WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB EM Validation Report (i)

Nov 4, 2024 – 05:26 AM JST

PDB ID	:	7V5J
EMDB ID	:	EMD-31725
Title	:	MERS S ectodomain trimer in complex with neutralizing antibody 0722(state 2)
Authors	:	Wang, X.; Zhao, J.; Wang, Z.; Zeng, J.; Zhang, S.; Wang, Y.
Deposited on	:	2021-08-17
Resolution	:	2.80 Å(reported)

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

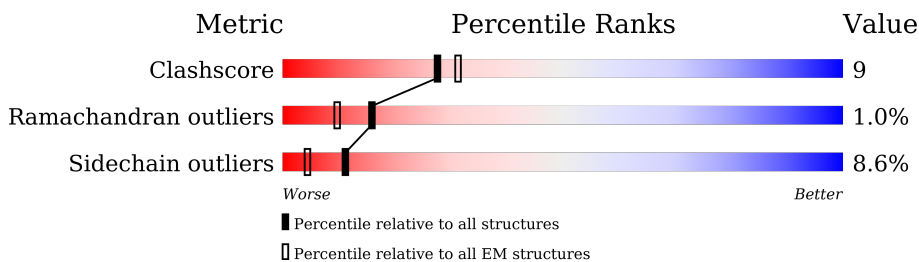|		
EMDB validation analysis	:	0.0.1.dev113
MolProbity	:	4.02b-467
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

1　Overall quality at a glance　ⓘ

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

The reported resolution of this entry is 2.80 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.
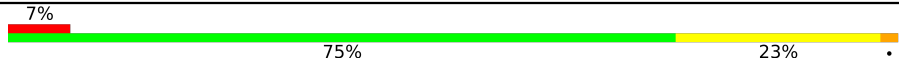
Metric	Percentile Ranks	Value
Clashscore		9
Ramachandran outliers		1.0%
Sidechain outliers		8.6%

Worse   *Better*

▮ Percentile relative to all structures
⧐ Percentile relative to all EM structures

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

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

Mol	Chain	Length	Quality of chain
1	A	1189	69% 24% · 5%
1	B	1189	69% 24% · ·
1	C	1189	70% 22% · 5%
2	D	212	9% 72% 26% ·
2	F	212	8% 75% 24% ·
2	H	212	5% 74% 24% ·
3	E	222	9% 79% 20% ·
3	G	222	6% 80% 17% ·

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
3	I	222	7% 75% 23%

2 Entry composition ⓘ

There are 3 unique types of molecules in this entry. The entry contains 36189 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 Spike glycoprotein.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1133	Total 8770	C 5579	N 1448	O 1692	S 51	0	0
1	B	1137	Total 8796	C 5589	N 1455	O 1701	S 51	0	0
1	C	1135	Total 8794	C 5587	N 1454	O 1703	S 50	1	0

- Molecule 2 is a protein called 0722 L.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	D	212	Total 1591	C 997	N 262	O 326	S 6	0	0
2	F	212	Total 1615	C 1012	N 265	O 332	S 6	0	0
2	H	212	Total 1619	C 1015	N 266	O 332	S 6	0	0

- Molecule 3 is a protein called 0722 H.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	E	222	Total 1668	C 1057	N 275	O 329	S 7	0	0
3	G	222	Total 1668	C 1057	N 275	O 329	S 7	0	0
3	I	222	Total 1668	C 1057	N 275	O 329	S 7	0	0

3　Residue-property plots ⓘ

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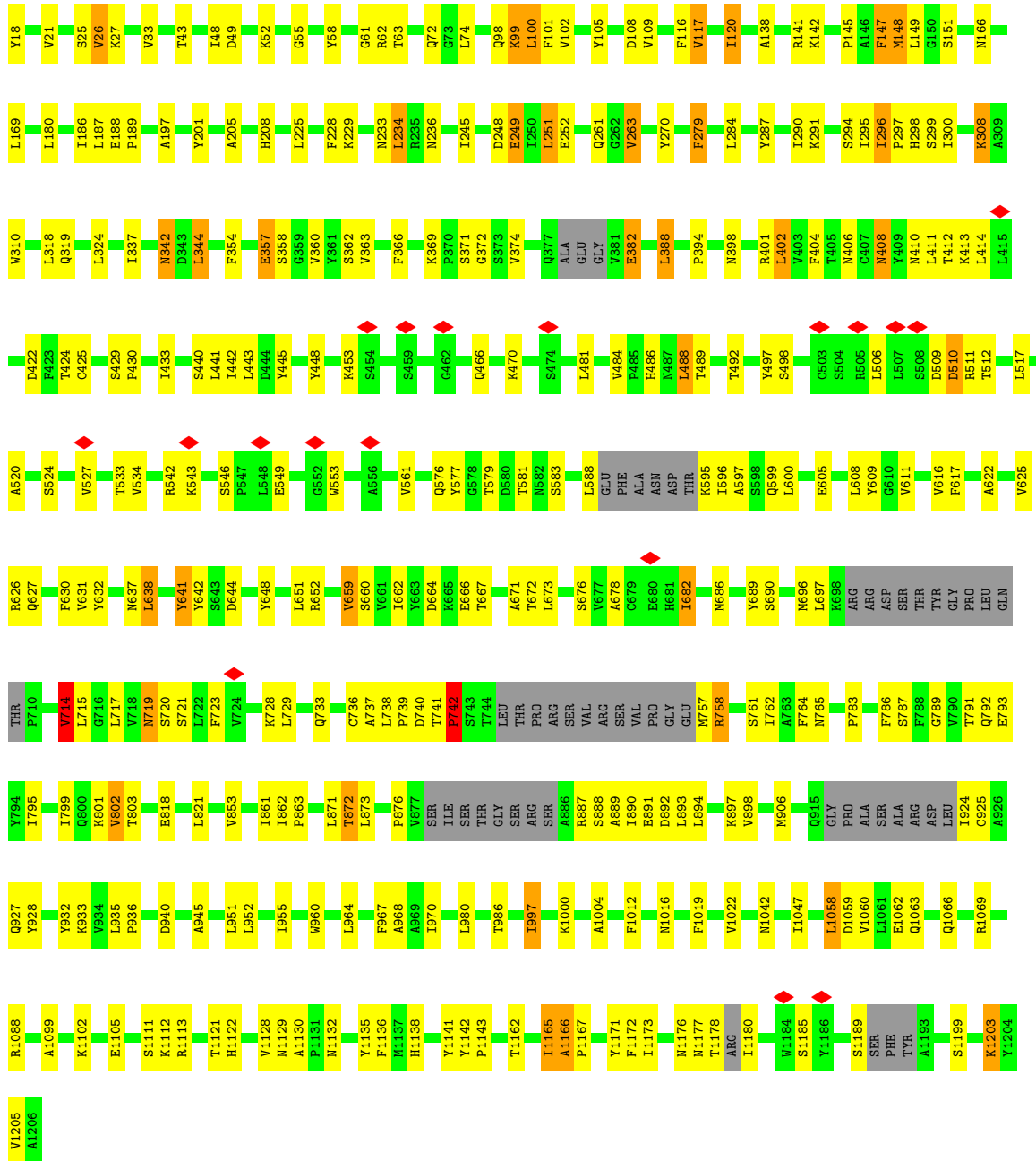
• Molecule 1: Spike glycoprotein

G1170 Y1171 F1172 I1173 K1174 THR ASN ASN THR ARG I1180 W1184 S1185 F1191 P1196 K1203 Y1204 V1205 A1206

• Molecule 1: Spike glycoprotein

Chain B:

69% 24%

Y18 V21 S25 V26 K27 V33 T43 I48 D49 K52 G55 Y58 G61 R62 T63 Q72 G73 L74 Q98 K99 L100 F101 V102 Y105 D108 V109 F116 V117 I120 A138 R141 K142 P145 A146 F147 M148 L149 G150 S151 N166

L169 L180 I186 L187 E188 P189 A197 Y201 A205 H208 L225 F228 K229 N233 L234 R235 N236 I245 D248 E249 I250 L251 E252 Q261 G262 V263 Y270 F279 L284 Y287 I290 K291 S294 I295 P297 H298 S299 I300 K308 A309

W310 L318 Q319 L324 I337 N342 D343 L344 F354 E357 S358 G359 V360 Y361 S362 V363 F366 K369 P370 S371 G372 S373 V374 Q377 ALA GLU GLY V381 E382 L388 P394 N398 R401 L402 V403 F404 T405 N406 C407 N408 Y409 N410 L411 T412 K413 L414 L415

D422 F423 T424 C425 S429 P430 I433 S440 L441 I442 L443 D444 Y445 Y448 K453 S454 S459 G462 Q466 K470 S474 L481 V484 P485 H486 N487 L488 T489 T492 Y497 S498 C503 S504 R505 L506 L507 S508 D509 D510 R511 T512 L517

A520 S524 V527 T533 V534 R542 K543 S546 P547 L548 E549 G552 W553 A556 V561 Q576 Y577 G578 T579 D580 T581 N582 S583 L588 GLU PHE ALA ASN ASP THR K595 I596 A597 S598 Q599 L600 E605 L608 Y609 G610 V611 V616 F617 A622 V625

R626 Q627 F630 V631 Y632 N637 L638 Y641 Y642 S643 D644 Y648 L651 R652 V659 S660 V661 I662 Y663 D664 K665 E666 T667 A671 T672 L673 S676 V677 A678 C679 E680 H681 I682 M686 Y689 S690 M696 L697 K698 ARG ARG ASP SER THR TYR GLY PRO LEU GLN

THR P710 V714 L715 G716 L717 V718 N719 S720 S721 L722 F723 V724 K728 L729 Q733 C736 A737 L738 P739 D740 T741 P742 S743 T744 LEU THR PRO ARG SER VAL ARG SER VAL PRO GLY GLU M757 R758 S761 I762 A763 F764 N765 P783 F786 S787 F788 G789 V790 T791 Q792 E793

Y794 I795 I799 Q800 K801 V802 T803 E818 L821 V853 I861 I862 P863 L871 T872 L873 P876 V877 SER ILE SER THR GLY SER ARG SER A886 R887 S888 A889 I890 E891 D892 L893 L894 K897 V898 M906 Q915 GLY PRO ALA SER ALA ARG ASP LEU I924 C925 A926

Q927 Y928 Y932 K933 V934 L935 P936 D940 A945 L951 L952 I955 W960 L964 F967 A968 A969 I970 L980 T986 I997 K1000 A1004 F1012 N1016 F1019 V1022 N1042 I1047 L1058 D1059 V1060 L1061 E1062 Q1063 Q1066 R1069

R1088 A1099 K1102 E1105 S1111 K1112 R1113 T1121 H1122 V1128 N1129 A1130 P1131 N1132 Y1135 F1136 M1137 H1138 Y1141 Y1142 P1143 T1162 I1165 A1166 P1167 Y1171 F1172 I1173 N1176 N1177 T1178 ARG I1180 W1184 S1185 Y1186 S1189 SER PHE TYR A1193 S1199 K1203 Y1204
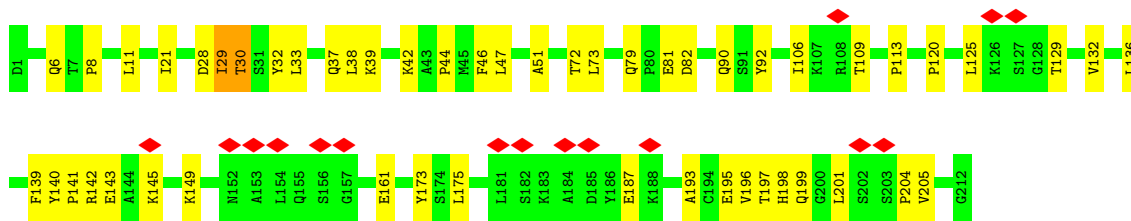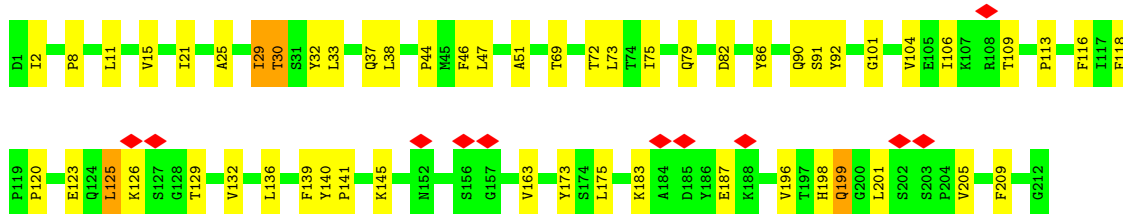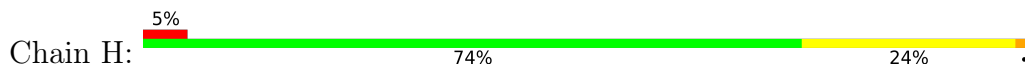
V1205 A1206

• Molecule 1: Spike glycoprotein

Chain C:

70% 22% 5%

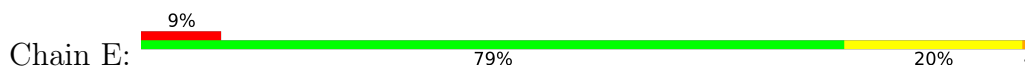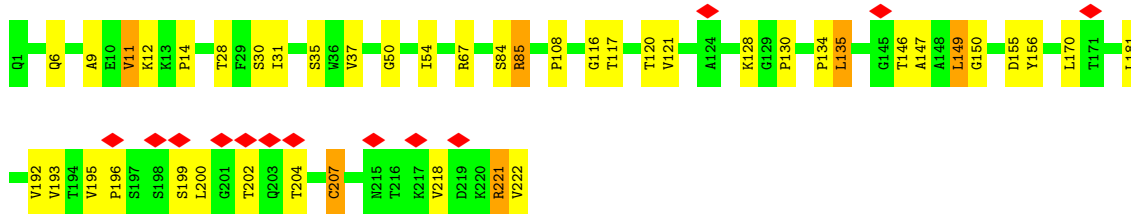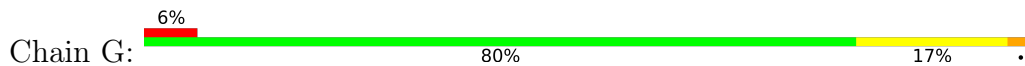- Molecule 2: 0722 L

Chain D:

- Molecule 2: 0722 L

Chain F:

D1 Q6 T7 P8 L11 I21 D28 I29 T30 S31 Y32 L33 Q37 L38 K39 K42 A43 P44 M45 F46 L47 A51 T72 L73 Q79 P80 E81 D82 Q90 S91 Y92 I106 K107 R108 T109 P113 P120 L125 K126 S127 G128 T129 V132 L136

F139 Y140 P141 R142 E143 A144 K145 K149 N152 A153 L154 Q155 S156 G157 E161 Y173 S174 L175 L181 S182 K183 A184 D185 Y186 E187 K188 A193 C194 E195 V196 T197 H198 Q199 G200 L201 S202 S203 P204 V205 G212

