Full wwPDB EM Validation Report ⓘ

Jul 4, 2023 – 04:20 PM JST

PDB ID	:	7XD2
EMDB ID	:	EMD-33133
Title	:	SARS-CoV-2 S ectodomain trimer in complex with neutralizing antibody 10-5B
Authors	:	Wang, X.; Wang, Z.
Deposited on	:	2022-03-26
Resolution	:	3.30 Å(reported)

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

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

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

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

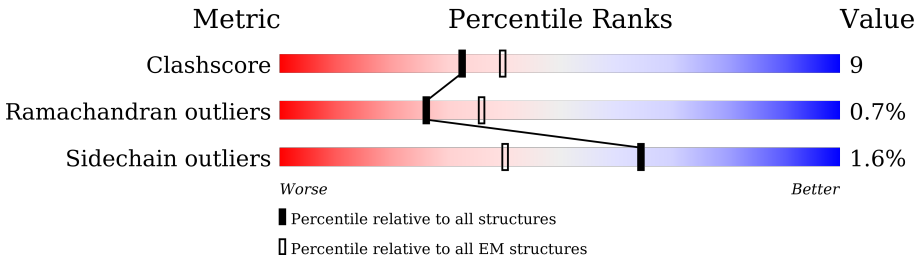
EMDB validation analysis	:	0.0.1.dev50
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.34

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 3.30 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	A	1298	8% 66% 15% 19%
1	B	1298	65% 15% 19%
1	C	1298	11% 61% 14% 24%
2	D	117	99% 62% 36%
2	E	117	88% 62% 36%
2	I	117	95% 62% 37%
3	H	107	94% 69% 28%
3	J	107	97% 67% 29%

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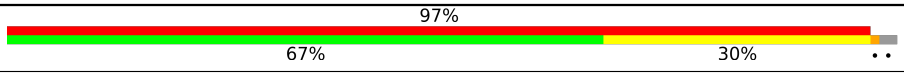
Mol	Chain	Length	Quality of chain
3	L	107	

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 28084 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	1056	Total	C	N	O	S	0	0
			7969	5048	1340	1548	33		
1	B	1048	Total	C	N	O	S	0	0
			7943	5039	1334	1534	36		
1	C	987	Total	C	N	O	S	0	0
			7462	4751	1247	1432	32		

There are 285 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	682	GLY	ARG	engineered mutation	UNP P0DTC2
A	683	SER	ARG	engineered mutation	UNP P0DTC2
A	685	SER	ARG	engineered mutation	UNP P0DTC2
A	986	PRO	LYS	engineered mutation	UNP P0DTC2
A	987	PRO	VAL	engineered mutation	UNP P0DTC2
A	1209	GLY	-	expression tag	UNP P0DTC2
A	1210	SER	-	expression tag	UNP P0DTC2
A	1211	GLY	-	expression tag	UNP P0DTC2
A	1212	TYR	-	expression tag	UNP P0DTC2
A	1213	ILE	-	expression tag	UNP P0DTC2
A	1214	PRO	-	expression tag	UNP P0DTC2
A	1215	GLU	-	expression tag	UNP P0DTC2
A	1216	ALA	-	expression tag	UNP P0DTC2
A	1217	PRO	-	expression tag	UNP P0DTC2
A	1218	ARG	-	expression tag	UNP P0DTC2
A	1219	ASP	-	expression tag	UNP P0DTC2
A	1220	GLY	-	expression tag	UNP P0DTC2
A	1221	GLN	-	expression tag	UNP P0DTC2
A	1222	ALA	-	expression tag	UNP P0DTC2
A	1223	TYR	-	expression tag	UNP P0DTC2
A	1224	VAL	-	expression tag	UNP P0DTC2
A	1225	ARG	-	expression tag	UNP P0DTC2
A	1226	LYS	-	expression tag	UNP P0DTC2
A	1227	ASP	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
A	1228	GLY	-	expression tag	UNP P0DTC2
A	1229	GLU	-	expression tag	UNP P0DTC2
A	1230	TRP	-	expression tag	UNP P0DTC2
A	1231	VAL	-	expression tag	UNP P0DTC2
A	1232	LEU	-	expression tag	UNP P0DTC2
A	1233	LEU	-	expression tag	UNP P0DTC2
A	1234	SER	-	expression tag	UNP P0DTC2
A	1235	THR	-	expression tag	UNP P0DTC2
A	1236	PHE	-	expression tag	UNP P0DTC2
A	1237	LEU	-	expression tag	UNP P0DTC2
A	1238	GLY	-	expression tag	UNP P0DTC2
A	1239	ARG	-	expression tag	UNP P0DTC2
A	1240	SER	-	expression tag	UNP P0DTC2
A	1241	LEU	-	expression tag	UNP P0DTC2
A	1242	GLU	-	expression tag	UNP P0DTC2
A	1243	VAL	-	expression tag	UNP P0DTC2
A	1244	LEU	-	expression tag	UNP P0DTC2
A	1245	PHE	-	expression tag	UNP P0DTC2
A	1246	GLN	-	expression tag	UNP P0DTC2
A	1247	GLY	-	expression tag	UNP P0DTC2
A	1248	PRO	-	expression tag	UNP P0DTC2
A	1249	GLY	-	expression tag	UNP P0DTC2
A	1250	HIS	-	expression tag	UNP P0DTC2
A	1251	HIS	-	expression tag	UNP P0DTC2
A	1252	HIS	-	expression tag	UNP P0DTC2
A	1253	HIS	-	expression tag	UNP P0DTC2
A	1254	HIS	-	expression tag	UNP P0DTC2
A	1255	HIS	-	expression tag	UNP P0DTC2
A	1256	HIS	-	expression tag	UNP P0DTC2
A	1257	HIS	-	expression tag	UNP P0DTC2
A	1258	SER	-	expression tag	UNP P0DTC2
A	1259	ALA	-	expression tag	UNP P0DTC2
A	1260	TRP	-	expression tag	UNP P0DTC2
A	1261	SER	-	expression tag	UNP P0DTC2
A	1262	HIS	-	expression tag	UNP P0DTC2
A	1263	PRO	-	expression tag	UNP P0DTC2
A	1264	GLN	-	expression tag	UNP P0DTC2
A	1265	PHE	-	expression tag	UNP P0DTC2
A	1266	GLU	-	expression tag	UNP P0DTC2
A	1267	LYS	-	expression tag	UNP P0DTC2
A	1268	GLY	-	expression tag	UNP P0DTC2
A	1269	GLY	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
A	1270	GLY	-	expression tag	UNP P0DTC2
A	1271	SER	-	expression tag	UNP P0DTC2
A	1272	GLY	-	expression tag	UNP P0DTC2
A	1273	GLY	-	expression tag	UNP P0DTC2
A	1274	GLY	-	expression tag	UNP P0DTC2
A	1275	GLY	-	expression tag	UNP P0DTC2
A	1276	SER	-	expression tag	UNP P0DTC2
A	1277	GLY	-	expression tag	UNP P0DTC2
A	1278	GLY	-	expression tag	UNP P0DTC2
A	1279	SER	-	expression tag	UNP P0DTC2
A	1280	ALA	-	expression tag	UNP P0DTC2
A	1281	TRP	-	expression tag	UNP P0DTC2
A	1282	SER	-	expression tag	UNP P0DTC2
A	1283	HIS	-	expression tag	UNP P0DTC2
A	1284	PRO	-	expression tag	UNP P0DTC2
A	1285	GLN	-	expression tag	UNP P0DTC2
A	1286	PHE	-	expression tag	UNP P0DTC2
A	1287	GLU	-	expression tag	UNP P0DTC2
A	1288	LYS	-	expression tag	UNP P0DTC2
A	1289	GLY	-	expression tag	UNP P0DTC2
A	1290	SER	-	expression tag	UNP P0DTC2
A	1291	ASP	-	expression tag	UNP P0DTC2
A	1292	TYR	-	expression tag	UNP P0DTC2
A	1293	LYS	-	expression tag	UNP P0DTC2
A	1294	ASP	-	expression tag	UNP P0DTC2
A	1295	ASP	-	expression tag	UNP P0DTC2
A	1296	ASP	-	expression tag	UNP P0DTC2
A	1297	ASP	-	expression tag	UNP P0DTC2
A	1298	LYS	-	expression tag	UNP P0DTC2
B	682	GLY	ARG	engineered mutation	UNP P0DTC2
B	683	SER	ARG	engineered mutation	UNP P0DTC2
B	685	SER	ARG	engineered mutation	UNP P0DTC2
B	986	PRO	LYS	engineered mutation	UNP P0DTC2
B	987	PRO	VAL	engineered mutation	UNP P0DTC2
B	1209	GLY	-	expression tag	UNP P0DTC2
B	1210	SER	-	expression tag	UNP P0DTC2
B	1211	GLY	-	expression tag	UNP P0DTC2
B	1212	TYR	-	expression tag	UNP P0DTC2
B	1213	ILE	-	expression tag	UNP P0DTC2
B	1214	PRO	-	expression tag	UNP P0DTC2
B	1215	GLU	-	expression tag	UNP P0DTC2
B	1216	ALA	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
B	1217	PRO	-	expression tag	UNP P0DTC2
B	1218	ARG	-	expression tag	UNP P0DTC2
B	1219	ASP	-	expression tag	UNP P0DTC2
B	1220	GLY	-	expression tag	UNP P0DTC2
B	1221	GLN	-	expression tag	UNP P0DTC2
B	1222	ALA	-	expression tag	UNP P0DTC2
B	1223	TYR	-	expression tag	UNP P0DTC2
B	1224	VAL	-	expression tag	UNP P0DTC2
B	1225	ARG	-	expression tag	UNP P0DTC2
B	1226	LYS	-	expression tag	UNP P0DTC2
B	1227	ASP	-	expression tag	UNP P0DTC2
B	1228	GLY	-	expression tag	UNP P0DTC2
B	1229	GLU	-	expression tag	UNP P0DTC2
B	1230	TRP	-	expression tag	UNP P0DTC2
B	1231	VAL	-	expression tag	UNP P0DTC2
B	1232	LEU	-	expression tag	UNP P0DTC2
B	1233	LEU	-	expression tag	UNP P0DTC2
B	1234	SER	-	expression tag	UNP P0DTC2
B	1235	THR	-	expression tag	UNP P0DTC2
B	1236	PHE	-	expression tag	UNP P0DTC2
B	1237	LEU	-	expression tag	UNP P0DTC2
B	1238	GLY	-	expression tag	UNP P0DTC2
B	1239	ARG	-	expression tag	UNP P0DTC2
B	1240	SER	-	expression tag	UNP P0DTC2
B	1241	LEU	-	expression tag	UNP P0DTC2
B	1242	GLU	-	expression tag	UNP P0DTC2
B	1243	VAL	-	expression tag	UNP P0DTC2
B	1244	LEU	-	expression tag	UNP P0DTC2
B	1245	PHE	-	expression tag	UNP P0DTC2
B	1246	GLN	-	expression tag	UNP P0DTC2
B	1247	GLY	-	expression tag	UNP P0DTC2
B	1248	PRO	-	expression tag	UNP P0DTC2
B	1249	GLY	-	expression tag	UNP P0DTC2
B	1250	HIS	-	expression tag	UNP P0DTC2
B	1251	HIS	-	expression tag	UNP P0DTC2
B	1252	HIS	-	expression tag	UNP P0DTC2
B	1253	HIS	-	expression tag	UNP P0DTC2
B	1254	HIS	-	expression tag	UNP P0DTC2
B	1255	HIS	-	expression tag	UNP P0DTC2
B	1256	HIS	-	expression tag	UNP P0DTC2
B	1257	HIS	-	expression tag	UNP P0DTC2
B	1258	SER	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
B	1259	ALA	-	expression tag	UNP P0DTC2
B	1260	TRP	-	expression tag	UNP P0DTC2
B	1261	SER	-	expression tag	UNP P0DTC2
B	1262	HIS	-	expression tag	UNP P0DTC2
B	1263	PRO	-	expression tag	UNP P0DTC2
B	1264	GLN	-	expression tag	UNP P0DTC2
B	1265	PHE	-	expression tag	UNP P0DTC2
B	1266	GLU	-	expression tag	UNP P0DTC2
B	1267	LYS	-	expression tag	UNP P0DTC2
B	1268	GLY	-	expression tag	UNP P0DTC2
B	1269	GLY	-	expression tag	UNP P0DTC2
B	1270	GLY	-	expression tag	UNP P0DTC2
B	1271	SER	-	expression tag	UNP P0DTC2
B	1272	GLY	-	expression tag	UNP P0DTC2
B	1273	GLY	-	expression tag	UNP P0DTC2
B	1274	GLY	-	expression tag	UNP P0DTC2
B	1275	GLY	-	expression tag	UNP P0DTC2
B	1276	SER	-	expression tag	UNP P0DTC2
B	1277	GLY	-	expression tag	UNP P0DTC2
B	1278	GLY	-	expression tag	UNP P0DTC2
B	1279	SER	-	expression tag	UNP P0DTC2
B	1280	ALA	-	expression tag	UNP P0DTC2
B	1281	TRP	-	expression tag	UNP P0DTC2
B	1282	SER	-	expression tag	UNP P0DTC2
B	1283	HIS	-	expression tag	UNP P0DTC2
B	1284	PRO	-	expression tag	UNP P0DTC2
B	1285	GLN	-	expression tag	UNP P0DTC2
B	1286	PHE	-	expression tag	UNP P0DTC2
B	1287	GLU	-	expression tag	UNP P0DTC2
B	1288	LYS	-	expression tag	UNP P0DTC2
B	1289	GLY	-	expression tag	UNP P0DTC2
B	1290	SER	-	expression tag	UNP P0DTC2
B	1291	ASP	-	expression tag	UNP P0DTC2
B	1292	TYR	-	expression tag	UNP P0DTC2
B	1293	LYS	-	expression tag	UNP P0DTC2
B	1294	ASP	-	expression tag	UNP P0DTC2
B	1295	ASP	-	expression tag	UNP P0DTC2
B	1296	ASP	-	expression tag	UNP P0DTC2
B	1297	ASP	-	expression tag	UNP P0DTC2
B	1298	LYS	-	expression tag	UNP P0DTC2
C	682	GLY	ARG	engineered mutation	UNP P0DTC2
C	683	SER	ARG	engineered mutation	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
C	685	SER	ARG	engineered mutation	UNP P0DTC2
C	986	PRO	LYS	engineered mutation	UNP P0DTC2
C	987	PRO	VAL	engineered mutation	UNP P0DTC2
C	1209	GLY	-	expression tag	UNP P0DTC2
C	1210	SER	-	expression tag	UNP P0DTC2
C	1211	GLY	-	expression tag	UNP P0DTC2
C	1212	TYR	-	expression tag	UNP P0DTC2
C	1213	ILE	-	expression tag	UNP P0DTC2
C	1214	PRO	-	expression tag	UNP P0DTC2
C	1215	GLU	-	expression tag	UNP P0DTC2
C	1216	ALA	-	expression tag	UNP P0DTC2
C	1217	PRO	-	expression tag	UNP P0DTC2
C	1218	ARG	-	expression tag	UNP P0DTC2
C	1219	ASP	-	expression tag	UNP P0DTC2
C	1220	GLY	-	expression tag	UNP P0DTC2
C	1221	GLN	-	expression tag	UNP P0DTC2
C	1222	ALA	-	expression tag	UNP P0DTC2
C	1223	TYR	-	expression tag	UNP P0DTC2
C	1224	VAL	-	expression tag	UNP P0DTC2
C	1225	ARG	-	expression tag	UNP P0DTC2
C	1226	LYS	-	expression tag	UNP P0DTC2
C	1227	ASP	-	expression tag	UNP P0DTC2
C	1228	GLY	-	expression tag	UNP P0DTC2
C	1229	GLU	-	expression tag	UNP P0DTC2
C	1230	TRP	-	expression tag	UNP P0DTC2
C	1231	VAL	-	expression tag	UNP P0DTC2
C	1232	LEU	-	expression tag	UNP P0DTC2
C	1233	LEU	-	expression tag	UNP P0DTC2
C	1234	SER	-	expression tag	UNP P0DTC2
C	1235	THR	-	expression tag	UNP P0DTC2
C	1236	PHE	-	expression tag	UNP P0DTC2
C	1237	LEU	-	expression tag	UNP P0DTC2
C	1238	GLY	-	expression tag	UNP P0DTC2
C	1239	ARG	-	expression tag	UNP P0DTC2
C	1240	SER	-	expression tag	UNP P0DTC2
C	1241	LEU	-	expression tag	UNP P0DTC2
C	1242	GLU	-	expression tag	UNP P0DTC2
C	1243	VAL	-	expression tag	UNP P0DTC2
C	1244	LEU	-	expression tag	UNP P0DTC2
C	1245	PHE	-	expression tag	UNP P0DTC2
C	1246	GLN	-	expression tag	UNP P0DTC2
C	1247	GLY	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
C	1248	PRO	-	expression tag	UNP P0DTC2
C	1249	GLY	-	expression tag	UNP P0DTC2
C	1250	HIS	-	expression tag	UNP P0DTC2
C	1251	HIS	-	expression tag	UNP P0DTC2
C	1252	HIS	-	expression tag	UNP P0DTC2
C	1253	HIS	-	expression tag	UNP P0DTC2
C	1254	HIS	-	expression tag	UNP P0DTC2
C	1255	HIS	-	expression tag	UNP P0DTC2
C	1256	HIS	-	expression tag	UNP P0DTC2
C	1257	HIS	-	expression tag	UNP P0DTC2
C	1258	SER	-	expression tag	UNP P0DTC2
C	1259	ALA	-	expression tag	UNP P0DTC2
C	1260	TRP	-	expression tag	UNP P0DTC2
C	1261	SER	-	expression tag	UNP P0DTC2
C	1262	HIS	-	expression tag	UNP P0DTC2
C	1263	PRO	-	expression tag	UNP P0DTC2
C	1264	GLN	-	expression tag	UNP P0DTC2
C	1265	PHE	-	expression tag	UNP P0DTC2
C	1266	GLU	-	expression tag	UNP P0DTC2
C	1267	LYS	-	expression tag	UNP P0DTC2
C	1268	GLY	-	expression tag	UNP P0DTC2
C	1269	GLY	-	expression tag	UNP P0DTC2
C	1270	GLY	-	expression tag	UNP P0DTC2
C	1271	SER	-	expression tag	UNP P0DTC2
C	1272	GLY	-	expression tag	UNP P0DTC2
C	1273	GLY	-	expression tag	UNP P0DTC2
C	1274	GLY	-	expression tag	UNP P0DTC2
C	1275	GLY	-	expression tag	UNP P0DTC2
C	1276	SER	-	expression tag	UNP P0DTC2
C	1277	GLY	-	expression tag	UNP P0DTC2
C	1278	GLY	-	expression tag	UNP P0DTC2
C	1279	SER	-	expression tag	UNP P0DTC2
C	1280	ALA	-	expression tag	UNP P0DTC2
C	1281	TRP	-	expression tag	UNP P0DTC2
C	1282	SER	-	expression tag	UNP P0DTC2
C	1283	HIS	-	expression tag	UNP P0DTC2
C	1284	PRO	-	expression tag	UNP P0DTC2
C	1285	GLN	-	expression tag	UNP P0DTC2
C	1286	PHE	-	expression tag	UNP P0DTC2
C	1287	GLU	-	expression tag	UNP P0DTC2
C	1288	LYS	-	expression tag	UNP P0DTC2
C	1289	GLY	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
C	1290	SER	-	expression tag	UNP P0DTC2
C	1291	ASP	-	expression tag	UNP P0DTC2
C	1292	TYR	-	expression tag	UNP P0DTC2
C	1293	LYS	-	expression tag	UNP P0DTC2
C	1294	ASP	-	expression tag	UNP P0DTC2
C	1295	ASP	-	expression tag	UNP P0DTC2
C	1296	ASP	-	expression tag	UNP P0DTC2
C	1297	ASP	-	expression tag	UNP P0DTC2
C	1298	LYS	-	expression tag	UNP P0DTC2

