Full wwPDB EM Validation Report ⓘ

Apr 1, 2025 – 10:22 am BST

PDB ID	:	8ROR / pdb_00008ror
EMDB ID	:	EMD-19402
Title	:	Single-particle cryo-EM of Mycoplasma pneumoniae adhesin P1 complexed with the anti-adhesive Fab fragment.
Authors	:	Vizarraga, D.; Kawamoto, A.; Marcos-Silva, M.; Fita, I.; Miyata, M.; Pinyol, J.; Namba, K.; Kenri, T.
Deposited on	:	2024-01-12
Resolution	:	2.39 Å(reported)

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

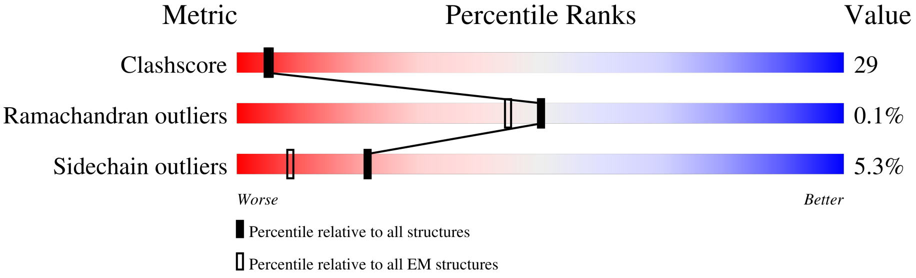
EMDB validation analysis	:	0.0.1.dev117
MolProbity	:	4.02b-467
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.42

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 2.39 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	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	1	1457	
2	L	218	
3	H	222	

2 Entry composition ⓘ

There are 4 unique types of molecules in this entry. The entry contains 14205 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 Adhesin P1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	1	1349	10563	6659	1841	2053	10	9	0

- Molecule 2 is a protein called Light Chain Fab.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	L	218	1698	1066	288	337	7	0	0

- Molecule 3 is a protein called Heavy Chain Fab.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	H	222	1675	1057	271	337	10	0	0

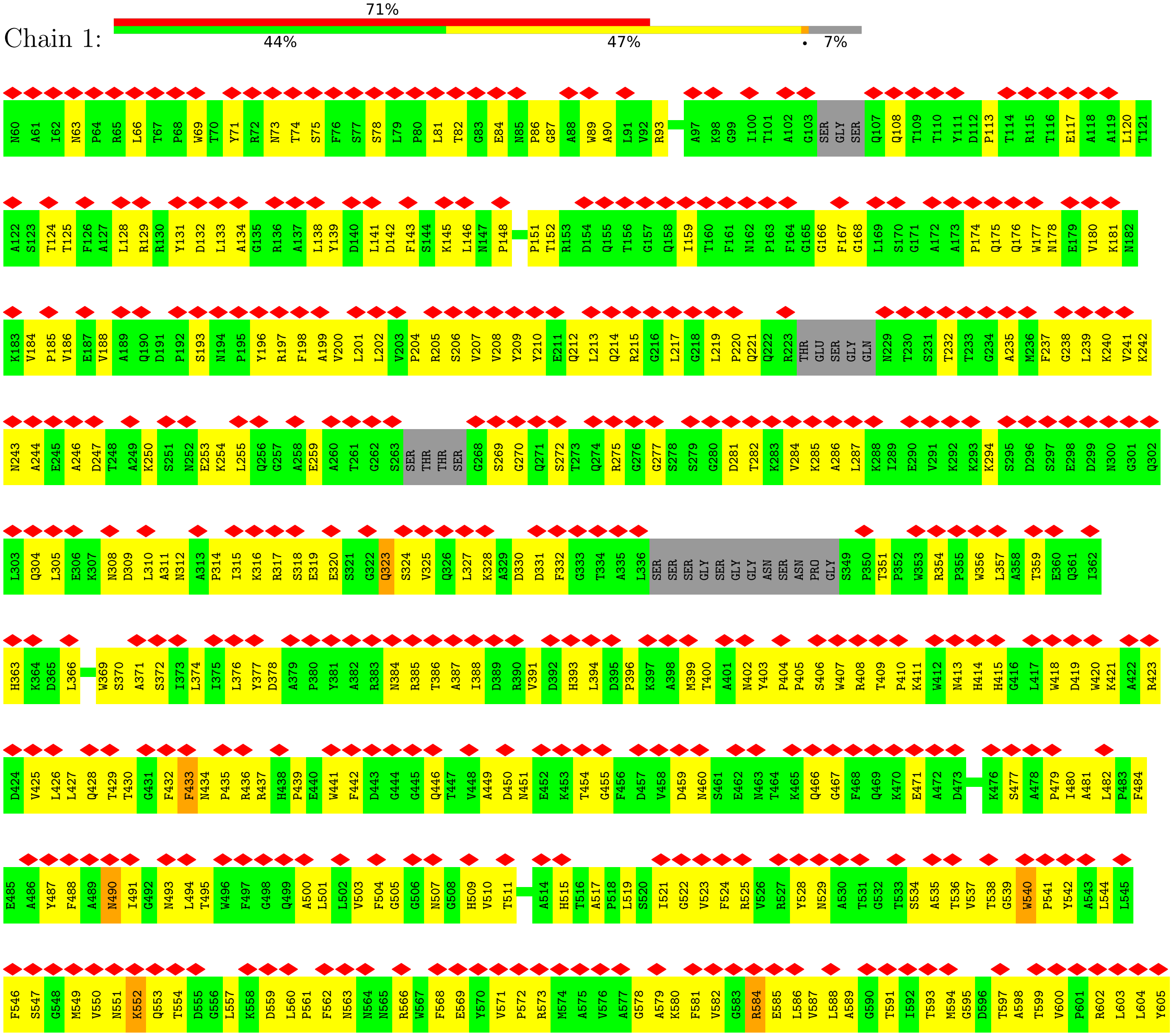
- Molecule 4 is water.

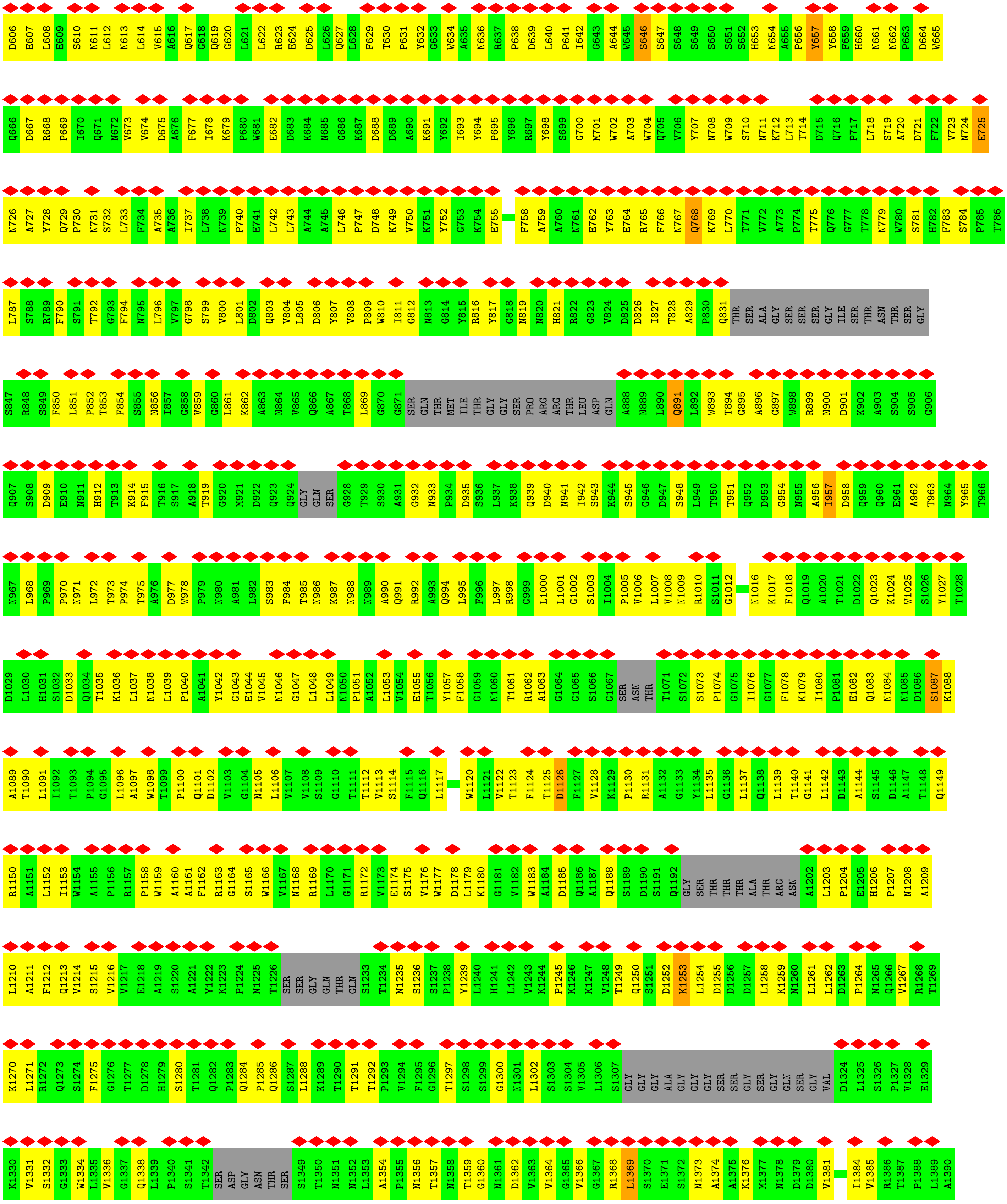
Mol	Chain	Residues	Atoms		AltConf
			Total	O	
4	1	267	267	267	0
4	H	2	2	2	0

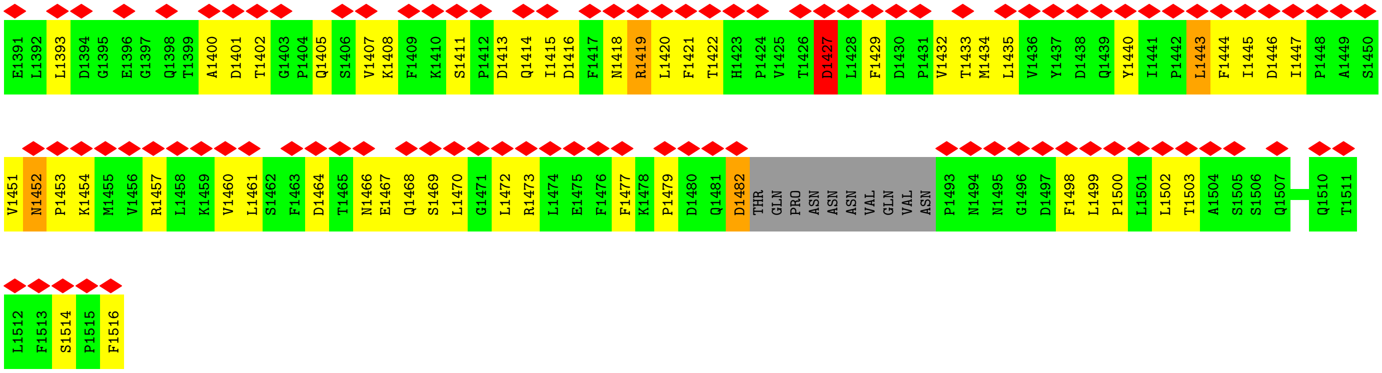
3 Residue-property plots ⓘ

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: Adhesin P1




D606 E607 L608 E609 S610 N611 L612 N613 L614 V615 A616 Q617 G618 Q619 G620 L621 L622 R623 E624 D625 L626 Q627 L628 F629 T630 P631 Y632 G633 W634 A635 N636 R637 P638 D639 L640 P641 I642 G643 A644 W645 S646 S647 S648 S649 S650 S651 S652 H653 N654 A655 P656 Y657 Y658 F659 H660 N661 N662 P663 D664 W665
Q666 D667 R668 P669 I670 Q671 N672 V673 V674 D675 A676 F677 I678 K679 P680 W681 E682 D683 K684 N685 G686 K687 D688 D689 A690 K691 Y692 I693 Y694 P695 Y696 R697 Y698 S699 G700 M701 W702 A703 W704 Q705 V706 Y707 N708 W709 S710 N711 K712 L713 T714 D715 Q716 P717 L718 S719 A720 D721 F722 V723 N724 E725
N726 A727 Y728 Q729 P730 N731 S732 L733 F734 A735 A736 I737 L738 N739 P740 E741 L742 L743 A744 A745 L746 P747 D748 K749 V750 K751 Y752 G753 K754 E755 F758 A759 A760 N761 E762 Y763 E764 R765 F766 N767 Q768 K769 L770 T771 V772 A773 P774 T775 Q776 G777 T778 N779 W780 S781 H782 F783 S784 P785 T786
L787 S788 R789 F790 S791 T792 G793 F794 N795 L796 V797 G798 S799 V800 L801 D802 Q803 V804 L805 D806 Y807 V808 P809 W810 I811 G812 N813 G814 Y815 R816 Y817 G818 N819 N820 H821 R822 G823 V824 D825 D826 I827 T828 A829 P830 Q831 THR SER ALA GLY SER SER SER GLY ILE SER THR ASN THR SER GLY
S847 R848 S849 F850 L851 P852 T853 F854 S855 N856 I857 G858 V859 G860 L861 K862 A863 N864 V865 Q866 A867 T868 L869 G870 G871 SER GLN THR MET ILE THR GLY GLY SER PRO ARG ARG THR LEU ASP GLN A888 N889 L890 Q891 L892 W893 T894 G895 A896 G897 W898 R899 N900 D901 K902 A903 S904 S905 G906
Q907 S908 D909 E910 N911 H912 T913 K914 F915 T916 S917 A918 T919 G920 M921 D922 Q923 Q924 GLY GLN SER G928 T929 S930 A931 G932 N933 P934 D935 S936 L937 K938 Q939 D940 N941 I942 S943 K944 S945 G946 D947 S948 L949 T950 T951 Q952 D953 G954 N955 A956 I957 D958 Q959 Q960 E961 A962 T963 N964 Y965 T966
N967 L968 P969 P970 N971 L972 T973 P974 T975 A976 D977 W978 P979 N980 A981 L982 S983 F984 T985 N986 K987 N988 N989 A990 Q991 R992 A993 Q994 L995 F996 L997 R998 G999 L1000 L1001 G1002 S1003 I1004 P1005 V1006 L1007 V1008 N1009 R1010 S1011 G1012 N1016 K1017 F1018 Q1019 A1020 T1021 D1022 Q1023 K1024 W1025 S1026 Y1027 T1028
D1029 L1030 H1031 S1032 D1033 Q1034 T1035 K1036 L1037 N1038 L1039 P1040 A1041 Y1042 G1043 E1044 V1045 N1046 G1047 L1048 L1049 N1050 P1051 A1052 L1053 V1054 E1055 T1056 Y1057 F1058 G1059 N1060 T1061 R1062 A1063 G1064 G1065 S1066 G1067 SER ASN THR T1071 S1072 S1073 P1074 G1075 I1076 G1077 F1078 K1079 I1080 P1081 E1082 Q1083 N1084 N1085 D1086 S1087 K1088
A1089 T1090 L1091 I1092 T1093 P1094 G1095 L1096 A1097 W1098 T1099 P1100 Q1101 D1102 V1103 G1104 N1105 L1106 V1107 V1108 S1109 G1110 T1111 T1112 V1113 S1114 F1115 Q1116 L1117 W1120 L1121 V1122 T1123 F1124 T1125 D1126 F1127 V1128 K1129 P1130 R1131 A1132 G1133 Y1134 L1135 G1136 L1137 Q1138 L1139 T1140 G1141 L1142 D1143 A1144 S1145 D1146 A1147 T1148 Q1149
R1150 A1151 L1152 I1153 W1154 A1155 P1156 R1157 P1158 W1159 A1160 A1161 F1162 R1163 G1164 S1165 W1166 V1167 N1168 R1169 L1170 G1171 R1172 V1173 E1174 S1175 V1176 W1177 D1178 L1179 K1180 G1181 V1182 W1183 A1184 D1185 Q1186 A1187 Q1188 S1189 D1190 S1191 Q1192 GLY SER THR THR THR ALA THR ARG ASN A1202 L1203 P1204 E1205 H1206 P1207 N1208 A1209
L1210 A1211 F1212 Q1213 V1214 S1215 V1216 V1217 E1218 A1219 S1220 A1221 Y1222 K1223 P1224 N1225 T1226 SER SER GLY GLN THR GLN S1233 T1234 N1235 S1236 S1237 P1238 Y1239 L1240 H1241 L1242 V1243 K1244 P1245 K1246 K1247 V1248 T1249 Q1250 S1251 D1252 K1253 L1254 D1255 D1256 D1257 L1258 K1259 N1260 L1261 L1262 D1263 P1264 N1265 Q1266 V1267 R1268 T1269
K1270 L1271 R1272 Q1273 S1274 F1275 G1276 T1277 D1278 H1279 S1280 T1281 Q1282 P1283 Q1284 P1285 Q1286 S1287 L1288 K1289 T1290 T1291 T1292 P1293 V1294 F1295 G1296 T1297 S1298 S1299 G1300 N1301 L1302 S1303 V1304 V1305 L1306 S1307 GLY GLY GLY ALA GLY GLY GLY SER SER GLY SER GLY GLN SER GLY VAL D1324 L1325 S1326 P1327 V1328 E1329
K1330 V1331 S1332 G1333 W1334 L1335 V1336 G1337 Q1338 L1339 P1340 S1341 T1342 SER ASP GLY ASN THR SER S1349 T1350 N1351 N1352 L1353 A1354 P1355 N1356 T1357 N1358 T1359 G1360 N1361 D1362 V1363 V1364 G1365 V1366 G1367 R1368 L1369 S1370 E1371 S1372 N1373 A1374 A1375 K1376 M1377 N1378 D1379 D1380 V1381 I1384 V1385 R1386 T1387 P1388 L1389 A1390

