# Full wwPDB EM Validation Report ⓘ

Nov 19, 2022 – 08:24 am GMT

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|---|---|---|
| PDB ID | : | 5LMX |
| EMDB ID | : | EMD-4088 |
| Title | : | Monomeric RNA polymerase I at 4.9 A resolution |
| Authors | : | Torreira, E.; Louro, J.A.; Gil-Carton, D.; Gallego, O.; Calvo, O.; Fernandez-Tornero, C. |
| Deposited on | : | 2016-08-02 |
| Resolution | : | 4.90 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 ⓘ 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 ⓘ) were used in the production of this report:

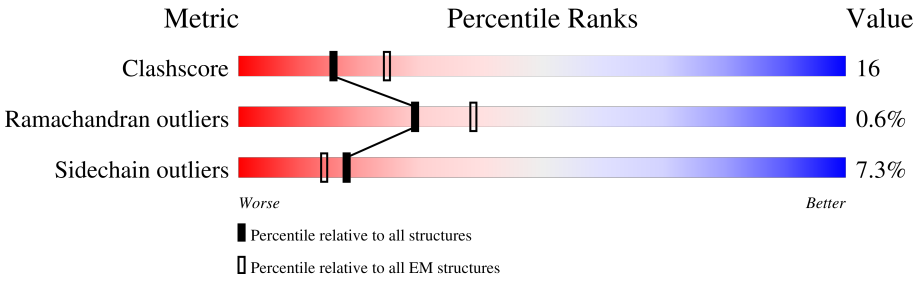
| | | |
|---|---|---|
| EMDB validation analysis | : | 0.0.1.dev43 |
| MolProbity | : | 4.02b-467 |
| Percentile statistics | : | 20191225.v01 (using entries in the PDB archive December 25th 2019) |
| MapQ | : | 1.9.9 |
| Ideal geometry (proteins) | : | Engh & Huber (2001) |
| Ideal geometry (DNA, RNA) | : | Parkinson et al. (1996) |
| Validation Pipeline (wwPDB-VP) | : | 2.31.2 |

# 1 Overall quality at a glance (i)

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

The reported resolution of this entry is 4.90 Å.

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




| Metric | Whole archive (#Entries) | EM structures (#Entries) |
|---|---|---|
| Clashscore | 158937 | 4297 |
| Ramachandran outliers | 154571 | 4023 |
| Sidechain outliers | 154315 | 3826 |

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 | A | 1664 | 29% 66% 18% • 15% |
| 2 | B | 1203 | 30% 69% 22% • 7% |
| 3 | C | 380 | 9% 58% 19% • 20% |
| 4 | D | 137 | 11% 7% 5% • 87% |
| 5 | E | 215 | 11% 90% 10% |
| 6 | F | 155 | 22% 55% 8% • 35% |
| 7 | G | 326 | 17% 20% 6% • 73% |
| 8 | H | 146 | 6% 79% 13% 8% |

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| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 9 | I | 125 | 19% 37% 13% 49% |
| 10 | J | 70 | 7% 73% 19% 7% |
| 11 | K | 142 | 13% 42% 27% 29% |
| 12 | L | 70 | 14% 40% 23% 36% |
| 13 | M | 415 | 12% 21% 75% |
| 14 | N | 233 | 36% 48% 9% 40% |

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|---|---|---|---|---|---|---|---|
| 15 | ZN | L | 101 | - | - | X | - |

# 2 Entry composition (i)

There are 15 unique types of molecules in this entry. The entry contains 31118 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 DNA-directed RNA polymerase I subunit RPA190.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | S | | |
| 1 | A | 1420 | 11207 | 7087 | 1942 | 2118 | 60 | 0 | 0 |

- Molecule 2 is a protein called DNA-directed RNA polymerase I subunit RPA135.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | S | | |
| 2 | B | 1115 | 8868 | 5618 | 1546 | 1656 | 48 | 0 | 0 |

- Molecule 3 is a protein called DNA-directed RNA polymerases I and III subunit RPAC1,DNA-directed RNA polymerases I and III subunit RPAC1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | S | | |
| 3 | C | 304 | 2418 | 1536 | 414 | 460 | 8 | 0 | 0 |

- Molecule 4 is a protein called DNA-directed RNA polymerase I subunit RPA14.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | | |
| 4 | D | 18 | 133 | 84 | 23 | 26 | 0 | 0 |

- Molecule 5 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | S | | |
| 5 | E | 215 | 1759 | 1116 | 310 | 321 | 12 | 0 | 0 |

- Molecule 6 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | S | | |
| 6 | F | 100 | 823 | 522 | 144 | 154 | 3 | 0 | 0 |

- Molecule 7 is a protein called DNA-directed RNA polymerase I subunit RPA43.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 7 | G | 89 | Total | C | N | O | S | 0 | 0 |
| | | | 706 | 465 | 113 | 123 | 5 | | |

- Molecule 8 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC3.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 8 | H | 134 | Total | C | N | O | S | 0 | 0 |
| | | | 1072 | 676 | 181 | 211 | 4 | | |

- Molecule 9 is a protein called DNA-directed RNA polymerase I subunit RPA12.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 9 | I | 64 | Total | C | N | O | S | 0 | 0 |
| | | | 472 | 295 | 78 | 95 | 4 | | |

- Molecule 10 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC5.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 10 | J | 69 | Total | C | N | O | S | 0 | 0 |
| | | | 569 | 362 | 101 | 100 | 6 | | |

- Molecule 11 is a protein called DNA-directed RNA polymerases I and III subunit RPAC2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 11 | K | 101 | Total | C | N | O | S | 0 | 0 |
| | | | 792 | 496 | 130 | 161 | 5 | | |

- Molecule 12 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC4.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 12 | L | 45 | Total | C | N | O | S | 0 | 0 |
| | | | 359 | 221 | 71 | 63 | 4 | | |

- Molecule 13 is a protein called DNA-directed RNA polymerase I subunit RPA49.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|
| 13 | M | 105 | Total | C | N | O | 0 | 0 |
| | | | 831 | 528 | 137 | 166 | | |

- Molecule 14 is a protein called DNA-directed RNA polymerase I subunit RPA34.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 14 | N | 139 | Total | C | N | O | S | 0 | 0 |
| | | | 1103 | 706 | 179 | 214 | 4 | | |

- Molecule 15 is ZINC ION (three-letter code: ZN) (formula: Zn).

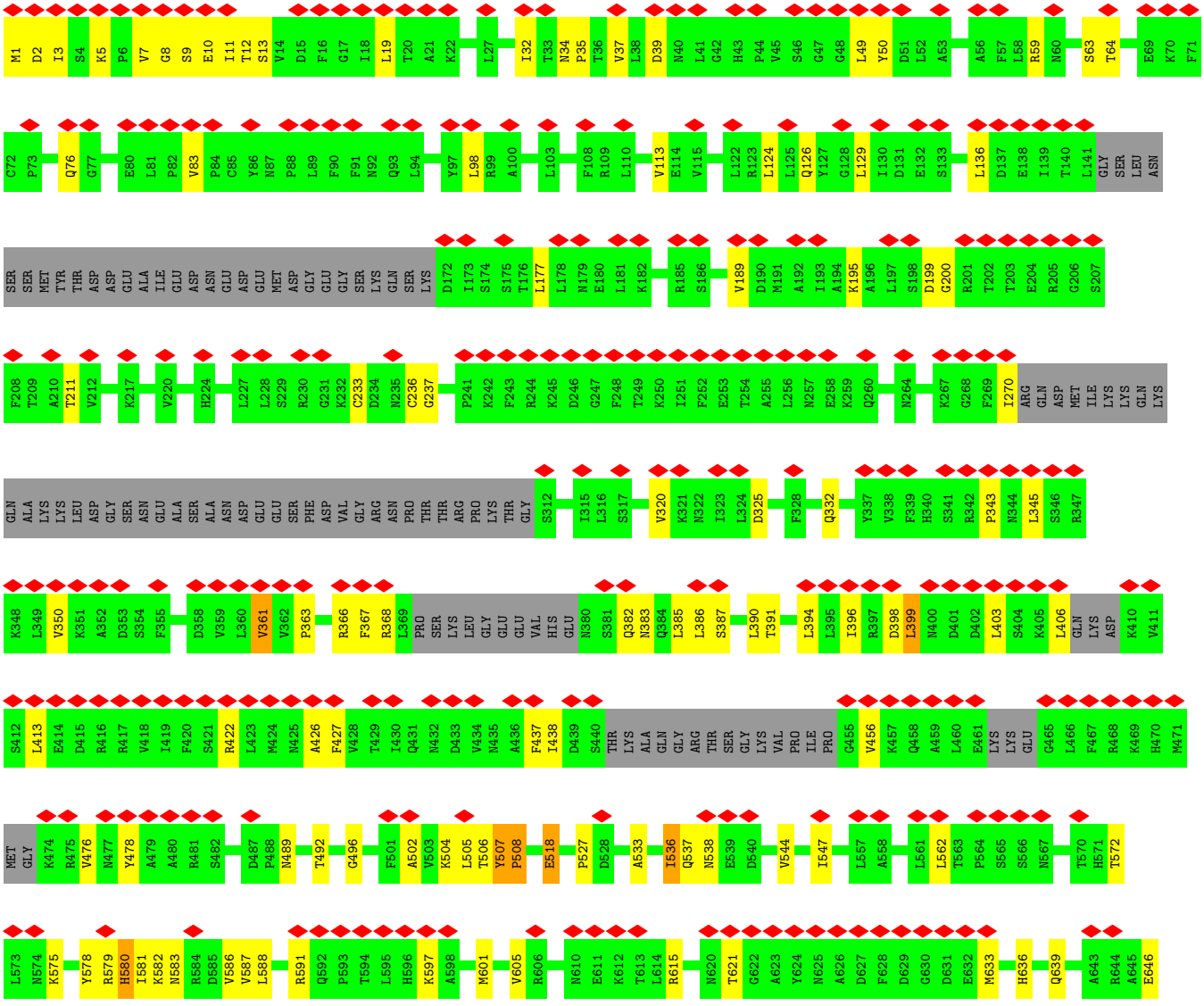
| Mol | Chain | Residues | Atoms | | AltConf |
|---|---|---|---|---|---|
| 15 | A | 2 | Total | Zn | 0 |
| | | | 2 | 2 | |
| 15 | B | 1 | Total | Zn | 0 |
| | | | 1 | 1 | |
| 15 | I | 1 | Total | Zn | 0 |
| | | | 1 | 1 | |
| 15 | J | 1 | Total | Zn | 0 |
| | | | 1 | 1 | |
| 15 | L | 1 | Total | Zn | 0 |
| | | | 1 | 1 | |

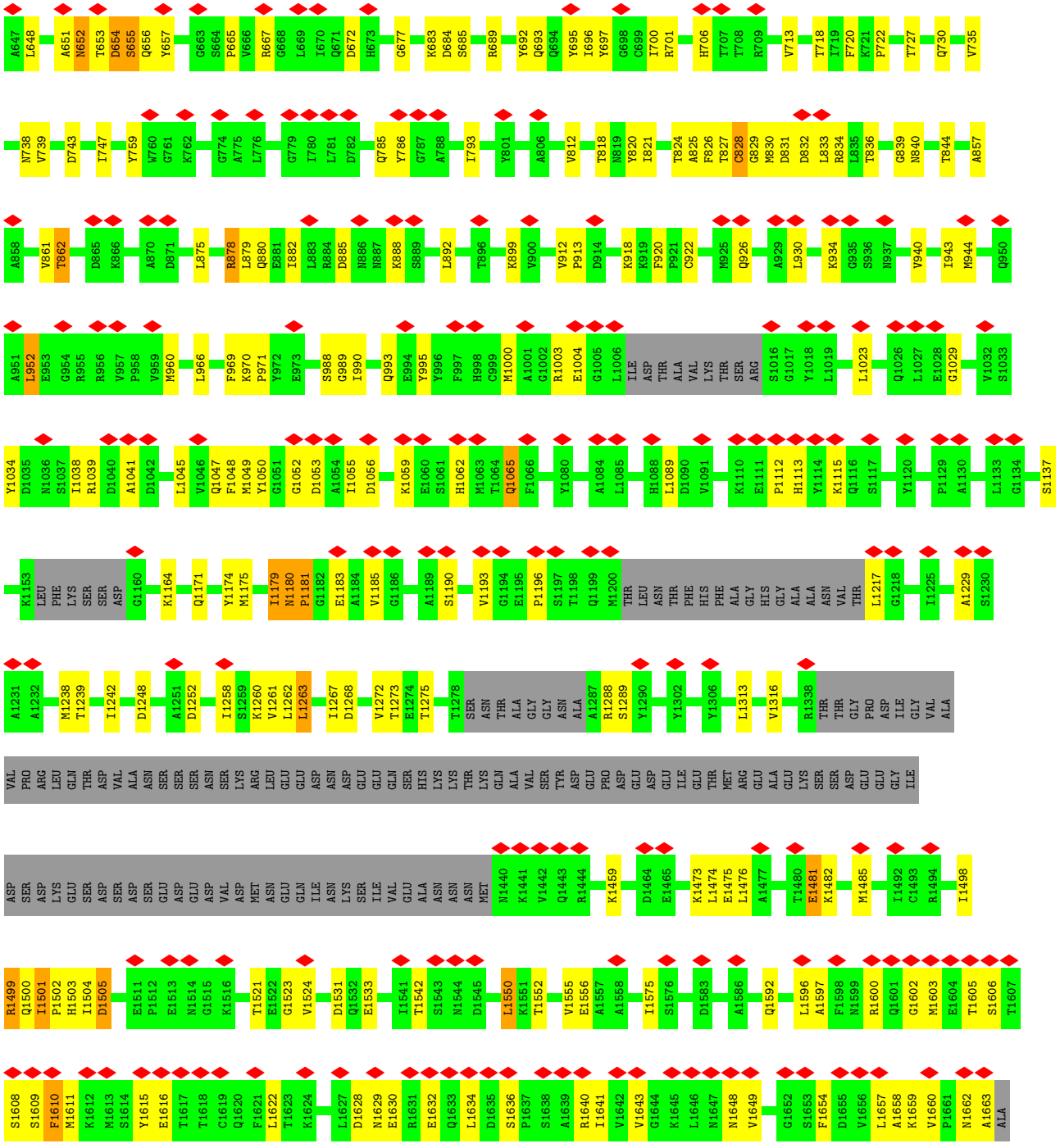
# 3 Residue-property plots (i)

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: DNA-directed RNA polymerase I subunit RPA190

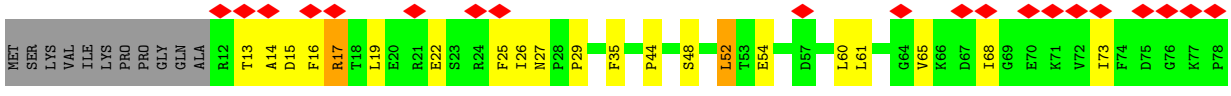
Chain A:

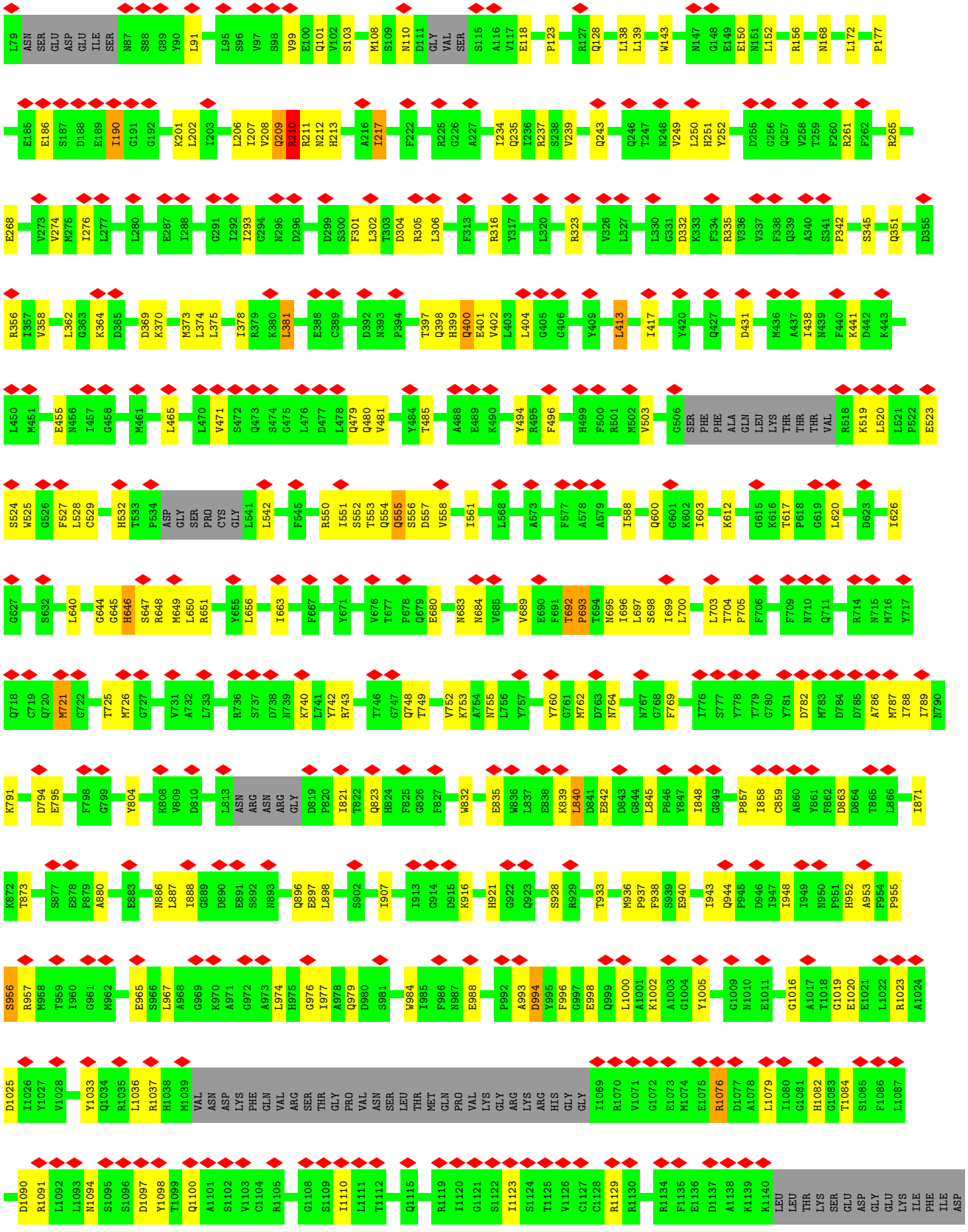



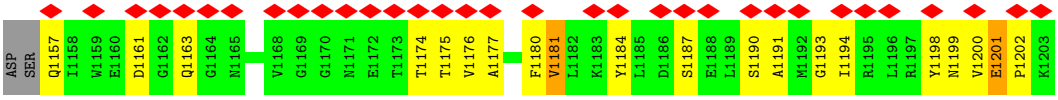


• Molecule 2: DNA-directed RNA polymerase I subunit RPA135

Chain B:

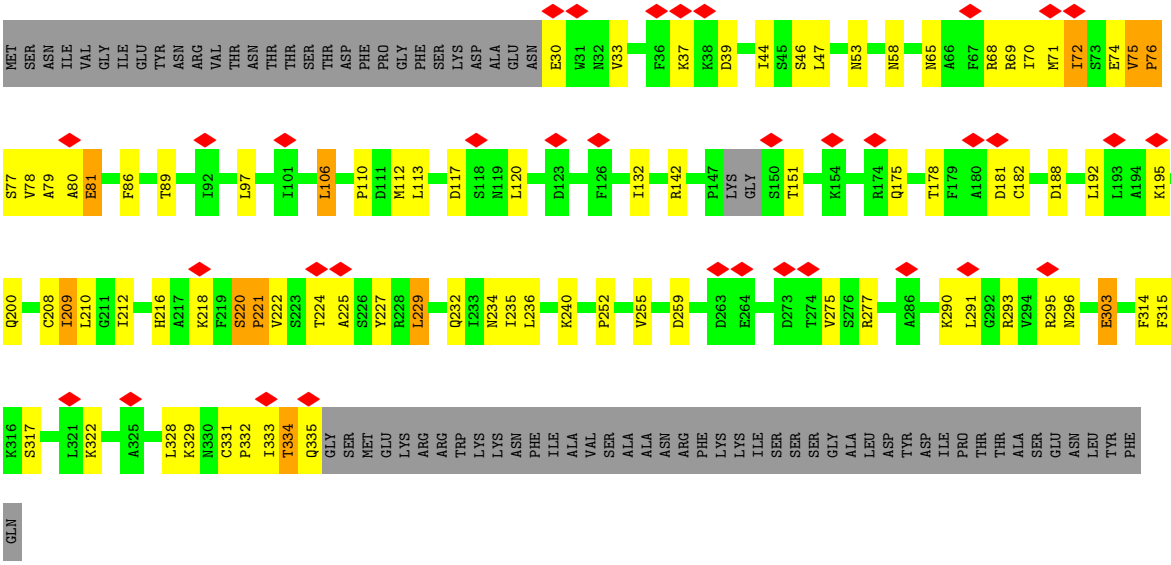




L79 ASN SER GLU ASP GLU ILE SER N87 S88 G89 Y90 L91 L95 S96 V97 S98 V99 E100 Q101 V102 S103 M108 S109 N110 D111 GLY VAL SER S115 A116 V117 E118 P123 R127 Q128 L138 L139 W143 N147 G148 E149 E150 N151 L152 R156 N168 L172 P177
E185 E186 S187 D188 E189 I190 G191 G192 K201 L202 I203 L206 I207 V208 Q209 R210 R211 N212 H213 A216 I217 F222 R225 G226 A227 I234 Q235 I236 R237 S238 V239 Q243 Q246 T247 N248 V249 L250 H251 Y252 D255 G256 Q257 V258 T259 F260 R261 F262 R265
E268 V273 V274 M275 I276 L277 L280 E287 I288 G291 I292 I293 G294 N295 D296 D299 S300 F301 L302 T303 D304 R305 L306 F313 R316 Y317 L320 R323 V326 L327 L330 G331 D332 K333 F334 R335 V336 V337 F338 Q339 A340 S341 P342 S345 Q351 D355
R356 I357 V358 L362 G363 K364 D365 D369 K370 M373 L374 L375 I378 R379 K380 L381 E388 C389 D392 N393 P394 T397 Q398 H399 Q400 E401 V402 L403 L404 G405 G406 Y409 L413 I417 Y420 Q427 D431 M436 A437 I438 N439 F440 K441 D442 K443
L450 M451 E455 N456 I457 G458 M461 L465 L470 V471 S472 Q473 S474 G475 L476 D477 L478 Q479 Q480 V481 Y484 T485 A488 E489 K490 Y494 R495 F496 H499 F500 R501 M502 V503 G506 SER PHE PHE ALA GLN LEU LYS THR THR THR VAL R518 K519 L520 L521 P522 E523
S524 W525 G526 F527 L528 C529 H532 T533 P534 ASP GLY SER PRO CYS GLY L541 L542 F545 R550 I551 S552 T553 Q554 Q555 S556 D557 V558 I561 L568 A573 F577 A578 A579 I588 Q600 G601 K602 I603 K612 G615 K616 T617 P618 G619 L620 D623 I626
G627 S632 L640 G644 G645 H646 S647 R648 M649 L650 R651 Y655 L656 I663 F667 Y671 V676 T677 P678 G679 E680 N683 N684 V685 V689 E690 F691 T692 P693 T694 N695 I696 L697 S698 I699 L700 L703 T704 P705 F706 F709 N710 Q711 R714 N715 M716 Y717
Q718 C719 Q720 M721 G722 T725 M726 G727 V731 A732 L733 R736 S737 D738 N739 K740 L741 Y742 R743 T746 G747 Q748 T749 V752 K753 A754 N755 L756 Y757 Y760 G761 M762 D763 N764 N767 G768 F769 I776 S777 Y778 T779 G780 Y781 D782 M783 D784 D785 A786 M787 I788 I789 N790
K791 D794 E795 F798 G799 Y804 K808 V809 D810 L813 D819 P820 I821 T822 Q823 H824 F825 G826 F827 W832 E835 W836 L837 E838 K839 L840 D841 E842 D843 G844 L845 P846 Y847 I848 G849 P857 I858 C859 A860 Y861 F862 D863 D864 T865 L866 I871
K872 T873 S877 E878 P879 A880 E883 N886 L887 I888 G889 D890 E891 S892 N893 Q896 E897 L898 S902 I907 I913 G914 D915 K916 H921 G922 Q923 S928 R929 T933 M936 P937 F938 S939 E940 I943 Q944 P945 D946 I947 I948 I949 N950 P951 H952 A953 F954 P955
S966 R957 M958 T959 I960 G961 M962 E965 S966 L967 A968 G969 K970 A971 G972 A973 L974 H975 G976 I977 A978 Q979 D980 S981 W984 I985 F986 N987 E988 P992 A993 D994 Y995 F996 G997 E998 Q999 L1000 A1001 K1002 A1003 G1004 Y1005 G1009 N1010 E1011 G1016 A1017 T1018 G1019 E1020 E1021 L1022 R1023 A1024
D1025 I1026 Y1027 V1028 Y1033 Q1034 R1035 L1036 R1037 H1038 M1039 VAL ASN ASP LYS PHE GLN VAL ARG SER THR GLY PRO VAL ASN SER LEU THR MET GLN PRO VAL LYS GLY ARG LYS ARG HIS GLY GLY I1069 R1070 V1071 G1072 E1073 M1074 E1075 R1076 D1077 A1078 L1079 I1080 G1081 H1082 G1083 T1084 S1085 F1086 L1087
D1090 R1091 L1092 L1093 N1094 S1095 S1096 D1097 Y1098 T1099 Q1100 A1101 S1102 V1103 C1104 R1105 G1108 S1109 I1110 L1111 T1112 Q1115 R1119 I1120 G1121 S1122 I1123 S1124 T1125 V1126 C1127 C1128 R1129 R1130 R1134 F1135 E1136 D1137 A1138 K1139 K1140 LEU LEU THR LYS SER GLU ASP GLY GLU LYS ILE PHE ILE ASP