- Molecule 2 is a protein called H chain of antibody 10-5B.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	D	116	Total	C	N	O	S	0	0
			831	510	149	168	4		
2	E	116	Total	C	N	O	S	0	0
			831	510	149	168	4		
2	I	116	Total	C	N	O	S	0	0
			831	510	149	168	4		

- Molecule 3 is a protein called L chian of antibody 10-5B.

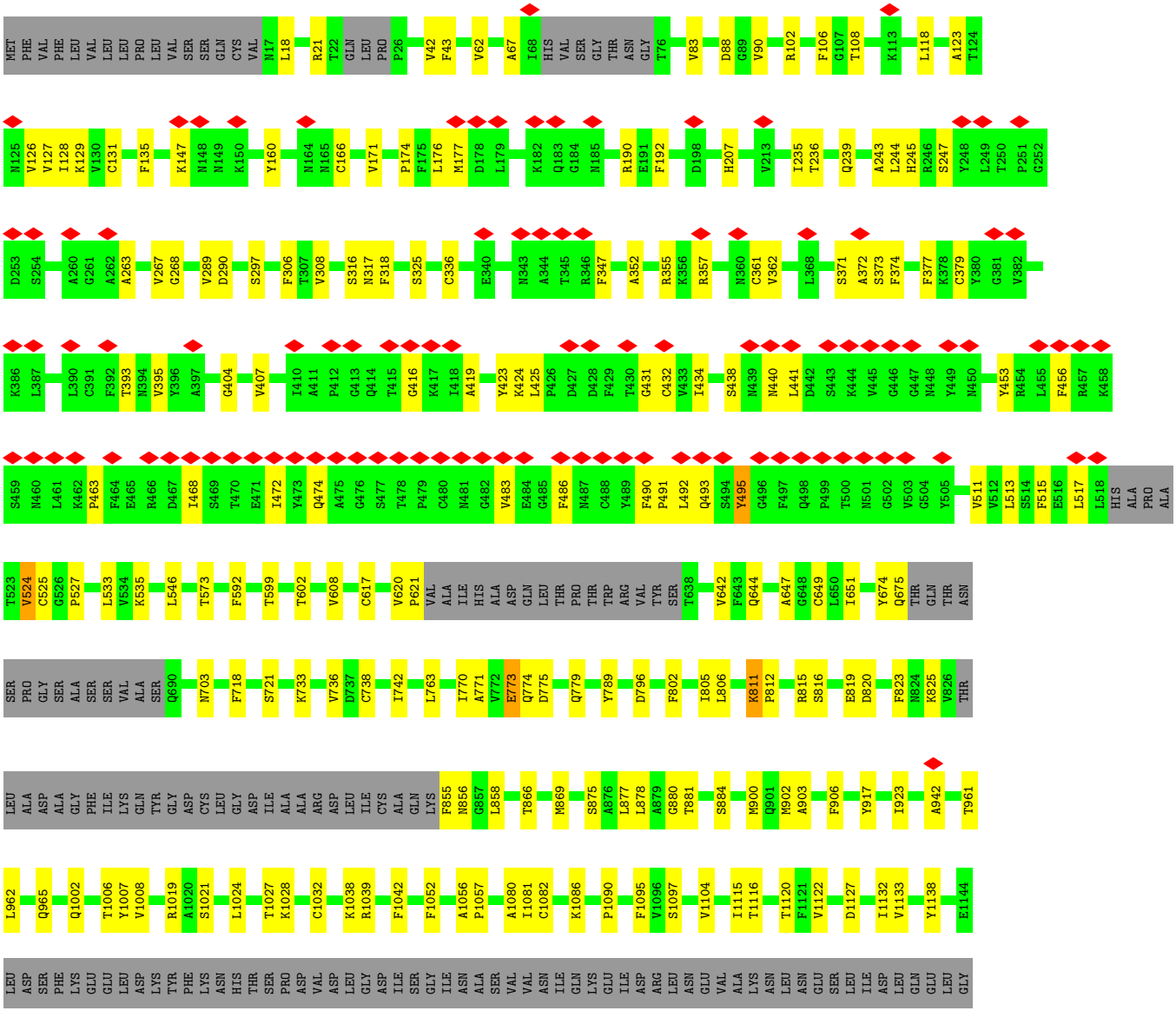
Mol	Chain	Residues	Atoms					AltConf	Trace
3	J	104	Total	C	N	O	S	0	0
			733	456	129	146	2		
3	H	105	Total	C	N	O	S	0	0
			742	461	130	149	2		
3	L	105	Total	C	N	O	S	0	0
			742	461	130	149	2		

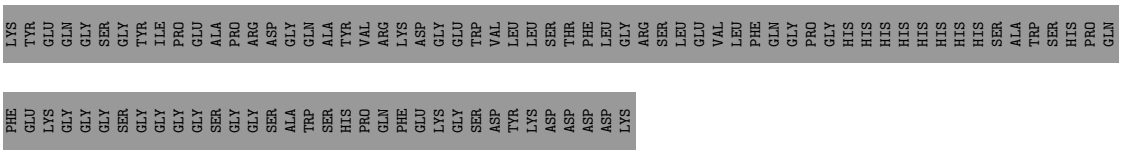
3 Residue-property plots (i)

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

- Molecule 1: Spike glycoprotein

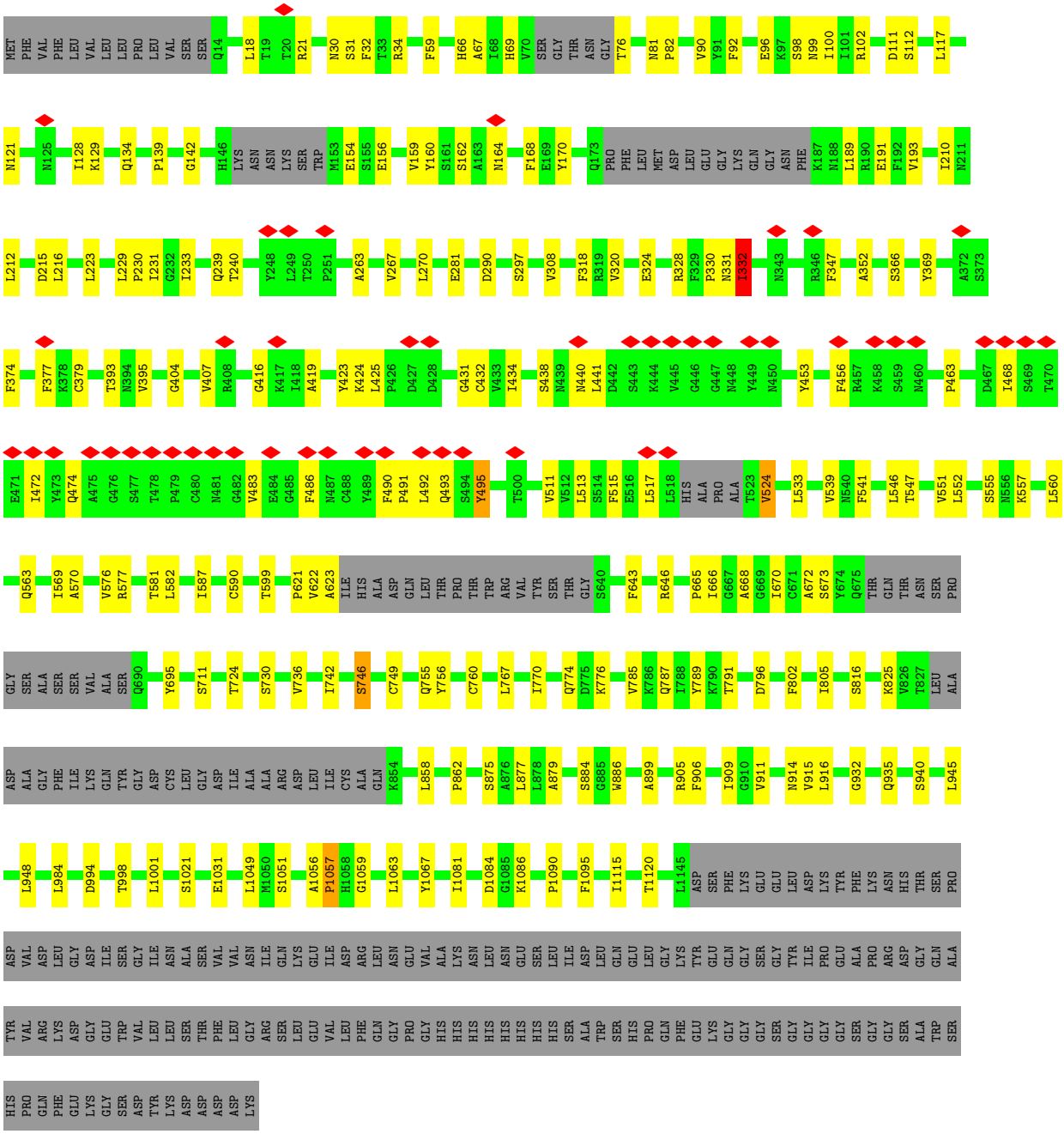
Chain A:





