  | R     | 25  | LEU  | CA-C-O    | -5.68 | 114.52      | 120.55   |
| 26  | O     | 70  | ARG  | CA-C-O    | 5.68  | 126.56      | 120.70   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 9   | 2     | 177 | ALA  | CA-C-N    | 5.68  | 128.36      | 120.29   |
| 9   | 2     | 177 | ALA  | C-N-CA    | 5.68  | 128.36      | 120.29   |
| 19  | Z     | 186 | THR  | CA-C-O    | -5.68 | 115.03      | 121.00   |
| 19  | Z     | 687 | ARG  | CA-C-O    | -5.68 | 111.33      | 118.43   |
| 22  | P     | 217 | GLU  | CB-CA-C   | -5.68 | 101.36      | 110.79   |
| 28  | I     | 421 | LYS  | CB-CA-C   | -5.68 | 101.92      | 110.90   |
| 19  | Z     | 18  | ALA  | CB-CA-C   | -5.68 | 101.19      | 110.85   |
| 19  | Z     | 255 | VAL  | CB-CA-C   | -5.68 | 104.47      | 112.14   |
| 27  | H     | 390 | THR  | CA-C-N    | 5.68  | 128.94      | 120.31   |
| 27  | H     | 390 | THR  | C-N-CA    | 5.68  | 128.94      | 120.31   |
| 9   | 2     | 51  | TYR  | CB-CG-CD2 | -5.68 | 112.28      | 120.80   |
| 19  | Z     | 6   | ARG  | N-CA-C    | -5.68 | 105.09      | 113.61   |
| 29  | K     | 96  | VAL  | N-CA-C    | 5.68  | 118.19      | 111.09   |
| 11  | 4     | 145 | ARG  | NE-CZ-NH1 | 5.68  | 127.18      | 121.50   |
| 24  | R     | 363 | ASN  | CA-C-N    | 5.68  | 127.89      | 120.28   |
| 24  | R     | 363 | ASN  | C-N-CA    | 5.68  | 127.89      | 120.28   |
| 26  | O     | 114 | CYS  | CA-C-O    | -5.68 | 114.40      | 120.42   |
| 32  | J     | 69  | GLN  | O-C-N     | -5.68 | 114.31      | 121.97   |
| 2   | B     | 56  | LEU  | N-CA-C    | -5.68 | 98.09       | 108.02   |
| 29  | K     | 353 | ASN  | CA-C-N    | 5.68  | 129.62      | 121.50   |
| 29  | K     | 353 | ASN  | C-N-CA    | 5.68  | 129.62      | 121.50   |
| 29  | K     | 361 | GLU  | O-C-N     | 5.68  | 128.14      | 122.12   |
| 1   | A     | 204 | THR  | CA-C-N    | 5.67  | 127.71      | 120.56   |
| 1   | A     | 204 | THR  | C-N-CA    | 5.67  | 127.71      | 120.56   |
| 22  | P     | 408 | ARG  | CA-C-N    | 5.67  | 128.16      | 120.44   |
| 22  | P     | 408 | ARG  | C-N-CA    | 5.67  | 128.16      | 120.44   |
| 24  | R     | 245 | GLU  | CB-CA-C   | -5.67 | 101.97      | 110.88   |
| 31  | M     | 267 | GLY  | CA-C-N    | 5.67  | 128.35      | 120.29   |
| 31  | M     | 267 | GLY  | C-N-CA    | 5.67  | 128.35      | 120.29   |
| 31  | M     | 403 | CYS  | CA-C-O    | 5.67  | 126.44      | 120.42   |
| 4   | D     | 225 | ILE  | N-CA-CB   | 5.67  | 117.85      | 111.21   |
| 15  | W     | 99  | HIS  | CB-CG-ND1 | 5.67  | 131.21      | 122.70   |
| 27  | H     | 181 | LYS  | CA-C-N    | 5.67  | 128.34      | 120.29   |
| 27  | H     | 181 | LYS  | C-N-CA    | 5.67  | 128.34      | 120.29   |
| 31  | M     | 46  | GLN  | N-CA-CB   | 5.67  | 118.46      | 110.12   |
| 4   | D     | 210 | LYS  | N-CA-CB   | 5.67  | 120.07      | 110.49   |
| 11  | 4     | 28  | MET  | N-CA-CB   | 5.67  | 121.69      | 111.37   |
| 17  | T     | 199 | LEU  | N-CA-C    | 5.67  | 117.46      | 111.28   |
| 20  | N     | 27  | LEU  | N-CA-C    | 5.67  | 118.40      | 111.82   |
| 20  | N     | 452 | ASN  | CA-CB-CG  | -5.67 | 106.93      | 112.60   |
| 28  | I     | 192 | ASN  | CA-CB-CG  | 5.67  | 118.27      | 112.60   |
| 28  | I     | 353 | PHE  | N-CA-C    | -5.67 | 100.79      | 109.64   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 31  | M     | 337 | ARG  | CA-C-N      | 5.67  | 132.18      | 121.97   |
| 31  | M     | 337 | ARG  | C-N-CA      | 5.67  | 132.18      | 121.97   |
| 32  | J     | 344 | LEU  | N-CA-C      | -5.67 | 105.24      | 111.82   |
| 17  | T     | 113 | SER  | N-CA-C      | -5.67 | 105.95      | 112.92   |
| 23  | Q     | 193 | ALA  | O-C-N       | -5.67 | 116.23      | 122.07   |
| 5   | E     | 120 | ALA  | N-CA-C      | 5.67  | 117.13      | 111.07   |
| 13  | 6     | 206 | PHE  | N-CA-CB     | 5.67  | 118.55      | 110.16   |
| 19  | Z     | 60  | VAL  | CA-C-N      | 5.67  | 127.88      | 120.28   |
| 19  | Z     | 60  | VAL  | C-N-CA      | 5.67  | 127.88      | 120.28   |
| 19  | Z     | 808 | ASN  | N-CA-C      | -5.67 | 103.53      | 110.61   |
| 20  | N     | 69  | TYR  | CA-C-O      | 5.67  | 126.43      | 120.42   |
| 30  | L     | 17  | ASP  | CA-CB-CG    | -5.67 | 106.93      | 112.60   |
| 31  | M     | 368 | ILE  | CB-CA-C     | -5.67 | 104.49      | 112.14   |
| 32  | J     | 260 | GLU  | N-CA-C      | -5.67 | 105.57      | 112.88   |
| 32  | J     | 277 | LEU  | N-CA-CB     | 5.67  | 119.07      | 110.28   |
| 2   | B     | 152 | SER  | O-C-N       | 5.67  | 128.21      | 122.09   |
| 12  | 5     | 150 | LYS  | N-CA-C      | 5.67  | 117.54      | 111.36   |
| 23  | Q     | 396 | THR  | O-C-N       | 5.67  | 128.21      | 122.09   |
| 12  | 5     | 198 | MET  | CA-C-N      | 5.67  | 128.92      | 120.31   |
| 12  | 5     | 198 | MET  | C-N-CA      | 5.67  | 128.92      | 120.31   |
| 22  | P     | 327 | GLU  | N-CA-C      | 5.67  | 117.32      | 111.03   |
| 24  | R     | 35  | THR  | CA-C-N      | 5.67  | 128.33      | 120.29   |
| 24  | R     | 35  | THR  | C-N-CA      | 5.67  | 128.33      | 120.29   |
| 1   | A     | 9   | PHE  | CA-CB-CG    | -5.66 | 108.14      | 113.80   |
| 9   | 2     | 231 | PRO  | CA-C-N      | 5.66  | 129.15      | 121.05   |
| 9   | 2     | 231 | PRO  | C-N-CA      | 5.66  | 129.15      | 121.05   |
| 20  | N     | 437 | TYR  | CA-C-O      | 5.66  | 126.55      | 120.55   |
| 22  | P     | 81  | ASP  | CA-C-O      | 5.66  | 126.55      | 120.55   |
| 28  | I     | 231 | GLY  | CA-C-N      | 5.66  | 127.87      | 120.28   |
| 28  | I     | 231 | GLY  | C-N-CA      | 5.66  | 127.87      | 120.28   |
| 3   | C     | 83  | ALA  | N-CA-CB     | 5.66  | 118.44      | 110.12   |
| 14  | 7     | 220 | LEU  | N-CA-C      | -5.66 | 105.19      | 111.36   |
| 18  | Y     | 51  | ASP  | CA-CB-CG    | 5.66  | 118.26      | 112.60   |
| 3   | C     | 159 | TRP  | CE2-CD2-CE3 | 5.66  | 124.46      | 118.80   |
| 9   | 2     | 217 | ASP  | N-CA-C      | -5.66 | 99.29       | 108.52   |
| 12  | 5     | 129 | ASN  | OD1-CG-ND2  | 5.66  | 128.26      | 122.60   |
| 12  | 5     | 143 | ALA  | CB-CA-C     | -5.66 | 101.96      | 110.90   |
| 15  | W     | 169 | HIS  | CG-CD2-NE2  | 5.66  | 112.86      | 107.20   |
| 20  | N     | 145 | HIS  | O-C-N       | -5.66 | 116.28      | 122.67   |
| 20  | N     | 590 | TYR  | CA-C-N      | 5.66  | 132.35      | 121.54   |
| 20  | N     | 590 | TYR  | C-N-CA      | 5.66  | 132.35      | 121.54   |
| 23  | Q     | 355 | LYS  | O-C-N       | -5.66 | 115.06      | 122.59   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 19  | Z     | 351 | THR  | CA-C-N      | 5.66  | 127.86      | 120.28   |
| 19  | Z     | 351 | THR  | C-N-CA      | 5.66  | 127.86      | 120.28   |
| 29  | K     | 416 | PHE  | N-CA-C      | 5.66  | 118.12      | 108.67   |
| 12  | 5     | 240 | GLU  | CB-CG-CD    | -5.66 | 102.99      | 112.60   |
| 19  | Z     | 110 | TYR  | N-CA-C      | -5.66 | 105.02      | 111.07   |
| 21  | S     | 359 | LEU  | CA-C-N      | 5.66  | 128.32      | 120.29   |
| 21  | S     | 359 | LEU  | C-N-CA      | 5.66  | 128.32      | 120.29   |
| 22  | P     | 12  | ARG  | CA-C-N      | 5.66  | 127.80      | 120.56   |
| 22  | P     | 12  | ARG  | C-N-CA      | 5.66  | 127.80      | 120.56   |
| 22  | P     | 319 | THR  | CA-C-N      | 5.66  | 127.86      | 120.28   |
| 22  | P     | 319 | THR  | C-N-CA      | 5.66  | 127.86      | 120.28   |
| 24  | R     | 136 | HIS  | CE1-NE2-CD2 | -5.66 | 103.34      | 109.00   |
| 30  | L     | 396 | SER  | CA-C-N      | 5.66  | 130.50      | 122.24   |
| 30  | L     | 396 | SER  | C-N-CA      | 5.66  | 130.50      | 122.24   |
| 8   | 1     | 86  | GLN  | OE1-CD-NE2  | 5.65  | 128.25      | 122.60   |
| 13  | 6     | 135 | ASN  | N-CA-C      | -5.65 | 100.08      | 109.46   |
| 19  | Z     | 826 | GLN  | CB-CA-C     | -5.65 | 100.68      | 109.55   |
| 21  | S     | 74  | HIS  | CG-CD2-NE2  | 5.65  | 112.85      | 107.20   |
| 28  | I     | 201 | VAL  | N-CA-C      | -5.65 | 106.19      | 111.45   |
| 30  | L     | 137 | SER  | CA-C-N      | 5.65  | 128.32      | 120.29   |
| 30  | L     | 137 | SER  | C-N-CA      | 5.65  | 128.32      | 120.29   |
| 5   | E     | 152 | GLN  | CB-CG-CD    | -5.65 | 102.99      | 112.60   |
| 23  | Q     | 107 | VAL  | CA-C-N      | 5.65  | 127.85      | 120.28   |
| 23  | Q     | 107 | VAL  | C-N-CA      | 5.65  | 127.85      | 120.28   |
| 30  | L     | 157 | ARG  | NE-CZ-NH1   | -5.65 | 115.85      | 121.50   |
| 16  | V     | 115 | HIS  | CE1-NE2-CD2 | -5.65 | 103.35      | 109.00   |
| 26  | O     | 168 | ASN  | CB-CG-ND2   | -5.65 | 107.93      | 116.40   |
| 3   | C     | 129 | PRO  | CA-C-O      | -5.65 | 115.03      | 121.98   |
| 22  | P     | 201 | ARG  | CA-C-O      | -5.65 | 114.89      | 120.82   |
| 31  | M     | 370 | GLN  | N-CA-C      | 5.65  | 117.43      | 111.28   |
| 31  | M     | 441 | TYR  | CA-CB-CG    | 5.65  | 124.06      | 113.90   |
| 4   | D     | 41  | VAL  | O-C-N       | -5.64 | 117.25      | 123.18   |
| 6   | F     | 84  | LEU  | CA-C-O      | -5.64 | 114.44      | 120.42   |
| 16  | V     | 89  | PRO  | N-CA-CB     | 5.64  | 108.93      | 103.51   |
| 17  | T     | 98  | TYR  | CA-C-O      | -5.64 | 114.67      | 120.99   |
| 19  | Z     | 520 | LEU  | CB-CA-C     | -5.64 | 101.25      | 110.85   |
| 20  | N     | 153 | ILE  | CA-C-N      | 5.64  | 127.84      | 120.28   |
| 20  | N     | 153 | ILE  | C-N-CA      | 5.64  | 127.84      | 120.28   |
| 20  | N     | 507 | VAL  | N-CA-C      | 5.64  | 117.56      | 111.58   |
| 27  | H     | 164 | MET  | CB-CA-C     | -5.64 | 101.42      | 110.79   |
| 29  | K     | 157 | ASP  | CA-CB-CG    | -5.64 | 106.96      | 112.60   |
| 30  | L     | 160 | ARG  | CA-C-O      | 5.64  | 126.40      | 120.42   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 6   | F     | 228 | ASP  | CA-C-N      | 5.64  | 129.55      | 120.30   |
| 6   | F     | 228 | ASP  | C-N-CA      | 5.64  | 129.55      | 120.30   |
| 13  | 6     | 63  | HIS  | CB-CG-CD2   | -5.64 | 123.86      | 131.20   |
| 32  | J     | 381 | GLU  | CA-C-N      | 5.64  | 127.84      | 120.28   |
| 32  | J     | 381 | GLU  | C-N-CA      | 5.64  | 127.84      | 120.28   |
| 3   | C     | 17  | ARG  | NH1-CZ-NH2  | 5.64  | 126.63      | 119.30   |
| 7   | G     | 143 | VAL  | CA-C-N      | 5.64  | 128.88      | 120.31   |
| 7   | G     | 143 | VAL  | C-N-CA      | 5.64  | 128.88      | 120.31   |
| 9   | 2     | 60  | ASP  | N-CA-CB     | 5.64  | 120.30      | 111.56   |
| 10  | 3     | 141 | THR  | N-CA-C      | 5.64  | 118.39      | 108.75   |
| 19  | Z     | 490 | ALA  | N-CA-C      | 5.64  | 122.81      | 110.80   |
| 26  | O     | 288 | HIS  | ND1-CE1-NE2 | 5.64  | 114.04      | 108.40   |
| 25  | U     | 279 | LYS  | CA-C-N      | 5.64  | 128.19      | 120.46   |
| 25  | U     | 279 | LYS  | C-N-CA      | 5.64  | 128.19      | 120.46   |
| 28  | I     | 386 | ALA  | N-CA-C      | 5.64  | 117.42      | 111.28   |
| 29  | K     | 66  | LYS  | CA-C-N      | 5.64  | 127.83      | 120.28   |
| 29  | K     | 66  | LYS  | C-N-CA      | 5.64  | 127.83      | 120.28   |
| 29  | K     | 68  | LEU  | N-CA-CB     | 5.64  | 119.02      | 110.28   |
| 7   | G     | 174 | LYS  | CA-C-N      | 5.64  | 128.29      | 120.29   |
| 7   | G     | 174 | LYS  | C-N-CA      | 5.64  | 128.29      | 120.29   |
| 10  | 3     | 157 | ASN  | OD1-CG-ND2  | 5.64  | 128.24      | 122.60   |
| 4   | D     | 152 | GLN  | CA-C-O      | -5.63 | 114.52      | 121.06   |
| 6   | F     | 146 | GLN  | OE1-CD-NE2  | 5.63  | 128.23      | 122.60   |
| 20  | N     | 358 | ASP  | N-CA-C      | -5.63 | 105.06      | 111.14   |
| 20  | N     | 389 | ASN  | OD1-CG-ND2  | 5.63  | 128.23      | 122.60   |
| 23  | Q     | 252 | LYS  | CB-CA-C     | -5.63 | 102.04      | 110.88   |
| 3   | C     | 102 | GLN  | OE1-CD-NE2  | 5.63  | 128.23      | 122.60   |
| 19  | Z     | 767 | GLY  | CA-C-N      | 5.63  | 128.29      | 120.29   |
| 19  | Z     | 767 | GLY  | C-N-CA      | 5.63  | 128.29      | 120.29   |
| 14  | 7     | 104 | PHE  | CB-CA-C     | 5.63  | 120.42      | 110.85   |
| 21  | S     | 307 | ASN  | N-CA-CB     | 5.63  | 118.40      | 110.12   |
| 22  | P     | 189 | GLN  | CA-C-N      | 5.63  | 127.83      | 120.28   |
| 22  | P     | 189 | GLN  | C-N-CA      | 5.63  | 127.83      | 120.28   |
| 6   | F     | 59  | HIS  | CE1-NE2-CD2 | -5.63 | 103.37      | 109.00   |
| 10  | 3     | 161 | GLU  | N-CA-CB     | 5.63  | 118.85      | 110.29   |
| 12  | 5     | 226 | ASP  | CB-CA-C     | -5.63 | 102.01      | 110.90   |
| 13  | 6     | 180 | VAL  | CA-CB-CG2   | 5.63  | 119.97      | 110.40   |
| 14  | 7     | 123 | ASP  | CA-CB-CG    | -5.63 | 106.97      | 112.60   |
| 16  | V     | 156 | VAL  | CA-C-O      | 5.63  | 126.24      | 120.39   |
| 21  | S     | 411 | SER  | N-CA-C      | 5.63  | 117.09      | 111.07   |
| 22  | P     | 98  | LYS  | N-CA-C      | 5.63  | 117.41      | 111.28   |
| 25  | U     | 168 | GLU  | CA-C-O      | -5.63 | 114.45      | 120.42   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 30  | L     | 328 | LYS  | N-CA-CB     | 5.63  | 118.39      | 110.12   |
| 32  | J     | 372 | ARG  | NE-CZ-NH2   | 5.63  | 124.27      | 119.20   |
| 3   | C     | 184 | MET  | CG-SD-CE    | -5.63 | 88.52       | 100.90   |
| 8   | 1     | 37  | MET  | CG-SD-CE    | -5.63 | 88.52       | 100.90   |
| 11  | 4     | 165 | GLU  | CA-C-O      | 5.63  | 126.51      | 120.55   |
| 12  | 5     | 107 | GLY  | CA-C-O      | 5.63  | 126.04      | 120.92   |
| 17  | T     | 347 | ARG  | N-CA-C      | 5.63  | 117.49      | 111.36   |
| 20  | N     | 658 | VAL  | CA-C-N      | 5.63  | 128.09      | 120.44   |
| 20  | N     | 658 | VAL  | C-N-CA      | 5.63  | 128.09      | 120.44   |
| 26  | O     | 19  | ALA  | CA-C-N      | 5.63  | 127.82      | 120.28   |
| 26  | O     | 19  | ALA  | C-N-CA      | 5.63  | 127.82      | 120.28   |
| 27  | H     | 308 | GLY  | CA-C-N      | 5.63  | 128.86      | 120.31   |
| 27  | H     | 308 | GLY  | C-N-CA      | 5.63  | 128.86      | 120.31   |
| 28  | I     | 130 | GLU  | CA-C-O      | -5.63 | 115.00      | 121.47   |
| 30  | L     | 145 | SER  | N-CA-C      | 5.62  | 117.09      | 111.07   |
| 31  | M     | 53  | SER  | CA-C-N      | 5.62  | 127.82      | 120.28   |
| 31  | M     | 53  | SER  | C-N-CA      | 5.62  | 127.82      | 120.28   |
| 8   | 1     | 178 | GLU  | CA-C-N      | 5.62  | 126.04      | 120.98   |
| 8   | 1     | 178 | GLU  | C-N-CA      | 5.62  | 126.04      | 120.98   |
| 9   | 2     | 259 | VAL  | CA-C-O      | -5.62 | 116.48      | 121.09   |
| 19  | Z     | 198 | HIS  | CE1-NE2-CD2 | -5.62 | 103.38      | 109.00   |
| 32  | J     | 67  | GLN  | N-CA-CB     | 5.62  | 118.23      | 109.85   |
| 3   | C     | 7   | SER  | CA-C-N      | 5.62  | 130.11      | 122.07   |
| 3   | C     | 7   | SER  | C-N-CA      | 5.62  | 130.11      | 122.07   |
| 16  | V     | 37  | ALA  | CA-C-O      | -5.62 | 114.46      | 120.42   |
| 1   | A     | 87  | SER  | CA-C-O      | -5.62 | 114.92      | 120.82   |
| 19  | Z     | 511 | SER  | CA-C-N      | 5.62  | 128.82      | 120.90   |
| 19  | Z     | 511 | SER  | C-N-CA      | 5.62  | 128.82      | 120.90   |
| 27  | H     | 209 | PRO  | CB-CA-C     | 5.62  | 118.78      | 111.64   |
| 32  | J     | 16  | ALA  | N-CA-CB     | 5.62  | 118.22      | 110.07   |
| 32  | J     | 355 | SER  | N-CA-C      | 5.62  | 117.73      | 109.24   |
| 5   | E     | 221 | GLN  | CA-C-N      | 5.62  | 126.06      | 119.99   |
| 5   | E     | 221 | GLN  | C-N-CA      | 5.62  | 126.06      | 119.99   |
| 31  | M     | 159 | ASP  | CA-CB-CG    | -5.62 | 106.98      | 112.60   |
| 31  | M     | 183 | ARG  | N-CA-C      | -5.62 | 101.84      | 110.32   |
| 28  | I     | 72  | LEU  | N-CA-C      | -5.62 | 105.24      | 111.36   |
| 11  | 4     | 63  | ASN  | CA-C-O      | -5.62 | 114.60      | 120.55   |
| 20  | N     | 777 | HIS  | CE1-NE2-CD2 | -5.62 | 103.38      | 109.00   |
| 23  | Q     | 362 | GLU  | O-C-N       | 5.62  | 128.07      | 122.12   |
| 23  | Q     | 378 | LEU  | N-CA-C      | -5.62 | 99.58       | 108.73   |
| 30  | L     | 370 | ARG  | CA-C-N      | 5.62  | 128.37      | 120.28   |
| 30  | L     | 370 | ARG  | C-N-CA      | 5.62  | 128.37      | 120.28   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 2   | B     | 108 | ALA  | CB-CA-C     | -5.61 | 101.47      | 110.79   |
| 2   | B     | 221 | LEU  | N-CA-CB     | 5.61  | 118.22      | 109.97   |
| 6   | F     | 29  | VAL  | CB-CA-C     | -5.61 | 104.78      | 111.97   |
| 16  | V     | 215 | LYS  | CA-C-N      | 5.61  | 127.80      | 120.28   |
| 16  | V     | 215 | LYS  | C-N-CA      | 5.61  | 127.80      | 120.28   |
| 20  | N     | 16  | GLU  | CA-C-N      | 5.61  | 125.14      | 119.19   |
| 20  | N     | 16  | GLU  | C-N-CA      | 5.61  | 125.14      | 119.19   |
| 25  | U     | 204 | LYS  | CA-C-N      | 5.61  | 128.26      | 120.29   |
| 25  | U     | 204 | LYS  | C-N-CA      | 5.61  | 128.26      | 120.29   |
| 22  | P     | 60  | MET  | CA-C-N      | 5.61  | 128.15      | 120.46   |
| 22  | P     | 60  | MET  | C-N-CA      | 5.61  | 128.15      | 120.46   |
| 22  | P     | 409 | LEU  | N-CA-C      | -5.61 | 105.08      | 111.14   |
| 26  | O     | 6   | ALA  | N-CA-C      | 5.61  | 117.20      | 111.14   |
| 7   | G     | 100 | ARG  | O-C-N       | -5.61 | 115.75      | 122.15   |
| 11  | 4     | 32  | HIS  | CE1-NE2-CD2 | -5.61 | 103.39      | 109.00   |
| 19  | Z     | 161 | HIS  | N-CA-C      | 5.61  | 117.07      | 111.07   |
| 20  | N     | 129 | ARG  | CA-C-O      | -5.61 | 114.47      | 120.42   |
| 31  | M     | 215 | PHE  | CA-C-O      | -5.61 | 114.47      | 120.42   |
| 11  | 4     | 48  | GLY  | O-C-N       | -5.61 | 117.65      | 123.48   |
| 12  | 5     | 117 | LEU  | O-C-N       | -5.61 | 115.37      | 122.27   |
| 19  | Z     | 556 | ARG  | CA-C-N      | 5.61  | 127.79      | 120.28   |
| 19  | Z     | 556 | ARG  | C-N-CA      | 5.61  | 127.79      | 120.28   |
| 24  | R     | 4   | GLU  | CB-CG-CD    | -5.61 | 103.07      | 112.60   |
| 27  | H     | 216 | GLY  | CA-C-N      | -5.61 | 114.61      | 120.38   |
| 27  | H     | 216 | GLY  | C-N-CA      | -5.61 | 114.61      | 120.38   |
| 19  | Z     | 382 | ASN  | N-CA-CB     | 5.61  | 119.43      | 111.25   |
| 20  | N     | 176 | MET  | CA-C-N      | 5.61  | 127.79      | 120.28   |
| 20  | N     | 176 | MET  | C-N-CA      | 5.61  | 127.79      | 120.28   |
| 20  | N     | 339 | LEU  | O-C-N       | -5.61 | 115.76      | 122.15   |
| 28  | I     | 384 | ILE  | CA-C-N      | 5.61  | 127.73      | 120.44   |
| 28  | I     | 384 | ILE  | C-N-CA      | 5.61  | 127.73      | 120.44   |
| 8   | 1     | 209 | LEU  | N-CA-CB     | 5.60  | 119.39      | 110.65   |
| 15  | W     | 177 | PRO  | CA-C-O      | -5.60 | 115.39      | 121.27   |
| 23  | Q     | 327 | TYR  | CA-C-N      | 5.60  | 128.25      | 120.29   |
| 23  | Q     | 327 | TYR  | C-N-CA      | 5.60  | 128.25      | 120.29   |
| 25  | U     | 135 | THR  | CA-CB-OG1   | 5.60  | 118.01      | 109.60   |
| 5   | E     | 22  | PHE  | CA-CB-CG    | -5.60 | 108.20      | 113.80   |
| 11  | 4     | 116 | TYR  | CA-C-O      | 5.60  | 127.27      | 120.99   |
| 23  | Q     | 122 | ARG  | N-CA-C      | 5.60  | 117.77      | 110.43   |
| 23  | Q     | 375 | HIS  | CA-CB-CG    | 5.60  | 119.40      | 113.80   |
| 29  | K     | 148 | ASP  | CA-CB-CG    | -5.60 | 107.00      | 112.60   |
| 8   | 1     | 116 | PHE  | CA-C-N      | 5.60  | 128.24      | 120.29   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | 1     | 116 | PHE  | C-N-CA      | 5.60  | 128.24      | 120.29   |
| 21  | S     | 186 | ASP  | CA-CB-CG    | -5.60 | 107.00      | 112.60   |
| 22  | P     | 65  | ARG  | O-C-N       | -5.60 | 115.38      | 122.27   |
| 23  | Q     | 22  | ALA  | N-CA-C      | 5.60  | 117.38      | 111.28   |
| 17  | T     | 256 | ALA  | CA-C-O      | -5.60 | 114.72      | 120.99   |
| 19  | Z     | 827 | PRO  | N-CA-CB     | 5.60  | 109.13      | 103.25   |
| 29  | K     | 217 | LYS  | N-CA-C      | 5.60  | 117.38      | 111.28   |
| 19  | Z     | 71  | TYR  | CB-CA-C     | -5.60 | 102.06      | 110.90   |
| 20  | N     | 628 | ARG  | CA-CB-CG    | 5.60  | 125.29      | 114.10   |
| 25  | U     | 157 | HIS  | CE1-NE2-CD2 | -5.60 | 103.40      | 109.00   |
| 29  | K     | 178 | ARG  | NE-CZ-NH2   | -5.60 | 114.16      | 119.20   |
| 8   | 1     | 190 | ALA  | CA-C-N      | 5.59  | 127.78      | 120.28   |
| 8   | 1     | 190 | ALA  | C-N-CA      | 5.59  | 127.78      | 120.28   |
| 19  | Z     | 50  | LYS  | CB-CA-C     | -5.59 | 101.50      | 110.79   |
| 20  | N     | 890 | LYS  | O-C-N       | -5.59 | 116.64      | 123.19   |
| 22  | P     | 107 | GLN  | N-CA-C      | 5.59  | 117.46      | 111.36   |
| 22  | P     | 164 | SER  | N-CA-C      | -5.59 | 105.08      | 111.07   |
| 27  | H     | 237 | PHE  | N-CA-CB     | 5.59  | 119.35      | 110.57   |
| 30  | L     | 352 | PHE  | N-CA-C      | -5.59 | 100.21      | 108.99   |
| 10  | 3     | 74  | TYR  | CA-CB-CG    | -5.59 | 103.83      | 113.90   |
| 14  | 7     | 100 | ASP  | CA-C-O      | -5.59 | 115.08      | 121.68   |
| 29  | K     | 146 | GLU  | CB-CA-C     | -5.59 | 101.86      | 110.81   |
| 3   | C     | 187 | LYS  | CA-C-N      | 5.59  | 128.81      | 120.31   |
| 3   | C     | 187 | LYS  | C-N-CA      | 5.59  | 128.81      | 120.31   |
| 19  | Z     | 858 | LYS  | CA-C-O      | -5.59 | 113.77      | 119.08   |
| 20  | N     | 676 | THR  | CA-CB-OG1   | 5.59  | 117.98      | 109.60   |
| 26  | O     | 222 | LEU  | CB-CA-C     | -5.59 | 100.47      | 110.70   |
| 2   | B     | 129 | PRO  | CB-CA-C     | -5.59 | 102.78      | 111.22   |
| 2   | B     | 192 | ILE  | N-CA-C      | 5.59  | 116.36      | 110.72   |
| 15  | W     | 86  | PHE  | CA-C-N      | 5.59  | 127.77      | 120.28   |
| 15  | W     | 86  | PHE  | C-N-CA      | 5.59  | 127.77      | 120.28   |
| 21  | S     | 189 | GLN  | CA-C-O      | -5.59 | 114.50      | 120.42   |
| 23  | Q     | 36  | GLN  | O-C-N       | 5.59  | 128.13      | 122.09   |
| 23  | Q     | 231 | TYR  | CA-C-O      | 5.59  | 126.47      | 120.55   |
| 11  | 4     | 33  | ASP  | CA-CB-CG    | -5.58 | 107.02      | 112.60   |
| 15  | W     | 143 | PHE  | CA-CB-CG    | 5.58  | 119.39      | 113.80   |
| 20  | N     | 767 | THR  | CA-C-N      | 5.58  | 130.31      | 121.99   |
| 20  | N     | 767 | THR  | C-N-CA      | 5.58  | 130.31      | 121.99   |
| 29  | K     | 298 | GLY  | CA-C-O      | 5.58  | 126.58      | 120.66   |
| 19  | Z     | 478 | ARG  | CA-C-O      | -5.58 | 114.96      | 120.82   |
| 24  | R     | 348 | ASP  | N-CA-C      | -5.58 | 96.74       | 107.57   |
| 29  | K     | 143 | LEU  | O-C-N       | -5.58 | 118.14      | 121.71   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 1   | A     | 8   | GLY  | N-CA-C     | -5.58 | 99.95       | 113.18   |
| 11  | 4     | 8   | GLN  | CA-C-O     | -5.58 | 113.42      | 120.28   |
| 17  | T     | 271 | ARG  | CA-C-N     | 5.58  | 128.22      | 120.29   |
| 17  | T     | 271 | ARG  | C-N-CA     | 5.58  | 128.22      | 120.29   |
| 19  | Z     | 578 | ALA  | O-C-N      | 5.58  | 128.04      | 122.12   |
| 19  | Z     | 649 | HIS  | CA-C-N     | 5.58  | 127.76      | 120.28   |
| 19  | Z     | 649 | HIS  | C-N-CA     | 5.58  | 127.76      | 120.28   |
| 20  | N     | 384 | GLN  | CA-CB-CG   | 5.58  | 125.26      | 114.10   |
| 21  | S     | 382 | PHE  | CA-CB-CG   | 5.58  | 119.38      | 113.80   |
| 26  | O     | 163 | TYR  | CA-CB-CG   | -5.58 | 103.85      | 113.90   |
| 31  | M     | 401 | ALA  | N-CA-C     | 5.58  | 117.36      | 111.28   |
| 15  | W     | 98  | LYS  | CA-C-O     | 5.58  | 126.46      | 120.55   |
| 24  | R     | 137 | ARG  | NE-CZ-NH1  | 5.58  | 127.08      | 121.50   |
| 27  | H     | 229 | VAL  | CA-C-O     | -5.58 | 114.44      | 120.47   |
| 31  | M     | 248 | LYS  | CG-CD-CE   | 5.58  | 124.13      | 111.30   |
| 27  | H     | 60  | ASN  | N-CA-CB    | 5.58  | 118.32      | 110.12   |
| 27  | H     | 139 | ARG  | N-CA-C     | -5.58 | 101.46      | 110.32   |
| 32  | J     | 167 | LEU  | CB-CA-C    | -5.58 | 102.39      | 112.76   |
| 32  | J     | 390 | VAL  | O-C-N      | -5.58 | 116.09      | 121.83   |
| 19  | Z     | 130 | ALA  | CA-C-O     | 5.57  | 126.46      | 120.55   |
| 20  | N     | 367 | THR  | CA-C-N     | 5.57  | 127.75      | 120.28   |
| 20  | N     | 367 | THR  | C-N-CA     | 5.57  | 127.75      | 120.28   |
| 22  | P     | 385 | SER  | CA-C-N     | 5.57  | 128.09      | 120.46   |
| 22  | P     | 385 | SER  | C-N-CA     | 5.57  | 128.09      | 120.46   |
| 26  | O     | 138 | VAL  | CA-CB-CG2  | 5.57  | 119.87      | 110.40   |
| 27  | H     | 333 | ARG  | NE-CZ-NH1  | 5.57  | 127.07      | 121.50   |
| 9   | 2     | 257 | GLU  | CA-C-O     | 5.57  | 127.02      | 120.89   |
| 19  | Z     | 657 | ILE  | CA-CB-CG2  | -5.57 | 101.03      | 110.50   |
| 22  | P     | 403 | PHE  | CA-CB-CG   | -5.57 | 108.23      | 113.80   |
| 23  | Q     | 111 | LEU  | CA-C-N     | 5.57  | 128.20      | 120.29   |
| 23  | Q     | 111 | LEU  | C-N-CA     | 5.57  | 128.20      | 120.29   |
| 29  | K     | 254 | ALA  | N-CA-C     | 5.57  | 117.35      | 111.28   |
| 1   | A     | 16  | PHE  | N-CA-C     | 5.57  | 122.66      | 110.80   |
| 16  | V     | 180 | ASN  | N-CA-CB    | 5.57  | 121.29      | 111.49   |
| 21  | S     | 181 | GLN  | O-C-N      | 5.57  | 128.50      | 122.15   |
| 24  | R     | 23  | ARG  | NE-CZ-NH1  | 5.57  | 127.07      | 121.50   |
| 11  | 4     | 63  | ASN  | OD1-CG-ND2 | -5.57 | 117.03      | 122.60   |
| 13  | 6     | 206 | PHE  | CB-CA-C    | -5.57 | 101.39      | 110.85   |
| 26  | O     | 2   | LYS  | N-CA-C     | -5.57 | 104.13      | 112.54   |
| 29  | K     | 178 | ARG  | NH1-CZ-NH2 | 5.57  | 126.54      | 119.30   |
| 10  | 3     | 139 | SER  | CA-C-N     | -5.57 | 117.87      | 121.65   |
| 10  | 3     | 139 | SER  | C-N-CA     | -5.57 | 117.87      | 121.65   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 12  | 5     | 165 | LYS  | CA-C-O      | 5.57  | 126.83      | 120.54   |
| 15  | W     | 113 | VAL  | N-CA-C      | -5.57 | 96.70       | 106.61   |
| 19  | Z     | 813 | LYS  | CG-CD-CE    | 5.57  | 124.10      | 111.30   |
| 20  | N     | 176 | MET  | CA-C-O      | 5.57  | 126.45      | 120.55   |
| 22  | P     | 264 | GLN  | N-CA-C      | -5.57 | 105.12      | 111.07   |
| 23  | Q     | 315 | ASP  | CA-CB-CG    | 5.57  | 118.17      | 112.60   |
| 28  | I     | 402 | ALA  | CA-C-O      | 5.57  | 126.32      | 120.42   |
| 32  | J     | 151 | ILE  | CA-C-N      | 5.57  | 132.32      | 121.41   |
| 32  | J     | 151 | ILE  | C-N-CA      | 5.57  | 132.32      | 121.41   |
| 9   | 2     | 222 | SER  | CA-C-O      | -5.56 | 114.35      | 120.36   |
| 19  | Z     | 885 | GLU  | N-CA-C      | -5.56 | 99.45       | 108.52   |
| 30  | L     | 285 | HIS  | CE1-NE2-CD2 | -5.56 | 103.44      | 109.00   |
| 32  | J     | 111 | ASN  | N-CA-CB     | 5.56  | 120.53      | 112.13   |
| 5   | E     | 224 | GLN  | N-CA-C      | -5.56 | 100.84      | 109.24   |
| 5   | E     | 228 | MET  | N-CA-CB     | 5.56  | 119.52      | 110.17   |
| 22  | P     | 56  | THR  | N-CA-C      | -5.56 | 105.22      | 111.28   |
| 22  | P     | 112 | VAL  | CB-CA-C     | -5.56 | 104.63      | 112.14   |
| 22  | P     | 235 | GLN  | CA-C-N      | 5.56  | 128.19      | 120.29   |
| 22  | P     | 235 | GLN  | C-N-CA      | 5.56  | 128.19      | 120.29   |
| 24  | R     | 213 | LEU  | CB-CA-C     | 5.56  | 121.31      | 110.30   |
| 28  | I     | 200 | SER  | N-CA-C      | 5.56  | 120.05      | 112.04   |
| 29  | K     | 166 | ASP  | CA-CB-CG    | -5.56 | 107.04      | 112.60   |
| 5   | E     | 83  | ALA  | O-C-N       | 5.56  | 128.01      | 122.12   |
| 7   | G     | 23  | GLN  | CB-CG-CD    | -5.56 | 103.15      | 112.60   |
| 8   | 1     | 151 | GLY  | CA-C-N      | 5.56  | 132.16      | 121.54   |
| 8   | 1     | 151 | GLY  | C-N-CA      | 5.56  | 132.16      | 121.54   |
| 21  | S     | 228 | HIS  | CA-C-N      | 5.56  | 128.19      | 120.29   |
| 21  | S     | 228 | HIS  | C-N-CA      | 5.56  | 128.19      | 120.29   |
| 24  | R     | 301 | ILE  | O-C-N       | 5.56  | 127.56      | 121.83   |
| 26  | O     | 215 | GLU  | CA-C-N      | 5.56  | 127.73      | 120.28   |
| 26  | O     | 215 | GLU  | C-N-CA      | 5.56  | 127.73      | 120.28   |
| 5   | E     | 209 | LYS  | N-CA-C      | -5.56 | 101.31      | 109.81   |
| 17  | T     | 328 | PRO  | N-CA-C      | -5.56 | 101.02      | 112.47   |
| 22  | P     | 287 | VAL  | N-CA-CB     | 5.56  | 120.16      | 110.65   |
| 5   | E     | 53  | ARG  | N-CA-C      | 5.56  | 117.41      | 110.91   |
| 7   | G     | 200 | ILE  | CA-CB-CG2   | -5.56 | 101.05      | 110.50   |
| 15  | W     | 112 | PHE  | CB-CG-CD2   | 5.56  | 130.15      | 120.70   |
| 20  | N     | 468 | ALA  | CB-CA-C     | 5.56  | 119.56      | 110.95   |
| 28  | I     | 170 | LEU  | O-C-N       | 5.56  | 128.09      | 122.09   |
| 12  | 5     | 174 | ASP  | CA-C-O      | 5.56  | 126.31      | 120.36   |
| 20  | N     | 848 | LYS  | N-CA-C      | -5.56 | 100.64      | 109.59   |
| 3   | C     | 213 | ILE  | CA-CB-CG2   | -5.55 | 101.06      | 110.50   |

