# WORLDWIDE
# wwPDB
## PROTEIN DATA BANK

# Full wwPDB EM Validation Report (i)

Nov 26, 2024 – 06:36 PM JST

| | | |
|---|---|---|
| PDB ID | : | 8XA0 |
| EMDB ID | : | EMD-38190 |
| Title | : | penton capsomer of the VZV C-capsid |
| Authors | : | Nan, W.; Lei, C.; Xiangxi, W. |
| Deposited on | : | 2023-12-01 |
| Resolution | : | 4.00 Å(reported) |

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

The following versions of software and data (see references (i)) were used in the production of this report:
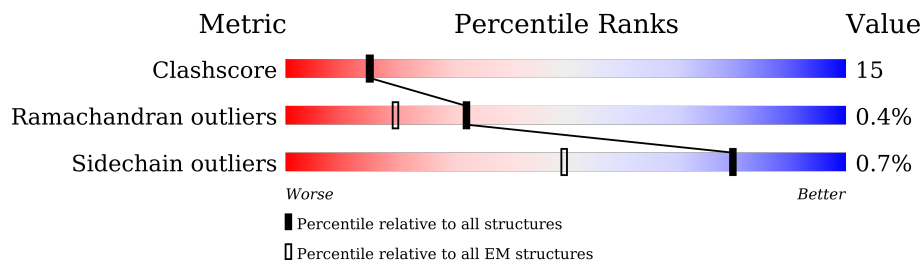
| | | |
|---|---|---|
| EMDB validation analysis | : | 0.0.1.dev113 |
| MolProbity | : | 4.02b-467 |
| Percentile statistics | : | 20231227.v01 (using entries in the PDB archive December 27th 2023) |
| MapQ | : | 1.9.13 |
| Ideal geometry (proteins) | : | Engh & Huber (2001) |
| Ideal geometry (DNA, RNA) | : | Parkinson et al. (1996) |
| Validation Pipeline (wwPDB-VP) | : | 2.40 |

# 1    Overall quality at a glance ⓘ

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

The reported resolution of this entry is 4.00 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 | Percentile Ranks | Value |
|--------|------------------|-------|
| Clashscore | | 15 |
| Ramachandran outliers | | 0.4% |
| Sidechain outliers | | 0.7% |

*Worse*                                                    *Better*

▮ Percentile relative to all structures
▯ Percentile relative to all EM structures

| Metric | Whole archive (#Entries) | EM structures (#Entries) |
|--------|--------------------------|--------------------------|
| Clashscore | 210492 | 15764 |
| Ramachandran outliers | 207382 | 16835 |
| Sidechain outliers | 206894 | 16415 |

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

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1 | 2 | 47 | 94% / 94% / 6% |
| 1 | y | 47 | 100% / 100% |
| 2 | A | 1370 | 9% / 56% / 28% / 16% |
| 2 | C | 1370 | 8% / 57% / 27% / 16% |
| 2 | E | 1370 | 9% / 55% / 29% / 16% |
| 2 | F | 1370 | 9% / 56% / 28% / 16% |
| 2 | G | 1370 | 9% / 57% / 27% / 16% |
| 3 | h | 696 | 66% / 79% / 21% |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 4 | q | 94 | 99% / 100% |
| 4 | u | 94 | 82% / 84% · 15% |
| 5 | R | 256 | 9% / 72% 28% |
| 6 | V | 263 | 7% / 68% 32% |
| 7 | Z | 286 | 5% / 57% 42% · |

# 2 Entry composition ⓘ

There are 7 unique types of molecules in this entry. The entry contains 57027 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Large tegument protein deneddylase.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|:---:|:---:|:---:|:---|:---|:---|:---|:---|:---:|:---:|
| 1 | 2 | 47 | Total<br>384 | C<br>237 | N<br>84 | O<br>61 | S<br>2 | 0 | 0 |
| 1 | y | 47 | Total<br>384 | C<br>237 | N<br>84 | O<br>61 | S<br>2 | 0 | 0 |

- Molecule 2 is a protein called Major capsid protein.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|:---:|:---:|:---:|:---|:---|:---|:---|:---|:---:|:---:|
| 2 | A | 1155 | Total<br>8918 | C<br>5661 | N<br>1575 | O<br>1628 | S<br>54 | 0 | 0 |
| 2 | C | 1155 | Total<br>8918 | C<br>5661 | N<br>1575 | O<br>1628 | S<br>54 | 0 | 0 |
| 2 | E | 1155 | Total<br>8918 | C<br>5661 | N<br>1575 | O<br>1628 | S<br>54 | 0 | 0 |
| 2 | F | 1155 | Total<br>8918 | C<br>5661 | N<br>1575 | O<br>1628 | S<br>54 | 0 | 0 |
| 2 | G | 1155 | Total<br>8918 | C<br>5661 | N<br>1575 | O<br>1628 | S<br>54 | 0 | 0 |

There are 35 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|:---:|:---:|:---:|:---:|:---:|:---:|
| A | 43 | ILE | ALA | conflict | UNP Q6QCL5 |
| A | 44 | PHE | HIS | conflict | UNP Q6QCL5 |
| A | 45 | PHE | ARG | conflict | UNP Q6QCL5 |
| A | 161 | ALA | ASP | conflict | UNP Q6QCL5 |
| A | 162 | ALA | GLY | conflict | UNP Q6QCL5 |
| A | 185 | SER | LEU | conflict | UNP Q6QCL5 |
| A | 814 | ALA | GLY | conflict | UNP Q6QCL5 |
| C | 43 | ILE | ALA | conflict | UNP Q6QCL5 |
| C | 44 | PHE | HIS | conflict | UNP Q6QCL5 |
| C | 45 | PHE | ARG | conflict | UNP Q6QCL5 |
| C | 161 | ALA | ASP | conflict | UNP Q6QCL5 |

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| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|---------|-----------|
| C | 162 | ALA | GLY | conflict | UNP Q6QCL5 |
| C | 185 | SER | LEU | conflict | UNP Q6QCL5 |
| C | 814 | ALA | GLY | conflict | UNP Q6QCL5 |
| E | 43 | ILE | ALA | conflict | UNP Q6QCL5 |
| E | 44 | PHE | HIS | conflict | UNP Q6QCL5 |
| E | 45 | PHE | ARG | conflict | UNP Q6QCL5 |
| E | 161 | ALA | ASP | conflict | UNP Q6QCL5 |
| E | 162 | ALA | GLY | conflict | UNP Q6QCL5 |
| E | 185 | SER | LEU | conflict | UNP Q6QCL5 |
| E | 814 | ALA | GLY | conflict | UNP Q6QCL5 |
| F | 43 | ILE | ALA | conflict | UNP Q6QCL5 |
| F | 44 | PHE | HIS | conflict | UNP Q6QCL5 |
| F | 45 | PHE | ARG | conflict | UNP Q6QCL5 |
| F | 161 | ALA | ASP | conflict | UNP Q6QCL5 |
| F | 162 | ALA | GLY | conflict | UNP Q6QCL5 |
| F | 185 | SER | LEU | conflict | UNP Q6QCL5 |
| F | 814 | ALA | GLY | conflict | UNP Q6QCL5 |
| G | 43 | ILE | ALA | conflict | UNP Q6QCL5 |
| G | 44 | PHE | HIS | conflict | UNP Q6QCL5 |
| G | 45 | PHE | ARG | conflict | UNP Q6QCL5 |
| G | 161 | ALA | ASP | conflict | UNP Q6QCL5 |
| G | 162 | ALA | GLY | conflict | UNP Q6QCL5 |
| G | 185 | SER | LEU | conflict | UNP Q6QCL5 |
| G | 814 | ALA | GLY | conflict | UNP Q6QCL5 |

- Molecule 3 is a protein called Capsid vertex component 1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|---|---|---|---|---------|-------|
| | | | Total | C | N | O | S | | |
| 3 | h | 550 | 4206 | 2674 | 764 | 747 | 21 | 0 | 0 |

There are 6 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|---------|-----------|
| h | 11 | TYR | THR | conflict | UNP P10201 |
| h | 12 | ASP | ILE | conflict | UNP P10201 |
| h | 13 | LEU | SER | conflict | UNP P10201 |
| h | 14 | GLY | ALA | conflict | UNP P10201 |
| h | 15 | HIS | THR | conflict | UNP P10201 |
| h | 21 | SER | ARG | conflict | UNP P10201 |

- Molecule 4 is a protein called Capsid vertex component 2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 4 | q | 94 | Total 766 | C 486 | N 138 | O 138 | S 4 | 0 | 0 |
| 4 | u | 80 | Total 654 | C 413 | N 124 | O 115 | S 2 | 0 | 0 |

- Molecule 5 is a protein called Tri2A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 5 | R | 256 | Total 1847 | C 1191 | N 315 | O 333 | S 8 | 0 | 0 |

- Molecule 6 is a protein called Tri2B.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 6 | V | 263 | Total 1975 | C 1269 | N 339 | O 358 | S 9 | 0 | 0 |

- Molecule 7 is a protein called Tri1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 7 | Z | 286 | Total 2221 | C 1408 | N 411 | O 389 | S 13 | 0 | 0 |

# 3 Residue-property plots ⓘ

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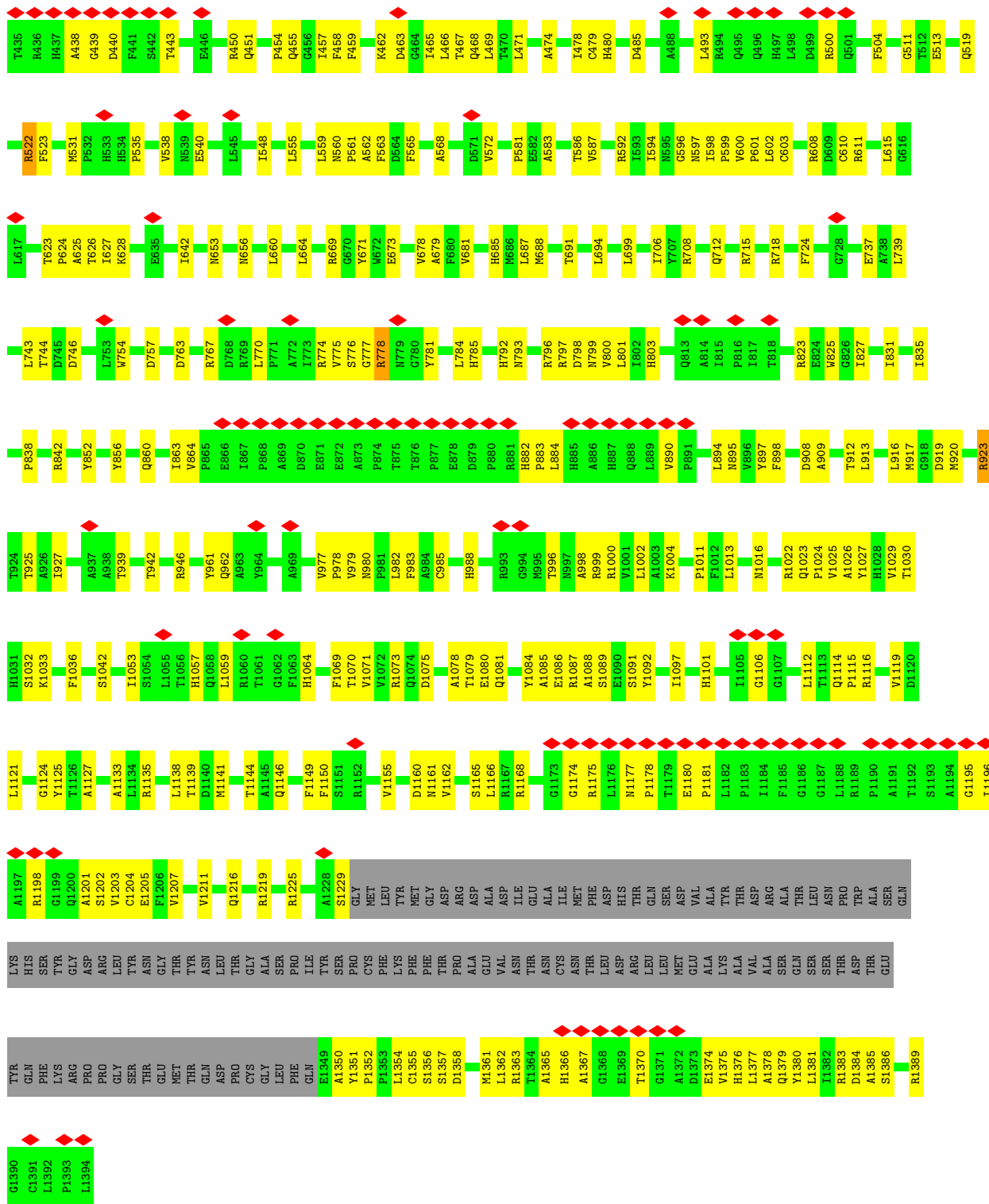
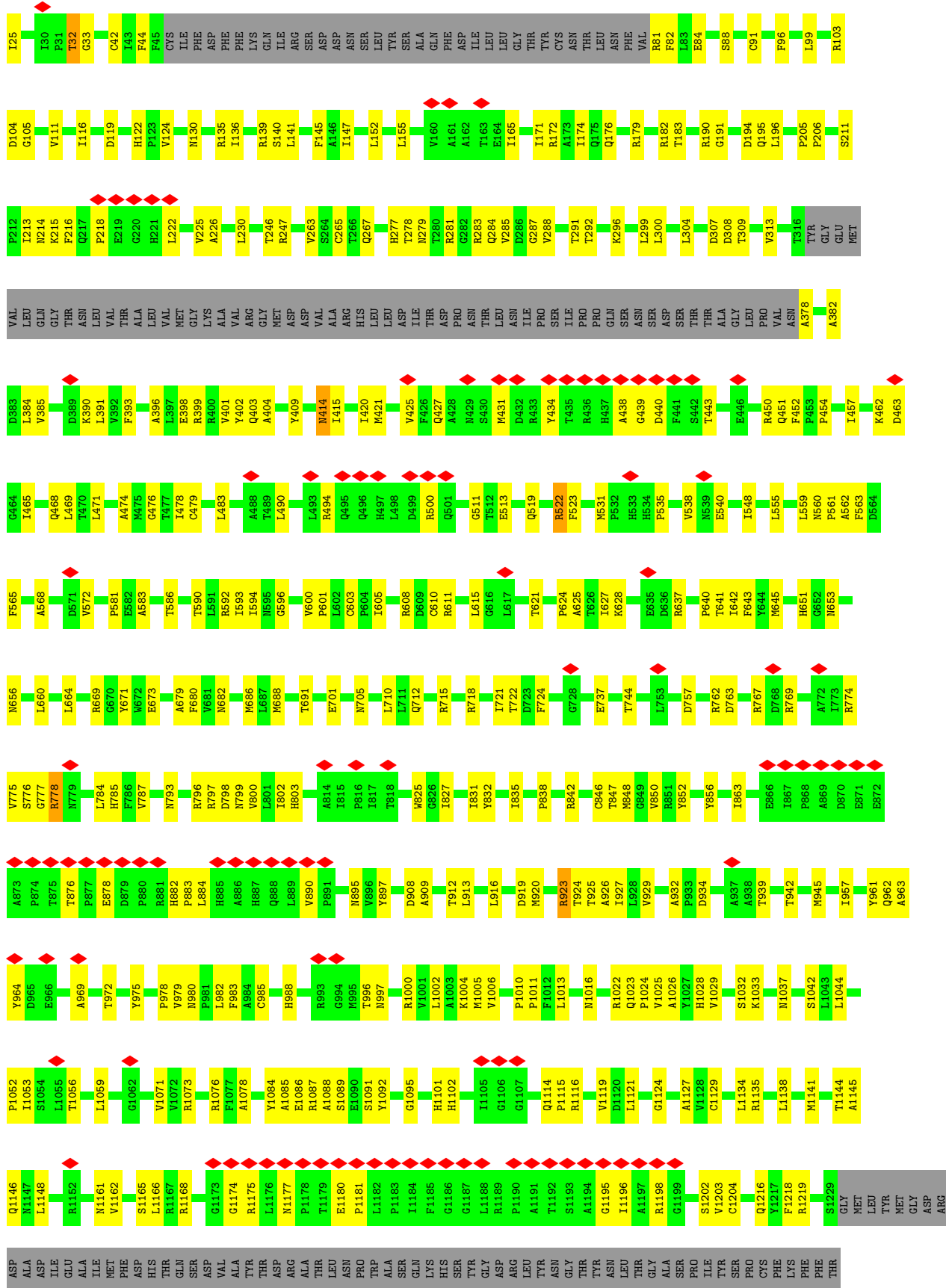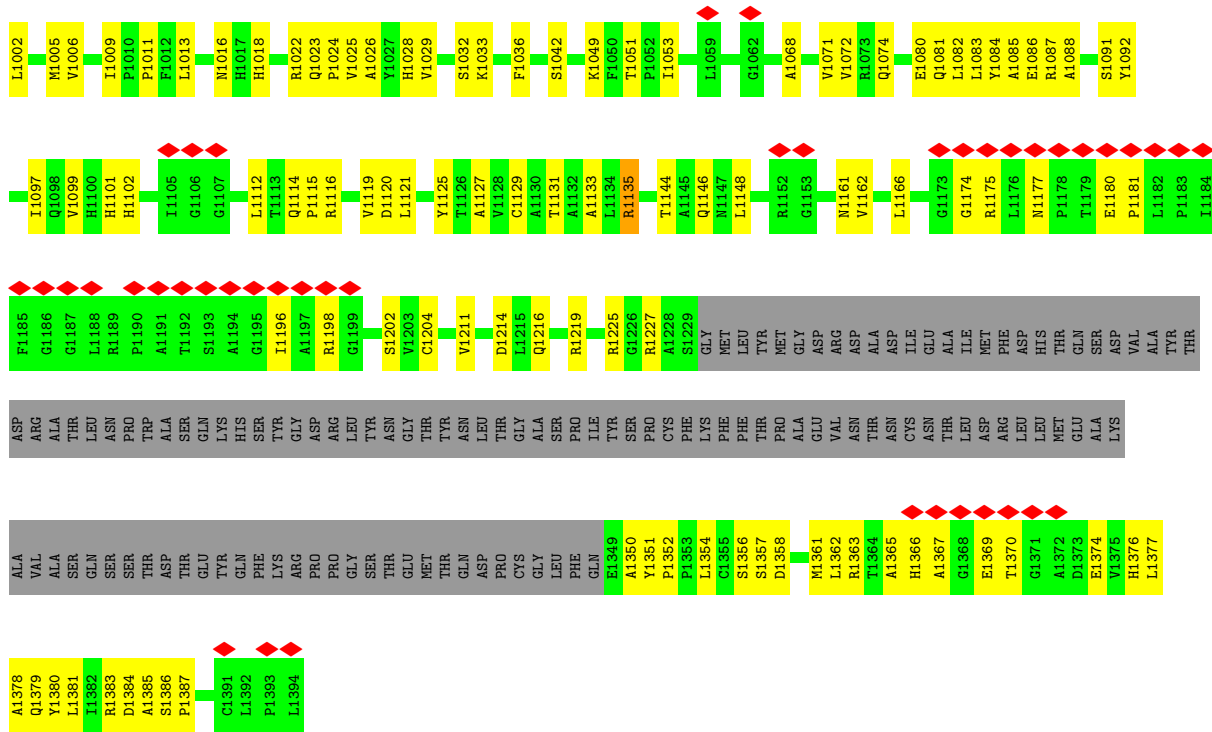- Molecule 1: Large tegument protein deneddylase

Chain 2:

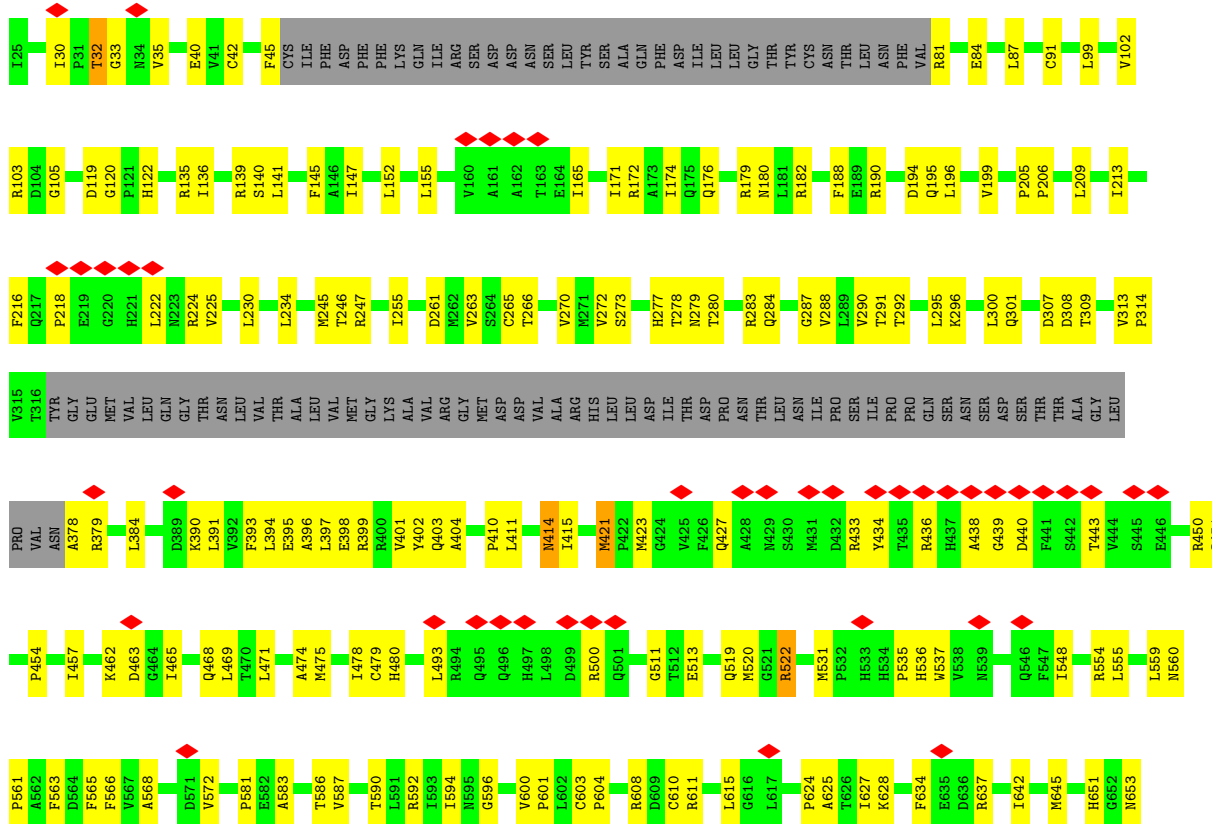- Molecule 1: Large tegument protein deneddylase

Chain y:

- Molecule 2: Major capsid protein

Chain A:

• Molecule 2: Major capsid protein

Chain C:

PRO ALA GLU VAL ASN THR ASN CYS ASN THR LEU ASP LEU LEU MET GLU ALA LYS ALA VAL ALA SER GLN SER SER THR ASP THR GLU TYR GLN PHE LYS ARG PRO PRO GLY SER THR GLU MET THR GLN ASP CYS GLY LEU PHE GLN E1349 A1350 Y1351 P1352 P1353 L1354 C1355 S1356

M1361 L1362 R1363 H1366 A1367 G1368 E1369 T1370 G1371 A1372 D1373 E1374 V1375 H1376 L1377 A1378 Q1379 Y1380 L1381 L1382 R1383 D1384 A1385 S1386 P1387 L1388 R1389 G1390 C1391 L1392 P1393 L1394

• Molecule 2: Major capsid protein

Chain E:

9%

55%　　　　29%　　　　16%

I25 I30 P31 T32 G33 N34 V35 C42 I43 F44 F45 CYS ILE PHE ASP PHE PHE LYS GLN ILE ARG SER ASP ASP ASN SER LEU TYR SER ALA GLN PHE ASP ILE LEU LEU GLY THR TYR CYS ASN THR LEU ASN PHE VAL R81 L85 G86 C91 I92 F96 L99

R103 D104 G105 V106 I107 Q108 F109 E110 P114 D119 H122 M132 R135 I136 R139 S140 L141 F145 A146 I147 L152 S153 L154 L155 V160 A161 A162 T163 E164 I165 I171 R172 A173 I174 Q175 Q176 R179 N180 R190 D194 Q195 L196 L197 G198 V199 K203

A204 P205 P206 L209 L210 S211 P212 I213 N214 K215 F216 Q217 P218 E219 G220 H221 L222 N223 R224 V225 A226 A229 L230 L231 S232 D233 L234 K235 R236 M245 T246 R247 R253 V263 T266 Q267 H277 T278 N279 T280 R281 G282 R283 Q284 G287 V288 L289 V290 T291 T292 A293 T294

L295 K296 R297 Q298 L299 L304 A310 V313 P314 V315 T316 TYR GLY GLU MET VAL LEU GLN GLY THR ASN LEU VAL THR ALA LEU VAL MET GLY LYS ALA VAL ARG GLY MET ASP ASP VAL ALA ARG HIS LEU LEU ASP ILE THR ASP PRO ASN THR LEU ASN ILE SER ILE PRO

PRO GLN SER ASN SER ASP SER THR THR ALA GLY LEU PRO VAL ASN A378 R379 A382 D383 L384 V385 D389 K390 L391 V392 F393 L394 E395 A396 L397 E398 R399 R400 V401 Y402 Q403 M414 I415 T418 F419 I420 M421 V425 F426 Q427 A428 N429 S430 M431 D432 R433 Y434 T435 R436 H437

A438 G439 D440 F441 S442 T443 V444 S445 E446 P449 R450 Q451 F452 P453 P454 F458 N461 K462 D463 G464 I465 L466 T467 Q468 L469 D473 A474 M475 G476 I493 R494 Q495 Q496 H497 L498 D499 R500 Q501 F504 G511 T512 E513 Q519 R522 F523 M531 P532 H533 H536

W537 V538 N539 E540 Q546 R554 F557 E558 L559 N560 P561 A562 F563 D564 F565 A568 D571 V572 P581 E582 A583 T586 T590 L591 R592 I593 I594 N595 G596 V600 P601 L602 C603 P604 I605 R608 D609 C610 R611 L615 G616 L617 G618 R619 P624 A625 T626 I627

K628 K631 E635 D636 G637 I642 F643 H651 G652 N653 R655 N656 L660 L664 I668 R669 G670 Y671 W672 E673 A679 F680 V681 N682 N683 M686 L687 M688 Y689 T690 T691 L694 L699 P700 E701 N705 I706 L710 L711 V714 R715 R718 Q719 T720

I721 F724 G728 E737 A738 L739 L743 T744 I752 L753 D757 R762 D763 R767 D768 R769 L770 P771 A772 I773 R774 V775 S776 G777 R778 N779 L784 H785 V787 D788 M789 H792 N793 R796 R797 D798 N799 V800 H803 A814 I815 P816 W825 I831

I835 P838 A839 F840 S841 R842 G843 C846 T847 M848 G849 V850 R851 Y852 Y856 E866 I867 P868 A869 D870 E871 E872 A873 P874 T875 T876 P877 E878 D879 P880 R881 H882 P883 L884 H885 A886 H887 Q888 L889 V890 P891 N895 V896 Y897 D908 A909 T912 L913 Q914 E915 L916

D919 M920 R923 T924 T925 A926 I927 L928 V929 A932 P933 D934 A937 A938 T939 T942 M945 R946 I947 Y948 I957 M958 M959 Q962 A963 Y964 A969 T970 G971 T972 P976 V977 P978 V979 N980 P981 L982 F983 A984 C985 H988 R993 G994 M995 T996 N997 A998 R999

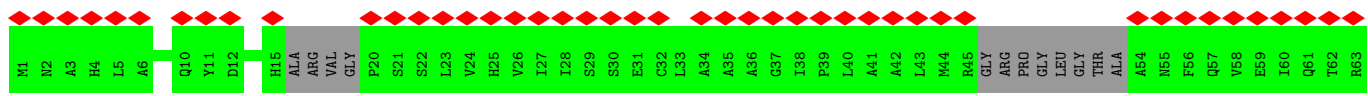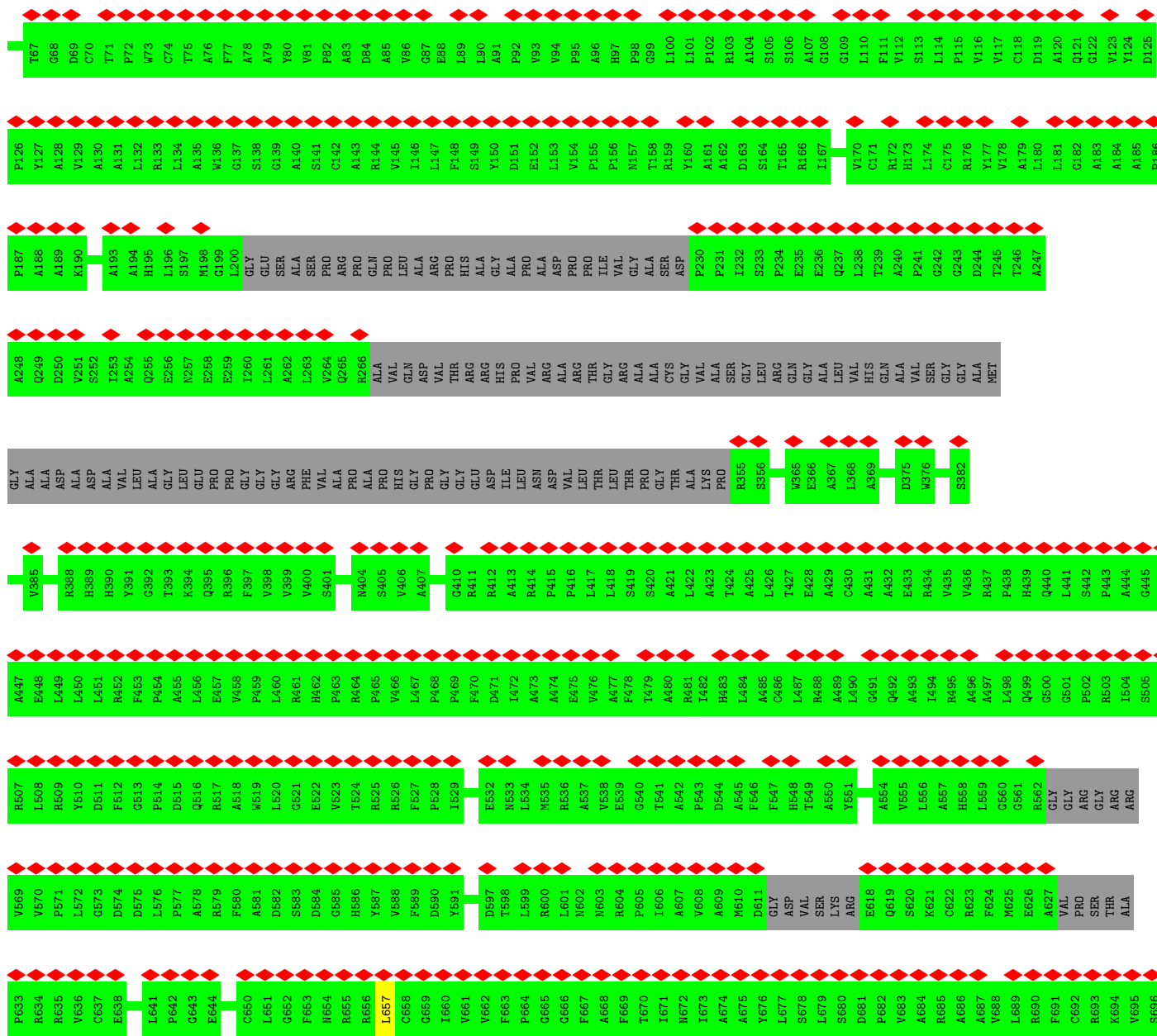• Molecule 2: Major capsid protein

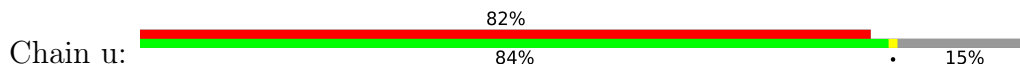• Molecule 2: Major capsid protein

Chain G:

• Molecule 3: Capsid vertex component 1

Chain h:

• Molecule 4: Capsid vertex component 2

Chain q:



• Molecule 4: Capsid vertex component 2

Chain u:

MET ASP PRO TYR CYS PRO PHE ASP ALA LEU ASP VAL W13 E14 H15 R16 R17 F18 I19 V20 A21 D22 S23 R24 N25 F26 I27 T28 P29 E30 F31 P32 R33 D34 F35 W36 M37 S38 P39 V40 F41 N42 L43 P44 R45 E46 T47 A48 A49 E50 Q51 V52 V53 V54 L55 Q56 A57 Q58 R59 T60