• Molecule 2: 0722 L

Chain H:

5%

74%   24%

D1 I2 P8 L11 V15 I21 A25 I29 T30 S31 Y32 L33 Q37 L38 P44 M45 F46 L47 A51 T69 T72 L73 T74 I75 Q79 D82 Y86 Q90 S91 Y92 G101 V104 E105 I106 K107 R108 T109 P113 F116 I117 F118

P119 P120 E123 Q124 L125 K126 S127 G128 T129 V132 L136 F139 Y140 P141 K145 N152 S156 G157 V163 Y173 S174 L175 K183 A184 D185 Y186 E187 K188 V196 T197 H198 Q199 G200 L201 S202 S203 P204 V205 F209 G212

• Molecule 3: 0722 H

Chain E:

9%

79%   20%

Q1 Q6 E10 P14 T28 F29 S30 I31 S35 W36 V37 E46 G50 I51 I52 P53 I54 S84 R85 L86 R98 Y103 D104 Y105 P108 G116 V121 A124 K128 G129 P130 S131 V132 L135 S138 S141 T146 L149 G150 C151

D155 Y156 F157 P158 S167 G168 A169 L170 T171 S172 G173 V174 L181 V193 P196 S197 S198 S199 L200 G201 T202 Q203 T204 Y205 I206 C207 H211 K212 P213 S214 N215 T216 K217 V218 D219 K220 R221 V222

• Molecule 3: 0722 H

Chain G:

6%

80%   17%

Q1 Q6 A9 E10 V11 K12 K13 P14 T28 F29 S30 I31 S35 W36 V37 G50 I54 R67 S84 R85 P108 G116 T117 T120 V121 A124 K128 G129 P130 P134 L135 G145 T146 A147 A148 L149 G150 D155 Y156 L170 T171 L181

V192 V193 T194 P195 P196 S197 S198 S199 L200 G201 T202 Q203 T204 C207 N215 T216 K217 V218 D219 K220 R221 V222

• Molecule 3: 0722 H

Chain I:

7%

75%   23%

Q1 V2 Q6 A9 E10 V11 G27 T28 F29 S30 I31 V37 E46 I54 M81 S84 R85 L86 T87 D90 P108 G116 T117 T127 K128 G129 P130 P134 L135 K140 S141 G145 T146 L149 G150 D155 Y156 F157 P158 V161 S167

4　Experimental information　ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	1463548	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	50	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	1800	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.070	Depositor
Minimum map value	-0.021	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.005	Depositor
Map size (Å)	346.4, 346.4, 346.4	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.0825, 1.0825, 1.0825	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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	0.64	0/8969	0.66	1/12189 (0.0%)
1	B	0.64	0/8992	0.66	0/12220
1	C	0.65	0/8992	0.65	1/12223 (0.0%)
2	D	0.65	0/1626	0.64	0/2212
2	F	0.65	0/1651	0.64	0/2245
2	H	0.65	0/1655	0.65	0/2249
3	E	0.65	0/1711	0.66	1/2336 (0.0%)
3	G	0.65	0/1711	0.65	0/2336
3	I	0.65	0/1711	0.70	2/2336 (0.1%)
All	All	0.65	0/37018	0.66	5/50346 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	C	0	2

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	I	158	PRO	CA-N-CD	-10.19	97.23	111.50
1	C	1138	HIS	CB-CA-C	-7.63	95.14	110.40
1	A	606	TYR	CB-CA-C	-7.63	95.15	110.40
3	E	105	TYR	CB-CA-C	-5.08	100.25	110.40
3	I	158	PRO	CB-CA-C	5.05	124.63	112.00

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	51[A]	SER	Mainchain
1	C	51[B]	SER	Mainchain

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	8770	0	8501	181	0
1	B	8796	0	8526	189	0
1	C	8794	0	8514	172	0
2	D	1591	0	1529	41	0
2	F	1615	0	1560	30	0
2	H	1619	0	1571	25	0
3	E	1668	0	1624	20	0
3	G	1668	0	1624	23	0
3	I	1668	0	1624	28	0
All	All	36189	0	35073	676	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 9.

All (676) 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:D:109:THR:HG21	2:D:169:LYS:C	1.64	1.16
2:F:39:LYS:CB	2:F:42:LYS:NZ	2.08	1.15
2:D:109:THR:HG21	2:D:170:ASP:N	1.57	1.14
2:F:39:LYS:CB	2:F:42:LYS:HZ3	1.66	1.09
1:A:906:MET:SD	1:C:713:CYS:SG	2.53	1.05
1:C:793:GLU:OE1	1:C:793:GLU:C	2.00	0.99
2:F:79:GLN:CB	2:F:81:GLU:OE2	2.11	0.99
2:D:109:THR:HG22	2:D:169:LYS:O	1.63	0.98
1:B:872:THR:HB	1:B:890:ILE:HD11	1.46	0.94
2:D:109:THR:CG2	2:D:169:LYS:O	2.15	0.94
1:C:1179:ARG:HD3	1:C:1185:SER:HA	1.48	0.92
3:G:11:VAL:HG23	3:G:120:THR:O	1.69	0.92
2:D:109:THR:CG2	2:D:169:LYS:C	2.37	0.92

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:579:THR:HA	1:B:61:GLY:HA2	1.51	0.92
1:A:328:SER:HB2	1:A:330:ASP:OD1	1.70	0.91
1:C:793:GLU:OE1	1:C:793:GLU:O	1.87	0.91
1:C:795:ILE:HG21	1:C:1099:ALA:HB2	1.55	0.89
2:F:79:GLN:HB2	2:F:81:GLU:OE2	1.72	0.88
2:F:39:LYS:CB	2:F:42:LYS:HZ2	1.82	0.88
1:A:185:CYS:HB3	1:A:237:CYS:HA	1.54	0.86
2:F:81:GLU:OE1	2:F:81:GLU:N	2.09	0.84
1:B:876:PRO:HD3	1:B:888:SER:HA	1.60	0.83
2:D:143:GLU:OE1	2:D:143:GLU:N	2.12	0.82
2:F:79:GLN:HB3	2:F:81:GLU:OE2	1.80	0.81
1:C:986:THR:HA	1:C:1180:ILE:HD13	1.63	0.80
1:C:792:GLN:NE2	1:C:1138:HIS:HB2	1.97	0.80
1:A:906:MET:CE	1:C:713:CYS:SG	2.72	0.78
1:C:731:LEU:HD22	1:C:742:PRO:HA	1.66	0.78
1:B:736:CYS:HB3	1:B:739:PRO:HD2	1.65	0.77
1:A:164:PHE:HB3	1:A:168:THR:HG21	1.68	0.77
1:C:866:GLY:HA3	1:C:869:PHE:HB2	1.65	0.76
1:B:889:ALA:O	1:B:892:ASP:HB2	1.86	0.75
1:C:450:LEU:HA	1:C:453:LYS:HE2	1.68	0.75
1:B:308:LYS:HB2	1:B:310:TRP:CZ2	2.22	0.74
1:A:425:CYS:HB2	1:B:1058:LEU:HD13	1.70	0.74
1:B:733:GLN:HB3	1:B:741:THR:HB	1.69	0.74
1:B:484:VAL:HG21	1:B:488:LEU:HB2	1.70	0.73
1:A:393:PRO:HD3	1:A:491:ILE:HG23	1.69	0.73
2:D:109:THR:OG1	2:D:171:SER:HB3	1.87	0.72
3:I:170:LEU:HD21	3:I:193:VAL:HG11	1.72	0.72
1:A:694:ARG:HD3	1:A:697:LEU:HB3	1.71	0.71
1:B:98:GLN:O	1:B:99:LYS:CB	2.37	0.71
3:G:170:LEU:HD21	3:G:193:VAL:HG11	1.73	0.71
1:A:21:VAL:HB	1:A:240:MET:HG3	1.73	0.71
1:C:1042:ASN:HA	1:C:1049:ALA:HB1	1.72	0.70
1:B:1178:THR:HG21	1:B:1189:SER:HB3	1.73	0.70
2:F:143:GLU:HB2	2:F:199:GLN:HE22	1.57	0.70
2:D:85:THR:OG1	2:D:103:LYS:NZ	2.20	0.70
3:E:170:LEU:HD21	3:E:193:VAL:HG11	1.74	0.70
1:B:120:ILE:HB	1:B:251:LEU:HG	1.73	0.69
1:B:887:ARG:H	1:B:945:ALA:HB1	1.56	0.69
1:B:1166:ALA:HB1	1:B:1167:PRO:HD2	1.75	0.69
1:A:1053:ASP:HA	1:A:1057:ARG:HB2	1.74	0.68
2:D:109:THR:OG1	2:D:171:SER:CB	2.32	0.68

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:149:LEU:HB3	1:B:290:ILE:HG21	1.74	0.68
1:C:1199:SER:HB3	1:C:1205:VAL:HA	1.76	0.68
3:I:179:ALA:HB1	3:I:187:TYR:HB3	1.76	0.67
1:B:742:PRO:HG2	1:B:758:ARG:HB3	1.77	0.66
1:B:801:LYS:HB2	1:B:935:LEU:HB2	1.77	0.66
1:C:57:ILE:HA	1:C:278:MET:HB3	1.77	0.66
1:C:1110:GLN:HA	1:C:1122:HIS:HD2	1.61	0.66
1:B:497:TYR:HB2	1:B:561:VAL:HB	1.77	0.66
1:C:792:GLN:HE21	1:C:1137:MET:C	1.98	0.66
2:D:85:THR:HA	2:D:102:THR:O	1.95	0.66
3:I:11:VAL:HG11	3:I:158:PRO:HG3	1.76	0.66
1:A:666:GLU:HG2	1:A:667:THR:N	2.11	0.66
1:A:1130:ALA:HB2	1:A:1135:TYR:HB2	1.77	0.66
1:C:736:CYS:HB2	1:C:739:PRO:HD2	1.78	0.66
1:C:1122:HIS:HE1	1:C:1125:SER:HB2	1.61	0.65
1:C:500:ILE:HD11	1:C:530:VAL:HG11	1.78	0.65
1:B:887:ARG:HG2	1:B:892:ASP:OD1	1.96	0.65
1:B:678:ALA:HB3	1:B:717:LEU:HB2	1.79	0.65
1:C:172:LEU:HD22	1:C:173:PRO:HD2	1.78	0.65
1:C:600:LEU:HG	1:C:602:ASN:HB2	1.78	0.64
1:B:873:LEU:HD23	1:B:952:LEU:HD13	1.79	0.64
1:B:960:TRP:HB2	1:B:970:ILE:HD13	1.79	0.64
2:F:141:PRO:HD2	2:F:198:HIS:HE1	1.63	0.64
1:A:388:LEU:HD12	1:A:443:LEU:HD21	1.80	0.63
1:B:897:LYS:HZ1	1:B:1012:PHE:H	1.46	0.63
3:G:6:GLN:HG3	3:G:116:GLY:H	1.63	0.63
1:A:865:PHE:HB3	1:A:871:LEU:HD12	1.79	0.63
1:C:657:VAL:HG13	1:C:677:VAL:HG21	1.79	0.63
1:C:987:GLN:HG3	1:C:990:LEU:HB2	1.79	0.63
1:B:509:ASP:O	1:B:510:ASP:HB2	1.98	0.63
1:C:792:GLN:HG3	1:C:1136:PHE:O	1.98	0.63
1:A:631:VAL:H	1:A:640:GLY:HA2	1.64	0.63
1:A:728:LYS:HD3	1:A:740:ASP:HA	1.78	0.63
1:B:509:ASP:OD1	1:B:510:ASP:N	2.32	0.63
1:A:742:PRO:HA	1:A:757:MET:HB3	1.81	0.63
1:A:1051:ILE:HG22	1:A:1054:ILE:HG22	1.80	0.63
1:B:799:ILE:HD13	1:B:1088:ARG:HG3	1.80	0.63
2:H:201:LEU:HD21	2:H:205:VAL:HG12	1.81	0.63
1:C:1168:VAL:HG22	1:C:1170:GLY:H	1.64	0.62
1:C:324:LEU:HB3	1:C:337:ILE:HB	1.81	0.62
1:B:595:LYS:HG3	1:B:597:ALA:H	1.64	0.62

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1029:ASN:HA	1:C:1088:ARG:HH12	1.64	0.62
1:C:1040:LEU:HD13	1:C:1077:THR:HB	1.82	0.62
1:A:807:LYS:HG3	1:A:821:LEU:HD23	1.80	0.62
1:B:366:PHE:HB3	1:B:689:TYR:HB3	1.82	0.62
1:C:485:PRO:HG2	1:C:488:LEU:HB2	1.80	0.62
2:D:37:GLN:HB2	2:D:47:LEU:HD11	1.81	0.61
2:H:29:ILE:HG22	2:H:32:TYR:HB2	1.82	0.61
1:A:269:ARG:HA	1:A:273:LEU:HB3	1.83	0.61
3:I:150:GLY:HA3	3:I:192:VAL:HA	1.82	0.61
1:B:662:ILE:HB	1:B:671:ALA:HB3	1.83	0.61
1:C:392:THR:HG22	1:C:492:THR:HB	1.82	0.61
3:E:205:TYR:H	3:E:221:ARG:HH21	1.49	0.61
1:B:542:ARG:HB3	1:B:553:TRP:HE1	1.66	0.60
1:A:63:THR:HG22	1:C:631:VAL:HG23	1.83	0.60
1:A:524:SER:HB3	1:A:527:VAL:HG23	1.83	0.60
1:B:1016:ASN:HB3	1:B:1019:PHE:HB2	1.83	0.60
3:I:130:PRO:HB3	3:I:156:TYR:HB3	1.83	0.60
1:C:659:VAL:HG11	1:C:691:ARG:HH12	1.66	0.60
2:H:33:LEU:HB3	2:H:51:ALA:HB2	1.82	0.60
1:A:397:TYR:HB3	1:A:468:ASN:HD22	1.66	0.60
1:A:631:VAL:HG12	1:A:640:GLY:HA2	1.84	0.60
3:G:130:PRO:HB3	3:G:156:TYR:HB3	1.83	0.60
2:H:141:PRO:HD2	2:H:198:HIS:CE1	2.37	0.60
1:C:1051:ILE:HG13	1:C:1053:ASP:H	1.65	0.60
1:A:606:TYR:CE1	1:A:615:GLY:HA3	2.38	0.59
1:B:109:VAL:HG22	1:B:294:SER:HB3	1.85	0.59
1:B:1105:GLU:HB3	1:B:1113:ARG:HH22	1.65	0.59
3:I:6:GLN:HG3	3:I:116:GLY:H	1.67	0.59
1:A:605:GLU:HA	1:A:614:ARG:HA	1.83	0.59
1:C:1168:VAL:HG11	1:C:1180:ILE:HA	1.85	0.59
2:D:33:LEU:HB3	2:D:51:ALA:HB2	1.85	0.59
1:C:780:LEU:HD21	1:C:1170:GLY:HA2	1.85	0.59
2:H:21:ILE:HD12	2:H:73:LEU:HD23	1.85	0.59
1:C:441:LEU:HG	1:C:573:ILE:HD11	1.85	0.58
1:A:779:LYS:HA	1:A:1150:VAL:HA	1.84	0.58
1:C:985:ILE:HG13	1:C:1168:VAL:HB	1.85	0.58
2:D:78:LEU:HD13	2:D:83:PHE:HE1	1.67	0.58
1:C:631:VAL:HG12	1:C:640:GLY:HA2	1.85	0.58
1:C:401:ARG:NH1	1:C:521:ASN:OD1	2.36	0.58
1:C:1047:ILE:HG23	1:C:1048:SER:H	1.68	0.58
1:A:504:SER:HA	1:A:515:PRO:HA	1.84	0.58

