



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2018 – 03:59 pm GMT

PDB ID : 2DY4
Title : Crystal structure of RB69 GP43 in complex with DNA containing Thymine Glycol
Authors : Aller, P.; Rould, M.A.; Hogg, M.; Wallace, S.S.; Doublie, S.
Deposited on : 2006-09-06
Resolution : 2.65 Å (reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467
Mogul : 1.7.3 (157068), CSD as539be (2018)
Xtriage (Phenix) : 1.13
EDS : trunk30967
Percentile statistics : 20171227.v01 (using entries in the PDB archive December 27th 2017)
Refmac : 5.8.0158
CCP4 : 7.0 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : trunk30967

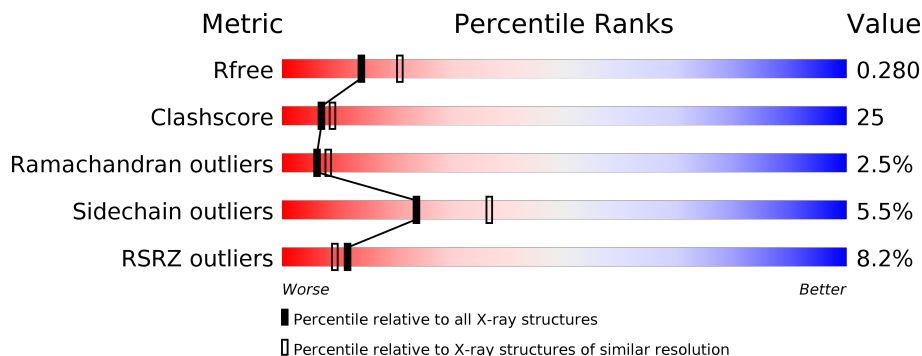
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.65 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.



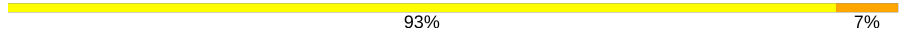
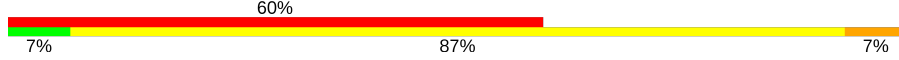




| Metric | Whole archive (#Entries) | Similar resolution (#Entries, resolution range(Å)) |
|-----------------------|-----------------------------|---|
| R_{free} | 111664 | 1112 (2.68-2.64) |
| Clashscore | 122126 | 1151 (2.68-2.64) |
| Ramachandran outliers | 120053 | 1133 (2.68-2.64) |
| Sidechain outliers | 120020 | 1133 (2.68-2.64) |
| RSRZ outliers | 108989 | 1098 (2.68-2.64) |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. 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 electron density. The numeric value is given above the bar.

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1 | E | 18 | |
| 1 | G | 18 | |
| 1 | I | 18 | |
| 1 | K | 18 | |
| 2 | F | 15 | |
| 2 | H | 15 | |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|---|
| 2 | J | 15 |  93% 7% |
| 2 | L | 15 |  60% 7% 87% 7% |
| 3 | A | 903 |  6% 59% 37% • |
| 3 | B | 903 |  5% 63% 32% •• |
| 3 | C | 903 |  4% 64% 32% • |
| 3 | D | 903 |  16% 47% 45% 6% • |

2 Entry composition i

There are 4 unique types of molecules in this entry. The entry contains 31943 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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 DNA chain called 5'-D(*CP*GP*(CTG)P*GP*GP*AP*AP*TP*GP*A*CP*AP*GP*CP*CP*GP*CP*G)-3'.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|-----|----|---------|---------|-------|
| 1 | E | 17 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 348 | 165 | 69 | 99 | 15 | | | |
| 1 | G | 18 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 372 | 175 | 74 | 106 | 17 | | | |
| 1 | I | 18 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 372 | 175 | 74 | 106 | 17 | | | |
| 1 | K | 18 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 372 | 175 | 74 | 106 | 17 | | | |

- Molecule 2 is a DNA chain called 5'-D(*GP*CP*GP*GP*CP*TP*GP*T*CP*AP*TP*TP*CP*CP*A)-3'.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|----|---------|---------|-------|
| 2 | F | 14 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 276 | 133 | 51 | 80 | 12 | | | |
| 2 | H | 15 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 299 | 143 | 53 | 89 | 14 | | | |
| 2 | J | 15 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 299 | 143 | 53 | 89 | 14 | | | |
| 2 | L | 15 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 299 | 143 | 53 | 89 | 14 | | | |

- Molecule 3 is a protein called DNA polymerase.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace | |
|-----|-------|----------|-------|------|------|------|---|---------|---------|-------|---|
| 3 | A | 902 | Total | C | N | O | S | Se | 0 | 0 | 0 |
| | | | 7302 | 4689 | 1213 | 1367 | 8 | 25 | | | |
| 3 | B | 888 | Total | C | N | O | S | Se | 0 | 0 | 0 |
| | | | 7175 | 4608 | 1193 | 1341 | 8 | 25 | | | |
| 3 | C | 900 | Total | C | N | O | S | Se | 0 | 0 | 0 |
| | | | 7300 | 4683 | 1214 | 1370 | 8 | 25 | | | |

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| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace | |
|-----|-------|----------|-------|------|------|------|---|---------|---------|-------|----|
| | | | Total | C | N | O | S | | | | Se |
| 3 | D | 890 | 6923 | 4449 | 1130 | 1313 | 8 | 23 | 0 | 0 | 0 |

There are 8 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|------------|------------|
| A | 222 | ALA | ASP | ENGINEERED | UNP Q38087 |
| A | 327 | ALA | ASP | ENGINEERED | UNP Q38087 |
| B | 222 | ALA | ASP | ENGINEERED | UNP Q38087 |
| B | 327 | ALA | ASP | ENGINEERED | UNP Q38087 |
| C | 222 | ALA | ASP | ENGINEERED | UNP Q38087 |
| C | 327 | ALA | ASP | ENGINEERED | UNP Q38087 |
| D | 222 | ALA | ASP | ENGINEERED | UNP Q38087 |
| D | 327 | ALA | ASP | ENGINEERED | UNP Q38087 |

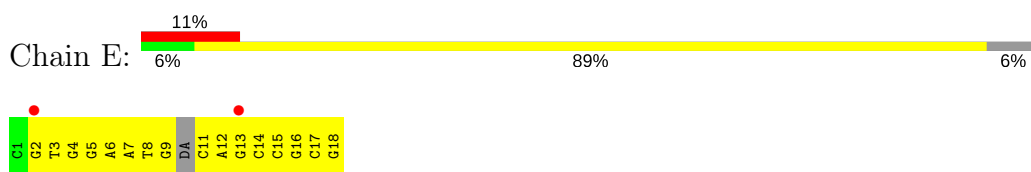
- Molecule 4 is water.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|--------------|----------|---------|---------|
| 4 | E | 9 | Total 9 | O 9 | 0 | 0 |
| 4 | F | 5 | Total 5 | O 5 | 0 | 0 |
| 4 | G | 18 | Total 18 | O 18 | 0 | 0 |
| 4 | H | 9 | Total 9 | O 9 | 0 | 0 |
| 4 | I | 17 | Total 17 | O 17 | 0 | 0 |
| 4 | J | 4 | Total 4 | O 4 | 0 | 0 |
| 4 | K | 5 | Total 5 | O 5 | 0 | 0 |
| 4 | L | 2 | Total 2 | O 2 | 0 | 0 |
| 4 | A | 117 | Total 117 | O 117 | 0 | 0 |
| 4 | B | 205 | Total 205 | O 205 | 0 | 0 |
| 4 | C | 160 | Total 160 | O 160 | 0 | 0 |
| 4 | D | 55 | Total 55 | O 55 | 0 | 0 |

3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA 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 electron 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 dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). 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.

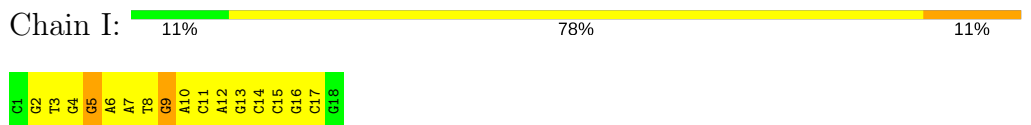
- Molecule 1: 5'-D(*CP*GP*(CTG)P*GP*GP*AP*AP*TP*GP*A*CP*AP*GP*CP*CP*GP*CP*G)-3'



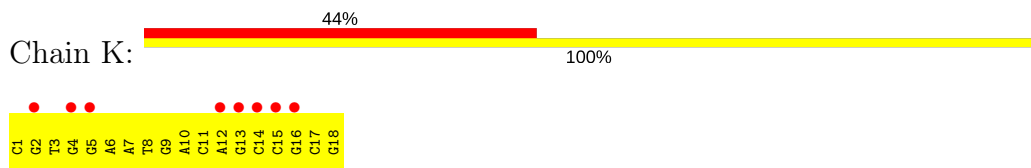
- Molecule 1: 5'-D(*CP*GP*(CTG)P*GP*GP*AP*AP*TP*GP*A*CP*AP*GP*CP*CP*GP*CP*G)-3'



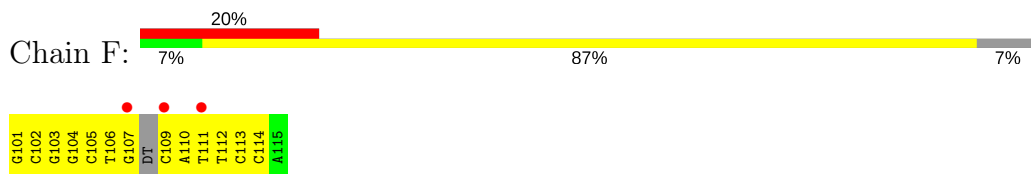
- Molecule 1: 5'-D(*CP*GP*(CTG)P*GP*GP*AP*AP*TP*GP*A*CP*AP*GP*CP*CP*GP*CP*G)-3'



- Molecule 1: 5'-D(*CP*GP*(CTG)P*GP*GP*AP*AP*TP*GP*A*CP*AP*GP*CP*CP*GP*CP*G)-3'



- Molecule 2: 5'-D(*GP*CP*GP*GP*CP*TP*GP*T*CP*AP*TP*TP*CP*CP*A)-3'



- Molecule 2: 5'-D(*GP*CP*GP*GP*CP*TP*GP*T*CP*AP*TP*TP*CP*CP*A)-3'

Chain H: 



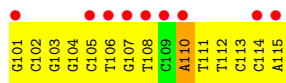
- Molecule 2: 5'-D(*GP*CP*GP*GP*CP*TP*GP*T*CP*AP*TP*TP*CP*CP*A)-3'

Chain J: 



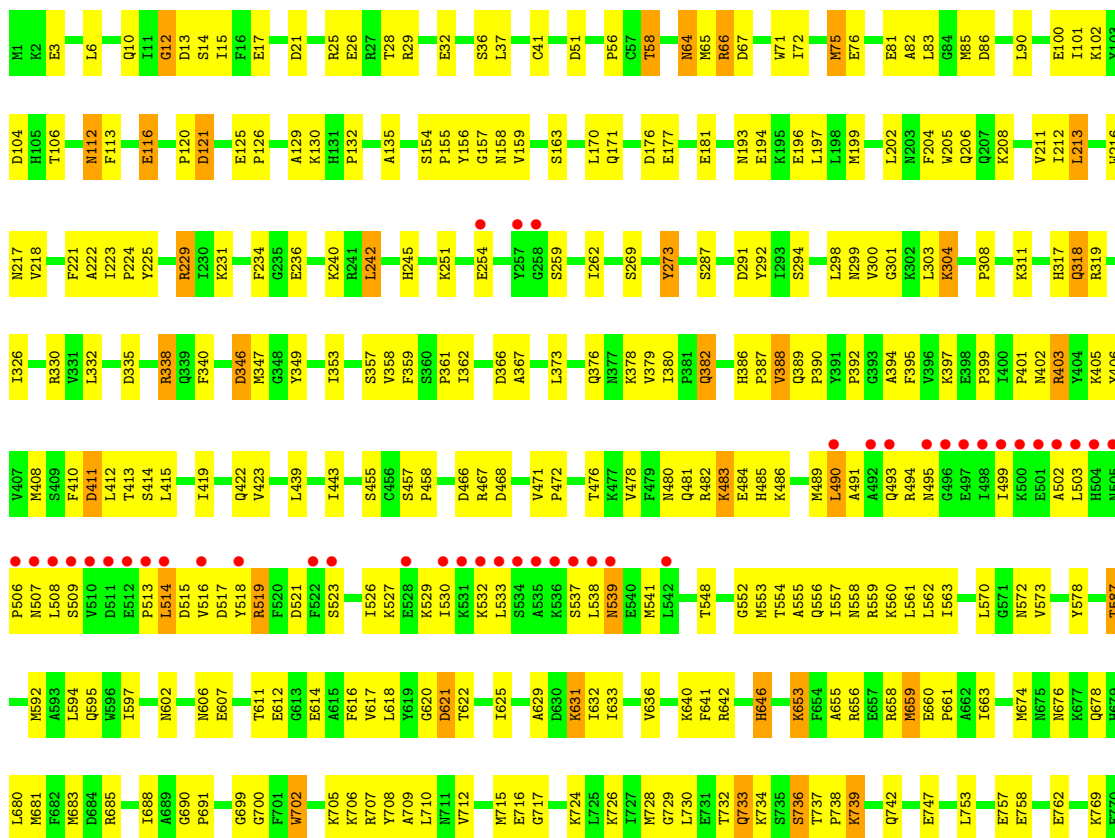
- Molecule 2: 5'-D(*GP*CP*GP*GP*CP*TP*GP*T*CP*AP*TP*TP*CP*CP*A)-3'

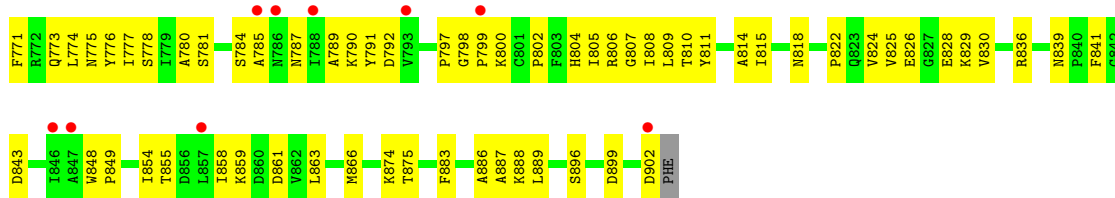
Chain L: 



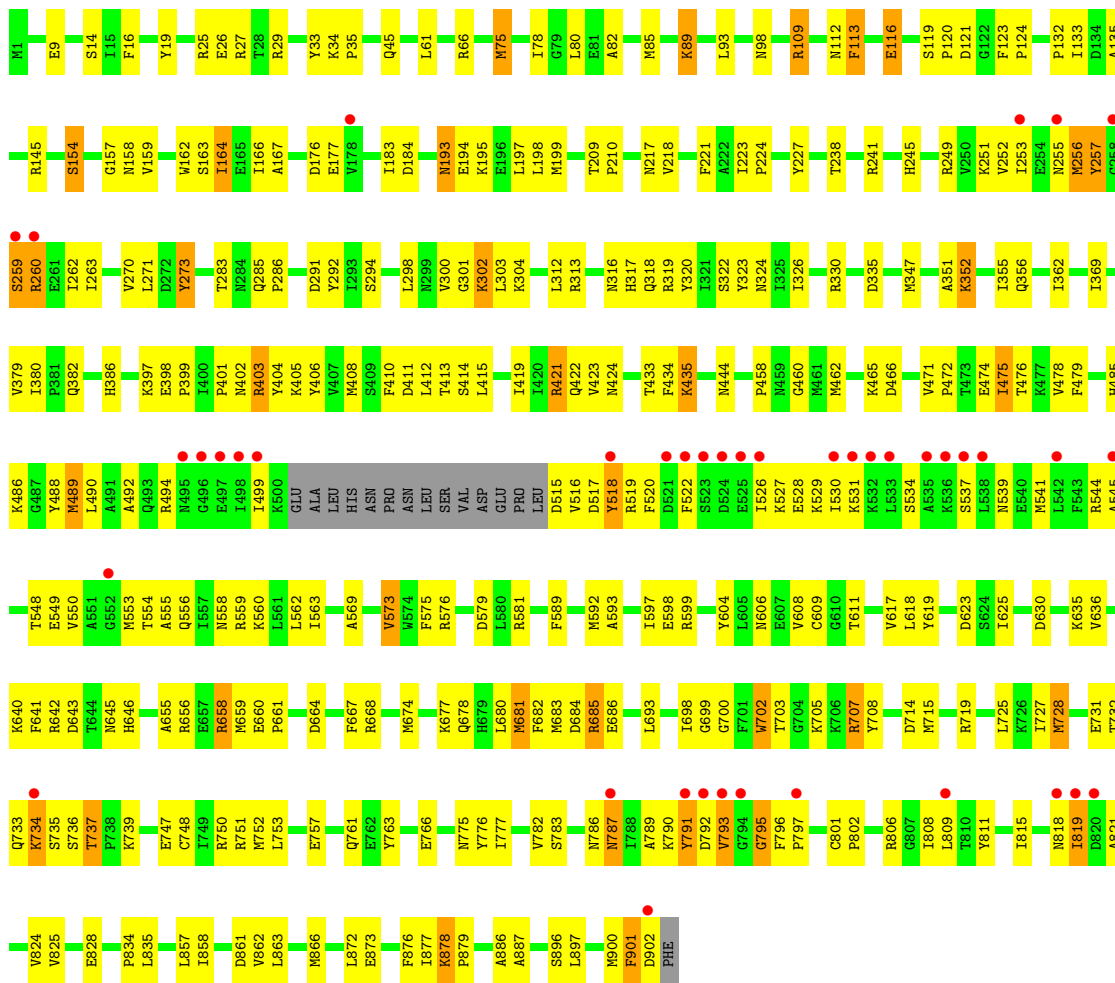
- Molecule 3: DNA polymerase

Chain A: 

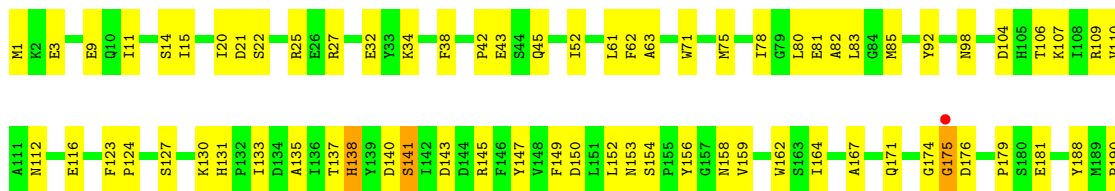


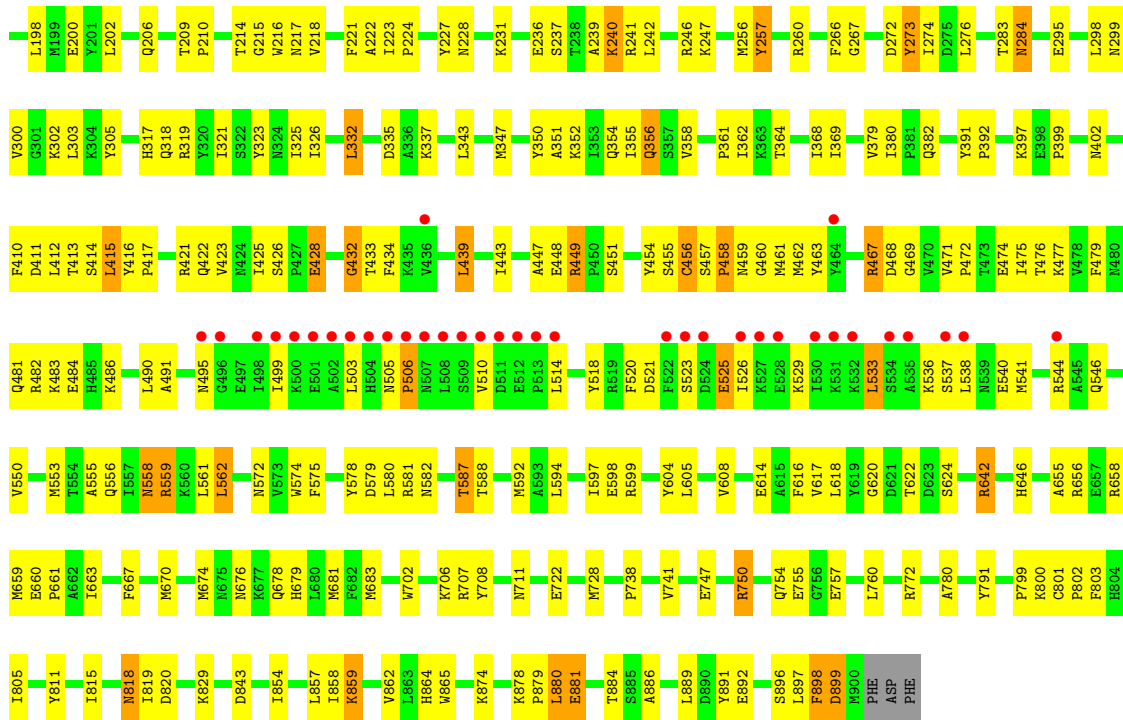


• Molecule 3: DNA polymerase

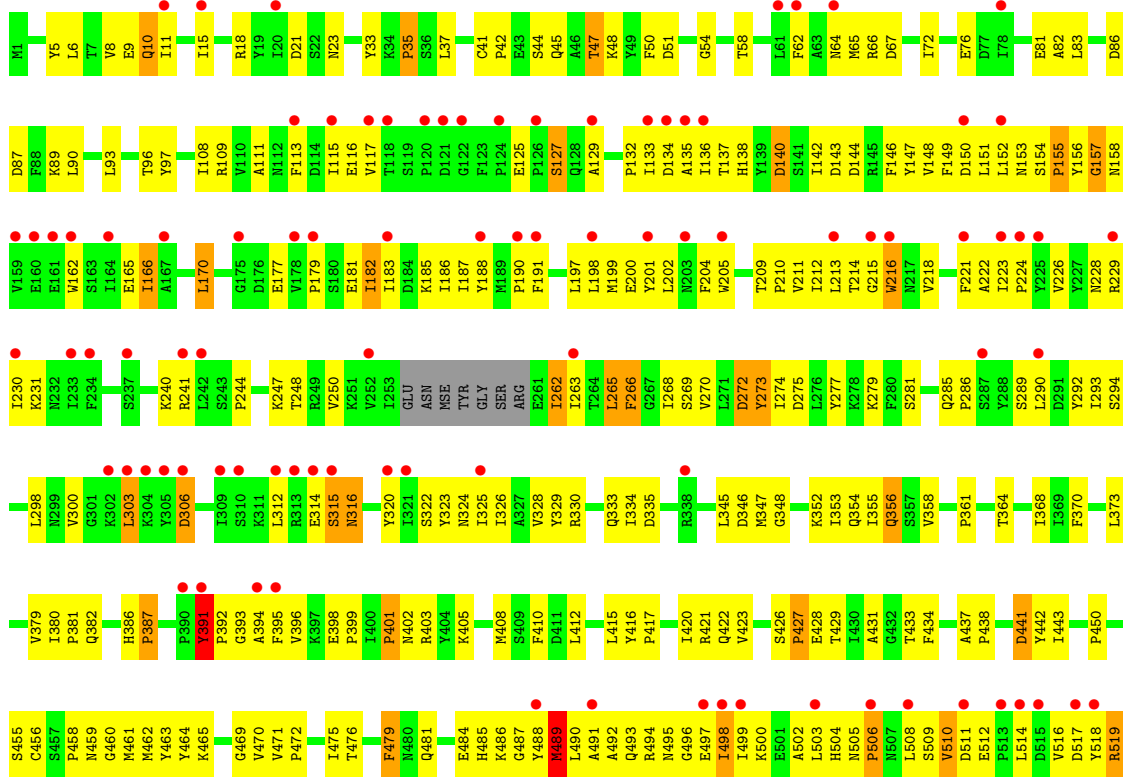


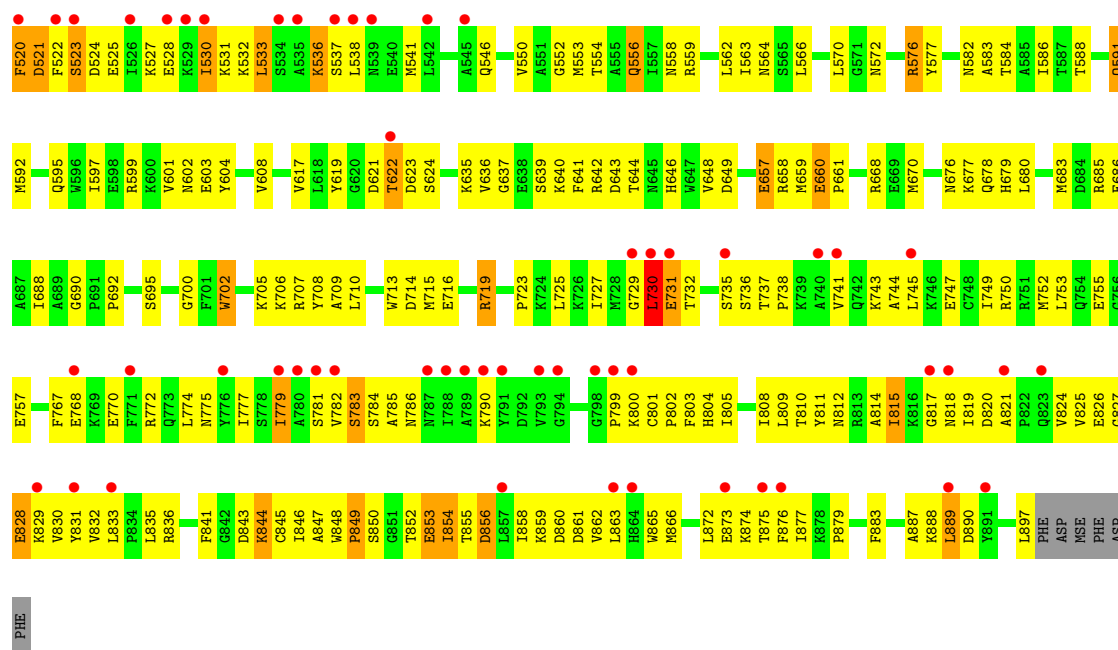
• Molecule 3: DNA polymerase





● Molecule 3: DNA polymerase





4 Data and refinement statistics

| Property | Value | Source |
|---|---|------------------|
| Space group | P 1 21 1 | Depositor |
| Cell constants a, b, c, α , β , γ | 132.61Å 122.63Å 168.69Å 90.00° 96.31° 90.00° | Depositor |
| Resolution (Å) | 50.00 – 2.65 49.49 – 2.60 | Depositor EDS |
| % Data completeness (in resolution range) | 88.3 (50.00-2.65) 93.6 (49.49-2.60) | Depositor EDS |
| R_{merge} | 0.11 | Depositor |
| R_{sym} | (Not available) | Depositor |
| $\langle I/\sigma(I) \rangle$ ¹ | 1.54 (at 2.61Å) | Xtrriage |
| Refinement program | CNS | Depositor |
| R, R_{free} | 0.229 , 0.281 0.229 , 0.280 | Depositor DCC |
| R_{free} test set | 28873 reflections (9.49%) | wwPDB-VP |
| Wilson B-factor (Å ²) | 47.3 | Xtrriage |
| Anisotropy | 0.252 | Xtrriage |
| Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²) | 0.31 , 56.7 | EDS |
| L-test for twinning ² | $\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$ | Xtrriage |
| Estimated twinning fraction | No twinning to report. | Xtrriage |
| F_o, F_c correlation | 0.92 | EDS |
| Total number of atoms | 31943 | wwPDB-VP |
| Average B, all atoms (Å ²) | 66.0 | wwPDB-VP |

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.13% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: CTG

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 | E | 0.41 | 0/365 | 1.28 | 0/558 |
| 1 | G | 0.52 | 0/393 | 1.33 | 1/603 (0.2%) |
| 1 | I | 0.60 | 0/393 | 1.31 | 2/603 (0.3%) |
| 1 | K | 0.73 | 0/393 | 1.31 | 0/603 |
| 2 | F | 0.41 | 0/307 | 1.24 | 0/468 |
| 2 | H | 0.57 | 0/333 | 1.37 | 1/510 (0.2%) |
| 2 | J | 0.54 | 0/333 | 1.30 | 1/510 (0.2%) |
| 2 | L | 0.79 | 0/333 | 1.27 | 1/510 (0.2%) |
| 3 | A | 0.39 | 0/7457 | 0.57 | 0/10050 |
| 3 | B | 0.42 | 0/7326 | 0.62 | 1/9873 (0.0%) |
| 3 | C | 0.41 | 0/7454 | 0.59 | 1/10045 (0.0%) |
| 3 | D | 0.30 | 0/7072 | 0.50 | 0/9590 |
| All | All | 0.41 | 0/32159 | 0.68 | 8/43923 (0.0%) |

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 | G | 1 | 0 |
| 2 | H | 0 | 1 |
| All | All | 1 | 1 |

There are no bond length outliers.