A61 A62 A63 A64 A65 L66 E67 N68 A69 A70 M71 Q72 A73 A74 E75 L76 P77 V78 D79 I80 E81 R82 R83 L84 R85 P86 I87 E88 R89 N90 V91 H92 GLU ILE

• Molecule 5: Tri2A

Chain R:

9%

72%    28%

A3 F6 E7 I8 E9 V10 K26 I32 T33 F34 S35 T36 L37 R38 H39 I46 A47 S50 Y51 G55 P58 A66 Y67 R68 M69 R70 F71 A72 G81 K82 L83 H86 F98 I99 Q100 N101 T102 S103 L107 C108 D111 Y112 I113 C114 L115 I126

R127 L128 D129 S130 I135 T140 Q143 T144 L145 M146 R147 E148 V154 L216 L217 I218 L219 A220 L221 I222 P223 R224 L225 L226 A227 L228 L229 I230 P231 R232 L233 L234 V244 T245 R246 E247 A248 A249 Q250 L259 M260 L267 P268 I269 Y270 E271 T272 I273 W276 I277 T286

L287 I292 L293 R294 V295 C296 V304 G307 D308 R309 T310 A311 V312 V315

• Molecule 6: Tri2B

Chain V:

7%

68%    32%

A3 M4 P5 F6 E7 I8 E9 V10 E28 G29 T33 F34 A41 L48 E65 M69 R70 F71 A72 T94 L97 F98 I99 Q100 N101 T102 S103 L107 G110 D111 Y112 I113 C114 L115 L116 P117 P118 V119 F120 D124 V136 F137 P138 L139 T140 I141 P142 Q143

T144 L145 M146 R147 I150 V153 V154 A155 E159 R160 T161 A162 A163 I177 C178 G181 R182 R183 L190 R193 D194 G195 S196 D197 A198 A199 I200 L203 N206 L207 N212 E213 G214 T215 I218 L219 I222 T223 L226 R266 F267 P268 I269 Y270 E271 A272 I273

S274 S275 W276 I277 S278 T279 R282 L283 G284 D285 T286 L287 G288 T289 R290 A291 I292 L293 R294 V295 P306 R309 V312 V315

• Molecule 7: Tri1

Chain Z:

5%

57%    42%    •

F115 K116 Q120 L121 I122 Q123 F131 R132 P133 D134 I135 S140 T141 V142 L143 I144 L145 R146 H147 P148 T149 D150 L151 P152 A153 L154 A159 P160 R163 Q164 T165 E66 R167 L168 A169 E170 A171 Q174 L175 L76 E177 A178 S179 R192 A193 Y194 V195 T196 S197 L198 S199 A202 A203

C204 R205 A206 E207 E208 Y209 K212 A215 R219 I222 V223 S224 A225 Y226 G227 C228 S229 R230 M231 R234 L235 I236 R237 F238 C241 L242 A243 A244 M245 C248 H249 V250 F251 P252 H253 R254 F255 F258 F259 L262 L263 E264 Y265 T266 I267 T275 P281 Q282 E283

T287 T290 S291 T292 R293 R294 V295 T296 A297 N298 I299 C302 V303 D306 V307 D308 K309 D310 L311 D316 K319 F322 F325 V326 Y327 T328 R333 E334 G335 V336 R337 L340 A341 L342 L345 N346 E347 Q348 C349 F350 G351 R352 F356 L357 L358 A432 Y433

# 4 Experimental information ⓘ

| Property | Value | Source |
|---|---|---|
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, Not provided | |
| Number of particles used | 417864 | Depositor |
| Resolution determination method | FSC 0.143 CUT-OFF | Depositor |
| CTF correction method | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope | FEI TITAN KRIOS | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose $(e^-/\text{Å}^2)$ | 60 | Depositor |
| Minimum defocus (nm) | 800 | Depositor |
| Maximum defocus (nm) | 2500 | Depositor |
| Magnification | Not provided | |
| Image detector | GATAN K2 BASE (4k x 4k) | Depositor |
| Maximum map value | 0.050 | Depositor |
| Minimum map value | -0.029 | Depositor |
| Average map value | 0.000 | Depositor |
| Map value standard deviation | 0.004 | Depositor |
| Recommended contour level | 0.004 | Depositor |
| Map size (Å) | 324.0, 324.0, 324.0 | wwPDB |
| Map dimensions | 240, 240, 240 | wwPDB |
| Map angles (°) | 90.0, 90.0, 90.0 | wwPDB |
| Pixel spacing (Å) | 1.35, 1.35, 1.35 | Depositor |

# 5 Model quality ⓘ

## 5.1 Standard geometry ⓘ

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

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|------|--------|------|--------|
| | | RMSZ | #$|Z| >5$ | RMSZ | #$|Z| >5$ |
| 1 | 2 | 0.22 | 0/388 | 0.54 | 0/521 |
| 1 | y | 0.21 | 0/388 | 0.53 | 0/521 |
| 2 | A | 0.25 | 0/9133 | 0.53 | 0/12454 |
| 2 | C | 0.27 | 1/9133 (0.0%) | 0.55 | 3/12454 (0.0%) |
| 2 | E | 0.25 | 0/9133 | 0.54 | 0/12454 |
| 2 | F | 0.26 | 1/9133 (0.0%) | 0.55 | 4/12454 (0.0%) |
| 2 | G | 0.25 | 0/9133 | 0.53 | 0/12454 |
| 3 | h | 0.24 | 0/4307 | 0.51 | 1/5866 (0.0%) |
| 4 | q | 0.24 | 0/786 | 0.49 | 0/1072 |
| 4 | u | 0.24 | 0/670 | 0.52 | 0/912 |
| 5 | R | 0.25 | 0/1878 | 0.53 | 0/2568 |
| 6 | V | 0.26 | 0/2010 | 0.57 | 0/2743 |
| 7 | Z | 0.26 | 0/2269 | 0.61 | 0/3078 |
| All | All | 0.25 | 2/58361 (0.0%) | 0.54 | 8/79551 (0.0%) |

All (2) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|------|-------------|----------|
| 2 | C | 535 | PRO | CG-CD | -8.43 | 1.22 | 1.50 |
| 2 | F | 535 | PRO | CG-CD | -7.62 | 1.25 | 1.50 |

All (8) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|-----|-------|-----|------|-------|--------|----------------|-------------|
| 2 | C | 535 | PRO | N-CD-CG | -10.50 | 87.45 | 103.20 |
| 2 | F | 535 | PRO | CA-N-CD | -10.06 | 97.42 | 111.50 |
| 2 | F | 535 | PRO | N-CD-CG | -9.92 | 88.32 | 103.20 |
| 2 | C | 535 | PRO | CA-N-CD | -9.92 | 97.62 | 111.50 |
| 2 | C | 535 | PRO | CA-CB-CG | -5.98 | 92.64 | 104.00 |
| 2 | F | 421 | MET | CG-SD-CE | 5.83 | 109.52 | 100.20 |
| 2 | F | 535 | PRO | CA-CB-CG | -5.58 | 93.40 | 104.00 |
| 3 | h | 657 | LEU | CA-CB-CG | 5.44 | 127.82 | 115.30 |

There are no chirality outliers.

There are no planarity outliers.

## 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 | 2 | 384 | 0 | 410 | 1 | 0 |
| 1 | y | 384 | 0 | 410 | 0 | 0 |
| 2 | A | 8918 | 0 | 8753 | 294 | 0 |
| 2 | C | 8918 | 0 | 8753 | 273 | 0 |
| 2 | E | 8918 | 0 | 8753 | 294 | 0 |
| 2 | F | 8918 | 0 | 8753 | 286 | 0 |
| 2 | G | 8918 | 0 | 8753 | 274 | 0 |
| 3 | h | 4206 | 0 | 4190 | 0 | 0 |
| 4 | q | 766 | 0 | 745 | 0 | 0 |
| 4 | u | 654 | 0 | 642 | 0 | 0 |
| 5 | R | 1847 | 0 | 1851 | 53 | 0 |
| 6 | V | 1975 | 0 | 2031 | 67 | 0 |
| 7 | Z | 2221 | 0 | 2184 | 100 | 0 |
| All | All | 57027 | 0 | 56228 | 1566 | 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 15.