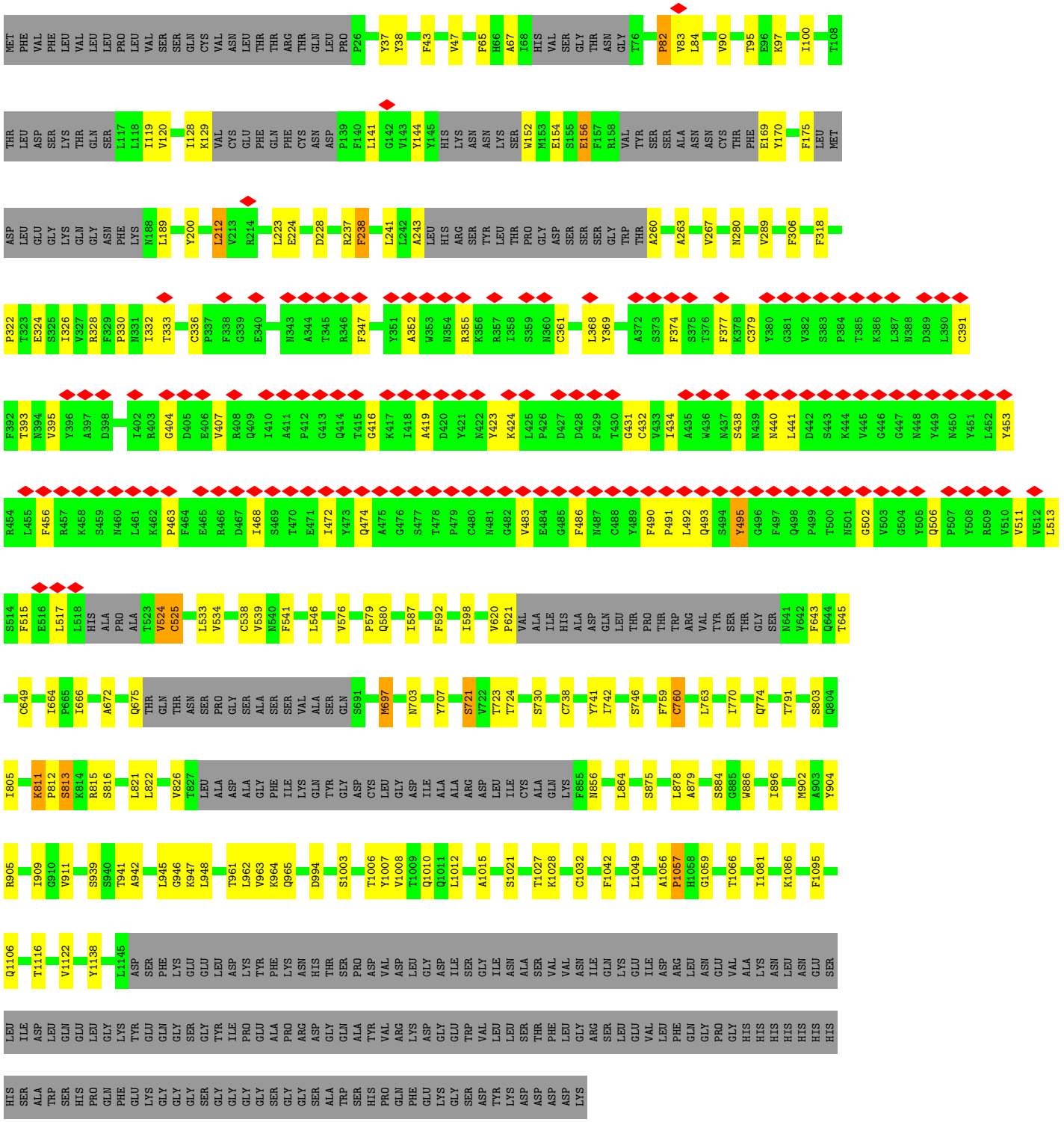
• Molecule 1: Spike glycoprotein

Chain B:



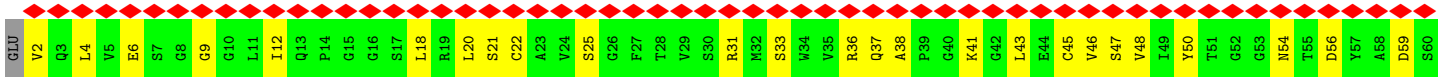
• Molecule 1: Spike glycoprotein

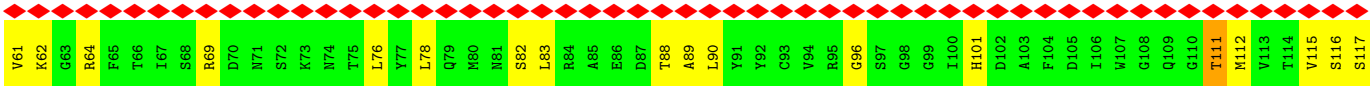
Chain C:



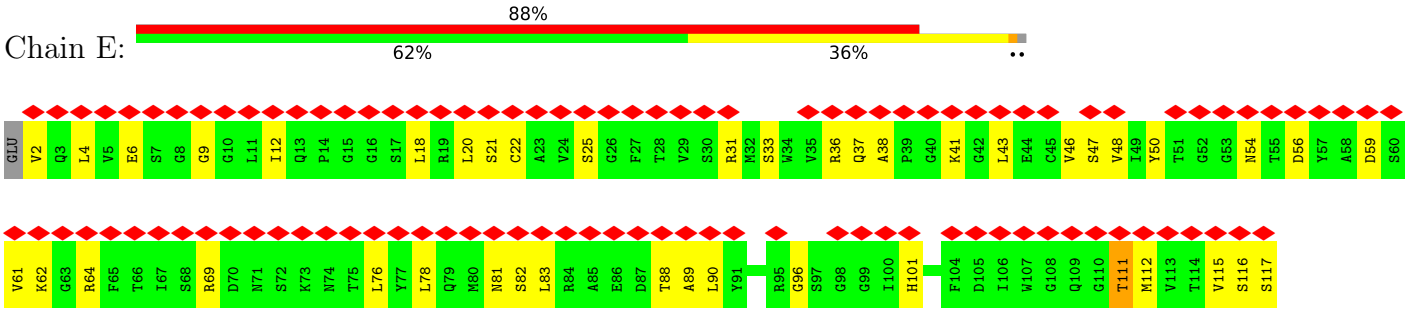
• Molecule 2: H chain of antibody 10-5B

Chain D:

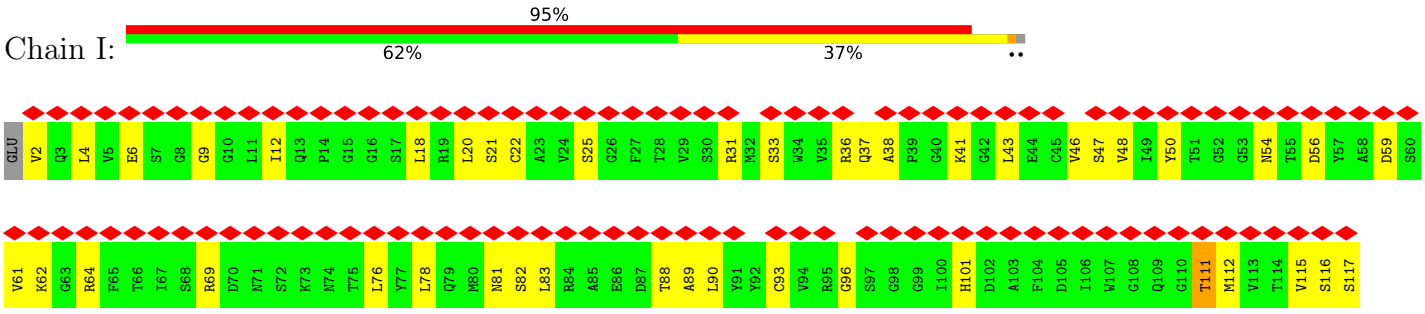




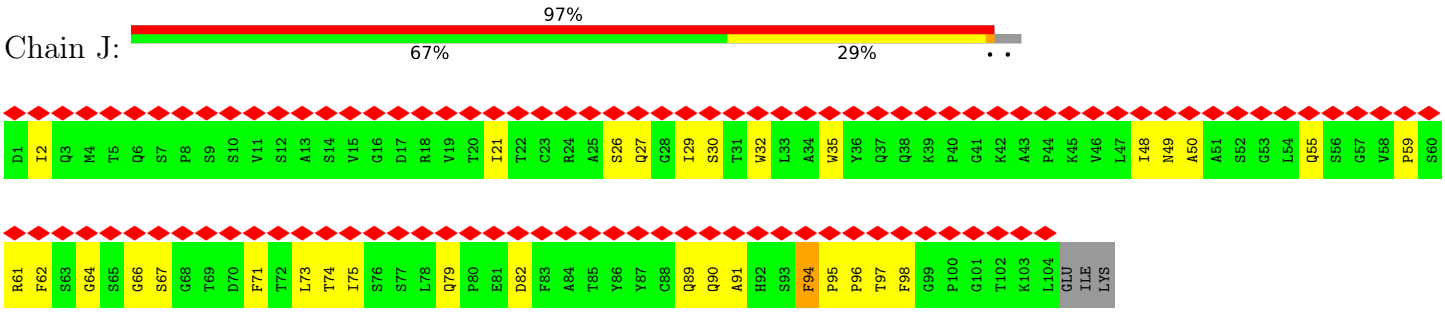
• Molecule 2: H chain of antibody 10-5B



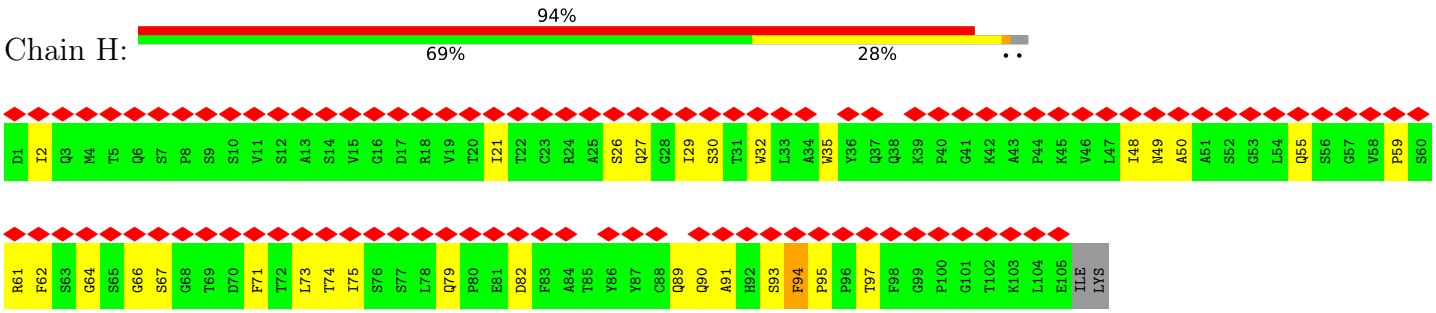
• Molecule 2: H chain of antibody 10-5B



• Molecule 3: L chian of antibody 10-5B

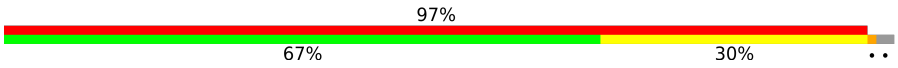


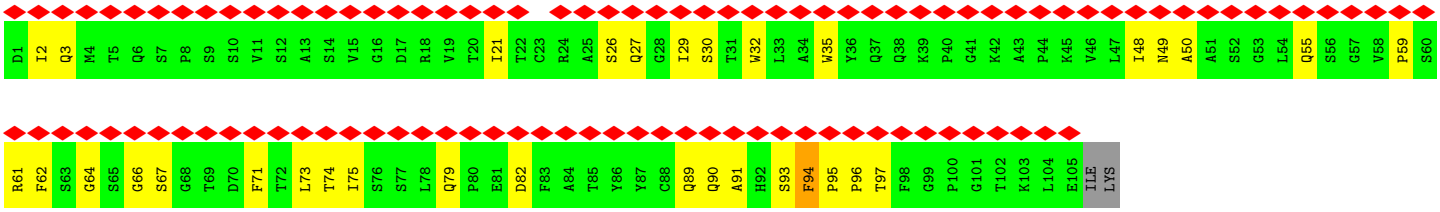
• Molecule 3: L chian of antibody 10-5B



• Molecule 3: L chian of antibody 10-5B

Chain L:


97%
67%
30%


D1 I2 Q3 M4 T5 Q6 S7 P8 S9 S10 V11 S12 A13 S14 V15 G16 D17 R18 V19 T20 I21 T22 C23 R24 A25 S26 Q27 G28 I29 S30 T31 W32 L33 A34 W35 Y36 Q37 Q38 K39 P40 G41 K42 A43 P44 K45 V46 L47 I48 N49 A50 A51 S52 G53 L54 Q55 S56 G57 V58 P59 S60
R61 F62 S63 G64 S65 G66 S67 G68 T69 D70 F71 T72 L73 T74 I75 S76 S77 L78 Q79 P80 E81 D82 F83 A84 T85 Y86 Y87 C88 Q89 Q90 A91 H92 S93 F94 P95 P96 T97 F98 G99 P100 G101 T102 K103 L104 E105 ILE LYS

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	368416	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 ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	1500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.893	Depositor
Minimum map value	-1.885	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.070	Depositor
Recommended contour level	0.22	Depositor
Map size (Å)	310.40002, 310.40002, 310.40002	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.9700001, 0.9700001, 0.9700001	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	0.70	5/8147 (0.1%)	0.88	4/11109 (0.0%)
1	B	0.71	8/8122 (0.1%)	0.89	5/11078 (0.0%)
1	C	0.70	7/7629 (0.1%)	0.89	5/10393 (0.0%)
2	D	0.64	0/843	0.71	0/1142
2	E	0.64	0/843	0.71	0/1142
2	I	0.64	0/843	0.71	0/1142
3	H	0.66	0/761	0.74	0/1038
3	J	0.66	0/752	0.74	0/1026
3	L	0.66	0/761	0.74	0/1038
All	All	0.69	20/28701 (0.1%)	0.86	14/39108 (0.0%)

All (20) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1021	SER	CA-CB	-6.66	1.43	1.52
1	B	816	SER	CA-CB	-6.29	1.43	1.52
1	C	1021	SER	CA-CB	-6.20	1.43	1.52
1	A	816	SER	CA-CB	-6.06	1.43	1.52
1	B	1021	SER	CA-CB	-5.93	1.44	1.52
1	B	711	SER	CA-CB	-5.88	1.44	1.52
1	A	875	SER	CA-CB	-5.83	1.44	1.52
1	C	816	SER	CA-CB	-5.83	1.44	1.52
1	B	1051	SER	CA-CB	-5.79	1.44	1.52
1	C	721	SER	CA-CB	-5.76	1.44	1.52
1	B	875	SER	CA-CB	-5.65	1.44	1.52
1	B	730	SER	CA-CB	-5.34	1.45	1.52
1	A	1097	SER	CA-CB	-5.31	1.45	1.52
1	C	803	SER	CA-CB	-5.19	1.45	1.52
1	B	746	SER	CA-CB	-5.19	1.45	1.52
1	A	721	SER	CA-CB	-5.18	1.45	1.52
1	B	884	SER	CA-CB	-5.16	1.45	1.52
1	C	884	SER	CA-CB	-5.13	1.45	1.52
1	C	730	SER	CA-CB	-5.08	1.45	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	875	SER	CA-CB	-5.03	1.45	1.52