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| Mol | Chain | Res | Type | Atoms    | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|-------|-------------|----------|
| 14  | 7     | 224 | ASP  | N-CA-C   | 5.55  | 117.14      | 111.14   |
| 19  | Z     | 100 | ARG  | CA-C-O   | -5.55 | 113.52      | 118.63   |
| 25  | U     | 203 | SER  | CB-CA-C  | -5.55 | 101.57      | 110.79   |
| 3   | C     | 94  | ALA  | CA-C-N   | 5.55  | 128.75      | 120.31   |
| 3   | C     | 94  | ALA  | C-N-CA   | 5.55  | 128.75      | 120.31   |
| 6   | F     | 178 | GLU  | CA-C-O   | -5.55 | 113.59      | 119.97   |
| 10  | 3     | 69  | PHE  | CA-C-N   | 5.55  | 127.72      | 120.28   |
| 10  | 3     | 69  | PHE  | C-N-CA   | 5.55  | 127.72      | 120.28   |
| 20  | N     | 264 | VAL  | CA-C-N   | 5.55  | 128.06      | 120.46   |
| 20  | N     | 264 | VAL  | C-N-CA   | 5.55  | 128.06      | 120.46   |
| 21  | S     | 382 | PHE  | N-CA-C   | 5.55  | 117.33      | 111.28   |
| 23  | Q     | 359 | ALA  | CB-CA-C  | -5.55 | 101.41      | 110.85   |
| 27  | H     | 228 | ALA  | CA-C-O   | -5.55 | 114.53      | 120.42   |
| 32  | J     | 188 | LEU  | O-C-N    | -5.55 | 116.89      | 123.22   |
| 19  | Z     | 199 | ASN  | CA-C-O   | -5.55 | 114.67      | 120.55   |
| 19  | Z     | 754 | LYS  | CA-C-N   | 5.55  | 135.34      | 121.80   |
| 19  | Z     | 754 | LYS  | C-N-CA   | 5.55  | 135.34      | 121.80   |
| 27  | H     | 69  | ASP  | CA-C-N   | 5.55  | 128.17      | 120.29   |
| 27  | H     | 69  | ASP  | C-N-CA   | 5.55  | 128.17      | 120.29   |
| 21  | S     | 254 | TYR  | CA-CB-CG | -5.55 | 103.91      | 113.90   |
| 28  | I     | 257 | GLN  | CA-C-N   | 5.55  | 127.65      | 120.44   |
| 28  | I     | 257 | GLN  | C-N-CA   | 5.55  | 127.65      | 120.44   |
| 20  | N     | 898 | CYS  | CA-C-N   | 5.55  | 132.13      | 121.54   |
| 20  | N     | 898 | CYS  | C-N-CA   | 5.55  | 132.13      | 121.54   |
| 24  | R     | 66  | ASP  | CA-C-N   | 5.55  | 128.16      | 120.29   |
| 24  | R     | 66  | ASP  | C-N-CA   | 5.55  | 128.16      | 120.29   |
| 29  | K     | 56  | VAL  | CA-C-O   | -5.55 | 115.18      | 120.95   |
| 15  | W     | 158 | ASN  | CA-CB-CG | 5.54  | 118.14      | 112.60   |
| 23  | Q     | 345 | VAL  | CA-C-N   | 5.54  | 130.59      | 121.39   |
| 23  | Q     | 345 | VAL  | C-N-CA   | 5.54  | 130.59      | 121.39   |
| 30  | L     | 385 | VAL  | N-CA-CB  | 5.54  | 118.08      | 110.54   |
| 19  | Z     | 457 | ASN  | N-CA-CB  | 5.54  | 118.11      | 110.07   |
| 23  | Q     | 316 | ASP  | CA-C-N   | 5.54  | 125.06      | 119.19   |
| 23  | Q     | 316 | ASP  | C-N-CA   | 5.54  | 125.06      | 119.19   |
| 24  | R     | 215 | ASP  | CA-C-O   | 5.54  | 127.49      | 121.06   |
| 8   | 1     | 37  | MET  | N-CA-C   | -5.54 | 99.99       | 109.24   |
| 31  | M     | 383 | ASN  | N-CA-CB  | 5.54  | 120.50      | 112.13   |
| 8   | 1     | 101 | ILE  | CA-C-O   | -5.54 | 114.90      | 121.05   |
| 13  | 6     | 96  | GLU  | CA-C-N   | 5.54  | 127.70      | 120.28   |
| 13  | 6     | 96  | GLU  | C-N-CA   | 5.54  | 127.70      | 120.28   |
| 20  | N     | 673 | GLU  | CA-C-O   | -5.54 | 112.97      | 118.34   |
| 28  | I     | 423 | LYS  | CA-C-O   | -5.54 | 114.68      | 120.55   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 31  | M     | 235 | GLY  | CA-C-N      | 5.54  | 127.64      | 120.44   |
| 31  | M     | 235 | GLY  | C-N-CA      | 5.54  | 127.64      | 120.44   |
| 4   | D     | 158 | THR  | N-CA-CB     | 5.54  | 120.47      | 110.83   |
| 7   | G     | 237 | GLU  | N-CA-C      | 5.54  | 117.32      | 111.28   |
| 11  | 4     | 89  | ALA  | N-CA-C      | -5.54 | 105.24      | 111.28   |
| 16  | V     | 111 | TRP  | CB-CG-CD2   | -5.54 | 119.05      | 126.80   |
| 19  | Z     | 271 | MET  | O-C-N       | 5.54  | 127.78      | 122.07   |
| 16  | V     | 126 | ASP  | N-CA-CB     | -5.54 | 101.69      | 110.22   |
| 19  | Z     | 405 | HIS  | CG-CD2-NE2  | 5.54  | 112.74      | 107.20   |
| 23  | Q     | 148 | HIS  | CG-CD2-NE2  | 5.54  | 112.74      | 107.20   |
| 2   | B     | 88  | HIS  | CE1-NE2-CD2 | -5.54 | 103.47      | 109.00   |
| 8   | 1     | 179 | GLY  | O-C-N       | 5.54  | 126.55      | 122.62   |
| 14  | 7     | 80  | PHE  | N-CA-CB     | 5.54  | 118.27      | 110.24   |
| 21  | S     | 228 | HIS  | ND1-CG-CD2  | -5.54 | 100.56      | 106.10   |
| 23  | Q     | 37  | GLU  | CA-C-N      | 5.54  | 129.48      | 120.23   |
| 23  | Q     | 37  | GLU  | C-N-CA      | 5.54  | 129.48      | 120.23   |
| 25  | U     | 19  | VAL  | CA-C-O      | -5.54 | 115.19      | 120.95   |
| 1   | A     | 122 | SER  | CA-C-O      | -5.53 | 112.57      | 119.38   |
| 10  | 3     | 33  | GLN  | N-CA-CB     | 5.53  | 119.84      | 110.49   |
| 16  | V     | 178 | THR  | CA-C-N      | 5.53  | 129.99      | 122.19   |
| 16  | V     | 178 | THR  | C-N-CA      | 5.53  | 129.99      | 122.19   |
| 19  | Z     | 2   | GLU  | O-C-N       | 5.53  | 128.98      | 122.34   |
| 24  | R     | 121 | LEU  | N-CA-CB     | -5.53 | 101.99      | 110.01   |
| 27  | H     | 102 | ILE  | CA-CB-CG1   | 5.53  | 119.81      | 110.40   |
| 31  | M     | 158 | LYS  | N-CA-CB     | 5.53  | 118.09      | 110.07   |
| 20  | N     | 607 | VAL  | CB-CA-C     | -5.53 | 104.77      | 112.02   |
| 26  | O     | 72  | ASN  | CA-C-N      | 5.53  | 125.15      | 119.56   |
| 26  | O     | 72  | ASN  | C-N-CA      | 5.53  | 125.15      | 119.56   |
| 26  | O     | 369 | HIS  | CE1-NE2-CD2 | -5.53 | 103.47      | 109.00   |
| 19  | Z     | 703 | ARG  | N-CA-CB     | 5.53  | 119.84      | 110.49   |
| 21  | S     | 424 | LEU  | N-CA-CB     | 5.53  | 119.31      | 110.46   |
| 24  | R     | 194 | PHE  | CA-C-N      | 5.53  | 127.63      | 120.44   |
| 24  | R     | 194 | PHE  | C-N-CA      | 5.53  | 127.63      | 120.44   |
| 24  | R     | 375 | LEU  | N-CA-CB     | 5.53  | 118.35      | 110.16   |
| 24  | R     | 379 | ARG  | CB-CA-C     | -5.53 | 101.45      | 110.85   |
| 26  | O     | 35  | HIS  | N-CA-C      | -5.53 | 105.17      | 111.14   |
| 28  | I     | 131 | HIS  | ND1-CE1-NE2 | 5.53  | 113.93      | 108.40   |
| 9   | 2     | 68  | VAL  | O-C-N       | 5.53  | 127.86      | 122.05   |
| 15  | W     | 145 | GLU  | N-CA-C      | 5.53  | 117.39      | 111.36   |
| 7   | G     | 34  | SER  | CA-C-N      | 5.53  | 131.45      | 121.06   |
| 7   | G     | 34  | SER  | C-N-CA      | 5.53  | 131.45      | 121.06   |
| 9   | 2     | 233 | SER  | N-CA-C      | -5.53 | 99.03       | 110.80   |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 17  | T     | 209 | ALA  | CB-CA-C | -5.53 | 102.20      | 110.88   |
| 31  | M     | 58  | MET  | CA-C-O  | -5.53 | 114.69      | 120.55   |
| 10  | 3     | 75  | GLU  | CA-C-N  | 5.53  | 128.14      | 120.29   |
| 10  | 3     | 75  | GLU  | C-N-CA  | 5.53  | 128.14      | 120.29   |
| 19  | Z     | 615 | ILE  | CA-C-O  | 5.53  | 126.48      | 120.57   |
| 21  | S     | 479 | CYS  | N-CA-CB | 5.53  | 118.24      | 110.12   |
| 26  | O     | 292 | THR  | N-CA-C  | -5.53 | 102.34      | 110.52   |
| 3   | C     | 41  | ASP  | N-CA-C  | -5.52 | 105.98      | 114.16   |
| 9   | 2     | 96  | ASP  | N-CA-C  | -5.52 | 105.16      | 111.07   |
| 27  | H     | 278 | ASP  | CA-C-N  | 5.52  | 130.56      | 122.77   |
| 27  | H     | 278 | ASP  | C-N-CA  | 5.52  | 130.56      | 122.77   |
| 32  | J     | 235 | PHE  | CA-C-N  | 5.52  | 127.52      | 120.56   |
| 32  | J     | 235 | PHE  | C-N-CA  | 5.52  | 127.52      | 120.56   |
| 30  | L     | 64  | LEU  | N-CA-C  | 5.52  | 117.30      | 111.28   |
| 32  | J     | 217 | SER  | N-CA-C  | 5.52  | 118.48      | 109.59   |
| 13  | 6     | 70  | CYS  | CB-CA-C | -5.52 | 101.70      | 110.81   |
| 21  | S     | 367 | ASN  | N-CA-CB | 5.52  | 119.17      | 110.23   |
| 28  | I     | 81  | ASN  | CB-CA-C | -5.52 | 100.60      | 110.70   |
| 1   | A     | 196 | GLU  | CA-C-N  | 5.52  | 128.12      | 120.29   |
| 1   | A     | 196 | GLU  | C-N-CA  | 5.52  | 128.12      | 120.29   |
| 14  | 7     | 120 | LEU  | CB-CA-C | -5.52 | 101.47      | 110.85   |
| 24  | R     | 39  | GLU  | N-CA-C  | -5.52 | 105.35      | 111.36   |
| 28  | I     | 122 | ILE  | N-CA-CB | 5.52  | 118.62      | 111.67   |
| 30  | L     | 395 | GLU  | CA-C-N  | 5.52  | 131.61      | 122.73   |
| 30  | L     | 395 | GLU  | C-N-CA  | 5.52  | 131.61      | 122.73   |
| 21  | S     | 107 | TYR  | CA-C-N  | 5.52  | 127.51      | 120.56   |
| 21  | S     | 107 | TYR  | C-N-CA  | 5.52  | 127.51      | 120.56   |
| 27  | H     | 108 | ASP  | CA-C-O  | -5.52 | 114.60      | 120.28   |
| 29  | K     | 49  | GLN  | CA-C-O  | -5.52 | 114.70      | 120.55   |
| 5   | E     | 162 | PHE  | N-CA-C  | -5.51 | 100.71      | 109.59   |
| 19  | Z     | 422 | VAL  | O-C-N   | 5.51  | 127.18      | 122.16   |
| 21  | S     | 209 | TYR  | CA-C-N  | 5.51  | 127.67      | 120.28   |
| 21  | S     | 209 | TYR  | C-N-CA  | 5.51  | 127.67      | 120.28   |
| 23  | Q     | 2   | ALA  | CA-C-N  | 5.51  | 127.61      | 120.44   |
| 23  | Q     | 2   | ALA  | C-N-CA  | 5.51  | 127.61      | 120.44   |
| 23  | Q     | 415 | TYR  | CA-C-N  | 5.51  | 127.61      | 120.44   |
| 23  | Q     | 415 | TYR  | C-N-CA  | 5.51  | 127.61      | 120.44   |
| 24  | R     | 319 | MET  | CA-C-N  | 5.51  | 128.12      | 120.29   |
| 24  | R     | 319 | MET  | C-N-CA  | 5.51  | 128.12      | 120.29   |
| 27  | H     | 254 | ALA  | N-CA-C  | 5.51  | 116.97      | 111.07   |
| 28  | I     | 285 | ASP  | O-C-N   | 5.51  | 129.49      | 123.04   |
| 30  | L     | 377 | VAL  | CA-C-N  | 5.51  | 128.22      | 120.28   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 30  | L     | 377 | VAL  | C-N-CA      | 5.51  | 128.22      | 120.28   |
| 1   | A     | 219 | VAL  | O-C-N       | 5.51  | 129.16      | 123.04   |
| 26  | O     | 138 | VAL  | N-CA-C      | 5.51  | 117.94      | 111.05   |
| 28  | I     | 332 | ASN  | N-CA-CB     | 5.51  | 118.74      | 110.53   |
| 30  | L     | 305 | ARG  | CA-CB-CG    | 5.51  | 125.12      | 114.10   |
| 31  | M     | 88  | THR  | CA-C-N      | 5.51  | 135.25      | 121.80   |
| 31  | M     | 88  | THR  | C-N-CA      | 5.51  | 135.25      | 121.80   |
| 32  | J     | 219 | LEU  | N-CA-C      | -5.51 | 105.19      | 111.14   |
| 1   | A     | 57  | PRO  | N-CA-CB     | 5.51  | 109.03      | 103.25   |
| 13  | 6     | 203 | LYS  | N-CA-CB     | 5.51  | 118.22      | 110.12   |
| 20  | N     | 570 | LEU  | CA-C-N      | 5.51  | 127.66      | 120.28   |
| 20  | N     | 570 | LEU  | C-N-CA      | 5.51  | 127.66      | 120.28   |
| 22  | P     | 230 | MET  | CA-C-N      | 5.51  | 128.01      | 120.46   |
| 22  | P     | 230 | MET  | C-N-CA      | 5.51  | 128.01      | 120.46   |
| 27  | H     | 180 | CYS  | CA-C-N      | 5.51  | 132.06      | 121.54   |
| 27  | H     | 180 | CYS  | C-N-CA      | 5.51  | 132.06      | 121.54   |
| 27  | H     | 282 | GLY  | CA-C-N      | 5.51  | 129.07      | 120.75   |
| 27  | H     | 282 | GLY  | C-N-CA      | 5.51  | 129.07      | 120.75   |
| 28  | I     | 334 | ILE  | CB-CG1-CD1  | 5.51  | 125.37      | 113.80   |
| 30  | L     | 352 | PHE  | CA-C-O      | 5.51  | 127.16      | 120.99   |
| 32  | J     | 311 | ILE  | CA-CB-CG1   | 5.51  | 119.77      | 110.40   |
| 1   | A     | 133 | PRO  | N-CA-CB     | 5.51  | 108.14      | 103.35   |
| 13  | 6     | 163 | LYS  | N-CA-C      | -5.51 | 106.73      | 113.50   |
| 21  | S     | 213 | VAL  | CA-CB-CG1   | -5.51 | 101.04      | 110.40   |
| 1   | A     | 156 | PRO  | CA-C-N      | 5.51  | 127.97      | 120.54   |
| 1   | A     | 156 | PRO  | C-N-CA      | 5.51  | 127.97      | 120.54   |
| 2   | B     | 149 | SER  | N-CA-CB     | 5.51  | 119.24      | 110.65   |
| 12  | 5     | 250 | ASN  | OD1-CG-ND2  | -5.51 | 117.09      | 122.60   |
| 17  | T     | 235 | LEU  | N-CA-C      | -5.51 | 105.36      | 111.36   |
| 19  | Z     | 598 | CYS  | N-CA-CB     | 5.51  | 118.22      | 110.12   |
| 19  | Z     | 794 | ALA  | N-CA-CB     | 5.51  | 118.70      | 110.22   |
| 20  | N     | 364 | VAL  | CA-C-N      | 5.51  | 127.66      | 120.28   |
| 20  | N     | 364 | VAL  | C-N-CA      | 5.51  | 127.66      | 120.28   |
| 24  | R     | 286 | TRP  | CE2-CD2-CE3 | 5.51  | 124.31      | 118.80   |
| 25  | U     | 29  | VAL  | N-CA-C      | 5.51  | 115.70      | 110.53   |
| 27  | H     | 336 | ARG  | CA-C-N      | 5.51  | 128.68      | 120.31   |
| 27  | H     | 336 | ARG  | C-N-CA      | 5.51  | 128.68      | 120.31   |
| 32  | J     | 188 | LEU  | N-CA-C      | -5.51 | 99.75       | 108.73   |
| 20  | N     | 561 | GLU  | CB-CG-CD    | -5.50 | 103.24      | 112.60   |
| 28  | I     | 413 | LYS  | CA-C-N      | 5.50  | 131.92      | 122.67   |
| 28  | I     | 413 | LYS  | C-N-CA      | 5.50  | 131.92      | 122.67   |
| 31  | M     | 252 | LEU  | N-CA-CB     | 5.50  | 119.40      | 110.43   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 2   | B     | 144 | PRO  | N-CA-CB     | 5.50  | 108.45      | 103.33   |
| 9   | 2     | 108 | LEU  | CA-C-O      | -5.50 | 114.72      | 120.55   |
| 24  | R     | 295 | TYR  | CB-CG-CD2   | -5.50 | 112.55      | 120.80   |
| 20  | N     | 495 | ASP  | CA-CB-CG    | 5.50  | 118.10      | 112.60   |
| 27  | H     | 83  | ASP  | CA-C-N      | 5.50  | 127.65      | 120.28   |
| 27  | H     | 83  | ASP  | C-N-CA      | 5.50  | 127.65      | 120.28   |
| 3   | C     | 141 | LYS  | O-C-N       | -5.50 | 116.29      | 122.12   |
| 2   | B     | 46  | LEU  | CB-CA-C     | -5.50 | 99.75       | 109.70   |
| 28  | I     | 105 | THR  | N-CA-C      | -5.50 | 102.72      | 110.31   |
| 17  | T     | 264 | ASP  | O-C-N       | -5.50 | 116.41      | 122.07   |
| 22  | P     | 387 | ASP  | CA-CB-CG    | 5.50  | 118.10      | 112.60   |
| 24  | R     | 51  | ALA  | N-CA-CB     | 5.50  | 120.15      | 110.37   |
| 29  | K     | 268 | ASP  | N-CA-C      | -5.50 | 106.58      | 113.28   |
| 31  | M     | 285 | ILE  | CB-CG1-CD1  | 5.50  | 125.34      | 113.80   |
| 19  | Z     | 288 | VAL  | CA-C-N      | -5.50 | 115.48      | 123.06   |
| 19  | Z     | 288 | VAL  | C-N-CA      | -5.50 | 115.48      | 123.06   |
| 26  | O     | 246 | ASP  | CA-C-O      | 5.50  | 126.38      | 120.55   |
| 30  | L     | 304 | LEU  | CB-CA-C     | -5.50 | 101.51      | 110.85   |
| 31  | M     | 335 | THR  | CA-C-N      | 5.50  | 131.17      | 122.60   |
| 31  | M     | 335 | THR  | C-N-CA      | 5.50  | 131.17      | 122.60   |
| 4   | D     | 98  | GLN  | N-CA-CB     | 5.49  | 118.29      | 110.16   |
| 6   | F     | 87  | PHE  | N-CA-C      | 5.49  | 117.07      | 111.14   |
| 9   | 2     | 69  | VAL  | N-CA-CB     | 5.49  | 119.65      | 110.86   |
| 15  | W     | 161 | ASN  | CA-CB-CG    | 5.49  | 118.09      | 112.60   |
| 17  | T     | 163 | ASP  | CA-CB-CG    | -5.49 | 107.11      | 112.60   |
| 24  | R     | 323 | PHE  | CA-CB-CG    | -5.49 | 108.31      | 113.80   |
| 14  | 7     | 120 | LEU  | N-CA-CB     | 5.49  | 118.29      | 110.16   |
| 14  | 7     | 221 | TYR  | CA-C-O      | -5.49 | 114.60      | 120.42   |
| 20  | N     | 366 | HIS  | CE1-NE2-CD2 | -5.49 | 103.51      | 109.00   |
| 22  | P     | 176 | SER  | N-CA-C      | -5.49 | 105.80      | 112.88   |
| 23  | Q     | 165 | LEU  | CA-C-N      | 5.49  | 128.19      | 120.28   |
| 23  | Q     | 165 | LEU  | C-N-CA      | 5.49  | 128.19      | 120.28   |
| 26  | O     | 22  | TRP  | CE2-CD2-CE3 | 5.49  | 124.29      | 118.80   |
| 2   | B     | 173 | PHE  | CA-C-N      | 5.49  | 128.09      | 120.29   |
| 2   | B     | 173 | PHE  | C-N-CA      | 5.49  | 128.09      | 120.29   |
| 19  | Z     | 803 | PHE  | CA-CB-CG    | -5.49 | 108.31      | 113.80   |
| 20  | N     | 68  | PHE  | CA-CB-CG    | -5.49 | 108.31      | 113.80   |
| 12  | 5     | 151 | GLY  | N-CA-C      | -5.49 | 106.02      | 113.37   |
| 19  | Z     | 639 | LYS  | CB-CG-CD    | 5.49  | 123.92      | 111.30   |
| 22  | P     | 278 | PRO  | CA-C-O      | -5.49 | 115.34      | 121.32   |
| 26  | O     | 42  | LEU  | CA-C-N      | 5.49  | 128.08      | 120.29   |
| 26  | O     | 42  | LEU  | C-N-CA      | 5.49  | 128.08      | 120.29   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 28  | I     | 64  | LYS  | CA-C-N      | 5.49  | 128.08      | 120.29   |
| 28  | I     | 64  | LYS  | C-N-CA      | 5.49  | 128.08      | 120.29   |
| 28  | I     | 326 | LYS  | N-CA-CB     | 5.49  | 119.63      | 110.85   |
| 14  | 7     | 100 | ASP  | CA-CB-CG    | 5.49  | 118.09      | 112.60   |
| 17  | T     | 257 | GLU  | N-CA-C      | -5.49 | 104.83      | 112.45   |
| 17  | T     | 341 | GLN  | OE1-CD-NE2  | 5.49  | 128.09      | 122.60   |
| 29  | K     | 111 | TYR  | CA-C-N      | 5.49  | 129.97      | 122.84   |
| 29  | K     | 111 | TYR  | C-N-CA      | 5.49  | 129.97      | 122.84   |
| 19  | Z     | 782 | HIS  | CG-CD2-NE2  | 5.48  | 112.68      | 107.20   |
| 20  | N     | 70  | HIS  | ND1-CE1-NE2 | 5.48  | 113.88      | 108.40   |
| 23  | Q     | 220 | ALA  | N-CA-CB     | 5.48  | 118.02      | 110.07   |
| 8   | 1     | 66  | LYS  | O-C-N       | 5.48  | 129.41      | 123.10   |
| 20  | N     | 111 | GLN  | CA-C-N      | 5.48  | 128.07      | 120.29   |
| 20  | N     | 111 | GLN  | C-N-CA      | 5.48  | 128.07      | 120.29   |
| 20  | N     | 848 | LYS  | CA-C-N      | 5.48  | 132.01      | 121.54   |
| 20  | N     | 848 | LYS  | C-N-CA      | 5.48  | 132.01      | 121.54   |
| 21  | S     | 414 | SER  | N-CA-CB     | 5.48  | 118.06      | 110.17   |
| 31  | M     | 411 | LEU  | CA-C-N      | 5.48  | 127.63      | 120.28   |
| 31  | M     | 411 | LEU  | C-N-CA      | 5.48  | 127.63      | 120.28   |
| 1   | A     | 91  | VAL  | O-C-N       | 5.48  | 127.19      | 121.87   |
| 25  | U     | 91  | ILE  | CA-C-N      | 5.48  | 129.72      | 120.29   |
| 25  | U     | 91  | ILE  | C-N-CA      | 5.48  | 129.72      | 120.29   |
| 28  | I     | 197 | ILE  | CA-C-N      | 5.48  | 128.17      | 120.28   |
| 28  | I     | 197 | ILE  | C-N-CA      | 5.48  | 128.17      | 120.28   |
| 29  | K     | 223 | THR  | N-CA-C      | 5.48  | 117.25      | 111.28   |
| 30  | L     | 76  | LYS  | CA-C-N      | 5.48  | 129.71      | 122.42   |
| 30  | L     | 76  | LYS  | C-N-CA      | 5.48  | 129.71      | 122.42   |
| 30  | L     | 206 | ASP  | N-CA-C      | 5.48  | 118.68      | 111.28   |
| 31  | M     | 297 | LYS  | CA-C-O      | 5.48  | 126.12      | 119.38   |
| 25  | U     | 5   | ALA  | N-CA-CB     | 5.48  | 119.75      | 110.49   |
| 13  | 6     | 67  | SER  | CA-C-N      | 5.48  | 126.69      | 119.84   |
| 13  | 6     | 67  | SER  | C-N-CA      | 5.48  | 126.69      | 119.84   |
| 14  | 7     | 247 | LEU  | N-CA-CB     | 5.48  | 118.09      | 110.26   |
| 16  | V     | 246 | LYS  | N-CA-CB     | 5.48  | 118.17      | 110.12   |
| 17  | T     | 298 | THR  | O-C-N       | -5.48 | 116.88      | 121.54   |
| 21  | S     | 113 | VAL  | CA-CB-CG2   | 5.48  | 119.71      | 110.40   |
| 22  | P     | 322 | GLU  | N-CA-C      | -5.48 | 105.39      | 111.36   |
| 25  | U     | 103 | LYS  | CA-C-N      | 5.48  | 128.17      | 120.28   |
| 25  | U     | 103 | LYS  | C-N-CA      | 5.48  | 128.17      | 120.28   |
| 26  | O     | 149 | THR  | CA-CB-OG1   | 5.48  | 117.82      | 109.60   |
| 29  | K     | 114 | ARG  | O-C-N       | -5.48 | 116.92      | 123.06   |
| 19  | Z     | 483 | PHE  | CA-C-N      | 5.47  | 127.24      | 120.34   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 19  | Z     | 483 | PHE  | C-N-CA      | 5.47  | 127.24      | 120.34   |
| 22  | P     | 116 | THR  | OG1-CB-CG2  | -5.47 | 98.35       | 109.30   |
| 27  | H     | 430 | MET  | O-C-N       | 5.47  | 130.16      | 123.10   |
| 29  | K     | 189 | GLU  | CB-CA-C     | -5.47 | 101.70      | 110.79   |
| 30  | L     | 346 | VAL  | CA-C-O      | -5.47 | 115.05      | 120.85   |
| 31  | M     | 127 | ILE  | N-CA-CB     | -5.47 | 102.46      | 111.44   |
| 2   | B     | 167 | TYR  | CA-C-N      | 5.47  | 127.96      | 120.46   |
| 2   | B     | 167 | TYR  | C-N-CA      | 5.47  | 127.96      | 120.46   |
| 8   | 1     | 214 | GLN  | N-CA-C      | -5.47 | 101.17      | 108.34   |
| 20  | N     | 743 | ASN  | CA-C-O      | -5.47 | 112.88      | 118.90   |
| 22  | P     | 54  | THR  | CB-CA-C     | -5.47 | 101.31      | 110.56   |
| 26  | O     | 108 | ASP  | N-CA-CB     | 5.47  | 120.92      | 111.13   |
| 26  | O     | 238 | TYR  | CA-C-O      | 5.47  | 126.35      | 120.55   |
| 30  | L     | 269 | ARG  | O-C-N       | 5.47  | 127.92      | 122.12   |
| 16  | V     | 129 | THR  | N-CA-CB     | 5.47  | 118.16      | 110.12   |
| 19  | Z     | 509 | LYS  | N-CA-CB     | 5.47  | 119.74      | 110.49   |
| 19  | Z     | 795 | GLY  | CA-C-N      | 5.47  | 128.63      | 120.31   |
| 19  | Z     | 795 | GLY  | C-N-CA      | 5.47  | 128.63      | 120.31   |
| 20  | N     | 838 | LYS  | CG-CD-CE    | 5.47  | 123.88      | 111.30   |
| 23  | Q     | 72  | TYR  | N-CA-CB     | 5.47  | 118.26      | 110.16   |
| 24  | R     | 302 | HIS  | ND1-CE1-NE2 | 5.47  | 113.87      | 108.40   |
| 32  | J     | 395 | SER  | CA-C-N      | 5.47  | 127.61      | 120.28   |
| 32  | J     | 395 | SER  | C-N-CA      | 5.47  | 127.61      | 120.28   |
| 10  | 3     | 47  | ASP  | CA-CB-CG    | -5.47 | 107.13      | 112.60   |
| 11  | 4     | 189 | HIS  | O-C-N       | 5.47  | 129.49      | 123.25   |
| 19  | Z     | 396 | ASN  | CA-CB-CG    | 5.47  | 118.07      | 112.60   |
| 19  | Z     | 782 | HIS  | CE1-NE2-CD2 | -5.47 | 103.53      | 109.00   |
| 23  | Q     | 158 | LYS  | O-C-N       | -5.47 | 116.32      | 122.12   |
| 23  | Q     | 203 | PRO  | N-CA-C      | 5.47  | 117.37      | 110.70   |
| 24  | R     | 89  | GLU  | CB-CG-CD    | -5.47 | 103.30      | 112.60   |
| 24  | R     | 369 | THR  | N-CA-CB     | 5.47  | 118.25      | 110.16   |
| 9   | 2     | 167 | TYR  | O-C-N       | -5.47 | 114.92      | 121.64   |
| 11  | 4     | 55  | GLN  | N-CA-CB     | 5.47  | 118.16      | 110.12   |
| 12  | 5     | 214 | LEU  | CA-C-N      | 5.47  | 127.61      | 120.28   |
| 12  | 5     | 214 | LEU  | C-N-CA      | 5.47  | 127.61      | 120.28   |
| 13  | 6     | 176 | LEU  | CD1-CG-CD2  | -5.47 | 98.77       | 110.80   |
| 22  | P     | 87  | ILE  | CB-CA-C     | -5.47 | 103.68      | 112.16   |
| 27  | H     | 39  | SER  | CA-C-O      | -5.47 | 115.08      | 120.82   |
| 16  | V     | 300 | LEU  | CA-C-N      | 5.47  | 127.61      | 120.28   |
| 16  | V     | 300 | LEU  | C-N-CA      | 5.47  | 127.61      | 120.28   |
| 19  | Z     | 180 | GLN  | CA-C-N      | 5.47  | 127.87      | 120.38   |
| 19  | Z     | 180 | GLN  | C-N-CA      | 5.47  | 127.87      | 120.38   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 19  | Z     | 846 | VAL  | O-C-N     | -5.47 | 116.97      | 123.04   |
| 20  | N     | 514 | LEU  | CA-C-N    | 5.47  | 127.61      | 120.28   |
| 20  | N     | 514 | LEU  | C-N-CA    | 5.47  | 127.61      | 120.28   |
| 20  | N     | 828 | VAL  | N-CA-CB   | 5.47  | 117.97      | 110.54   |
| 27  | H     | 321 | THR  | CA-C-O    | -5.47 | 115.04      | 121.44   |
| 28  | I     | 370 | SER  | CA-C-O    | -5.47 | 114.76      | 120.55   |
| 28  | I     | 147 | GLY  | O-C-N     | 5.46  | 128.11      | 122.54   |
| 29  | K     | 267 | ILE  | N-CA-CB   | -5.46 | 102.21      | 111.23   |
| 32  | J     | 203 | VAL  | O-C-N     | -5.46 | 116.20      | 121.83   |
| 19  | Z     | 154 | TRP  | N-CA-CB   | 5.46  | 118.75      | 110.28   |
| 26  | O     | 22  | TRP  | N-CA-C    | 5.46  | 117.23      | 111.28   |
| 6   | F     | 190 | HIS  | O-C-N     | -5.46 | 115.55      | 122.27   |
| 10  | 3     | 100 | PHE  | CA-CB-CG  | -5.46 | 108.34      | 113.80   |
| 22  | P     | 323 | ASP  | CA-C-N    | 5.46  | 127.60      | 120.28   |
| 22  | P     | 323 | ASP  | C-N-CA    | 5.46  | 127.60      | 120.28   |
| 24  | R     | 126 | LYS  | N-CA-C    | 5.46  | 118.16      | 111.82   |
| 27  | H     | 265 | ARG  | CA-C-N    | 5.46  | 127.54      | 120.44   |
| 27  | H     | 265 | ARG  | C-N-CA    | 5.46  | 127.54      | 120.44   |
| 28  | I     | 245 | ALA  | N-CA-C    | -5.46 | 100.78      | 109.96   |
| 23  | Q     | 39  | ASP  | CA-CB-CG  | 5.46  | 118.06      | 112.60   |
| 1   | A     | 165 | ALA  | N-CA-C    | -5.46 | 100.14      | 108.76   |
| 12  | 5     | 159 | MET  | CB-CA-C   | -5.46 | 104.29      | 111.82   |
| 17  | T     | 231 | HIS  | CA-C-N    | 5.46  | 124.98      | 119.19   |
| 17  | T     | 231 | HIS  | C-N-CA    | 5.46  | 124.98      | 119.19   |
| 22  | P     | 366 | MET  | N-CA-C    | 5.46  | 117.31      | 111.36   |
| 27  | H     | 246 | VAL  | CA-CB-CG2 | 5.46  | 119.68      | 110.40   |
| 1   | A     | 127 | GLN  | N-CA-CB   | 5.46  | 118.74      | 110.28   |
| 9   | 2     | 192 | GLU  | CA-C-N    | 5.46  | 128.04      | 120.29   |
| 9   | 2     | 192 | GLU  | C-N-CA    | 5.46  | 128.04      | 120.29   |
| 13  | 6     | 188 | VAL  | CA-C-O    | 5.46  | 126.36      | 120.47   |
| 26  | O     | 23  | HIS  | CA-C-N    | 5.46  | 127.53      | 120.44   |
| 26  | O     | 23  | HIS  | C-N-CA    | 5.46  | 127.53      | 120.44   |
| 26  | O     | 228 | THR  | N-CA-CB   | 5.46  | 117.92      | 110.01   |
| 11  | 4     | 46  | CYS  | N-CA-C    | -5.46 | 100.01      | 108.90   |
| 15  | W     | 18  | ASN  | N-CA-C    | 5.46  | 117.33      | 110.24   |
| 27  | H     | 326 | THR  | N-CA-C    | -5.46 | 105.43      | 113.61   |
| 3   | C     | 128 | ARG  | CA-C-O    | -5.45 | 114.77      | 120.88   |
| 14  | 7     | 154 | LYS  | N-CA-CB   | 5.45  | 118.03      | 109.69   |
| 17  | T     | 303 | THR  | N-CA-C    | 5.45  | 116.91      | 111.07   |
| 19  | Z     | 771 | LEU  | N-CA-C    | -5.45 | 106.48      | 114.39   |
| 25  | U     | 114 | ARG  | N-CA-C    | 5.45  | 117.22      | 111.28   |
| 21  | S     | 184 | SER  | N-CA-C    | -5.45 | 104.58      | 113.19   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 23  | Q     | 82  | LYS  | O-C-N       | 5.45  | 129.69      | 123.48   |
| 28  | I     | 308 | THR  | CA-C-O      | -5.45 | 114.77      | 120.55   |
| 2   | B     | 213 | CYS  | N-CA-C      | -5.45 | 99.55       | 108.76   |
| 16  | V     | 225 | TRP  | CG-CD2-CE3  | -5.45 | 128.45      | 133.90   |
| 19  | Z     | 876 | HIS  | ND1-CE1-NE2 | 5.45  | 113.85      | 108.40   |
| 19  | Z     | 885 | GLU  | CA-C-O      | 5.45  | 126.32      | 120.32   |
| 20  | N     | 125 | PRO  | N-CA-CB     | 5.45  | 108.70      | 103.52   |
| 22  | P     | 209 | ILE  | CB-CA-C     | -5.45 | 102.71      | 111.59   |
| 26  | O     | 142 | LEU  | CA-C-N      | 5.45  | 128.03      | 120.29   |
| 26  | O     | 142 | LEU  | C-N-CA      | 5.45  | 128.03      | 120.29   |
| 30  | L     | 342 | TYR  | CB-CG-CD1   | 5.45  | 128.98      | 120.80   |
| 4   | D     | 85  | ASP  | CA-C-N      | 5.45  | 128.12      | 120.28   |
| 4   | D     | 85  | ASP  | C-N-CA      | 5.45  | 128.12      | 120.28   |
| 4   | D     | 243 | GLU  | O-C-N       | 5.45  | 128.97      | 122.27   |
| 9   | 2     | 100 | GLN  | N-CA-C      | -5.45 | 105.34      | 111.28   |
| 30  | L     | 22  | ALA  | N-CA-CB     | 5.45  | 118.13      | 110.12   |
| 1   | A     | 2   | SER  | N-CA-C      | -5.45 | 100.44      | 108.99   |
| 7   | G     | 10  | LEU  | N-CA-C      | -5.45 | 106.22      | 112.92   |
| 12  | 5     | 77  | SER  | N-CA-CB     | 5.45  | 120.16      | 111.56   |
| 15  | W     | 95  | LEU  | N-CA-C      | -5.45 | 105.42      | 111.36   |
| 16  | V     | 219 | ASN  | O-C-N       | 5.45  | 129.70      | 122.95   |
| 30  | L     | 235 | TYR  | CA-C-O      | 5.45  | 126.32      | 120.55   |
| 31  | M     | 77  | LYS  | O-C-N       | 5.45  | 127.89      | 122.12   |
| 31  | M     | 139 | VAL  | O-C-N       | 5.45  | 129.29      | 122.59   |
| 9   | 2     | 175 | LEU  | N-CA-CB     | 5.44  | 118.72      | 110.28   |
| 30  | L     | 390 | ASP  | CA-CB-CG    | -5.44 | 107.16      | 112.60   |
| 15  | W     | 169 | HIS  | CA-C-O      | -5.44 | 115.41      | 121.23   |
| 17  | T     | 102 | LYS  | CA-C-N      | 5.44  | 128.02      | 120.29   |
| 17  | T     | 102 | LYS  | C-N-CA      | 5.44  | 128.02      | 120.29   |
| 19  | Z     | 514 | VAL  | CA-C-N      | 5.44  | 128.12      | 120.28   |
| 19  | Z     | 514 | VAL  | C-N-CA      | 5.44  | 128.12      | 120.28   |
| 19  | Z     | 853 | VAL  | CA-C-N      | 5.44  | 128.83      | 122.19   |
| 19  | Z     | 853 | VAL  | C-N-CA      | 5.44  | 128.83      | 122.19   |
| 20  | N     | 33  | ASP  | CA-C-N      | 5.44  | 132.19      | 121.58   |
| 20  | N     | 33  | ASP  | C-N-CA      | 5.44  | 132.19      | 121.58   |
| 28  | I     | 103 | ARG  | CA-CB-CG    | 5.44  | 124.98      | 114.10   |
| 29  | K     | 177 | VAL  | N-CA-C      | 5.44  | 116.22      | 110.72   |
| 15  | W     | 105 | HIS  | CE1-NE2-CD2 | -5.44 | 103.56      | 109.00   |
| 19  | Z     | 263 | PRO  | CA-C-N      | 5.44  | 128.58      | 120.31   |
| 19  | Z     | 263 | PRO  | C-N-CA      | 5.44  | 128.58      | 120.31   |
| 32  | J     | 106 | ASN  | N-CA-C      | -5.44 | 106.32      | 113.17   |
| 4   | D     | 2   | SER  | N-CA-C      | -5.44 | 98.69       | 108.48   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 30  | L     | 17  | ASP  | N-CA-C      | -5.44 | 99.63       | 108.82   |
| 6   | F     | 23  | GLU  | CA-C-N      | 5.44  | 128.01      | 120.29   |
| 6   | F     | 23  | GLU  | C-N-CA      | 5.44  | 128.01      | 120.29   |
| 7   | G     | 121 | HIS  | CA-C-O      | -5.44 | 114.79      | 120.55   |
| 9   | 2     | 187 | PRO  | N-CA-C      | -5.44 | 101.27      | 112.47   |
| 14  | 7     | 117 | ASP  | N-CA-C      | -5.44 | 105.43      | 111.36   |
| 16  | V     | 31  | VAL  | N-CA-CB     | -5.44 | 104.46      | 110.99   |
| 20  | N     | 691 | SER  | CA-C-N      | 5.44  | 127.57      | 120.28   |
| 20  | N     | 691 | SER  | C-N-CA      | 5.44  | 127.57      | 120.28   |
| 22  | P     | 149 | LEU  | CB-CA-C     | -5.44 | 101.77      | 110.79   |
| 23  | Q     | 263 | THR  | CA-C-N      | 5.44  | 125.13      | 119.64   |
| 23  | Q     | 263 | THR  | C-N-CA      | 5.44  | 125.13      | 119.64   |
| 24  | R     | 304 | TYR  | CA-CB-CG    | -5.44 | 104.11      | 113.90   |
| 25  | U     | 273 | HIS  | CE1-NE2-CD2 | -5.44 | 103.56      | 109.00   |
| 25  | U     | 77  | ASN  | CA-C-N      | 5.44  | 128.57      | 120.31   |
| 25  | U     | 77  | ASN  | C-N-CA      | 5.44  | 128.57      | 120.31   |
| 28  | I     | 173 | VAL  | N-CA-C      | 5.44  | 116.21      | 110.72   |
| 1   | A     | 245 | ARG  | NE-CZ-NH2   | -5.43 | 114.31      | 119.20   |
| 8   | 1     | 203 | SER  | O-C-N       | -5.43 | 116.25      | 121.85   |
| 11  | 4     | 84  | THR  | CA-C-O      | -5.43 | 114.66      | 120.42   |
| 23  | Q     | 47  | GLU  | CB-CG-CD    | -5.43 | 103.36      | 112.60   |
| 25  | U     | 193 | ASN  | CA-C-N      | 5.43  | 127.56      | 120.28   |
| 25  | U     | 193 | ASN  | C-N-CA      | 5.43  | 127.56      | 120.28   |
| 31  | M     | 287 | PHE  | CB-CA-C     | -5.43 | 101.14      | 110.22   |
| 4   | D     | 200 | ALA  | N-CA-CB     | -5.43 | 102.12      | 110.16   |
| 4   | D     | 221 | GLN  | OE1-CD-NE2  | 5.43  | 128.03      | 122.60   |
| 5   | E     | 124 | GLY  | O-C-N       | -5.43 | 115.64      | 122.70   |
| 15  | W     | 92  | VAL  | CA-C-N      | 5.43  | 128.57      | 120.31   |
| 15  | W     | 92  | VAL  | C-N-CA      | 5.43  | 128.57      | 120.31   |
| 19  | Z     | 316 | ASP  | N-CA-C      | -5.43 | 107.02      | 113.97   |
| 19  | Z     | 832 | THR  | N-CA-C      | -5.43 | 105.87      | 112.88   |
| 19  | Z     | 838 | ARG  | CD-NE-CZ    | -5.43 | 116.80      | 124.40   |
| 22  | P     | 260 | SER  | CB-CA-C     | -5.43 | 102.32      | 110.90   |
| 23  | Q     | 36  | GLN  | OE1-CD-NE2  | 5.43  | 128.03      | 122.60   |
| 25  | U     | 170 | VAL  | CA-C-N      | 5.43  | 126.01      | 119.98   |
| 25  | U     | 170 | VAL  | C-N-CA      | 5.43  | 126.01      | 119.98   |
| 29  | K     | 123 | LEU  | CA-C-N      | 5.43  | 133.21      | 121.64   |
| 29  | K     | 123 | LEU  | C-N-CA      | 5.43  | 133.21      | 121.64   |
| 9   | 2     | 255 | LEU  | N-CA-C      | -5.43 | 100.87      | 108.96   |
| 11  | 4     | 50  | ALA  | CA-C-N      | 5.43  | 132.05      | 121.41   |
| 11  | 4     | 50  | ALA  | C-N-CA      | 5.43  | 132.05      | 121.41   |
| 20  | N     | 461 | LEU  | CD1-CG-CD2  | -5.43 | 98.86       | 110.80   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 22  | P     | 52  | LYS  | N-CA-C      | -5.43 | 105.52      | 111.82   |
| 23  | Q     | 109 | LEU  | CA-C-N      | 5.43  | 128.00      | 120.29   |
| 23  | Q     | 109 | LEU  | C-N-CA      | 5.43  | 128.00      | 120.29   |
| 9   | 2     | 132 | ARG  | CA-C-O      | -5.43 | 114.80      | 120.55   |
| 24  | R     | 172 | GLY  | O-C-N       | -5.43 | 115.50      | 122.39   |
| 31  | M     | 36  | VAL  | O-C-N       | 5.43  | 127.23      | 121.91   |
| 1   | A     | 235 | ILE  | CA-C-O      | -5.43 | 115.31      | 120.95   |
| 3   | C     | 27  | ALA  | CA-C-N      | 5.43  | 127.89      | 120.46   |
| 3   | C     | 27  | ALA  | C-N-CA      | 5.43  | 127.89      | 120.46   |
| 23  | Q     | 35  | ILE  | O-C-N       | 5.43  | 127.23      | 121.91   |
| 26  | O     | 305 | ASN  | CA-CB-CG    | -5.43 | 107.17      | 112.60   |
| 27  | H     | 62  | LEU  | O-C-N       | 5.43  | 127.66      | 122.07   |
| 31  | M     | 137 | LEU  | CA-C-O      | -5.43 | 114.69      | 120.28   |
| 32  | J     | 144 | PRO  | CB-CA-C     | 5.43  | 116.43      | 111.87   |
| 4   | D     | 64  | ALA  | N-CA-C      | -5.42 | 100.33      | 108.96   |
| 4   | D     | 184 | ASP  | CA-C-N      | 5.42  | 127.55      | 120.28   |
| 4   | D     | 184 | ASP  | C-N-CA      | 5.42  | 127.55      | 120.28   |
| 19  | Z     | 728 | ALA  | N-CA-CB     | -5.42 | 102.14      | 110.01   |
| 21  | S     | 413 | ILE  | N-CA-C      | -5.42 | 100.02      | 108.81   |
| 8   | 1     | 197 | MET  | CA-C-O      | -5.42 | 115.11      | 120.70   |
| 25  | U     | 133 | LEU  | CA-C-O      | -5.42 | 114.53      | 120.17   |
| 1   | A     | 12  | HIS  | O-C-N       | 5.42  | 128.75      | 122.19   |
| 3   | C     | 178 | ASP  | CA-CB-CG    | 5.42  | 118.02      | 112.60   |
| 7   | G     | 217 | VAL  | N-CA-C      | -5.42 | 98.06       | 109.34   |
| 12  | 5     | 126 | GLU  | CA-C-N      | 5.42  | 127.81      | 120.44   |
| 12  | 5     | 126 | GLU  | C-N-CA      | 5.42  | 127.81      | 120.44   |
| 19  | Z     | 275 | MET  | O-C-N       | 5.42  | 128.94      | 122.27   |
| 23  | Q     | 126 | ARG  | N-CA-C      | -5.42 | 105.37      | 111.28   |
| 23  | Q     | 192 | SER  | CA-C-O      | -5.42 | 114.67      | 120.42   |
| 27  | H     | 262 | GLU  | N-CA-CB     | 5.42  | 118.09      | 110.12   |
| 12  | 5     | 255 | HIS  | CG-CD2-NE2  | 5.42  | 112.62      | 107.20   |
| 16  | V     | 239 | LYS  | CA-C-N      | 5.42  | 127.54      | 120.28   |
| 16  | V     | 239 | LYS  | C-N-CA      | 5.42  | 127.54      | 120.28   |
| 19  | Z     | 187 | LEU  | CA-C-N      | -5.42 | 114.56      | 122.58   |
| 19  | Z     | 187 | LEU  | C-N-CA      | -5.42 | 114.56      | 122.58   |
| 5   | E     | 99  | HIS  | CE1-NE2-CD2 | -5.42 | 103.58      | 109.00   |
| 23  | Q     | 125 | LEU  | O-C-N       | 5.42  | 128.94      | 122.27   |
| 31  | M     | 87  | LYS  | CA-C-O      | -5.42 | 115.13      | 120.82   |
| 32  | J     | 241 | HIS  | CG-CD2-NE2  | 5.42  | 112.62      | 107.20   |
| 14  | 7     | 141 | TYR  | N-CA-C      | -5.42 | 105.54      | 111.82   |
| 17  | T     | 217 | ARG  | O-C-N       | 5.42  | 128.32      | 122.15   |
| 27  | H     | 79  | ASP  | CB-CA-C     | -5.42 | 101.80      | 110.79   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 27  | H     | 169 | LYS  | CA-C-O      | -5.42 | 115.37      | 119.59   |
| 29  | K     | 306 | LYS  | CA-C-O      | -5.42 | 115.91      | 121.87   |
| 32  | J     | 160 | GLU  | CB-CA-C     | -5.42 | 101.64      | 110.85   |
| 4   | D     | 238 | ILE  | CA-C-N      | 5.42  | 128.54      | 120.31   |
| 4   | D     | 238 | ILE  | C-N-CA      | 5.42  | 128.54      | 120.31   |
| 5   | E     | 60  | GLU  | CA-C-N      | 5.42  | 124.75      | 118.85   |
| 5   | E     | 60  | GLU  | C-N-CA      | 5.42  | 124.75      | 118.85   |
| 15  | W     | 149 | ASN  | CB-CG-ND2   | -5.42 | 108.28      | 116.40   |
| 17  | T     | 185 | LEU  | CB-CA-C     | 5.42  | 117.71      | 110.13   |
| 19  | Z     | 96  | LEU  | CB-CA-C     | -5.42 | 102.38      | 110.88   |
| 4   | D     | 113 | ILE  | CA-C-O      | 5.41  | 126.59      | 120.85   |
| 17  | T     | 213 | THR  | O-C-N       | 5.41  | 127.64      | 122.07   |
| 20  | N     | 556 | MET  | CA-C-N      | 5.41  | 130.00      | 121.56   |
| 20  | N     | 556 | MET  | C-N-CA      | 5.41  | 130.00      | 121.56   |
| 10  | 3     | 51  | ILE  | CA-C-O      | -5.41 | 115.62      | 121.19   |
| 21  | S     | 131 | LEU  | N-CA-C      | -5.41 | 101.97      | 110.36   |
| 30  | L     | 30  | LEU  | N-CA-CB     | 5.41  | 118.08      | 110.12   |
| 32  | J     | 59  | LEU  | N-CA-C      | -5.41 | 105.46      | 111.36   |
| 5   | E     | 153 | LEU  | N-CA-C      | -5.41 | 99.61       | 108.76   |
| 19  | Z     | 480 | GLY  | CA-C-O      | -5.41 | 115.16      | 121.00   |
| 24  | R     | 107 | LYS  | CA-C-O      | -5.41 | 114.81      | 120.55   |
| 24  | R     | 141 | VAL  | N-CA-CB     | 5.41  | 119.90      | 110.65   |
| 29  | K     | 222 | HIS  | CE1-NE2-CD2 | -5.41 | 103.59      | 109.00   |
| 19  | Z     | 312 | GLU  | CA-C-O      | -5.41 | 115.49      | 121.33   |
| 19  | Z     | 422 | VAL  | N-CA-C      | -5.41 | 107.71      | 112.90   |
| 20  | N     | 108 | TYR  | N-CA-C      | -5.41 | 105.39      | 111.28   |
| 21  | S     | 167 | MET  | CA-C-N      | 5.41  | 127.87      | 120.46   |
| 21  | S     | 167 | MET  | C-N-CA      | 5.41  | 127.87      | 120.46   |
| 21  | S     | 179 | GLU  | CB-CA-C     | -5.41 | 101.81      | 110.79   |
| 21  | S     | 430 | ALA  | N-CA-C      | 5.41  | 117.17      | 111.28   |
| 22  | P     | 182 | ARG  | NE-CZ-NH2   | -5.41 | 114.33      | 119.20   |
| 24  | R     | 224 | VAL  | CA-CB-CG2   | -5.41 | 101.21      | 110.40   |
| 27  | H     | 396 | ALA  | CA-C-O      | -5.41 | 114.82      | 120.55   |
| 29  | K     | 49  | GLN  | O-C-N       | 5.41  | 127.85      | 122.12   |
| 29  | K     | 118 | THR  | CA-C-N      | 5.41  | 130.87      | 123.46   |
| 29  | K     | 118 | THR  | C-N-CA      | 5.41  | 130.87      | 123.46   |
| 19  | Z     | 181 | ARG  | NE-CZ-NH2   | -5.41 | 114.33      | 119.20   |
| 24  | R     | 168 | ILE  | N-CA-C      | 5.41  | 115.61      | 110.42   |
| 13  | 6     | 233 | GLU  | N-CA-C      | -5.41 | 101.08      | 109.24   |
| 24  | R     | 157 | ILE  | CB-CA-C     | -5.41 | 104.84      | 112.14   |
| 26  | O     | 321 | ARG  | N-CA-C      | -5.41 | 100.96      | 109.50   |
| 26  | O     | 371 | ALA  | CA-C-N      | 5.41  | 129.82      | 120.58   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 26  | O     | 371 | ALA  | C-N-CA     | 5.41  | 129.82      | 120.58   |
| 6   | F     | 171 | TYR  | N-CA-C     | -5.40 | 105.47      | 111.36   |
| 27  | H     | 255 | ARG  | CA-C-N     | 5.40  | 127.47      | 120.44   |
| 27  | H     | 255 | ARG  | C-N-CA     | 5.40  | 127.47      | 120.44   |
| 19  | Z     | 415 | GLY  | CA-C-N     | 5.40  | 128.52      | 120.31   |
| 19  | Z     | 415 | GLY  | C-N-CA     | 5.40  | 128.52      | 120.31   |
| 20  | N     | 599 | ILE  | N-CA-CB    | 5.40  | 117.89      | 110.54   |
| 21  | S     | 263 | ALA  | CA-C-N     | 5.40  | 127.52      | 120.28   |
| 21  | S     | 263 | ALA  | C-N-CA     | 5.40  | 127.52      | 120.28   |
| 21  | S     | 462 | ILE  | CA-C-O     | 5.40  | 124.93      | 119.20   |
| 32  | J     | 391 | MET  | N-CA-CB    | 5.40  | 117.84      | 110.01   |
| 20  | N     | 382 | SER  | N-CA-C     | 5.40  | 122.30      | 110.80   |
| 26  | O     | 11  | SER  | O-C-N      | 5.40  | 128.31      | 122.15   |
| 26  | O     | 25  | LEU  | N-CA-CB    | 5.40  | 118.06      | 110.12   |
| 19  | Z     | 133 | MET  | CA-C-N     | 5.40  | 131.85      | 121.54   |
| 19  | Z     | 133 | MET  | C-N-CA     | 5.40  | 131.85      | 121.54   |
| 20  | N     | 349 | ASP  | CA-C-N     | 5.40  | 128.52      | 120.31   |
| 20  | N     | 349 | ASP  | C-N-CA     | 5.40  | 128.52      | 120.31   |
| 26  | O     | 363 | MET  | N-CA-C     | 5.40  | 117.17      | 111.28   |
| 12  | 5     | 220 | TYR  | CA-C-O     | -5.40 | 115.15      | 120.82   |
| 20  | N     | 766 | PHE  | N-CA-C     | 5.40  | 117.16      | 111.28   |
| 24  | R     | 82  | LYS  | N-CA-C     | 5.40  | 117.16      | 111.28   |
| 27  | H     | 53  | GLN  | CB-CA-C    | -5.40 | 101.83      | 110.79   |
| 31  | M     | 242 | ALA  | N-CA-C     | 5.40  | 117.16      | 111.28   |
| 32  | J     | 33  | LEU  | N-CA-C     | 5.40  | 117.24      | 111.36   |
| 14  | 7     | 253 | TRP  | CB-CG-CD2  | -5.40 | 119.25      | 126.80   |
| 21  | S     | 357 | PHE  | CA-C-N     | 5.40  | 127.51      | 120.28   |
| 21  | S     | 357 | PHE  | C-N-CA     | 5.40  | 127.51      | 120.28   |
| 29  | K     | 82  | ILE  | N-CA-C     | -5.40 | 105.27      | 110.72   |
| 1   | A     | 154 | CYS  | CA-C-N     | 5.39  | 131.22      | 122.48   |
| 1   | A     | 154 | CYS  | C-N-CA     | 5.39  | 131.22      | 122.48   |
| 13  | 6     | 197 | ARG  | CA-C-N     | 5.39  | 127.51      | 120.28   |
| 13  | 6     | 197 | ARG  | C-N-CA     | 5.39  | 127.51      | 120.28   |
| 27  | H     | 430 | MET  | N-CA-C     | -5.39 | 101.78      | 110.14   |
| 28  | I     | 387 | LYS  | N-CA-C     | -5.39 | 100.52      | 108.99   |
| 29  | K     | 352 | MET  | CG-SD-CE   | 5.39  | 112.77      | 100.90   |
| 13  | 6     | 174 | PRO  | CA-C-N     | 5.39  | 127.51      | 120.28   |
| 13  | 6     | 174 | PRO  | C-N-CA     | 5.39  | 127.51      | 120.28   |
| 27  | H     | 401 | ARG  | NH1-CZ-NH2 | -5.39 | 112.29      | 119.30   |
| 29  | K     | 178 | ARG  | N-CA-CB    | 5.39  | 117.83      | 110.01   |
| 4   | D     | 216 | VAL  | CA-C-N     | 5.39  | 131.18      | 122.29   |
| 4   | D     | 216 | VAL  | C-N-CA     | 5.39  | 131.18      | 122.29   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 17  | T     | 166 | SER  | CA-C-N      | 5.39  | 127.50      | 120.28   |
| 17  | T     | 166 | SER  | C-N-CA      | 5.39  | 127.50      | 120.28   |
| 19  | Z     | 3   | GLU  | N-CA-CB     | 5.39  | 117.77      | 110.38   |
| 21  | S     | 284 | TYR  | CA-CB-CG    | -5.39 | 104.20      | 113.90   |
| 31  | M     | 50  | LEU  | CA-C-N      | 5.39  | 128.04      | 120.28   |
| 31  | M     | 50  | LEU  | C-N-CA      | 5.39  | 128.04      | 120.28   |
| 20  | N     | 151 | ILE  | CA-C-N      | 5.39  | 125.81      | 119.94   |
| 20  | N     | 151 | ILE  | C-N-CA      | 5.39  | 125.81      | 119.94   |
| 21  | S     | 176 | ARG  | N-CA-CB     | 5.39  | 119.41      | 110.52   |
| 21  | S     | 275 | GLN  | OE1-CD-NE2  | -5.39 | 117.21      | 122.60   |
| 20  | N     | 399 | TRP  | CE2-CD2-CE3 | 5.39  | 124.19      | 118.80   |
| 32  | J     | 154 | LEU  | N-CA-C      | -5.39 | 98.03       | 107.73   |
| 32  | J     | 205 | HIS  | CE1-NE2-CD2 | -5.39 | 103.61      | 109.00   |
| 2   | B     | 77  | SER  | N-CA-C      | -5.39 | 99.90       | 109.06   |
| 16  | V     | 172 | HIS  | N-CA-CB     | 5.39  | 119.59      | 110.49   |
| 21  | S     | 180 | ALA  | CA-C-N      | 5.39  | 127.94      | 120.29   |
| 21  | S     | 180 | ALA  | C-N-CA      | 5.39  | 127.94      | 120.29   |
| 22  | P     | 306 | LEU  | CA-C-N      | 5.39  | 127.50      | 120.28   |
| 22  | P     | 306 | LEU  | C-N-CA      | 5.39  | 127.50      | 120.28   |
| 27  | H     | 261 | PHE  | CA-CB-CG    | -5.39 | 108.41      | 113.80   |
| 7   | G     | 97  | SER  | CA-C-O      | -5.38 | 114.84      | 120.55   |
| 10  | 3     | 121 | ILE  | CA-CB-CG1   | 5.38  | 119.55      | 110.40   |
| 21  | S     | 315 | HIS  | N-CA-C      | 5.38  | 117.15      | 111.28   |
| 22  | P     | 309 | PHE  | O-C-N       | 5.38  | 128.29      | 122.15   |
| 23  | Q     | 63  | ALA  | N-CA-C      | -5.38 | 101.22      | 109.41   |
| 28  | I     | 243 | THR  | N-CA-CB     | 5.38  | 118.13      | 110.16   |
| 29  | K     | 364 | VAL  | CA-C-N      | 5.38  | 127.44      | 120.44   |
| 29  | K     | 364 | VAL  | C-N-CA      | 5.38  | 127.44      | 120.44   |
| 1   | A     | 131 | MET  | CG-SD-CE    | -5.38 | 89.06       | 100.90   |
| 14  | 7     | 52  | GLY  | O-C-N       | -5.38 | 115.70      | 122.70   |
| 19  | Z     | 72  | ARG  | O-C-N       | -5.38 | 116.13      | 120.38   |
| 19  | Z     | 309 | GLU  | CA-C-N      | 5.38  | 131.82      | 121.54   |
| 19  | Z     | 309 | GLU  | C-N-CA      | 5.38  | 131.82      | 121.54   |
| 20  | N     | 556 | MET  | N-CA-C      | 5.38  | 119.47      | 113.01   |
| 31  | M     | 245 | ALA  | N-CA-CB     | -5.38 | 102.20      | 110.16   |
| 15  | W     | 154 | THR  | CA-C-N      | 5.38  | 127.49      | 120.28   |
| 15  | W     | 154 | THR  | C-N-CA      | 5.38  | 127.49      | 120.28   |
| 20  | N     | 766 | PHE  | CA-C-N      | 5.38  | 127.49      | 120.28   |
| 20  | N     | 766 | PHE  | C-N-CA      | 5.38  | 127.49      | 120.28   |
| 23  | Q     | 69  | LEU  | N-CA-C      | -5.38 | 105.50      | 111.36   |
| 31  | M     | 110 | ASP  | CA-C-O      | 5.38  | 125.28      | 119.15   |
| 13  | 6     | 120 | SER  | CA-C-N      | 5.38  | 128.03      | 120.28   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 13  | 6     | 120 | SER  | C-N-CA    | 5.38  | 128.03      | 120.28   |
| 17  | T     | 288 | ALA  | CA-C-N    | 5.38  | 128.49      | 120.31   |
| 17  | T     | 288 | ALA  | C-N-CA    | 5.38  | 128.49      | 120.31   |
| 18  | Y     | 47  | ASN  | CB-CG-ND2 | -5.38 | 108.33      | 116.40   |
| 32  | J     | 284 | GLU  | O-C-N     | -5.38 | 115.44      | 122.59   |
| 4   | D     | 106 | ASP  | CA-C-O    | -5.38 | 114.96      | 120.87   |
| 16  | V     | 59  | GLY  | N-CA-C    | -5.38 | 102.83      | 111.59   |
| 19  | Z     | 881 | GLU  | CA-C-O    | -5.38 | 114.22      | 120.62   |
| 23  | Q     | 162 | ASP  | O-C-N     | 5.38  | 127.39      | 121.85   |
| 25  | U     | 134 | PRO  | N-CA-C    | -5.38 | 107.80      | 114.68   |
| 28  | I     | 415 | THR  | CA-C-O    | -5.38 | 114.97      | 121.32   |
| 31  | M     | 30  | ASP  | CB-CA-C   | -5.38 | 100.03      | 109.71   |
| 32  | J     | 330 | LYS  | N-CA-C    | 5.38  | 117.14      | 111.28   |
| 19  | Z     | 343 | LYS  | CA-C-N    | 5.38  | 123.63      | 120.24   |
| 19  | Z     | 343 | LYS  | C-N-CA    | 5.38  | 123.63      | 120.24   |
| 19  | Z     | 522 | CYS  | N-CA-C    | 5.38  | 117.22      | 111.36   |
| 23  | Q     | 157 | LEU  | CA-C-N    | 5.38  | 127.48      | 120.28   |
| 23  | Q     | 157 | LEU  | C-N-CA    | 5.38  | 127.48      | 120.28   |
| 24  | R     | 74  | LYS  | CA-C-N    | 5.38  | 127.43      | 120.44   |
| 24  | R     | 74  | LYS  | C-N-CA    | 5.38  | 127.43      | 120.44   |
| 26  | O     | 373 | ASP  | CA-CB-CG  | -5.38 | 107.22      | 112.60   |
| 9   | 2     | 122 | ALA  | CA-C-N    | 5.37  | 128.48      | 120.31   |
| 9   | 2     | 122 | ALA  | C-N-CA    | 5.37  | 128.48      | 120.31   |
| 17  | T     | 323 | SER  | CA-C-N    | 5.37  | 128.48      | 120.31   |
| 17  | T     | 323 | SER  | C-N-CA    | 5.37  | 128.48      | 120.31   |
| 19  | Z     | 128 | VAL  | N-CA-CB   | 5.37  | 116.84      | 110.55   |
| 19  | Z     | 542 | ILE  | CA-C-N    | 5.37  | 127.43      | 120.44   |
| 19  | Z     | 542 | ILE  | C-N-CA    | 5.37  | 127.43      | 120.44   |
| 20  | N     | 231 | ASP  | N-CA-CB   | 5.37  | 118.02      | 110.12   |
| 21  | S     | 385 | ASP  | CA-C-O    | 5.37  | 126.15      | 119.97   |
| 22  | P     | 371 | THR  | CA-C-O    | 5.37  | 126.12      | 120.42   |
| 24  | R     | 32  | ARG  | NE-CZ-NH2 | 5.37  | 124.04      | 119.20   |
| 28  | I     | 327 | VAL  | CA-C-O    | 5.37  | 126.96      | 120.67   |
| 29  | K     | 172 | ILE  | CA-CB-CG1 | 5.37  | 119.53      | 110.40   |
| 31  | M     | 206 | VAL  | CB-CA-C   | -5.37 | 104.80      | 112.22   |
| 2   | B     | 33  | ALA  | N-CA-C    | 5.37  | 116.59      | 109.93   |
| 15  | W     | 105 | HIS  | CA-C-O    | -5.37 | 115.61      | 121.89   |
| 22  | P     | 453 | HIS  | CA-CB-CG  | 5.37  | 119.17      | 113.80   |
| 24  | R     | 118 | GLU  | CA-C-N    | 5.37  | 125.91      | 120.00   |
| 24  | R     | 118 | GLU  | C-N-CA    | 5.37  | 125.91      | 120.00   |
| 31  | M     | 52  | ASP  | CA-CB-CG  | -5.37 | 107.23      | 112.60   |
| 31  | M     | 396 | GLY  | CA-C-O    | 5.37  | 126.28      | 120.75   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 32  | J     | 302 | ASP  | CB-CA-C   | -5.37 | 100.33      | 109.51   |
| 4   | D     | 97  | CYS  | CA-C-N    | 5.37  | 127.92      | 120.29   |
| 4   | D     | 97  | CYS  | C-N-CA    | 5.37  | 127.92      | 120.29   |
| 32  | J     | 45  | LEU  | CA-C-N    | 5.37  | 127.74      | 120.44   |
| 32  | J     | 45  | LEU  | C-N-CA    | 5.37  | 127.74      | 120.44   |
| 14  | 7     | 214 | GLU  | N-CA-C    | 5.37  | 117.13      | 111.28   |
| 15  | W     | 147 | GLU  | N-CA-CB   | 5.37  | 117.79      | 110.01   |
| 17  | T     | 216 | GLU  | CA-C-N    | 5.37  | 127.91      | 120.29   |
| 17  | T     | 216 | GLU  | C-N-CA    | 5.37  | 127.91      | 120.29   |
| 20  | N     | 713 | TYR  | CA-C-O    | 5.37  | 126.46      | 120.82   |
| 22  | P     | 361 | HIS  | CB-CG-CD2 | -5.37 | 124.22      | 131.20   |
| 2   | B     | 69  | THR  | CA-CB-OG1 | 5.37  | 117.65      | 109.60   |
| 4   | D     | 173 | SER  | CB-CA-C   | -5.37 | 102.42      | 110.90   |
| 21  | S     | 447 | ILE  | N-CA-CB   | 5.37  | 117.43      | 110.99   |
| 24  | R     | 195 | LYS  | CA-C-N    | 5.37  | 127.42      | 120.44   |
| 24  | R     | 195 | LYS  | C-N-CA    | 5.37  | 127.42      | 120.44   |
| 21  | S     | 477 | SER  | N-CA-C    | -5.37 | 105.33      | 111.07   |
| 8   | 1     | 83  | ALA  | CA-C-N    | 5.36  | 127.91      | 120.29   |
| 8   | 1     | 83  | ALA  | C-N-CA    | 5.36  | 127.91      | 120.29   |
| 20  | N     | 378 | CYS  | CA-CB-SG  | 5.36  | 126.73      | 114.40   |
| 22  | P     | 374 | THR  | CA-C-O    | -5.36 | 115.65      | 121.87   |
| 25  | U     | 127 | LYS  | CB-CG-CD  | 5.36  | 123.64      | 111.30   |
| 27  | H     | 80  | LEU  | CB-CA-C   | -5.36 | 101.73      | 110.85   |
| 30  | L     | 175 | ARG  | O-C-N     | 5.36  | 127.59      | 122.07   |
| 31  | M     | 221 | GLN  | N-CA-C    | -5.36 | 102.89      | 110.29   |
| 13  | 6     | 77  | THR  | CA-CB-OG1 | 5.36  | 117.64      | 109.60   |
| 17  | T     | 164 | ILE  | CA-C-O    | -5.36 | 114.29      | 118.85   |
| 20  | N     | 404 | ALA  | CA-C-O    | -5.36 | 114.87      | 120.55   |
| 20  | N     | 485 | ALA  | CA-C-N    | 5.36  | 131.78      | 121.54   |
| 20  | N     | 485 | ALA  | C-N-CA    | 5.36  | 131.78      | 121.54   |
| 30  | L     | 22  | ALA  | CA-C-N    | 5.36  | 127.90      | 120.29   |
| 30  | L     | 22  | ALA  | C-N-CA    | 5.36  | 127.90      | 120.29   |
| 30  | L     | 370 | ARG  | CB-CA-C   | -5.36 | 102.46      | 110.88   |
| 11  | 4     | 133 | GLY  | N-CA-C    | -5.36 | 101.00      | 111.03   |
| 28  | I     | 313 | LEU  | N-CA-C    | 5.36  | 116.81      | 111.07   |
| 29  | K     | 250 | VAL  | CA-C-N    | 5.36  | 127.46      | 120.28   |
| 29  | K     | 250 | VAL  | C-N-CA    | 5.36  | 127.46      | 120.28   |
| 4   | D     | 76  | VAL  | CB-CA-C   | -5.36 | 101.12      | 110.71   |
| 13  | 6     | 224 | ILE  | N-CA-C    | -5.36 | 100.61      | 108.11   |
| 15  | W     | 98  | LYS  | CB-CA-C   | -5.36 | 101.89      | 110.79   |
| 20  | N     | 223 | LEU  | N-CA-C    | 5.36  | 117.20      | 111.36   |
| 20  | N     | 327 | LYS  | N-CA-C    | 5.36  | 116.80      | 111.07   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 21  | S     | 442 | VAL  | CA-CB-CG1   | -5.36 | 101.29      | 110.40   |
| 23  | Q     | 45  | VAL  | O-C-N       | 5.36  | 127.07      | 121.87   |
| 3   | C     | 123 | GLN  | CB-CG-CD    | -5.36 | 103.49      | 112.60   |
| 17  | T     | 258 | SER  | CA-C-N      | 5.36  | 128.45      | 120.31   |
| 17  | T     | 258 | SER  | C-N-CA      | 5.36  | 128.45      | 120.31   |
| 19  | Z     | 89  | MET  | N-CA-C      | -5.36 | 104.72      | 113.19   |
| 20  | N     | 749 | GLN  | CB-CG-CD    | -5.36 | 103.49      | 112.60   |
| 27  | H     | 49  | GLU  | CA-C-N      | 5.36  | 127.40      | 120.44   |
| 27  | H     | 49  | GLU  | C-N-CA      | 5.36  | 127.40      | 120.44   |
| 27  | H     | 150 | HIS  | O-C-N       | 5.36  | 127.82      | 122.03   |
| 28  | I     | 57  | GLN  | CB-CG-CD    | -5.36 | 103.49      | 112.60   |
| 28  | I     | 172 | THR  | CA-C-N      | 5.36  | 128.03      | 120.42   |
| 28  | I     | 172 | THR  | C-N-CA      | 5.36  | 128.03      | 120.42   |
| 29  | K     | 321 | LEU  | N-CA-CB     | -5.36 | 102.23      | 110.16   |
| 5   | E     | 30  | GLY  | CA-C-N      | 5.36  | 127.90      | 120.29   |
| 5   | E     | 30  | GLY  | C-N-CA      | 5.36  | 127.90      | 120.29   |
| 20  | N     | 323 | LEU  | N-CA-CB     | -5.36 | 101.40      | 110.50   |
| 20  | N     | 694 | ILE  | CA-C-N      | 5.36  | 129.66      | 120.72   |
| 20  | N     | 694 | ILE  | C-N-CA      | 5.36  | 129.66      | 120.72   |
| 21  | S     | 338 | ILE  | CA-CB-CG1   | 5.36  | 119.51      | 110.40   |
| 21  | S     | 368 | LEU  | CA-C-N      | 5.36  | 127.40      | 120.44   |
| 21  | S     | 368 | LEU  | C-N-CA      | 5.36  | 127.40      | 120.44   |
| 26  | O     | 23  | HIS  | CG-CD2-NE2  | 5.36  | 112.56      | 107.20   |
| 30  | L     | 177 | GLY  | CA-C-N      | 5.36  | 131.61      | 121.97   |
| 30  | L     | 177 | GLY  | C-N-CA      | 5.36  | 131.61      | 121.97   |
| 27  | H     | 401 | ARG  | CG-CD-NE    | -5.35 | 100.22      | 112.00   |
| 28  | I     | 223 | ILE  | N-CA-C      | -5.35 | 100.41      | 108.12   |
| 10  | 3     | 188 | HIS  | ND1-CE1-NE2 | 5.35  | 113.75      | 108.40   |
| 23  | Q     | 81  | SER  | N-CA-C      | 5.35  | 118.78      | 111.39   |
| 26  | O     | 122 | LYS  | CA-C-O      | 5.35  | 126.22      | 120.55   |
| 26  | O     | 228 | THR  | CA-C-N      | 5.35  | 127.99      | 120.28   |
| 26  | O     | 228 | THR  | C-N-CA      | 5.35  | 127.99      | 120.28   |
| 27  | H     | 44  | GLN  | OE1-CD-NE2  | 5.35  | 127.95      | 122.60   |
| 20  | N     | 616 | ARG  | CA-C-N      | 5.35  | 127.45      | 120.28   |
| 20  | N     | 616 | ARG  | C-N-CA      | 5.35  | 127.45      | 120.28   |
| 23  | Q     | 179 | ALA  | CA-C-N      | 5.35  | 127.99      | 120.28   |
| 23  | Q     | 179 | ALA  | C-N-CA      | 5.35  | 127.99      | 120.28   |
| 25  | U     | 264 | SER  | CA-C-N      | 5.35  | 127.72      | 120.44   |
| 25  | U     | 264 | SER  | C-N-CA      | 5.35  | 127.72      | 120.44   |
| 27  | H     | 87  | LEU  | CA-C-N      | 5.35  | 129.34      | 120.94   |
| 27  | H     | 87  | LEU  | C-N-CA      | 5.35  | 129.34      | 120.94   |
| 27  | H     | 423 | PHE  | O-C-N       | 5.35  | 129.28      | 122.91   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 6   | F     | 228 | ASP  | CA-C-O      | 5.35  | 125.61      | 119.35   |
| 9   | 2     | 148 | VAL  | CB-CA-C     | 5.35  | 120.06      | 111.29   |
| 11  | 4     | 65  | GLN  | N-CA-C      | 5.35  | 117.86      | 111.71   |
| 27  | H     | 69  | ASP  | CA-CB-CG    | 5.35  | 117.95      | 112.60   |
| 5   | E     | 31  | HIS  | CE1-NE2-CD2 | -5.35 | 103.65      | 109.00   |
| 11  | 4     | 145 | ARG  | NE-CZ-NH2   | -5.35 | 114.39      | 119.20   |
| 16  | V     | 111 | TRP  | O-C-N       | -5.35 | 116.70      | 123.17   |
| 19  | Z     | 770 | HIS  | O-C-N       | -5.35 | 116.88      | 121.85   |
| 19  | Z     | 776 | LEU  | CA-C-N      | 5.35  | 128.44      | 120.31   |
| 19  | Z     | 776 | LEU  | C-N-CA      | 5.35  | 128.44      | 120.31   |
| 20  | N     | 32  | ASN  | CA-CB-CG    | -5.35 | 107.25      | 112.60   |
| 5   | E     | 73  | HIS  | CE1-NE2-CD2 | -5.35 | 103.65      | 109.00   |
| 19  | Z     | 649 | HIS  | CE1-NE2-CD2 | -5.34 | 103.66      | 109.00   |
| 23  | Q     | 36  | GLN  | N-CA-CB     | -5.34 | 102.32      | 110.07   |
| 26  | O     | 321 | ARG  | CA-C-O      | 5.34  | 127.36      | 121.11   |
| 27  | H     | 47  | GLN  | N-CA-C      | 5.34  | 117.19      | 111.36   |
| 28  | I     | 78  | PHE  | N-CA-C      | 5.34  | 117.11      | 111.28   |
| 28  | I     | 335 | GLU  | N-CA-CB     | 5.34  | 118.07      | 110.16   |
| 4   | D     | 88  | ILE  | CA-C-O      | -5.34 | 115.39      | 120.95   |
| 8   | 1     | 220 | GLN  | OE1-CD-NE2  | 5.34  | 127.94      | 122.60   |
| 12  | 5     | 115 | GLU  | N-CA-C      | -5.34 | 105.54      | 111.36   |
| 14  | 7     | 115 | VAL  | CA-C-N      | 5.34  | 127.78      | 120.46   |
| 14  | 7     | 115 | VAL  | C-N-CA      | 5.34  | 127.78      | 120.46   |
| 19  | Z     | 640 | LYS  | CA-C-N      | 5.34  | 130.18      | 121.74   |
| 19  | Z     | 640 | LYS  | C-N-CA      | 5.34  | 130.18      | 121.74   |
| 20  | N     | 450 | HIS  | CG-CD2-NE2  | 5.34  | 112.54      | 107.20   |
| 23  | Q     | 67  | GLY  | CA-C-N      | 5.34  | 125.88      | 120.00   |
| 23  | Q     | 67  | GLY  | C-N-CA      | 5.34  | 125.88      | 120.00   |
| 10  | 3     | 73  | LEU  | CA-C-O      | 5.34  | 126.08      | 120.42   |
| 19  | Z     | 108 | GLU  | N-CA-C      | -5.34 | 105.54      | 111.36   |
| 19  | Z     | 290 | VAL  | CB-CA-C     | -5.34 | 105.08      | 112.24   |
| 21  | S     | 140 | ASP  | CA-C-N      | 5.34  | 128.43      | 120.31   |
| 21  | S     | 140 | ASP  | C-N-CA      | 5.34  | 128.43      | 120.31   |
| 23  | Q     | 132 | ARG  | N-CA-C      | 5.34  | 117.18      | 111.36   |
| 28  | I     | 83  | GLU  | CA-C-N      | 5.34  | 128.42      | 120.95   |
| 28  | I     | 83  | GLU  | C-N-CA      | 5.34  | 128.42      | 120.95   |
| 32  | J     | 189 | TYR  | N-CA-C      | -5.34 | 101.18      | 109.24   |
| 32  | J     | 194 | THR  | N-CA-C      | -5.34 | 106.44      | 113.17   |
| 29  | K     | 194 | ILE  | CA-C-O      | -5.34 | 115.40      | 120.95   |
| 30  | L     | 305 | ARG  | CA-C-O      | -5.34 | 115.23      | 119.71   |
| 31  | M     | 341 | LEU  | CA-C-O      | -5.34 | 115.32      | 121.19   |
| 1   | A     | 66  | VAL  | O-C-N       | 5.34  | 127.83      | 121.80   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 3   | C     | 66  | TYR  | N-CA-C      | -5.34 | 100.70      | 109.40   |
| 4   | D     | 55  | ASP  | O-C-N       | 5.34  | 129.98      | 123.10   |
| 12  | 5     | 132 | ARG  | N-CA-C      | -5.34 | 105.56      | 113.40   |
| 16  | V     | 65  | TYR  | N-CA-CB     | 5.34  | 119.51      | 110.49   |
| 19  | Z     | 49  | ASP  | O-C-N       | 5.34  | 127.78      | 122.12   |
| 19  | Z     | 631 | LYS  | CA-C-O      | 5.34  | 126.13      | 120.10   |
| 30  | L     | 385 | VAL  | CB-CA-C     | -5.34 | 104.94      | 112.14   |
| 20  | N     | 107 | HIS  | ND1-CE1-NE2 | 5.33  | 113.73      | 108.40   |
| 20  | N     | 899 | ARG  | N-CA-C      | 5.33  | 122.16      | 110.80   |
| 22  | P     | 83  | LEU  | CA-C-N      | 5.33  | 127.43      | 120.28   |
| 22  | P     | 83  | LEU  | C-N-CA      | 5.33  | 127.43      | 120.28   |
| 32  | J     | 158 | ILE  | CA-C-N      | 5.33  | 127.43      | 120.28   |
| 32  | J     | 158 | ILE  | C-N-CA      | 5.33  | 127.43      | 120.28   |
| 9   | 2     | 131 | PHE  | CA-C-N      | 5.33  | 127.43      | 120.28   |
| 9   | 2     | 131 | PHE  | C-N-CA      | 5.33  | 127.43      | 120.28   |
| 12  | 5     | 209 | GLU  | CB-CG-CD    | 5.33  | 121.67      | 112.60   |
| 13  | 6     | 191 | VAL  | N-CA-CB     | 5.33  | 118.68      | 111.21   |
| 16  | V     | 87  | VAL  | CB-CA-C     | -5.33 | 105.47      | 111.23   |
| 17  | T     | 259 | TYR  | CB-CA-C     | -5.33 | 100.43      | 110.67   |
| 19  | Z     | 555 | ALA  | CB-CA-C     | -5.33 | 101.94      | 110.79   |
| 19  | Z     | 876 | HIS  | CG-CD2-NE2  | 5.33  | 112.53      | 107.20   |
| 25  | U     | 112 | MET  | CA-CB-CG    | -5.33 | 103.43      | 114.10   |
| 26  | O     | 5   | PRO  | N-CD-CG     | 5.33  | 111.20      | 103.20   |
| 31  | M     | 423 | TYR  | CB-CG-CD1   | -5.33 | 112.80      | 120.80   |
| 19  | Z     | 587 | PHE  | N-CA-CB     | 5.33  | 118.43      | 110.22   |
| 20  | N     | 119 | PRO  | CA-C-O      | -5.33 | 115.36      | 121.86   |
| 20  | N     | 916 | ASP  | N-CA-C      | -5.33 | 100.48      | 108.96   |
| 21  | S     | 359 | LEU  | N-CA-CB     | 5.33  | 117.96      | 110.12   |
| 26  | O     | 302 | ILE  | O-C-N       | -5.33 | 117.42      | 123.18   |
| 30  | L     | 276 | ASN  | CB-CA-C     | -5.33 | 101.94      | 110.79   |
| 31  | M     | 34  | GLU  | CA-C-O      | -5.33 | 114.08      | 120.10   |
| 2   | B     | 64  | LYS  | CG-CD-CE    | 5.33  | 123.56      | 111.30   |
| 9   | 2     | 132 | ARG  | CD-NE-CZ    | -5.33 | 116.94      | 124.40   |
| 10  | 3     | 205 | ASP  | N-CA-CB     | 5.33  | 119.56      | 110.50   |
| 11  | 4     | 23  | SER  | N-CA-C      | -5.33 | 97.12       | 107.62   |
| 22  | P     | 87  | ILE  | CA-C-N      | 5.33  | 127.42      | 120.28   |
| 22  | P     | 87  | ILE  | C-N-CA      | 5.33  | 127.42      | 120.28   |
| 13  | 6     | 61  | SER  | O-C-N       | 5.33  | 129.68      | 122.59   |
| 16  | V     | 76  | PRO  | CA-N-CD     | -5.33 | 104.54      | 112.00   |
| 18  | Y     | 55  | GLN  | CB-CG-CD    | -5.33 | 103.54      | 112.60   |
| 20  | N     | 791 | LEU  | CA-C-N      | 5.33  | 132.85      | 121.45   |
| 20  | N     | 791 | LEU  | C-N-CA      | 5.33  | 132.85      | 121.45   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 15  | W     | 13  | SER  | CA-C-N      | 5.33  | 128.41      | 120.31   |
| 15  | W     | 13  | SER  | C-N-CA      | 5.33  | 128.41      | 120.31   |
| 11  | 4     | 66  | LEU  | CA-C-N      | 5.33  | 127.85      | 120.29   |
| 11  | 4     | 66  | LEU  | C-N-CA      | 5.33  | 127.85      | 120.29   |
| 16  | V     | 303 | MET  | CG-SD-CE    | -5.33 | 89.18       | 100.90   |
| 19  | Z     | 502 | LEU  | CA-C-O      | -5.33 | 113.73      | 118.63   |
| 28  | I     | 348 | ASP  | CA-CB-CG    | -5.33 | 107.28      | 112.60   |
| 30  | L     | 373 | HIS  | ND1-CE1-NE2 | 5.33  | 113.72      | 108.40   |
| 2   | B     | 177 | ARG  | N-CA-CB     | 5.32  | 118.13      | 110.20   |
| 2   | B     | 212 | ILE  | CB-CG1-CD1  | 5.32  | 124.98      | 113.80   |
| 2   | B     | 224 | THR  | N-CA-CB     | -5.32 | 102.28      | 110.16   |
| 13  | 6     | 202 | VAL  | CB-CA-C     | 5.32  | 119.33      | 112.14   |
| 19  | Z     | 78  | LEU  | CA-C-N      | 5.32  | 127.41      | 120.28   |
| 19  | Z     | 78  | LEU  | C-N-CA      | 5.32  | 127.41      | 120.28   |
| 19  | Z     | 771 | LEU  | CA-C-N      | 5.32  | 125.16      | 120.10   |
| 19  | Z     | 771 | LEU  | C-N-CA      | 5.32  | 125.16      | 120.10   |
| 22  | P     | 289 | ARG  | CB-CA-C     | -5.32 | 102.52      | 110.88   |
| 23  | Q     | 93  | LEU  | O-C-N       | 5.32  | 127.76      | 122.12   |
| 32  | J     | 303 | SER  | CA-C-N      | 5.32  | 127.41      | 120.28   |
| 32  | J     | 303 | SER  | C-N-CA      | 5.32  | 127.41      | 120.28   |
| 22  | P     | 59  | ASP  | CA-C-O      | 5.32  | 126.06      | 120.42   |
| 5   | E     | 237 | VAL  | CA-C-N      | 5.32  | 129.03      | 120.30   |
| 5   | E     | 237 | VAL  | C-N-CA      | 5.32  | 129.03      | 120.30   |
| 11  | 4     | 174 | ASN  | CA-C-O      | -5.32 | 112.84      | 119.38   |
| 21  | S     | 133 | GLU  | CA-C-O      | -5.32 | 114.88      | 119.72   |
| 27  | H     | 323 | ARG  | CA-C-O      | -5.32 | 115.56      | 120.13   |
| 15  | W     | 164 | ASP  | CA-CB-CG    | 5.32  | 117.92      | 112.60   |
| 20  | N     | 904 | LYS  | CA-C-O      | -5.32 | 112.87      | 120.16   |
| 21  | S     | 410 | TYR  | CB-CA-C     | 5.32  | 119.30      | 110.74   |
| 22  | P     | 447 | ALA  | CA-C-N      | 5.32  | 127.41      | 120.28   |
| 22  | P     | 447 | ALA  | C-N-CA      | 5.32  | 127.41      | 120.28   |
| 1   | A     | 211 | LYS  | CA-C-N      | 5.32  | 124.83      | 119.19   |
| 1   | A     | 211 | LYS  | C-N-CA      | 5.32  | 124.83      | 119.19   |
| 5   | E     | 221 | GLN  | N-CA-C      | -5.32 | 103.43      | 110.40   |
| 13  | 6     | 42  | ILE  | O-C-N       | -5.32 | 117.44      | 123.18   |
| 19  | Z     | 311 | VAL  | CA-CB-CG2   | 5.32  | 119.44      | 110.40   |
| 20  | N     | 512 | ALA  | CA-C-N      | -5.32 | 114.15      | 120.00   |
| 20  | N     | 512 | ALA  | C-N-CA      | -5.32 | 114.15      | 120.00   |
| 22  | P     | 407 | ASP  | CA-C-N      | 5.32  | 131.46      | 122.26   |
| 22  | P     | 407 | ASP  | C-N-CA      | 5.32  | 131.46      | 122.26   |
| 28  | I     | 217 | LYS  | CA-C-N      | 5.32  | 125.86      | 120.38   |
| 28  | I     | 217 | LYS  | C-N-CA      | 5.32  | 125.86      | 120.38   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 28  | I     | 344 | PRO  | O-C-N       | 5.32  | 129.64      | 123.21   |
| 1   | A     | 69  | LEU  | CA-C-N      | 5.32  | 131.16      | 122.81   |
| 1   | A     | 69  | LEU  | C-N-CA      | 5.32  | 131.16      | 122.81   |
| 3   | C     | 56  | LEU  | N-CA-C      | -5.32 | 101.10      | 109.50   |
| 4   | D     | 139 | ILE  | CA-CB-CG1   | 5.32  | 119.44      | 110.40   |
| 14  | 7     | 208 | GLU  | CA-C-O      | -5.32 | 114.92      | 120.55   |
| 16  | V     | 206 | ASN  | CA-CB-CG    | -5.32 | 107.28      | 112.60   |
| 19  | Z     | 300 | ARG  | N-CA-C      | 5.32  | 117.07      | 111.28   |
| 19  | Z     | 606 | VAL  | CA-C-N      | 5.32  | 127.35      | 120.44   |
| 19  | Z     | 606 | VAL  | C-N-CA      | 5.32  | 127.35      | 120.44   |
| 24  | R     | 153 | ASP  | N-CA-C      | -5.32 | 100.64      | 109.46   |
| 26  | O     | 54  | ASP  | O-C-N       | 5.32  | 129.55      | 122.43   |
| 31  | M     | 256 | GLY  | CA-C-O      | -5.32 | 113.92      | 121.52   |
| 8   | 1     | 144 | VAL  | N-CA-CB     | 5.31  | 120.08      | 111.36   |
| 14  | 7     | 257 | HIS  | CG-CD2-NE2  | 5.31  | 112.51      | 107.20   |
| 7   | G     | 47  | VAL  | O-C-N       | -5.31 | 117.52      | 123.26   |
| 19  | Z     | 161 | HIS  | O-C-N       | 5.31  | 127.54      | 122.07   |
| 21  | S     | 202 | VAL  | CA-C-N      | 5.31  | 128.39      | 120.31   |
| 21  | S     | 202 | VAL  | C-N-CA      | 5.31  | 128.39      | 120.31   |
| 21  | S     | 243 | GLN  | OE1-CD-NE2  | 5.31  | 127.91      | 122.60   |
| 22  | P     | 66  | ILE  | N-CA-C      | 5.31  | 117.69      | 111.05   |
| 30  | L     | 237 | ARG  | CG-CD-NE    | -5.31 | 100.32      | 112.00   |
| 31  | M     | 312 | THR  | CA-C-N      | 5.31  | 127.83      | 120.29   |
| 31  | M     | 312 | THR  | C-N-CA      | 5.31  | 127.83      | 120.29   |
| 7   | G     | 90  | ASP  | N-CA-C      | 5.31  | 117.15      | 111.36   |
| 7   | G     | 163 | GLY  | O-C-N       | -5.31 | 115.80      | 122.70   |
| 11  | 4     | 11  | ASP  | CA-C-N      | 5.31  | 130.38      | 122.74   |
| 11  | 4     | 11  | ASP  | C-N-CA      | 5.31  | 130.38      | 122.74   |
| 20  | N     | 238 | LYS  | CA-C-N      | 5.31  | 128.38      | 120.31   |
| 20  | N     | 238 | LYS  | C-N-CA      | 5.31  | 128.38      | 120.31   |
| 30  | L     | 158 | GLU  | N-CA-C      | -5.31 | 105.49      | 111.28   |
| 30  | L     | 231 | GLU  | CA-C-N      | 5.31  | 127.39      | 120.28   |
| 30  | L     | 231 | GLU  | C-N-CA      | 5.31  | 127.39      | 120.28   |
| 30  | L     | 333 | PRO  | N-CA-CB     | 5.31  | 109.17      | 103.33   |
| 1   | A     | 228 | ARG  | N-CA-C      | -5.31 | 100.38      | 109.24   |
| 2   | B     | 66  | GLU  | CB-CA-C     | -5.31 | 103.10      | 110.16   |
| 2   | B     | 189 | HIS  | CE1-NE2-CD2 | -5.31 | 103.69      | 109.00   |
| 23  | Q     | 281 | GLY  | N-CA-C      | -5.31 | 100.60      | 113.18   |
| 29  | K     | 36  | ASP  | CA-C-N      | 5.31  | 127.83      | 120.29   |
| 29  | K     | 36  | ASP  | C-N-CA      | 5.31  | 127.83      | 120.29   |
| 29  | K     | 207 | PRO  | N-CA-C      | -5.31 | 104.22      | 110.70   |
| 3   | C     | 203 | VAL  | CA-C-N      | 5.30  | 131.67      | 121.54   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 3   | C     | 203 | VAL  | C-N-CA      | 5.30  | 131.67      | 121.54   |
| 4   | D     | 126 | GLN  | O-C-N       | -5.30 | 116.10      | 122.15   |
| 7   | G     | 121 | HIS  | CB-CG-CD2   | -5.30 | 124.30      | 131.20   |
| 9   | 2     | 144 | GLY  | CA-C-O      | -5.30 | 116.76      | 121.64   |
| 17  | T     | 312 | LEU  | CA-C-N      | 5.30  | 129.70      | 120.68   |
| 17  | T     | 312 | LEU  | C-N-CA      | 5.30  | 129.70      | 120.68   |
| 19  | Z     | 187 | LEU  | CB-CA-C     | -5.30 | 102.52      | 110.90   |
| 26  | O     | 35  | HIS  | CG-CD2-NE2  | 5.30  | 112.50      | 107.20   |
| 27  | H     | 409 | PHE  | CA-CB-CG    | -5.30 | 108.50      | 113.80   |
| 28  | I     | 205 | LEU  | CA-C-N      | 5.30  | 127.34      | 120.44   |
| 28  | I     | 205 | LEU  | C-N-CA      | 5.30  | 127.34      | 120.44   |
| 29  | K     | 350 | SER  | CA-C-N      | 5.30  | 127.34      | 120.44   |
| 29  | K     | 350 | SER  | C-N-CA      | 5.30  | 127.34      | 120.44   |
| 19  | Z     | 750 | GLN  | CB-CA-C     | -5.30 | 102.55      | 110.88   |
| 29  | K     | 68  | LEU  | N-CA-C      | -5.30 | 105.67      | 111.82   |
| 30  | L     | 33  | HIS  | CE1-NE2-CD2 | -5.30 | 103.70      | 109.00   |
| 5   | E     | 95  | GLU  | N-CA-C      | -5.30 | 105.50      | 111.28   |
| 8   | 1     | 167 | TYR  | N-CA-C      | -5.30 | 106.66      | 113.02   |
| 10  | 3     | 101 | GLY  | CA-C-N      | 5.30  | 126.47      | 119.84   |
| 10  | 3     | 101 | GLY  | C-N-CA      | 5.30  | 126.47      | 119.84   |
| 22  | P     | 299 | ILE  | CA-CB-CG1   | 5.30  | 119.41      | 110.40   |
| 22  | P     | 422 | ASN  | OD1-CG-ND2  | 5.30  | 127.90      | 122.60   |
| 25  | U     | 231 | GLN  | CB-CG-CD    | -5.30 | 103.59      | 112.60   |
| 25  | U     | 283 | ARG  | N-CA-CB     | 5.30  | 117.91      | 110.12   |
| 28  | I     | 98  | LYS  | CB-CA-C     | -5.30 | 101.99      | 110.79   |
| 2   | B     | 164 | GLY  | O-C-N       | 5.30  | 127.93      | 122.90   |
| 6   | F     | 192 | LEU  | N-CA-CB     | 5.30  | 118.00      | 110.16   |
| 17  | T     | 265 | ILE  | CA-CB-CG2   | -5.30 | 101.49      | 110.50   |
| 19  | Z     | 65  | GLU  | CA-C-O      | -5.30 | 112.33      | 119.11   |
| 20  | N     | 424 | ALA  | CA-C-N      | 5.30  | 127.38      | 120.28   |
| 20  | N     | 424 | ALA  | C-N-CA      | 5.30  | 127.38      | 120.28   |
| 30  | L     | 367 | PHE  | CA-C-O      | 5.30  | 126.17      | 120.55   |
| 20  | N     | 789 | ILE  | N-CA-CB     | -5.30 | 104.10      | 111.41   |
| 22  | P     | 327 | GLU  | O-C-N       | 5.30  | 127.75      | 122.03   |
| 30  | L     | 389 | ALA  | CA-C-N      | 5.30  | 127.38      | 120.28   |
| 30  | L     | 389 | ALA  | C-N-CA      | 5.30  | 127.38      | 120.28   |
| 12  | 5     | 112 | SER  | N-CA-CB     | 5.30  | 117.69      | 110.01   |
| 23  | Q     | 332 | GLU  | CA-C-O      | -5.30 | 114.94      | 120.55   |
| 30  | L     | 331 | ALA  | N-CA-CB     | 5.30  | 118.38      | 110.22   |
| 31  | M     | 364 | ALA  | CA-C-N      | 5.30  | 127.38      | 120.28   |
| 31  | M     | 364 | ALA  | C-N-CA      | 5.30  | 127.38      | 120.28   |
| 31  | M     | 439 | GLN  | OE1-CD-NE2  | 5.30  | 127.90      | 122.60   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 24  | R     | 360 | ASP  | N-CA-C      | -5.29 | 100.47      | 108.52   |
| 30  | L     | 145 | SER  | CA-C-O      | -5.29 | 115.26      | 120.82   |
| 8   | 1     | 202 | SER  | CA-C-N      | 5.29  | 129.33      | 120.70   |
| 8   | 1     | 202 | SER  | C-N-CA      | 5.29  | 129.33      | 120.70   |
| 16  | V     | 53  | VAL  | N-CA-C      | -5.29 | 100.73      | 108.99   |
| 24  | R     | 337 | PHE  | N-CA-C      | 5.29  | 117.13      | 111.36   |
| 30  | L     | 141 | PRO  | CA-N-CD     | -5.29 | 104.59      | 112.00   |
| 31  | M     | 66  | THR  | CA-C-N      | 5.29  | 127.37      | 120.28   |
| 31  | M     | 66  | THR  | C-N-CA      | 5.29  | 127.37      | 120.28   |
| 32  | J     | 113 | ARG  | N-CA-CB     | 5.29  | 118.05      | 110.06   |
| 6   | F     | 120 | THR  | CA-CB-OG1   | 5.29  | 117.54      | 109.60   |
| 12  | 5     | 168 | PRO  | N-CA-CB     | 5.29  | 108.81      | 103.25   |
| 14  | 7     | 192 | PRO  | N-CA-CB     | 5.29  | 108.81      | 103.25   |
| 20  | N     | 90  | VAL  | N-CA-C      | 5.29  | 116.02      | 110.62   |
| 20  | N     | 98  | GLU  | N-CA-CB     | 5.29  | 118.69      | 110.44   |
| 20  | N     | 665 | ASN  | N-CA-CB     | 5.29  | 120.65      | 111.39   |
| 22  | P     | 349 | LYS  | CG-CD-CE    | 5.29  | 123.47      | 111.30   |
| 23  | Q     | 136 | LEU  | CA-C-N      | 5.29  | 127.37      | 120.28   |
| 23  | Q     | 136 | LEU  | C-N-CA      | 5.29  | 127.37      | 120.28   |
| 24  | R     | 333 | GLU  | N-CA-C      | -5.29 | 105.51      | 111.28   |
| 25  | U     | 227 | ILE  | O-C-N       | -5.29 | 116.74      | 121.87   |
| 25  | U     | 256 | GLN  | CB-CG-CD    | 5.29  | 121.60      | 112.60   |
| 3   | C     | 50  | ARG  | CD-NE-CZ    | -5.29 | 116.99      | 124.40   |
| 19  | Z     | 705 | ASN  | CA-C-O      | -5.29 | 114.12      | 120.10   |
| 20  | N     | 677 | ASN  | N-CA-CB     | 5.29  | 118.48      | 110.28   |
| 23  | Q     | 58  | ALA  | O-C-N       | 5.29  | 128.41      | 122.22   |
| 3   | C     | 99  | LEU  | O-C-N       | -5.29 | 116.62      | 122.07   |
| 3   | C     | 178 | ASP  | O-C-N       | 5.29  | 129.42      | 122.33   |
| 4   | D     | 100 | HIS  | CE1-NE2-CD2 | -5.29 | 103.71      | 109.00   |
| 6   | F     | 183 | ASN  | CA-C-N      | 5.29  | 127.31      | 120.44   |
| 6   | F     | 183 | ASN  | C-N-CA      | 5.29  | 127.31      | 120.44   |
| 10  | 3     | 162 | HIS  | N-CA-C      | 5.29  | 117.04      | 111.28   |
| 19  | Z     | 869 | THR  | N-CA-C      | -5.29 | 100.41      | 109.24   |
| 23  | Q     | 59  | LYS  | CA-C-O      | -5.29 | 115.25      | 121.07   |
| 27  | H     | 88  | GLN  | CA-C-N      | 5.29  | 131.41      | 122.26   |
| 27  | H     | 88  | GLN  | C-N-CA      | 5.29  | 131.41      | 122.26   |
| 31  | M     | 368 | ILE  | N-CA-CB     | 5.29  | 117.73      | 110.54   |
| 2   | B     | 146 | LEU  | O-C-N       | -5.29 | 116.94      | 123.44   |
| 4   | D     | 70  | CYS  | CA-C-O      | -5.29 | 115.42      | 121.40   |
| 28  | I     | 186 | ASP  | N-CA-C      | -5.29 | 101.64      | 109.83   |
| 29  | K     | 365 | ALA  | CB-CA-C     | -5.29 | 102.58      | 110.88   |
| 32  | J     | 175 | PHE  | O-C-N       | -5.29 | 115.77      | 122.27   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 1   | A     | 80  | MET  | N-CA-C    | -5.29 | 101.08      | 109.59   |
| 9   | 2     | 230 | ARG  | CA-C-N    | 5.29  | 126.45      | 119.84   |
| 9   | 2     | 230 | ARG  | C-N-CA    | 5.29  | 126.45      | 119.84   |
| 19  | Z     | 44  | GLU  | CA-C-O    | -5.29 | 114.82      | 120.42   |
| 13  | 6     | 75  | ASP  | CA-CB-CG  | -5.28 | 107.32      | 112.60   |
| 31  | M     | 63  | LEU  | CB-CA-C   | -5.28 | 101.87      | 110.85   |
| 26  | O     | 148 | VAL  | N-CA-CB   | -5.28 | 105.03      | 111.21   |
| 27  | H     | 212 | VAL  | N-CA-C    | -5.28 | 101.38      | 108.35   |
| 29  | K     | 64  | GLU  | CA-C-N    | 5.28  | 127.36      | 120.28   |
| 29  | K     | 64  | GLU  | C-N-CA    | 5.28  | 127.36      | 120.28   |
| 16  | V     | 263 | ASP  | N-CA-C    | -5.28 | 106.52      | 113.17   |
| 20  | N     | 9   | ILE  | CA-C-O    | -5.28 | 115.46      | 120.95   |
| 20  | N     | 162 | VAL  | CA-C-O    | -5.28 | 114.18      | 120.78   |
| 15  | W     | 4   | GLU  | N-CA-C    | -5.28 | 100.08      | 109.06   |
| 17  | T     | 263 | ILE  | CA-C-N    | 5.28  | 127.30      | 120.44   |
| 17  | T     | 263 | ILE  | C-N-CA    | 5.28  | 127.30      | 120.44   |
| 22  | P     | 424 | LEU  | N-CA-C    | -5.28 | 105.61      | 111.36   |
| 12  | 5     | 224 | TYR  | CA-C-O    | -5.28 | 114.83      | 120.42   |
| 12  | 5     | 236 | TYR  | CB-CG-CD1 | -5.28 | 112.88      | 120.80   |