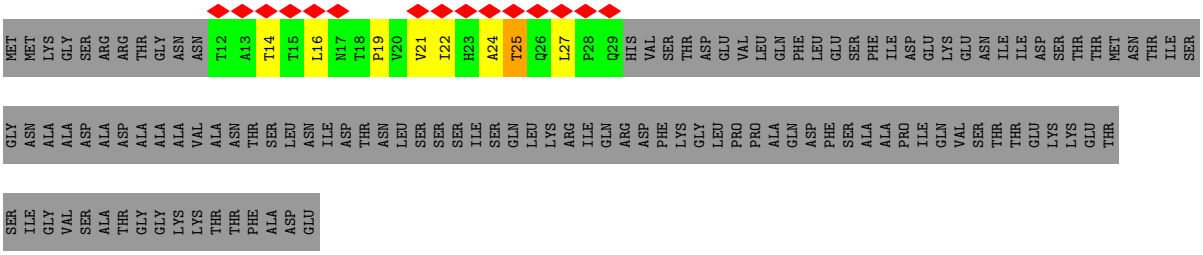

• Molecule 3: DNA-directed RNA polymerases I and III subunit RPAC1,DNA-directed RNA polymerases I and III subunit RPAC1

Chain C:

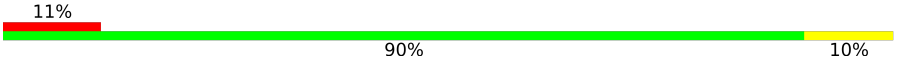

• Molecule 4: DNA-directed RNA polymerase I subunit RPA14

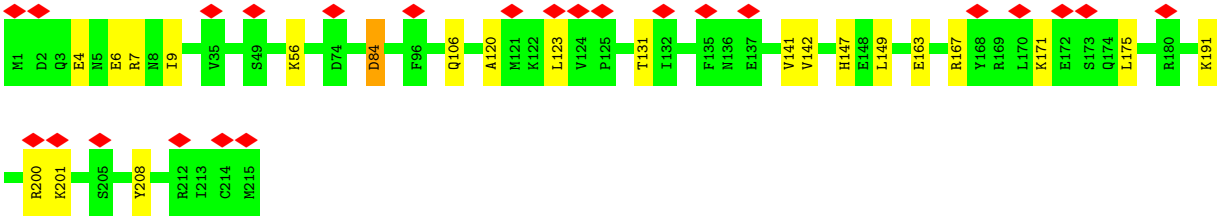
Chain D:


• Molecule 5: DNA-directed RNA polymerases I, II, and III subunit RPABC1

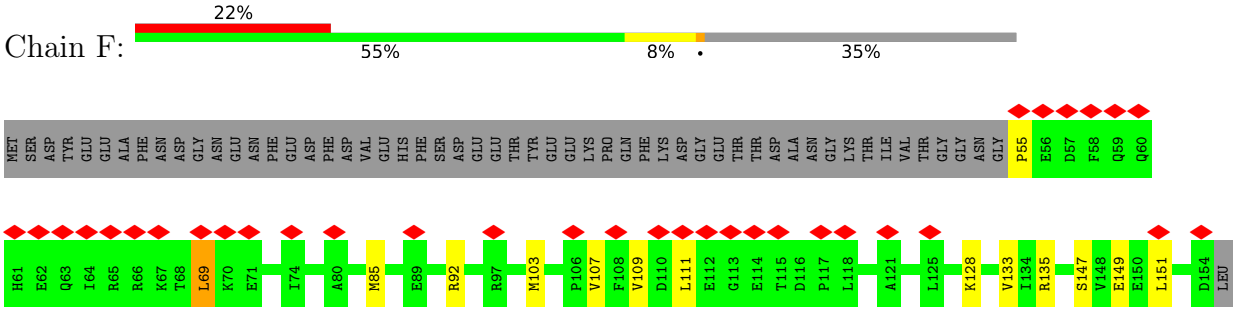
Chain E:



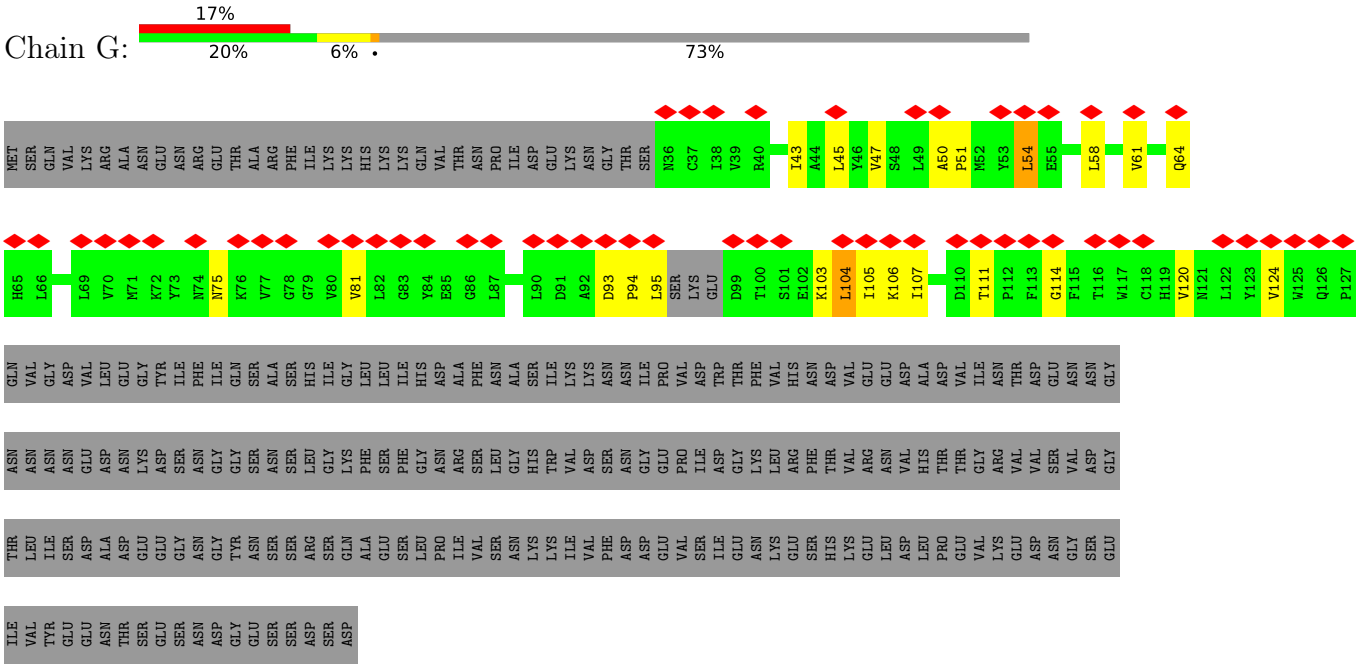

• Molecule 6: DNA-directed RNA polymerases I, II, and III subunit RPABC2

Chain F:



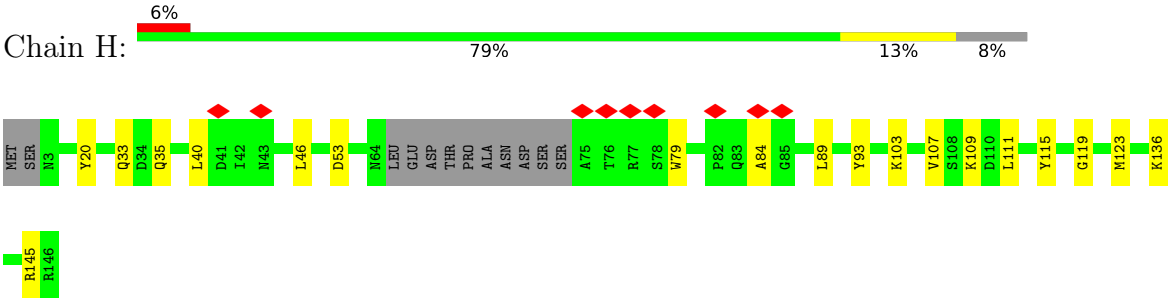

• Molecule 7: DNA-directed RNA polymerase I subunit RPA43

Chain G:



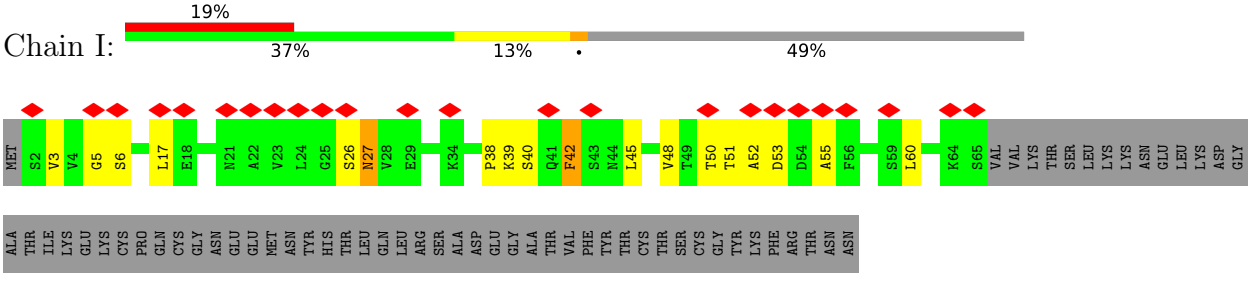

• Molecule 8: DNA-directed RNA polymerases I, II, and III subunit RPABC3

Chain H:



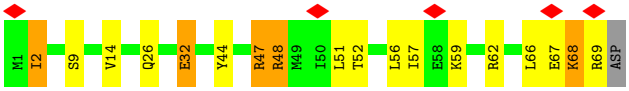

• Molecule 9: DNA-directed RNA polymerase I subunit RPA12

Chain I:



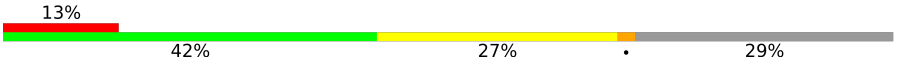
• Molecule 10: DNA-directed RNA polymerases I, II, and III subunit RPABC5

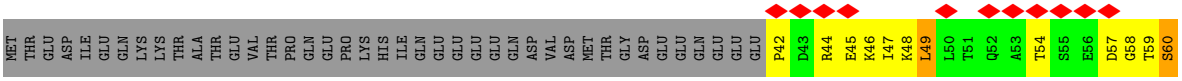
Chain J:

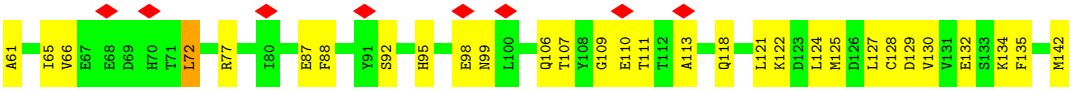




• Molecule 11: DNA-directed RNA polymerases I and III subunit RPAC2

Chain K:

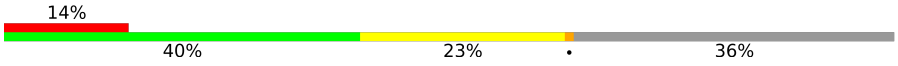


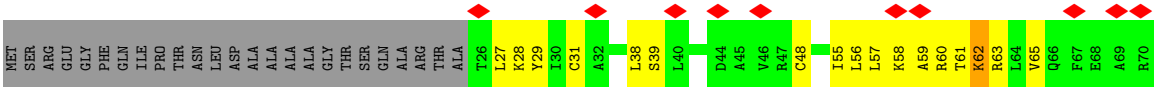




• Molecule 12: DNA-directed RNA polymerases I, II, and III subunit RPABC4

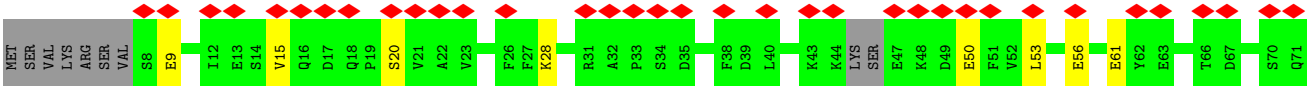
Chain L:

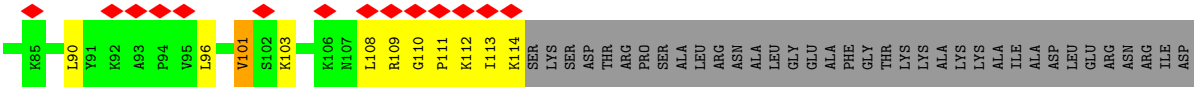



• Molecule 13: DNA-directed RNA polymerase I subunit RPA49

Chain M:



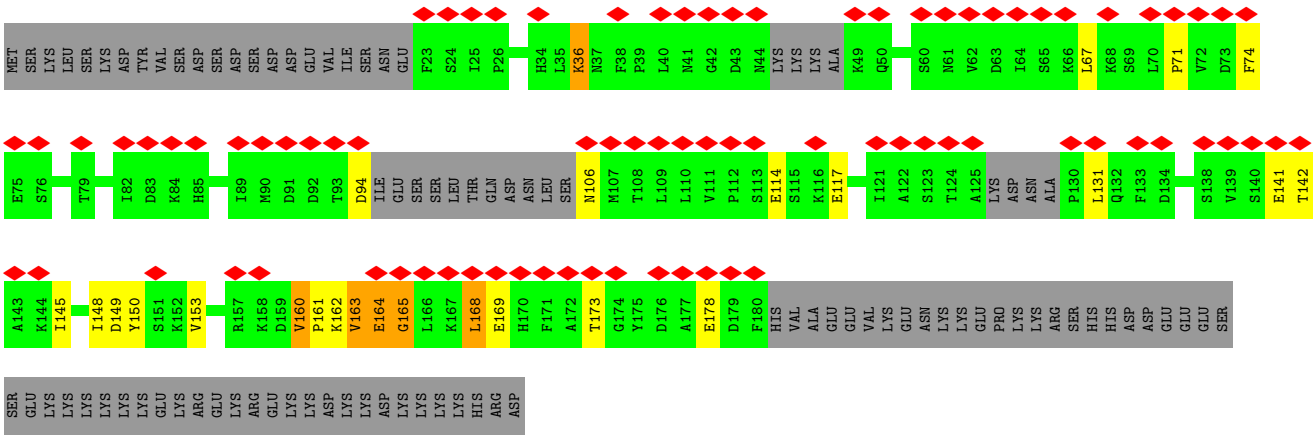




• Molecule 14: DNA-directed RNA polymerase I subunit RPA34

Chain N:


36%
48%
9%
40%


MET SER LYS LEU SER LYS ASP TYR VAL SER ASP SER ASP SER ASP ASP GLU VAL ILE SER ASN GLU F23 S24 I25 P26 H34 L35 K36 N37 F38 P39 L40 N41 G42 D43 N44 LYS LYS LYS ALA K49 Q50 S60 N61 V62 D63 I64 S65 K66 L67 K68 S69 L70 P71 V72 D73 F74
E75 S76 T79 I82 D83 K84 H85 I89 M90 D91 D92 T93 D94 ILE GLU SER SER LEU THR GLN ASP ASN LEU SER N106 M107 T108 L109 L110 V111 P112 S113 E114 S115 K116 E117 I121 A122 S123 T124 A125 LYS ASP ASN ALA P130 L131 Q132 F133 D134 S138 V139 S140 E141 T142
A143 K144 I145 I148 D149 Y150 S151 K152 V153 R157 K158 D159 V160 P161 K162 V163 E164 G165 L166 K167 L168 E169 H170 F171 A172 T173 G174 Y175 D176 A177 E178 D179 F180 HIS VAL ALA GLU GLU VAL LYS GLU ASN LYS LYS GLU PRO LYS LYS ARG SER HIS HIS ASP ASP GLU GLU GLU SER
SER GLU LYS LYS LYS LYS LYS LYS GLU LYS ARG GLU LYS ARG GLU LYS LYS ASP LYS LYS ASP LYS LYS LYS LYS HIS ARG ASP

# 4 Experimental information (i)

| Property | Value | Source |
|---|---|---|
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, Not provided | |
| Number of particles used | 122348 | Depositor |
| Resolution determination method | FSC 0.143 CUT-OFF | Depositor |
| CTF correction method | PHASE FLIPPING ONLY | Depositor |
| Microscope | FEI TITAN KRIOS | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose ($e^-/Å^2$) | 68.0 | Depositor |
| Minimum defocus (nm) | 1900.0 | Depositor |
| Maximum defocus (nm) | 4200.0 | Depositor |
| Magnification | 79096 | Depositor |
| Image detector | FEI FALCON II (4k x 4k) | Depositor |
| Maximum map value | 0.408 | Depositor |
| Minimum map value | -0.180 | Depositor |
| Average map value | 0.005 | Depositor |
| Map value standard deviation | 0.024 | Depositor |
| Recommended contour level | 0.14 | Depositor |
| Map size (Å) | 286.74, 286.74, 286.74 | wwPDB |
| Map dimensions | 162, 162, 162 | wwPDB |
| Map angles (°) | 90.0, 90.0, 90.0 | wwPDB |
| Pixel spacing (Å) | 1.77, 1.77, 1.77 | Depositor |

# 5 Model quality (i)

## 5.1 Standard geometry (i)

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

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

| Mol | Chain | Bond lengths | | Bond angles | |
|---|---|---|---|---|---|
| | | RMSZ | #$\|Z\|>5$ | RMSZ | #$\|Z\|>5$ |
| 1 | A | 0.40 | 1/11408 (0.0%) | 0.57 | 3/15405 (0.0%) |
| 2 | B | 0.39 | 1/9062 (0.0%) | 0.59 | 2/12249 (0.0%) |
| 3 | C | 0.42 | 0/2469 | 0.62 | 2/3347 (0.1%) |
| 4 | D | 0.37 | 0/135 | 0.62 | 0/188 |
| 5 | E | 0.40 | 0/1795 | 0.55 | 0/2416 |
| 6 | F | 0.39 | 0/838 | 0.54 | 0/1129 |
| 7 | G | 0.40 | 0/725 | 0.60 | 0/990 |
| 8 | H | 0.39 | 0/1090 | 0.57 | 0/1476 |
| 9 | I | 0.37 | 0/478 | 0.53 | 0/647 |
| 10 | J | 0.40 | 0/578 | 0.62 | 0/775 |
| 11 | K | 0.38 | 0/803 | 0.57 | 0/1083 |
| 12 | L | 0.35 | 0/361 | 0.56 | 0/478 |
| 13 | M | 0.38 | 0/846 | 0.53 | 0/1136 |
| 14 | N | 0.44 | 0/1124 | 0.56 | 2/1512 (0.1%) |
| All | All | 0.40 | 2/31712 (0.0%) | 0.58 | 9/42831 (0.0%) |

All (2) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 1 | A | 1181 | PRO | N-CD | 5.30 | 1.55 | 1.47 |
| 2 | B | 693 | PRO | N-CD | 5.26 | 1.55 | 1.47 |

All (9) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 3 | C | 220 | SER | C-N-CD | 6.06 | 141.13 | 128.40 |
| 1 | A | 1501 | ILE | C-N-CD | 6.05 | 141.12 | 128.40 |
| 3 | C | 75 | VAL | C-N-CD | 6.04 | 141.09 | 128.40 |
| 14 | N | 160 | VAL | C-N-CD | 6.04 | 141.07 | 128.40 |
| 1 | A | 507 | TYR | C-N-CD | 6.03 | 141.07 | 128.40 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 2 | B | 704 | THR | C-N-CD | 6.02 | 141.05 | 128.40 |
| 14 | N | 145 | ILE | C-N-CD | 6.02 | 141.04 | 128.40 |
| 1 | A | 1180 | ASN | C-N-CD | 5.60 | 140.16 | 128.40 |
| 2 | B | 692 | THR | C-N-CD | 5.58 | 140.13 | 128.40 |

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 | A | 11207 | 0 | 11249 | 527 | 0 |
| 2 | B | 8868 | 0 | 8734 | 466 | 0 |
| 3 | C | 2418 | 0 | 2401 | 145 | 0 |
| 4 | D | 133 | 0 | 138 | 5 | 0 |
| 5 | E | 1759 | 0 | 1788 | 14 | 0 |
| 6 | F | 823 | 0 | 841 | 28 | 0 |
| 7 | G | 706 | 0 | 721 | 59 | 0 |
| 8 | H | 1072 | 0 | 1042 | 15 | 0 |
| 9 | I | 472 | 0 | 473 | 9 | 0 |
| 10 | J | 569 | 0 | 585 | 58 | 0 |
| 11 | K | 792 | 0 | 790 | 93 | 0 |
| 12 | L | 359 | 0 | 384 | 17 | 0 |
| 13 | M | 831 | 0 | 820 | 19 | 0 |
| 14 | N | 1103 | 0 | 1106 | 27 | 0 |
| 15 | A | 2 | 0 | 0 | 0 | 0 |
| 15 | B | 1 | 0 | 0 | 0 | 0 |
| 15 | I | 1 | 0 | 0 | 0 | 0 |
| 15 | J | 1 | 0 | 0 | 0 | 0 |
| 15 | L | 1 | 0 | 0 | 2 | 0 |
| All | All | 31118 | 0 | 31072 | 1011 | 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 16.