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	856	ASN	CB-CA-C	-11.79	86.82	110.40
1	B	1067	TYR	CB-CA-C	-8.93	92.53	110.40
1	A	855	PHE	CB-CA-C	-8.67	93.06	110.40
1	C	856	ASN	CB-CA-C	-7.06	96.28	110.40
1	B	760	CYS	CB-CA-C	-6.74	96.92	110.40
1	C	815	ARG	CB-CA-C	6.56	123.51	110.40
1	B	1057	PRO	N-CD-CG	-5.90	94.34	103.20
1	A	796	ASP	CB-CA-C	-5.85	98.69	110.40
1	A	773	GLU	CB-CA-C	-5.74	98.92	110.40
1	C	760	CYS	CB-CA-C	5.69	121.79	110.40
1	B	899	ALA	N-CA-CB	-5.35	102.61	110.10
1	B	796	ASP	CB-CA-C	-5.20	100.00	110.40
1	C	649	CYS	CB-CA-C	-5.04	100.32	110.40
1	C	675	GLN	CB-CA-C	-5.00	100.39	110.40

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	7969	0	7457	120	0
1	B	7943	0	7464	124	0
1	C	7462	0	7017	119	0
2	D	831	0	779	28	0
2	E	831	0	779	28	0
2	I	831	0	779	29	0
3	H	742	0	676	25	0
3	J	733	0	670	26	0
3	L	742	0	676	27	0
All	All	28084	0	26297	506	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 (506) 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:37:GLN:HA	2:D:43:LEU:HA	1.67	0.77
2:E:37:GLN:HA	2:E:43:LEU:HA	1.67	0.76
2:I:37:GLN:HA	2:I:43:LEU:HA	1.67	0.75
2:E:38:ALA:HB3	2:E:41:LYS:HB3	1.70	0.73
3:L:29:ILE:HG23	3:L:32:TRP:HB2	1.71	0.72
2:I:38:ALA:HB3	2:I:41:LYS:HB3	1.70	0.71
3:H:29:ILE:HG23	3:H:32:TRP:HB2	1.71	0.71
2:D:38:ALA:HB3	2:D:41:LYS:HB3	1.70	0.71
3:J:29:ILE:HG23	3:J:32:TRP:HB2	1.71	0.71
2:E:90:LEU:HA	2:E:112:MET:HA	1.73	0.70
2:I:90:LEU:HA	2:I:112:MET:HA	1.73	0.70
2:I:33:SER:HB2	2:I:96:GLY:HA2	1.73	0.70
2:D:33:SER:HB2	2:D:96:GLY:HA2	1.73	0.69
2:D:12:ILE:HG21	2:D:18:LEU:HD11	1.75	0.69
2:D:90:LEU:HA	2:D:112:MET:HA	1.73	0.69
2:E:33:SER:HB2	2:E:96:GLY:HA2	1.73	0.69
2:E:12:ILE:HG21	2:E:18:LEU:HD11	1.75	0.68
2:I:12:ILE:HG21	2:I:18:LEU:HD11	1.75	0.68
1:A:617:CYS:SG	1:A:644:GLN:HB2	2.34	0.68
2:D:61:VAL:HA	2:D:64:ARG:HE	1.59	0.68
2:I:61:VAL:HA	2:I:64:ARG:HE	1.59	0.68
2:E:61:VAL:HA	2:E:64:ARG:HE	1.59	0.68
1:A:866:THR:H	1:A:869:MET:HE3	1.60	0.67
1:A:135:PHE:HA	1:A:160:TYR:HA	1.77	0.67
2:E:2:VAL:N	2:E:25:SER:HG	1.94	0.66
2:I:2:VAL:N	2:I:25:SER:HG	1.95	0.65
1:A:357:ARG:NH1	1:B:168:PHE:CE1	2.65	0.64
1:A:456:PHE:HD2	1:A:491:PRO:HA	1.62	0.64
1:C:456:PHE:HD2	1:C:491:PRO:HA	1.62	0.64
1:B:456:PHE:HD2	1:B:491:PRO:HA	1.62	0.64
1:B:67:ALA:HB3	1:B:263:ALA:HB3	1.80	0.63
1:B:570:ALA:HB1	1:C:963:VAL:HG12	1.80	0.63
1:B:770:ILE:O	1:B:774:GLN:HG2	1.99	0.62
2:D:2:VAL:N	2:D:25:SER:HG	1.97	0.62
1:B:570:ALA:HB1	1:C:963:VAL:CG1	2.30	0.62
1:C:326:ILE:HG21	1:C:534:VAL:HG12	1.82	0.61
1:C:67:ALA:HB3	1:C:263:ALA:HB3	1.81	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:945:LEU:O	1:C:947:LYS:N	2.33	0.61
1:B:216:LEU:O	1:B:216:LEU:HD12	2.00	0.61
1:B:483:VAL:HG23	2:E:54:ASN:HB3	1.83	0.61
1:C:90:VAL:HG13	1:C:267:VAL:HG13	1.83	0.61
3:L:48:ILE:HG23	3:L:50:ALA:H	1.66	0.61
1:C:483:VAL:HG23	2:D:54:ASN:HB3	1.83	0.61
1:B:802:PHE:HD1	1:B:805:ILE:HD11	1.66	0.60
1:C:948:LEU:HD21	1:C:1059:GLY:HA3	1.83	0.60
1:B:560:LEU:HB2	1:B:563:GLN:NE2	2.16	0.60
1:C:811:LYS:HB3	1:C:812:PRO:HD2	1.84	0.60
3:H:48:ILE:HG23	3:H:50:ALA:H	1.66	0.60
1:B:909:ILE:HD13	1:B:1049:LEU:HD21	1.83	0.60
2:D:46:VAL:HG22	2:D:61:VAL:HG22	1.84	0.59
1:A:483:VAL:HG23	2:I:54:ASN:HB3	1.83	0.59
1:C:886:TRP:H	1:C:886:TRP:HE3	1.50	0.59
2:E:20:LEU:HD13	2:E:78:LEU:HD23	1.84	0.59
2:I:46:VAL:HG22	2:I:61:VAL:HG22	1.84	0.59
1:A:736:VAL:HG22	1:A:858:LEU:CD2	2.32	0.59
3:J:48:ILE:HG23	3:J:50:ALA:H	1.66	0.59
1:B:139:PRO:HG2	1:B:239:GLN:HE22	1.68	0.59
2:D:20:LEU:HD13	2:D:78:LEU:HD23	1.84	0.59
2:I:20:LEU:HD13	2:I:78:LEU:HD23	1.84	0.59
1:C:826:VAL:HG23	1:C:945:LEU:HG	1.83	0.59
1:C:82:PRO:HD2	1:C:84:LEU:HD11	1.84	0.58
1:A:123:ALA:HA	1:A:176:LEU:HA	1.85	0.58
1:A:67:ALA:HB3	1:A:263:ALA:HB3	1.83	0.58
1:B:320:VAL:HA	1:B:623:ALA:HB1	1.83	0.58
1:B:791:THR:HG23	1:B:879:ALA:CB	2.33	0.58
1:C:723:THR:O	1:C:724:THR:HG23	2.03	0.58
1:B:736:VAL:HG23	1:B:767:LEU:HD13	1.86	0.58
3:J:90:GLN:CB	3:J:97:THR:H	2.17	0.58
1:A:763:LEU:HD22	1:A:1008:VAL:HG21	1.86	0.58
3:H:90:GLN:CB	3:H:97:THR:H	2.17	0.58
1:B:32:PHE:HD1	1:B:59:PHE:CE1	2.22	0.58
1:A:419:ALA:HA	1:A:423:TYR:O	2.04	0.57
1:B:825:LYS:HB3	1:B:945:LEU:HD12	1.86	0.57
2:E:31:ARG:HD3	2:E:50:TYR:HD1	1.70	0.57
3:L:90:GLN:CB	3:L:97:THR:H	2.17	0.57
1:C:643:PHE:CE2	1:C:645:THR:HG22	2.39	0.57
2:E:46:VAL:HG22	2:E:61:VAL:HG22	1.84	0.57
1:A:1056:ALA:HB1	1:A:1057:PRO:HD2	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:419:ALA:HA	1:B:423:TYR:O	2.04	0.57
2:D:31:ARG:HD3	2:D:50:TYR:HD1	1.70	0.57
3:J:79:GLN:H	3:J:82:ASP:HB3	1.69	0.57
1:B:665:PRO:HB3	1:C:864:LEU:HD11	1.86	0.57
3:L:79:GLN:H	3:L:82:ASP:HB3	1.69	0.57
1:A:1086:LYS:HB3	1:A:1122:VAL:HG13	1.86	0.57
1:A:770:ILE:O	1:A:774:GLN:HG2	2.05	0.57
1:C:741:TYR:CE2	1:C:962:LEU:HG	2.40	0.57
1:A:811:LYS:HB3	1:A:812:PRO:CD	2.35	0.56
1:C:419:ALA:HA	1:C:423:TYR:O	2.04	0.56
3:H:79:GLN:H	3:H:82:ASP:HB3	1.69	0.56
1:A:102:ARG:HG2	1:A:243:ALA:HB2	1.88	0.56
1:C:83:VAL:HA	1:C:237:ARG:NE	2.21	0.56
1:C:821:LEU:HD11	1:C:939:SER:HB2	1.87	0.56
1:A:308:VAL:HB	1:A:602:THR:HG23	1.88	0.56
1:A:416:GLY:H	1:A:419:ALA:HB3	1.71	0.56
1:B:102:ARG:HH22	1:B:154:GLU:HG2	1.71	0.56
1:B:142:GLY:HA3	1:B:156:GLU:HB2	1.86	0.56
1:B:1115:ILE:HG23	1:B:1120:THR:HG21	1.88	0.56
1:C:416:GLY:H	1:C:419:ALA:HB3	1.71	0.56
2:I:31:ARG:HD3	2:I:50:TYR:HD1	1.70	0.56
1:B:416:GLY:H	1:B:419:ALA:HB3	1.71	0.56
1:B:128:ILE:HG21	1:B:229:LEU:HD13	1.87	0.56
1:C:328:ARG:HD2	1:C:533:LEU:HB3	1.88	0.55
1:A:546:LEU:HD21	1:A:573:THR:HG21	1.88	0.55
1:A:395:VAL:HG23	1:A:524:VAL:HG21	1.89	0.55
1:C:128:ILE:O	1:C:169:GLU:HA	2.06	0.55
2:D:9:GLY:HA3	2:D:111:THR:HB	1.89	0.55
1:A:736:VAL:HG22	1:A:858:LEU:HD23	1.89	0.55
1:A:1095:PHE:CE1	1:A:1104:VAL:HG22	2.42	0.55
1:B:742:ILE:HD13	1:B:1001:LEU:HG	1.89	0.55
3:J:21:ILE:HG22	3:J:73:LEU:HB3	1.89	0.55
1:A:453:TYR:CE1	1:A:493:GLN:HB3	2.43	0.54
2:I:9:GLY:HA3	2:I:111:THR:HB	1.89	0.54
1:B:453:TYR:CE1	1:B:493:GLN:HB3	2.43	0.54
1:B:486:PHE:HB3	2:E:101:HIS:CE1	2.42	0.54
2:E:9:GLY:HA3	2:E:111:THR:HB	1.89	0.54
1:A:289:VAL:HG23	1:A:306:PHE:CE2	2.42	0.54
1:A:703:ASN:O	1:B:789:TYR:HA	2.08	0.54
1:B:31:SER:HA	1:B:216:LEU:HD11	1.89	0.54
1:C:486:PHE:HB3	2:D:101:HIS:CE1	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:89:GLN:HE22	3:J:91:ALA:HB2	1.73	0.54
3:H:89:GLN:HE22	3:H:91:ALA:HB2	1.73	0.54
1:A:811:LYS:HB3	1:A:812:PRO:HD3	1.89	0.54
1:C:456:PHE:HB3	1:C:474:GLN:HG2	1.89	0.54
1:A:486:PHE:HB3	2:I:101:HIS:CE1	2.43	0.54
1:C:1028:LYS:O	1:C:1032:CYS:HB2	2.08	0.54
3:H:21:ILE:HG22	3:H:73:LEU:HB3	1.89	0.54
3:L:21:ILE:HG22	3:L:73:LEU:HB3	1.89	0.54
1:C:453:TYR:CE1	1:C:493:GLN:HB3	2.43	0.53
1:B:577:ARG:HH21	1:B:582:LEU:HB3	1.74	0.53
1:B:646:ARG:HD3	1:B:668:ALA:HB1	1.89	0.53
1:C:100:ILE:HG23	1:C:243:ALA:HB3	1.90	0.53
1:C:144:TYR:H	1:C:152:TRP:HA	1.73	0.53
1:B:666:ILE:HD11	1:B:672:ALA:HB2	1.90	0.53
3:J:62:PHE:HB3	3:J:73:LEU:HD21	1.91	0.53
1:C:200:TYR:HB3	1:C:228:ASP:OD1	2.08	0.53
1:A:1082:CYS:HB2	1:A:1132:ILE:CG2	2.39	0.53
3:H:62:PHE:HB3	3:H:73:LEU:HD21	1.91	0.53
1:B:92:PHE:HE2	1:B:240:THR:CG2	2.21	0.53
1:B:1056:ALA:HB1	1:B:1057:PRO:HD2	1.90	0.53
1:C:438:SER:HB2	1:C:441:LEU:HB2	1.91	0.53
2:I:116:SER:OG	2:I:117:SER:N	2.42	0.53
1:B:456:PHE:HB3	1:B:474:GLN:HG2	1.89	0.53
1:A:438:SER:HB2	1:A:441:LEU:HB2	1.91	0.53
1:C:791:THR:HG23	1:C:879:ALA:HB2	1.90	0.53
1:A:1039:ARG:NH2	1:B:1031:GLU:OE2	2.43	0.52
1:C:141:LEU:HA	1:C:156:GLU:HG3	1.90	0.52
1:C:324:GLU:OE1	1:C:539:VAL:HG22	2.09	0.52
3:L:2:ILE:HG13	3:L:26:SER:HB3	1.91	0.52
1:B:81:ASN:N	1:B:82:PRO:HD3	2.25	0.52
1:B:210:ILE:HG13	1:B:212:LEU:H	1.74	0.52
2:D:116:SER:OG	2:D:117:SER:N	2.42	0.52
3:J:2:ILE:HG13	3:J:26:SER:HB3	1.91	0.52
1:A:118:LEU:O	1:A:128:ILE:HA	2.10	0.52
1:A:456:PHE:CD2	1:A:491:PRO:HA	2.45	0.52
1:A:190:ARG:HB3	1:A:192:PHE:HE1	1.74	0.52
1:B:69:HIS:HA	1:B:76:THR:O	2.09	0.52
1:B:189:LEU:HD21	1:B:191:GLU:OE2	2.08	0.52