All (8) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 3 | B | 255 | ASN | N-CA-C | -5.75 | 95.47 | 111.00 |
| 1 | G | 12 | DA | C4'-C3'-O3' | 5.52 | 123.50 | 109.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 2 | L | 110 | DA | C4'-C3'-C2' | 5.47 | 108.03 | 103.10 |
| 2 | J | 113 | DC | C4'-C3'-C2' | 5.39 | 107.95 | 103.10 |
| 3 | C | 750 | ARG | NE-CZ-NH2 | -5.35 | 117.62 | 120.30 |
| 1 | I | 5 | DG | O4'-C1'-C2' | 5.18 | 110.05 | 105.90 |
| 1 | I | 9 | DG | N9-C1'-C2' | 5.18 | 122.44 | 112.60 |
| 2 | H | 108 | DT | O4'-C1'-C2' | 5.12 | 110.00 | 105.90 |

All (1) chirality outliers are listed below:

| Mol | Chain | Res | Type | Atom |
|-----|-------|-----|------|------|
| 1 | G | 12 | DA | C3' |

All (1) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|-----------|
| 2 | H | 115 | DA | Sidechain |

5.2 Too-close contacts [i](#)

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 | E | 348 | 0 | 195 | 40 | 0 |
| 1 | G | 372 | 0 | 204 | 26 | 0 |
| 1 | I | 372 | 0 | 204 | 39 | 0 |
| 1 | K | 372 | 0 | 204 | 38 | 0 |
| 2 | F | 276 | 0 | 155 | 22 | 0 |
| 2 | H | 299 | 0 | 165 | 22 | 0 |
| 2 | J | 299 | 0 | 165 | 28 | 0 |
| 2 | L | 299 | 0 | 165 | 26 | 0 |
| 3 | A | 7302 | 0 | 7141 | 309 | 0 |
| 3 | B | 7175 | 0 | 6995 | 306 | 0 |
| 3 | C | 7300 | 0 | 7144 | 254 | 0 |
| 3 | D | 6923 | 0 | 6512 | 420 | 0 |
| 4 | A | 117 | 0 | 0 | 28 | 0 |
| 4 | B | 205 | 0 | 0 | 17 | 0 |
| 4 | C | 160 | 0 | 0 | 14 | 0 |
| 4 | D | 55 | 0 | 0 | 25 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 4 | E | 9 | 0 | 0 | 2 | 0 |
| 4 | F | 5 | 0 | 0 | 1 | 0 |
| 4 | G | 18 | 0 | 0 | 0 | 0 |
| 4 | H | 9 | 0 | 0 | 2 | 0 |
| 4 | I | 17 | 0 | 0 | 3 | 0 |
| 4 | J | 4 | 0 | 0 | 0 | 0 |
| 4 | K | 5 | 0 | 0 | 1 | 0 |
| 4 | L | 2 | 0 | 0 | 0 | 0 |
| All | All | 31943 | 0 | 29249 | 1491 | 0 |

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 25.