| 17  | T     | 248 | PHE  | CA-C-O    | 5.28  | 127.56      | 121.28   |
| 24  | R     | 278 | VAL  | CA-C-N    | 5.28  | 127.30      | 120.44   |
| 24  | R     | 278 | VAL  | C-N-CA    | 5.28  | 127.30      | 120.44   |
| 29  | K     | 386 | ALA  | N-CA-C    | 5.28  | 117.78      | 111.71   |
| 4   | D     | 216 | VAL  | N-CA-C    | -5.28 | 100.73      | 108.85   |
| 4   | D     | 227 | SER  | N-CA-CB   | 5.28  | 117.81      | 110.11   |
| 16  | V     | 286 | GLU  | CB-CG-CD  | -5.28 | 103.63      | 112.60   |
| 19  | Z     | 676 | GLY  | O-C-N     | 5.28  | 127.25      | 122.19   |
| 22  | P     | 288 | HIS  | CB-CG-ND1 | 5.28  | 130.61      | 122.70   |
| 23  | Q     | 58  | ALA  | N-CA-C    | 5.28  | 117.78      | 111.71   |
| 27  | H     | 195 | LEU  | CA-C-N    | 5.28  | 127.30      | 120.44   |
| 27  | H     | 195 | LEU  | C-N-CA    | 5.28  | 127.30      | 120.44   |
| 28  | I     | 306 | GLN  | CA-C-O    | -5.28 | 114.96      | 120.55   |
| 12  | 5     | 123 | ARG  | N-CA-C    | 5.27  | 117.11      | 111.36   |
| 13  | 6     | 54  | THR  | O-C-N     | -5.27 | 117.24      | 123.25   |
| 14  | 7     | 68  | ALA  | CB-CA-C   | 5.27  | 119.44      | 109.37   |
| 19  | Z     | 53  | GLN  | CA-C-O    | 5.27  | 126.14      | 120.55   |
| 20  | N     | 844 | LYS  | CA-C-O    | 5.27  | 126.17      | 120.32   |
| 22  | P     | 358 | VAL  | CA-C-N    | 5.27  | 127.69      | 120.46   |
| 22  | P     | 358 | VAL  | C-N-CA    | 5.27  | 127.69      | 120.46   |
| 30  | L     | 169 | ASN  | O-C-N     | 5.27  | 127.39      | 121.32   |
| 1   | A     | 155 | ASP  | CA-C-N    | 5.27  | 125.33      | 119.32   |
| 1   | A     | 155 | ASP  | C-N-CA    | 5.27  | 125.33      | 119.32   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 2   | B     | 91  | ARG  | N-CA-C     | -5.27 | 105.61      | 111.36   |
| 12  | 5     | 144 | ASN  | CA-C-O     | -5.27 | 114.83      | 120.42   |
| 21  | S     | 309 | LEU  | CA-C-N     | 5.27  | 127.78      | 120.29   |
| 21  | S     | 309 | LEU  | C-N-CA     | 5.27  | 127.78      | 120.29   |
| 21  | S     | 322 | GLN  | CB-CG-CD   | -5.27 | 103.64      | 112.60   |
| 29  | K     | 357 | GLU  | CA-C-N     | 5.27  | 128.47      | 120.77   |
| 29  | K     | 357 | GLU  | C-N-CA     | 5.27  | 128.47      | 120.77   |
| 30  | L     | 71  | VAL  | CA-C-O     | -5.27 | 114.18      | 121.51   |
| 3   | C     | 51  | ASN  | N-CA-C     | -5.27 | 100.14      | 108.73   |
| 3   | C     | 130 | PHE  | N-CA-CB    | 5.27  | 118.07      | 109.69   |
| 4   | D     | 80  | SER  | CA-C-N     | 5.27  | 126.19      | 120.44   |
| 4   | D     | 80  | SER  | C-N-CA     | 5.27  | 126.19      | 120.44   |
| 8   | 1     | 232 | ILE  | CA-CB-CG1  | 5.27  | 119.36      | 110.40   |
| 28  | I     | 286 | GLU  | N-CA-C     | 5.27  | 117.61      | 111.02   |
| 1   | A     | 193 | GLN  | OE1-CD-NE2 | 5.27  | 127.87      | 122.60   |
| 10  | 3     | 15  | LYS  | CA-C-N     | 5.27  | 126.78      | 121.35   |
| 10  | 3     | 15  | LYS  | C-N-CA     | 5.27  | 126.78      | 121.35   |
| 15  | W     | 84  | ILE  | N-CA-C     | -5.27 | 102.05      | 109.21   |
| 16  | V     | 287 | HIS  | O-C-N      | -5.27 | 116.53      | 122.12   |
| 22  | P     | 353 | ASP  | CA-C-N     | 5.27  | 127.87      | 120.28   |
| 22  | P     | 353 | ASP  | C-N-CA     | 5.27  | 127.87      | 120.28   |
| 25  | U     | 253 | THR  | CA-CB-CG2  | -5.27 | 101.54      | 110.50   |
| 25  | U     | 256 | GLN  | CA-CB-CG   | 5.27  | 124.64      | 114.10   |
| 28  | I     | 246 | THR  | CA-C-O     | 5.27  | 126.93      | 120.92   |
| 3   | C     | 57  | ASP  | N-CA-C     | -5.27 | 106.98      | 113.41   |
| 19  | Z     | 699 | VAL  | CB-CA-C    | -5.27 | 105.03      | 112.14   |
| 22  | P     | 285 | ASP  | CA-C-N     | 5.27  | 127.77      | 120.29   |
| 22  | P     | 285 | ASP  | C-N-CA     | 5.27  | 127.77      | 120.29   |
| 29  | K     | 118 | THR  | N-CA-C     | -5.27 | 99.58       | 110.80   |
| 3   | C     | 92  | LEU  | CB-CA-C    | -5.27 | 102.58      | 110.90   |
| 11  | 4     | 84  | THR  | O-C-N      | 5.27  | 128.15      | 122.15   |
| 14  | 7     | 251 | THR  | N-CA-C     | -5.27 | 101.29      | 109.24   |
| 4   | D     | 51  | ALA  | CA-C-N     | 5.26  | 129.88      | 122.46   |
| 4   | D     | 51  | ALA  | C-N-CA     | 5.26  | 129.88      | 122.46   |
| 8   | 1     | 154 | VAL  | CA-CB-CG2  | -5.26 | 101.45      | 110.40   |
| 23  | Q     | 243 | ASP  | CB-CA-C    | -5.26 | 101.42      | 110.16   |
| 29  | K     | 145 | PRO  | N-CA-C     | -5.26 | 107.55      | 114.03   |
| 30  | L     | 375 | PHE  | N-CA-C     | -5.26 | 101.30      | 109.72   |
| 2   | B     | 124 | SER  | CA-C-O     | -5.26 | 115.40      | 121.19   |
| 7   | G     | 142 | SER  | N-CA-C     | -5.26 | 101.12      | 108.96   |
| 11  | 4     | 103 | LEU  | N-CA-C     | -5.26 | 100.15      | 108.73   |
| 11  | 4     | 105 | ALA  | CB-CA-C    | -5.26 | 102.04      | 110.14   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 16  | V     | 223 | LYS  | CA-C-N      | 5.26  | 129.50      | 120.72   |
| 16  | V     | 223 | LYS  | C-N-CA      | 5.26  | 129.50      | 120.72   |
| 19  | Z     | 75  | LEU  | CA-C-N      | 5.26  | 127.33      | 120.28   |
| 19  | Z     | 75  | LEU  | C-N-CA      | 5.26  | 127.33      | 120.28   |
| 20  | N     | 457 | ILE  | O-C-N       | 5.26  | 127.75      | 121.80   |
| 28  | I     | 403 | GLY  | CA-C-N      | 5.26  | 127.59      | 120.44   |
| 28  | I     | 403 | GLY  | C-N-CA      | 5.26  | 127.59      | 120.44   |
| 8   | 1     | 178 | GLU  | N-CA-C      | -5.26 | 101.41      | 109.41   |
| 12  | 5     | 154 | LEU  | N-CA-C      | -5.26 | 106.63      | 112.57   |
| 16  | V     | 172 | HIS  | CA-C-N      | 5.26  | 126.32      | 120.06   |
| 16  | V     | 172 | HIS  | C-N-CA      | 5.26  | 126.32      | 120.06   |
| 17  | T     | 138 | LYS  | O-C-N       | -5.26 | 115.80      | 122.27   |
| 19  | Z     | 345 | PRO  | O-C-N       | 5.26  | 128.81      | 122.23   |
| 19  | Z     | 398 | TRP  | N-CA-CB     | 5.26  | 117.80      | 110.07   |
| 20  | N     | 780 | SER  | N-CA-C      | 5.26  | 117.76      | 111.71   |
| 22  | P     | 28  | LEU  | N-CA-C      | 5.26  | 120.63      | 113.16   |
| 25  | U     | 236 | LEU  | N-CA-C      | 5.26  | 117.92      | 111.82   |
| 26  | O     | 295 | GLU  | O-C-N       | 5.26  | 127.69      | 122.12   |
| 27  | H     | 124 | ASP  | CA-CB-CG    | 5.26  | 117.86      | 112.60   |
| 30  | L     | 82  | LYS  | N-CA-CB     | 5.26  | 119.03      | 110.77   |
| 31  | M     | 230 | GLY  | CA-C-N      | 5.26  | 125.80      | 120.38   |
| 31  | M     | 230 | GLY  | C-N-CA      | 5.26  | 125.80      | 120.38   |
| 21  | S     | 61  | ARG  | CA-C-O      | 5.26  | 126.12      | 120.55   |
| 26  | O     | 240 | PHE  | CB-CG-CD1   | 5.26  | 129.64      | 120.70   |
| 6   | F     | 190 | HIS  | CE1-NE2-CD2 | -5.26 | 103.74      | 109.00   |
| 11  | 4     | 3   | TYR  | CA-C-N      | 5.26  | 129.75      | 120.87   |
| 11  | 4     | 3   | TYR  | C-N-CA      | 5.26  | 129.75      | 120.87   |
| 12  | 5     | 104 | MET  | N-CA-CB     | 5.26  | 118.80      | 110.55   |
| 19  | Z     | 592 | ASN  | CA-C-O      | -5.26 | 114.95      | 120.63   |
| 19  | Z     | 677 | HIS  | CG-CD2-NE2  | 5.26  | 112.46      | 107.20   |
| 23  | Q     | 188 | ALA  | CA-C-N      | 5.26  | 127.85      | 120.28   |
| 23  | Q     | 188 | ALA  | C-N-CA      | 5.26  | 127.85      | 120.28   |
| 29  | K     | 103 | VAL  | CA-C-O      | -5.26 | 115.71      | 121.28   |
| 31  | M     | 215 | PHE  | O-C-N       | 5.26  | 128.14      | 122.15   |
| 31  | M     | 251 | PHE  | CA-C-N      | 5.26  | 129.97      | 122.72   |
| 31  | M     | 251 | PHE  | C-N-CA      | 5.26  | 129.97      | 122.72   |
| 31  | M     | 353 | ARG  | CA-C-O      | -5.26 | 115.08      | 121.28   |
| 10  | 3     | 67  | LEU  | CA-C-O      | 5.25  | 125.99      | 120.42   |
| 13  | 6     | 57  | SER  | N-CA-C      | -5.25 | 99.61       | 110.80   |
| 24  | R     | 92  | GLU  | CA-C-O      | -5.25 | 114.98      | 120.55   |
| 30  | L     | 102 | ASP  | N-CA-C      | -5.25 | 100.61      | 109.07   |
| 30  | L     | 157 | ARG  | NE-CZ-NH2   | 5.25  | 123.93      | 119.20   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 7   | G     | 29  | LYS  | CB-CA-C    | -5.25 | 100.58      | 110.67   |
| 8   | 1     | 83  | ALA  | CB-CA-C    | -5.25 | 102.07      | 110.79   |
| 8   | 1     | 207 | ILE  | CA-C-N     | 5.25  | 129.01      | 121.50   |
| 8   | 1     | 207 | ILE  | C-N-CA     | 5.25  | 129.01      | 121.50   |
| 9   | 2     | 53  | ASP  | CA-CB-CG   | 5.25  | 117.85      | 112.60   |
| 13  | 6     | 86  | GLY  | CA-C-O     | 5.25  | 125.92      | 120.98   |
| 16  | V     | 245 | VAL  | N-CA-C     | -5.25 | 105.41      | 110.72   |
| 20  | N     | 378 | CYS  | N-CA-CB    | 5.25  | 117.73      | 110.17   |
| 25  | U     | 85  | VAL  | N-CA-C     | 5.25  | 115.47      | 110.53   |
| 26  | O     | 164 | GLN  | OE1-CD-NE2 | 5.25  | 127.85      | 122.60   |
| 20  | N     | 25  | HIS  | CA-CB-CG   | -5.25 | 108.55      | 113.80   |
| 22  | P     | 305 | LEU  | CA-C-N     | 5.25  | 127.75      | 120.29   |
| 22  | P     | 305 | LEU  | C-N-CA     | 5.25  | 127.75      | 120.29   |
| 27  | H     | 433 | ASN  | CA-CB-CG   | 5.25  | 117.85      | 112.60   |
| 29  | K     | 53  | PHE  | CA-C-N     | 5.25  | 127.75      | 120.29   |
| 29  | K     | 53  | PHE  | C-N-CA     | 5.25  | 127.75      | 120.29   |
| 4   | D     | 94  | ARG  | N-CA-CB    | 5.25  | 117.93      | 110.16   |
| 19  | Z     | 778 | LEU  | CA-C-O     | -5.25 | 114.98      | 120.55   |
| 3   | C     | 183 | GLU  | CA-C-N     | 5.25  | 130.54      | 122.93   |
| 3   | C     | 183 | GLU  | C-N-CA     | 5.25  | 130.54      | 122.93   |
| 8   | 1     | 117 | LYS  | N-CA-C     | -5.25 | 105.64      | 111.36   |
| 19  | Z     | 215 | ASP  | N-CA-CB    | 5.25  | 119.24      | 110.32   |
| 19  | Z     | 690 | VAL  | O-C-N      | -5.25 | 115.12      | 121.10   |
| 20  | N     | 140 | ARG  | CD-NE-CZ   | -5.25 | 117.05      | 124.40   |
| 20  | N     | 143 | ASP  | CB-CA-C    | -5.25 | 102.08      | 110.79   |
| 20  | N     | 150 | ALA  | CA-C-N     | 5.25  | 127.65      | 120.46   |
| 20  | N     | 150 | ALA  | C-N-CA     | 5.25  | 127.65      | 120.46   |
| 22  | P     | 269 | SER  | N-CA-C     | -5.25 | 105.45      | 111.07   |
| 28  | I     | 200 | SER  | CB-CA-C    | -5.25 | 100.95      | 110.56   |
| 14  | 7     | 132 | ILE  | O-C-N      | 5.25  | 127.23      | 121.83   |
| 20  | N     | 702 | THR  | CA-C-O     | 5.25  | 124.53      | 118.55   |
| 30  | L     | 16  | ALA  | O-C-N      | 5.25  | 128.59      | 122.24   |
| 31  | M     | 167 | LEU  | N-CA-C     | -5.25 | 102.22      | 110.14   |
| 6   | F     | 170 | THR  | O-C-N      | -5.24 | 116.56      | 122.12   |
| 9   | 2     | 178 | MET  | CA-CB-CG   | -5.24 | 103.61      | 114.10   |
| 17  | T     | 339 | ALA  | CB-CA-C    | -5.24 | 102.08      | 110.79   |
| 22  | P     | 420 | ASP  | CB-CA-C    | -5.24 | 100.92      | 108.84   |
| 24  | R     | 303 | ALA  | O-C-N      | 5.24  | 127.68      | 122.12   |
| 26  | O     | 7   | PHE  | CA-CB-CG   | -5.24 | 108.56      | 113.80   |
| 26  | O     | 344 | GLN  | CA-C-N     | 5.24  | 127.74      | 120.29   |
| 26  | O     | 344 | GLN  | C-N-CA     | 5.24  | 127.74      | 120.29   |
| 8   | 1     | 125 | GLU  | N-CA-C     | 5.24  | 119.97      | 111.37   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 32  | J     | 388 | ALA  | CA-C-O    | -5.24 | 115.32      | 120.82   |
| 6   | F     | 98  | VAL  | N-CA-C    | 5.24  | 115.35      | 110.42   |
| 7   | G     | 154 | PRO  | CA-C-N    | 5.24  | 127.57      | 120.44   |
| 7   | G     | 154 | PRO  | C-N-CA    | 5.24  | 127.57      | 120.44   |
| 9   | 2     | 116 | LEU  | CA-C-N    | 5.24  | 126.39      | 119.84   |
| 9   | 2     | 116 | LEU  | C-N-CA    | 5.24  | 126.39      | 119.84   |
| 16  | V     | 201 | TYR  | N-CA-C    | -5.24 | 101.15      | 109.59   |
| 19  | Z     | 621 | ASP  | CA-C-N    | 5.24  | 128.28      | 120.31   |
| 19  | Z     | 621 | ASP  | C-N-CA    | 5.24  | 128.28      | 120.31   |
| 20  | N     | 865 | LYS  | N-CA-CB   | 5.24  | 120.37      | 111.57   |
| 25  | U     | 55  | ALA  | O-C-N     | 5.24  | 128.88      | 122.96   |
| 27  | H     | 153 | LEU  | CA-C-N    | 5.24  | 123.49      | 119.66   |
| 27  | H     | 153 | LEU  | C-N-CA    | 5.24  | 123.49      | 119.66   |
| 28  | I     | 251 | VAL  | N-CA-C    | -5.24 | 100.84      | 109.12   |
| 19  | Z     | 546 | SER  | CA-C-O    | 5.24  | 125.97      | 120.42   |
| 19  | Z     | 653 | ALA  | CA-C-N    | 5.24  | 127.64      | 120.46   |
| 19  | Z     | 653 | ALA  | C-N-CA    | 5.24  | 127.64      | 120.46   |
| 20  | N     | 583 | MET  | CA-C-N    | 5.24  | 127.82      | 120.28   |
| 20  | N     | 583 | MET  | C-N-CA    | 5.24  | 127.82      | 120.28   |
| 22  | P     | 444 | HIS  | N-CA-C    | 5.24  | 116.99      | 111.28   |
| 25  | U     | 267 | ARG  | NE-CZ-NH2 | -5.24 | 114.49      | 119.20   |
| 27  | H     | 357 | ILE  | CA-C-O    | -5.24 | 115.30      | 120.85   |
| 29  | K     | 333 | PHE  | O-C-N     | 5.24  | 127.34      | 121.32   |
| 31  | M     | 360 | PRO  | CA-C-N    | 5.24  | 131.72      | 121.66   |
| 31  | M     | 360 | PRO  | C-N-CA    | 5.24  | 131.72      | 121.66   |
| 9   | 2     | 229 | LEU  | N-CA-C    | -5.24 | 99.75       | 108.34   |
| 2   | B     | 60  | ARG  | CA-C-O    | 5.24  | 124.44      | 118.47   |
| 3   | C     | 65  | ILE  | N-CA-CB   | 5.24  | 116.97      | 111.00   |
| 14  | 7     | 225 | ALA  | N-CA-C    | 5.24  | 118.13      | 111.69   |
| 15  | W     | 177 | PRO  | O-C-N     | 5.24  | 128.69      | 122.98   |
| 16  | V     | 111 | TRP  | CB-CG-CD1 | 5.24  | 134.75      | 126.90   |
| 17  | T     | 209 | ALA  | CA-C-N    | 5.24  | 127.30      | 120.28   |
| 17  | T     | 209 | ALA  | C-N-CA    | 5.24  | 127.30      | 120.28   |
| 20  | N     | 328 | ILE  | CA-CB-CG1 | 5.24  | 119.30      | 110.40   |
| 20  | N     | 750 | SER  | N-CA-C    | -5.24 | 101.72      | 109.94   |
| 20  | N     | 790 | GLY  | N-CA-C    | -5.24 | 102.03      | 111.19   |
| 26  | O     | 76  | LEU  | CA-C-N    | 5.24  | 127.63      | 120.46   |
| 26  | O     | 76  | LEU  | C-N-CA    | 5.24  | 127.63      | 120.46   |
| 31  | M     | 242 | ALA  | CB-CA-C   | -5.24 | 102.10      | 110.79   |
| 2   | B     | 231 | ALA  | CA-C-N    | 5.23  | 127.24      | 120.44   |
| 2   | B     | 231 | ALA  | C-N-CA    | 5.23  | 127.24      | 120.44   |
| 31  | M     | 69  | LEU  | O-C-N     | -5.23 | 116.57      | 122.12   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 1   | A     | 99  | ALA  | CA-C-N     | 5.23  | 127.29      | 120.28   |
| 1   | A     | 99  | ALA  | C-N-CA     | 5.23  | 127.29      | 120.28   |
| 7   | G     | 71  | ASP  | CB-CA-C    | 5.23  | 120.83      | 110.42   |
| 22  | P     | 213 | PHE  | CA-C-O     | -5.23 | 115.00      | 120.55   |
| 23  | Q     | 88  | LEU  | CB-CA-C    | -5.23 | 102.67      | 110.88   |
| 25  | U     | 24  | ASN  | CA-C-N     | 5.23  | 127.24      | 120.44   |
| 25  | U     | 24  | ASN  | C-N-CA     | 5.23  | 127.24      | 120.44   |
| 26  | O     | 168 | ASN  | N-CA-C     | -5.23 | 99.23       | 108.23   |
| 27  | H     | 53  | GLN  | N-CA-CB    | 5.23  | 117.81      | 110.12   |
| 8   | 1     | 96  | LEU  | CA-C-N     | 5.23  | 125.79      | 119.98   |
| 8   | 1     | 96  | LEU  | C-N-CA     | 5.23  | 125.79      | 119.98   |
| 8   | 1     | 114 | SER  | CB-CA-C    | -5.23 | 100.63      | 110.67   |
| 21  | S     | 495 | LYS  | CA-C-N     | 5.23  | 127.29      | 120.28   |
| 21  | S     | 495 | LYS  | C-N-CA     | 5.23  | 127.29      | 120.28   |
| 22  | P     | 390 | GLU  | CA-C-N     | 5.23  | 127.72      | 120.29   |
| 22  | P     | 390 | GLU  | C-N-CA     | 5.23  | 127.72      | 120.29   |
| 25  | U     | 186 | THR  | CA-C-N     | 5.23  | 127.29      | 120.28   |
| 25  | U     | 186 | THR  | C-N-CA     | 5.23  | 127.29      | 120.28   |
| 29  | K     | 158 | GLN  | CB-CG-CD   | -5.23 | 103.71      | 112.60   |
| 29  | K     | 192 | LYS  | O-C-N      | 5.23  | 128.11      | 122.15   |
| 29  | K     | 245 | ARG  | CA-C-N     | 5.23  | 127.29      | 120.28   |
| 29  | K     | 245 | ARG  | C-N-CA     | 5.23  | 127.29      | 120.28   |
| 5   | E     | 186 | HIS  | CA-C-N     | 5.23  | 127.28      | 120.28   |
| 5   | E     | 186 | HIS  | C-N-CA     | 5.23  | 127.28      | 120.28   |
| 15  | W     | 93  | ALA  | CB-CA-C    | -5.23 | 100.63      | 110.67   |
| 21  | S     | 370 | LYS  | CB-CA-C    | -5.23 | 101.96      | 110.85   |
| 22  | P     | 126 | ASP  | CB-CA-C    | -5.23 | 102.11      | 110.79   |
| 2   | B     | 226 | VAL  | O-C-N      | 5.23  | 126.94      | 121.87   |
| 23  | Q     | 289 | CYS  | CA-CB-SG   | -5.23 | 102.38      | 114.40   |
| 28  | I     | 378 | VAL  | N-CA-CB    | 5.23  | 116.42      | 110.72   |
| 1   | A     | 174 | GLU  | N-CA-C     | -5.22 | 105.67      | 111.36   |
| 7   | G     | 225 | HIS  | CG-CD2-NE2 | 5.22  | 112.42      | 107.20   |
| 19  | Z     | 160 | ARG  | CA-C-N     | 5.22  | 127.23      | 120.44   |
| 19  | Z     | 160 | ARG  | C-N-CA     | 5.22  | 127.23      | 120.44   |
| 21  | S     | 67  | THR  | N-CA-CB    | 5.22  | 117.65      | 110.07   |
| 23  | Q     | 98  | ASP  | O-C-N      | 5.22  | 127.45      | 122.07   |
| 23  | Q     | 354 | ILE  | N-CA-C     | 5.22  | 116.00      | 110.72   |
| 24  | R     | 148 | GLY  | O-C-N      | -5.22 | 116.70      | 122.24   |
| 28  | I     | 368 | HIS  | CG-CD2-NE2 | 5.22  | 112.42      | 107.20   |
| 29  | K     | 373 | ALA  | N-CA-CB    | 5.22  | 117.80      | 110.12   |
| 4   | D     | 168 | GLY  | O-C-N      | 5.22  | 129.49      | 122.70   |
| 7   | G     | 223 | GLY  | N-CA-C     | -5.22 | 107.04      | 115.08   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 11  | 4     | 4   | LEU  | O-C-N       | 5.22  | 128.86      | 122.75   |
| 20  | N     | 332 | GLU  | CA-C-N      | 5.22  | 127.71      | 120.29   |
| 20  | N     | 332 | GLU  | C-N-CA      | 5.22  | 127.71      | 120.29   |
| 3   | C     | 129 | PRO  | CA-N-CD     | -5.22 | 104.69      | 112.00   |
| 21  | S     | 469 | GLN  | OE1-CD-NE2  | 5.22  | 127.82      | 122.60   |
| 6   | F     | 121 | GLN  | CG-CD-NE2   | -5.22 | 108.57      | 116.40   |
| 6   | F     | 143 | HIS  | ND1-CE1-NE2 | 5.22  | 113.62      | 108.40   |
| 15  | W     | 146 | GLU  | CA-C-N      | 5.22  | 127.22      | 120.44   |
| 15  | W     | 146 | GLU  | C-N-CA      | 5.22  | 127.22      | 120.44   |
| 21  | S     | 218 | ASP  | CA-CB-CG    | 5.22  | 117.82      | 112.60   |
| 23  | Q     | 399 | ALA  | N-CA-C      | 5.22  | 117.05      | 111.36   |
| 24  | R     | 183 | TYR  | CB-CG-CD1   | 5.22  | 128.63      | 120.80   |
| 25  | U     | 16  | LEU  | N-CA-C      | 5.22  | 116.78      | 111.14   |
| 27  | H     | 424 | SER  | CB-CA-C     | -5.22 | 101.45      | 111.78   |
| 31  | M     | 118 | SER  | N-CA-C      | -5.22 | 104.59      | 112.99   |
| 12  | 5     | 77  | SER  | O-C-N       | -5.22 | 117.10      | 123.10   |
| 20  | N     | 822 | GLU  | O-C-N       | 5.22  | 128.69      | 122.27   |
| 28  | I     | 61  | LYS  | CB-CA-C     | -5.22 | 102.13      | 110.79   |
| 9   | 2     | 152 | HIS  | ND1-CE1-NE2 | 5.22  | 113.62      | 108.40   |
| 20  | N     | 482 | GLY  | N-CA-C      | -5.22 | 106.47      | 112.73   |
| 20  | N     | 782 | ALA  | CA-C-N      | 5.22  | 128.25      | 120.95   |
| 20  | N     | 782 | ALA  | C-N-CA      | 5.22  | 128.25      | 120.95   |
| 28  | I     | 379 | THR  | CA-C-N      | 5.22  | 128.24      | 120.31   |
| 28  | I     | 379 | THR  | C-N-CA      | 5.22  | 128.24      | 120.31   |
| 29  | K     | 56  | VAL  | CA-C-N      | 5.22  | 127.27      | 120.28   |
| 29  | K     | 56  | VAL  | C-N-CA      | 5.22  | 127.27      | 120.28   |
| 30  | L     | 399 | ASP  | CA-CB-CG    | -5.22 | 107.38      | 112.60   |
| 7   | G     | 164 | CYS  | CA-C-N      | 5.21  | 131.34      | 122.37   |
| 7   | G     | 164 | CYS  | C-N-CA      | 5.21  | 131.34      | 122.37   |
| 21  | S     | 181 | GLN  | N-CA-C      | 5.21  | 117.04      | 111.36   |
| 21  | S     | 323 | THR  | O-C-N       | -5.21 | 116.59      | 122.12   |
| 28  | I     | 190 | LEU  | CA-C-N      | 5.21  | 128.24      | 120.31   |
| 28  | I     | 190 | LEU  | C-N-CA      | 5.21  | 128.24      | 120.31   |
| 31  | M     | 131 | THR  | N-CA-C      | -5.21 | 105.59      | 111.28   |
| 4   | D     | 91  | ASN  | O-C-N       | -5.21 | 116.59      | 122.12   |
| 15  | W     | 71  | ILE  | CA-C-N      | 5.21  | 127.79      | 120.28   |
| 15  | W     | 71  | ILE  | C-N-CA      | 5.21  | 127.79      | 120.28   |
| 26  | O     | 91  | ASN  | CA-C-N      | 5.21  | 127.82      | 120.42   |
| 26  | O     | 91  | ASN  | C-N-CA      | 5.21  | 127.82      | 120.42   |
| 28  | I     | 438 | LEU  | O-C-N       | 5.21  | 127.65      | 122.12   |
| 1   | A     | 21  | ARG  | CA-C-O      | -5.21 | 115.88      | 121.56   |
| 26  | O     | 156 | TYR  | CB-CG-CD1   | 5.21  | 128.62      | 120.80   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 8   | 1     | 110 | HIS  | ND1-CE1-NE2 | 5.21  | 113.61      | 108.40   |
| 20  | N     | 80  | TYR  | CA-CB-CG    | -5.21 | 104.52      | 113.90   |
| 17  | T     | 329 | GLU  | O-C-N       | 5.21  | 128.76      | 122.35   |
| 19  | Z     | 635 | LYS  | N-CA-C      | 5.21  | 116.64      | 111.07   |
| 25  | U     | 39  | LEU  | N-CA-C      | -5.21 | 100.41      | 108.90   |
| 28  | I     | 257 | GLN  | N-CA-C      | -5.21 | 101.78      | 109.18   |
| 29  | K     | 362 | ASP  | CA-CB-CG    | 5.21  | 117.81      | 112.60   |
| 10  | 3     | 79  | GLY  | O-C-N       | 5.21  | 127.18      | 122.18   |
| 16  | V     | 124 | GLY  | CA-C-O      | -5.21 | 115.14      | 120.66   |
| 17  | T     | 125 | VAL  | CA-C-N      | 5.21  | 127.78      | 120.28   |
| 17  | T     | 125 | VAL  | C-N-CA      | 5.21  | 127.78      | 120.28   |
| 17  | T     | 319 | TYR  | O-C-N       | 5.21  | 128.31      | 122.22   |
| 19  | Z     | 105 | LYS  | CB-CA-C     | -5.21 | 102.00      | 110.85   |
| 20  | N     | 159 | ARG  | CD-NE-CZ    | -5.21 | 117.11      | 124.40   |
| 21  | S     | 481 | ASP  | CA-C-N      | 5.21  | 127.59      | 120.46   |
| 21  | S     | 481 | ASP  | C-N-CA      | 5.21  | 127.59      | 120.46   |
| 20  | N     | 355 | ASN  | CA-CB-CG    | 5.21  | 117.81      | 112.60   |
| 21  | S     | 333 | LEU  | N-CA-C      | 5.21  | 117.70      | 111.71   |
| 22  | P     | 101 | VAL  | CA-C-N      | 5.21  | 127.25      | 120.28   |
| 22  | P     | 101 | VAL  | C-N-CA      | 5.21  | 127.25      | 120.28   |
| 23  | Q     | 162 | ASP  | CA-CB-CG    | 5.21  | 117.81      | 112.60   |
| 10  | 3     | 162 | HIS  | O-C-N       | 5.20  | 127.64      | 122.12   |
| 12  | 5     | 178 | ASN  | CA-CB-CG    | -5.20 | 107.40      | 112.60   |
| 20  | N     | 216 | VAL  | CA-C-O      | 5.20  | 126.36      | 120.95   |
| 22  | P     | 422 | ASN  | CA-CB-CG    | -5.20 | 107.40      | 112.60   |
| 31  | M     | 429 | GLU  | N-CA-C      | 5.20  | 116.64      | 111.07   |
| 1   | A     | 161 | CYS  | O-C-N       | -5.20 | 117.80      | 123.26   |
| 14  | 7     | 108 | LYS  | CA-C-N      | 5.20  | 128.22      | 120.31   |
| 14  | 7     | 108 | LYS  | C-N-CA      | 5.20  | 128.22      | 120.31   |
| 24  | R     | 125 | ARG  | CA-CB-CG    | 5.20  | 124.50      | 114.10   |
| 27  | H     | 231 | ASN  | CA-CB-CG    | -5.20 | 107.40      | 112.60   |
| 6   | F     | 144 | VAL  | N-CA-C      | -5.20 | 100.16      | 107.75   |
| 7   | G     | 83  | ALA  | CA-C-O      | -5.20 | 115.36      | 120.82   |
| 7   | G     | 201 | VAL  | N-CA-C      | 5.20  | 115.92      | 110.62   |
| 13  | 6     | 104 | HIS  | CB-CG-ND1   | 5.20  | 130.50      | 122.70   |
| 17  | T     | 287 | PHE  | N-CA-CB     | 5.20  | 117.76      | 110.12   |
| 20  | N     | 797 | MET  | CA-C-O      | -5.20 | 115.34      | 119.71   |
| 21  | S     | 333 | LEU  | CA-C-N      | 5.20  | 127.77      | 120.28   |
| 21  | S     | 333 | LEU  | C-N-CA      | 5.20  | 127.77      | 120.28   |
| 21  | S     | 406 | ILE  | N-CA-C      | 5.20  | 115.97      | 110.72   |
| 2   | B     | 43  | GLY  | CA-C-O      | 5.20  | 126.54      | 122.33   |
| 5   | E     | 177 | ALA  | CA-C-N      | 5.20  | 127.67      | 120.29   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 5   | E     | 177 | ALA  | C-N-CA     | 5.20  | 127.67      | 120.29   |
| 8   | 1     | 59  | ILE  | CA-CB-CG2  | -5.20 | 101.66      | 110.50   |
| 10  | 3     | 179 | ALA  | N-CA-C     | 5.20  | 118.88      | 112.54   |
| 15  | W     | 146 | GLU  | N-CA-CB    | 5.20  | 117.76      | 110.12   |
| 20  | N     | 677 | ASN  | OD1-CG-ND2 | -5.20 | 117.40      | 122.60   |
| 27  | H     | 415 | LYS  | N-CA-CB    | 5.20  | 117.86      | 110.16   |
| 31  | M     | 38  | LYS  | CB-CA-C    | -5.20 | 102.69      | 110.90   |
| 32  | J     | 387 | VAL  | CA-CB-CG1  | 5.20  | 119.24      | 110.40   |
| 7   | G     | 80  | GLY  | N-CA-C     | -5.20 | 106.31      | 111.56   |
| 10  | 3     | 137 | VAL  | O-C-N      | -5.20 | 116.07      | 122.57   |
| 24  | R     | 27  | SER  | N-CA-CB    | 5.20  | 117.85      | 110.16   |
| 27  | H     | 44  | GLN  | CA-C-N     | 5.20  | 127.80      | 120.42   |
| 27  | H     | 44  | GLN  | C-N-CA     | 5.20  | 127.80      | 120.42   |
| 29  | K     | 163 | MET  | N-CA-C     | -5.20 | 101.36      | 108.38   |
| 12  | 5     | 233 | VAL  | N-CA-CB    | 5.20  | 119.80      | 111.23   |
| 16  | V     | 175 | ARG  | CA-C-O     | -5.20 | 114.00      | 119.97   |
| 19  | Z     | 113 | MET  | CG-SD-CE   | -5.20 | 89.47       | 100.90   |
| 20  | N     | 861 | LYS  | N-CA-C     | -5.20 | 100.13      | 108.55   |
| 20  | N     | 898 | CYS  | N-CA-C     | -5.20 | 99.73       | 110.80   |
| 24  | R     | 267 | ARG  | NE-CZ-NH2  | -5.20 | 114.52      | 119.20   |
| 28  | I     | 67  | ARG  | CB-CG-CD   | 5.20  | 123.25      | 111.30   |
| 28  | I     | 272 | ARG  | N-CA-CB    | 5.20  | 117.85      | 110.16   |
| 28  | I     | 346 | ARG  | N-CA-C     | -5.20 | 106.47      | 114.16   |
| 31  | M     | 386 | GLU  | CA-C-N     | 5.20  | 127.24      | 120.28   |
| 31  | M     | 386 | GLU  | C-N-CA     | 5.20  | 127.24      | 120.28   |
| 17  | T     | 320 | SER  | N-CA-C     | 5.19  | 118.40      | 111.75   |
| 20  | N     | 129 | ARG  | NE-CZ-NH1  | -5.19 | 116.31      | 121.50   |
| 1   | A     | 84  | THR  | N-CA-CB    | 5.19  | 118.33      | 110.28   |
| 1   | A     | 235 | ILE  | CA-C-N     | 5.19  | 127.76      | 120.28   |
| 1   | A     | 235 | ILE  | C-N-CA     | 5.19  | 127.76      | 120.28   |
| 6   | F     | 115 | LYS  | N-CA-C     | 5.19  | 117.02      | 111.36   |
| 11  | 4     | 122 | ALA  | CA-C-N     | 5.19  | 131.24      | 122.26   |
| 11  | 4     | 122 | ALA  | C-N-CA     | 5.19  | 131.24      | 122.26   |
| 15  | W     | 11  | ASP  | N-CA-CB    | 5.19  | 118.18      | 110.29   |
| 15  | W     | 189 | LEU  | CB-CA-C    | -5.19 | 102.46      | 109.16   |
| 20  | N     | 99  | THR  | CA-C-O     | 5.19  | 126.27      | 120.82   |
| 20  | N     | 227 | GLN  | O-C-N      | -5.19 | 116.62      | 122.12   |
| 20  | N     | 526 | THR  | CA-CB-OG1  | 5.19  | 117.39      | 109.60   |
| 1   | A     | 153 | LYS  | CA-C-N     | 5.19  | 130.46      | 122.93   |
| 1   | A     | 153 | LYS  | C-N-CA     | 5.19  | 130.46      | 122.93   |
| 2   | B     | 222 | THR  | N-CA-CB    | 5.19  | 117.69      | 110.11   |
| 27  | H     | 133 | ASP  | CA-C-N     | -5.19 | 115.61      | 122.98   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 27  | H     | 133 | ASP  | C-N-CA      | -5.19 | 115.61      | 122.98   |
| 31  | M     | 212 | LYS  | CA-C-N      | 5.19  | 127.19      | 120.44   |
| 31  | M     | 212 | LYS  | C-N-CA      | 5.19  | 127.19      | 120.44   |
| 16  | V     | 211 | GLU  | CB-CA-C     | -5.19 | 102.03      | 110.85   |
| 16  | V     | 243 | SER  | N-CA-CB     | 5.19  | 117.59      | 110.07   |
| 25  | U     | 43  | TRP  | CA-C-N      | 5.19  | 131.45      | 121.54   |
| 25  | U     | 43  | TRP  | C-N-CA      | 5.19  | 131.45      | 121.54   |
| 26  | O     | 197 | ALA  | CA-C-N      | 5.19  | 127.66      | 120.29   |
| 26  | O     | 197 | ALA  | C-N-CA      | 5.19  | 127.66      | 120.29   |
| 28  | I     | 343 | ARG  | NE-CZ-NH1   | 5.19  | 126.69      | 121.50   |
| 2   | B     | 48  | THR  | CA-C-N      | 5.19  | 129.24      | 121.72   |
| 2   | B     | 48  | THR  | C-N-CA      | 5.19  | 129.24      | 121.72   |
| 2   | B     | 64  | LYS  | CB-CA-C     | -5.19 | 101.95      | 110.72   |
| 3   | C     | 97  | TYR  | CA-C-N      | 5.19  | 127.75      | 120.28   |
| 3   | C     | 97  | TYR  | C-N-CA      | 5.19  | 127.75      | 120.28   |
| 4   | D     | 28  | LYS  | N-CA-CB     | 5.19  | 117.84      | 110.06   |
| 6   | F     | 196 | ARG  | CA-C-N      | 5.19  | 127.75      | 120.28   |
| 6   | F     | 196 | ARG  | C-N-CA      | 5.19  | 127.75      | 120.28   |
| 8   | 1     | 126 | ASP  | N-CA-CB     | 5.19  | 118.26      | 110.53   |
| 10  | 3     | 161 | GLU  | O-C-N       | -5.19 | 117.10      | 122.96   |
| 16  | V     | 127 | ILE  | CA-C-N      | 5.19  | 127.19      | 120.44   |
| 16  | V     | 127 | ILE  | C-N-CA      | 5.19  | 127.19      | 120.44   |
| 22  | P     | 228 | ASN  | CA-C-O      | -5.19 | 115.05      | 120.55   |
| 26  | O     | 300 | ALA  | N-CA-C      | 5.19  | 117.84      | 111.82   |
| 27  | H     | 407 | LYS  | CA-C-N      | 5.19  | 127.23      | 120.28   |
| 27  | H     | 407 | LYS  | C-N-CA      | 5.19  | 127.23      | 120.28   |
| 8   | 1     | 206 | VAL  | N-CA-C      | 5.19  | 120.13      | 109.34   |
| 11  | 4     | 119 | ASP  | CA-C-O      | -5.19 | 115.04      | 120.80   |
| 14  | 7     | 70  | MET  | CG-SD-CE    | -5.19 | 89.49       | 100.90   |
| 19  | Z     | 87  | THR  | CA-C-N      | 5.19  | 129.92      | 122.35   |
| 19  | Z     | 87  | THR  | C-N-CA      | 5.19  | 129.92      | 122.35   |
| 24  | R     | 220 | VAL  | N-CA-CB     | 5.19  | 117.59      | 110.54   |
| 26  | O     | 218 | MET  | CA-C-O      | -5.19 | 115.05      | 120.55   |
| 5   | E     | 73  | HIS  | ND1-CE1-NE2 | 5.18  | 113.58      | 108.40   |
| 10  | 3     | 164 | PHE  | N-CA-C      | -5.18 | 105.63      | 111.28   |
| 17  | T     | 249 | LEU  | N-CA-C      | -5.18 | 106.87      | 114.39   |
| 20  | N     | 342 | LEU  | CA-C-N      | 5.18  | 127.20      | 120.56   |
| 20  | N     | 342 | LEU  | C-N-CA      | 5.18  | 127.20      | 120.56   |
| 27  | H     | 428 | ARG  | NE-CZ-NH2   | 5.18  | 123.87      | 119.20   |
| 31  | M     | 210 | ASN  | CB-CA-C     | -5.18 | 102.08      | 110.79   |
| 2   | B     | 171 | LYS  | CA-C-N      | 5.18  | 127.65      | 120.29   |
| 2   | B     | 171 | LYS  | C-N-CA      | 5.18  | 127.65      | 120.29   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 5   | E     | 118 | ASN  | CA-CB-CG    | 5.18  | 117.78      | 112.60   |
| 9   | 2     | 109 | HIS  | CB-CA-C     | -5.18 | 102.19      | 110.79   |
| 20  | N     | 756 | HIS  | CB-CG-CD2   | -5.18 | 124.47      | 131.20   |
| 5   | E     | 25  | GLU  | CA-CB-CG    | -5.18 | 103.74      | 114.10   |
| 5   | E     | 31  | HIS  | CG-CD2-NE2  | 5.18  | 112.38      | 107.20   |
| 8   | 1     | 143 | GLN  | O-C-N       | 5.18  | 129.12      | 123.01   |
| 15  | W     | 157 | VAL  | CA-C-N      | 5.18  | 127.17      | 120.44   |
| 15  | W     | 157 | VAL  | C-N-CA      | 5.18  | 127.17      | 120.44   |
| 21  | S     | 45  | SER  | N-CA-CB     | -5.18 | 102.50      | 110.16   |
| 23  | Q     | 412 | ASP  | CA-C-N      | 5.18  | 127.64      | 120.29   |
| 23  | Q     | 412 | ASP  | C-N-CA      | 5.18  | 127.64      | 120.29   |
| 24  | R     | 250 | LEU  | N-CA-CB     | 5.18  | 119.92      | 111.74   |
| 9   | 2     | 97  | MET  | CA-C-O      | -5.18 | 115.37      | 120.70   |
| 17  | T     | 285 | ILE  | CB-CA-C     | 5.18  | 118.59      | 111.19   |
| 22  | P     | 296 | LEU  | O-C-N       | 5.18  | 127.61      | 122.12   |
| 7   | G     | 162 | TRP  | N-CA-C      | 5.18  | 117.00      | 111.36   |
| 11  | 4     | 86  | ARG  | CA-C-N      | 5.18  | 127.64      | 120.29   |
| 11  | 4     | 86  | ARG  | C-N-CA      | 5.18  | 127.64      | 120.29   |
| 19  | Z     | 429 | ILE  | CB-CA-C     | 5.18  | 115.82      | 110.70   |
| 25  | U     | 85  | VAL  | CB-CA-C     | -5.18 | 105.24      | 112.02   |
| 29  | K     | 75  | ALA  | CA-C-N      | 5.18  | 127.22      | 120.28   |
| 29  | K     | 75  | ALA  | C-N-CA      | 5.18  | 127.22      | 120.28   |
| 11  | 4     | 191 | LEU  | CB-CA-C     | -5.17 | 99.49       | 109.37   |
| 19  | Z     | 105 | LYS  | CA-C-N      | 5.17  | 127.21      | 120.28   |
| 19  | Z     | 105 | LYS  | C-N-CA      | 5.17  | 127.21      | 120.28   |
| 19  | Z     | 481 | SER  | N-CA-C      | 5.17  | 116.92      | 111.28   |
| 19  | Z     | 810 | ILE  | N-CA-C      | -5.17 | 101.20      | 109.17   |
| 21  | S     | 256 | HIS  | CE1-NE2-CD2 | -5.17 | 103.83      | 109.00   |
| 23  | Q     | 50  | ILE  | CA-C-O      | -5.17 | 115.37      | 120.85   |
| 23  | Q     | 234 | GLU  | O-C-N       | 5.17  | 128.05      | 122.15   |
| 23  | Q     | 349 | HIS  | CA-C-O      | -5.17 | 115.39      | 120.82   |
| 30  | L     | 179 | ILE  | CA-C-O      | -5.17 | 116.10      | 119.15   |
| 16  | V     | 146 | ASP  | CA-CB-CG    | -5.17 | 107.43      | 112.60   |
| 20  | N     | 666 | LYS  | CA-C-N      | 5.17  | 127.21      | 120.28   |
| 20  | N     | 666 | LYS  | C-N-CA      | 5.17  | 127.21      | 120.28   |
| 27  | H     | 169 | LYS  | CA-C-N      | 5.17  | 126.31      | 119.84   |
| 27  | H     | 169 | LYS  | C-N-CA      | 5.17  | 126.31      | 119.84   |
| 28  | I     | 404 | LEU  | O-C-N       | -5.17 | 116.50      | 122.09   |
| 2   | B     | 143 | ARG  | O-C-N       | -5.17 | 116.51      | 121.94   |
| 19  | Z     | 400 | TYR  | N-CA-C      | 5.17  | 117.82      | 111.82   |
| 24  | R     | 1   | MET  | CB-CA-C     | 5.17  | 119.93      | 110.10   |
| 25  | U     | 118 | ASN  | N-CA-CB     | 5.17  | 119.23      | 110.49   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 27  | H     | 163 | MET  | CA-C-N     | 5.17  | 127.21      | 120.28   |
| 27  | H     | 163 | MET  | C-N-CA     | 5.17  | 127.21      | 120.28   |
| 27  | H     | 258 | ARG  | CA-C-N     | 5.17  | 127.64      | 120.29   |
| 27  | H     | 258 | ARG  | C-N-CA     | 5.17  | 127.64      | 120.29   |
| 28  | I     | 341 | LEU  | N-CA-C     | -5.17 | 105.65      | 112.94   |
| 32  | J     | 41  | ASN  | N-CA-CB    | -5.17 | 102.51      | 110.16   |
| 14  | 7     | 113 | GLN  | N-CA-C     | 5.17  | 116.92      | 111.28   |
| 20  | N     | 768 | GLN  | CG-CD-NE2  | -5.17 | 108.64      | 116.40   |
| 21  | S     | 31  | GLN  | CA-C-O     | -5.17 | 114.94      | 120.42   |
| 25  | U     | 174 | HIS  | CB-CG-CD2  | -5.17 | 124.48      | 131.20   |
| 4   | D     | 178 | LEU  | N-CA-C     | 5.17  | 117.82      | 111.82   |
| 17  | T     | 124 | LEU  | O-C-N      | -5.17 | 116.64      | 122.12   |
| 19  | Z     | 622 | SER  | N-CA-C     | 5.17  | 117.81      | 111.82   |
| 25  | U     | 78  | MET  | N-CA-CB    | 5.17  | 118.29      | 110.28   |
| 27  | H     | 307 | ASP  | CA-C-N     | 5.17  | 130.35      | 121.87   |
| 27  | H     | 307 | ASP  | C-N-CA     | 5.17  | 130.35      | 121.87   |
| 27  | H     | 365 | GLU  | N-CA-C     | -5.17 | 100.47      | 108.90   |
| 8   | 1     | 83  | ALA  | N-CA-C     | 5.17  | 116.91      | 111.28   |
| 16  | V     | 80  | THR  | N-CA-C     | -5.17 | 106.66      | 113.17   |
| 19  | Z     | 532 | GLY  | CA-C-N     | 5.17  | 129.89      | 122.35   |
| 19  | Z     | 532 | GLY  | C-N-CA     | 5.17  | 129.89      | 122.35   |
| 20  | N     | 221 | ILE  | CB-CA-C    | -5.17 | 105.25      | 112.02   |
| 20  | N     | 647 | HIS  | CB-CG-ND1  | 5.17  | 130.45      | 122.70   |
| 24  | R     | 174 | TRP  | N-CA-CB    | 5.17  | 118.29      | 110.28   |
| 25  | U     | 182 | THR  | N-CA-C     | -5.17 | 104.67      | 112.99   |
| 32  | J     | 182 | GLN  | N-CA-C     | -5.17 | 102.95      | 110.08   |
| 2   | B     | 65  | VAL  | N-CA-C     | -5.17 | 100.31      | 107.80   |
| 13  | 6     | 225 | VAL  | O-C-N      | 5.17  | 128.60      | 123.18   |
| 20  | N     | 814 | PRO  | N-CA-C     | 5.17  | 119.31      | 111.15   |
| 28  | I     | 327 | VAL  | CA-CB-CG1  | 5.17  | 119.18      | 110.40   |
| 30  | L     | 269 | ARG  | NE-CZ-NH2  | -5.17 | 114.55      | 119.20   |
| 24  | R     | 54  | TYR  | N-CA-C     | -5.16 | 106.49      | 112.89   |
| 28  | I     | 233 | THR  | CA-C-N     | 5.16  | 127.20      | 120.28   |
| 28  | I     | 233 | THR  | C-N-CA     | 5.16  | 127.20      | 120.28   |
| 29  | K     | 206 | GLY  | O-C-N      | -5.16 | 116.61      | 121.77   |
| 31  | M     | 396 | GLY  | CA-C-N     | 5.16  | 127.20      | 120.28   |
| 31  | M     | 396 | GLY  | C-N-CA     | 5.16  | 127.20      | 120.28   |
| 32  | J     | 218 | GLU  | CA-C-N     | 5.16  | 127.46      | 120.44   |
| 32  | J     | 218 | GLU  | C-N-CA     | 5.16  | 127.46      | 120.44   |
| 3   | C     | 96  | ARG  | N-CA-C     | 5.16  | 116.99      | 111.36   |
| 13  | 6     | 85  | HIS  | CA-CB-CG   | 5.16  | 118.96      | 113.80   |
| 21  | S     | 322 | GLN  | OE1-CD-NE2 | 5.16  | 127.76      | 122.60   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 23  | Q     | 267 | VAL  | CA-C-N      | 5.16  | 127.62      | 120.29   |
| 23  | Q     | 267 | VAL  | C-N-CA      | 5.16  | 127.62      | 120.29   |
| 28  | I     | 349 | ARG  | N-CA-C      | -5.16 | 102.64      | 110.28   |
| 32  | J     | 372 | ARG  | CD-NE-CZ    | -5.16 | 117.17      | 124.40   |
| 10  | 3     | 47  | ASP  | CA-C-O      | 5.16  | 124.20      | 118.52   |
| 19  | Z     | 490 | ALA  | O-C-N       | -5.16 | 115.73      | 122.59   |
| 19  | Z     | 570 | GLY  | N-CA-C      | -5.16 | 106.51      | 112.50   |
| 21  | S     | 181 | GLN  | OE1-CD-NE2  | 5.16  | 127.76      | 122.60   |
| 22  | P     | 263 | TRP  | CA-C-N      | 5.16  | 127.15      | 120.44   |
| 22  | P     | 263 | TRP  | C-N-CA      | 5.16  | 127.15      | 120.44   |
| 24  | R     | 205 | VAL  | O-C-N       | -5.16 | 116.66      | 121.87   |
| 26  | O     | 69  | HIS  | ND1-CE1-NE2 | 5.16  | 113.56      | 108.40   |
| 28  | I     | 76  | GLU  | O-C-N       | -5.16 | 115.92      | 122.27   |
| 7   | G     | 98  | ASN  | CA-C-O      | 5.16  | 126.02      | 120.55   |
| 10  | 3     | 79  | GLY  | CA-C-O      | -5.16 | 115.43      | 121.00   |
| 16  | V     | 29  | GLU  | CA-C-N      | 5.16  | 129.71      | 121.66   |
| 16  | V     | 29  | GLU  | C-N-CA      | 5.16  | 129.71      | 121.66   |
| 20  | N     | 729 | GLY  | CA-C-O      | 5.16  | 126.13      | 120.66   |
| 23  | Q     | 34  | ASP  | CA-C-N      | 5.16  | 127.06      | 120.56   |
| 23  | Q     | 34  | ASP  | C-N-CA      | 5.16  | 127.06      | 120.56   |
| 23  | Q     | 49  | SER  | CA-C-O      | 5.16  | 126.02      | 120.55   |
| 25  | U     | 258 | VAL  | N-CA-CB     | 5.16  | 117.56      | 110.54   |
| 28  | I     | 61  | LYS  | CB-CG-CD    | 5.16  | 123.16      | 111.30   |
| 19  | Z     | 182 | GLU  | N-CA-C      | 5.16  | 119.26      | 112.35   |
| 20  | N     | 377 | HIS  | CB-CG-ND1   | 5.16  | 130.44      | 122.70   |
| 4   | D     | 190 | ASP  | CA-C-O      | 5.16  | 125.89      | 120.42   |
| 15  | W     | 104 | ASN  | CA-CB-CG    | -5.16 | 107.44      | 112.60   |
| 19  | Z     | 83  | ARG  | CG-CD-NE    | -5.16 | 100.66      | 112.00   |
| 19  | Z     | 673 | ARG  | CA-C-N      | 5.16  | 127.70      | 120.28   |
| 19  | Z     | 673 | ARG  | C-N-CA      | 5.16  | 127.70      | 120.28   |
| 20  | N     | 237 | VAL  | CB-CA-C     | -5.16 | 105.37      | 111.97   |
| 21  | S     | 132 | GLU  | O-C-N       | 5.16  | 129.45      | 122.59   |
| 25  | U     | 158 | VAL  | CA-C-O      | 5.16  | 126.44      | 120.67   |
| 6   | F     | 133 | LEU  | N-CA-C      | -5.15 | 98.87       | 107.99   |
| 19  | Z     | 145 | VAL  | N-CA-CB     | 5.15  | 117.55      | 110.54   |
| 20  | N     | 412 | HIS  | CB-CG-CD2   | -5.15 | 124.50      | 131.20   |
| 22  | P     | 361 | HIS  | CB-CG-ND1   | 5.15  | 130.43      | 122.70   |
| 31  | M     | 67  | HIS  | O-C-N       | 5.15  | 127.58      | 122.12   |
| 6   | F     | 237 | GLU  | CA-C-O      | 5.15  | 126.17      | 120.71   |
| 11  | 4     | 180 | VAL  | N-CA-C      | -5.15 | 100.46      | 108.81   |
| 15  | W     | 152 | LYS  | CB-CA-C     | -5.15 | 100.78      | 110.67   |
| 27  | H     | 203 | ASN  | N-CA-CB     | 5.15  | 117.48      | 110.01   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 32  | J     | 7   | GLU  | N-CA-CB     | 5.15  | 119.38      | 111.24   |
| 19  | Z     | 665 | GLU  | CA-C-N      | 5.15  | 127.52      | 120.46   |
| 19  | Z     | 665 | GLU  | C-N-CA      | 5.15  | 127.52      | 120.46   |
| 20  | N     | 619 | VAL  | CA-C-N      | 5.15  | 127.18      | 120.28   |
| 20  | N     | 619 | VAL  | C-N-CA      | 5.15  | 127.18      | 120.28   |
| 21  | S     | 359 | LEU  | N-CA-C      | -5.15 | 105.67      | 111.28   |
| 26  | O     | 334 | THR  | N-CA-C      | -5.15 | 105.74      | 112.23   |
| 28  | I     | 365 | PHE  | N-CA-CB     | 5.15  | 117.78      | 110.16   |
| 31  | M     | 420 | HIS  | N-CA-C      | 5.15  | 117.79      | 111.82   |
| 32  | J     | 386 | ALA  | CB-CA-C     | -5.15 | 102.76      | 110.90   |
| 1   | A     | 178 | PHE  | CA-C-O      | 5.15  | 125.88      | 120.42   |
| 21  | S     | 196 | ARG  | CA-C-O      | -5.15 | 115.37      | 121.60   |
| 22  | P     | 248 | ARG  | CA-CB-CG    | 5.15  | 124.40      | 114.10   |
| 10  | 3     | 110 | ALA  | N-CA-CB     | 5.15  | 119.79      | 110.83   |
| 11  | 4     | 55  | GLN  | CA-CB-CG    | 5.15  | 124.40      | 114.10   |
| 13  | 6     | 201 | LEU  | N-CA-C      | 5.15  | 116.89      | 111.28   |
| 19  | Z     | 170 | TRP  | N-CA-C      | -5.15 | 104.31      | 111.52   |
| 27  | H     | 418 | LYS  | CA-C-N      | 5.15  | 127.44      | 120.65   |
| 27  | H     | 418 | LYS  | C-N-CA      | 5.15  | 127.44      | 120.65   |
| 31  | M     | 352 | ASP  | N-CA-CB     | 5.15  | 117.69      | 110.12   |
| 32  | J     | 153 | GLY  | O-C-N       | 5.15  | 129.39      | 122.70   |
| 4   | D     | 42  | VAL  | O-C-N       | -5.15 | 117.59      | 123.10   |
| 13  | 6     | 63  | HIS  | CE1-NE2-CD2 | -5.15 | 103.85      | 109.00   |
| 28  | I     | 417 | GLU  | N-CA-CB     | 5.15  | 117.47      | 110.01   |
| 30  | L     | 270 | THR  | CA-C-N      | 5.15  | 127.69      | 120.28   |
| 30  | L     | 270 | THR  | C-N-CA      | 5.15  | 127.69      | 120.28   |
| 9   | 2     | 94  | ASP  | N-CA-C      | 5.14  | 116.57      | 111.07   |
| 10  | 3     | 47  | ASP  | CB-CA-C     | -5.14 | 102.45      | 110.37   |
| 13  | 6     | 134 | TYR  | CB-CG-CD1   | 5.14  | 128.52      | 120.80   |
| 14  | 7     | 128 | SER  | CA-C-N      | 5.14  | 126.27      | 119.84   |
| 14  | 7     | 128 | SER  | C-N-CA      | 5.14  | 126.27      | 119.84   |
| 20  | N     | 113 | VAL  | N-CA-C      | 5.14  | 115.36      | 110.42   |
| 21  | S     | 50  | ASP  | N-CA-CB     | 5.14  | 117.78      | 110.16   |
| 26  | O     | 15  | GLY  | CA-C-N      | 5.14  | 126.27      | 119.84   |
| 26  | O     | 15  | GLY  | C-N-CA      | 5.14  | 126.27      | 119.84   |
| 28  | I     | 306 | GLN  | N-CA-CB     | 5.14  | 117.68      | 110.12   |
| 2   | B     | 180 | GLU  | N-CA-C      | -5.14 | 101.30      | 108.96   |
| 5   | E     | 14  | THR  | CA-C-N      | 5.14  | 131.38      | 122.64   |
| 5   | E     | 14  | THR  | C-N-CA      | 5.14  | 131.38      | 122.64   |
| 11  | 4     | 56  | PHE  | N-CA-C      | 5.14  | 116.97      | 111.36   |
| 27  | H     | 341 | ILE  | CA-C-O      | 5.14  | 125.93      | 120.48   |
| 29  | K     | 249 | ASP  | CA-CB-CG    | 5.14  | 117.74      | 112.60   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 30  | L     | 387 | LYS  | CA-C-N      | 5.14  | 127.72      | 120.42   |
| 30  | L     | 387 | LYS  | C-N-CA      | 5.14  | 127.72      | 120.42   |
| 31  | M     | 294 | ILE  | CA-CB-CG2   | -5.14 | 101.76      | 110.50   |
| 7   | G     | 185 | MET  | CG-SD-CE    | -5.14 | 89.59       | 100.90   |
| 26  | O     | 149 | THR  | CA-C-N      | 5.14  | 127.59      | 120.29   |
| 26  | O     | 149 | THR  | C-N-CA      | 5.14  | 127.59      | 120.29   |
| 27  | H     | 407 | LYS  | O-C-N       | -5.14 | 116.29      | 122.15   |
| 28  | I     | 191 | ASP  | CA-CB-CG    | 5.14  | 117.74      | 112.60   |
| 3   | C     | 67  | LYS  | CA-C-N      | 5.14  | 129.37      | 120.58   |
| 3   | C     | 67  | LYS  | C-N-CA      | 5.14  | 129.37      | 120.58   |
| 7   | G     | 201 | VAL  | CA-C-N      | 5.14  | 128.15      | 120.95   |
| 7   | G     | 201 | VAL  | C-N-CA      | 5.14  | 128.15      | 120.95   |
| 15  | W     | 118 | GLU  | CA-C-N      | -5.14 | 115.63      | 122.72   |
| 15  | W     | 118 | GLU  | C-N-CA      | -5.14 | 115.63      | 122.72   |
| 17  | T     | 169 | ARG  | O-C-N       | -5.14 | 116.78      | 122.07   |
| 20  | N     | 55  | ARG  | CB-CG-CD    | 5.14  | 123.12      | 111.30   |
| 31  | M     | 68  | GLU  | CA-C-N      | 5.14  | 127.17      | 120.28   |
| 31  | M     | 68  | GLU  | C-N-CA      | 5.14  | 127.17      | 120.28   |
| 20  | N     | 488 | THR  | N-CA-CB     | 5.14  | 117.76      | 110.16   |
| 20  | N     | 742 | HIS  | ND1-CE1-NE2 | 5.14  | 113.54      | 108.40   |
| 22  | P     | 132 | THR  | CA-C-N      | 5.14  | 127.42      | 120.38   |
| 22  | P     | 132 | THR  | C-N-CA      | 5.14  | 127.42      | 120.38   |
| 4   | D     | 239 | GLU  | N-CA-C      | -5.14 | 105.86      | 111.82   |
| 8   | 1     | 231 | THR  | N-CA-C      | -5.14 | 98.95       | 107.99   |
| 17  | T     | 324 | GLN  | OE1-CD-NE2  | 5.14  | 127.74      | 122.60   |
| 20  | N     | 634 | PRO  | N-CA-CB     | 5.14  | 108.94      | 103.39   |
| 31  | M     | 364 | ALA  | N-CA-C      | 5.14  | 116.96      | 111.36   |
| 32  | J     | 101 | LYS  | CA-C-O      | 5.14  | 125.68      | 119.31   |
| 3   | C     | 92  | LEU  | N-CA-C      | 5.13  | 116.68      | 111.14   |
| 7   | G     | 46  | VAL  | O-C-N       | 5.13  | 128.59      | 123.10   |
| 22  | P     | 361 | HIS  | CE1-NE2-CD2 | -5.13 | 103.86      | 109.00   |
| 24  | R     | 297 | ARG  | NE-CZ-NH2   | -5.13 | 114.58      | 119.20   |
| 28  | I     | 93  | GLU  | CA-C-O      | 5.13  | 126.21      | 120.82   |
| 30  | L     | 68  | GLY  | O-C-N       | 5.13  | 129.38      | 122.70   |
| 1   | A     | 67  | THR  | O-C-N       | 5.13  | 129.18      | 122.87   |
| 8   | 1     | 144 | VAL  | N-CA-C      | -5.13 | 101.58      | 108.35   |
| 23  | Q     | 24  | ILE  | N-CA-C      | -5.13 | 105.39      | 110.62   |
| 28  | I     | 213 | GLU  | N-CA-CB     | 5.13  | 117.76      | 110.16   |
| 32  | J     | 236 | VAL  | CB-CA-C     | -5.13 | 105.40      | 111.97   |
| 17  | T     | 341 | GLN  | CA-C-N      | 5.13  | 128.58      | 120.47   |
| 17  | T     | 341 | GLN  | C-N-CA      | 5.13  | 128.58      | 120.47   |
| 19  | Z     | 618 | GLU  | CA-C-N      | 5.13  | 130.22      | 122.68   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 19  | Z     | 618 | GLU  | C-N-CA    | 5.13  | 130.22      | 122.68   |
| 20  | N     | 20  | LYS  | O-C-N     | -5.13 | 116.68      | 122.12   |
| 26  | O     | 275 | LEU  | CB-CA-C   | 5.13  | 119.58      | 110.85   |
| 21  | S     | 326 | LYS  | CB-CA-C   | -5.13 | 102.27      | 110.79   |
| 23  | Q     | 23  | SER  | N-CA-C    | 5.13  | 117.77      | 111.82   |
| 23  | Q     | 202 | CYS  | CA-C-O    | -5.13 | 113.13      | 120.16   |
| 28  | I     | 176 | VAL  | N-CA-C    | -5.13 | 100.50      | 108.81   |
| 4   | D     | 223 | LEU  | N-CA-CB   | 5.13  | 117.49      | 109.85   |
| 8   | 1     | 173 | ASP  | N-CA-C    | 5.13  | 116.87      | 111.28   |
| 19  | Z     | 192 | VAL  | CA-C-N    | 5.13  | 124.92      | 119.28   |
| 19  | Z     | 192 | VAL  | C-N-CA    | 5.13  | 124.92      | 119.28   |
| 20  | N     | 939 | GLU  | CB-CA-C   | -5.13 | 103.18      | 111.18   |
| 23  | Q     | 259 | ILE  | CA-CB-CG1 | 5.13  | 119.12      | 110.40   |
| 29  | K     | 159 | LYS  | CA-C-N    | 5.13  | 126.25      | 119.84   |
| 29  | K     | 159 | LYS  | C-N-CA    | 5.13  | 126.25      | 119.84   |
| 3   | C     | 241 | GLU  | CB-CA-C   | -5.13 | 102.28      | 110.79   |
| 6   | F     | 123 | TYR  | N-CA-C    | -5.13 | 100.95      | 109.46   |
| 9   | 2     | 92  | ALA  | CA-C-N    | 5.13  | 128.10      | 120.31   |
| 9   | 2     | 92  | ALA  | C-N-CA    | 5.13  | 128.10      | 120.31   |
| 16  | V     | 104 | ARG  | CA-C-O    | -5.13 | 114.84      | 120.17   |
| 19  | Z     | 377 | VAL  | CA-C-O    | -5.13 | 115.08      | 120.57   |
| 20  | N     | 212 | ASP  | N-CA-CB   | 5.13  | 117.57      | 109.83   |
| 21  | S     | 29  | ALA  | CA-C-N    | 5.13  | 124.62      | 119.19   |
| 21  | S     | 29  | ALA  | C-N-CA    | 5.13  | 124.62      | 119.19   |
| 22  | P     | 24  | VAL  | CA-C-N    | 5.13  | 127.57      | 120.29   |
| 22  | P     | 24  | VAL  | C-N-CA    | 5.13  | 127.57      | 120.29   |
| 24  | R     | 92  | GLU  | O-C-N     | 5.13  | 127.56      | 122.12   |
| 24  | R     | 374 | ASP  | O-C-N     | 5.13  | 127.35      | 122.07   |
| 25  | U     | 13  | PRO  | CA-C-N    | 5.13  | 127.15      | 120.28   |
| 25  | U     | 13  | PRO  | C-N-CA    | 5.13  | 127.15      | 120.28   |
| 26  | O     | 140 | GLU  | N-CA-CB   | -5.13 | 102.58      | 110.01   |
| 29  | K     | 416 | PHE  | CB-CA-C   | -5.13 | 110.26      | 117.23   |
| 14  | 7     | 45  | THR  | CA-CB-CG2 | -5.12 | 101.79      | 110.50   |
| 14  | 7     | 228 | TYR  | CA-CB-CG  | -5.12 | 104.67      | 113.90   |
| 20  | N     | 194 | ARG  | NE-CZ-NH2 | 5.12  | 123.81      | 119.20   |
| 1   | A     | 33  | ASN  | CA-C-N    | 5.12  | 127.14      | 120.28   |
| 1   | A     | 33  | ASN  | C-N-CA    | 5.12  | 127.14      | 120.28   |
| 8   | 1     | 154 | VAL  | N-CA-C    | 5.12  | 115.23      | 107.75   |
| 22  | P     | 302 | TYR  | N-CA-CB   | 5.12  | 118.22      | 110.28   |
| 23  | Q     | 414 | LEU  | N-CA-CB   | 5.12  | 117.65      | 110.12   |
| 25  | U     | 126 | VAL  | N-CA-C    | -5.12 | 105.55      | 110.72   |
| 26  | O     | 255 | TRP  | CA-C-N    | 5.12  | 126.54      | 120.14   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 26  | O     | 255 | TRP  | C-N-CA      | 5.12  | 126.54      | 120.14   |
| 32  | J     | 149 | GLU  | CA-C-N      | 5.12  | 127.10      | 120.44   |
| 32  | J     | 149 | GLU  | C-N-CA      | 5.12  | 127.10      | 120.44   |
| 10  | 3     | 118 | LYS  | CA-C-O      | -5.12 | 116.25      | 120.71   |
| 17  | T     | 217 | ARG  | N-CA-C      | 5.12  | 116.94      | 111.36   |
| 21  | S     | 323 | THR  | CA-C-N      | 5.12  | 127.69      | 120.42   |
| 21  | S     | 323 | THR  | C-N-CA      | 5.12  | 127.69      | 120.42   |
| 23  | Q     | 352 | SER  | CA-C-O      | -5.12 | 115.42      | 120.70   |
| 23  | Q     | 370 | LEU  | N-CA-CB     | 5.12  | 117.74      | 110.16   |
| 25  | U     | 282 | ASN  | CB-CG-ND2   | -5.12 | 108.72      | 116.40   |
| 16  | V     | 235 | SER  | CA-C-O      | 5.12  | 126.20      | 120.82   |
| 19  | Z     | 612 | LEU  | CA-C-N      | 5.12  | 130.99      | 121.62   |
| 19  | Z     | 612 | LEU  | C-N-CA      | 5.12  | 130.99      | 121.62   |
| 20  | N     | 335 | ILE  | CA-C-N      | 5.12  | 127.14      | 120.28   |
| 20  | N     | 335 | ILE  | C-N-CA      | 5.12  | 127.14      | 120.28   |
| 22  | P     | 206 | SER  | CA-C-N      | 5.12  | 128.09      | 120.31   |
| 22  | P     | 206 | SER  | C-N-CA      | 5.12  | 128.09      | 120.31   |
| 22  | P     | 211 | THR  | CA-C-N      | 5.12  | 127.14      | 120.28   |
| 22  | P     | 211 | THR  | C-N-CA      | 5.12  | 127.14      | 120.28   |
| 27  | H     | 257 | VAL  | CA-C-O      | -5.12 | 115.62      | 120.95   |
| 1   | A     | 189 | TRP  | CB-CG-CD2   | -5.12 | 119.63      | 126.80   |
| 5   | E     | 67  | ILE  | N-CA-C      | -5.12 | 100.38      | 107.80   |
| 5   | E     | 102 | THR  | N-CA-CB     | 5.12  | 117.40      | 109.98   |
| 15  | W     | 192 | GLU  | CA-C-N      | 5.12  | 128.67      | 121.30   |
| 15  | W     | 192 | GLU  | C-N-CA      | 5.12  | 128.67      | 121.30   |
| 17  | T     | 311 | TRP  | O-C-N       | -5.12 | 116.54      | 123.19   |
| 24  | R     | 125 | ARG  | CA-C-N      | 5.12  | 128.09      | 120.31   |
| 24  | R     | 125 | ARG  | C-N-CA      | 5.12  | 128.09      | 120.31   |
| 27  | H     | 95  | VAL  | CB-CA-C     | -5.12 | 104.07      | 111.34   |
| 27  | H     | 172 | VAL  | N-CA-C      | -5.12 | 100.97      | 108.85   |
| 12  | 5     | 69  | HIS  | CG-CD2-NE2  | 5.12  | 112.32      | 107.20   |
| 16  | V     | 282 | ARG  | CA-C-N      | 5.12  | 127.09      | 120.44   |
| 16  | V     | 282 | ARG  | C-N-CA      | 5.12  | 127.09      | 120.44   |
| 19  | Z     | 470 | VAL  | N-CA-CB     | 5.12  | 119.40      | 110.65   |
| 21  | S     | 131 | LEU  | N-CA-CB     | 5.12  | 118.32      | 110.49   |
| 30  | L     | 343 | GLU  | CB-CA-C     | -5.12 | 102.78      | 110.92   |
| 32  | J     | 241 | HIS  | ND1-CE1-NE2 | 5.12  | 113.52      | 108.40   |
| 4   | D     | 143 | ASP  | CA-CB-CG    | 5.12  | 117.72      | 112.60   |
| 5   | E     | 143 | PHE  | N-CA-CB     | 5.12  | 118.34      | 110.21   |
| 7   | G     | 132 | PHE  | N-CA-C      | -5.12 | 102.91      | 110.48   |
| 19  | Z     | 42  | GLU  | CA-C-N      | 5.12  | 127.09      | 120.44   |
| 19  | Z     | 42  | GLU  | C-N-CA      | 5.12  | 127.09      | 120.44   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 20  | N     | 339 | LEU  | CA-C-N      | 5.12  | 127.09      | 120.44   |
| 20  | N     | 339 | LEU  | C-N-CA      | 5.12  | 127.09      | 120.44   |
| 24  | R     | 371 | LYS  | O-C-N       | 5.12  | 127.54      | 122.12   |
| 27  | H     | 336 | ARG  | CB-CA-C     | -5.12 | 102.15      | 110.85   |
| 31  | M     | 371 | ILE  | CA-CB-CG2   | -5.12 | 101.80      | 110.50   |
| 32  | J     | 387 | VAL  | CB-CA-C     | -5.12 | 105.16      | 112.22   |
| 9   | 2     | 152 | HIS  | CA-C-N      | -5.11 | 114.87      | 122.74   |
| 9   | 2     | 152 | HIS  | C-N-CA      | -5.11 | 114.87      | 122.74   |
| 15  | W     | 94  | HIS  | CG-CD2-NE2  | 5.11  | 112.31      | 107.20   |
| 20  | N     | 489 | ALA  | CA-C-O      | -5.11 | 115.80      | 122.14   |
| 26  | O     | 94  | LEU  | CA-C-O      | 5.11  | 125.97      | 120.55   |
| 27  | H     | 430 | MET  | N-CA-CB     | 5.11  | 118.72      | 110.85   |
| 28  | I     | 421 | LYS  | N-CA-C      | -5.11 | 105.62      | 111.14   |
| 32  | J     | 323 | GLU  | CA-C-O      | -5.11 | 115.00      | 120.42   |
| 1   | A     | 149 | PRO  | N-CA-CB     | 5.11  | 107.86      | 103.31   |
| 8   | 1     | 103 | LEU  | N-CA-C      | 5.11  | 116.93      | 111.36   |
| 25  | U     | 90  | ARG  | N-CA-C      | -5.11 | 101.34      | 108.96   |
| 10  | 3     | 113 | ASP  | CA-C-N      | 5.11  | 125.56      | 120.14   |
| 10  | 3     | 113 | ASP  | C-N-CA      | 5.11  | 125.56      | 120.14   |
| 15  | W     | 171 | VAL  | N-CA-C      | -5.11 | 101.12      | 108.48   |
| 16  | V     | 211 | GLU  | CA-C-N      | 5.11  | 127.13      | 120.28   |
| 16  | V     | 211 | GLU  | C-N-CA      | 5.11  | 127.13      | 120.28   |
| 23  | Q     | 342 | PHE  | CB-CA-C     | -5.11 | 100.36      | 109.71   |
| 24  | R     | 108 | ALA  | CA-C-O      | -5.11 | 115.13      | 120.55   |
| 28  | I     | 165 | ASP  | CA-C-O      | -5.11 | 115.38      | 121.56   |
| 31  | M     | 97  | ILE  | CA-C-O      | -5.11 | 115.38      | 121.05   |
| 8   | 1     | 196 | ALA  | CB-CA-C     | -5.11 | 102.31      | 110.79   |
| 9   | 2     | 131 | PHE  | CB-CG-CD1   | -5.11 | 112.01      | 120.70   |
| 16  | V     | 236 | GLU  | N-CA-C      | 5.11  | 116.93      | 111.36   |
| 29  | K     | 410 | ASP  | CA-CB-CG    | 5.11  | 117.71      | 112.60   |
| 2   | B     | 230 | LEU  | O-C-N       | -5.11 | 116.71      | 122.12   |
| 6   | F     | 119 | PRO  | N-CA-CB     | 5.11  | 108.59      | 103.48   |
| 14  | 7     | 193 | LEU  | CA-C-O      | -5.11 | 115.14      | 120.55   |
| 20  | N     | 397 | THR  | CA-CB-OG1   | 5.11  | 117.26      | 109.60   |
| 22  | P     | 399 | ASN  | O-C-N       | 5.11  | 128.55      | 122.27   |
| 26  | O     | 347 | LYS  | CA-C-O      | -5.11 | 115.46      | 120.82   |
| 29  | K     | 77  | GLU  | CG-CD-OE2   | -5.11 | 106.65      | 118.40   |
| 30  | L     | 140 | ASP  | CA-C-O      | -5.11 | 113.16      | 120.16   |
| 7   | G     | 166 | ILE  | CA-C-O      | -5.11 | 115.14      | 120.76   |
| 20  | N     | 596 | ASN  | OD1-CG-ND2  | -5.11 | 117.49      | 122.60   |
| 29  | K     | 44  | TYR  | N-CA-C      | 5.11  | 116.85      | 111.28   |
| 5   | E     | 227 | HIS  | ND1-CE1-NE2 | 5.10  | 113.50      | 108.40   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 15  | W     | 163 | LYS  | N-CA-C      | -5.10 | 100.99      | 109.46   |
| 19  | Z     | 734 | SER  | N-CA-CB     | 5.10  | 118.19      | 110.28   |
| 25  | U     | 172 | VAL  | O-C-N       | 5.10  | 126.82      | 121.87   |
| 5   | E     | 150 | GLY  | CA-C-N      | 5.10  | 125.34      | 119.83   |
| 5   | E     | 150 | GLY  | C-N-CA      | 5.10  | 125.34      | 119.83   |
| 6   | F     | 110 | SER  | CA-C-N      | 5.10  | 127.54      | 120.29   |
| 6   | F     | 110 | SER  | C-N-CA      | 5.10  | 127.54      | 120.29   |
| 6   | F     | 171 | TYR  | CB-CG-CD2   | 5.10  | 128.45      | 120.80   |
| 16  | V     | 45  | GLY  | N-CA-C      | -5.10 | 106.24      | 112.77   |
| 20  | N     | 439 | GLU  | O-C-N       | 5.10  | 127.60      | 122.09   |
| 22  | P     | 128 | LEU  | CA-C-N      | 5.10  | 127.07      | 120.44   |
| 22  | P     | 128 | LEU  | C-N-CA      | 5.10  | 127.07      | 120.44   |
| 23  | Q     | 148 | HIS  | CE1-NE2-CD2 | -5.10 | 103.90      | 109.00   |
| 27  | H     | 79  | ASP  | CA-CB-CG    | -5.10 | 107.50      | 112.60   |
| 27  | H     | 150 | HIS  | CE1-NE2-CD2 | -5.10 | 103.90      | 109.00   |
| 29  | K     | 229 | ARG  | CA-C-N      | 5.10  | 130.23      | 122.98   |
| 29  | K     | 229 | ARG  | C-N-CA      | 5.10  | 130.23      | 122.98   |
| 8   | 1     | 57  | SER  | N-CA-C      | 5.10  | 117.19      | 108.67   |
| 14  | 7     | 124 | GLY  | CA-C-O      | 5.10  | 124.80      | 119.04   |
| 19  | Z     | 319 | GLU  | CA-C-O      | -5.10 | 115.45      | 120.70   |
| 20  | N     | 497 | LEU  | O-C-N       | 5.10  | 127.97      | 122.15   |
| 5   | E     | 151 | PRO  | N-CA-CB     | 5.10  | 107.86      | 103.27   |
| 10  | 3     | 86  | THR  | N-CA-C      | 5.10  | 116.84      | 111.28   |
| 26  | O     | 185 | ILE  | O-C-N       | -5.10 | 117.23      | 122.23   |
| 26  | O     | 301 | LYS  | CA-C-N      | 5.10  | 130.10      | 123.06   |
| 26  | O     | 301 | LYS  | C-N-CA      | 5.10  | 130.10      | 123.06   |
| 8   | 1     | 225 | ASP  | O-C-N       | -5.10 | 115.81      | 122.59   |
| 17  | T     | 130 | ASN  | N-CA-CB     | 5.10  | 118.00      | 110.56   |
| 19  | Z     | 876 | HIS  | CA-CB-CG    | 5.10  | 118.90      | 113.80   |
| 20  | N     | 470 | ASN  | CA-C-N      | 5.10  | 128.80      | 121.71   |
| 20  | N     | 470 | ASN  | C-N-CA      | 5.10  | 128.80      | 121.71   |
| 23  | Q     | 324 | ALA  | O-C-N       | 5.10  | 127.52      | 122.12   |
| 32  | J     | 46  | GLN  | OE1-CD-NE2  | -5.10 | 117.50      | 122.60   |
| 6   | F     | 130 | VAL  | N-CA-C      | -5.10 | 101.00      | 108.85   |
| 20  | N     | 746 | ILE  | CA-C-O      | 5.09  | 126.02      | 120.57   |
| 21  | S     | 167 | MET  | N-CA-C      | 5.09  | 116.52      | 111.07   |
| 25  | U     | 80  | GLY  | N-CA-C      | -5.09 | 106.25      | 112.77   |
| 26  | O     | 17  | GLY  | CA-C-N      | 5.09  | 131.07      | 122.26   |
| 26  | O     | 17  | GLY  | C-N-CA      | 5.09  | 131.07      | 122.26   |
| 27  | H     | 183 | GLN  | CA-C-N      | 5.09  | 127.65      | 120.42   |
| 27  | H     | 183 | GLN  | C-N-CA      | 5.09  | 127.65      | 120.42   |
| 19  | Z     | 446 | LEU  | N-CA-C      | -5.09 | 105.81      | 111.36   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 21  | S     | 188 | MET  | CA-C-N     | 5.09  | 127.52      | 120.29   |
| 21  | S     | 188 | MET  | C-N-CA     | 5.09  | 127.52      | 120.29   |
| 9   | 2     | 133 | TYR  | CA-C-N     | 5.09  | 128.05      | 120.31   |
| 9   | 2     | 133 | TYR  | C-N-CA     | 5.09  | 128.05      | 120.31   |
| 16  | V     | 197 | ASN  | OD1-CG-ND2 | -5.09 | 117.51      | 122.60   |
| 21  | S     | 475 | ARG  | CB-CA-C    | -5.09 | 102.89      | 110.88   |
| 24  | R     | 181 | LYS  | CA-C-O     | -5.09 | 115.15      | 120.55   |
| 32  | J     | 221 | GLN  | N-CA-CB    | 5.09  | 118.55      | 110.55   |
| 3   | C     | 39  | ALA  | N-CA-C     | -5.09 | 101.67      | 109.41   |
| 13  | 6     | 226 | THR  | CA-C-O     | 5.09  | 125.92      | 120.32   |
| 20  | N     | 262 | SER  | CA-C-O     | -5.09 | 115.03      | 120.42   |
| 23  | Q     | 148 | HIS  | CA-C-N     | 5.09  | 127.06      | 120.44   |
| 23  | Q     | 148 | HIS  | C-N-CA     | 5.09  | 127.06      | 120.44   |
| 24  | R     | 87  | GLU  | CB-CG-CD   | -5.09 | 103.95      | 112.60   |
| 26  | O     | 8   | LEU  | CA-C-N     | 5.09  | 127.10      | 120.28   |
| 26  | O     | 8   | LEU  | C-N-CA     | 5.09  | 127.10      | 120.28   |
| 32  | J     | 62  | GLU  | CA-C-O     | -5.09 | 114.35      | 120.10   |
| 4   | D     | 138 | LEU  | N-CA-CB    | 5.09  | 120.02      | 110.56   |
| 8   | 1     | 209 | LEU  | N-CA-C     | -5.09 | 100.12      | 108.41   |
| 27  | H     | 346 | PRO  | N-CA-CB    | 5.09  | 107.73      | 103.25   |
| 31  | M     | 222 | PRO  | CA-C-O     | -5.09 | 113.18      | 120.56   |
| 10  | 3     | 47  | ASP  | CA-C-N     | 5.09  | 128.00      | 120.17   |
| 10  | 3     | 47  | ASP  | C-N-CA     | 5.09  | 128.00      | 120.17   |
| 13  | 6     | 58  | GLU  | CA-C-N     | 5.09  | 126.87      | 121.48   |
| 13  | 6     | 58  | GLU  | C-N-CA     | 5.09  | 126.87      | 121.48   |
| 19  | Z     | 722 | SER  | N-CA-C     | 5.09  | 117.72      | 111.82   |
| 19  | Z     | 752 | HIS  | CA-C-N     | 5.09  | 127.10      | 120.28   |
| 19  | Z     | 752 | HIS  | C-N-CA     | 5.09  | 127.10      | 120.28   |
| 20  | N     | 918 | SER  | N-CA-C     | -5.09 | 97.07       | 107.70   |
| 21  | S     | 433 | ILE  | N-CA-C     | -5.09 | 105.54      | 110.42   |
| 23  | Q     | 392 | PRO  | CA-C-N     | 5.09  | 131.13      | 121.97   |
| 23  | Q     | 392 | PRO  | C-N-CA     | 5.09  | 131.13      | 121.97   |
| 26  | O     | 192 | GLU  | CA-C-N     | 5.09  | 127.51      | 120.29   |
| 26  | O     | 192 | GLU  | C-N-CA     | 5.09  | 127.51      | 120.29   |
| 26  | O     | 295 | GLU  | CA-C-O     | -5.09 | 115.16      | 120.55   |
| 3   | C     | 161 | ALA  | N-CA-CB    | 5.08  | 118.98      | 110.59   |
| 4   | D     | 22  | ALA  | CA-C-N     | 5.08  | 127.09      | 120.28   |
| 4   | D     | 22  | ALA  | C-N-CA     | 5.08  | 127.09      | 120.28   |
| 14  | 7     | 76  | SER  | N-CA-C     | -5.08 | 98.29       | 107.75   |
| 24  | R     | 107 | LYS  | CB-CA-C    | -5.08 | 102.35      | 110.79   |
| 3   | C     | 86  | LEU  | N-CA-C     | -5.08 | 105.82      | 111.36   |
| 3   | C     | 143 | TYR  | CB-CG-CD2  | -5.08 | 113.18      | 120.80   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 9   | 2     | 178 | MET  | O-C-N     | -5.08 | 116.35      | 122.15   |
| 13  | 6     | 29  | PHE  | CB-CG-CD1 | 5.08  | 129.34      | 120.70   |
| 15  | W     | 182 | ALA  | CA-C-N    | 5.08  | 128.81      | 120.63   |
| 15  | W     | 182 | ALA  | C-N-CA    | 5.08  | 128.81      | 120.63   |
| 17  | T     | 208 | VAL  | N-CA-C    | -5.08 | 105.59      | 110.72   |
| 19  | Z     | 827 | PRO  | CA-C-O    | -5.08 | 111.35      | 120.60   |
| 20  | N     | 529 | ILE  | CA-C-N    | 5.08  | 127.09      | 120.28   |
| 20  | N     | 529 | ILE  | C-N-CA    | 5.08  | 127.09      | 120.28   |
| 21  | S     | 263 | ALA  | CA-C-O    | -5.08 | 115.03      | 120.42   |
| 28  | I     | 217 | LYS  | N-CA-CB   | 5.08  | 117.22      | 109.75   |
| 1   | A     | 132 | ARG  | N-CA-CB   | 5.08  | 117.53      | 110.11   |
| 9   | 2     | 66  | GLY  | CA-C-N    | 5.08  | 131.25      | 121.54   |
| 9   | 2     | 66  | GLY  | C-N-CA    | 5.08  | 131.25      | 121.54   |
| 17  | T     | 135 | THR  | CA-C-N    | 5.08  | 131.37      | 121.41   |
| 17  | T     | 135 | THR  | C-N-CA    | 5.08  | 131.37      | 121.41   |
| 17  | T     | 345 | TYR  | CA-C-N    | 5.08  | 127.09      | 120.28   |
| 17  | T     | 345 | TYR  | C-N-CA    | 5.08  | 127.09      | 120.28   |
| 19  | Z     | 602 | GLY  | N-CA-C    | -5.08 | 108.43      | 114.48   |
| 19  | Z     | 791 | VAL  | N-CA-C    | -5.08 | 105.44      | 112.50   |
| 22  | P     | 194 | LEU  | N-CA-C    | 5.08  | 116.90      | 111.36   |
| 23  | Q     | 265 | GLU  | CB-CG-CD  | 5.08  | 121.24      | 112.60   |
| 25  | U     | 33  | LYS  | N-CA-C    | -5.08 | 99.83       | 108.26   |
| 14  | 7     | 209 | ALA  | N-CA-C    | 5.08  | 116.82      | 111.28   |
| 23  | Q     | 232 | PHE  | CA-C-N    | 5.08  | 127.04      | 120.44   |
| 23  | Q     | 232 | PHE  | C-N-CA    | 5.08  | 127.04      | 120.44   |
| 23  | Q     | 270 | LEU  | O-C-N     | 5.08  | 127.94      | 122.15   |
| 13  | 6     | 182 | PHE  | CA-CB-CG  | -5.08 | 108.72      | 113.80   |
| 16  | V     | 241 | ASN  | CA-C-O    | 5.08  | 125.80      | 120.42   |
| 20  | N     | 349 | ASP  | CA-CB-CG  | 5.08  | 117.68      | 112.60   |
| 21  | S     | 98  | PRO  | CA-C-N    | 5.08  | 130.61      | 121.06   |
| 21  | S     | 98  | PRO  | C-N-CA    | 5.08  | 130.61      | 121.06   |
| 21  | S     | 485 | MET  | CA-C-N    | 5.08  | 127.04      | 120.44   |
| 21  | S     | 485 | MET  | C-N-CA    | 5.08  | 127.04      | 120.44   |
| 22  | P     | 435 | LEU  | N-CA-CB   | -5.08 | 102.64      | 110.16   |
| 23  | Q     | 262 | ASN  | O-C-N     | 5.08  | 129.34      | 122.59   |
| 27  | H     | 323 | ARG  | CA-C-N    | 5.08  | 126.09      | 120.45   |
| 27  | H     | 323 | ARG  | C-N-CA    | 5.08  | 126.09      | 120.45   |
| 28  | I     | 372 | MET  | CG-SD-CE  | -5.08 | 89.73       | 100.90   |
| 29  | K     | 186 | THR  | CB-CA-C   | 5.08  | 119.22      | 110.79   |
| 29  | K     | 366 | ARG  | O-C-N     | -5.08 | 115.96      | 120.48   |
| 30  | L     | 295 | ARG  | N-CA-C    | -5.08 | 98.58       | 109.81   |
| 32  | J     | 247 | PHE  | CA-CB-CG  | 5.08  | 118.88      | 113.80   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 1   | A     | 145 | GLU  | O-C-N      | 5.08  | 127.30      | 122.07   |
| 9   | 2     | 254 | VAL  | O-C-N      | 5.08  | 128.87      | 123.03   |
| 21  | S     | 279 | ASN  | CA-CB-CG   | -5.08 | 107.52      | 112.60   |
| 25  | U     | 129 | LYS  | CB-CA-C    | -5.08 | 102.67      | 111.30   |
| 1   | A     | 21  | ARG  | NH1-CZ-NH2 | -5.08 | 112.70      | 119.30   |
| 4   | D     | 46  | GLU  | CA-C-N     | 5.08  | 131.24      | 121.54   |
| 4   | D     | 46  | GLU  | C-N-CA     | 5.08  | 131.24      | 121.54   |
| 6   | F     | 77  | LEU  | CA-C-O     | 5.08  | 126.28      | 120.54   |
| 19  | Z     | 223 | GLU  | N-CA-CB    | 5.08  | 117.37      | 110.01   |
| 19  | Z     | 304 | PHE  | CA-CB-CG   | 5.08  | 118.88      | 113.80   |
| 20  | N     | 431 | THR  | N-CA-C     | -5.08 | 103.70      | 110.55   |
| 22  | P     | 117 | ASP  | O-C-N      | -5.08 | 116.90      | 122.38   |
| 22  | P     | 228 | ASN  | CB-CA-C    | -5.08 | 102.36      | 110.79   |
| 24  | R     | 14  | ASN  | O-C-N      | -5.08 | 115.85      | 121.53   |
| 28  | I     | 172 | THR  | N-CA-C     | 5.08  | 116.50      | 111.07   |
| 32  | J     | 105 | ILE  | N-CA-C     | -5.08 | 108.34      | 113.47   |
| 9   | 2     | 183 | ASP  | CA-CB-CG   | -5.07 | 107.53      | 112.60   |
| 19  | Z     | 692 | LEU  | CB-CA-C    | -5.07 | 102.92      | 110.88   |
| 24  | R     | 144 | LEU  | N-CA-C     | -5.07 | 105.75      | 111.28   |
| 28  | I     | 343 | ARG  | CA-C-N     | 5.07  | 126.19      | 120.66   |
| 28  | I     | 343 | ARG  | C-N-CA     | 5.07  | 126.19      | 120.66   |
| 29  | K     | 29  | PHE  | N-CA-C     | -5.07 | 105.46      | 113.02   |
| 18  | Y     | 51  | ASP  | CA-C-O     | -5.07 | 115.17      | 120.55   |
| 19  | Z     | 642 | ALA  | N-CA-CB    | 5.07  | 115.62      | 109.74   |
| 22  | P     | 186 | ILE  | CA-C-O     | -5.07 | 115.67      | 120.95   |
| 23  | Q     | 364 | LYS  | CB-CA-C    | -5.07 | 102.23      | 110.85   |
| 24  | R     | 109 | GLU  | O-C-N      | 5.07  | 127.93      | 122.15   |
| 30  | L     | 40  | LEU  | O-C-N      | 5.07  | 127.50      | 122.12   |
| 32  | J     | 345 | ARG  | NE-CZ-NH2  | 5.07  | 123.77      | 119.20   |
| 2   | B     | 1   | MET  | CG-SD-CE   | -5.07 | 89.75       | 100.90   |
| 8   | 1     | 149 | MET  | CG-SD-CE   | -5.07 | 89.75       | 100.90   |
| 11  | 4     | 62  | LYS  | CA-C-N     | 5.07  | 127.07      | 120.28   |
| 11  | 4     | 62  | LYS  | C-N-CA     | 5.07  | 127.07      | 120.28   |
| 19  | Z     | 782 | HIS  | CA-CB-CG   | 5.07  | 118.87      | 113.80   |
| 22  | P     | 9   | ALA  | CB-CA-C    | -5.07 | 100.33      | 110.42   |
| 23  | Q     | 15  | LEU  | N-CA-CB    | 5.07  | 117.42      | 110.07   |
| 23  | Q     | 331 | LEU  | CA-C-N     | 5.07  | 127.08      | 120.28   |
| 23  | Q     | 331 | LEU  | C-N-CA     | 5.07  | 127.08      | 120.28   |
| 26  | O     | 87  | MET  | CG-SD-CE   | -5.07 | 89.74       | 100.90   |
| 29  | K     | 89  | ILE  | CB-CA-C    | -5.07 | 103.27      | 110.83   |
| 6   | F     | 70  | ILE  | CA-C-N     | 5.07  | 127.56      | 121.38   |
| 6   | F     | 70  | ILE  | C-N-CA     | 5.07  | 127.56      | 121.38   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 10  | 3     | 167 | ILE  | CA-C-N     | 5.07  | 127.33      | 120.44   |
| 10  | 3     | 167 | ILE  | C-N-CA     | 5.07  | 127.33      | 120.44   |
| 20  | N     | 856 | VAL  | CA-C-N     | 5.07  | 129.39      | 122.34   |
| 20  | N     | 856 | VAL  | C-N-CA     | 5.07  | 129.39      | 122.34   |
| 28  | I     | 376 | ASP  | O-C-N      | 5.07  | 128.88      | 121.78   |
| 3   | C     | 208 | ALA  | N-CA-CB    | 5.07  | 117.57      | 110.12   |
| 3   | C     | 215 | THR  | CA-C-O     | 5.07  | 126.17      | 120.70   |
| 6   | F     | 53  | GLN  | N-CA-C     | 5.07  | 119.17      | 112.89   |
| 7   | G     | 86  | ARG  | CB-CA-C    | -5.07 | 100.94      | 110.67   |
| 19  | Z     | 788 | MET  | N-CA-C     | -5.07 | 106.51      | 113.30   |
| 25  | U     | 240 | ALA  | CA-C-N     | 5.07  | 130.82      | 121.85   |
| 25  | U     | 240 | ALA  | C-N-CA     | 5.07  | 130.82      | 121.85   |
| 28  | I     | 414 | VAL  | N-CA-C     | -5.07 | 101.05      | 108.85   |
| 29  | K     | 222 | HIS  | CB-CG-ND1  | 5.07  | 130.30      | 122.70   |
| 32  | J     | 238 | ALA  | N-CA-C     | 5.07  | 116.80      | 111.28   |
| 4   | D     | 165 | ASN  | OD1-CG-ND2 | 5.07  | 127.67      | 122.60   |
| 4   | D     | 181 | ASN  | N-CA-C     | -5.07 | 105.94      | 111.82   |
| 8   | 1     | 92  | VAL  | CA-C-N     | 5.07  | 128.01      | 120.31   |
| 8   | 1     | 92  | VAL  | C-N-CA     | 5.07  | 128.01      | 120.31   |
| 14  | 7     | 235 | THR  | CA-C-O     | 5.07  | 125.89      | 120.32   |
| 19  | Z     | 238 | ASN  | CA-C-O     | -5.07 | 115.32      | 120.99   |
| 20  | N     | 685 | GLN  | CA-C-N     | 5.07  | 125.57      | 120.00   |
| 20  | N     | 685 | GLN  | C-N-CA     | 5.07  | 125.57      | 120.00   |
| 23  | Q     | 202 | CYS  | CA-C-N     | 5.07  | 125.60      | 120.38   |
| 23  | Q     | 202 | CYS  | C-N-CA     | 5.07  | 125.60      | 120.38   |
| 24  | R     | 97  | GLU  | O-C-N      | 5.07  | 127.50      | 122.03   |
| 24  | R     | 259 | TYR  | CA-C-N     | 5.07  | 127.48      | 120.29   |
| 24  | R     | 259 | TYR  | C-N-CA     | 5.07  | 127.48      | 120.29   |
| 26  | O     | 202 | LEU  | CB-CA-C    | -5.07 | 102.38      | 110.79   |
| 30  | L     | 258 | SER  | N-CA-C     | 5.07  | 118.61      | 111.52   |
| 31  | M     | 400 | LYS  | CA-C-N     | 5.07  | 127.07      | 120.28   |
| 31  | M     | 400 | LYS  | C-N-CA     | 5.07  | 127.07      | 120.28   |
| 32  | J     | 88  | LYS  | CA-C-O     | 5.07  | 125.88      | 120.46   |
| 32  | J     | 212 | ILE  | CA-CB-CG1  | 5.07  | 119.01      | 110.40   |
| 20  | N     | 866 | GLU  | CB-CG-CD   | -5.06 | 103.99      | 112.60   |
| 22  | P     | 148 | THR  | CA-C-O     | -5.06 | 115.18      | 120.55   |
| 27  | H     | 293 | ASN  | CA-CB-CG   | -5.06 | 107.54      | 112.60   |
| 13  | 6     | 168 | ALA  | CA-C-N     | 5.06  | 127.77      | 120.38   |
| 13  | 6     | 168 | ALA  | C-N-CA     | 5.06  | 127.77      | 120.38   |
| 14  | 7     | 146 | LYS  | CA-C-N     | 5.06  | 127.06      | 120.28   |
| 14  | 7     | 146 | LYS  | C-N-CA     | 5.06  | 127.06      | 120.28   |
| 22  | P     | 169 | LEU  | CD1-CG-CD2 | 5.06  | 121.94      | 110.80   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 22  | P     | 326 | VAL  | O-C-N      | -5.06 | 116.63      | 121.90   |
| 26  | O     | 30  | THR  | CA-C-N     | 5.06  | 127.57      | 120.28   |
| 26  | O     | 30  | THR  | C-N-CA     | 5.06  | 127.57      | 120.28   |
| 30  | L     | 43  | LEU  | O-C-N      | -5.06 | 116.75      | 122.12   |
| 32  | J     | 188 | LEU  | N-CA-CB    | 5.06  | 118.67      | 110.42   |
| 32  | J     | 317 | PHE  | CA-CB-CG   | -5.06 | 108.74      | 113.80   |
| 7   | G     | 19  | GLY  | N-CA-C     | -5.06 | 107.99      | 114.37   |
| 21  | S     | 455 | GLN  | OE1-CD-NE2 | 5.06  | 127.66      | 122.60   |
| 24  | R     | 291 | HIS  | CA-C-N     | 5.06  | 129.17      | 120.72   |
| 24  | R     | 291 | HIS  | C-N-CA     | 5.06  | 129.17      | 120.72   |
| 1   | A     | 124 | VAL  | CA-C-N     | 5.06  | 127.06      | 120.28   |
| 1   | A     | 124 | VAL  | C-N-CA     | 5.06  | 127.06      | 120.28   |
| 3   | C     | 97  | TYR  | CA-C-O     | -5.06 | 115.19      | 120.55   |
| 13  | 6     | 35  | ASN  | CA-CB-CG   | 5.06  | 117.66      | 112.60   |
| 13  | 6     | 64  | THR  | CA-C-N     | 5.06  | 127.32      | 120.44   |
| 13  | 6     | 64  | THR  | C-N-CA     | 5.06  | 127.32      | 120.44   |
| 16  | V     | 282 | ARG  | O-C-N      | 5.06  | 127.92      | 122.15   |
| 25  | U     | 69  | PHE  | CA-C-O     | -5.06 | 114.84      | 120.66   |
| 27  | H     | 354 | ILE  | CA-C-N     | 5.06  | 127.57      | 120.28   |
| 27  | H     | 354 | ILE  | C-N-CA     | 5.06  | 127.57      | 120.28   |
| 25  | U     | 161 | GLU  | CA-C-O     | -5.06 | 115.79      | 121.40   |
| 25  | U     | 172 | VAL  | CA-C-O     | -5.06 | 115.69      | 120.95   |
| 31  | M     | 198 | ILE  | N-CA-CB    | 5.06  | 117.42      | 110.54   |
| 3   | C     | 233 | VAL  | CA-C-N     | 5.06  | 127.05      | 120.28   |
| 3   | C     | 233 | VAL  | C-N-CA     | 5.06  | 127.05      | 120.28   |
| 16  | V     | 271 | ALA  | N-CA-C     | 5.06  | 116.79      | 111.28   |
| 22  | P     | 228 | ASN  | N-CA-CB    | 5.06  | 117.55      | 110.12   |
| 24  | R     | 31  | HIS  | CG-CD2-NE2 | 5.06  | 112.26      | 107.20   |
| 30  | L     | 66  | SER  | CB-CA-C    | -5.06 | 101.80      | 109.89   |
| 4   | D     | 10  | PHE  | O-C-N      | -5.05 | 117.03      | 122.79   |
| 6   | F     | 167 | SER  | N-CA-C     | 5.05  | 117.68      | 111.82   |
| 10  | 3     | 56  | LEU  | CA-C-N     | 5.05  | 131.19      | 121.54   |
| 10  | 3     | 56  | LEU  | C-N-CA     | 5.05  | 131.19      | 121.54   |
| 17  | T     | 249 | LEU  | O-C-N      | -5.05 | 116.98      | 122.19   |
| 22  | P     | 46  | THR  | CA-C-N     | 5.05  | 127.99      | 120.31   |
| 22  | P     | 46  | THR  | C-N-CA     | 5.05  | 127.99      | 120.31   |
| 22  | P     | 262 | LYS  | O-C-N      | 5.05  | 127.48      | 122.12   |
| 23  | Q     | 209 | THR  | CA-C-N     | 5.05  | 127.01      | 120.44   |
| 23  | Q     | 209 | THR  | C-N-CA     | 5.05  | 127.01      | 120.44   |
| 25  | U     | 194 | GLN  | CA-CB-CG   | -5.05 | 103.99      | 114.10   |
| 26  | O     | 190 | VAL  | N-CA-CB    | 5.05  | 117.41      | 110.54   |
| 27  | H     | 396 | ALA  | CA-C-N     | 5.05  | 127.60      | 120.42   |