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:791:THR:HA	1:B:1138:HIS:HB3	1.84	0.58
1:A:220:ASN:HB3	1:A:223:ALA:HB2	1.86	0.58
3:E:6:GLN:HG3	3:E:116:GLY:H	1.68	0.58
1:B:138:ALA:HB1	1:B:141:ARG:HH21	1.69	0.57
2:F:33:LEU:HB3	2:F:51:ALA:HB2	1.87	0.57
1:A:542:ARG:HG2	1:A:555:VAL:HG22	1.86	0.57
1:C:777:TYR:HB3	1:C:1150:VAL:HG23	1.86	0.57
1:A:631:VAL:HG13	1:A:639:VAL:HG13	1.87	0.57
1:C:910:ASP:O	1:C:914:GLN:HG2	2.04	0.57
2:H:29:ILE:HG23	2:H:92:TYR:HB2	1.86	0.57
1:B:401:ARG:HD2	1:B:442:ILE:HG23	1.87	0.57
1:A:626:ARG:HD3	1:A:648:TYR:HD2	1.69	0.56
1:A:906:MET:H	1:C:676:SER:HA	1.69	0.56
1:C:1192:TYR:HB2	1:C:1194:PRO:HG3	1.86	0.56
2:D:21:ILE:HD12	2:D:73:LEU:HD23	1.86	0.56
2:H:38:LEU:HD13	2:H:44:PRO:HG3	1.87	0.56
1:A:187:LEU:HD23	1:A:187:LEU:H	1.70	0.56
1:B:98:GLN:O	1:B:99:LYS:HB3	2.04	0.56
2:F:141:PRO:HD2	2:F:198:HIS:CE1	2.40	0.56
1:B:616:VAL:HB	1:B:652:ARG:HB2	1.87	0.56
1:C:163:ARG:HH22	1:C:189:PRO:HD3	1.69	0.56
3:I:157:PHE:CG	3:I:158:PRO:HD2	2.41	0.56
1:A:210:PRO:HG2	1:A:302:SER:HB3	1.87	0.56
1:A:869:PHE:HE2	1:A:973:ALA:HB2	1.70	0.56
1:B:889:ALA:O	1:B:893:LEU:HD23	2.05	0.55
1:B:872:THR:O	1:B:889:ALA:HB3	2.06	0.55
1:C:1126:PHE:HB2	1:C:1137:MET:HB2	1.88	0.55
1:B:736:CYS:SG	1:B:737:ALA:N	2.79	0.55
1:B:897:LYS:NZ	1:B:1012:PHE:H	2.04	0.55
1:A:430:PRO:HD3	1:B:1058:LEU:HD12	1.88	0.55
2:F:37:GLN:HB2	2:F:47:LEU:HD11	1.89	0.55
2:H:141:PRO:HD2	2:H:198:HIS:HE1	1.71	0.55
1:B:366:PHE:HE1	1:B:659:VAL:HB	1.70	0.55
1:C:724:VAL:HB	1:C:758:ARG:HG2	1.88	0.55
2:H:37:GLN:HB2	2:H:47:LEU:HD11	1.87	0.55
1:C:484:VAL:HB	1:C:567:LEU:HB3	1.89	0.55
3:I:127:THR:HG21	3:I:213:PRO:HB2	1.89	0.55
1:B:783:PRO:HB3	1:B:1143:PRO:HB3	1.89	0.55
3:E:205:TYR:H	3:E:221:ARG:NH2	2.05	0.55
1:B:388:LEU:HD12	1:B:445:TYR:HB3	1.89	0.54
1:C:1152:ALA:HB2	1:C:1173:ILE:HG22	1.89	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:29:ILE:HG23	2:F:92:TYR:HB2	1.89	0.54
1:A:441:LEU:HB2	1:A:584:VAL:HG21	1.88	0.54
1:A:261:GLN:HG2	1:C:403:VAL:HG11	1.88	0.54
1:B:142:LYS:HG3	1:B:251:LEU:HD22	1.90	0.54
3:E:30:SER:HB2	3:E:54:ILE:HB	1.88	0.54
2:F:38:LEU:HD13	2:F:44:PRO:HG3	1.89	0.54
2:F:201:LEU:HD21	2:F:205:VAL:HG12	1.88	0.54
1:B:888:SER:OG	1:B:891:GLU:HG3	2.07	0.54
1:C:679:CYS:HB3	1:C:713:CYS:HB2	1.90	0.54
2:D:109:THR:C	2:D:170:ASP:O	2.44	0.54
1:A:468:ASN:HD21	1:A:500:ILE:H	1.56	0.54
1:B:374:VAL:HA	1:B:597:ALA:HA	1.89	0.54
2:D:110:VAL:HA	2:D:140:TYR:HD1	1.73	0.54
1:B:429:SER:HB2	1:C:1058:LEU:C	2.28	0.54
1:B:498:SER:HB3	1:B:534:VAL:HG23	1.90	0.54
1:B:795:ILE:HG21	1:B:1099:ALA:HB2	1.89	0.54
1:B:889:ALA:HA	1:B:892:ASP:OD2	2.08	0.54
1:A:369:LYS:HE2	1:A:690:SER:HB3	1.89	0.54
1:A:437:CYS:HB3	1:A:610:GLY:HA2	1.89	0.53
1:A:397:TYR:HD2	1:A:527:VAL:HG13	1.72	0.53
1:A:440:SER:HB3	1:A:576:GLN:HB3	1.90	0.53
1:A:820:LEU:HD13	1:A:1067:ILE:HD13	1.91	0.53
1:A:994:GLN:HB3	1:A:997:ILE:HD11	1.90	0.53
1:C:731:LEU:H	1:C:740:ASP:HB3	1.72	0.53
1:B:189:PRO:HB2	1:B:197:ALA:HB2	1.90	0.53
1:B:862:ILE:HB	1:B:863:PRO:HD2	1.90	0.53
1:A:1165:ILE:HG23	1:A:1167:PRO:HD3	1.91	0.53
1:A:784:THR:H	1:A:1145:ASN:HB2	1.73	0.53
1:B:721:SER:C	1:B:723:PHE:H	2.12	0.53
1:C:1172:PHE:HB2	1:C:1185:SER:HB3	1.90	0.53
2:F:161:GLU:HB3	2:F:175:LEU:HD11	1.90	0.53
3:I:204:THR:HA	3:I:221:ARG:HH21	1.73	0.53
1:B:105:TYR:HA	1:B:108:ASP:OD2	2.09	0.53
3:G:135:LEU:HB2	3:G:150:GLY:H	1.73	0.53
2:H:25:ALA:HB3	2:H:69:THR:HA	1.89	0.53
1:B:410:ASN:HB2	1:B:413:LYS:HE3	1.91	0.53
1:A:986:THR:HA	1:A:990:LEU:HD23	1.90	0.52
2:D:29:ILE:HG22	2:D:32:TYR:HB2	1.90	0.52
1:A:898:VAL:HA	1:A:1023:GLN:HE22	1.73	0.52
3:I:30:SER:HB2	3:I:54:ILE:HB	1.91	0.52
1:A:112:PHE:CE1	1:A:115:GLY:HA2	2.45	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1152:ALA:O	1:A:1153:TYR:HB2	2.08	0.52
1:B:1173:ILE:HD12	1:B:1177:ASN:HB2	1.90	0.52
1:A:611:VAL:HB	1:A:638:LEU:HD22	1.89	0.52
1:A:1191:PHE:CD1	1:C:1195:GLU:HB2	2.44	0.52
3:I:127:THR:HA	3:I:157:PHE:HB3	1.91	0.52
2:D:110:VAL:HA	2:D:140:TYR:CD1	2.45	0.52
1:B:887:ARG:HA	1:B:891:GLU:OE1	2.09	0.52
1:C:799:ILE:HG23	1:C:1092:ALA:HB2	1.91	0.52
1:B:404:PHE:HB2	1:B:441:LEU:HB3	1.92	0.52
1:B:98:GLN:O	1:B:99:LYS:HB2	2.08	0.52
1:B:151:SER:HB2	1:B:166:ASN:HD22	1.74	0.52
2:D:109:THR:O	2:D:170:ASP:O	2.27	0.52
1:A:401:ARG:HD3	1:B:261:GLN:HA	1.92	0.52
1:C:789:GLY:H	1:C:1140:GLY:H	1.57	0.52
2:F:21:ILE:HD12	2:F:73:LEU:HD23	1.92	0.52
1:A:412:THR:HB	1:A:434:ALA:HB1	1.92	0.51
1:A:780:LEU:HG	1:B:968:ALA:HA	1.90	0.51
1:B:1060:VAL:O	1:B:1063:GLN:HG3	2.10	0.51
1:C:673:LEU:HD22	1:C:735:LEU:HD11	1.91	0.51
1:C:659:VAL:HG11	1:C:691:ARG:NH1	2.25	0.51
1:C:724:VAL:HG22	1:C:728:LYS:HG3	1.92	0.51
3:G:30:SER:HB2	3:G:54:ILE:HB	1.93	0.51
1:B:786:PHE:HA	1:B:1141:TYR:CE1	2.45	0.51
2:F:149:LYS:HG3	2:F:193:ALA:HB3	1.92	0.51
2:H:113:PRO:HB3	2:H:139:PHE:HB3	1.93	0.51
1:A:1043:THR:HB	1:C:636:GLN:HB2	1.92	0.51
2:D:170:ASP:O	2:D:172:THR:HG23	2.09	0.51
1:A:50:VAL:HG22	1:A:78:GLN:HG3	1.92	0.51
1:B:102:VAL:HG11	1:B:205:ALA:HB3	1.93	0.51
1:C:406:ASN:H	1:C:584:VAL:HG12	1.75	0.51
1:C:641:TYR:HA	1:C:649:TYR:O	2.10	0.51
1:C:792:GLN:HG3	1:C:1136:PHE:C	2.31	0.51
1:B:74:LEU:HD12	1:B:318:LEU:HB3	1.91	0.51
1:C:399:PHE:O	1:C:523:TYR:CE1	2.64	0.51
1:A:718:VAL:HG12	1:A:720:SER:H	1.76	0.51
1:B:980:LEU:HD22	1:B:997:ILE:HD12	1.93	0.51
1:C:792:GLN:NE2	1:C:1137:MET:C	2.64	0.51
1:A:418:PHE:HA	1:A:484:VAL:HG13	1.93	0.51
1:A:605:GLU:H	1:A:615:GLY:H	1.57	0.51
1:A:496:LYS:HD3	1:A:560:THR:HB	1.93	0.51
1:A:1128:VAL:HG23	1:A:1135:TYR:HB3	1.91	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:132:VAL:HG12	3:E:151:CYS:HB2	1.92	0.50
1:A:715:LEU:HD11	1:A:735:LEU:HB3	1.94	0.50
1:A:1158:ALA:HB2	1:A:1203:LYS:HE2	1.93	0.50
1:B:151:SER:HA	1:B:291:LYS:H	1.76	0.50
1:B:509:ASP:O	1:B:510:ASP:CB	2.58	0.50
1:C:149:LEU:HB3	1:C:290:ILE:HG21	1.92	0.50
1:C:662:ILE:HG12	1:C:735:LEU:HD13	1.93	0.50
1:C:1160:ASN:N	1:C:1161:PRO:HD3	2.26	0.50
1:A:411:LEU:HB3	1:A:434:ALA:HA	1.92	0.50
1:A:1163:ASN:O	1:A:1196:PRO:HD2	2.10	0.50
1:C:366:PHE:HB2	1:C:691:ARG:HA	1.93	0.50
1:B:117:VAL:HG22	1:B:318:LEU:HG	1.93	0.50
3:E:146:THR:HA	3:E:196:PRO:HA	1.94	0.50
2:H:139:PHE:HB2	2:H:198:HIS:CE1	2.47	0.50
1:B:342:ASN:HB3	1:B:344:LEU:HG	1.92	0.50
1:B:366:PHE:CE1	1:B:659:VAL:HB	2.47	0.50
1:A:328:SER:CB	1:A:330:ASP:OD1	2.53	0.50
1:B:372:GLY:HA2	1:B:596:ILE:HD11	1.93	0.50
1:B:728:LYS:HB3	1:B:761:SER:H	1.76	0.50
1:C:284:LEU:HG	1:C:286:VAL:HG23	1.94	0.50
1:B:622:ALA:HA	1:B:648:TYR:CD2	2.47	0.49
1:B:676:SER:HB2	1:C:927:GLN:HE22	1.77	0.49
1:A:925:CYS:HB3	1:A:928:TYR:HB2	1.95	0.49
1:C:1130:ALA:HB2	1:C:1135:TYR:HB2	1.93	0.49
2:H:29:ILE:O	2:H:30:THR:C	2.51	0.49
1:A:734:SER:HA	1:A:739:PRO:HD2	1.93	0.49
1:C:718:VAL:HB	1:C:721:SER:HB3	1.94	0.49
2:D:136:LEU:HD11	2:D:196:VAL:HG11	1.95	0.49
1:B:48:ILE:HD11	1:B:55:GLY:HA3	1.95	0.49
1:C:990:LEU:HD13	1:C:1180:ILE:HD11	1.94	0.49
3:I:177:PHE:HE2	3:I:192:VAL:HG22	1.77	0.49
1:A:795:ILE:O	1:A:1095:SER:HB3	2.13	0.49
1:C:1175:THR:O	1:C:1176:ASN:HB2	2.12	0.49
1:A:965:SER:HA	1:C:1143:PRO:HG3	1.95	0.49
1:B:853:VAL:HG13	1:B:951:LEU:HD22	1.94	0.49
1:C:358:SER:HB2	1:C:733:GLN:HE22	1.76	0.49
1:A:576:GLN:HG2	1:A:578:GLY:H	1.78	0.49
1:A:596:ILE:HG13	1:A:597:ALA:N	2.28	0.49
1:B:440:SER:HB3	1:B:576:GLN:HG3	1.95	0.49
1:C:792:GLN:HA	1:C:792:GLN:OE1	2.13	0.49
3:G:150:GLY:HA3	3:G:192:VAL:HG12	1.95	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:448:TYR:CZ	1:B:481:LEU:HB3	2.48	0.49
1:C:980:LEU:HD23	1:C:1123:ILE:HD12	1.95	0.49
2:F:29:ILE:HG22	2:F:32:TYR:HB2	1.95	0.49
1:A:875:GLU:N	1:A:875:GLU:OE1	2.46	0.48
1:A:267:SER:HB3	1:A:270:TYR:HD2	1.79	0.48
1:A:364:SER:HB3	1:A:693:THR:HG21	1.95	0.48
1:A:457:SER:HB3	1:A:460:SER:HB3	1.95	0.48
1:A:498:SER:HB3	1:A:534:VAL:HG23	1.94	0.48
1:A:1154:GLY:HA3	1:A:1205:VAL:H	1.78	0.48
1:C:1166:ALA:HA	1:C:1192:TYR:HB3	1.95	0.48
1:C:180:LEU:HB3	1:C:245:ILE:HD11	1.95	0.48
3:G:149:LEU:HD21	3:G:200:LEU:HD22	1.95	0.48
3:G:204:THR:HA	3:G:221:ARG:HH21	1.78	0.48
1:B:422:ASP:HB3	1:B:481:LEU:HD12	1.96	0.48
1:B:510:ASP:O	1:B:511:ARG:HB3	2.14	0.48
1:C:496:LYS:HE3	1:C:560:THR:HB	1.96	0.48
1:B:887:ARG:N	1:B:945:ALA:HB1	2.26	0.48
1:B:49:ASP:HB3	1:B:52:LYS:HG2	1.96	0.48
2:D:161:GLU:HB3	2:D:175:LEU:HD11	1.96	0.48
1:A:691:ARG:HG2	1:A:693:THR:HG23	1.96	0.48