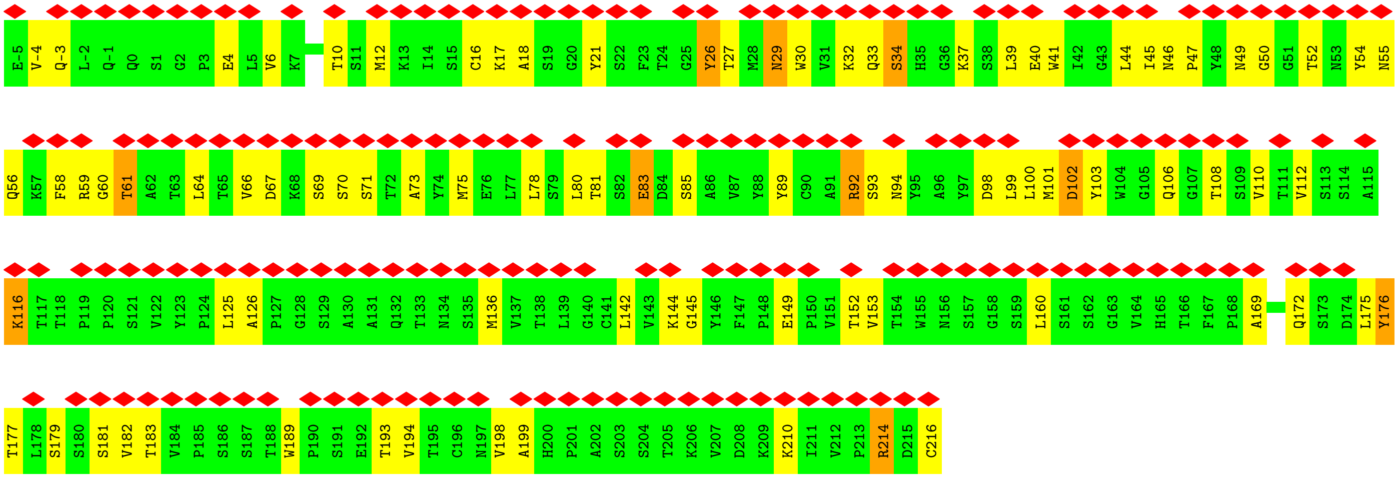


- Molecule 2: Light Chain Fab

Chain L:

- Molecule 3: Heavy Chain Fab

Chain H:



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	4312408	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	JEOL CRYO ARM 300	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	2.0	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	1500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.027	Depositor
Minimum map value	-0.011	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.005	Depositor
Map size (Å)	188.0, 188.0, 188.0	wwPDB
Map dimensions	376, 376, 376	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.5, 0.5, 0.5	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#|Z| >5$	RMSZ	$\#|Z| >5$
1	1	0.32	0/10826	0.52	3/14749 (0.0%)
2	L	0.27	0/1739	0.51	0/2361
3	H	0.27	0/1718	0.51	0/2349
All	All	0.31	0/14283	0.52	3/19459 (0.0%)

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	1443	LEU	CA-CB-CG	5.59	128.16	115.30
1	1	1427	ASP	CB-CG-OD1	5.55	123.29	118.30
1	1	433	PHE	C-N-CA	-5.42	108.16	121.70

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1	10563	0	10175	661	0
2	L	1698	0	1638	72	0
3	H	1675	0	1630	78	0
4	1	267	0	0	14	0
4	H	2	0	0	0	0
All	All	14205	0	13443	784	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 29.