All (1566) 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) |
|--------|--------|--------------------------|-------------------|
| 2:F:398:GLU:O | 2:F:403:GLN:NE2 | 2.04 | 0.91 |
| 2:E:1361:MET:HB3 | 2:E:1381:LEU:HD12 | 1.53 | 0.89 |
| 7:Z:171:ALA:O | 7:Z:237:ARG:NH2 | 2.07 | 0.88 |
| 2:E:1216:GLN:HA | 2:E:1219:ARG:HG3 | 1.59 | 0.84 |
| 2:G:1219:ARG:NH1 | 2:G:1374:GLU:OE1 | 2.12 | 0.82 |
| 2:E:842:ARG:NH1 | 2:E:1032:SER:O | 2.14 | 0.81 |
| 5:R:113:ILE:HD11 | 5:R:295:VAL:HG13 | 1.62 | 0.80 |
| 2:C:398:GLU:O | 2:C:403:GLN:NE2 | 2.15 | 0.80 |
| 2:E:291:THR:HG22 | 2:E:292:THR:H | 1.47 | 0.78 |
| 2:E:450:ARG:NH1 | 2:E:1379:GLN:OE1 | 2.16 | 0.78 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:G:682:ASN:ND2 | 2:G:957:ILE:O | 2.17 | 0.78 |
| 2:A:398:GLU:O | 2:A:403:GLN:NE2 | 2.17 | 0.78 |
| 2:C:1351:TYR:HB3 | 2:C:1386:SER:HA | 1.66 | 0.78 |
| 6:V:115:LEU:HD22 | 6:V:138:PRO:HB2 | 1.65 | 0.77 |
| 2:C:291:THR:HG22 | 2:C:292:THR:H | 1.47 | 0.77 |
| 5:R:8:ILE:HG21 | 5:R:34:PHE:HE2 | 1.50 | 0.77 |
| 2:E:296:LYS:HE2 | 2:E:396:ALA:HB3 | 1.65 | 0.77 |
| 2:C:450:ARG:NH1 | 2:C:1379:GLN:OE1 | 2.17 | 0.77 |
| 5:R:112:TYR:HB2 | 5:R:143:GLN:HG2 | 1.67 | 0.77 |
| 2:G:421:MET:HB2 | 2:G:1071:VAL:HB | 1.65 | 0.76 |
| 2:G:450:ARG:NH1 | 2:G:1379:GLN:OE1 | 2.18 | 0.76 |
| 2:F:660:LEU:HD21 | 2:F:916:LEU:HD22 | 1.68 | 0.76 |
| 2:A:135:ARG:HE | 2:A:136:ILE:H | 1.33 | 0.76 |
| 2:A:1351:TYR:HB3 | 2:A:1386:SER:HA | 1.66 | 0.75 |
| 5:R:33:THR:OG1 | 5:R:70:ARG:NH1 | 2.20 | 0.75 |
| 2:C:450:ARG:HH12 | 2:C:1379:GLN:H | 1.34 | 0.75 |
| 2:A:1365:ALA:HB2 | 2:A:1381:LEU:HD11 | 1.69 | 0.75 |
| 2:G:1080:GLU:OE2 | 2:G:1135:ARG:NH2 | 2.19 | 0.75 |
| 2:G:1216:GLN:HA | 2:G:1219:ARG:HG3 | 1.68 | 0.75 |
| 2:C:105:GLY:O | 2:C:135:ARG:NH2 | 2.20 | 0.74 |
| 2:G:296:LYS:NZ | 2:G:394:LEU:O | 2.20 | 0.74 |
| 2:E:421:MET:HB3 | 2:E:1071:VAL:HB | 1.70 | 0.74 |
| 2:A:454:PRO:HB3 | 2:A:1379:GLN:HG3 | 1.70 | 0.74 |
| 2:F:427:GLN:HE22 | 2:F:1378:ALA:HA | 1.53 | 0.73 |
| 2:C:1216:GLN:HA | 2:C:1219:ARG:HG3 | 1.71 | 0.73 |
| 2:F:390:LYS:NZ | 2:F:1084:TYR:OH | 2.20 | 0.73 |
| 2:E:135:ARG:HE | 2:E:136:ILE:H | 1.36 | 0.73 |
| 2:G:513:GLU:O | 2:G:797:ARG:NH2 | 2.22 | 0.73 |
| 2:C:471:LEU:HB3 | 2:C:1059:LEU:HD22 | 1.71 | 0.72 |
| 2:C:682:ASN:ND2 | 2:C:957:ILE:O | 2.22 | 0.72 |
| 2:C:513:GLU:O | 2:C:797:ARG:NH2 | 2.22 | 0.72 |
| 2:A:450:ARG:HH12 | 2:A:1379:GLN:H | 1.33 | 0.72 |
| 2:F:135:ARG:HE | 2:F:136:ILE:H | 1.37 | 0.72 |
| 2:F:660:LEU:HD11 | 2:F:916:LEU:HB2 | 1.72 | 0.72 |
| 2:F:1086:GLU:HB2 | 2:F:1089:SER:HB2 | 1.72 | 0.72 |
| 7:Z:349:CYS:SG | 7:Z:350:PHE:N | 2.62 | 0.72 |
| 2:C:141:LEU:HD12 | 2:C:1114:GLN:HB3 | 1.71 | 0.71 |
| 2:C:660:LEU:HD21 | 2:C:916:LEU:HD22 | 1.73 | 0.71 |
| 2:C:653:ASN:ND2 | 2:C:919:ASP:OD2 | 2.23 | 0.71 |
| 2:F:776:SER:OG | 2:F:778:ARG:NH1 | 2.23 | 0.71 |
| 2:G:296:LYS:HE2 | 2:G:396:ALA:HB3 | 1.73 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:A:1053:ILE:HD11 | 2:A:1162:VAL:HG13 | 1.73 | 0.71 |
| 2:C:390:LYS:NZ | 2:C:1084:TYR:OH | 2.21 | 0.71 |
| 2:A:421:MET:HB3 | 2:A:1071:VAL:HB | 1.71 | 0.70 |
| 2:A:625:ALA:HA | 2:A:628:LYS:HE2 | 1.73 | 0.70 |
| 2:A:660:LEU:HD21 | 2:A:916:LEU:HD22 | 1.72 | 0.70 |
| 2:F:682:ASN:ND2 | 2:F:957:ILE:O | 2.24 | 0.70 |
| 2:F:296:LYS:NZ | 2:F:394:LEU:O | 2.24 | 0.70 |
| 6:V:100:GLN:NE2 | 6:V:102:THR:OG1 | 2.24 | 0.70 |
| 2:F:1216:GLN:HA | 2:F:1219:ARG:HG3 | 1.73 | 0.70 |
| 7:Z:203:ALA:O | 7:Z:219:ARG:NH2 | 2.24 | 0.70 |
| 2:E:232:SER:HA | 2:E:235:LYS:HE2 | 1.74 | 0.70 |
| 2:F:421:MET:HE2 | 2:F:1353:PRO:HD2 | 1.73 | 0.70 |
| 2:G:842:ARG:NH1 | 2:G:1032:SER:O | 2.24 | 0.70 |
| 2:A:842:ARG:HH12 | 2:A:1033:LYS:HA | 1.57 | 0.70 |
| 2:G:660:LEU:HD21 | 2:G:916:LEU:HD22 | 1.74 | 0.70 |
| 2:A:105:GLY:O | 2:A:135:ARG:NH2 | 2.25 | 0.70 |
| 2:E:450:ARG:HH12 | 2:E:1379:GLN:H | 1.40 | 0.70 |
| 2:F:450:ARG:NH1 | 2:F:1379:GLN:OE1 | 2.24 | 0.70 |
| 2:F:291:THR:HG22 | 2:F:292:THR:H | 1.57 | 0.69 |
| 2:A:513:GLU:O | 2:A:797:ARG:NH2 | 2.23 | 0.69 |
| 2:E:653:ASN:ND2 | 2:E:919:ASP:OD2 | 2.24 | 0.69 |
| 2:A:708:ARG:O | 2:A:712:GLN:NE2 | 2.25 | 0.69 |
| 2:C:1145:ALA:HA | 2:C:1204:CYS:HB2 | 1.72 | 0.69 |
| 2:C:980:ASN:HB2 | 2:C:983:PHE:HB2 | 1.73 | 0.69 |
| 2:F:105:GLY:O | 2:F:135:ARG:NH2 | 2.25 | 0.69 |
| 2:F:401:VAL:HG13 | 2:F:402:TYR:HD2 | 1.58 | 0.69 |
| 7:Z:308:ASP:OD2 | 7:Z:319:LYS:NZ | 2.25 | 0.69 |
| 2:A:531:MET:HG3 | 2:A:1002:LEU:HD11 | 1.74 | 0.69 |
| 2:E:450:ARG:HH12 | 2:E:1378:ALA:H | 1.39 | 0.69 |
| 5:R:100:GLN:HE21 | 5:R:307:GLY:HA2 | 1.57 | 0.69 |
| 2:G:194:ASP:OD1 | 2:G:402:TYR:OH | 2.08 | 0.69 |
| 2:E:660:LEU:HD21 | 2:E:916:LEU:HD22 | 1.74 | 0.69 |
| 2:C:560:ASN:HB3 | 2:C:563:PHE:HB2 | 1.75 | 0.69 |
| 2:E:279:ASN:HD21 | 2:E:283:ARG:HB3 | 1.58 | 0.69 |
| 2:E:611:ARG:NH1 | 2:E:1042:SER:O | 2.25 | 0.68 |
| 2:G:1351:TYR:HB3 | 2:G:1386:SER:HA | 1.75 | 0.68 |
| 2:A:119:ASP:OD2 | 2:C:195:GLN:NE2 | 2.26 | 0.68 |
| 2:C:451:GLN:NE2 | 2:C:610:CYS:SG | 2.66 | 0.68 |
| 2:F:842:ARG:HH12 | 2:F:1033:LYS:HA | 1.59 | 0.68 |
| 2:F:1080:GLU:HB3 | 2:F:1133:ALA:HB3 | 1.74 | 0.68 |
| 2:G:1225:ARG:NH2 | 2:G:1229:SER:OG | 2.27 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:A:478:ILE:HD13 | 2:A:1069:PHE:HZ | 1.57 | 0.68 |
| 2:E:914:GLN:NE2 | 2:E:915:GLU:OE1 | 2.25 | 0.68 |
| 2:G:427:GLN:HE22 | 2:G:1378:ALA:HA | 1.57 | 0.68 |
| 2:A:660:LEU:HD11 | 2:A:916:LEU:HB2 | 1.75 | 0.68 |
| 2:C:842:ARG:NH1 | 2:C:1032:SER:O | 2.27 | 0.68 |
| 2:G:141:LEU:HD12 | 2:G:1114:GLN:HB3 | 1.75 | 0.68 |
| 6:V:143:GLN:OE1 | 6:V:147:ARG:NH1 | 2.26 | 0.68 |
| 2:A:411:LEU:O | 2:A:1081:GLN:NE2 | 2.27 | 0.68 |
| 7:Z:263:LEU:HG | 7:Z:264:GLU:OE1 | 1.93 | 0.68 |
| 2:E:105:GLY:O | 2:E:135:ARG:NH2 | 2.25 | 0.68 |
| 2:F:1351:TYR:HB3 | 2:F:1386:SER:HA | 1.73 | 0.68 |
| 2:E:513:GLU:O | 2:E:797:ARG:NH2 | 2.26 | 0.68 |
| 2:A:225:VAL:HG23 | 2:C:1196:ILE:HB | 1.76 | 0.68 |
| 2:E:1080:GLU:HB3 | 2:E:1133:ALA:HB3 | 1.75 | 0.67 |
| 2:G:291:THR:HG22 | 2:G:292:THR:H | 1.58 | 0.67 |
| 2:A:141:LEU:HD12 | 2:A:1114:GLN:HB3 | 1.75 | 0.67 |
| 2:C:450:ARG:HH12 | 2:C:1378:ALA:H | 1.41 | 0.67 |
| 2:C:776:SER:OG | 2:C:778:ARG:NH1 | 2.28 | 0.67 |
| 2:C:1356:SER:HB3 | 2:C:1362:LEU:HB2 | 1.75 | 0.67 |
| 2:F:882:HIS:HE1 | 2:F:884:LEU:HD12 | 1.60 | 0.67 |
| 2:G:776:SER:OG | 2:G:778:ARG:NH1 | 2.27 | 0.67 |
| 6:V:33:THR:HA | 6:V:72:ALA:HA | 1.75 | 0.67 |
| 2:C:454:PRO:HB3 | 2:C:1379:GLN:HG3 | 1.76 | 0.67 |
| 2:G:1092:TYR:HE1 | 2:G:1116:ARG:HH11 | 1.40 | 0.67 |
| 2:A:842:ARG:NH1 | 2:A:1032:SER:O | 2.28 | 0.67 |
| 2:E:1005:MET:HG3 | 2:E:1006:VAL:HG23 | 1.76 | 0.67 |
| 2:C:225:VAL:HG23 | 2:E:1196:ILE:HB | 1.77 | 0.67 |
| 2:C:660:LEU:HD11 | 2:C:916:LEU:HB2 | 1.77 | 0.67 |
| 2:C:279:ASN:HD21 | 2:C:283:ARG:HB3 | 1.61 | 0.66 |
| 2:E:682:ASN:ND2 | 2:E:957:ILE:O | 2.28 | 0.66 |
| 2:E:882:HIS:HE1 | 2:E:884:LEU:HD12 | 1.61 | 0.66 |
| 2:A:980:ASN:HB2 | 2:A:983:PHE:HB2 | 1.76 | 0.66 |
| 2:C:531:MET:HG3 | 2:C:1002:LEU:HD11 | 1.77 | 0.66 |
| 2:G:416:ASP:OD1 | 2:G:1074:GLN:NE2 | 2.29 | 0.66 |
| 2:C:842:ARG:HH12 | 2:C:1033:LYS:HA | 1.60 | 0.66 |
| 2:G:451:GLN:HA | 2:G:1377:LEU:HD22 | 1.78 | 0.66 |
| 2:G:230:LEU:O | 2:G:234:LEU:HD12 | 1.96 | 0.66 |
| 2:A:438:ALA:N | 2:C:439:GLY:O | 2.26 | 0.66 |
| 2:C:194:ASP:OD1 | 2:C:402:TYR:OH | 2.06 | 0.66 |
| 6:V:69:MET:SD | 7:Z:352:ARG:NH2 | 2.69 | 0.66 |
| 2:A:523:PHE:CE1 | 2:A:1011:PRO:HD3 | 2.30 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:E:119:ASP:OD2 | 2:F:195:GLN:NE2 | 2.29 | 0.66 |
| 2:E:842:ARG:HH21 | 2:E:1036:PHE:HE1 | 1.42 | 0.66 |
| 2:A:1196:ILE:HB | 2:G:225:VAL:HG23 | 1.78 | 0.66 |
| 2:G:653:ASN:ND2 | 2:G:919:ASP:OD2 | 2.29 | 0.66 |
| 2:C:414:ASN:HD21 | 2:C:1076:ARG:HB3 | 1.61 | 0.65 |
| 2:F:787:VAL:HG13 | 2:F:920:MET:HB3 | 1.77 | 0.65 |
| 2:E:225:VAL:HG23 | 2:F:1196:ILE:HB | 1.77 | 0.65 |
| 2:E:842:ARG:HH12 | 2:E:1033:LYS:HA | 1.60 | 0.65 |
| 2:G:701:GLU:OE2 | 2:G:705:ASN:ND2 | 2.29 | 0.65 |
| 2:A:451:GLN:NE2 | 2:A:610:CYS:SG | 2.69 | 0.65 |
| 2:G:1174:GLY:O | 2:G:1177:ASN:ND2 | 2.29 | 0.65 |
| 2:E:701:GLU:OE2 | 2:E:705:ASN:ND2 | 2.30 | 0.65 |
| 2:E:194:ASP:OD1 | 2:E:402:TYR:OH | 2.14 | 0.65 |
| 2:G:1367:ALA:HB1 | 2:G:1370:THR:HA | 1.78 | 0.65 |
| 2:A:882:HIS:HE1 | 2:A:884:LEU:HD12 | 1.62 | 0.65 |
| 2:E:784:LEU:HB3 | 2:E:800:VAL:HG13 | 1.78 | 0.65 |
| 2:F:1174:GLY:O | 2:F:1177:ASN:ND2 | 2.30 | 0.65 |
| 2:C:625:ALA:HA | 2:C:628:LYS:HE2 | 1.79 | 0.65 |
| 2:G:784:LEU:HB3 | 2:G:800:VAL:HG13 | 1.77 | 0.65 |
| 2:A:548:ILE:HA | 2:A:555:LEU:HD21 | 1.79 | 0.65 |
| 2:A:642:ILE:HD11 | 2:A:897:TYR:HB3 | 1.78 | 0.65 |
| 2:F:450:ARG:HH12 | 2:F:1379:GLN:H | 1.44 | 0.65 |
| 2:F:279:ASN:HD21 | 2:F:283:ARG:HB3 | 1.62 | 0.64 |
| 2:A:291:THR:HG22 | 2:A:292:THR:H | 1.61 | 0.64 |
| 5:R:222:ILE:HG21 | 5:R:276:TRP:HB2 | 1.80 | 0.64 |
| 2:G:1086:GLU:HB2 | 2:G:1089:SER:HB2 | 1.79 | 0.64 |
| 2:A:44:PHE:O | 2:G:103:ARG:NH2 | 2.30 | 0.64 |
| 2:A:784:LEU:HB3 | 2:A:800:VAL:HG13 | 1.79 | 0.64 |
| 2:F:594:ILE:HG22 | 2:F:596:GLY:H | 1.62 | 0.64 |
| 2:A:195:GLN:NE2 | 2:G:119:ASP:OD2 | 2.29 | 0.64 |
| 2:A:611:ARG:NH1 | 2:A:1042:SER:O | 2.31 | 0.64 |
| 2:A:776:SER:OG | 2:A:778:ARG:NH1 | 2.31 | 0.64 |
| 2:E:979:VAL:HG21 | 2:E:1013:LEU:HB3 | 1.79 | 0.64 |
| 2:G:401:VAL:HG13 | 2:G:402:TYR:HD1 | 1.63 | 0.64 |
| 2:C:213:ILE:HG13 | 2:C:230:LEU:HD21 | 1.80 | 0.64 |
| 2:C:438:ALA:N | 2:E:439:GLY:O | 2.30 | 0.64 |
| 2:C:882:HIS:HE1 | 2:C:884:LEU:HD12 | 1.62 | 0.64 |
| 2:E:776:SER:OG | 2:E:778:ARG:NH1 | 2.30 | 0.64 |
| 2:E:206:PRO:HG2 | 2:E:209:LEU:HD12 | 1.80 | 0.64 |
| 2:E:776:SER:HG | 2:E:778:ARG:NH1 | 1.96 | 0.64 |
| 2:F:513:GLU:O | 2:F:797:ARG:NH2 | 2.31 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:A:594:ILE:HG22 | 2:A:596:GLY:H | 1.62 | 0.64 |
| 2:C:784:LEU:HB3 | 2:C:800:VAL:HG13 | 1.80 | 0.64 |
| 2:C:1092:TYR:OH | 2:C:1116:ARG:NH1 | 2.29 | 0.64 |
| 2:A:1086:GLU:HB2 | 2:A:1089:SER:HB2 | 1.79 | 0.64 |
| 2:C:611:ARG:NH1 | 2:C:1042:SER:O | 2.31 | 0.64 |
| 2:A:101:TYR:O | 2:A:103:ARG:NH1 | 2.32 | 0.63 |
| 2:G:1363:ARG:O | 2:G:1366:HIS:ND1 | 2.28 | 0.63 |
| 6:V:8:ILE:HG21 | 6:V:34:PHE:HE2 | 1.63 | 0.63 |
| 6:V:48:LEU:HD12 | 6:V:136:VAL:HB | 1.80 | 0.63 |
| 2:A:194:ASP:OD1 | 2:A:402:TYR:OH | 2.15 | 0.63 |
| 5:R:7:GLU:OE1 | 5:R:86:HIS:NE2 | 2.30 | 0.63 |
| 2:E:450:ARG:NH1 | 2:E:1378:ALA:H | 1.96 | 0.63 |
| 2:E:454:PRO:HB3 | 2:E:1379:GLN:HG3 | 1.79 | 0.63 |
| 2:E:913:LEU:HD13 | 2:E:916:LEU:HD23 | 1.81 | 0.63 |
| 5:R:126:ILE:HB | 5:R:135:ILE:HB | 1.80 | 0.63 |
| 2:F:454:PRO:HB3 | 2:F:1379:GLN:HG3 | 1.81 | 0.63 |
| 6:V:178:CYS:HB3 | 6:V:183:ARG:HH12 | 1.64 | 0.63 |
| 2:G:882:HIS:HE1 | 2:G:884:LEU:HD12 | 1.64 | 0.63 |
| 7:Z:165:THR:O | 7:Z:169:ALA:N | 2.25 | 0.63 |
| 2:A:1174:GLY:O | 2:A:1177:ASN:ND2 | 2.30 | 0.63 |
| 2:E:451:GLN:NE2 | 2:E:610:CYS:SG | 2.72 | 0.63 |
| 2:A:561:PRO:O | 2:A:592:ARG:NH1 | 2.28 | 0.63 |
| 2:C:883:PRO:O | 2:C:895:ASN:ND2 | 2.31 | 0.63 |
| 2:F:218:PRO:HD2 | 2:F:222:LEU:HD11 | 1.81 | 0.63 |
| 2:G:32:THR:OG1 | 2:G:33:GLY:N | 2.32 | 0.63 |
| 2:A:218:PRO:HD2 | 2:A:222:LEU:HD11 | 1.80 | 0.62 |
| 2:E:1174:GLY:O | 2:E:1177:ASN:ND2 | 2.31 | 0.62 |
| 2:F:511:GLY:HA3 | 2:F:776:SER:HA | 1.81 | 0.62 |
| 2:F:883:PRO:O | 2:F:895:ASN:ND2 | 2.32 | 0.62 |
| 2:A:458:PHE:HD2 | 2:A:466:LEU:HD11 | 1.65 | 0.62 |
| 2:A:213:ILE:HG13 | 2:A:230:LEU:HD21 | 1.81 | 0.62 |
| 2:C:621:THR:OG1 | 2:C:1037:ASN:ND2 | 2.30 | 0.62 |
| 2:G:279:ASN:HD21 | 2:G:283:ARG:HB3 | 1.65 | 0.62 |
| 2:C:594:ILE:HG22 | 2:C:596:GLY:H | 1.64 | 0.62 |
| 2:F:119:ASP:OD2 | 2:G:195:GLN:NE2 | 2.33 | 0.62 |
| 2:G:454:PRO:HB3 | 2:G:1379:GLN:HG3 | 1.80 | 0.62 |
| 2:A:712:GLN:HA | 2:A:715:ARG:HD3 | 1.81 | 0.62 |
| 2:C:1367:ALA:HB1 | 2:C:1370:THR:HA | 1.81 | 0.62 |
| 2:E:384:LEU:HB3 | 2:E:391:LEU:HD11 | 1.80 | 0.62 |
| 2:F:701:GLU:OE2 | 2:F:705:ASN:ND2 | 2.32 | 0.62 |
| 2:A:401:VAL:HG13 | 2:A:402:TYR:HD1 | 1.63 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:C:218:PRO:HD2 | 2:C:222:LEU:HD11 | 1.81 | 0.62 |
| 2:G:883:PRO:O | 2:G:895:ASN:ND2 | 2.33 | 0.62 |
| 2:A:32:THR:OG1 | 2:A:33:GLY:N | 2.33 | 0.62 |
| 2:C:135:ARG:HH21 | 2:C:136:ILE:HG12 | 1.64 | 0.62 |
| 2:E:1080:GLU:HB2 | 2:E:1135:ARG:HH22 | 1.63 | 0.62 |
| 2:G:216:PHE:HB3 | 2:G:230:LEU:HD13 | 1.81 | 0.62 |
| 2:C:103:ARG:NH2 | 2:E:45:PHE:HB3 | 2.14 | 0.62 |
| 2:F:653:ASN:ND2 | 2:F:919:ASP:OD2 | 2.33 | 0.62 |
| 2:G:500:ARG:NH2 | 2:G:583:ALA:O | 2.33 | 0.61 |
| 2:G:660:LEU:HD11 | 2:G:916:LEU:HB2 | 1.82 | 0.61 |
| 2:G:980:ASN:HB2 | 2:G:983:PHE:HB2 | 1.82 | 0.61 |
| 7:Z:303:VAL:O | 7:Z:340:LEU:N | 2.32 | 0.61 |
| 6:V:150:ILE:HA | 6:V:153:VAL:HG12 | 1.82 | 0.61 |
| 2:E:141:LEU:HD12 | 2:E:1114:GLN:HB3 | 1.81 | 0.61 |
| 2:G:451:GLN:NE2 | 2:G:610:CYS:SG | 2.73 | 0.61 |
| 2:G:594:ILE:HG22 | 2:G:596:GLY:H | 1.64 | 0.61 |
| 2:A:451:GLN:HA | 2:A:1377:LEU:HD22 | 1.83 | 0.61 |
| 2:C:701:GLU:OE2 | 2:C:705:ASN:ND2 | 2.32 | 0.61 |
| 5:R:66:ALA:HB1 | 5:R:70:ARG:HH21 | 1.65 | 0.61 |
| 7:Z:167:ARG:NH2 | 7:Z:248:CYS:SG | 2.74 | 0.61 |
| 2:C:913:LEU:HD13 | 2:C:916:LEU:HD23 | 1.82 | 0.61 |
| 2:C:450:ARG:NH1 | 2:C:1378:ALA:H | 1.98 | 0.61 |
| 2:G:611:ARG:NH1 | 2:G:1042:SER:O | 2.32 | 0.61 |
| 7:Z:174:GLN:HG2 | 7:Z:237:ARG:HH21 | 1.65 | 0.61 |
| 2:A:500:ARG:NH2 | 2:A:583:ALA:O | 2.34 | 0.61 |
| 2:A:471:LEU:HB3 | 2:A:1059:LEU:HD22 | 1.83 | 0.61 |
| 2:C:401:VAL:HG13 | 2:C:402:TYR:HD1 | 1.64 | 0.61 |
| 7:Z:243:ARG:NH1 | 7:Z:333:ARG:O | 2.34 | 0.61 |
| 2:A:139:ARG:NH1 | 2:A:195:GLN:OE1 | 2.34 | 0.61 |
| 2:C:136:ILE:HA | 2:C:1119:VAL:HG22 | 1.83 | 0.61 |
| 2:F:745:ASP:OD2 | 2:F:1049:LYS:NZ | 2.32 | 0.61 |
| 2:A:450:ARG:NH1 | 2:A:1379:GLN:H | 1.98 | 0.61 |
| 2:A:1092:TYR:HE2 | 2:A:1116:ARG:HH11 | 1.49 | 0.61 |
| 2:A:1367:ALA:HB1 | 2:A:1370:THR:HA | 1.81 | 0.61 |
| 2:C:1086:GLU:HB2 | 2:C:1089:SER:HB2 | 1.83 | 0.60 |
| 2:E:594:ILE:HG22 | 2:E:596:GLY:H | 1.64 | 0.60 |
| 2:F:688:MET:HA | 2:F:691:THR:HG22 | 1.83 | 0.60 |
| 6:V:110:GLY:H | 6:V:295:VAL:HG13 | 1.65 | 0.60 |
| 7:Z:205:ARG:NH1 | 7:Z:207:GLU:OE1 | 2.34 | 0.60 |
| 2:C:831:ILE:HG23 | 2:C:835:ILE:HD12 | 1.82 | 0.60 |
| 2:E:660:LEU:HD11 | 2:E:916:LEU:HB2 | 1.83 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:E:1351:TYR:HB3 | 2:E:1386:SER:HA | 1.82 | 0.60 |
| 2:G:468:GLN:NE2 | 2:G:469:LEU:O | 2.34 | 0.60 |
| 7:Z:171:ALA:C | 7:Z:237:ARG:HH22 | 2.05 | 0.60 |
| 2:C:32:THR:OG1 | 2:C:33:GLY:N | 2.33 | 0.60 |
| 2:E:253:ARG:NH1 | 2:F:301:GLN:OE1 | 2.34 | 0.60 |
| 2:E:313:VAL:O | 2:E:378:ALA:N | 2.35 | 0.60 |
| 2:E:1016:ASN:HD21 | 2:E:1023:GLN:HB2 | 1.65 | 0.60 |
| 2:F:831:ILE:HG23 | 2:F:835:ILE:HD12 | 1.83 | 0.60 |
| 2:E:883:PRO:O | 2:E:895:ASN:ND2 | 2.34 | 0.60 |
| 2:F:141:LEU:HD12 | 2:F:1114:GLN:HB3 | 1.83 | 0.60 |
| 2:F:1225:ARG:HH12 | 2:F:1227:ARG:HD2 | 1.67 | 0.60 |
| 6:V:65:GLU:O | 6:V:69:MET:HB2 | 2.01 | 0.60 |
| 2:A:465:ILE:HD13 | 2:A:1198:ARG:HH12 | 1.65 | 0.60 |
| 2:E:1219:ARG:NH1 | 2:E:1374:GLU:OE2 | 2.35 | 0.60 |
| 2:F:784:LEU:HB3 | 2:F:800:VAL:HG13 | 1.82 | 0.60 |
| 2:G:1022:ARG:HB3 | 2:G:1024:PRO:HD2 | 1.82 | 0.60 |
| 2:F:531:MET:HG3 | 2:F:1002:LEU:HD11 | 1.83 | 0.60 |
| 2:C:1174:GLY:O | 2:C:1177:ASN:ND2 | 2.33 | 0.60 |
| 2:F:1363:ARG:O | 2:F:1366:HIS:ND1 | 2.33 | 0.60 |
| 5:R:286:THR:HG23 | 5:R:287:LEU:HD12 | 1.84 | 0.60 |
| 2:A:211:SER:OG | 2:A:215:LYS:NZ | 2.33 | 0.60 |
| 2:F:450:ARG:HH21 | 2:F:1376:HIS:HB3 | 1.65 | 0.60 |
| 2:C:421:MET:HB2 | 2:C:1071:VAL:HB | 1.84 | 0.60 |
| 2:E:451:GLN:HA | 2:E:1377:LEU:HD22 | 1.83 | 0.60 |
| 2:E:458:PHE:HD2 | 2:E:466:LEU:HD11 | 1.67 | 0.60 |
| 2:F:451:GLN:NE2 | 2:F:610:CYS:SG | 2.75 | 0.60 |
| 2:F:1361:MET:HB3 | 2:F:1381:LEU:HD22 | 1.83 | 0.60 |
| 2:A:44:PHE:HD2 | 2:G:104:ASP:HB3 | 1.67 | 0.60 |
| 2:C:500:ARG:NH2 | 2:C:583:ALA:O | 2.34 | 0.60 |
| 2:F:660:LEU:HB3 | 2:F:664:LEU:HD23 | 1.83 | 0.60 |
| 2:G:462:LYS:HD2 | 2:G:1137:PRO:HG2 | 1.82 | 0.60 |
| 7:Z:328:THR:OG1 | 7:Z:335:GLY:O | 2.20 | 0.60 |
| 2:A:230:LEU:O | 2:A:234:LEU:HD12 | 2.02 | 0.59 |
| 2:C:1053:ILE:HD11 | 2:C:1162:VAL:HG13 | 1.83 | 0.59 |
| 2:E:590:THR:HB | 2:E:945:MET:HE1 | 1.84 | 0.59 |
| 2:F:278:THR:HG22 | 2:F:284:GLN:HA | 1.83 | 0.59 |
| 2:G:831:ILE:HG23 | 2:G:835:ILE:HD12 | 1.83 | 0.59 |
| 2:C:1144:THR:OG1 | 2:C:1202:SER:O | 2.20 | 0.59 |
| 2:F:451:GLN:HA | 2:F:1377:LEU:HD22 | 1.83 | 0.59 |
| 6:V:101:ASN:HB3 | 6:V:306:PRO:HA | 1.83 | 0.59 |
| 7:Z:230:ARG:O | 7:Z:234:ARG:HG2 | 2.00 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:A:743:LEU:HD23 | 2:A:831:ILE:HA | 1.85 | 0.59 |
| 2:A:831:ILE:HG23 | 2:A:835:ILE:HD12 | 1.85 | 0.59 |
| 2:G:787:VAL:HG13 | 2:G:920:MET:HB3 | 1.84 | 0.59 |
| 2:E:789:MET:O | 2:E:792:HIS:ND1 | 2.30 | 0.59 |
| 2:E:1365:ALA:HB2 | 2:E:1381:LEU:HD11 | 1.85 | 0.59 |
| 2:G:979:VAL:HG21 | 2:G:1013:LEU:HB3 | 1.84 | 0.59 |
| 2:C:96:PHE:HD2 | 2:C:99:LEU:HB2 | 1.68 | 0.59 |
| 7:Z:251:PHE:HB3 | 7:Z:327:TYR:HE2 | 1.67 | 0.59 |
| 2:F:1367:ALA:HB1 | 2:F:1370:THR:HA | 1.83 | 0.59 |
| 2:G:307:ASP:HB3 | 2:G:384:LEU:HG | 1.83 | 0.59 |
| 2:A:450:ARG:HH12 | 2:A:1378:ALA:H | 1.51 | 0.59 |
| 2:A:883:PRO:O | 2:A:895:ASN:ND2 | 2.36 | 0.59 |
| 2:A:913:LEU:HD13 | 2:A:916:LEU:HD23 | 1.83 | 0.59 |
| 2:E:909:ALA:O | 2:E:912:THR:OG1 | 2.20 | 0.59 |
| 2:F:500:ARG:NH2 | 2:F:583:ALA:O | 2.36 | 0.59 |
| 2:G:139:ARG:NH1 | 2:G:195:GLN:OE1 | 2.36 | 0.59 |
| 2:G:1083:LEU:HD12 | 2:G:1129:CYS:HB3 | 1.85 | 0.58 |
| 2:A:299:LEU:HD12 | 2:A:304:LEU:HD23 | 1.84 | 0.58 |
| 2:G:511:GLY:HA3 | 2:G:776:SER:HA | 1.85 | 0.58 |
| 2:C:1005:MET:HG3 | 2:C:1006:VAL:HG23 | 1.85 | 0.58 |
| 2:E:139:ARG:NH1 | 2:E:195:GLN:OE1 | 2.36 | 0.58 |
| 2:F:139:ARG:NH1 | 2:F:195:GLN:OE1 | 2.36 | 0.58 |
| 2:F:1016:ASN:HD21 | 2:F:1023:GLN:HB2 | 1.68 | 0.58 |
| 2:A:688:MET:HA | 2:A:691:THR:HG22 | 1.84 | 0.58 |
| 2:A:979:VAL:HG21 | 2:A:1013:LEU:HB3 | 1.85 | 0.58 |
| 2:C:122:HIS:HD2 | 2:C:124:VAL:HG22 | 1.68 | 0.58 |
| 2:E:231:LEU:HB3 | 2:E:235:LYS:NZ | 2.18 | 0.58 |
| 2:E:1367:ALA:HB1 | 2:E:1370:THR:HA | 1.85 | 0.58 |
| 2:F:711:LEU:O | 2:F:715:ARG:HG3 | 2.02 | 0.58 |
| 7:Z:231:MET:HA | 7:Z:234:ARG:HE | 1.69 | 0.58 |
| 2:A:1080:GLU:HB2 | 2:A:1133:ALA:HB3 | 1.85 | 0.58 |
| 2:F:287:GLY:HA3 | 2:F:1084:TYR:HE1 | 1.69 | 0.58 |
| 2:A:1146:GLN:HG2 | 2:A:1203:VAL:HB | 1.85 | 0.58 |
| 2:E:738:ALA:O | 2:E:1049:LYS:NZ | 2.36 | 0.58 |
| 6:V:212:ASN:OD1 | 6:V:213:GLU:N | 2.31 | 0.58 |
| 2:F:1005:MET:HG3 | 2:F:1006:VAL:HG23 | 1.85 | 0.58 |
| 2:G:660:LEU:HB3 | 2:G:664:LEU:HD23 | 1.85 | 0.58 |
| 2:G:913:LEU:HD13 | 2:G:916:LEU:HD23 | 1.85 | 0.58 |
| 2:G:1144:THR:OG1 | 2:G:1202:SER:O | 2.22 | 0.58 |
| 5:R:98:PHE:HD2 | 5:R:309:ARG:HD2 | 1.68 | 0.58 |
| 2:A:1016:ASN:HD21 | 2:A:1023:GLN:HB2 | 1.69 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:A:1022:ARG:HH11 | 2:A:1024:PRO:HD3 | 1.69 | 0.58 |
| 2:C:384:LEU:HD12 | 2:C:391:LEU:HD21 | 1.86 | 0.58 |
| 2:E:401:VAL:HG13 | 2:E:402:TYR:HD1 | 1.68 | 0.58 |
| 2:E:421:MET:O | 2:E:1071:VAL:N | 2.32 | 0.58 |
| 2:F:384:LEU:HD12 | 2:F:391:LEU:HD21 | 1.86 | 0.58 |
| 2:F:561:PRO:O | 2:F:592:ARG:NH1 | 2.33 | 0.58 |
| 2:C:135:ARG:HE | 2:C:136:ILE:H | 1.52 | 0.57 |
| 2:C:451:GLN:HA | 2:C:1377:LEU:HD22 | 1.86 | 0.57 |
| 2:C:660:LEU:HB3 | 2:C:664:LEU:HD23 | 1.86 | 0.57 |
| 2:G:398:GLU:O | 2:G:403:GLN:NE2 | 2.36 | 0.57 |
| 2:C:511:GLY:HA3 | 2:C:776:SER:HA | 1.87 | 0.57 |
| 2:E:414:ASN:CG | 2:E:415:ILE:H | 2.07 | 0.57 |
| 2:C:465:ILE:HD13 | 2:C:1198:ARG:HH12 | 1.68 | 0.57 |
| 2:E:500:ARG:NH2 | 2:E:583:ALA:O | 2.37 | 0.57 |
| 2:G:778:ARG:NH2 | 2:G:798:ASP:O | 2.37 | 0.57 |
| 2:F:930:SER:HG | 2:F:946:ARG:HH21 | 1.52 | 0.57 |
| 2:G:1085:ALA:HA | 2:G:1127:ALA:HA | 1.85 | 0.57 |
| 2:A:411:LEU:HG | 2:A:1081:GLN:HB2 | 1.86 | 0.57 |
| 2:A:462:LYS:HE3 | 2:A:1198:ARG:HB2 | 1.85 | 0.57 |
| 2:E:519:GLN:O | 2:E:522:ARG:HD3 | 2.05 | 0.57 |
| 6:V:279:THR:HA | 6:V:282:ARG:NH1 | 2.20 | 0.57 |
| 2:A:236:ARG:HD2 | 2:C:463:ASP:HB3 | 1.86 | 0.57 |
| 2:E:688:MET:HA | 2:E:691:THR:HG22 | 1.85 | 0.57 |
| 2:G:458:PHE:N | 2:G:1356:SER:O | 2.22 | 0.57 |
| 2:A:923:ARG:HH12 | 2:A:925:THR:HB | 1.69 | 0.57 |
| 2:F:225:VAL:HG23 | 2:G:1196:ILE:HB | 1.86 | 0.57 |
| 2:G:465:ILE:HD13 | 2:G:1198:ARG:HH12 | 1.68 | 0.57 |
| 7:Z:140:SER:HB2 | 7:Z:262:LEU:HD13 | 1.85 | 0.57 |
| 2:F:1144:THR:OG1 | 2:F:1202:SER:O | 2.22 | 0.57 |
| 2:A:519:GLN:O | 2:A:522:ARG:HD3 | 2.04 | 0.57 |
| 2:C:479:CYS:SG | 2:C:1056:THR:OG1 | 2.60 | 0.57 |
| 2:F:307:ASP:HB3 | 2:F:384:LEU:HG | 1.86 | 0.57 |
| 2:F:468:GLN:NE2 | 2:F:469:LEU:O | 2.38 | 0.57 |
| 2:G:769:ARG:NE | 2:G:932:ALA:O | 2.30 | 0.57 |
| 2:A:770:LEU:O | 2:A:946:ARG:NH1 | 2.36 | 0.57 |
| 2:C:287:GLY:HA3 | 2:C:1084:TYR:HE1 | 1.70 | 0.57 |
| 2:E:605:ILE:HG21 | 2:E:1032:SER:HB2 | 1.87 | 0.57 |
| 2:G:1385:ALA:O | 2:G:1389:ARG:NH2 | 2.38 | 0.57 |
| 2:A:439:GLY:O | 2:G:438:ALA:N | 2.25 | 0.56 |
| 2:C:688:MET:HA | 2:C:691:THR:HG22 | 1.87 | 0.56 |
| 2:F:213:ILE:HG13 | 2:F:230:LEU:HD21 | 1.86 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:F:979:VAL:HG21 | 2:F:1013:LEU:HB3 | 1.87 | 0.56 |
| 2:E:284:GLN:OE1 | 2:E:1087:ARG:NH2 | 2.37 | 0.56 |
| 2:F:397:LEU:HG | 2:F:401:VAL:HG12 | 1.87 | 0.56 |
| 2:F:769:ARG:NE | 2:F:932:ALA:O | 2.31 | 0.56 |
| 2:A:426:PHE:N | 2:A:1211:VAL:O | 2.34 | 0.56 |
| 2:A:463:ASP:HB3 | 2:G:236:ARG:HD2 | 1.87 | 0.56 |
| 2:A:627:ILE:HD11 | 2:A:1036:PHE:HD2 | 1.71 | 0.56 |
| 2:E:287:GLY:HA3 | 2:E:1084:TYR:HE1 | 1.70 | 0.56 |
| 2:E:438:ALA:N | 2:F:439:GLY:O | 2.35 | 0.56 |