1:B:625:VAL:O	1:B:626:ARG:HB2	2.14	0.48
1:B:1059:ASP:HB3	1:B:1062:GLU:HB2	1.95	0.48
2:H:136:LEU:HD11	2:H:196:VAL:HG11	1.96	0.48
1:C:802:VAL:HG21	1:C:1033:LEU:HD11	1.96	0.48
1:A:185:CYS:HB3	1:A:237:CYS:CA	2.35	0.47
1:B:263:VAL:HG23	1:B:284:LEU:HB3	1.96	0.47
1:C:439:SER:HA	1:C:583:SER:HA	1.95	0.47
1:B:100:LEU:HD11	1:B:299:SER:HB3	1.96	0.47
1:C:521:ASN:OD1	1:C:521:ASN:O	2.32	0.47
3:G:204:THR:HG23	3:G:221:ARG:HE	1.79	0.47
3:I:134:PRO:HB3	3:I:222:VAL:HG22	1.95	0.47
1:B:406:ASN:HA	1:B:583:SER:HB2	1.95	0.47
1:C:1193:ALA:N	1:C:1194:PRO:HD3	2.28	0.47
3:I:197:SER:HA	3:I:200:LEU:HD12	1.96	0.47
1:A:739:PRO:HA	1:A:759:LEU:O	2.14	0.47
1:B:625:VAL:HG23	1:C:332:TYR:HE1	1.79	0.47
1:B:638:LEU:H	1:B:638:LEU:HD22	1.79	0.47
2:F:29:ILE:O	2:F:30:THR:C	2.53	0.47
2:F:113:PRO:HB3	2:F:139:PHE:HB3	1.96	0.47
1:A:580:ASP:HB2	1:A:630:PHE:HB2	1.96	0.47
1:B:251:LEU:HD12	1:B:252:GLU:H	1.80	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1165:ILE:HG21	1:C:960:TRP:HZ2	1.79	0.47
1:C:226:ASN:O	1:C:230:GLU:HG3	2.14	0.47
1:A:714:VAL:HG21	1:A:737:ALA:CB	2.45	0.47
2:H:123:GLU:HA	2:H:126:LYS:HG2	1.96	0.47
1:B:609:TYR:HB3	1:B:630:PHE:HZ	1.80	0.47
1:B:802:VAL:HG23	1:B:932:TYR:HB2	1.94	0.47
2:D:111:ALA:HB1	2:D:138:ASN:HB2	1.96	0.47
3:E:158:PRO:HD2	3:E:211:HIS:CE1	2.49	0.47
3:I:205:TYR:H	3:I:221:ARG:NH2	2.11	0.47
1:A:33:VAL:HG11	1:A:203:SER:HB3	1.97	0.47
1:B:524:SER:HB3	1:B:527:VAL:HG23	1.97	0.47
1:B:660:SER:HB2	1:B:673:LEU:HB3	1.95	0.47
1:B:793:GLU:HB3	1:B:1136:PHE:HB2	1.96	0.47
2:D:123:GLU:HA	2:D:126:LYS:HG2	1.96	0.47
1:B:608:LEU:HB3	1:B:611:VAL:O	2.15	0.47
1:B:18:TYR:HD1	1:B:236:ASN:HA	1.80	0.47
1:B:1016:ASN:HB3	1:B:1019:PHE:CB	2.45	0.47
1:C:1205:VAL:O	1:C:1206:ALA:C	2.53	0.46
2:D:29:ILE:O	2:D:30:THR:C	2.53	0.46
1:A:789:GLY:HA2	1:A:1139:VAL:HG13	1.96	0.46
1:A:937:PRO:O	1:A:939:MET:N	2.48	0.46
1:B:1066:GLN:O	1:B:1069:ARG:HG3	2.15	0.46
1:C:1075:LEU:HD12	1:C:1078:LEU:HD11	1.96	0.46
1:C:782:ILE:HG13	1:C:1172:PHE:CE1	2.50	0.46
1:C:1081:PHE:O	1:C:1084:GLN:HG3	2.14	0.46
3:I:127:THR:HG23	3:I:211:HIS:HE1	1.79	0.46
1:A:273:LEU:HD23	1:A:273:LEU:H	1.81	0.46
1:C:118:VAL:HG12	1:C:315:VAL:HG22	1.97	0.46
1:C:374:VAL:HA	1:C:597:ALA:HA	1.97	0.46
2:H:79:GLN:H	2:H:82:ASP:HB2	1.81	0.46
1:B:626:ARG:HA	1:B:641:TYR:OH	2.15	0.46
1:C:1110:GLN:HA	1:C:1122:HIS:CD2	2.45	0.46
3:G:14:PRO:HG3	3:G:121:VAL:HB	1.97	0.46
1:C:156:PHE:HE1	1:C:232:PHE:HZ	1.64	0.46
1:C:780:LEU:O	1:C:1148:GLU:HA	2.16	0.46
1:A:790:VAL:O	1:A:791:THR:HB	2.16	0.46
1:B:147:PHE:HB3	1:B:295:ILE:HD13	1.98	0.46
1:B:789:GLY:CA	1:B:1004:ALA:HB1	2.46	0.46
3:E:130:PRO:HB3	3:E:156:TYR:HB3	1.97	0.46
2:H:32:TYR:HB3	2:H:91:SER:HB3	1.98	0.46
1:A:666:GLU:HG2	1:A:667:THR:H	1.81	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1111:SER:H	1:B:1122:HIS:HD1	1.64	0.46
2:D:12:SER:HB2	2:D:107:LYS:HD3	1.98	0.46
1:A:189:PRO:HB3	1:A:196:PRO:HB2	1.98	0.46
1:B:641:TYR:HB2	1:B:648:TYR:CE2	2.50	0.46
1:C:40:PHE:HA	1:C:131:ILE:HD11	1.98	0.46
1:C:835:LEU:HD12	1:C:835:LEU:HA	1.78	0.46
1:C:1192:TYR:HD1	1:C:1194:PRO:HD3	1.80	0.46
3:E:84:SER:O	3:E:85:ARG:HG2	2.16	0.46
2:F:136:LEU:HD11	2:F:196:VAL:HG11	1.97	0.46
1:B:208:HIS:HB3	1:B:300:ILE:HG23	1.98	0.46
1:B:448:TYR:HE2	1:B:453:LYS:HB2	1.81	0.46
1:C:220:ASN:HB3	1:C:223:ALA:HB2	1.97	0.46
3:G:207:CYS:HB3	3:G:222:VAL:HG21	1.98	0.46
1:A:734:SER:HB3	1:A:738:LEU:HB3	1.98	0.45
2:F:120:PRO:HD3	2:F:132:VAL:HG12	1.98	0.45
1:A:399:PHE:HB3	1:A:446:PHE:HB3	1.97	0.45
1:A:408:ASN:HD22	1:A:408:ASN:HA	1.60	0.45
1:A:985:ILE:HB	1:A:1180:ILE:N	2.31	0.45
3:I:135:LEU:HB2	3:I:150:GLY:H	1.81	0.45
1:A:601:GLY:C	1:A:603:CYS:H	2.19	0.45
3:G:84:SER:O	3:G:85:ARG:HG2	2.17	0.45
3:G:146:THR:HA	3:G:196:PRO:HA	1.98	0.45
1:A:1152:ALA:HB3	1:A:1172:PHE:HB2	1.98	0.45
1:B:382:GLU:HA	1:B:408:ASN:O	2.17	0.45
1:B:897:LYS:HZ1	1:B:1012:PHE:N	2.14	0.45
2:D:117:ILE:HG12	2:D:209:PHE:HD2	1.81	0.45
1:B:576:GLN:O	1:B:577:TYR:HB2	2.17	0.45
1:C:741:THR:HA	1:C:759:LEU:HA	1.99	0.45
1:C:951:LEU:HD12	1:C:951:LEU:HA	1.76	0.45
3:G:9:ALA:HA	3:G:117:THR:HG23	1.98	0.45
1:B:324:LEU:HB3	1:B:337:ILE:HB	1.98	0.45
1:B:388:LEU:HD13	1:B:443:LEU:HD21	1.98	0.45
1:C:600:LEU:CG	1:C:602:ASN:HB2	2.46	0.45
1:C:826:GLN:H	1:C:826:GLN:HG3	1.49	0.45
1:B:506:LEU:HB3	1:B:553:TRP:H	1.82	0.45
1:B:632:TYR:CE1	1:B:638:LEU:HB3	2.52	0.45
1:B:803:THR:O	1:B:932:TYR:HA	2.17	0.45
1:C:430:PRO:O	1:C:433:ILE:HG22	2.17	0.45
1:A:112:PHE:HE2	1:A:258:GLN:HB2	1.82	0.45
1:A:359:GLY:HA2	1:A:733:GLN:HG2	1.99	0.45
1:C:887:ARG:HA	1:C:887:ARG:HD3	1.72	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:234:LEU:H	1:A:234:LEU:HG	1.46	0.45
1:B:26:VAL:HG22	1:B:27:LYS:H	1.81	0.45
2:D:33:LEU:HD21	2:D:88:CYS:HB2	1.99	0.45
1:A:987:GLN:O	1:A:988:GLN:C	2.54	0.44
1:B:1102:LYS:HB3	1:B:1102:LYS:HE2	1.81	0.44
1:C:1033:LEU:HD23	1:C:1033:LEU:HA	1.86	0.44
3:E:35:SER:HA	3:E:50:GLY:HA2	1.99	0.44
2:F:81:GLU:H	2:F:81:GLU:CD	2.10	0.44
1:B:357:GLU:H	1:B:357:GLU:HG3	1.55	0.44
2:F:139:PHE:HB2	2:F:198:HIS:CE1	2.52	0.44
1:B:318:LEU:HD23	1:B:318:LEU:HA	1.83	0.44
1:C:983:VAL:HG11	1:C:1123:ILE:HD13	1.98	0.44
1:C:1137:MET:HB2	1:C:1137:MET:HE2	1.78	0.44
3:I:181:LEU:HD13	3:I:181:LEU:HA	1.88	0.44
1:A:718:VAL:HG12	1:A:719:ASN:N	2.33	0.44
1:B:180:LEU:HB3	1:B:245:ILE:HD11	1.98	0.44
1:A:909:TYR:O	1:A:912:CYS:HB2	2.18	0.44
1:B:205:ALA:HB1	1:B:297:PRO:O	2.17	0.44
1:C:724:VAL:HG11	1:C:761:SER:HB2	1.99	0.44
1:C:780:LEU:CD2	1:C:1170:GLY:HA2	2.46	0.44
1:A:821:LEU:HD12	1:A:821:LEU:HA	1.82	0.44
1:A:835:LEU:HD12	1:A:835:LEU:HA	1.83	0.44
3:I:9:ALA:HA	3:I:117:THR:HG23	1.99	0.44
3:I:84:SER:O	3:I:85:ARG:HG2	2.17	0.44
1:A:715:LEU:CD2	1:B:936:PRO:HG2	2.47	0.44
1:A:804:VAL:HG12	1:A:835:LEU:HD22	1.98	0.44
1:B:894:LEU:HB2	1:B:1019:PHE:CE1	2.53	0.44
1:A:383:CYS:N	1:A:407:CYS:HB2	2.33	0.44
1:A:679:CYS:HA	1:A:717:LEU:HD23	1.99	0.44
1:A:1051:ILE:HD12	1:A:1051:ILE:HA	1.85	0.44
1:B:625:VAL:HG13	1:B:627:GLN:H	1.83	0.44
1:C:476:PRO:HG2	1:C:575:VAL:HG23	2.00	0.44
1:C:1202:THR:C	1:C:1204:TYR:H	2.21	0.44
2:D:142:ARG:HB2	2:D:143:GLU:OE1	2.18	0.44
3:E:174:VAL:HA	3:E:193:VAL:HG22	2.00	0.44
1:A:968:ALA:HB2	1:C:1169:ASN:HD22	1.83	0.44
1:B:631:VAL:HG23	1:C:63:THR:HG23	2.00	0.44
1:C:368:ALA:HA	1:C:689:TYR:HD1	1.82	0.44
1:A:455:ASP:HA	1:A:462:GLY:HA3	2.00	0.43
1:A:893:LEU:O	1:A:897:LYS:HG2	2.18	0.43
1:B:714:VAL:HB	1:B:715:LEU:H	1.64	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:125:LEU:HD12	2:H:183:LYS:HE3	2.00	0.43
2:H:163:VAL:HB	2:H:175:LEU:HD12	1.99	0.43
1:A:806:CYS:O	1:A:807:LYS:HB2	2.18	0.43
1:C:344:LEU:HD13	1:C:344:LEU:HA	1.84	0.43
1:A:149:LEU:HB3	1:A:290:ILE:HD13	2.00	0.43
1:A:831:ILE:HG23	1:A:1082:VAL:HG21	1.98	0.43
1:B:786:PHE:HB2	1:B:1000:LYS:HE3	2.01	0.43
1:B:789:GLY:HA2	1:B:1004:ALA:HB1	2.00	0.43
1:B:897:LYS:HG3	1:B:1012:PHE:HB2	1.99	0.43
2:D:120:PRO:HD3	2:D:132:VAL:HG12	2.00	0.43
1:A:102:VAL:HG12	1:A:299:SER:HB2	2.00	0.43
1:A:428:ILE:HG23	1:A:478:CYS:SG	2.59	0.43
1:A:595:LYS:HD2	1:A:600:LEU:HB2	2.00	0.43
1:B:787:SER:HB2	1:B:1142:TYR:O	2.18	0.43
1:C:1054:ILE:HA	1:C:1063:GLN:HG3	1.99	0.43
1:B:599:GLN:HB2	1:B:644:ASP:HB2	2.00	0.43
1:B:720:SER:HA	1:B:757:MET:SD	2.58	0.43
1:C:657:VAL:HG11	1:C:682:ILE:HD11	2.01	0.43
3:I:146:THR:HA	3:I:196:PRO:HA	2.00	0.43
1:A:56:ILE:HG23	1:A:75:PHE:CE1	2.53	0.43
1:A:714:VAL:HG21	1:A:737:ALA:HB3	2.00	0.43
1:A:900:ILE:HG22	1:A:902:ASP:H	1.84	0.43
1:C:497:TYR:HE2	1:C:564:THR:HG22	1.82	0.43
3:G:147:ALA:HB3	3:G:200:LEU:HD11	2.01	0.43
1:A:324:LEU:HG	1:A:354:PHE:CE1	2.54	0.43
1:A:608:LEU:HA	1:A:608:LEU:HD23	1.87	0.43
1:B:342:ASN:HD22	1:B:342:ASN:HA	1.58	0.43
1:C:179:LEU:HD11	1:C:242:THR:HB	2.01	0.43
1:C:1045:GLY:HA3	1:C:1049:ALA:HA	2.01	0.43
3:G:12:LYS:O	3:G:121:VAL:HA	2.18	0.43
3:G:199:SER:HA	3:G:202:THR:HG22	2.00	0.43
1:A:424:THR:HG23	1:A:479:LEU:HB3	2.00	0.43
1:A:951:LEU:O	1:A:955:ILE:HG13	2.18	0.43
2:D:38:LEU:HD13	2:D:44:PRO:HG3	2.00	0.43
3:G:207:CYS:HB3	3:G:222:VAL:CG2	2.49	0.43
1:A:61:GLY:HA2	1:C:581:THR:HG23	2.00	0.43
1:B:100:LEU:HD22	1:B:100:LEU:HA	1.85	0.43
1:B:358:SER:HB3	1:B:664:ASP:HA	2.00	0.43
1:C:189:PRO:HB2	1:C:197:ALA:HB2	2.00	0.43
2:D:78:LEU:HD23	2:D:78:LEU:HA	1.76	0.43