All (784) 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)
3:H:214:ARG:H	3:H:214:ARG:HD3	1.39	0.86
1:1:374:LEU:HD13	1:1:388:ILE:HG12	1.61	0.82
1:1:1088:LYS:NZ	1:1:1253:LYS:O	2.12	0.82
1:1:733:LEU:HD21	1:1:1122:VAL:HG11	1.63	0.81
1:1:515:HIS:HE1	1:1:1209:ALA:HB3	1.48	0.79
1:1:217:LEU:HD11	1:1:439:PRO:HG2	1.65	0.78
1:1:202:LEU:O	1:1:371:ALA:HA	1.83	0.77
1:1:139:TYR:OH	1:1:378:ASP:OD1	2.01	0.77
1:1:399:MET:HG2	1:1:482:LEU:HD22	1.69	0.74
1:1:809:PRO:HA	1:1:816:ARG:HA	1.70	0.74
1:1:806:ASP:OD2	1:1:852:PRO:HB2	1.87	0.74
3:H:93:SER:HB3	3:H:101:MET:H	1.52	0.73
1:1:711:ASN:HB3	1:1:723:VAL:HG22	1.70	0.73
1:1:749:LYS:HA	1:1:749:LYS:HE2	1.71	0.73
1:1:851:LEU:HD12	1:1:1037:LEU:HD13	1.70	0.72
1:1:582:VAL:HG21	1:1:1128:VAL:HG21	1.70	0.72
1:1:704:TRP:HB2	1:1:983:SER:HA	1.68	0.72
1:1:640:LEU:HD12	1:1:693:ILE:HD13	1.71	0.72
3:H:102:ASP:OD1	3:H:103:TYR:N	2.21	0.72
1:1:525:ARG:NH2	1:1:748:ASP:OD1	2.22	0.72
1:1:617:GLN:O	1:1:728:TYR:OH	2.06	0.72
1:1:517:ALA:HA	1:1:1101:GLN:HE22	1.55	0.71
1:1:733:LEU:HD13	1:1:1117:LEU:HD22	1.73	0.71
1:1:1216:VAL:HG21	1:1:1252:ASP:HB3	1.72	0.71
1:1:1427:ASP:O	3:H:49:ASN:ND2	2.23	0.70
1:1:801:LEU:HD23	1:1:992:ARG:HB3	1.72	0.70
3:H:149:GLU:HG2	3:H:176:TYR:HE2	1.56	0.70
1:1:629:PHE:O	1:1:1043:GLY:N	2.21	0.69
1:1:787:LEU:HD21	1:1:790:PHE:HB3	1.73	0.69
1:1:132:ASP:HB2	1:1:1502:LEU:HD13	1.73	0.69
1:1:617:GLN:NE2	1:1:624:GLU:O	2.25	0.69
2:L:189:GLU:OE2	2:L:213:ARG:NH2	2.26	0.69
1:1:1206:HIS:HB3	1:1:1209:ALA:HB2	1.74	0.69
1:1:460:ASN:H	1:1:466:GLN:HE21	1.41	0.68
2:L:21:ARG:HG3	2:L:21:ARG:HH11	1.57	0.68
2:L:81:GLU:OE2	2:L:81:GLU:N	2.26	0.68
1:1:81:LEU:O	1:1:86:PRO:HA	1.93	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:998:ARG:HD2	1:1:1001:LEU:HD12	1.74	0.68
1:1:561:PRO:HG2	1:1:594:MET:HB2	1.76	0.68
2:L:37:TRP:HB2	2:L:50:ILE:HB	1.73	0.68
1:1:1038:ASN:HA	1:1:1080:ILE:HG12	1.75	0.68
1:1:73:ASN:ND2	1:1:491:ILE:O	2.27	0.68
1:1:415:HIS:HB2	1:1:419:ASP:HB2	1.77	0.67
1:1:602:ARG:H	1:1:638:PRO:HB3	1.59	0.67
1:1:426:LEU:HD22	1:1:608:LEU:HD21	1.76	0.67
1:1:975:THR:HA	1:1:987:LYS:HE3	1.77	0.67
1:1:146:LEU:HD21	1:1:386:THR:HG21	1.76	0.67
2:L:49:LEU:HA	2:L:60:VAL:HG21	1.76	0.67
1:1:701:MET:N	1:1:983:SER:O	2.25	0.67
2:L:56:ARG:NH1	2:L:64:PHE:O	2.28	0.67
1:1:1434:MET:O	1:1:1460:VAL:N	2.24	0.66
1:1:584:ARG:NH2	2:L:71:THR:OG1	2.26	0.66
1:1:730:PRO:HB2	1:1:1100:PRO:HB2	1.76	0.66
1:1:1356:ASN:ND2	1:1:1369:LEU:O	2.28	0.66
1:1:1164:GLY:O	1:1:1175:SER:HA	1.95	0.66
1:1:180:VAL:HG21	1:1:391:VAL:HG11	1.78	0.66
1:1:674:VAL:HG22	1:1:678:ILE:HD12	1.77	0.66
1:1:604:LEU:HD11	1:1:660:HIS:HA	1.78	0.65
1:1:1172[A]:ARG:NH2	1:1:1373:ASN:OD1	2.30	0.65
1:1:235:ALA:HB1	1:1:239:LEU:HB3	1.78	0.65
1:1:1284:GLN:O	1:1:1286:GLN:NE2	2.30	0.65
1:1:1106:LEU:HD11	1:1:1113:VAL:HB	1.79	0.65
1:1:467:GLY:HA3	1:1:762:GLU:HG2	1.78	0.65
3:H:47:PRO:HA	3:H:66:VAL:HG21	1.79	0.65
1:1:394:LEU:HD11	1:1:503:VAL:HG21	1.79	0.64
1:1:573:ARG:NH2	1:1:727:ALA:O	2.24	0.64
1:1:585:GLU:HB3	1:1:737:ILE:HG23	1.80	0.64
1:1:662:ASN:ND2	1:1:932:GLY:O	2.31	0.64
1:1:509:HIS:NE2	1:1:1102:ASP:OD1	2.30	0.64
1:1:1009:ASN:ND2	1:1:1079:LYS:O	2.20	0.64
3:H:152:THR:HB	3:H:199:ALA:HB3	1.80	0.64
1:1:1369:LEU:HD12	1:1:1373:ASN:HB3	1.79	0.63
1:1:1447:ILE:HG21	1:1:1453:PRO:HG3	1.80	0.63
1:1:418:TRP:HB2	1:1:641:PRO:HB3	1.79	0.63
1:1:1332:SER:O	1:1:1336:VAL:HG23	1.98	0.63
1:1:611:ASN:HD22	1:1:630:THR:HB	1.64	0.63
1:1:310:LEU:HD13	1:1:418:TRP:HD1	1.64	0.63
1:1:725:GLU:OE1	1:1:726:ASN:N	2.15	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:197:ARG:NH1	4:1:1644:HOH:O	2.31	0.62
1:1:594:MET:N	1:1:731:ASN:OD1	2.28	0.62
3:H:94:ASN:HB2	3:H:99:LEU:HB2	1.81	0.62
1:1:629:PHE:CG	1:1:974:PRO:HG3	2.35	0.62
1:1:796:LEU:HD13	1:1:800:VAL:HG12	1.81	0.62
1:1:244:ALA:HB3	1:1:605:TYR:HB2	1.81	0.62
1:1:394:LEU:HA	1:1:537:VAL:HG11	1.81	0.62
1:1:519:LEU:O	4:1:1601:HOH:O	2.16	0.62
1:1:536:THR:OG1	1:1:748:ASP:OD2	2.15	0.62
2:L:119:ILE:HG21	2:L:211:PHE:HB3	1.80	0.62
1:1:901:ASP:OD1	1:1:914:LYS:N	2.30	0.61
1:1:1354:ALA:O	1:1:1368:ARG:NH2	2.23	0.61
1:1:1179:LEU:HD11	1:1:1288:LEU:HB2	1.82	0.61
1:1:1126:ASP:HB2	1:1:1131:ARG:H	1.63	0.61
1:1:515:HIS:CE1	1:1:1209:ALA:HB3	2.33	0.61
1:1:602:ARG:NH2	4:1:1656:HOH:O	2.34	0.61
1:1:285:LYS:O	1:1:657:TYR:OH	2.12	0.61
1:1:436:ARG:HA	1:1:449:ALA:HB1	1.82	0.61
1:1:372:SER:HA	1:1:393:HIS:HA	1.83	0.60
1:1:811:ILE:HB	1:1:1120:TRP:HE1	1.66	0.60
1:1:1381:VAL:HG22	1:1:1393:LEU:HB3	1.82	0.60
1:1:625:ASP:OD1	1:1:728:TYR:N	2.34	0.60
1:1:731:ASN:ND2	4:1:1662:HOH:O	2.34	0.60
2:L:22:PHE:HB2	2:L:71:THR:HB	1.82	0.60
1:1:1039:LEU:HD13	1:1:1049:LEU:HD12	1.82	0.60
1:1:504:PHE:HD2	1:1:588:LEU:HD13	1.66	0.60
1:1:1005:PRO:HB2	1:1:1091:LEU:HD22	1.83	0.60
1:1:1078:PHE:HE1	1:1:1080:ILE:HD13	1.66	0.60
3:H:172:GLN:HE22	3:H:177:THR:HB	1.66	0.60
1:1:404:PRO:HD3	1:1:541:PRO:HG3	1.83	0.60
1:1:582:VAL:HB	1:1:1128:VAL:HG11	1.83	0.60
1:1:423:ARG:HB2	1:1:430:THR:HG22	1.84	0.60
1:1:809:PRO:HD2	1:1:1120:TRP:HH2	1.67	0.60
3:H:17:LYS:NZ	3:H:70:SER:O	2.32	0.60
1:1:413:ASN:ND2	1:1:419:ASP:OD2	2.26	0.60
1:1:956:ALA:O	1:1:957:ILE:HG13	2.02	0.60
1:1:1338:GLN:HG2	1:1:1364:VAL:HG23	1.84	0.60
1:1:851:LEU:HB2	1:1:1025[A]:TRP:HE3	1.66	0.60
3:H:160:LEU:HD21	3:H:182:VAL:HG21	1.84	0.59
1:1:275:ARG:NH1	1:1:667:ASP:OD2	2.35	0.59
1:1:493:ASN:ND2	1:1:505:GLY:O	2.29	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1113:VAL:HG23	1:1:1124:PHE:HB2	1.84	0.59
1:1:987:LYS:HG2	1:1:1047:GLY:HA2	1.84	0.59
2:L:194:TYR:HB2	2:L:211:PHE:CE1	2.36	0.59
1:1:200:VAL:HB	1:1:374:LEU:HG	1.85	0.59
1:1:426:LEU:HA	1:1:608:LEU:HD11	1.83	0.59
1:1:523:VAL:HG23	1:1:542:TYR:CE1	2.38	0.59
1:1:420:TRP:NE1	1:1:451:ASN:O	2.33	0.59
1:1:482:LEU:HG	1:1:487:TYR:HA	1.85	0.59
1:1:547:SER:HB3	1:1:568:PHE:HE1	1.67	0.59
1:1:566:ARG:HD2	1:1:755:GLU:HB2	1.83	0.59
1:1:603:LEU:HD11	1:1:614:LEU:HB3	1.84	0.59
1:1:184:VAL:HG12	1:1:186:VAL:HG13	1.85	0.59
1:1:862:LYS:HD2	1:1:891:GLN:HG2	1.84	0.59
1:1:1009:ASN:HB3	1:1:1089:ALA:HB2	1.84	0.59
1:1:563:ASN:HB3	1:1:720:ALA:HB2	1.85	0.58
1:1:1098:TRP:HE1	1:1:1153:ILE:HG23	1.67	0.58
2:L:91:PHE:HE1	2:L:98:TRP:HB3	1.67	0.58
2:L:110:ARG:NH1	2:L:173:SER:O	2.36	0.58
1:1:328:LYS:O	1:1:436:ARG:NH1	2.35	0.58
2:L:97:PRO:HB3	3:H:55:ASN:HB2	1.83	0.58
1:1:423:ARG:HD3	1:1:430:THR:HA	1.84	0.58
1:1:1000:LEU:HD12	1:1:1117:LEU:HD23	1.86	0.58
1:1:1025[B]:TRP:HE1	1:1:1061:THR:HG21	1.68	0.58
3:H:116:LYS:HE2	3:H:116:LYS:H	1.67	0.58
1:1:796:LEU:HD11	1:1:1135:LEU:HD22	1.86	0.58
1:1:1357:THR:HB	1:1:1359:THR:HG22	1.85	0.58
1:1:1415:ILE:HD13	1:1:1420:LEU:HD22	1.85	0.58
2:L:40:GLN:OE1	3:H:33:GLN:NE2	2.27	0.58
1:1:242:LYS:HB3	1:1:325:VAL:HG11	1.85	0.58
1:1:410:PRO:HG2	1:1:442:PHE:CE2	2.39	0.58
1:1:1007:LEU:O	1:1:1078:PHE:HB2	2.04	0.58
1:1:142:ASP:O	1:1:146:LEU:N	2.37	0.58
1:1:319:GLU:HA	1:1:324:SER:HA	1.85	0.58
1:1:540:TRP:HB3	1:1:544:LEU:HD23	1.86	0.58
1:1:602:ARG:NH1	4:1:1650:HOH:O	2.37	0.58
1:1:973:THR:O	1:1:986:ASN:ND2	2.37	0.58
1:1:1432:VAL:O	2:L:28:HIS:NE2	2.37	0.58
1:1:584:ARG:HH22	2:L:71:THR:HG1	1.50	0.57
1:1:219:LEU:HD13	1:1:237:PHE:HB3	1.84	0.57
2:L:146:ILE:HD11	2:L:198:ALA:HB1	1.86	0.57
1:1:894:THR:O	1:1:971:ASN:ND2	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:247:ASP:N	1:1:314:PRO:O	2.31	0.57
1:1:1124:PHE:HA	1:1:1137:LEU:HD12	1.86	0.57
1:1:623:ARG:NH1	4:1:1683:HOH:O	2.37	0.57
1:1:956:ALA:HB2	1:1:962:ALA:HB2	1.87	0.57
1:1:957:ILE:HD12	1:1:958:ASP:HB2	1.86	0.57
1:1:394:LEU:HD22	1:1:524:PHE:HB3	1.86	0.57
1:1:1025[A]:TRP:HE1	1:1:1061:THR:HG21	1.70	0.57
1:1:661:ASN:ND2	1:1:700:GLY:O	2.30	0.57
1:1:311:ALA:O	1:1:421:LYS:NZ	2.35	0.57
1:1:419:ASP:OD1	1:1:602:ARG:NH2	2.37	0.57
1:1:896:ALA:O	1:1:975:THR:OG1	2.20	0.57
1:1:427:LEU:O	1:1:619:GLN:HB3	2.05	0.56
1:1:308:ASN:HD21	1:1:762:GLU:HG3	1.70	0.56
1:1:544:LEU:HD21	1:1:750:VAL:HG11	1.87	0.56
1:1:1183:TRP:NE1	1:1:1285:PRO:O	2.30	0.56
2:L:38:TYR:OH	3:H:100:LEU:O	2.23	0.56
1:1:1415:ILE:HB	1:1:1420:LEU:HD13	1.87	0.56
1:1:1120:TRP:CE3	1:1:1139:LEU:HB3	2.41	0.56
1:1:714:THR:HG1	1:1:719:SER:HG	1.50	0.56
1:1:305:LEU:HD23	1:1:308:ASN:HB2	1.88	0.56
1:1:1162:PHE:HE1	1:1:1175:SER:HB3	1.70	0.56
1:1:1470:LEU:HG	1:1:1472:LEU:HD21	1.87	0.56
2:L:108:ILE:N	2:L:168:GLN:OE1	2.38	0.56
1:1:198:PHE:CE2	1:1:378:ASP:HB3	2.41	0.56
1:1:859:VAL:HB	1:1:895:GLY:HA2	1.88	0.56
1:1:977:ASP:HA	1:1:985:THR:HG23	1.87	0.56
1:1:1033:ASP:OD1	1:1:1035:THR:OG1	2.23	0.56
1:1:653:HIS:ND1	1:1:935:ASP:OD1	2.33	0.56
3:H:33:GLN:HB2	3:H:39:LEU:HD23	1.87	0.56
3:H:54:TYR:HE2	3:H:64:LEU:HD13	1.71	0.56
1:1:124:THR:O	1:1:205:ARG:NH1	2.39	0.55
1:1:269:SER:OG	1:1:270:GLY:N	2.38	0.55
1:1:405:PRO:HB3	1:1:408:ARG:HH22	1.71	0.55
3:H:27:THR:O	3:H:93:SER:OG	2.24	0.55
1:1:1126:ASP:HB3	1:1:1131:ARG:HE	1.70	0.55
1:1:410:PRO:HG2	1:1:442:PHE:HE2	1.72	0.55
1:1:517:ALA:HA	1:1:1101:GLN:NE2	2.21	0.55
1:1:856:ASN:ND2	1:1:975:THR:O	2.35	0.55
1:1:869:LEU:HD22	1:1:965:TYR:CG	2.41	0.55
1:1:897:GLY:HA3	1:1:973:THR:HG21	1.89	0.55
1:1:1096:LEU:O	1:1:1208:ASN:ND2	2.38	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:781:SER:O	1:1:784:SER:OG	2.25	0.55
1:1:800:VAL:HG13	1:1:1331:VAL:HG11	1.89	0.55
1:1:1212:PHE:HB2	1:1:1262:LEU:HD21	1.88	0.55
2:L:138:LEU:HB2	2:L:177:MET:HB3	1.89	0.55
1:1:703:ALA:HA	1:1:988:ASN:HB3	1.88	0.55
2:L:90:CYS:O	2:L:101:GLY:N	2.38	0.55
1:1:557:LEU:HD11	1:1:801:LEU:HD22	1.89	0.54
2:L:194:TYR:HB2	2:L:211:PHE:HE1	1.72	0.54
1:1:237:PHE:CE2	1:1:1262:LEU:HD13	2.42	0.54
1:1:853:THR:HG22	1:1:1048:LEU:HB2	1.90	0.54
1:1:1002:GLY:HA3	1:1:1096:LEU:HD12	1.90	0.54
1:1:1464:ASP:O	1:1:1468:GLN:N	2.40	0.54
3:H:149:GLU:HG2	3:H:176:TYR:CE2	2.42	0.54
1:1:580:LYS:NZ	4:1:1701:HOH:O	2.40	0.54
3:H:64:LEU:HD12	3:H:75:MET:HG3	1.88	0.54
1:1:73:ASN:HB2	1:1:510:VAL:HB	1.88	0.54
1:1:89:TRP:CZ3	1:1:128:LEU:HB3	2.42	0.54
1:1:359:THR:HG23	1:1:396:PRO:HB2	1.89	0.54
1:1:418:TRP:CH2	1:1:639:ASP:HA	2.42	0.54
1:1:429:THR:HG21	1:1:437:ARG:HG3	1.89	0.54
1:1:519:LEU:HD21	1:1:1101:GLN:HG2	1.89	0.54
1:1:519:LEU:HD11	1:1:730:PRO:HD3	1.90	0.54
1:1:589:ALA:HA	1:1:735:ALA:HA	1.88	0.54
1:1:219:LEU:HD21	1:1:1203:LEU:HD22	1.89	0.54
1:1:221:GLN:NE2	1:1:330:ASP:O	2.41	0.54
1:1:255:LEU:HD21	1:1:309:ASP:HB3	1.89	0.54
1:1:899:ARG:CZ	1:1:972:LEU:HG	2.37	0.54
1:1:1178:ASP:OD2	1:1:1180:LYS:NZ	2.39	0.54
1:1:133:LEU:HD21	1:1:1499:LEU:HB3	1.90	0.54
1:1:1044:GLU:HA	1:1:1091:LEU:HD21	1.89	0.54
1:1:152:THR:N	1:1:168:GLY:O	2.32	0.53
1:1:184:VAL:O	1:1:202:LEU:HA	2.08	0.53
1:1:819:ASN:HB3	1:1:850[A]:PHE:HD2	1.73	0.53
1:1:1009:ASN:HA	1:1:1258:LEU:HD21	1.89	0.53
1:1:945:SER:O	1:1:948:SER:OG	2.26	0.53
2:L:89:TYR:OH	3:H:33:GLN:NE2	2.41	0.53
3:H:16:CYS:HB3	3:H:73:ALA:HB3	1.91	0.53
1:1:74:THR:HG21	1:1:493:ASN:H	1.74	0.53
1:1:829:ALA:O	1:1:831:GLN:NE2	2.38	0.53
1:1:1288:LEU:HD11	1:1:1374:ALA:HB1	1.91	0.53
1:1:1454[A]:LYS:O	3:H:56:GLN:NE2	2.37	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:810:TRP:HD1	1:1:817:TYR:HH	1.56	0.53
1:1:423:ARG:NH2	1:1:724:ASN:O	2.40	0.53
1:1:488:PHE:HA	1:1:491:ILE:HB	1.91	0.53
1:1:1405:GLN:N	1:1:1405:GLN:OE1	2.42	0.53
1:1:641:PRO:HD2	1:1:693:ILE:HD11	1.90	0.52
1:1:87:GLY:HA3	1:1:131:TYR:O	2.09	0.52
1:1:237:PHE:HE2	1:1:1262:LEU:HD13	1.74	0.52
1:1:557:LEU:HB2	1:1:560:LEU:HD11	1.90	0.52
1:1:1411:SER:OG	1:1:1413:ASP:OD1	2.26	0.52
3:H:34:SER:HB2	3:H:37:LYS:HD3	1.90	0.52
1:1:174:PRO:HG2	1:1:177:TRP:HB2	1.90	0.52
1:1:286:ALA:HB2	1:1:695:PRO:HD3	1.90	0.52
1:1:510:VAL:HG13	1:1:511:THR:HG23	1.92	0.52
1:1:562:PHE:HB2	1:1:713:LEU:HG	1.91	0.52
1:1:597:THR:HG22	1:1:710:SER:HB2	1.92	0.52
1:1:459:ASP:OD1	1:1:459:ASP:N	2.43	0.52
1:1:494:LEU:HG	1:1:501:LEU:HD21	1.92	0.52
1:1:721:ASP:HA	1:1:770:LEU:HD13	1.90	0.52
1:1:1005:PRO:HD2	1:1:1045:VAL:HG21	1.92	0.52
1:1:1042:TYR:HE1	1:1:1215:SER:HB3	1.75	0.52