| 2:E:465:ILE:HD13 | 2:E:1198:ARG:HH12 | 1.70 | 0.56 |
| 2:E:769:ARG:NE | 2:E:932:ALA:O | 2.30 | 0.56 |
| 2:F:465:ILE:HD13 | 2:F:1198:ARG:HH12 | 1.70 | 0.56 |
| 2:F:744:THR:HA | 2:F:827:ILE:HD12 | 1.87 | 0.56 |
| 2:F:979:VAL:O | 2:F:980:ASN:ND2 | 2.38 | 0.56 |
| 2:G:427:GLN:NE2 | 2:G:1377:LEU:O | 2.37 | 0.56 |
| 2:A:1144:THR:OG1 | 2:A:1202:SER:O | 2.22 | 0.56 |
| 2:F:206:PRO:HG2 | 2:F:209:LEU:HD12 | 1.87 | 0.56 |
| 6:V:10:VAL:HG22 | 6:V:41:ALA:HB3 | 1.86 | 0.56 |
| 2:A:1363:ARG:HH22 | 2:G:1373:ASP:HA | 1.70 | 0.56 |
| 2:A:296:LYS:HE2 | 2:A:394:LEU:HG | 1.87 | 0.56 |
| 2:A:653:ASN:ND2 | 2:A:919:ASP:OD2 | 2.38 | 0.56 |
| 2:A:785:HIS:HB3 | 2:A:803:HIS:HB3 | 1.85 | 0.56 |
| 2:A:939:THR:H | 2:A:942:THR:HG1 | 1.53 | 0.56 |
| 2:C:452:PHE:O | 2:C:1379:GLN:NE2 | 2.34 | 0.56 |
| 2:F:778:ARG:NH2 | 2:F:798:ASP:O | 2.39 | 0.56 |
| 2:F:1356:SER:HB2 | 2:F:1381:LEU:HD13 | 1.88 | 0.56 |
| 2:C:139:ARG:NH1 | 2:C:195:GLN:OE1 | 2.39 | 0.56 |
| 2:E:291:THR:HG22 | 2:E:292:THR:N | 2.20 | 0.56 |
| 2:F:273:SER:OG | 2:F:1087:ARG:NH2 | 2.38 | 0.56 |
| 2:F:913:LEU:HD13 | 2:F:916:LEU:HD23 | 1.88 | 0.56 |
| 2:G:450:ARG:HH12 | 2:G:1379:GLN:H | 1.52 | 0.56 |
| 2:A:455:GLN:HG2 | 2:A:1064:HIS:HD2 | 1.71 | 0.56 |
| 2:C:778:ARG:NH2 | 2:C:798:ASP:O | 2.38 | 0.56 |
| 2:E:1022:ARG:HG2 | 2:E:1023:GLN:H | 1.71 | 0.56 |
| 2:C:103:ARG:HH21 | 2:E:45:PHE:HB3 | 1.71 | 0.56 |
| 2:C:1022:ARG:HH11 | 2:C:1024:PRO:HD3 | 1.71 | 0.56 |
| 5:R:219:LEU:HD22 | 6:V:276:TRP:CE3 | 2.41 | 0.56 |
| 2:E:1363:ARG:O | 2:E:1366:HIS:ND1 | 2.38 | 0.56 |
| 7:Z:146:ARG:HH22 | 7:Z:151:LEU:HD11 | 1.70 | 0.56 |
| 2:A:560:ASN:HB3 | 2:A:563:PHE:HB2 | 1.88 | 0.55 |
| 2:A:793:ASN:HB2 | 2:A:796:ARG:HH21 | 1.71 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:C:299:LEU:HD12 | 2:C:304:LEU:HD23 | 1.88 | 0.55 |
| 2:C:1361:MET:HB3 | 2:C:1381:LEU:HD22 | 1.88 | 0.55 |
| 2:E:171:ILE:HA | 2:E:174:ILE:HG22 | 1.88 | 0.55 |
| 2:F:559:LEU:HB2 | 2:F:565:PHE:CE1 | 2.41 | 0.55 |
| 2:G:308:ASP:OD1 | 2:G:309:THR:N | 2.36 | 0.55 |
| 2:C:176:GLN:OE1 | 2:C:179:ARG:NH1 | 2.39 | 0.55 |
| 2:C:590:THR:HB | 2:C:945:MET:HE3 | 1.88 | 0.55 |
| 7:Z:144:ILE:HG13 | 7:Z:259:PHE:HB2 | 1.88 | 0.55 |
| 2:A:450:ARG:NH1 | 2:A:1379:GLN:OE1 | 2.38 | 0.55 |
| 2:E:688:MET:HG2 | 2:E:825:TRP:CZ3 | 2.42 | 0.55 |
| 2:F:120:GLY:HA3 | 5:R:39:HIS:CD2 | 2.41 | 0.55 |
| 2:F:537:TRP:HB2 | 2:F:1022:ARG:HH12 | 1.71 | 0.55 |
| 2:A:450:ARG:NH1 | 2:A:1378:ALA:H | 2.04 | 0.55 |
| 2:A:511:GLY:HA3 | 2:A:776:SER:HA | 1.88 | 0.55 |
| 2:E:103:ARG:NH2 | 2:F:45:PHE:HB3 | 2.21 | 0.55 |
| 2:E:523:PHE:HE1 | 2:E:1011:PRO:HD3 | 1.71 | 0.55 |
| 2:F:743:LEU:HD23 | 2:F:831:ILE:HA | 1.89 | 0.55 |
| 2:G:278:THR:HG22 | 2:G:284:GLN:HA | 1.87 | 0.55 |
| 2:G:1022:ARG:HH11 | 2:G:1024:PRO:HD3 | 1.70 | 0.55 |
| 7:Z:131:PHE:HZ | 7:Z:262:LEU:HD12 | 1.71 | 0.55 |
| 2:A:280:THR:HA | 2:A:379:ARG:HH12 | 1.72 | 0.55 |
| 2:A:384:LEU:HD12 | 2:A:391:LEU:HD21 | 1.87 | 0.55 |
| 2:A:562:ALA:O | 2:A:592:ARG:N | 2.34 | 0.55 |
| 2:F:438:ALA:N | 2:G:439:GLY:O | 2.31 | 0.55 |
| 6:V:107:LEU:HD13 | 6:V:142:PRO:HG3 | 1.87 | 0.55 |
| 7:Z:134:ASP:HB3 | 7:Z:267:ILE:HD11 | 1.88 | 0.55 |
| 7:Z:203:ALA:HB1 | 7:Z:222:ILE:HG21 | 1.89 | 0.55 |
| 2:E:218:PRO:HD2 | 2:E:222:LEU:HD11 | 1.88 | 0.55 |
| 2:E:561:PRO:O | 2:E:592:ARG:NH1 | 2.35 | 0.55 |
| 2:F:308:ASP:HB3 | 2:F:384:LEU:HD21 | 1.88 | 0.55 |
| 2:F:842:ARG:NH1 | 2:F:1032:SER:O | 2.39 | 0.55 |
| 2:G:603:CYS:SG | 2:G:608:ARG:NE | 2.66 | 0.55 |
| 2:G:688:MET:HA | 2:G:691:THR:HG22 | 1.87 | 0.55 |
| 6:V:295:VAL:HA | 6:V:312:VAL:HG22 | 1.87 | 0.55 |
| 7:Z:345:LEU:HB3 | 7:Z:350:PHE:HB2 | 1.88 | 0.55 |
| 2:C:313:VAL:O | 2:C:378:ALA:N | 2.40 | 0.55 |
| 2:E:32:THR:OG1 | 2:E:33:GLY:N | 2.35 | 0.55 |
| 2:E:245:MET:SD | 2:E:298:GLN:NE2 | 2.80 | 0.55 |
| 2:F:308:ASP:OD1 | 2:F:309:THR:N | 2.37 | 0.55 |
| 7:Z:296:THR:OG1 | 7:Z:463:LEU:O | 2.24 | 0.55 |
| 2:A:468:GLN:NE2 | 2:A:469:LEU:O | 2.39 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:F:206:PRO:HA | 2:F:1129:CYS:O | 2.07 | 0.55 |
| 6:V:5:PRO:HB3 | 6:V:94:THR:HG22 | 1.88 | 0.55 |
| 2:A:1097:ILE:HD11 | 2:A:1112:LEU:HB3 | 1.88 | 0.55 |
| 2:G:266:THR:OG1 | 2:G:1125:TYR:O | 2.25 | 0.55 |
| 2:G:1016:ASN:HD21 | 2:G:1023:GLN:HB2 | 1.72 | 0.55 |
| 2:G:1353:PRO:HA | 2:G:1384:ASP:OD1 | 2.07 | 0.55 |
| 2:A:1356:SER:HB3 | 2:A:1362:LEU:HB2 | 1.87 | 0.55 |
| 2:C:119:ASP:OD2 | 2:E:195:GLN:NE2 | 2.40 | 0.55 |
| 2:C:434:TYR:OH | 2:E:1363:ARG:NE | 2.36 | 0.55 |
| 2:F:479:CYS:HG | 2:F:1056:THR:HG1 | 1.53 | 0.55 |
| 6:V:147:ARG:HH21 | 6:V:150:ILE:HD13 | 1.72 | 0.55 |
| 2:E:778:ARG:NH2 | 2:E:798:ASP:O | 2.40 | 0.54 |
| 5:R:47:ALA:O | 5:R:50:SER:OG | 2.25 | 0.54 |
| 2:E:145:PHE:CE2 | 2:E:147:ILE:HD11 | 2.42 | 0.54 |
| 2:E:468:GLN:NE2 | 2:E:469:LEU:O | 2.40 | 0.54 |
| 2:A:267:GLN:NE2 | 2:A:1124:GLY:H | 2.04 | 0.54 |
| 2:A:1361:MET:HB3 | 2:A:1381:LEU:HD12 | 1.88 | 0.54 |
| 2:C:399:ARG:HE | 2:C:403:GLN:NE2 | 2.06 | 0.54 |
| 2:E:603:CYS:SG | 2:E:608:ARG:NE | 2.70 | 0.54 |
| 2:F:103:ARG:NH2 | 2:G:45:PHE:HB3 | 2.22 | 0.54 |
| 2:F:171:ILE:HA | 2:F:174:ILE:HG22 | 1.89 | 0.54 |
| 2:G:471:LEU:HB3 | 2:G:1059:LEU:HD22 | 1.88 | 0.54 |
| 2:A:171:ILE:HA | 2:A:174:ILE:HG22 | 1.88 | 0.54 |
| 2:C:468:GLN:NE2 | 2:C:469:LEU:O | 2.41 | 0.54 |
| 2:F:548:ILE:HA | 2:F:555:LEU:HD13 | 1.88 | 0.54 |
| 2:G:785:HIS:HB3 | 2:G:803:HIS:HB3 | 1.88 | 0.54 |
| 7:Z:143:LEU:HD13 | 7:Z:258:PHE:HA | 1.89 | 0.54 |
| 2:C:450:ARG:NH1 | 2:C:1379:GLN:H | 2.03 | 0.54 |
| 2:E:568:ALA:O | 2:E:586:THR:N | 2.39 | 0.54 |
| 2:F:785:HIS:HB3 | 2:F:803:HIS:HB3 | 1.88 | 0.54 |
| 2:G:145:PHE:CE2 | 2:G:147:ILE:HD11 | 2.42 | 0.54 |
| 7:Z:131:PHE:HB2 | 7:Z:196:THR:HA | 1.90 | 0.54 |
| 2:A:32:THR:HB | 2:A:35:VAL:HG23 | 1.90 | 0.54 |
| 2:A:1216:GLN:HA | 2:A:1219:ARG:HG3 | 1.89 | 0.54 |
| 2:C:308:ASP:OD1 | 2:C:309:THR:N | 2.35 | 0.54 |
| 2:A:776:SER:HG | 2:A:778:ARG:NH1 | 2.06 | 0.54 |
| 2:C:744:THR:HA | 2:C:827:ILE:HD12 | 1.89 | 0.54 |
| 2:E:627:ILE:HD11 | 2:E:1036:PHE:HD2 | 1.72 | 0.54 |
| 2:G:1097:ILE:HD11 | 2:G:1112:LEU:HB3 | 1.88 | 0.54 |
| 6:V:114:CYS:HB3 | 6:V:289:THR:HB | 1.90 | 0.54 |
| 2:C:1353:PRO:HA | 2:C:1384:ASP:OD1 | 2.08 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:A:145:PHE:CE2 | 2:A:147:ILE:HD11 | 2.43 | 0.54 |
| 2:A:308:ASP:OD1 | 2:A:309:THR:N | 2.36 | 0.54 |
| 2:A:778:ARG:HH21 | 2:A:799:ASN:HA | 1.72 | 0.54 |
| 2:C:923:ARG:HH12 | 2:C:925:THR:HB | 1.73 | 0.54 |
| 2:C:1085:ALA:HA | 2:C:1127:ALA:HA | 1.90 | 0.54 |
| 2:E:384:LEU:HD23 | 2:E:391:LEU:HD21 | 1.88 | 0.54 |
| 2:E:1144:THR:OG1 | 2:E:1202:SER:O | 2.23 | 0.54 |
| 2:F:216:PHE:HB3 | 2:F:230:LEU:HD13 | 1.90 | 0.54 |
| 2:F:568:ALA:O | 2:F:586:THR:N | 2.40 | 0.54 |
| 6:V:279:THR:HA | 6:V:282:ARG:HH12 | 1.73 | 0.54 |
| 2:A:568:ALA:O | 2:A:586:THR:N | 2.38 | 0.53 |
| 2:A:1085:ALA:HA | 2:A:1127:ALA:HA | 1.89 | 0.53 |
| 2:A:1363:ARG:O | 2:A:1366:HIS:ND1 | 2.36 | 0.53 |
| 2:C:769:ARG:NE | 2:C:932:ALA:O | 2.30 | 0.53 |
| 2:F:898:PHE:HE2 | 2:F:910:LEU:HD21 | 1.73 | 0.53 |
| 2:C:1354:LEU:HB2 | 2:C:1384:ASP:HB2 | 1.90 | 0.53 |
| 2:E:1022:ARG:HH11 | 2:E:1024:PRO:HD3 | 1.72 | 0.53 |
| 2:E:1049:LYS:HG2 | 2:E:1051:THR:HG23 | 1.89 | 0.53 |
| 5:R:154:VAL:HG11 | 6:V:273:ILE:HG21 | 1.91 | 0.53 |
| 2:E:236:ARG:HD2 | 2:F:463:ASP:HB3 | 1.90 | 0.53 |
| 2:F:681:VAL:HA | 2:F:687:LEU:HD11 | 1.90 | 0.53 |
| 2:G:171:ILE:HA | 2:G:174:ILE:HG22 | 1.89 | 0.53 |
| 2:C:785:HIS:HB3 | 2:C:803:HIS:HB3 | 1.91 | 0.53 |
| 7:Z:123:GLN:HG2 | 7:Z:275:THR:HG22 | 1.90 | 0.53 |
| 2:A:279:ASN:HD21 | 2:A:283:ARG:HB3 | 1.74 | 0.53 |
| 2:C:296:LYS:HE3 | 2:C:396:ALA:HB3 | 1.90 | 0.53 |
| 2:G:852:TYR:HD2 | 2:G:923:ARG:HA | 1.72 | 0.53 |
| 7:Z:135:ILE:HG21 | 7:Z:225:ALA:HB1 | 1.91 | 0.53 |
| 2:C:82:PHE:HZ | 2:C:196:LEU:HD13 | 1.73 | 0.53 |
| 2:E:398:GLU:O | 2:E:403:GLN:NE2 | 2.40 | 0.53 |
| 2:E:523:PHE:CE1 | 2:E:1011:PRO:HD3 | 2.44 | 0.53 |
| 5:R:147:ARG:CZ | 6:V:274:SER:HB3 | 2.39 | 0.53 |
| 7:Z:171:ALA:HA | 7:Z:237:ARG:HH22 | 1.73 | 0.53 |
| 2:C:793:ASN:HB2 | 2:C:796:ARG:HH21 | 1.73 | 0.53 |
| 2:E:939:THR:H | 2:E:942:THR:HG1 | 1.52 | 0.53 |
| 2:G:531:MET:HG2 | 2:G:1002:LEU:HD21 | 1.91 | 0.53 |
| 2:G:1165:SER:HA | 2:G:1168:ARG:HG2 | 1.90 | 0.53 |
| 5:R:108:CYS:HB2 | 7:Z:146:ARG:HE | 1.73 | 0.53 |
| 7:Z:198:LEU:O | 7:Z:202:ALA:N | 2.24 | 0.53 |
| 2:C:519:GLN:O | 2:C:522:ARG:HD3 | 2.09 | 0.53 |
| 2:E:206:PRO:HA | 2:E:1129:CYS:O | 2.09 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:F:479:CYS:SG | 2:F:1056:THR:OG1 | 2.65 | 0.53 |
| 2:F:852:TYR:HD2 | 2:F:923:ARG:HA | 1.74 | 0.53 |
| 2:A:778:ARG:HE | 2:A:799:ASN:HB3 | 1.74 | 0.53 |
| 2:A:852:TYR:HD2 | 2:A:923:ARG:HA | 1.74 | 0.53 |
| 2:C:562:ALA:O | 2:C:592:ARG:N | 2.35 | 0.53 |
| 2:C:979:VAL:HG21 | 2:C:1013:LEU:HB3 | 1.90 | 0.53 |
| 2:E:980:ASN:HB2 | 2:E:983:PHE:HB2 | 1.89 | 0.53 |
| 2:A:478:ILE:HD13 | 2:A:1069:PHE:CZ | 2.42 | 0.53 |
| 2:E:92:ILE:HD11 | 2:E:1088:ALA:HB1 | 1.90 | 0.53 |
| 2:E:176:GLN:OE1 | 2:E:179:ARG:NH2 | 2.42 | 0.53 |
| 2:F:427:GLN:NE2 | 2:F:1377:LEU:O | 2.42 | 0.53 |
| 2:G:480:HIS:CE1 | 2:G:1149:PHE:HA | 2.44 | 0.53 |
| 2:G:1358:ASP:HB2 | 2:G:1361:MET:HG2 | 1.91 | 0.53 |
| 2:C:1095:GLY:O | 2:C:1114:GLN:NE2 | 2.42 | 0.52 |
| 2:F:848:MET:HB3 | 2:F:976:PRO:HA | 1.91 | 0.52 |
| 2:A:611:ARG:O | 2:A:615:LEU:HG | 2.10 | 0.52 |
| 2:C:624:PRO:HA | 2:C:627:ILE:HG22 | 1.92 | 0.52 |
| 2:A:778:ARG:NH2 | 2:A:798:ASP:O | 2.42 | 0.52 |
| 2:A:1078:ALA:HB2 | 2:A:1138:LEU:HD23 | 1.89 | 0.52 |
| 2:E:213:ILE:HG13 | 2:E:230:LEU:HD21 | 1.91 | 0.52 |
| 2:E:450:ARG:NH1 | 2:E:1379:GLN:H | 2.06 | 0.52 |
| 2:F:245:MET:HG2 | 2:F:1132:ALA:HB1 | 1.91 | 0.52 |
| 5:R:269:ILE:HA | 5:R:272:THR:HG22 | 1.91 | 0.52 |
| 7:Z:174:GLN:CG | 7:Z:237:ARG:HH21 | 2.22 | 0.52 |
| 7:Z:251:PHE:O | 7:Z:254:ARG:NH1 | 2.42 | 0.52 |
| 2:A:287:GLY:HA3 | 2:A:1084:TYR:HE1 | 1.75 | 0.52 |
| 2:C:1356:SER:HB2 | 2:C:1381:LEU:HD13 | 1.91 | 0.52 |
| 2:E:668:ILE:HD13 | 2:E:680:PHE:HD2 | 1.74 | 0.52 |
| 2:F:770:LEU:O | 2:F:946:ARG:NH1 | 2.35 | 0.52 |
| 2:A:688:MET:HG2 | 2:A:825:TRP:CZ3 | 2.45 | 0.52 |
| 2:F:625:ALA:HA | 2:F:628:LYS:HE2 | 1.92 | 0.52 |
| 2:G:296:LYS:HE2 | 2:G:396:ALA:CB | 2.39 | 0.52 |
| 7:Z:131:PHE:HE1 | 7:Z:197:SER:HB3 | 1.75 | 0.52 |
| 2:E:737:GLU:O | 2:E:744:THR:OG1 | 2.27 | 0.52 |
| 2:F:32:THR:OG1 | 2:F:33:GLY:N | 2.41 | 0.52 |
| 2:F:209:LEU:HD23 | 2:F:234:LEU:HD12 | 1.91 | 0.52 |
| 2:G:1192:THR:HG21 | 6:V:183:ARG:HB2 | 1.92 | 0.52 |
| 2:C:421:MET:O | 2:C:1071:VAL:N | 2.35 | 0.52 |
| 2:C:450:ARG:HG2 | 2:C:1376:HIS:ND1 | 2.25 | 0.52 |
| 2:C:778:ARG:HH21 | 2:C:799:ASN:HA | 1.75 | 0.52 |
| 2:F:909:ALA:O | 2:F:912:THR:OG1 | 2.27 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:G:104:ASP:OD2 | 2:G:135:ARG:NH2 | 2.43 | 0.52 |
| 6:V:28:GLU:OE1 | 6:V:309:ARG:NH2 | 2.42 | 0.52 |
| 6:V:112:TYR:HB2 | 6:V:143:GLN:HB2 | 1.90 | 0.52 |
| 2:A:660:LEU:HB3 | 2:A:664:LEU:HD23 | 1.91 | 0.52 |
| 2:A:775:VAL:HG13 | 2:A:927:ILE:HG12 | 1.91 | 0.52 |
| 2:C:267:GLN:NE2 | 2:C:1124:GLY:H | 2.08 | 0.52 |
| 2:C:568:ALA:O | 2:C:586:THR:N | 2.42 | 0.52 |
| 2:C:637:ARG:NH2 | 2:C:964:TYR:H | 2.08 | 0.52 |
| 2:E:615:LEU:HD22 | 2:E:724:PHE:CE2 | 2.44 | 0.52 |
| 2:G:247:ARG:HH12 | 2:G:1387:PRO:HA | 1.75 | 0.52 |
| 7:Z:346:ASN:HB3 | 7:Z:349:CYS:HB3 | 1.92 | 0.52 |
| 2:A:278:THR:HG22 | 2:A:284:GLN:HA | 1.92 | 0.52 |
| 2:C:288:VAL:HA | 2:C:393:PHE:HB2 | 1.91 | 0.52 |
| 2:C:611:ARG:O | 2:C:615:LEU:HG | 2.10 | 0.52 |
| 2:C:778:ARG:HE | 2:C:799:ASN:HB3 | 1.74 | 0.52 |
| 2:E:1357:SER:HG | 2:E:1380:TYR:H | 1.54 | 0.52 |
| 2:G:218:PRO:HD2 | 2:G:222:LEU:HD11 | 1.91 | 0.52 |
| 2:G:1001:VAL:HA | 2:G:1004:LYS:HD2 | 1.92 | 0.52 |
| 2:G:1356:SER:OG | 2:G:1358:ASP:O | 2.27 | 0.52 |
| 2:A:982:LEU:HD21 | 2:A:1025:VAL:HG22 | 1.91 | 0.52 |
| 2:C:91:CYS:HB3 | 2:C:196:LEU:HD11 | 1.92 | 0.52 |
| 2:E:176:GLN:O | 2:E:179:ARG:HG3 | 2.10 | 0.52 |
| 6:V:120:PHE:HD2 | 6:V:139:LEU:HD21 | 1.73 | 0.52 |
| 6:V:177:ILE:C | 6:V:183:ARG:HH22 | 2.13 | 0.52 |
| 2:E:114:PRO:HD2 | 2:F:404:ALA:HB3 | 1.92 | 0.51 |
| 2:F:145:PHE:CE2 | 2:F:147:ILE:HD11 | 2.45 | 0.51 |
| 2:F:450:ARG:NH2 | 2:F:1376:HIS:HB3 | 2.25 | 0.51 |
| 2:F:480:HIS:CE1 | 2:F:1149:PHE:HA | 2.44 | 0.51 |
| 7:Z:206:ALA:HB1 | 7:Z:215:ALA:HB1 | 1.93 | 0.51 |
| 2:E:923:ARG:HH12 | 2:E:925:THR:HB | 1.75 | 0.51 |
| 2:G:479:CYS:SG | 2:G:1166:LEU:HD22 | 2.50 | 0.51 |
| 2:G:559:LEU:HB2 | 2:G:565:PHE:CE1 | 2.45 | 0.51 |
| 7:Z:147:HIS:CE1 | 7:Z:150:ASP:HB3 | 2.45 | 0.51 |
| 2:E:209:LEU:HD23 | 2:E:234:LEU:HD12 | 1.93 | 0.51 |
| 2:E:1354:LEU:HB2 | 2:E:1384:ASP:HB2 | 1.91 | 0.51 |
| 6:V:274:SER:HA | 6:V:277:ILE:HG12 | 1.92 | 0.51 |
| 2:A:25:ILE:HG23 | 2:A:155:LEU:HG | 1.93 | 0.51 |
| 2:C:171:ILE:HA | 2:C:174:ILE:HG22 | 1.92 | 0.51 |
| 2:C:483:LEU:HD11 | 2:C:1052:PRO:HD3 | 1.92 | 0.51 |
| 2:E:660:LEU:HB3 | 2:E:664:LEU:HD23 | 1.92 | 0.51 |
| 2:E:721:ILE:HD13 | 2:E:743:LEU:HD11 | 1.92 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:E:787:VAL:HG13 | 2:E:920:MET:HB3 | 1.91 | 0.51 |
| 2:F:213:ILE:HA | 2:F:230:LEU:HD11 | 1.93 | 0.51 |
| 2:F:778:ARG:HE | 2:F:799:ASN:HB3 | 1.75 | 0.51 |
| 2:G:778:ARG:HH21 | 2:G:799:ASN:HA | 1.76 | 0.51 |
| 7:Z:174:GLN:HG2 | 7:Z:237:ARG:NH2 | 2.25 | 0.51 |
| 2:A:266:THR:OG1 | 2:A:1125:TYR:O | 2.23 | 0.51 |
| 2:A:681:VAL:HA | 2:A:687:LEU:HD11 | 1.93 | 0.51 |
| 2:C:1144:THR:HG22 | 2:C:1175:ARG:HD2 | 1.91 | 0.51 |
| 2:F:615:LEU:HD22 | 2:F:724:PHE:CE2 | 2.45 | 0.51 |
| 2:A:1354:LEU:HB2 | 2:A:1384:ASP:HB2 | 1.93 | 0.51 |
| 2:C:1146:GLN:HB2 | 2:C:1203:VAL:HB | 1.92 | 0.51 |
| 2:E:624:PRO:HA | 2:E:627:ILE:HG22 | 1.92 | 0.51 |
| 2:E:1085:ALA:O | 2:E:1086:GLU:HB2 | 2.11 | 0.51 |
| 2:F:923:ARG:HH12 | 2:F:925:THR:HB | 1.76 | 0.51 |
| 2:G:519:GLN:O | 2:G:522:ARG:HD3 | 2.11 | 0.51 |
| 2:G:615:LEU:HD22 | 2:G:724:PHE:CE2 | 2.46 | 0.51 |
| 2:G:778:ARG:HE | 2:G:799:ASN:HB3 | 1.75 | 0.51 |
| 2:G:1214:ASP:OD1 | 2:G:1216:GLN:HG3 | 2.10 | 0.51 |
| 5:R:10:VAL:HB | 5:R:83:LEU:HB3 | 1.93 | 0.51 |
| 2:C:615:LEU:HD22 | 2:C:724:PHE:CE2 | 2.45 | 0.51 |
| 2:C:1053:ILE:HD13 | 2:C:1166:LEU:HD21 | 1.93 | 0.51 |
| 2:E:785:HIS:HB3 | 2:E:803:HIS:HB3 | 1.92 | 0.51 |
| 2:F:176:GLN:O | 2:F:179:ARG:HG3 | 2.10 | 0.51 |
| 2:A:1363:ARG:NH2 | 2:G:1373:ASP:HA | 2.26 | 0.51 |
| 2:A:1374:GLU:O | 2:A:1381:LEU:N | 2.41 | 0.51 |
| 2:C:278:THR:HG22 | 2:C:284:GLN:HA | 1.92 | 0.51 |
| 2:C:476:GLY:O | 2:C:1148:LEU:N | 2.44 | 0.51 |
| 2:C:603:CYS:SG | 2:C:608:ARG:NE | 2.68 | 0.51 |
| 2:E:793:ASN:HB2 | 2:E:796:ARG:HH21 | 1.75 | 0.51 |
| 2:F:1385:ALA:O | 2:F:1389:ARG:NH2 | 2.44 | 0.51 |
| 2:G:744:THR:HA | 2:G:827:ILE:HD12 | 1.93 | 0.51 |
| 2:G:842:ARG:HH12 | 2:G:1033:LYS:HA | 1.75 | 0.51 |
| 2:G:923:ARG:HH12 | 2:G:925:THR:HB | 1.76 | 0.51 |
| 2:A:1165:SER:HA | 2:A:1168:ARG:HG2 | 1.93 | 0.51 |
| 2:F:624:PRO:HA | 2:F:627:ILE:HG22 | 1.92 | 0.51 |
| 2:F:793:ASN:HB2 | 2:F:796:ARG:HH21 | 1.76 | 0.51 |
| 2:G:793:ASN:HB2 | 2:G:796:ARG:HH21 | 1.75 | 0.51 |
| 5:R:270:TYR:HD1 | 6:V:159:GLU:HG3 | 1.76 | 0.51 |
| 2:C:669:ARG:O | 2:C:673:GLU:HG2 | 2.11 | 0.51 |
| 2:E:450:ARG:HH21 | 2:E:1376:HIS:HB3 | 1.75 | 0.51 |
| 2:G:384:LEU:HD12 | 2:G:391:LEU:HD21 | 1.92 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:G:611:ARG:O | 2:G:615:LEU:HG | 2.11 | 0.51 |
| 2:C:211:SER:OG | 2:C:215:LYS:NZ | 2.36 | 0.50 |
| 2:F:969:ALA:O | 2:F:972:THR:OG1 | 2.29 | 0.50 |
| 2:F:980:ASN:HB2 | 2:F:983:PHE:HB2 | 1.93 | 0.50 |
| 6:V:110:GLY:O | 6:V:294:ARG:NH1 | 2.44 | 0.50 |
| 2:A:399:ARG:HE | 2:A:403:GLN:NE2 | 2.09 | 0.50 |
| 2:C:291:THR:HG22 | 2:C:292:THR:N | 2.21 | 0.50 |
| 2:C:1165:SER:HA | 2:C:1168:ARG:HG2 | 1.93 | 0.50 |
| 2:F:287:GLY:HA3 | 2:F:1084:TYR:CE1 | 2.46 | 0.50 |
| 2:G:277:HIS:HD2 | 2:G:313:VAL:HG22 | 1.75 | 0.50 |
| 2:A:421:MET:O | 2:A:1071:VAL:N | 2.44 | 0.50 |
| 2:C:205:PRO:HD2 | 2:C:1127:ALA:O | 2.12 | 0.50 |
| 2:F:194:ASP:OD1 | 2:F:402:TYR:OH | 2.23 | 0.50 |
| 2:A:1000:ARG:O | 2:A:1004:LYS:HG2 | 2.11 | 0.50 |
| 2:C:1363:ARG:O | 2:C:1366:HIS:ND1 | 2.36 | 0.50 |
| 2:E:278:THR:HG22 | 2:E:284:GLN:HA | 1.92 | 0.50 |
| 2:E:1022:ARG:HB3 | 2:E:1024:PRO:HD2 | 1.93 | 0.50 |
| 2:F:763:ASP:O | 2:F:767:ARG:NH2 | 2.45 | 0.50 |
| 5:R:8:ILE:HG21 | 5:R:34:PHE:CE2 | 2.38 | 0.50 |
| 7:Z:298:ASN:HB2 | 7:Z:460:THR:HB | 1.93 | 0.50 |
| 2:E:611:ARG:O | 2:E:615:LEU:HG | 2.12 | 0.50 |
| 2:E:1214:ASP:OD2 | 2:E:1216:GLN:NE2 | 2.43 | 0.50 |
| 2:G:969:ALA:O | 2:G:972:THR:OG1 | 2.26 | 0.50 |
| 7:Z:171:ALA:CA | 7:Z:237:ARG:HH22 | 2.24 | 0.50 |
| 7:Z:174:GLN:HA | 7:Z:177:GLU:HB2 | 1.94 | 0.50 |
| 2:F:1060:ARG:HD3 | 2:F:1169:ILE:HD11 | 1.93 | 0.50 |
| 6:V:177:ILE:O | 6:V:183:ARG:NH2 | 2.44 | 0.50 |
| 7:Z:202:ALA:HA | 7:Z:209:TYR:OH | 2.12 | 0.50 |
| 2:A:559:LEU:HB2 | 2:A:565:PHE:CE1 | 2.45 | 0.50 |
| 2:A:909:ALA:O | 2:A:912:THR:OG1 | 2.30 | 0.50 |
| 2:C:559:LEU:HB2 | 2:C:565:PHE:CE1 | 2.47 | 0.50 |
| 2:E:122:HIS:ND1 | 2:E:122:HIS:O | 2.45 | 0.50 |
| 2:G:280:THR:HG22 | 2:G:379:ARG:CZ | 2.42 | 0.50 |
| 2:A:627:ILE:HD11 | 2:A:1036:PHE:CD2 | 2.47 | 0.50 |
| 2:E:969:ALA:O | 2:E:972:THR:OG1 | 2.27 | 0.50 |
| 2:F:140:SER:HA | 2:F:1115:PRO:HA | 1.93 | 0.50 |
| 2:F:939:THR:H | 2:F:942:THR:HG1 | 1.58 | 0.50 |
| 2:F:1092:TYR:HE2 | 2:F:1116:ARG:HH11 | 1.60 | 0.50 |
| 2:G:909:ALA:O | 2:G:912:THR:OG1 | 2.30 | 0.50 |
| 2:G:1146:GLN:N | 2:G:1204:CYS:O | 2.39 | 0.50 |
| 5:R:107:LEU:HB2 | 5:R:304:VAL:HB | 1.94 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 7:Z:222:ILE:HD11 | 7:Z:226:TYR:CE2 | 2.46 | 0.50 |
| 2:A:136:ILE:HA | 2:A:1119:VAL:HG22 | 1.93 | 0.49 |
| 2:A:669:ARG:O | 2:A:673:GLU:HG2 | 2.12 | 0.49 |
| 2:C:1092:TYR:OH | 2:C:1116:ARG:HD3 | 2.12 | 0.49 |
| 2:E:850:VAL:H | 2:E:924:THR:HG21 | 1.77 | 0.49 |
| 2:F:205:PRO:HD2 | 2:F:1127:ALA:O | 2.12 | 0.49 |
| 2:G:624:PRO:HA | 2:G:627:ILE:HG22 | 1.94 | 0.49 |
| 6:V:115:LEU:O | 6:V:289:THR:OG1 | 2.29 | 0.49 |
| 7:Z:250:VAL:HB | 7:Z:254:ARG:HH22 | 1.76 | 0.49 |
| 7:Z:253:HIS:O | 7:Z:254:ARG:HG2 | 2.11 | 0.49 |
| 2:A:308:ASP:HB3 | 2:A:384:LEU:HD21 | 1.93 | 0.49 |
| 2:A:1144:THR:HG22 | 2:A:1175:ARG:HD2 | 1.94 | 0.49 |
| 2:C:216:PHE:HB3 | 2:C:230:LEU:HD13 | 1.93 | 0.49 |
| 2:C:427:GLN:NE2 | 2:C:1375:VAL:HG21 | 2.27 | 0.49 |
| 2:E:775:VAL:HG13 | 2:E:927:ILE:HG12 | 1.93 | 0.49 |
| 2:E:778:ARG:HE | 2:E:799:ASN:HB3 | 1.76 | 0.49 |
| 2:G:1077:PHE:HE1 | 2:G:1388:LEU:HD11 | 1.77 | 0.49 |
| 2:C:214:ASN:ND2 | 2:C:265:CYS:O | 2.46 | 0.49 |
| 2:E:152:LEU:O | 2:E:155:LEU:HB3 | 2.11 | 0.49 |
| 2:E:466:LEU:HD13 | 2:E:1362:LEU:HD13 | 1.94 | 0.49 |
| 2:E:752:ILE:HD12 | 2:E:957:ILE:HG13 | 1.94 | 0.49 |
| 2:F:450:ARG:NH1 | 2:F:1378:ALA:H | 2.10 | 0.49 |
| 2:A:307:ASP:HB2 | 2:A:384:LEU:HG | 1.94 | 0.49 |
| 2:A:504:PHE:HE1 | 2:A:523:PHE:HZ | 1.60 | 0.49 |
| 2:A:1358:ASP:HB2 | 2:A:1361:MET:SD | 2.52 | 0.49 |
| 2:C:640:PRO:HD2 | 2:C:643:PHE:HE2 | 1.76 | 0.49 |
| 2:E:631:LYS:NZ | 2:E:840:PHE:O | 2.43 | 0.49 |
| 2:E:1092:TYR:HE2 | 2:E:1116:ARG:HH11 | 1.58 | 0.49 |
| 2:F:603:CYS:SG | 2:F:608:ARG:NE | 2.71 | 0.49 |
| 2:G:313:VAL:O | 2:G:378:ALA:N | 2.46 | 0.49 |
| 2:G:961:TYR:HB2 | 2:G:988:HIS:CE1 | 2.46 | 0.49 |
| 2:A:176:GLN:O | 2:A:179:ARG:HG3 | 2.13 | 0.49 |
| 2:A:480:HIS:NE2 | 2:A:1149:PHE:HA | 2.27 | 0.49 |
| 2:A:1225:ARG:NH2 | 2:A:1229:SER:OG | 2.44 | 0.49 |
| 2:C:1085:ALA:O | 2:C:1086:GLU:HG2 | 2.12 | 0.49 |
| 2:E:418:THR:HG22 | 2:E:1074:GLN:HE21 | 1.76 | 0.49 |
| 2:E:450:ARG:NH2 | 2:E:1376:HIS:HB3 | 2.27 | 0.49 |
| 2:E:536:HIS:ND1 | 2:E:554:ARG:HD3 | 2.28 | 0.49 |
| 2:F:462:LYS:HE3 | 2:F:1198:ARG:HB2 | 1.94 | 0.49 |
| 2:G:775:VAL:HG13 | 2:G:927:ILE:HG12 | 1.94 | 0.49 |
| 2:G:1356:SER:OG | 2:G:1361:MET:HB2 | 2.12 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:A:109:PHE:HB2 | 2:A:132:MET:HG2 | 1.93 | 0.49 |
| 2:A:152:LEU:O | 2:A:155:LEU:HB3 | 2.12 | 0.49 |
| 2:A:1146:GLN:N | 2:A:1204:CYS:O | 2.43 | 0.49 |
| 2:C:296:LYS:HE3 | 2:C:396:ALA:CB | 2.41 | 0.49 |
| 2:C:852:TYR:HD2 | 2:C:923:ARG:HA | 1.78 | 0.49 |
| 2:G:419:PHE:CD1 | 2:G:1353:PRO:HG3 | 2.47 | 0.49 |
| 6:V:146:MET:HE3 | 6:V:147:ARG:HH22 | 1.77 | 0.49 |
| 7:Z:209:TYR:CD2 | 7:Z:302:CYS:HB3 | 2.47 | 0.49 |
| 2:E:831:ILE:HG23 | 2:E:835:ILE:HD12 | 1.93 | 0.49 |
| 2:F:611:ARG:O | 2:F:615:LEU:HG | 2.12 | 0.49 |
| 2:G:774:ARG:NH2 | 2:G:777:GLY:O | 2.46 | 0.49 |
| 2:C:523:PHE:CE1 | 2:C:1011:PRO:HD3 | 2.48 | 0.49 |
| 2:E:559:LEU:HB2 | 2:E:565:PHE:CE1 | 2.48 | 0.49 |
| 2:F:737:GLU:O | 2:F:744:THR:OG1 | 2.26 | 0.49 |
| 2:G:737:GLU:O | 2:G:744:THR:OG1 | 2.31 | 0.49 |
| 2:A:624:PRO:HA | 2:A:627:ILE:HG22 | 1.95 | 0.49 |
| 2:C:787:VAL:HG13 | 2:C:920:MET:HB3 | 1.94 | 0.49 |
| 2:E:511:GLY:HA3 | 2:E:776:SER:HA | 1.94 | 0.49 |
| 2:F:1165:SER:HA | 2:F:1168:ARG:HG2 | 1.94 | 0.49 |
| 2:G:267:GLN:NE2 | 2:G:1124:GLY:H | 2.11 | 0.49 |
| 2:A:479:CYS:SG | 2:A:1166:LEU:HD22 | 2.53 | 0.49 |
| 2:A:1180:GLU:HG3 | 2:A:1181:PRO:HD3 | 1.95 | 0.49 |
| 2:C:737:GLU:O | 2:C:744:THR:OG1 | 2.31 | 0.49 |
| 2:C:1380:TYR:HD2 | 2:C:1382:ILE:HG13 | 1.77 | 0.49 |
| 2:E:770:LEU:O | 2:E:946:ARG:NH1 | 2.38 | 0.49 |
| 2:G:176:GLN:O | 2:G:179:ARG:HG3 | 2.12 | 0.49 |
| 6:V:118:PRO:HA | 6:V:139:LEU:HD22 | 1.95 | 0.49 |
| 2:C:718:ARG:NH1 | 2:C:722:THR:OG1 | 2.46 | 0.48 |
| 2:E:1085:ALA:HA | 2:E:1127:ALA:HA | 1.95 | 0.48 |
| 2:F:1058:GLN:HG2 | 2:F:1063:PHE:HD2 | 1.77 | 0.48 |
| 2:G:87:LEU:HA | 2:G:288:VAL:HG21 | 1.94 | 0.48 |
| 2:G:122:HIS:O | 2:G:122:HIS:ND1 | 2.43 | 0.48 |
| 2:G:939:THR:H | 2:G:942:THR:HG1 | 1.60 | 0.48 |