All (1491) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:14:DC:H2'' | 1:I:15:DC:H5'' | 1.21 | 1.17 |
| 2:J:111:DT:H2'' | 2:J:112:DT:H5' | 1.16 | 1.13 |
| 3:B:164:ILE:H | 3:B:164:ILE:HD12 | 1.13 | 1.09 |
| 2:L:104:DG:H2'' | 2:L:105:DC:H5'' | 1.32 | 1.07 |
| 1:G:11:DC:H2'' | 1:G:12:DA:H5'' | 1.34 | 1.05 |
| 3:B:347:MSE:HE1 | 3:B:562:LEU:HD11 | 1.43 | 1.00 |
| 3:B:556:GLN:HB3 | 4:B:990:HOH:O | 1.61 | 0.99 |
| 3:D:212:ILE:HD11 | 3:D:345:LEU:HD21 | 1.45 | 0.98 |
| 1:I:15:DC:H2'' | 1:I:16:DG:H5' | 1.45 | 0.97 |
| 3:D:619:TYR:HE1 | 3:D:621:ASP:HB2 | 1.30 | 0.96 |
| 3:B:82:ALA:H | 3:B:382:GLN:HE21 | 1.06 | 0.96 |
| 2:J:111:DT:H2'' | 2:J:112:DT:C5' | 1.95 | 0.95 |
| 3:C:112:ASN:HB3 | 3:C:214:THR:HG23 | 1.49 | 0.95 |
| 1:I:17:DC:H1' | 4:I:435:HOH:O | 1.67 | 0.94 |
| 3:C:897:LEU:H | 3:C:897:LEU:HD23 | 1.31 | 0.94 |
| 3:D:218:VAL:HG12 | 3:D:223:ILE:HG13 | 1.48 | 0.93 |
| 3:D:356:GLN:HE21 | 3:D:356:GLN:H | 0.94 | 0.93 |
| 3:A:863:LEU:HA | 3:A:866:MSE:HE3 | 1.48 | 0.93 |
| 3:D:214:THR:HG22 | 3:D:215:GLY:H | 1.30 | 0.93 |
| 3:D:356:GLN:NE2 | 3:D:356:GLN:H | 1.66 | 0.92 |
| 3:B:736:SER:HA | 4:B:910:HOH:O | 1.68 | 0.92 |
| 3:B:793:VAL:HB | 3:B:796:PHE:HB2 | 1.49 | 0.91 |
| 3:A:642:ARG:H | 3:A:646:HIS:HD2 | 1.20 | 0.90 |
| 3:D:686:GLU:HB3 | 3:D:715:MSE:HE1 | 1.54 | 0.89 |
| 3:B:405:LYS:HA | 3:B:699:GLY:HA3 | 1.55 | 0.89 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:I:10:DA:H2'' | 1:I:11:DC:H5' | 1.55 | 0.89 |
| 3:B:530:ILE:HG13 | 3:B:531:LYS:H | 1.38 | 0.89 |
| 3:B:732:THR:HG23 | 3:B:733:GLN:HE21 | 1.38 | 0.88 |
| 1:G:11:DC:C2' | 1:G:12:DA:H5'' | 2.04 | 0.87 |
| 3:D:356:GLN:N | 3:D:356:GLN:HE21 | 1.71 | 0.87 |
| 3:C:112:ASN:HD21 | 3:C:332:LEU:HD11 | 1.37 | 0.86 |
| 3:D:619:TYR:CE1 | 3:D:621:ASP:HB2 | 2.09 | 0.86 |
| 3:D:844:LYS:H | 3:D:844:LYS:HD3 | 1.38 | 0.86 |
| 3:C:572:ASN:ND2 | 3:C:574:TRP:H | 1.73 | 0.86 |
| 3:D:854:ILE:HD11 | 3:D:858:ILE:HD11 | 1.56 | 0.86 |
| 2:L:112:DT:H2'' | 2:L:113:DC:H5'' | 1.55 | 0.86 |
| 2:L:112:DT:C2' | 2:L:113:DC:H5'' | 2.04 | 0.86 |
| 3:D:597:ILE:O | 3:D:601:VAL:HG23 | 1.73 | 0.86 |
| 3:D:873:GLU:HA | 3:D:877:ILE:HG12 | 1.57 | 0.85 |
| 3:A:495:ASN:HD21 | 3:A:521:ASP:HA | 1.41 | 0.85 |
| 3:C:553:MSE:HA | 4:C:1026:HOH:O | 1.75 | 0.85 |
| 1:I:9:DG:H2'' | 1:I:10:DA:H5'' | 1.59 | 0.85 |
| 3:B:253:ILE:HD11 | 3:B:260:ARG:CZ | 2.07 | 0.84 |
| 3:A:655:ALA:HA | 3:A:659:MSE:HG3 | 1.60 | 0.84 |
| 1:E:6:DA:H2'' | 1:E:7:DA:C8 | 2.12 | 0.84 |
| 3:B:863:LEU:HA | 3:B:866:MSE:HE3 | 1.60 | 0.84 |
| 3:D:489:MSE:HE3 | 3:D:490:LEU:HB2 | 1.57 | 0.84 |
| 1:G:7:DA:H2'' | 1:G:8:DT:H5' | 1.58 | 0.84 |
| 3:D:6:LEU:HD22 | 3:D:211:VAL:HG11 | 1.60 | 0.83 |
| 3:A:90:LEU:HD22 | 3:A:353:ILE:HG22 | 1.59 | 0.83 |
| 2:J:104:DG:H2' | 2:J:105:DC:C6 | 2.12 | 0.83 |
| 1:K:5:DG:H2'' | 1:K:6:DA:H5' | 1.59 | 0.83 |
| 3:A:728:MSE:HG3 | 4:A:986:HOH:O | 1.77 | 0.83 |
| 3:D:154:SER:HB3 | 3:D:155:PRO:HD2 | 1.60 | 0.83 |
| 3:D:137:THR:HB | 3:D:328:VAL:HG21 | 1.58 | 0.83 |
| 1:I:14:DC:C2' | 1:I:15:DC:H5'' | 2.07 | 0.83 |
| 2:L:105:DC:H2' | 2:L:106:DT:H72 | 1.59 | 0.83 |
| 3:B:386:HIS:HB2 | 3:B:573:VAL:HG22 | 1.60 | 0.83 |
| 3:C:660:GLU:HB2 | 3:C:661:PRO:HD3 | 1.60 | 0.83 |
| 3:D:412:LEU:HD12 | 3:D:623:ASP:HA | 1.61 | 0.82 |
| 3:A:486:LYS:HE3 | 3:A:556:GLN:HG2 | 1.62 | 0.82 |
| 3:B:75:MSE:HA | 3:B:75:MSE:HE3 | 1.61 | 0.82 |
| 2:L:104:DG:H2'' | 2:L:105:DC:C5' | 2.08 | 0.82 |
| 3:A:499:ILE:HD13 | 3:A:541:MSE:HG2 | 1.61 | 0.81 |
| 3:D:303:LEU:HD23 | 3:D:303:LEU:H | 1.44 | 0.81 |
| 1:K:8:DT:H2'' | 1:K:9:DG:H5' | 1.62 | 0.81 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:121:ASP:HA | 3:B:819:ILE:HG21 | 1.62 | 0.81 |
| 3:C:592:MSE:HE3 | 3:C:670:MSE:SE | 2.30 | 0.81 |
| 1:I:12:DA:H2'' | 1:I:13:DG:C8 | 2.14 | 0.81 |
| 3:A:660:GLU:HB2 | 3:A:661:PRO:HD3 | 1.63 | 0.81 |
| 3:A:738:PRO:HB3 | 3:A:780:ALA:O | 1.80 | 0.80 |
| 3:C:412:LEU:HG | 3:C:683:MSE:HE3 | 1.64 | 0.80 |
| 2:F:106:DT:H2'' | 2:F:107:DG:H5'' | 1.63 | 0.80 |
| 3:D:484:GLU:HG2 | 3:D:488:TYR:HE1 | 1.46 | 0.80 |
| 3:A:408:MSE:HE1 | 3:A:655:ALA:HB2 | 1.62 | 0.80 |
| 3:B:154:SER:HB3 | 3:B:313:ARG:HH12 | 1.46 | 0.80 |
| 1:I:9:DG:H2'' | 1:I:10:DA:C5' | 2.12 | 0.80 |
| 3:C:503:LEU:HA | 3:C:506:PRO:HG3 | 1.64 | 0.80 |
| 2:J:111:DT:C2' | 2:J:112:DT:H5' | 2.08 | 0.79 |
| 3:A:483:LYS:HE3 | 3:A:483:LYS:HA | 1.64 | 0.79 |
| 3:C:392:PRO:O | 3:C:587:THR:HG21 | 1.83 | 0.79 |
| 1:I:5:DG:H2'' | 1:I:6:DA:C5' | 2.12 | 0.79 |
| 2:J:109:DC:H2'' | 2:J:110:DA:H5' | 1.65 | 0.79 |
| 3:B:732:THR:HG23 | 3:B:733:GLN:NE2 | 1.98 | 0.78 |
| 3:C:240:LYS:HE3 | 3:C:246:ARG:HB3 | 1.64 | 0.78 |
| 1:I:5:DG:H2'' | 1:I:6:DA:H5' | 1.65 | 0.77 |
| 3:A:347:MSE:HB2 | 3:A:558:ASN:HD21 | 1.50 | 0.77 |
| 3:D:137:THR:HG22 | 3:D:138:HIS:H | 1.48 | 0.77 |
| 3:B:159:VAL:HG21 | 3:B:317:HIS:CD2 | 2.20 | 0.77 |
| 3:B:157:GLY:C | 3:B:158:ASN:HD22 | 1.87 | 0.77 |
| 1:I:8:DT:H4' | 4:I:192:HOH:O | 1.86 | 0.76 |
| 3:B:224:PRO:HA | 3:B:263:ILE:HD12 | 1.66 | 0.76 |
| 1:G:9:DG:H2'' | 1:G:10:DA:H5' | 1.68 | 0.76 |
| 3:A:739:LYS:HD3 | 3:A:778:SER:HA | 1.65 | 0.76 |
| 1:E:13:DG:O5' | 3:A:800:LYS:HG2 | 1.85 | 0.76 |
| 3:D:833:LEU:HD22 | 3:D:866:MSE:HE3 | 1.68 | 0.76 |
| 1:K:13:DG:H2'' | 1:K:14:DC:H5' | 1.65 | 0.76 |
| 3:A:176:ASP:HA | 3:A:319:ARG:HH21 | 1.51 | 0.75 |
| 3:C:523:SER:HB2 | 3:C:525:GLU:HG2 | 1.68 | 0.75 |
| 3:A:700:GLY:HA2 | 3:A:753:LEU:HD22 | 1.69 | 0.75 |
| 3:C:454:TYR:HD2 | 3:C:462:MSE:HE2 | 1.51 | 0.75 |
| 3:D:136:ILE:HG23 | 3:D:149:PHE:HB2 | 1.66 | 0.75 |
| 3:A:775:ASN:HD21 | 3:A:777:ILE:HB | 1.51 | 0.75 |
| 3:D:784:SER:HA | 3:D:829:LYS:HA | 1.67 | 0.75 |
| 1:K:8:DT:H2' | 1:K:9:DG:C8 | 2.22 | 0.75 |
| 3:A:514:LEU:HD21 | 3:A:529:LYS:HE2 | 1.67 | 0.75 |
| 3:C:221:PHE:O | 3:C:224:PRO:HD2 | 1.86 | 0.75 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:D:824:VAL:HA | 3:D:849:PRO:HB3 | 1.69 | 0.75 |
| 3:D:399:PRO:HB3 | 3:D:619:TYR:HD2 | 1.52 | 0.74 |
| 3:A:100:GLU:HG2 | 3:A:102:LYS:HE2 | 1.67 | 0.74 |
| 1:I:10:DA:H2'' | 1:I:11:DC:C5' | 2.16 | 0.74 |
| 2:J:114:DC:H2'' | 2:J:115:DA:H5'' | 1.68 | 0.74 |
| 3:A:848:TRP:HB2 | 3:A:849:PRO:HD2 | 1.69 | 0.74 |
| 1:K:8:DT:H2' | 1:K:9:DG:H8 | 1.52 | 0.74 |
| 3:B:116:GLU:HB2 | 3:B:135:ALA:HB3 | 1.69 | 0.74 |
| 3:B:735:SER:HB3 | 3:B:737:THR:HG23 | 1.67 | 0.74 |
| 3:A:739:LYS:CD | 3:A:739:LYS:H | 1.99 | 0.74 |
| 3:B:818:ASN:ND2 | 3:B:821:ALA:HB2 | 2.02 | 0.74 |
| 3:D:700:GLY:HA2 | 3:D:753:LEU:HD22 | 1.69 | 0.74 |
| 3:A:213:LEU:HD13 | 3:A:223:ILE:HD11 | 1.68 | 0.74 |
| 3:B:298:LEU:O | 3:B:300:VAL:HG23 | 1.88 | 0.74 |
| 1:I:6:DA:H2'' | 1:I:7:DA:C8 | 2.23 | 0.73 |
| 3:D:730:LEU:H | 3:D:730:LEU:HD23 | 1.52 | 0.73 |
| 3:A:392:PRO:O | 3:A:587:THR:HG21 | 1.88 | 0.73 |
| 3:D:300:VAL:HG21 | 3:D:330:ARG:HH12 | 1.52 | 0.73 |
| 3:D:514:LEU:HB3 | 3:D:516:VAL:HG13 | 1.69 | 0.73 |
| 3:A:631:LYS:HB2 | 3:A:631:LYS:NZ | 2.04 | 0.73 |
| 3:D:218:VAL:HG13 | 3:D:222:ALA:HB3 | 1.69 | 0.73 |
| 1:I:13:DG:H2'' | 1:I:14:DC:H5' | 1.71 | 0.73 |
| 3:A:112:ASN:HB2 | 4:A:987:HOH:O | 1.89 | 0.73 |
| 3:B:700:GLY:HA2 | 3:B:753:LEU:HD22 | 1.70 | 0.72 |
| 3:D:250:VAL:HG13 | 3:D:263:ILE:HG12 | 1.71 | 0.72 |
| 3:A:776:TYR:HB2 | 3:A:866:MSE:HE1 | 1.71 | 0.72 |
| 3:B:732:THR:CG2 | 3:B:733:GLN:HE21 | 2.03 | 0.72 |
| 2:H:104:DG:H2'' | 2:H:105:DC:O5' | 1.88 | 0.72 |
| 2:L:106:DT:H2'' | 2:L:107:DG:H5'' | 1.72 | 0.72 |
| 3:A:443:ILE:HD13 | 3:A:595:GLN:HB2 | 1.71 | 0.72 |
| 3:B:163:SER:H | 3:B:318:GLN:HE22 | 1.37 | 0.72 |
| 3:D:492:ALA:HA | 3:D:495:ASN:HB3 | 1.72 | 0.72 |
| 3:D:790:LYS:HD3 | 3:D:790:LYS:O | 1.89 | 0.72 |
| 3:B:223:ILE:HB | 3:B:224:PRO:HD3 | 1.70 | 0.72 |
| 2:F:106:DT:H2'' | 2:F:107:DG:C5' | 2.20 | 0.72 |
| 3:C:153:ASN:HD22 | 3:C:158:ASN:CG | 1.93 | 0.71 |
| 3:D:523:SER:HB2 | 3:D:527:LYS:CB | 2.20 | 0.71 |
| 3:A:592:MSE:HE1 | 3:A:674:MSE:HG3 | 1.71 | 0.71 |
| 3:B:589:PHE:HE1 | 3:B:681:MSE:HE2 | 1.55 | 0.71 |
| 3:D:405:LYS:O | 3:D:690:GLY:HA2 | 1.91 | 0.71 |
| 3:D:604:TYR:OH | 3:D:658:ARG:HG3 | 1.89 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:D:347:MSE:HG2 | 3:D:358:VAL:HG13 | 1.72 | 0.71 |
| 3:A:422:GLN:HE22 | 3:A:681:MSE:HG2 | 1.56 | 0.71 |
| 3:A:507:ASN:C | 3:A:508:LEU:HD22 | 2.10 | 0.71 |
| 3:A:468:ASP:HA | 4:A:997:HOH:O | 1.90 | 0.71 |
| 3:B:253:ILE:O | 3:B:259:SER:HA | 1.90 | 0.71 |
| 3:C:295:GLU:O | 3:C:299:ASN:HA | 1.91 | 0.71 |
| 3:D:202:LEU:HB3 | 3:D:241:ARG:HD3 | 1.72 | 0.71 |
| 3:B:435:LYS:H | 3:B:435:LYS:HD3 | 1.54 | 0.70 |
| 3:D:486:LYS:HA | 4:D:916:HOH:O | 1.91 | 0.70 |
| 3:D:702:TRP:CE2 | 3:D:708:TYR:HB3 | 2.27 | 0.70 |
| 3:B:303:LEU:HD13 | 3:B:319:ARG:HD2 | 1.72 | 0.70 |
| 3:B:408:MSE:HE1 | 3:B:655:ALA:HB2 | 1.73 | 0.70 |
| 3:C:572:ASN:HD22 | 3:C:574:TRP:H | 1.38 | 0.70 |
| 3:C:104:ASP:OD1 | 3:C:106:THR:HB | 1.91 | 0.70 |
| 3:C:21:ASP:OD2 | 3:C:25:ARG:HG3 | 1.92 | 0.70 |
| 3:B:164:ILE:H | 3:B:164:ILE:CD1 | 1.90 | 0.70 |
| 3:B:735:SER:CB | 3:B:737:THR:HG23 | 2.22 | 0.70 |
| 2:L:110:DA:H2'' | 2:L:111:DT:O4' | 1.92 | 0.70 |
| 3:D:370:PHE:HA | 3:D:380:ILE:HD11 | 1.73 | 0.69 |
| 3:D:730:LEU:HG | 3:D:731:GLU:H | 1.57 | 0.69 |
| 3:A:218:VAL:HG23 | 3:A:222:ALA:HB3 | 1.74 | 0.69 |
| 3:D:803:PHE:CZ | 3:D:845:CYS:HB3 | 2.27 | 0.69 |
| 3:D:326:ILE:O | 3:D:330:ARG:HG2 | 1.92 | 0.69 |
| 3:D:802:PRO:HB2 | 3:D:804:HIS:CE1 | 2.27 | 0.69 |
| 3:A:347:MSE:HE1 | 3:A:562:LEU:HD11 | 1.75 | 0.69 |
| 3:B:435:LYS:N | 3:B:435:LYS:HD3 | 2.08 | 0.69 |
| 3:B:797:PRO:HG3 | 3:B:806:ARG:NH1 | 2.08 | 0.69 |
| 3:D:213:LEU:HB3 | 3:D:270:VAL:HG12 | 1.73 | 0.69 |
| 3:D:731:GLU:OE2 | 3:D:879:PRO:HB3 | 1.92 | 0.69 |
| 2:H:107:DG:H5' | 4:H:306:HOH:O | 1.92 | 0.69 |
| 3:B:733:GLN:O | 3:B:734:LYS:C | 2.30 | 0.69 |
| 3:C:343:LEU:HG | 4:C:1053:HOH:O | 1.92 | 0.69 |
| 3:C:604:TYR:OH | 3:C:658:ARG:HB3 | 1.93 | 0.69 |
| 3:D:779:ILE:HD11 | 3:D:866:MSE:HE1 | 1.73 | 0.69 |
| 3:D:8:VAL:HG11 | 3:D:93:LEU:HD13 | 1.75 | 0.69 |
| 1:K:5:DG:H2'' | 1:K:6:DA:C5' | 2.21 | 0.69 |
| 3:D:117:VAL:HG12 | 3:D:133:ILE:HA | 1.73 | 0.69 |
| 3:B:303:LEU:HD12 | 3:B:323:TYR:HA | 1.74 | 0.68 |
| 3:C:412:LEU:HD13 | 3:C:415:LEU:HD13 | 1.75 | 0.68 |
| 3:D:109:ARG:HB2 | 3:D:211:VAL:HG23 | 1.75 | 0.68 |
| 2:H:110:DA:H2'' | 2:H:111:DT:H5' | 1.74 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:D:90:LEU:HG | 3:D:353:ILE:HG22 | 1.75 | 0.68 |
| 2:F:106:DT:C2' | 2:F:107:DG:H5'' | 2.22 | 0.68 |
| 3:C:482:ARG:C | 3:C:484:GLU:H | 1.96 | 0.68 |
| 3:C:81:GLU:HG2 | 3:C:83:LEU:HD22 | 1.73 | 0.68 |
| 2:F:111:DT:H1' | 4:F:577:HOH:O | 1.93 | 0.68 |
| 3:A:642:ARG:H | 3:A:646:HIS:CD2 | 2.08 | 0.68 |
| 3:D:458:PRO:HG3 | 3:D:592:MSE:SE | 2.43 | 0.68 |
| 3:A:739:LYS:HD2 | 3:A:778:SER:O | 1.94 | 0.68 |
| 1:I:13:DG:H2'' | 1:I:14:DC:C5' | 2.24 | 0.68 |
| 3:C:881:GLU:HG3 | 3:C:891:TYR:HE1 | 1.59 | 0.68 |
| 3:D:737:THR:HG22 | 3:D:875:THR:HB | 1.76 | 0.68 |
| 3:B:75:MSE:HA | 3:B:75:MSE:CE | 2.23 | 0.67 |
| 3:D:427:PRO:HG2 | 4:D:953:HOH:O | 1.94 | 0.67 |
| 4:E:449:HOH:O | 2:F:110:DA:H1' | 1.93 | 0.67 |
| 3:B:326:ILE:CG2 | 3:B:330:ARG:HE | 2.06 | 0.67 |
| 3:C:52:ILE:HD12 | 3:C:428:GLU:HG3 | 1.77 | 0.67 |
| 3:D:830:VAL:HA | 3:D:850:SER:H | 1.58 | 0.67 |
| 3:A:485:HIS:HB3 | 3:A:556:GLN:HE21 | 1.58 | 0.67 |
| 1:I:9:DG:C2' | 1:I:10:DA:H5'' | 2.23 | 0.67 |
| 3:C:171:GLN:HA | 3:C:175:GLY:HA2 | 1.77 | 0.67 |
| 3:C:495:ASN:O | 3:C:499:ILE:HG12 | 1.94 | 0.67 |
| 3:A:602:ASN:HD21 | 3:A:617:VAL:H | 1.42 | 0.67 |
| 3:C:152:LEU:HD11 | 3:C:190:PRO:HB2 | 1.76 | 0.67 |
| 3:D:132:PRO:HB3 | 3:D:229:ARG:NH2 | 2.10 | 0.67 |
| 3:A:403:ARG:HD2 | 3:A:887:ALA:O | 1.95 | 0.67 |
| 3:C:175:GLY:HA3 | 3:C:319:ARG:HH21 | 1.59 | 0.66 |
| 2:J:105:DC:H2'' | 2:J:106:DT:H5' | 1.77 | 0.66 |
| 3:D:821:ALA:HB1 | 3:D:855:THR:HG21 | 1.78 | 0.66 |
| 3:A:559:ARG:O | 3:A:563:ILE:HG13 | 1.94 | 0.66 |
| 3:C:130:LYS:HE3 | 3:C:131:HIS:CE1 | 2.29 | 0.66 |
| 3:B:82:ALA:H | 3:B:382:GLN:NE2 | 1.88 | 0.66 |
| 3:D:471:VAL:HB | 3:D:472:PRO:HD3 | 1.77 | 0.66 |
| 2:L:105:DC:H2' | 2:L:106:DT:C7 | 2.24 | 0.66 |
| 3:B:164:ILE:HD12 | 3:B:164:ILE:N | 1.98 | 0.66 |
| 3:C:298:LEU:HB2 | 3:C:300:VAL:HG12 | 1.78 | 0.66 |
| 1:E:18:DG:H3' | 1:E:18:DG:OP1 | 1.96 | 0.66 |
| 2:H:107:DG:H2'' | 2:H:108:DT:O5' | 1.94 | 0.66 |
| 2:H:110:DA:H2'' | 2:H:111:DT:C5' | 2.26 | 0.66 |
| 3:A:338:ARG:HB3 | 3:A:340:PHE:CE1 | 2.30 | 0.66 |
| 3:C:78:ILE:HG13 | 3:C:80:LEU:HD23 | 1.77 | 0.66 |
| 1:E:2:DG:OP1 | 3:A:361:PRO:HD2 | 1.96 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:527:LYS:HA | 3:B:530:ILE:HD11 | 1.76 | 0.66 |
| 3:C:391:TYR:HB2 | 3:C:392:PRO:HD2 | 1.76 | 0.66 |
| 1:I:16:DG:H2'' | 1:I:17:DC:O5' | 1.94 | 0.66 |
| 1:K:8:DT:OP1 | 1:K:8:DT:H4' | 1.96 | 0.66 |
| 3:B:458:PRO:HG3 | 3:B:592:MSE:SE | 2.46 | 0.66 |
| 3:C:556:GLN:HB3 | 4:C:1026:HOH:O | 1.96 | 0.66 |
| 3:B:326:ILE:O | 3:B:330:ARG:HG2 | 1.95 | 0.65 |
| 3:B:593:ALA:CB | 3:B:681:MSE:HE3 | 2.25 | 0.65 |
| 3:D:191:PHE:HE2 | 3:D:200:GLU:HG3 | 1.61 | 0.65 |
| 3:C:540:GLU:O | 3:C:544:ARG:HG2 | 1.96 | 0.65 |
| 3:A:170:LEU:HA | 3:A:177:GLU:HG2 | 1.79 | 0.65 |
| 3:A:874:LYS:HB3 | 4:A:964:HOH:O | 1.96 | 0.65 |
| 3:A:810:THR:OG1 | 3:A:843:ASP:HB2 | 1.96 | 0.65 |
| 1:G:9:DG:H2'' | 1:G:10:DA:C5' | 2.26 | 0.65 |
| 3:D:768:GLU:HG2 | 3:D:872:LEU:HD21 | 1.79 | 0.65 |
| 2:L:112:DT:H2'' | 2:L:113:DC:O4' | 1.97 | 0.65 |
| 3:D:244:PRO:HD3 | 3:D:268:ILE:HD11 | 1.79 | 0.64 |
| 3:A:193:ASN:HD21 | 3:A:196:GLU:HG3 | 1.61 | 0.64 |
| 3:A:555:ALA:N | 4:A:960:HOH:O | 2.30 | 0.64 |
| 3:B:422:GLN:HG3 | 3:B:678:GLN:O | 1.96 | 0.64 |
| 3:B:516:VAL:H | 3:B:544:ARG:NH1 | 1.94 | 0.64 |
| 3:C:439:LEU:HD21 | 3:C:588:THR:HG23 | 1.78 | 0.64 |
| 1:E:5:DG:C2' | 1:E:6:DA:H5'' | 2.27 | 0.64 |
| 3:C:458:PRO:HB2 | 3:C:588:THR:HG22 | 1.79 | 0.64 |
| 1:K:3:CTG:H2'' | 1:K:4:DG:C8 | 2.32 | 0.64 |
| 3:C:231:LYS:HE3 | 3:C:236:GLU:HG3 | 1.79 | 0.64 |
| 3:C:455:SER:OG | 3:C:676:ASN:HA | 1.98 | 0.64 |
| 3:D:592:MSE:HE3 | 3:D:670:MSE:SE | 2.48 | 0.64 |
| 3:D:649:ASP:CG | 3:D:719:ARG:HH22 | 2.01 | 0.64 |
| 3:B:541:MSE:HE3 | 3:B:544:ARG:NH2 | 2.12 | 0.64 |
| 3:C:218:VAL:HG22 | 3:C:223:ILE:HG13 | 1.80 | 0.64 |
| 3:D:492:ALA:HA | 3:D:495:ASN:CB | 2.27 | 0.64 |
| 3:D:355:ILE:O | 3:D:358:VAL:HG23 | 1.97 | 0.64 |
| 3:D:484:GLU:HG2 | 3:D:488:TYR:CE1 | 2.29 | 0.64 |
| 3:D:504:HIS:C | 3:D:506:PRO:HD3 | 2.17 | 0.64 |
| 2:L:112:DT:H2'' | 2:L:113:DC:C5' | 2.27 | 0.64 |
| 3:A:738:PRO:HB3 | 3:A:780:ALA:C | 2.18 | 0.64 |
| 3:A:811:TYR:OH | 3:A:822:PRO:HG2 | 1.98 | 0.64 |
| 3:B:668:ARG:HG3 | 3:B:668:ARG:HH11 | 1.62 | 0.64 |
| 3:D:416:TYR:O | 3:D:420:ILE:HG13 | 1.98 | 0.64 |
| 3:D:668:ARG:HB2 | 3:D:668:ARG:NH1 | 2.12 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:A:83:LEU:HD12 | 3:A:83:LEU:H | 1.62 | 0.64 |
| 3:B:757:GLU:O | 3:B:761:GLN:HG3 | 1.97 | 0.64 |
| 2:F:106:DT:H1' | 2:F:107:DG:H5'' | 1.80 | 0.64 |
| 2:H:113:DC:O5' | 3:B:734:LYS:HB2 | 1.98 | 0.63 |
| 3:A:822:PRO:HD2 | 3:A:855:THR:HB | 1.80 | 0.63 |
| 3:D:856:ASP:HA | 3:D:859:LYS:HB3 | 1.80 | 0.63 |
| 1:K:8:DT:H2'' | 1:K:9:DG:C5' | 2.28 | 0.63 |
| 3:A:13:ASP:OD1 | 3:A:66:ARG:HB2 | 1.98 | 0.63 |
| 3:A:231:LYS:HG3 | 3:A:236:GLU:HA | 1.79 | 0.63 |
| 3:B:598:GLU:HG3 | 3:B:617:VAL:HG11 | 1.80 | 0.63 |
| 3:B:397:LYS:HD3 | 3:B:619:TYR:HA | 1.81 | 0.63 |
| 1:E:11:DC:H2'' | 1:E:12:DA:H5' | 1.79 | 0.63 |
| 3:A:251:LYS:HD2 | 3:A:262:ILE:HD11 | 1.80 | 0.63 |
| 3:B:403:ARG:HH11 | 3:B:403:ARG:CB | 2.12 | 0.63 |
| 3:B:658:ARG:NE | 3:D:897:LEU:HD11 | 2.13 | 0.63 |
| 1:E:9:DG:H2' | 1:E:11:DC:C6 | 2.34 | 0.63 |
| 3:A:387:PRO:HB2 | 4:A:998:HOH:O | 1.98 | 0.63 |
| 1:K:9:DG:H2'' | 1:K:10:DA:O5' | 1.99 | 0.63 |
| 3:B:304:LYS:N | 3:B:304:LYS:HD2 | 2.12 | 0.63 |
| 3:A:620:GLY:O | 3:A:621:ASP:HB2 | 1.99 | 0.63 |
| 3:D:273:TYR:OH | 3:D:335:ASP:HA | 1.99 | 0.63 |
| 3:D:41:CYS:HB2 | 3:D:42:PRO:HD2 | 1.81 | 0.62 |
| 3:D:642:ARG:HG2 | 3:D:646:HIS:HD2 | 1.63 | 0.62 |
| 3:D:398:GLU:OE1 | 3:D:705:LYS:HE3 | 1.98 | 0.62 |
| 3:A:304:LYS:O | 3:A:319:ARG:HD3 | 1.99 | 0.62 |
| 3:C:467:ARG:HD3 | 3:C:467:ARG:H | 1.64 | 0.62 |
| 1:G:14:DC:H2'' | 1:G:15:DC:H5' | 1.81 | 0.62 |
| 2:H:101:DG:H8 | 2:H:101:DG:HO5' | 1.47 | 0.62 |
| 3:D:166:ILE:HB | 4:D:934:HOH:O | 1.99 | 0.62 |
| 1:I:2:DG:OP2 | 3:C:361:PRO:HD2 | 2.00 | 0.62 |
| 3:B:403:ARG:HH11 | 3:B:403:ARG:HB3 | 1.64 | 0.62 |
| 3:A:655:ALA:HA | 3:A:659:MSE:CG | 2.27 | 0.62 |
| 3:A:685:ARG:NH1 | 3:A:688:ILE:HG13 | 2.15 | 0.62 |
| 3:B:589:PHE:CE1 | 3:B:681:MSE:HE2 | 2.33 | 0.62 |
| 3:D:272:ASP:OD2 | 3:D:274:ILE:HG22 | 1.99 | 0.62 |
| 3:D:725:LEU:HD11 | 3:D:750:ARG:HG3 | 1.82 | 0.62 |
| 3:A:839:ASN:HD22 | 3:A:841:PHE:HB2 | 1.63 | 0.62 |
| 3:C:818:ASN:OD1 | 3:C:857:LEU:HD11 | 2.00 | 0.62 |
| 1:E:14:DC:H2'' | 1:E:15:DC:H5' | 1.81 | 0.62 |
| 3:B:790:LYS:HE2 | 3:B:802:PRO:HD3 | 1.81 | 0.62 |
| 3:D:841:PHE:HZ | 3:D:861:ASP:HB3 | 1.64 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:J:103:DG:H2'' | 2:J:104:DG:O5' | 1.99 | 0.62 |
| 1:K:16:DG:H2'' | 1:K:17:DC:H5'' | 1.82 | 0.62 |
| 3:A:130:LYS:HE2 | 4:A:956:HOH:O | 2.00 | 0.62 |
| 3:C:520:PHE:HA | 4:C:937:HOH:O | 2.00 | 0.61 |
| 3:D:520:PHE:HA | 4:D:931:HOH:O | 2.00 | 0.61 |
| 3:B:162:TRP:CZ3 | 3:B:164:ILE:HG13 | 2.35 | 0.61 |
| 1:E:12:DA:H2'' | 1:E:13:DG:O5' | 2.00 | 0.61 |
| 1:G:7:DA:H2'' | 1:G:8:DT:C5' | 2.29 | 0.61 |
| 2:J:108:DT:H2'' | 2:J:109:DC:H5' | 1.82 | 0.61 |
| 3:A:82:ALA:O | 3:A:382:GLN:HG3 | 2.00 | 0.61 |
| 3:C:164:ILE:N | 4:C:983:HOH:O | 2.27 | 0.61 |
| 3:B:303:LEU:HB2 | 3:B:323:TYR:CD1 | 2.36 | 0.61 |
| 3:B:541:MSE:HE3 | 3:B:544:ARG:HH22 | 1.65 | 0.61 |
| 3:C:421:ARG:HD3 | 3:C:476:THR:OG1 | 1.99 | 0.61 |
| 3:D:686:GLU:CB | 3:D:715:MSE:HE1 | 2.28 | 0.61 |
| 1:E:11:DC:H2'' | 1:E:12:DA:C5' | 2.31 | 0.61 |
| 3:B:257:TYR:CE1 | 3:B:786:ASN:HB3 | 2.35 | 0.61 |
| 3:D:496:GLY:O | 3:D:499:ILE:HB | 2.01 | 0.61 |
| 3:A:443:ILE:HD13 | 3:A:595:GLN:CB | 2.30 | 0.61 |
| 3:D:277:TYR:O | 3:D:281:SER:HB2 | 2.01 | 0.61 |
| 3:D:553:MSE:O | 3:D:556:GLN:HG3 | 2.00 | 0.61 |
| 3:D:825:VAL:HB | 3:D:828:GLU:HB2 | 1.81 | 0.61 |
| 3:A:85:MSE:HE1 | 3:A:366:ASP:OD2 | 2.01 | 0.61 |
| 3:A:606:ASN:OD1 | 3:A:616:PHE:HE1 | 1.84 | 0.61 |
| 3:A:707:ARG:HD3 | 3:A:729:GLY:HA3 | 1.83 | 0.60 |
| 3:D:402:ASN:CG | 3:D:403:ARG:H | 2.04 | 0.60 |
| 3:D:465:LYS:HD2 | 3:D:677:LYS:HA | 1.83 | 0.60 |
| 2:L:114:DC:H2'' | 2:L:115:DA:O4' | 2.01 | 0.60 |
| 3:B:132:PRO:HA | 3:B:194:GLU:OE2 | 2.01 | 0.60 |
| 3:B:421:ARG:HD3 | 3:B:475:ILE:HD12 | 1.82 | 0.60 |
| 3:C:343:LEU:HD11 | 3:C:558:ASN:ND2 | 2.15 | 0.60 |
| 1:K:13:DG:H2'' | 1:K:14:DC:C5' | 2.32 | 0.60 |
| 3:A:347:MSE:HB2 | 3:A:558:ASN:ND2 | 2.16 | 0.60 |
| 3:B:159:VAL:HG11 | 3:B:317:HIS:HB2 | 1.83 | 0.60 |
| 3:D:214:THR:HG22 | 3:D:215:GLY:N | 2.10 | 0.60 |
| 1:K:2:DG:O6 | 3:D:279:LYS:HD2 | 2.01 | 0.60 |
| 3:D:714:ASP:HB2 | 3:D:719:ARG:HD3 | 1.83 | 0.60 |
| 3:D:9:GLU:O | 3:D:15:ILE:HG13 | 2.01 | 0.60 |
| 3:D:262:ILE:N | 3:D:262:ILE:HD12 | 2.16 | 0.60 |
| 1:E:6:DA:H2'' | 1:E:7:DA:N7 | 2.15 | 0.60 |
| 3:A:606:ASN:HD21 | 3:A:614:GLU:H | 1.47 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:494:ARG:HH11 | 3:B:494:ARG:CB | 2.15 | 0.60 |
| 3:C:112:ASN:HD21 | 3:C:332:LEU:CD1 | 2.14 | 0.60 |
| 3:C:791:TYR:CD2 | 3:C:801:CYS:HA | 2.36 | 0.60 |
| 3:D:142:ILE:HD12 | 3:D:143:ASP:N | 2.17 | 0.60 |
| 3:A:405:LYS:HA | 3:A:699:GLY:HA3 | 1.84 | 0.60 |
| 3:D:434:PHE:CZ | 3:D:460:GLY:HA2 | 2.36 | 0.60 |
| 2:H:106:DT:H2'' | 2:H:107:DG:H5' | 1.83 | 0.60 |
| 1:I:7:DA:H2'' | 1:I:8:DT:O5' | 2.02 | 0.60 |
| 3:B:294:SER:HB2 | 3:B:301:GLY:HA2 | 1.82 | 0.60 |
| 2:F:111:DT:H2'' | 2:F:112:DT:C5' | 2.31 | 0.60 |
| 1:G:12:DA:H2'' | 1:G:13:DG:C8 | 2.36 | 0.60 |
| 3:A:502:ALA:HA | 3:A:538:LEU:HD23 | 1.82 | 0.60 |
| 3:A:554:THR:C | 4:A:960:HOH:O | 2.41 | 0.60 |
| 3:A:784:SER:HB3 | 3:A:829:LYS:HG2 | 1.81 | 0.60 |
| 3:C:711:ASN:ND2 | 3:C:754:GLN:HE21 | 2.00 | 0.60 |
| 3:D:890:ASP:HB3 | 4:D:949:HOH:O | 2.02 | 0.60 |
| 3:A:386:HIS:HB2 | 3:A:573:VAL:HB | 1.84 | 0.59 |
| 3:A:625:ILE:HG12 | 3:A:683:MSE:HE1 | 1.83 | 0.59 |
| 3:C:655:ALA:O | 3:C:660:GLU:HG2 | 2.02 | 0.59 |
| 3:B:285:GLN:HG3 | 3:B:286:PRO:HD2 | 1.84 | 0.59 |
| 3:B:636:VAL:O | 3:B:640:LYS:HG3 | 2.02 | 0.59 |
| 3:D:730:LEU:HD12 | 3:D:883:PHE:CZ | 2.37 | 0.59 |
| 3:A:81:GLU:OE2 | 3:A:83:LEU:HG | 2.03 | 0.59 |
| 3:C:112:ASN:HB3 | 3:C:214:THR:CG2 | 2.30 | 0.59 |
| 3:B:303:LEU:C | 3:B:304:LYS:HD2 | 2.23 | 0.59 |
| 2:F:102:DC:H2'' | 2:F:103:DG:OP2 | 2.02 | 0.59 |
| 2:J:101:DG:HO5' | 2:J:101:DG:H8 | 1.50 | 0.59 |
| 3:A:791:TYR:O | 3:A:798:GLY:N | 2.36 | 0.59 |
| 3:D:510:VAL:O | 3:D:533:LEU:HD13 | 2.02 | 0.59 |
| 1:I:6:DA:H2'' | 1:I:7:DA:H8 | 1.66 | 0.59 |
| 1:K:3:CTG:H2'' | 1:K:4:DG:H8 | 1.66 | 0.59 |
| 3:A:194:GLU:OE1 | 3:A:229:ARG:HD2 | 2.02 | 0.59 |
| 2:J:105:DC:H2'' | 2:J:106:DT:C5' | 2.32 | 0.59 |
| 1:K:13:DG:H2' | 1:K:14:DC:C6 | 2.38 | 0.59 |
| 3:C:273:TYR:OH | 3:C:335:ASP:HA | 2.02 | 0.59 |
| 3:D:731:GLU:N | 4:D:925:HOH:O | 2.35 | 0.59 |
| 3:B:82:ALA:N | 3:B:382:GLN:HE21 | 1.90 | 0.59 |
| 3:C:1:MSE:HE1 | 3:C:107:LYS:HE3 | 1.84 | 0.59 |
| 1:K:1:DC:H4' | 3:D:572:ASN:HD21 | 1.68 | 0.59 |
| 3:B:731:GLU:HB3 | 3:B:737:THR:HG21 | 1.85 | 0.58 |
| 3:D:708:TYR:O | 3:D:730:LEU:HD22 | 2.03 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 2:L:105:DC:H4' | 2:L:105:DC:OP1 | 2.03 | 0.58 |
| 3:C:757:GLU:HB2 | 3:C:889:LEU:HD22 | 1.84 | 0.58 |
| 3:A:90:LEU:CD2 | 3:A:353:ILE:HG22 | 2.31 | 0.58 |
| 3:A:513:PRO:HG3 | 3:A:537:SER:HB3 | 1.84 | 0.58 |
| 3:D:202:LEU:HD13 | 3:D:241:ARG:HD2 | 1.86 | 0.58 |
| 3:D:306:ASP:HB2 | 3:D:315:SER:OG | 2.03 | 0.58 |
| 3:D:330:ARG:O | 3:D:334:ILE:HG13 | 2.02 | 0.58 |
| 3:D:844:LYS:N | 3:D:844:LYS:HD3 | 2.15 | 0.58 |
| 3:A:791:TYR:HA | 3:A:799:PRO:HD2 | 1.84 | 0.58 |
| 3:A:807:GLY:HA3 | 4:A:972:HOH:O | 2.03 | 0.58 |
| 3:D:642:ARG:HG3 | 3:D:643:ASP:OD2 | 2.03 | 0.58 |
| 3:D:832:VAL:HB | 4:D:957:HOH:O | 2.02 | 0.58 |
| 1:I:2:DG:H2'' | 1:I:3:CTG:OP2 | 2.04 | 0.58 |
| 1:I:8:DT:H2' | 1:I:9:DG:C8 | 2.37 | 0.58 |
| 3:A:896:SER:HB3 | 3:A:899:ASP:OD1 | 2.03 | 0.58 |
| 3:D:392:PRO:HD2 | 3:D:584:THR:HG22 | 1.86 | 0.58 |
| 3:D:496:GLY:HA2 | 3:D:499:ILE:HD12 | 1.84 | 0.58 |
| 3:A:129:ALA:HA | 3:A:225:TYR:CE1 | 2.39 | 0.58 |
| 3:A:784:SER:HA | 3:A:829:LYS:HA | 1.85 | 0.58 |
| 3:A:734:LYS:HE2 | 3:A:737:THR:OG1 | 2.04 | 0.58 |
| 3:A:485:HIS:HB3 | 3:A:556:GLN:NE2 | 2.18 | 0.58 |
| 3:D:422:GLN:HG3 | 3:D:678:GLN:O | 2.04 | 0.58 |
| 3:B:386:HIS:CD2 | 4:B:1064:HOH:O | 2.56 | 0.58 |
| 3:D:10:GLN:HG3 | 3:D:65:MSE:SE | 2.53 | 0.58 |
| 3:D:830:VAL:HG22 | 3:D:831:TYR:H | 1.69 | 0.58 |
| 3:A:489:MSE:HE2 | 3:A:490:LEU:HG | 1.86 | 0.58 |
| 3:A:64:ASN:ND2 | 3:A:67:ASP:H | 2.02 | 0.58 |
| 3:B:435:LYS:O | 3:B:435:LYS:HG2 | 2.04 | 0.58 |
| 3:C:897:LEU:H | 3:C:897:LEU:CD2 | 2.11 | 0.58 |
| 3:A:775:ASN:ND2 | 3:A:777:ILE:HB | 2.16 | 0.57 |
| 3:A:776:TYR:CB | 3:A:866:MSE:HE1 | 2.34 | 0.57 |
| 3:B:271:LEU:HD11 | 3:B:356:GLN:HA | 1.85 | 0.57 |
| 3:D:495:ASN:HD22 | 3:D:521:ASP:HA | 1.68 | 0.57 |
| 3:D:51:ASP:HA | 3:D:379:VAL:HG22 | 1.85 | 0.57 |
| 1:E:4:DG:H2'' | 1:E:5:DG:O5' | 2.05 | 0.57 |
| 1:G:14:DC:H2'' | 1:G:15:DC:C5' | 2.34 | 0.57 |
| 1:G:7:DA:H2' | 1:G:8:DT:H72 | 1.86 | 0.57 |
| 2:L:103:DG:H2'' | 2:L:104:DG:C8 | 2.39 | 0.57 |
| 3:A:739:LYS:CD | 3:A:739:LYS:N | 2.68 | 0.57 |
| 3:B:158:ASN:HD22 | 3:B:158:ASN:N | 2.02 | 0.57 |
| 2:H:114:DC:OP1 | 3:B:728:MSE:HE3 | 2.04 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:C:52:ILE:HB | 3:C:428:GLU:HG2 | 1.85 | 0.57 |
| 1:I:5:DG:H2'' | 1:I:6:DA:H5'' | 1.86 | 0.57 |
| 3:B:421:ARG:HD2 | 3:B:476:THR:OG1 | 2.03 | 0.57 |
| 3:B:534:SER:OG | 3:B:537:SER:HB2 | 2.05 | 0.57 |
| 3:B:685:ARG:NH2 | 3:B:714:ASP:OD1 | 2.37 | 0.57 |
| 3:C:555:ALA:O | 3:C:559:ARG:HG2 | 2.04 | 0.57 |
| 3:D:509:SER:HB2 | 3:D:533:LEU:HA | 1.87 | 0.57 |
| 3:B:183:ILE:HG23 | 3:B:184:ASP:N | 2.19 | 0.57 |
| 3:B:227:TYR:CD2 | 3:B:263:ILE:HD13 | 2.40 | 0.57 |
| 3:B:312:LEU:HD12 | 3:B:320:TYR:HB2 | 1.86 | 0.57 |
| 3:B:703:THR:OG1 | 3:B:707:ARG:HD3 | 2.05 | 0.57 |
| 3:C:711:ASN:HD21 | 3:C:754:GLN:HE21 | 1.51 | 0.57 |
| 3:D:514:LEU:HD23 | 3:D:541:MSE:HE1 | 1.87 | 0.57 |
| 3:A:471:VAL:HB | 3:A:472:PRO:CD | 2.34 | 0.57 |
| 3:A:800:LYS:NZ | 3:A:800:LYS:HB2 | 2.20 | 0.57 |
| 3:B:245:HIS:HE1 | 4:B:961:HOH:O | 1.85 | 0.57 |
| 3:C:477:LYS:O | 3:C:481:GLN:HG3 | 2.04 | 0.57 |
| 3:D:730:LEU:N | 3:D:730:LEU:HD23 | 2.19 | 0.57 |
| 3:A:806:ARG:HA | 3:A:809:LEU:HD12 | 1.86 | 0.57 |
| 3:D:396:VAL:HG21 | 3:D:706:LYS:HE2 | 1.86 | 0.57 |
| 3:D:833:LEU:CD2 | 3:D:866:MSE:HE3 | 2.35 | 0.57 |
| 3:B:593:ALA:HB1 | 3:B:681:MSE:HE3 | 1.87 | 0.57 |
| 1:E:9:DG:H2'' | 1:E:11:DC:O4' | 2.05 | 0.57 |
| 3:A:807:GLY:CA | 4:A:972:HOH:O | 2.52 | 0.57 |
| 3:C:42:PRO:HG2 | 3:C:45:GLN:HG3 | 1.86 | 0.57 |
| 3:D:300:VAL:HG21 | 3:D:330:ARG:NH1 | 2.20 | 0.57 |
| 3:A:597:ILE:HD11 | 3:A:663:ILE:HG23 | 1.86 | 0.56 |
| 3:A:6:LEU:CD1 | 3:A:26:GLU:HG3 | 2.35 | 0.56 |
| 3:A:771:PHE:HA | 3:A:774:LEU:HD12 | 1.86 | 0.56 |
| 3:B:478:VAL:HG13 | 3:B:559:ARG:HG3 | 1.87 | 0.56 |
| 3:C:750:ARG:NH2 | 3:C:755:GLU:OE1 | 2.38 | 0.56 |
| 3:D:147:TYR:HA | 3:D:187:ILE:HG23 | 1.87 | 0.56 |
| 3:D:831:TYR:HB2 | 3:D:848:TRP:CB | 2.35 | 0.56 |
| 2:L:106:DT:H5'' | 2:L:106:DT:H6 | 1.70 | 0.56 |
| 3:A:163:SER:N | 3:A:318:GLN:OE1 | 2.35 | 0.56 |
| 3:A:685:ARG:HH11 | 3:A:688:ILE:HG13 | 1.69 | 0.56 |
| 3:B:410:PHE:HB3 | 3:B:683:MSE:HG2 | 1.87 | 0.56 |
| 3:C:218:VAL:HA | 3:C:222:ALA:HB3 | 1.86 | 0.56 |
| 3:D:35:PRO:HD2 | 3:D:64:ASN:O | 2.06 | 0.56 |
| 1:E:14:DC:H2' | 1:E:15:DC:C6 | 2.40 | 0.56 |
| 3:A:157:GLY:C | 3:A:158:ASN:HD22 | 2.09 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:D:116:GLU:HB3 | 3:D:135:ALA:HB3 | 1.87 | 0.56 |
| 3:D:212:ILE:CD1 | 3:D:345:LEU:HD21 | 2.29 | 0.56 |
| 3:D:873:GLU:HG2 | 3:D:877:ILE:CD1 | 2.35 | 0.56 |
| 3:A:101:ILE:HG21 | 3:A:349:TYR:HB3 | 1.88 | 0.56 |
| 3:B:660:GLU:HB3 | 3:B:661:PRO:HD3 | 1.87 | 0.56 |
| 3:C:181:GLU:CD | 3:C:181:GLU:H | 2.08 | 0.56 |
| 3:C:523:SER:CB | 3:C:525:GLU:HG2 | 2.35 | 0.56 |
| 3:C:599:ARG:HA | 4:C:920:HOH:O | 2.06 | 0.56 |
| 1:K:11:DC:H2'' | 1:K:12:DA:H5' | 1.87 | 0.56 |
| 3:B:351:ALA:O | 3:B:352:LYS:HB2 | 2.05 | 0.56 |
| 3:B:530:ILE:HG13 | 3:B:531:LYS:N | 2.15 | 0.56 |
| 3:C:216:TRP:O | 3:C:217:ASN:HB2 | 2.06 | 0.56 |
| 3:C:503:LEU:HD21 | 3:C:538:LEU:HB3 | 1.86 | 0.56 |
| 3:D:530:ILE:HD13 | 3:D:530:ILE:N | 2.19 | 0.56 |
| 3:D:803:PHE:CE1 | 3:D:845:CYS:HB3 | 2.41 | 0.56 |
| 1:E:2:DG:OP2 | 3:A:362:ILE:HD12 | 2.05 | 0.56 |
| 3:A:712:VAL:HG22 | 3:A:724:LYS:O | 2.06 | 0.56 |
| 3:B:221:PHE:O | 3:B:224:PRO:HD2 | 2.05 | 0.56 |
| 3:D:546:GLN:HA | 3:D:546:GLN:OE1 | 2.05 | 0.56 |