3:H:2:ILE:HG13	3:H:26:SER:HB3	1.91	0.52
1:A:456:PHE:HB3	1:A:474:GLN:HG2	1.89	0.52
1:A:1090:PRO:HD3	1:A:1095:PHE:CE2	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1115:ILE:CG2	1:B:1120:THR:HG21	2.39	0.52
2:E:116:SER:OG	2:E:117:SER:N	2.42	0.52
1:A:83:VAL:HG22	1:A:239:GLN:CD	2.30	0.52
1:B:438:SER:HB2	1:B:441:LEU:HB2	1.91	0.52
1:C:237:ARG:HG2	1:C:238:PHE:N	2.25	0.52
1:C:770:ILE:O	1:C:774:GLN:HG2	2.10	0.52
1:C:812:PRO:O	1:C:813:SER:C	2.48	0.52
3:L:59:PRO:HB2	3:L:61:ARG:HG2	1.92	0.52
3:H:59:PRO:HB2	3:H:61:ARG:HG2	1.92	0.51
1:C:37:TYR:HA	1:C:223:LEU:H	1.75	0.51
2:E:36:ARG:NH2	2:E:46:VAL:HB	2.26	0.51
3:L:62:PHE:HB3	3:L:73:LEU:HD21	1.91	0.51
1:C:374:PHE:CE2	1:C:377:PHE:HB2	2.46	0.51
3:J:21:ILE:CG2	3:J:73:LEU:HB3	2.41	0.51
1:A:131:CYS:CB	1:A:166:CYS:HA	2.40	0.51
1:A:533:LEU:HD12	1:A:533:LEU:O	2.11	0.51
1:C:119:ILE:HA	1:C:128:ILE:HG13	1.93	0.51
2:D:36:ARG:NH2	2:D:46:VAL:HB	2.26	0.51
1:A:374:PHE:CE2	1:A:377:PHE:HB2	2.46	0.51
1:B:456:PHE:CD2	1:B:491:PRO:HA	2.45	0.51
1:B:490:PHE:CE2	1:B:492:LEU:HB2	2.46	0.51
1:B:825:LYS:HB3	1:B:945:LEU:CD1	2.40	0.51
1:C:490:PHE:CE2	1:C:492:LEU:HB2	2.46	0.51
1:C:770:ILE:HD11	1:C:1012:LEU:HD23	1.92	0.51
2:I:36:ARG:NH2	2:I:46:VAL:HB	2.26	0.51
3:L:89:GLN:HE22	3:L:91:ALA:HB2	1.73	0.51
1:B:914:ASN:OD1	1:B:915:VAL:N	2.44	0.51
1:C:1081:ILE:HD12	1:C:1095:PHE:CE1	2.46	0.51
3:J:59:PRO:HB2	3:J:61:ARG:HG2	1.92	0.51
2:E:6:GLU:HA	2:E:21:SER:O	2.11	0.51
1:A:490:PHE:CE2	1:A:492:LEU:HB2	2.46	0.50
1:C:896:ILE:HD11	1:C:904:TYR:CZ	2.46	0.50
3:H:21:ILE:CG2	3:H:73:LEU:HB3	2.41	0.50
1:C:289:VAL:HG23	1:C:306:PHE:CE2	2.47	0.50
1:A:1081:ILE:CD1	1:A:1133:VAL:HG23	2.41	0.50
1:B:374:PHE:CE2	1:B:377:PHE:HB2	2.46	0.50
1:C:456:PHE:CD2	1:C:491:PRO:HA	2.44	0.50
3:J:64:GLY:HA3	3:J:73:LEU:HA	1.94	0.50
3:L:21:ILE:CG2	3:L:73:LEU:HB3	2.41	0.50
3:L:64:GLY:HA3	3:L:73:LEU:HA	1.94	0.50
1:A:802:PHE:HD1	1:A:805:ILE:HD11	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:374:PHE:HE2	1:B:377:PHE:HB2	1.77	0.50
1:B:673:SER:OG	1:B:695:TYR:HE2	1.95	0.49
1:A:374:PHE:HE2	1:A:377:PHE:HB2	1.77	0.49
1:A:789:TYR:HA	1:C:703:ASN:O	2.11	0.49
1:B:791:THR:CG2	1:B:879:ALA:CB	2.90	0.49
1:C:374:PHE:HE2	1:C:377:PHE:HB2	1.77	0.49
2:I:6:GLU:HA	2:I:21:SER:O	2.11	0.49
1:B:117:LEU:HD11	1:B:128:ILE:HG22	1.94	0.49
1:B:791:THR:HG23	1:B:879:ALA:HB2	1.94	0.49
1:C:1086:LYS:HB3	1:C:1122:VAL:HG13	1.94	0.49
1:B:193:VAL:HG13	1:B:270:LEU:HD11	1.93	0.49
1:C:431:GLY:HA3	1:C:513:LEU:O	2.13	0.49
1:C:962:LEU:HD13	1:C:1007:TYR:HB2	1.94	0.49
3:H:64:GLY:HA3	3:H:73:LEU:HA	1.94	0.49
1:B:30:ASN:ND2	1:B:32:PHE:CE1	2.79	0.49
1:B:431:GLY:HA3	1:B:513:LEU:O	2.13	0.49
1:A:424:LYS:HE2	1:A:463:PRO:HG3	1.95	0.49
2:D:6:GLU:HA	2:D:21:SER:O	2.11	0.49
2:I:33:SER:CB	2:I:96:GLY:HA2	2.42	0.49
1:A:961:THR:O	1:A:965:GLN:HG2	2.12	0.49
1:B:424:LYS:HE2	1:B:463:PRO:HG3	1.95	0.49
1:C:811:LYS:HB3	1:C:812:PRO:CD	2.42	0.49
1:B:18:LEU:HD23	1:B:21:ARG:HD3	1.94	0.49
1:C:369:TYR:HB3	1:C:377:PHE:CE2	2.47	0.49
1:A:42:VAL:HG12	1:A:43:PHE:N	2.27	0.48
1:A:431:GLY:HA3	1:A:513:LEU:O	2.13	0.48
1:A:1028:LYS:O	1:A:1032:CYS:HB2	2.13	0.48
1:B:318:PHE:CZ	1:B:623:ALA:HB3	2.48	0.48
3:H:30:SER:HA	3:H:67:SER:HA	1.95	0.48
1:A:336:CYS:HA	1:A:361:CYS:HB2	1.94	0.48
1:A:486:PHE:HB3	2:I:101:HIS:NE2	2.29	0.48
1:A:878:LEU:HD21	1:A:1052:PHE:HB3	1.96	0.48
1:C:322:PRO:HA	1:C:538:CYS:O	2.13	0.48
1:C:424:LYS:HE2	1:C:463:PRO:HG3	1.95	0.48
1:C:486:PHE:HB3	2:D:101:HIS:NE2	2.28	0.48
1:C:620:VAL:HG23	1:C:621:PRO:HD3	1.95	0.48
1:C:822:LEU:HD23	1:C:1056:ALA:CB	2.43	0.48
2:I:20:LEU:HB2	2:I:78:LEU:HB3	1.95	0.48
1:B:785:VAL:CG1	1:B:787:GLN:O	2.61	0.48
1:C:1006:THR:O	1:C:1010:GLN:HG2	2.14	0.48
1:A:825:LYS:NZ	1:A:942:ALA:HB3	2.29	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:330:PRO:HA	1:C:579:PRO:HB2	1.96	0.48
1:B:1090:PRO:HD3	1:B:1095:PHE:CE2	2.49	0.48
1:C:395:VAL:HG23	1:C:524:VAL:HG21	1.95	0.48
1:C:770:ILE:HD12	1:C:1015:ALA:CB	2.44	0.48
1:A:371:SER:C	1:A:373:SER:H	2.17	0.48
1:A:802:PHE:CD1	1:A:805:ILE:HD11	2.49	0.47
1:B:486:PHE:HB3	2:E:101:HIS:NE2	2.29	0.47
1:C:328:ARG:HH21	1:C:580:GLN:HB3	1.79	0.47
1:A:308:VAL:H	1:A:602:THR:CG2	2.25	0.47
1:B:948:LEU:HD21	1:B:1059:GLY:HA3	1.95	0.47
1:C:318:PHE:O	1:C:592:PHE:HA	2.14	0.47
1:C:721:SER:OG	1:C:1066:THR:OG1	2.31	0.47
1:C:738:CYS:O	1:C:742:ILE:HG13	2.15	0.47
2:D:20:LEU:HB2	2:D:78:LEU:HB3	1.95	0.47
2:D:33:SER:CB	2:D:96:GLY:HA2	2.42	0.47
3:H:35:TRP:CD1	3:H:73:LEU:HD13	2.50	0.47
3:H:94:PHE:CD1	3:H:95:PRO:HA	2.49	0.47
3:L:35:TRP:CD1	3:L:73:LEU:HD13	2.49	0.47
1:B:308:VAL:CG1	1:B:599:THR:HG21	2.44	0.47
3:L:30:SER:HA	3:L:67:SER:HA	1.95	0.47
1:A:126:VAL:H	1:A:174:PRO:HA	1.78	0.47
1:C:961:THR:O	1:C:965:GLN:HG3	2.14	0.47
1:B:395:VAL:HG23	1:B:524:VAL:HG21	1.96	0.47
1:C:822:LEU:CD2	1:C:1056:ALA:HB2	2.45	0.47
3:J:30:SER:HA	3:J:67:SER:HA	1.95	0.47
2:E:20:LEU:HB2	2:E:78:LEU:HB3	1.95	0.47
3:J:94:PHE:CD1	3:J:95:PRO:HA	2.49	0.47
1:A:90:VAL:HG13	1:A:267:VAL:HG13	1.96	0.47
1:A:190:ARG:HB3	1:A:192:PHE:CE1	2.50	0.47
1:B:134:GLN:HB3	1:B:162:SER:HB3	1.97	0.47
1:C:576:VAL:HG23	1:C:587:ILE:HD13	1.95	0.47
1:C:763:LEU:HD22	1:C:1008:VAL:HG21	1.97	0.47
1:C:822:LEU:HD23	1:C:1056:ALA:HB2	1.96	0.47
1:C:965:GLN:OE1	1:C:1003:SER:HB2	2.14	0.47
1:B:994:ASP:O	1:B:998:THR:HG23	2.15	0.47
3:J:35:TRP:CD1	3:J:73:LEU:HD13	2.50	0.47
1:A:1115:ILE:CG2	1:A:1120:THR:HG21	2.45	0.47
1:C:541:PHE:CZ	1:C:587:ILE:HG12	2.50	0.47
2:E:33:SER:CB	2:E:96:GLY:HA2	2.42	0.47
1:A:599:THR:HG22	1:A:608:VAL:HG12	1.96	0.46
1:C:723:THR:O	1:C:724:THR:CG2	2.62	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1024:LEU:HD11	1:A:1042:PHE:HE1	1.80	0.46
1:C:598:ILE:HG23	1:C:664:ILE:HG21	1.96	0.46
3:L:94:PHE:CD1	3:L:95:PRO:HA	2.49	0.46
1:A:642:VAL:HG13	1:A:649:CYS:SG	2.55	0.46
1:B:393:THR:HB	1:B:517:LEU:HA	1.98	0.46
1:B:666:ILE:CD1	1:B:672:ALA:HB2	2.46	0.46
1:B:785:VAL:HG12	1:B:787:GLN:O	2.15	0.46
1:A:1080:ALA:O	1:A:1081:ILE:HD13	2.15	0.46
1:A:1116:THR:HG22	1:A:1138:TYR:HD2	1.81	0.46
1:B:328:ARG:HH22	1:B:581:THR:HG23	1.80	0.46
1:B:932:GLY:O	1:B:935:GLN:HG2	2.16	0.46
1:C:909:ILE:HD13	1:C:1049:LEU:HD21	1.98	0.46
3:J:29:ILE:HB	3:J:71:PHE:CZ	2.51	0.46
1:B:905:ARG:HD3	1:B:1049:LEU:O	2.16	0.46
1:A:395:VAL:HG22	1:A:515:PHE:HD1	1.81	0.46
3:L:29:ILE:HB	3:L:71:PHE:CZ	2.51	0.46
1:A:393:THR:HB	1:A:517:LEU:HA	1.98	0.46
2:D:47:SER:CB	2:D:61:VAL:HG21	2.45	0.46
3:J:49:ASN:OD1	3:J:55:GLN:HA	2.16	0.46
3:H:29:ILE:HB	3:H:71:PHE:CZ	2.51	0.46
1:A:108:THR:HA	1:A:236:THR:H	1.81	0.46
1:B:984:LEU:HD12	1:B:984:LEU:HA	1.78	0.46
2:I:47:SER:CB	2:I:61:VAL:HG21	2.45	0.46
1:A:869:MET:SD	1:C:697:MET:HE3	2.56	0.45
1:B:785:VAL:CG2	1:B:877:LEU:HG	2.47	0.45
2:E:47:SER:CB	2:E:61:VAL:HG21	2.46	0.45
1:B:546:LEU:HD11	1:B:576:VAL:HG21	1.99	0.45
3:L:49:ASN:OD1	3:L:55:GLN:HA	2.16	0.45
1:B:92:PHE:CE2	1:B:240:THR:HG22	2.51	0.45
1:B:96:GLU:HG3	1:B:99:ASN:H	1.80	0.45
1:B:395:VAL:HG22	1:B:515:PHE:HD1	1.81	0.45
3:J:32:TRP:HB3	3:J:91:ALA:HB3	1.99	0.45
1:A:18:LEU:HD21	1:A:244:LEU:HD21	1.99	0.45
1:A:533:LEU:HD12	1:A:533:LEU:C	2.36	0.45
1:C:791:THR:HG23	1:C:879:ALA:CB	2.46	0.45
1:A:815:ARG:HD2	1:A:820:ASP:OD1	2.17	0.45
1:B:570:ALA:HA	1:C:964:LYS:HG3	1.99	0.45
3:H:32:TRP:HB3	3:H:91:ALA:HB3	1.98	0.45
1:C:83:VAL:HA	1:C:237:ARG:HE	1.80	0.45
3:H:49:ASN:OD1	3:H:55:GLN:HA	2.16	0.45
1:A:620:VAL:HG21	1:A:651:ILE:HD11	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:742:ILE:CD1	1:B:1001:LEU:HG	2.46	0.45
1:A:404:GLY:O	1:A:407:VAL:HG22	2.17	0.45
1:B:90:VAL:HG13	1:B:267:VAL:HG13	1.99	0.45
1:C:393:THR:HB	1:C:517:LEU:HA	1.98	0.45
1:A:880:GLY:O	1:A:884:SER:HB2	2.17	0.44
1:C:822:LEU:HD12	1:C:945:LEU:HD21	1.99	0.44
1:B:111:ASP:O	1:B:112:SER:HB2	2.16	0.44
1:C:289:VAL:HG23	1:C:306:PHE:CZ	2.52	0.44
1:A:62:VAL:HG12	1:A:268:GLY:HA3	2.00	0.44
1:C:502:GLY:O	1:C:506:GLN:N	2.49	0.44
1:A:106:PHE:HB3	1:A:235:ILE:CG2	2.48	0.44