1:A:526:CYS:HB2	1:A:556:ALA:HB2	2.00	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:148:MET:HG2	1:B:296:ILE:HG12	2.01	0.43
1:B:1130:ALA:HB2	1:B:1135:TYR:HB2	2.01	0.43
1:C:43:THR:HG22	1:C:45:PRO:HD3	2.00	0.43
2:D:111:ALA:HB3	2:D:172:THR:HG21	2.00	0.43
3:E:158:PRO:HB2	3:E:213:PRO:HG2	2.00	0.43
1:A:389:LEU:H	1:A:389:LEU:HG	1.71	0.42
1:A:740:ASP:HB2	1:A:760:ALA:HB2	2.01	0.42
1:A:1056:GLN:HE21	1:A:1056:GLN:HB2	1.58	0.42
1:B:270:TYR:HB2	1:B:279:PHE:HE1	1.84	0.42
1:B:1165:ILE:HG22	1:B:1172:PHE:H	1.84	0.42
3:E:135:LEU:HB2	3:E:150:GLY:H	1.84	0.42
2:H:120:PRO:HD3	2:H:132:VAL:HG12	2.01	0.42
1:A:149:LEU:HB2	1:A:169:LEU:HB3	2.01	0.42
1:A:738:LEU:H	1:A:738:LEU:HG	1.53	0.42
1:A:1078:LEU:HD12	1:A:1078:LEU:HA	1.83	0.42
1:A:1156:CYS:SG	1:A:1163:ASN:HB3	2.58	0.42
1:B:25:SER:HB2	1:B:233:ASN:HD21	1.84	0.42
1:B:951:LEU:O	1:B:955:ILE:HG13	2.19	0.42
2:F:79:GLN:H	2:F:82:ASP:HB2	1.83	0.42
1:B:924:ILE:HG23	1:B:925:CYS:N	2.34	0.42
1:C:968:ALA:HB1	1:C:970:ILE:HG23	2.01	0.42
3:E:52:ILE:HD11	3:E:103:TYR:HA	2.01	0.42
1:B:248:ASP:O	1:B:249:GLU:HB2	2.19	0.42
2:F:37:GLN:HE22	2:F:82:ASP:HA	1.84	0.42
1:A:1053:ASP:HB2	1:A:1063:GLN:HG2	2.02	0.42
2:F:197:THR:HG23	2:F:204:PRO:HG3	2.01	0.42
3:G:35:SER:HA	3:G:50:GLY:HA2	2.00	0.42
1:A:906:MET:HE3	1:C:713:CYS:SG	2.58	0.42
1:A:987:GLN:H	1:A:990:LEU:HB3	1.85	0.42
1:A:1156:CYS:CB	1:A:1163:ASN:HB3	2.50	0.42
1:A:1191:PHE:HD1	1:C:1195:GLU:HB2	1.83	0.42
1:B:362:SER:H	1:C:836:HIS:CE1	2.37	0.42
1:B:369:LYS:NZ	1:B:690:SER:HA	2.34	0.42
1:B:764:PHE:HB2	1:C:943:MET:HG3	2.01	0.42
1:C:604:VAL:HG12	1:C:605:GLU:N	2.35	0.42
1:C:631:VAL:H	1:C:640:GLY:HA2	1.84	0.42
3:E:151:CYS:HB3	3:E:222:VAL:HG21	2.02	0.42
1:A:99:LYS:H	1:A:99:LYS:HG3	1.71	0.42
1:A:663:TYR:CE2	1:A:665:LYS:HB2	2.55	0.42
1:B:546:SER:HB3	1:B:549:GLU:HG3	2.01	0.42
1:C:680:GLU:H	1:C:680:GLU:HG3	1.66	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:783:PRO:HA	1:C:1145:ASN:O	2.19	0.42
3:G:67:ARG:HE	3:G:67:ARG:HB3	1.59	0.42
1:A:673:LEU:HD12	1:A:718:VAL:HG22	2.01	0.42
1:A:909:TYR:CE1	1:C:655:VAL:HG22	2.55	0.42
1:B:740:ASP:HB2	1:B:762:ILE:HG12	2.01	0.42
1:B:951:LEU:HD12	1:B:951:LEU:HA	1.88	0.42
1:C:149:LEU:HB2	1:C:169:LEU:HB3	2.02	0.42
1:C:266:PHE:HA	1:C:280:GLN:HA	2.02	0.42
1:C:269:ARG:HA	1:C:273:LEU:HB3	2.01	0.42
2:H:199:GLN:HE21	2:H:199:GLN:HB3	1.71	0.42
1:B:366:PHE:CD2	1:B:689:TYR:HB3	2.54	0.42
1:B:466:GLN:HB3	1:B:517:LEU:HD22	2.02	0.42
1:C:399:PHE:O	1:C:523:TYR:CZ	2.73	0.42
1:C:1047:ILE:HG21	1:C:1058:LEU:HD11	2.02	0.42
2:D:143:GLU:H	2:D:143:GLU:CD	2.23	0.42
1:A:580:ASP:HB3	1:B:62:ARG:HA	2.00	0.42
1:B:510:ASP:O	1:B:511:ARG:CB	2.68	0.42
1:B:641:TYR:HD2	1:B:648:TYR:CE2	2.38	0.42
1:B:1199:SER:HB2	1:B:1205:VAL:HG23	2.02	0.42
1:A:580:ASP:HB3	1:B:62:ARG:H	1.85	0.41
1:C:1165:ILE:O	1:C:1166:ALA:HB2	2.20	0.41
3:G:134:PRO:HB3	3:G:222:VAL:HG22	2.02	0.41
1:A:1005:LEU:O	1:A:1009:GLN:HG2	2.20	0.41
1:B:678:ALA:HB1	1:B:682:ILE:HG12	2.02	0.41
1:B:737:ALA:HB1	1:C:940:ASP:HB3	2.02	0.41
1:C:266:PHE:HB3	1:C:278:MET:HG3	2.01	0.41
1:C:470:LYS:HB3	1:C:520:ALA:HA	2.01	0.41
1:C:608:LEU:HB3	1:C:609:TYR:H	1.77	0.41
2:D:79:GLN:H	2:D:82:ASP:HB2	1.84	0.41
3:I:199:SER:HA	3:I:202:THR:HG22	2.01	0.41
1:B:631:VAL:HB	1:B:641:TYR:HB3	2.01	0.41
1:C:428:ILE:HG21	1:C:433:ILE:HD13	2.01	0.41
1:C:780:LEU:HD23	1:C:782:ILE:HD11	2.02	0.41
1:A:715:LEU:HD22	1:B:936:PRO:HG2	2.02	0.41
1:B:394:PRO:HB2	1:B:398:ASN:O	2.20	0.41
1:B:625:VAL:HG23	1:C:332:TYR:CE1	2.56	0.41
1:C:631:VAL:HG13	1:C:639:VAL:HG13	2.02	0.41
2:D:111:ALA:H	2:D:140:TYR:HB2	1.85	0.41
3:I:2:VAL:HG22	3:I:27:GLY:HA3	2.03	0.41
3:I:156:TYR:HB2	3:I:211:HIS:CD2	2.56	0.41
1:A:518:VAL:HG23	1:A:524:SER:HB2	2.02	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:604:VAL:O	1:A:605:GLU:HB2	2.20	0.41
1:B:208:HIS:HB2	1:B:298:HIS:NE2	2.36	0.41
1:B:728:LYS:HD3	1:B:728:LYS:HA	1.94	0.41
1:B:964:LEU:HD12	1:B:964:LEU:HA	1.93	0.41
1:C:524:SER:HB3	1:C:527:VAL:HB	2.03	0.41
2:D:149:LYS:HD2	2:D:152:ASN:HA	2.03	0.41
1:A:397:TYR:HB3	1:A:468:ASN:ND2	2.34	0.41
1:A:404:PHE:HB2	1:A:441:LEU:HB3	2.02	0.41
1:A:1184:TRP:HB2	1:A:1185:SER:H	1.68	0.41
1:B:337:ILE:HG12	1:B:354:PHE:CE1	2.55	0.41
1:B:1180:ILE:HG22	1:B:1185:SER:OG	2.20	0.41
1:C:355:ASP:HB2	1:C:665:LYS:HE3	2.03	0.41
1:C:422:ASP:HB2	1:C:481:LEU:HD23	2.01	0.41
1:A:344:LEU:HD22	1:A:663:TYR:HD1	1.86	0.41
1:A:676:SER:HA	1:B:906:MET:HA	2.03	0.41
1:A:1043:THR:HA	1:A:1048:SER:HB2	2.03	0.41
1:A:1044:PHE:CE1	1:A:1073:GLY:HA3	2.55	0.41
1:B:234:LEU:H	1:B:234:LEU:HG	1.72	0.41
1:B:360:VAL:HG22	1:B:662:ILE:HG23	2.02	0.41
1:B:715:LEU:HD13	1:B:736:CYS:HB2	2.02	0.41
1:B:894:LEU:HB2	1:B:1019:PHE:HE1	1.86	0.41
1:C:408:ASN:HB3	1:C:587:LYS:HB3	2.03	0.41
1:C:782:ILE:HG13	1:C:1172:PHE:HE1	1.86	0.41
1:B:927:GLN:HE21	1:B:933:LYS:HE2	1.85	0.41
1:C:112:PHE:CE1	1:C:115:GLY:HA2	2.55	0.41
1:C:1113:ARG:HA	1:C:1113:ARG:HD2	1.82	0.41
2:H:199:GLN:H	2:H:199:GLN:HG2	1.55	0.41
1:A:87:TYR:HB2	1:A:143:ILE:HD13	2.03	0.41
1:A:150:GLY:HA3	1:A:164:PHE:HD2	1.86	0.41
1:A:470:LYS:HE3	1:A:470:LYS:HB3	1.95	0.41
1:A:718:VAL:HG12	1:A:719:ASN:H	1.86	0.41
1:B:120:ILE:HG21	1:B:145:PRO:HD3	2.03	0.41
1:B:430:PRO:O	1:B:433:ILE:HG12	2.21	0.41
1:B:672:THR:H	1:B:719:ASN:HB2	1.86	0.41
1:C:284:LEU:HA	1:C:285:PRO:HD3	1.92	0.41
1:C:871:LEU:HD12	1:C:871:LEU:HA	1.92	0.41
1:C:909:TYR:O	1:C:912:CYS:HB2	2.20	0.41
1:C:1174:LYS:HB3	1:C:1175:THR:H	1.63	0.41
2:D:125:LEU:HD12	2:D:183:LYS:HE3	2.03	0.41
3:E:128:LYS:HE3	3:E:155:ASP:HB3	2.02	0.41
1:A:180:LEU:HB2	1:A:245:ILE:HD11	2.03	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:989:VAL:O	1:A:992:GLU:HG2	2.21	0.41
1:B:898:VAL:HG13	1:B:1019:PHE:CE2	2.56	0.41
1:C:1179:ARG:HA	1:C:1179:ARG:HD2	1.44	0.41
2:H:2:ILE:HG21	2:H:29:ILE:HD11	2.03	0.41
2:H:86:TYR:O	2:H:101:GLY:HA2	2.21	0.41
1:A:493:LYS:HA	1:A:567:LEU:HD11	2.02	0.40
1:A:788:PHE:HB3	1:A:1141:TYR:HA	2.03	0.40
1:B:21:VAL:HG23	1:B:225:LEU:HD11	2.02	0.40
1:B:188:GLU:HG2	1:B:189:PRO:HD2	2.02	0.40
1:B:1165:ILE:O	1:B:1166:ALA:HB3	2.21	0.40
1:C:150:GLY:HA3	1:C:164:PHE:CG	2.56	0.40
1:C:1113:ARG:HD3	1:C:1120:GLY:O	2.21	0.40
1:C:1153:TYR:HB3	1:C:1205:VAL:H	1.86	0.40
3:E:14:PRO:HA	3:E:86:LEU:HB2	2.04	0.40
2:F:198:HIS:HB3	2:F:201:LEU:HB2	2.03	0.40
3:I:87:THR:H	3:I:90:ASP:HB2	1.87	0.40
1:A:154:GLY:O	1:A:163:ARG:HB3	2.20	0.40
1:A:496:LYS:HE2	1:A:496:LYS:HB3	1.92	0.40
1:A:664:ASP:HB3	1:A:669:THR:O	2.21	0.40
1:A:936:PRO:HA	1:A:937:PRO:HD3	1.85	0.40
1:B:411:LEU:HD12	1:B:411:LEU:HA	1.84	0.40
3:E:138:SER:H	3:E:141:SER:HB2	1.85	0.40
3:G:128:LYS:HE3	3:G:155:ASP:HB3	2.03	0.40
3:I:128:LYS:CE	3:I:155:ASP:HB3	2.51	0.40
1:A:368:ALA:HB3	1:A:654:CYS:SG	2.61	0.40
1:A:617:PHE:HB3	1:A:651:LEU:HG	2.02	0.40
1:A:964:LEU:HD13	1:A:964:LEU:HA	1.88	0.40
1:A:1110:GLN:HA	1:A:1122:HIS:CE1	2.56	0.40
1:B:371:SER:N	1:B:605:GLU:HB2	2.36	0.40
1:C:642:TYR:H	1:C:649:TYR:H	1.69	0.40
1:C:819:GLN:HA	1:C:822:ARG:HD3	2.02	0.40
2:D:29:ILE:HG23	2:D:92:TYR:HB2	2.04	0.40
2:D:133:VAL:HG22	2:D:178:THR:HG22	2.04	0.40
3:E:14:PRO:HG3	3:E:121:VAL:HB	2.03	0.40
1:A:213:ASP:O	1:A:219:TYR:HA	2.22	0.40
1:A:343:ASP:HA	1:A:694:ARG:NH2	2.36	0.40
1:A:1054:ILE:HG13	1:A:1055:ILE:N	2.36	0.40
1:B:470:LYS:HB3	1:B:520:ALA:HA	2.03	0.40
1:C:729:LEU:HA	1:C:730:PRO:HD3	1.95	0.40
2:H:118:PHE:HD1	3:I:141:SER:HA	1.87	0.40
1:A:1166:ALA:HB1	1:A:1169:ASN:HB2	2.02	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1167:PRO:HA	1:A:1171:TYR:CE1	2.57	0.40
1:B:402:LEU:HD13	1:B:445:TYR:HE1	1.86	0.40
1:C:190:ARG:HG3	1:C:230:GLU:O	2.22	0.40
1:C:1121:THR:OG1	1:C:1141:TYR:HB3	2.21	0.40
2:D:150:VAL:HG22	2:D:192:TYR:HA	2.03	0.40
2:F:149:LYS:HG2	2:F:195:GLU:OE1	2.21	0.40
3:I:204:THR:HG23	3:I:221:ARG:HE	1.87	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	1117/1189 (94%)	1034 (93%)	72 (6%)	11 (1%)	13	39
1	B	1119/1189 (94%)	1042 (93%)	62 (6%)	15 (1%)	10	32
1	C	1122/1189 (94%)	1051 (94%)	60 (5%)	11 (1%)	13	39
2	D	210/212 (99%)	201 (96%)	8 (4%)	1 (0%)	25	56
2	F	210/212 (99%)	203 (97%)	5 (2%)	2 (1%)	13	39
2	H	210/212 (99%)	204 (97%)	4 (2%)	2 (1%)	13	39
3	E	220/222 (99%)	218 (99%)	1 (0%)	1 (0%)	25	56
3	G	220/222 (99%)	218 (99%)	1 (0%)	1 (0%)	25	56
3	I	220/222 (99%)	214 (97%)	3 (1%)	3 (1%)	9	30
All	All	4648/4869 (96%)	4385 (94%)	216 (5%)	47 (1%)	16	39