| 2:L:106:DT:H2'' | 2:L:107:DG:C5' | 2.35 | 0.56 |
| 3:A:231:LYS:O | 3:A:234:PHE:O | 2.23 | 0.56 |
| 3:A:410:PHE:HZ | 3:A:659:MSE:HE3 | 1.69 | 0.56 |
| 3:C:175:GLY:CA | 3:C:319:ARG:HH21 | 2.19 | 0.56 |
| 3:C:434:PHE:CE1 | 3:C:460:GLY:HA2 | 2.40 | 0.56 |
| 3:D:223:ILE:HB | 3:D:224:PRO:HD3 | 1.86 | 0.56 |
| 3:D:416:TYR:N | 4:D:958:HOH:O | 2.32 | 0.56 |
| 2:F:111:DT:H2'' | 2:F:112:DT:H5' | 1.87 | 0.56 |
| 1:K:5:DG:H2' | 1:K:6:DA:C8 | 2.40 | 0.56 |
| 3:B:494:ARG:HH11 | 3:B:494:ARG:HB3 | 1.70 | 0.56 |
| 3:D:752:MSE:HE3 | 3:D:889:LEU:HD12 | 1.87 | 0.56 |
| 3:B:245:HIS:HD2 | 4:B:957:HOH:O | 1.88 | 0.56 |
| 3:C:150:ASP:OD2 | 3:C:321:ILE:HG13 | 2.06 | 0.56 |
| 3:C:171:GLN:NE2 | 3:C:303:LEU:HD22 | 2.21 | 0.56 |
| 3:D:222:ALA:O | 3:D:226:VAL:HG23 | 2.06 | 0.56 |
| 3:D:216:TRP:CZ2 | 3:D:293:ILE:HD13 | 2.41 | 0.56 |
| 3:D:329:TYR:O | 3:D:333:GLN:HG3 | 2.05 | 0.56 |
| 3:D:421:ARG:NE | 3:D:476:THR:OG1 | 2.39 | 0.56 |
| 3:A:362:ILE:HD11 | 3:A:572:ASN:CG | 2.26 | 0.55 |
| 3:B:197:LEU:HD23 | 3:B:197:LEU:C | 2.26 | 0.55 |
| 3:D:588:THR:O | 3:D:591:GLN:HB2 | 2.05 | 0.55 |
| 3:A:116:GLU:HB2 | 3:A:135:ALA:HB3 | 1.87 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:A:739:LYS:HD2 | 3:A:739:LYS:N | 2.21 | 0.55 |
| 3:D:146:PHE:HB2 | 3:D:186:ILE:HG22 | 1.88 | 0.55 |
| 3:D:348:GLY:HA2 | 3:D:353:ILE:CD1 | 2.37 | 0.55 |
| 1:E:13:DG:H2'' | 1:E:14:DC:O5' | 2.06 | 0.55 |
| 1:E:18:DG:N3 | 1:E:18:DG:H2' | 2.22 | 0.55 |
| 3:A:113:PHE:CE1 | 3:A:218:VAL:HG21 | 2.41 | 0.55 |
| 3:C:482:ARG:HG3 | 3:C:559:ARG:HB2 | 1.86 | 0.55 |
| 3:D:566:LEU:O | 3:D:570:LEU:HD23 | 2.06 | 0.55 |
| 3:D:801:CYS:SG | 3:D:802:PRO:HD2 | 2.47 | 0.55 |
| 3:D:873:GLU:HG2 | 3:D:877:ILE:HD13 | 1.87 | 0.55 |
| 3:B:322:SER:O | 3:B:326:ILE:HG12 | 2.07 | 0.55 |
| 3:C:25:ARG:HD2 | 4:C:958:HOH:O | 2.06 | 0.55 |
| 3:D:493:GLN:HG2 | 3:D:546:GLN:HE22 | 1.72 | 0.55 |
| 3:A:394:ALA:N | 4:A:1011:HOH:O | 2.37 | 0.55 |
| 3:D:402:ASN:CG | 3:D:403:ARG:N | 2.60 | 0.55 |
| 3:B:253:ILE:HD11 | 3:B:260:ARG:NH1 | 2.21 | 0.55 |
| 3:C:143:ASP:O | 3:C:145:ARG:HG2 | 2.07 | 0.55 |
| 3:D:511:ASP:O | 3:D:533:LEU:HD11 | 2.07 | 0.55 |
| 3:A:287:SER:HB3 | 3:A:292:TYR:CD1 | 2.41 | 0.55 |
| 3:C:457:SER:O | 3:C:459:ASN:N | 2.39 | 0.55 |
| 3:C:818:ASN:HD22 | 3:C:818:ASN:C | 2.10 | 0.55 |
| 3:D:470:VAL:HG13 | 3:D:471:VAL:N | 2.20 | 0.55 |
| 3:D:887:ALA:O | 3:D:888:LYS:HB3 | 2.05 | 0.55 |
| 1:I:4:DG:H2'' | 1:I:5:DG:O5' | 2.07 | 0.55 |
| 3:A:485:HIS:CB | 3:A:556:GLN:HE21 | 2.19 | 0.55 |
| 3:A:726:LYS:HE3 | 3:A:728:MSE:CG | 2.37 | 0.55 |
| 3:C:422:GLN:HG3 | 3:C:678:GLN:O | 2.07 | 0.55 |
| 3:D:426:SER:O | 3:D:428:GLU:N | 2.40 | 0.55 |
| 3:D:443:ILE:HD13 | 3:D:595:GLN:HB2 | 1.89 | 0.55 |
| 3:A:221:PHE:O | 3:A:224:PRO:HD2 | 2.07 | 0.55 |
| 3:B:776:TYR:HB2 | 3:B:866:MSE:HE1 | 1.89 | 0.55 |
| 3:B:121:ASP:HA | 3:B:819:ILE:CG2 | 2.34 | 0.55 |
| 3:D:188:TYR:CD2 | 3:D:190:PRO:HD3 | 2.42 | 0.55 |
| 3:C:52:ILE:HG12 | 4:C:926:HOH:O | 2.07 | 0.55 |
| 3:D:617:VAL:O | 3:D:617:VAL:HG23 | 2.07 | 0.55 |
| 3:C:223:ILE:HB | 3:C:224:PRO:HD3 | 1.89 | 0.54 |
| 3:C:237:SER:O | 3:C:240:LYS:HG2 | 2.07 | 0.54 |
| 3:A:592:MSE:HE1 | 3:A:674:MSE:CG | 2.37 | 0.54 |
| 3:D:137:THR:HG22 | 3:D:138:HIS:N | 2.19 | 0.54 |
| 3:D:455:SER:OG | 3:D:676:ASN:HA | 2.06 | 0.54 |
| 3:D:64:ASN:HD21 | 3:D:67:ASP:H | 1.55 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:A:37:LEU:HD21 | 3:A:72:ILE:HD11 | 1.88 | 0.54 |
| 3:A:631:LYS:HB2 | 3:A:631:LYS:HZ3 | 1.72 | 0.54 |
| 3:D:151:LEU:HD22 | 3:D:152:LEU:H | 1.71 | 0.54 |
| 3:D:497:GLU:C | 3:D:499:ILE:H | 2.11 | 0.54 |
| 3:B:405:LYS:HA | 3:B:699:GLY:CA | 2.34 | 0.54 |
| 3:B:700:GLY:HA2 | 3:B:753:LEU:CD2 | 2.36 | 0.54 |
| 1:K:4:DG:H4' | 3:D:391:TYR:O | 2.07 | 0.54 |
| 3:D:403:ARG:HA | 4:D:917:HOH:O | 2.08 | 0.54 |
| 3:D:485:HIS:HB3 | 3:D:556:GLN:HB3 | 1.90 | 0.54 |
| 2:J:101:DG:H2'' | 2:J:102:DC:H6 | 1.72 | 0.54 |
| 3:A:376:GLN:HG3 | 3:A:378:LYS:HG3 | 1.90 | 0.54 |
| 3:C:443:ILE:O | 3:C:599:ARG:NH2 | 2.33 | 0.54 |
| 3:A:482:ARG:HE | 3:A:560:LYS:HB2 | 1.72 | 0.54 |
| 3:B:291:ASP:HB2 | 3:B:302:LYS:HG3 | 1.89 | 0.54 |
| 3:C:656:ARG:HA | 3:C:660:GLU:HG3 | 1.90 | 0.54 |
| 3:C:482:ARG:HG2 | 3:C:556:GLN:HG2 | 1.90 | 0.54 |
| 3:D:348:GLY:HA2 | 3:D:353:ILE:HD11 | 1.90 | 0.54 |
| 3:D:81:GLU:CD | 3:D:83:LEU:HD21 | 2.28 | 0.54 |
| 2:L:106:DT:H2'' | 2:L:107:DG:O4' | 2.07 | 0.54 |
| 3:B:256:MSE:HG2 | 3:B:257:TYR:CD2 | 2.42 | 0.54 |
| 3:B:818:ASN:HD22 | 3:B:857:LEU:CD1 | 2.20 | 0.54 |
| 3:C:167:ALA:HA | 3:C:176:ASP:CB | 2.38 | 0.54 |
| 3:C:587:THR:HG22 | 3:C:588:THR:N | 2.21 | 0.54 |
| 3:D:599:ARG:HB3 | 3:D:599:ARG:NH1 | 2.23 | 0.54 |
| 3:B:433:THR:O | 3:B:462:MSE:HE2 | 2.08 | 0.54 |
| 3:B:775:ASN:HD21 | 3:B:777:ILE:HB | 1.73 | 0.54 |
| 3:D:685:ARG:NH1 | 3:D:688:ILE:HG13 | 2.23 | 0.54 |
| 2:F:104:DG:H2'' | 2:F:105:DC:O5' | 2.08 | 0.54 |
| 1:G:12:DA:C2' | 1:G:13:DG:C8 | 2.90 | 0.54 |
| 1:G:12:DA:H2'' | 1:G:13:DG:H8 | 1.71 | 0.54 |
| 3:D:637:GLY:HA2 | 4:D:956:HOH:O | 2.07 | 0.54 |
| 3:D:64:ASN:HD22 | 3:D:66:ARG:H | 1.56 | 0.54 |
| 1:K:12:DA:H2'' | 1:K:13:DG:O5' | 2.07 | 0.54 |
| 3:D:744:ALA:HB2 | 3:D:767:PHE:CE2 | 2.43 | 0.53 |
| 1:E:6:DA:H2'' | 1:E:7:DA:H8 | 1.69 | 0.53 |
| 3:A:132:PRO:HD2 | 4:A:963:HOH:O | 2.07 | 0.53 |
| 3:B:251:LYS:HB3 | 3:B:262:ILE:HG13 | 1.89 | 0.53 |
| 3:C:15:ILE:HD11 | 3:C:92:TYR:CZ | 2.43 | 0.53 |
| 3:D:111:ALA:HB3 | 3:D:210:PRO:HB3 | 1.90 | 0.53 |
| 3:D:582:ASN:O | 3:D:586:ILE:HG13 | 2.07 | 0.53 |
| 2:F:103:DG:H2'' | 2:F:104:DG:O5' | 2.08 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:A:373:LEU:HD12 | 3:A:380:ILE:HG22 | 1.90 | 0.53 |
| 3:B:163:SER:N | 3:B:318:GLN:HE22 | 2.06 | 0.53 |
| 3:D:125:GLU:O | 3:D:129:ALA:HB2 | 2.08 | 0.53 |
| 3:D:155:PRO:C | 3:D:157:GLY:H | 2.12 | 0.53 |
| 3:D:487:GLY:C | 4:D:938:HOH:O | 2.46 | 0.53 |
| 2:L:105:DC:OP1 | 2:L:105:DC:C4' | 2.57 | 0.53 |
| 3:A:389:GLN:HB2 | 4:A:998:HOH:O | 2.07 | 0.53 |
| 3:B:645:ASN:OD1 | 3:B:719:ARG:NH1 | 2.42 | 0.53 |
| 3:C:526:ILE:HG23 | 3:C:529:LYS:HD3 | 1.90 | 0.53 |
| 3:D:459:ASN:HD21 | 3:D:461:MSE:HB2 | 1.73 | 0.53 |
| 3:D:524:ASP:HB3 | 3:D:525:GLU:OE2 | 2.07 | 0.53 |
| 3:D:642:ARG:H | 3:D:646:HIS:CD2 | 2.26 | 0.53 |
| 2:F:112:DT:H2'' | 2:F:113:DC:O5' | 2.08 | 0.53 |
| 2:J:109:DC:H2'' | 2:J:110:DA:C5' | 2.37 | 0.53 |
| 3:A:213:LEU:CD1 | 3:A:223:ILE:HD11 | 2.37 | 0.53 |
| 3:A:739:LYS:H | 3:A:739:LYS:HD2 | 1.74 | 0.53 |
| 3:B:303:LEU:HB2 | 3:B:323:TYR:HD1 | 1.72 | 0.53 |
| 3:C:14:SER:HB3 | 3:C:32:GLU:OE1 | 2.09 | 0.53 |
| 3:D:533:LEU:HD12 | 3:D:537:SER:OG | 2.08 | 0.53 |
| 3:D:730:LEU:CD2 | 3:D:730:LEU:H | 2.21 | 0.53 |
| 3:D:809:LEU:HA | 3:D:812:ASN:ND2 | 2.23 | 0.53 |
| 3:D:87:ASP:CG | 3:D:90:LEU:HD13 | 2.28 | 0.53 |
| 3:A:552:GLY:O | 3:A:555:ALA:HB3 | 2.09 | 0.53 |
| 3:B:435:LYS:CD | 3:B:435:LYS:H | 2.21 | 0.53 |
| 3:D:490:LEU:HD23 | 3:D:490:LEU:O | 2.08 | 0.53 |
| 2:J:115:DA:OP1 | 3:C:708:TYR:OH | 2.23 | 0.53 |
| 1:K:2:DG:H1' | 1:K:3:CTG:O5 | 2.07 | 0.53 |
| 3:A:825:VAL:HG23 | 3:A:828:GLU:HB2 | 1.90 | 0.53 |
| 3:D:247:LYS:O | 3:D:266:PHE:HB2 | 2.09 | 0.53 |
| 3:D:679:HIS:O | 3:D:680:LEU:HG | 2.09 | 0.53 |
| 3:D:700:GLY:CA | 3:D:753:LEU:HD22 | 2.38 | 0.53 |
| 3:A:738:PRO:HD3 | 3:A:781:SER:HA | 1.91 | 0.53 |
| 3:B:154:SER:HB3 | 3:B:313:ARG:NH1 | 2.20 | 0.53 |
| 3:C:858:ILE:O | 3:C:862:VAL:HG23 | 2.08 | 0.53 |
| 1:G:16:DG:H2'' | 1:G:17:DC:H5'' | 1.90 | 0.53 |
| 2:H:107:DG:H8 | 4:H:306:HOH:O | 1.92 | 0.53 |
| 3:A:254:GLU:CD | 3:A:259:SER:HB2 | 2.29 | 0.53 |
| 3:D:602:ASN:HD21 | 3:D:617:VAL:HG22 | 1.74 | 0.53 |
| 3:D:782:VAL:HG12 | 3:D:783:SER:N | 2.24 | 0.53 |
| 3:B:133:ILE:HD12 | 3:B:198:LEU:HD21 | 1.90 | 0.53 |
| 3:C:461:MSE:HE3 | 3:C:581:ARG:HB3 | 1.91 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:C:351:ALA:O | 3:C:352:LYS:HB2 | 2.08 | 0.52 |
| 3:C:355:ILE:O | 3:C:358:VAL:HG13 | 2.08 | 0.52 |
| 1:E:13:DG:OP1 | 3:A:800:LYS:HA | 2.10 | 0.52 |
| 3:C:681:MSE:HA | 3:C:681:MSE:HE2 | 1.92 | 0.52 |
| 3:A:12:GLY:O | 3:A:13:ASP:HB2 | 2.10 | 0.52 |
| 3:A:902:ASP:HA | 4:A:1014:HOH:O | 2.10 | 0.52 |
| 3:B:465:LYS:HE3 | 3:B:677:LYS:HA | 1.92 | 0.52 |
| 2:L:114:DC:H1' | 3:D:706:LYS:HD3 | 1.90 | 0.52 |
| 2:J:112:DT:H2'' | 2:J:113:DC:OP2 | 2.09 | 0.52 |
| 3:A:64:ASN:HD22 | 3:A:67:ASP:H | 1.57 | 0.52 |
| 3:D:47:THR:HG22 | 3:D:48:LYS:H | 1.74 | 0.52 |
| 2:F:104:DG:H2' | 2:F:105:DC:C6 | 2.44 | 0.52 |
| 3:A:709:ALA:O | 3:A:710:LEU:HD23 | 2.09 | 0.52 |
| 3:A:739:LYS:H | 3:A:739:LYS:CE | 2.22 | 0.52 |
| 3:B:791:TYR:HA | 4:B:1086:HOH:O | 2.10 | 0.52 |
| 3:C:145:ARG:HB2 | 3:C:147:TYR:CE1 | 2.45 | 0.52 |
| 3:D:21:ASP:HB3 | 3:D:23:ASN:OD1 | 2.09 | 0.52 |
| 1:E:7:DA:H2' | 1:E:8:DT:H72 | 1.91 | 0.52 |
| 1:G:6:DA:H2'' | 1:G:7:DA:OP2 | 2.10 | 0.52 |
| 2:H:110:DA:H1' | 2:H:111:DT:H5'' | 1.90 | 0.52 |
| 1:K:7:DA:H2' | 1:K:8:DT:C6 | 2.44 | 0.52 |
| 3:A:557:ILE:HB | 4:A:960:HOH:O | 2.10 | 0.52 |
| 3:B:34:LYS:NZ | 3:B:61:LEU:HD11 | 2.24 | 0.52 |
| 3:B:592:MSE:HE1 | 3:B:674:MSE:HG3 | 1.91 | 0.52 |
| 3:C:34:LYS:HE3 | 3:C:63:ALA:HA | 1.91 | 0.52 |
| 3:C:369:ILE:HG12 | 3:C:474:GLU:HG3 | 1.92 | 0.52 |
| 3:C:898:PHE:O | 3:C:899:ASP:HB3 | 2.09 | 0.52 |
| 3:A:527:LYS:O | 3:A:530:ILE:HG12 | 2.09 | 0.52 |
| 3:C:221:PHE:C | 3:C:224:PRO:HD2 | 2.29 | 0.52 |
| 3:C:659:MSE:O | 3:C:663:ILE:HG13 | 2.09 | 0.52 |
| 1:E:11:DC:H2'' | 1:E:12:DA:O5' | 2.10 | 0.52 |
| 1:K:17:DC:H5' | 1:K:17:DC:H6 | 1.74 | 0.52 |
| 3:A:346:ASP:HB3 | 4:A:965:HOH:O | 2.10 | 0.52 |
| 3:A:51:ASP:HB2 | 4:A:908:HOH:O | 2.09 | 0.52 |
| 3:A:896:SER:HB3 | 3:A:899:ASP:CG | 2.29 | 0.52 |
| 3:B:193:ASN:HD22 | 3:B:194:GLU:N | 2.08 | 0.52 |
| 3:B:727:ILE:HG21 | 3:B:732:THR:HG21 | 1.91 | 0.52 |
| 3:D:116:GLU:HB2 | 3:D:324:ASN:HD22 | 1.74 | 0.52 |
| 3:B:528:GLU:C | 3:B:530:ILE:H | 2.14 | 0.52 |
| 3:B:486:LYS:HA | 3:B:556:GLN:OE1 | 2.09 | 0.52 |
| 3:A:486:LYS:CE | 3:A:556:GLN:HG2 | 2.38 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:434:PHE:CE2 | 3:B:460:GLY:HA2 | 2.45 | 0.52 |
| 3:C:397:LYS:O | 3:C:399:PRO:HD3 | 2.10 | 0.52 |
| 3:D:364:THR:O | 3:D:368:ILE:HG13 | 2.09 | 0.52 |
| 3:D:713:TRP:CZ3 | 3:D:723:PRO:HD3 | 2.45 | 0.52 |
| 3:C:110:VAL:O | 3:C:141:SER:HB3 | 2.10 | 0.51 |
| 3:C:240:LYS:HD2 | 3:C:246:ARG:O | 2.10 | 0.51 |
| 3:D:285:GLN:HE21 | 3:D:286:PRO:HD2 | 1.75 | 0.51 |
| 3:D:50:PHE:HD2 | 3:D:54:GLY:O | 1.93 | 0.51 |
| 3:D:735:SER:HA | 4:D:930:HOH:O | 2.09 | 0.51 |
| 1:I:9:DG:H2'' | 1:I:10:DA:H5' | 1.92 | 0.51 |
| 3:A:822:PRO:HB2 | 3:A:849:PRO:HG3 | 1.91 | 0.51 |
| 3:B:641:PHE:HD1 | 3:B:646:HIS:CD2 | 2.28 | 0.51 |
| 3:D:218:VAL:HG12 | 3:D:223:ILE:CG1 | 2.31 | 0.51 |
| 3:D:410:PHE:O | 3:D:624:SER:HA | 2.10 | 0.51 |
| 3:A:739:LYS:NZ | 3:A:780:ALA:O | 2.43 | 0.51 |
| 3:C:20:ILE:HA | 3:C:25:ARG:O | 2.10 | 0.51 |
| 3:C:451:SER:HB3 | 3:C:456:CYS:SG | 2.50 | 0.51 |
| 3:C:594:LEU:O | 3:C:597:ILE:HG22 | 2.10 | 0.51 |
| 3:D:485:HIS:HA | 3:D:488:TYR:HD1 | 1.74 | 0.51 |
| 1:E:9:DG:O3' | 3:A:874:LYS:HE3 | 2.11 | 0.51 |
| 3:A:458:PRO:HG3 | 3:A:592:MSE:SE | 2.60 | 0.51 |
| 3:A:518:TYR:HE2 | 3:A:541:MSE:HG3 | 1.76 | 0.51 |
| 3:D:517:ASP:C | 3:D:519:ARG:H | 2.12 | 0.51 |
| 3:B:555:ALA:O | 3:B:559:ARG:HD3 | 2.10 | 0.51 |
| 3:B:597:ILE:HD12 | 3:B:598:GLU:N | 2.26 | 0.51 |
| 3:C:750:ARG:HH22 | 3:C:755:GLU:CD | 2.13 | 0.51 |
| 3:C:811:TYR:CE2 | 3:C:815:ILE:HD13 | 2.45 | 0.51 |
| 3:D:757:GLU:HB2 | 3:D:889:LEU:HD22 | 1.92 | 0.51 |
| 1:I:16:DG:H2'' | 1:I:17:DC:C5' | 2.41 | 0.51 |
| 3:A:757:GLU:HB2 | 3:A:889:LEU:HD22 | 1.92 | 0.51 |
| 3:B:401:PRO:O | 3:B:402:ASN:HB2 | 2.11 | 0.51 |
| 3:B:75:MSE:HE2 | 3:B:78:ILE:HG21 | 1.92 | 0.51 |
| 3:C:11:ILE:HD13 | 3:C:247:LYS:HD2 | 1.92 | 0.51 |
| 3:C:116:GLU:HB2 | 3:C:135:ALA:HB3 | 1.92 | 0.51 |
| 3:C:159:VAL:HG21 | 3:C:317:HIS:CD2 | 2.45 | 0.51 |
| 3:C:112:ASN:ND2 | 3:C:332:LEU:HD11 | 2.17 | 0.51 |
| 3:C:598:GLU:HG3 | 3:C:617:VAL:HG11 | 1.92 | 0.51 |
| 3:D:410:PHE:HB3 | 3:D:683:MSE:HE2 | 1.93 | 0.51 |
| 3:D:846:ILE:HD13 | 3:D:862:VAL:HG21 | 1.93 | 0.51 |
| 3:A:526:ILE:O | 3:A:530:ILE:HG23 | 2.11 | 0.51 |
| 3:B:581:ARG:HD2 | 4:B:999:HOH:O | 2.11 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:C:137:THR:HG21 | 3:C:325:ILE:HA | 1.92 | 0.51 |
| 3:C:482:ARG:C | 3:C:484:GLU:N | 2.64 | 0.51 |
| 3:D:485:HIS:CG | 4:D:918:HOH:O | 2.63 | 0.51 |
| 3:D:489:MSE:HA | 4:D:936:HOH:O | 2.09 | 0.51 |
| 3:D:494:ARG:O | 3:D:494:ARG:HG2 | 2.10 | 0.51 |
| 3:D:505:ASN:N | 3:D:506:PRO:HD3 | 2.26 | 0.51 |
| 3:D:781:SER:HB2 | 4:D:957:HOH:O | 2.10 | 0.51 |
| 3:B:589:PHE:HE1 | 3:B:681:MSE:CE | 2.24 | 0.51 |
| 3:B:793:VAL:O | 3:B:796:PHE:HD2 | 1.93 | 0.51 |
| 3:B:402:ASN:HA | 3:B:886:ALA:O | 2.10 | 0.51 |
| 3:C:738:PRO:HG2 | 3:C:741:VAL:HB | 1.93 | 0.51 |
| 3:D:841:PHE:CZ | 3:D:861:ASP:HB3 | 2.44 | 0.51 |
| 3:B:398:GLU:OE2 | 3:B:705:LYS:HE3 | 2.11 | 0.51 |
| 3:B:89:LYS:NZ | 3:B:89:LYS:HB2 | 2.25 | 0.51 |
| 3:C:362:ILE:HD12 | 3:C:575:PHE:HB2 | 1.93 | 0.51 |
| 3:C:518:TYR:HA | 4:C:1027:HOH:O | 2.10 | 0.51 |
| 3:C:620:GLY:HA2 | 3:C:624:SER:O | 2.11 | 0.51 |
| 3:D:354:GLN:HB3 | 3:D:356:GLN:NE2 | 2.26 | 0.51 |
| 3:D:599:ARG:O | 3:D:603:GLU:HG3 | 2.11 | 0.51 |
| 1:G:16:DG:H2'' | 1:G:17:DC:C5' | 2.41 | 0.51 |
| 3:A:489:MSE:C | 3:A:491:ALA:H | 2.14 | 0.51 |
| 3:A:700:GLY:HA2 | 3:A:753:LEU:CD2 | 2.41 | 0.51 |
| 3:B:241:ARG:NH2 | 4:B:1087:HOH:O | 2.44 | 0.51 |
| 3:C:572:ASN:HD22 | 3:C:574:TRP:N | 2.07 | 0.51 |
| 3:D:599:ARG:HH11 | 3:D:599:ARG:HB3 | 1.76 | 0.51 |
| 3:A:298:LEU:O | 3:A:299:ASN:HB3 | 2.11 | 0.50 |
| 3:C:162:TRP:HB3 | 3:C:188:TYR:CZ | 2.46 | 0.50 |
| 3:D:469:GLY:C | 3:D:472:PRO:HD2 | 2.31 | 0.50 |
| 3:D:811:TYR:CZ | 3:D:815:ILE:HD11 | 2.47 | 0.50 |
| 3:D:819:ILE:HG13 | 3:D:819:ILE:O | 2.11 | 0.50 |
| 3:D:322:SER:O | 3:D:326:ILE:HG23 | 2.11 | 0.50 |
| 1:E:7:DA:H2'' | 1:E:8:DT:O5' | 2.12 | 0.50 |
| 2:L:103:DG:H2'' | 2:L:104:DG:H8 | 1.74 | 0.50 |
| 3:A:839:ASN:ND2 | 3:A:841:PHE:HB2 | 2.26 | 0.50 |
| 3:B:405:LYS:O | 3:B:630:ASP:OD2 | 2.29 | 0.50 |
| 3:B:522:PHE:HB2 | 3:B:526:ILE:HD12 | 1.92 | 0.50 |
| 3:C:133:ILE:HD12 | 3:C:198:LEU:HD21 | 1.92 | 0.50 |
| 3:D:64:ASN:ND2 | 3:D:67:ASP:H | 2.09 | 0.50 |
| 3:B:658:ARG:HG2 | 3:D:897:LEU:HD21 | 1.94 | 0.50 |
| 3:B:790:LYS:HA | 4:B:1052:HOH:O | 2.10 | 0.50 |
| 3:C:260:ARG:HH11 | 3:C:260:ARG:HG2 | 1.75 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:D:182:ILE:O | 3:D:186:ILE:HG23 | 2.11 | 0.50 |
| 3:D:381:PRO:O | 3:D:576:ARG:HD2 | 2.11 | 0.50 |
| 3:A:171:GLN:HE22 | 3:A:319:ARG:HH12 | 1.60 | 0.50 |
| 3:A:526:ILE:HA | 3:A:529:LYS:HB3 | 1.92 | 0.50 |
| 3:B:599:ARG:HA | 4:B:1083:HOH:O | 2.11 | 0.50 |
| 3:C:447:ALA:HA | 4:C:927:HOH:O | 2.11 | 0.50 |
| 3:C:284:ASN:HD21 | 3:C:829:LYS:HZ1 | 1.58 | 0.50 |
| 2:J:108:DT:H2'' | 2:J:109:DC:C5' | 2.42 | 0.50 |
| 3:A:221:PHE:C | 3:A:224:PRO:HD2 | 2.32 | 0.50 |
| 3:A:730:LEU:HD13 | 3:A:883:PHE:CE1 | 2.46 | 0.50 |
| 3:D:487:GLY:O | 3:D:491:ALA:N | 2.37 | 0.50 |
| 1:K:11:DC:H2'' | 1:K:12:DA:C5' | 2.42 | 0.50 |
| 3:A:245:HIS:HE1 | 4:A:949:HOH:O | 1.94 | 0.50 |
| 3:A:733:GLN:HE21 | 3:A:733:GLN:N | 2.09 | 0.50 |
| 3:B:608:VAL:HG11 | 3:D:897:LEU:HD22 | 1.94 | 0.50 |
| 3:D:479:PHE:CE1 | 3:D:563:ILE:HD13 | 2.47 | 0.50 |
| 1:K:1:DC:H4' | 3:D:572:ASN:ND2 | 2.27 | 0.50 |
| 2:F:106:DT:C1' | 2:F:107:DG:H5'' | 2.41 | 0.50 |
| 3:A:236:GLU:HG2 | 3:A:240:LYS:HE2 | 1.93 | 0.50 |
| 3:A:439:LEU:HD22 | 4:A:988:HOH:O | 2.12 | 0.50 |
| 3:B:218:VAL:HG22 | 3:B:223:ILE:HG13 | 1.94 | 0.50 |
| 3:B:326:ILE:HG23 | 3:B:330:ARG:HE | 1.76 | 0.50 |
| 3:D:488:TYR:O | 3:D:552:GLY:HA3 | 2.11 | 0.50 |
| 1:I:10:DA:OP1 | 3:C:874:LYS:HD2 | 2.11 | 0.50 |
| 2:J:101:DG:H2'' | 2:J:102:DC:C6 | 2.46 | 0.50 |
| 3:A:653:LYS:HD2 | 3:A:653:LYS:C | 2.32 | 0.50 |
| 3:C:818:ASN:HD22 | 3:C:819:ILE:N | 2.09 | 0.50 |
| 3:D:144:ASP:OD1 | 3:D:185:LYS:HD3 | 2.11 | 0.50 |
| 3:D:854:ILE:HD11 | 3:D:858:ILE:CD1 | 2.37 | 0.50 |
| 2:J:104:DG:H2' | 2:J:105:DC:C5 | 2.47 | 0.50 |
| 1:K:2:DG:OP2 | 3:D:361:PRO:HD2 | 2.11 | 0.50 |
| 3:B:471:VAL:O | 3:B:475:ILE:HG22 | 2.11 | 0.49 |
| 3:D:213:LEU:HD23 | 3:D:213:LEU:C | 2.32 | 0.49 |
| 3:D:642:ARG:HG2 | 3:D:646:HIS:CD2 | 2.46 | 0.49 |
| 3:D:809:LEU:HA | 3:D:812:ASN:HD22 | 1.76 | 0.49 |
| 3:A:154:SER:HB2 | 3:A:155:PRO:HD2 | 1.94 | 0.49 |
| 3:A:338:ARG:HB3 | 3:A:340:PHE:CZ | 2.47 | 0.49 |
| 3:C:179:PRO:HB3 | 3:C:181:GLU:OE1 | 2.12 | 0.49 |
| 3:D:274:ILE:HG23 | 3:D:275:ASP:N | 2.27 | 0.49 |
| 3:B:797:PRO:HG3 | 3:B:806:ARG:HH12 | 1.74 | 0.49 |
| 3:D:51:ASP:HB2 | 4:D:909:HOH:O | 2.13 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:D:380:ILE:HD12 | 3:D:577:TYR:OH | 2.11 | 0.49 |
| 1:E:14:DC:H6 | 1:E:14:DC:H5'' | 1.78 | 0.49 |
| 3:B:355:ILE:N | 3:B:355:ILE:HD12 | 2.26 | 0.49 |
| 3:D:518:TYR:C | 3:D:520:PHE:H | 2.14 | 0.49 |
| 3:B:116:GLU:CB | 3:B:135:ALA:HB3 | 2.41 | 0.49 |
| 3:B:362:ILE:HD12 | 3:B:575:PHE:HB2 | 1.94 | 0.49 |
| 3:D:202:LEU:HD21 | 3:D:230:ILE:HD13 | 1.95 | 0.49 |
| 3:D:428:GLU:N | 4:D:953:HOH:O | 2.44 | 0.49 |
| 3:D:484:GLU:C | 3:D:486:LYS:H | 2.14 | 0.49 |
| 3:B:154:SER:CB | 3:B:313:ARG:HH12 | 2.21 | 0.49 |
| 3:B:423:VAL:O | 3:B:424:ASN:HB3 | 2.11 | 0.49 |
| 3:B:486:LYS:O | 3:B:489:MSE:HG3 | 2.12 | 0.49 |
| 3:C:302:LYS:HE2 | 3:C:326:ILE:HG21 | 1.94 | 0.49 |
| 3:C:707:ARG:HD3 | 4:C:905:HOH:O | 2.12 | 0.49 |
| 3:D:115:ILE:HD13 | 3:D:226:VAL:HG23 | 1.94 | 0.49 |
| 3:A:491:ALA:C | 3:A:493:GLN:H | 2.15 | 0.49 |
| 3:A:629:ALA:HA | 3:A:632:ILE:HD12 | 1.94 | 0.49 |
| 3:B:183:ILE:CG2 | 3:B:184:ASP:N | 2.76 | 0.49 |
| 3:B:218:VAL:O | 3:B:223:ILE:HG13 | 2.13 | 0.49 |
| 3:B:499:ILE:HG22 | 4:B:1054:HOH:O | 2.12 | 0.49 |
| 3:B:863:LEU:O | 3:B:863:LEU:HD23 | 2.12 | 0.49 |
| 3:C:167:ALA:O | 3:C:176:ASP:O | 2.31 | 0.49 |
| 3:C:284:ASN:ND2 | 3:C:829:LYS:HZ1 | 2.11 | 0.49 |
| 3:D:639:SER:C | 3:D:641:PHE:H | 2.16 | 0.49 |
| 3:A:415:LEU:O | 3:A:419:ILE:HG13 | 2.13 | 0.49 |
| 3:B:609:CYS:HA | 3:B:635:LYS:HE3 | 1.94 | 0.49 |
| 3:C:272:ASP:OD1 | 3:C:274:ILE:HG22 | 2.13 | 0.49 |
| 3:B:645:ASN:HB2 | 4:B:1063:HOH:O | 2.13 | 0.49 |
| 3:B:808:ILE:HD13 | 3:B:824:VAL:HG11 | 1.95 | 0.49 |
| 3:D:197:LEU:HD12 | 3:D:197:LEU:H | 1.78 | 0.49 |
| 3:D:285:GLN:NE2 | 3:D:286:PRO:HD2 | 2.27 | 0.49 |
| 3:D:399:PRO:HB3 | 3:D:619:TYR:CD2 | 2.41 | 0.49 |
| 3:B:193:ASN:ND2 | 3:B:194:GLU:N | 2.61 | 0.49 |
| 3:C:61:LEU:HD23 | 3:C:62:PHE:N | 2.28 | 0.49 |
| 3:D:11:ILE:O | 3:D:11:ILE:HG23 | 2.13 | 0.49 |
| 2:J:104:DG:H2' | 2:J:105:DC:H6 | 1.73 | 0.49 |
| 3:C:471:VAL:HB | 3:C:472:PRO:HD3 | 1.95 | 0.48 |
| 3:C:52:ILE:HD12 | 3:C:428:GLU:CG | 2.41 | 0.48 |
| 3:C:533:LEU:HB2 | 3:C:537:SER:HB2 | 1.95 | 0.48 |
| 3:C:880:LEU:HD22 | 3:C:884:THR:HG23 | 1.94 | 0.48 |
| 3:D:316:ASN:H | 3:D:316:ASN:HD22 | 1.60 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:D:824:VAL:HG22 | 3:D:825:VAL:N | 2.28 | 0.48 |
| 1:E:12:DA:O3' | 3:A:800:LYS:HA | 2.14 | 0.48 |
| 3:B:123:PHE:CD1 | 3:B:124:PRO:HD2 | 2.48 | 0.48 |
| 3:B:789:ALA:C | 3:B:791:TYR:H | 2.16 | 0.48 |
| 3:D:830:VAL:HG22 | 3:D:831:TYR:N | 2.28 | 0.48 |
| 3:A:159:VAL:HG21 | 3:A:317:HIS:CD2 | 2.48 | 0.48 |
| 3:A:685:ARG:NH2 | 3:A:717:GLY:H | 2.10 | 0.48 |
| 3:A:739:LYS:H | 3:A:739:LYS:HE3 | 1.78 | 0.48 |
| 3:C:605:LEU:HA | 3:C:608:VAL:HG22 | 1.94 | 0.48 |
| 1:G:8:DT:H2'' | 1:G:9:DG:C8 | 2.48 | 0.48 |
| 3:C:347:MSE:HE2 | 3:C:558:ASN:ND2 | 2.29 | 0.48 |
| 3:C:410:PHE:HB3 | 3:C:683:MSE:HG2 | 1.95 | 0.48 |
| 3:C:416:TYR:HB2 | 3:C:417:PRO:HD3 | 1.95 | 0.48 |
| 3:D:116:GLU:CB | 3:D:135:ALA:HB3 | 2.43 | 0.48 |
| 3:A:776:TYR:CD1 | 3:A:863:LEU:HD11 | 2.49 | 0.48 |
| 3:B:727:ILE:HG21 | 3:B:732:THR:CG2 | 2.43 | 0.48 |
| 3:D:530:ILE:HG12 | 3:D:531:LYS:N | 2.29 | 0.48 |
| 3:A:113:PHE:CE1 | 3:A:218:VAL:CG2 | 2.97 | 0.48 |
| 3:A:347:MSE:N | 4:A:965:HOH:O | 2.46 | 0.48 |
| 3:B:415:LEU:HD11 | 3:B:419:ILE:HD11 | 1.95 | 0.48 |
| 3:B:597:ILE:HG21 | 3:B:667:PHE:CE2 | 2.49 | 0.48 |
| 3:B:734:LYS:O | 3:B:735:SER:OG | 2.30 | 0.48 |
| 3:B:901:PHE:HB2 | 3:D:608:VAL:O | 2.13 | 0.48 |
| 3:C:149:PHE:N | 3:C:149:PHE:CD1 | 2.81 | 0.48 |
| 3:C:34:LYS:HB3 | 3:C:61:LEU:HD21 | 1.96 | 0.48 |
| 3:C:803:PHE:HA | 4:C:922:HOH:O | 2.14 | 0.48 |
| 3:D:213:LEU:HD21 | 3:D:218:VAL:HG11 | 1.95 | 0.48 |
| 3:D:64:ASN:ND2 | 3:D:66:ARG:H | 2.12 | 0.48 |
| 3:D:804:HIS:CD2 | 3:D:805:ILE:HG13 | 2.48 | 0.48 |
| 3:A:405:LYS:O | 3:A:690:GLY:HA2 | 2.13 | 0.48 |
| 3:A:347:MSE:CB | 3:A:558:ASN:HD21 | 2.23 | 0.48 |
| 3:C:486:LYS:O | 3:C:490:LEU:HG | 2.12 | 0.48 |
| 3:C:706:LYS:C | 3:C:707:ARG:HG2 | 2.34 | 0.48 |
| 3:B:900:MSE:SE | 3:D:636:VAL:HA | 2.64 | 0.48 |
| 3:D:727:ILE:HG13 | 3:D:732:THR:HG21 | 1.96 | 0.48 |
| 3:D:732:THR:HG23 | 4:D:914:HOH:O | 2.13 | 0.48 |
| 3:A:158:ASN:HD22 | 3:A:158:ASN:N | 2.12 | 0.48 |
| 3:D:316:ASN:N | 3:D:316:ASN:HD22 | 2.11 | 0.48 |
| 1:E:3:CTG:H2' | 1:E:3:CTG:O6 | 2.12 | 0.48 |
| 3:A:211:VAL:HG21 | 4:A:957:HOH:O | 2.14 | 0.48 |
| 3:A:6:LEU:HD11 | 3:A:26:GLU:HG3 | 1.95 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:475:ILE:C | 3:B:475:ILE:HD13 | 2.33 | 0.48 |
| 3:B:560:LYS:HE3 | 4:B:979:HOH:O | 2.13 | 0.48 |
| 3:B:642:ARG:H | 3:B:646:HIS:CD2 | 2.31 | 0.48 |
| 3:C:302:LYS:HD2 | 3:C:323:TYR:CE1 | 2.48 | 0.48 |
| 3:C:3:GLU:HG2 | 3:C:22:SER:N | 2.29 | 0.48 |
| 3:C:592:MSE:HE1 | 3:C:674:MSE:HG3 | 1.96 | 0.48 |
| 3:D:487:GLY:O | 3:D:491:ALA:HB3 | 2.13 | 0.48 |
| 3:D:528:GLU:C | 3:D:530:ILE:HD13 | 2.34 | 0.48 |
| 2:L:107:DG:H2' | 2:L:108:DT:C6 | 2.49 | 0.48 |
| 3:A:636:VAL:O | 3:A:640:LYS:HG3 | 2.14 | 0.48 |
| 3:A:706:LYS:O | 3:A:707:ARG:HD3 | 2.14 | 0.48 |
| 3:B:163:SER:HB3 | 3:B:166:ILE:HD12 | 1.95 | 0.48 |
| 3:B:85:MSE:HA | 3:B:380:ILE:HD11 | 1.96 | 0.48 |
| 3:B:471:VAL:HB | 3:B:472:PRO:CD | 2.44 | 0.48 |
| 3:C:104:ASP:OD1 | 3:C:107:LYS:HG2 | 2.14 | 0.48 |
| 3:D:503:LEU:O | 3:D:506:PRO:HG3 | 2.13 | 0.48 |
| 3:D:62:PHE:HB3 | 3:D:67:ASP:OD2 | 2.12 | 0.48 |
| 1:K:10:DA:H3' | 4:K:146:HOH:O | 2.14 | 0.48 |
| 3:C:481:GLN:HE21 | 3:C:559:ARG:HD2 | 1.78 | 0.47 |
| 3:D:484:GLU:C | 3:D:486:LYS:N | 2.67 | 0.47 |
| 1:I:13:DG:H2'' | 1:I:14:DC:O5' | 2.13 | 0.47 |
| 3:A:502:ALA:O | 3:A:506:PRO:HB3 | 2.14 | 0.47 |
| 3:B:748:CYS:O | 3:B:752:MSE:HG3 | 2.14 | 0.47 |
| 3:C:878:LYS:HB3 | 3:C:879:PRO:CD | 2.45 | 0.47 |
| 3:D:248:THR:HG22 | 3:D:265:LEU:HA | 1.96 | 0.47 |
| 1:E:16:DG:H2'' | 1:E:17:DC:O5' | 2.14 | 0.47 |
| 3:B:858:ILE:O | 3:B:862:VAL:HG23 | 2.13 | 0.47 |
| 3:C:667:PHE:HB3 | 3:C:679:HIS:HE1 | 1.77 | 0.47 |
| 1:G:5:DG:H1' | 1:G:6:DA:H5' | 1.96 | 0.47 |
| 3:A:790:LYS:HD3 | 3:A:791:TYR:CE1 | 2.49 | 0.47 |
| 3:B:403:ARG:NH1 | 3:B:887:ALA:O | 2.47 | 0.47 |
| 3:C:81:GLU:HG2 | 3:C:83:LEU:CD2 | 2.44 | 0.47 |
| 3:D:660:GLU:CB | 3:D:661:PRO:HD3 | 2.43 | 0.47 |
| 2:J:102:DC:H2'' | 2:J:103:DG:O5' | 2.15 | 0.47 |
| 2:J:111:DT:C2' | 2:J:112:DT:C5' | 2.79 | 0.47 |
| 3:B:167:ALA:HA | 3:B:176:ASP:HB2 | 1.97 | 0.47 |
| 3:B:664:ASP:OD2 | 3:B:668:ARG:NH1 | 2.48 | 0.47 |
| 3:D:197:LEU:C | 3:D:199:MSE:H | 2.17 | 0.47 |
| 3:D:824:VAL:HG22 | 3:D:825:VAL:H | 1.80 | 0.47 |
| 1:E:5:DG:H2' | 1:E:6:DA:H5'' | 1.97 | 0.47 |
| 3:A:112:ASN:C | 3:A:112:ASN:HD22 | 2.18 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:A:72:ILE:HG22 | 3:A:76:GLU:OE1 | 2.15 | 0.47 |
| 3:B:494:ARG:NH1 | 3:B:494:ARG:CB | 2.77 | 0.47 |
| 3:C:305:TYR:HB3 | 3:C:323:TYR:OH | 2.14 | 0.47 |
| 3:D:154:SER:HB3 | 3:D:155:PRO:CD | 2.39 | 0.47 |
| 3:D:82:ALA:N | 3:D:382:GLN:OE1 | 2.43 | 0.47 |
| 3:D:856:ASP:HA | 3:D:859:LYS:CB | 2.45 | 0.47 |
| 1:G:3:CTG:H2' | 1:G:3:CTG:O6 | 2.15 | 0.47 |
| 3:A:202:LEU:O | 3:A:206:GLN:HG2 | 2.15 | 0.47 |
| 3:A:774:LEU:HB3 | 4:A:1004:HOH:O | 2.14 | 0.47 |
| 3:B:787:ASN:C | 3:B:789:ALA:N | 2.68 | 0.47 |
| 3:D:201:TYR:O | 3:D:204:PHE:HB3 | 2.15 | 0.47 |
| 3:A:797:PRO:N | 3:A:809:LEU:HD13 | 2.30 | 0.47 |
| 3:B:732:THR:CG2 | 3:B:733:GLN:N | 2.77 | 0.47 |
| 2:H:112:DT:H2'' | 2:H:113:DC:OP2 | 2.15 | 0.47 |
| 3:A:822:PRO:HD3 | 4:A:933:HOH:O | 2.15 | 0.47 |
| 3:A:887:ALA:O | 3:A:888:LYS:HB2 | 2.15 | 0.47 |
| 1:I:2:DG:C8 | 3:C:361:PRO:HG2 | 2.50 | 0.47 |
| 3:D:197:LEU:HD12 | 3:D:197:LEU:N | 2.30 | 0.47 |
| 3:D:399:PRO:O | 3:D:401:PRO:HD3 | 2.15 | 0.47 |
| 3:A:347:MSE:HG2 | 3:A:358:VAL:HG23 | 1.96 | 0.47 |
| 3:C:15:ILE:HD11 | 3:C:92:TYR:CE2 | 2.49 | 0.47 |
| 3:C:451:SER:OG | 3:C:462:MSE:HE3 | 2.14 | 0.47 |
| 3:D:151:LEU:HD22 | 3:D:152:LEU:N | 2.30 | 0.47 |
| 3:D:170:LEU:HA | 3:D:177:GLU:HG2 | 1.97 | 0.47 |
| 3:D:109:ARG:HD2 | 3:D:209:THR:O | 2.14 | 0.47 |
| 3:D:290:LEU:HD21 | 3:D:330:ARG:HB2 | 1.96 | 0.47 |
| 3:D:644:THR:O | 3:D:648:VAL:HG23 | 2.15 | 0.47 |
| 3:D:730:LEU:HD11 | 3:D:749:ILE:HD13 | 1.97 | 0.47 |
| 3:A:197:LEU:HD23 | 3:A:197:LEU:C | 2.35 | 0.47 |
| 3:A:730:LEU:HD22 | 3:A:883:PHE:HE1 | 1.80 | 0.47 |
| 3:B:362:ILE:HD13 | 3:B:569:ALA:HB1 | 1.96 | 0.47 |
| 3:D:153:ASN:HA | 3:D:158:ASN:OD1 | 2.15 | 0.47 |
| 3:D:752:MSE:HG2 | 3:D:889:LEU:HD13 | 1.97 | 0.47 |
| 2:H:104:DG:C2' | 2:H:105:DC:O5' | 2.61 | 0.47 |
| 3:A:607:GLU:HG2 | 3:A:607:GLU:O | 2.14 | 0.46 |
| 3:A:412:LEU:HG | 3:A:683:MSE:HG2 | 1.96 | 0.46 |
| 3:B:818:ASN:ND2 | 3:B:857:LEU:CD1 | 2.78 | 0.46 |
| 3:D:202:LEU:HD21 | 3:D:230:ILE:CD1 | 2.45 | 0.46 |
| 3:D:808:ILE:HA | 3:D:847:ALA:HB3 | 1.96 | 0.46 |
| 1:E:15:DC:H2'' | 1:E:16:DG:C8 | 2.50 | 0.46 |
| 3:B:249:ARG:HG2 | 3:B:249:ARG:HH11 | 1.80 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:415:LEU:HD22 | 3:B:623:ASP:HB3 | 1.97 | 0.46 |
| 3:B:489:MSE:HE2 | 3:B:490:LEU:HG | 1.97 | 0.46 |
| 3:B:787:ASN:O | 3:B:789:ALA:N | 2.48 | 0.46 |
| 3:D:386:HIS:HB3 | 3:D:387:PRO:HD2 | 1.96 | 0.46 |
| 3:A:875:THR:HA | 4:A:955:HOH:O | 2.15 | 0.46 |
| 3:B:641:PHE:HA | 3:B:646:HIS:HD2 | 1.80 | 0.46 |
| 3:D:151:LEU:HD13 | 3:D:151:LEU:C | 2.35 | 0.46 |
| 3:D:416:TYR:HB2 | 3:D:417:PRO:HD3 | 1.96 | 0.46 |
| 3:D:511:ASP:C | 3:D:533:LEU:HD11 | 2.35 | 0.46 |
| 3:A:482:ARG:HH11 | 3:A:483:LYS:NZ | 2.13 | 0.46 |
| 3:C:138:HIS:CD2 | 3:C:138:HIS:C | 2.88 | 0.46 |
| 3:C:412:LEU:HD13 | 3:C:415:LEU:CD1 | 2.43 | 0.46 |
| 3:C:514:LEU:HD23 | 3:C:541:MSE:HE1 | 1.98 | 0.46 |
| 3:C:482:ARG:HD2 | 3:C:556:GLN:HE21 | 1.79 | 0.46 |
| 3:D:33:TYR:HB3 | 3:D:65:MSE:CE | 2.45 | 0.46 |
| 3:D:517:ASP:C | 3:D:519:ARG:N | 2.69 | 0.46 |
| 3:D:730:LEU:O | 3:D:731:GLU:HB2 | 2.15 | 0.46 |
| 3:B:319:ARG:HD3 | 3:B:319:ARG:HA | 1.73 | 0.46 |
| 3:B:312:LEU:HD12 | 3:B:320:TYR:CB | 2.45 | 0.46 |
| 3:B:347:MSE:HB2 | 3:B:558:ASN:HD21 | 1.80 | 0.46 |
| 3:B:793:VAL:C | 3:B:795:GLY:H | 2.18 | 0.46 |
| 3:C:579:ASP:HB3 | 3:C:582:ASN:HB2 | 1.96 | 0.46 |
| 1:K:16:DG:H2'' | 1:K:17:DC:C5' | 2.43 | 0.46 |
| 3:A:326:ILE:O | 3:A:330:ARG:HG2 | 2.15 | 0.46 |