1:C:643:PHE:CE2	1:C:645:THR:CG2	3.00	0.44
1:A:533:LEU:CD1	1:A:535:LYS:HE3	2.47	0.44
1:B:643:PHE:CE2	1:B:670:ILE:HD13	2.53	0.44
1:C:1116:THR:HG22	1:C:1138:TYR:HD2	1.83	0.44
3:H:2:ILE:HG22	3:H:97:THR:HB	2.00	0.44
1:A:83:VAL:HG22	1:A:239:GLN:OE1	2.17	0.44
1:C:38:TYR:CE1	1:C:224:GLU:HG2	2.53	0.44
3:L:32:TRP:HB3	3:L:91:ALA:HB3	1.99	0.44
1:A:773:GLU:OE2	1:A:1019:ARG:HD3	2.18	0.44
1:A:815:ARG:HA	1:A:819:GLU:OE1	2.18	0.44
1:B:193:VAL:HG23	1:B:223:LEU:HD12	2.00	0.44
1:B:736:VAL:HG13	1:B:858:LEU:HD23	2.00	0.44
1:C:905:ARG:HD3	1:C:1049:LEU:O	2.17	0.44
2:D:59:ASP:HA	2:D:62:LYS:HE2	2.00	0.44
3:L:2:ILE:HG22	3:L:97:THR:HB	2.00	0.44
1:B:560:LEU:HB2	1:B:563:GLN:CD	2.38	0.44
1:C:212:LEU:O	1:C:212:LEU:HG	2.17	0.44
1:B:112:SER:HB3	1:B:164:ASN:HB2	2.00	0.44
1:B:533:LEU:HD23	1:B:533:LEU:H	1.83	0.44
1:C:495:TYR:HD1	1:C:495:TYR:HA	1.72	0.44
3:J:27:GLN:H	3:J:29:ILE:HD12	1.83	0.44
3:H:27:GLN:H	3:H:29:ILE:HD12	1.83	0.44
1:A:775:ASP:O	1:A:779:GLN:HG3	2.18	0.43
1:C:404:GLY:O	1:C:407:VAL:HG22	2.17	0.43
2:D:64:ARG:HB3	2:D:82:SER:OG	2.18	0.43
2:I:59:ASP:HA	2:I:62:LYS:HE2	2.00	0.43
3:J:79:GLN:HB2	3:J:82:ASP:HB2	2.00	0.43
1:A:147:LYS:HD3	1:A:147:LYS:HA	1.84	0.43
1:A:617:CYS:O	1:A:620:VAL:HG12	2.18	0.43
1:B:159:VAL:HG13	1:B:160:TYR:HD1	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:69:ARG:HA	2:D:76:LEU:HA	2.01	0.43
3:J:2:ILE:HG22	3:J:97:THR:HB	2.00	0.43
1:B:331:ASN:O	1:B:332:ILE:HG12	2.18	0.43
1:C:95:THR:HG22	1:C:189:LEU:HA	2.00	0.43
1:B:98:SER:HB2	1:B:100:ILE:HG13	2.00	0.43
1:B:434:ILE:HB	1:B:511:VAL:HG12	2.01	0.43
1:C:120:VAL:HG21	1:C:129:LYS:HE3	2.01	0.43
1:C:391:CYS:HA	1:C:525:CYS:HB3	2.00	0.43
1:A:434:ILE:HB	1:A:511:VAL:HG12	2.01	0.43
1:A:902:MET:O	1:A:903:ALA:HB3	2.19	0.43
1:A:1002:GLN:O	1:A:1006:THR:HG23	2.18	0.43
1:B:909:ILE:HG13	1:B:911:VAL:HG23	2.00	0.43
1:C:368:LEU:HB3	1:C:377:PHE:CE1	2.54	0.43
3:H:89:GLN:NE2	3:H:91:ALA:HB2	2.34	0.43
3:L:79:GLN:HB2	3:L:82:ASP:HB2	2.00	0.43
1:B:404:GLY:O	1:B:407:VAL:HG22	2.17	0.43
2:E:69:ARG:HA	2:E:76:LEU:HA	2.01	0.43
1:A:647:ALA:HA	1:B:862:PRO:HG3	1.99	0.43
1:C:67:ALA:HB1	1:C:260:ALA:HB1	2.00	0.43
2:D:4:LEU:HB3	2:D:22:CYS:SG	2.59	0.43
2:E:64:ARG:HB3	2:E:82:SER:OG	2.18	0.43
1:B:231:ILE:HG22	1:B:233:ILE:HG23	2.00	0.43
1:B:495:TYR:HD1	1:B:495:TYR:HA	1.72	0.43
1:C:434:ILE:HB	1:C:511:VAL:HG12	2.01	0.43
2:E:4:LEU:HB3	2:E:22:CYS:SG	2.59	0.43
1:A:425:LEU:HD12	1:A:425:LEU:HA	1.80	0.42
1:B:129:LYS:HA	1:B:170:TYR:O	2.18	0.42
2:I:64:ARG:HB3	2:I:82:SER:OG	2.18	0.42
1:B:324:GLU:HB2	1:B:539:VAL:HG23	2.01	0.42
1:B:551:VAL:HG23	1:B:590:CYS:HB3	2.02	0.42
1:C:805:ILE:HD12	1:C:878:LEU:HD21	2.00	0.42
2:E:59:ASP:HA	2:E:62:LYS:HE2	2.00	0.42
1:A:123:ALA:HB1	1:A:176:LEU:HD12	2.01	0.42
1:A:352:ALA:HA	1:A:468:ILE:HG12	2.01	0.42
1:B:308:VAL:HG12	1:B:599:THR:HG21	2.01	0.42
1:B:1081:ILE:HD13	1:B:1115:ILE:HD13	2.00	0.42
1:C:1027:THR:HG22	1:C:1042:PHE:HZ	1.84	0.42
1:B:32:PHE:HD1	1:B:59:PHE:HE1	1.65	0.42
2:I:88:THR:HG21	2:I:115:VAL:HB	2.02	0.42
1:B:34:ARG:NE	1:B:191:GLU:OE2	2.52	0.42
1:B:142:GLY:CA	1:B:156:GLU:HB2	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:379:CYS:HA	1:B:432:CYS:HA	2.02	0.42
1:B:776:LYS:HE2	1:B:776:LYS:HB3	1.85	0.42
1:C:368:LEU:HB3	1:C:377:PHE:HE1	1.85	0.42
1:C:939:SER:C	1:C:941:THR:N	2.73	0.42
3:J:89:GLN:NE2	3:J:91:ALA:HB2	2.34	0.42
2:I:4:LEU:HB3	2:I:22:CYS:SG	2.59	0.42
2:I:83:LEU:HD12	2:I:83:LEU:H	1.85	0.42
1:A:1095:PHE:CD1	1:A:1104:VAL:HG22	2.55	0.42
2:I:69:ARG:HA	2:I:76:LEU:HA	2.01	0.42
3:L:27:GLN:H	3:L:29:ILE:HD12	1.83	0.42
1:A:1115:ILE:HG22	1:A:1120:THR:HG21	2.01	0.42
3:H:79:GLN:HB2	3:H:82:ASP:HB2	2.00	0.42
3:L:66:GLY:HA2	3:L:71:PHE:HA	2.01	0.42
1:A:190:ARG:HG3	1:A:207:HIS:CD2	2.54	0.42
1:A:674:TYR:O	1:A:675:GLN:C	2.58	0.42
1:A:733:LYS:HE3	1:A:771:ALA:O	2.20	0.42
1:B:352:ALA:HA	1:B:468:ILE:HG12	2.01	0.42
2:D:45:CYS:HG	3:J:98:PHE:HE1	1.66	0.42
2:E:88:THR:HG21	2:E:115:VAL:HB	2.02	0.42
3:L:89:GLN:NE2	3:L:91:ALA:HB2	2.34	0.42
1:B:366:SER:HA	1:B:369:TYR:CE1	2.54	0.42
1:B:746:SER:OG	1:B:749:CYS:HB3	2.19	0.42
1:B:906:PHE:O	1:B:909:ILE:HG12	2.19	0.42
1:C:721:SER:OG	1:C:721:SER:O	2.31	0.42
1:A:379:CYS:HA	1:A:432:CYS:HA	2.02	0.42
1:C:352:ALA:HA	1:C:468:ILE:HG12	2.01	0.42
2:E:83:LEU:HD12	2:E:83:LEU:H	1.85	0.42
3:H:62:PHE:HA	3:H:74:THR:O	2.20	0.42
3:H:66:GLY:HA2	3:H:71:PHE:HA	2.01	0.42
1:A:289:VAL:HG23	1:A:306:PHE:CZ	2.54	0.41
1:A:318:PHE:O	1:A:592:PHE:HA	2.20	0.41
1:B:18:LEU:HA	1:B:18:LEU:HD12	1.82	0.41
2:D:83:LEU:HD12	2:D:83:LEU:H	1.85	0.41
1:B:621:PRO:HG2	1:B:622:VAL:HG23	2.03	0.41
1:C:128:ILE:HD13	1:C:170:TYR:HB3	2.03	0.41
1:A:962:LEU:HD13	1:A:1007:TYR:HB2	2.02	0.41
1:C:1086:LYS:HB3	1:C:1122:VAL:CG1	2.49	0.41
3:J:62:PHE:HA	3:J:74:THR:O	2.20	0.41
3:J:66:GLY:HA2	3:J:71:PHE:HA	2.01	0.41
2:I:48:VAL:HB	2:I:56:ASP:OD1	2.20	0.41
1:A:738:CYS:O	1:A:742:ILE:HG12	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:534:VAL:CG1	1:C:539:VAL:HG21	2.51	0.41
3:L:62:PHE:HA	3:L:74:THR:O	2.20	0.41
1:A:18:LEU:HD21	1:A:244:LEU:CD2	2.50	0.41
1:A:127:VAL:HG13	1:A:171:VAL:HG23	2.01	0.41
1:A:900:MET:HG3	1:A:917:TYR:OH	2.21	0.41
1:A:1038:LYS:HB3	1:A:1038:LYS:HE2	1.87	0.41
1:C:911:VAL:HG13	1:C:1106:GLN:HE22	1.85	0.41
1:B:229:LEU:HA	1:B:230:PRO:HD3	1.94	0.41
1:B:756:TYR:OH	1:B:998:THR:HG22	2.20	0.41
1:C:666:ILE:HD11	1:C:672:ALA:HB2	2.03	0.41
2:D:88:THR:HG21	2:D:115:VAL:HB	2.02	0.41
2:E:48:VAL:HB	2:E:56:ASP:OD1	2.20	0.41
2:E:64:ARG:O	2:E:81:ASN:HB2	2.21	0.41
1:A:495:TYR:HD1	1:A:495:TYR:HA	1.72	0.41
1:B:724:THR:HG22	1:B:1063:LEU:CD2	2.51	0.41
3:H:27:GLN:OE1	3:H:93:SER:HB3	2.21	0.41
2:I:64:ARG:O	2:I:81:ASN:HB2	2.21	0.41
1:C:416:GLY:N	1:C:419:ALA:HB3	2.36	0.41
2:D:48:VAL:HB	2:D:56:ASP:OD1	2.20	0.41
1:A:245:HIS:CE1	1:A:247:SER:HB2	2.56	0.41
1:A:362:VAL:HG11	1:A:527:PRO:HB3	2.02	0.41
1:A:620:VAL:N	1:A:621:PRO:HD2	2.36	0.41
1:B:290:ASP:O	1:B:297:SER:HB3	2.21	0.41
1:B:425:LEU:HD12	1:B:425:LEU:HA	1.80	0.41
1:B:541:PHE:O	1:B:547:THR:HA	2.21	0.41
1:B:552:LEU:HD23	1:B:587:ILE:HG13	2.03	0.41
1:B:569:ILE:O	1:B:570:ALA:HB3	2.20	0.41
1:C:355:ARG:HH21	1:C:355:ARG:HG3	1.86	0.41
1:C:379:CYS:HA	1:C:432:CYS:HA	2.02	0.41
3:L:94:PHE:CD1	3:L:96:PRO:HD3	2.56	0.41
1:A:118:LEU:HD23	1:A:129:LYS:HE3	2.03	0.41
1:B:555:SER:OG	1:B:557:LYS:HG2	2.21	0.41
1:C:1027:THR:HG22	1:C:1042:PHE:CZ	2.56	0.41
3:J:62:PHE:HD1	3:J:75:ILE:HG12	1.86	0.41
1:A:42:VAL:CG1	1:A:43:PHE:N	2.84	0.40
1:A:823:PHE:CE1	1:A:1057:PRO:HA	2.57	0.40
1:A:1081:ILE:HD13	1:A:1133:VAL:HG23	2.03	0.40
1:B:1084:ASP:HB3	1:B:1086:LYS:HE2	2.03	0.40
3:H:62:PHE:HD1	3:H:75:ILE:HG12	1.86	0.40
2:I:6:GLU:OE2	2:I:93:CYS:SG	2.79	0.40
3:L:62:PHE:HD1	3:L:75:ILE:HG12	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:877:LEU:O	1:A:881:THR:HG22	2.21	0.40
3:L:27:GLN:OE1	3:L:93:SER:HB3	2.21	0.40
1:A:355:ARG:HH21	1:A:355:ARG:HG3	1.86	0.40
1:C:38:TYR:HE1	1:C:224:GLU:HG2	1.86	0.40
1:C:336:CYS:HA	1:C:361:CYS:HB2	2.03	0.40
1:C:1056:ALA:O	1:C:1057:PRO:C	2.59	0.40
1:A:290:ASP:O	1:A:297:SER:HB3	2.21	0.40
1:A:1027:THR:HG22	1:A:1042:PHE:CZ	2.57	0.40
1:C:805:ILE:HD12	1:C:878:LEU:HD11	2.03	0.40
1:C:994:ASP:OD1	1:C:994:ASP:O	2.39	0.40
1:A:316:SER:HB3	1:A:317:ASN:H	1.64	0.40
1:A:718:PHE:CE1	1:A:923:ILE:HG12	2.57	0.40
1:A:806:LEU:HD23	1:A:806:LEU:HA	1.92	0.40
1:B:416:GLY:N	1:B:419:ALA:HB3	2.36	0.40
1:C:65:PHE:CE1	1:C:84:LEU:HD21	2.57	0.40
1:C:723:THR:C	1:C:724:THR:HG23	2.40	0.40
3:J:94:PHE:CD1	3:J:96:PRO:HD3	2.56	0.40
3:L:3:GLN:O	3:L:26:SER:HB2	2.22	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	1042/1298 (80%)	988 (95%)	48 (5%)	6 (1%)	25	57
1	B	1032/1298 (80%)	969 (94%)	59 (6%)	4 (0%)	34	66
1	C	963/1298 (74%)	904 (94%)	48 (5%)	11 (1%)	14	45
2	D	114/117 (97%)	109 (96%)	4 (4%)	1 (1%)	17	48
2	E	114/117 (97%)	109 (96%)	4 (4%)	1 (1%)	17	48
2	I	114/117 (97%)	109 (96%)	4 (4%)	1 (1%)	17	48