| 2:G:1180:GLU:HG3 | 2:G:1181:PRO:HD3 | 1.95 | 0.48 |
| 6:V:290:ARG:HE | 6:V:292:ILE:HD13 | 1.78 | 0.48 |
| 7:Z:175:LEU:HD11 | 7:Z:238:PHE:HD1 | 1.77 | 0.48 |
| 2:C:774:ARG:NH2 | 2:C:777:GLY:O | 2.46 | 0.48 |
| 2:C:838:PRO:HB2 | 2:C:1029:VAL:HG21 | 1.94 | 0.48 |
| 2:E:179:ARG:HD2 | 2:E:180:ASN:N | 2.29 | 0.48 |
| 2:E:294:THR:HA | 2:E:297:ARG:CZ | 2.43 | 0.48 |
| 2:E:681:VAL:HA | 2:E:687:LEU:HD11 | 1.94 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:E:1144:THR:HG22 | 2:E:1175:ARG:HD2 | 1.94 | 0.48 |
| 2:F:450:ARG:HG2 | 2:F:1376:HIS:CE1 | 2.48 | 0.48 |
| 2:F:680:PHE:HA | 2:F:686:MET:HE3 | 1.95 | 0.48 |
| 2:G:287:GLY:HA3 | 2:G:1084:TYR:HE1 | 1.77 | 0.48 |
| 2:G:415:ILE:HB | 2:G:1079:THR:HG21 | 1.95 | 0.48 |
| 7:Z:205:ARG:NH1 | 7:Z:208:GLU:OE2 | 2.46 | 0.48 |
| 2:A:474:ALA:HB3 | 2:A:1059:LEU:HD13 | 1.96 | 0.48 |
| 2:A:485:ASP:HB3 | 2:A:1155:VAL:HG12 | 1.95 | 0.48 |
| 2:F:288:VAL:HA | 2:F:393:PHE:HB2 | 1.94 | 0.48 |
| 2:G:308:ASP:HB3 | 2:G:384:LEU:HD21 | 1.95 | 0.48 |
| 2:G:743:LEU:HD23 | 2:G:831:ILE:HA | 1.93 | 0.48 |
| 5:R:296:CYS:SG | 7:Z:122:ILE:HG12 | 2.54 | 0.48 |
| 6:V:112:TYR:HE2 | 6:V:294:ARG:HD2 | 1.78 | 0.48 |
| 6:V:285:ASP:O | 7:Z:348:GLN:NE2 | 2.46 | 0.48 |
| 7:Z:120:GLN:NE2 | 7:Z:122:ILE:HG13 | 2.28 | 0.48 |
| 7:Z:131:PHE:CE1 | 7:Z:197:SER:HB3 | 2.48 | 0.48 |
| 2:C:548:ILE:HA | 2:C:555:LEU:HD13 | 1.95 | 0.48 |
| 2:C:775:VAL:HG13 | 2:C:927:ILE:HG12 | 1.95 | 0.48 |
| 2:C:1369:GLU:O | 2:C:1370:THR:OG1 | 2.28 | 0.48 |
| 2:F:1357:SER:HG | 2:F:1380:TYR:H | 1.59 | 0.48 |
| 7:Z:447:THR:HB | 7:Z:462:TRP:HB2 | 1.95 | 0.48 |
| 2:E:296:LYS:HE2 | 2:E:396:ALA:CB | 2.41 | 0.48 |
| 2:E:419:PHE:O | 2:E:1072:VAL:HA | 2.13 | 0.48 |
| 2:E:1097:ILE:HD11 | 2:E:1112:LEU:HB3 | 1.95 | 0.48 |
| 2:F:926:ALA:HB1 | 2:F:1013:LEU:HD11 | 1.95 | 0.48 |
| 7:Z:352:ARG:O | 7:Z:356:PHE:N | 2.37 | 0.48 |
| 2:C:763:ASP:O | 2:C:767:ARG:NH2 | 2.46 | 0.48 |
| 2:G:205:PRO:HD2 | 2:G:1127:ALA:O | 2.14 | 0.48 |
| 2:A:1374:GLU:OE1 | 2:C:1363:ARG:NH1 | 2.46 | 0.48 |
| 2:C:190:ARG:NH2 | 2:C:401:VAL:HA | 2.29 | 0.48 |
| 2:C:846:CYS:HB2 | 2:C:985:CYS:HB3 | 1.56 | 0.48 |
| 2:G:91:CYS:HB3 | 2:G:196:LEU:HD11 | 1.95 | 0.48 |
| 2:G:669:ARG:O | 2:G:673:GLU:HG2 | 2.13 | 0.48 |
| 5:R:277:ILE:HD11 | 6:V:283:LEU:HD21 | 1.95 | 0.48 |
| 7:Z:346:ASN:OD1 | 7:Z:347:GLU:N | 2.47 | 0.48 |
| 2:A:114:PRO:HD2 | 2:C:404:ALA:HB3 | 1.96 | 0.48 |
| 2:E:140:SER:HA | 2:E:1115:PRO:HA | 1.96 | 0.48 |
| 2:G:1022:ARG:HG2 | 2:G:1023:GLN:H | 1.79 | 0.48 |
| 2:C:962:GLN:N | 2:C:962:GLN:OE1 | 2.47 | 0.48 |
| 2:E:287:GLY:HA3 | 2:E:1084:TYR:CE1 | 2.48 | 0.48 |
| 2:E:778:ARG:HH21 | 2:E:799:ASN:HA | 1.78 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:F:414:ASN:CG | 2:F:415:ILE:H | 2.17 | 0.48 |
| 2:F:1180:GLU:HG3 | 2:F:1181:PRO:HD3 | 1.95 | 0.48 |
| 2:F:1353:PRO:HA | 2:F:1384:ASP:OD1 | 2.14 | 0.48 |
| 2:G:247:ARG:HH11 | 2:G:1389:ARG:HD2 | 1.78 | 0.48 |
| 7:Z:251:PHE:HB3 | 7:Z:327:TYR:CE2 | 2.48 | 0.48 |
| 2:E:572:VAL:HG22 | 2:E:581:PRO:HG2 | 1.96 | 0.47 |
| 2:E:1180:GLU:HG3 | 2:E:1181:PRO:HD3 | 1.95 | 0.47 |
| 2:F:295:LEU:HD23 | 2:F:1080:GLU:HG2 | 1.96 | 0.47 |
| 2:F:296:LYS:HE2 | 2:F:396:ALA:HB3 | 1.95 | 0.47 |
| 2:F:769:ARG:NH1 | 2:F:934:ASP:OD2 | 2.47 | 0.47 |
| 2:G:201:LEU:HD22 | 2:G:1083:LEU:HD13 | 1.96 | 0.47 |
| 2:G:1103:ASP:HA | 2:G:1108:VAL:HG12 | 1.96 | 0.47 |
| 7:Z:282:GLN:HG3 | 7:Z:283:GLU:H | 1.79 | 0.47 |
| 7:Z:439:ILE:HG21 | 7:Z:444:VAL:HG12 | 1.94 | 0.47 |
| 2:A:450:ARG:HH21 | 2:A:1376:HIS:HB3 | 1.80 | 0.47 |
| 2:A:455:GLN:HG2 | 2:A:1064:HIS:CD2 | 2.48 | 0.47 |
| 2:C:1180:GLU:HG3 | 2:C:1181:PRO:HD3 | 1.96 | 0.47 |
| 2:E:85:LEU:HD12 | 2:E:86:GLY:H | 1.79 | 0.47 |
| 2:E:627:ILE:HD11 | 2:E:1036:PHE:CD2 | 2.48 | 0.47 |
| 2:G:514:ASP:OD2 | 2:G:515:THR:N | 2.47 | 0.47 |
| 2:G:1087:ARG:HG3 | 2:G:1088:ALA:H | 1.79 | 0.47 |
| 5:R:225:LEU:HD21 | 6:V:215:THR:HB | 1.95 | 0.47 |
| 2:A:598:ILE:HD12 | 2:A:599:PRO:HD2 | 1.96 | 0.47 |
| 2:A:603:CYS:SG | 2:A:608:ARG:NE | 2.71 | 0.47 |
| 2:A:671:TYR:CD2 | 2:A:679:ALA:HB2 | 2.49 | 0.47 |
| 2:A:979:VAL:O | 2:A:979:VAL:HG13 | 2.14 | 0.47 |
| 2:C:979:VAL:HG13 | 2:C:979:VAL:O | 2.14 | 0.47 |
| 2:F:898:PHE:CE2 | 2:F:910:LEU:HD21 | 2.49 | 0.47 |
| 2:F:1161:ASN:OD1 | 2:F:1162:VAL:N | 2.47 | 0.47 |
| 5:R:295:VAL:HA | 5:R:312:VAL:HG12 | 1.96 | 0.47 |
| 6:V:266:ARG:HA | 7:Z:163:ARG:HD2 | 1.96 | 0.47 |
| 2:A:205:PRO:HD2 | 2:A:1127:ALA:O | 2.14 | 0.47 |
| 2:A:763:ASP:O | 2:A:767:ARG:NH2 | 2.47 | 0.47 |
| 2:A:838:PRO:HB2 | 2:A:1029:VAL:HG21 | 1.96 | 0.47 |
| 2:F:669:ARG:O | 2:F:673:GLU:HG2 | 2.13 | 0.47 |
| 2:G:450:ARG:HH22 | 2:G:1379:GLN:H | 1.62 | 0.47 |
| 2:A:415:ILE:HB | 2:A:1079:THR:HG21 | 1.97 | 0.47 |
| 2:A:1150:PHE:HE2 | 2:A:1178:PRO:HD3 | 1.80 | 0.47 |
| 2:C:111:VAL:HG13 | 2:C:130:ASN:HB2 | 1.95 | 0.47 |
| 2:E:263:VAL:HG23 | 2:E:1084:TYR:CE2 | 2.50 | 0.47 |
| 2:E:848:MET:HB3 | 2:E:976:PRO:HA | 1.97 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:F:277:HIS:HD2 | 2:F:313:VAL:HG22 | 1.80 | 0.47 |
| 2:G:976:PRO:HD2 | 2:G:992:LEU:HB2 | 1.97 | 0.47 |
| 2:G:979:VAL:O | 2:G:979:VAL:HG13 | 2.14 | 0.47 |
| 5:R:32:ILE:HD11 | 5:R:46:ILE:HB | 1.95 | 0.47 |
| 7:Z:197:SER:HG | 7:Z:199:SER:HG | 1.58 | 0.47 |
| 2:A:190:ARG:NH2 | 2:A:401:VAL:HA | 2.29 | 0.47 |
| 2:A:1022:ARG:HB3 | 2:A:1024:PRO:HD2 | 1.96 | 0.47 |
| 2:A:1146:GLN:HB2 | 2:A:1205:GLU:HA | 1.97 | 0.47 |
| 2:C:462:LYS:HE3 | 2:C:1198:ARG:HB2 | 1.96 | 0.47 |
| 2:E:962:GLN:OE1 | 2:E:962:GLN:N | 2.48 | 0.47 |
| 2:F:433:ARG:O | 2:G:443:THR:HG22 | 2.14 | 0.47 |
| 2:F:908:ASP:N | 2:F:908:ASP:OD1 | 2.47 | 0.47 |
| 2:A:105:GLY:HA2 | 2:C:42:CYS:O | 2.14 | 0.47 |
| 2:A:450:ARG:NH2 | 2:A:1376:HIS:HB3 | 2.29 | 0.47 |
| 2:A:962:GLN:OE1 | 2:A:962:GLN:N | 2.47 | 0.47 |
| 2:C:457:ILE:HD11 | 2:C:1355:CYS:SG | 2.55 | 0.47 |
| 2:C:1087:ARG:HG3 | 2:C:1088:ALA:H | 1.79 | 0.47 |
| 2:E:85:LEU:HD11 | 2:E:397:LEU:HD13 | 1.97 | 0.47 |
| 2:E:91:CYS:HB3 | 2:E:196:LEU:HD11 | 1.97 | 0.47 |
| 2:E:103:ARG:HH21 | 2:F:45:PHE:HB3 | 1.79 | 0.47 |
| 2:E:450:ARG:HG2 | 2:E:1376:HIS:ND1 | 2.29 | 0.47 |
| 2:E:625:ALA:O | 2:E:628:LYS:HG2 | 2.15 | 0.47 |
| 2:E:1369:GLU:O | 2:E:1370:THR:OG1 | 2.29 | 0.47 |
| 2:F:280:THR:HA | 2:F:379:ARG:HH12 | 1.80 | 0.47 |
| 2:F:671:TYR:CD2 | 2:F:679:ALA:HB2 | 2.50 | 0.47 |
| 2:F:1091:SER:HB3 | 2:F:1121:LEU:HD22 | 1.95 | 0.47 |
| 2:G:458:PHE:HD2 | 2:G:466:LEU:HD11 | 1.80 | 0.47 |
| 2:G:926:ALA:HB1 | 2:G:1013:LEU:HD11 | 1.97 | 0.47 |
| 5:R:68:ARG:HE | 5:R:286:THR:HA | 1.80 | 0.47 |
| 7:Z:281:PRO:HA | 7:Z:467:VAL:HG12 | 1.96 | 0.47 |
| 2:A:678:VAL:HG21 | 2:A:706:ILE:HG21 | 1.97 | 0.47 |
| 2:C:1016:ASN:HD21 | 2:C:1023:GLN:HB2 | 1.80 | 0.47 |
| 2:E:154:LEU:HD23 | 2:E:173:ALA:HB2 | 1.96 | 0.47 |
| 2:E:224:ARG:HG3 | 2:F:1195:GLY:HA2 | 1.96 | 0.47 |
| 2:E:476:GLY:O | 2:E:1148:LEU:N | 2.48 | 0.47 |
| 2:E:979:VAL:HG11 | 2:E:1013:LEU:HD13 | 1.97 | 0.47 |
| 2:F:87:LEU:HA | 2:F:288:VAL:HG21 | 1.95 | 0.47 |
| 2:F:712:GLN:HG2 | 2:F:715:ARG:HH12 | 1.80 | 0.47 |
| 2:F:742:ILE:HG13 | 2:F:1049:LYS:HG2 | 1.96 | 0.47 |
| 2:G:397:LEU:HG | 2:G:401:VAL:HG12 | 1.96 | 0.47 |
| 2:G:962:GLN:OE1 | 2:G:962:GLN:N | 2.48 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:G:1101:HIS:O | 2:G:1101:HIS:ND1 | 2.47 | 0.47 |
| 2:A:433:ARG:O | 2:C:443:THR:HG22 | 2.15 | 0.47 |
| 2:C:104:ASP:HB3 | 2:E:44:PHE:HD2 | 1.79 | 0.47 |
| 2:C:307:ASP:HB2 | 2:C:384:LEU:HG | 1.97 | 0.47 |
| 2:C:710:LEU:HD21 | 2:C:832:TYR:CE1 | 2.50 | 0.47 |
| 2:C:985:CYS:HB2 | 2:C:988:HIS:HB2 | 1.97 | 0.47 |
| 2:E:531:MET:HG3 | 2:E:1002:LEU:HD11 | 1.97 | 0.47 |
| 2:F:190:ARG:NH2 | 2:F:401:VAL:HA | 2.30 | 0.47 |
| 2:F:296:LYS:HE2 | 2:F:396:ALA:CB | 2.44 | 0.47 |
| 2:G:450:ARG:HH21 | 2:G:1376:HIS:HB3 | 1.80 | 0.47 |
| 2:G:523:PHE:CZ | 2:G:1010:PRO:HA | 2.50 | 0.47 |
| 2:G:625:ALA:HA | 2:G:628:LYS:HE2 | 1.97 | 0.47 |
| 2:G:1192:THR:HB | 6:V:181:GLY:HA2 | 1.97 | 0.47 |
| 7:Z:147:HIS:ND1 | 7:Z:149:THR:OG1 | 2.44 | 0.47 |
| 7:Z:306:ASP:O | 7:Z:309:LYS:HG3 | 2.15 | 0.47 |
| 2:A:149:SER:OG | 2:A:1106:GLY:O | 2.33 | 0.47 |
| 2:A:615:LEU:HD22 | 2:A:724:PHE:CE2 | 2.50 | 0.47 |
| 2:C:982:LEU:HD21 | 2:C:1025:VAL:HG22 | 1.96 | 0.47 |
| 2:E:982:LEU:HD21 | 2:E:1025:VAL:HG22 | 1.97 | 0.47 |
| 2:F:590:THR:HB | 2:F:945:MET:HE1 | 1.97 | 0.47 |
| 2:F:1380:TYR:HD2 | 2:F:1382:ILE:HG13 | 1.80 | 0.47 |
| 2:G:757:ASP:N | 2:G:757:ASP:OD1 | 2.48 | 0.47 |
| 7:Z:342:LEU:HD21 | 7:Z:463:LEU:HD11 | 1.96 | 0.47 |
| 2:C:172:ARG:HA | 2:C:172:ARG:HD2 | 1.79 | 0.46 |
| 2:C:856:TYR:CZ | 2:C:920:MET:HG2 | 2.51 | 0.46 |
| 2:F:32:THR:OG1 | 2:F:182:ARG:HG3 | 2.15 | 0.46 |
| 2:F:450:ARG:HH12 | 2:F:1378:ALA:H | 1.64 | 0.46 |
| 2:G:476:GLY:O | 2:G:1148:LEU:N | 2.46 | 0.46 |
| 2:G:743:LEU:HD23 | 2:G:831:ILE:HG12 | 1.96 | 0.46 |
| 7:Z:230:ARG:NE | 7:Z:234:ARG:HD3 | 2.29 | 0.46 |
| 7:Z:325:PHE:N | 7:Z:432:ALA:O | 2.46 | 0.46 |
| 2:A:287:GLY:HA3 | 2:A:1084:TYR:CE1 | 2.50 | 0.46 |
| 2:C:1114:GLN:OE1 | 2:C:1116:ARG:NH2 | 2.49 | 0.46 |
| 2:E:558:GLU:CD | 2:E:592:ARG:HH22 | 2.18 | 0.46 |
| 2:F:479:CYS:SG | 2:F:1166:LEU:HD22 | 2.55 | 0.46 |
| 2:G:568:ALA:O | 2:G:586:THR:N | 2.39 | 0.46 |
| 2:A:1386:SER:O | 2:A:1389:ARG:HD2 | 2.16 | 0.46 |
| 2:C:296:LYS:HG2 | 2:C:300:LEU:HD12 | 1.96 | 0.46 |
| 2:E:763:ASP:O | 2:E:767:ARG:NH2 | 2.47 | 0.46 |
| 2:F:688:MET:HG2 | 2:F:825:TRP:CZ3 | 2.50 | 0.46 |
| 2:F:1101:HIS:ND1 | 2:F:1101:HIS:O | 2.49 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:G:688:MET:HG2 | 2:G:825:TRP:CZ3 | 2.51 | 0.46 |
| 5:R:269:ILE:O | 5:R:273:ILE:HG12 | 2.16 | 0.46 |
| 2:C:287:GLY:HA3 | 2:C:1084:TYR:CE1 | 2.50 | 0.46 |
| 2:C:712:GLN:HG2 | 2:C:715:ARG:NH2 | 2.30 | 0.46 |
| 2:E:979:VAL:HG13 | 2:E:979:VAL:O | 2.15 | 0.46 |
| 2:E:1161:ASN:OD1 | 2:E:1162:VAL:N | 2.48 | 0.46 |
| 2:F:979:VAL:O | 2:F:979:VAL:HG13 | 2.15 | 0.46 |
| 7:Z:472:ASN:OD1 | 7:Z:474:TRP:NE1 | 2.47 | 0.46 |
| 2:C:1022:ARG:HB3 | 2:C:1024:PRO:HD2 | 1.98 | 0.46 |
| 2:F:266:THR:OG1 | 2:F:1125:TYR:O | 2.32 | 0.46 |
| 2:F:401:VAL:HG13 | 2:F:402:TYR:CD2 | 2.45 | 0.46 |
| 2:F:600:VAL:N | 2:F:601:PRO:HD2 | 2.30 | 0.46 |
| 2:F:1078:ALA:HB2 | 2:F:1138:LEU:HD23 | 1.98 | 0.46 |
| 2:F:1085:ALA:HA | 2:F:1127:ALA:HA | 1.97 | 0.46 |
| 2:F:1097:ILE:HD11 | 2:F:1112:LEU:HB3 | 1.98 | 0.46 |
| 2:A:255:ILE:H | 2:A:255:ILE:HD12 | 1.81 | 0.46 |
| 2:E:671:TYR:CD2 | 2:E:679:ALA:HB2 | 2.50 | 0.46 |
| 2:E:1358:ASP:HB2 | 2:E:1361:MET:SD | 2.55 | 0.46 |
| 2:F:434:TYR:OH | 2:G:1363:ARG:HD3 | 2.15 | 0.46 |
| 2:G:440:ASP:HB2 | 2:G:1376:HIS:HE2 | 1.81 | 0.46 |
| 2:G:475:MET:SD | 2:G:1056:THR:HG23 | 2.56 | 0.46 |
| 2:G:1053:ILE:HD13 | 2:G:1166:LEU:HD21 | 1.97 | 0.46 |
| 2:C:651:HIS:CE1 | 2:C:656:ASN:HD21 | 2.34 | 0.46 |
| 2:C:757:ASP:OD1 | 2:C:757:ASP:N | 2.49 | 0.46 |
| 2:E:277:HIS:HD2 | 2:E:313:VAL:HG22 | 1.80 | 0.46 |
| 5:R:129:ASP:OD1 | 5:R:130:SER:N | 2.49 | 0.46 |
| 2:A:979:VAL:HG11 | 2:A:1013:LEU:HD13 | 1.98 | 0.46 |
| 2:C:152:LEU:O | 2:C:155:LEU:HB3 | 2.16 | 0.46 |
| 2:C:561:PRO:O | 2:C:592:ARG:NH1 | 2.46 | 0.46 |
| 2:C:939:THR:H | 2:C:942:THR:HG1 | 1.59 | 0.46 |
| 2:E:211:SER:OG | 2:E:215:LYS:NZ | 2.38 | 0.46 |
| 2:E:560:ASN:HB3 | 2:E:563:PHE:HB2 | 1.97 | 0.46 |
| 2:F:122:HIS:ND1 | 2:F:122:HIS:O | 2.48 | 0.46 |
| 2:F:769:ARG:HD3 | 2:F:934:ASP:HA | 1.98 | 0.46 |
| 2:F:962:GLN:N | 2:F:962:GLN:OE1 | 2.49 | 0.46 |
| 2:G:908:ASP:OD1 | 2:G:908:ASP:N | 2.49 | 0.46 |
| 5:R:248:ALA:O | 5:R:250:GLN:N | 2.49 | 0.46 |
| 2:C:996:THR:HG22 | 2:C:997:ASN:H | 1.80 | 0.46 |
| 2:E:757:ASP:OD1 | 2:E:757:ASP:N | 2.48 | 0.46 |
| 2:G:140:SER:HA | 2:G:1115:PRO:HA | 1.97 | 0.46 |
| 2:G:152:LEU:O | 2:G:155:LEU:HB3 | 2.16 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:G:1060:ARG:HD3 | 2:G:1169:ILE:HD11 | 1.98 | 0.46 |
| 7:Z:209:TYR:HD1 | 7:Z:337:ARG:HD3 | 1.81 | 0.46 |
| 2:C:1091:SER:OG | 2:C:1119:VAL:HB | 2.16 | 0.46 |
| 2:E:625:ALA:HA | 2:E:628:LYS:HE2 | 1.96 | 0.46 |
| 2:G:190:ARG:NH2 | 2:G:401:VAL:HA | 2.31 | 0.46 |
| 2:G:1091:SER:HB3 | 2:G:1121:LEU:HD22 | 1.98 | 0.46 |
| 5:R:115:LEU:HD13 | 5:R:292:ILE:HD13 | 1.98 | 0.46 |
| 7:Z:356:PHE:O | 7:Z:358:LEU:N | 2.49 | 0.46 |
| 2:A:140:SER:HA | 2:A:1115:PRO:HA | 1.98 | 0.45 |
| 2:C:263:VAL:HG22 | 2:C:390:LYS:HD3 | 1.98 | 0.45 |
| 2:C:680:PHE:HB3 | 2:C:686:MET:HE2 | 1.98 | 0.45 |
| 2:E:654:GLU:HA | 2:E:689:TYR:HE1 | 1.81 | 0.45 |
| 2:E:682:ASN:HB2 | 2:E:959:MET:SD | 2.55 | 0.45 |
| 2:E:706:ILE:O | 2:E:710:LEU:HG | 2.16 | 0.45 |
| 2:G:763:ASP:O | 2:G:767:ARG:NH2 | 2.49 | 0.45 |
| 2:A:91:CYS:HB3 | 2:A:196:LEU:HD11 | 1.98 | 0.45 |
| 2:A:600:VAL:N | 2:A:601:PRO:HD2 | 2.31 | 0.45 |
| 2:A:860:GLN:NE2 | 2:A:917:MET:SD | 2.71 | 0.45 |
| 2:A:1085:ALA:O | 2:A:1086:GLU:HG2 | 2.15 | 0.45 |
| 2:C:145:PHE:CE2 | 2:C:147:ILE:HD11 | 2.51 | 0.45 |
| 2:C:1073:ARG:HH22 | 2:C:1141:MET:HA | 1.80 | 0.45 |
| 2:E:856:TYR:CZ | 2:E:920:MET:HG3 | 2.51 | 0.45 |
| 2:F:247:ARG:HH12 | 2:F:1387:PRO:HA | 1.81 | 0.45 |
| 2:F:1085:ALA:O | 2:F:1086:GLU:HG2 | 2.16 | 0.45 |
| 6:V:102:THR:O | 6:V:139:LEU:HD12 | 2.16 | 0.45 |
| 2:A:466:LEU:HD12 | 2:A:467:THR:N | 2.30 | 0.45 |
| 2:C:671:TYR:CD2 | 2:C:679:ALA:HB2 | 2.52 | 0.45 |
| 2:E:299:LEU:HD12 | 2:E:304:LEU:HD23 | 1.99 | 0.45 |
| 2:G:462:LYS:HE3 | 2:G:1198:ARG:HB2 | 1.98 | 0.45 |
| 6:V:214:GLY:O | 6:V:218:ILE:HG12 | 2.16 | 0.45 |
| 2:A:105:GLY:H | 2:A:135:ARG:HH22 | 1.63 | 0.45 |
| 2:C:277:HIS:HD2 | 2:C:313:VAL:HG22 | 1.81 | 0.45 |
| 2:C:474:ALA:O | 2:C:478:ILE:HG22 | 2.16 | 0.45 |
| 2:E:600:VAL:N | 2:E:601:PRO:HD2 | 2.31 | 0.45 |
| 2:E:1120:ASP:OD1 | 2:E:1120:ASP:N | 2.47 | 0.45 |
| 2:E:1146:GLN:N | 2:E:1204:CYS:O | 2.47 | 0.45 |
| 2:G:561:PRO:O | 2:G:592:ARG:NH1 | 2.45 | 0.45 |
| 2:G:882:HIS:CE1 | 2:G:884:LEU:HD12 | 2.49 | 0.45 |
| 6:V:272:ALA:O | 6:V:276:TRP:CD1 | 2.69 | 0.45 |
| 2:A:96:PHE:HD2 | 2:A:99:LEU:HB2 | 1.82 | 0.45 |
| 2:C:140:SER:HA | 2:C:1115:PRO:HA | 1.98 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:F:566:PHE:HZ | 2:F:945:MET:HE1 | 1.82 | 0.45 |
| 2:F:1354:LEU:HB2 | 2:F:1384:ASP:HB2 | 1.97 | 0.45 |
| 2:G:209:LEU:HA | 2:G:234:LEU:HD23 | 1.99 | 0.45 |
| 2:G:450:ARG:NH1 | 2:G:1378:ALA:H | 2.14 | 0.45 |
| 7:Z:299:ILE:O | 7:Z:461:ILE:HG12 | 2.17 | 0.45 |
| 7:Z:434:THR:HG23 | 7:Z:436:ILE:HD11 | 1.98 | 0.45 |
| 2:A:296:LYS:HZ2 | 2:A:396:ALA:H | 1.63 | 0.45 |
| 2:E:1099:VAL:HG12 | 2:E:1112:LEU:HD13 | 1.99 | 0.45 |
| 2:G:600:VAL:N | 2:G:601:PRO:HD2 | 2.31 | 0.45 |
| 2:G:1053:ILE:HD11 | 2:G:1162:VAL:HG13 | 1.98 | 0.45 |
| 2:A:309:THR:O | 2:A:382:ALA:N | 2.49 | 0.45 |
| 2:A:978:PRO:HG3 | 2:A:985:CYS:SG | 2.57 | 0.45 |
| 2:C:909:ALA:O | 2:C:912:THR:OG1 | 2.34 | 0.45 |
| 2:E:1352:PRO:HG2 | 2:E:1385:ALA:HB3 | 1.97 | 0.45 |
| 2:F:474:ALA:O | 2:F:478:ILE:HG22 | 2.17 | 0.45 |
| 2:G:560:ASN:HB3 | 2:G:563:PHE:HB2 | 1.98 | 0.45 |
| 2:G:979:VAL:HG11 | 2:G:1013:LEU:HD13 | 1.99 | 0.45 |
| 2:G:1076:ARG:H | 2:G:1139:THR:HG21 | 1.82 | 0.45 |
| 2:G:1085:ALA:O | 2:G:1086:GLU:HG2 | 2.16 | 0.45 |
| 2:E:205:PRO:HG3 | 2:E:1125:TYR:CD1 | 2.52 | 0.45 |
| 2:E:266:THR:OG1 | 2:E:1125:TYR:O | 2.33 | 0.45 |
| 2:E:426:PHE:N | 2:E:1211:VAL:O | 2.39 | 0.45 |
| 2:E:669:ARG:O | 2:E:673:GLU:HG2 | 2.15 | 0.45 |
| 2:G:531:MET:HG3 | 2:G:1002:LEU:HD11 | 1.98 | 0.45 |
| 5:R:218:ILE:HA | 5:R:222:ILE:HD12 | 1.98 | 0.45 |
| 6:V:292:ILE:HG22 | 6:V:293:LEU:HD23 | 1.99 | 0.45 |
| 7:Z:143:LEU:N | 7:Z:196:THR:O | 2.44 | 0.45 |
| 2:E:769:ARG:HD3 | 2:E:934:ASP:HA | 1.98 | 0.45 |
| 5:R:292:ILE:HG22 | 5:R:293:LEU:HD22 | 1.98 | 0.45 |
| 5:R:304:VAL:HG11 | 5:R:310:THR:HB | 1.99 | 0.45 |
| 6:V:196:SER:O | 6:V:200:ILE:HG12 | 2.17 | 0.45 |
| 2:A:291:THR:O | 2:A:396:ALA:HA | 2.17 | 0.45 |
| 2:A:623:THR:HB | 2:A:626:THR:HG22 | 1.99 | 0.45 |
| 2:A:1161:ASN:OD1 | 2:A:1162:VAL:N | 2.50 | 0.45 |
| 2:C:247:ARG:HD3 | 2:C:1389:ARG:HB2 | 1.99 | 0.45 |
| 2:C:1375:VAL:HG23 | 2:C:1379:GLN:O | 2.17 | 0.45 |
| 2:E:96:PHE:HD2 | 2:E:99:LEU:HB2 | 1.82 | 0.45 |
| 2:E:105:GLY:HA2 | 2:F:42:CYS:O | 2.17 | 0.45 |
| 2:E:619:ARG:HH21 | 2:E:720:THR:HA | 1.82 | 0.45 |
| 2:F:1144:THR:HG22 | 2:F:1175:ARG:HD2 | 1.99 | 0.45 |
| 2:G:179:ARG:HD2 | 2:G:180:ASN:N | 2.31 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:G:536:HIS:ND1 | 2:G:554:ARG:HD3 | 2.32 | 0.45 |
| 2:G:545:LEU:HA | 2:G:548:ILE:HG22 | 1.98 | 0.45 |
| 7:Z:131:PHE:HB3 | 7:Z:195:VAL:HG23 | 1.99 | 0.45 |
| 7:Z:241:CYS:O | 7:Z:245:MET:HG2 | 2.17 | 0.45 |
| 2:A:572:VAL:HG22 | 2:A:581:PRO:HG2 | 1.99 | 0.44 |
| 2:A:757:ASP:OD1 | 2:A:757:ASP:N | 2.50 | 0.44 |
| 2:E:605:ILE:HG23 | 2:E:1028:HIS:ND1 | 2.33 | 0.44 |
| 2:G:247:ARG:NH1 | 2:G:1389:ARG:HD2 | 2.32 | 0.44 |
| 7:Z:152:PRO:HB3 | 7:Z:159:ALA:HB2 | 1.99 | 0.44 |
| 2:A:85:LEU:HD12 | 2:A:86:GLY:H | 1.81 | 0.44 |
| 2:A:1160:ASP:OD1 | 2:A:1160:ASP:N | 2.50 | 0.44 |
| 2:C:291:THR:O | 2:C:396:ALA:HA | 2.18 | 0.44 |
| 2:C:600:VAL:N | 2:C:601:PRO:HD2 | 2.32 | 0.44 |
| 2:C:848:MET:HB2 | 2:C:975:TYR:O | 2.17 | 0.44 |
| 2:E:247:ARG:HH12 | 2:E:1387:PRO:HA | 1.82 | 0.44 |
| 2:F:457:ILE:HD11 | 2:F:1355:CYS:SG | 2.57 | 0.44 |
| 2:F:519:GLN:O | 2:F:522:ARG:HD3 | 2.16 | 0.44 |
| 2:G:277:HIS:CD2 | 2:G:314:PRO:HD2 | 2.52 | 0.44 |
| 2:G:419:PHE:O | 2:G:1072:VAL:HA | 2.18 | 0.44 |
| 2:G:504:PHE:HZ | 2:G:1009:ILE:H | 1.66 | 0.44 |
| 2:G:898:PHE:HE2 | 2:G:910:LEU:HD22 | 1.82 | 0.44 |
| 2:A:1087:ARG:HG3 | 2:A:1088:ALA:H | 1.81 | 0.44 |
| 2:C:81:ARG:HB2 | 2:C:84:GLU:HG3 | 1.99 | 0.44 |
| 2:C:179:ARG:O | 2:C:183:THR:HG23 | 2.18 | 0.44 |
| 2:C:206:PRO:HA | 2:C:1129:CYS:O | 2.18 | 0.44 |
| 2:F:572:VAL:HG22 | 2:F:581:PRO:HG2 | 1.98 | 0.44 |
| 2:F:739:LEU:HD21 | 2:F:1053:ILE:HG21 | 1.99 | 0.44 |
| 2:F:961:TYR:HB2 | 2:F:988:HIS:CE1 | 2.53 | 0.44 |
| 2:G:769:ARG:HD3 | 2:G:934:ASP:HA | 1.98 | 0.44 |
| 2:G:1217:TYR:CZ | 2:G:1222:CYS:HB2 | 2.52 | 0.44 |
| 6:V:6:PHE:CD1 | 6:V:8:ILE:HD11 | 2.52 | 0.44 |
| 7:Z:263:LEU:O | 7:Z:265:TYR:N | 2.51 | 0.44 |
| 2:A:122:HIS:O | 2:A:122:HIS:ND1 | 2.50 | 0.44 |
| 2:A:863:ILE:HG13 | 2:A:890:VAL:HG12 | 1.99 | 0.44 |
| 2:A:1053:ILE:O | 2:A:1057:HIS:ND1 | 2.49 | 0.44 |
| 2:A:1073:ARG:HH22 | 2:A:1141:MET:HA | 1.82 | 0.44 |
| 2:A:1101:HIS:ND1 | 2:A:1101:HIS:O | 2.50 | 0.44 |
| 2:E:1071:VAL:HG13 | 2:E:1204:CYS:HB3 | 2.00 | 0.44 |
| 2:E:1225:ARG:HH12 | 2:E:1227:ARG:HD2 | 1.81 | 0.44 |
| 2:E:1356:SER:HB3 | 2:E:1362:LEU:HB2 | 2.00 | 0.44 |
| 2:F:615:LEU:HD22 | 2:F:724:PHE:HE2 | 1.82 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:F:1053:ILE:HD13 | 2:F:1166:LEU:HD21 | 1.99 | 0.44 |
| 2:G:206:PRO:HA | 2:G:1129:CYS:O | 2.17 | 0.44 |
| 2:G:535:PRO:HB2 | 2:G:538:VAL:HG23 | 1.99 | 0.44 |
| 2:G:625:ALA:O | 2:G:628:LYS:HG2 | 2.17 | 0.44 |
| 2:G:848:MET:HB2 | 2:G:975:TYR:O | 2.18 | 0.44 |
| 2:G:985:CYS:HB2 | 2:G:988:HIS:HB2 | 2.00 | 0.44 |
| 6:V:143:GLN:O | 6:V:144:THR:OG1 | 2.27 | 0.44 |
| 2:A:224:ARG:HG3 | 2:C:1195:GLY:HA2 | 1.99 | 0.44 |
| 2:A:842:ARG:HH21 | 2:A:1036:PHE:HE1 | 1.64 | 0.44 |
| 2:C:908:ASP:N | 2:C:908:ASP:OD1 | 2.51 | 0.44 |
| 2:E:852:TYR:HD2 | 2:E:923:ARG:HA | 1.82 | 0.44 |
| 2:F:948:TYR:HB2 | 2:F:1018:HIS:HB3 | 2.00 | 0.44 |
| 5:R:81:GLY:O | 5:R:82:LYS:HD2 | 2.17 | 0.44 |
| 5:R:147:ARG:HG2 | 6:V:277:ILE:HD11 | 2.00 | 0.44 |
| 2:A:466:LEU:HD13 | 2:A:1362:LEU:HD23 | 2.00 | 0.44 |
| 2:A:594:ILE:HG22 | 2:A:596:GLY:N | 2.31 | 0.44 |
| 2:E:996:THR:O | 2:E:999:ARG:HG3 | 2.16 | 0.44 |
| 2:F:141:LEU:HB3 | 2:F:188:PHE:CE2 | 2.53 | 0.44 |
| 2:G:421:MET:O | 2:G:1071:VAL:N | 2.45 | 0.44 |
| 2:G:729:GLU:OE1 | 2:G:1168:ARG:NH2 | 2.51 | 0.44 |
| 2:G:838:PRO:HB2 | 2:G:1029:VAL:HG21 | 1.99 | 0.44 |
| 6:V:115:LEU:H | 6:V:289:THR:HG21 | 1.82 | 0.44 |
| 2:A:1144:THR:HG21 | 2:A:1201:ALA:HB1 | 1.99 | 0.44 |
| 2:C:308:ASP:HB3 | 2:C:384:LEU:HD21 | 2.00 | 0.44 |
| 2:C:688:MET:HG2 | 2:C:825:TRP:CZ3 | 2.53 | 0.44 |
| 2:E:146:ALA:O | 2:E:147:ILE:HD13 | 2.18 | 0.44 |
| 2:E:205:PRO:HD2 | 2:E:1127:ALA:O | 2.18 | 0.44 |
| 2:F:414:ASN:OD1 | 2:F:415:ILE:N | 2.48 | 0.44 |
| 2:F:1214:ASP:OD2 | 2:F:1216:GLN:HG3 | 2.18 | 0.44 |
| 2:G:1144:THR:HG22 | 2:G:1175:ARG:HD2 | 1.99 | 0.44 |
| 5:R:33:THR:HA | 5:R:72:ALA:HA | 1.99 | 0.44 |
| 2:F:152:LEU:O | 2:F:155:LEU:HB3 | 2.17 | 0.44 |
| 2:F:774:ARG:NH2 | 2:F:777:GLY:O | 2.51 | 0.44 |
| 2:F:977:VAL:O | 2:F:977:VAL:HG13 | 2.18 | 0.44 |
| 2:G:651:HIS:CE1 | 2:G:656:ASN:HD21 | 2.36 | 0.44 |
| 5:R:111:ASP:OD2 | 7:Z:146:ARG:NH2 | 2.51 | 0.44 |
| 2:A:996:THR:HG22 | 2:A:998:ALA:H | 1.83 | 0.44 |
| 2:C:82:PHE:O | 2:C:88:SER:OG | 2.20 | 0.44 |
| 2:C:246:THR:HG21 | 2:C:1134:LEU:H | 1.83 | 0.44 |
| 2:C:688:MET:HG2 | 2:C:825:TRP:CH2 | 2.53 | 0.44 |
| 2:C:769:ARG:HD3 | 2:C:934:ASP:HA | 2.00 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:E:108:GLN:HE22 | 2:F:40:GLU:H | 1.65 | 0.44 |
| 2:E:289:LEU:HA | 2:E:1083:LEU:O | 2.17 | 0.44 |
| 2:E:711:LEU:O | 2:E:715:ARG:HG3 | 2.16 | 0.44 |
| 2:E:882:HIS:CE1 | 2:E:884:LEU:HD12 | 2.46 | 0.44 |
| 2:F:91:CYS:HB3 | 2:F:196:LEU:HD11 | 2.00 | 0.44 |
| 2:G:860:GLN:NE2 | 2:G:917:MET:SD | 2.87 | 0.44 |
| 2:G:863:ILE:HG13 | 2:G:890:VAL:HG12 | 2.00 | 0.44 |
| 7:Z:231:MET:O | 7:Z:235:LEU:HD23 | 2.18 | 0.44 |
| 2:A:32:THR:OG1 | 2:A:182:ARG:HG3 | 2.18 | 0.43 |
| 2:A:1352:PRO:HG2 | 2:A:1385:ALA:HB3 | 1.99 | 0.43 |
| 2:C:25:ILE:HG13 | 2:C:25:ILE:O | 2.17 | 0.43 |
| 2:C:414:ASN:OD1 | 2:C:415:ILE:N | 2.43 | 0.43 |
| 2:C:421:MET:HE2 | 2:C:1353:PRO:HD2 | 2.00 | 0.43 |
| 2:C:462:LYS:HB3 | 2:C:1141:MET:HG2 | 2.00 | 0.43 |
| 2:E:196:LEU:O | 2:E:199:VAL:HG12 | 2.18 | 0.43 |
| 2:F:423:MET:N | 2:F:1069:PHE:O | 2.47 | 0.43 |