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| Mol | Chain | Res | Type | Atoms    | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|-------|-------------|----------|
| 27  | H     | 396 | ALA  | C-N-CA   | 5.05  | 127.60      | 120.42   |
| 32  | J     | 44  | ARG  | CA-C-N   | 5.05  | 127.99      | 120.31   |
| 32  | J     | 44  | ARG  | C-N-CA   | 5.05  | 127.99      | 120.31   |
| 32  | J     | 219 | LEU  | N-CA-CB  | 5.05  | 117.40      | 110.07   |
| 5   | E     | 136 | PRO  | CA-C-N   | 5.05  | 127.89      | 120.71   |
| 5   | E     | 136 | PRO  | C-N-CA   | 5.05  | 127.89      | 120.71   |
| 9   | 2     | 82  | PRO  | O-C-N    | 5.05  | 129.46      | 122.64   |
| 1   | A     | 93  | ARG  | CB-CG-CD | 5.05  | 122.92      | 111.30   |
| 7   | G     | 236 | ALA  | O-C-N    | 5.05  | 127.91      | 122.15   |
| 19  | Z     | 541 | THR  | N-CA-CB  | 5.05  | 117.55      | 110.12   |
| 19  | Z     | 800 | LEU  | CA-C-N   | 5.05  | 128.76      | 121.18   |
| 19  | Z     | 800 | LEU  | C-N-CA   | 5.05  | 128.76      | 121.18   |
| 20  | N     | 460 | TYR  | N-CA-C   | -5.05 | 105.69      | 111.14   |
| 20  | N     | 586 | VAL  | CA-C-N   | 5.05  | 127.05      | 120.28   |
| 20  | N     | 586 | VAL  | C-N-CA   | 5.05  | 127.05      | 120.28   |
| 21  | S     | 221 | ASP  | CA-CB-CG | -5.05 | 107.55      | 112.60   |
| 21  | S     | 493 | PRO  | CA-C-O   | -5.05 | 113.23      | 120.56   |
| 23  | Q     | 201 | TYR  | N-CA-C   | -5.05 | 100.04      | 110.80   |
| 26  | O     | 61  | GLU  | CB-CG-CD | -5.05 | 104.01      | 112.60   |
| 29  | K     | 81  | ARG  | CA-C-N   | 5.05  | 127.59      | 120.42   |
| 29  | K     | 81  | ARG  | C-N-CA   | 5.05  | 127.59      | 120.42   |
| 4   | D     | 187 | ILE  | N-CA-C   | 5.05  | 115.82      | 110.72   |
| 14  | 7     | 248 | SER  | CB-CA-C  | -5.05 | 102.89      | 110.16   |
| 15  | W     | 89  | GLY  | CA-C-N   | 5.05  | 126.92      | 120.56   |
| 15  | W     | 89  | GLY  | C-N-CA   | 5.05  | 126.92      | 120.56   |
| 15  | W     | 112 | PHE  | N-CA-C   | -5.05 | 101.48      | 109.96   |
| 19  | Z     | 332 | ALA  | N-CA-C   | -5.05 | 100.85      | 108.52   |
| 20  | N     | 881 | PRO  | O-C-N    | 5.05  | 129.46      | 122.64   |
| 23  | Q     | 30  | ILE  | CA-C-N   | 5.05  | 127.38      | 120.46   |
| 23  | Q     | 30  | ILE  | C-N-CA   | 5.05  | 127.38      | 120.46   |
| 24  | R     | 203 | ASP  | O-C-N    | 5.05  | 127.47      | 122.12   |
| 24  | R     | 376 | LEU  | O-C-N    | 5.05  | 127.47      | 122.12   |
| 26  | O     | 160 | SER  | CA-C-N   | 5.05  | 127.05      | 120.28   |
| 26  | O     | 160 | SER  | C-N-CA   | 5.05  | 127.05      | 120.28   |
| 26  | O     | 230 | ARG  | CA-C-N   | 5.05  | 127.05      | 120.28   |
| 26  | O     | 230 | ARG  | C-N-CA   | 5.05  | 127.05      | 120.28   |
| 26  | O     | 273 | GLN  | CA-C-N   | 5.05  | 127.46      | 120.29   |
| 26  | O     | 273 | GLN  | C-N-CA   | 5.05  | 127.46      | 120.29   |
| 26  | O     | 316 | SER  | O-C-N    | -5.05 | 116.39      | 122.15   |
| 28  | I     | 192 | ASN  | CA-C-N   | 5.05  | 127.46      | 120.29   |
| 28  | I     | 192 | ASN  | C-N-CA   | 5.05  | 127.46      | 120.29   |
| 32  | J     | 129 | ASN  | CA-CB-CG | -5.05 | 107.55      | 112.60   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 1   | A     | 93  | ARG  | N-CA-CB    | 5.05  | 117.63      | 110.16   |
| 23  | Q     | 249 | THR  | CA-C-N     | 5.05  | 127.05      | 120.28   |
| 23  | Q     | 249 | THR  | C-N-CA     | 5.05  | 127.05      | 120.28   |
| 24  | R     | 135 | GLY  | CA-C-N     | 5.05  | 127.05      | 120.28   |
| 24  | R     | 135 | GLY  | C-N-CA     | 5.05  | 127.05      | 120.28   |
| 31  | M     | 376 | MET  | CA-C-N     | 5.05  | 128.27      | 121.05   |
| 31  | M     | 376 | MET  | C-N-CA     | 5.05  | 128.27      | 121.05   |
| 8   | 1     | 100 | SER  | CA-C-O     | 5.05  | 125.77      | 120.42   |
| 16  | V     | 210 | ASN  | CA-CB-CG   | -5.05 | 107.55      | 112.60   |
| 27  | H     | 277 | ILE  | CA-CB-CG2  | -5.05 | 101.92      | 110.50   |
| 2   | B     | 26  | LEU  | O-C-N      | -5.04 | 116.06      | 122.27   |
| 14  | 7     | 238 | GLU  | N-CA-C     | -5.04 | 101.49      | 109.76   |
| 17  | T     | 230 | LYS  | CA-C-O     | 5.04  | 125.80      | 120.10   |
| 19  | Z     | 546 | SER  | O-C-N      | -5.04 | 116.40      | 122.15   |
| 28  | I     | 272 | ARG  | O-C-N      | 5.04  | 127.90      | 122.15   |
| 10  | 3     | 97  | GLU  | CA-C-N     | 5.04  | 127.98      | 120.31   |
| 10  | 3     | 97  | GLU  | C-N-CA     | 5.04  | 127.98      | 120.31   |
| 15  | W     | 178 | SER  | N-CA-C     | -5.04 | 100.06      | 110.80   |
| 21  | S     | 60  | GLN  | OE1-CD-NE2 | -5.04 | 117.56      | 122.60   |
| 22  | P     | 150 | ALA  | CA-C-N     | 5.04  | 127.30      | 120.44   |
| 22  | P     | 150 | ALA  | C-N-CA     | 5.04  | 127.30      | 120.44   |
| 26  | O     | 195 | GLU  | N-CA-CB    | 5.04  | 117.62      | 110.16   |
| 27  | H     | 174 | TYR  | O-C-N      | 5.04  | 128.12      | 122.22   |
| 28  | I     | 95  | GLU  | N-CA-C     | -5.04 | 105.78      | 111.28   |
| 31  | M     | 248 | LYS  | N-CA-CB    | 5.04  | 119.01      | 110.49   |
| 32  | J     | 37  | ASP  | N-CA-C     | -5.04 | 105.86      | 111.36   |
| 32  | J     | 342 | ILE  | N-CA-C     | -5.04 | 100.86      | 108.12   |
| 2   | B     | 99  | LEU  | O-C-N      | 5.04  | 127.26      | 122.07   |
| 5   | E     | 30  | GLY  | N-CA-C     | 5.04  | 118.78      | 112.73   |
| 11  | 4     | 44  | LEU  | N-CA-CB    | 5.04  | 120.12      | 111.00   |
| 12  | 5     | 136 | ALA  | N-CA-C     | -5.04 | 103.00      | 110.46   |
| 20  | N     | 329 | LEU  | CA-C-O     | -5.04 | 115.21      | 120.55   |
| 22  | P     | 36  | LYS  | CA-C-N     | 5.04  | 127.45      | 120.29   |
| 22  | P     | 36  | LYS  | C-N-CA     | 5.04  | 127.45      | 120.29   |
| 24  | R     | 261 | PHE  | CA-C-N     | 5.04  | 127.03      | 120.28   |
| 24  | R     | 261 | PHE  | C-N-CA     | 5.04  | 127.03      | 120.28   |
| 29  | K     | 368 | ASP  | N-CA-C     | -5.04 | 107.18      | 113.38   |
| 2   | B     | 30  | ALA  | N-CA-C     | 5.04  | 116.77      | 111.28   |
| 16  | V     | 214 | GLN  | O-C-N      | 5.04  | 127.89      | 122.15   |
| 21  | S     | 444 | GLU  | O-C-N      | -5.04 | 116.66      | 122.86   |
| 21  | S     | 493 | PRO  | N-CA-C     | 5.04  | 116.85      | 110.70   |
| 6   | F     | 189 | LYS  | CA-C-N     | 5.04  | 127.97      | 120.31   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 6   | F     | 189 | LYS  | C-N-CA      | 5.04  | 127.97      | 120.31   |
| 9   | 2     | 134 | GLN  | CG-CD-NE2   | -5.04 | 108.84      | 116.40   |
| 22  | P     | 176 | SER  | CA-C-O      | 5.04  | 125.53      | 119.59   |
| 25  | U     | 275 | LEU  | N-CA-C      | -5.04 | 105.68      | 111.07   |
| 26  | O     | 13  | SER  | CA-C-N      | 5.04  | 127.97      | 120.31   |
| 26  | O     | 13  | SER  | C-N-CA      | 5.04  | 127.97      | 120.31   |
| 28  | I     | 268 | ARG  | NE-CZ-NH2   | -5.04 | 114.67      | 119.20   |
| 31  | M     | 112 | ALA  | CB-CA-C     | -5.04 | 108.10      | 114.40   |
| 19  | Z     | 110 | TYR  | N-CA-CB     | 5.04  | 117.31      | 110.01   |
| 22  | P     | 94  | ARG  | N-CA-C      | -5.04 | 101.76      | 108.86   |
| 24  | R     | 237 | ARG  | CA-C-O      | -5.04 | 115.53      | 120.82   |
| 27  | H     | 254 | ALA  | N-CA-CB     | 5.04  | 117.31      | 110.01   |
| 5   | E     | 89  | ILE  | N-CA-CB     | 5.04  | 117.39      | 110.54   |
| 10  | 3     | 143 | SER  | CA-C-N      | 5.04  | 130.77      | 123.12   |
| 10  | 3     | 143 | SER  | C-N-CA      | 5.04  | 130.77      | 123.12   |
| 15  | W     | 94  | HIS  | CA-CB-CG    | -5.04 | 108.76      | 113.80   |
| 20  | N     | 703 | CYS  | CB-CA-C     | -5.04 | 103.07      | 109.92   |
| 24  | R     | 152 | MET  | CG-SD-CE    | -5.04 | 89.82       | 100.90   |
| 28  | I     | 58  | CYS  | CA-CB-SG    | 5.04  | 125.98      | 114.40   |
| 30  | L     | 164 | GLU  | N-CA-C      | 5.04  | 116.58      | 111.14   |
| 32  | J     | 203 | VAL  | CA-C-O      | 5.04  | 126.19      | 120.85   |
| 4   | D     | 24  | GLU  | CB-CA-C     | -5.03 | 102.44      | 110.79   |
| 16  | V     | 193 | ILE  | O-C-N       | -5.03 | 116.64      | 121.83   |
| 19  | Z     | 276 | GLU  | CB-CA-C     | -5.03 | 102.43      | 110.79   |
| 19  | Z     | 633 | GLU  | CA-C-N      | 5.03  | 129.70      | 122.35   |
| 19  | Z     | 633 | GLU  | C-N-CA      | 5.03  | 129.70      | 122.35   |
| 20  | N     | 178 | ALA  | N-CA-C      | 5.03  | 116.77      | 111.28   |
| 20  | N     | 467 | ASN  | CA-CB-CG    | 5.03  | 117.63      | 112.60   |
| 20  | N     | 877 | LEU  | CA-C-O      | 5.03  | 126.61      | 121.07   |
| 21  | S     | 283 | ARG  | CA-C-O      | -5.03 | 115.21      | 120.55   |
| 22  | P     | 453 | HIS  | CB-CG-CD2   | -5.03 | 124.66      | 131.20   |
| 28  | I     | 309 | MET  | CA-C-N      | 5.03  | 127.02      | 120.28   |
| 28  | I     | 309 | MET  | C-N-CA      | 5.03  | 127.02      | 120.28   |
| 4   | D     | 99  | SER  | CA-C-O      | -5.03 | 115.22      | 120.55   |
| 8   | 1     | 204 | GLY  | CA-C-O      | -5.03 | 115.42      | 122.36   |
| 20  | N     | 330 | SER  | CA-C-N      | 5.03  | 130.30      | 122.30   |
| 20  | N     | 330 | SER  | C-N-CA      | 5.03  | 130.30      | 122.30   |
| 32  | J     | 302 | ASP  | N-CA-CB     | 5.03  | 118.61      | 110.41   |
| 1   | A     | 92  | GLN  | N-CA-CB     | 5.03  | 117.52      | 110.12   |
| 4   | D     | 100 | HIS  | ND1-CE1-NE2 | 5.03  | 113.43      | 108.40   |
| 9   | 2     | 49  | VAL  | CA-CB-CG1   | 5.03  | 118.95      | 110.40   |
| 11  | 4     | 55  | GLN  | N-CA-C      | -5.03 | 105.80      | 111.28   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 11  | 4     | 129 | PHE  | CA-C-N      | 5.03  | 127.96      | 120.31   |
| 11  | 4     | 129 | PHE  | C-N-CA      | 5.03  | 127.96      | 120.31   |
| 17  | T     | 318 | TYR  | N-CA-CB     | 5.03  | 118.83      | 111.54   |
| 19  | Z     | 133 | MET  | CA-C-O      | -5.03 | 114.19      | 119.97   |
| 19  | Z     | 407 | MET  | N-CA-C      | 5.03  | 116.76      | 111.28   |
| 19  | Z     | 680 | ARG  | CB-CA-C     | -5.03 | 102.98      | 110.88   |
| 19  | Z     | 895 | GLU  | CA-CB-CG    | -5.03 | 104.04      | 114.10   |
| 20  | N     | 773 | PHE  | CA-C-O      | -5.03 | 113.27      | 120.16   |
| 21  | S     | 244 | ALA  | N-CA-C      | 5.03  | 116.45      | 111.07   |
| 21  | S     | 463 | TYR  | CA-CB-CG    | -5.03 | 104.85      | 113.90   |
| 22  | P     | 80  | TRP  | CE2-CD2-CE3 | 5.03  | 123.83      | 118.80   |
| 24  | R     | 321 | GLU  | CA-C-N      | 5.03  | 127.28      | 120.44   |
| 24  | R     | 321 | GLU  | C-N-CA      | 5.03  | 127.28      | 120.44   |
| 27  | H     | 216 | GLY  | CA-C-O      | -5.03 | 114.33      | 121.52   |
| 3   | C     | 4   | ARG  | O-C-N       | 5.03  | 128.33      | 122.24   |
| 4   | D     | 171 | ALA  | O-C-N       | 5.03  | 127.45      | 122.12   |
| 22  | P     | 239 | SER  | CA-C-N      | 5.03  | 127.43      | 120.29   |
| 22  | P     | 239 | SER  | C-N-CA      | 5.03  | 127.43      | 120.29   |
| 6   | F     | 62  | LYS  | CA-C-N      | 5.03  | 128.86      | 122.37   |
| 6   | F     | 62  | LYS  | C-N-CA      | 5.03  | 128.86      | 122.37   |
| 12  | 5     | 215 | ALA  | CA-C-O      | 5.03  | 125.88      | 120.55   |
| 17  | T     | 213 | THR  | CA-C-O      | -5.03 | 115.54      | 120.82   |
| 27  | H     | 125 | LEU  | CA-C-O      | -5.03 | 115.64      | 121.07   |
| 29  | K     | 64  | GLU  | N-CA-C      | 5.03  | 116.84      | 111.36   |
| 7   | G     | 175 | THR  | N-CA-CB     | 5.03  | 117.60      | 110.16   |
| 10  | 3     | 153 | LEU  | CA-C-N      | 5.03  | 127.27      | 120.44   |
| 10  | 3     | 153 | LEU  | C-N-CA      | 5.03  | 127.27      | 120.44   |
| 25  | U     | 2   | PRO  | N-CA-CB     | 5.03  | 108.00      | 103.33   |
| 30  | L     | 227 | ARG  | CA-C-O      | -5.03 | 115.09      | 120.42   |
| 31  | M     | 359 | MET  | CA-C-N      | 5.03  | 126.12      | 119.84   |
| 31  | M     | 359 | MET  | C-N-CA      | 5.03  | 126.12      | 119.84   |
| 13  | 6     | 52  | SER  | N-CA-C      | -5.02 | 100.22      | 108.41   |
| 17  | T     | 128 | GLU  | N-CA-C      | 5.02  | 116.45      | 111.07   |
| 21  | S     | 171 | LEU  | N-CA-CB     | 5.02  | 117.50      | 110.12   |
| 21  | S     | 273 | PRO  | N-CA-CB     | 5.02  | 108.53      | 103.25   |
| 13  | 6     | 45  | GLU  | CA-C-O      | 5.02  | 126.22      | 120.54   |
| 15  | W     | 34  | ASN  | OD1-CG-ND2  | 5.02  | 127.62      | 122.60   |
| 16  | V     | 256 | ASN  | CA-C-O      | -5.02 | 115.10      | 120.42   |
| 19  | Z     | 596 | ASP  | N-CA-C      | -5.02 | 105.70      | 111.07   |
| 20  | N     | 526 | THR  | N-CA-CB     | 5.02  | 117.59      | 110.16   |
| 20  | N     | 691 | SER  | N-CA-C      | 5.02  | 116.75      | 111.28   |
| 26  | O     | 265 | GLU  | CA-CB-CG    | 5.02  | 124.15      | 114.10   |