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
3	H	103/107 (96%)	98 (95%)	5 (5%)	0	100 100
3	J	102/107 (95%)	97 (95%)	5 (5%)	0	100 100
3	L	103/107 (96%)	98 (95%)	5 (5%)	0	100 100
All	All	3687/4566 (81%)	3481 (94%)	182 (5%)	24 (1%)	26 54

All (24) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	811	LYS
1	B	332	ILE
1	C	280	ASN
1	C	707	TYR
1	C	813	SER
1	C	942	ALA
1	C	946	GLY
2	D	89	ALA
2	E	89	ALA
2	I	89	ALA
1	A	88	ASP
1	A	372	ALA
1	A	472	ILE
1	B	472	ILE
1	B	940	SER
1	C	332	ILE
1	C	472	ILE
1	B	330	PRO
1	C	525	CYS
1	C	82	PRO
1	C	1057	PRO
1	A	325	SER
1	A	1127	ASP
1	C	811	LYS

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	845/1122 (75%)	837 (99%)	8 (1%)	78	87
1	B	846/1122 (75%)	834 (99%)	12 (1%)	67	82
1	C	788/1122 (70%)	767 (97%)	21 (3%)	44	71
2	D	85/95 (90%)	84 (99%)	1 (1%)	71	83
2	E	85/95 (90%)	84 (99%)	1 (1%)	71	83
2	I	85/95 (90%)	84 (99%)	1 (1%)	71	83
3	H	74/89 (83%)	73 (99%)	1 (1%)	67	82
3	J	73/89 (82%)	72 (99%)	1 (1%)	67	82
3	L	74/89 (83%)	73 (99%)	1 (1%)	67	82
All	All	2955/3918 (75%)	2908 (98%)	47 (2%)	64	79

All (47) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	21	ARG
1	A	177	MET
1	A	347	PHE
1	A	440	ASN
1	A	495	TYR
1	A	524	VAL
1	A	525	CYS
1	A	906	PHE
1	B	66	HIS
1	B	121	ASN
1	B	215	ASP
1	B	281	GLU
1	B	332	ILE
1	B	347	PHE
1	B	440	ASN
1	B	495	TYR
1	B	524	VAL
1	B	755	GLN
1	B	886	TRP
1	B	916	LEU
1	C	43	PHE
1	C	47	VAL
1	C	97	LYS
1	C	154	GLU
1	C	156	GLU
1	C	175	PHE

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Mol	Chain	Res	Type
1	C	212	LEU
1	C	238	PHE
1	C	241	LEU
1	C	333	THR
1	C	347	PHE
1	C	440	ASN
1	C	495	TYR
1	C	515	PHE
1	C	524	VAL
1	C	546	LEU
1	C	697	MET
1	C	746	SER
1	C	759	PHE
1	C	760	CYS
1	C	902	MET
2	D	111	THR
3	J	94	PHE
2	E	111	THR
3	H	94	PHE
2	I	111	THR
3	L	94	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (40) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	66	HIS
1	A	115	GLN
1	A	370	ASN
1	A	440	ASN
1	A	607	GLN
1	A	655	HIS
1	A	703	ASN
1	A	751	ASN
1	A	755	GLN
1	A	787	GLN
1	A	1002	GLN
1	A	1011	GLN
1	B	121	ASN
1	B	134	GLN
1	B	370	ASN
1	B	388	ASN
1	B	440	ASN

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Mol	Chain	Res	Type
1	B	536	ASN
1	B	703	ASN
1	B	751	ASN
1	B	762	GLN
1	B	787	GLN
1	B	1005	GLN
1	B	1011	GLN
1	B	1108	ASN
1	C	81	ASN
1	C	321	GLN
1	C	370	ASN
1	C	440	ASN
1	C	536	ASN
1	C	655	HIS
1	C	675	GLN
1	C	703	ASN
1	C	787	GLN
1	C	1005	GLN
1	C	1106	GLN
1	C	1108	ASN
3	J	89	GLN
3	H	89	GLN
3	L	89	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry

There are no ligands in this entry.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

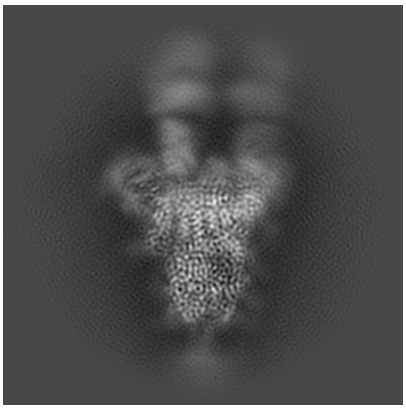
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-33133. These allow visual inspection of the internal detail of the map and identification of artifacts.

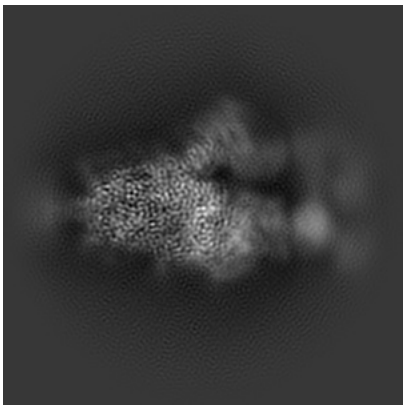
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

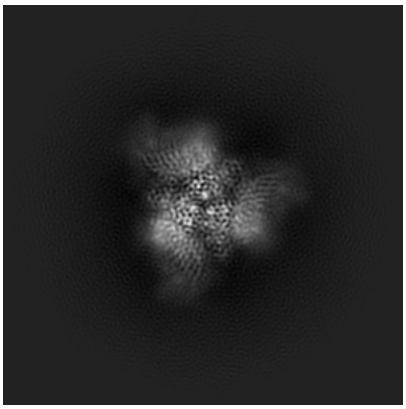
6.1.1 Primary map



X

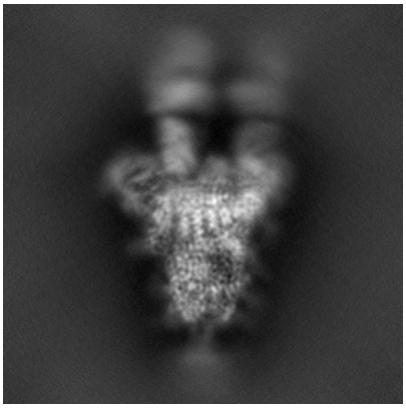


Y

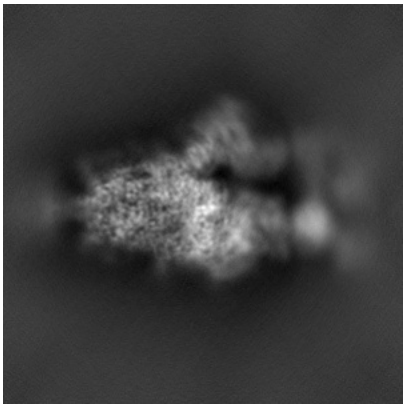


Z

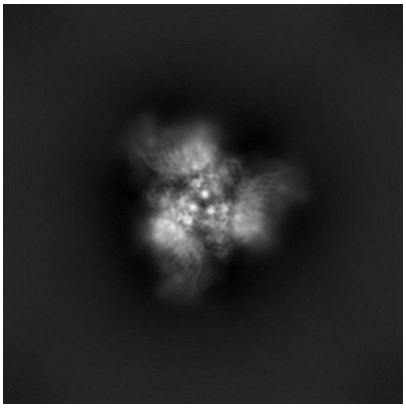
6.1.2 Raw map



X



Y

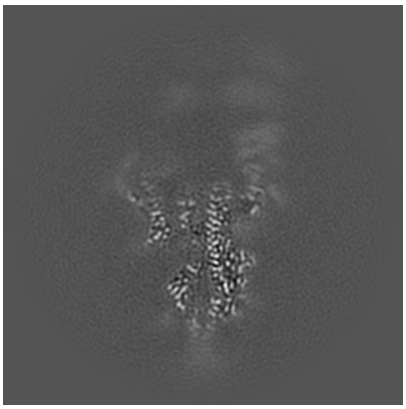


Z

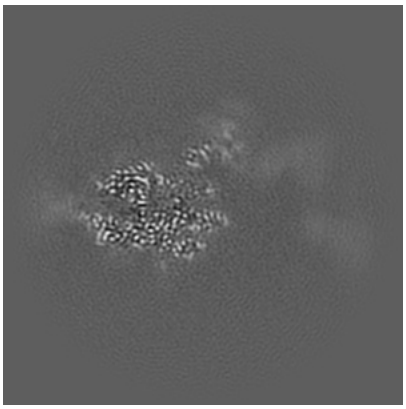
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

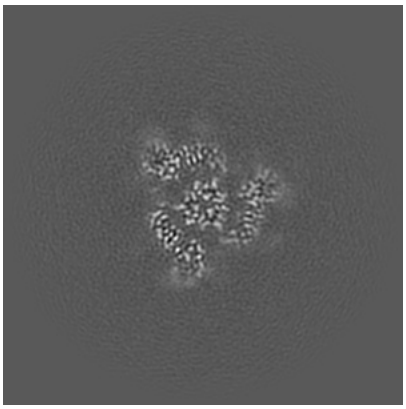
6.2.1 Primary map



X Index: 160

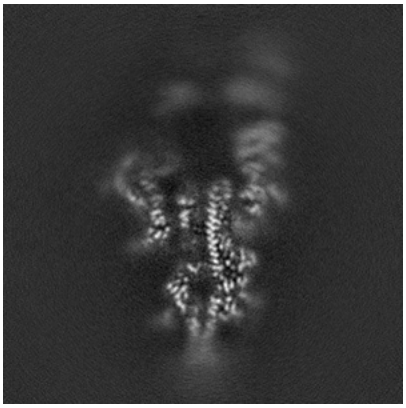


Y Index: 160

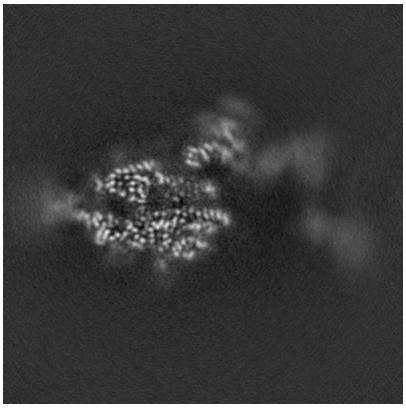


Z Index: 160

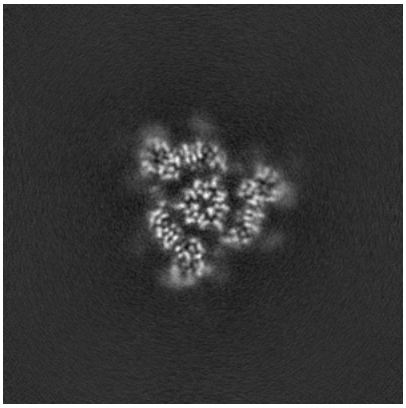
6.2.2 Raw map



X Index: 160



Y Index: 160

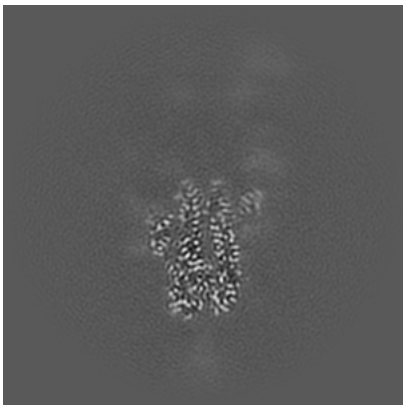


Z Index: 160

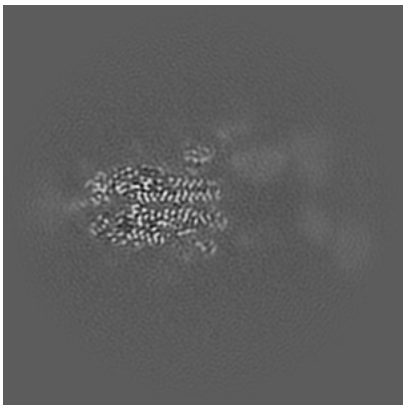
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

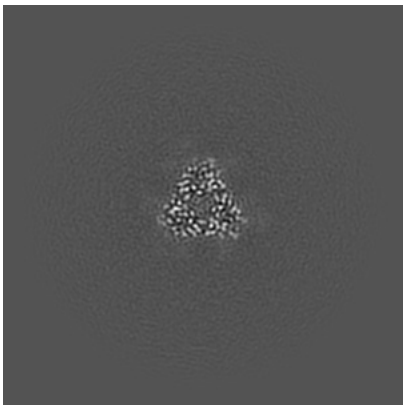
6.3.1 Primary map



X Index: 169

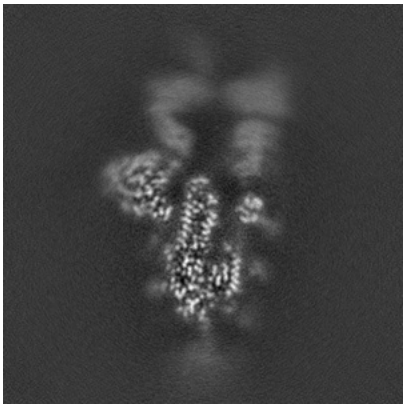


Y Index: 154

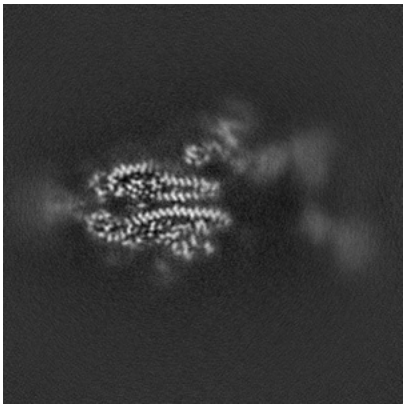


Z Index: 100

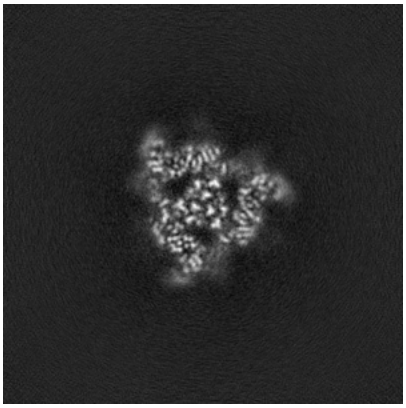
6.3.2 Raw map



X Index: 146



Y Index: 157

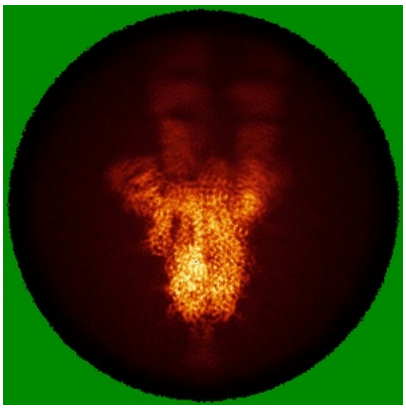


Z Index: 155

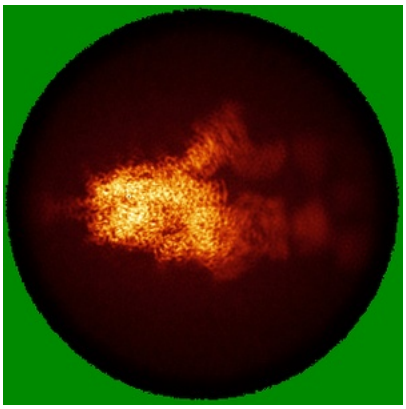
The images above show the largest variance slices of the map in three orthogonal directions.