1:1:239:LEU:HD22	1:1:1213:GLN:HG3	1.90	0.52
1:1:259:GLU:HG2	1:1:285:LYS:HG2	1.90	0.52
1:1:495:THR:HG21	1:1:586:LEU:HD11	1.92	0.52
1:1:998:ARG:NH2	1:1:1003:SER:O	2.43	0.52
1:1:1461:LEU:HD11	1:1:1473:ARG:HB2	1.91	0.52
1:1:808:VAL:HG22	1:1:1366:VAL:HG11	1.90	0.52
1:1:1018:PHE:CZ	1:1:1023:GLN:HB2	2.44	0.52
1:1:1203:LEU:HD12	1:1:1204:PRO:HD2	1.90	0.52
1:1:1421:PHE:HB3	1:1:1468:GLN:HG2	1.90	0.52
1:1:1042:TYR:CE1	1:1:1215:SER:HB3	2.44	0.52
3:H:41:TRP:HZ2	3:H:44:LEU:HD23	1.74	0.52
3:H:136:MET:SD	3:H:183:THR:HB	2.49	0.52
1:1:175:GLN:O	1:1:176:GLN:HG2	2.10	0.52
1:1:184:VAL:HG11	1:1:208:VAL:HG21	1.92	0.52
1:1:581:PHE:HE1	1:1:740:PRO:HG3	1.75	0.52
1:1:698:TYR:HB3	1:1:704:TRP:HH2	1.75	0.52
1:1:809:PRO:HD2	1:1:1120:TRP:CH2	2.43	0.52
1:1:519:LEU:HB2	1:1:573:ARG:HB3	1.92	0.51
1:1:254:LYS:HG2	1:1:646:SER:HB3	1.92	0.51
1:1:407:TRP:CH2	1:1:571:VAL:HG13	2.44	0.51
1:1:1000:LEU:HD21	1:1:1139:LEU:HD13	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:232:THR:HG22	1:1:1250:GLN:HE22	1.75	0.51
1:1:410:PRO:HB2	1:1:433:PHE:O	2.10	0.51
1:1:1001:LEU:HD21	1:1:1117:LEU:HD11	1.93	0.51
1:1:1012:GLY:N	1:1:1016:ASN:O	2.41	0.51
3:H:153:VAL:HG22	3:H:198:VAL:HG22	1.93	0.51
1:1:1097:ALA:HB1	1:1:1207:PRO:HG2	1.92	0.51
2:L:149:LYS:O	2:L:197:GLU:N	2.39	0.51
1:1:255:LEU:HD12	1:1:644:ALA:HB2	1.92	0.51
1:1:404:PRO:HD2	1:1:407:TRP:CD2	2.46	0.51
1:1:437:ARG:HG2	1:1:620:GLY:HA2	1.92	0.51
1:1:636:ASN:ND2	4:1:1693:HOH:O	2.43	0.51
1:1:1432:VAL:HG11	3:H:100:LEU:HD11	1.93	0.51
1:1:167:PHE:HZ	1:1:196:TYR:HB3	1.75	0.51
1:1:851:LEU:HB2	1:1:1025[A]:TRP:CE3	2.44	0.51
1:1:1440:TYR:HD1	1:1:1443:LEU:HD21	1.76	0.51
2:L:93:GLY:O	2:L:98:TRP:NE1	2.43	0.51
1:1:315:ILE:HD11	1:1:646:SER:HB2	1.92	0.51
1:1:941:ASN:HB3	1:1:956:ALA:HA	1.93	0.51
1:1:1125:THR:OG1	1:1:1126:ASP:OD1	2.28	0.51
1:1:1261:LEU:HD22	1:1:1267:VAL:HG22	1.91	0.51
1:1:1479:PRO:HB2	1:1:1482:ASP:HA	1.92	0.51
1:1:89:TRP:HB3	1:1:188:VAL:HG21	1.93	0.51
1:1:856:ASN:OD1	1:1:987:LYS:NZ	2.44	0.51
1:1:1429:PHE:CG	1:1:1460:VAL:HG21	2.45	0.51
3:H:32:LYS:HD2	3:H:58:PHE:CZ	2.46	0.51
2:L:37:TRP:CH2	2:L:90:CYS:HB3	2.46	0.51
1:1:217:LEU:HB3	1:1:515:HIS:HB2	1.92	0.50
1:1:912:HIS:HA	1:1:970:PRO:HD3	1.93	0.50
1:1:1063:ALA:HB3	1:1:1073:SER:HB3	1.93	0.50
1:1:1135:LEU:N	1:1:1300:GLY:O	2.41	0.50
1:1:627:GLN:OE1	1:1:1046:ASN:ND2	2.44	0.50
1:1:729:GLN:NE2	4:1:1643:HOH:O	2.31	0.50
1:1:201:LEU:HD11	1:1:491:ILE:HG23	1.93	0.50
1:1:429:THR:OG1	1:1:437:ARG:NE	2.37	0.50
1:1:593:THR:HB	1:1:727:ALA:HB3	1.94	0.50
1:1:327:LEU:HD11	1:1:619:GLN:HB2	1.93	0.50
1:1:561:PRO:HD3	1:1:990:ALA:HB2	1.93	0.50
1:1:584:ARG:NH1	2:L:22:PHE:O	2.45	0.50
3:H:46:ASN:O	3:H:50:GLY:N	2.44	0.50
1:1:405:PRO:HB3	1:1:408:ARG:NH2	2.26	0.50
3:H:32:LYS:O	3:H:40:GLU:N	2.41	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:143:PHE:HE2	1:1:185:PRO:HB3	1.77	0.50
1:1:406:SER:HB2	1:1:758:PHE:CZ	2.47	0.50
1:1:108:GLN:NE2	1:1:214:GLN:O	2.45	0.50
1:1:370:SER:OG	1:1:393:HIS:HB3	2.11	0.50
1:1:620:GLY:HA2	1:1:728:TYR:HE2	1.76	0.50
1:1:610:SER:HB3	1:1:1245:PRO:HG2	1.94	0.50
1:1:627:GLN:CD	1:1:991:GLN:HB2	2.32	0.50
1:1:199:ALA:HB1	1:1:501:LEU:HD22	1.94	0.50
3:H:61:THR:O	3:H:78:LEU:N	2.44	0.50
1:1:407:TRP:CG	1:1:480:ILE:HD12	2.47	0.49
2:L:117:VAL:HG22	2:L:138:LEU:HG	1.93	0.49
1:1:1160:ALA:O	1:1:1163:ARG:NH1	2.43	0.49
1:1:1362:ASP:OD1	1:1:1362:ASP:N	2.41	0.49
1:1:275:ARG:HA	1:1:656:PRO:HG3	1.94	0.49
1:1:759:ALA:HB1	1:1:764[A]:GLU:HB3	1.94	0.49
1:1:632:TYR:CD2	1:1:1245:PRO:HD2	2.47	0.49
1:1:1123:THR:O	1:1:1137:LEU:HA	2.13	0.49
1:1:402:ASN:ND2	1:1:538:THR:OG1	2.44	0.49
1:1:413:ASN:HA	1:1:758:PHE:CZ	2.48	0.49
1:1:1012:GLY:O	1:1:1017:LYS:NZ	2.41	0.49
1:1:1302:LEU:HD22	1:1:1331:VAL:HG22	1.93	0.49
1:1:66:LEU:HD21	1:1:125:THR:HB	1.95	0.49
1:1:132:ASP:HB3	1:1:138:LEU:HD11	1.95	0.49
1:1:415:HIS:HB3	1:1:418:TRP:CE2	2.47	0.49
1:1:611:ASN:HB3	1:1:630:THR:HB	1.95	0.49
1:1:673:VAL:HG22	1:1:942:ILE:HD12	1.94	0.49
1:1:677:PHE:CZ	1:1:942:ILE:HD11	2.48	0.49
1:1:1161:ALA:O	1:1:1178:ASP:N	2.24	0.49
1:1:1249:THR:H	1:1:1252:ASP:HB2	1.77	0.49
3:H:80:LEU:HB3	3:H:112:VAL:HG11	1.94	0.49
1:1:411:LYS:HD3	1:1:450:ASP:O	2.13	0.49
1:1:669:PRO:HD2	1:1:965:TYR:OH	2.12	0.49
1:1:675:ASP:HA	1:1:679:LYS:HB2	1.94	0.49
1:1:1334:TRP:CH2	1:1:1364:VAL:HA	2.48	0.49
3:H:194:VAL:H	3:H:210:LYS:HZ2	1.60	0.49
1:1:557:LEU:HD21	1:1:801:LEU:HD22	1.94	0.49
1:1:408:ARG:HA	1:1:479:PRO:HB3	1.94	0.49
2:L:91:PHE:CE1	2:L:98:TRP:HB3	2.46	0.49
3:H:45:ILE:HD12	3:H:52:THR:HG22	1.95	0.49
1:1:204:PRO:HD2	1:1:488:PHE:CZ	2.47	0.48
1:1:584:ARG:HH11	1:1:584:ARG:HG2	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:691:LYS:H	1:1:766:PHE:HZ	1.60	0.48
1:1:210:TYR:CD2	1:1:213:LEU:HD12	2.48	0.48
1:1:305:LEU:HD11	1:1:763:TYR:HB2	1.96	0.48
1:1:434:ASN:N	1:1:725:GLU:OE2	2.32	0.48
1:1:441:TRP:CH2	1:1:573:ARG:HD2	2.49	0.48
1:1:523:VAL:HG23	1:1:542:TYR:HE1	1.79	0.48
1:1:978:TRP:O	1:1:985:THR:OG1	2.32	0.48
1:1:1024:LYS:HB2	1:1:1036:LYS:HB3	1.95	0.48
1:1:1338:GLN:HG3	1:1:1360:GLY:HA2	1.95	0.48
1:1:612:LEU:HB3	1:1:1213:GLN:CB	2.43	0.48
1:1:667:ASP:HB3	1:1:673:VAL:HG11	1.95	0.48
1:1:1025[B]:TRP:NE1	1:1:1061:THR:HG21	2.28	0.48
1:1:1477:PHE:CG	3:H:56:GLN:HG2	2.49	0.48
2:L:135:VAL:HG12	2:L:180:THR:HG23	1.95	0.48
3:H:18:ALA:HB3	3:H:71:SER:HG	1.79	0.48
1:1:220:PRO:HB3	1:1:331:ASP:HB3	1.96	0.48
1:1:407:TRP:HB3	1:1:480:ILE:HB	1.94	0.48
1:1:487:TYR:O	1:1:491:ILE:HG12	2.14	0.48
1:1:821:HIS:CD2	1:1:852:PRO:HD3	2.48	0.48
1:1:133:LEU:CD2	1:1:1499:LEU:HB3	2.43	0.48
1:1:897:GLY:HA2	1:1:1239:TYR:CD2	2.48	0.48
1:1:1008:VAL:HG23	1:1:1258:LEU:HD11	1.95	0.48
1:1:1010:ARG:HB2	1:1:1018:PHE:HB2	1.95	0.48
1:1:446:GLN:HA	1:1:449:ALA:HB2	1.95	0.48
1:1:359:THR:OG1	1:1:481:ALA:HB1	2.14	0.48
1:1:490:ASN:O	1:1:490:ASN:ND2	2.44	0.48
1:1:528:TYR:CD2	1:1:535:ALA:HB2	2.49	0.48
1:1:629:PHE:CE2	1:1:631:PRO:HG3	2.49	0.48
1:1:828:THR:HA	1:1:1027:TYR:H	1.79	0.48
1:1:1432:VAL:HG11	3:H:100:LEU:HD21	1.95	0.48
1:1:560:LEU:O	1:1:713:LEU:N	2.46	0.48
2:L:93:GLY:HA3	3:H:100:LEU:CD1	2.44	0.48
1:1:87:GLY:HA2	1:1:133:LEU:HA	1.95	0.47
3:H:144:LYS:HD2	3:H:177:THR:HG21	1.95	0.47
1:1:277:GLY:HA2	1:1:281:ASP:HB3	1.96	0.47
1:1:432:PHE:O	1:1:726:ASN:ND2	2.47	0.47
1:1:433:PHE:HE2	1:1:441:TRP:HB2	1.79	0.47
3:H:126:ALA:O	3:H:214:ARG:NH2	2.48	0.47
1:1:86:PRO:HG3	1:1:1500:PRO:HG3	1.95	0.47
1:1:419:ASP:OD2	1:1:423:ARG:HD2	2.14	0.47
1:1:243:ASN:HB3	1:1:606:ASP:HA	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:428:GLN:NE2	4:1:1650:HOH:O	2.40	0.47
1:1:631:PRO:HA	1:1:634:TRP:CD2	2.49	0.47
1:1:678:ILE:O	1:1:682:GLU:N	2.48	0.47
1:1:901:ASP:OD2	1:1:1235:ASN:HB2	2.14	0.47
1:1:494:LEU:HB3	1:1:501:LEU:HD11	1.95	0.47
1:1:549:MET:HG2	1:1:787:LEU:HD22	1.95	0.47
1:1:1419:ARG:HH22	1:1:1440:TYR:HE1	1.63	0.47
2:L:119:ILE:HD11	2:L:209:LYS:HB3	1.97	0.47
3:H:125:LEU:HD11	3:H:142:LEU:HB2	1.97	0.47
1:1:402:ASN:HB2	1:1:539:GLY:O	2.14	0.47
1:1:117:GLU:HB2	1:1:369:TRP:CH2	2.49	0.47
1:1:399:MET:HA	1:1:539:GLY:O	2.15	0.47
1:1:403:TYR:OH	1:1:521:ILE:HG21	2.14	0.47
1:1:566:ARG:HH22	1:1:768:GLN:HB2	1.79	0.47
1:1:599:THR:HA	1:1:614:LEU:HD11	1.97	0.47
1:1:896:ALA:HB3	1:1:1049:LEU:HD13	1.96	0.47
1:1:1408:LYS:NZ	1:1:1503:THR:O	2.43	0.47
1:1:1452:ASN:HD22	1:1:1453:PRO:HD2	1.79	0.47
1:1:159:ILE:HG13	1:1:377:TYR:CZ	2.50	0.47
1:1:490:ASN:ND2	1:1:522:GLY:O	2.38	0.47
1:1:587:VAL:HG11	1:1:1113:VAL:HG21	1.96	0.47
1:1:1149:GLN:HG2	1:1:1288:LEU:HD21	1.96	0.47
1:1:63:ASN:O	1:1:129:ARG:NH2	2.47	0.47
1:1:84:GLU:HG3	1:1:1473:ARG:HH22	1.79	0.47
1:1:310:LEU:HD13	1:1:418:TRP:CD1	2.48	0.47
1:1:642:ILE:HG13	4:1:1698:HOH:O	2.15	0.47
2:L:212:ASN:OD1	2:L:213:ARG:N	2.48	0.47
1:1:1407:VAL:HG13	1:1:1445:ILE:HD12	1.96	0.47
2:L:117:VAL:HB	2:L:209:LYS:HG3	1.96	0.47
1:1:74:THR:HG21	1:1:493:ASN:N	2.31	0.46
1:1:113:PRO:HA	1:1:356:TRP:CH2	2.50	0.46
1:1:405:PRO:HD3	1:1:752:TYR:CG	2.50	0.46
1:1:563:ASN:ND2	1:1:719:SER:OG	2.37	0.46
1:1:566:ARG:HH11	1:1:755:GLU:HA	1.80	0.46
1:1:742:LEU:O	1:1:746:LEU:N	2.48	0.46
1:1:1098:TRP:CZ2	1:1:1153:ILE:HA	2.50	0.46
1:1:71:TYR:CG	1:1:186:VAL:HB	2.50	0.46
1:1:631:PRO:HA	1:1:634:TRP:CE2	2.50	0.46
3:H:-4:VAL:HG11	3:H:92:ARG:HD3	1.97	0.46
1:1:167:PHE:CE2	1:1:377:TYR:HB3	2.51	0.46
1:1:240[B]:LYS:O	1:1:619:GLN:NE2	2.44	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:420:TRP:CD1	1:1:454:THR:HG21	2.50	0.46
1:1:1454[B]:LYS:HE2	3:H:60:GLY:HA3	1.97	0.46
2:L:39:LEU:HB2	2:L:49:LEU:HD11	1.98	0.46
2:L:151:LYS:HB2	2:L:195:THR:HG22	1.96	0.46
1:1:78:SER:HA	1:1:90:ALA:HA	1.98	0.46
1:1:504:PHE:HA	1:1:523:VAL:HG22	1.96	0.46
1:1:544:LEU:HG	1:1:783:PHE:CG	2.50	0.46
1:1:546:PHE:HB3	1:1:549:MET:SD	2.55	0.46
1:1:503:VAL:HB	1:1:524:PHE:HB2	1.97	0.46
1:1:622:LEU:HD22	1:1:1212:PHE:HA	1.96	0.46
1:1:1039:LEU:HD12	1:1:1040:PRO:HD2	1.98	0.46
2:L:57:PHE:CZ	3:H:102:ASP:HB2	2.50	0.46
1:1:239:LEU:HD11	1:1:615:VAL:HG12	1.98	0.46
1:1:287:LEU:HB2	1:1:693:ILE:HB	1.96	0.46
1:1:396:PRO:O	1:1:400:THR:HG23	2.15	0.46
1:1:563:ASN:O	1:1:711:ASN:HB2	2.16	0.46
1:1:240[A]:LYS:O	1:1:619:GLN:NE2	2.44	0.46
1:1:743:LEU:HA	1:1:746:LEU:HD12	1.96	0.46
2:L:87:VAL:HA	2:L:105:LYS:HA	1.97	0.46
1:1:131:TYR:CZ	1:1:1385:VAL:HG21	2.51	0.46
1:1:807:TYR:OH	1:1:1360:GLY:HA3	2.16	0.46
1:1:1144:ALA:O	1:1:1150:ARG:HB2	2.15	0.46
1:1:525:ARG:CZ	1:1:540:TRP:HZ2	2.28	0.46
1:1:640:LEU:HB3	1:1:644:ALA:HB3	1.97	0.46
1:1:854:PHE:CD1	1:1:995:LEU:HD13	2.51	0.46
1:1:1176:VAL:HB	1:1:1384:ILE:HD11	1.98	0.46
1:1:1185:ASP:HA	1:1:1188:GLN:HG2	1.98	0.46
1:1:113:PRO:HA	1:1:356:TRP:CZ2	2.51	0.45
1:1:525:ARG:NH1	1:1:746:LEU:O	2.44	0.45
1:1:711:ASN:OD1	1:1:711:ASN:N	2.48	0.45
1:1:810:TRP:CZ3	1:1:1057:TYR:HA	2.51	0.45
1:1:1150:ARG:HD2	1:1:1275:PHE:CD2	2.51	0.45
1:1:1174:GLU:HG2	1:1:1291:THR:HG23	1.97	0.45
1:1:134:ALA:HB2	1:1:1402:THR:HG23	1.98	0.45
1:1:317:ARG:HG2	1:1:425:VAL:HA	1.98	0.45
1:1:400:THR:HA	1:1:403:TYR:CG	2.51	0.45
1:1:862:LYS:HE3	1:1:893:TRP:NE1	2.30	0.45
1:1:1055:GLU:OE2	1:1:1062:ARG:N	2.47	0.45
1:1:1464:ASP:O	1:1:1468:GLN:CA	2.64	0.45
3:H:54:TYR:CE2	3:H:64:LEU:HD13	2.51	0.45
1:1:554:THR:HA	1:1:790:PHE:O	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:573:ARG:HH21	1:1:726:ASN:HB3	1.82	0.45
1:1:620:GLY:HA2	1:1:728:TYR:CE2	2.51	0.45
1:1:629:PHE:HA	1:1:702:TRP:HE1	1.82	0.45
1:1:664:ASP:CG	1:1:899:ARG:HH12	2.20	0.45
1:1:755:GLU:OE1	1:1:775:THR:OG1	2.34	0.45
2:L:26:ILE:HA	2:L:95:HIS:CE1	2.52	0.45
1:1:730:PRO:HD2	1:1:1100:PRO:HG2	1.99	0.45
1:1:1214:VAL:HG22	1:1:1216:VAL:HG22	1.98	0.45
3:H:83:GLU:H	3:H:83:GLU:CD	2.19	0.45
1:1:244:ALA:N	1:1:605:TYR:O	2.50	0.45
1:1:507:ASN:HB2	1:1:1101:GLN:O	2.16	0.45
1:1:573:ARG:NH2	1:1:726:ASN:HB3	2.31	0.45
1:1:595:GLY:HA3	1:1:711:ASN:OD1	2.17	0.45
1:1:854:PHE:HE1	1:1:995:LEU:HD22	1.82	0.45
1:1:998:ARG:HA	1:1:1001:LEU:HD12	1.98	0.45
1:1:1416:ASP:HB2	1:1:1418:ASN:ND2	2.32	0.45
2:L:171:LYS:H	2:L:171:LYS:HG2	1.57	0.45
3:H:144:LYS:HB3	3:H:144:LYS:HE2	1.64	0.45
1:1:455:GLY:N	1:1:477:SER:HB3	2.31	0.45
1:1:1141:GLY:O	1:1:1369:LEU:N	2.40	0.45
2:L:185:LYS:O	2:L:189:GLU:HG2	2.16	0.45
3:H:-4:VAL:HG22	3:H:21:TYR:CD1	2.52	0.45
3:H:169:ALA:HB1	3:H:177:THR:H	1.81	0.45
1:1:71:TYR:CE1	1:1:510:VAL:HG21	2.51	0.45
1:1:207:VAL:O	1:1:510:VAL:HG22	2.16	0.45
1:1:707:TYR:HA	1:1:712:LYS:HD3	1.99	0.45
1:1:1097:ALA:HB3	1:1:1158:PRO:HD3	1.99	0.45
1:1:1211:ALA:O	1:1:1213:GLN:NE2	2.49	0.45
2:L:157:ARG:HH22	2:L:183:LEU:HD11	1.81	0.45
1:1:794:PHE:HB3	1:1:796:LEU:HG	1.99	0.45
1:1:1152:LEU:HD21	1:1:1177:TRP:CD2	2.51	0.45
1:1:202:LEU:O	1:1:371:ALA:CA	2.61	0.45
1:1:235:ALA:HB2	1:1:241:VAL:HG12	1.99	0.45
1:1:504:PHE:CD2	1:1:588:LEU:HD13	2.50	0.45
1:1:647:SER:HB3	1:1:654:ASN:HA	1.99	0.45
1:1:1262:LEU:HD23	1:1:1262:LEU:HA	1.68	0.45
1:1:1454[B]:LYS:O	3:H:56:GLN:NE2	2.38	0.45
1:1:594:MET:HG3	1:1:731:ASN:OD1	2.17	0.44