All (1011) 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:B:697:LEU:HD11 | 2:B:984:TRP:CH2 | 1.23 | 1.65 |
| 2:B:697:LEU:HD11 | 2:B:984:TRP:CZ3 | 1.31 | 1.59 |
| 1:A:5:LYS:CB | 2:B:1100:GLN:NE2 | 1.67 | 1.57 |
| 1:A:1660:VAL:CG2 | 7:G:105:ILE:HG23 | 1.10 | 1.56 |
| 3:C:37:LYS:HG3 | 11:K:134:LYS:CE | 1.33 | 1.55 |
| 1:A:824:THR:CG2 | 2:B:1023:ARG:HD3 | 1.30 | 1.55 |
| 1:A:9:SER:HB3 | 2:B:1200:VAL:CG1 | 1.05 | 1.52 |
| 1:A:49:LEU:HD22 | 1:A:390:LEU:CD1 | 1.42 | 1.48 |
| 1:A:49:LEU:CD2 | 1:A:390:LEU:HD11 | 1.42 | 1.47 |
| 1:A:1660:VAL:HG21 | 7:G:105:ILE:CG2 | 1.02 | 1.47 |
| 1:A:35:PRO:CD | 1:A:394:LEU:HD12 | 1.48 | 1.42 |
| 1:A:826:PHE:HA | 2:B:1023:ARG:NH2 | 1.27 | 1.42 |
| 2:B:683:ASN:OD1 | 14:N:150:TYR:CE2 | 1.72 | 1.42 |
| 1:A:35:PRO:CD | 1:A:394:LEU:CD1 | 1.97 | 1.41 |
| 1:A:367:PHE:CE1 | 2:B:1184:TYR:HA | 1.57 | 1.38 |
| 2:B:697:LEU:CD1 | 2:B:984:TRP:CZ3 | 2.03 | 1.38 |
| 1:A:9:SER:CB | 2:B:1200:VAL:CG1 | 2.00 | 1.37 |
| 1:A:11:ILE:HD13 | 2:B:1198:TYR:CD1 | 1.57 | 1.36 |
| 1:A:49:LEU:CD2 | 1:A:390:LEU:CD1 | 2.00 | 1.36 |
| 3:C:37:LYS:CG | 11:K:134:LYS:CE | 2.01 | 1.36 |
| 2:B:342:PRO:O | 13:M:112:LYS:CE | 1.74 | 1.36 |
| 2:B:974:LEU:HD21 | 10:J:44:TYR:CD1 | 1.60 | 1.35 |
| 1:A:1662:ASN:ND2 | 7:G:58:LEU:H | 1.18 | 1.35 |
| 1:A:34:ASN:O | 1:A:390:LEU:CD2 | 1.75 | 1.33 |
| 1:A:9:SER:HA | 2:B:1201:GLU:O | 1.22 | 1.33 |
| 1:A:1:MET:HG2 | 2:B:1098:TYR:CE2 | 1.65 | 1.31 |
| 1:A:5:LYS:HB3 | 2:B:1100:GLN:NE2 | 1.01 | 1.31 |
| 2:B:401:GLU:CD | 2:B:647:SER:OG | 1.67 | 1.31 |
| 2:B:494:TYR:CE1 | 2:B:762:MET:SD | 2.25 | 1.30 |
| 2:B:342:PRO:O | 13:M:112:LYS:HE3 | 1.14 | 1.27 |
| 3:C:142:ARG:HH21 | 10:J:67:GLU:CD | 1.38 | 1.27 |
| 1:A:1003:ARG:NH2 | 2:B:520:LEU:HD22 | 1.50 | 1.27 |
| 1:A:1659:LYS:CE | 6:F:133:VAL:HG21 | 1.64 | 1.26 |
| 1:A:11:ILE:CG1 | 2:B:1198:TYR:HB3 | 1.65 | 1.25 |
| 3:C:37:LYS:CG | 11:K:134:LYS:HE2 | 1.64 | 1.25 |
| 1:A:1662:ASN:HD22 | 7:G:58:LEU:N | 1.35 | 1.24 |
| 1:A:824:THR:HG22 | 2:B:1023:ARG:CD | 1.65 | 1.23 |
| 1:A:826:PHE:CA | 2:B:1023:ARG:NH2 | 2.01 | 1.23 |
| 2:B:683:ASN:OD1 | 14:N:150:TYR:CZ | 1.91 | 1.23 |
| 2:B:697:LEU:CD1 | 2:B:984:TRP:CH2 | 2.19 | 1.23 |
| 1:A:35:PRO:HD3 | 1:A:394:LEU:CD1 | 1.61 | 1.22 |
| 1:A:11:ILE:HA | 2:B:1199:ASN:O | 1.35 | 1.22 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:363:PRO:CG | 2:B:1191:ALA:HB2 | 1.69 | 1.21 |
| 1:A:1660:VAL:HG22 | 7:G:105:ILE:N | 1.57 | 1.19 |
| 1:A:76:GLN:NE2 | 2:B:1190:SER:HB3 | 1.55 | 1.18 |
| 2:B:494:TYR:CZ | 2:B:762:MET:SD | 2.36 | 1.17 |
| 1:A:35:PRO:CG | 1:A:394:LEU:HD12 | 1.73 | 1.16 |
| 1:A:824:THR:CG2 | 2:B:1023:ARG:CD | 2.21 | 1.15 |
| 1:A:49:LEU:HG | 1:A:386:LEU:HB3 | 1.28 | 1.15 |
| 1:A:363:PRO:HG3 | 2:B:1191:ALA:CB | 1.75 | 1.15 |
| 1:A:825:ALA:O | 2:B:1023:ARG:NH2 | 1.79 | 1.15 |
| 1:A:1660:VAL:CG2 | 7:G:105:ILE:CG2 | 1.85 | 1.15 |
| 1:A:368:ARG:HG3 | 1:A:382:GLN:OE1 | 1.48 | 1.13 |
| 1:A:1048:PHE:HB2 | 5:E:208:TYR:OH | 1.47 | 1.13 |
| 1:A:1003:ARG:HH12 | 2:B:520:LEU:CB | 1.60 | 1.13 |
| 2:B:974:LEU:HD23 | 10:J:44:TYR:HB3 | 1.21 | 1.13 |
| 1:A:35:PRO:HD2 | 1:A:394:LEU:CD1 | 1.77 | 1.13 |
| 2:B:974:LEU:CD2 | 10:J:44:TYR:CD1 | 2.32 | 1.12 |
| 1:A:34:ASN:O | 1:A:390:LEU:HD22 | 0.96 | 1.12 |
| 1:A:825:ALA:O | 2:B:1023:ARG:NE | 1.83 | 1.12 |
| 1:A:1260:LYS:HG3 | 1:A:1500:GLN:HB2 | 1.18 | 1.11 |
| 1:A:83:VAL:HG21 | 1:A:427:PHE:CE2 | 1.84 | 1.11 |
| 3:C:53:ASN:ND2 | 14:N:173:THR:HB | 1.63 | 1.11 |
| 1:A:1660:VAL:HG21 | 7:G:105:ILE:HG21 | 1.28 | 1.11 |
| 3:C:37:LYS:HG3 | 11:K:134:LYS:HE3 | 1.15 | 1.11 |
| 1:A:83:VAL:HG21 | 1:A:427:PHE:CZ | 1.86 | 1.10 |
| 1:A:825:ALA:O | 2:B:1023:ARG:CZ | 1.96 | 1.10 |
| 3:C:75:VAL:CG1 | 3:C:221:PRO:HG3 | 1.81 | 1.10 |
| 3:C:33:VAL:HG22 | 11:K:130:VAL:HG21 | 1.30 | 1.10 |
| 2:B:697:LEU:CD1 | 2:B:984:TRP:HZ3 | 1.50 | 1.10 |
| 1:A:34:ASN:C | 1:A:390:LEU:HD22 | 1.70 | 1.10 |
| 1:A:368:ARG:CG | 1:A:382:GLN:OE1 | 1.99 | 1.10 |
| 2:B:397:THR:HB | 2:B:523:GLU:CB | 1.80 | 1.10 |
| 2:B:207:ILE:HD13 | 2:B:402:VAL:HG22 | 1.33 | 1.10 |
| 3:C:37:LYS:CG | 11:K:134:LYS:HE3 | 1.72 | 1.10 |
| 3:C:70:ILE:HG23 | 3:C:74:GLU:HG3 | 1.32 | 1.10 |
| 1:A:826:PHE:CA | 2:B:1023:ARG:HH21 | 1.62 | 1.09 |
| 9:I:6:SER:HA | 9:I:45:LEU:HD13 | 1.18 | 1.09 |
| 1:A:1003:ARG:HH12 | 2:B:520:LEU:HB2 | 1.11 | 1.08 |
| 2:B:401:GLU:CG | 2:B:647:SER:OG | 2.01 | 1.08 |
| 1:A:934:LYS:NZ | 2:B:956:SER:OG | 1.87 | 1.07 |
| 3:C:314:PHE:CE2 | 11:K:135:PHE:CE1 | 2.42 | 1.07 |
| 1:A:35:PRO:CD | 1:A:394:LEU:HD11 | 1.78 | 1.07 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:11:ILE:CD1 | 2:B:1198:TYR:CD1 | 2.38 | 1.06 |
| 3:C:333:ILE:HG23 | 11:K:47:ILE:HG12 | 1.35 | 1.06 |
| 1:A:5:LYS:HB3 | 2:B:1100:GLN:CD | 1.75 | 1.06 |
| 1:A:9:SER:HB3 | 2:B:1200:VAL:HG13 | 1.14 | 1.05 |
| 1:A:1003:ARG:NH2 | 2:B:520:LEU:CD2 | 2.19 | 1.05 |
| 1:A:5:LYS:HB2 | 2:B:1100:GLN:NE2 | 1.68 | 1.05 |
| 1:A:988:SER:C | 2:B:988:GLU:OE1 | 1.83 | 1.05 |
| 1:A:11:ILE:HG12 | 2:B:1198:TYR:CB | 1.87 | 1.04 |
| 1:A:363:PRO:HG3 | 2:B:1191:ALA:HB2 | 1.09 | 1.04 |
| 2:B:26:ILE:HA | 10:J:62:ARG:HD2 | 1.33 | 1.04 |
| 3:C:314:PHE:CD2 | 11:K:135:PHE:CZ | 2.45 | 1.04 |
| 1:A:1659:LYS:HD2 | 6:F:133:VAL:HG23 | 1.40 | 1.03 |
| 1:A:1663:ALA:CA | 7:G:103:LYS:HD2 | 1.88 | 1.03 |
| 1:A:49:LEU:CD2 | 1:A:390:LEU:HD12 | 1.89 | 1.03 |
| 3:C:333:ILE:HA | 11:K:47:ILE:CG2 | 1.89 | 1.03 |
| 1:A:9:SER:HB3 | 2:B:1200:VAL:HG11 | 1.34 | 1.02 |
| 2:B:345:SER:CB | 13:M:111:PRO:O | 2.07 | 1.02 |
| 2:B:697:LEU:HD12 | 2:B:984:TRP:HZ3 | 1.21 | 1.02 |
| 2:B:345:SER:HB2 | 13:M:111:PRO:O | 1.57 | 1.02 |
| 2:B:401:GLU:OE1 | 2:B:647:SER:CB | 2.08 | 1.02 |
| 3:C:322:LYS:HE3 | 11:K:129:ASP:OD1 | 1.57 | 1.02 |
| 1:A:1003:ARG:NH1 | 2:B:520:LEU:CB | 2.23 | 1.01 |
| 3:C:37:LYS:HG3 | 11:K:134:LYS:HE2 | 1.02 | 1.01 |
| 3:C:222:VAL:HG23 | 3:C:303:GLU:O | 1.58 | 1.01 |
| 3:C:328:LEU:CD1 | 11:K:72:LEU:HD11 | 1.91 | 1.01 |
| 1:A:10:GLU:O | 2:B:1200:VAL:HA | 1.59 | 1.01 |
| 1:A:759:TYR:OH | 1:A:930:LEU:HD22 | 1.57 | 1.01 |
| 3:C:75:VAL:HG12 | 3:C:221:PRO:HG3 | 1.38 | 1.01 |
| 3:C:76:PRO:HB3 | 3:C:212:ILE:HG22 | 1.39 | 1.01 |
| 3:C:314:PHE:HE2 | 11:K:135:PHE:CE1 | 1.75 | 1.01 |
| 1:A:76:GLN:HE22 | 2:B:1190:SER:HB3 | 1.16 | 1.00 |
| 3:C:328:LEU:CD1 | 11:K:72:LEU:CD1 | 2.38 | 1.00 |
| 1:A:7:VAL:CG1 | 2:B:1176:VAL:HA | 1.91 | 1.00 |
| 1:A:759:TYR:OH | 1:A:930:LEU:CD2 | 2.10 | 1.00 |
| 1:A:934:LYS:NZ | 2:B:956:SER:CB | 2.24 | 1.00 |
| 1:A:1659:LYS:HE3 | 6:F:133:VAL:HG21 | 1.41 | 1.00 |
| 1:A:1660:VAL:HG23 | 7:G:105:ILE:HG23 | 1.39 | 1.00 |
| 1:A:1:MET:N | 2:B:1098:TYR:CG | 2.30 | 1.00 |
| 1:A:367:PHE:HD1 | 2:B:1184:TYR:HD1 | 1.03 | 0.99 |
| 12:L:48:CYS:SG | 15:L:101:ZN:ZN | 1.51 | 0.99 |
| 2:B:397:THR:HB | 2:B:523:GLU:HB3 | 1.01 | 0.99 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 12:L:28:LYS:HB2 | 12:L:59:ALA:HB3 | 1.42 | 0.99 |
| 3:C:142:ARG:NH2 | 10:J:67:GLU:OE2 | 1.95 | 0.99 |
| 1:A:63:SER:O | 2:B:1163:GLN:OE1 | 1.81 | 0.98 |
| 1:A:7:VAL:HG11 | 2:B:1176:VAL:HA | 1.43 | 0.98 |
| 1:A:1663:ALA:HA | 7:G:103:LYS:HD2 | 1.00 | 0.98 |
| 2:B:397:THR:CB | 2:B:523:GLU:HB3 | 1.92 | 0.98 |
| 1:A:689:ARG:NH2 | 11:K:87:GLU:O | 1.97 | 0.98 |
| 1:A:1501:ILE:HG13 | 1:A:1502:PRO:CD | 1.93 | 0.98 |
| 3:C:70:ILE:HG23 | 3:C:74:GLU:CG | 1.92 | 0.98 |
| 2:B:25:PHE:CE1 | 2:B:764:ASN:OD1 | 2.16 | 0.98 |
| 1:A:1:MET:HA | 2:B:1098:TYR:CD2 | 1.99 | 0.98 |
| 1:A:1663:ALA:HA | 7:G:103:LYS:CD | 1.94 | 0.98 |
| 1:A:1660:VAL:H | 7:G:104:LEU:HA | 1.26 | 0.97 |
| 1:A:11:ILE:CD1 | 2:B:1198:TYR:HB3 | 1.92 | 0.97 |
| 3:C:75:VAL:CG1 | 3:C:221:PRO:CG | 2.42 | 0.97 |
| 1:A:9:SER:HB3 | 2:B:1200:VAL:HG12 | 1.01 | 0.97 |
| 2:B:211:ARG:HH22 | 2:B:243:GLN:NE2 | 1.61 | 0.97 |
| 1:A:1659:LYS:NZ | 6:F:133:VAL:HG21 | 1.78 | 0.97 |
| 2:B:974:LEU:CD2 | 10:J:44:TYR:HB3 | 1.93 | 0.97 |
| 1:A:1:MET:HA | 2:B:1098:TYR:CD1 | 2.00 | 0.97 |
| 1:A:1657:LEU:CD1 | 6:F:135:ARG:HD2 | 1.94 | 0.97 |
| 2:B:25:PHE:CZ | 2:B:764:ASN:OD1 | 2.18 | 0.96 |
| 1:A:11:ILE:HG12 | 2:B:1198:TYR:HB3 | 0.99 | 0.96 |
| 1:A:1660:VAL:CG2 | 7:G:105:ILE:CB | 2.34 | 0.96 |
| 2:B:401:GLU:OE1 | 2:B:647:SER:HB3 | 1.62 | 0.96 |
| 1:A:1:MET:HA | 2:B:1098:TYR:CG | 2.00 | 0.96 |
| 1:A:1:MET:CA | 2:B:1098:TYR:CG | 2.49 | 0.96 |
| 1:A:9:SER:CA | 2:B:1201:GLU:O | 2.13 | 0.96 |
| 1:A:1654:PHE:HE2 | 6:F:92:ARG:HH11 | 1.09 | 0.96 |
| 1:A:367:PHE:CD1 | 2:B:1184:TYR:HD1 | 1.82 | 0.95 |
| 1:A:824:THR:HG23 | 2:B:1023:ARG:HD3 | 1.48 | 0.95 |
| 1:A:200:GLY:O | 5:E:171:LYS:NZ | 2.00 | 0.95 |
| 2:B:401:GLU:OE1 | 2:B:647:SER:OG | 1.84 | 0.95 |
| 1:A:989:GLY:N | 2:B:988:GLU:OE1 | 1.99 | 0.95 |
| 1:A:367:PHE:HE1 | 2:B:1184:TYR:HA | 1.18 | 0.94 |
| 3:C:334:THR:HG21 | 11:K:44:ARG:HB3 | 1.47 | 0.94 |
| 1:A:1660:VAL:HG21 | 7:G:105:ILE:CB | 1.89 | 0.94 |
| 1:A:1660:VAL:HG22 | 7:G:105:ILE:HG23 | 1.49 | 0.94 |
| 1:A:1662:ASN:ND2 | 7:G:58:LEU:N | 2.02 | 0.94 |
| 1:A:8:GLY:O | 2:B:1202:PRO:HD3 | 1.68 | 0.94 |
| 2:B:527:PHE:CE2 | 2:B:651:ARG:HD3 | 2.04 | 0.93 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:C:142:ARG:NH2 | 10:J:67:GLU:OE1 | 2.02 | 0.93 |
| 1:A:1003:ARG:HH22 | 2:B:520:LEU:HD22 | 1.09 | 0.93 |
| 1:A:76:GLN:NE2 | 2:B:1190:SER:CB | 2.31 | 0.93 |
| 3:C:37:LYS:HG2 | 11:K:134:LYS:CE | 1.97 | 0.93 |
| 1:A:1316:VAL:HG21 | 1:A:1498:ILE:HG23 | 1.50 | 0.93 |
| 4:D:24:ALA:O | 6:F:55:PRO:HA | 1.69 | 0.92 |
| 2:B:211:ARG:HD3 | 2:B:239:VAL:HG21 | 1.48 | 0.92 |
| 3:C:53:ASN:ND2 | 14:N:173:THR:CB | 2.31 | 0.92 |
| 1:A:1:MET:CG | 2:B:1098:TYR:CE2 | 2.52 | 0.92 |
| 2:B:494:TYR:OH | 2:B:762:MET:SD | 2.28 | 0.92 |
| 2:B:26:ILE:HA | 10:J:62:ARG:CD | 1.99 | 0.92 |
| 3:C:142:ARG:NH2 | 10:J:67:GLU:CD | 2.22 | 0.92 |
| 1:A:12:THR:HG21 | 2:B:1201:GLU:OE2 | 1.70 | 0.91 |
| 2:B:974:LEU:CD2 | 10:J:44:TYR:HD1 | 1.78 | 0.91 |
| 12:L:48:CYS:HG | 15:L:101:ZN:ZN | 0.65 | 0.91 |
| 1:A:11:ILE:CA | 2:B:1199:ASN:O | 2.16 | 0.91 |
| 1:A:1003:ARG:NH1 | 2:B:520:LEU:HB3 | 1.83 | 0.91 |
| 2:B:209:GLN:HG2 | 2:B:210:ARG:H | 1.35 | 0.91 |
| 1:A:1:MET:HA | 2:B:1098:TYR:CE2 | 2.05 | 0.91 |
| 1:A:1657:LEU:HD13 | 6:F:135:ARG:HD2 | 1.50 | 0.91 |
| 3:C:33:VAL:CG2 | 11:K:130:VAL:HG21 | 2.00 | 0.91 |
| 14:N:149:ASP:O | 14:N:153:VAL:HG12 | 1.69 | 0.91 |
| 1:A:1:MET:CA | 2:B:1098:TYR:CD2 | 2.54 | 0.90 |
| 2:B:529:CYS:SG | 2:B:698:SER:HB2 | 2.10 | 0.90 |
| 1:A:13:SER:O | 2:B:1199:ASN:OD1 | 1.89 | 0.90 |
| 1:A:1659:LYS:HD2 | 6:F:133:VAL:CG2 | 2.01 | 0.90 |
| 1:A:363:PRO:CG | 2:B:1191:ALA:CB | 2.42 | 0.89 |
| 1:A:1003:ARG:NH1 | 2:B:520:LEU:HB2 | 1.86 | 0.89 |
| 1:A:367:PHE:CE1 | 2:B:1184:TYR:CA | 2.53 | 0.89 |
| 1:A:759:TYR:HD1 | 1:A:920:PHE:CD2 | 1.90 | 0.89 |
| 11:K:59:THR:O | 11:K:113:ALA:HB2 | 1.72 | 0.89 |
| 1:A:35:PRO:HD3 | 1:A:394:LEU:HD11 | 1.40 | 0.89 |
| 1:A:34:ASN:O | 1:A:390:LEU:CG | 2.20 | 0.89 |
| 1:A:1659:LYS:CE | 6:F:133:VAL:CG2 | 2.51 | 0.89 |
| 2:B:14:ALA:HB3 | 2:B:755:ASN:HD21 | 1.37 | 0.89 |
| 1:A:824:THR:HG22 | 2:B:1023:ARG:HD3 | 0.89 | 0.88 |
| 1:A:1:MET:HA | 2:B:1098:TYR:CE1 | 2.08 | 0.88 |
| 1:A:1260:LYS:HG3 | 1:A:1500:GLN:CB | 2.04 | 0.88 |
| 1:A:934:LYS:NZ | 2:B:956:SER:HB2 | 1.87 | 0.88 |
| 2:B:211:ARG:NH2 | 2:B:243:GLN:HE22 | 1.72 | 0.88 |
| 1:A:1659:LYS:NZ | 6:F:133:VAL:CG2 | 2.37 | 0.88 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:1654:PHE:CE2 | 6:F:92:ARG:NH1 | 2.42 | 0.87 |
| 1:A:1003:ARG:HH22 | 2:B:520:LEU:CD2 | 1.81 | 0.87 |
| 2:B:99:VAL:HG21 | 2:B:417:ILE:HD11 | 1.55 | 0.87 |
| 3:C:314:PHE:HD2 | 11:K:135:PHE:CZ | 1.91 | 0.87 |
| 1:A:11:ILE:HD13 | 2:B:1198:TYR:HD1 | 0.96 | 0.87 |
| 2:B:525:TRP:CZ2 | 2:B:696:ILE:HG21 | 2.10 | 0.87 |
| 3:C:53:ASN:HD21 | 14:N:173:THR:CB | 1.88 | 0.87 |
| 1:A:35:PRO:HG2 | 1:A:394:LEU:HD12 | 1.55 | 0.87 |
| 1:A:49:LEU:CG | 1:A:386:LEU:HB3 | 2.04 | 0.87 |
| 1:A:367:PHE:HD1 | 2:B:1184:TYR:CD1 | 1.93 | 0.87 |
| 3:C:328:LEU:HD12 | 11:K:72:LEU:CD1 | 2.04 | 0.87 |
| 2:B:974:LEU:HD23 | 10:J:44:TYR:CB | 2.04 | 0.87 |
| 1:A:368:ARG:HG2 | 1:A:382:GLN:OE1 | 1.76 | 0.86 |
| 14:N:163:VAL:HG12 | 14:N:164:GLU:H | 1.41 | 0.86 |
| 1:A:35:PRO:HD2 | 1:A:394:LEU:HD11 | 1.47 | 0.86 |
| 2:B:209:GLN:HG2 | 2:B:210:ARG:N | 1.91 | 0.86 |
| 3:C:37:LYS:O | 11:K:134:LYS:NZ | 2.07 | 0.86 |
| 3:C:315:PHE:CE1 | 11:K:135:PHE:HD2 | 1.94 | 0.86 |
| 3:C:333:ILE:HA | 11:K:47:ILE:HG23 | 1.54 | 0.86 |
| 1:A:1:MET:HG2 | 2:B:1098:TYR:HE2 | 1.35 | 0.85 |
| 1:A:1659:LYS:HG2 | 7:G:104:LEU:HB3 | 1.58 | 0.85 |
| 2:B:398:GLN:HG3 | 2:B:399:HIS:CE1 | 2.11 | 0.85 |
| 2:B:697:LEU:HD11 | 2:B:984:TRP:HH2 | 1.13 | 0.85 |
| 1:A:1:MET:HA | 2:B:1098:TYR:CZ | 2.10 | 0.85 |
| 1:A:718:THR:HG21 | 8:H:119:GLY:HA3 | 1.56 | 0.85 |
| 2:B:404:LEU:HD21 | 2:B:551:ILE:HD13 | 1.57 | 0.85 |
| 1:A:1:MET:CB | 2:B:1098:TYR:CD2 | 2.59 | 0.85 |
| 9:I:6:SER:HA | 9:I:45:LEU:CD1 | 2.05 | 0.85 |
| 1:A:8:GLY:O | 2:B:1202:PRO:CD | 2.25 | 0.85 |
| 1:A:76:GLN:HE22 | 2:B:1190:SER:CB | 1.87 | 0.85 |
| 3:C:314:PHE:CE2 | 11:K:135:PHE:CZ | 2.65 | 0.85 |
| 2:B:26:ILE:HG23 | 10:J:62:ARG:HH11 | 1.42 | 0.84 |
| 3:C:328:LEU:CD1 | 11:K:72:LEU:HD13 | 2.07 | 0.84 |
| 3:C:335:GLN:HB3 | 11:K:49:LEU:H | 1.40 | 0.84 |
| 1:A:9:SER:CB | 2:B:1200:VAL:HG12 | 1.83 | 0.84 |
| 2:B:128:GLN:HB3 | 12:L:55:ILE:HD13 | 1.59 | 0.84 |
| 1:A:49:LEU:HG | 1:A:386:LEU:CB | 2.07 | 0.84 |
| 2:B:14:ALA:CB | 2:B:755:ASN:ND2 | 2.41 | 0.84 |
| 9:I:6:SER:CA | 9:I:45:LEU:HD13 | 2.04 | 0.84 |
| 1:A:1:MET:CB | 2:B:1094:ASN:OD1 | 2.26 | 0.84 |
| 2:B:494:TYR:HE1 | 2:B:762:MET:SD | 2.00 | 0.84 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:1501:ILE:HG13 | 1:A:1502:PRO:HD2 | 1.58 | 0.83 |
| 3:C:333:ILE:HA | 11:K:47:ILE:HG21 | 1.59 | 0.83 |
| 3:C:333:ILE:HG23 | 11:K:47:ILE:CG1 | 2.07 | 0.83 |
| 3:C:335:GLN:O | 11:K:49:LEU:HB3 | 1.77 | 0.83 |