| 2:F:475:MET:SD | 2:F:1056:THR:OG1 | 2.76 | 0.43 |
| 2:G:982:LEU:HD21 | 2:G:1025:VAL:HG22 | 1.99 | 0.43 |
| 7:Z:432:ALA:HA | 7:Z:476:GLU:HA | 1.99 | 0.43 |
| 2:A:440:ASP:HB2 | 2:A:1376:HIS:NE2 | 2.34 | 0.43 |
| 2:C:105:GLY:HA2 | 2:E:42:CYS:O | 2.18 | 0.43 |
| 2:C:641:THR:O | 2:C:645:MET:HG3 | 2.18 | 0.43 |
| 2:C:969:ALA:O | 2:C:972:THR:OG1 | 2.33 | 0.43 |
| 2:E:739:LEU:HD21 | 2:E:1053:ILE:HG21 | 1.99 | 0.43 |
| 2:F:32:THR:HB | 2:F:35:VAL:HG23 | 2.00 | 0.43 |
| 2:F:740:ASN:O | 2:F:1049:LYS:HG3 | 2.18 | 0.43 |
| 2:F:1356:SER:HB3 | 2:F:1362:LEU:HB2 | 1.99 | 0.43 |
| 2:G:572:VAL:HG22 | 2:G:581:PRO:HG2 | 2.00 | 0.43 |
| 2:G:593:ILE:O | 2:G:1049:LYS:HA | 2.18 | 0.43 |
| 2:A:685:HIS:CE1 | 2:A:754:TRP:HD1 | 2.36 | 0.43 |
| 2:A:1070:THR:HG22 | 2:A:1207:VAL:HB | 2.01 | 0.43 |
| 2:C:309:THR:O | 2:C:382:ALA:N | 2.50 | 0.43 |
| 2:C:572:VAL:HG22 | 2:C:581:PRO:HG2 | 2.00 | 0.43 |
| 2:C:1352:PRO:HG2 | 2:C:1385:ALA:HB3 | 2.00 | 0.43 |
| 2:F:757:ASP:OD1 | 2:F:757:ASP:N | 2.49 | 0.43 |
| 2:F:978:PRO:HG3 | 2:F:985:CYS:SG | 2.57 | 0.43 |
| 5:R:51:TYR:HB3 | 5:R:58:PRO:HG3 | 1.99 | 0.43 |
| 5:R:100:GLN:HB2 | 5:R:309:ARG:NH1 | 2.33 | 0.43 |
| 2:E:32:THR:HB | 2:E:35:VAL:HG23 | 2.00 | 0.43 |
| 2:E:379:ARG:HA | 2:E:379:ARG:HD3 | 1.82 | 0.43 |
| 2:E:420:ILE:HB | 2:E:1350:ALA:HB3 | 2.00 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:E:559:LEU:HB2 | 2:E:565:PHE:CZ | 2.53 | 0.43 |
| 2:E:560:ASN:H | 2:E:565:PHE:HE1 | 1.66 | 0.43 |
| 2:F:604:PRO:HG3 | 2:F:1212:SER:HB3 | 1.98 | 0.43 |
| 2:G:310:ALA:HA | 2:G:382:ALA:H | 1.83 | 0.43 |
| 7:Z:132:ARG:NH1 | 7:Z:133:PRO:HD2 | 2.33 | 0.43 |
| 7:Z:290:THR:HG23 | 7:Z:293:ARG:H | 1.84 | 0.43 |
| 2:A:295:LEU:O | 2:A:299:LEU:HD23 | 2.19 | 0.43 |
| 2:C:420:ILE:O | 2:C:421:MET:HE2 | 2.19 | 0.43 |
| 2:C:431:MET:SD | 2:E:449:PRO:HB2 | 2.58 | 0.43 |
| 2:F:634:PHE:HE1 | 2:F:681:VAL:HG11 | 1.84 | 0.43 |
| 7:Z:292:THR:HG23 | 7:Z:294:ARG:H | 1.84 | 0.43 |
| 2:A:404:ALA:HB3 | 2:G:114:PRO:HD2 | 2.00 | 0.43 |
| 2:C:277:HIS:O | 2:C:285:VAL:HG22 | 2.18 | 0.43 |
| 2:F:230:LEU:O | 2:F:234:LEU:HD23 | 2.18 | 0.43 |
| 2:G:224:ARG:HH21 | 2:G:228:ALA:N | 2.17 | 0.43 |
| 2:G:450:ARG:HG2 | 2:G:1376:HIS:ND1 | 2.33 | 0.43 |
| 2:G:712:GLN:HA | 2:G:715:ARG:HD3 | 2.01 | 0.43 |
| 2:G:978:PRO:HG3 | 2:G:985:CYS:SG | 2.58 | 0.43 |
| 1:2:3133:HIS:O | 1:2:3136:MET:HB3 | 2.19 | 0.43 |
| 2:A:599:PRO:HG2 | 2:A:602:LEU:HD12 | 2.00 | 0.43 |
| 2:C:642:ILE:HD12 | 2:C:897:TYR:HB3 | 2.00 | 0.43 |
| 2:C:1078:ALA:HB2 | 2:C:1138:LEU:HD23 | 2.00 | 0.43 |
| 2:E:114:PRO:HG2 | 2:F:403:GLN:O | 2.18 | 0.43 |
| 2:E:908:ASP:N | 2:E:908:ASP:OD1 | 2.49 | 0.43 |
| 2:F:421:MET:HE3 | 2:F:1353:PRO:O | 2.19 | 0.43 |
| 2:F:1369:GLU:O | 2:F:1370:THR:OG1 | 2.31 | 0.43 |
| 2:F:1375:VAL:HG23 | 2:F:1379:GLN:O | 2.18 | 0.43 |
| 2:G:977:VAL:HG13 | 2:G:977:VAL:O | 2.19 | 0.43 |
| 7:Z:192:ARG:HB3 | 7:Z:193:ALA:H | 1.68 | 0.43 |
| 2:A:85:LEU:HD11 | 2:A:397:LEU:HD13 | 2.00 | 0.43 |
| 2:A:104:ASP:N | 2:C:44:PHE:HB2 | 2.34 | 0.43 |
| 2:A:179:ARG:O | 2:A:183:THR:HG23 | 2.18 | 0.43 |
| 2:A:977:VAL:O | 2:A:977:VAL:HG13 | 2.19 | 0.43 |
| 2:A:985:CYS:HB2 | 2:A:988:HIS:HB2 | 2.01 | 0.43 |
| 2:C:222:LEU:HB3 | 2:C:226:ALA:HB3 | 2.01 | 0.43 |
| 2:E:110:GLU:OE1 | 2:E:110:GLU:N | 2.52 | 0.43 |
| 2:E:399:ARG:HA | 2:E:399:ARG:HE | 1.84 | 0.43 |
| 2:E:461:ASN:OD1 | 2:E:462:LYS:N | 2.49 | 0.43 |
| 2:E:683:ASN:HB3 | 2:E:686:MET:CE | 2.48 | 0.43 |
| 2:G:81:ARG:HB2 | 2:G:84:GLU:HG3 | 2.00 | 0.43 |
| 5:R:103:SER:HB3 | 5:R:140:THR:O | 2.19 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:R:216:LEU:HD22 | 6:V:222:ILE:HD13 | 2.01 | 0.43 |
| 6:V:160:ARG:NH1 | 6:V:190:LEU:O | 2.51 | 0.43 |
| 7:Z:132:ARG:HD2 | 7:Z:132:ARG:HA | 1.80 | 0.43 |
| 2:A:104:ASP:HB3 | 2:C:44:PHE:HD2 | 1.83 | 0.43 |
| 2:A:538:VAL:O | 2:A:540:GLU:N | 2.50 | 0.43 |
| 2:E:427:GLN:OE1 | 2:E:427:GLN:N | 2.52 | 0.43 |
| 2:E:531:MET:HG2 | 2:E:1002:LEU:HD21 | 2.00 | 0.43 |
| 2:E:651:HIS:CE1 | 2:E:656:ASN:HD21 | 2.36 | 0.43 |
| 2:F:105:GLY:HA2 | 2:G:42:CYS:O | 2.19 | 0.43 |
| 2:G:450:ARG:HG3 | 2:G:1377:LEU:HB3 | 2.01 | 0.43 |
| 7:Z:264:GLU:OE2 | 7:Z:287:THR:HA | 2.19 | 0.43 |
| 2:A:443:THR:HG22 | 2:G:433:ARG:O | 2.19 | 0.43 |
| 2:A:1053:ILE:HD13 | 2:A:1166:LEU:HD21 | 2.00 | 0.43 |
| 2:A:1375:VAL:HG23 | 2:A:1379:GLN:O | 2.19 | 0.43 |
| 2:C:637:ARG:HH22 | 2:C:964:TYR:H | 1.67 | 0.43 |
| 2:E:926:ALA:HB1 | 2:E:1013:LEU:HD11 | 2.00 | 0.43 |
| 2:F:450:ARG:HH22 | 2:F:1379:GLN:H | 1.67 | 0.43 |
| 2:F:1071:VAL:HA | 2:F:1205:GLU:O | 2.18 | 0.43 |
| 2:F:1358:ASP:HB2 | 2:F:1361:MET:CE | 2.49 | 0.43 |
| 2:G:846:CYS:HB2 | 2:G:985:CYS:HB3 | 1.54 | 0.43 |
| 2:A:427:GLN:OE1 | 2:A:1375:VAL:HG21 | 2.19 | 0.42 |
| 2:A:450:ARG:NH2 | 2:A:1377:LEU:H | 2.17 | 0.42 |
| 2:C:116:ILE:HD12 | 2:C:116:ILE:HA | 1.88 | 0.42 |
| 2:C:399:ARG:HE | 2:C:399:ARG:HA | 1.84 | 0.42 |
| 2:C:850:VAL:H | 2:C:924:THR:HG21 | 1.84 | 0.42 |
| 2:C:1161:ASN:OD1 | 2:C:1162:VAL:N | 2.51 | 0.42 |
| 2:E:1121:LEU:HD23 | 2:E:1121:LEU:H | 1.84 | 0.42 |
| 2:F:775:VAL:HG13 | 2:F:927:ILE:HG12 | 1.99 | 0.42 |
| 2:G:414:ASN:OD1 | 2:G:415:ILE:N | 2.43 | 0.42 |
| 5:R:145:LEU:HA | 5:R:148:GLU:OE2 | 2.19 | 0.42 |
| 2:A:458:PHE:HB3 | 2:A:1362:LEU:HD22 | 2.01 | 0.42 |
| 2:C:978:PRO:HG3 | 2:C:985:CYS:SG | 2.59 | 0.42 |
| 2:E:230:LEU:O | 2:E:234:LEU:HD23 | 2.19 | 0.42 |
| 2:E:385:VAL:HG21 | 2:E:394:LEU:HD13 | 2.01 | 0.42 |
| 2:E:686:MET:O | 2:E:690:ILE:N | 2.44 | 0.42 |
| 2:E:1081:GLN:OE1 | 2:E:1131:THR:HG22 | 2.19 | 0.42 |
| 2:F:493:LEU:HD23 | 2:F:587:VAL:HG21 | 2.00 | 0.42 |
| 2:F:1141:MET:O | 2:F:1141:MET:HG3 | 2.18 | 0.42 |
| 6:V:97:LEU:HB2 | 6:V:312:VAL:O | 2.19 | 0.42 |
| 2:A:263:VAL:HG23 | 2:A:1084:TYR:CE2 | 2.54 | 0.42 |
| 2:A:457:ILE:HD11 | 2:A:1355:CYS:SG | 2.60 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:A:474:ALA:O | 2:A:478:ILE:HG22 | 2.19 | 0.42 |
| 2:A:982:LEU:HD23 | 2:A:1026:ALA:HA | 2.01 | 0.42 |
| 2:C:593:ILE:HD12 | 2:C:593:ILE:H | 1.85 | 0.42 |
| 2:E:231:LEU:HB3 | 2:E:235:LYS:HZ1 | 1.85 | 0.42 |
| 2:E:440:ASP:HB2 | 2:E:1376:HIS:CD2 | 2.54 | 0.42 |
| 2:E:694:LEU:HB3 | 2:E:699:LEU:HD13 | 2.00 | 0.42 |
| 2:F:725:THR:HA | 2:F:740:ASN:HD22 | 1.83 | 0.42 |
| 2:G:287:GLY:HA3 | 2:G:1084:TYR:CE1 | 2.55 | 0.42 |
| 2:G:773:ILE:HG13 | 2:G:929:VAL:HG12 | 2.00 | 0.42 |
| 2:A:883:PRO:HB2 | 2:A:895:ASN:HD21 | 1.85 | 0.42 |
| 2:E:985:CYS:HB2 | 2:E:988:HIS:HB2 | 1.99 | 0.42 |
| 2:F:141:LEU:HD11 | 2:F:1116:ARG:HH21 | 1.85 | 0.42 |
| 2:F:141:LEU:HD11 | 2:F:1116:ARG:NH2 | 2.35 | 0.42 |
| 2:F:1361:MET:N | 2:F:1361:MET:SD | 2.93 | 0.42 |
| 7:Z:134:ASP:OD1 | 7:Z:135:ILE:N | 2.53 | 0.42 |
| 2:A:894:LEU:HB3 | 2:A:898:PHE:CZ | 2.54 | 0.42 |
| 2:A:1357:SER:HG | 2:A:1380:TYR:H | 1.62 | 0.42 |
| 2:C:474:ALA:HB3 | 2:C:1059:LEU:HD13 | 2.01 | 0.42 |
| 2:E:190:ARG:NH2 | 2:E:401:VAL:HA | 2.35 | 0.42 |
| 2:F:462:LYS:HG3 | 2:F:463:ASP:OD1 | 2.19 | 0.42 |
| 2:F:1159:HIS:HB2 | 2:F:1162:VAL:HG22 | 2.00 | 0.42 |
| 2:G:194:ASP:O | 2:G:197:LEU:HG | 2.20 | 0.42 |
| 5:R:82:LYS:HA | 5:R:82:LYS:HE3 | 2.01 | 0.42 |
| 2:A:89:VAL:HG23 | 2:A:277:HIS:CG | 2.54 | 0.42 |
| 2:C:802:ILE:HG21 | 2:C:920:MET:O | 2.20 | 0.42 |
| 2:E:452:PHE:O | 2:E:1379:GLN:NE2 | 2.46 | 0.42 |
| 2:E:977:VAL:HG13 | 2:E:977:VAL:O | 2.18 | 0.42 |
| 2:F:224:ARG:HG3 | 2:G:1195:GLY:HA2 | 2.02 | 0.42 |
| 2:F:625:ALA:O | 2:F:628:LYS:HG2 | 2.19 | 0.42 |
| 2:F:651:HIS:CE1 | 2:F:656:ASN:HD21 | 2.37 | 0.42 |
| 2:F:1379:GLN:OE1 | 2:F:1379:GLN:N | 2.53 | 0.42 |
| 2:G:32:THR:HB | 2:G:35:VAL:HG23 | 2.02 | 0.42 |
| 2:G:288:VAL:HA | 2:G:393:PHE:HB2 | 2.01 | 0.42 |
| 6:V:112:TYR:O | 6:V:143:GLN:N | 2.51 | 0.42 |
| 6:V:223:THR:HA | 6:V:226:LEU:HG | 2.01 | 0.42 |
| 7:Z:212:LYS:HA | 7:Z:212:LYS:HD2 | 1.65 | 0.42 |
| 2:A:247:ARG:HH11 | 2:A:1389:ARG:HD3 | 1.85 | 0.42 |
| 2:A:420:ILE:HB | 2:A:1350:ALA:HB3 | 2.02 | 0.42 |
| 2:A:462:LYS:HG3 | 2:A:463:ASP:OD1 | 2.19 | 0.42 |
| 2:C:427:GLN:HE22 | 2:C:1375:VAL:HG21 | 1.84 | 0.42 |
| 2:C:440:ASP:HB2 | 2:C:1376:HIS:CD2 | 2.54 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:E:139:ARG:HB2 | 2:E:1116:ARG:HG3 | 2.02 | 0.42 |
| 2:E:288:VAL:HA | 2:E:393:PHE:HB2 | 2.02 | 0.42 |
| 2:E:554:ARG:HD2 | 2:E:557:PHE:HD2 | 1.84 | 0.42 |
| 2:F:172:ARG:HD2 | 2:F:172:ARG:HA | 1.86 | 0.42 |
| 2:F:179:ARG:HD2 | 2:F:180:ASN:N | 2.35 | 0.42 |
| 2:F:396:ALA:O | 2:F:398:GLU:N | 2.53 | 0.42 |
| 2:G:605:ILE:HG21 | 2:G:1032:SER:HB2 | 2.02 | 0.42 |
| 2:G:605:ILE:HG23 | 2:G:1028:HIS:ND1 | 2.34 | 0.42 |
| 2:G:615:LEU:HD22 | 2:G:724:PHE:HE2 | 1.85 | 0.42 |
| 2:G:985:CYS:HB2 | 2:G:988:HIS:CD2 | 2.54 | 0.42 |
| 2:G:1369:GLU:O | 2:G:1370:THR:OG1 | 2.31 | 0.42 |
| 2:A:116:ILE:HD11 | 2:C:191:GLY:HA2 | 2.02 | 0.42 |
| 2:A:196:LEU:O | 2:A:199:VAL:HG12 | 2.19 | 0.42 |
| 2:A:626:THR:OG1 | 2:A:706:ILE:HG23 | 2.20 | 0.42 |
| 2:C:982:LEU:HD23 | 2:C:1026:ALA:HA | 2.02 | 0.42 |
| 2:C:1121:LEU:HD23 | 2:C:1121:LEU:H | 1.85 | 0.42 |
| 2:E:923:ARG:NH1 | 2:E:925:THR:HB | 2.35 | 0.42 |
| 2:E:982:LEU:HD23 | 2:E:1026:ALA:HA | 2.02 | 0.42 |
| 2:F:99:LEU:HD12 | 2:F:102:VAL:HG21 | 2.01 | 0.42 |
| 2:F:608:ARG:O | 2:F:611:ARG:HG2 | 2.19 | 0.42 |
| 2:F:846:CYS:HB2 | 2:F:985:CYS:HB3 | 1.47 | 0.42 |
| 7:Z:131:PHE:CZ | 7:Z:142:VAL:HG22 | 2.54 | 0.42 |
| 7:Z:349:CYS:O | 7:Z:350:PHE:HB3 | 2.20 | 0.42 |
| 2:A:118:ARG:HA | 2:A:118:ARG:HD2 | 1.93 | 0.42 |
| 2:A:277:HIS:HD2 | 2:A:313:VAL:HG22 | 1.84 | 0.42 |
| 2:A:656:ASN:OD1 | 2:A:919:ASP:HB3 | 2.20 | 0.42 |
| 2:A:774:ARG:NH2 | 2:A:777:GLY:O | 2.53 | 0.42 |
| 2:C:926:ALA:HB1 | 2:C:1013:LEU:HD11 | 2.01 | 0.42 |
| 2:C:1101:HIS:ND1 | 2:C:1101:HIS:O | 2.52 | 0.42 |
| 2:E:414:ASN:CG | 2:E:415:ILE:N | 2.72 | 0.42 |
| 2:E:769:ARG:NH1 | 2:E:934:ASP:OD2 | 2.53 | 0.42 |
| 2:E:1053:ILE:HD13 | 2:E:1166:LEU:HD21 | 2.01 | 0.42 |
| 2:F:560:ASN:HB3 | 2:F:563:PHE:HB2 | 2.00 | 0.42 |
| 2:F:1071:VAL:HB | 2:F:1204:CYS:HB3 | 2.01 | 0.42 |
| 2:G:426:PHE:O | 2:G:1212:SER:HA | 2.20 | 0.42 |
| 2:G:451:GLN:HA | 2:G:1377:LEU:CD2 | 2.49 | 0.42 |
| 2:G:631:LYS:HD3 | 2:G:1036:PHE:CE1 | 2.55 | 0.42 |
| 5:R:36:THR:H | 5:R:38:ARG:HH21 | 1.67 | 0.42 |
| 5:R:148:GLU:HB2 | 6:V:270:TYR:OH | 2.19 | 0.42 |
| 6:V:282:ARG:NH1 | 6:V:282:ARG:HB2 | 2.34 | 0.42 |
| 2:A:179:ARG:HD2 | 2:A:180:ASN:N | 2.35 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:A:559:LEU:HB2 | 2:A:565:PHE:CZ | 2.55 | 0.42 |
| 2:C:605:ILE:HG23 | 2:C:1028:HIS:ND1 | 2.35 | 0.42 |
| 2:E:846:CYS:HB2 | 2:E:985:CYS:HB3 | 1.42 | 0.42 |
| 2:F:81:ARG:HB2 | 2:F:84:GLU:HG3 | 2.02 | 0.42 |
| 2:F:1081:GLN:OE1 | 2:F:1131:THR:HG22 | 2.20 | 0.42 |
| 2:G:842:ARG:NH1 | 2:G:1033:LYS:HA | 2.35 | 0.42 |
| 6:V:219:LEU:HA | 6:V:222:ILE:HG22 | 2.02 | 0.42 |
| 2:A:224:ARG:HH21 | 2:A:228:ALA:N | 2.18 | 0.41 |
| 2:C:304:LEU:HB3 | 2:C:385:VAL:HG11 | 2.02 | 0.41 |
| 2:C:402:TYR:CE2 | 2:C:409:TYR:HA | 2.55 | 0.41 |
| 2:C:538:VAL:O | 2:C:540:GLU:N | 2.51 | 0.41 |
| 2:C:721:ILE:HG12 | 2:C:1044:LEU:HD11 | 2.02 | 0.41 |
| 2:C:923:ARG:NH1 | 2:C:925:THR:HB | 2.35 | 0.41 |
| 2:C:979:VAL:HG11 | 2:C:1013:LEU:HD13 | 2.02 | 0.41 |
| 2:E:838:PRO:HB2 | 2:E:1029:VAL:HG21 | 2.02 | 0.41 |
| 2:E:1101:HIS:ND1 | 2:E:1101:HIS:O | 2.53 | 0.41 |
| 2:F:436:ARG:NH1 | 2:G:1369:GLU:OE2 | 2.53 | 0.41 |
| 2:F:735:THR:HG23 | 2:F:738:ALA:H | 1.85 | 0.41 |
| 6:V:114:CYS:SG | 6:V:143:GLN:NE2 | 2.93 | 0.41 |
| 2:A:280:THR:HG22 | 2:A:379:ARG:NH1 | 2.34 | 0.41 |
| 2:A:384:LEU:HD12 | 2:A:391:LEU:HD11 | 2.02 | 0.41 |
| 2:C:399:ARG:HA | 2:C:399:ARG:NE | 2.35 | 0.41 |
| 2:E:106:VAL:HG23 | 2:F:42:CYS:HB2 | 2.02 | 0.41 |
| 2:E:538:VAL:O | 2:E:540:GLU:N | 2.49 | 0.41 |
| 2:F:1030:THR:HG23 | 2:F:1031:HIS:CD2 | 2.55 | 0.41 |
| 2:G:146:ALA:O | 2:G:147:ILE:HD13 | 2.19 | 0.41 |
| 2:G:255:ILE:H | 2:G:255:ILE:HD12 | 1.85 | 0.41 |
| 6:V:33:THR:O | 6:V:70:ARG:NH2 | 2.52 | 0.41 |
| 7:Z:175:LEU:HD11 | 7:Z:238:PHE:CD1 | 2.55 | 0.41 |
| 2:A:535:PRO:HB2 | 2:A:538:VAL:HG23 | 2.03 | 0.41 |
| 2:A:856:TYR:OH | 2:A:920:MET:HG2 | 2.20 | 0.41 |
| 2:C:450:ARG:NH2 | 2:C:1376:HIS:HB3 | 2.34 | 0.41 |
| 2:C:762:ARG:NH2 | 2:C:929:VAL:HB | 2.35 | 0.41 |
| 2:C:847:THR:HA | 2:C:957:ILE:HG12 | 2.02 | 0.41 |
| 2:E:216:PHE:HB3 | 2:E:230:LEU:HD13 | 2.03 | 0.41 |
| 2:E:1357:SER:OG | 2:E:1379:GLN:HB3 | 2.20 | 0.41 |
| 2:F:985:CYS:HB2 | 2:F:988:HIS:HB2 | 2.01 | 0.41 |
| 2:F:1000:ARG:O | 2:F:1004:LYS:HG2 | 2.20 | 0.41 |
| 2:G:261:ASP:O | 2:G:265:CYS:HB2 | 2.19 | 0.41 |
| 2:A:792:HIS:CD2 | 2:A:793:ASN:H | 2.39 | 0.41 |
| 2:A:1053:ILE:HG22 | 2:A:1057:HIS:CE1 | 2.55 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:A:1091:SER:HB3 | 2:A:1121:LEU:HD22 | 2.02 | 0.41 |
| 2:F:245:MET:SD | 2:F:255:ILE:HD12 | 2.60 | 0.41 |
| 2:F:246:THR:HG21 | 2:F:1134:LEU:HB3 | 2.02 | 0.41 |
| 2:F:536:HIS:ND1 | 2:F:554:ARG:HD3 | 2.36 | 0.41 |
| 2:F:1352:PRO:HG2 | 2:F:1385:ALA:HB3 | 2.02 | 0.41 |
| 2:C:863:ILE:HG13 | 2:C:890:VAL:HG12 | 2.03 | 0.41 |
| 2:C:1000:ARG:O | 2:C:1004:LYS:HG2 | 2.20 | 0.41 |
| 2:C:1091:SER:HB3 | 2:C:1121:LEU:HD22 | 2.02 | 0.41 |
| 2:E:176:GLN:OE1 | 2:E:179:ARG:NE | 2.52 | 0.41 |
| 2:E:504:PHE:HZ | 2:E:1009:ILE:H | 1.67 | 0.41 |
| 2:E:774:ARG:NH2 | 2:E:777:GLY:O | 2.54 | 0.41 |
| 2:E:1080:GLU:HB2 | 2:E:1135:ARG:NH2 | 2.32 | 0.41 |
| 2:F:30:ILE:O | 2:F:32:THR:N | 2.52 | 0.41 |
| 2:F:313:VAL:O | 2:F:378:ALA:N | 2.53 | 0.41 |
| 2:F:520:MET:HE1 | 2:F:975:TYR:HB2 | 2.02 | 0.41 |
| 2:G:172:ARG:HD2 | 2:G:172:ARG:HA | 1.80 | 0.41 |
| 2:G:786:PHE:CD1 | 2:G:811:THR:HG21 | 2.56 | 0.41 |
| 7:Z:141:THR:OG1 | 7:Z:198:LEU:HD13 | 2.21 | 0.41 |
| 7:Z:219:ARG:O | 7:Z:223:VAL:HG22 | 2.20 | 0.41 |
| 2:C:1361:MET:HB3 | 2:C:1381:LEU:HB2 | 2.01 | 0.41 |
| 2:E:203:LYS:NZ | 2:E:1120:ASP:OD2 | 2.53 | 0.41 |
| 2:E:996:THR:HG22 | 2:E:997:ASN:N | 2.35 | 0.41 |
| 2:F:1360:ALA:O | 2:F:1364:THR:HG23 | 2.21 | 0.41 |
| 2:G:292:THR:C | 2:G:396:ALA:HB1 | 2.41 | 0.41 |
| 2:G:414:ASN:HD21 | 2:G:1076:ARG:HG2 | 1.85 | 0.41 |
| 2:G:688:MET:HG2 | 2:G:825:TRP:CH2 | 2.56 | 0.41 |
| 2:A:270:VAL:HG22 | 2:A:272:VAL:H | 1.85 | 0.41 |
| 2:A:277:HIS:O | 2:A:285:VAL:HG22 | 2.21 | 0.41 |
| 2:A:615:LEU:HD22 | 2:A:724:PHE:HE2 | 1.84 | 0.41 |
| 2:A:1022:ARG:HG2 | 2:A:1023:GLN:H | 1.86 | 0.41 |
| 2:C:882:HIS:CE1 | 2:C:884:LEU:HD12 | 2.50 | 0.41 |
| 2:E:25:ILE:HG13 | 2:E:25:ILE:O | 2.20 | 0.41 |
| 2:E:397:LEU:HG | 2:E:401:VAL:HG12 | 2.02 | 0.41 |
| 2:E:466:LEU:HD12 | 2:E:467:THR:N | 2.36 | 0.41 |
| 2:F:139:ARG:HB2 | 2:F:1116:ARG:HG3 | 2.03 | 0.41 |
| 2:F:263:VAL:HG22 | 2:F:390:LYS:HD3 | 2.01 | 0.41 |
| 2:F:277:HIS:CD2 | 2:F:314:PRO:HD2 | 2.55 | 0.41 |
| 2:F:291:THR:O | 2:F:396:ALA:HA | 2.20 | 0.41 |
| 2:G:923:ARG:NH1 | 2:G:925:THR:HB | 2.36 | 0.41 |
| 2:G:1095:GLY:O | 2:G:1114:GLN:NE2 | 2.54 | 0.41 |
| 2:A:30:ILE:O | 2:A:32:THR:N | 2.54 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:A:450:ARG:HG2 | 2:A:1376:HIS:ND1 | 2.35 | 0.41 |
| 2:A:694:LEU:HD13 | 2:A:699:LEU:HD11 | 2.02 | 0.41 |
| 2:A:1027:TYR:HA | 2:A:1030:THR:HG22 | 2.03 | 0.41 |
| 2:C:490:LEU:HB3 | 2:C:494:ARG:NH1 | 2.35 | 0.41 |
| 2:E:714:VAL:HG13 | 2:E:831:ILE:HG21 | 2.02 | 0.41 |
| 2:F:261:ASP:O | 2:F:265:CYS:HB2 | 2.20 | 0.41 |
| 2:F:270:VAL:HG22 | 2:F:272:VAL:H | 1.86 | 0.41 |
| 2:F:410:PRO:O | 2:F:411:LEU:HB2 | 2.21 | 0.41 |
| 2:G:738:ALA:O | 2:G:1049:LYS:NZ | 2.31 | 0.41 |
| 2:G:762:ARG:NH2 | 2:G:929:VAL:HB | 2.35 | 0.41 |
| 2:A:45:PHE:HA | 2:G:103:ARG:NH2 | 2.36 | 0.41 |
| 2:A:110:GLU:N | 2:A:110:GLU:OE2 | 2.54 | 0.41 |
| 2:A:261:ASP:O | 2:A:265:CYS:HB2 | 2.20 | 0.41 |
| 2:A:440:ASP:HB2 | 2:A:1376:HIS:HE2 | 1.85 | 0.41 |
| 2:A:459:PHE:HE1 | 2:A:469:LEU:HD23 | 1.86 | 0.41 |
| 2:A:592:ARG:HD3 | 2:A:597:ASN:HB2 | 2.03 | 0.41 |
| 2:A:737:GLU:O | 2:A:744:THR:OG1 | 2.38 | 0.41 |
| 2:A:744:THR:HA | 2:A:827:ILE:HD12 | 2.01 | 0.41 |
| 2:A:908:ASP:OD1 | 2:A:908:ASP:N | 2.54 | 0.41 |
| 2:A:923:ARG:NH1 | 2:A:925:THR:HB | 2.34 | 0.41 |
| 2:A:961:TYR:HB2 | 2:A:988:HIS:CD2 | 2.56 | 0.41 |
| 2:A:996:THR:O | 2:A:999:ARG:HG3 | 2.20 | 0.41 |
| 2:A:1075:ASP:HB3 | 2:A:1139:THR:HG21 | 2.02 | 0.41 |
| 2:A:1121:LEU:H | 2:A:1121:LEU:HD23 | 1.85 | 0.41 |
| 2:C:32:THR:OG1 | 2:C:182:ARG:HG3 | 2.21 | 0.41 |
| 2:C:462:LYS:HG3 | 2:C:463:ASP:OD1 | 2.21 | 0.41 |
| 2:C:523:PHE:CZ | 2:C:1010:PRO:HA | 2.56 | 0.41 |
| 2:C:625:ALA:O | 2:C:628:LYS:HG2 | 2.21 | 0.41 |
| 2:E:141:LEU:HD11 | 2:E:1116:ARG:NH2 | 2.36 | 0.41 |
| 2:E:194:ASP:O | 2:E:197:LEU:HG | 2.21 | 0.41 |
| 2:E:310:ALA:HA | 2:E:382:ALA:H | 1.86 | 0.41 |
| 2:E:434:TYR:OH | 2:F:1363:ARG:HD3 | 2.21 | 0.41 |
| 2:E:643:PHE:HD1 | 2:E:680:PHE:CZ | 2.38 | 0.41 |
| 2:E:680:PHE:HB3 | 2:E:686:MET:SD | 2.61 | 0.41 |
| 2:E:762:ARG:NH2 | 2:E:929:VAL:HB | 2.36 | 0.41 |
| 2:E:948:TYR:HB2 | 2:E:1018:HIS:HB3 | 2.02 | 0.41 |
| 2:F:399:ARG:NE | 2:F:399:ARG:HA | 2.36 | 0.41 |
| 2:F:411:LEU:O | 2:F:1081:GLN:NE2 | 2.54 | 0.41 |
| 2:G:30:ILE:O | 2:G:32:THR:N | 2.52 | 0.41 |
| 2:G:120:GLY:HA2 | 2:G:121:PRO:HD3 | 1.88 | 0.41 |
| 2:G:135:ARG:NH1 | 2:G:136:ILE:HG22 | 2.36 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:G:671:TYR:CD2 | 2:G:679:ALA:HB2 | 2.55 | 0.41 |
| 2:G:982:LEU:HD23 | 2:G:1026:ALA:HA | 2.03 | 0.41 |
| 2:G:1121:LEU:H | 2:G:1121:LEU:HD23 | 1.86 | 0.41 |
| 7:Z:168:LEU:HD12 | 7:Z:245:MET:HA | 2.03 | 0.41 |
| 7:Z:253:HIS:C | 7:Z:255:PHE:H | 2.23 | 0.41 |
| 7:Z:322:PHE:O | 7:Z:340:LEU:HD12 | 2.21 | 0.41 |
| 7:Z:325:PHE:HB3 | 7:Z:327:TYR:CE1 | 2.55 | 0.41 |
| 2:A:277:HIS:CD2 | 2:A:314:PRO:HD2 | 2.56 | 0.41 |
| 2:A:864:VAL:HA | 2:A:883:PRO:HB3 | 2.02 | 0.41 |
| 2:C:425:VAL:HG11 | 2:C:1218:PHE:HE2 | 1.86 | 0.41 |
| 2:E:109:PHE:HB2 | 2:E:132:MET:HG2 | 2.03 | 0.41 |
| 2:F:296:LYS:HG2 | 2:F:300:LEU:HD12 | 2.03 | 0.41 |
| 2:F:1121:LEU:H | 2:F:1121:LEU:HD23 | 1.86 | 0.41 |
| 2:F:1160:ASP:OD1 | 2:F:1160:ASP:N | 2.53 | 0.41 |
| 2:F:1359:ALA:O | 2:F:1363:ARG:HG2 | 2.20 | 0.41 |
| 2:G:462:LYS:HG3 | 2:G:463:ASP:OD1 | 2.21 | 0.41 |
| 2:G:769:ARG:NH1 | 2:G:934:ASP:OD2 | 2.54 | 0.41 |
| 5:R:101:ASN:HB3 | 5:R:107:LEU:HD11 | 2.03 | 0.41 |
| 6:V:116:LEU:HD21 | 6:V:141:ILE:HG13 | 2.03 | 0.41 |
| 2:A:493:LEU:HD23 | 2:A:587:VAL:HG21 | 2.03 | 0.40 |
| 2:A:1091:SER:OG | 2:A:1119:VAL:HB | 2.21 | 0.40 |
| 2:C:961:TYR:CZ | 2:C:963:ALA:HB2 | 2.56 | 0.40 |
| 2:E:433:ARG:O | 2:F:443:THR:HG22 | 2.21 | 0.40 |
| 2:E:642:ILE:HD11 | 2:E:897:TYR:HB3 | 2.02 | 0.40 |
| 2:E:1091:SER:OG | 2:E:1119:VAL:HB | 2.21 | 0.40 |
| 2:F:290:VAL:HA | 2:F:395:GLU:O | 2.21 | 0.40 |
| 2:F:762:ARG:NH2 | 2:F:929:VAL:HB | 2.36 | 0.40 |
| 2:F:923:ARG:NH1 | 2:F:925:THR:HB | 2.35 | 0.40 |
| 2:G:752:ILE:HD12 | 2:G:957:ILE:HG13 | 2.03 | 0.40 |
| 2:G:996:THR:O | 2:G:999:ARG:HG3 | 2.22 | 0.40 |
| 2:G:1077:PHE:O | 2:G:1079:THR:HG23 | 2.21 | 0.40 |
| 6:V:268:PRO:C | 6:V:270:TYR:H | 2.24 | 0.40 |
| 2:A:42:CYS:O | 2:G:105:GLY:HA2 | 2.22 | 0.40 |
| 2:C:414:ASN:CG | 2:C:415:ILE:H | 2.23 | 0.40 |
| 2:E:796:ARG:HE | 2:E:796:ARG:HB2 | 1.77 | 0.40 |
| 2:F:196:LEU:O | 2:F:199:VAL:HG12 | 2.22 | 0.40 |
| 2:F:440:ASP:HB2 | 2:F:1376:HIS:HE2 | 1.85 | 0.40 |
| 2:G:96:PHE:HD2 | 2:G:99:LEU:HB2 | 1.85 | 0.40 |
| 2:G:996:THR:HG22 | 2:G:997:ASN:N | 2.37 | 0.40 |
| 5:R:6:PHE:CE2 | 5:R:8:ILE:HD11 | 2.57 | 0.40 |
| 5:R:111:ASP:O | 5:R:295:VAL:HG22 | 2.20 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 7:Z:263:LEU:HG | 7:Z:264:GLU:H | 1.86 | 0.40 |
| 2:A:396:ALA:O | 2:A:398:GLU:N | 2.54 | 0.40 |
| 2:A:781:TYR:HB2 | 2:A:801:LEU:HD13 | 2.03 | 0.40 |
| 2:C:996:THR:HG22 | 2:C:997:ASN:N | 2.36 | 0.40 |
| 2:C:1356:SER:HB2 | 2:C:1381:LEU:CD1 | 2.51 | 0.40 |
| 2:E:291:THR:OG1 | 2:E:1082:LEU:HD13 | 2.21 | 0.40 |
| 2:E:384:LEU:HD23 | 2:E:391:LEU:HD11 | 2.03 | 0.40 |
| 2:E:462:LYS:HG3 | 2:E:463:ASP:OD1 | 2.20 | 0.40 |
| 2:F:982:LEU:HD23 | 2:F:1026:ALA:HA | 2.03 | 0.40 |
| 2:F:996:THR:O | 2:F:999:ARG:HG3 | 2.21 | 0.40 |
| 2:F:1357:SER:OG | 2:F:1379:GLN:HB3 | 2.20 | 0.40 |
| 5:R:47:ALA:HA | 5:R:135:ILE:HD13 | 2.03 | 0.40 |
| 6:V:117:PRO:O | 6:V:119:VAL:HG23 | 2.22 | 0.40 |
| 7:Z:263:LEU:N | 7:Z:275:THR:O | 2.54 | 0.40 |
| 2:A:746:ASP:HA | 2:A:823:ARG:HH21 | 1.85 | 0.40 |
| 2:A:1195:GLY:HA2 | 2:G:224:ARG:HG3 | 2.04 | 0.40 |
| 2:C:876:THR:OG1 | 2:C:878:GLU:OE1 | 2.40 | 0.40 |
| 2:C:1219:ARG:NH1 | 2:C:1374:GLU:OE2 | 2.54 | 0.40 |
| 2:E:846:CYS:SG | 2:E:978:PRO:HB3 | 2.62 | 0.40 |
| 2:E:1068:ALA:HB2 | 2:E:1211:VAL:HA | 2.03 | 0.40 |
| 2:F:415:ILE:HG22 | 2:F:1077:PHE:H | 1.87 | 0.40 |
| 2:G:141:LEU:HD11 | 2:G:1116:ARG:NH2 | 2.36 | 0.40 |
| 5:R:33:THR:HG1 | 5:R:51:TYR:HH | 1.70 | 0.40 |
| 6:V:103:SER:HB2 | 6:V:140:THR:O | 2.21 | 0.40 |
| 7:Z:132:ARG:NH1 | 7:Z:134:ASP:H | 2.18 | 0.40 |
| 2:A:109:PHE:CZ | 2:A:1121:LEU:HB2 | 2.57 | 0.40 |
| 2:A:739:LEU:HD21 | 2:A:1053:ILE:HG21 | 2.03 | 0.40 |
| 2:C:139:ARG:HB2 | 2:C:1116:ARG:HG3 | 2.03 | 0.40 |
| 2:C:247:ARG:HH12 | 2:C:1387:PRO:HA | 1.87 | 0.40 |
| 2:C:291:THR:CG2 | 2:C:292:THR:H | 2.28 | 0.40 |
| 2:E:277:HIS:CD2 | 2:E:314:PRO:HD2 | 2.56 | 0.40 |
| 2:F:471:LEU:HB3 | 2:F:1059:LEU:HD22 | 2.04 | 0.40 |
| 2:F:642:ILE:HA | 2:F:645:MET:HG2 | 2.04 | 0.40 |
| 2:F:856:TYR:CZ | 2:F:920:MET:HG3 | 2.57 | 0.40 |
| 2:G:82:PHE:O | 2:G:85:LEU:HB3 | 2.22 | 0.40 |
| 2:G:211:SER:N | 2:G:212:PRO:HD2 | 2.37 | 0.40 |
| 2:G:754:TRP:HE3 | 2:G:954:HIS:HD1 | 1.70 | 0.40 |
| 5:R:112:TYR:CD2 | 5:R:294:ARG:HD3 | 2.57 | 0.40 |
| 6:V:29:GLY:O | 6:V:99:ILE:HA | 2.22 | 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 PDB entries followed by that with respect to all EM entries.