All (47) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	988	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B	26	VAL
1	B	99	LYS
1	B	249	GLU
1	C	810	VAL
1	C	1176	ASN
2	D	30	THR
2	F	30	THR
2	H	30	THR
3	I	158	PRO
3	I	161	VAL
1	A	602	ASN
1	A	605	GLU
1	A	607	SER
1	A	791	THR
1	A	1059	ASP
1	A	1146	HIS
1	B	714	VAL
1	C	168	THR
1	C	372	GLY
1	A	382	GLU
1	A	785	ASN
1	B	382	GLU
1	B	792	GLN
1	C	929	VAL
1	A	1171	TYR
1	B	58	TYR
1	B	486	HIS
1	B	510	ASP
1	C	966	SER
1	C	1047	ILE
1	A	1119	GLN
1	B	43	THR
1	B	928	TYR
1	B	1166	ALA
1	B	1203	LYS
1	C	609	TYR
1	C	1166	ALA
1	C	1194	PRO
3	E	108	PRO
3	G	108	PRO
3	I	108	PRO
1	B	742	PRO

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B	738	LEU
1	C	714	VAL
2	F	8	PRO
2	H	8	PRO

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	975/1022 (95%)	893 (92%)	82 (8%)	9	28
1	B	979/1022 (96%)	891 (91%)	88 (9%)	8	25
1	C	978/1022 (96%)	888 (91%)	90 (9%)	7	24
2	D	180/186 (97%)	170 (94%)	10 (6%)	17	47
2	F	185/186 (100%)	169 (91%)	16 (9%)	8	27
2	H	186/186 (100%)	167 (90%)	19 (10%)	6	19
3	E	185/185 (100%)	172 (93%)	13 (7%)	12	36
3	G	185/185 (100%)	173 (94%)	12 (6%)	14	40
3	I	185/185 (100%)	168 (91%)	17 (9%)	7	24
All	All	4038/4179 (97%)	3691 (91%)	347 (9%)	11	27

All (347) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	58	TYR
1	A	62	ARG
1	A	63	THR
1	A	93	THR
1	A	172	LEU
1	A	174	ASP
1	A	179	LEU
1	A	185	CYS
1	A	206	THR
1	A	208	HIS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	214	CYS
1	A	234	LEU
1	A	237	CYS
1	A	263	VAL
1	A	273	LEU
1	A	363	VAL
1	A	366	PHE
1	A	389	LEU
1	A	401	ARG
1	A	405	THR
1	A	412	THR
1	A	423	PHE
1	A	427	GLN
1	A	436	ASN
1	A	452	MET
1	A	470	LYS
1	A	475	ASN
1	A	484	VAL
1	A	491	ILE
1	A	492	THR
1	A	514	VAL
1	A	517	LEU
1	A	522	GLN
1	A	523	TYR
1	A	554	LEU
1	A	575	VAL
1	A	599	GLN
1	A	600	LEU
1	A	607	SER
1	A	617	PHE
1	A	620	CYS
1	A	623	VAL
1	A	629	ARG
1	A	642	TYR
1	A	644	ASP
1	A	650	CYS
1	A	657	VAL
1	A	659	VAL
1	A	667	THR
1	A	680	GLU
1	A	693	THR
1	A	697	LEU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	717	LEU
1	A	729	LEU
1	A	731	LEU
1	A	738	LEU
1	A	778	PHE
1	A	779	LYS
1	A	784	THR
1	A	795	ILE
1	A	854	LYS
1	A	893	LEU
1	A	961	THR
1	A	986	THR
1	A	987	GLN
1	A	1012	PHE
1	A	1013	THR
1	A	1015	THR
1	A	1022	VAL
1	A	1044	PHE
1	A	1056	GLN
1	A	1069	ARG
1	A	1070	LEU
1	A	1084	GLN
1	A	1102	LYS
1	A	1116	PHE
1	A	1117	CYS
1	A	1147	ILE
1	A	1163	ASN
1	A	1168	VAL
1	A	1180	ILE
1	A	1184	TRP
1	B	33	VAL
1	B	63	THR
1	B	72	GLN
1	B	100	LEU
1	B	101	PHE
1	B	116	PHE
1	B	117	VAL
1	B	120	ILE
1	B	147	PHE
1	B	148	MET
1	B	169	LEU
1	B	186	ILE

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B	187	LEU
1	B	201	TYR
1	B	228	PHE
1	B	229	LYS
1	B	234	LEU
1	B	251	LEU
1	B	263	VAL
1	B	279	PHE
1	B	287	TYR
1	B	296	ILE
1	B	308	LYS
1	B	319	GLN
1	B	342	ASN
1	B	344	LEU
1	B	357	GLU
1	B	363	VAL
1	B	388	LEU
1	B	402	LEU
1	B	408	ASN
1	B	412	THR
1	B	414	LEU
1	B	424	THR
1	B	425	CYS
1	B	488	LEU
1	B	489	THR
1	B	492	THR
1	B	512	THR
1	B	533	THR
1	B	543	LYS
1	B	579	THR
1	B	581	THR
1	B	588	LEU
1	B	600	LEU
1	B	617	PHE
1	B	637	ASN
1	B	638	LEU
1	B	641	TYR
1	B	642	TYR
1	B	651	LEU
1	B	659	VAL
1	B	666	GLU
1	B	667	THR

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B	682	ILE
1	B	686	MET
1	B	696	MET
1	B	697	LEU
1	B	714	VAL
1	B	719	ASN
1	B	729	LEU
1	B	742	PRO
1	B	758	ARG
1	B	765	ASN
1	B	802	VAL
1	B	818	GLU
1	B	821	LEU
1	B	861	ILE
1	B	871	LEU
1	B	872	THR
1	B	940	ASP
1	B	967	PHE
1	B	986	THR
1	B	997	ILE
1	B	1022	VAL
1	B	1042	ASN
1	B	1047	ILE
1	B	1058	LEU
1	B	1112	LYS
1	B	1121	THR
1	B	1128	VAL
1	B	1129	ASN
1	B	1132	ASN
1	B	1162	THR
1	B	1165	ILE
1	B	1171	TYR
1	B	1176	ASN
1	B	1203	LYS
1	C	19	VAL
1	C	35	ILE
1	C	57	ILE
1	C	93	THR
1	C	120	ILE
1	C	131	ILE
1	C	132	ILE
1	C	172	LEU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	C	180	LEU
1	C	185	CYS
1	C	208	HIS
1	C	237	CYS
1	C	252	GLU
1	C	273	LEU
1	C	322	THR
1	C	344	LEU
1	C	383	CYS
1	C	395	GLN
1	C	412	THR
1	C	415	LEU
1	C	443	LEU
1	C	450	LEU
1	C	456	LEU
1	C	458	VAL
1	C	465	SER
1	C	488	LEU
1	C	491	ILE
1	C	503	CYS
1	C	506	LEU
1	C	512	THR
1	C	535	TRP
1	C	541	TYR
1	C	561	VAL
1	C	564	THR
1	C	565	GLU
1	C	567	LEU
1	C	568	GLN
1	C	579	THR
1	C	584	VAL
1	C	588	LEU
1	C	600	LEU
1	C	609	TYR
1	C	611	VAL
1	C	614	ARG
1	C	616	VAL
1	C	620	CYS
1	C	626	ARG
1	C	629	ARG
1	C	642	TYR
1	C	650	CYS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	C	655	VAL
1	C	659	VAL
1	C	664	ASP
1	C	680	GLU
1	C	711	VAL
1	C	714	VAL
1	C	715	LEU
1	C	764	PHE
1	C	793	GLU
1	C	796	GLN
1	C	810	VAL
1	C	812	ASN
1	C	819	GLN
1	C	826	GLN
1	C	853	VAL
1	C	854	LYS
1	C	857	GLN
1	C	865	PHE
1	C	868	ASP
1	C	887	ARG
1	C	898	VAL
1	C	933	LYS
1	C	951	LEU
1	C	964	LEU
1	C	987	GLN
1	C	996	LEU
1	C	1012	PHE
1	C	1033	LEU
1	C	1054	ILE
1	C	1063	GLN
1	C	1090	GLU
1	C	1128	VAL
1	C	1135	TYR
1	C	1139	VAL
1	C	1150	VAL
1	C	1162	THR
1	C	1174	LYS
1	C	1181	VAL
1	C	1192	TYR
1	C	1197	ILE
2	D	6	GLN
2	D	29	ILE

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	D	46	PHE
2	D	75	ILE
2	D	90	GLN
2	D	125	LEU
2	D	129	THR
2	D	187	GLU
2	D	198	HIS
2	D	199	GLN
3	E	10	GLU
3	E	28	THR
3	E	31	ILE
3	E	37	VAL
3	E	46	GLU
3	E	85	ARG
3	E	98	ARG
3	E	149	LEU
3	E	181	LEU
3	E	207	CYS
3	E	218	VAL
3	E	219	ASP
3	E	221	ARG
2	F	6	GLN
2	F	11	LEU
2	F	28	ASP
2	F	29	ILE
2	F	46	PHE
2	F	72	THR
2	F	90	GLN
2	F	106	ILE
2	F	109	THR
2	F	125	LEU
2	F	129	THR
2	F	140	TYR
2	F	142	ARG
2	F	145	LYS
2	F	173	TYR
2	F	187	GLU
3	G	11	VAL
3	G	28	THR
3	G	31	ILE
3	G	37	VAL
3	G	85	ARG

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
3	G	135	LEU
3	G	149	LEU
3	G	181	LEU
3	G	195	VAL
3	G	207	CYS
3	G	218	VAL
3	G	221	ARG
2	H	11	LEU
2	H	15	VAL
2	H	29	ILE
2	H	46	PHE
2	H	72	THR
2	H	75	ILE
2	H	90	GLN
2	H	104	VAL
2	H	106	ILE
2	H	109	THR
2	H	116	PHE
2	H	125	LEU
2	H	129	THR
2	H	140	TYR
2	H	145	LYS
2	H	173	TYR
2	H	187	GLU
2	H	199	GLN
2	H	209	PHE
3	I	10	GLU
3	I	11	VAL
3	I	28	THR
3	I	31	ILE
3	I	37	VAL
3	I	46	GLU
3	I	81	MET
3	I	135	LEU
3	I	140	LYS
3	I	146	THR
3	I	149	LEU
3	I	158	PRO
3	I	161	VAL
3	I	195	VAL
3	I	207	CYS
3	I	218	VAL

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
3	I	221	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (75) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	91	HIS
1	A	166	ASN
1	A	346	GLN
1	A	408	ASN
1	A	436	ASN
1	A	468	ASN
1	A	501	ASN
1	A	602	ASN
1	A	765	ASN
1	A	848	ASN
1	A	987	GLN
1	A	1020	GLN
1	A	1023	GLN
1	A	1056	GLN
1	A	1084	GLN
1	A	1085	GLN
1	A	1160	ASN
1	A	1169	ASN
1	B	66	ASN
1	B	72	GLN
1	B	78	GLN
1	B	98	GLN
1	B	111	GLN
1	B	166	ASN
1	B	220	ASN
1	B	342	ASN
1	B	410	ASN
1	B	627	GLN
1	B	688	GLN
1	B	719	ASN
1	B	765	ASN
1	B	792	GLN
1	B	988	GLN
1	B	994	GLN
1	B	1016	ASN
1	B	1029	ASN
1	B	1042	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B	1110	GLN
1	B	1132	ASN
1	B	1145	ASN
1	B	1201	ASN
1	C	208	HIS
1	C	258	GLN
1	C	280	GLN
1	C	408	ASN
1	C	466	GLN
1	C	475	ASN
1	C	568	GLN
1	C	576	GLN
1	C	582	ASN
1	C	733	GLN
1	C	792	GLN
1	C	808	GLN
1	C	832	ASN
1	C	836	HIS
1	C	857	GLN
1	C	987	GLN
1	C	1027	ASN
1	C	1056	GLN
1	C	1122	HIS
1	C	1145	ASN
1	C	1201	ASN
2	D	79	GLN
3	E	107	ASN
2	F	37	GLN
2	F	79	GLN
2	F	138	ASN
2	F	198	HIS
2	F	199	GLN
3	G	107	ASN
2	H	34	ASN
2	H	79	GLN
2	H	198	HIS
2	H	199	GLN
3	I	107	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