| 2:B:208:VAL:O | 2:B:401:GLU:N | 2.09 | 0.82 |
| 2:B:211:ARG:HH22 | 2:B:243:GLN:HE22 | 0.87 | 0.82 |
| 1:A:654:ASP:O | 1:A:656:GLN:N | 2.12 | 0.82 |
| 1:A:824:THR:HA | 2:B:1023:ARG:HB2 | 1.61 | 0.82 |
| 1:A:825:ALA:C | 2:B:1023:ARG:HH21 | 1.81 | 0.82 |
| 1:A:1654:PHE:HE2 | 6:F:92:ARG:NH1 | 1.77 | 0.82 |
| 1:A:834:ARG:HH22 | 2:B:994:ASP:CG | 1.83 | 0.82 |
| 1:A:7:VAL:HG21 | 2:B:1177:ALA:N | 1.94 | 0.82 |
| 2:B:527:PHE:CZ | 2:B:651:ARG:HD3 | 2.15 | 0.82 |
| 2:B:401:GLU:CB | 2:B:647:SER:OG | 2.27 | 0.81 |
| 1:A:722:PRO:HG2 | 8:H:46:LEU:HD13 | 1.61 | 0.81 |
| 1:A:722:PRO:CG | 8:H:46:LEU:HD13 | 2.11 | 0.81 |
| 3:C:75:VAL:HG12 | 3:C:221:PRO:CG | 2.10 | 0.81 |
| 14:N:162:LYS:N | 14:N:162:LYS:HD2 | 1.96 | 0.81 |
| 1:A:651:ALA:O | 1:A:652:ASN:O | 1.97 | 0.80 |
| 3:C:37:LYS:CA | 11:K:134:LYS:HE3 | 2.11 | 0.80 |
| 2:B:211:ARG:HD3 | 2:B:239:VAL:CG2 | 2.10 | 0.80 |
| 3:C:33:VAL:HG22 | 11:K:130:VAL:CG2 | 2.12 | 0.80 |
| 2:B:401:GLU:HB2 | 2:B:647:SER:OG | 1.81 | 0.80 |
| 1:A:1:MET:N | 2:B:1098:TYR:CB | 2.45 | 0.80 |
| 1:A:7:VAL:HG21 | 2:B:1177:ALA:H | 1.46 | 0.80 |
| 1:A:489:ASN:HB3 | 11:K:95:HIS:HD2 | 1.46 | 0.80 |
| 2:B:401:GLU:CD | 2:B:647:SER:CB | 2.47 | 0.80 |
| 2:B:494:TYR:CZ | 2:B:762:MET:CE | 2.65 | 0.80 |
| 2:B:26:ILE:CA | 10:J:62:ARG:HD2 | 2.12 | 0.79 |
| 1:A:1660:VAL:HG22 | 7:G:105:ILE:CB | 2.08 | 0.79 |
| 1:A:722:PRO:HD2 | 8:H:46:LEU:HD13 | 1.63 | 0.79 |
| 2:B:398:GLN:HG3 | 2:B:399:HIS:ND1 | 1.98 | 0.78 |
| 2:B:525:TRP:CH2 | 2:B:696:ILE:HG21 | 2.19 | 0.78 |
| 1:A:367:PHE:CD1 | 2:B:1184:TYR:CD1 | 2.70 | 0.77 |
| 1:A:826:PHE:HA | 2:B:1023:ARG:HH22 | 0.97 | 0.77 |
| 1:A:9:SER:CB | 2:B:1200:VAL:HG13 | 1.89 | 0.77 |
| 1:A:489:ASN:CB | 11:K:95:HIS:HD2 | 1.97 | 0.77 |
| 1:A:1600:ARG:HD2 | 1:A:1616:GLU:OE2 | 1.84 | 0.77 |
| 1:A:1659:LYS:CD | 6:F:133:VAL:CG2 | 2.63 | 0.77 |
| 2:B:527:PHE:CE1 | 2:B:651:ARG:HB3 | 2.18 | 0.77 |
| 3:C:222:VAL:CG2 | 3:C:303:GLU:O | 2.30 | 0.77 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:B:14:ALA:HB1 | 2:B:755:ASN:ND2 | 2.00 | 0.77 |
| 2:B:974:LEU:HD21 | 10:J:44:TYR:HD1 | 1.07 | 0.77 |
| 1:A:1260:LYS:NZ | 1:A:1262:LEU:HD11 | 1.98 | 0.77 |
| 2:B:14:ALA:CB | 2:B:755:ASN:HD21 | 1.99 | 0.76 |
| 1:A:367:PHE:HE1 | 2:B:1184:TYR:CA | 1.96 | 0.76 |
| 3:C:328:LEU:HD12 | 11:K:72:LEU:HD11 | 1.62 | 0.76 |
| 9:I:5:GLY:O | 9:I:45:LEU:HD22 | 1.85 | 0.75 |
| 1:A:1:MET:HE2 | 2:B:1094:ASN:HD21 | 1.51 | 0.75 |
| 1:A:1660:VAL:HG22 | 7:G:105:ILE:CA | 2.16 | 0.75 |
| 1:A:9:SER:CB | 2:B:1200:VAL:HG11 | 2.00 | 0.75 |
| 2:B:494:TYR:OH | 2:B:762:MET:CG | 2.35 | 0.74 |
| 1:A:1:MET:CA | 2:B:1098:TYR:CD1 | 2.68 | 0.74 |
| 1:A:1260:LYS:CG | 1:A:1500:GLN:HB2 | 2.10 | 0.74 |
| 1:A:1659:LYS:CD | 6:F:133:VAL:HG21 | 2.17 | 0.74 |
| 3:C:75:VAL:HG11 | 3:C:221:PRO:CG | 2.15 | 0.74 |
| 1:A:1:MET:HG3 | 2:B:1094:ASN:OD1 | 1.87 | 0.74 |
| 3:C:37:LYS:HA | 11:K:134:LYS:HE3 | 1.69 | 0.74 |
| 1:A:11:ILE:CD1 | 2:B:1198:TYR:CB | 2.66 | 0.74 |
| 1:A:11:ILE:CD1 | 2:B:1198:TYR:CG | 2.71 | 0.74 |
| 1:A:1657:LEU:CG | 7:G:106:LYS:HG3 | 2.17 | 0.74 |
| 14:N:168:LEU:O | 14:N:169:GLU:HG3 | 1.88 | 0.73 |
| 1:A:49:LEU:HD21 | 1:A:390:LEU:CD1 | 2.12 | 0.73 |
| 3:C:328:LEU:HD11 | 11:K:72:LEU:HD13 | 1.71 | 0.73 |
| 1:A:7:VAL:HG13 | 2:B:1175:THR:O | 1.87 | 0.73 |
| 1:A:722:PRO:CD | 8:H:46:LEU:HD13 | 2.18 | 0.73 |
| 1:A:363:PRO:HG2 | 2:B:1191:ALA:HB2 | 1.67 | 0.73 |
| 1:A:824:THR:HG23 | 2:B:1023:ARG:CG | 2.18 | 0.72 |
| 3:C:328:LEU:HD13 | 11:K:72:LEU:HD11 | 1.71 | 0.72 |
| 1:A:832:ASP:C | 1:A:833:LEU:HD12 | 2.09 | 0.72 |
| 1:A:1048:PHE:CB | 5:E:208:TYR:OH | 2.32 | 0.72 |
| 2:B:44:PRO:CB | 2:B:551:ILE:HD12 | 2.20 | 0.72 |
| 3:C:75:VAL:CB | 3:C:221:PRO:HG3 | 2.19 | 0.72 |
| 1:A:1:MET:CE | 2:B:1094:ASN:HD21 | 2.02 | 0.72 |
| 1:A:1:MET:HB3 | 2:B:1094:ASN:CG | 2.10 | 0.72 |
| 2:B:209:GLN:HA | 2:B:400:GLN:HA | 1.71 | 0.72 |
| 1:A:1:MET:H1 | 2:B:1098:TYR:CB | 2.01 | 0.72 |
| 1:A:35:PRO:HD3 | 1:A:394:LEU:CG | 2.18 | 0.72 |
| 2:B:1005:TYR:HH | 10:J:44:TYR:HE1 | 1.37 | 0.72 |
| 1:A:1179:ILE:HG13 | 1:A:1180:ASN:N | 2.04 | 0.72 |
| 1:A:7:VAL:HG13 | 2:B:1176:VAL:HA | 1.71 | 0.72 |
| 1:A:759:TYR:HB3 | 1:A:920:PHE:CE2 | 2.25 | 0.72 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:759:TYR:OH | 1:A:930:LEU:HD21 | 1.90 | 0.72 |
| 3:C:37:LYS:CB | 11:K:134:LYS:HE3 | 2.19 | 0.71 |
| 1:A:759:TYR:HB3 | 1:A:920:PHE:HE2 | 1.55 | 0.71 |
| 2:B:14:ALA:O | 2:B:755:ASN:OD1 | 2.08 | 0.71 |
| 1:A:826:PHE:CB | 2:B:1023:ARG:NH2 | 2.52 | 0.71 |
| 1:A:988:SER:O | 2:B:988:GLU:CA | 2.39 | 0.71 |
| 2:B:342:PRO:O | 13:M:112:LYS:HE2 | 1.83 | 0.71 |
| 1:A:1179:ILE:HG13 | 1:A:1180:ASN:H | 1.55 | 0.71 |
| 3:C:328:LEU:HB3 | 11:K:121:LEU:HD22 | 1.73 | 0.71 |
| 1:A:50:TYR:CE1 | 1:A:383:ASN:OD1 | 2.37 | 0.71 |
| 1:A:759:TYR:CD1 | 1:A:920:PHE:CD2 | 2.76 | 0.71 |
| 1:A:489:ASN:CB | 11:K:95:HIS:CD2 | 2.74 | 0.70 |
| 1:A:759:TYR:CZ | 1:A:930:LEU:HD22 | 2.26 | 0.70 |
| 1:A:1660:VAL:N | 7:G:104:LEU:HA | 2.05 | 0.70 |
| 3:C:71:MET:HG3 | 3:C:317:SER:HB3 | 1.73 | 0.70 |
| 1:A:597:LYS:HB2 | 2:B:1082:HIS:CE1 | 2.27 | 0.70 |
| 1:A:993:GLN:NE2 | 2:B:680:GLU:OE2 | 2.24 | 0.70 |
| 2:B:345:SER:CA | 13:M:111:PRO:O | 2.39 | 0.70 |
| 3:C:70:ILE:HG23 | 3:C:74:GLU:CB | 2.22 | 0.70 |
| 3:C:71:MET:SD | 3:C:314:PHE:HA | 2.31 | 0.70 |
| 1:A:76:GLN:HE21 | 2:B:1190:SER:HB3 | 1.53 | 0.69 |
| 1:A:1260:LYS:HZ2 | 1:A:1262:LEU:HD11 | 1.57 | 0.69 |
| 2:B:209:GLN:C | 2:B:400:GLN:HA | 2.13 | 0.69 |
| 1:A:818:THR:O | 1:A:821:ILE:HG22 | 1.92 | 0.69 |
| 3:C:335:GLN:O | 11:K:49:LEU:CB | 2.40 | 0.69 |
| 1:A:1663:ALA:CB | 7:G:103:LYS:NZ | 2.56 | 0.69 |
| 2:B:401:GLU:HB2 | 2:B:647:SER:O | 1.91 | 0.69 |
| 1:A:826:PHE:N | 2:B:1023:ARG:HH21 | 1.88 | 0.69 |
| 1:A:1:MET:CE | 2:B:1094:ASN:ND2 | 2.56 | 0.69 |
| 1:A:19:LEU:HD12 | 2:B:1193:GLY:C | 2.12 | 0.69 |
| 1:A:1606:SER:HB3 | 1:A:1611:MET:HE3 | 1.74 | 0.69 |
| 2:B:397:THR:CB | 2:B:523:GLU:CB | 2.60 | 0.69 |
| 1:A:1:MET:HB2 | 2:B:1094:ASN:HA | 1.75 | 0.69 |
| 1:A:1023:LEU:HB3 | 1:A:1190:SER:HB3 | 1.74 | 0.69 |
| 1:A:1:MET:N | 2:B:1098:TYR:HB3 | 2.07 | 0.68 |
| 1:A:10:GLU:O | 2:B:1199:ASN:O | 2.11 | 0.68 |
| 1:A:759:TYR:CE1 | 1:A:930:LEU:HD13 | 2.29 | 0.68 |
| 2:B:44:PRO:CG | 2:B:551:ILE:HD12 | 2.22 | 0.68 |
| 2:B:342:PRO:O | 13:M:112:LYS:CD | 2.42 | 0.68 |
| 3:C:44:ILE:HD13 | 11:K:142:MET:SD | 2.34 | 0.68 |
| 3:C:71:MET:HG3 | 3:C:317:SER:CB | 2.24 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:1:MET:HE3 | 2:B:1094:ASN:ND2 | 2.09 | 0.68 |
| 2:B:974:LEU:CD2 | 10:J:44:TYR:CG | 2.76 | 0.68 |
| 1:A:1:MET:HB2 | 2:B:1098:TYR:CD2 | 2.29 | 0.68 |
| 2:B:208:VAL:HG23 | 2:B:401:GLU:CG | 2.24 | 0.68 |
| 1:A:11:ILE:HD13 | 2:B:1198:TYR:CG | 2.25 | 0.68 |
| 1:A:1:MET:CG | 2:B:1094:ASN:OD1 | 2.42 | 0.67 |
| 1:A:49:LEU:HD23 | 1:A:390:LEU:HD12 | 1.75 | 0.67 |
| 1:A:367:PHE:CZ | 2:B:1187:SER:HB2 | 2.01 | 0.67 |
| 3:C:229:LEU:HB3 | 3:C:293:ARG:HG2 | 1.76 | 0.67 |
| 1:A:64:THR:HG23 | 2:B:1129:ARG:NH1 | 2.10 | 0.67 |
| 1:A:693:GLN:HB3 | 11:K:88:PHE:CE2 | 2.29 | 0.67 |
| 1:A:824:THR:HG23 | 2:B:1023:ARG:CD | 2.12 | 0.67 |
| 12:L:28:LYS:NZ | 12:L:60:ARG:O | 2.18 | 0.67 |
| 3:C:221:PRO:HD2 | 3:C:222:VAL:H | 1.59 | 0.67 |
| 2:B:697:LEU:CD1 | 2:B:984:TRP:HH2 | 1.84 | 0.67 |
| 2:B:210:ARG:N | 2:B:400:GLN:HA | 2.10 | 0.67 |
| 2:B:404:LEU:HD21 | 2:B:551:ILE:HG21 | 1.76 | 0.67 |
| 1:A:826:PHE:CB | 2:B:1023:ARG:HH21 | 2.07 | 0.67 |
| 14:N:162:LYS:HD2 | 14:N:162:LYS:H | 1.58 | 0.67 |
| 2:B:555:GLN:HB3 | 2:B:644:GLY:O | 1.94 | 0.66 |
| 2:B:1005:TYR:CZ | 10:J:44:TYR:HE1 | 2.13 | 0.66 |
| 3:C:329:LYS:NZ | 11:K:125:MET:CE | 2.54 | 0.66 |
| 11:K:54:THR:HG23 | 11:K:61:ALA:HB2 | 1.75 | 0.66 |
| 1:A:34:ASN:O | 1:A:390:LEU:CD1 | 2.43 | 0.66 |
| 1:A:1622:LEU:HD21 | 2:B:1194:ILE:HD13 | 1.78 | 0.66 |
| 2:B:524:SER:HB3 | 2:B:528:LEU:HB2 | 1.77 | 0.66 |
| 3:C:53:ASN:HD22 | 14:N:173:THR:HB | 1.58 | 0.66 |
| 1:A:35:PRO:HD2 | 1:A:394:LEU:HD12 | 1.49 | 0.66 |
| 1:A:1038:ILE:HB | 1:A:1047:GLN:HB2 | 1.78 | 0.66 |
| 2:B:44:PRO:HB3 | 2:B:551:ILE:HD12 | 1.76 | 0.66 |
| 1:A:83:VAL:HG11 | 1:A:427:PHE:HZ | 1.61 | 0.66 |
| 1:A:1504:ILE:HG22 | 1:A:1505:ASP:N | 2.11 | 0.66 |
| 1:A:34:ASN:O | 1:A:390:LEU:HD13 | 1.96 | 0.66 |
| 1:A:63:SER:O | 2:B:1163:GLN:CD | 2.33 | 0.66 |
| 1:A:1622:LEU:HD21 | 2:B:1194:ILE:CD1 | 2.26 | 0.66 |
| 2:B:25:PHE:CZ | 10:J:59:LYS:HE2 | 2.29 | 0.66 |
| 1:A:988:SER:O | 2:B:988:GLU:CB | 2.44 | 0.66 |
| 2:B:210:ARG:NH2 | 2:B:648:ARG:HA | 2.11 | 0.66 |
| 2:B:345:SER:HA | 13:M:111:PRO:O | 1.96 | 0.65 |
| 2:B:1019:GLY:HA3 | 3:C:65:ASN:ND2 | 2.11 | 0.65 |
| 1:A:824:THR:HG22 | 2:B:1023:ARG:NE | 2.12 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:1657:LEU:CB | 7:G:106:LYS:HG3 | 2.27 | 0.65 |
| 1:A:581:ILE:HD11 | 1:A:605:VAL:HG21 | 1.78 | 0.65 |
| 1:A:655:SER:O | 1:A:656:GLN:NE2 | 2.30 | 0.64 |
| 1:A:1659:LYS:HA | 7:G:104:LEU:CB | 2.27 | 0.64 |
| 2:B:209:GLN:CA | 2:B:400:GLN:HA | 2.28 | 0.64 |
| 2:B:210:ARG:O | 2:B:237:ARG:NH1 | 2.31 | 0.64 |
| 1:A:1659:LYS:HZ2 | 6:F:133:VAL:CG2 | 2.08 | 0.64 |
| 2:B:886:ASN:OD1 | 12:L:57:LEU:HD23 | 1.97 | 0.64 |
| 1:A:10:GLU:H | 2:B:1201:GLU:H | 1.45 | 0.64 |
| 1:A:1260:LYS:HG2 | 1:A:1261:VAL:N | 2.11 | 0.64 |
| 1:A:1663:ALA:HB1 | 7:G:103:LYS:NZ | 2.13 | 0.64 |
| 1:A:1663:ALA:HB1 | 7:G:103:LYS:HZ3 | 1.62 | 0.64 |
| 1:A:697:TYR:CE2 | 11:K:92:SER:HB2 | 2.33 | 0.64 |
| 2:B:25:PHE:HE2 | 10:J:56:LEU:HD23 | 1.63 | 0.64 |
| 1:A:19:LEU:HD12 | 2:B:1193:GLY:O | 1.98 | 0.64 |
| 2:B:399:HIS:O | 2:B:400:GLN:HB3 | 1.96 | 0.64 |
| 2:B:190:ILE:HD13 | 2:B:190:ILE:H | 1.63 | 0.64 |
| 2:B:404:LEU:CD2 | 2:B:551:ILE:HD13 | 2.26 | 0.64 |
| 2:B:699:ILE:HG23 | 2:B:760:TYR:CE2 | 2.32 | 0.64 |
| 1:A:1034:TYR:HA | 1:A:1181:PRO:HG2 | 1.80 | 0.63 |
| 2:B:974:LEU:CD2 | 10:J:44:TYR:CB | 2.69 | 0.63 |
| 2:B:974:LEU:CG | 10:J:44:TYR:HB3 | 2.29 | 0.63 |
| 2:B:1016:GLY:O | 3:C:69:ARG:NH2 | 2.30 | 0.63 |
| 3:C:315:PHE:CE1 | 11:K:135:PHE:CD2 | 2.81 | 0.63 |
| 1:A:368:ARG:HE | 1:A:386:LEU:HD11 | 1.62 | 0.63 |
| 1:A:913:PRO:HB3 | 1:A:926:GLN:HE22 | 1.63 | 0.63 |
| 2:B:208:VAL:HG23 | 2:B:401:GLU:HG3 | 1.81 | 0.63 |
| 2:B:494:TYR:OH | 2:B:762:MET:HG3 | 1.99 | 0.63 |
| 2:B:697:LEU:HD21 | 2:B:984:TRP:HH2 | 1.64 | 0.63 |
| 1:A:367:PHE:CZ | 2:B:1187:SER:CB | 2.55 | 0.63 |
| 2:B:211:ARG:CD | 2:B:239:VAL:HG21 | 2.28 | 0.63 |
| 1:A:1:MET:N | 2:B:1098:TYR:CD1 | 2.60 | 0.63 |
| 1:A:1608:SER:HB2 | 1:A:1636:SER:HB3 | 1.80 | 0.63 |
| 3:C:79:ALA:HA | 3:C:106:LEU:HD11 | 1.79 | 0.63 |
| 2:B:998:GLU:O | 2:B:1002:LYS:HG2 | 1.99 | 0.63 |
| 1:A:1:MET:HB2 | 2:B:1094:ASN:OD1 | 1.99 | 0.62 |
| 3:C:75:VAL:HG11 | 3:C:221:PRO:HG2 | 1.80 | 0.62 |
| 2:B:210:ARG:HH12 | 2:B:648:ARG:HG2 | 1.64 | 0.62 |
| 1:A:713:VAL:H | 1:A:738:ASN:HD21 | 1.47 | 0.62 |
| 2:B:16:PHE:HB3 | 2:B:753:LYS:NZ | 2.14 | 0.62 |
| 11:K:59:THR:HG22 | 11:K:107:THR:OG1 | 2.00 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:37:VAL:HG13 | 1:A:387:SER:OG | 1.99 | 0.62 |
| 14:N:160:VAL:HG12 | 14:N:161:PRO:HD2 | 1.82 | 0.62 |
| 1:A:824:THR:HG21 | 2:B:1023:ARG:HD3 | 1.64 | 0.62 |
| 1:A:834:ARG:NH2 | 2:B:994:ASP:OD1 | 2.33 | 0.62 |
| 3:C:142:ARG:CZ | 10:J:67:GLU:OE2 | 2.48 | 0.62 |
| 4:D:24:ALA:O | 6:F:55:PRO:CA | 2.46 | 0.62 |
| 1:A:833:LEU:HD12 | 1:A:833:LEU:N | 2.15 | 0.62 |
| 1:A:1603:MET:HE1 | 1:A:1615:TYR:CG | 2.34 | 0.62 |
| 2:B:26:ILE:CG2 | 10:J:62:ARG:HH11 | 2.12 | 0.62 |
| 14:N:160:VAL:HG12 | 14:N:161:PRO:CD | 2.30 | 0.62 |
| 1:A:701:ARG:H | 1:A:706:HIS:HD2 | 1.46 | 0.61 |
| 1:A:988:SER:O | 2:B:988:GLU:HA | 1.99 | 0.61 |
| 3:C:335:GLN:HB3 | 11:K:49:LEU:N | 2.14 | 0.61 |
| 1:A:363:PRO:HG3 | 2:B:1191:ALA:CA | 2.30 | 0.61 |
| 2:B:558:VAL:HA | 2:B:561:ILE:HD12 | 1.80 | 0.61 |
| 1:A:1608:SER:CB | 1:A:1636:SER:HB3 | 2.29 | 0.61 |
| 2:B:25:PHE:HE2 | 10:J:56:LEU:CD2 | 2.14 | 0.61 |
| 3:C:79:ALA:HA | 3:C:106:LEU:CD1 | 2.29 | 0.61 |
| 3:C:322:LYS:CE | 11:K:129:ASP:OD1 | 2.43 | 0.61 |
| 1:A:1:MET:HG2 | 2:B:1098:TYR:CD2 | 2.33 | 0.61 |
| 1:A:368:ARG:HE | 1:A:386:LEU:CD1 | 2.13 | 0.61 |
| 2:B:527:PHE:CZ | 2:B:651:ARG:CG | 2.84 | 0.61 |
| 3:C:335:GLN:HB2 | 11:K:48:LYS:HG2 | 1.82 | 0.61 |
| 1:A:1600:ARG:HG3 | 1:A:1615:TYR:HE2 | 1.66 | 0.61 |
| 3:C:76:PRO:HB3 | 3:C:212:ILE:CG2 | 2.24 | 0.61 |
| 3:C:329:LYS:HD2 | 11:K:122:LYS:HA | 1.82 | 0.61 |
| 1:A:1659:LYS:HA | 7:G:104:LEU:HB2 | 1.83 | 0.61 |
| 2:B:494:TYR:HE2 | 2:B:703:LEU:HD13 | 1.64 | 0.61 |
| 1:A:825:ALA:C | 2:B:1023:ARG:NH2 | 2.46 | 0.60 |
| 1:A:1657:LEU:HD11 | 6:F:135:ARG:HD2 | 1.79 | 0.60 |
| 2:B:211:ARG:HG3 | 2:B:211:ARG:O | 2.00 | 0.60 |
| 1:A:1003:ARG:CZ | 2:B:520:LEU:HB3 | 2.31 | 0.60 |
| 2:B:683:ASN:OD1 | 14:N:150:TYR:OH | 2.18 | 0.60 |
| 3:C:44:ILE:CD1 | 11:K:142:MET:SD | 2.88 | 0.60 |
| 2:B:527:PHE:CZ | 2:B:651:ARG:HG2 | 2.37 | 0.60 |
| 14:N:149:ASP:O | 14:N:153:VAL:CG1 | 2.48 | 0.60 |
| 3:C:275:VAL:HG21 | 3:C:293:ARG:HH21 | 1.66 | 0.60 |
| 1:A:697:TYR:CD2 | 11:K:92:SER:HB2 | 2.37 | 0.60 |
| 1:A:1660:VAL:HG22 | 7:G:104:LEU:C | 2.20 | 0.60 |
| 3:C:334:THR:H | 11:K:47:ILE:HG23 | 1.67 | 0.60 |
| 1:A:10:GLU:C | 2:B:1200:VAL:HA | 2.22 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:1600:ARG:CD | 1:A:1616:GLU:OE2 | 2.49 | 0.60 |
| 2:B:494:TYR:CE1 | 2:B:762:MET:CE | 2.84 | 0.60 |
| 1:A:1:MET:CB | 2:B:1094:ASN:CG | 2.69 | 0.60 |
| 2:B:128:GLN:CB | 12:L:55:ILE:HD13 | 2.30 | 0.60 |
| 1:A:507:TYR:HE1 | 1:A:639:GLN:HA | 1.68 | 0.59 |
| 3:C:334:THR:CB | 11:K:47:ILE:O | 2.49 | 0.59 |
| 1:A:785:GLN:HB3 | 1:A:793:ILE:HG22 | 1.83 | 0.59 |
| 1:A:1556:GLU:OE2 | 5:E:200:ARG:NH1 | 2.35 | 0.59 |
| 1:A:1603:MET:CE | 1:A:1615:TYR:CD2 | 2.86 | 0.59 |
| 3:C:37:LYS:HG2 | 11:K:134:LYS:NZ | 2.16 | 0.59 |
| 13:M:61:GLU:HB3 | 13:M:101:VAL:HG23 | 1.84 | 0.59 |