1:1:799:SER:O	1:1:803:GLN:HG2	2.17	0.44
1:1:817:TYR:O	1:1:853:THR:OG1	2.15	0.44
1:1:978:TRP:H	1:1:985:THR:HG23	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1058:PHE:HB3	1:1:1074:PRO:HD2	1.99	0.44
2:L:112:ASP:OD1	2:L:112:ASP:N	2.50	0.44
1:1:247:ASP:HB3	1:1:250:LYS:HB2	1.98	0.44
1:1:253:GLU:O	1:1:312:ASN:HB3	2.18	0.44
1:1:542:TYR:HB2	1:1:572:PRO:O	2.17	0.44
3:H:29:ASN:OD1	3:H:29:ASN:N	2.50	0.44
1:1:482:LEU:HD12	1:1:482:LEU:HA	1.72	0.44
1:1:1140:THR:HG21	1:1:1292:THR:HA	2.00	0.44
1:1:148:PRO:HB3	1:1:388:ILE:HD12	1.98	0.44
1:1:598:ALA:HA	1:1:627:GLN:HA	2.00	0.44
2:L:52:LYS:HB3	2:L:55:ASN:OD1	2.17	0.44
1:1:134:ALA:O	1:1:1400:ALA:N	2.51	0.44
1:1:629:PHE:CZ	1:1:631:PRO:HG3	2.52	0.44
1:1:862:LYS:HD2	1:1:891:GLN:CG	2.46	0.44
1:1:997:LEU:HD21	1:1:1100:PRO:HB3	1.98	0.44
1:1:1126:ASP:O	1:1:1130:PRO:HA	2.17	0.44
1:1:1165:SER:HA	1:1:1175:SER:HA	1.99	0.44
1:1:1214:VAL:HB	1:1:1254:LEU:HG	2.00	0.44
1:1:1432:VAL:HG21	3:H:100:LEU:HD21	1.99	0.44
1:1:151:PRO:HG3	1:1:377:TYR:CD2	2.52	0.44
1:1:284:VAL:HG12	1:1:695:PRO:HG2	1.99	0.44
1:1:410:PRO:HG3	1:1:480:ILE:HG13	2.00	0.44
1:1:594:MET:SD	1:1:732:SER:HB2	2.57	0.44
1:1:166:GLY:HA3	1:1:384:ASN:HB2	1.99	0.44
1:1:285:LYS:O	1:1:695:PRO:HG3	2.17	0.44
1:1:589:ALA:HB3	1:1:1106:LEU:HD13	1.99	0.44
1:1:656:PRO:HG2	1:1:695:PRO:HA	2.00	0.44
1:1:747:PRO:HG2	1:1:779:ASN:HB2	2.00	0.44
1:1:1418:ASN:O	1:1:1422:THR:N	2.51	0.44
2:L:32:ALA:HB1	2:L:52:LYS:HD2	2.00	0.44
3:H:136:MET:HE2	3:H:136:MET:HA	2.00	0.44
1:1:206:SER:HB3	1:1:356:TRP:CZ3	2.52	0.44
1:1:357:LEU:HD12	1:1:484:PHE:CD2	2.53	0.44
1:1:515:HIS:NE2	1:1:1204:PRO:O	2.50	0.44
1:1:517:ALA:HB2	1:1:623:ARG:HH21	1.82	0.44
1:1:560:LEU:HD13	1:1:562:PHE:HE2	1.82	0.44
1:1:1139:LEU:HB2	1:1:1366:VAL:HG13	1.99	0.44
1:1:69:TRP:CH2	1:1:186:VAL:HG12	2.53	0.44
1:1:796:LEU:HD21	1:1:1135:LEU:HA	1.98	0.44
1:1:974:PRO:HB3	1:1:1046:ASN:HA	2.00	0.44
1:1:1407:VAL:HA	1:1:1446:ASP:O	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1418:ASN:O	1:1:1422:THR:HG23	2.17	0.44
3:H:214:ARG:HH12	3:H:216:CYS:HB3	1.82	0.44
1:1:254:LYS:HA	1:1:314:PRO:HG3	2.00	0.43
1:1:414:HIS:ND1	1:1:569:GLU:OE2	2.51	0.43
1:1:441:TRP:HE1	1:1:521:ILE:HB	1.83	0.43
1:1:604:LEU:HD12	1:1:607:GLU:HG3	2.00	0.43
1:1:811:ILE:HD11	1:1:1142:LEU:H	1.82	0.43
2:L:39:LEU:HD13	2:L:88:TYR:CE1	2.53	0.43
1:1:120:LEU:HD13	1:1:209:TYR:HD2	1.83	0.43
1:1:611:ASN:HA	1:1:1042:TYR:OH	2.18	0.43
1:1:801:LEU:O	1:1:805:LEU:HG	2.18	0.43
1:1:915:PHE:CE1	1:1:919:THR:HG21	2.53	0.43
1:1:1137:LEU:HD23	1:1:1139:LEU:HD21	2.00	0.43
1:1:1254:LEU:HD23	1:1:1254:LEU:HA	1.79	0.43
2:L:40:GLN:NE2	3:H:89:TYR:OH	2.50	0.43
2:L:150:TRP:HB3	2:L:181:LEU:HD11	1.99	0.43
3:H:30:TRP:CD1	3:H:64:LEU:HG	2.53	0.43
1:1:1467:GLU:OE2	1:1:1469:SER:HB3	2.19	0.43
1:1:407:TRP:CD2	1:1:480:ILE:HD12	2.54	0.43
1:1:415:HIS:HB2	1:1:419:ASP:CB	2.45	0.43
1:1:604:LEU:HA	1:1:658:TYR:OH	2.18	0.43
1:1:613:ASN:ND2	1:1:1213:GLN:O	2.47	0.43
1:1:1023:GLN:HG2	1:1:1025[A]:TRP:CZ2	2.53	0.43
1:1:1102:ASP:HB3	1:1:1159:TRP:CE3	2.53	0.43
1:1:275:ARG:NH1	1:1:695:PRO:O	2.38	0.43
1:1:668:ARG:HG3	1:1:963:THR:O	2.19	0.43
1:1:750:VAL:HG22	1:1:783:PHE:CZ	2.54	0.43
1:1:861:LEU:HD12	1:1:900:ASN:CG	2.39	0.43
1:1:1008:VAL:HG11	1:1:1076:ILE:HG22	2.00	0.43
1:1:1285:PRO:HG3	1:1:1376:LYS:HB3	2.01	0.43
2:L:40:GLN:NE2	3:H:33:GLN:OE1	2.37	0.43
3:H:145:GLY:HA2	3:H:175:LEU:HG	2.01	0.43
1:1:86:PRO:HB2	1:1:133:LEU:HB2	1.99	0.43
1:1:125:THR:HA	1:1:205:ARG:HH12	1.84	0.43
1:1:141:LEU:HD23	1:1:141:LEU:HA	1.76	0.43
1:1:402:ASN:HD21	1:1:538:THR:HG1	1.67	0.43
1:1:403:TYR:CE2	1:1:480:ILE:HG22	2.54	0.43
1:1:554:THR:HB	1:1:790:PHE:CE1	2.53	0.43
1:1:560:LEU:HD13	1:1:792:THR:HG21	1.99	0.43
1:1:827:ILE:HD11	1:1:1025[B]:TRP:CZ3	2.54	0.43
1:1:894:THR:HA	1:1:978:TRP:CH2	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1514:SER:O	1:1:1516:PHE:N	2.51	0.43
2:L:137:PHE:CZ	3:H:179:SER:HB2	2.53	0.43
2:L:189:GLU:HA	2:L:213:ARG:NH1	2.34	0.43
1:1:128:LEU:HD23	1:1:128:LEU:HA	1.78	0.43
3:H:26:TYR:HB2	3:H:92:ARG:HG3	2.00	0.43
1:1:429:THR:HG22	1:1:436:ARG:HB3	2.01	0.43
1:1:493:ASN:HB3	1:1:578:GLY:HA2	2.00	0.43
1:1:603:LEU:O	4:1:1602:HOH:O	2.22	0.43
1:1:941:ASN:HA	1:1:962:ALA:HA	2.00	0.43
1:1:1112:THR:HB	1:1:1125:THR:HA	2.01	0.43
1:1:1259:LYS:HB2	1:1:1259:LYS:HE2	1.88	0.43
1:1:1464:ASP:O	1:1:1468:GLN:HA	2.19	0.43
2:L:52:LYS:HD3	3:H:98:ASP:HB2	1.99	0.43
3:H:29:ASN:HA	3:H:44:LEU:HA	2.01	0.43
3:H:32:LYS:HD2	3:H:58:PHE:CE2	2.54	0.43
1:1:108:GLN:HE22	1:1:214:GLN:HB2	1.84	0.43
1:1:193:SER:HA	2:L:25:THR:HG21	2.00	0.43
1:1:587:VAL:HG11	1:1:1113:VAL:HG11	2.01	0.43
1:1:629:PHE:HZ	1:1:972:LEU:O	2.02	0.43
1:1:634:TRP:HZ2	1:1:702:TRP:CE2	2.37	0.43
1:1:1150:ARG:HA	1:1:1153:ILE:HD12	1.99	0.43
2:L:37:TRP:HB3	2:L:75:LEU:HD22	2.00	0.43
1:1:1018:PHE:HZ	1:1:1023:GLN:HB2	1.83	0.43
1:1:1038:ASN:C	1:1:1051:PRO:HG3	2.39	0.43
2:L:126:GLN:O	2:L:129:SER:OG	2.32	0.43
1:1:210:TYR:HH	1:1:215:ARG:HH11	1.66	0.42
1:1:377:TYR:HB2	1:1:387:ALA:HB3	2.00	0.42
1:1:759:ALA:HB1	1:1:764[B]:GLU:HB3	2.01	0.42
1:1:939:GLN:O	1:1:954:GLY:N	2.52	0.42
1:1:990:ALA:O	1:1:994:GLN:HG3	2.18	0.42
2:L:48:LEU:HB2	3:H:102:ASP:HA	2.01	0.42
3:H:106:GLN:OE1	3:H:106:GLN:N	2.47	0.42
1:1:627:GLN:NE2	1:1:988:ASN:OD1	2.38	0.42
1:1:811:ILE:HB	1:1:1120:TRP:NE1	2.32	0.42
1:1:1360:GLY:O	1:1:1364:VAL:N	2.49	0.42
2:L:121:PRO:HB3	2:L:211:PHE:CE2	2.55	0.42
2:L:162:LEU:HD23	2:L:162:LEU:HA	1.85	0.42
1:1:713:LEU:HD23	1:1:713:LEU:HA	1.73	0.42
2:L:39:LEU:HB3	2:L:49:LEU:HD21	2.00	0.42
2:L:173:SER:O	2:L:173:SER:OG	2.28	0.42
3:H:-3:GLN:HA	3:H:-3:GLN:NE2	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:550:VAL:HG21	1:1:552:LYS:HE3	2.02	0.42
1:1:810:TRP:CZ2	1:1:812:GLY:HA3	2.54	0.42
1:1:968:LEU:HB3	1:1:984:PHE:CE2	2.54	0.42
2:L:148:VAL:HA	2:L:198:ALA:HA	2.01	0.42
1:1:414:HIS:N	1:1:569:GLU:OE2	2.22	0.42
1:1:579:ALA:HB1	1:1:586:LEU:HD11	2.00	0.42
1:1:997:LEU:O	1:1:1001:LEU:HG	2.20	0.42
1:1:1042:TYR:CZ	1:1:1245:PRO:HB3	2.54	0.42
1:1:1106:LEU:HD12	1:1:1114:SER:O	2.20	0.42
1:1:320:GLU:N	1:1:323:GLN:O	2.53	0.42
1:1:627:GLN:O	1:1:991:GLN:NE2	2.52	0.42
1:1:1206:HIS:CD2	1:1:1264:PRO:HB2	2.54	0.42
2:L:35:LEU:HG	2:L:73:PHE:CG	2.55	0.42
3:H:41:TRP:CZ2	3:H:44:LEU:HD23	2.55	0.42
3:H:214:ARG:NH1	3:H:216:CYS:HB3	2.34	0.42
1:1:75:SER:HB2	1:1:1105:ASN:H	1.85	0.42
1:1:415:HIS:HB3	1:1:418:TRP:NE1	2.34	0.42
1:1:429:THR:HB	1:1:434:ASN:CB	2.50	0.42
1:1:491:ILE:HD13	1:1:491:ILE:HA	1.80	0.42
2:L:12:LEU:HD13	2:L:80:VAL:O	2.18	0.42
1:1:332:PHE:HZ	1:1:436:ARG:HG3	1.83	0.42
1:1:1009:ASN:HD22	1:1:1087:SER:HB2	1.84	0.42
2:L:199:THR:HG23	2:L:206:PRO:HG3	2.00	0.42
1:1:538:THR:OG1	1:1:748:ASP:O	2.33	0.42
1:1:551:ASN:ND2	1:1:713:LEU:O	2.53	0.42
1:1:584:ARG:NH1	1:1:584:ARG:HG2	2.34	0.42
1:1:811:ILE:HG12	1:1:1153:ILE:HG12	2.01	0.42
1:1:1025[B]:TRP:CD1	1:1:1025[B]:TRP:N	2.87	0.42
1:1:1178:ASP:HB2	1:1:1381:VAL:O	2.19	0.42
2:L:77:ILE:HD12	2:L:106:LEU:HD11	2.00	0.42
2:L:149:LYS:HE3	2:L:149:LYS:HB3	1.91	0.42
1:1:246:ALA:HA	1:1:315:ILE:HD13	2.02	0.42
1:1:853:THR:O	1:1:1049:LEU:N	2.50	0.42
1:1:1074:PRO:HB3	1:1:1270:LYS:HB3	2.02	0.42
1:1:1407:VAL:HG21	1:1:1451:VAL:HG11	2.02	0.42
3:H:54:TYR:CD1	3:H:59:ARG:HD2	2.55	0.42
1:1:407:TRP:HA	1:1:432:PHE:HZ	1.86	0.41
1:1:804:VAL:O	1:1:808:VAL:HG23	2.20	0.41
1:1:810:TRP:HH2	1:1:1271:LEU:HD13	1.84	0.41
1:1:1420:LEU:HD23	1:1:1421:PHE:CE2	2.55	0.41
1:1:436:ARG:HG2	1:1:619:GLN:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:742:LEU:O	1:1:746:LEU:HG	2.19	0.41
1:1:69:TRP:CD1	1:1:93:ARG:HB3	2.56	0.41
1:1:318:SER:O	1:1:325:VAL:HG12	2.19	0.41
1:1:597:THR:HA	1:1:600:VAL:HG23	2.02	0.41
1:1:998:ARG:NH1	4:1:1737:HOH:O	2.52	0.41
1:1:1444:PHE:CZ	1:1:1470:LEU:HD23	2.55	0.41
1:1:220:PRO:O	1:1:238:GLY:HA3	2.21	0.41
1:1:407:TRP:CZ2	1:1:571:VAL:HG22	2.55	0.41
1:1:423:ARG:HB3	1:1:428:GLN:HG2	2.03	0.41
1:1:636:ASN:OD1	1:1:658:TYR:HA	2.20	0.41
1:1:767:ASN:O	1:1:769:LYS:NZ	2.53	0.41
1:1:1039:LEU:HA	1:1:1051:PRO:HD3	2.01	0.41
1:1:1098:TRP:HZ2	1:1:1153:ILE:HA	1.84	0.41
1:1:1411:SER:OG	1:1:1414:GLN:HG2	2.21	0.41
3:H:6:VAL:HG11	3:H:80:LEU:HD13	2.01	0.41
1:1:549:MET:HA	1:1:553:GLN:OE1	2.20	0.41
1:1:665:TRP:HE1	1:1:933:ASN:HB3	1.85	0.41
1:1:811:ILE:O	1:1:1153:ILE:HD13	2.20	0.41
1:1:1210:LEU:HB2	1:1:1212:PHE:CE2	2.56	0.41
2:L:189:GLU:HA	2:L:213:ARG:HH12	1.85	0.41
3:H:81:THR:O	3:H:112:VAL:HG21	2.20	0.41
1:1:1113:VAL:CG2	1:1:1124:PHE:HB2	2.48	0.41
1:1:1457:ARG:NH1	2:L:96:VAL:HB	2.36	0.41
3:H:67:ASP:OD1	3:H:69:SER:OG	2.30	0.41
1:1:141:LEU:HD12	1:1:376:LEU:HD21	2.03	0.41
1:1:210:TYR:HE2	1:1:356:TRP:HB2	1.85	0.41
1:1:327:LEU:HD21	1:1:619:GLN:HB2	2.03	0.41
1:1:591:THR:HG21	1:1:1117:LEU:HD13	2.01	0.41
1:1:915:PHE:HA	1:1:968:LEU:HD11	2.02	0.41
1:1:1255:ASP:HB2	1:1:1258:LEU:HB2	2.01	0.41
2:L:137:PHE:CE1	3:H:179:SER:HB2	2.55	0.41
3:H:193:THR:HA	3:H:210:LYS:HZ3	1.85	0.41
1:1:363:HIS:O	1:1:366:LEU:HG	2.21	0.41
1:1:385:ARG:HE	1:1:385:ARG:HB2	1.60	0.41
1:1:409:THR:HB	1:1:454:THR:O	2.20	0.41
1:1:731:ASN:HB2	1:1:994:GLN:OE1	2.20	0.41
3:H:108:THR:HG22	3:H:110:VAL:HG23	2.03	0.41
1:1:178:ASN:HA	1:1:181:LYS:NZ	2.36	0.41
1:1:198:PHE:HE2	1:1:378:ASP:HB3	1.83	0.41
1:1:310:LEU:HD22	1:1:418:TRP:HB3	2.02	0.41
1:1:372:SER:HG	1:1:393:HIS:HD1	1.64	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:471:GLU:OE2	1:1:471:GLU:HA	2.21	0.41
1:1:638:PRO:HD2	1:1:709:TRP:CE3	2.56	0.41
1:1:675:ASP:HA	1:1:679:LYS:CB	2.51	0.41
1:1:677:PHE:O	1:1:694:TYR:HB3	2.20	0.41
1:1:798:GLY:O	1:1:992:ARG:HD3	2.21	0.41
1:1:803:GLN:OE1	1:1:1332:SER:HB2	2.21	0.41
1:1:851:LEU:HD22	1:1:859:VAL:HG13	2.02	0.41
1:1:1427:ASP:OD1	1:1:1427:ASP:C	2.59	0.41
1:1:561:PRO:HG2	1:1:594:MET:CB	2.47	0.41
1:1:617:GLN:HE21	1:1:624:GLU:HB3	1.86	0.41
1:1:673:VAL:HG21	1:1:963:THR:HA	2.02	0.41
1:1:1006:VAL:HG23	1:1:1053:LEU:HB3	2.02	0.41
1:1:411:LYS:HG2	1:1:435:PRO:HD2	2.02	0.40
1:1:598:ALA:HB2	1:1:625:ASP:O	2.20	0.40
1:1:1090:THR:HB	1:1:1254:LEU:HD21	2.02	0.40
2:L:188:TYR:O	2:L:213:ARG:NH1	2.45	0.40
1:1:354:ARG:HB3	1:1:354:ARG:HH11	1.85	0.40
1:1:1042:TYR:CD1	1:1:1042:TYR:C	2.95	0.40
1:1:1168:ASN:OD1	1:1:1172[B]:ARG:N	2.50	0.40
2:L:21:ARG:HG3	2:L:21:ARG:NH1	2.29	0.40
3:H:175:LEU:HD12	3:H:175:LEU:HA	1.86	0.40
1:1:159:ILE:HG13	1:1:377:TYR:CE1	2.56	0.40
1:1:369:TRP:HA	1:1:369:TRP:CE3	2.56	0.40
1:1:504:PHE:O	1:1:542:TYR:OH	2.31	0.40
1:1:587:VAL:HG22	1:1:737:ILE:CD1	2.50	0.40
1:1:612:LEU:HB3	1:1:1213:GLN:HB3	2.04	0.40
1:1:708:ASN:HB2	1:1:709:TRP:CE3	2.57	0.40
1:1:869:LEU:HD22	1:1:965:TYR:CD2	2.56	0.40
1:1:1003:SER:HB3	4:1:1669:HOH:O	2.21	0.40
1:1:1210:LEU:HB2	1:1:1212:PHE:CZ	2.56	0.40
1:1:272:SER:HB2	1:1:951:THR:O	2.21	0.40
1:1:406:SER:HB2	1:1:758:PHE:CE2	2.57	0.40
1:1:415:HIS:CB	1:1:419:ASP:HB2	2.48	0.40
1:1:504:PHE:CE2	1:1:588:LEU:HB2	2.56	0.40
1:1:529:ASN:OD1	1:1:529:ASN:N	2.54	0.40
1:1:603:LEU:HD23	1:1:634:TRP:HD1	1.87	0.40
1:1:631:PRO:HB2	1:1:701:MET:HE1	2.03	0.40
1:1:1087:SER:O	1:1:1216:VAL:HA	2.22	0.40
1:1:1502:LEU:H	1:1:1502:LEU:HG	1.60	0.40
2:L:98:TRP:HB2	3:H:41:TRP:CD2	2.57	0.40
1:1:134:ALA:HB1	1:1:1400:ALA:O	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:212:GLN:O	1:1:214:GLN:NE2	2.54	0.40
1:1:500:ALA:HB1	1:1:525:ARG:HD2	2.03	0.40
1:1:547:SER:HB3	1:1:568:PHE:CE1	2.53	0.40
1:1:624:GLU:OE2	1:1:998:ARG:NH1	2.55	0.40
1:1:1082:GLU:HB2	1:1:1083:GLN:NE2	2.37	0.40
1:1:1098:TRP:CH2	1:1:1158:PRO:HB2	2.56	0.40
1:1:1166:TRP:CH2	1:1:1168:ASN:HA	2.57	0.40
1:1:1258:LEU:HD12	1:1:1258:LEU:HA	1.90	0.40
1:1:1433:THR:HB	1:1:1435:LEU:HG	2.04	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	1	1330/1457 (91%)	1252 (94%)	77 (6%)	1 (0%)	48	65
2	L	216/218 (99%)	205 (95%)	11 (5%)	0	100	100
3	H	220/222 (99%)	208 (94%)	11 (5%)	1 (0%)	25	38
All	All	1766/1897 (93%)	1665 (94%)	99 (6%)	2 (0%)	50	65