| 3:A:523:SER:HB3 | 3:A:526:ILE:HG12 | 1.96 | 0.46 |
| 1:E:13:DG:P | 3:A:800:LYS:HA | 2.56 | 0.46 |
| 3:B:285:GLN:HG3 | 3:B:292:TYR:HE2 | 1.80 | 0.46 |
| 3:B:386:HIS:HD2 | 4:B:1064:HOH:O | 1.98 | 0.46 |
| 3:C:162:TRP:HB3 | 3:C:188:TYR:CE1 | 2.50 | 0.46 |
| 3:D:730:LEU:HG | 3:D:732:THR:H | 1.80 | 0.46 |
| 3:D:10:GLN:H | 3:D:89:LYS:HE2 | 1.80 | 0.46 |
| 1:E:14:DC:H2' | 1:E:15:DC:C5 | 2.50 | 0.46 |
| 3:A:797:PRO:HD3 | 3:A:809:LEU:HD13 | 1.98 | 0.46 |
| 3:C:881:GLU:HG3 | 3:C:891:TYR:CE1 | 2.44 | 0.46 |
| 3:D:391:TYR:CZ | 3:D:583:ALA:HB1 | 2.51 | 0.46 |
| 3:D:490:LEU:HD23 | 3:D:490:LEU:C | 2.36 | 0.46 |
| 3:D:660:GLU:HB3 | 3:D:661:PRO:HD3 | 1.96 | 0.46 |
| 2:H:105:DC:H2'' | 2:H:106:DT:H5' | 1.98 | 0.46 |
| 3:A:824:VAL:HG22 | 3:A:849:PRO:HD3 | 1.98 | 0.46 |
| 3:B:492:ALA:HB1 | 3:B:545:ALA:O | 2.14 | 0.46 |
| 3:B:702:TRP:CD1 | 3:B:708:TYR:HB3 | 2.51 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:75:MSE:HE2 | 3:B:78:ILE:CG2 | 2.46 | 0.46 |
| 3:B:811:TYR:O | 3:B:815:ILE:HG12 | 2.16 | 0.46 |
| 3:C:154:SER:C | 3:C:156:TYR:H | 2.18 | 0.46 |
| 3:C:127:SER:HA | 3:C:228:ASN:ND2 | 2.31 | 0.46 |
| 1:E:14:DC:H2'' | 1:E:15:DC:C5' | 2.46 | 0.46 |
| 1:K:16:DG:C2' | 1:K:17:DC:H5'' | 2.44 | 0.46 |
| 1:K:7:DA:H2' | 1:K:8:DT:H6 | 1.81 | 0.46 |
| 2:L:101:DG:N3 | 2:L:102:DC:C5 | 2.84 | 0.46 |
| 3:A:514:LEU:HB3 | 3:A:541:MSE:SE | 2.65 | 0.46 |
| 3:B:252:VAL:O | 3:B:252:VAL:HG23 | 2.15 | 0.46 |
| 3:B:747:GLU:OE2 | 3:B:750:ARG:NH2 | 2.49 | 0.46 |
| 3:C:526:ILE:O | 3:C:526:ILE:HG22 | 2.15 | 0.46 |
| 3:D:183:ILE:O | 3:D:186:ILE:HG12 | 2.15 | 0.46 |
| 3:D:216:TRP:CZ3 | 3:D:274:ILE:HD12 | 2.51 | 0.46 |
| 3:D:394:ALA:HB1 | 4:D:945:HOH:O | 2.15 | 0.46 |
| 2:J:101:DG:H2'' | 2:J:102:DC:O5' | 2.16 | 0.46 |
| 3:A:205:TRP:CE2 | 3:A:242:LEU:HD12 | 2.51 | 0.46 |
| 3:A:455:SER:OG | 3:A:676:ASN:HA | 2.15 | 0.46 |
| 3:A:758:GLU:O | 3:A:762:GLU:HG3 | 2.16 | 0.46 |
| 3:B:415:LEU:O | 3:B:419:ILE:HG13 | 2.16 | 0.46 |
| 3:B:9:GLU:HA | 3:B:89:LYS:HD2 | 1.98 | 0.46 |
| 3:C:491:ALA:HB1 | 3:C:521:ASP:N | 2.31 | 0.46 |
| 3:C:347:MSE:CE | 3:C:562:LEU:HD13 | 2.46 | 0.46 |
| 3:D:136:ILE:HD11 | 3:D:201:TYR:CE2 | 2.51 | 0.46 |
| 3:D:293:ILE:HG13 | 3:D:294:SER:N | 2.31 | 0.46 |
| 3:D:546:GLN:O | 3:D:550:VAL:HG23 | 2.16 | 0.46 |
| 1:G:16:DG:H2'' | 1:G:17:DC:O5' | 2.16 | 0.46 |
| 3:A:691:PRO:HD3 | 3:A:699:GLY:HA2 | 1.98 | 0.45 |
| 3:B:347:MSE:SE | 3:B:562:LEU:HG | 2.66 | 0.45 |
| 3:D:226:VAL:O | 3:D:230:ILE:HG13 | 2.16 | 0.45 |
| 3:D:428:GLU:OE2 | 3:D:470:VAL:HG12 | 2.15 | 0.45 |
| 3:D:775:ASN:OD1 | 3:D:777:ILE:HG12 | 2.16 | 0.45 |
| 1:E:12:DA:H61 | 2:F:106:DT:H3 | 1.64 | 0.45 |
| 3:A:308:PRO:CG | 3:A:311:LYS:HD2 | 2.47 | 0.45 |
| 3:C:167:ALA:HA | 3:C:176:ASP:HB3 | 1.98 | 0.45 |
| 3:C:239:ALA:C | 3:C:241:ARG:H | 2.20 | 0.45 |
| 3:C:738:PRO:HG2 | 3:C:741:VAL:CG2 | 2.46 | 0.45 |
| 3:C:854:ILE:CG2 | 3:C:859:LYS:HD3 | 2.47 | 0.45 |
| 3:D:113:PHE:HE1 | 3:D:213:LEU:HD21 | 1.81 | 0.45 |
| 3:D:429:THR:O | 3:D:463:TYR:HA | 2.16 | 0.45 |
| 3:D:443:ILE:HD13 | 3:D:595:GLN:CB | 2.46 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:D:37:LEU:HD11 | 3:D:72:ILE:HD11 | 1.97 | 0.45 |
| 3:A:495:ASN:ND2 | 3:A:521:ASP:HA | 2.21 | 0.45 |
| 3:B:14:SER:HG | 3:B:16:PHE:HE1 | 1.62 | 0.45 |
| 3:B:369:ILE:HG12 | 3:B:474:GLU:HG3 | 1.98 | 0.45 |
| 3:B:897:LEU:O | 3:B:900:MSE:HG3 | 2.16 | 0.45 |
| 3:D:410:PHE:CB | 3:D:683:MSE:HE2 | 2.46 | 0.45 |
| 3:A:642:ARG:HG3 | 3:A:646:HIS:CD2 | 2.52 | 0.45 |
| 3:B:835:LEU:HD23 | 3:B:866:MSE:HA | 1.98 | 0.45 |
| 3:B:873:GLU:HA | 3:B:877:ILE:HG13 | 1.98 | 0.45 |
| 3:D:155:PRO:O | 3:D:156:TYR:HB2 | 2.16 | 0.45 |
| 3:D:433:THR:N | 3:D:462:MSE:HE2 | 2.31 | 0.45 |
| 1:I:5:DG:C2' | 1:I:6:DA:H5'' | 2.46 | 0.45 |
| 3:A:481:GLN:HA | 3:A:484:GLU:HG2 | 1.99 | 0.45 |
| 3:A:422:GLN:NE2 | 3:A:680:LEU:H | 2.14 | 0.45 |
| 3:B:273:TYR:OH | 3:B:335:ASP:HA | 2.16 | 0.45 |
| 3:B:516:VAL:H | 3:B:544:ARG:CZ | 2.29 | 0.45 |
| 3:B:548:THR:C | 3:B:550:VAL:H | 2.19 | 0.45 |
| 3:B:818:ASN:ND2 | 3:B:857:LEU:HD12 | 2.32 | 0.45 |
| 1:E:13:DG:O4' | 3:A:800:LYS:HD3 | 2.16 | 0.45 |
| 3:A:843:ASP:HA | 4:A:1009:HOH:O | 2.16 | 0.45 |
| 3:A:769:LYS:HD2 | 4:A:994:HOH:O | 2.16 | 0.45 |
| 3:A:810:THR:HG22 | 4:A:999:HOH:O | 2.16 | 0.45 |
| 3:B:221:PHE:C | 3:B:224:PRO:HD2 | 2.37 | 0.45 |
| 3:D:127:SER:C | 3:D:129:ALA:H | 2.20 | 0.45 |
| 3:D:412:LEU:HD23 | 3:D:683:MSE:HG2 | 1.99 | 0.45 |
| 3:A:732:THR:C | 3:A:733:GLN:HE21 | 2.18 | 0.45 |
| 3:B:413:THR:O | 3:B:414:SER:C | 2.55 | 0.45 |
| 3:C:109:ARG:NH1 | 3:C:140:ASP:OD2 | 2.40 | 0.45 |
| 3:C:660:GLU:HB2 | 3:C:661:PRO:CD | 2.39 | 0.45 |
| 3:A:594:LEU:HD21 | 3:A:621:ASP:H | 1.82 | 0.45 |
| 3:A:810:THR:HG23 | 3:A:841:PHE:O | 2.17 | 0.45 |
| 3:B:193:ASN:ND2 | 3:B:195:LYS:H | 2.14 | 0.45 |
| 3:B:435:LYS:O | 3:B:435:LYS:CG | 2.64 | 0.45 |
| 3:D:533:LEU:HD12 | 3:D:537:SER:CB | 2.47 | 0.45 |
| 3:D:692:PRO:HG3 | 3:D:713:TRP:HZ2 | 1.82 | 0.45 |
| 3:D:858:ILE:O | 3:D:862:VAL:HG23 | 2.16 | 0.45 |
| 1:E:4:DG:OP1 | 3:A:390:PRO:HA | 2.16 | 0.45 |
| 1:K:18:DG:O4' | 3:A:36:SER:HB2 | 2.17 | 0.45 |
| 3:A:402:ASN:HA | 3:A:886:ALA:O | 2.17 | 0.45 |
| 3:A:471:VAL:HG11 | 3:A:570:LEU:HD11 | 1.99 | 0.45 |
| 3:B:901:PHE:HD2 | 3:D:635:LYS:HG2 | 1.82 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:D:709:ALA:HB1 | 3:D:727:ILE:HG22 | 1.99 | 0.45 |
| 3:D:786:ASN:OD1 | 3:D:805:ILE:HD11 | 2.17 | 0.45 |
| 2:J:104:DG:H2'' | 2:J:105:DC:O5' | 2.17 | 0.45 |
| 3:A:71:TRP:CZ2 | 3:A:75:MSE:HE2 | 2.53 | 0.44 |
| 3:B:113:PHE:CE1 | 3:B:218:VAL:CG2 | 3.00 | 0.44 |
| 3:B:735:SER:HB2 | 3:B:737:THR:HG23 | 1.97 | 0.44 |
| 3:C:425:ILE:HG23 | 3:C:463:TYR:CE2 | 2.52 | 0.44 |
| 3:D:289:SER:HB2 | 3:D:292:TYR:CB | 2.47 | 0.44 |
| 3:D:470:VAL:HG13 | 3:D:471:VAL:H | 1.81 | 0.44 |
| 1:G:5:DG:H2'' | 1:G:6:DA:O5' | 2.17 | 0.44 |
| 1:I:7:DA:H2' | 1:I:8:DT:H71 | 1.98 | 0.44 |
| 3:A:747:GLU:HA | 4:A:916:HOH:O | 2.16 | 0.44 |
| 3:B:435:LYS:HG3 | 4:B:1082:HOH:O | 2.16 | 0.44 |
| 3:B:751:ARG:NE | 3:B:763:TYR:HB2 | 2.33 | 0.44 |
| 3:B:872:LEU:HD12 | 3:B:876:PHE:HB3 | 1.99 | 0.44 |
| 3:D:240:LYS:HE2 | 3:D:248:THR:OG1 | 2.16 | 0.44 |
| 3:D:250:VAL:HG22 | 3:D:263:ILE:HG23 | 2.00 | 0.44 |
| 1:I:11:DC:H2'' | 1:I:12:DA:O5' | 2.18 | 0.44 |
| 2:J:109:DC:O4' | 3:C:800:LYS:NZ | 2.50 | 0.44 |
| 3:A:15:ILE:HG12 | 3:A:65:MSE:HE1 | 2.00 | 0.44 |
| 3:B:421:ARG:HB3 | 3:B:680:LEU:CD1 | 2.47 | 0.44 |
| 3:B:608:VAL:HG13 | 3:D:897:LEU:HB2 | 1.99 | 0.44 |
| 3:C:214:THR:OG1 | 3:C:215:GLY:N | 2.50 | 0.44 |
| 3:D:33:TYR:HB3 | 3:D:65:MSE:HE1 | 1.99 | 0.44 |
| 3:D:741:VAL:O | 3:D:745:LEU:HD13 | 2.18 | 0.44 |
| 2:F:111:DT:H2'' | 2:F:112:DT:H5'' | 1.99 | 0.44 |
| 2:F:112:DT:H1' | 2:F:113:DC:H5' | 1.99 | 0.44 |
| 3:B:408:MSE:CE | 3:B:655:ALA:HB2 | 2.45 | 0.44 |
| 3:B:792:ASP:CG | 3:B:793:VAL:H | 2.20 | 0.44 |
| 3:C:469:GLY:C | 3:C:472:PRO:HD2 | 2.38 | 0.44 |
| 3:C:558:ASN:HA | 3:C:558:ASN:HD22 | 1.62 | 0.44 |
| 3:C:738:PRO:HB3 | 3:C:780:ALA:O | 2.18 | 0.44 |
| 3:D:150:ASP:HB3 | 3:D:188:TYR:CE1 | 2.53 | 0.44 |
| 3:D:434:PHE:CE1 | 3:D:460:GLY:HA2 | 2.53 | 0.44 |
| 2:H:111:DT:H2'' | 2:H:112:DT:C5' | 2.47 | 0.44 |
| 3:A:176:ASP:OD2 | 3:A:318:GLN:NE2 | 2.51 | 0.44 |
| 3:A:406:TYR:CD2 | 3:A:633:ILE:HG13 | 2.53 | 0.44 |
| 3:A:507:ASN:O | 3:A:508:LEU:HD22 | 2.17 | 0.44 |
| 3:A:553:MSE:HA | 3:A:556:GLN:OE1 | 2.18 | 0.44 |
| 3:A:641:PHE:HA | 3:A:646:HIS:CD2 | 2.52 | 0.44 |
| 3:A:715:MSE:O | 3:A:716:GLU:HB2 | 2.18 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:257:TYR:N | 3:B:257:TYR:CD2 | 2.85 | 0.44 |
| 3:D:290:LEU:O | 3:D:290:LEU:HD23 | 2.16 | 0.44 |
| 3:D:873:GLU:HB3 | 3:D:877:ILE:HD11 | 2.00 | 0.44 |
| 3:A:787:ASN:N | 3:A:826:GLU:OE1 | 2.47 | 0.44 |
| 3:A:854:ILE:HG23 | 3:A:859:LYS:HB2 | 2.00 | 0.44 |
| 3:B:193:ASN:C | 3:B:193:ASN:ND2 | 2.71 | 0.44 |
| 3:D:434:PHE:CE2 | 3:D:450:PRO:HB3 | 2.53 | 0.44 |
| 3:A:539:ASN:HD22 | 3:A:539:ASN:HA | 1.61 | 0.44 |
| 3:A:800:LYS:HB2 | 3:A:800:LYS:HZ2 | 1.82 | 0.44 |
| 3:B:270:VAL:O | 3:B:271:LEU:HD12 | 2.18 | 0.44 |
| 3:B:825:VAL:HB | 3:B:828:GLU:CD | 2.38 | 0.44 |
| 3:B:818:ASN:HD22 | 3:B:857:LEU:HD13 | 1.82 | 0.44 |
| 3:C:198:LEU:O | 3:C:202:LEU:HB2 | 2.18 | 0.44 |
| 3:C:154:SER:O | 3:C:156:TYR:N | 2.51 | 0.44 |
| 3:C:284:ASN:ND2 | 3:C:829:LYS:NZ | 2.66 | 0.44 |
| 3:C:491:ALA:O | 3:C:495:ASN:HB2 | 2.18 | 0.44 |
| 3:C:71:TRP:O | 3:C:75:MSE:HG2 | 2.17 | 0.44 |
| 3:C:83:LEU:HB3 | 3:C:379:VAL:CG1 | 2.48 | 0.44 |
| 3:D:151:LEU:HD23 | 3:D:191:PHE:O | 2.18 | 0.44 |
| 3:A:777:ILE:HD13 | 3:A:848:TRP:HZ2 | 1.83 | 0.44 |
| 3:C:482:ARG:O | 3:C:484:GLU:N | 2.50 | 0.44 |
| 3:D:314:GLU:HG3 | 3:D:314:GLU:O | 2.18 | 0.44 |
| 3:D:481:GLN:HB3 | 3:D:559:ARG:HE | 1.83 | 0.44 |
| 3:D:749:ILE:O | 3:D:753:LEU:HG | 2.18 | 0.44 |
| 3:D:848:TRP:CB | 4:D:932:HOH:O | 2.65 | 0.44 |
| 3:D:8:VAL:HG11 | 3:D:93:LEU:CD1 | 2.46 | 0.44 |
| 1:I:15:DC:H2'' | 1:I:16:DG:C8 | 2.53 | 0.44 |
| 2:L:112:DT:H2'' | 2:L:113:DC:C4' | 2.47 | 0.44 |
| 3:B:686:GLU:HG3 | 3:B:715:MSE:SE | 2.68 | 0.43 |
| 3:D:499:ILE:O | 3:D:502:ALA:HB3 | 2.18 | 0.43 |
| 3:D:602:ASN:HD21 | 3:D:617:VAL:CG2 | 2.31 | 0.43 |
| 3:D:685:ARG:HD2 | 3:D:686:GLU:N | 2.33 | 0.43 |
| 3:D:849:PRO:HG2 | 3:D:852:THR:OG1 | 2.18 | 0.43 |
| 3:D:853:GLU:O | 3:D:854:ILE:HB | 2.18 | 0.43 |
| 2:F:113:DC:H2'' | 2:F:114:DC:OP2 | 2.18 | 0.43 |
| 1:G:15:DC:H6 | 1:G:15:DC:H5' | 1.81 | 0.43 |
| 2:J:105:DC:H2'' | 2:J:106:DT:O5' | 2.17 | 0.43 |
| 3:A:218:VAL:HG23 | 3:A:222:ALA:CB | 2.46 | 0.43 |
| 3:A:734:LYS:HG2 | 3:A:736:SER:OG | 2.17 | 0.43 |
| 3:A:814:ALA:HB1 | 3:A:858:ILE:HG21 | 2.00 | 0.43 |
| 3:B:494:ARG:NH1 | 3:B:494:ARG:HB2 | 2.33 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:606:ASN:HA | 3:B:611:THR:OG1 | 2.19 | 0.43 |
| 3:B:703:THR:HG1 | 3:B:707:ARG:HD3 | 1.82 | 0.43 |
| 3:C:455:SER:HG | 3:C:676:ASN:HA | 1.83 | 0.43 |
| 3:A:516:VAL:HG22 | 3:A:517:ASP:N | 2.33 | 0.43 |
| 3:A:737:THR:O | 3:A:742:GLN:NE2 | 2.51 | 0.43 |
| 3:C:283:THR:O | 3:C:283:THR:HG23 | 2.17 | 0.43 |
| 3:C:818:ASN:ND2 | 3:C:818:ASN:C | 2.71 | 0.43 |
| 3:C:864:HIS:HD2 | 3:C:865:TRP:NE1 | 2.16 | 0.43 |
| 3:D:147:TYR:HA | 3:D:187:ILE:CG2 | 2.48 | 0.43 |
| 3:D:438:PRO:HG2 | 3:D:441:ASP:CG | 2.37 | 0.43 |
| 3:D:487:GLY:HA2 | 3:D:490:LEU:HB3 | 2.00 | 0.43 |
| 3:B:901:PHE:CD2 | 3:D:635:LYS:HG2 | 2.53 | 0.43 |
| 3:B:791:TYR:CD1 | 3:B:809:LEU:HD22 | 2.53 | 0.43 |
| 3:C:227:TYR:HD1 | 3:C:242:LEU:HD12 | 1.82 | 0.43 |
| 3:D:503:LEU:HA | 3:D:538:LEU:HD13 | 2.01 | 0.43 |
| 3:D:700:GLY:HA2 | 3:D:753:LEU:CD2 | 2.44 | 0.43 |
| 3:A:401:PRO:O | 3:A:402:ASN:HB2 | 2.17 | 0.43 |
| 3:A:83:LEU:HD12 | 3:A:83:LEU:N | 2.31 | 0.43 |
| 3:B:604:TYR:O | 3:B:608:VAL:HG23 | 2.17 | 0.43 |
| 3:B:643:ASP:OD2 | 3:B:646:HIS:HB2 | 2.18 | 0.43 |
| 3:B:660:GLU:CB | 3:B:661:PRO:HD3 | 2.47 | 0.43 |
| 3:B:878:LYS:HB3 | 3:B:879:PRO:CD | 2.48 | 0.43 |
| 3:D:485:HIS:N | 4:D:918:HOH:O | 2.51 | 0.43 |
| 3:D:514:LEU:C | 3:D:516:VAL:H | 2.21 | 0.43 |
| 3:D:730:LEU:HB2 | 3:D:883:PHE:CE2 | 2.54 | 0.43 |
| 3:D:744:ALA:HB1 | 3:D:876:PHE:CE1 | 2.54 | 0.43 |
| 3:A:36:SER:O | 3:A:37:LEU:HD12 | 2.19 | 0.43 |
| 3:B:643:ASP:HB2 | 4:B:1024:HOH:O | 2.18 | 0.43 |
| 3:B:834:PRO:O | 3:B:866:MSE:HA | 2.19 | 0.43 |
| 3:D:181:GLU:O | 3:D:185:LYS:HD2 | 2.18 | 0.43 |
| 3:D:437:ALA:HB3 | 3:D:442:TYR:CE2 | 2.54 | 0.43 |
| 2:H:105:DC:H2' | 2:H:106:DT:C6 | 2.53 | 0.43 |
| 3:A:606:ASN:OD1 | 3:A:616:PHE:CE1 | 2.69 | 0.43 |
| 3:B:668:ARG:HG3 | 3:B:668:ARG:NH1 | 2.30 | 0.43 |
| 3:C:25:ARG:HH21 | 3:C:27:ARG:HG2 | 1.84 | 0.43 |
| 1:I:2:DG:P | 3:C:361:PRO:HD2 | 2.59 | 0.43 |
| 3:D:228:ASN:HA | 3:D:231:LYS:HD3 | 2.00 | 0.43 |
| 3:D:408:MSE:HE1 | 3:D:659:MSE:SE | 2.69 | 0.43 |
| 3:D:738:PRO:HG2 | 3:D:741:VAL:HG23 | 2.00 | 0.43 |
| 3:D:846:ILE:HG21 | 3:D:862:VAL:CG1 | 2.48 | 0.43 |
| 2:H:105:DC:H2'' | 2:H:106:DT:C5' | 2.49 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:A:386:HIS:HA | 3:A:387:PRO:HD3 | 1.88 | 0.43 |
| 3:A:830:VAL:HG12 | 3:A:849:PRO:HA | 2.01 | 0.43 |
| 3:B:145:ARG:HD3 | 3:B:145:ARG:HA | 1.75 | 0.43 |
| 3:B:656:ARG:HD3 | 4:B:970:HOH:O | 2.18 | 0.43 |
| 3:C:112:ASN:ND2 | 3:C:332:LEU:CD1 | 2.80 | 0.43 |
| 3:D:140:ASP:OD2 | 3:D:142:ILE:HD11 | 2.18 | 0.43 |
| 3:D:641:PHE:HB3 | 3:D:646:HIS:HB3 | 2.00 | 0.43 |
| 1:K:6:DA:H5'' | 3:D:705:LYS:HD3 | 1.99 | 0.43 |
| 3:D:835:LEU:HA | 3:D:865:TRP:O | 2.19 | 0.43 |
| 3:A:199:MSE:HG2 | 3:A:234:PHE:CZ | 2.53 | 0.43 |
| 3:A:353:ILE:HG21 | 3:A:367:ALA:HB2 | 2.01 | 0.43 |
| 3:A:41:CYS:O | 3:A:56:PRO:HG2 | 2.19 | 0.43 |
| 3:B:541:MSE:CE | 3:B:544:ARG:NH2 | 2.82 | 0.43 |
| 3:B:782:VAL:HG12 | 3:B:783:SER:N | 2.33 | 0.43 |
| 3:C:818:ASN:ND2 | 3:C:820:ASP:H | 2.16 | 0.43 |
| 3:C:878:LYS:HB3 | 3:C:879:PRO:HD3 | 2.00 | 0.43 |
| 3:D:421:ARG:HD2 | 3:D:475:ILE:HG23 | 2.01 | 0.43 |
| 3:A:489:MSE:C | 3:A:491:ALA:N | 2.71 | 0.43 |
| 3:B:643:ASP:HA | 3:B:693:LEU:HD23 | 2.00 | 0.43 |
| 3:B:698:ILE:HG12 | 3:B:752:MSE:O | 2.19 | 0.43 |
| 3:C:240:LYS:O | 3:C:246:ARG:HA | 2.18 | 0.43 |
| 3:D:214:THR:CG2 | 3:D:215:GLY:N | 2.78 | 0.43 |
| 3:D:312:LEU:HG | 3:D:320:TYR:CD2 | 2.54 | 0.43 |
| 3:D:511:ASP:OD1 | 3:D:536:LYS:HG2 | 2.18 | 0.43 |
| 3:D:642:ARG:H | 3:D:646:HIS:HD2 | 1.67 | 0.43 |
| 3:D:710:LEU:HA | 3:D:753:LEU:HD13 | 2.01 | 0.43 |
| 2:J:101:DG:O5' | 2:J:101:DG:H8 | 2.02 | 0.43 |
| 3:A:17:GLU:O | 3:A:28:THR:HA | 2.19 | 0.42 |
| 3:A:422:GLN:HG3 | 3:A:678:GLN:O | 2.19 | 0.42 |
| 3:A:785:ALA:HB2 | 3:A:808:ILE:HD11 | 1.99 | 0.42 |
| 3:B:19:TYR:HE1 | 3:B:29:ARG:HG2 | 1.84 | 0.42 |
| 3:B:423:VAL:O | 3:B:424:ASN:CB | 2.67 | 0.42 |
| 3:C:123:PHE:CD1 | 3:C:124:PRO:HD2 | 2.54 | 0.42 |
| 3:D:499:ILE:HD11 | 3:D:522:PHE:CE1 | 2.54 | 0.42 |
| 3:D:747:GLU:HA | 3:D:747:GLU:OE2 | 2.19 | 0.42 |
| 1:E:15:DC:H2'' | 1:E:16:DG:O5' | 2.18 | 0.42 |
| 2:H:107:DG:H1' | 2:H:108:DT:H5' | 2.01 | 0.42 |
| 1:K:4:DG:H2' | 1:K:5:DG:H8 | 1.84 | 0.42 |
| 2:L:113:DC:H2'' | 2:L:114:DC:O5' | 2.19 | 0.42 |
| 3:A:388:VAL:HG23 | 3:A:388:VAL:O | 2.19 | 0.42 |
| 3:A:411:ASP:O | 3:A:683:MSE:HA | 2.19 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:A:532:LYS:O | 3:A:533:LEU:HD22 | 2.18 | 0.42 |
| 3:A:728:MSE:HA | 3:A:728:MSE:HE2 | 2.01 | 0.42 |
| 3:C:3:GLU:HG2 | 3:C:21:ASP:C | 2.38 | 0.42 |
| 3:D:564:ASN:N | 3:D:564:ASN:HD22 | 2.15 | 0.42 |
| 3:D:715:MSE:O | 3:D:716:GLU:HB2 | 2.18 | 0.42 |
| 2:J:107:DG:H2'' | 2:J:108:DT:O5' | 2.19 | 0.42 |
| 2:J:113:DC:H2' | 2:J:114:DC:C6 | 2.54 | 0.42 |
| 3:A:3:GLU:CG | 3:A:21:ASP:HA | 2.49 | 0.42 |
| 3:A:514:LEU:HD23 | 3:A:533:LEU:HD21 | 2.00 | 0.42 |
| 3:A:802:PRO:HG2 | 3:A:805:ILE:HD12 | 2.01 | 0.42 |
| 3:A:836:ARG:HG3 | 3:A:836:ARG:HH11 | 1.84 | 0.42 |
| 3:C:200:GLU:HA | 3:C:200:GLU:OE2 | 2.19 | 0.42 |
| 3:C:350:TYR:OH | 3:C:481:GLN:NE2 | 2.43 | 0.42 |
| 3:D:423:VAL:HG12 | 3:D:423:VAL:O | 2.19 | 0.42 |
| 3:D:500:LYS:HA | 4:D:942:HOH:O | 2.19 | 0.42 |
| 3:D:743:LYS:HA | 4:D:951:HOH:O | 2.19 | 0.42 |
| 1:E:2:DG:H2'' | 1:E:3:CTG:OP2 | 2.19 | 0.42 |
| 1:E:9:DG:N2 | 4:E:449:HOH:O | 2.52 | 0.42 |
| 2:H:111:DT:H2'' | 2:H:112:DT:O5' | 2.19 | 0.42 |
| 3:A:597:ILE:HD12 | 3:A:597:ILE:HA | 1.82 | 0.42 |
| 3:A:10:GLN:HG3 | 3:A:65:MSE:SE | 2.68 | 0.42 |
| 3:C:176:ASP:OD1 | 3:C:318:GLN:HG3 | 2.20 | 0.42 |
| 3:C:799:PRO:HD2 | 4:C:952:HOH:O | 2.19 | 0.42 |
| 3:D:707:ARG:HA | 3:D:729:GLY:HA3 | 2.02 | 0.42 |
| 3:D:785:ALA:HB3 | 3:D:827:GLY:H | 1.84 | 0.42 |
| 1:E:6:DA:OP1 | 3:A:705:LYS:NZ | 2.52 | 0.42 |
| 1:K:14:DC:C4 | 1:K:15:DC:N4 | 2.88 | 0.42 |
| 3:A:573:VAL:HG12 | 3:A:578:TYR:CZ | 2.54 | 0.42 |
| 3:B:75:MSE:CE | 3:B:80:LEU:HD12 | 2.50 | 0.42 |
| 3:B:857:LEU:O | 3:B:857:LEU:HD23 | 2.18 | 0.42 |
| 3:C:402:ASN:HA | 3:C:886:ALA:O | 2.20 | 0.42 |
| 3:D:323:TYR:HA | 3:D:326:ILE:HG12 | 2.02 | 0.42 |
| 1:K:5:DG:P | 3:D:393:GLY:H | 2.43 | 0.42 |
| 3:D:472:PRO:O | 3:D:475:ILE:HG22 | 2.20 | 0.42 |
| 3:D:810:THR:HG23 | 3:D:841:PHE:O | 2.19 | 0.42 |
| 3:A:413:THR:O | 3:A:414:SER:C | 2.57 | 0.42 |
| 3:A:476:THR:HG22 | 3:A:480:ASN:ND2 | 2.34 | 0.42 |
| 3:A:519:ARG:HA | 3:A:548:THR:HG21 | 2.01 | 0.42 |
| 3:B:238:THR:O | 3:B:241:ARG:HB2 | 2.20 | 0.42 |
| 3:B:362:ILE:CD1 | 3:B:575:PHE:HB2 | 2.49 | 0.42 |
| 3:B:515:ASP:HA | 3:B:544:ARG:HH12 | 1.85 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:B:725:LEU:HD11 | 3:B:750:ARG:HG2 | 2.02 | 0.42 |
| 3:C:354:GLN:HB3 | 3:C:356:GLN:OE1 | 2.18 | 0.42 |
| 3:C:642:ARG:HG3 | 3:C:646:HIS:CD2 | 2.55 | 0.42 |
| 3:C:85:MSE:HA | 3:C:380:ILE:HD11 | 2.00 | 0.42 |
| 3:D:298:LEU:HD13 | 3:D:333:GLN:OE1 | 2.20 | 0.42 |
| 3:D:685:ARG:C | 3:D:685:ARG:HD2 | 2.40 | 0.42 |
| 3:D:6:LEU:HB2 | 3:D:18:ARG:O | 2.19 | 0.42 |
| 3:D:6:LEU:HD21 | 3:D:108:ILE:HG12 | 2.00 | 0.42 |
| 3:D:824:VAL:HG13 | 3:D:826:GLU:H | 1.84 | 0.42 |
| 1:E:13:DG:P | 3:A:800:LYS:HG2 | 2.60 | 0.42 |
| 3:B:113:PHE:CE1 | 3:B:218:VAL:HG21 | 2.54 | 0.42 |
| 3:B:421:ARG:HG2 | 3:B:421:ARG:HH11 | 1.85 | 0.42 |
| 3:B:479:PHE:CE2 | 3:B:563:ILE:HD13 | 2.54 | 0.42 |
| 3:C:472:PRO:O | 3:C:475:ILE:HG22 | 2.20 | 0.42 |
| 3:C:392:PRO:C | 3:C:587:THR:HG21 | 2.39 | 0.42 |
| 3:C:656:ARG:HA | 3:C:660:GLU:CG | 2.48 | 0.42 |
| 3:C:83:LEU:HD22 | 3:C:83:LEU:N | 2.34 | 0.42 |
| 3:D:205:TRP:HH2 | 3:D:213:LEU:HD12 | 1.84 | 0.42 |
| 3:D:373:LEU:HD12 | 3:D:380:ILE:CD1 | 2.49 | 0.42 |
| 3:D:456:CYS:SG | 3:D:462:MSE:HG2 | 2.60 | 0.42 |
| 3:D:770:GLU:O | 3:D:774:LEU:HD23 | 2.19 | 0.42 |
| 3:D:811:TYR:O | 3:D:814:ALA:HB3 | 2.20 | 0.42 |
| 2:H:101:DG:H2'' | 2:H:102:DC:O5' | 2.18 | 0.42 |
| 1:I:9:DG:H1' | 1:I:10:DA:H5'' | 2.01 | 0.42 |
| 3:B:283:THR:O | 3:B:283:THR:HG23 | 2.20 | 0.42 |
| 3:B:655:ALA:HA | 3:B:659:MSE:HB2 | 2.01 | 0.42 |
| 3:C:423:VAL:HB | 3:C:425:ILE:HG13 | 2.02 | 0.42 |
| 3:C:529:LYS:HE3 | 4:C:1047:HOH:O | 2.20 | 0.42 |
| 1:I:11:DC:H5' | 1:I:11:DC:H6 | 1.85 | 0.42 |
| 3:A:254:GLU:OE1 | 3:A:259:SER:HB2 | 2.20 | 0.42 |
| 3:A:357:SER:C | 3:A:359:PHE:N | 2.72 | 0.42 |
| 3:A:494:ARG:NH2 | 3:A:521:ASP:OD1 | 2.53 | 0.42 |
| 3:A:789:ALA:HA | 3:A:792:ASP:HB3 | 2.01 | 0.42 |
| 3:B:787:ASN:C | 3:B:789:ALA:H | 2.21 | 0.42 |
| 3:C:482:ARG:CD | 3:C:556:GLN:HE21 | 2.33 | 0.42 |
| 3:C:605:LEU:HD21 | 3:C:659:MSE:HE3 | 2.02 | 0.42 |
| 3:C:898:PHE:N | 3:C:898:PHE:CD2 | 2.83 | 0.42 |
| 3:D:262:ILE:N | 3:D:262:ILE:CD1 | 2.82 | 0.42 |
| 3:D:818:ASN:C | 3:D:820:ASP:H | 2.22 | 0.42 |
| 3:D:859:LYS:O | 3:D:863:LEU:HD13 | 2.20 | 0.42 |
| 1:G:15:DC:H2'' | 1:G:16:DG:O5' | 2.20 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:A:775:ASN:HB3 | 3:A:778:SER:OG | 2.20 | 0.42 |
| 3:B:466:ASP:N | 3:B:466:ASP:OD1 | 2.53 | 0.42 |
| 3:B:790:LYS:HE2 | 3:B:801:CYS:HA | 2.02 | 0.42 |
| 3:C:38:PHE:N | 3:C:38:PHE:CD1 | 2.87 | 0.42 |
| 3:D:148:VAL:HG21 | 3:D:325:ILE:CD1 | 2.50 | 0.42 |
| 3:D:431:ALA:HA | 3:D:464:TYR:CE1 | 2.55 | 0.42 |
| 3:D:72:ILE:HG22 | 3:D:76:GLU:OE2 | 2.20 | 0.42 |
| 3:A:338:ARG:HD2 | 3:A:340:PHE:CZ | 2.54 | 0.41 |
| 3:B:119:SER:HA | 3:B:120:PRO:HD2 | 1.91 | 0.41 |
| 3:B:326:ILE:HG22 | 3:B:330:ARG:HG2 | 2.02 | 0.41 |
| 2:H:113:DC:O5' | 3:B:734:LYS:O | 2.37 | 0.41 |
| 3:C:448:GLU:O | 3:C:449:ARG:C | 2.57 | 0.41 |
| 3:C:503:LEU:HD21 | 3:C:538:LEU:CB | 2.50 | 0.41 |
| 3:D:214:THR:CG2 | 3:D:215:GLY:H | 2.11 | 0.41 |
| 3:D:352:LYS:O | 3:D:353:ILE:HG23 | 2.19 | 0.41 |
| 3:D:368:ILE:CD1 | 3:D:562:LEU:HD21 | 2.50 | 0.41 |
| 3:D:489:MSE:CE | 3:D:490:LEU:HB2 | 2.39 | 0.41 |
| 3:D:492:ALA:HA | 3:D:495:ASN:HB2 | 2.02 | 0.41 |
| 3:D:779:ILE:CD1 | 3:D:866:MSE:HE1 | 2.45 | 0.41 |
| 3:D:96:THR:HB | 3:D:97:TYR:CD1 | 2.54 | 0.41 |
| 2:F:109:DC:H2'' | 2:F:110:DA:O5' | 2.20 | 0.41 |
| 3:C:510:VAL:O | 3:C:533:LEU:HB3 | 2.19 | 0.41 |
| 3:D:433:THR:OG1 | 3:D:434:PHE:N | 2.53 | 0.41 |
| 1:G:6:DA:H1' | 1:G:7:DA:C8 | 2.55 | 0.41 |
| 3:A:120:PRO:HG2 | 3:A:156:TYR:CE1 | 2.55 | 0.41 |
| 3:B:195:LYS:O | 3:B:199:MSE:HB2 | 2.20 | 0.41 |
| 3:B:355:ILE:N | 3:B:355:ILE:CD1 | 2.83 | 0.41 |
| 3:C:239:ALA:O | 3:C:241:ARG:N | 2.53 | 0.41 |
| 3:A:101:ILE:CG2 | 3:A:349:TYR:HB3 | 2.50 | 0.41 |
| 3:A:382:GLN:HE21 | 3:A:382:GLN:HB3 | 1.62 | 0.41 |
| 3:A:51:ASP:HA | 3:A:379:VAL:HG22 | 2.01 | 0.41 |
| 3:A:797:PRO:CD | 3:A:809:LEU:HD13 | 2.50 | 0.41 |
| 3:A:811:TYR:HH | 3:A:822:PRO:HG2 | 1.83 | 0.41 |
| 3:B:489:MSE:SE | 3:B:553:MSE:SE | 3.38 | 0.41 |
| 3:B:380:ILE:HD12 | 3:B:576:ARG:CZ | 2.50 | 0.41 |
| 3:B:404:TYR:CD1 | 3:B:618:LEU:HD22 | 2.55 | 0.41 |
| 3:C:458:PRO:CG | 3:C:592:MSE:SE | 3.18 | 0.41 |
| 3:D:146:PHE:CE2 | 3:D:182:ILE:HG13 | 2.55 | 0.41 |
| 3:D:5:TYR:HB3 | 3:D:97:TYR:CE1 | 2.55 | 0.41 |
| 3:A:423:VAL:HG12 | 3:A:423:VAL:O | 2.19 | 0.41 |
| 3:A:478:VAL:HG13 | 3:A:559:ARG:HD2 | 2.01 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:A:702:TRP:NE1 | 3:A:708:TYR:CD1 | 2.88 | 0.41 |
| 3:B:291:ASP:HA | 3:B:302:LYS:HG3 | 2.02 | 0.41 |
| 3:B:579:ASP:OD1 | 3:B:581:ARG:HB2 | 2.20 | 0.41 |
| 3:C:364:THR:O | 3:C:368:ILE:HG13 | 2.21 | 0.41 |
| 3:C:413:THR:O | 3:C:414:SER:C | 2.59 | 0.41 |
| 3:C:467:ARG:CD | 3:C:467:ARG:H | 2.31 | 0.41 |
| 3:D:827:GLY:HA2 | 4:D:921:HOH:O | 2.21 | 0.41 |
| 3:A:100:GLU:CG | 3:A:102:LYS:HE2 | 2.44 | 0.41 |
| 3:A:104:ASP:OD2 | 3:A:106:THR:HB | 2.20 | 0.41 |
| 3:A:129:ALA:HA | 3:A:225:TYR:CZ | 2.55 | 0.41 |
| 3:A:212:ILE:HD13 | 3:A:269:SER:HB2 | 2.02 | 0.41 |
| 3:A:466:ASP:N | 3:A:466:ASP:OD2 | 2.53 | 0.41 |
| 3:A:804:HIS:O | 3:A:808:ILE:HG13 | 2.20 | 0.41 |
| 3:B:516:VAL:HB | 3:B:544:ARG:NH2 | 2.36 | 0.41 |
| 3:C:414:SER:O | 3:C:415:LEU:C | 2.59 | 0.41 |
| 3:C:546:GLN:O | 3:C:550:VAL:HG23 | 2.21 | 0.41 |
| 3:C:854:ILE:HD13 | 3:C:862:VAL:HG21 | 2.03 | 0.41 |
| 3:D:621:ASP:O | 3:D:622:THR:HB | 2.19 | 0.41 |
| 2:F:102:DC:H1' | 2:F:103:DG:C8 | 2.55 | 0.41 |
| 1:G:15:DC:H2'' | 1:G:16:DG:C8 | 2.55 | 0.41 |
| 2:L:104:DG:H1' | 2:L:105:DC:O4' | 2.20 | 0.41 |
| 3:B:209:THR:HA | 3:B:210:PRO:HD3 | 1.94 | 0.41 |
| 3:B:82:ALA:O | 3:B:382:GLN:HG3 | 2.21 | 0.41 |
| 3:B:444:ASN:HA | 3:B:599:ARG:NE | 2.35 | 0.41 |
| 3:C:9:GLU:OE2 | 3:C:266:PHE:HA | 2.20 | 0.41 |
| 3:C:802:PRO:HB2 | 3:C:805:ILE:HG12 | 2.03 | 0.41 |
| 3:A:216:TRP:O | 3:A:217:ASN:HB2 | 2.21 | 0.41 |
| 3:A:739:LYS:CD | 3:A:778:SER:HA | 2.42 | 0.41 |
| 3:A:811:TYR:O | 3:A:815:ILE:HG12 | 2.20 | 0.41 |
| 3:B:109:ARG:HH11 | 3:B:109:ARG:HB2 | 1.86 | 0.41 |
| 3:B:435:LYS:N | 3:B:435:LYS:CD | 2.82 | 0.41 |
| 3:B:492:ALA:HB1 | 3:B:549:GLU:HB2 | 2.02 | 0.41 |
| 3:C:432:GLY:C | 3:C:433:THR:HG23 | 2.40 | 0.41 |
| 3:C:458:PRO:HG2 | 3:C:592:MSE:SE | 2.71 | 0.41 |
| 3:D:6:LEU:CD2 | 3:D:108:ILE:HG12 | 2.51 | 0.41 |
| 3:D:429:THR:O | 3:D:464:TYR:HD1 | 2.03 | 0.41 |
| 2:F:101:DG:H2'' | 2:F:102:DC:C6 | 2.55 | 0.41 |
| 3:A:21:ASP:OD1 | 3:A:25:ARG:HG2 | 2.20 | 0.41 |
| 3:C:82:ALA:O | 3:C:382:GLN:HB2 | 2.21 | 0.41 |
| 3:C:891:TYR:CD2 | 3:C:892:GLU:HG3 | 2.55 | 0.41 |
| 3:A:273:TYR:OH | 3:A:335:ASP:HA | 2.20 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 3:A:308:PRO:HG3 | 3:A:311:LYS:HD2 | 2.03 | 0.41 |
| 3:A:41:CYS:HB3 | 3:A:58:THR:HG22 | 2.01 | 0.41 |
| 3:B:257:TYR:HE1 | 3:B:786:ASN:CG | 2.24 | 0.41 |
| 3:B:25:ARG:O | 3:B:27:ARG:HG2 | 2.21 | 0.41 |
| 3:B:294:SER:CB | 3:B:301:GLY:HA2 | 2.49 | 0.41 |
| 3:B:485:HIS:HA | 3:B:488:TYR:CD2 | 2.56 | 0.41 |
| 3:B:517:ASP:C | 3:B:519:ARG:H | 2.24 | 0.41 |
| 3:B:731:GLU:N | 3:B:731:GLU:OE2 | 2.38 | 0.41 |
| 3:D:228:ASN:HD22 | 3:D:231:LYS:HD3 | 1.86 | 0.41 |
| 3:D:657:GLU:O | 3:D:661:PRO:HG2 | 2.21 | 0.41 |
| 3:A:125:GLU:HA | 3:A:126:PRO:HD3 | 1.91 | 0.41 |
| 3:A:204:PHE:CE1 | 3:A:208:LYS:HD2 | 2.56 | 0.41 |
| 3:A:395:PHE:CE2 | 3:A:595:GLN:HG2 | 2.56 | 0.41 |
| 3:B:19:TYR:CE1 | 3:B:29:ARG:HG2 | 2.56 | 0.41 |
| 3:B:320:TYR:O | 3:B:323:TYR:HB3 | 2.21 | 0.41 |
| 3:B:528:GLU:C | 3:B:530:ILE:N | 2.74 | 0.41 |
| 3:B:554:THR:O | 3:B:558:ASN:HB2 | 2.21 | 0.41 |
| 3:B:818:ASN:HD22 | 3:B:821:ALA:HB2 | 1.83 | 0.41 |
| 3:C:21:ASP:CG | 3:C:25:ARG:HG3 | 2.40 | 0.41 |
| 3:C:9:GLU:HG3 | 3:C:267:GLY:N | 2.36 | 0.41 |
| 3:D:346:ASP:OD2 | 3:D:554:THR:HG22 | 2.22 | 0.41 |
| 3:D:668:ARG:CZ | 3:D:668:ARG:HB2 | 2.51 | 0.41 |
| 2:F:105:DC:H2' | 2:F:106:DT:H72 | 2.03 | 0.41 |
| 1:I:12:DA:H2'' | 1:I:13:DG:N7 | 2.35 | 0.41 |
| 1:I:8:DT:P | 4:I:192:HOH:O | 2.79 | 0.41 |
| 3:A:405:LYS:O | 3:A:699:GLY:HA3 | 2.22 | 0.40 |
| 3:B:33:TYR:O | 3:B:35:PRO:HD3 | 2.21 | 0.40 |
| 3:B:412:LEU:HA | 3:B:682:PHE:O | 2.21 | 0.40 |
| 3:B:792:ASP:CG | 3:B:793:VAL:N | 2.75 | 0.40 |
| 3:C:202:LEU:O | 3:C:206:GLN:HG2 | 2.20 | 0.40 |
| 3:C:109:ARG:HD2 | 3:C:209:THR:O | 2.21 | 0.40 |
| 3:C:433:THR:O | 3:C:462:MSE:SE | 2.88 | 0.40 |
| 3:C:505:ASN:N | 3:C:506:PRO:HD3 | 2.36 | 0.40 |
| 3:D:426:SER:C | 3:D:428:GLU:H | 2.25 | 0.40 |
| 3:D:702:TRP:NE1 | 3:D:708:TYR:HB3 | 2.35 | 0.40 |
| 3:A:176:ASP:HA | 3:A:319:ARG:NH2 | 2.27 | 0.40 |
| 3:A:294:SER:HB3 | 3:A:301:GLY:HA2 | 2.03 | 0.40 |
| 3:B:379:VAL:HG13 | 3:B:379:VAL:O | 2.21 | 0.40 |
| 3:B:593:ALA:HB2 | 3:B:681:MSE:HE3 | 2.00 | 0.40 |
| 3:C:454:TYR:HD2 | 3:C:462:MSE:CE | 2.27 | 0.40 |
| 3:D:508:LEU:N | 3:D:508:LEU:HD22 | 2.36 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:G:12:DA:H2'' | 1:G:13:DG:O5' | 2.21 | 0.40 |
| 1:K:6:DA:C2 | 1:K:7:DA:N6 | 2.90 | 0.40 |
| 3:A:457:SER:HA | 3:A:458:PRO:HD3 | 1.94 | 0.40 |
| 3:C:614:GLU:HB2 | 3:C:616:PHE:HE1 | 1.86 | 0.40 |
| 1:K:8:DT:C2' | 1:K:9:DG:C8 | 2.99 | 0.40 |
| 2:L:101:DG:H2' | 2:L:102:DC:C5 | 2.57 | 0.40 |
| 3:A:494:ARG:HE | 3:A:494:ARG:HB2 | 1.75 | 0.40 |
| 3:A:514:LEU:HD13 | 3:A:515:ASP:N | 2.36 | 0.40 |
| 3:A:660:GLU:HB2 | 3:A:661:PRO:CD | 2.42 | 0.40 |
| 3:B:901:PHE:HB2 | 3:B:902:ASP:H | 1.65 | 0.40 |
| 3:C:257:TYR:N | 3:C:257:TYR:CD2 | 2.86 | 0.40 |
| 3:C:302:LYS:HD2 | 3:C:323:TYR:CD1 | 2.56 | 0.40 |
| 3:C:578:TYR:CD1 | 3:C:578:TYR:C | 2.95 | 0.40 |
| 3:D:157:GLY:O | 3:D:158:ASN:HB3 | 2.21 | 0.40 |
| 3:D:433:THR:O | 3:D:462:MSE:HE2 | 2.21 | 0.40 |
| 3:D:730:LEU:N | 4:D:925:HOH:O | 2.54 | 0.40 |
| 1:G:8:DT:H6 | 1:G:8:DT:H5' | 1.86 | 0.40 |
| 1:I:15:DC:C2' | 1:I:16:DG:H5' | 2.33 | 0.40 |
| 3:A:397:LYS:O | 3:A:399:PRO:HD3 | 2.21 | 0.40 |
| 3:B:158:ASN:N | 3:B:158:ASN:ND2 | 2.68 | 0.40 |
| 3:B:397:LYS:O | 3:B:399:PRO:HD3 | 2.21 | 0.40 |
| 3:B:518:TYR:CB | 3:B:544:ARG:HG2 | 2.52 | 0.40 |
| 3:B:597:ILE:HD13 | 3:B:625:ILE:HD13 | 2.02 | 0.40 |
| 3:B:857:LEU:CD2 | 3:B:858:ILE:HG23 | 2.52 | 0.40 |
| 3:C:209:THR:HA | 3:C:210:PRO:HD3 | 1.85 | 0.40 |
| 3:C:392:PRO:O | 3:C:587:THR:CG2 | 2.62 | 0.40 |
| 3:C:772:ARG:HG3 | 3:C:772:ARG:HH11 | 1.87 | 0.40 |
| 3:D:188:TYR:CE2 | 3:D:190:PRO:HD3 | 2.55 | 0.40 |
| 3:D:887:ALA:C | 3:D:889:LEU:H | 2.25 | 0.40 |
| 2:H:110:DA:C2' | 2:H:111:DT:C5' | 2.98 | 0.40 |
| 1:K:11:DC:N3 | 2:L:107:DG:O6 | 2.55 | 0.40 |