| 2:B:52:LEU:HG | 2:B:61:LEU:HD13 | 1.84 | 0.59 |
| 2:B:683:ASN:OD1 | 14:N:150:TYR:HE2 | 1.69 | 0.59 |
| 3:C:70:ILE:HG23 | 3:C:74:GLU:HB2 | 1.82 | 0.59 |
| 10:J:48:ARG:O | 10:J:52:THR:HB | 2.01 | 0.59 |
| 2:B:527:PHE:CZ | 2:B:651:ARG:CD | 2.85 | 0.59 |
| 3:C:332:PRO:O | 11:K:47:ILE:CG2 | 2.50 | 0.59 |
| 3:C:75:VAL:HB | 3:C:221:PRO:HG3 | 1.84 | 0.59 |
| 5:E:147:HIS:HD2 | 5:E:149:LEU:H | 1.50 | 0.59 |
| 12:L:28:LYS:HB2 | 12:L:59:ALA:CB | 2.26 | 0.59 |
| 1:A:83:VAL:CG2 | 1:A:427:PHE:CE2 | 2.75 | 0.59 |
| 1:A:1659:LYS:CG | 7:G:104:LEU:HB3 | 2.32 | 0.59 |
| 3:C:71:MET:O | 3:C:222:VAL:HG11 | 2.03 | 0.58 |
| 1:A:506:THR:HA | 1:A:580:HIS:HA | 1.85 | 0.58 |
| 1:A:1048:PHE:HB2 | 5:E:208:TYR:HH | 1.67 | 0.58 |
| 1:A:35:PRO:O | 1:A:387:SER:HA | 2.02 | 0.58 |
| 1:A:507:TYR:CD2 | 1:A:508:PRO:HD2 | 2.38 | 0.58 |
| 3:C:142:ARG:NE | 10:J:67:GLU:OE2 | 2.37 | 0.58 |
| 1:A:934:LYS:HZ3 | 2:B:956:SER:HB2 | 1.67 | 0.58 |
| 1:A:527:PRO:HG2 | 1:A:547:ILE:HA | 1.85 | 0.58 |
| 1:A:727:THR:HG22 | 1:A:730:GLN:HG3 | 1.85 | 0.58 |
| 1:A:1003:ARG:CZ | 2:B:520:LEU:CB | 2.80 | 0.58 |
| 2:B:839:LYS:HG3 | 2:B:857:PRO:HD2 | 1.86 | 0.58 |
| 2:B:974:LEU:HG | 10:J:44:TYR:CG | 2.39 | 0.58 |
| 1:A:32:ILE:HG22 | 1:A:390:LEU:HD21 | 1.84 | 0.58 |
| 1:A:332:GLN:HE22 | 1:A:350:VAL:H | 1.52 | 0.58 |
| 1:A:1502:PRO:O | 1:A:1503:HIS:HB2 | 2.03 | 0.58 |
| 2:B:400:GLN:O | 2:B:649:MET:CE | 2.51 | 0.58 |
| 3:C:332:PRO:HG2 | 11:K:42:PRO:HB2 | 1.85 | 0.58 |
| 2:B:656:LEU:HD23 | 14:N:148:ILE:HD13 | 1.86 | 0.57 |
| 2:B:210:ARG:NH1 | 2:B:648:ARG:HG2 | 2.18 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:B:938:PHE:CZ | 3:C:68:ARG:CZ | 2.87 | 0.57 |
| 3:C:328:LEU:HD11 | 11:K:72:LEU:CD1 | 2.29 | 0.57 |
| 1:A:952:LEU:HD21 | 1:A:1000:MET:HB3 | 1.85 | 0.57 |
| 2:B:398:GLN:CG | 2:B:399:HIS:CE1 | 2.86 | 0.57 |
| 2:B:974:LEU:HA | 10:J:44:TYR:HB3 | 1.84 | 0.57 |
| 11:K:88:PHE:HB3 | 11:K:106:GLN:HB2 | 1.86 | 0.57 |
| 1:A:34:ASN:C | 1:A:390:LEU:CD2 | 2.49 | 0.57 |
| 1:A:1662:ASN:HD21 | 7:G:58:LEU:HB2 | 1.69 | 0.57 |
| 1:A:1662:ASN:ND2 | 7:G:58:LEU:CB | 2.67 | 0.57 |
| 1:A:1:MET:H2 | 2:B:1098:TYR:HB3 | 1.69 | 0.57 |
| 1:A:1662:ASN:ND2 | 7:G:58:LEU:HB2 | 2.20 | 0.57 |
| 2:B:786:ALA:HB1 | 2:B:928:SER:HB2 | 1.86 | 0.57 |
| 1:A:1610:PHE:CD2 | 1:A:1632:GLU:HG2 | 2.40 | 0.57 |
| 2:B:335:ARG:NH2 | 13:M:114:LYS:C | 2.58 | 0.57 |
| 2:B:840:LEU:HD21 | 2:B:857:PRO:HB2 | 1.87 | 0.57 |
| 1:A:9:SER:C | 2:B:1200:VAL:HG13 | 2.26 | 0.56 |
| 1:A:10:GLU:O | 2:B:1200:VAL:CA | 2.46 | 0.56 |
| 1:A:579:ARG:NH1 | 1:A:580:HIS:O | 2.38 | 0.56 |
| 2:B:26:ILE:O | 10:J:62:ARG:NE | 2.38 | 0.56 |
| 3:C:70:ILE:CG2 | 3:C:74:GLU:HG3 | 2.21 | 0.56 |
| 3:C:71:MET:C | 3:C:72:ILE:HG13 | 2.24 | 0.56 |
| 3:C:78:VAL:HG22 | 3:C:210:LEU:CD1 | 2.36 | 0.56 |
| 1:A:367:PHE:CZ | 2:B:1187:SER:HB3 | 2.39 | 0.56 |
| 1:A:1501:ILE:HG13 | 1:A:1502:PRO:N | 2.21 | 0.56 |
| 1:A:1:MET:CG | 2:B:1098:TYR:CD2 | 2.86 | 0.56 |
| 1:A:1605:THR:HG22 | 1:A:1605:THR:O | 2.04 | 0.56 |
| 1:A:502:ALA:O | 1:A:580:HIS:HB3 | 2.05 | 0.56 |
| 2:B:1090:ASP:HA | 2:B:1094:ASN:HB2 | 1.86 | 0.56 |
| 1:A:507:TYR:CE2 | 1:A:508:PRO:HD2 | 2.40 | 0.56 |
| 1:A:1662:ASN:OD1 | 7:G:58:LEU:HD12 | 2.05 | 0.56 |
| 3:C:78:VAL:HG22 | 3:C:210:LEU:HD12 | 1.87 | 0.56 |
| 1:A:824:THR:HG23 | 2:B:1023:ARG:HG3 | 1.87 | 0.56 |
| 1:A:826:PHE:HB2 | 2:B:1023:ARG:NH2 | 2.21 | 0.56 |
| 3:C:78:VAL:O | 3:C:79:ALA:HB2 | 2.05 | 0.56 |
| 1:A:502:ALA:HA | 1:A:581:ILE:CG2 | 2.36 | 0.56 |
| 2:B:207:ILE:HG12 | 2:B:503:VAL:HG22 | 1.88 | 0.56 |
| 1:A:363:PRO:HG2 | 2:B:1191:ALA:CB | 2.28 | 0.55 |
| 2:B:400:GLN:O | 2:B:649:MET:HE3 | 2.05 | 0.55 |
| 2:B:791:LYS:O | 2:B:795:GLU:HG2 | 2.06 | 0.55 |
| 1:A:361:VAL:CG2 | 2:B:1190:SER:O | 2.54 | 0.55 |
| 1:A:367:PHE:CZ | 2:B:1184:TYR:HA | 2.32 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:722:PRO:HG3 | 8:H:46:LEU:HB3 | 1.87 | 0.55 |
| 1:A:1501:ILE:HG23 | 1:A:1504:ILE:HB | 1.88 | 0.55 |
| 2:B:527:PHE:HE1 | 2:B:650:LEU:C | 2.10 | 0.55 |
| 1:A:586:VAL:HG21 | 1:A:648:LEU:HG | 1.87 | 0.55 |
| 1:A:1603:MET:HE2 | 1:A:1615:TYR:CD2 | 2.42 | 0.55 |
| 2:B:699:ILE:HD13 | 2:B:760:TYR:CZ | 2.41 | 0.55 |
| 3:C:200:GLN:HG3 | 10:J:66:LEU:HD13 | 1.87 | 0.55 |
| 3:C:221:PRO:CD | 3:C:222:VAL:H | 2.19 | 0.55 |
| 2:B:697:LEU:CD2 | 2:B:984:TRP:HH2 | 2.19 | 0.55 |
| 1:A:476:VAL:HG12 | 2:B:1091:ARG:O | 2.06 | 0.55 |
| 1:A:361:VAL:HG21 | 2:B:1190:SER:O | 2.06 | 0.55 |
| 1:A:1501:ILE:CG2 | 1:A:1504:ILE:HB | 2.37 | 0.55 |
| 1:A:1663:ALA:CB | 7:G:103:LYS:HZ2 | 2.20 | 0.55 |
| 11:K:46:LYS:HA | 11:K:66:VAL:HG22 | 1.88 | 0.55 |
| 1:A:586:VAL:CG2 | 1:A:648:LEU:HG | 2.37 | 0.55 |
| 3:C:33:VAL:CG2 | 11:K:130:VAL:CG2 | 2.79 | 0.55 |
| 13:M:9:GLU:HG2 | 14:N:71:PRO:HB3 | 1.89 | 0.55 |
| 2:B:555:GLN:HG2 | 2:B:645:GLY:HA2 | 1.89 | 0.55 |
| 1:A:64:THR:O | 2:B:1161:ASP:HB2 | 2.07 | 0.54 |
| 1:A:934:LYS:HZ2 | 2:B:956:SER:HB2 | 1.69 | 0.54 |
| 3:C:232:GLN:HE21 | 3:C:234:ASN:HD21 | 1.55 | 0.54 |
| 3:C:334:THR:O | 11:K:48:LYS:HA | 2.08 | 0.54 |
| 1:A:63:SER:O | 2:B:1163:GLN:HG3 | 2.07 | 0.54 |
| 1:A:677:GLY:HA3 | 1:A:786:TYR:OH | 2.07 | 0.54 |
| 1:A:695:TYR:HE1 | 1:A:820:TYR:HA | 1.71 | 0.54 |
| 1:A:1658:ALA:H | 7:G:107:ILE:H | 1.55 | 0.54 |
| 1:A:834:ARG:NH2 | 2:B:994:ASP:OD2 | 2.36 | 0.54 |
| 2:B:721:MET:HG3 | 2:B:1036:LEU:HD21 | 1.88 | 0.54 |
| 2:B:525:TRP:CZ2 | 2:B:696:ILE:CG2 | 2.86 | 0.54 |
| 1:A:1503:HIS:C | 1:A:1504:ILE:HG13 | 2.26 | 0.54 |
| 2:B:699:ILE:HG12 | 2:B:760:TYR:OH | 2.08 | 0.54 |
| 2:B:943:ILE:HG23 | 10:J:9:SER:HB3 | 1.90 | 0.54 |
| 10:J:2:ILE:HG23 | 10:J:57:ILE:HG21 | 1.90 | 0.54 |
| 2:B:938:PHE:CE1 | 3:C:68:ARG:NH2 | 2.76 | 0.54 |
| 1:A:701:ARG:H | 1:A:706:HIS:CD2 | 2.24 | 0.53 |
| 2:B:857:PRO:HB3 | 2:B:871:ILE:HD13 | 1.89 | 0.53 |
| 11:K:54:THR:HG23 | 11:K:61:ALA:CB | 2.38 | 0.53 |
| 1:A:49:LEU:HD23 | 1:A:390:LEU:CD1 | 2.22 | 0.53 |
| 1:A:438:ILE:HA | 1:A:456:VAL:HG22 | 1.89 | 0.53 |
| 1:A:1596:LEU:HD22 | 1:A:1602:GLY:HA2 | 1.90 | 0.53 |
| 3:C:333:ILE:CA | 11:K:47:ILE:HG23 | 2.35 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:366:ARG:NH2 | 2:B:1180:PHE:CE2 | 2.76 | 0.53 |
| 1:A:1062:HIS:HA | 1:A:1065:GLN:HB2 | 1.90 | 0.53 |
| 2:B:748:GLN:HB2 | 2:B:769:PHE:HA | 1.89 | 0.53 |
| 13:M:28:LYS:HD2 | 14:N:106:ASN:HB2 | 1.91 | 0.53 |
| 7:G:81:VAL:HA | 7:G:124:VAL:HG12 | 1.90 | 0.53 |
| 2:B:323:ARG:HH22 | 2:B:351:GLN:HE22 | 1.56 | 0.53 |
| 2:B:211:ARG:O | 2:B:212:ASN:HB2 | 2.08 | 0.53 |
| 3:C:335:GLN:OE1 | 11:K:49:LEU:O | 2.27 | 0.53 |
| 1:A:11:ILE:HD11 | 2:B:1198:TYR:CG | 2.43 | 0.53 |
| 3:C:58:ASN:HA | 3:C:296:ASN:HB3 | 1.90 | 0.53 |
| 3:C:71:MET:CG | 3:C:317:SER:HB3 | 2.39 | 0.53 |
| 1:A:1:MET:CA | 2:B:1098:TYR:CE2 | 2.83 | 0.53 |
| 1:A:9:SER:OG | 2:B:1174:THR:HG21 | 2.09 | 0.53 |
| 3:C:328:LEU:HD12 | 11:K:72:LEU:HD13 | 1.81 | 0.52 |
| 1:A:5:LYS:O | 2:B:1100:GLN:NE2 | 2.42 | 0.52 |
| 1:A:1658:ALA:H | 7:G:106:LYS:HA | 1.74 | 0.52 |
| 2:B:555:GLN:O | 2:B:556:SER:HB3 | 2.09 | 0.52 |
| 2:B:1019:GLY:HA3 | 3:C:65:ASN:HD21 | 1.74 | 0.52 |
| 1:A:8:GLY:O | 2:B:1202:PRO:HD2 | 2.06 | 0.52 |
| 1:A:646:GLU:OE1 | 2:B:1084:THR:OG1 | 2.27 | 0.52 |
| 1:A:1056:ASP:HB3 | 1:A:1059:LYS:HD3 | 1.91 | 0.52 |
| 5:E:131:THR:HG21 | 5:E:191:LYS:HE2 | 1.91 | 0.52 |
| 1:A:502:ALA:HA | 1:A:581:ILE:HG22 | 1.90 | 0.52 |
| 1:A:833:LEU:HD23 | 1:A:943:ILE:CG2 | 2.40 | 0.52 |
| 7:G:50:ALA:H | 7:G:64:GLN:HE22 | 1.56 | 0.52 |
| 1:A:697:TYR:CE2 | 11:K:92:SER:CB | 2.93 | 0.52 |
| 2:B:979:GLN:HG2 | 2:B:996:PHE:HE1 | 1.73 | 0.52 |
| 1:A:1606:SER:CB | 1:A:1611:MET:HE3 | 2.40 | 0.52 |
| 2:B:26:ILE:CG2 | 10:J:62:ARG:NH1 | 2.73 | 0.52 |
| 2:B:646:HIS:CD2 | 2:B:646:HIS:H | 2.28 | 0.52 |
| 1:A:1:MET:CB | 2:B:1094:ASN:HA | 2.40 | 0.52 |
| 2:B:208:VAL:HG23 | 2:B:401:GLU:HG2 | 1.92 | 0.52 |
| 2:B:749:THR:HG22 | 10:J:52:THR:O | 2.10 | 0.52 |
| 3:C:216:HIS:HD2 | 3:C:218:LYS:H | 1.58 | 0.52 |
| 1:A:489:ASN:HB2 | 11:K:95:HIS:CD2 | 2.44 | 0.51 |
| 2:B:726:MET:HG3 | 2:B:742:TYR:HB3 | 1.93 | 0.51 |
| 1:A:722:PRO:HD2 | 8:H:46:LEU:CD1 | 2.37 | 0.51 |
| 2:B:91:LEU:CD2 | 2:B:342:PRO:HG2 | 2.40 | 0.51 |
| 6:F:69:LEU:HB3 | 7:G:94:PRO:HG3 | 1.92 | 0.51 |
| 1:A:934:LYS:HG2 | 2:B:955:PRO:HB2 | 1.92 | 0.51 |
| 1:A:1504:ILE:HA | 1:A:1523:GLY:HA3 | 1.91 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:B:974:LEU:HA | 10:J:44:TYR:CB | 2.40 | 0.51 |
| 1:A:759:TYR:CD1 | 1:A:920:PHE:CE2 | 2.98 | 0.51 |
| 2:B:974:LEU:HG | 10:J:44:TYR:CB | 2.40 | 0.51 |
| 1:A:720:PHE:CE2 | 8:H:79:TRP:CD1 | 2.98 | 0.51 |
| 1:A:1229:ALA:CB | 1:A:1597:ALA:HB2 | 2.41 | 0.51 |
| 2:B:25:PHE:CE1 | 10:J:59:LYS:HE2 | 2.45 | 0.51 |
| 3:C:329:LYS:NZ | 11:K:125:MET:HE2 | 2.24 | 0.51 |
| 1:A:588:LEU:HB2 | 1:A:636:HIS:HB2 | 1.91 | 0.51 |
| 1:A:1003:ARG:NH2 | 2:B:520:LEU:CB | 2.74 | 0.51 |
| 1:A:1263:LEU:HD22 | 1:A:1267:ILE:HD11 | 1.92 | 0.51 |
| 1:A:10:GLU:H | 2:B:1201:GLU:N | 2.07 | 0.51 |
| 1:A:1660:VAL:HG22 | 7:G:105:ILE:H | 1.66 | 0.51 |
| 6:F:69:LEU:HD22 | 7:G:94:PRO:HD3 | 1.92 | 0.51 |
| 3:C:86:PHE:HA | 12:L:63:ARG:O | 2.11 | 0.51 |
| 13:M:53:LEU:HB2 | 13:M:96:LEU:HD22 | 1.93 | 0.51 |
| 1:A:827:THR:OG1 | 1:A:828:CYS:N | 2.42 | 0.51 |
| 2:B:207:ILE:CD1 | 2:B:402:VAL:HG22 | 2.24 | 0.51 |
| 2:B:293:ILE:HG12 | 2:B:302:LEU:HD23 | 1.91 | 0.51 |
| 1:A:507:TYR:O | 1:A:578:TYR:HA | 2.11 | 0.50 |
| 1:A:1049:MET:SD | 1:A:1052:GLY:HA2 | 2.51 | 0.50 |
| 14:N:141:GLU:O | 14:N:142:THR:HG23 | 2.10 | 0.50 |
| 1:A:1606:SER:OG | 1:A:1611:MET:HE1 | 2.11 | 0.50 |
| 2:B:123:PRO:HG2 | 2:B:172:LEU:HD11 | 1.92 | 0.50 |
| 2:B:699:ILE:HD13 | 2:B:760:TYR:CE1 | 2.46 | 0.50 |
| 3:C:78:VAL:HG12 | 3:C:79:ALA:N | 2.27 | 0.50 |
| 3:C:314:PHE:HE2 | 11:K:135:PHE:CD1 | 2.23 | 0.50 |
| 4:D:25:THR:O | 6:F:55:PRO:O | 2.29 | 0.50 |
| 1:A:1039:ARG:HD2 | 1:A:1045:LEU:HA | 1.94 | 0.50 |
| 1:A:1239:THR:HB | 1:A:1542:THR:HB | 1.92 | 0.50 |
| 1:A:1608:SER:CB | 1:A:1636:SER:CB | 2.90 | 0.50 |
| 2:B:25:PHE:HE1 | 2:B:764:ASN:OD1 | 1.85 | 0.50 |
| 12:L:60:ARG:HG2 | 12:L:61:THR:H | 1.77 | 0.50 |
| 1:A:11:ILE:HD11 | 2:B:1198:TYR:HB3 | 1.89 | 0.50 |
| 1:A:35:PRO:HD3 | 1:A:394:LEU:HG | 1.92 | 0.50 |
| 2:B:974:LEU:HD23 | 10:J:44:TYR:CD1 | 2.40 | 0.50 |
| 1:A:34:ASN:O | 1:A:390:LEU:CB | 2.55 | 0.50 |
| 2:B:44:PRO:HB3 | 2:B:551:ILE:CD1 | 2.41 | 0.50 |
| 2:B:211:ARG:NH2 | 2:B:243:GLN:NE2 | 2.44 | 0.50 |
| 1:A:5:LYS:HB3 | 2:B:1100:GLN:OE1 | 2.09 | 0.50 |
| 1:A:1501:ILE:HG12 | 1:A:1504:ILE:HD12 | 1.94 | 0.50 |
| 2:B:700:LEU:HA | 2:B:703:LEU:HD12 | 1.94 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:B:110:ASN:HB3 | 2:B:118:GLU:HG2 | 1.94 | 0.50 |
| 2:B:209:GLN:O | 2:B:401:GLU:HG2 | 2.12 | 0.50 |
| 1:A:1003:ARG:HH21 | 2:B:520:LEU:HD22 | 1.62 | 0.49 |
| 1:A:1003:ARG:HH22 | 2:B:520:LEU:CB | 2.25 | 0.49 |
| 2:B:26:ILE:HG23 | 10:J:62:ARG:NH1 | 2.20 | 0.49 |
| 7:G:51:PRO:HA | 7:G:54:LEU:HD13 | 1.95 | 0.49 |
| 3:C:334:THR:HB | 11:K:47:ILE:O | 2.11 | 0.49 |
| 2:B:823:GLN:HG2 | 2:B:863:ASP:HB3 | 1.94 | 0.49 |
| 3:C:335:GLN:HB2 | 11:K:48:LYS:CG | 2.42 | 0.49 |
| 1:A:63:SER:O | 2:B:1163:GLN:CG | 2.61 | 0.49 |
| 1:A:1038:ILE:HD12 | 1:A:1185:VAL:HG21 | 1.94 | 0.49 |
| 2:B:974:LEU:CG | 10:J:44:TYR:CB | 2.91 | 0.49 |
| 3:C:334:THR:CG2 | 11:K:44:ARG:HB3 | 2.32 | 0.49 |
| 1:A:496:GLY:HA3 | 1:A:615:ARG:HB2 | 1.94 | 0.49 |
| 1:A:601:MET:HB3 | 1:A:653:THR:HG22 | 1.95 | 0.49 |
| 1:A:1503:HIS:O | 1:A:1504:ILE:HG13 | 2.13 | 0.49 |
| 1:A:32:ILE:CG2 | 1:A:390:LEU:HD21 | 2.42 | 0.49 |
| 1:A:833:LEU:HD23 | 1:A:943:ILE:HG23 | 1.94 | 0.49 |
| 1:A:918:LYS:HE2 | 1:A:922:CYS:HB3 | 1.94 | 0.49 |
| 1:A:1500:GLN:NE2 | 1:A:1501:ILE:O | 2.45 | 0.49 |
| 1:A:1659:LYS:HZ1 | 6:F:133:VAL:HG21 | 1.74 | 0.49 |
| 12:L:60:ARG:NH2 | 12:L:65:VAL:HG21 | 2.28 | 0.49 |
| 1:A:64:THR:CG2 | 2:B:1129:ARG:NH1 | 2.76 | 0.49 |
| 14:N:163:VAL:HG12 | 14:N:164:GLU:N | 2.18 | 0.49 |
| 1:A:19:LEU:HD12 | 2:B:1193:GLY:CA | 2.42 | 0.49 |
| 1:A:861:VAL:HG21 | 1:A:892:LEU:HA | 1.94 | 0.49 |
| 1:A:1504:ILE:HG22 | 1:A:1505:ASP:H | 1.76 | 0.49 |
| 12:L:62:LYS:HB2 | 12:L:62:LYS:NZ | 2.28 | 0.49 |
| 1:A:934:LYS:HZ1 | 2:B:956:SER:CB | 1.94 | 0.49 |
| 2:B:705:PRO:HG2 | 2:B:921:HIS:CE1 | 2.47 | 0.49 |
| 2:B:976:GLY:HA2 | 10:J:51:LEU:CD2 | 2.43 | 0.49 |
| 1:A:504:LYS:O | 1:A:506:THR:N | 2.45 | 0.48 |
| 1:A:1504:ILE:CG2 | 1:A:1505:ASP:N | 2.76 | 0.48 |
| 1:A:1603:MET:HE1 | 1:A:1615:TYR:CD2 | 2.47 | 0.48 |
| 3:C:113:LEU:HD11 | 3:C:132:ILE:HD12 | 1.94 | 0.48 |
| 9:I:42:PHE:CD1 | 9:I:42:PHE:N | 2.81 | 0.48 |
| 2:B:252:TYR:HB2 | 2:B:381:LEU:HD21 | 1.93 | 0.48 |
| 2:B:916:LYS:HB3 | 2:B:1036:LEU:HD12 | 1.95 | 0.48 |
| 3:C:334:THR:OG1 | 11:K:47:ILE:O | 2.30 | 0.48 |
| 1:A:718:THR:CG2 | 8:H:119:GLY:HA3 | 2.36 | 0.48 |
| 1:A:952:LEU:HD23 | 1:A:1004:GLU:HG3 | 1.95 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:B:740:LYS:HA | 2:B:804:TYR:O | 2.13 | 0.48 |
| 3:C:192:LEU:HD21 | 3:C:195:LYS:HE3 | 1.96 | 0.48 |
| 6:F:69:LEU:HB3 | 7:G:94:PRO:CG | 2.43 | 0.48 |
| 1:A:1663:ALA:HB2 | 7:G:103:LYS:HZ2 | 1.79 | 0.48 |
| 2:B:26:ILE:O | 10:J:62:ARG:CZ | 2.61 | 0.48 |
| 1:A:1609:SER:HB2 | 1:A:1630:GLU:OE2 | 2.13 | 0.48 |
| 13:M:109:ARG:HG3 | 13:M:110:GLY:H | 1.77 | 0.48 |
| 2:B:16:PHE:HB3 | 2:B:753:LYS:HZ2 | 1.76 | 0.48 |
| 1:A:507:TYR:CE1 | 1:A:639:GLN:HA | 2.47 | 0.48 |
| 1:A:1003:ARG:NH2 | 2:B:520:LEU:HD23 | 2.23 | 0.48 |
| 1:A:1196:PRO:HB2 | 1:A:1575:ILE:HG21 | 1.96 | 0.48 |
| 1:A:9:SER:O | 2:B:1176:VAL:HG12 | 2.13 | 0.48 |
| 1:A:518:GLU:OE2 | 1:A:582:LYS:NZ | 2.43 | 0.48 |
| 7:G:47:VAL:HG21 | 7:G:61:VAL:HG13 | 1.96 | 0.48 |
| 1:A:836:THR:HG23 | 1:A:839:GLY:H | 1.78 | 0.48 |
| 11:K:95:HIS:HB3 | 11:K:98:GLU:HG2 | 1.96 | 0.48 |
| 1:A:1:MET:H2 | 2:B:1098:TYR:CB | 2.16 | 0.48 |
| 8:H:103:LYS:HB3 | 8:H:115:TYR:HB2 | 1.96 | 0.48 |