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

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|----------|----------|---------|----------|------|------|
| 1 | 2 | 45/47 (96%) | 44 (98%) | 1 (2%) | 0 | 100 | 100 |
| 1 | y | 45/47 (96%) | 45 (100%) | 0 | 0 | 100 | 100 |
| 2 | A | 1145/1370 (84%) | 1062 (93%) | 79 (7%) | 4 (0%) | 37 | 71 |
| 2 | C | 1145/1370 (84%) | 1053 (92%) | 88 (8%) | 4 (0%) | 37 | 71 |
| 2 | E | 1145/1370 (84%) | 1062 (93%) | 79 (7%) | 4 (0%) | 37 | 71 |
| 2 | F | 1145/1370 (84%) | 1057 (92%) | 84 (7%) | 4 (0%) | 37 | 71 |
| 2 | G | 1145/1370 (84%) | 1052 (92%) | 89 (8%) | 4 (0%) | 37 | 71 |
| 3 | h | 534/696 (77%) | 518 (97%) | 16 (3%) | 0 | 100 | 100 |
| 4 | q | 92/94 (98%) | 88 (96%) | 4 (4%) | 0 | 100 | 100 |
| 4 | u | 78/94 (83%) | 78 (100%) | 0 | 0 | 100 | 100 |
| 5 | R | 248/256 (97%) | 236 (95%) | 10 (4%) | 2 (1%) | 16 | 53 |
| 6 | V | 257/263 (98%) | 236 (92%) | 20 (8%) | 1 (0%) | 30 | 66 |
| 7 | Z | 280/286 (98%) | 242 (86%) | 35 (12%) | 3 (1%) | 12 | 45 |
| All | All | 7304/8633 (85%) | 6773 (93%) | 505 (7%) | 26 (0%) | 32 | 66 |

All (26) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | C | 414 | ASN |
| 2 | E | 414 | ASN |
| 2 | F | 414 | ASN |
| 2 | G | 414 | ASN |
| 6 | V | 269 | ILE |
| 2 | C | 1135 | ARG |
| 2 | E | 1135 | ARG |
| 2 | G | 1135 | ARG |
| 7 | Z | 265 | TYR |
| 2 | A | 1135 | ARG |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | F | 1135 | ARG |
| 5 | R | 230 | ILE |
| 7 | Z | 262 | LEU |
| 2 | A | 32 | THR |
| 2 | A | 165 | ILE |
| 2 | C | 32 | THR |
| 2 | C | 165 | ILE |
| 2 | E | 165 | ILE |
| 2 | F | 32 | THR |
| 2 | F | 165 | ILE |
| 2 | G | 32 | THR |
| 2 | G | 165 | ILE |
| 5 | R | 38 | ARG |
| 2 | E | 32 | THR |
| 2 | A | 413 | GLY |
| 7 | Z | 267 | ILE |

## 5.3.2　Protein sidechains ⓘ

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

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

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|----------|-----------|----------|-------------|---|
| 1 | 2 | 41/41 (100%) | 40 (98%) | 1 (2%) | 44 | 63 |
| 1 | y | 41/41 (100%) | 41 (100%) | 0 | 100 | 100 |
| 2 | A | 947/1159 (82%) | 940 (99%) | 7 (1%) | 81 | 86 |
| 2 | C | 947/1159 (82%) | 941 (99%) | 6 (1%) | 84 | 88 |
| 2 | E | 947/1159 (82%) | 938 (99%) | 9 (1%) | 73 | 81 |
| 2 | F | 947/1159 (82%) | 941 (99%) | 6 (1%) | 84 | 88 |
| 2 | G | 947/1159 (82%) | 939 (99%) | 8 (1%) | 79 | 84 |
| 3 | h | 429/524 (82%) | 429 (100%) | 0 | 100 | 100 |
| 4 | q | 80/80 (100%) | 80 (100%) | 0 | 100 | 100 |
| 4 | u | 67/80 (84%) | 66 (98%) | 1 (2%) | 60 | 75 |
| 5 | R | 188/218 (86%) | 185 (98%) | 3 (2%) | 58 | 74 |

*Continued on next page...*

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|---|---|---|---|---|---|---|
| 6 | V | 214/224 (96%) | 214 (100%) | 0 | 100 | 100 |
| 7 | Z | 225/238 (94%) | 223 (99%) | 2 (1%) | 75 | 83 |
| All | All | 6020/7241 (83%) | 5977 (99%) | 43 (1%) | 80 | 86 |

All (43) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | 2 | 3115 | ARG |
| 2 | A | 103 | ARG |
| 2 | A | 281 | ARG |
| 2 | A | 522 | ARG |
| 2 | A | 718 | ARG |
| 2 | A | 778 | ARG |
| 2 | A | 923 | ARG |
| 2 | A | 1383 | ARG |
| 2 | C | 281 | ARG |
| 2 | C | 522 | ARG |
| 2 | C | 778 | ARG |
| 2 | C | 923 | ARG |
| 2 | C | 1102 | HIS |
| 2 | C | 1383 | ARG |
| 2 | E | 267 | GLN |
| 2 | E | 281 | ARG |
| 2 | E | 522 | ARG |
| 2 | E | 637 | ARG |
| 2 | E | 718 | ARG |
| 2 | E | 778 | ARG |
| 2 | E | 923 | ARG |
| 2 | E | 1102 | HIS |
| 2 | E | 1383 | ARG |
| 2 | F | 522 | ARG |
| 2 | F | 637 | ARG |
| 2 | F | 718 | ARG |
| 2 | F | 778 | ARG |
| 2 | F | 923 | ARG |
| 2 | F | 1383 | ARG |
| 2 | G | 281 | ARG |
| 2 | G | 400 | ARG |
| 2 | G | 522 | ARG |
| 2 | G | 662 | ARG |
| 2 | G | 718 | ARG |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 2 | G | 778 | ARG |
| 2 | G | 923 | ARG |
| 2 | G | 1383 | ARG |
| 4 | u | 90 | ASN |
| 5 | R | 26 | LYS |
| 5 | R | 127 | ARG |
| 5 | R | 224 | ARG |
| 7 | Z | 309 | LYS |
| 7 | Z | 445 | ARG |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (37) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 2 | A | 267 | GLN |
| 2 | A | 451 | GLN |
| 2 | A | 651 | HIS |
| 2 | A | 712 | GLN |
| 2 | A | 732 | ASN |
| 2 | A | 980 | ASN |
| 2 | A | 1100 | HIS |
| 2 | C | 267 | GLN |
| 2 | C | 277 | HIS |
| 2 | C | 427 | GLN |
| 2 | C | 451 | GLN |
| 2 | C | 651 | HIS |
| 2 | C | 682 | ASN |
| 2 | C | 988 | HIS |
| 2 | C | 1037 | ASN |
| 2 | C | 1100 | HIS |
| 2 | E | 277 | HIS |
| 2 | E | 451 | GLN |
| 2 | E | 651 | HIS |
| 2 | E | 980 | ASN |
| 2 | E | 1100 | HIS |
| 2 | F | 130 | ASN |
| 2 | F | 451 | GLN |
| 2 | F | 651 | HIS |
| 2 | F | 980 | ASN |
| 2 | F | 988 | HIS |
| 2 | F | 1100 | HIS |
| 2 | F | 1114 | GLN |
| 2 | G | 267 | GLN |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | G | 277 | HIS |
| 2 | G | 451 | GLN |
| 2 | G | 519 | GLN |
| 2 | G | 651 | HIS |
| 2 | G | 988 | HIS |
| 5 | R | 39 | HIS |
| 6 | V | 100 | GLN |
| 7 | Z | 348 | GLN |

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry ⓘ

There are no ligands in this entry.

## 5.7 Other polymers ⓘ

There are no such residues in this entry.

## 5.8 Polymer linkage issues ⓘ

The following chains have linkage breaks:

| Mol | Chain | Number of breaks |
|-----|-------|------------------|
| 5 | R | 3 |
| 6 | V | 2 |
| 7 | Z | 2 |
| 2 | G | 1 |

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| Mol | Chain | Number of breaks |
|:---:|:---:|:---:|
| 2 | A | 1 |
| 2 | F | 1 |
| 2 | C | 1 |
| 2 | E | 1 |

All chain breaks are listed below:

| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|:---:|:---:|:---:|:---:|:---:|:---:|:---:|
| 1 | V | 226:LEU | C | 266:ARG | N | 27.47 |
| 1 | R | 236:LEU | C | 244:VAL | N | 20.00 |
| 1 | R | 260:MET | C | 267:LEU | N | 17.99 |
| 1 | V | 163:ALA | C | 175:ASP | N | 15.40 |
| 1 | Z | 362:ILE | C | 428:CYS | N | 11.87 |
| 1 | R | 161:LEU | C | 206:ASN | N | 10.96 |
| 1 | Z | 179:SER | C | 192:ARG | N | 9.26 |
| 1 | G | 103:ARG | C | 104:ASP | N | 3.69 |
| 1 | A | 103:ARG | C | 104:ASP | N | 3.67 |
| 1 | F | 103:ARG | C | 104:ASP | N | 3.48 |
| 1 | C | 103:ARG | C | 104:ASP | N | 3.46 |
| 1 | E | 103:ARG | C | 104:ASP | N | 3.42 |

# 6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-38190. These allow visual inspection of the internal detail of the map and identification of artifacts.

Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

## 6.1 Orthogonal projections ⓘ
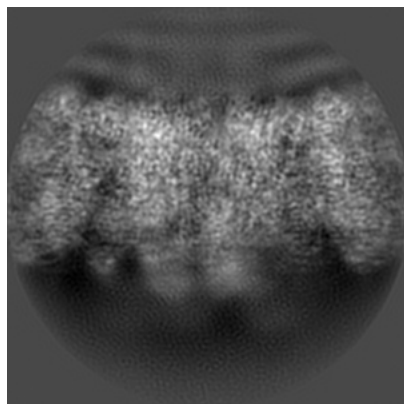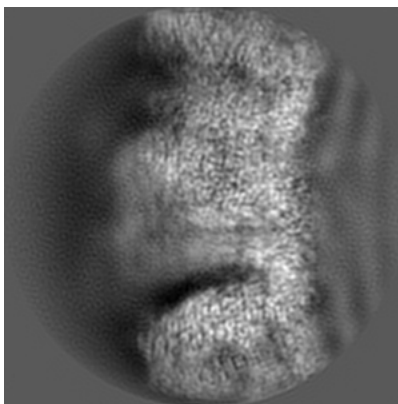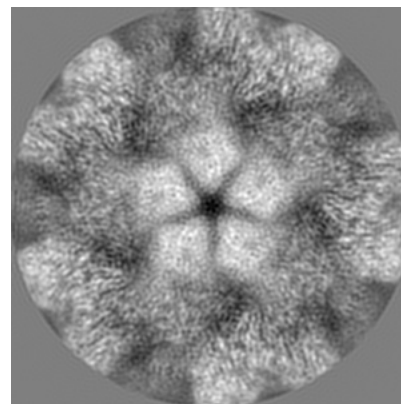
### 6.1.1 Primary map



X   Y   Z

### 6.1.2 Raw map



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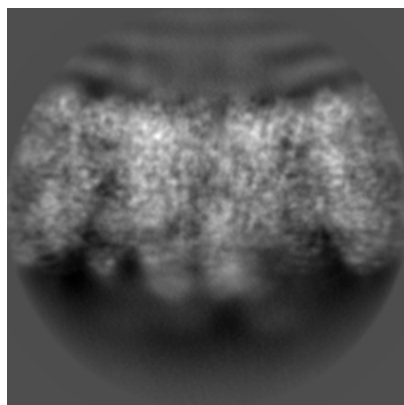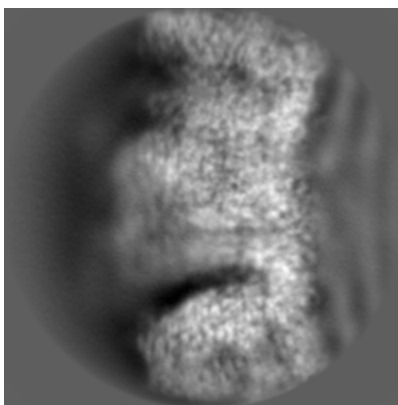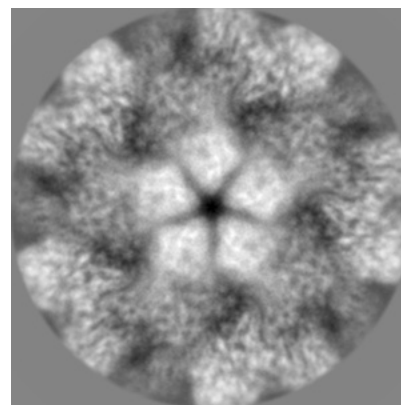
The images above show the map projected in three orthogonal directions.

## 6.2　Central slices ⓘ
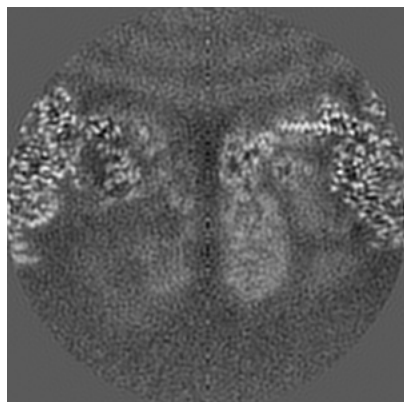
### 6.2.1　Primary map
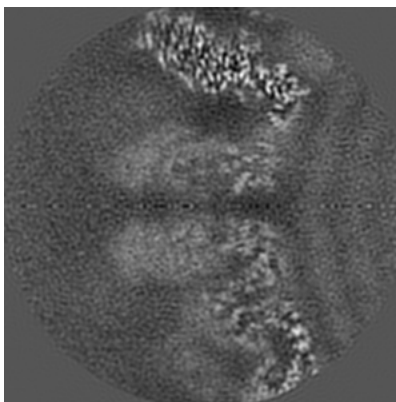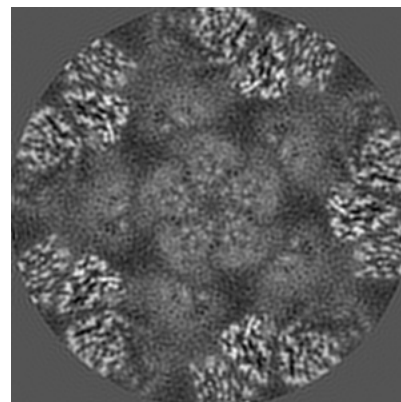


X Index: 120　　　　　　　　　Y Index: 120　　　　　　　　　Z Index: 120

### 6.2.2　Raw map
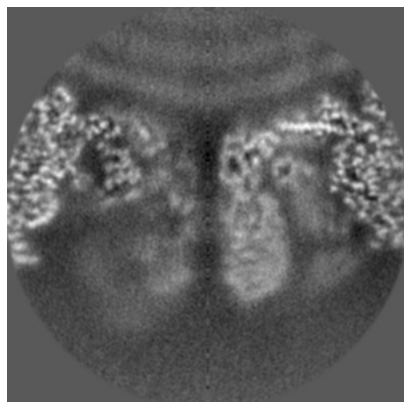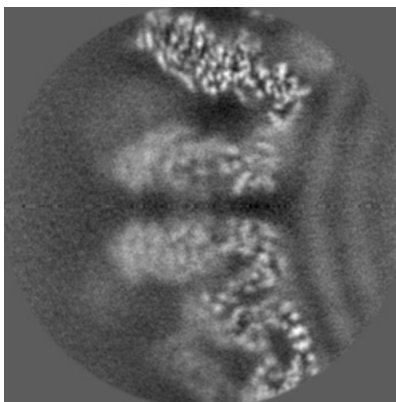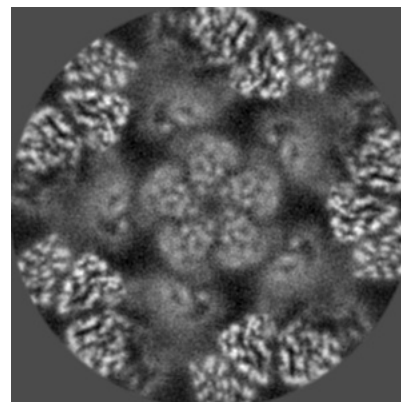


X Index: 120　　　　　　　　　Y Index: 120　　　　　　　　　Z Index: 120

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

## 6.3 Largest variance slices (i)

### 6.3.1 Primary map
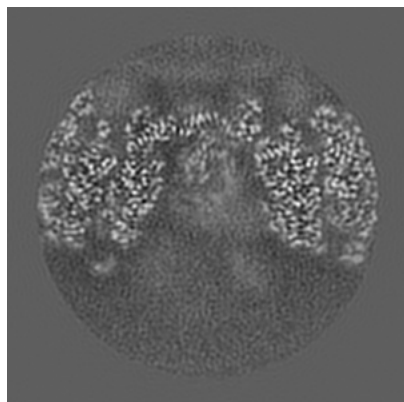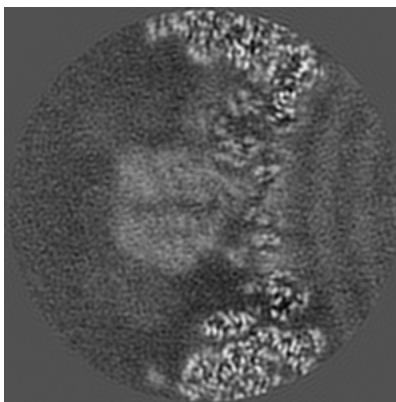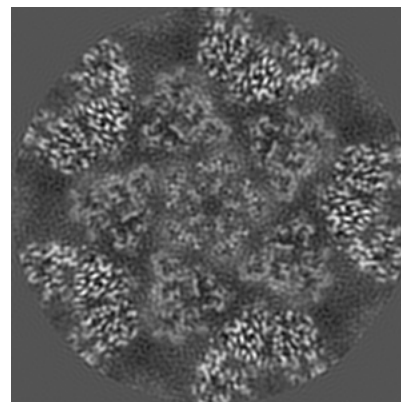


| | | |
|:-:|:-:|:-:|
| X Index: 55 | Y Index: 90 | Z Index: 141 |

### 6.3.2 Raw map
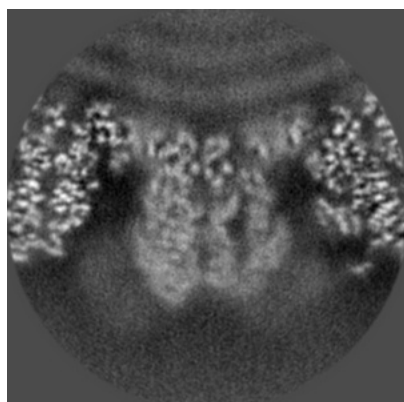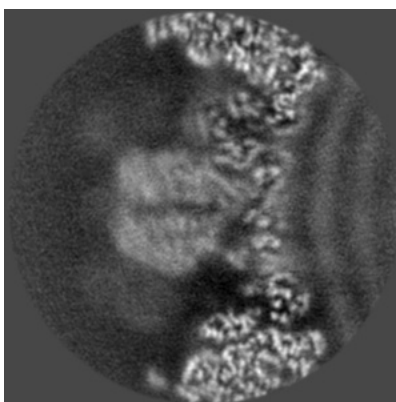


| | | |
|:-:|:-:|:-:|
| X Index: 133 | Y Index: 90 | Z Index: 135 |
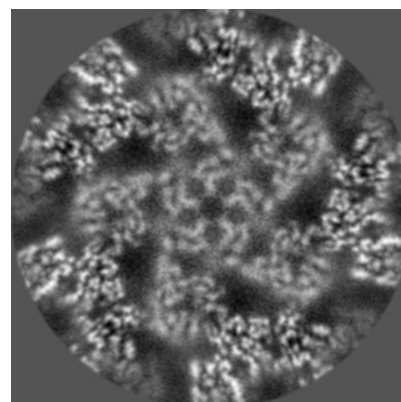
The images above show the largest variance slices of the map in three orthogonal directions.