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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 | |
|-----|-------|-----------------|------------|-----------|----------|-------------|----|
| 3 | A | 900/903 (100%) | 804 (89%) | 84 (9%) | 12 (1%) | 13 | 20 |
| 3 | B | 884/903 (98%) | 802 (91%) | 70 (8%) | 12 (1%) | 12 | 18 |
| 3 | C | 898/903 (99%) | 830 (92%) | 56 (6%) | 12 (1%) | 13 | 20 |
| 3 | D | 886/903 (98%) | 701 (79%) | 131 (15%) | 54 (6%) | 1 | 1 |
| All | All | 3568/3612 (99%) | 3137 (88%) | 341 (10%) | 90 (2%) | 6 | 8 |

All (90) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3 | A | 519 | ARG |
| 3 | A | 611 | THR |
| 3 | A | 621 | ASP |
| 3 | B | 177 | GLU |
| 3 | C | 256 | MSE |
| 3 | C | 458 | PRO |
| 3 | C | 899 | ASP |
| 3 | D | 44 | SER |
| 3 | D | 170 | LEU |
| 3 | D | 265 | LEU |
| 3 | D | 489 | MSE |
| 3 | D | 498 | ILE |
| 3 | D | 521 | ASP |
| 3 | D | 532 | LYS |
| 3 | D | 731 | GLU |
| 3 | D | 736 | SER |
| 3 | D | 815 | ILE |
| 3 | D | 853 | GLU |
| 3 | A | 12 | GLY |
| 3 | A | 121 | ASP |
| 3 | A | 300 | VAL |
| 3 | B | 45 | GLN |
| 3 | D | 127 | SER |
| 3 | D | 155 | PRO |
| 3 | D | 165 | GLU |
| 3 | D | 179 | PRO |
| 3 | D | 221 | PHE |
| 3 | D | 387 | PRO |
| 3 | D | 427 | PRO |
| 3 | D | 506 | PRO |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 3 | D | 523 | SER |
| 3 | D | 533 | LEU |
| 3 | D | 536 | LYS |
| 3 | D | 695 | SER |
| 3 | D | 800 | LYS |
| 3 | D | 817 | GLY |
| 3 | D | 836 | ARG |
| 3 | D | 854 | ILE |
| 3 | A | 303 | LEU |
| 3 | B | 352 | LYS |
| 3 | B | 406 | TYR |
| 3 | B | 518 | TYR |
| 3 | B | 795 | GLY |
| 3 | C | 432 | GLY |
| 3 | C | 483 | LYS |
| 3 | C | 533 | LEU |
| 3 | C | 622 | THR |
| 3 | D | 45 | GLN |
| 3 | D | 140 | ASP |
| 3 | D | 315 | SER |
| 3 | D | 415 | LEU |
| 3 | D | 622 | THR |
| 3 | D | 843 | ASP |
| 3 | D | 874 | LYS |
| 3 | A | 338 | ARG |
| 3 | A | 490 | LEU |
| 3 | A | 509 | SER |
| 3 | B | 520 | PHE |
| 3 | B | 734 | LYS |
| 3 | B | 793 | VAL |
| 3 | B | 896 | SER |
| 3 | C | 174 | GLY |
| 3 | C | 415 | LEU |
| 3 | C | 506 | PRO |
| 3 | D | 198 | LEU |
| 3 | D | 262 | ILE |
| 3 | D | 272 | ASP |
| 3 | D | 401 | PRO |
| 3 | D | 512 | GLU |
| 3 | D | 640 | LYS |
| 3 | D | 730 | LEU |
| 3 | D | 783 | SER |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3 | D | 849 | PRO |
| 3 | D | 889 | LEU |
| 3 | C | 240 | LYS |
| 3 | D | 182 | ILE |
| 3 | D | 269 | SER |
| 3 | D | 391 | TYR |
| 3 | D | 395 | PHE |
| 3 | D | 510 | VAL |
| 3 | A | 622 | THR |
| 3 | B | 302 | LYS |
| 3 | B | 529 | LYS |
| 3 | D | 157 | GLY |
| 3 | D | 35 | PRO |
| 3 | D | 799 | PRO |
| 3 | C | 175 | GLY |
| 3 | A | 388 | VAL |
| 3 | D | 166 | ILE |
| 3 | D | 779 | ILE |