| 1:A:5:LYS:HB2 | 2:B:1100:GLN:HE21 | 1.72 | 0.47 |
| 1:A:727:THR:H | 1:A:730:GLN:HE21 | 1.61 | 0.47 |
| 2:B:1005:TYR:OH | 10:J:44:TYR:HE1 | 1.95 | 0.47 |
| 1:A:49:LEU:CD2 | 1:A:386:LEU:HB3 | 2.44 | 0.47 |
| 1:A:934:LYS:HZ3 | 2:B:956:SER:CB | 2.18 | 0.47 |
| 2:B:103:SER:HB3 | 2:B:138:LEU:HB2 | 1.95 | 0.47 |
| 3:C:314:PHE:HD2 | 11:K:135:PHE:CE2 | 2.31 | 0.47 |
| 3:C:333:ILE:CG2 | 11:K:47:ILE:HG12 | 2.25 | 0.47 |
| 1:A:1003:ARG:CZ | 2:B:520:LEU:HB2 | 2.44 | 0.47 |
| 2:B:699:ILE:CD1 | 2:B:760:TYR:OH | 2.62 | 0.47 |
| 6:F:128:LYS:HD2 | 6:F:149:GLU:HA | 1.96 | 0.47 |
| 1:A:862:THR:OG1 | 1:A:878:ARG:HB3 | 2.15 | 0.47 |
| 1:A:879:LEU:HA | 1:A:882:ILE:HD12 | 1.97 | 0.47 |
| 1:A:1659:LYS:NZ | 6:F:133:VAL:HG22 | 2.25 | 0.47 |
| 2:B:375:LEU:HA | 2:B:378:ILE:HD12 | 1.96 | 0.47 |
| 2:B:554:GLN:HG3 | 2:B:646:HIS:CE1 | 2.48 | 0.47 |
| 5:E:56:LYS:HE2 | 5:E:84:ASP:H | 1.80 | 0.47 |
| 8:H:107:VAL:O | 8:H:111:LEU:HB2 | 2.15 | 0.47 |
| 1:A:37:VAL:HG12 | 1:A:49:LEU:HB2 | 1.95 | 0.47 |
| 1:A:538:ASN:HA | 1:A:575:LYS:HG2 | 1.96 | 0.47 |
| 1:A:1634:LEU:HD13 | 1:A:1643:VAL:HG11 | 1.96 | 0.47 |
| 2:B:527:PHE:HZ | 2:B:651:ARG:HG2 | 1.77 | 0.47 |
| 2:B:697:LEU:CG | 2:B:984:TRP:HH2 | 2.27 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:9:SER:CA | 2:B:1200:VAL:HG13 | 2.44 | 0.47 |
| 1:A:126:GLN:HB3 | 1:A:343:PRO:HD3 | 1.96 | 0.47 |
| 1:A:506:THR:HB | 1:A:579:ARG:O | 2.14 | 0.47 |
| 1:A:1640:ARG:HH11 | 1:A:1648:ASN:HB3 | 1.78 | 0.47 |
| 2:B:362:LEU:HD22 | 2:B:369:ASP:HB3 | 1.97 | 0.47 |
| 2:B:494:TYR:CE2 | 2:B:703:LEU:HD13 | 2.47 | 0.47 |
| 14:N:150:TYR:HA | 14:N:153:VAL:HG12 | 1.96 | 0.47 |
| 1:A:652:ASN:HD22 | 1:A:654:ASP:HB2 | 1.80 | 0.47 |
| 3:C:229:LEU:HD23 | 3:C:293:ARG:HB3 | 1.97 | 0.47 |
| 5:E:4:GLU:HG2 | 5:E:7:ARG:HH12 | 1.80 | 0.47 |
| 1:A:826:PHE:CA | 2:B:1023:ARG:HH22 | 1.88 | 0.47 |
| 1:A:1658:ALA:H | 7:G:107:ILE:N | 2.12 | 0.47 |
| 1:A:536:ILE:HD11 | 1:A:575:LYS:HD3 | 1.96 | 0.47 |
| 3:C:70:ILE:CG2 | 3:C:74:GLU:HB2 | 2.44 | 0.47 |
| 2:B:880:ALA:HB2 | 2:B:907:ILE:HG13 | 1.97 | 0.46 |
| 9:I:48:VAL:HG13 | 9:I:48:VAL:O | 2.15 | 0.46 |
| 11:K:59:THR:CG2 | 11:K:107:THR:OG1 | 2.61 | 0.46 |
| 1:A:1660:VAL:H | 7:G:104:LEU:CA | 2.11 | 0.46 |
| 2:B:25:PHE:HZ | 2:B:764:ASN:OD1 | 1.88 | 0.46 |
| 11:K:59:THR:HG22 | 11:K:111:THR:O | 2.16 | 0.46 |
| 3:C:75:VAL:HB | 3:C:221:PRO:CG | 2.46 | 0.46 |
| 3:C:81:GLU:HG3 | 3:C:209:ILE:HG22 | 1.97 | 0.46 |
| 3:C:334:THR:HG21 | 11:K:44:ARG:CB | 2.32 | 0.46 |
| 1:A:32:ILE:HG21 | 1:A:49:LEU:HD13 | 1.96 | 0.46 |
| 14:N:164:GLU:HG2 | 14:N:165:GLY:N | 2.30 | 0.46 |
| 1:A:1641:ILE:HD13 | 2:B:1076:ARG:HH11 | 1.81 | 0.46 |
| 1:A:1662:ASN:HD22 | 7:G:58:LEU:H | 0.54 | 0.46 |
| 2:B:397:THR:OG1 | 2:B:523:GLU:HB2 | 2.15 | 0.46 |
| 1:A:11:ILE:HD11 | 2:B:1198:TYR:CB | 2.46 | 0.46 |
| 1:A:3:ILE:O | 7:G:111:THR:CG2 | 2.64 | 0.46 |
| 1:A:1275:THR:HG23 | 1:A:1289:SER:HB2 | 1.97 | 0.46 |
| 2:B:65:VAL:HA | 2:B:68:ILE:HG12 | 1.97 | 0.46 |
| 1:A:827:THR:HG21 | 2:B:1025:ASP:O | 2.15 | 0.46 |
| 1:A:1657:LEU:HA | 7:G:106:LYS:HG3 | 1.97 | 0.46 |
| 1:A:1112:PRO:HD2 | 1:A:1115:LYS:HB2 | 1.97 | 0.45 |
| 2:B:143:TRP:HB3 | 2:B:152:LEU:HB2 | 1.99 | 0.45 |
| 2:B:335:ARG:NH2 | 13:M:113:ILE:O | 2.50 | 0.45 |
| 2:B:721:MET:O | 2:B:725:THR:HG23 | 2.16 | 0.45 |
| 12:L:60:ARG:HG2 | 12:L:61:THR:N | 2.31 | 0.45 |
| 1:A:1:MET:CB | 2:B:1098:TYR:CE2 | 2.91 | 0.45 |
| 1:A:1003:ARG:HH22 | 2:B:520:LEU:HB2 | 1.82 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:B:1005:TYR:CE2 | 10:J:44:TYR:CE1 | 3.05 | 0.45 |
| 14:N:162:LYS:H | 14:N:162:LYS:CD | 2.29 | 0.45 |
| 1:A:506:THR:CA | 1:A:579:ARG:O | 2.64 | 0.45 |
| 1:A:824:THR:CA | 2:B:1023:ARG:HB2 | 2.40 | 0.45 |
| 1:A:828:CYS:SG | 1:A:829:GLY:N | 2.89 | 0.45 |
| 14:N:160:VAL:CG1 | 14:N:161:PRO:CD | 2.95 | 0.45 |
| 1:A:35:PRO:HB2 | 1:A:391:THR:CG2 | 2.47 | 0.45 |
| 1:A:700:ILE:HD11 | 1:A:735:VAL:HA | 1.97 | 0.45 |
| 1:A:1498:ILE:O | 1:A:1499:ARG:HB2 | 2.16 | 0.45 |
| 2:B:16:PHE:HB3 | 2:B:753:LYS:HZ1 | 1.81 | 0.45 |
| 2:B:553:THR:O | 2:B:554:GLN:HB2 | 2.17 | 0.45 |
| 3:C:110:PRO:C | 3:C:112:MET:H | 2.20 | 0.45 |
| 10:J:44:TYR:HA | 10:J:47:ARG:HB2 | 1.99 | 0.45 |
| 1:A:1657:LEU:HG | 7:G:106:LYS:HG3 | 1.93 | 0.45 |
| 1:A:537:GLN:HB2 | 1:A:578:TYR:HE1 | 1.81 | 0.45 |
| 3:C:236:LEU:HD11 | 3:C:290:LYS:HG3 | 1.98 | 0.45 |
| 9:I:39:LYS:O | 9:I:40:SER:HB2 | 2.15 | 0.45 |
| 1:A:35:PRO:HG2 | 1:A:391:THR:HA | 1.34 | 0.45 |
| 1:A:1659:LYS:HZ2 | 6:F:133:VAL:HG22 | 1.80 | 0.45 |
| 3:C:229:LEU:HD21 | 3:C:295:ARG:HA | 1.99 | 0.45 |
| 12:L:28:LYS:CB | 12:L:59:ALA:HB3 | 2.30 | 0.45 |
| 1:A:507:TYR:CG | 1:A:508:PRO:CD | 3.00 | 0.45 |
| 1:A:672:ASP:OD1 | 2:B:952:HIS:CE1 | 2.70 | 0.45 |
| 1:A:833:LEU:N | 1:A:833:LEU:CD1 | 2.79 | 0.45 |
| 1:A:1003:ARG:HH22 | 2:B:520:LEU:CG | 2.29 | 0.45 |
| 1:A:1053:ASP:HB3 | 1:A:1137:SER:HB3 | 1.99 | 0.45 |
| 2:B:397:THR:CB | 2:B:523:GLU:HB2 | 2.44 | 0.45 |
| 3:C:71:MET:O | 3:C:222:VAL:CG1 | 2.64 | 0.45 |
| 3:C:75:VAL:HG12 | 3:C:221:PRO:CB | 2.46 | 0.45 |
| 1:A:35:PRO:HB2 | 1:A:391:THR:HG23 | 1.98 | 0.44 |
| 2:B:398:GLN:O | 2:B:399:HIS:CG | 2.70 | 0.44 |
| 2:B:556:SER:O | 2:B:558:VAL:N | 2.50 | 0.44 |
| 2:B:1097:ASP:OD2 | 2:B:1181:VAL:HG22 | 2.17 | 0.44 |
| 3:C:33:VAL:HG21 | 11:K:127:LEU:HA | 1.98 | 0.44 |
| 1:A:1055:ILE:HD11 | 1:A:1174:TYR:CE2 | 2.53 | 0.44 |
| 9:I:27:ASN:HA | 9:I:38:PRO:HD3 | 1.99 | 0.44 |
| 2:B:398:GLN:CD | 2:B:399:HIS:CE1 | 2.91 | 0.44 |
| 2:B:693:PRO:O | 2:B:696:ILE:HG12 | 2.18 | 0.44 |
| 1:A:692:TYR:O | 1:A:696:ILE:HG12 | 2.17 | 0.44 |
| 1:A:19:LEU:HD12 | 2:B:1193:GLY:HA2 | 2.00 | 0.44 |
| 1:A:1288:ARG:HB2 | 1:A:1476:LEU:HB2 | 1.98 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:988:SER:O | 2:B:988:GLU:HB2 | 2.17 | 0.44 |
| 1:A:1258:ILE:HG22 | 1:A:1258:ILE:O | 2.18 | 0.44 |
| 2:B:210:ARG:NH2 | 2:B:649:MET:H | 2.16 | 0.44 |
| 3:C:200:GLN:CG | 10:J:66:LEU:HD13 | 2.48 | 0.44 |
| 1:A:1029:GLY:HA3 | 1:A:1041:ALA:HB2 | 1.99 | 0.44 |
| 2:B:398:GLN:O | 2:B:399:HIS:CD2 | 2.71 | 0.44 |
| 2:B:401:GLU:HG3 | 2:B:402:VAL:N | 2.32 | 0.44 |
| 1:A:1038:ILE:HD11 | 1:A:1050:TYR:HB2 | 1.99 | 0.44 |
| 2:B:689:VAL:HG13 | 2:B:689:VAL:O | 2.17 | 0.44 |
| 2:B:845:LEU:HB2 | 12:L:58:LYS:HE2 | 2.00 | 0.44 |
| 3:C:72:ILE:HG22 | 3:C:72:ILE:O | 2.17 | 0.44 |
| 5:E:120:ALA:HA | 5:E:123:LEU:HD12 | 2.00 | 0.44 |
| 1:A:655:SER:O | 1:A:656:GLN:HG2 | 2.18 | 0.44 |
| 1:A:826:PHE:HB2 | 2:B:1023:ARG:HH21 | 1.77 | 0.44 |
| 1:A:1113:HIS:HB3 | 5:E:201:LYS:NZ | 2.33 | 0.44 |
| 1:A:1663:ALA:HB2 | 7:G:103:LYS:NZ | 2.32 | 0.44 |
| 2:B:556:SER:C | 2:B:558:VAL:H | 2.20 | 0.44 |
| 3:C:72:ILE:HD11 | 3:C:225:ALA:HB3 | 1.98 | 0.44 |
| 1:A:1:MET:HE2 | 2:B:1094:ASN:ND2 | 2.21 | 0.43 |
| 1:A:476:VAL:CG1 | 2:B:1091:ARG:O | 2.66 | 0.43 |
| 1:A:506:THR:CB | 1:A:579:ARG:O | 2.65 | 0.43 |
| 1:A:940:VAL:HG13 | 1:A:944:MET:HE3 | 2.00 | 0.43 |
| 1:A:385:LEU:HD13 | 1:A:437:PHE:HA | 2.00 | 0.43 |
| 2:B:953:ALA:O | 2:B:957:ARG:HG2 | 2.19 | 0.43 |
| 5:E:141:VAL:HG12 | 5:E:142:VAL:HG23 | 2.00 | 0.43 |
| 8:H:40:LEU:HB2 | 8:H:123:MET:HG3 | 1.99 | 0.43 |
| 1:A:233:CYS:HB3 | 1:A:236:CYS:O | 2.18 | 0.43 |
| 1:A:387:SER:HA | 1:A:390:LEU:HD12 | 2.01 | 0.43 |
| 1:A:1658:ALA:N | 7:G:107:ILE:H | 2.16 | 0.43 |
| 2:B:26:ILE:O | 10:J:62:ARG:CD | 2.66 | 0.43 |
| 13:M:9:GLU:HA | 14:N:71:PRO:HA | 2.00 | 0.43 |
| 1:A:83:VAL:HG11 | 1:A:427:PHE:CZ | 2.49 | 0.43 |
| 1:A:683:LYS:HD2 | 8:H:20:TYR:OH | 2.17 | 0.43 |
| 1:A:1603:MET:CE | 1:A:1615:TYR:CG | 2.99 | 0.43 |
| 1:A:1659:LYS:HA | 7:G:104:LEU:HB3 | 2.01 | 0.43 |
| 1:A:862:THR:HG21 | 1:A:875:LEU:HD12 | 1.99 | 0.43 |
| 2:B:529:CYS:SG | 2:B:698:SER:CB | 2.97 | 0.43 |
| 1:A:5:LYS:HD3 | 2:B:1100:GLN:CD | 2.39 | 0.43 |
| 1:A:10:GLU:N | 2:B:1200:VAL:HG13 | 2.34 | 0.43 |
| 1:A:885:ASP:HB3 | 1:A:888:LYS:HB2 | 2.01 | 0.43 |
| 1:A:1113:HIS:CB | 5:E:201:LYS:NZ | 2.82 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:1260:LYS:HZ1 | 1:A:1262:LEU:HD11 | 1.81 | 0.43 |
| 1:A:1481:GLU:HB2 | 1:A:1482:LYS:H | 1.72 | 0.43 |
| 2:B:25:PHE:CE2 | 10:J:56:LEU:HD23 | 2.49 | 0.43 |
| 2:B:26:ILE:CA | 10:J:62:ARG:CD | 2.85 | 0.43 |
| 2:B:207:ILE:HD13 | 2:B:402:VAL:CG2 | 2.23 | 0.43 |
| 2:B:251:HIS:HE1 | 2:B:261:ARG:HD2 | 1.84 | 0.43 |
| 1:A:396:ILE:HG12 | 1:A:426:ALA:HB1 | 2.01 | 0.43 |
| 1:A:739:VAL:HG11 | 1:A:812:VAL:HG21 | 2.00 | 0.43 |
| 2:B:25:PHE:HD2 | 10:J:59:LYS:HB2 | 1.32 | 0.43 |
| 3:C:80:ALA:HA | 3:C:208:CYS:HA | 2.00 | 0.43 |
| 3:C:333:ILE:CD1 | 11:K:118:GLN:HE21 | 2.31 | 0.43 |
| 3:C:44:ILE:HD12 | 11:K:142:MET:SD | 2.59 | 0.42 |
| 3:C:221:PRO:CD | 3:C:222:VAL:N | 2.82 | 0.42 |
| 1:A:49:LEU:HD22 | 1:A:390:LEU:HD11 | 0.56 | 0.42 |
| 2:B:249:VAL:HB | 2:B:261:ARG:HB3 | 2.00 | 0.42 |
| 2:B:974:LEU:CG | 10:J:44:TYR:CG | 3.02 | 0.42 |
| 6:F:107:VAL:HG12 | 6:F:109:VAL:H | 1.84 | 0.42 |
| 4:D:19:PRO:HG2 | 4:D:22:ILE:HD11 | 2.01 | 0.42 |
| 1:A:657:TYR:O | 1:A:665:PRO:HA | 2.19 | 0.42 |
| 1:A:1663:ALA:CB | 7:G:103:LYS:HZ3 | 2.24 | 0.42 |
| 2:B:301:PHE:O | 2:B:305:ARG:HG2 | 2.19 | 0.42 |
| 3:C:71:MET:O | 3:C:72:ILE:HG13 | 2.19 | 0.42 |
| 11:K:46:LYS:O | 11:K:65:ILE:HA | 2.20 | 0.42 |
| 1:A:591:ARG:HB2 | 1:A:633:MET:HG2 | 2.02 | 0.42 |
| 1:A:966:LEU:HB2 | 1:A:969:PHE:HD2 | 1.84 | 0.42 |
| 10:J:32:GLU:H | 10:J:32:GLU:HG2 | 1.53 | 0.42 |
| 2:B:61:LEU:HD21 | 2:B:413:LEU:HD13 | 2.02 | 0.42 |
| 2:B:561:ILE:HG12 | 2:B:620:LEU:HD12 | 2.01 | 0.42 |
| 1:A:399:LEU:HD11 | 1:A:422:ARG:HB3 | 2.02 | 0.42 |
| 1:A:1603:MET:HE2 | 1:A:1615:TYR:CE2 | 2.54 | 0.42 |
| 2:B:612:LYS:HD3 | 2:B:626:ILE:HD11 | 2.01 | 0.42 |
| 4:D:24:ALA:HA | 7:G:43:ILE:HG22 | 2.02 | 0.42 |
| 8:H:35:GLN:HB3 | 8:H:111:LEU:HD21 | 2.01 | 0.42 |
| 3:C:252:PRO:HD2 | 3:C:255:VAL:HG21 | 2.02 | 0.42 |
| 12:L:29:TYR:HD2 | 12:L:39:SER:HA | 1.85 | 0.42 |
| 1:A:536:ILE:HG23 | 1:A:544:VAL:HB | 2.02 | 0.42 |
| 1:A:970:LYS:HG2 | 1:A:971:PRO:HD2 | 2.02 | 0.42 |
| 2:B:44:PRO:O | 2:B:48:SER:HB2 | 2.20 | 0.42 |
| 2:B:209:GLN:CG | 2:B:210:ARG:N | 2.73 | 0.42 |
| 2:B:217:ILE:HD11 | 2:B:235:GLN:HB2 | 2.02 | 0.42 |
| 2:B:699:ILE:CD1 | 2:B:760:TYR:CZ | 3.01 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:1238:MET:HB2 | 1:A:1521:THR:HB | 2.01 | 0.41 |
| 2:B:26:ILE:HA | 10:J:62:ARG:HD3 | 1.92 | 0.41 |
| 2:B:201:LYS:HD3 | 2:B:465:LEU:O | 2.20 | 0.41 |
| 2:B:210:ARG:HH22 | 2:B:648:ARG:CA | 2.33 | 0.41 |
| 6:F:85:MET:HB2 | 6:F:151:LEU:HB3 | 2.01 | 0.41 |
| 1:A:880:GLN:HE21 | 1:A:880:GLN:HB2 | 1.69 | 0.41 |
| 2:B:212:ASN:O | 2:B:213:HIS:HB2 | 2.20 | 0.41 |
| 9:I:52:ALA:HB3 | 9:I:55:ALA:HB2 | 2.02 | 0.41 |
| 11:K:60:SER:HB3 | 11:K:106:GLN:HG2 | 2.02 | 0.41 |
| 1:A:11:ILE:HG12 | 2:B:1198:TYR:CA | 2.47 | 0.41 |
| 1:A:1459:LYS:HB2 | 1:A:1473:LYS:HB2 | 2.02 | 0.41 |
| 2:B:25:PHE:CE2 | 10:J:56:LEU:CD2 | 3.00 | 0.41 |
| 2:B:788:ILE:HB | 2:B:948:ILE:HB | 2.02 | 0.41 |
| 2:B:858:ILE:HD12 | 2:B:858:ILE:HA | 1.97 | 0.41 |
| 2:B:936:MET:HG3 | 2:B:937:PRO:HD2 | 2.01 | 0.41 |
| 1:A:830:MET:SD | 2:B:993:ALA:CB | 3.09 | 0.41 |
| 5:E:6:GLU:HA | 5:E:9:ILE:HD12 | 2.02 | 0.41 |
| 12:L:31:CYS:HA | 12:L:56:LEU:HD23 | 2.03 | 0.41 |
| 1:A:492:THR:HB | 1:A:667:ARG:HH22 | 1.85 | 0.41 |
| 1:A:1:MET:H1 | 2:B:1094:ASN:HA | 1.86 | 0.41 |
| 1:A:533:ALA:HA | 1:A:579:ARG:HA | 2.03 | 0.41 |
| 3:C:335:GLN:CB | 11:K:48:LYS:HG2 | 2.50 | 0.41 |
| 8:H:93:TYR:HA | 8:H:145:ARG:HG3 | 2.03 | 0.41 |
| 13:M:20:SER:HB3 | 14:N:36:LYS:HB2 | 2.02 | 0.41 |
| 1:A:7:VAL:HG11 | 2:B:1176:VAL:CA | 2.31 | 0.41 |
| 1:A:363:PRO:CG | 2:B:1191:ALA:HB1 | 2.44 | 0.41 |
| 1:A:507:TYR:N | 1:A:579:ARG:O | 2.54 | 0.41 |
| 1:A:1550:LEU:HD12 | 1:A:1555:VAL:HA | 2.02 | 0.41 |
| 2:B:494:TYR:CE1 | 2:B:762:MET:HE1 | 2.56 | 0.41 |
| 3:C:77:SER:OG | 3:C:78:VAL:N | 2.52 | 0.41 |
| 10:J:68:LYS:HD3 | 10:J:69:ARG:HD2 | 2.03 | 0.41 |
| 2:B:17:ARG:H | 2:B:17:ARG:HG2 | 1.64 | 0.41 |
| 2:B:342:PRO:O | 13:M:112:LYS:HD2 | 2.17 | 0.41 |
| 13:M:15:VAL:HG12 | 13:M:90:LEU:HB2 | 2.03 | 0.41 |
| 1:A:3:ILE:O | 7:G:111:THR:HG21 | 2.20 | 0.41 |
| 1:A:124:LEU:HD21 | 1:A:189:VAL:HA | 2.01 | 0.41 |
| 2:B:190:ILE:HD11 | 2:B:496:PHE:HE2 | 1.85 | 0.41 |
| 2:B:1079:LEU:O | 2:B:1084:THR:HG22 | 2.21 | 0.41 |
| 2:B:1084:THR:HG23 | 2:B:1084:THR:O | 2.21 | 0.41 |
| 3:C:175:GLN:HB3 | 3:C:178:THR:HG22 | 2.03 | 0.41 |
| 1:A:582:LYS:HB3 | 1:A:583:ASN:H | 1.69 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:912:VAL:HA | 1:A:913:PRO:HA | 1.92 | 0.41 |
| 1:A:1229:ALA:HB2 | 1:A:1597:ALA:HB2 | 2.03 | 0.41 |
| 2:B:29:PRO:HB2 | 2:B:177:PRO:HG2 | 2.03 | 0.41 |
| 2:B:600:GLN:HA | 2:B:603:ILE:HD12 | 2.03 | 0.41 |
| 2:B:1005:TYR:CE2 | 10:J:44:TYR:HE1 | 2.37 | 0.41 |
| 7:G:45:LEU:HD11 | 7:G:120:VAL:HG12 | 2.02 | 0.41 |
| 1:A:693:GLN:CD | 11:K:88:PHE:CD2 | 2.94 | 0.40 |
| 2:B:210:ARG:NH2 | 2:B:648:ARG:CA | 2.82 | 0.40 |
| 1:A:361:VAL:HG22 | 2:B:1190:SER:O | 2.21 | 0.40 |
| 1:A:368:ARG:NE | 1:A:386:LEU:HD11 | 2.33 | 0.40 |
| 1:A:507:TYR:CD2 | 1:A:508:PRO:CD | 3.04 | 0.40 |
| 1:A:990:ILE:HD12 | 1:A:995:TYR:HA | 2.03 | 0.40 |
| 3:C:65:ASN:HA | 3:C:227:TYR:HE2 | 1.86 | 0.40 |
| 3:C:322:LYS:HB2 | 11:K:128:CYS:HB3 | 2.03 | 0.40 |
| 1:A:12:THR:N | 2:B:1199:ASN:O | 2.54 | 0.40 |
| 1:A:76:GLN:HE21 | 2:B:1190:SER:CB | 2.20 | 0.40 |
| 1:A:857:ALA:HB2 | 1:A:899:LYS:HD2 | 2.03 | 0.40 |
| 1:A:1272:VAL:HG11 | 1:A:1485:MET:HB3 | 2.03 | 0.40 |
| 2:B:974:LEU:CG | 10:J:44:TYR:CD1 | 3.03 | 0.40 |
| 1:A:98:LEU:HD13 | 1:A:320:VAL:HG13 | 2.03 | 0.40 |
| 1:A:1503:HIS:HB3 | 1:A:1524:VAL:O | 2.21 | 0.40 |
| 2:B:358:VAL:HG13 | 2:B:370:LYS:HD3 | 2.03 | 0.40 |
| 2:B:650:LEU:HB3 | 2:B:663:ILE:HG23 | 2.04 | 0.40 |
| 2:B:699:ILE:CG2 | 2:B:760:TYR:CE2 | 3.04 | 0.40 |
| 7:G:107:ILE:HA | 7:G:114:GLY:HA2 | 2.03 | 0.40 |
| 11:K:109:GLY:O | 11:K:110:GLU:HG2 | 2.21 | 0.40 |