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| Mol | Chain | Res | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|------------|-------|-------------|----------|
| 4   | D     | 2   | SER  | N-CA-CB    | 5.02  | 119.05      | 110.71   |
| 19  | Z     | 121 | PHE  | CB-CG-CD2  | -5.02 | 112.16      | 120.70   |
| 20  | N     | 397 | THR  | N-CA-C     | -5.02 | 101.66      | 109.14   |
| 20  | N     | 562 | GLU  | CA-C-N     | 5.02  | 127.51      | 120.28   |
| 20  | N     | 562 | GLU  | C-N-CA     | 5.02  | 127.51      | 120.28   |
| 21  | S     | 231 | LEU  | O-C-N      | -5.02 | 116.90      | 122.07   |
| 7   | G     | 31  | VAL  | CA-CB-CG2  | -5.02 | 101.87      | 110.40   |
| 19  | Z     | 241 | PRO  | CA-C-N     | 5.02  | 126.99      | 120.26   |
| 19  | Z     | 241 | PRO  | C-N-CA     | 5.02  | 126.99      | 120.26   |
| 19  | Z     | 862 | ILE  | CA-C-O     | -5.02 | 114.78      | 120.65   |
| 20  | N     | 457 | ILE  | CA-CB-CG2  | 5.02  | 119.03      | 110.50   |
| 21  | S     | 443 | ILE  | CA-C-N     | 5.02  | 130.06      | 122.68   |
| 21  | S     | 443 | ILE  | C-N-CA     | 5.02  | 130.06      | 122.68   |
| 26  | O     | 37  | LEU  | N-CA-CB    | 5.02  | 117.50      | 110.12   |
| 26  | O     | 50  | PHE  | CA-CB-CG   | 5.02  | 118.82      | 113.80   |
| 26  | O     | 97  | LEU  | CA-C-O     | -5.02 | 115.55      | 120.82   |
| 28  | I     | 393 | ALA  | N-CA-C     | -5.02 | 105.81      | 111.28   |
| 30  | L     | 327 | LEU  | CA-C-O     | -5.02 | 115.23      | 120.55   |
| 2   | B     | 24  | TYR  | CB-CG-CD2  | -5.02 | 113.27      | 120.80   |
| 3   | C     | 151 | ASP  | CA-CB-CG   | -5.02 | 107.58      | 112.60   |
| 6   | F     | 32  | GLY  | CA-C-N     | 5.02  | 128.82      | 120.94   |
| 6   | F     | 32  | GLY  | C-N-CA     | 5.02  | 128.82      | 120.94   |
| 6   | F     | 69  | HIS  | CG-CD2-NE2 | 5.02  | 112.22      | 107.20   |
| 20  | N     | 503 | GLN  | CA-C-O     | 5.02  | 125.77      | 120.10   |
| 23  | Q     | 74  | ARG  | N-CA-C     | 5.02  | 119.57      | 112.75   |
| 23  | Q     | 404 | ILE  | N-CA-CB    | 5.02  | 117.36      | 110.54   |
| 1   | A     | 9   | PHE  | N-CA-C     | -5.02 | 104.34      | 110.61   |
| 1   | A     | 225 | PRO  | CA-C-O     | -5.02 | 111.94      | 118.86   |
| 7   | G     | 158 | SER  | N-CA-C     | -5.02 | 100.72      | 108.90   |
| 29  | K     | 388 | ARG  | CB-CA-C    | -5.02 | 102.46      | 110.79   |
| 31  | M     | 423 | TYR  | CA-C-O     | 5.02  | 125.87      | 120.55   |
| 5   | E     | 26  | TYR  | CB-CA-C    | -5.01 | 101.04      | 110.67   |
| 7   | G     | 103 | PHE  | CA-CB-CG   | 5.01  | 118.81      | 113.80   |
| 16  | V     | 44  | HIS  | N-CA-C     | 5.01  | 116.75      | 111.28   |
| 19  | Z     | 507 | ASP  | N-CA-C     | -5.01 | 103.10      | 110.52   |
| 22  | P     | 386 | VAL  | CA-CB-CG2  | 5.01  | 118.92      | 110.40   |
| 24  | R     | 123 | ALA  | O-C-N      | -5.01 | 116.67      | 122.09   |
| 26  | O     | 125 | ILE  | N-CA-CB    | 5.01  | 117.36      | 110.54   |
| 27  | H     | 130 | ALA  | N-CA-C     | 5.01  | 115.37      | 109.60   |
| 14  | 7     | 253 | TRP  | CA-C-N     | 5.01  | 130.06      | 122.99   |
| 14  | 7     | 253 | TRP  | C-N-CA     | 5.01  | 130.06      | 122.99   |
| 4   | D     | 199 | LYS  | CA-C-O     | -5.01 | 115.24      | 120.55   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 6   | F     | 69  | HIS  | ND1-CE1-NE2 | 5.01  | 113.41      | 108.40   |
| 7   | G     | 72  | ARG  | NE-CZ-NH2   | -5.01 | 114.69      | 119.20   |
| 11  | 4     | 156 | ALA  | CA-C-N      | 5.01  | 128.52      | 120.30   |
| 11  | 4     | 156 | ALA  | C-N-CA      | 5.01  | 128.52      | 120.30   |
| 12  | 5     | 195 | PHE  | CB-CA-C     | -5.01 | 102.33      | 110.85   |
| 15  | W     | 112 | PHE  | CB-CG-CD1   | -5.01 | 112.18      | 120.70   |
| 17  | T     | 265 | ILE  | O-C-N       | 5.01  | 126.73      | 121.87   |
| 20  | N     | 415 | HIS  | CA-C-N      | 5.01  | 126.95      | 120.44   |
| 20  | N     | 415 | HIS  | C-N-CA      | 5.01  | 126.95      | 120.44   |
| 21  | S     | 252 | ARG  | CA-C-N      | 5.01  | 126.95      | 120.44   |
| 21  | S     | 252 | ARG  | C-N-CA      | 5.01  | 126.95      | 120.44   |
| 21  | S     | 492 | PHE  | CA-CB-CG    | 5.01  | 118.81      | 113.80   |
| 23  | Q     | 41  | GLU  | N-CA-C      | -5.01 | 99.46       | 108.48   |
| 4   | D     | 163 | LYS  | CA-C-N      | 5.01  | 130.61      | 121.89   |
| 4   | D     | 163 | LYS  | C-N-CA      | 5.01  | 130.61      | 121.89   |
| 6   | F     | 51  | ARG  | CB-CA-C     | -5.01 | 101.30      | 110.62   |
| 7   | G     | 229 | PRO  | CA-C-N      | 5.01  | 126.99      | 120.28   |
| 7   | G     | 229 | PRO  | C-N-CA      | 5.01  | 126.99      | 120.28   |
| 8   | 1     | 212 | ILE  | CA-CB-CG1   | 5.01  | 118.92      | 110.40   |
| 19  | Z     | 264 | GLU  | CA-C-N      | 5.01  | 126.99      | 120.28   |
| 19  | Z     | 264 | GLU  | C-N-CA      | 5.01  | 126.99      | 120.28   |
| 20  | N     | 901 | GLN  | CA-C-O      | -5.01 | 115.88      | 120.94   |
| 25  | U     | 227 | ILE  | CA-C-O      | 5.01  | 126.16      | 120.95   |
| 19  | Z     | 729 | MET  | CA-C-N      | 5.01  | 125.54      | 119.98   |
| 19  | Z     | 729 | MET  | C-N-CA      | 5.01  | 125.54      | 119.98   |
| 26  | O     | 300 | ALA  | CA-C-N      | 5.01  | 129.25      | 122.19   |
| 26  | O     | 300 | ALA  | C-N-CA      | 5.01  | 129.25      | 122.19   |
| 12  | 5     | 113 | PHE  | CA-C-N      | 5.01  | 127.40      | 120.29   |
| 12  | 5     | 113 | PHE  | C-N-CA      | 5.01  | 127.40      | 120.29   |
| 20  | N     | 647 | HIS  | ND1-CE1-NE2 | 5.01  | 113.41      | 108.40   |
| 20  | N     | 726 | ALA  | N-CA-C      | 5.01  | 116.74      | 111.28   |
| 7   | G     | 60  | GLU  | N-CA-CB     | 5.00  | 119.13      | 111.22   |
| 22  | P     | 25  | ASP  | CA-C-N      | 5.00  | 126.99      | 120.28   |
| 22  | P     | 25  | ASP  | C-N-CA      | 5.00  | 126.99      | 120.28   |
| 1   | A     | 40  | VAL  | N-CA-C      | -5.00 | 101.10      | 108.11   |
| 9   | 2     | 221 | ILE  | N-CA-CB     | 5.00  | 117.06      | 111.21   |
| 14  | 7     | 101 | TYR  | N-CA-CB     | 5.00  | 118.95      | 110.49   |
| 15  | W     | 54  | LEU  | CA-C-N      | 5.00  | 127.81      | 120.71   |
| 15  | W     | 54  | LEU  | C-N-CA      | 5.00  | 127.81      | 120.71   |
| 16  | V     | 44  | HIS  | ND1-CE1-NE2 | 5.00  | 113.40      | 108.40   |
| 19  | Z     | 333 | LEU  | N-CA-C      | -5.00 | 104.79      | 111.24   |
| 20  | N     | 49  | TYR  | CA-C-N      | 5.00  | 126.94      | 120.44   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 20  | N     | 49  | TYR  | C-N-CA      | 5.00  | 126.94      | 120.44   |
| 23  | Q     | 349 | HIS  | CE1-NE2-CD2 | -5.00 | 104.00      | 109.00   |
| 27  | H     | 184 | ILE  | CA-C-N      | 5.00  | 126.98      | 120.28   |
| 27  | H     | 184 | ILE  | C-N-CA      | 5.00  | 126.98      | 120.28   |
| 30  | L     | 162 | VAL  | CA-C-O      | -5.00 | 115.38      | 121.18   |
| 32  | J     | 396 | GLU  | CA-C-N      | 5.00  | 126.99      | 120.28   |
| 32  | J     | 396 | GLU  | C-N-CA      | 5.00  | 126.99      | 120.28   |
| 4   | D     | 92  | ARG  | NE-CZ-NH1   | -5.00 | 116.50      | 121.50   |
| 6   | F     | 68  | ASN  | CA-C-O      | -5.00 | 113.38      | 119.43   |
| 15  | W     | 157 | VAL  | N-CA-CB     | 5.00  | 117.34      | 110.54   |
| 19  | Z     | 638 | ASP  | CB-CA-C     | -5.00 | 102.49      | 110.79   |
| 21  | S     | 364 | ARG  | CB-CA-C     | -5.00 | 103.03      | 110.88   |
| 23  | Q     | 252 | LYS  | O-C-N       | 5.00  | 127.22      | 122.07   |
| 31  | M     | 202 | VAL  | CA-C-N      | 5.00  | 126.94      | 120.44   |
| 31  | M     | 202 | VAL  | C-N-CA      | 5.00  | 126.94      | 120.44   |
| 31  | M     | 301 | SER  | N-CA-CB     | 5.00  | 119.31      | 111.56   |