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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 | |
|-----|-------|-----------------|------------|----------|-------------|----|
| 3 | A | 785/775 (101%) | 739 (94%) | 46 (6%) | 21 | 34 |
| 3 | B | 767/775 (99%) | 722 (94%) | 45 (6%) | 21 | 34 |
| 3 | C | 786/775 (101%) | 744 (95%) | 42 (5%) | 25 | 39 |
| 3 | D | 711/775 (92%) | 675 (95%) | 36 (5%) | 26 | 41 |
| All | All | 3049/3100 (98%) | 2880 (94%) | 169 (6%) | 24 | 37 |

All (169) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3 | A | 14 | SER |
| 3 | A | 29 | ARG |
| 3 | A | 32 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 3 | A | 58 | THR |
| 3 | A | 64 | ASN |
| 3 | A | 66 | ARG |
| 3 | A | 75 | MSE |
| 3 | A | 86 | ASP |
| 3 | A | 112 | ASN |
| 3 | A | 116 | GLU |
| 3 | A | 121 | ASP |
| 3 | A | 181 | GLU |
| 3 | A | 213 | LEU |
| 3 | A | 229 | ARG |
| 3 | A | 242 | LEU |
| 3 | A | 273 | TYR |
| 3 | A | 291 | ASP |
| 3 | A | 304 | LYS |
| 3 | A | 318 | GLN |
| 3 | A | 332 | LEU |
| 3 | A | 346 | ASP |
| 3 | A | 382 | GLN |
| 3 | A | 403 | ARG |
| 3 | A | 411 | ASP |
| 3 | A | 467 | ARG |
| 3 | A | 483 | LYS |
| 3 | A | 503 | LEU |
| 3 | A | 514 | LEU |
| 3 | A | 539 | ASN |
| 3 | A | 561 | LEU |
| 3 | A | 587 | THR |
| 3 | A | 612 | GLU |
| 3 | A | 618 | LEU |
| 3 | A | 631 | LYS |
| 3 | A | 646 | HIS |
| 3 | A | 653 | LYS |
| 3 | A | 656 | ARG |
| 3 | A | 658 | ARG |
| 3 | A | 659 | MSE |
| 3 | A | 702 | TRP |
| 3 | A | 733 | GLN |
| 3 | A | 736 | SER |
| 3 | A | 739 | LYS |
| 3 | A | 773 | GLN |
| 3 | A | 818 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 3 | A | 861 | ASP |
| 3 | B | 26 | GLU |
| 3 | B | 66 | ARG |
| 3 | B | 75 | MSE |
| 3 | B | 89 | LYS |
| 3 | B | 93 | LEU |
| 3 | B | 98 | ASN |
| 3 | B | 109 | ARG |
| 3 | B | 112 | ASN |
| 3 | B | 113 | PHE |
| 3 | B | 116 | GLU |
| 3 | B | 154 | SER |
| 3 | B | 164 | ILE |
| 3 | B | 193 | ASN |
| 3 | B | 217 | ASN |
| 3 | B | 256 | MSE |
| 3 | B | 257 | TYR |
| 3 | B | 259 | SER |
| 3 | B | 260 | ARG |
| 3 | B | 273 | TYR |
| 3 | B | 316 | ASN |
| 3 | B | 324 | ASN |
| 3 | B | 403 | ARG |
| 3 | B | 411 | ASP |
| 3 | B | 421 | ARG |
| 3 | B | 435 | LYS |
| 3 | B | 475 | ILE |
| 3 | B | 489 | MSE |
| 3 | B | 539 | ASN |
| 3 | B | 573 | VAL |
| 3 | B | 658 | ARG |
| 3 | B | 681 | MSE |
| 3 | B | 684 | ASP |
| 3 | B | 685 | ARG |
| 3 | B | 702 | TRP |
| 3 | B | 707 | ARG |
| 3 | B | 728 | MSE |
| 3 | B | 737 | THR |
| 3 | B | 739 | LYS |
| 3 | B | 766 | GLU |
| 3 | B | 787 | ASN |
| 3 | B | 791 | TYR |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 3 | B | 819 | ILE |
| 3 | B | 861 | ASP |
| 3 | B | 878 | LYS |
| 3 | B | 901 | PHE |
| 3 | C | 43 | GLU |
| 3 | C | 98 | ASN |
| 3 | C | 138 | HIS |
| 3 | C | 141 | SER |
| 3 | C | 257 | TYR |
| 3 | C | 273 | TYR |
| 3 | C | 276 | LEU |
| 3 | C | 284 | ASN |
| 3 | C | 332 | LEU |
| 3 | C | 337 | LYS |
| 3 | C | 356 | GLN |
| 3 | C | 411 | ASP |
| 3 | C | 426 | SER |
| 3 | C | 428 | GLU |
| 3 | C | 439 | LEU |
| 3 | C | 449 | ARG |
| 3 | C | 456 | CYS |
| 3 | C | 467 | ARG |
| 3 | C | 468 | ASP |
| 3 | C | 479 | PHE |
| 3 | C | 525 | GLU |
| 3 | C | 536 | LYS |
| 3 | C | 558 | ASN |
| 3 | C | 559 | ARG |
| 3 | C | 561 | LEU |
| 3 | C | 562 | LEU |
| 3 | C | 580 | LEU |
| 3 | C | 587 | THR |
| 3 | C | 618 | LEU |
| 3 | C | 642 | ARG |
| 3 | C | 702 | TRP |
| 3 | C | 722 | GLU |
| 3 | C | 728 | MSE |
| 3 | C | 747 | GLU |
| 3 | C | 760 | LEU |
| 3 | C | 818 | ASN |
| 3 | C | 843 | ASP |
| 3 | C | 859 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 3 | C | 880 | LEU |
| 3 | C | 881 | GLU |
| 3 | C | 896 | SER |
| 3 | C | 898 | PHE |
| 3 | D | 10 | GLN |
| 3 | D | 47 | THR |
| 3 | D | 58 | THR |
| 3 | D | 86 | ASP |
| 3 | D | 134 | ASP |
| 3 | D | 162 | TRP |
| 3 | D | 216 | TRP |
| 3 | D | 266 | PHE |
| 3 | D | 273 | TYR |
| 3 | D | 303 | LEU |
| 3 | D | 306 | ASP |
| 3 | D | 316 | ASN |
| 3 | D | 356 | GLN |
| 3 | D | 391 | TYR |
| 3 | D | 441 | ASP |
| 3 | D | 479 | PHE |
| 3 | D | 489 | MSE |
| 3 | D | 498 | ILE |
| 3 | D | 519 | ARG |
| 3 | D | 520 | PHE |
| 3 | D | 530 | ILE |
| 3 | D | 556 | GLN |
| 3 | D | 558 | ASN |
| 3 | D | 576 | ARG |
| 3 | D | 591 | GLN |
| 3 | D | 657 | GLU |
| 3 | D | 660 | GLU |
| 3 | D | 702 | TRP |
| 3 | D | 719 | ARG |
| 3 | D | 730 | LEU |
| 3 | D | 755 | GLU |
| 3 | D | 772 | ARG |
| 3 | D | 828 | GLU |
| 3 | D | 844 | LYS |
| 3 | D | 856 | ASP |
| 3 | D | 860 | ASP |