There are no symmetry-related clashes.

## 5.3 Torsion angles (i)

### 5.3.1 Protein backbone (i)

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

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

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles |
|---|---|---|---|---|---|---|
| 1 | A | 1394/1664 (84%) | 1309 (94%) | 76 (6%) | 9 (1%) | 25 65 |
| 2 | B | 1099/1203 (91%) | 1020 (93%) | 73 (7%) | 6 (0%) | 29 68 |
| 3 | C | 300/380 (79%) | 273 (91%) | 24 (8%) | 3 (1%) | 15 54 |
| 4 | D | 16/137 (12%) | 14 (88%) | 2 (12%) | 0 | 100 100 |
| 5 | E | 213/215 (99%) | 202 (95%) | 11 (5%) | 0 | 100 100 |
| 6 | F | 98/155 (63%) | 96 (98%) | 2 (2%) | 0 | 100 100 |
| 7 | G | 85/326 (26%) | 80 (94%) | 5 (6%) | 0 | 100 100 |
| 8 | H | 130/146 (89%) | 119 (92%) | 10 (8%) | 1 (1%) | 19 60 |
| 9 | I | 62/125 (50%) | 53 (86%) | 8 (13%) | 1 (2%) | 9 44 |
| 10 | J | 67/70 (96%) | 62 (92%) | 5 (8%) | 0 | 100 100 |
| 11 | K | 99/142 (70%) | 91 (92%) | 6 (6%) | 2 (2%) | 7 39 |
| 12 | L | 43/70 (61%) | 38 (88%) | 5 (12%) | 0 | 100 100 |
| 13 | M | 101/415 (24%) | 93 (92%) | 8 (8%) | 0 | 100 100 |
| 14 | N | 131/233 (56%) | 114 (87%) | 15 (12%) | 2 (2%) | 10 46 |
| All | All | 3838/5281 (73%) | 3564 (93%) | 250 (6%) | 24 (1%) | 29 65 |

All (24) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | A | 652 | ASN |
| 1 | A | 655 | SER |
| 1 | A | 505 | LEU |
| 1 | A | 654 | ASP |
| 1 | A | 1499 | ARG |
| 2 | B | 210 | ARG |
| 2 | B | 557 | ASP |
| 11 | K | 57 | ASP |
| 14 | N | 165 | GLY |
| 1 | A | 237 | GLY |
| 2 | B | 532 | HIS |
| 3 | C | 72 | ILE |
| 3 | C | 221 | PRO |
| 1 | A | 478 | TYR |
| 2 | B | 209 | GLN |
| 2 | B | 400 | GLN |
| 2 | B | 552 | SER |
| 1 | A | 508 | PRO |
| 1 | A | 580 | HIS |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 3 | C | 76 | PRO |
| 8 | H | 84 | ALA |
| 9 | I | 26 | SER |
| 11 | K | 58 | GLY |
| 14 | N | 163 | VAL |

### 5.3.2 Protein sidechains (i)

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

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

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles |
|---|---|---|---|---|---|
| 1 | A | 1250/1465 (85%) | 1184 (95%) | 66 (5%) | 22 49 |
| 2 | B | 973/1053 (92%) | 876 (90%) | 97 (10%) | 7 28 |
| 3 | C | 269/334 (80%) | 243 (90%) | 26 (10%) | 8 29 |
| 4 | D | 16/116 (14%) | 11 (69%) | 5 (31%) | 0 2 |
| 5 | E | 197/197 (100%) | 192 (98%) | 5 (2%) | 47 68 |
| 6 | F | 90/137 (66%) | 86 (96%) | 4 (4%) | 28 53 |
| 7 | G | 80/291 (28%) | 75 (94%) | 5 (6%) | 18 44 |
| 8 | H | 116/128 (91%) | 111 (96%) | 5 (4%) | 29 54 |
| 9 | I | 56/110 (51%) | 48 (86%) | 8 (14%) | 3 17 |
| 10 | J | 64/65 (98%) | 57 (89%) | 7 (11%) | 6 25 |
| 11 | K | 91/130 (70%) | 83 (91%) | 8 (9%) | 10 33 |
| 12 | L | 40/57 (70%) | 37 (92%) | 3 (8%) | 13 39 |
| 13 | M | 94/371 (25%) | 89 (95%) | 5 (5%) | 22 49 |
| 14 | N | 128/220 (58%) | 118 (92%) | 10 (8%) | 12 38 |
| All | All | 3464/4674 (74%) | 3210 (93%) | 254 (7%) | 18 40 |

All (254) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | A | 2 | ASP |
| 1 | A | 39 | ASP |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | A | 59 | ARG |
| 1 | A | 113 | VAL |
| 1 | A | 129 | LEU |
| 1 | A | 136 | LEU |
| 1 | A | 177 | LEU |
| 1 | A | 195 | LYS |
| 1 | A | 199 | ASP |
| 1 | A | 211 | THR |
| 1 | A | 270 | ILE |
| 1 | A | 325 | ASP |
| 1 | A | 345 | LEU |
| 1 | A | 361 | VAL |
| 1 | A | 398 | ASP |
| 1 | A | 399 | LEU |
| 1 | A | 403 | LEU |
| 1 | A | 406 | LEU |
| 1 | A | 413 | LEU |
| 1 | A | 518 | GLU |
| 1 | A | 536 | ILE |
| 1 | A | 562 | LEU |
| 1 | A | 572 | THR |
| 1 | A | 587 | VAL |
| 1 | A | 621 | THR |
| 1 | A | 684 | ASP |
| 1 | A | 685 | SER |
| 1 | A | 743 | ASP |
| 1 | A | 747 | ILE |
| 1 | A | 828 | CYS |
| 1 | A | 831 | ASP |
| 1 | A | 840 | ASN |
| 1 | A | 844 | THR |
| 1 | A | 862 | THR |
| 1 | A | 878 | ARG |
| 1 | A | 952 | LEU |
| 1 | A | 960 | MET |
| 1 | A | 1065 | GLN |
| 1 | A | 1089 | LEU |
| 1 | A | 1164 | LYS |
| 1 | A | 1171 | GLN |
| 1 | A | 1175 | MET |
| 1 | A | 1179 | ILE |
| 1 | A | 1183 | GLU |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | A | 1193 | VAL |
| 1 | A | 1217 | LEU |
| 1 | A | 1242 | ILE |
| 1 | A | 1248 | ASP |
| 1 | A | 1252 | ASP |
| 1 | A | 1263 | LEU |
| 1 | A | 1268 | ASP |
| 1 | A | 1273 | THR |
| 1 | A | 1313 | LEU |
| 1 | A | 1474 | LEU |
| 1 | A | 1475 | GLU |
| 1 | A | 1481 | GLU |
| 1 | A | 1505 | ASP |
| 1 | A | 1531 | ASP |
| 1 | A | 1533 | GLU |
| 1 | A | 1550 | LEU |
| 1 | A | 1552 | THR |
| 1 | A | 1592 | GLN |
| 1 | A | 1610 | PHE |
| 1 | A | 1628 | ASP |
| 1 | A | 1629 | ASN |
| 1 | A | 1649 | VAL |
| 2 | B | 13 | THR |
| 2 | B | 15 | ASP |
| 2 | B | 17 | ARG |
| 2 | B | 19 | LEU |
| 2 | B | 22 | GLU |
| 2 | B | 27 | ASN |
| 2 | B | 35 | PHE |
| 2 | B | 52 | LEU |
| 2 | B | 54 | GLU |
| 2 | B | 60 | LEU |
| 2 | B | 73 | ILE |
| 2 | B | 101 | GLN |
| 2 | B | 108 | MET |
| 2 | B | 139 | LEU |
| 2 | B | 150 | GLU |
| 2 | B | 156 | ARG |
| 2 | B | 168 | ASN |
| 2 | B | 186 | GLU |
| 2 | B | 190 | ILE |
| 2 | B | 202 | LEU |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 2 | B | 206 | LEU |
| 2 | B | 210 | ARG |
| 2 | B | 217 | ILE |
| 2 | B | 234 | ILE |
| 2 | B | 250 | LEU |
| 2 | B | 265 | ARG |
| 2 | B | 268 | GLU |
| 2 | B | 274 | VAL |
| 2 | B | 276 | ILE |
| 2 | B | 304 | ASP |
| 2 | B | 306 | LEU |
| 2 | B | 316 | ARG |
| 2 | B | 332 | ASP |
| 2 | B | 356 | ARG |
| 2 | B | 364 | LYS |
| 2 | B | 373 | MET |
| 2 | B | 374 | LEU |
| 2 | B | 381 | LEU |
| 2 | B | 413 | LEU |
| 2 | B | 431 | ASP |
| 2 | B | 438 | ILE |
| 2 | B | 441 | LYS |
| 2 | B | 455 | GLU |
| 2 | B | 471 | VAL |
| 2 | B | 479 | GLN |
| 2 | B | 480 | GLN |
| 2 | B | 481 | VAL |
| 2 | B | 485 | THR |
| 2 | B | 519 | LYS |
| 2 | B | 542 | LEU |
| 2 | B | 550 | ARG |
| 2 | B | 555 | GLN |
| 2 | B | 588 | ILE |
| 2 | B | 617 | THR |
| 2 | B | 640 | LEU |
| 2 | B | 646 | HIS |
| 2 | B | 684 | ASN |
| 2 | B | 692 | THR |
| 2 | B | 695 | ASN |
| 2 | B | 721 | MET |
| 2 | B | 743 | ARG |
| 2 | B | 752 | VAL |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 2 | B | 782 | ASP |
| 2 | B | 787 | MET |
| 2 | B | 789 | ILE |
| 2 | B | 794 | ASP |
| 2 | B | 821 | ILE |
| 2 | B | 832 | TRP |
| 2 | B | 835 | GLU |
| 2 | B | 840 | LEU |
| 2 | B | 842 | GLU |
| 2 | B | 848 | ILE |
| 2 | B | 859 | CYS |
| 2 | B | 873 | THR |
| 2 | B | 887 | LEU |
| 2 | B | 888 | ILE |
| 2 | B | 896 | GLN |
| 2 | B | 897 | GLU |
| 2 | B | 898 | LEU |
| 2 | B | 933 | THR |
| 2 | B | 940 | GLU |
| 2 | B | 944 | GLN |
| 2 | B | 956 | SER |
| 2 | B | 965 | GLU |
| 2 | B | 967 | LEU |
| 2 | B | 977 | ILE |
| 2 | B | 994 | ASP |
| 2 | B | 1000 | LEU |
| 2 | B | 1020 | GLU |
| 2 | B | 1033 | TYR |
| 2 | B | 1037 | ARG |
| 2 | B | 1076 | ARG |
| 2 | B | 1110 | ILE |
| 2 | B | 1123 | ILE |
| 2 | B | 1157 | GLN |
| 2 | B | 1181 | VAL |
| 2 | B | 1201 | GLU |
| 3 | C | 30 | GLU |
| 3 | C | 39 | ASP |
| 3 | C | 46 | SER |
| 3 | C | 47 | LEU |
| 3 | C | 81 | GLU |
| 3 | C | 89 | THR |
| 3 | C | 97 | LEU |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 3 | C | 106 | LEU |
| 3 | C | 117 | ASP |
| 3 | C | 120 | LEU |
| 3 | C | 151 | THR |
| 3 | C | 181 | ASP |
| 3 | C | 182 | CYS |
| 3 | C | 188 | ASP |
| 3 | C | 209 | ILE |
| 3 | C | 220 | SER |
| 3 | C | 224 | THR |
| 3 | C | 229 | LEU |
| 3 | C | 235 | ILE |
| 3 | C | 240 | LYS |
| 3 | C | 259 | ASP |
| 3 | C | 277 | ARG |
| 3 | C | 291 | LEU |
| 3 | C | 303 | GLU |
| 3 | C | 331 | CYS |
| 3 | C | 334 | THR |
| 4 | D | 14 | THR |
| 4 | D | 16 | LEU |
| 4 | D | 21 | VAL |
| 4 | D | 25 | THR |
| 4 | D | 27 | LEU |
| 5 | E | 84 | ASP |
| 5 | E | 106 | GLN |
| 5 | E | 163 | GLU |
| 5 | E | 167 | ARG |
| 5 | E | 175 | LEU |
| 6 | F | 69 | LEU |
| 6 | F | 103 | MET |
| 6 | F | 111 | LEU |
| 6 | F | 147 | SER |
| 7 | G | 54 | LEU |
| 7 | G | 75 | ASN |
| 7 | G | 93 | ASP |
| 7 | G | 95 | LEU |
| 7 | G | 104 | LEU |
| 8 | H | 33 | GLN |
| 8 | H | 53 | ASP |
| 8 | H | 89 | LEU |
| 8 | H | 109 | LYS |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 8 | H | 136 | LYS |
| 9 | I | 3 | VAL |
| 9 | I | 17 | LEU |
| 9 | I | 27 | ASN |
| 9 | I | 42 | PHE |
| 9 | I | 50 | THR |
| 9 | I | 51 | THR |
| 9 | I | 53 | ASP |
| 9 | I | 60 | LEU |
| 10 | J | 2 | ILE |
| 10 | J | 14 | VAL |
| 10 | J | 26 | GLN |
| 10 | J | 32 | GLU |
| 10 | J | 47 | ARG |
| 10 | J | 48 | ARG |
| 10 | J | 68 | LYS |
| 11 | K | 45 | GLU |
| 11 | K | 49 | LEU |
| 11 | K | 60 | SER |
| 11 | K | 72 | LEU |
| 11 | K | 77 | ARG |
| 11 | K | 99 | ASN |
| 11 | K | 124 | LEU |
| 11 | K | 132 | GLU |
| 12 | L | 27 | LEU |
| 12 | L | 38 | LEU |
| 12 | L | 62 | LYS |
| 13 | M | 50 | GLU |
| 13 | M | 56 | GLU |
| 13 | M | 101 | VAL |
| 13 | M | 103 | LYS |
| 13 | M | 108 | LEU |
| 14 | N | 36 | LYS |
| 14 | N | 67 | LEU |
| 14 | N | 74 | PHE |
| 14 | N | 94 | ASP |
| 14 | N | 114 | GLU |
| 14 | N | 117 | GLU |
| 14 | N | 131 | LEU |
| 14 | N | 164 | GLU |
| 14 | N | 168 | LEU |
| 14 | N | 178 | GLU |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (54) such sidechains are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | A | 76 | GLN |
| 1 | A | 260 | GLN |
| 1 | A | 332 | GLN |
| 1 | A | 435 | ASN |
| 1 | A | 592 | GLN |
| 1 | A | 671 | GLN |
| 1 | A | 693 | GLN |
| 1 | A | 706 | HIS |
| 1 | A | 730 | GLN |
| 1 | A | 738 | ASN |
| 1 | A | 798 | HIS |
| 1 | A | 926 | GLN |
| 1 | A | 1026 | GLN |
| 1 | A | 1128 | ASN |
| 1 | A | 1180 | ASN |
| 1 | A | 1592 | GLN |
| 1 | A | 1599 | ASN |
| 1 | A | 1662 | ASN |
| 2 | B | 146 | ASN |
| 2 | B | 151 | ASN |
| 2 | B | 212 | ASN |
| 2 | B | 243 | GLN |
| 2 | B | 251 | HIS |
| 2 | B | 351 | GLN |
| 2 | B | 361 | HIS |
| 2 | B | 399 | HIS |
| 2 | B | 400 | GLN |
| 2 | B | 555 | GLN |
| 2 | B | 646 | HIS |
| 2 | B | 683 | ASN |
| 2 | B | 686 | HIS |
| 2 | B | 695 | ASN |
| 2 | B | 724 | GLN |
| 2 | B | 755 | ASN |
| 2 | B | 896 | GLN |
| 2 | B | 975 | HIS |
| 2 | B | 987 | ASN |
| 2 | B | 999 | GLN |
| 2 | B | 1094 | ASN |
| 3 | C | 99 | HIS |
| 3 | C | 130 | ASN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 3 | C | 216 | HIS |
| 3 | C | 232 | GLN |
| 5 | E | 147 | HIS |
| 5 | E | 179 | GLN |
| 7 | G | 64 | GLN |
| 7 | G | 65 | HIS |
| 8 | H | 35 | GLN |
| 9 | I | 21 | ASN |
| 11 | K | 95 | HIS |
| 11 | K | 106 | GLN |
| 11 | K | 118 | GLN |
| 13 | M | 16 | GLN |
| 14 | N | 132 | 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 monosaccharides in this entry.

### 5.6 Ligand geometry

Of 6 ligands modelled in this entry, 6 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers (i)

There are no such residues in this entry.

## 5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

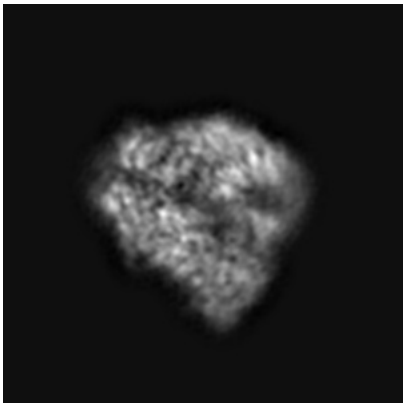
# 6 Map visualisation

This section contains visualisations of the EMDB entry EMD-4088. These allow visual inspection of the internal detail of the map and identification of artifacts.