There are no ligands in this entry.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-31725. 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 |
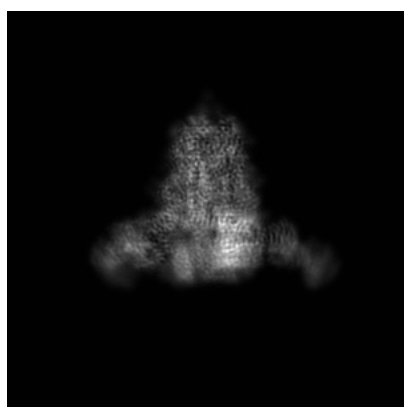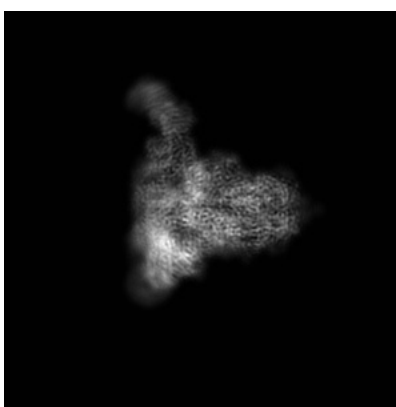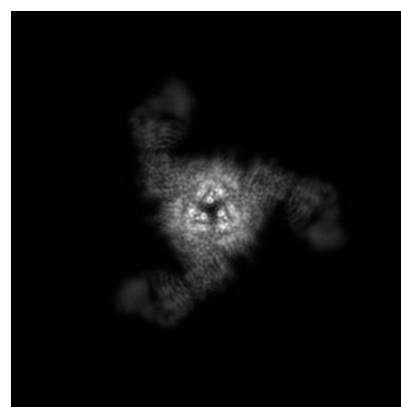
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ
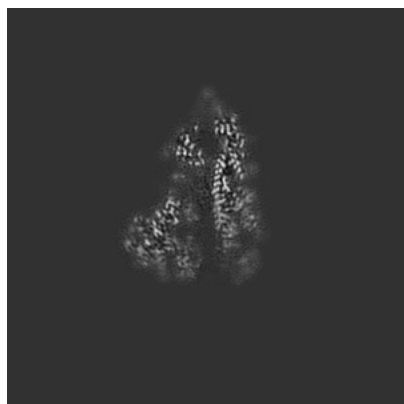
6.2.1 Primary map
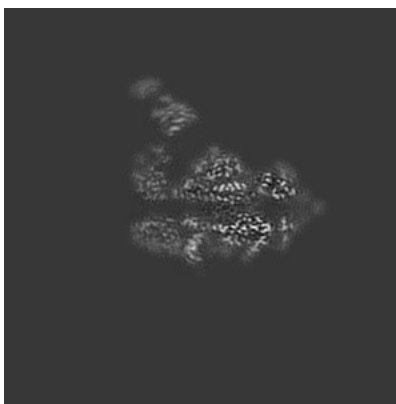
| X Index: 160 | Y Index: 160 | Z Index: 160 |
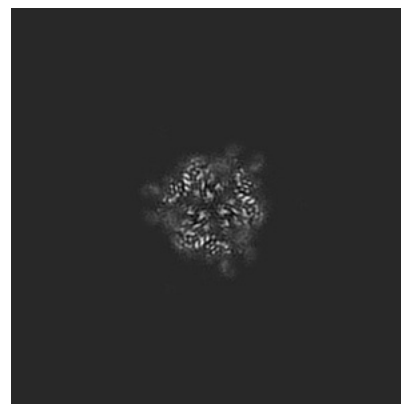
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices ⓘ

6.3.1 Primary map
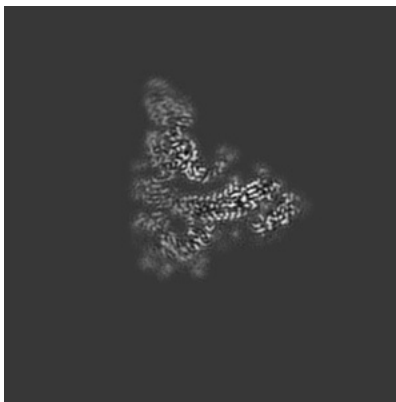
| X Index: 153 | Y Index: 173 | Z Index: 132 |
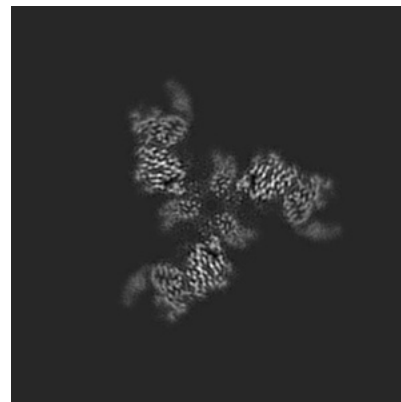
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map

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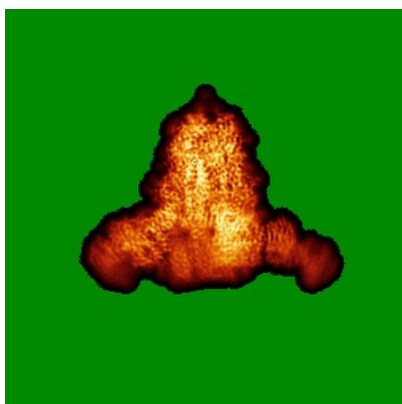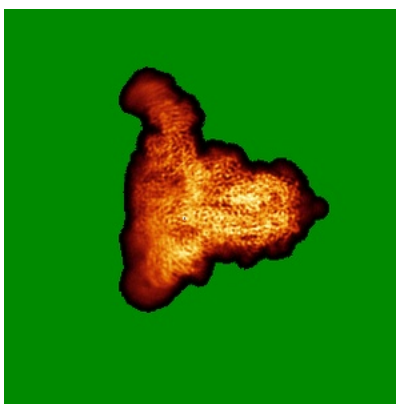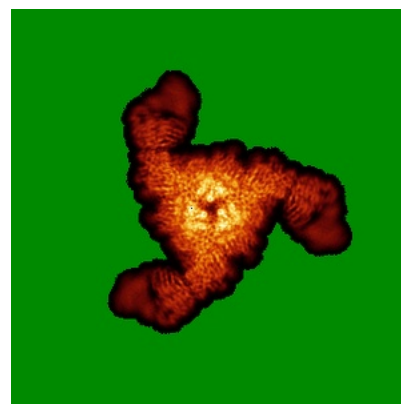
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views ⓘ

6.5.1 Primary map

X   Y   Z
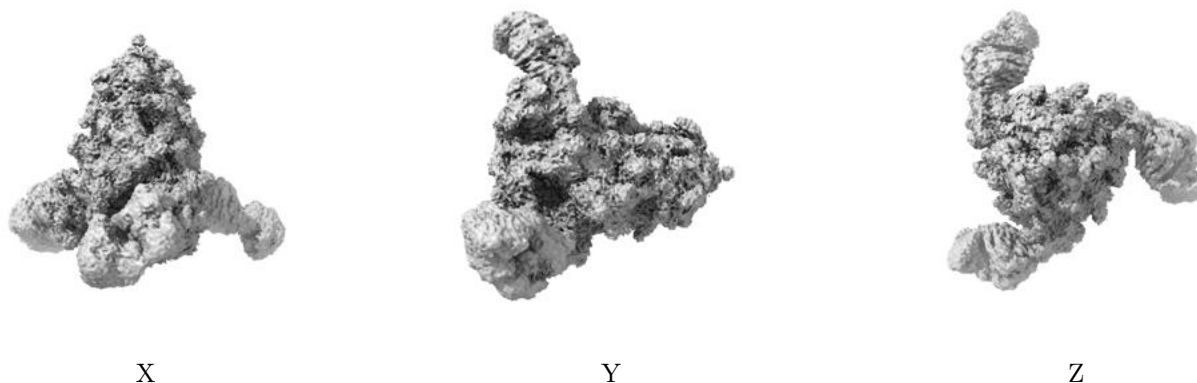
The images above show the 3D surface view of the map at the recommended contour level 0.005. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.6 Mask visualisation ⓘ

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

7   Map analysis ⓘ

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

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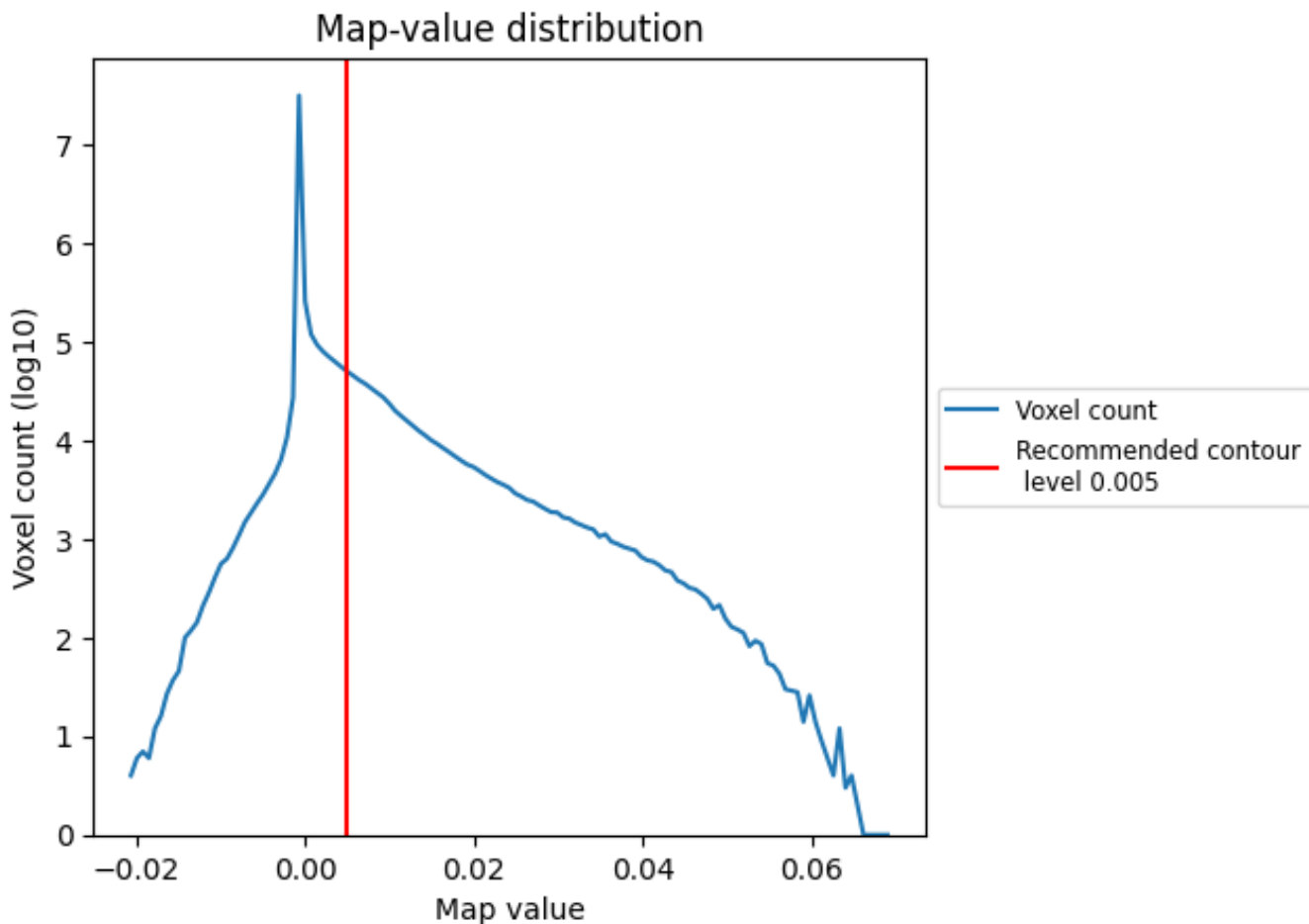
The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

7.2 Volume estimate (i)
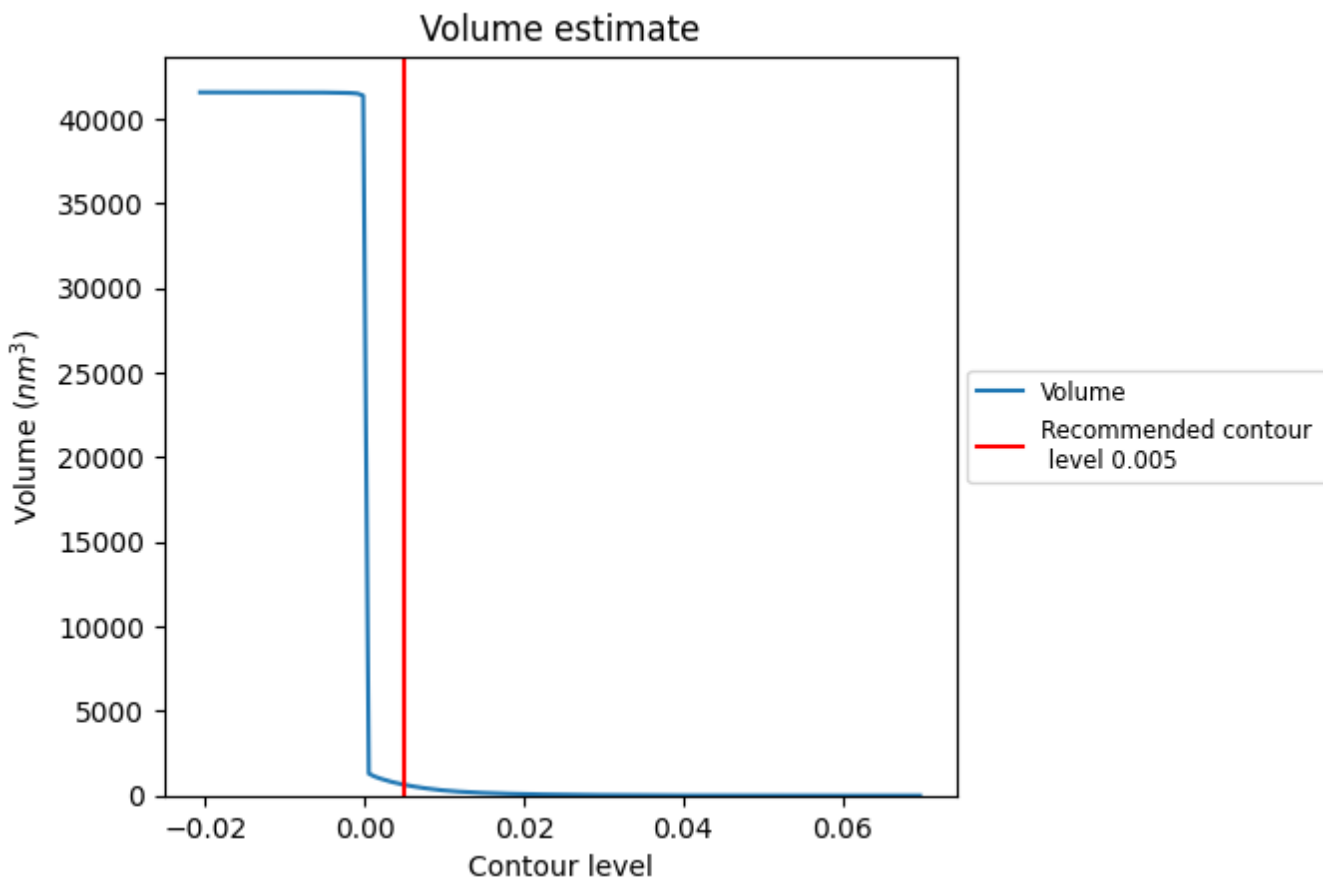
The volume at the recommended contour level is 641 nm^3; this corresponds to an approximate mass of 579 kDa.