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

### 6.4.1 Primary map
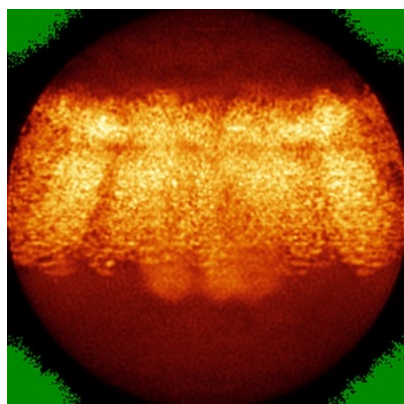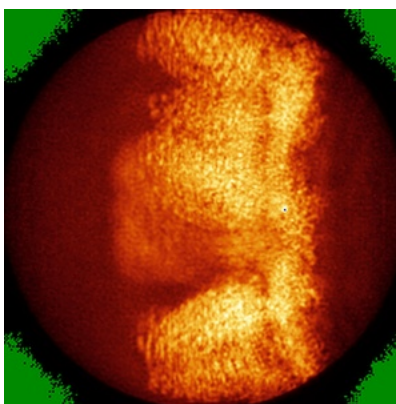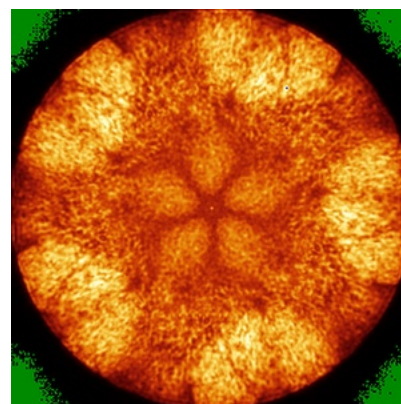


X Y Z

### 6.4.2 Raw map



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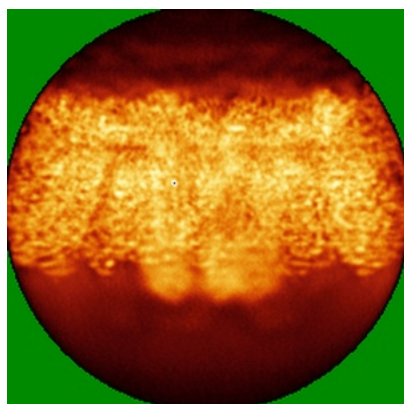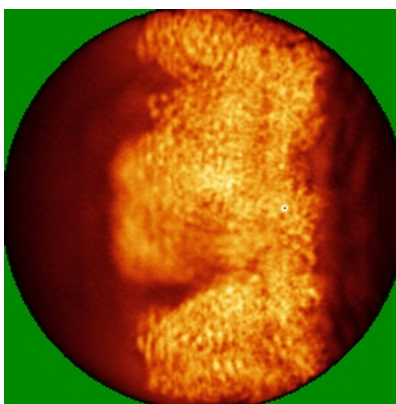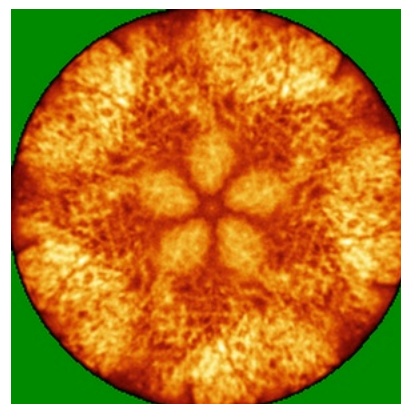
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

## 6.5 Orthogonal surface views ⓘ

### 6.5.1 Primary map



| X | Y | Z |
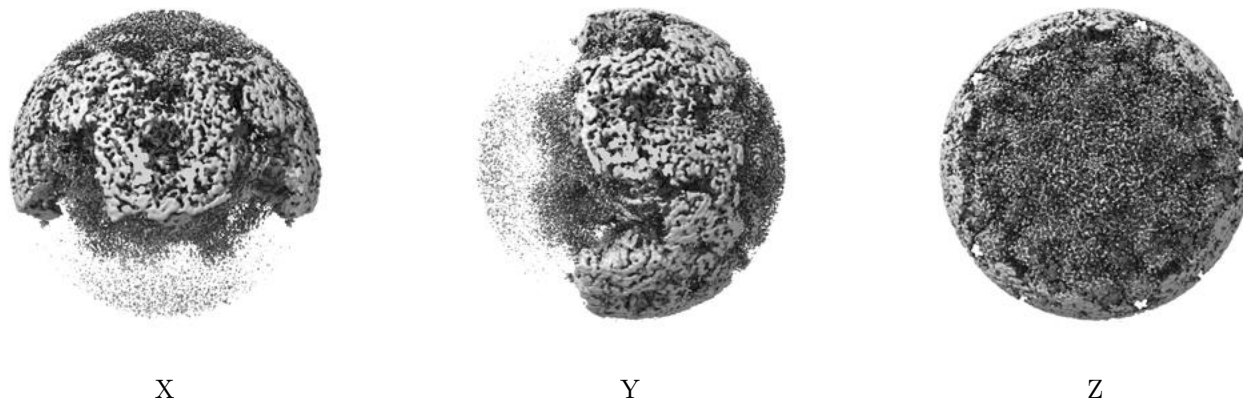
The images above show the 3D surface view of the map at the recommended contour level 0.004. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.5.2 Raw map



| X | Y | Z |
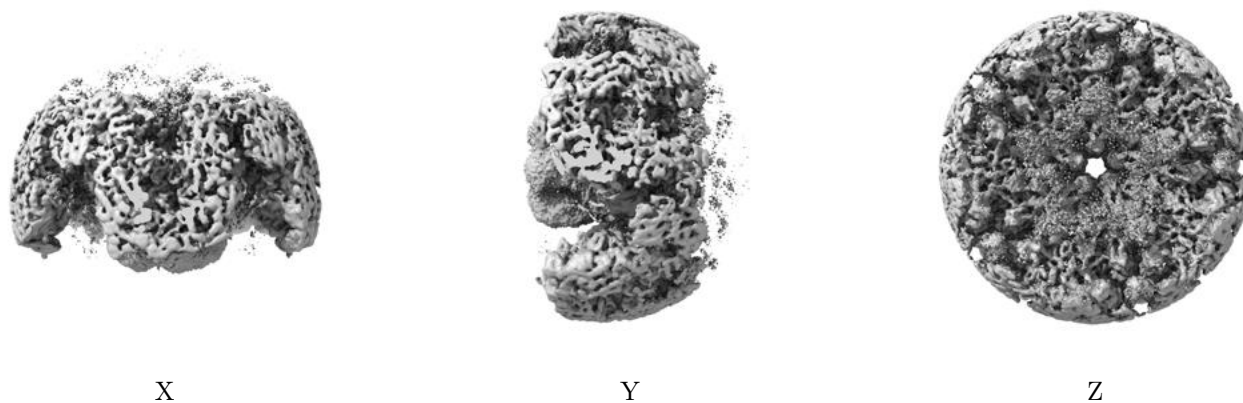
These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

## 6.6 Mask visualisation ⓘ

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

# 7　Map analysis ⓘ

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

## 7.1　Map-value distribution ⓘ
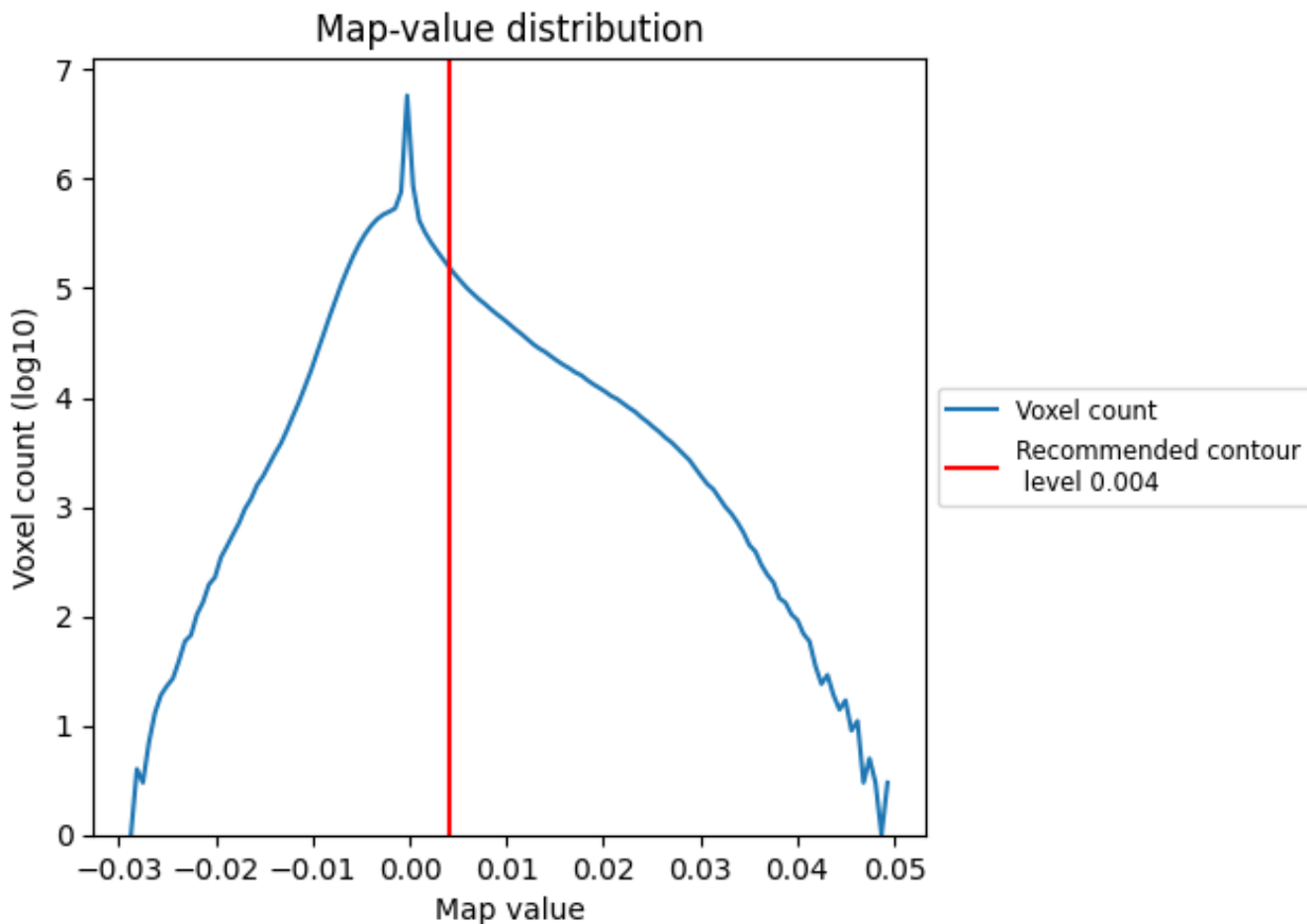


The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

## 7.2   Volume estimate ⓘ
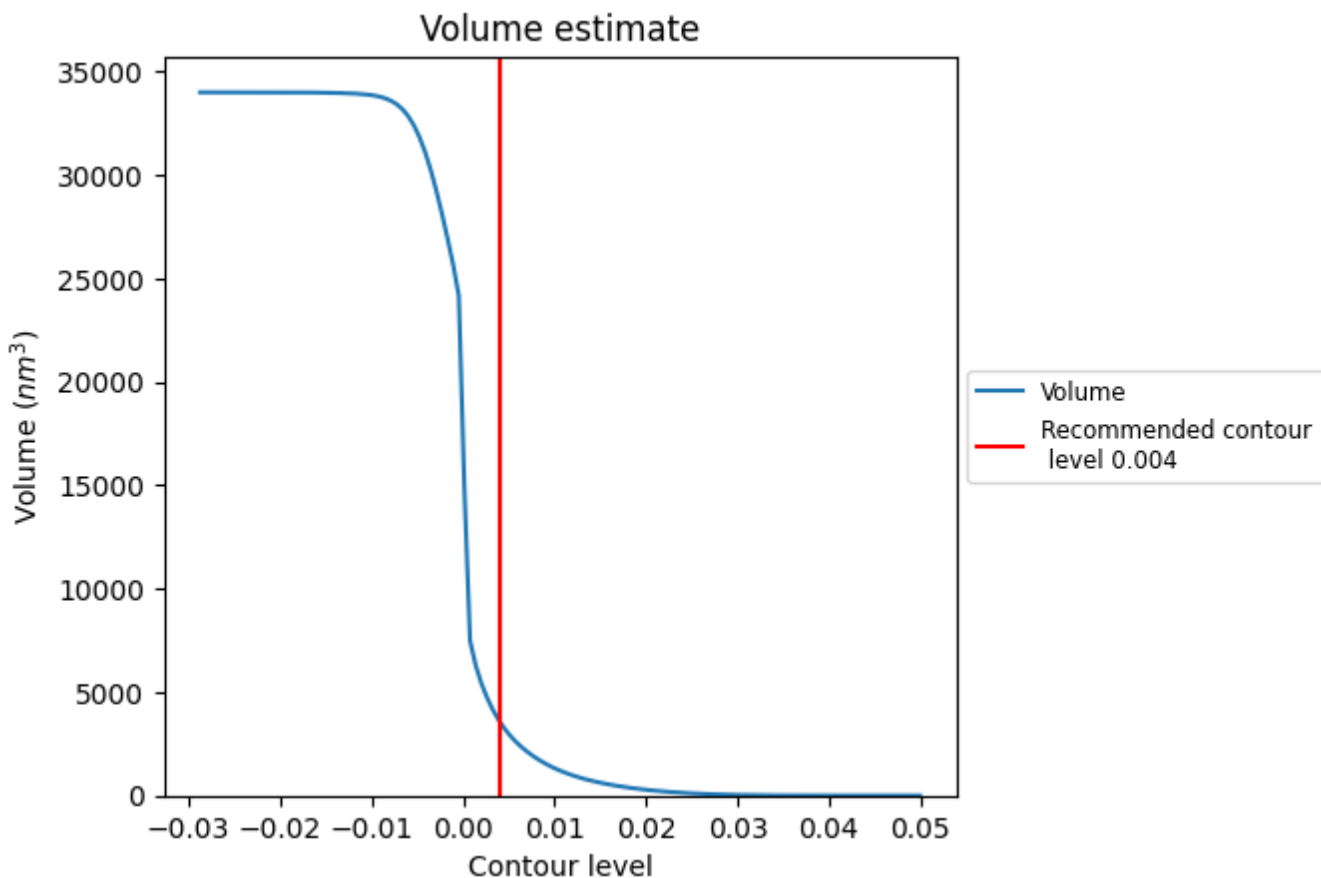


The volume at the recommended contour level is 3584 nm$^3$; this corresponds to an approximate mass of 3238 kDa.

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

## 7.3 Rotationally averaged power spectrum ⓘ
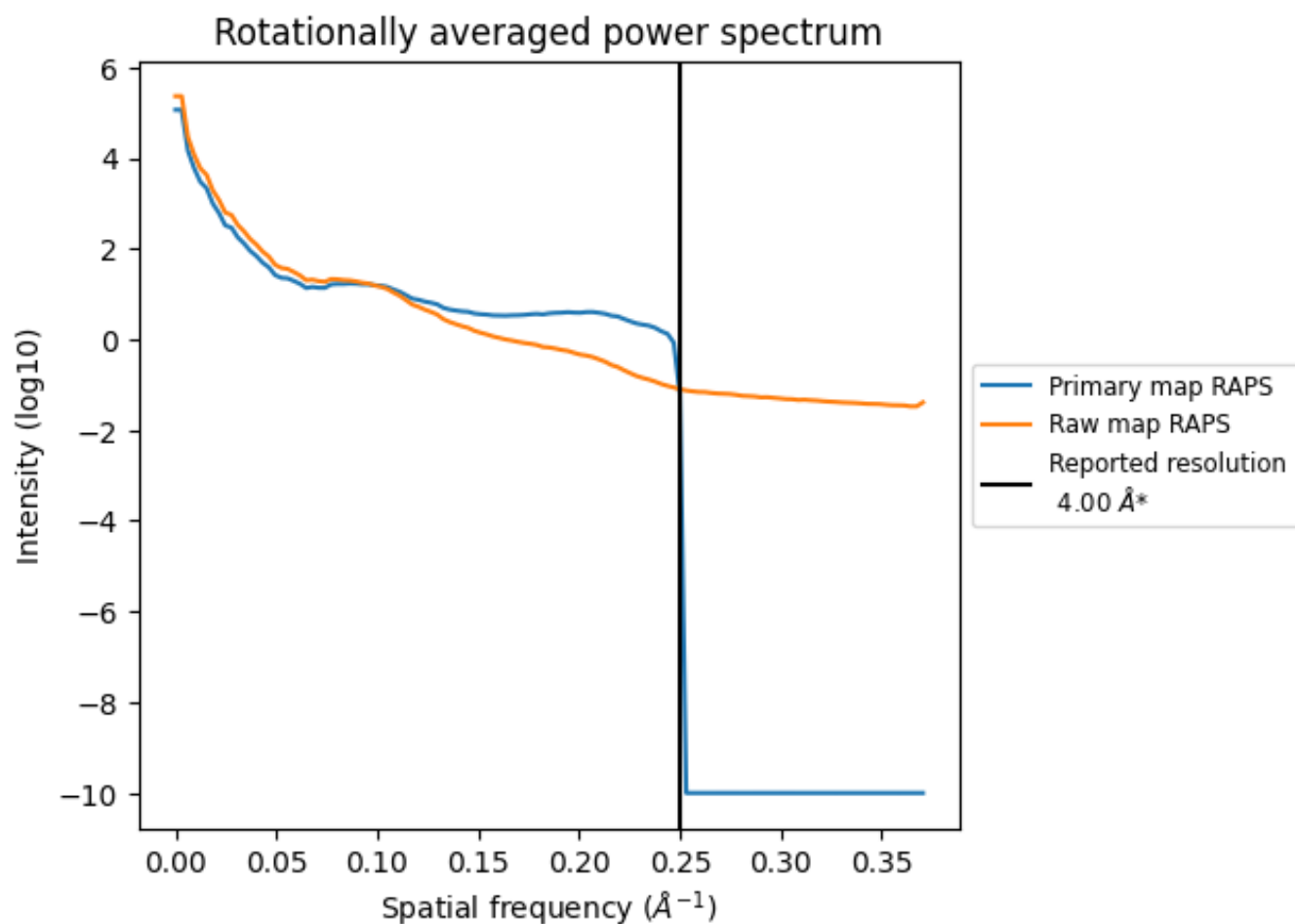


*Reported resolution corresponds to spatial frequency of 0.250 Å$^{-1}$

# 8 Fourier-Shell correlation ⓘ

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

## 8.1 FSC ⓘ
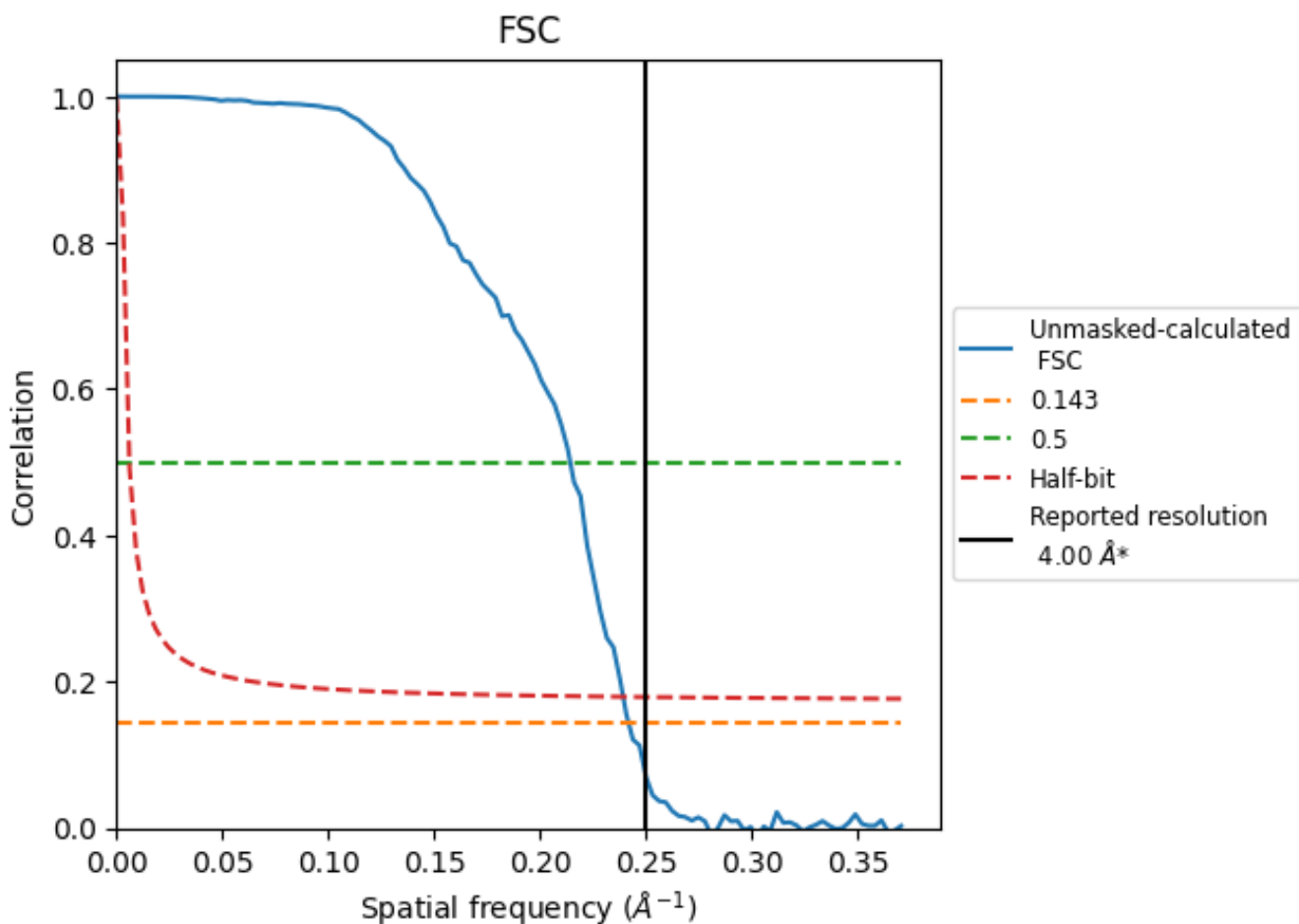


*Reported resolution corresponds to spatial frequency of 0.250 $\text{Å}^{-1}$

## 8.2 Resolution estimates (i)

| Resolution estimate (Å) | Estimation criterion (FSC cut-off) | | |
|---|---|---|---|
| | 0.143 | 0.5 | Half-bit |
| Reported by author | 4.00 | - | - |
| Author-provided FSC curve | - | - | - |
| Unmasked-calculated* | 4.14 | 4.67 | 4.18 |

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

# 9 Map-model fit (i)

This section contains information regarding the fit between EMDB map EMD-38190 and PDB model 8XA0. Per-residue inclusion information can be found in section 3 on page 7.

## 9.1 Map-model overlay (i)



| X | Y | Z |
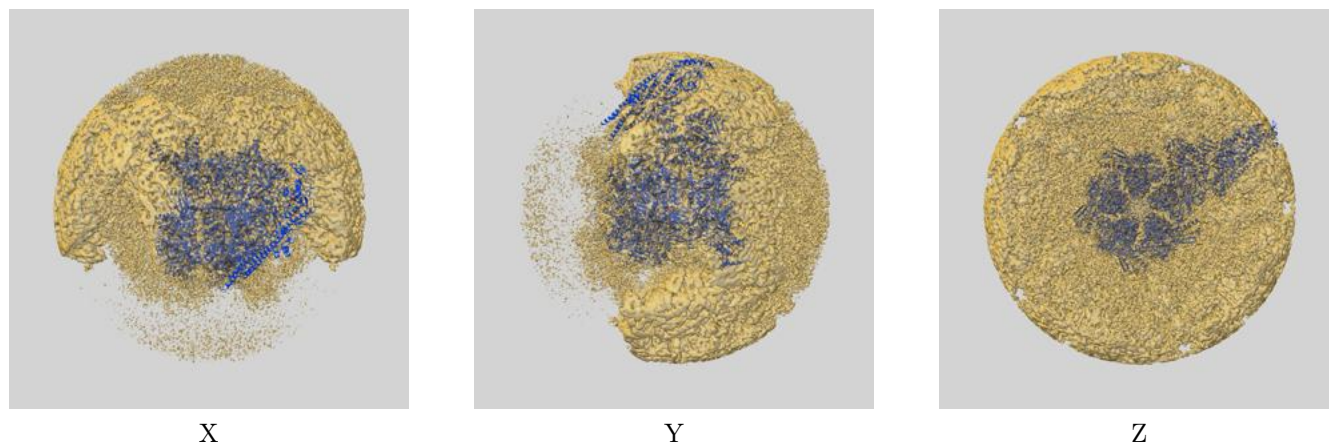
The images above show the 3D surface view of the map at the recommended contour level 0.004 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

## 9.2　Q-score mapped to coordinate model ⓘ
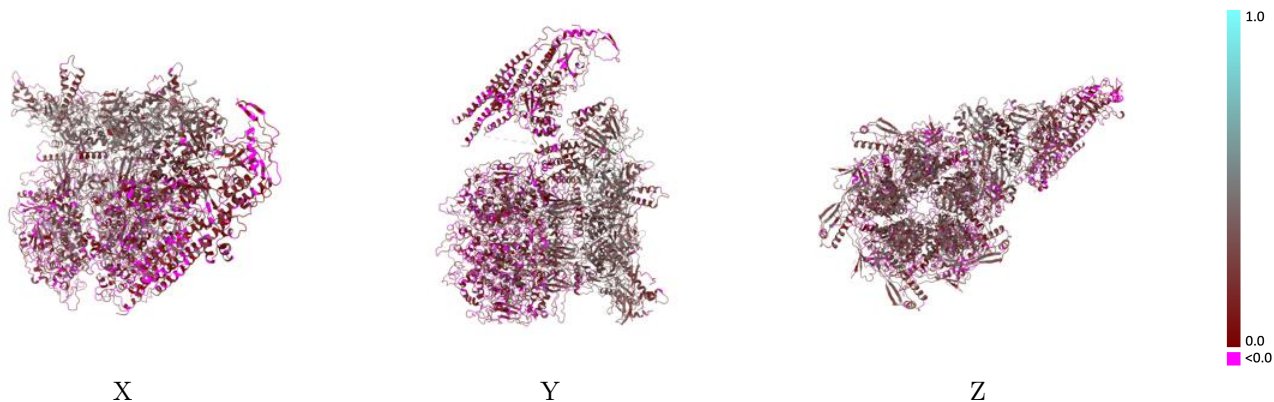


The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

## 9.3　Atom inclusion mapped to coordinate model ⓘ
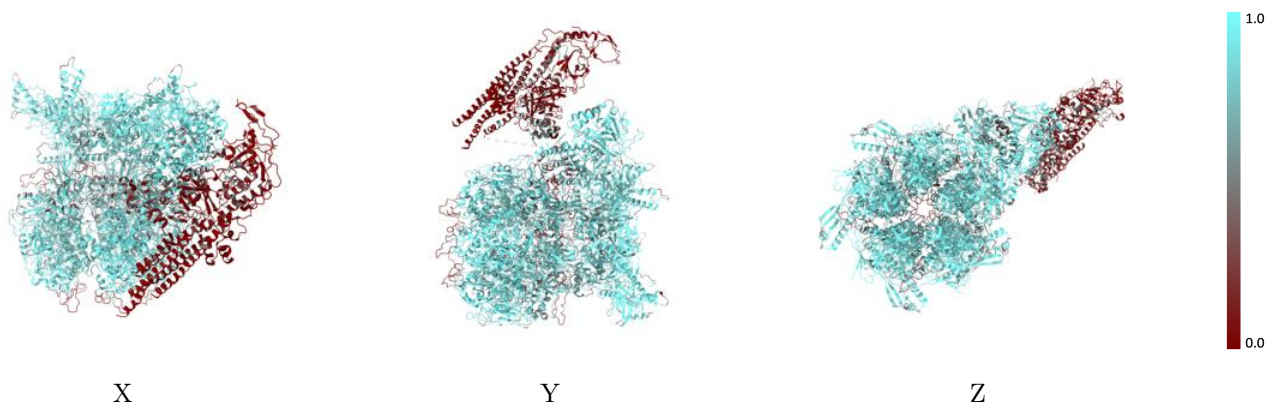


The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.004).

## 9.4　Atom inclusion ⓘ
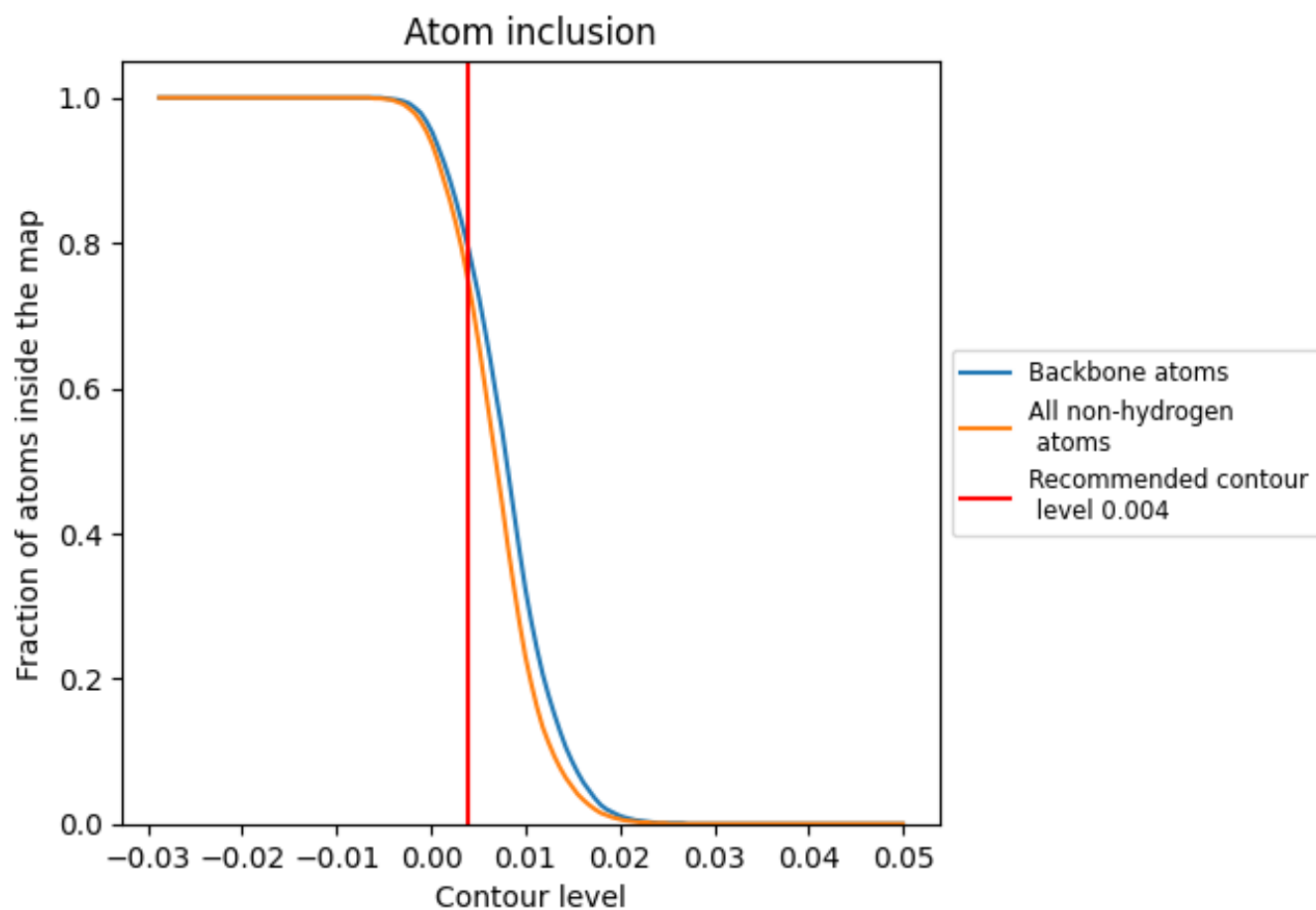
Atom inclusion



At the recommended contour level, 79% of all backbone atoms, 74% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.004) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion | Q-score |
|:-----:|:--------------:|:-------:|
| All | 0.7430 | 0.1950 |
| 2 | 0.0820 | 0.0720 |
| A | 0.8190 | 0.1900 |
| C | 0.8180 | 0.1910 |
| E | 0.8180 | 0.1910 |
| F | 0.8190 | 0.1900 |
| G | 0.8170 | 0.1930 |
| R | 0.8460 | 0.3010 |
| V | 0.7670 | 0.3270 |
| Z | 0.8410 | 0.2900 |
| h | 0.1850 | 0.1380 |
| q | 0.0440 | 0.0910 |
| u | 0.0810 | 0.0970 |
| y | 0.0440 | 0.1230 |

1.0

0.0
<0.0