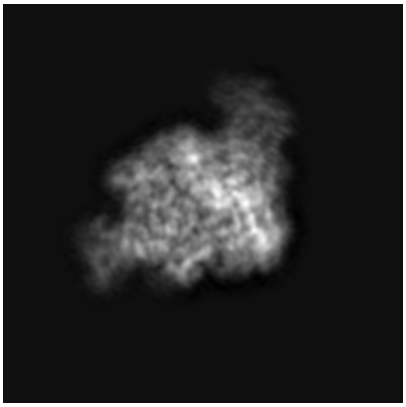
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

## 6.1 Orthogonal projections

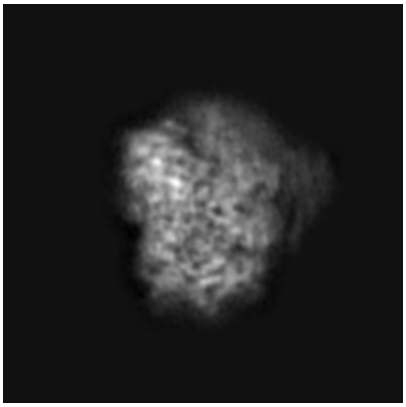
### 6.1.1 Primary map



X



Y

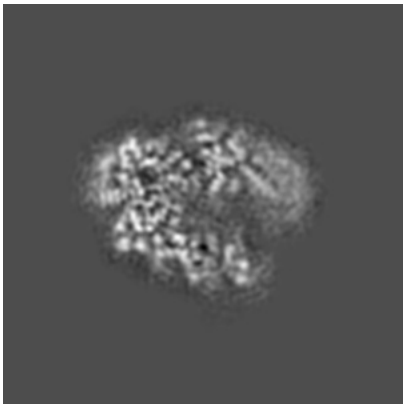


Z

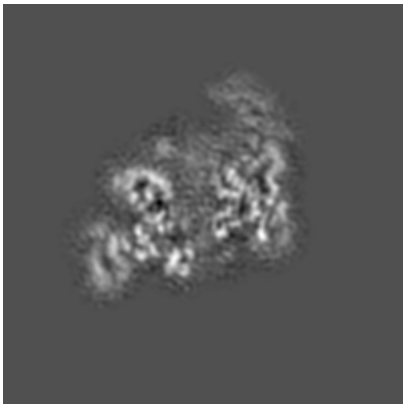
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices

### 6.2.1 Primary map



X Index: 81



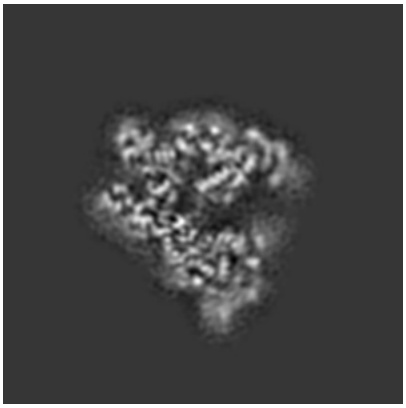
Y Index: 81

Z Index: 81

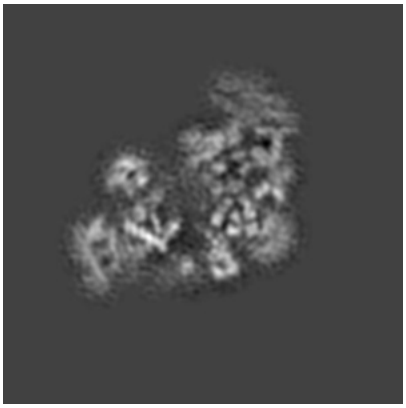
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices (i)

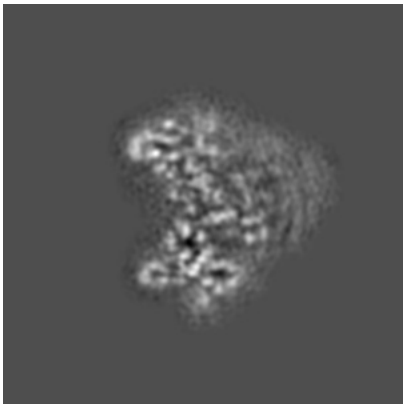
### 6.3.1 Primary map



X Index: 69



Y Index: 89

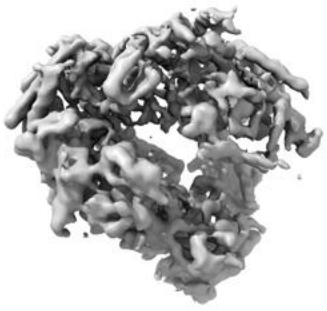


Z Index: 98

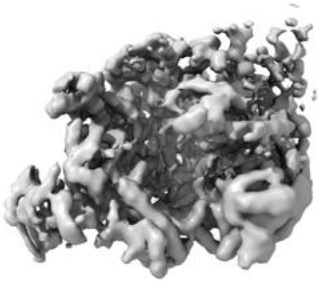
The images above show the largest variance slices of the map in three orthogonal directions.

## 6.4 Orthogonal surface views (i)

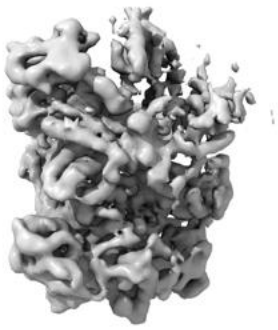
### 6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.14. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

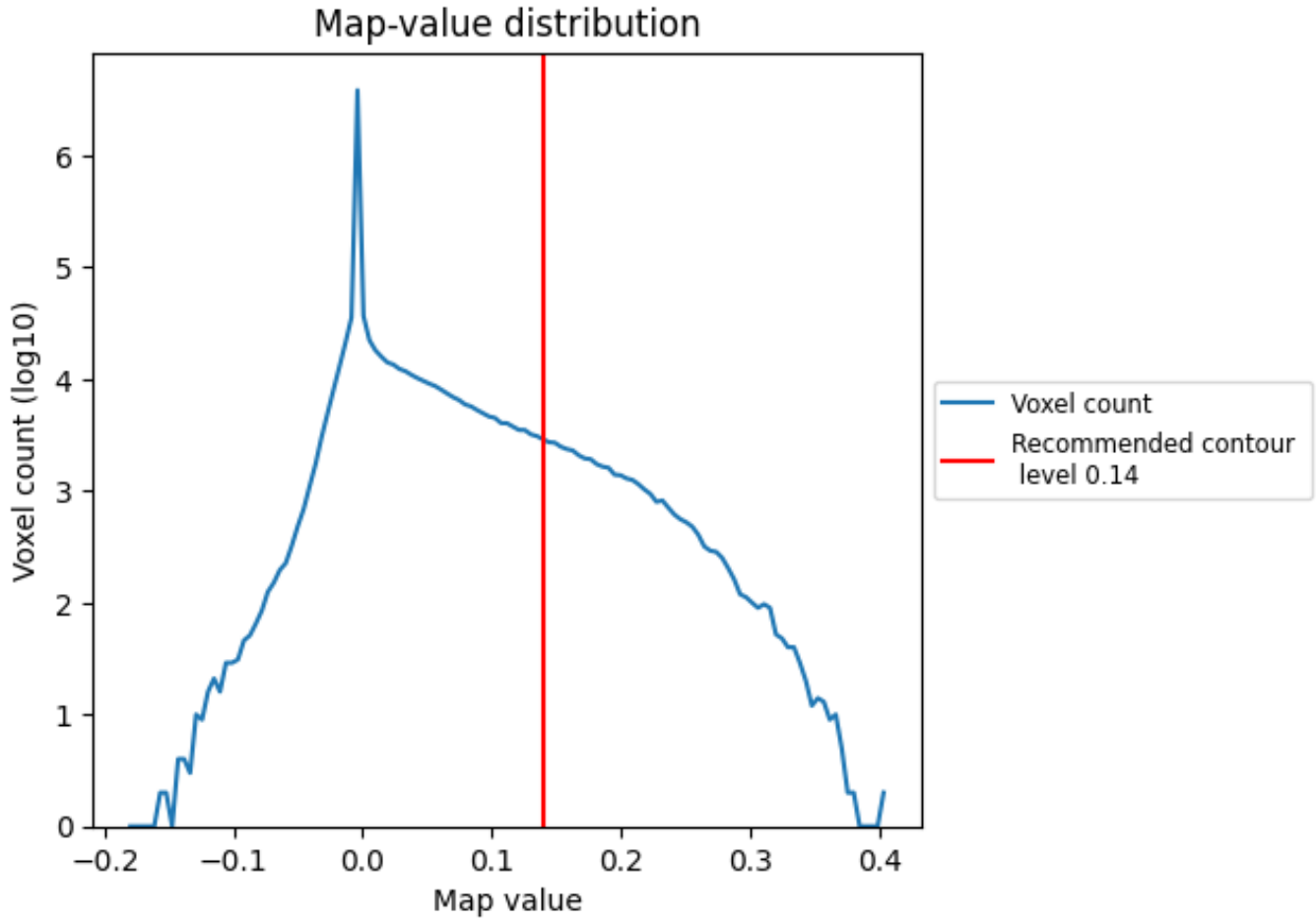
## 6.5 Mask visualisation (i)

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

# 7 Map analysis

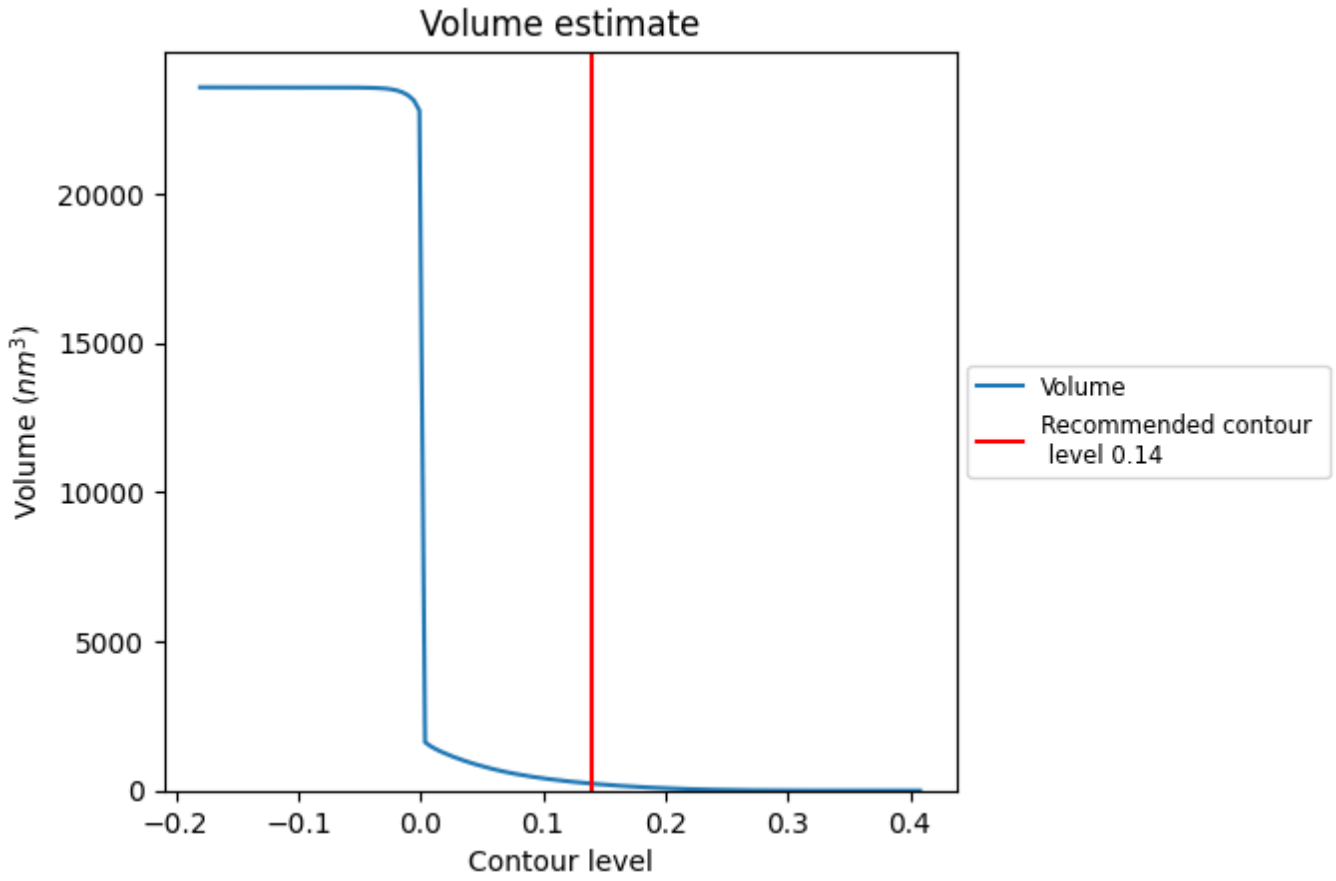
This section contains the results of statistical analysis of the map.

## 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.

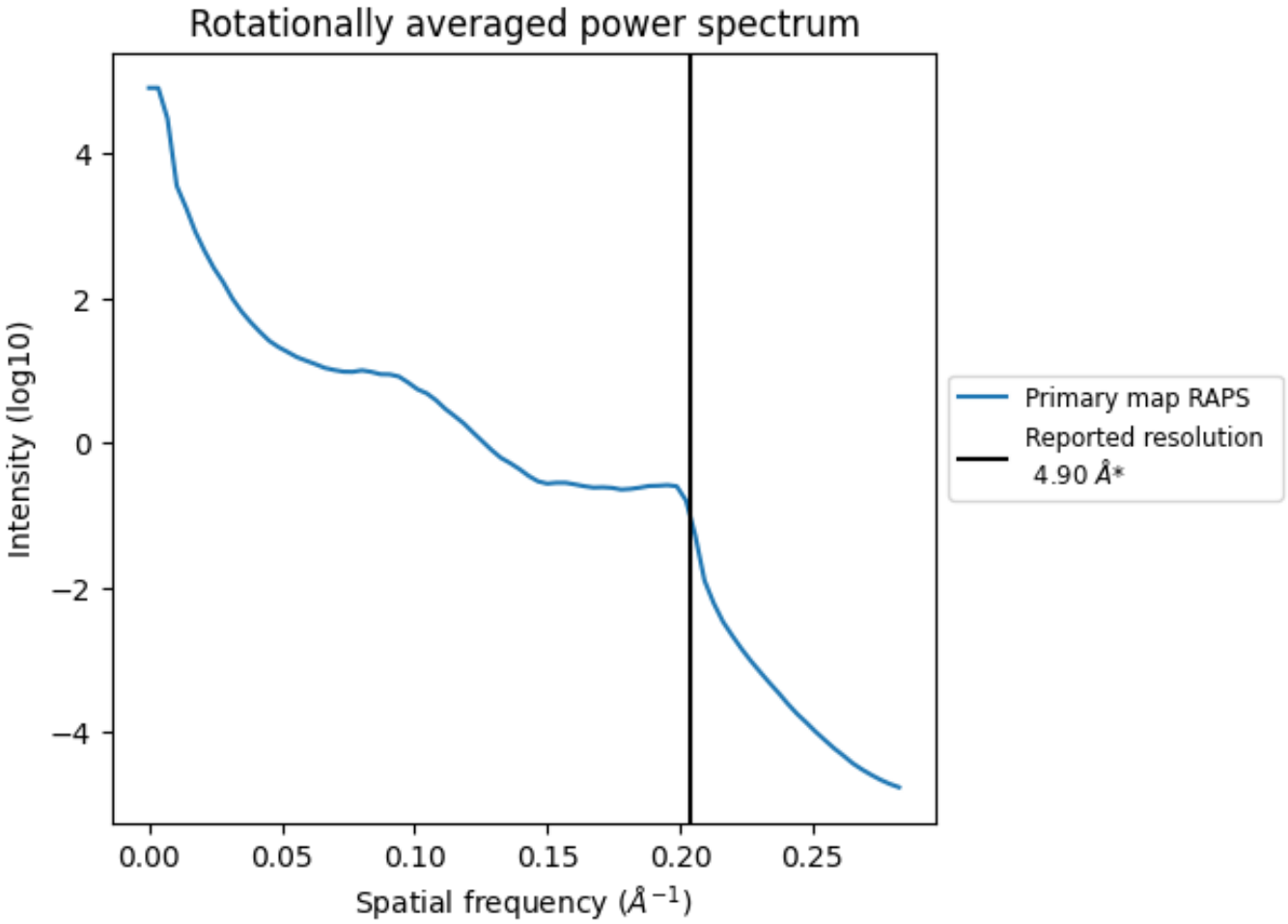
## 7.2 Volume estimate




The volume at the recommended contour level is 233 $nm^3$; this corresponds to an approximate mass of 210 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 (i)




*Reported resolution corresponds to spatial frequency of 0.204 Å$^{-1}$

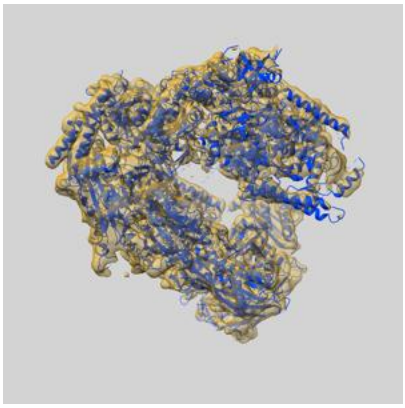
# 8 Fourier-Shell correlation

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

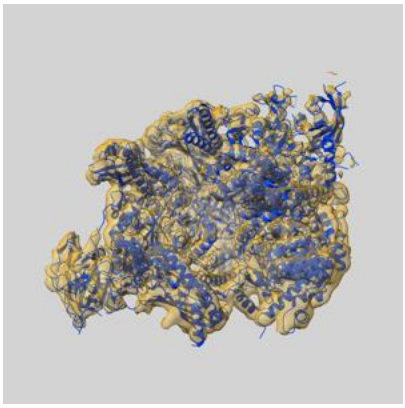
# 9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-4088 and PDB model 5LMX. Per-residue inclusion information can be found in section 3 on page 7.

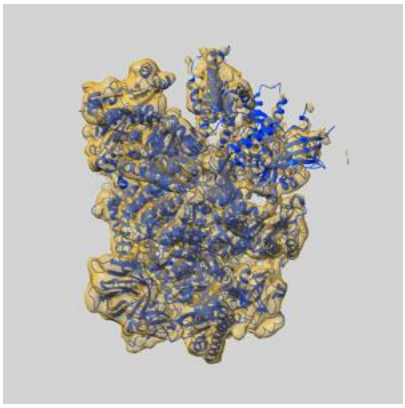
## 9.1 Map-model overlay



X



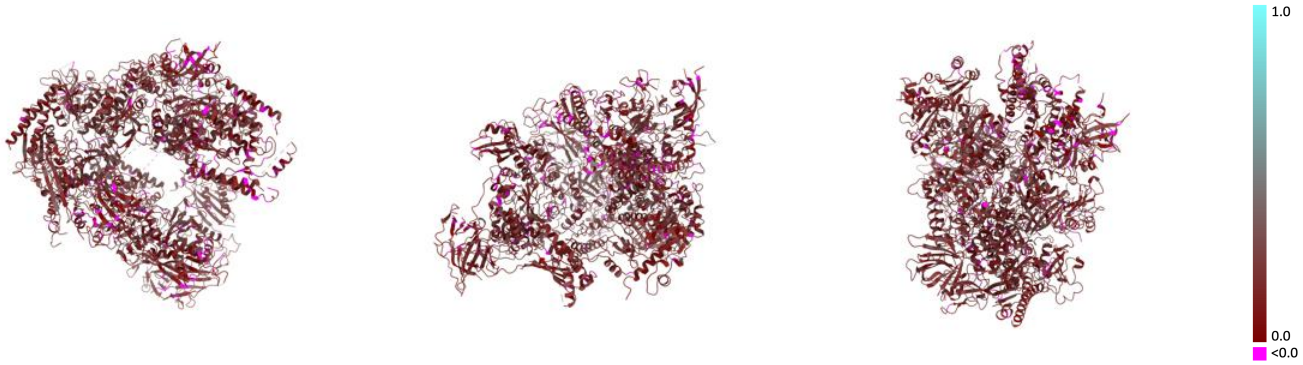
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.14 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

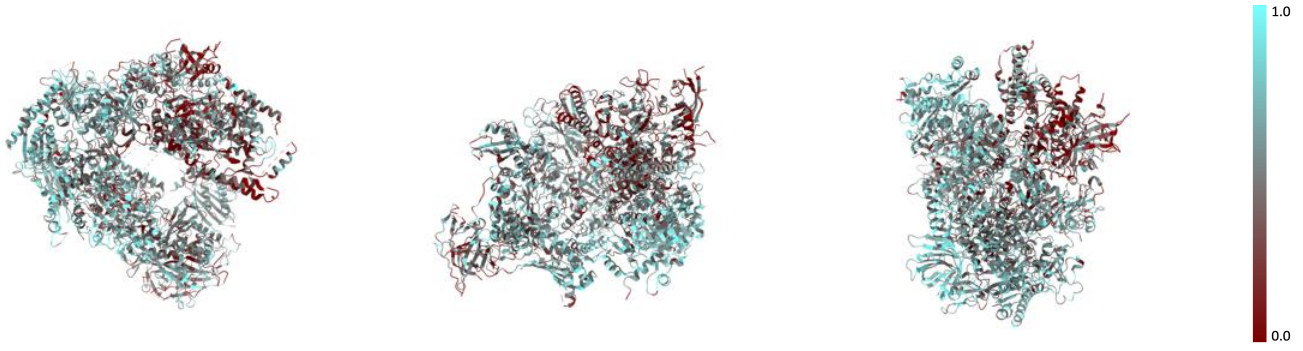
## 9.2 Q-score mapped to coordinate model (i)




X Y Z

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.

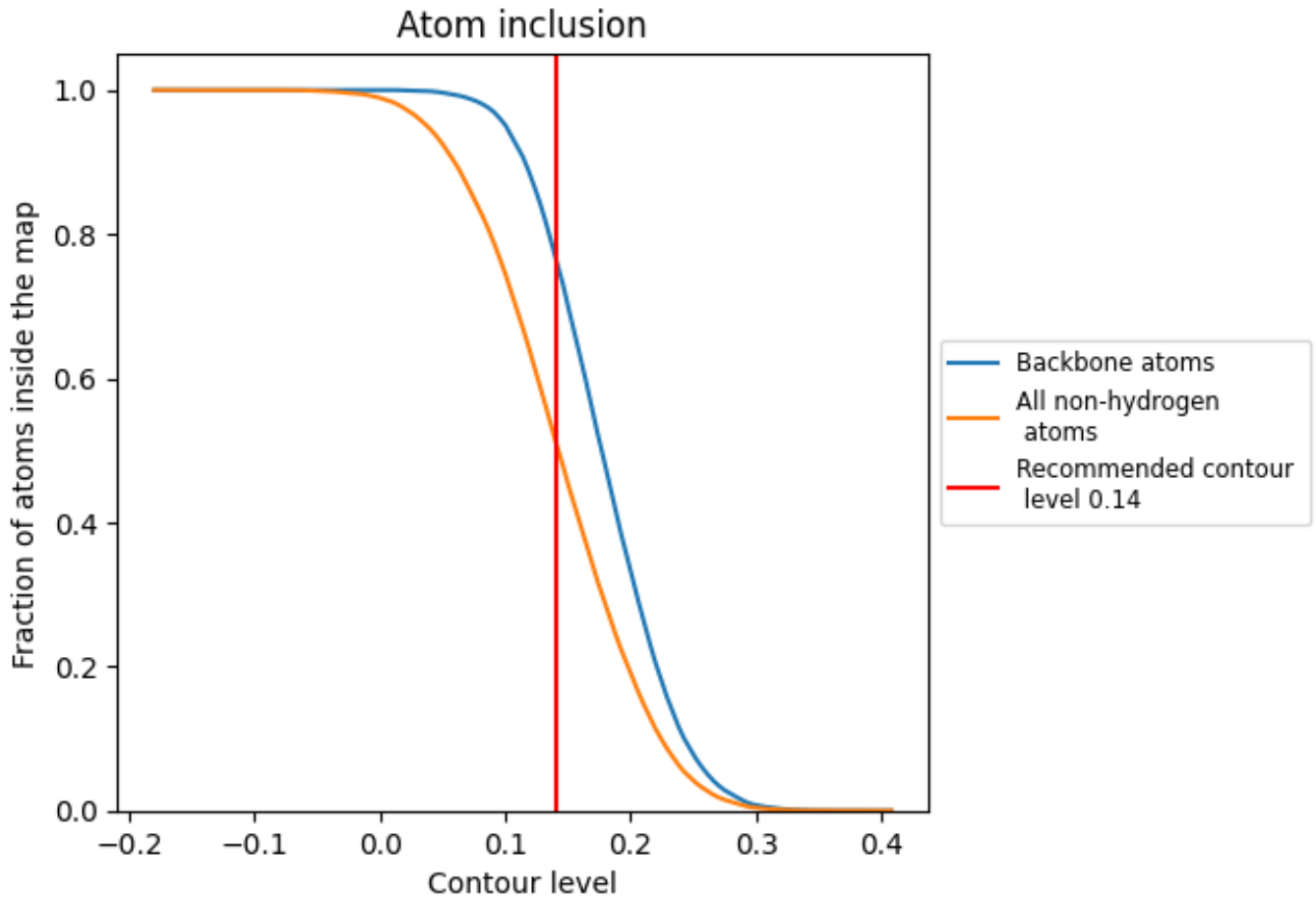
## 9.3 Atom inclusion mapped to coordinate model (i)




X Y Z

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 (0.14).

## 9.4 Atom inclusion (i)




At the recommended contour level, 77% of all backbone atoms, 51% 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 (0.14) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion | Q-score |
|---|---|---|
| All | 0.5134 | 0.1830 |
| A | 0.4848 | 0.1820 |
| B | 0.5162 | 0.1770 |
| C | 0.6411 | 0.2020 |
| D | 0.1203 | 0.2100 |
| E | 0.6556 | 0.1840 |
| F | 0.4831 | 0.1910 |
| G | 0.2712 | 0.1830 |
| H | 0.6791 | 0.2120 |
| I | 0.4894 | 0.1950 |
| J | 0.6159 | 0.1980 |
| K | 0.5900 | 0.1840 |
| L | 0.5620 | 0.1250 |
| M | 0.4037 | 0.1460 |
| N | 0.3160 | 0.1800 |