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	1	957	ILE
3	H	102	ASP

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	1	1141/1215 (94%)	1099 (96%)	42 (4%)	29	48
2	L	194/194 (100%)	170 (88%)	24 (12%)	4	5
3	H	193/193 (100%)	178 (92%)	15 (8%)	10	17
All	All	1528/1602 (95%)	1447 (95%)	81 (5%)	21	33

All (81) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	1	82	THR
1	1	145	LYS
1	1	282	THR
1	1	294	LYS
1	1	304	GLN
1	1	316	LYS
1	1	323	GLN
1	1	351	THR
1	1	490	ASN
1	1	534	SER
1	1	540	TRP
1	1	552	LYS
1	1	559	ASP
1	1	584	ARG
1	1	646	SER
1	1	657	TYR
1	1	688	ASP
1	1	718	LEU
1	1	725	GLU
1	1	765	ARG
1	1	768	GLN
1	1	826	ASP
1	1	891	GLN
1	1	909	ASP
1	1	940	ASP
1	1	943	SER
1	1	1084	ASN
1	1	1087	SER
1	1	1126	ASP
1	1	1169	ARG

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Mol	Chain	Res	Type
1	1	1236	SER
1	1	1253	LYS
1	1	1280	SER
1	1	1297	THR
1	1	1369	LEU
1	1	1401	ASP
1	1	1419	ARG
1	1	1427	ASP
1	1	1452	ASN
1	1	1466	ASN
1	1	1482	ASP
1	1	1498	PHE
2	L	1	MET
2	L	2	THR
2	L	6	LEU
2	L	17	SER
2	L	24	GLN
2	L	51	TYR
2	L	55	ASN
2	L	69	SER
2	L	71	THR
2	L	72	ASP
2	L	91	PHE
2	L	94	SER
2	L	105	LYS
2	L	109	LYS
2	L	112	ASP
2	L	136	CYS
2	L	147	ASN
2	L	157	ARG
2	L	159	ASN
2	L	169	ASP
2	L	174	THR
2	L	177	MET
2	L	179	SER
2	L	213	ARG
3	H	4	GLU
3	H	10	THR
3	H	12	MET
3	H	26	TYR
3	H	29	ASN
3	H	34	SER

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Mol	Chain	Res	Type
3	H	61	THR
3	H	83	GLU
3	H	85	SER
3	H	92	ARG
3	H	116	LYS
3	H	176	TYR
3	H	181	SER
3	H	189	TRP
3	H	214	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (10) such sidechains are listed below:

Mol	Chain	Res	Type
1	1	108	GLN
1	1	415	HIS
1	1	611	ASN
1	1	1046	ASN
1	1	1101	GLN
1	1	1418	ASN
2	L	40	GLN
2	L	214	ASN
3	H	33	GLN
3	H	172	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

There are no ligands in this entry.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

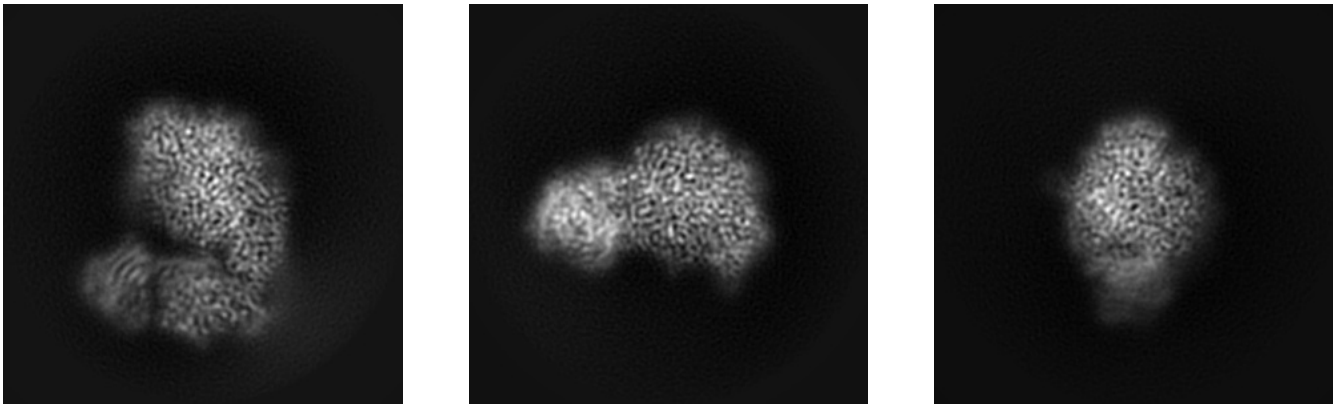
6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-19402. These allow visual inspection of the internal detail of the map and identification of artifacts.

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

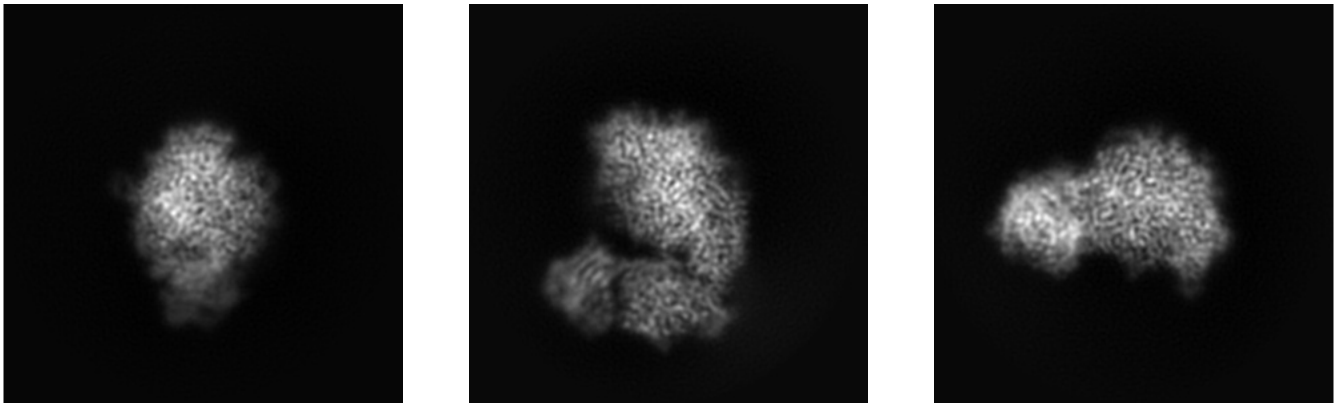
6.1 Orthogonal projections ⓘ

6.1.1 Primary map



X Y Z

6.1.2 Raw map

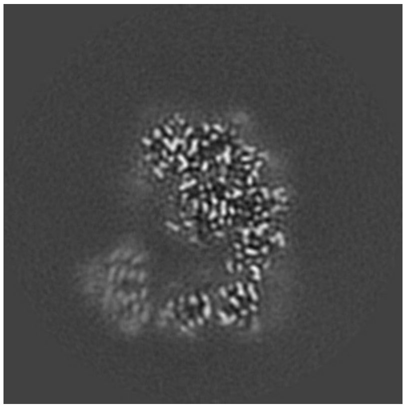


X Y Z

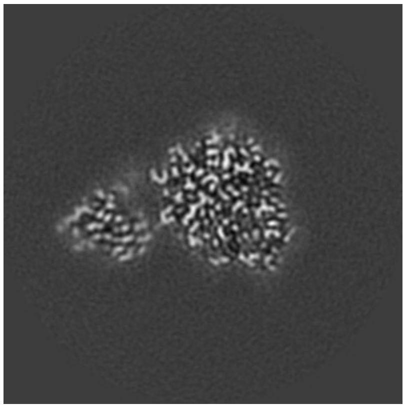
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

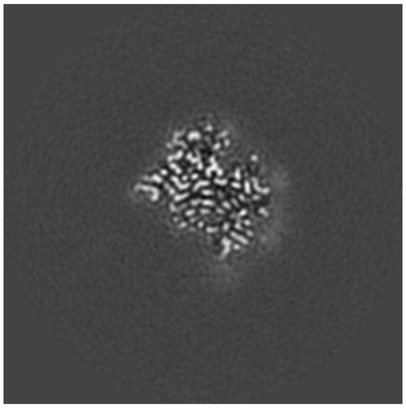
6.2.1 Primary map



X Index: 188

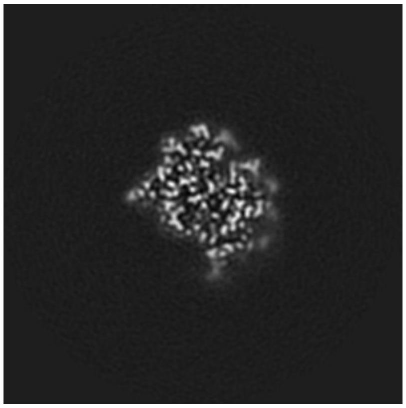


Y Index: 188

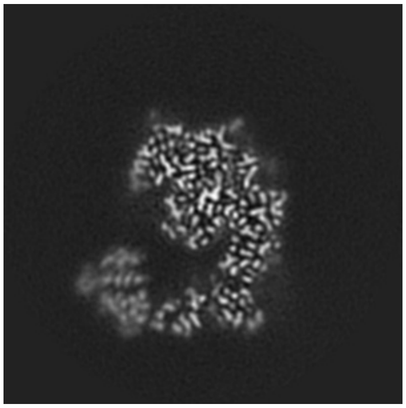


Z Index: 188

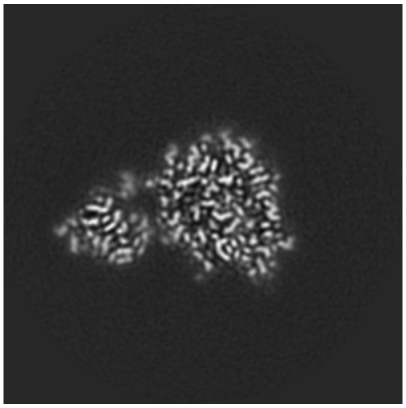
6.2.2 Raw map



X Index: 188



Y Index: 188

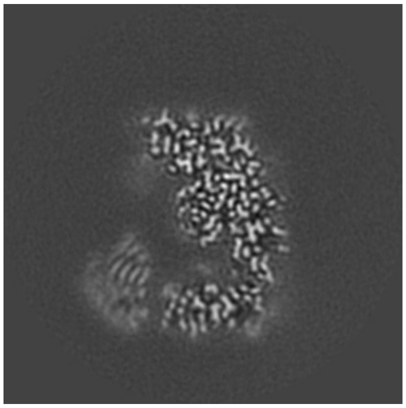


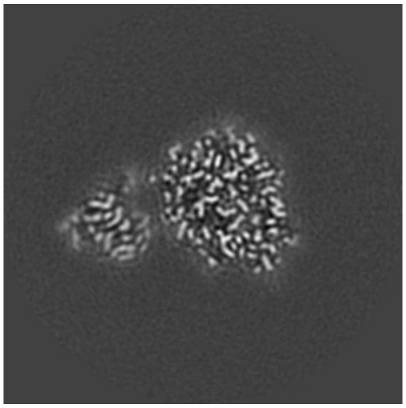
Z Index: 188

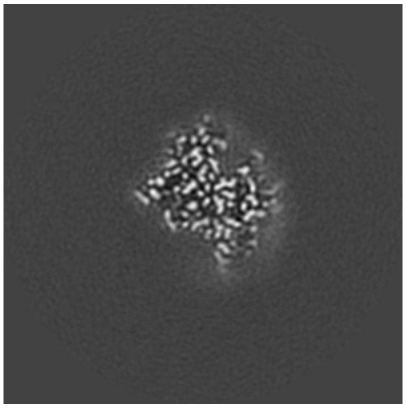
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices

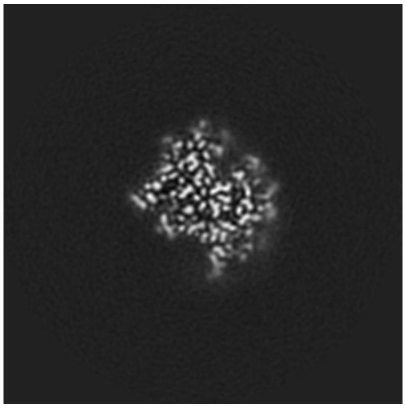
6.3.1 Primary map

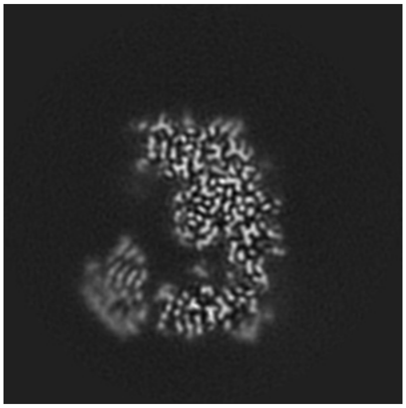

X Index: 180

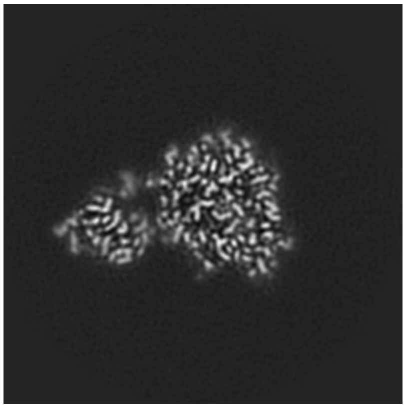

Y Index: 191


Z Index: 196

6.3.2 Raw map


X Index: 192

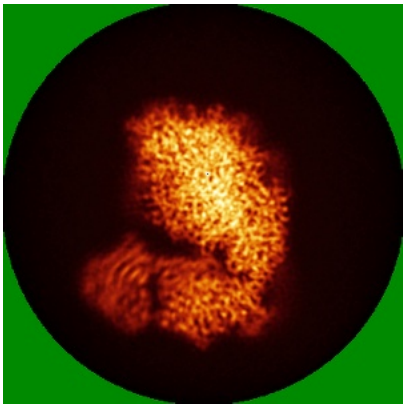

Y Index: 177


Z Index: 187

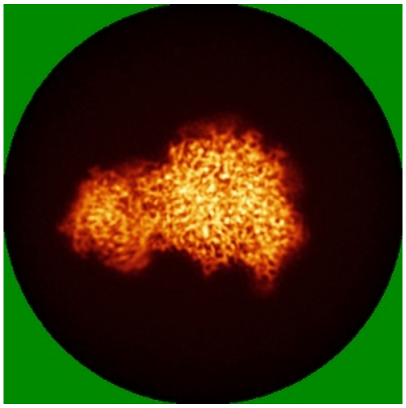
The images above show the largest variance slices of the map in three orthogonal directions.

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

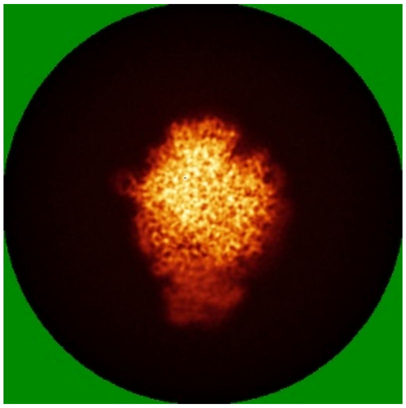
6.4.1 Primary map



X

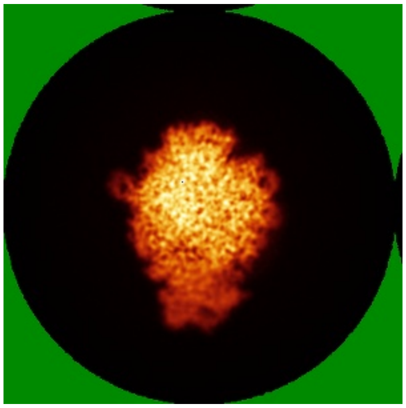


Y

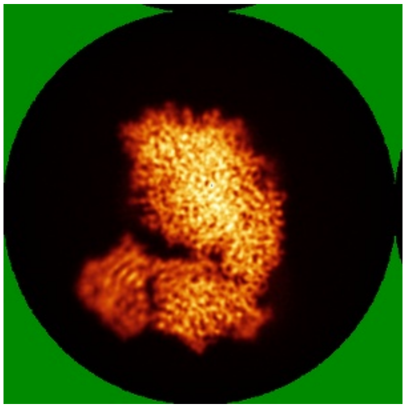


Z

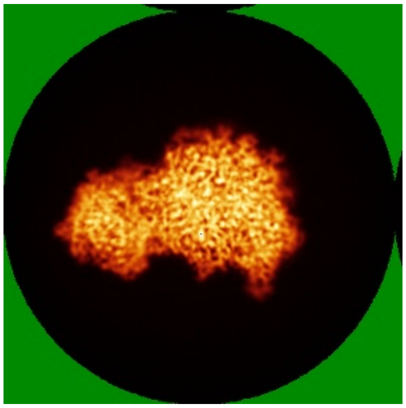
6.4.2 Raw map



X



Y

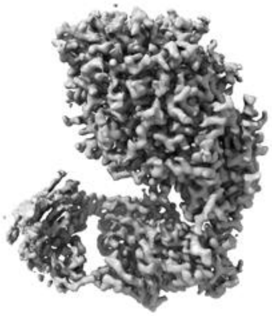


Z

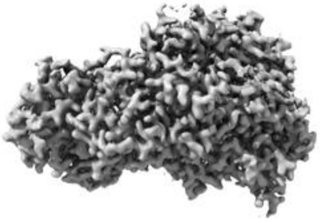
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views ⓘ

6.5.1 Primary map



X



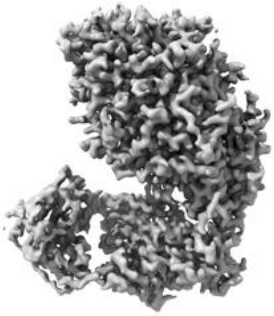
Y

Z

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

6.5.2 Raw map

X



Y

Z

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

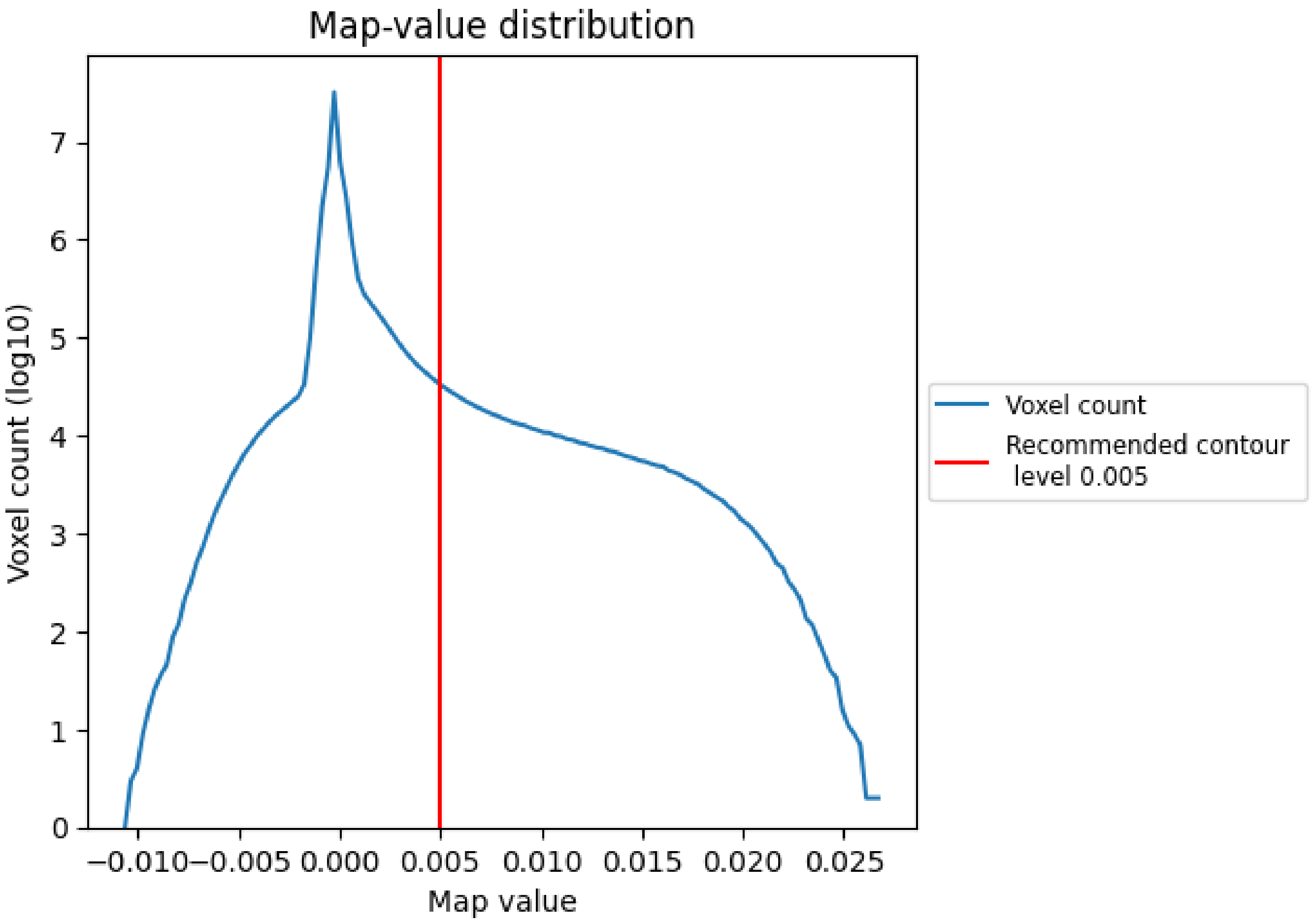
6.6 Mask visualisation ⓘ

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

7 Map analysis ⓘ

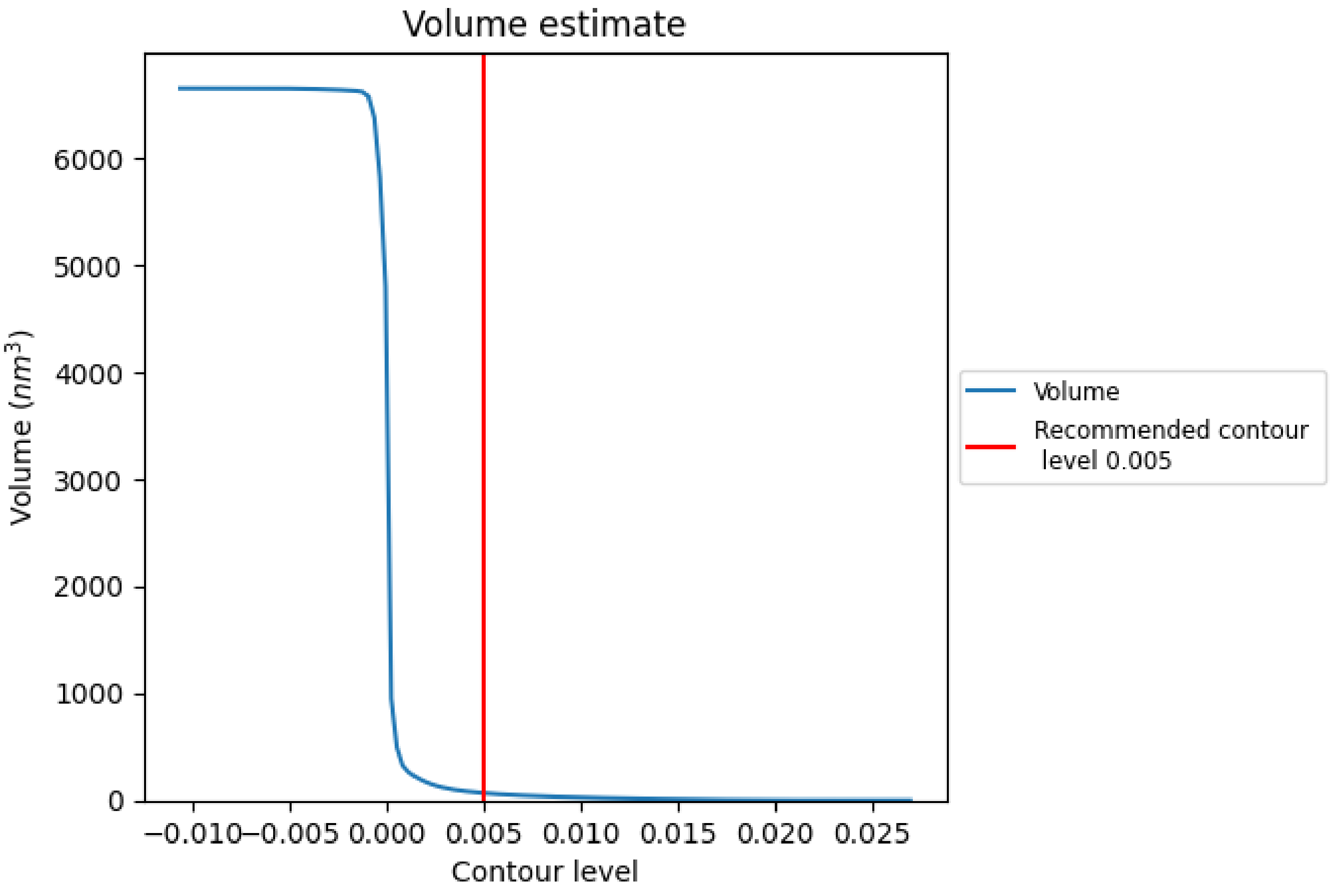
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution ⓘ