All (1) chirality outliers are listed below:

| Mol | Chain | Res | Type | Atom |
|-----|-------|-----|------|------|
| 9   | 2     | 231 | PRO  | CA   |

All (282) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group     |
|-----|-------|-----|------|-----------|
| 8   | 1     | 105 | GLU  | Peptide   |
| 8   | 1     | 145 | TYR  | Sidechain |
| 8   | 1     | 167 | TYR  | Sidechain |
| 8   | 1     | 169 | TYR  | Sidechain |
| 8   | 1     | 52  | ARG  | Sidechain |
| 8   | 1     | 58  | TYR  | Sidechain |
| 9   | 2     | 115 | ARG  | Sidechain |
| 9   | 2     | 124 | ARG  | Sidechain |
| 9   | 2     | 132 | ARG  | Sidechain |
| 9   | 2     | 141 | LEU  | Mainchain |
| 9   | 2     | 186 | ARG  | Sidechain |
| 9   | 2     | 85  | TYR  | Sidechain |
| 10  | 3     | 74  | TYR  | Sidechain |
| 11  | 4     | 127 | ALA  | Mainchain |
| 11  | 4     | 134 | TYR  | Sidechain |
| 11  | 4     | 147 | TYR  | Sidechain |
| 11  | 4     | 153 | ARG  | Sidechain |