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (92) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3 | A | 64 | ASN |
| 3 | A | 153 | ASN |
| 3 | A | 158 | ASN |
| 3 | A | 206 | GLN |
| 3 | A | 245 | HIS |
| 3 | A | 284 | ASN |
| 3 | A | 285 | GLN |
| 3 | A | 376 | GLN |
| 3 | A | 382 | GLN |
| 3 | A | 422 | GLN |
| 3 | A | 480 | ASN |
| 3 | A | 485 | HIS |
| 3 | A | 493 | GLN |
| 3 | A | 495 | ASN |
| 3 | A | 505 | ASN |
| 3 | A | 539 | ASN |
| 3 | A | 556 | GLN |
| 3 | A | 558 | ASN |
| 3 | A | 602 | ASN |
| 3 | A | 606 | ASN |
| 3 | A | 646 | HIS |
| 3 | A | 678 | GLN |
| 3 | A | 733 | GLN |
| 3 | A | 742 | GLN |
| 3 | A | 773 | GLN |
| 3 | A | 775 | ASN |
| 3 | B | 70 | GLN |
| 3 | B | 98 | ASN |
| 3 | B | 153 | ASN |
| 3 | B | 158 | ASN |
| 3 | B | 193 | ASN |
| 3 | B | 203 | ASN |
| 3 | B | 217 | ASN |
| 3 | B | 245 | HIS |
| 3 | B | 316 | ASN |
| 3 | B | 318 | GLN |
| 3 | B | 324 | ASN |
| 3 | B | 376 | GLN |
| 3 | B | 382 | GLN |
| 3 | B | 389 | GLN |
| 3 | B | 493 | GLN |
| 3 | B | 646 | HIS |
| 3 | B | 733 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 3 | B | 742 | GLN |
| 3 | B | 775 | ASN |
| 3 | B | 818 | ASN |
| 3 | C | 45 | GLN |
| 3 | C | 98 | ASN |
| 3 | C | 112 | ASN |
| 3 | C | 131 | HIS |
| 3 | C | 153 | ASN |
| 3 | C | 158 | ASN |
| 3 | C | 171 | GLN |
| 3 | C | 173 | GLN |
| 3 | C | 203 | ASN |
| 3 | C | 207 | GLN |
| 3 | C | 284 | ASN |
| 3 | C | 285 | GLN |
| 3 | C | 376 | GLN |
| 3 | C | 481 | GLN |
| 3 | C | 495 | ASN |
| 3 | C | 539 | ASN |
| 3 | C | 556 | GLN |
| 3 | C | 558 | ASN |
| 3 | C | 572 | ASN |
| 3 | C | 675 | ASN |
| 3 | C | 676 | ASN |
| 3 | C | 678 | GLN |
| 3 | C | 679 | HIS |
| 3 | C | 711 | ASN |
| 3 | C | 818 | ASN |
| 3 | C | 864 | HIS |
| 3 | D | 10 | GLN |
| 3 | D | 64 | ASN |
| 3 | D | 70 | GLN |
| 3 | D | 228 | ASN |
| 3 | D | 285 | GLN |
| 3 | D | 316 | ASN |
| 3 | D | 339 | GLN |
| 3 | D | 342 | ASN |
| 3 | D | 356 | GLN |
| 3 | D | 440 | HIS |
| 3 | D | 444 | ASN |
| 3 | D | 485 | HIS |
| 3 | D | 495 | ASN |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3 | D | 505 | ASN |
| 3 | D | 564 | ASN |
| 3 | D | 591 | GLN |
| 3 | D | 646 | HIS |
| 3 | D | 742 | GLN |
| 3 | D | 761 | GLN |
| 3 | D | 812 | ASN |

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

4 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
| | | | | | Counts | RMSZ | # Z > 2 | Counts | RMSZ | # Z > 2 |
| 1 | CTG | E | 3 | 1,2 | 19,23,24 | 0.76 | 0 | 21,35,38 | 1.02 | 2 (9%) |
| 1 | CTG | G | 3 | 1,2 | 19,23,24 | 0.90 | 1 (5%) | 21,35,38 | 1.02 | 1 (4%) |
| 1 | CTG | I | 3 | 1,2 | 19,23,24 | 0.90 | 1 (5%) | 21,35,38 | 1.08 | 2 (9%) |
| 1 | CTG | K | 3 | 1 | 19,23,24 | 1.01 | 1 (5%) | 21,35,38 | 1.03 | 2 (9%) |

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|---------|-----------|---------|
| 1 | CTG | E | 3 | 1,2 | - | 0/7/45/46 | 0/2/2/2 |
| 1 | CTG | G | 3 | 1,2 | - | 0/7/45/46 | 0/2/2/2 |
| 1 | CTG | I | 3 | 1,2 | - | 0/7/45/46 | 0/2/2/2 |
| 1 | CTG | K | 3 | 1 | - | 0/7/45/46 | 0/2/2/2 |

All (3) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|--------|------|-------------|----------|
| 1 | G | 3 | CTG | C1'-N1 | 2.04 | 1.48 | 1.45 |
| 1 | I | 3 | CTG | C1'-N1 | 2.41 | 1.48 | 1.45 |
| 1 | K | 3 | CTG | C5-C4 | 2.82 | 1.55 | 1.52 |

All (7) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 1 | G | 3 | CTG | N3-C2-N1 | -2.40 | 114.20 | 116.69 |
| 1 | K | 3 | CTG | N3-C2-N1 | -2.32 | 114.28 | 116.69 |
| 1 | E | 3 | CTG | N3-C2-N1 | -2.14 | 114.48 | 116.69 |
| 1 | I | 3 | CTG | N3-C2-N1 | -2.07 | 114.54 | 116.69 |
| 1 | K | 3 | CTG | O3'-C3'-C2' | 2.23 | 118.95 | 110.86 |
| 1 | E | 3 | CTG | O3'-C3'-C2' | 2.50 | 119.92 | 110.86 |
| 1 | I | 3 | CTG | O3'-C3'-C2' | 2.74 | 120.79 | 110.86 |

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

4 monomers are involved in 7 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 1 | E | 3 | CTG | 2 | 0 |
| 1 | G | 3 | CTG | 1 | 0 |
| 1 | I | 3 | CTG | 1 | 0 |
| 1 | K | 3 | CTG | 3 | 0 |

5.5 Carbohydrates [i](#)

There are no carbohydrates 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

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

| Mol | Chain | Analysed | <RSRZ> | #RSRZ>2 | OWAB(Å ²) | Q<0.9 |
|-----|-------|-----------------|--------|---------------|-----------------------|-------|
| 1 | E | 16/18 (88%) | 0.73 | 2 (12%) 4 2 | 87, 109, 126, 131 | 0 |
| 1 | G | 17/18 (94%) | -0.26 | 0 100 100 | 34, 47, 76, 79 | 0 |
| 1 | I | 17/18 (94%) | -0.06 | 0 100 100 | 35, 50, 84, 91 | 0 |
| 1 | K | 17/18 (94%) | 1.92 | 8 (47%) 0 0 | 65, 80, 81, 81 | 0 |
| 2 | F | 14/15 (93%) | 1.08 | 3 (21%) 1 1 | 106, 125, 133, 135 | 0 |
| 2 | H | 15/15 (100%) | -0.36 | 0 100 100 | 36, 49, 100, 100 | 0 |
| 2 | J | 15/15 (100%) | -0.09 | 0 100 100 | 33, 65, 112, 113 | 0 |
| 2 | L | 15/15 (100%) | 2.30 | 9 (60%) 0 0 | 78, 80, 82, 82 | 0 |
| 3 | A | 877/903 (97%) | 0.20 | 51 (5%) 23 20 | 23, 51, 125, 141 | 0 |
| 3 | B | 863/903 (95%) | 0.04 | 41 (4%) 30 27 | 16, 44, 116, 139 | 0 |
| 3 | C | 875/903 (96%) | 0.07 | 36 (4%) 37 34 | 17, 47, 114, 142 | 0 |
| 3 | D | 867/903 (96%) | 0.90 | 145 (16%) 1 1 | 54, 102, 140, 153 | 0 |
| All | All | 3608/3744 (96%) | 0.32 | 295 (8%) 11 9 | 16, 58, 131, 153 | 0 |

All (295) RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 3 | A | 503 | LEU | 9.4 |
| 3 | C | 503 | LEU | 9.2 |
| 3 | D | 309 | ILE | 9.1 |
| 3 | D | 498 | ILE | 8.8 |
| 3 | D | 135 | ALA | 8.7 |
| 3 | D | 534 | SER | 8.4 |
| 3 | D | 313 | ARG | 8.0 |
| 3 | A | 504 | HIS | 7.8 |
| 3 | C | 510 | VAL | 7.7 |
| 3 | A | 532 | LYS | 7.6 |
| 3 | B | 538 | LEU | 6.8 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 3 | D | 118 | THR | 6.8 |
| 3 | A | 505 | ASN | 6.7 |
| 3 | A | 502 | ALA | 6.6 |
| 3 | B | 497 | GLU | 6.5 |
| 3 | B | 258 | GLY | 6.5 |
| 3 | D | 303 | LEU | 6.5 |
| 3 | A | 511 | ASP | 6.3 |
| 3 | C | 531 | LYS | 6.2 |
| 3 | A | 509 | SER | 6.2 |
| 3 | D | 535 | ALA | 6.1 |
| 3 | C | 505 | ASN | 6.1 |
| 3 | D | 115 | ILE | 6.0 |
| 3 | D | 514 | LEU | 6.0 |
| 3 | D | 315 | SER | 6.0 |
| 3 | B | 794 | GLY | 6.0 |
| 3 | D | 542 | LEU | 5.9 |
| 3 | C | 511 | ASP | 5.8 |
| 3 | D | 829 | LYS | 5.8 |
| 3 | D | 164 | ILE | 5.8 |
| 3 | A | 499 | ILE | 5.7 |
| 3 | D | 305 | TYR | 5.7 |
| 3 | A | 506 | PRO | 5.7 |
| 3 | A | 846 | ILE | 5.6 |
| 3 | D | 526 | ILE | 5.6 |
| 3 | D | 538 | LEU | 5.6 |
| 3 | D | 517 | ASP | 5.5 |
| 2 | L | 108 | DT | 5.4 |
| 3 | A | 496 | GLY | 5.4 |
| 3 | D | 875 | THR | 5.4 |
| 3 | B | 793 | VAL | 5.3 |
| 3 | A | 508 | LEU | 5.3 |
| 3 | C | 495 | ASN | 5.2 |
| 3 | C | 504 | HIS | 5.2 |
| 3 | B | 498 | ILE | 5.2 |
| 2 | L | 109 | DC | 5.2 |
| 3 | D | 522 | PHE | 5.1 |
| 3 | D | 817 | GLY | 5.1 |
| 3 | B | 792 | ASP | 5.1 |
| 3 | C | 498 | ILE | 5.0 |
| 3 | C | 507 | ASN | 4.8 |
| 3 | A | 536 | LYS | 4.8 |
| 3 | D | 121 | ASP | 4.8 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 3 | B | 791 | TYR | 4.7 |
| 3 | C | 512 | GLU | 4.6 |
| 3 | C | 508 | LEU | 4.6 |
| 3 | D | 523 | SER | 4.6 |
| 3 | D | 314 | GLU | 4.6 |
| 3 | A | 257 | TYR | 4.6 |
| 3 | D | 730 | LEU | 4.5 |
| 3 | D | 230 | ILE | 4.5 |
| 3 | C | 509 | SER | 4.5 |
| 3 | D | 491 | ALA | 4.4 |
| 3 | A | 500 | LYS | 4.4 |
| 3 | A | 530 | ILE | 4.4 |
| 3 | C | 522 | PHE | 4.3 |
| 3 | D | 252 | VAL | 4.3 |
| 3 | D | 782 | VAL | 4.3 |
| 3 | A | 514 | LEU | 4.3 |
| 3 | D | 508 | LEU | 4.3 |
| 3 | B | 524 | ASP | 4.2 |
| 3 | B | 819 | ILE | 4.2 |
| 3 | C | 530 | ILE | 4.2 |
| 3 | A | 510 | VAL | 4.2 |
| 3 | D | 320 | TYR | 4.1 |
| 3 | A | 498 | ILE | 4.1 |
| 3 | C | 499 | ILE | 4.1 |
| 3 | B | 542 | LEU | 4.1 |
| 3 | C | 506 | PRO | 4.1 |
| 3 | D | 539 | ASN | 4.0 |
| 2 | L | 101 | DG | 4.0 |
| 3 | D | 529 | LYS | 4.0 |
| 3 | C | 496 | GLY | 3.9 |
| 3 | A | 497 | GLU | 3.9 |
| 3 | C | 527 | LYS | 3.9 |
| 3 | D | 787 | ASN | 3.9 |
| 3 | D | 818 | ASN | 3.9 |
| 3 | B | 820 | ASP | 3.8 |
| 3 | D | 150 | ASP | 3.8 |
| 3 | D | 159 | VAL | 3.8 |
| 3 | A | 513 | PRO | 3.8 |
| 3 | D | 203 | ASN | 3.8 |
| 3 | D | 216 | TRP | 3.8 |
| 3 | D | 321 | ILE | 3.7 |
| 1 | K | 2 | DG | 3.7 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 3 | D | 794 | GLY | 3.7 |
| 3 | B | 259 | SER | 3.7 |
| 3 | D | 134 | ASP | 3.6 |
| 3 | D | 78 | ILE | 3.6 |
| 3 | A | 535 | ALA | 3.6 |
| 3 | D | 133 | ILE | 3.6 |
| 2 | L | 107 | DG | 3.6 |
| 3 | C | 502 | ALA | 3.6 |
| 3 | D | 789 | ALA | 3.5 |
| 3 | A | 534 | SER | 3.5 |
| 3 | D | 537 | SER | 3.5 |
| 3 | D | 225 | TYR | 3.5 |
| 3 | D | 136 | ILE | 3.5 |
| 3 | A | 538 | LEU | 3.5 |
| 3 | B | 533 | LEU | 3.5 |
| 3 | D | 306 | ASP | 3.5 |
| 3 | B | 253 | ILE | 3.5 |
| 3 | D | 263 | ILE | 3.4 |
| 3 | D | 191 | PHE | 3.4 |
| 3 | A | 507 | ASN | 3.4 |
| 3 | A | 799 | PRO | 3.4 |
| 3 | D | 234 | PHE | 3.4 |
| 3 | B | 523 | SER | 3.4 |
| 3 | D | 518 | TYR | 3.3 |
| 3 | D | 779 | ILE | 3.3 |
| 3 | D | 821 | ALA | 3.3 |
| 3 | D | 126 | PRO | 3.3 |
| 3 | A | 539 | ASN | 3.3 |
| 3 | B | 525 | GLU | 3.2 |
| 3 | A | 528 | GLU | 3.2 |
| 3 | D | 798 | GLY | 3.2 |
| 3 | A | 501 | GLU | 3.2 |
| 3 | D | 876 | PHE | 3.2 |
| 3 | B | 734 | LYS | 3.2 |
| 3 | D | 160 | GLU | 3.2 |
| 3 | D | 190 | PRO | 3.2 |
| 3 | D | 304 | LYS | 3.1 |
| 3 | C | 513 | PRO | 3.1 |
| 1 | K | 15 | DC | 3.1 |
| 3 | D | 545 | ALA | 3.1 |
| 3 | A | 533 | LEU | 3.1 |
| 3 | C | 538 | LEU | 3.1 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 3 | D | 15 | ILE | 3.1 |
| 3 | A | 537 | SER | 3.1 |
| 3 | D | 223 | ILE | 3.1 |
| 3 | D | 497 | GLU | 3.1 |
| 3 | D | 741 | VAL | 3.1 |
| 3 | D | 735 | SER | 3.1 |
| 3 | D | 745 | LEU | 3.1 |
| 3 | B | 536 | LYS | 3.1 |
| 3 | D | 201 | TYR | 3.0 |
| 3 | D | 152 | LEU | 3.0 |
| 3 | D | 124 | PRO | 3.0 |
| 3 | D | 873 | GLU | 3.0 |
| 3 | B | 495 | ASN | 3.0 |
| 3 | D | 793 | VAL | 3.0 |
| 3 | D | 229 | ARG | 3.0 |
| 3 | C | 523 | SER | 3.0 |
| 3 | D | 506 | PRO | 3.0 |
| 3 | D | 161 | GLU | 2.9 |
| 3 | C | 528 | GLU | 2.9 |
| 3 | A | 254 | GLU | 2.9 |
| 3 | C | 544 | ARG | 2.9 |
| 3 | D | 215 | GLY | 2.9 |
| 3 | C | 175 | GLY | 2.9 |
| 3 | A | 518 | TYR | 2.8 |
| 3 | D | 120 | PRO | 2.8 |
| 3 | A | 857 | LEU | 2.8 |
| 3 | D | 62 | PHE | 2.8 |
| 3 | D | 515 | ASP | 2.8 |
| 3 | D | 857 | LEU | 2.8 |
| 3 | A | 788 | ILE | 2.8 |
| 3 | B | 902 | ASP | 2.8 |
| 3 | D | 61 | LEU | 2.8 |
| 3 | A | 258 | GLY | 2.8 |
| 3 | A | 495 | ASN | 2.8 |
| 3 | D | 113 | PHE | 2.8 |
| 3 | D | 511 | ASP | 2.8 |
| 3 | D | 499 | ILE | 2.8 |
| 3 | A | 516 | VAL | 2.8 |
| 3 | D | 129 | ALA | 2.7 |
| 3 | D | 162 | TRP | 2.7 |
| 3 | B | 526 | ILE | 2.7 |
| 3 | D | 788 | ILE | 2.7 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 3 | D | 310 | SER | 2.7 |
| 3 | D | 488 | TYR | 2.7 |
| 3 | D | 771 | PHE | 2.7 |
| 3 | D | 394 | ALA | 2.7 |
| 3 | D | 117 | VAL | 2.7 |
| 1 | K | 13 | DG | 2.7 |
| 3 | D | 213 | LEU | 2.7 |
| 3 | C | 532 | LYS | 2.7 |
| 3 | D | 198 | LEU | 2.7 |
| 3 | D | 889 | LEU | 2.7 |
| 3 | B | 818 | ASN | 2.7 |
| 2 | F | 111 | DT | 2.7 |
| 3 | B | 518 | TYR | 2.7 |
| 3 | B | 530 | ILE | 2.6 |
| 3 | D | 831 | TYR | 2.6 |
| 3 | A | 542 | LEU | 2.6 |
| 3 | D | 122 | GLY | 2.6 |
| 3 | D | 183 | ILE | 2.6 |
| 3 | B | 255 | ASN | 2.6 |
| 3 | C | 526 | ILE | 2.6 |
| 3 | D | 891 | TYR | 2.6 |
| 3 | D | 790 | LYS | 2.6 |
| 3 | D | 167 | ALA | 2.6 |
| 3 | A | 902 | ASP | 2.6 |
| 3 | D | 863 | LEU | 2.6 |
| 2 | L | 106 | DT | 2.6 |
| 3 | D | 221 | PHE | 2.5 |
| 3 | A | 786 | ASN | 2.5 |
| 1 | K | 12 | DA | 2.5 |
| 3 | D | 233 | ILE | 2.5 |
| 3 | B | 496 | GLY | 2.5 |
| 3 | C | 537 | SER | 2.5 |
| 3 | B | 499 | ILE | 2.5 |
| 3 | D | 242 | LEU | 2.5 |
| 3 | D | 391 | TYR | 2.5 |
| 3 | B | 552 | GLY | 2.5 |
| 3 | C | 534 | SER | 2.5 |
| 3 | B | 260 | ARG | 2.5 |
| 3 | D | 179 | PRO | 2.5 |
| 3 | D | 513 | PRO | 2.5 |
| 3 | D | 799 | PRO | 2.5 |
| 3 | D | 237 | SER | 2.5 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 3 | A | 785 | ALA | 2.5 |
| 2 | L | 110 | DA | 2.4 |
| 3 | D | 528 | GLU | 2.4 |
| 1 | K | 4 | DG | 2.4 |
| 3 | B | 797 | PRO | 2.4 |
| 3 | B | 545 | ALA | 2.4 |
| 3 | D | 325 | ILE | 2.4 |
| 3 | B | 787 | ASN | 2.4 |
| 3 | D | 390 | PRO | 2.4 |
| 3 | B | 521 | ASP | 2.4 |
| 3 | D | 776 | TYR | 2.4 |
| 3 | A | 512 | GLU | 2.4 |
| 3 | C | 514 | LEU | 2.4 |
| 3 | C | 524 | ASP | 2.4 |
| 3 | A | 490 | LEU | 2.4 |
| 3 | D | 781 | SER | 2.4 |
| 3 | D | 20 | ILE | 2.4 |
| 3 | D | 175 | GLY | 2.4 |
| 3 | D | 287 | SER | 2.3 |
| 2 | F | 107 | DG | 2.3 |
| 1 | K | 5 | DG | 2.3 |
| 3 | A | 492 | ALA | 2.3 |
| 3 | B | 809 | LEU | 2.3 |
| 3 | A | 493 | GLN | 2.3 |
| 2 | L | 114 | DC | 2.3 |
| 3 | D | 729 | GLY | 2.3 |
| 2 | F | 109 | DC | 2.3 |
| 3 | D | 800 | LYS | 2.3 |
| 1 | K | 16 | DG | 2.3 |
| 3 | D | 338 | ARG | 2.3 |
| 3 | D | 864 | HIS | 2.3 |
| 3 | D | 791 | TYR | 2.3 |
| 3 | D | 731 | GLU | 2.3 |
| 3 | A | 522 | PHE | 2.3 |
| 3 | D | 740 | ALA | 2.3 |
| 3 | B | 522 | PHE | 2.3 |
| 3 | B | 178 | VAL | 2.2 |
| 3 | A | 531 | LYS | 2.2 |
| 3 | D | 780 | ALA | 2.2 |
| 3 | D | 823 | GLN | 2.2 |
| 3 | B | 537 | SER | 2.2 |
| 1 | E | 13 | DG | 2.2 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 3 | A | 523 | SER | 2.2 |
| 3 | D | 530 | ILE | 2.2 |
| 3 | D | 312 | LEU | 2.2 |
| 2 | L | 115 | DA | 2.2 |
| 2 | L | 105 | DC | 2.2 |
| 3 | D | 64 | ASN | 2.2 |
| 3 | D | 768 | GLU | 2.2 |
| 3 | D | 520 | PHE | 2.2 |
| 3 | A | 793 | VAL | 2.1 |
| 3 | D | 224 | PRO | 2.1 |
| 3 | D | 290 | LEU | 2.1 |
| 3 | D | 503 | LEU | 2.1 |
| 3 | C | 535 | ALA | 2.1 |
| 3 | D | 395 | PHE | 2.1 |
| 3 | C | 436 | VAL | 2.1 |
| 1 | K | 14 | DC | 2.1 |
| 3 | D | 188 | TYR | 2.1 |
| 3 | B | 532 | LYS | 2.1 |
| 3 | D | 622 | THR | 2.1 |
| 3 | D | 178 | VAL | 2.1 |
| 3 | D | 241 | ARG | 2.1 |
| 3 | C | 501 | GLU | 2.1 |
| 3 | D | 833 | LEU | 2.1 |
| 3 | C | 464 | TYR | 2.1 |
| 3 | A | 847 | ALA | 2.0 |
| 3 | B | 535 | ALA | 2.0 |
| 3 | D | 205 | TRP | 2.0 |
| 1 | E | 2 | DG | 2.0 |
| 3 | D | 11 | ILE | 2.0 |
| 3 | B | 531 | LYS | 2.0 |
| 3 | C | 500 | LYS | 2.0 |
| 3 | D | 302 | LYS | 2.0 |

6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å ²) | Q<0.9 |
|-----|------|-------|-----|-------|------|------|----------------------------|-------|
| 1 | CTG | K | 3 | 22/23 | 0.81 | 0.42 | 75,79,85,88 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|-----|-------|------|------|-----------------------------|-------|
| 1 | CTG | E | 3 | 22/23 | 0.82 | 0.23 | 110,111,113,114 | 0 |
| 1 | CTG | I | 3 | 22/23 | 0.96 | 0.17 | 58,61,62,63 | 0 |
| 1 | CTG | G | 3 | 22/23 | 0.98 | 0.13 | 32,41,42,43 | 0 |

6.3 Carbohydrates [i](#)

There are no carbohydrates in this entry.

6.4 Ligands [i](#)

There are no ligands in this entry.

6.5 Other polymers [i](#)

There are no such residues in this entry.