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

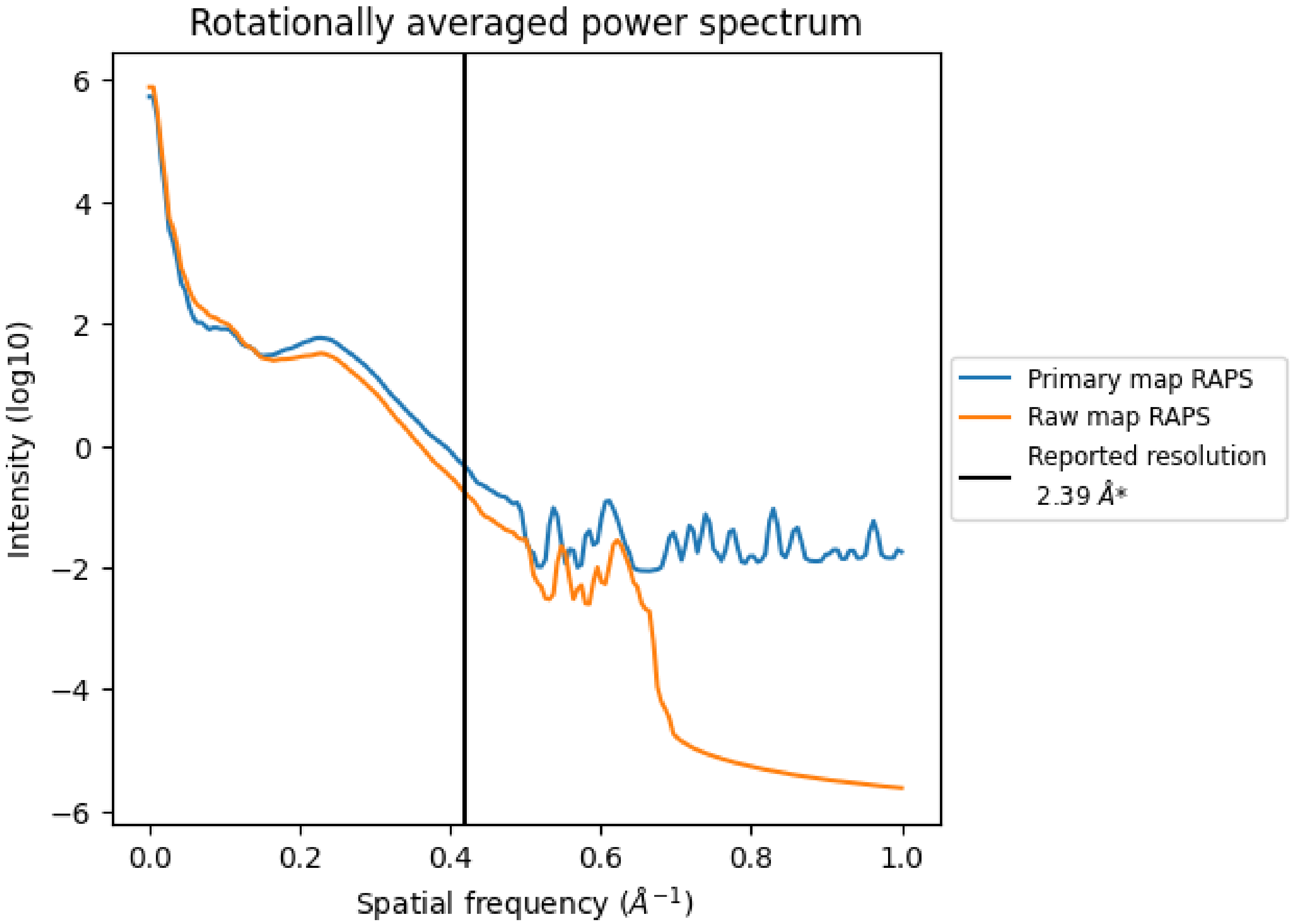
7.2 Volume estimate ⓘ



The volume at the recommended contour level is 66 nm^3; this corresponds to an approximate mass of 60 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 ⓘ

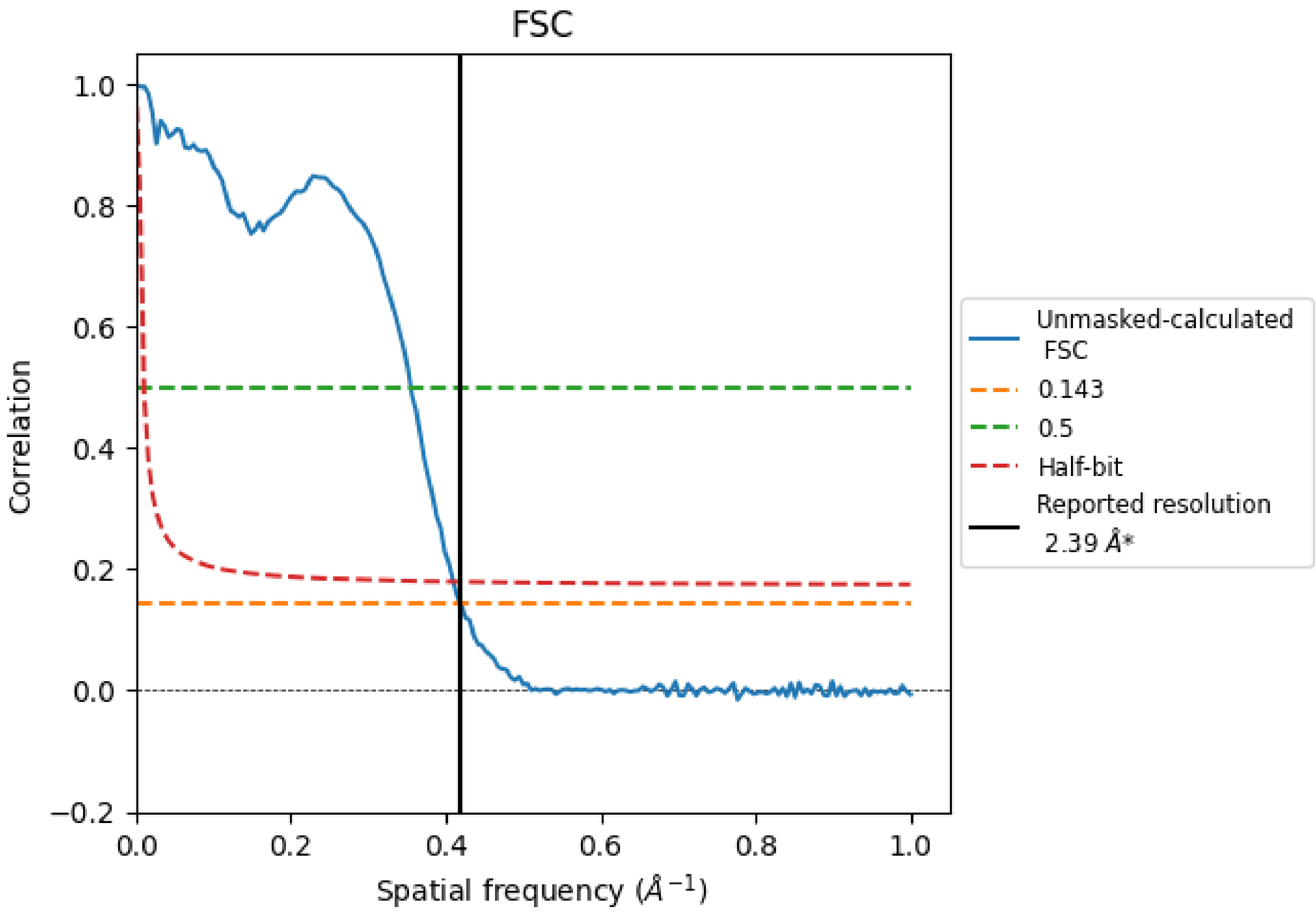


*Reported resolution corresponds to spatial frequency of 0.418 $Å^{-1}$

8 Fourier-Shell correlation ⓘ

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

8.1 FSC ⓘ



*Reported resolution corresponds to spatial frequency of 0.418 $Å^{-1}$

8.2 Resolution estimates ⓘ

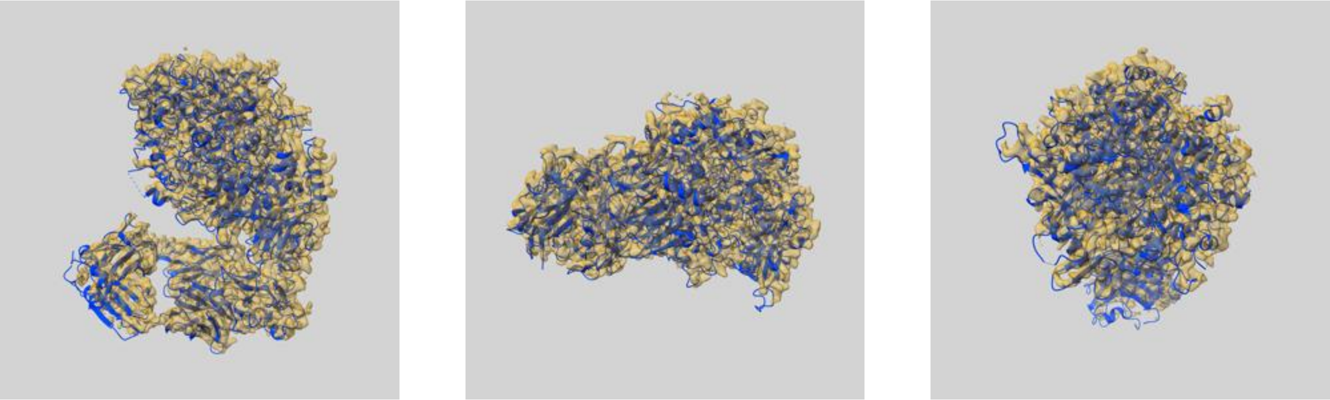
Resolution estimate (Å)	**Estimation criterion (FSC cut-off)**		
	0.143	0.5	Half-bit
Reported by author	2.39	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	2.38	2.82	2.44

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

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-19402 and PDB model 8ROR. Per-residue inclusion information can be found in section 3 on page 4.

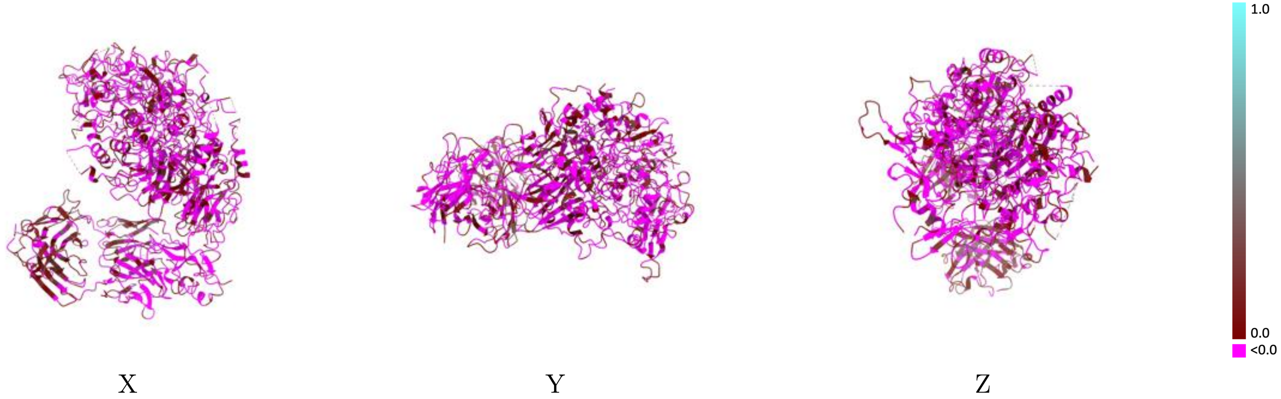
9.1 Map-model overlay ⓘ



X Y Z

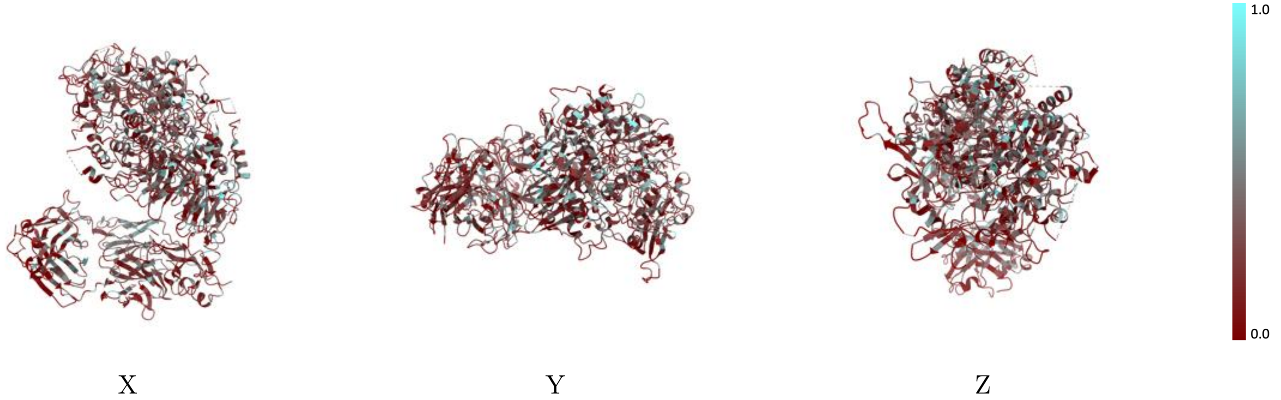
The images above show the 3D surface view of the map at the recommended contour level 0.005 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model ⓘ



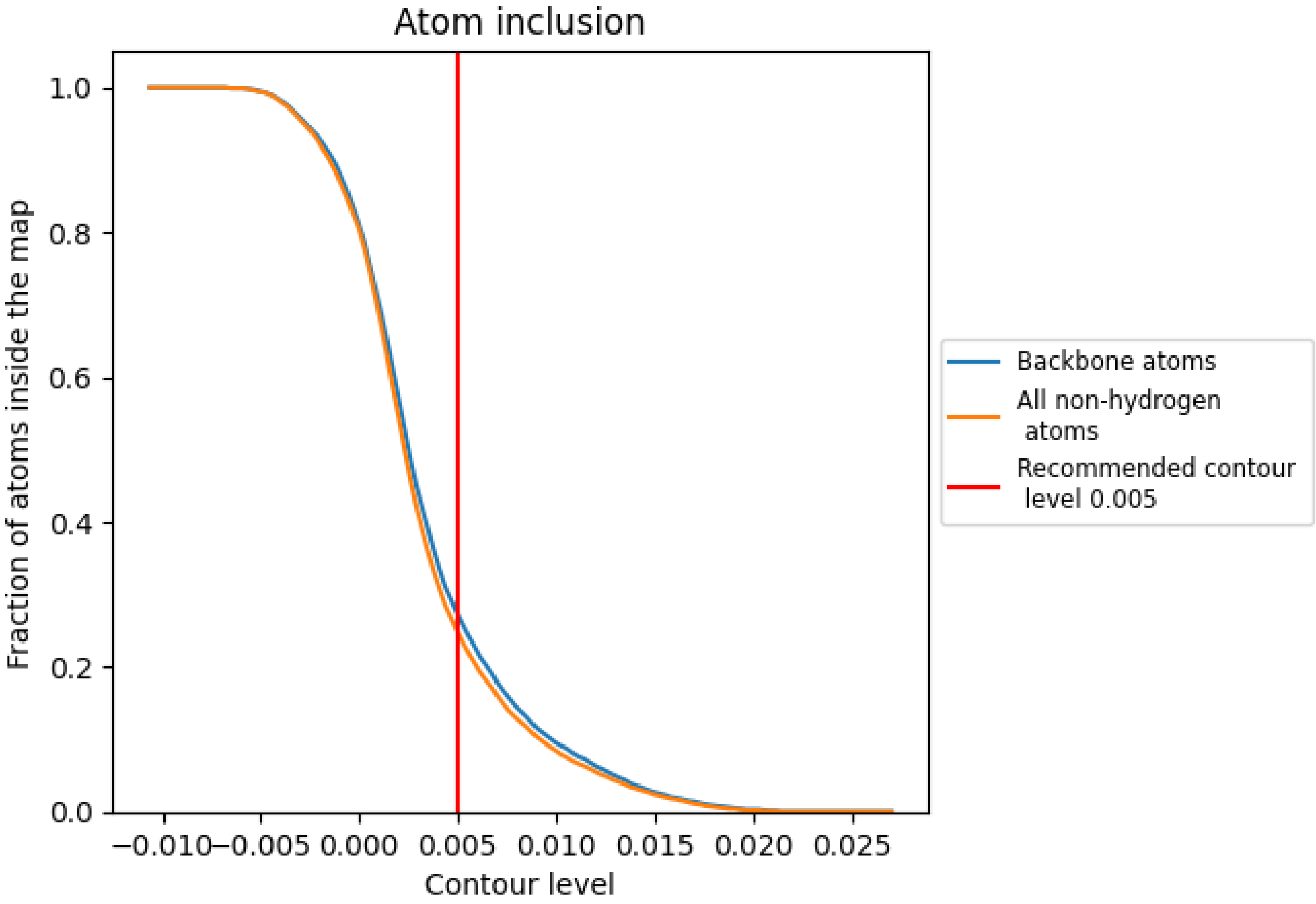
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3 Atom inclusion mapped to coordinate model ⓘ



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.005).

9.4 Atom inclusion ⓘ



At the recommended contour level, 27% of all backbone atoms, 25% 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	■ 0.2480	■ -0.0430
1	■ 0.2520	■ -0.0620
H	■ 0.1980	■ -0.0180
L	■ 0.2780	■ 0.0550