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| Mol | Chain | Res | Type | Group             |
|-----|-------|-----|------|-------------------|
| 11  | 4     | 171 | PHE  | Sidechain         |
| 11  | 4     | 19  | ARG  | Sidechain         |
| 11  | 4     | 30  | ASP  | Mainchain         |
| 11  | 4     | 67  | TYR  | Sidechain         |
| 11  | 4     | 85  | ARG  | Sidechain         |
| 11  | 4     | 95  | ARG  | Sidechain         |
| 12  | 5     | 147 | TYR  | Sidechain         |
| 12  | 5     | 171 | TYR  | Sidechain         |
| 12  | 5     | 172 | TYR  | Sidechain         |
| 12  | 5     | 202 | TYR  | Sidechain         |
| 12  | 5     | 228 | TYR  | Sidechain         |
| 12  | 5     | 62  | THR  | Peptide,Mainchain |
| 12  | 5     | 69  | HIS  | Sidechain         |
| 12  | 5     | 78  | ARG  | Sidechain         |
| 12  | 5     | 84  | TYR  | Sidechain         |
| 12  | 5     | 99  | TYR  | Sidechain         |
| 13  | 6     | 151 | PHE  | Sidechain         |
| 13  | 6     | 159 | ARG  | Sidechain         |
| 13  | 6     | 215 | TYR  | Sidechain         |
| 13  | 6     | 65  | ARG  | Sidechain         |
| 13  | 6     | 71  | TYR  | Sidechain         |
| 14  | 7     | 101 | TYR  | Sidechain         |
| 14  | 7     | 127 | TYR  | Sidechain         |
| 14  | 7     | 167 | GLY  | Peptide           |
| 14  | 7     | 168 | TYR  | Sidechain         |
| 14  | 7     | 176 | TYR  | Sidechain         |
| 14  | 7     | 222 | TYR  | Sidechain         |
| 14  | 7     | 228 | TYR  | Sidechain         |
| 14  | 7     | 230 | ARG  | Sidechain         |
| 14  | 7     | 74  | TYR  | Sidechain         |
| 1   | A     | 105 | TYR  | Sidechain         |
| 1   | A     | 107 | TYR  | Sidechain         |
| 1   | A     | 159 | TYR  | Sidechain         |
| 1   | A     | 227 | PHE  | Mainchain         |
| 1   | A     | 245 | ARG  | Sidechain         |
| 1   | A     | 9   | PHE  | Sidechain         |
| 1   | A     | 93  | ARG  | Sidechain         |
| 1   | A     | 95  | ARG  | Sidechain         |
| 2   | B     | 101 | TYR  | Sidechain         |
| 2   | B     | 121 | TYR  | Sidechain         |
| 2   | B     | 155 | TYR  | Sidechain         |
| 2   | B     | 167 | TYR  | Sidechain         |

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| Mol | Chain | Res | Type | Group     |
|-----|-------|-----|------|-----------|
| 2   | B     | 229 | TYR  | Sidechain |
| 2   | B     | 57  | TYR  | Sidechain |
| 2   | B     | 6   | TYR  | Sidechain |
| 2   | B     | 97  | TYR  | Sidechain |
| 2   | B     | 98  | TYR  | Sidechain |
| 3   | C     | 148 | TYR  | Sidechain |
| 3   | C     | 156 | TYR  | Sidechain |
| 3   | C     | 17  | ARG  | Sidechain |
| 3   | C     | 179 | TYR  | Sidechain |
| 4   | D     | 112 | TYR  | Sidechain |
| 4   | D     | 116 | TYR  | Sidechain |
| 4   | D     | 123 | ARG  | Sidechain |
| 4   | D     | 169 | ARG  | Sidechain |
| 4   | D     | 182 | TYR  | Sidechain |
| 4   | D     | 21  | TYR  | Sidechain |
| 4   | D     | 234 | TYR  | Sidechain |
| 4   | D     | 73  | PHE  | Sidechain |
| 4   | D     | 87  | ARG  | Sidechain |
| 5   | E     | 10  | ARG  | Sidechain |
| 5   | E     | 123 | PHE  | Sidechain |
| 5   | E     | 15  | PHE  | Sidechain |
| 5   | E     | 20  | ARG  | Sidechain |
| 5   | E     | 93  | ARG  | Sidechain |
| 6   | F     | 126 | ARG  | Sidechain |
| 6   | F     | 171 | TYR  | Sidechain |
| 6   | F     | 232 | PHE  | Sidechain |
| 6   | F     | 6   | TYR  | Sidechain |
| 6   | F     | 65  | HIS  | Sidechain |
| 6   | F     | 87  | PHE  | Sidechain |
| 6   | F     | 89  | ARG  | Sidechain |
| 7   | G     | 150 | TYR  | Sidechain |
| 7   | G     | 159 | TYR  | Sidechain |
| 7   | G     | 188 | ARG  | Sidechain |
| 7   | G     | 210 | PHE  | Sidechain |
| 7   | G     | 239 | TYR  | Sidechain |
| 7   | G     | 8   | TYR  | Sidechain |
| 7   | G     | 86  | ARG  | Sidechain |
| 27  | H     | 188 | ARG  | Sidechain |
| 27  | H     | 227 | ARG  | Sidechain |
| 27  | H     | 232 | ARG  | Sidechain |
| 27  | H     | 237 | PHE  | Sidechain |
| 27  | H     | 265 | ARG  | Sidechain |

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| Mol | Chain | Res | Type | Group     |
|-----|-------|-----|------|-----------|
| 27  | H     | 360 | ARG  | Sidechain |
| 27  | H     | 398 | ARG  | Sidechain |
| 27  | H     | 41  | TYR  | Sidechain |
| 27  | H     | 97  | ARG  | Sidechain |
| 28  | I     | 189 | GLY  | Peptide   |
| 28  | I     | 346 | ARG  | Sidechain |
| 28  | I     | 349 | ARG  | Sidechain |
| 28  | I     | 411 | ARG  | Sidechain |
| 28  | I     | 439 | TYR  | Sidechain |
| 28  | I     | 71  | TYR  | Sidechain |
| 32  | J     | 117 | ARG  | Sidechain |
| 32  | J     | 12  | GLU  | Peptide   |
| 32  | J     | 189 | TYR  | Sidechain |
| 32  | J     | 23  | TYR  | Sidechain |
| 32  | J     | 271 | ARG  | Sidechain |
| 32  | J     | 297 | ARG  | Sidechain |
| 32  | J     | 313 | ARG  | Sidechain |
| 32  | J     | 340 | ARG  | Sidechain |
| 32  | J     | 372 | ARG  | Sidechain |
| 32  | J     | 43  | ARG  | Sidechain |
| 32  | J     | 72  | TYR  | Sidechain |
| 29  | K     | 111 | TYR  | Sidechain |
| 29  | K     | 133 | HIS  | Sidechain |
| 29  | K     | 164 | TYR  | Sidechain |
| 29  | K     | 283 | ARG  | Sidechain |
| 29  | K     | 299 | PHE  | Sidechain |
| 29  | K     | 323 | ARG  | Sidechain |
| 29  | K     | 366 | ARG  | Sidechain |
| 29  | K     | 399 | PHE  | Sidechain |
| 29  | K     | 92  | PHE  | Sidechain |
| 30  | L     | 111 | ARG  | Sidechain |
| 30  | L     | 134 | TYR  | Sidechain |
| 30  | L     | 138 | HIS  | Sidechain |
| 30  | L     | 146 | TYR  | Sidechain |
| 30  | L     | 157 | ARG  | Sidechain |
| 30  | L     | 173 | PHE  | Sidechain |
| 30  | L     | 221 | TYR  | Sidechain |
| 30  | L     | 235 | TYR  | Sidechain |
| 30  | L     | 27  | ARG  | Sidechain |
| 30  | L     | 280 | GLY  | Peptide   |
| 30  | L     | 286 | ARG  | Sidechain |
| 30  | L     | 305 | ARG  | Sidechain |

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| Mol | Chain | Res | Type | Group     |
|-----|-------|-----|------|-----------|
| 30  | L     | 342 | TYR  | Sidechain |
| 30  | L     | 370 | ARG  | Sidechain |
| 30  | L     | 381 | PHE  | Sidechain |
| 30  | L     | 386 | ARG  | Sidechain |
| 30  | L     | 400 | TYR  | Sidechain |
| 31  | M     | 229 | TYR  | Sidechain |
| 31  | M     | 241 | ARG  | Sidechain |
| 31  | M     | 324 | GLN  | Peptide   |
| 31  | M     | 384 | TYR  | Sidechain |
| 31  | M     | 49  | ARG  | Sidechain |
| 20  | N     | 140 | ARG  | Sidechain |
| 20  | N     | 194 | ARG  | Sidechain |
| 20  | N     | 253 | TYR  | Sidechain |
| 20  | N     | 34  | PHE  | Sidechain |
| 20  | N     | 361 | ARG  | Sidechain |
| 20  | N     | 375 | PHE  | Sidechain |
| 20  | N     | 450 | HIS  | Sidechain |
| 20  | N     | 494 | TYR  | Sidechain |
| 20  | N     | 572 | ARG  | Sidechain |
| 20  | N     | 579 | ARG  | Sidechain |
| 20  | N     | 584 | TYR  | Sidechain |
| 20  | N     | 604 | HIS  | Sidechain |
| 20  | N     | 684 | ARG  | Sidechain |
| 20  | N     | 710 | ARG  | Sidechain |
| 20  | N     | 713 | TYR  | Sidechain |
| 20  | N     | 802 | TYR  | Sidechain |
| 26  | O     | 155 | PHE  | Sidechain |
| 26  | O     | 238 | TYR  | Sidechain |
| 26  | O     | 247 | ARG  | Sidechain |
| 26  | O     | 282 | PHE  | Sidechain |
| 26  | O     | 284 | ARG  | Sidechain |
| 26  | O     | 289 | ARG  | Sidechain |
| 26  | O     | 330 | ARG  | Sidechain |
| 26  | O     | 339 | ARG  | Sidechain |
| 26  | O     | 352 | ARG  | Sidechain |
| 26  | O     | 60  | TYR  | Sidechain |
| 26  | O     | 69  | HIS  | Sidechain |
| 26  | O     | 7   | PHE  | Sidechain |
| 26  | O     | 82  | HIS  | Sidechain |
| 22  | P     | 182 | ARG  | Sidechain |
| 22  | P     | 20  | TYR  | Sidechain |
| 22  | P     | 227 | TYR  | Sidechain |

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| Mol | Chain | Res | Type | Group     |
|-----|-------|-----|------|-----------|
| 22  | P     | 247 | TYR  | Sidechain |
| 22  | P     | 302 | TYR  | Sidechain |
| 22  | P     | 350 | ARG  | Sidechain |
| 22  | P     | 357 | ARG  | Sidechain |
| 22  | P     | 364 | ARG  | Sidechain |
| 22  | P     | 370 | TYR  | Sidechain |
| 22  | P     | 94  | ARG  | Sidechain |
| 23  | Q     | 132 | ARG  | Sidechain |
| 23  | Q     | 229 | TYR  | Sidechain |
| 23  | Q     | 233 | TYR  | Sidechain |
| 23  | Q     | 253 | TYR  | Sidechain |
| 23  | Q     | 279 | TYR  | Sidechain |
| 23  | Q     | 363 | ARG  | Sidechain |
| 23  | Q     | 72  | TYR  | Sidechain |
| 23  | Q     | 96  | PHE  | Sidechain |
| 24  | R     | 128 | TYR  | Sidechain |
| 24  | R     | 137 | ARG  | Sidechain |
| 24  | R     | 142 | PHE  | Sidechain |
| 24  | R     | 146 | ARG  | Sidechain |
| 24  | R     | 177 | ARG  | Sidechain |
| 24  | R     | 192 | ARG  | Sidechain |
| 24  | R     | 233 | ARG  | Sidechain |
| 24  | R     | 251 | HIS  | Sidechain |
| 24  | R     | 261 | PHE  | Sidechain |
| 24  | R     | 264 | TYR  | Sidechain |
| 24  | R     | 272 | PHE  | Sidechain |
| 24  | R     | 293 | ARG  | Sidechain |
| 24  | R     | 304 | TYR  | Sidechain |
| 24  | R     | 311 | TYR  | Sidechain |
| 21  | S     | 162 | TYR  | Sidechain |
| 21  | S     | 208 | TYR  | Sidechain |
| 21  | S     | 254 | TYR  | Sidechain |
| 21  | S     | 257 | TYR  | Sidechain |
| 21  | S     | 260 | TYR  | Sidechain |
| 21  | S     | 283 | ARG  | Sidechain |
| 21  | S     | 284 | TYR  | Sidechain |
| 21  | S     | 286 | TYR  | Sidechain |
| 21  | S     | 302 | ARG  | Sidechain |
| 21  | S     | 310 | ARG  | Sidechain |
| 21  | S     | 345 | ARG  | Sidechain |
| 21  | S     | 364 | ARG  | Sidechain |
| 21  | S     | 410 | TYR  | Sidechain |

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| Mol | Chain | Res | Type | Group     |
|-----|-------|-----|------|-----------|
| 21  | S     | 478 | PHE  | Sidechain |
| 21  | S     | 491 | ARG  | Sidechain |
| 21  | S     | 76  | ARG  | Sidechain |
| 21  | S     | 95  | ARG  | Sidechain |
| 17  | T     | 107 | ARG  | Sidechain |
| 17  | T     | 148 | ARG  | Sidechain |
| 17  | T     | 169 | ARG  | Sidechain |
| 17  | T     | 178 | TYR  | Sidechain |
| 17  | T     | 180 | ASP  | Peptide   |
| 17  | T     | 217 | ARG  | Sidechain |
| 17  | T     | 228 | TYR  | Sidechain |
| 17  | T     | 262 | PHE  | Sidechain |
| 17  | T     | 282 | TYR  | Sidechain |
| 17  | T     | 318 | TYR  | Sidechain |
| 17  | T     | 319 | TYR  | Sidechain |
| 17  | T     | 340 | ARG  | Sidechain |
| 25  | U     | 211 | TYR  | Sidechain |
| 25  | U     | 228 | TYR  | Sidechain |
| 25  | U     | 25  | ARG  | Sidechain |
| 25  | U     | 250 | TYR  | Sidechain |
| 25  | U     | 261 | TYR  | Sidechain |
| 25  | U     | 79  | TYR  | Sidechain |
| 16  | V     | 112 | TYR  | Sidechain |
| 16  | V     | 139 | ARG  | Sidechain |
| 16  | V     | 255 | TYR  | Sidechain |
| 16  | V     | 282 | ARG  | Sidechain |
| 16  | V     | 309 | PHE  | Sidechain |
| 16  | V     | 46  | ARG  | Sidechain |
| 16  | V     | 68  | ARG  | Sidechain |
| 15  | W     | 108 | ARG  | Sidechain |
| 15  | W     | 21  | PHE  | Sidechain |
| 15  | W     | 99  | HIS  | Sidechain |
| 18  | Y     | 57  | ARG  | Sidechain |
| 19  | Z     | 143 | ARG  | Sidechain |
| 19  | Z     | 160 | ARG  | Sidechain |
| 19  | Z     | 217 | LEU  | Peptide   |
| 19  | Z     | 226 | TYR  | Sidechain |
| 19  | Z     | 239 | TYR  | Sidechain |
| 19  | Z     | 323 | ASN  | Peptide   |
| 19  | Z     | 34  | ARG  | Sidechain |
| 19  | Z     | 371 | ASN  | Peptide   |
| 19  | Z     | 376 | PHE  | Sidechain |

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| Mol | Chain | Res | Type | Group     |
|-----|-------|-----|------|-----------|
| 19  | Z     | 456 | ARG  | Sidechain |
| 19  | Z     | 459 | CYS  | Peptide   |
| 19  | Z     | 485 | LEU  | Mainchain |
| 19  | Z     | 489 | TYR  | Sidechain |
| 19  | Z     | 556 | ARG  | Sidechain |
| 19  | Z     | 746 | ARG  | Sidechain |
| 19  | Z     | 755 | ASP  | Peptide   |
| 19  | Z     | 781 | TYR  | Sidechain |
| 19  | Z     | 816 | TYR  | Sidechain |
| 19  | Z     | 865 | PHE  | Sidechain |
| 19  | Z     | 887 | PHE  | Sidechain |
| 19  | Z     | 98  | PHE  | Sidechain |

## 5.2 Too-close contacts ⓘ

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1   | A     | 1920  | 0        | 1927     | 0       | 0            |
| 2   | B     | 1828  | 0        | 1823     | 0       | 0            |
| 3   | C     | 1960  | 0        | 1983     | 0       | 0            |
| 4   | D     | 1926  | 0        | 1955     | 0       | 0            |
| 5   | E     | 1778  | 0        | 1756     | 0       | 0            |
| 6   | F     | 1871  | 0        | 1856     | 0       | 0            |
| 7   | G     | 1912  | 0        | 1907     | 0       | 0            |
| 8   | 1     | 1516  | 0        | 1485     | 0       | 0            |
| 9   | 2     | 1651  | 0        | 1674     | 0       | 0            |
| 10  | 3     | 1600  | 0        | 1621     | 0       | 0            |
| 11  | 4     | 1572  | 0        | 1575     | 0       | 0            |
| 12  | 5     | 1560  | 0        | 1519     | 0       | 0            |
| 13  | 6     | 1659  | 0        | 1654     | 0       | 0            |
| 14  | 7     | 1686  | 0        | 1662     | 0       | 0            |
| 15  | W     | 1480  | 0        | 1522     | 0       | 0            |
| 16  | V     | 2272  | 0        | 2288     | 0       | 0            |
| 17  | T     | 2149  | 0        | 2170     | 0       | 0            |
| 18  | Y     | 199   | 0        | 180      | 0       | 0            |
| 19  | Z     | 6913  | 0        | 6910     | 0       | 0            |
| 20  | N     | 7082  | 0        | 7121     | 0       | 0            |
| 21  | S     | 3844  | 0        | 3888     | 0       | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 22  | P     | 3706  | 0        | 3817     | 0       | 0            |
| 23  | Q     | 3335  | 0        | 3435     | 0       | 0            |
| 24  | R     | 3204  | 0        | 3204     | 0       | 0            |
| 25  | U     | 2299  | 0        | 2334     | 0       | 0            |
| 26  | O     | 3011  | 0        | 3042     | 0       | 0            |
| 27  | H     | 3113  | 0        | 3162     | 0       | 0            |
| 28  | I     | 3042  | 0        | 3098     | 0       | 0            |
| 29  | K     | 3125  | 0        | 3151     | 0       | 0            |
| 30  | L     | 3098  | 0        | 3171     | 0       | 0            |
| 31  | M     | 3252  | 0        | 3321     | 0       | 0            |
| 32  | J     | 3194  | 0        | 3311     | 0       | 0            |
| All | All   | 82757 | 0        | 83522    | 0       | 0            |

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). Clashscore could not be calculated for this entry.

There are no clashes within the asymmetric unit.

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

| Mol | Chain | Analysed      | Favoured  | Allowed  | Outliers | Percentiles |    |
|-----|-------|---------------|-----------|----------|----------|-------------|----|
| 1   | A     | 244/246 (99%) | 234 (96%) | 6 (2%)   | 4 (2%)   | 7           | 38 |
| 2   | B     | 232/234 (99%) | 209 (90%) | 17 (7%)  | 6 (3%)   | 4           | 25 |
| 3   | C     | 247/261 (95%) | 236 (96%) | 8 (3%)   | 3 (1%)   | 10          | 44 |
| 4   | D     | 244/254 (96%) | 223 (91%) | 13 (5%)  | 8 (3%)   | 3           | 21 |
| 5   | E     | 231/241 (96%) | 215 (93%) | 13 (6%)  | 3 (1%)   | 9           | 42 |
| 6   | F     | 236/263 (90%) | 219 (93%) | 16 (7%)  | 1 (0%)   | 30          | 67 |
| 7   | G     | 243/255 (95%) | 222 (91%) | 17 (7%)  | 4 (2%)   | 7           | 38 |
| 8   | 1     | 200/238 (84%) | 168 (84%) | 19 (10%) | 13 (6%)  | 1           | 12 |

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| Mol | Chain | Analysed          | Favoured   | Allowed  | Outliers | Percentiles |     |
|-----|-------|-------------------|------------|----------|----------|-------------|-----|
| 9   | 2     | 217/277 (78%)     | 179 (82%)  | 22 (10%) | 16 (7%)  | 1           | 10  |
| 10  | 3     | 203/205 (99%)     | 165 (81%)  | 21 (10%) | 17 (8%)  | 0           | 9   |
| 11  | 4     | 194/201 (96%)     | 173 (89%)  | 14 (7%)  | 7 (4%)   | 2           | 20  |
| 12  | 5     | 199/263 (76%)     | 168 (84%)  | 21 (11%) | 10 (5%)  | 1           | 16  |
| 13  | 6     | 211/240 (88%)     | 173 (82%)  | 21 (10%) | 17 (8%)  | 1           | 9   |
| 14  | 7     | 214/263 (81%)     | 195 (91%)  | 12 (6%)  | 7 (3%)   | 3           | 21  |
| 15  | W     | 193/377 (51%)     | 175 (91%)  | 14 (7%)  | 4 (2%)   | 5           | 30  |
| 16  | V     | 287/310 (93%)     | 266 (93%)  | 15 (5%)  | 6 (2%)   | 5           | 30  |
| 17  | T     | 261/353 (74%)     | 224 (86%)  | 24 (9%)  | 13 (5%)  | 1           | 16  |
| 18  | Y     | 22/70 (31%)       | 21 (96%)   | 1 (4%)   | 0        | 100         | 100 |
| 19  | Z     | 894/908 (98%)     | 792 (89%)  | 68 (8%)  | 34 (4%)  | 2           | 19  |
| 20  | N     | 901/953 (94%)     | 822 (91%)  | 55 (6%)  | 24 (3%)  | 4           | 25  |
| 21  | S     | 474/530 (89%)     | 427 (90%)  | 34 (7%)  | 13 (3%)  | 4           | 25  |
| 22  | P     | 454/456 (100%)    | 429 (94%)  | 17 (4%)  | 8 (2%)   | 6           | 34  |
| 23  | Q     | 420/422 (100%)    | 395 (94%)  | 19 (4%)  | 6 (1%)   | 9           | 40  |
| 24  | R     | 387/389 (100%)    | 363 (94%)  | 16 (4%)  | 8 (2%)   | 5           | 30  |
| 25  | U     | 286/320 (89%)     | 268 (94%)  | 11 (4%)  | 7 (2%)   | 4           | 27  |
| 26  | O     | 374/376 (100%)    | 354 (95%)  | 15 (4%)  | 5 (1%)   | 9           | 42  |
| 27  | H     | 394/433 (91%)     | 362 (92%)  | 24 (6%)  | 8 (2%)   | 6           | 31  |
| 28  | I     | 383/440 (87%)     | 347 (91%)  | 24 (6%)  | 12 (3%)  | 3           | 22  |
| 29  | K     | 389/418 (93%)     | 354 (91%)  | 26 (7%)  | 9 (2%)   | 5           | 28  |
| 30  | L     | 387/403 (96%)     | 349 (90%)  | 33 (8%)  | 5 (1%)   | 9           | 42  |
| 31  | M     | 413/442 (93%)     | 370 (90%)  | 30 (7%)  | 13 (3%)  | 3           | 22  |
| 32  | J     | 404/406 (100%)    | 368 (91%)  | 29 (7%)  | 7 (2%)   | 7           | 36  |
| All | All   | 10438/11447 (91%) | 9465 (91%) | 675 (6%) | 298 (3%) | 5           | 23  |

All (298) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 16  | PHE  |
| 2   | B     | 63  | HIS  |
| 2   | B     | 205 | GLU  |
| 4   | D     | 74  | ALA  |
| 4   | D     | 75  | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 4   | D     | 77  | ALA  |
| 4   | D     | 82  | LEU  |
| 8   | 1     | 53  | THR  |
| 8   | 1     | 105 | GLU  |
| 8   | 1     | 152 | MET  |
| 8   | 1     | 217 | VAL  |
| 9   | 2     | 53  | ASP  |
| 9   | 2     | 63  | ALA  |
| 9   | 2     | 81  | SER  |
| 9   | 2     | 91  | THR  |
| 9   | 2     | 172 | SER  |
| 9   | 2     | 231 | PRO  |
| 10  | 3     | 57  | ALA  |
| 11  | 4     | 50  | ALA  |
| 11  | 4     | 114 | ALA  |
| 11  | 4     | 149 | PRO  |
| 13  | 6     | 57  | SER  |
| 13  | 6     | 62  | ILE  |
| 13  | 6     | 85  | HIS  |
| 13  | 6     | 157 | TYR  |
| 13  | 6     | 158 | GLN  |
| 13  | 6     | 168 | ALA  |
| 13  | 6     | 193 | LEU  |
| 14  | 7     | 65  | VAL  |
| 16  | V     | 25  | VAL  |
| 17  | T     | 94  | ALA  |
| 19  | Z     | 66  | LYS  |
| 19  | Z     | 134 | SER  |
| 19  | Z     | 147 | SER  |
| 19  | Z     | 460 | ASP  |
| 19  | Z     | 755 | ASP  |
| 20  | N     | 435 | SER  |
| 20  | N     | 574 | LYS  |
| 20  | N     | 798 | PRO  |
| 20  | N     | 855 | GLU  |
| 20  | N     | 923 | GLU  |
| 20  | N     | 926 | GLU  |
| 20  | N     | 928 | VAL  |
| 21  | S     | 138 | GLU  |
| 21  | S     | 238 | HIS  |
| 21  | S     | 314 | GLN  |
| 21  | S     | 461 | ASP  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 22  | P     | 452 | ILE  |
| 24  | R     | 51  | ALA  |
| 25  | U     | 5   | ALA  |
| 25  | U     | 238 | PRO  |
| 25  | U     | 242 | LEU  |
| 26  | O     | 3   | ASP  |
| 28  | I     | 119 | ASN  |
| 28  | I     | 216 | ILE  |
| 28  | I     | 391 | SER  |
| 28  | I     | 439 | TYR  |
| 29  | K     | 335 | LEU  |
| 29  | K     | 415 | GLU  |
| 30  | L     | 140 | ASP  |
| 31  | M     | 132 | ARG  |
| 31  | M     | 325 | PRO  |
| 31  | M     | 338 | VAL  |
| 31  | M     | 340 | ILE  |
| 31  | M     | 379 | SER  |
| 31  | M     | 435 | LYS  |
| 1   | A     | 186 | LYS  |
| 4   | D     | 47  | LYS  |
| 4   | D     | 80  | SER  |
| 7   | G     | 9   | ASP  |
| 7   | G     | 209 | ALA  |
| 8   | 1     | 163 | SER  |
| 8   | 1     | 232 | ILE  |
| 9   | 2     | 84  | ILE  |
| 9   | 2     | 136 | TYR  |
| 9   | 2     | 256 | THR  |
| 10  | 3     | 32  | ALA  |
| 10  | 3     | 107 | PRO  |
| 10  | 3     | 186 | ILE  |
| 10  | 3     | 204 | MET  |
| 11  | 4     | 13  | VAL  |
| 11  | 4     | 22  | ALA  |
| 12  | 5     | 62  | THR  |
| 12  | 5     | 79  | ALA  |
| 12  | 5     | 101 | LEU  |
| 12  | 5     | 179 | ARG  |
| 13  | 6     | 32  | TYR  |
| 13  | 6     | 61  | SER  |
| 14  | 7     | 164 | SER  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 14  | 7     | 175 | ALA  |
| 16  | V     | 275 | VAL  |
| 17  | T     | 258 | SER  |
| 17  | T     | 332 | THR  |
| 19  | Z     | 174 | ASP  |
| 19  | Z     | 237 | VAL  |
| 19  | Z     | 293 | GLN  |
| 19  | Z     | 490 | ALA  |
| 19  | Z     | 851 | ASP  |
| 20  | N     | 432 | SER  |
| 20  | N     | 899 | ARG  |
| 20  | N     | 929 | ALA  |
| 21  | S     | 132 | GLU  |
| 21  | S     | 178 | LYS  |
| 21  | S     | 276 | ALA  |
| 21  | S     | 296 | LEU  |
| 22  | P     | 9   | ALA  |
| 22  | P     | 410 | ALA  |
| 23  | Q     | 201 | TYR  |
| 23  | Q     | 271 | VAL  |
| 23  | Q     | 355 | LYS  |
| 23  | Q     | 393 | VAL  |
| 24  | R     | 132 | VAL  |
| 24  | R     | 192 | ARG  |
| 27  | H     | 157 | ILE  |
| 27  | H     | 181 | LYS  |
| 28  | I     | 118 | ASP  |
| 28  | I     | 377 | ASP  |
| 29  | K     | 118 | THR  |
| 29  | K     | 137 | ASN  |
| 29  | K     | 156 | SER  |
| 30  | L     | 178 | ILE  |
| 30  | L     | 279 | ASP  |
| 31  | M     | 181 | ASP  |
| 32  | J     | 152 | GLY  |
| 2   | B     | 16  | SER  |
| 5   | E     | 55  | THR  |
| 5   | E     | 122 | GLN  |
| 5   | E     | 127 | ASP  |
| 7   | G     | 3   | SER  |
| 8   | 1     | 43  | GLY  |
| 8   | 1     | 72  | ASP  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 8   | 1     | 216 | GLY  |
| 9   | 2     | 55  | ILE  |
| 9   | 2     | 82  | PRO  |
| 9   | 2     | 117 | PRO  |
| 9   | 2     | 189 | MET  |
| 10  | 3     | 3   | VAL  |
| 10  | 3     | 105 | THR  |
| 10  | 3     | 182 | GLY  |
| 12  | 5     | 168 | PRO  |
| 12  | 5     | 230 | GLY  |
| 12  | 5     | 233 | VAL  |
| 13  | 6     | 39  | VAL  |
| 13  | 6     | 109 | ALA  |
| 15  | W     | 45  | PRO  |
| 17  | T     | 116 | GLY  |
| 17  | T     | 119 | LEU  |
| 17  | T     | 132 | LEU  |
| 17  | T     | 186 | PRO  |
| 17  | T     | 219 | PRO  |
| 17  | T     | 335 | SER  |
| 19  | Z     | 30  | GLY  |
| 19  | Z     | 87  | THR  |
| 19  | Z     | 306 | GLU  |
| 19  | Z     | 309 | GLU  |
| 19  | Z     | 357 | ARG  |
| 19  | Z     | 426 | LEU  |
| 19  | Z     | 491 | GLY  |
| 19  | Z     | 509 | LYS  |
| 19  | Z     | 738 | ASN  |
| 19  | Z     | 756 | PRO  |
| 19  | Z     | 839 | PRO  |
| 19  | Z     | 864 | GLY  |
| 20  | N     | 560 | MET  |
| 21  | S     | 272 | PHE  |
| 22  | P     | 7   | GLU  |
| 22  | P     | 341 | PHE  |
| 24  | R     | 359 | PRO  |
| 25  | U     | 27  | GLY  |
| 25  | U     | 44  | GLN  |
| 26  | O     | 101 | ARG  |
| 27  | H     | 72  | LEU  |
| 27  | H     | 281 | GLY  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 28  | I     | 86  | LYS  |
| 28  | I     | 179 | ALA  |
| 28  | I     | 372 | MET  |
| 29  | K     | 200 | ARG  |
| 29  | K     | 390 | ASN  |
| 32  | J     | 262 | GLY  |
| 32  | J     | 263 | SER  |
| 2   | B     | 6   | TYR  |
| 2   | B     | 61  | SER  |
| 3   | C     | 204 | SER  |
| 8   | 1     | 44  | GLY  |
| 10  | 3     | 10  | ALA  |
| 10  | 3     | 19  | CYS  |
| 10  | 3     | 20  | VAL  |
| 10  | 3     | 156 | PRO  |
| 11  | 4     | 188 | ILE  |
| 13  | 6     | 37  | GLY  |
| 13  | 6     | 60  | PHE  |
| 13  | 6     | 132 | TYR  |
| 13  | 6     | 220 | LEU  |
| 14  | 7     | 101 | TYR  |
| 15  | W     | 58  | CYS  |
| 15  | W     | 135 | LYS  |
| 16  | V     | 189 | ILE  |
| 17  | T     | 97  | MET  |
| 19  | Z     | 310 | ASP  |
| 19  | Z     | 385 | PHE  |
| 19  | Z     | 428 | GLN  |
| 19  | Z     | 437 | GLU  |
| 19  | Z     | 453 | SER  |
| 19  | Z     | 492 | SER  |
| 19  | Z     | 765 | ALA  |
| 19  | Z     | 842 | VAL  |
| 19  | Z     | 889 | PRO  |
| 20  | N     | 429 | LYS  |
| 20  | N     | 433 | PRO  |
| 20  | N     | 486 | MET  |
| 20  | N     | 754 | HIS  |
| 20  | N     | 819 | VAL  |
| 20  | N     | 849 | LYS  |
| 21  | S     | 239 | ASP  |
| 21  | S     | 348 | SER  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 22  | P     | 2   | ALA  |
| 22  | P     | 136 | ILE  |
| 22  | P     | 336 | PRO  |
| 24  | R     | 95  | LEU  |
| 25  | U     | 243 | GLN  |
| 26  | O     | 69  | HIS  |
| 26  | O     | 375 | LEU  |
| 27  | H     | 285 | PHE  |
| 28  | I     | 321 | SER  |
| 28  | I     | 410 | ARG  |
| 29  | K     | 148 | ASP  |
| 31  | M     | 187 | GLN  |
| 31  | M     | 282 | ALA  |
| 31  | M     | 326 | ASN  |
| 32  | J     | 120 | SER  |
| 32  | J     | 142 | LYS  |
| 1   | A     | 57  | PRO  |
| 1   | A     | 73  | THR  |
| 3   | C     | 205 | LYS  |
| 6   | F     | 103 | LEU  |
| 8   | 1     | 158 | PHE  |
| 8   | 1     | 207 | ILE  |
| 9   | 2     | 137 | ILE  |
| 10  | 3     | 33  | GLN  |
| 10  | 3     | 43  | PHE  |
| 10  | 3     | 119 | PRO  |
| 10  | 3     | 137 | VAL  |
| 11  | 4     | 26  | VAL  |
| 12  | 5     | 81  | ALA  |
| 14  | 7     | 191 | GLN  |
| 14  | 7     | 232 | GLN  |
| 14  | 7     | 256 | ALA  |
| 17  | T     | 133 | PRO  |
| 17  | T     | 182 | LYS  |
| 19  | Z     | 508 | SER  |
| 19  | Z     | 703 | ARG  |
| 19  | Z     | 715 | HIS  |
| 20  | N     | 591 | CYS  |
| 20  | N     | 854 | MET  |
| 21  | S     | 152 | SER  |
| 23  | Q     | 202 | CYS  |
| 24  | R     | 47  | GLU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 24  | R     | 290 | PRO  |
| 25  | U     | 219 | LYS  |
| 26  | O     | 32  | LYS  |
| 27  | H     | 427 | PRO  |
| 29  | K     | 408 | LYS  |
| 30  | L     | 280 | GLY  |
| 31  | M     | 107 | GLN  |
| 31  | M     | 380 | PRO  |
| 2   | B     | 7   | SER  |
| 3   | C     | 7   | SER  |
| 4   | D     | 78  | SER  |
| 7   | G     | 205 | VAL  |
| 10  | 3     | 49  | LEU  |
| 12  | 5     | 192 | VAL  |
| 16  | V     | 106 | GLU  |
| 20  | N     | 170 | SER  |
| 20  | N     | 398 | ASN  |
| 20  | N     | 887 | ALA  |
| 23  | Q     | 374 | PHE  |
| 24  | R     | 251 | HIS  |
| 28  | I     | 89  | GLU  |
| 31  | M     | 102 | VAL  |
| 13  | 6     | 129 | PHE  |
| 16  | V     | 187 | PRO  |
| 20  | N     | 933 | PRO  |
| 21  | S     | 442 | VAL  |
| 30  | L     | 340 | ILE  |
| 32  | J     | 91  | PRO  |
| 9   | 2     | 158 | PRO  |
| 16  | V     | 105 | PRO  |
| 17  | T     | 328 | PRO  |
| 20  | N     | 856 | VAL  |
| 27  | H     | 170 | PRO  |
| 4   | D     | 222 | PRO  |
| 9   | 2     | 187 | PRO  |
| 27  | H     | 280 | ILE  |
| 32  | J     | 224 | ILE  |
| 12  | 5     | 83  | PRO  |
| 13  | 6     | 68  | PRO  |
| 15  | W     | 2   | VAL  |
| 8   | 1     | 148 | PRO  |

### 5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

| Mol | Chain | Analysed       | Rotameric | Outliers | Percentiles |     |
|-----|-------|----------------|-----------|----------|-------------|-----|
| 1   | A     | 210/210 (100%) | 201 (96%) | 9 (4%)   | 26          | 47  |
| 2   | B     | 191/191 (100%) | 169 (88%) | 22 (12%) | 5           | 18  |
| 3   | C     | 209/221 (95%)  | 193 (92%) | 16 (8%)  | 12          | 32  |
| 4   | D     | 208/215 (97%)  | 196 (94%) | 12 (6%)  | 18          | 40  |
| 5   | E     | 195/203 (96%)  | 185 (95%) | 10 (5%)  | 21          | 42  |
| 6   | F     | 204/224 (91%)  | 193 (95%) | 11 (5%)  | 20          | 41  |
| 7   | G     | 202/212 (95%)  | 191 (95%) | 11 (5%)  | 20          | 41  |
| 8   | 1     | 160/185 (86%)  | 149 (93%) | 11 (7%)  | 14          | 36  |
| 9   | 2     | 180/227 (79%)  | 164 (91%) | 16 (9%)  | 9           | 28  |
| 10  | 3     | 175/175 (100%) | 149 (85%) | 26 (15%) | 3           | 12  |
| 11  | 4     | 167/172 (97%)  | 149 (89%) | 18 (11%) | 6           | 21  |
| 12  | 5     | 158/205 (77%)  | 137 (87%) | 21 (13%) | 4           | 14  |
| 13  | 6     | 179/200 (90%)  | 162 (90%) | 17 (10%) | 8           | 25  |
| 14  | 7     | 178/215 (83%)  | 160 (90%) | 18 (10%) | 7           | 23  |
| 15  | W     | 168/312 (54%)  | 156 (93%) | 12 (7%)  | 13          | 35  |
| 16  | V     | 253/268 (94%)  | 241 (95%) | 12 (5%)  | 23          | 45  |
| 17  | T     | 233/298 (78%)  | 220 (94%) | 13 (6%)  | 19          | 40  |
| 18  | Y     | 22/63 (35%)    | 22 (100%) | 0        | 100         | 100 |
| 19  | Z     | 753/765 (98%)  | 709 (94%) | 44 (6%)  | 18          | 40  |
| 20  | N     | 776/814 (95%)  | 724 (93%) | 52 (7%)  | 15          | 36  |
| 21  | S     | 414/458 (90%)  | 394 (95%) | 20 (5%)  | 23          | 44  |
| 22  | P     | 419/419 (100%) | 395 (94%) | 24 (6%)  | 18          | 40  |
| 23  | Q     | 362/362 (100%) | 333 (92%) | 29 (8%)  | 11          | 31  |
| 24  | R     | 345/345 (100%) | 317 (92%) | 28 (8%)  | 11          | 31  |
| 25  | U     | 259/289 (90%)  | 246 (95%) | 13 (5%)  | 22          | 43  |
| 26  | O     | 334/334 (100%) | 311 (93%) | 23 (7%)  | 14          | 36  |

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| Mol | Chain | Analysed        | Rotameric  | Outliers | Percentiles |    |
|-----|-------|-----------------|------------|----------|-------------|----|
| 27  | H     | 341/372 (92%)   | 329 (96%)  | 12 (4%)  | 32          | 53 |
| 28  | I     | 341/385 (89%)   | 321 (94%)  | 20 (6%)  | 18          | 39 |
| 29  | K     | 343/367 (94%)   | 316 (92%)  | 27 (8%)  | 11          | 32 |
| 30  | L     | 341/353 (97%)   | 330 (97%)  | 11 (3%)  | 34          | 56 |
| 31  | M     | 357/382 (94%)   | 327 (92%)  | 30 (8%)  | 10          | 30 |
| 32  | J     | 352/352 (100%)  | 336 (96%)  | 16 (4%)  | 24          | 46 |
| All | All   | 9029/9793 (92%) | 8425 (93%) | 604 (7%) | 17          | 36 |