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

7.3　Rotationally averaged power spectrum ⓘ
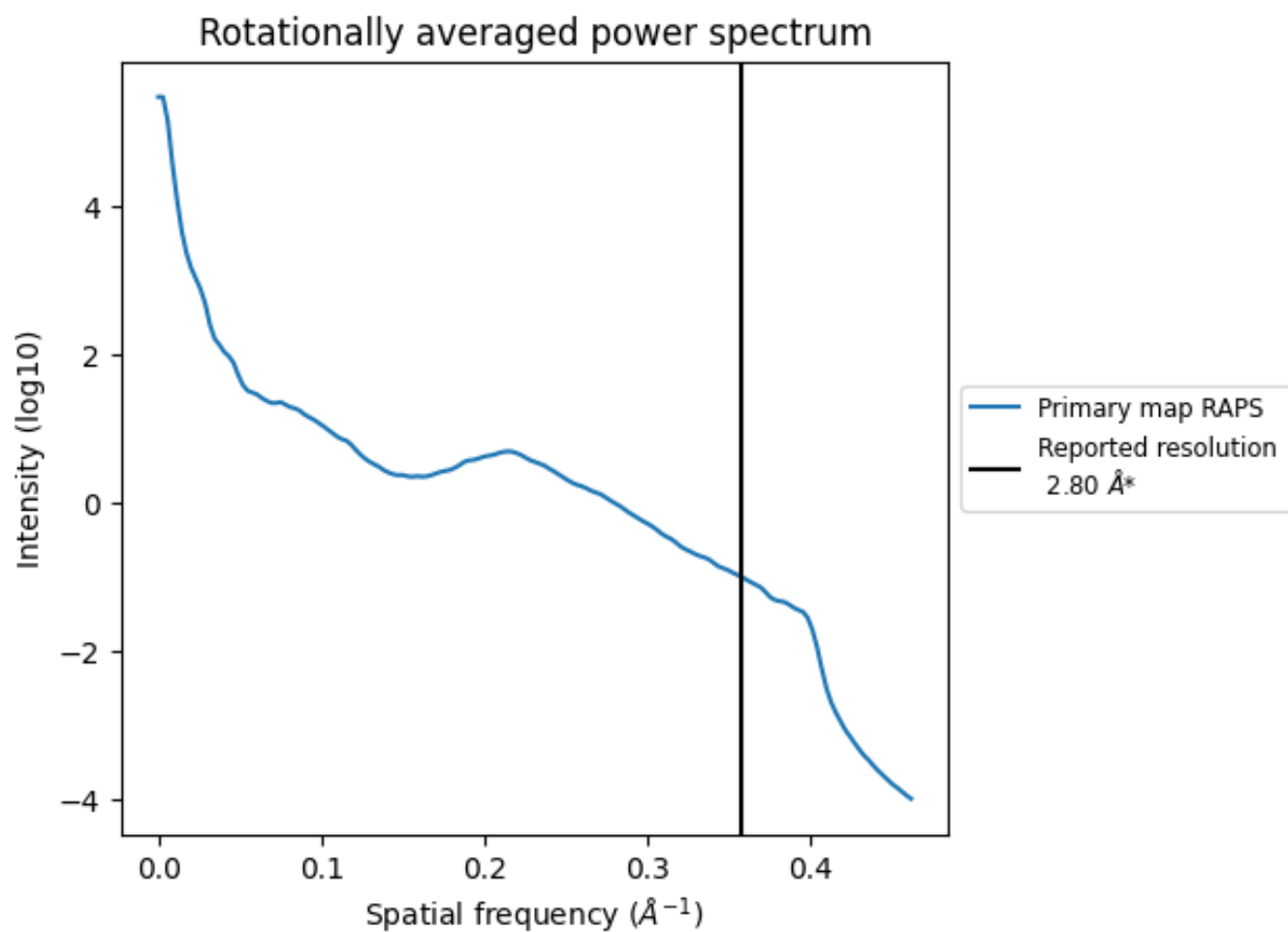
*Reported resolution corresponds to spatial frequency of 0.357 Å^{-1}

8 Fourier-Shell correlation (i)

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-31725 and PDB model 7V5J. Per-residue inclusion information can be found in section 3 on page 5.

9.1　Map-model overlay ⓘ

X　　　　　　　　　　　　　Y　　　　　　　　　　　　　Z
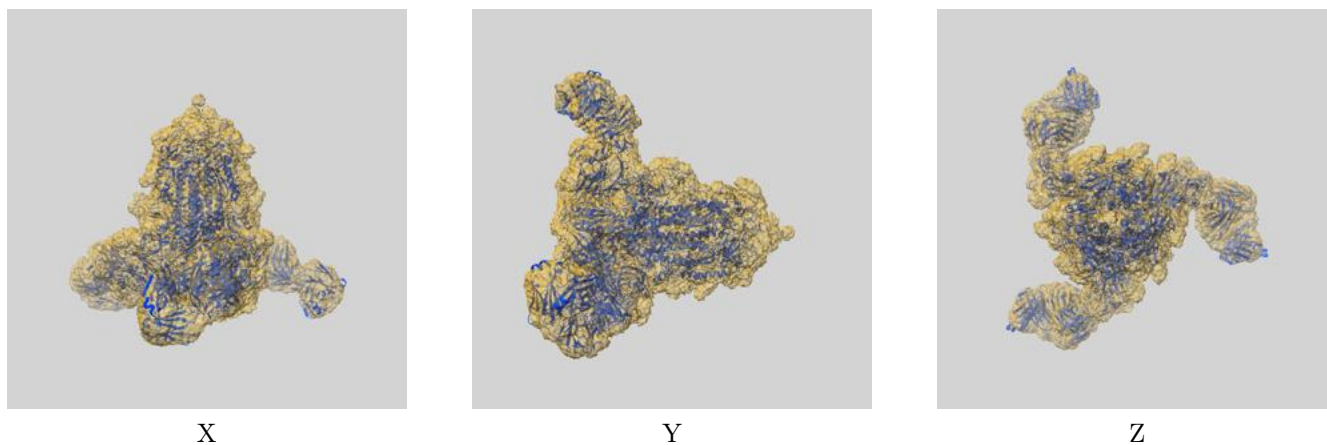
The images above show the 3D surface view of the map at the recommended contour level 0.005 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2　Q-score mapped to coordinate model (i)

X　　　　　　　　　　　　Y　　　　　　　　　　　　Z
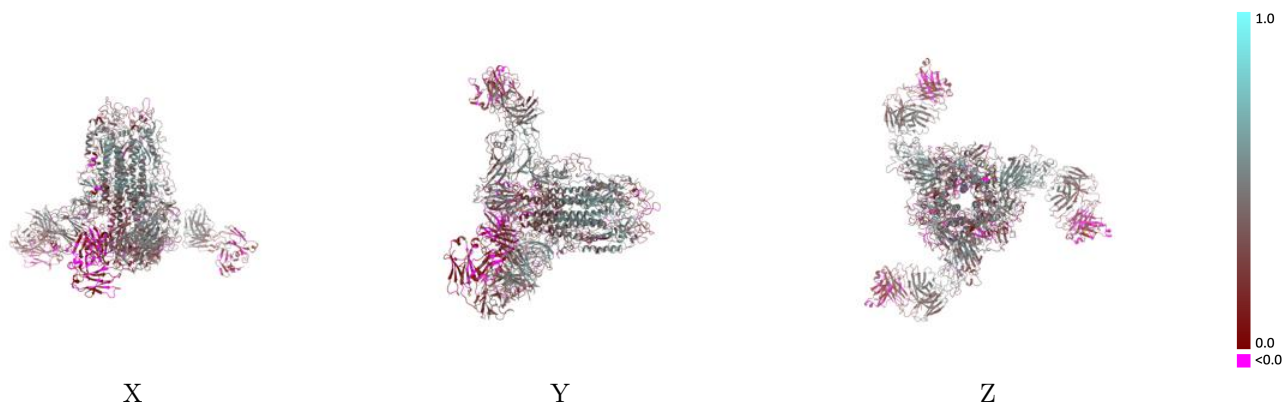
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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
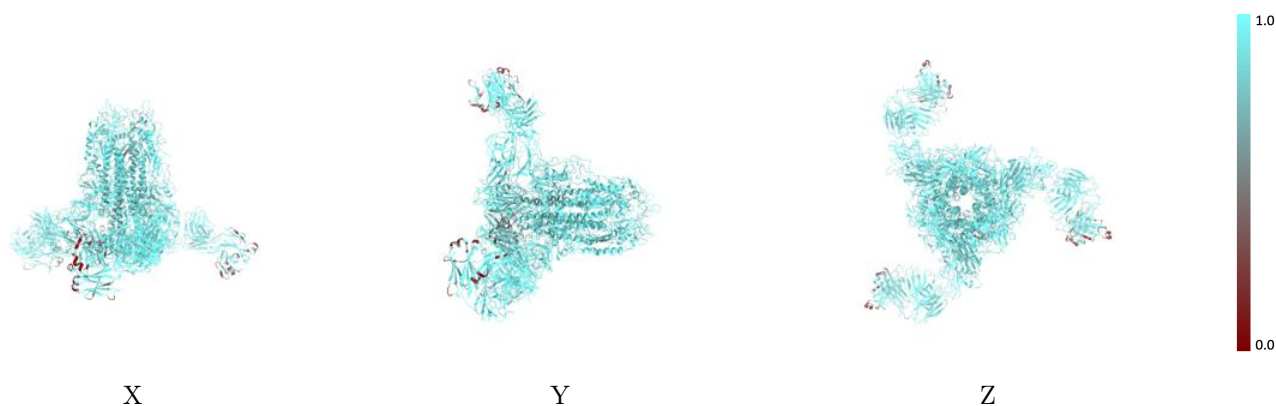
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.005).

9.4　Atom inclusion ⓘ
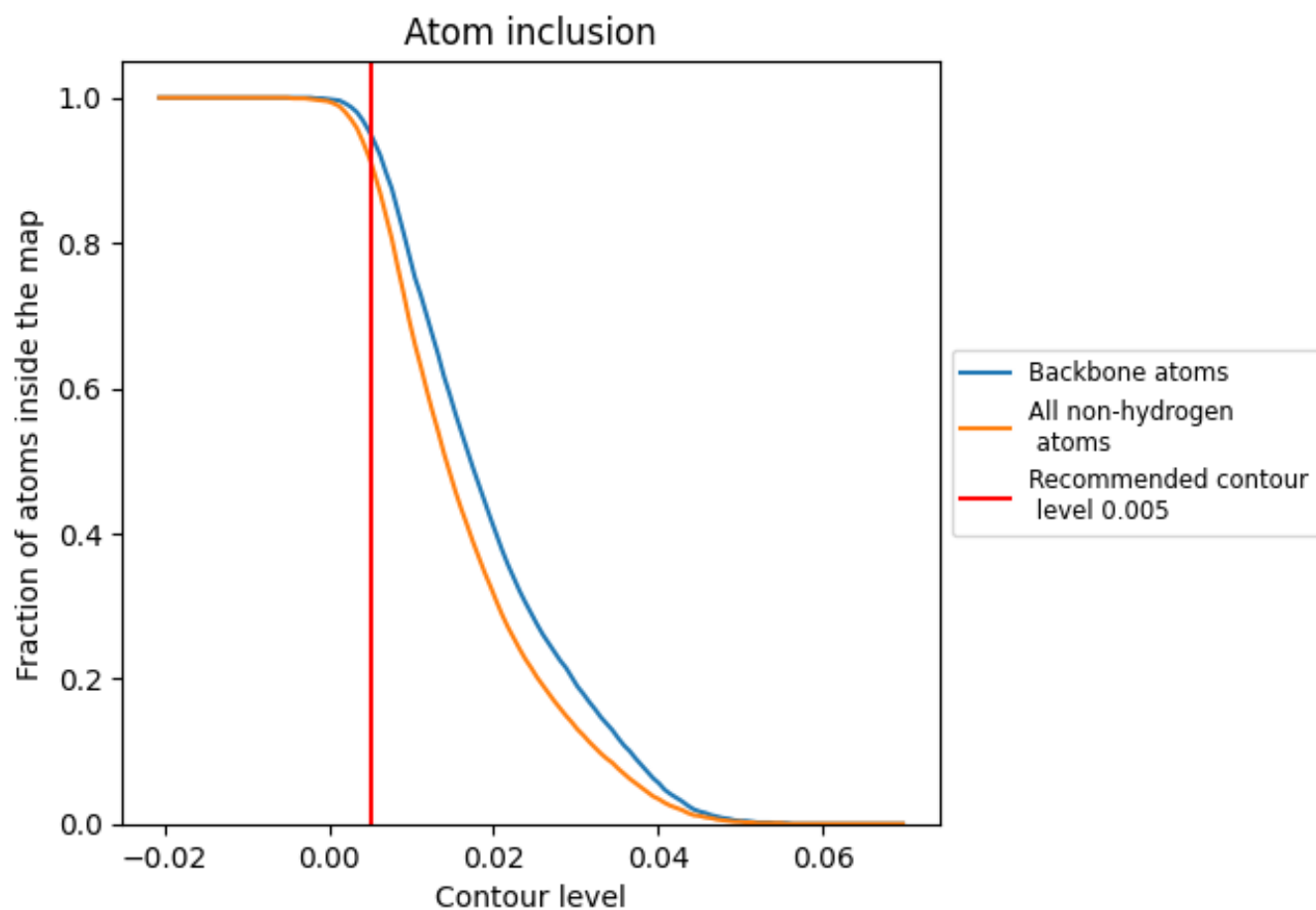
At the recommended contour level, 95% of all backbone atoms, 91% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.005) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9140	0.3170
A	0.9160	0.3440
B	0.9080	0.3040
C	0.9390	0.3830
D	0.8920	0.2160
E	0.8670	0.2470
F	0.8810	0.2200
G	0.9130	0.2880
H	0.9090	0.2260
I	0.9000	0.2760

1.0

0.0
<0.0