All (604) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | A     | 50  | ILE  |
| 1   | A     | 60  | LEU  |
| 1   | A     | 81  | THR  |
| 1   | A     | 101 | TRP  |
| 1   | A     | 107 | TYR  |
| 1   | A     | 161 | CYS  |
| 1   | A     | 166 | THR  |
| 1   | A     | 229 | ILE  |
| 1   | A     | 239 | LEU  |
| 2   | B     | 56  | LEU  |
| 2   | B     | 59  | GLU  |
| 2   | B     | 60  | ARG  |
| 2   | B     | 62  | VAL  |
| 2   | B     | 75  | VAL  |
| 2   | B     | 84  | ARG  |
| 2   | B     | 85  | VAL  |
| 2   | B     | 93  | LEU  |
| 2   | B     | 97  | TYR  |
| 2   | B     | 100 | VAL  |
| 2   | B     | 107 | THR  |
| 2   | B     | 119 | GLN  |
| 2   | B     | 127 | VAL  |
| 2   | B     | 133 | SER  |
| 2   | B     | 136 | ILE  |
| 2   | B     | 143 | ARG  |
| 2   | B     | 147 | PHE  |
| 2   | B     | 167 | TYR  |
| 2   | B     | 202 | GLN  |
| 2   | B     | 208 | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | B     | 219 | ARG  |
| 2   | B     | 222 | THR  |
| 3   | C     | 35  | LEU  |
| 3   | C     | 38  | LEU  |
| 3   | C     | 43  | VAL  |
| 3   | C     | 44  | LEU  |
| 3   | C     | 81  | SER  |
| 3   | C     | 98  | LEU  |
| 3   | C     | 101 | TYR  |
| 3   | C     | 114 | LEU  |
| 3   | C     | 122 | THR  |
| 3   | C     | 137 | ILE  |
| 3   | C     | 147 | LEU  |
| 3   | C     | 156 | TYR  |
| 3   | C     | 194 | VAL  |
| 3   | C     | 196 | VAL  |
| 3   | C     | 211 | VAL  |
| 3   | C     | 240 | HIS  |
| 4   | D     | 10  | PHE  |
| 4   | D     | 27  | LYS  |
| 4   | D     | 42  | VAL  |
| 4   | D     | 43  | LEU  |
| 4   | D     | 68  | ASN  |
| 4   | D     | 79  | VAL  |
| 4   | D     | 90  | ILE  |
| 4   | D     | 104 | VAL  |
| 4   | D     | 135 | ILE  |
| 4   | D     | 152 | GLN  |
| 4   | D     | 192 | LEU  |
| 4   | D     | 243 | GLU  |
| 5   | E     | 14  | THR  |
| 5   | E     | 42  | THR  |
| 5   | E     | 100 | TRP  |
| 5   | E     | 129 | ASP  |
| 5   | E     | 135 | ARG  |
| 5   | E     | 170 | ILE  |
| 5   | E     | 181 | LEU  |
| 5   | E     | 210 | LEU  |
| 5   | E     | 215 | ILE  |
| 5   | E     | 219 | THR  |
| 6   | F     | 10  | VAL  |
| 6   | F     | 13  | TRP  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 6   | F     | 39  | LYS  |
| 6   | F     | 70  | ILE  |
| 6   | F     | 108 | LEU  |
| 6   | F     | 130 | VAL  |
| 6   | F     | 132 | LEU  |
| 6   | F     | 138 | ASP  |
| 6   | F     | 161 | ILE  |
| 6   | F     | 222 | THR  |
| 6   | F     | 236 | LEU  |
| 7   | G     | 42  | CYS  |
| 7   | G     | 55  | LEU  |
| 7   | G     | 61  | GLU  |
| 7   | G     | 67  | LEU  |
| 7   | G     | 84  | ASP  |
| 7   | G     | 107 | ILE  |
| 7   | G     | 111 | HIS  |
| 7   | G     | 138 | LEU  |
| 7   | G     | 157 | VAL  |
| 7   | G     | 162 | TRP  |
| 7   | G     | 166 | ILE  |
| 8   | 1     | 59  | ILE  |
| 8   | 1     | 62  | ARG  |
| 8   | 1     | 115 | LEU  |
| 8   | 1     | 118 | GLU  |
| 8   | 1     | 131 | ILE  |
| 8   | 1     | 143 | GLN  |
| 8   | 1     | 144 | VAL  |
| 8   | 1     | 182 | LYS  |
| 8   | 1     | 212 | ILE  |
| 8   | 1     | 213 | GLN  |
| 8   | 1     | 233 | SER  |
| 9   | 2     | 49  | VAL  |
| 9   | 2     | 55  | ILE  |
| 9   | 2     | 57  | LEU  |
| 9   | 2     | 77  | ILE  |
| 9   | 2     | 80  | ILE  |
| 9   | 2     | 99  | THR  |
| 9   | 2     | 100 | GLN  |
| 9   | 2     | 101 | LEU  |
| 9   | 2     | 111 | LEU  |
| 9   | 2     | 156 | ILE  |
| 9   | 2     | 175 | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 9   | 2     | 195 | LYS  |
| 9   | 2     | 218 | LEU  |
| 9   | 2     | 249 | LYS  |
| 9   | 2     | 254 | VAL  |
| 9   | 2     | 259 | VAL  |
| 10  | 3     | 3   | VAL  |
| 10  | 3     | 11  | VAL  |
| 10  | 3     | 15  | LYS  |
| 10  | 3     | 22  | ILE  |
| 10  | 3     | 25  | ASP  |
| 10  | 3     | 26  | ARG  |
| 10  | 3     | 28  | PHE  |
| 10  | 3     | 37  | THR  |
| 10  | 3     | 45  | MET  |
| 10  | 3     | 63  | VAL  |
| 10  | 3     | 71  | LEU  |
| 10  | 3     | 74  | TYR  |
| 10  | 3     | 91  | VAL  |
| 10  | 3     | 102 | PRO  |
| 10  | 3     | 109 | ILE  |
| 10  | 3     | 121 | ILE  |
| 10  | 3     | 124 | LEU  |
| 10  | 3     | 132 | VAL  |
| 10  | 3     | 141 | THR  |
| 10  | 3     | 142 | CYS  |
| 10  | 3     | 154 | TRP  |
| 10  | 3     | 161 | GLU  |
| 10  | 3     | 163 | LEU  |
| 10  | 3     | 169 | GLN  |
| 10  | 3     | 172 | LEU  |
| 10  | 3     | 201 | LYS  |
| 11  | 4     | 4   | LEU  |
| 11  | 4     | 5   | ILE  |
| 11  | 4     | 7   | ILE  |
| 11  | 4     | 13  | VAL  |
| 11  | 4     | 28  | MET  |
| 11  | 4     | 42  | ILE  |
| 11  | 4     | 55  | GLN  |
| 11  | 4     | 84  | THR  |
| 11  | 4     | 100 | VAL  |
| 11  | 4     | 102 | LEU  |
| 11  | 4     | 126 | LYS  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 11  | 4     | 137 | PHE  |
| 11  | 4     | 138 | LEU  |
| 11  | 4     | 143 | LEU  |
| 11  | 4     | 148 | THR  |
| 11  | 4     | 150 | THR  |
| 11  | 4     | 151 | ILE  |
| 11  | 4     | 185 | LYS  |
| 12  | 5     | 62  | THR  |
| 12  | 5     | 63  | LEU  |
| 12  | 5     | 66  | LYS  |
| 12  | 5     | 67  | PHE  |
| 12  | 5     | 93  | VAL  |
| 12  | 5     | 96  | ILE  |
| 12  | 5     | 117 | LEU  |
| 12  | 5     | 118 | LEU  |
| 12  | 5     | 121 | GLN  |
| 12  | 5     | 127 | LEU  |
| 12  | 5     | 135 | VAL  |
| 12  | 5     | 142 | LEU  |
| 12  | 5     | 156 | MET  |
| 12  | 5     | 163 | TRP  |
| 12  | 5     | 164 | ASP  |
| 12  | 5     | 173 | VAL  |
| 12  | 5     | 180 | ILE  |
| 12  | 5     | 183 | THR  |
| 12  | 5     | 187 | VAL  |
| 12  | 5     | 220 | TYR  |
| 12  | 5     | 253 | ASP  |
| 13  | 6     | 50  | VAL  |
| 13  | 6     | 55  | ARG  |
| 13  | 6     | 64  | THR  |
| 13  | 6     | 65  | ARG  |
| 13  | 6     | 77  | THR  |
| 13  | 6     | 84  | PHE  |
| 13  | 6     | 101 | MET  |
| 13  | 6     | 119 | LEU  |
| 13  | 6     | 121 | THR  |
| 13  | 6     | 122 | ILE  |
| 13  | 6     | 124 | TYR  |
| 13  | 6     | 133 | VAL  |
| 13  | 6     | 137 | ILE  |
| 13  | 6     | 148 | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 13  | 6     | 162 | PHE  |
| 13  | 6     | 180 | VAL  |
| 13  | 6     | 216 | THR  |
| 14  | 7     | 56  | LEU  |
| 14  | 7     | 66  | ILE  |
| 14  | 7     | 74  | TYR  |
| 14  | 7     | 80  | PHE  |
| 14  | 7     | 86  | ILE  |
| 14  | 7     | 136 | LEU  |
| 14  | 7     | 146 | LYS  |
| 14  | 7     | 148 | ASN  |
| 14  | 7     | 155 | VAL  |
| 14  | 7     | 171 | MET  |
| 14  | 7     | 183 | THR  |
| 14  | 7     | 189 | LEU  |
| 14  | 7     | 194 | LEU  |
| 14  | 7     | 204 | LEU  |
| 14  | 7     | 231 | PHE  |
| 14  | 7     | 241 | VAL  |
| 14  | 7     | 243 | ILE  |
| 14  | 7     | 250 | GLN  |
| 15  | W     | 34  | ASN  |
| 15  | W     | 62  | THR  |
| 15  | W     | 68  | THR  |
| 15  | W     | 71  | ILE  |
| 15  | W     | 72  | LEU  |
| 15  | W     | 84  | ILE  |
| 15  | W     | 85  | THR  |
| 15  | W     | 107 | MET  |
| 15  | W     | 131 | LEU  |
| 15  | W     | 153 | LEU  |
| 15  | W     | 168 | SER  |
| 15  | W     | 183 | LEU  |
| 16  | V     | 46  | ARG  |
| 16  | V     | 90  | VAL  |
| 16  | V     | 125 | VAL  |
| 16  | V     | 152 | LYS  |
| 16  | V     | 178 | THR  |
| 16  | V     | 181 | LEU  |
| 16  | V     | 189 | ILE  |
| 16  | V     | 190 | GLN  |
| 16  | V     | 193 | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 16  | V     | 264 | LYS  |
| 16  | V     | 284 | LEU  |
| 16  | V     | 291 | LEU  |
| 17  | T     | 119 | LEU  |
| 17  | T     | 132 | LEU  |
| 17  | T     | 133 | PRO  |
| 17  | T     | 164 | ILE  |
| 17  | T     | 191 | MET  |
| 17  | T     | 195 | LEU  |
| 17  | T     | 208 | VAL  |
| 17  | T     | 215 | LEU  |
| 17  | T     | 219 | PRO  |
| 17  | T     | 266 | LEU  |
| 17  | T     | 282 | TYR  |
| 17  | T     | 286 | LEU  |
| 17  | T     | 333 | ILE  |
| 19  | Z     | 11  | VAL  |
| 19  | Z     | 27  | LYS  |
| 19  | Z     | 66  | LYS  |
| 19  | Z     | 91  | SER  |
| 19  | Z     | 181 | ARG  |
| 19  | Z     | 191 | ILE  |
| 19  | Z     | 199 | ASN  |
| 19  | Z     | 224 | ASN  |
| 19  | Z     | 240 | VAL  |
| 19  | Z     | 277 | LEU  |
| 19  | Z     | 281 | ILE  |
| 19  | Z     | 286 | LYS  |
| 19  | Z     | 293 | GLN  |
| 19  | Z     | 298 | LEU  |
| 19  | Z     | 307 | LEU  |
| 19  | Z     | 311 | VAL  |
| 19  | Z     | 335 | ARG  |
| 19  | Z     | 344 | VAL  |
| 19  | Z     | 352 | HIS  |
| 19  | Z     | 378 | ASN  |
| 19  | Z     | 399 | LEU  |
| 19  | Z     | 420 | TRP  |
| 19  | Z     | 426 | LEU  |
| 19  | Z     | 428 | GLN  |
| 19  | Z     | 460 | ASP  |
| 19  | Z     | 465 | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 19  | Z     | 466 | LEU  |
| 19  | Z     | 487 | LEU  |
| 19  | Z     | 525 | ILE  |
| 19  | Z     | 562 | LEU  |
| 19  | Z     | 597 | VAL  |
| 19  | Z     | 608 | LYS  |
| 19  | Z     | 619 | HIS  |
| 19  | Z     | 628 | ASP  |
| 19  | Z     | 631 | LYS  |
| 19  | Z     | 660 | ILE  |
| 19  | Z     | 678 | LEU  |
| 19  | Z     | 704 | LEU  |
| 19  | Z     | 777 | THR  |
| 19  | Z     | 799 | VAL  |
| 19  | Z     | 800 | LEU  |
| 19  | Z     | 810 | ILE  |
| 19  | Z     | 822 | VAL  |
| 19  | Z     | 868 | HIS  |
| 20  | N     | 15  | GLU  |
| 20  | N     | 41  | SER  |
| 20  | N     | 82  | LEU  |
| 20  | N     | 87  | LEU  |
| 20  | N     | 93  | ASN  |
| 20  | N     | 100 | ILE  |
| 20  | N     | 124 | LYS  |
| 20  | N     | 128 | GLN  |
| 20  | N     | 141 | CYS  |
| 20  | N     | 146 | LYS  |
| 20  | N     | 166 | THR  |
| 20  | N     | 167 | ILE  |
| 20  | N     | 173 | VAL  |
| 20  | N     | 183 | LEU  |
| 20  | N     | 196 | LYS  |
| 20  | N     | 220 | LEU  |
| 20  | N     | 236 | LEU  |
| 20  | N     | 248 | ILE  |
| 20  | N     | 252 | LEU  |
| 20  | N     | 258 | GLN  |
| 20  | N     | 332 | GLU  |
| 20  | N     | 333 | MET  |
| 20  | N     | 352 | ILE  |
| 20  | N     | 427 | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 20  | N     | 446 | LEU  |
| 20  | N     | 479 | LEU  |
| 20  | N     | 481 | LEU  |
| 20  | N     | 496 | LEU  |
| 20  | N     | 508 | THR  |
| 20  | N     | 527 | GLN  |
| 20  | N     | 543 | LYS  |
| 20  | N     | 548 | LEU  |
| 20  | N     | 574 | LYS  |
| 20  | N     | 609 | ASP  |
| 20  | N     | 614 | VAL  |
| 20  | N     | 625 | ILE  |
| 20  | N     | 695 | MET  |
| 20  | N     | 751 | ARG  |
| 20  | N     | 767 | THR  |
| 20  | N     | 769 | PHE  |
| 20  | N     | 779 | LEU  |
| 20  | N     | 786 | THR  |
| 20  | N     | 797 | MET  |
| 20  | N     | 838 | LYS  |
| 20  | N     | 844 | LYS  |
| 20  | N     | 861 | LYS  |
| 20  | N     | 863 | GLU  |
| 20  | N     | 865 | LYS  |
| 20  | N     | 869 | LYS  |
| 20  | N     | 905 | PRO  |
| 20  | N     | 911 | ILE  |
| 20  | N     | 924 | LEU  |
| 21  | S     | 163 | LEU  |
| 21  | S     | 167 | MET  |
| 21  | S     | 169 | ILE  |
| 21  | S     | 199 | LEU  |
| 21  | S     | 210 | HIS  |
| 21  | S     | 226 | PHE  |
| 21  | S     | 233 | THR  |
| 21  | S     | 249 | LEU  |
| 21  | S     | 267 | VAL  |
| 21  | S     | 285 | LEU  |
| 21  | S     | 302 | ARG  |
| 21  | S     | 327 | LEU  |
| 21  | S     | 329 | ILE  |
| 21  | S     | 338 | ILE  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 21  | S     | 390 | LEU  |
| 21  | S     | 393 | ARG  |
| 21  | S     | 413 | ILE  |
| 21  | S     | 431 | GLU  |
| 21  | S     | 447 | ILE  |
| 21  | S     | 480 | LEU  |
| 22  | P     | 7   | GLU  |
| 22  | P     | 33  | LYS  |
| 22  | P     | 34  | LEU  |
| 22  | P     | 42  | GLU  |
| 22  | P     | 48  | LEU  |
| 22  | P     | 90  | LEU  |
| 22  | P     | 120 | VAL  |
| 22  | P     | 131 | VAL  |
| 22  | P     | 169 | LEU  |
| 22  | P     | 243 | ILE  |
| 22  | P     | 247 | TYR  |
| 22  | P     | 253 | THR  |
| 22  | P     | 269 | SER  |
| 22  | P     | 276 | LEU  |
| 22  | P     | 305 | LEU  |
| 22  | P     | 308 | LEU  |
| 22  | P     | 329 | ARG  |
| 22  | P     | 344 | THR  |
| 22  | P     | 373 | ILE  |
| 22  | P     | 384 | LEU  |
| 22  | P     | 402 | ILE  |
| 22  | P     | 432 | LEU  |
| 22  | P     | 440 | ASN  |
| 22  | P     | 456 | GLN  |
| 23  | Q     | 13  | GLN  |
| 23  | Q     | 45  | VAL  |
| 23  | Q     | 51  | LEU  |
| 23  | Q     | 59  | LYS  |
| 23  | Q     | 66  | LEU  |
| 23  | Q     | 90  | ARG  |
| 23  | Q     | 93  | LEU  |
| 23  | Q     | 132 | ARG  |
| 23  | Q     | 133 | LEU  |
| 23  | Q     | 137 | TYR  |
| 23  | Q     | 169 | VAL  |
| 23  | Q     | 180 | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 23  | Q     | 181 | SER  |
| 23  | Q     | 200 | ILE  |
| 23  | Q     | 206 | LEU  |
| 23  | Q     | 213 | GLN  |
| 23  | Q     | 217 | ILE  |
| 23  | Q     | 248 | ILE  |
| 23  | Q     | 304 | LYS  |
| 23  | Q     | 306 | LEU  |
| 23  | Q     | 310 | ARG  |
| 23  | Q     | 325 | LYS  |
| 23  | Q     | 340 | GLU  |
| 23  | Q     | 348 | GLU  |
| 23  | Q     | 353 | LEU  |
| 23  | Q     | 377 | ILE  |
| 23  | Q     | 386 | ILE  |
| 23  | Q     | 387 | ILE  |
| 23  | Q     | 390 | GLU  |
| 24  | R     | 7   | GLU  |
| 24  | R     | 23  | ARG  |
| 24  | R     | 25  | LEU  |
| 24  | R     | 37  | VAL  |
| 24  | R     | 40  | GLU  |
| 24  | R     | 46  | ARG  |
| 24  | R     | 69  | LEU  |
| 24  | R     | 78  | GLU  |
| 24  | R     | 100 | ILE  |
| 24  | R     | 121 | LEU  |
| 24  | R     | 145 | LEU  |
| 24  | R     | 169 | GLU  |
| 24  | R     | 175 | ASP  |
| 24  | R     | 204 | THR  |
| 24  | R     | 209 | THR  |
| 24  | R     | 225 | TYR  |
| 24  | R     | 228 | MET  |
| 24  | R     | 233 | ARG  |
| 24  | R     | 246 | ILE  |
| 24  | R     | 247 | LEU  |
| 24  | R     | 254 | PRO  |
| 24  | R     | 260 | LEU  |
| 24  | R     | 287 | LEU  |
| 24  | R     | 293 | ARG  |
| 24  | R     | 350 | VAL  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 24  | R     | 353 | ILE  |
| 24  | R     | 354 | VAL  |
| 24  | R     | 375 | LEU  |
| 25  | U     | 1   | MET  |
| 25  | U     | 8   | LYS  |
| 25  | U     | 16  | LEU  |
| 25  | U     | 79  | TYR  |
| 25  | U     | 118 | ASN  |
| 25  | U     | 127 | LYS  |
| 25  | U     | 131 | LEU  |
| 25  | U     | 196 | HIS  |
| 25  | U     | 198 | LEU  |
| 25  | U     | 210 | THR  |
| 25  | U     | 230 | LEU  |
| 25  | U     | 244 | GLU  |
| 25  | U     | 253 | THR  |
| 26  | O     | 22  | TRP  |
| 26  | O     | 28  | LEU  |
| 26  | O     | 47  | ASP  |
| 26  | O     | 56  | LEU  |
| 26  | O     | 58  | LYS  |
| 26  | O     | 84  | VAL  |
| 26  | O     | 125 | ILE  |
| 26  | O     | 135 | ILE  |
| 26  | O     | 145 | LEU  |
| 26  | O     | 155 | PHE  |
| 26  | O     | 156 | TYR  |
| 26  | O     | 158 | LEU  |
| 26  | O     | 159 | SER  |
| 26  | O     | 233 | LEU  |
| 26  | O     | 234 | ILE  |
| 26  | O     | 236 | THR  |
| 26  | O     | 241 | ASN  |
| 26  | O     | 261 | LEU  |
| 26  | O     | 268 | LEU  |
| 26  | O     | 320 | VAL  |
| 26  | O     | 331 | VAL  |
| 26  | O     | 341 | LEU  |
| 26  | O     | 347 | LYS  |
| 27  | H     | 50  | ASP  |
| 27  | H     | 56  | LEU  |
| 27  | H     | 60  | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 27  | H     | 97  | ARG  |
| 27  | H     | 102 | ILE  |
| 27  | H     | 138 | MET  |
| 27  | H     | 187 | LEU  |
| 27  | H     | 268 | LYS  |
| 27  | H     | 345 | LEU  |
| 27  | H     | 364 | VAL  |
| 27  | H     | 376 | LEU  |
| 27  | H     | 405 | THR  |
| 28  | I     | 79  | ILE  |
| 28  | I     | 107 | MET  |
| 28  | I     | 112 | LEU  |
| 28  | I     | 115 | ILE  |
| 28  | I     | 117 | ASP  |
| 28  | I     | 135 | ILE  |
| 28  | I     | 178 | LYS  |
| 28  | I     | 222 | VAL  |
| 28  | I     | 250 | VAL  |
| 28  | I     | 256 | ILE  |
| 28  | I     | 287 | ILE  |
| 28  | I     | 329 | MET  |
| 28  | I     | 332 | ASN  |
| 28  | I     | 334 | ILE  |
| 28  | I     | 376 | ASP  |
| 28  | I     | 387 | LYS  |
| 28  | I     | 398 | ILE  |
| 28  | I     | 404 | LEU  |
| 28  | I     | 414 | VAL  |
| 28  | I     | 427 | LEU  |
| 29  | K     | 37  | LEU  |
| 29  | K     | 41  | TYR  |
| 29  | K     | 56  | VAL  |
| 29  | K     | 61  | ILE  |
| 29  | K     | 79  | VAL  |
| 29  | K     | 93  | LEU  |
| 29  | K     | 98  | GLN  |
| 29  | K     | 116 | LEU  |
| 29  | K     | 153 | MET  |
| 29  | K     | 154 | LEU  |
| 29  | K     | 155 | THR  |
| 29  | K     | 172 | ILE  |
| 29  | K     | 185 | LEU  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 29  | K     | 190 | LEU  |
| 29  | K     | 196 | ILE  |
| 29  | K     | 214 | MET  |
| 29  | K     | 231 | VAL  |
| 29  | K     | 250 | VAL  |
| 29  | K     | 264 | ILE  |
| 29  | K     | 290 | LEU  |
| 29  | K     | 292 | LEU  |
| 29  | K     | 322 | LEU  |
| 29  | K     | 356 | GLU  |
| 29  | K     | 360 | LEU  |
| 29  | K     | 391 | ARG  |
| 29  | K     | 394 | VAL  |
| 29  | K     | 397 | LYS  |
| 30  | L     | 34  | LYS  |
| 30  | L     | 103 | LYS  |
| 30  | L     | 110 | THR  |
| 30  | L     | 229 | ILE  |
| 30  | L     | 256 | ARG  |
| 30  | L     | 266 | GLU  |
| 30  | L     | 271 | LEU  |
| 30  | L     | 303 | LEU  |
| 30  | L     | 308 | ARG  |
| 30  | L     | 350 | ASP  |
| 30  | L     | 360 | VAL  |
| 31  | M     | 44  | ILE  |
| 31  | M     | 50  | LEU  |
| 31  | M     | 118 | SER  |
| 31  | M     | 127 | ILE  |
| 31  | M     | 137 | LEU  |
| 31  | M     | 164 | LEU  |
| 31  | M     | 175 | VAL  |
| 31  | M     | 191 | ILE  |
| 31  | M     | 207 | LEU  |
| 31  | M     | 218 | LEU  |
| 31  | M     | 223 | PRO  |
| 31  | M     | 236 | LYS  |
| 31  | M     | 238 | LEU  |
| 31  | M     | 250 | THR  |
| 31  | M     | 262 | MET  |
| 31  | M     | 285 | ILE  |
| 31  | M     | 298 | ARG  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 31  | M     | 314 | LEU  |
| 31  | M     | 316 | LEU  |
| 31  | M     | 325 | PRO  |
| 31  | M     | 329 | VAL  |
| 31  | M     | 330 | LYS  |
| 31  | M     | 332 | ILE  |
| 31  | M     | 346 | LEU  |
| 31  | M     | 360 | PRO  |
| 31  | M     | 373 | SER  |
| 31  | M     | 375 | LYS  |
| 31  | M     | 378 | VAL  |
| 31  | M     | 422 | ASP  |
| 31  | M     | 441 | TYR  |
| 32  | J     | 3   | LEU  |
| 32  | J     | 28  | ILE  |
| 32  | J     | 31  | LEU  |
| 32  | J     | 71  | SER  |
| 32  | J     | 85  | VAL  |
| 32  | J     | 143 | VAL  |
| 32  | J     | 147 | THR  |
| 32  | J     | 164 | VAL  |
| 32  | J     | 187 | LEU  |
| 32  | J     | 194 | THR  |
| 32  | J     | 280 | LEU  |
| 32  | J     | 286 | THR  |
| 32  | J     | 291 | VAL  |
| 32  | J     | 314 | LYS  |
| 32  | J     | 326 | LEU  |
| 32  | J     | 343 | ASN  |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

## 5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

There are no non-standard protein/DNA/RNA residues in this entry.

## 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

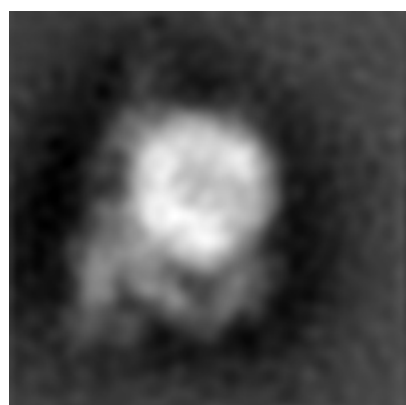
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-3914. These allow visual inspection of the internal detail of the map and identification of artifacts.

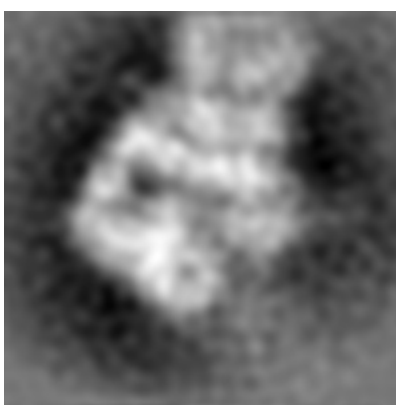
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

### 6.1 Orthogonal projections [i](#)

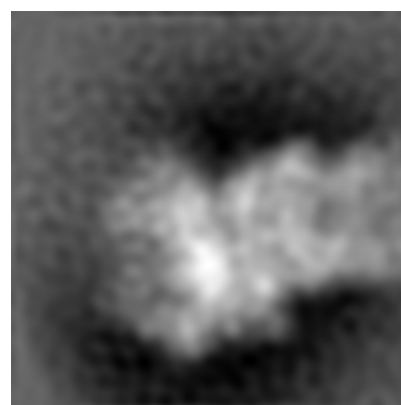
#### 6.1.1 Primary map



X



Y



Z

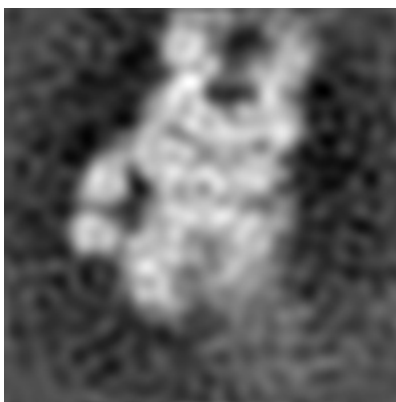
The images above show the map projected in three orthogonal directions.

### 6.2 Central slices [i](#)

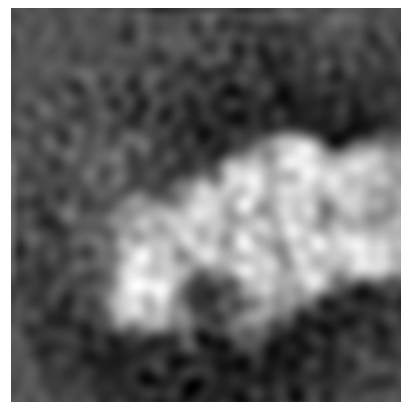
#### 6.2.1 Primary map



X Index: 45



Y Index: 45

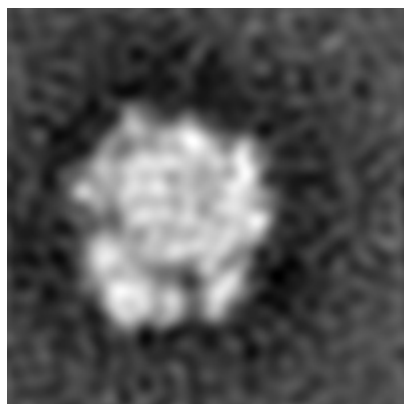


Z Index: 45

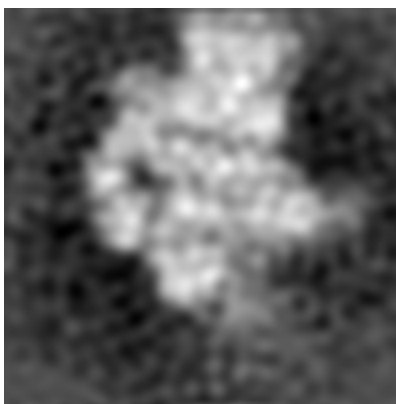
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

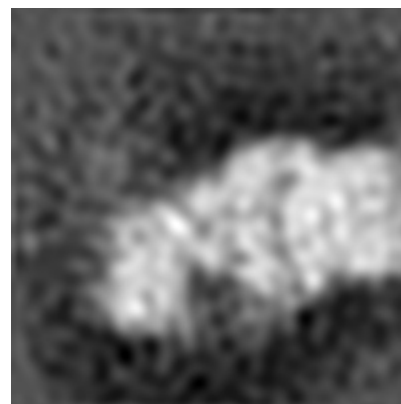
### 6.3.1 Primary map



X Index: 55



Y Index: 34

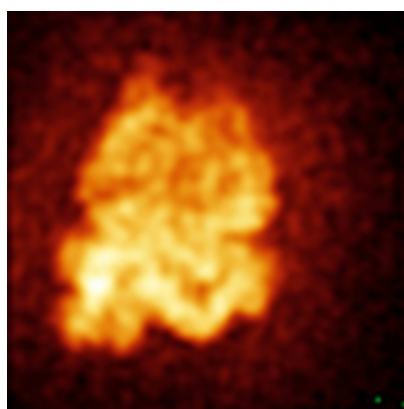


Z Index: 43

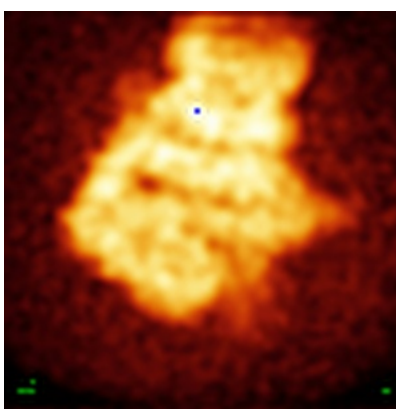
The images above show the largest variance slices of the map in three orthogonal directions.

## 6.4 Orthogonal standard-deviation projections (False-color) [i](#)

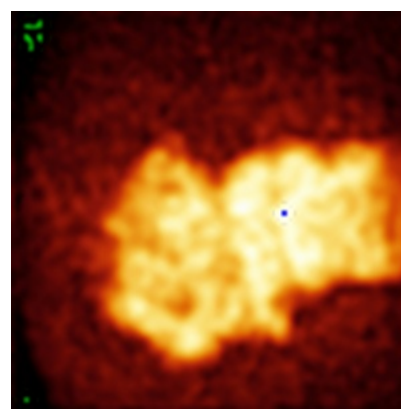
### 6.4.1 Primary map



X



Y



Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

## 6.5 Orthogonal surface views

This section was not generated.

## 6.6 Mask visualisation

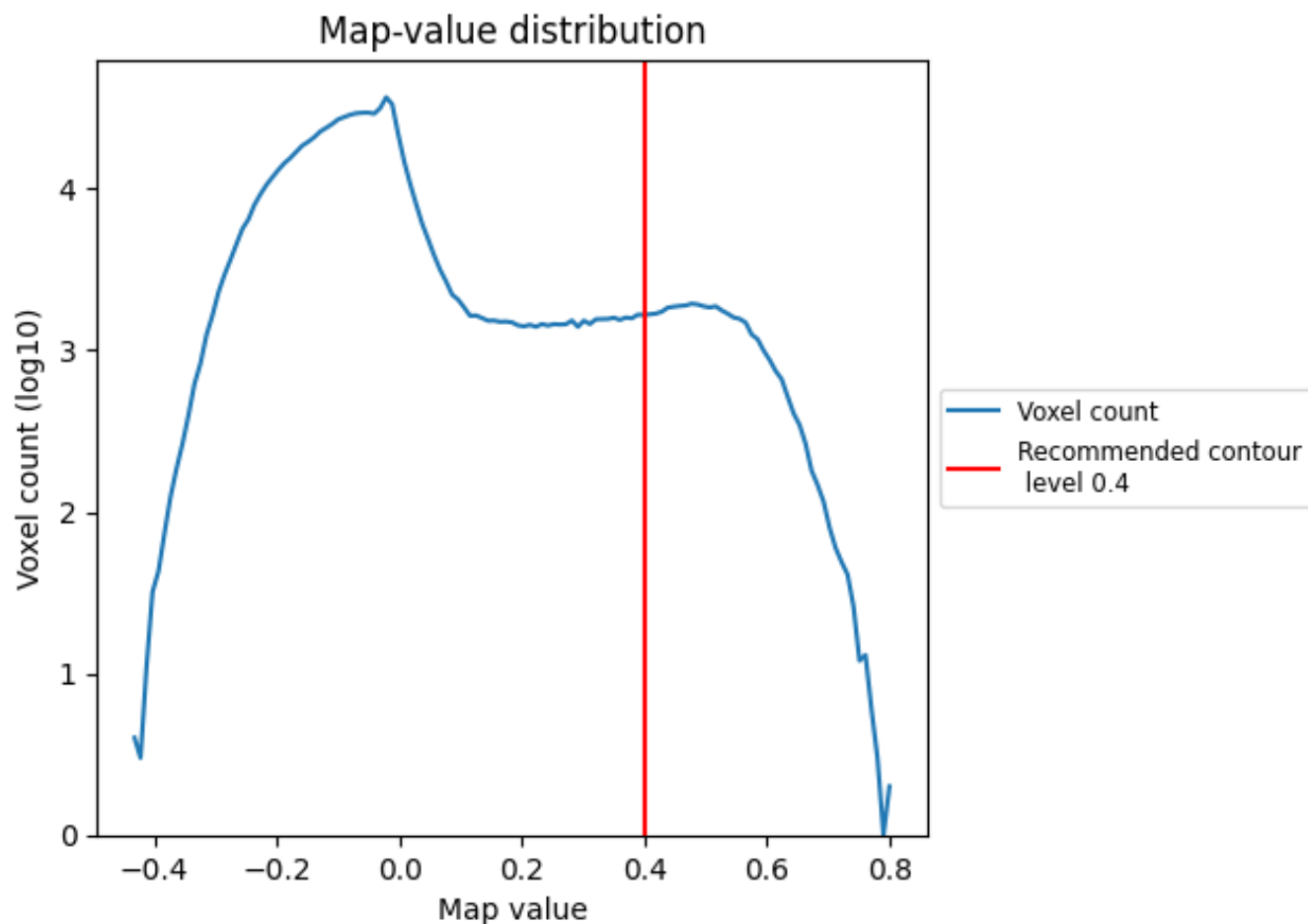
This section was not generated. No masks/segmentation were deposited.



## 7 Map analysis [i](#)

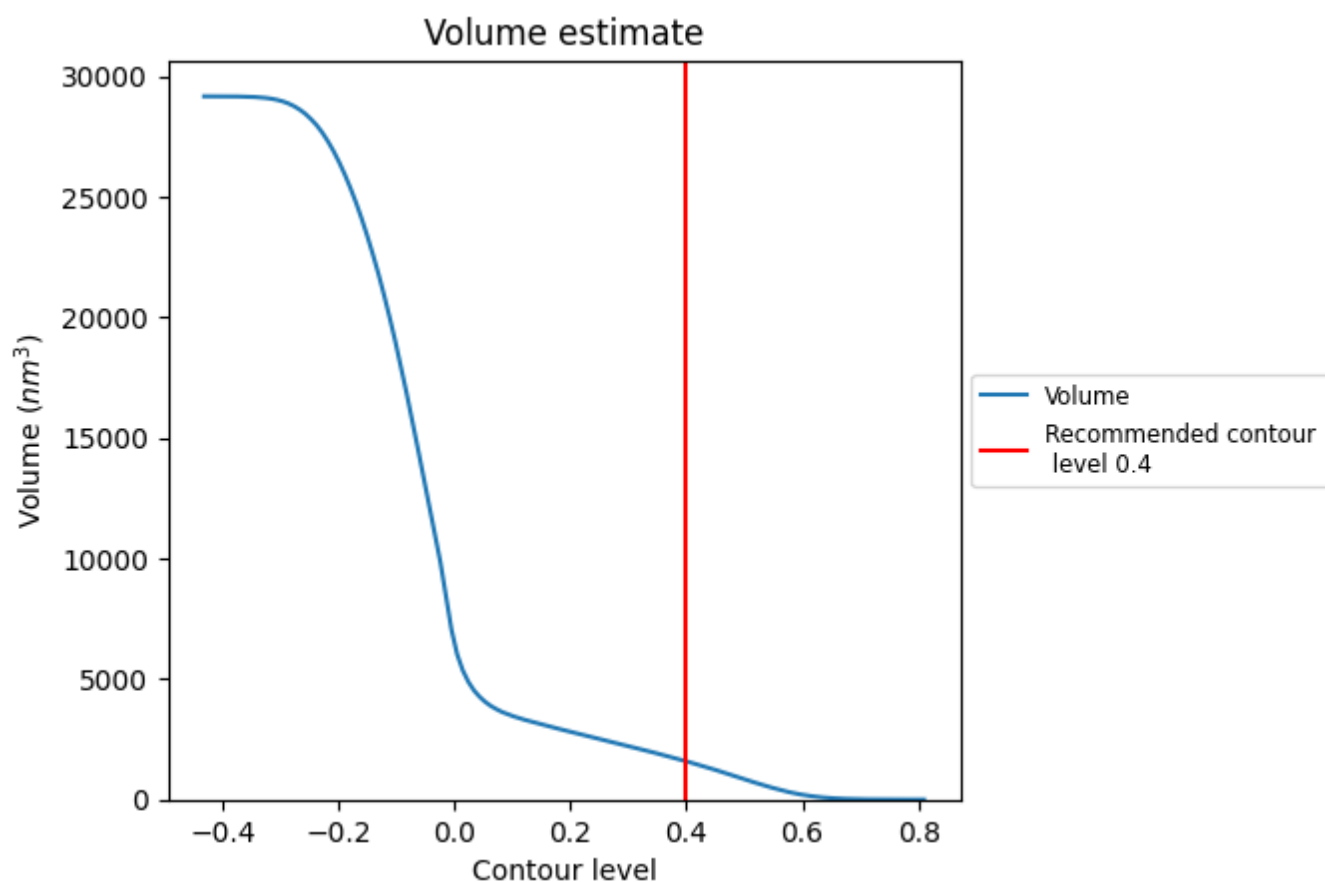
This section contains the results of statistical analysis of the map.

### 7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

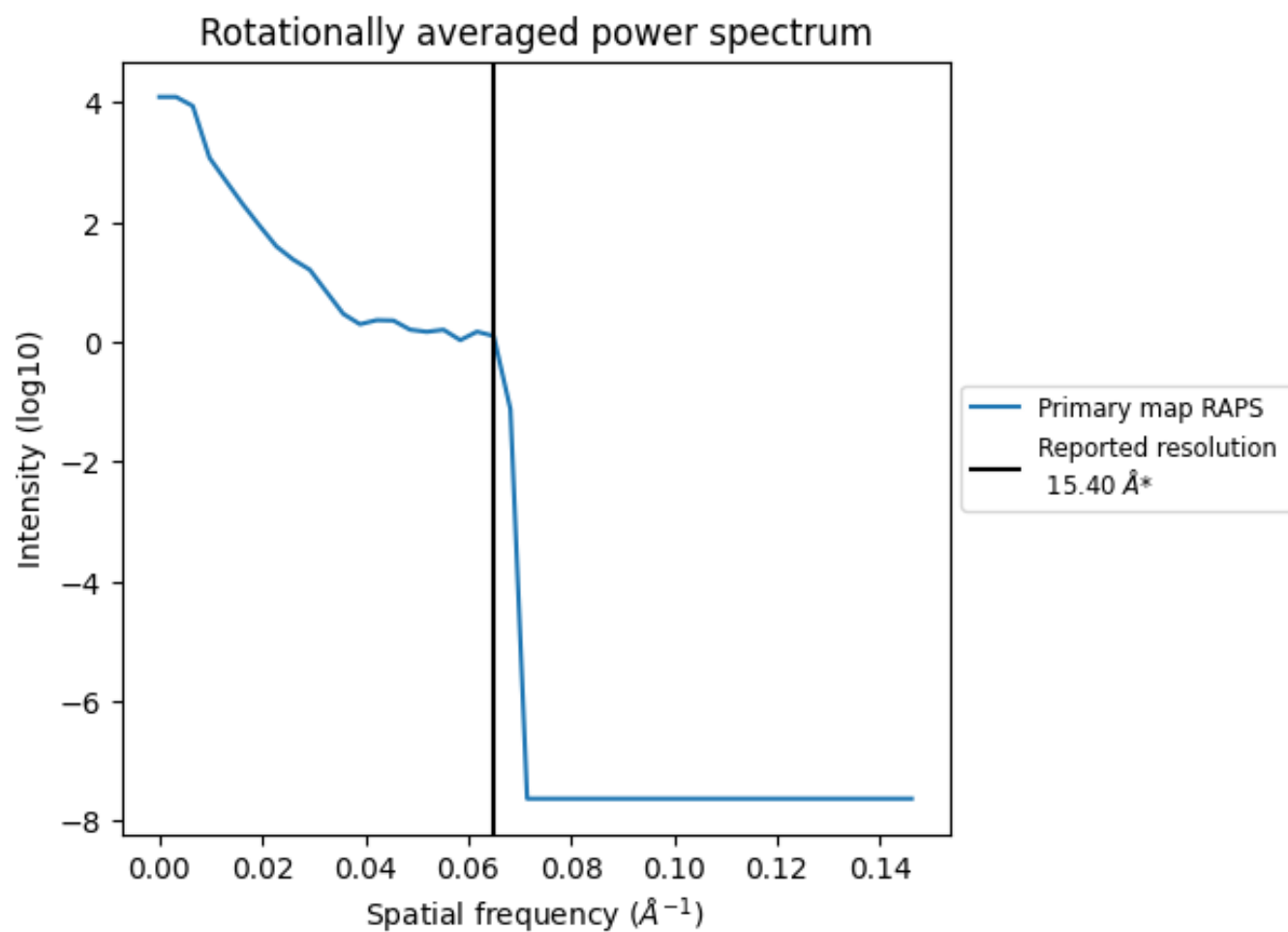
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1585 nm<sup>3</sup>; this corresponds to an approximate mass of 1431 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

### 7.3 Rotationally averaged power spectrum ⓘ



\*Reported resolution corresponds to spatial frequency of 0.065 Å<sup>-1</sup>

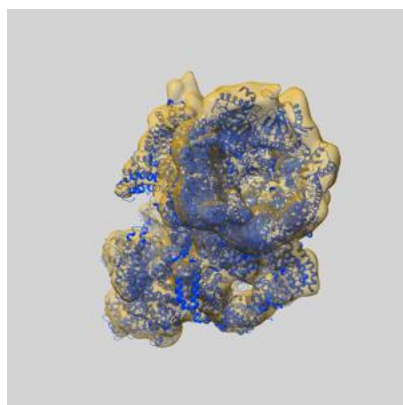
## 8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

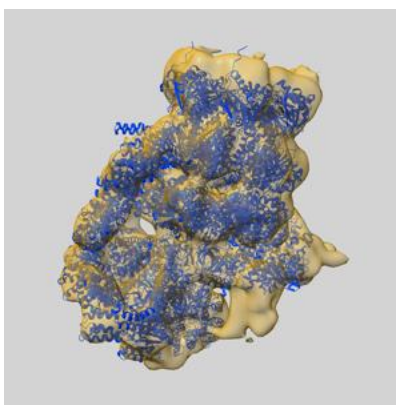
## 9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-3914 and PDB model 6EPD. Per-residue inclusion information can be found in section 3 on page 10.

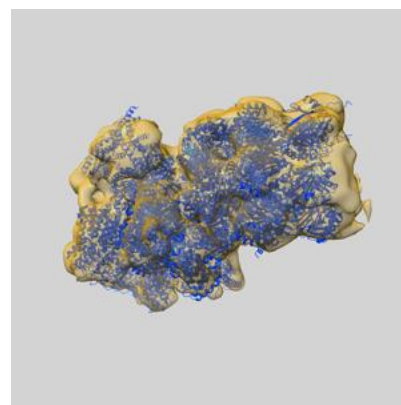
### 9.1 Map-model overlay [i](#)



X



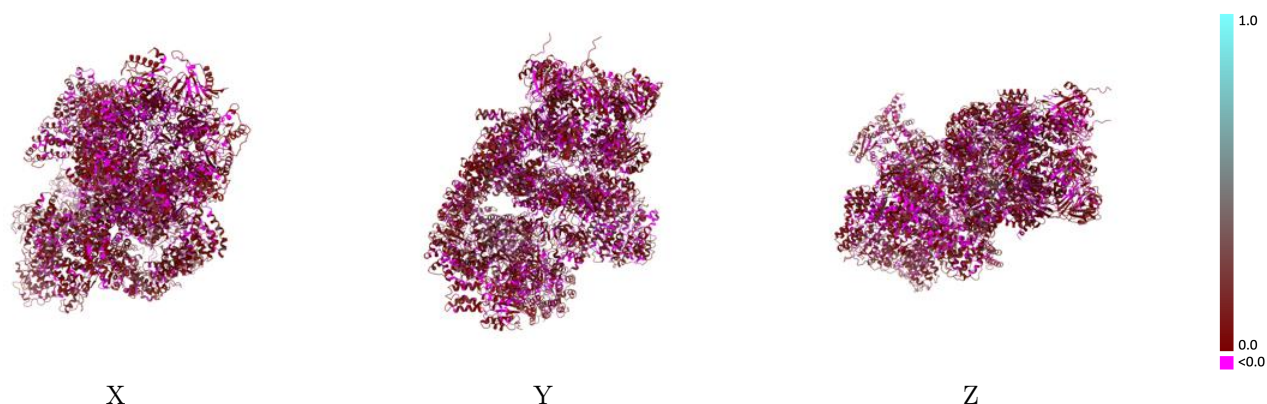
Y



Z

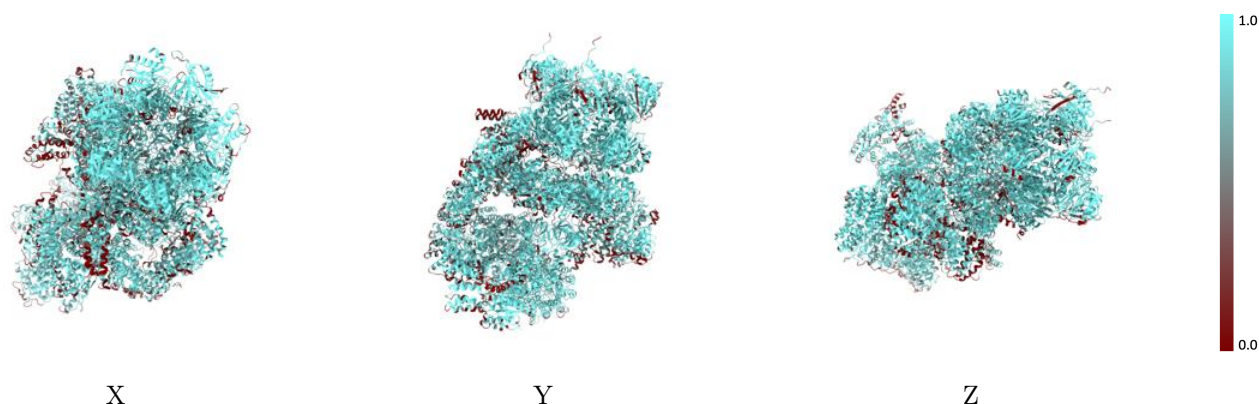
The images above show the 3D surface view of the map at the recommended contour level 0.4 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

## 9.2 Q-score mapped to coordinate model [i](#)



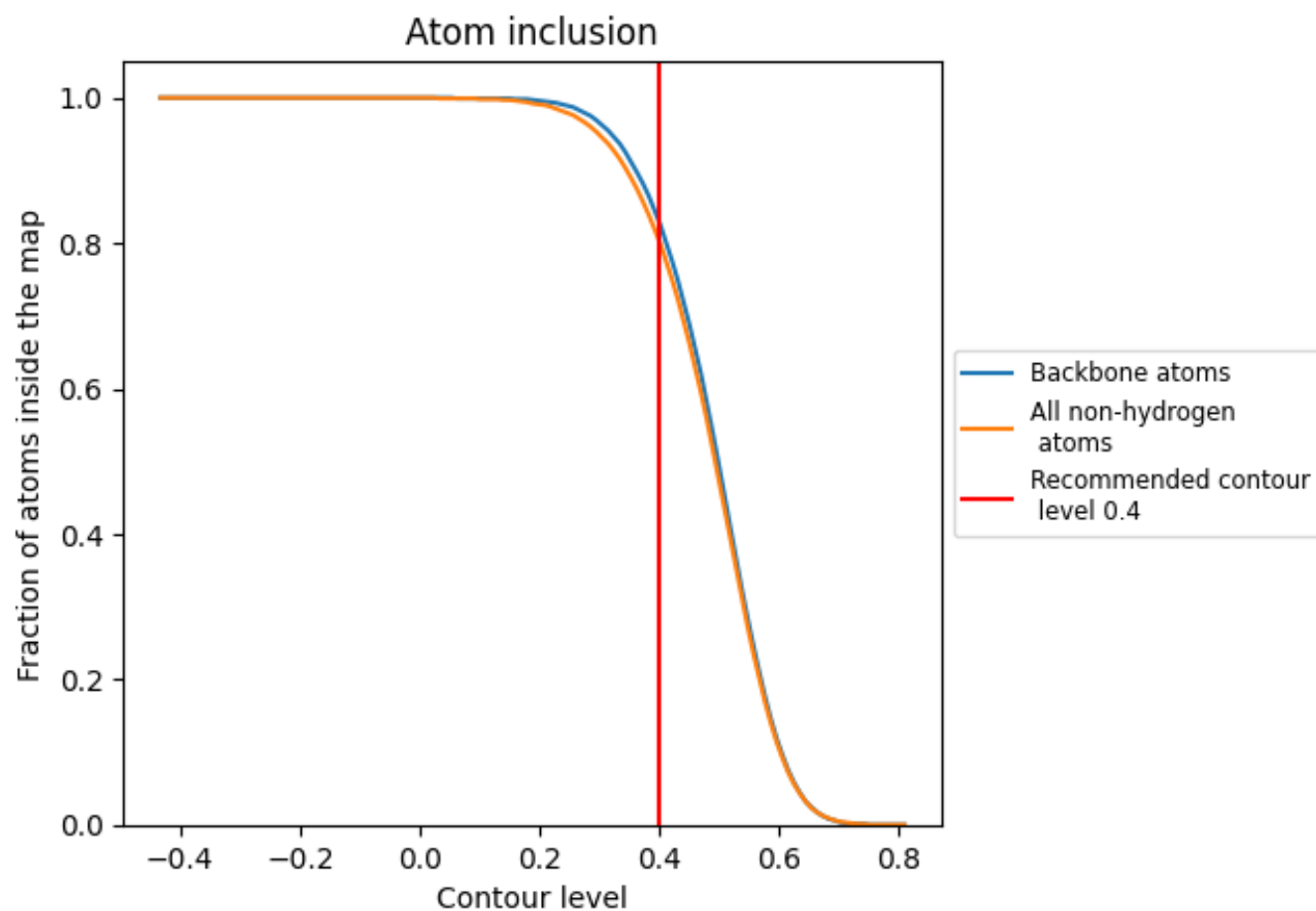
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

## 9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.4).



































































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 83% of all backbone atoms, 80% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.4) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion   | Q-score  |
|-------|--|--|
| All   |  0.8040   |  0.0500   |
| 1     |  0.8450   |  0.0460   |
| 2     |  0.7610   |  0.0440   |
| 3     |  0.8230   |  0.0390   |
| 4     |  0.8300   |  0.0470   |
| 5     |  0.8830   |  0.0610   |
| 6     |  0.7810   |  0.0290   |
| 7     |  0.8350   |  0.0480   |
| A     |  0.8290   |  0.0490   |
| B     |  0.8810   |  0.0310   |
| C     |  0.8630   |  0.0550   |
| D     |  0.8590   |  0.0430   |
| E     |  0.9040   |  0.0310   |
| F     |  0.9600   |  0.0560   |
| G     |  0.8710  |  0.0350  |
| H     |  0.8540 |  0.0400 |
| I     |  0.8310 |  0.0470 |
| J     |  0.8030 |  0.0500 |
| K     |  0.7940 |  0.0470 |
| L     |  0.8070 |  0.0540 |
| M     |  0.8710 |  0.0350 |
| N     |  0.8240 |  0.0520 |
| O     |  0.7040 |  0.0780 |
| P     |  0.7250 |  0.0700 |
| Q     |  0.6990 |  0.0530 |
| R     |  0.7560 |  0.0570 |
| S     |  0.8170 |  0.0610 |
| T     |  0.7350 |  0.0770 |
| U     |  0.8170 |  0.0470 |
| V     |  0.9160 |  0.0480 |
| W     |  0.7940 |  0.0580 |
| Y     |  0.5870 |  0.0630 |
| Z     |  0.6880 |  0.0370 |