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

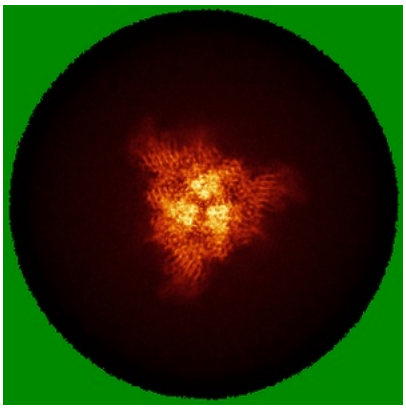
6.4.1 Primary map



X

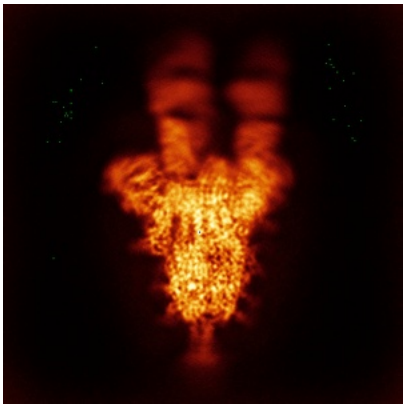


Y

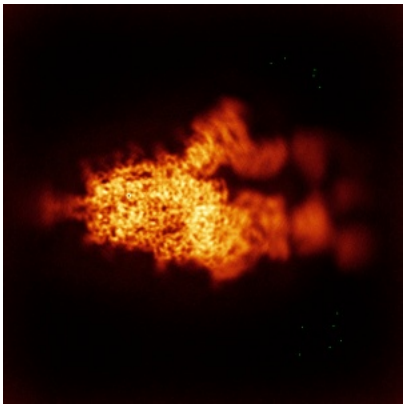


Z

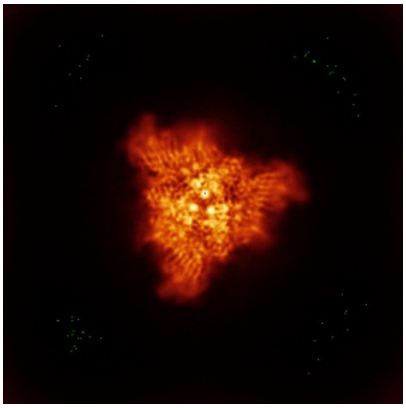
6.4.2 Raw map



X



Y

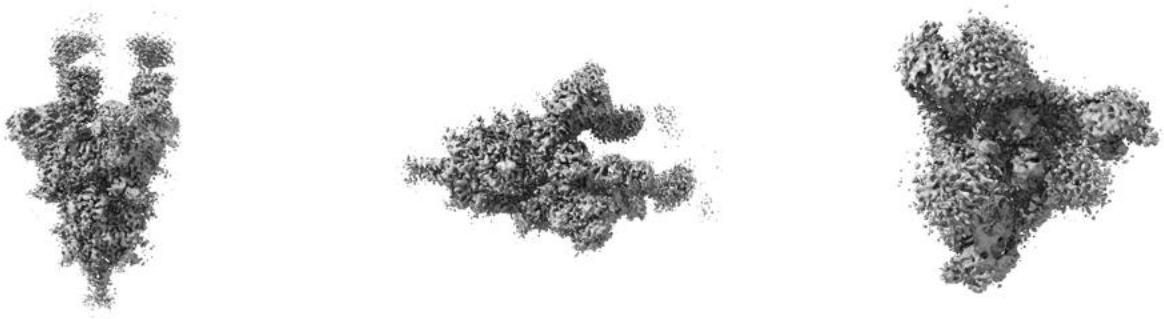


Z

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 (i)

6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.22. 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.

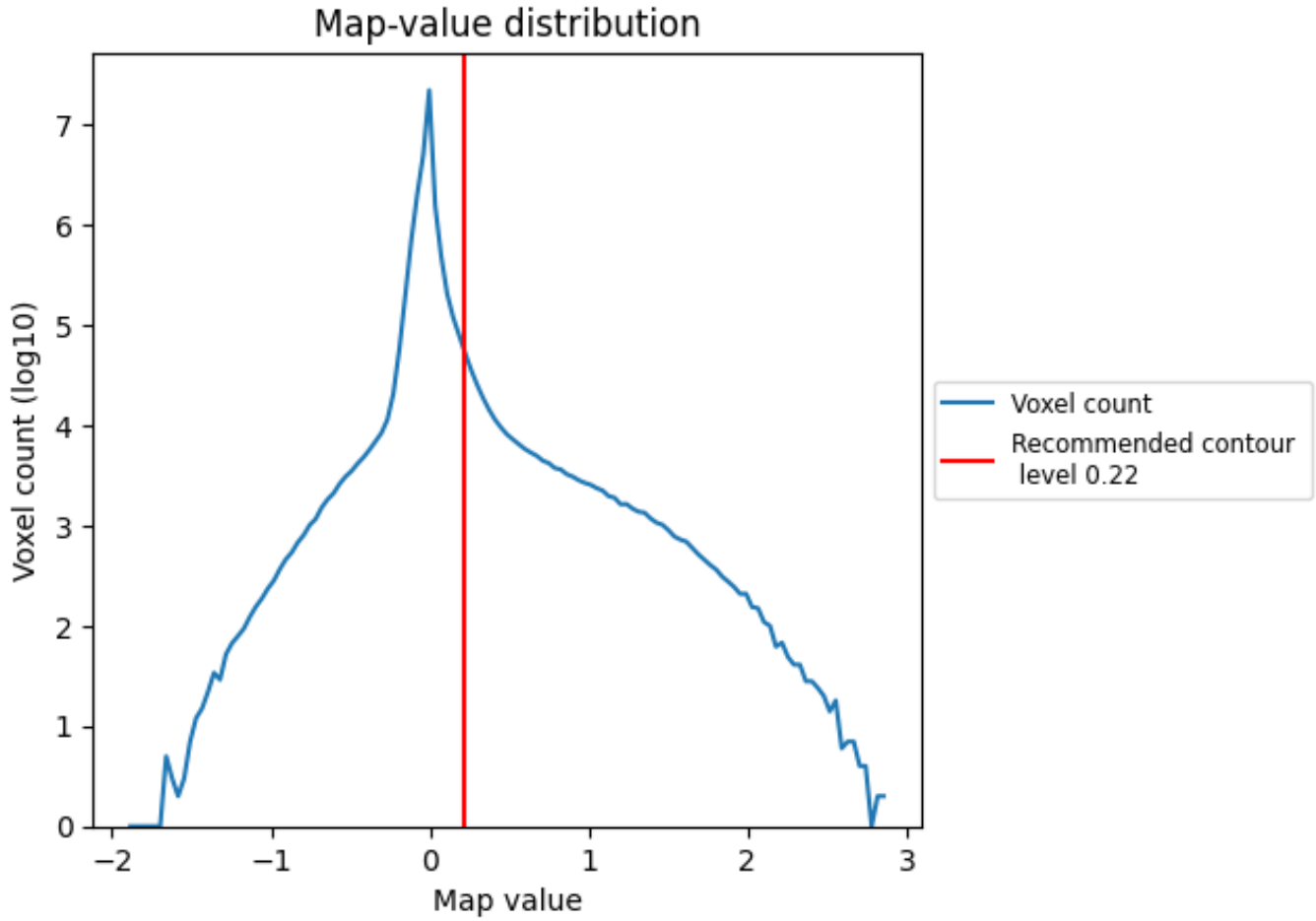
6.6 Mask visualisation (i)

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

7 Map analysis

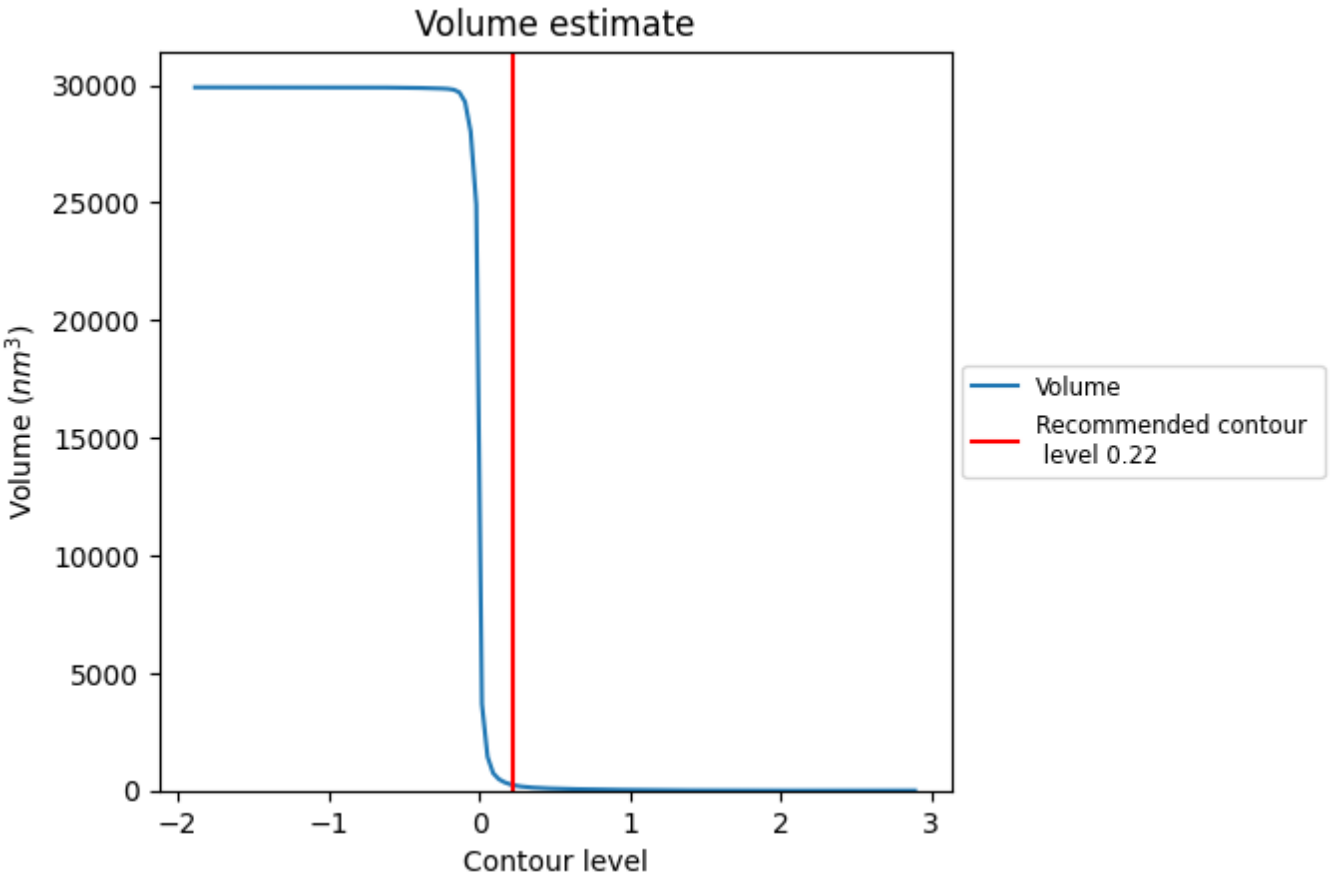
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

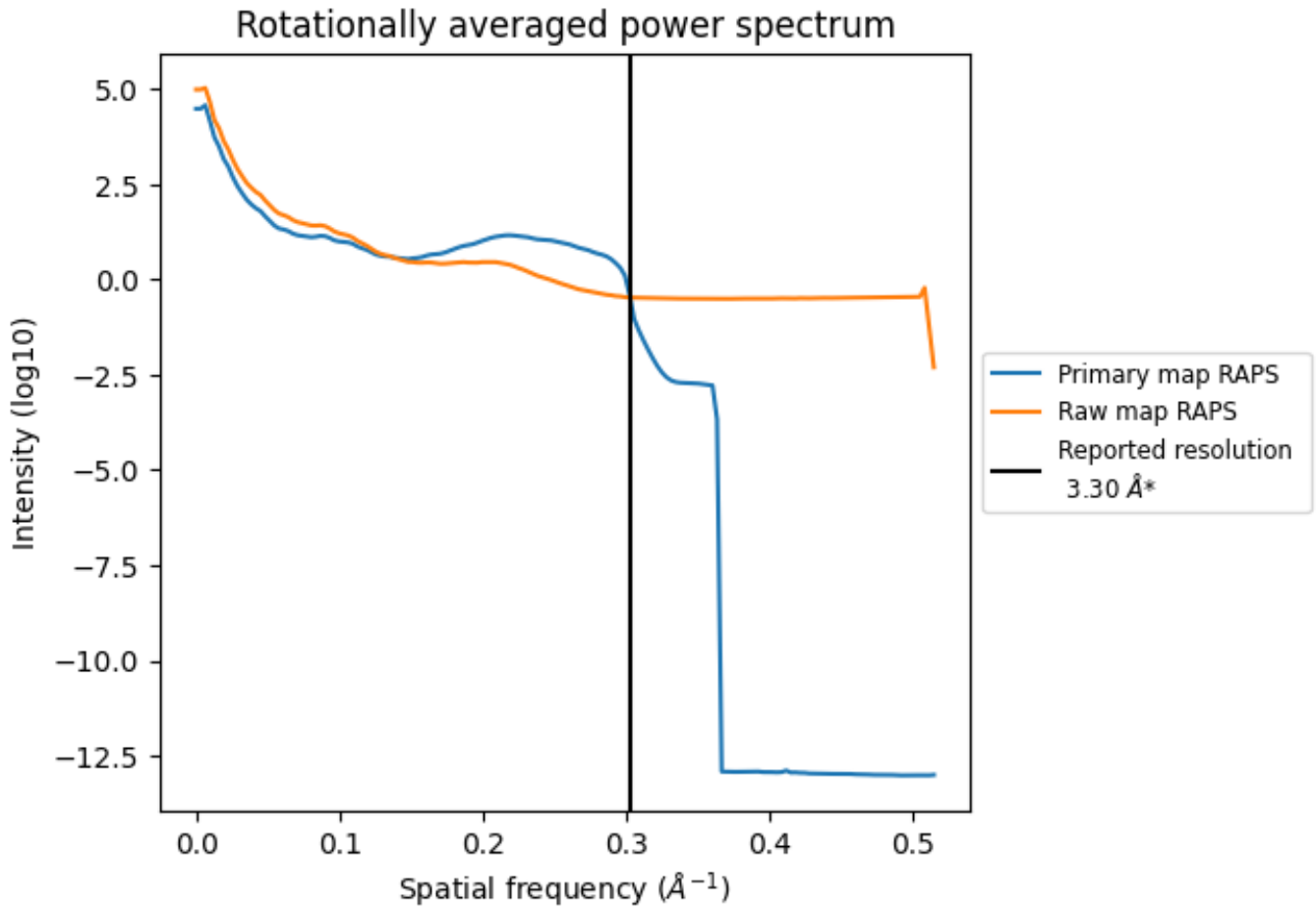
7.2 Volume estimate



The volume at the recommended contour level is 246 nm^3; this corresponds to an approximate mass of 222 kDa.

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

7.3 Rotationally averaged power spectrum (i)

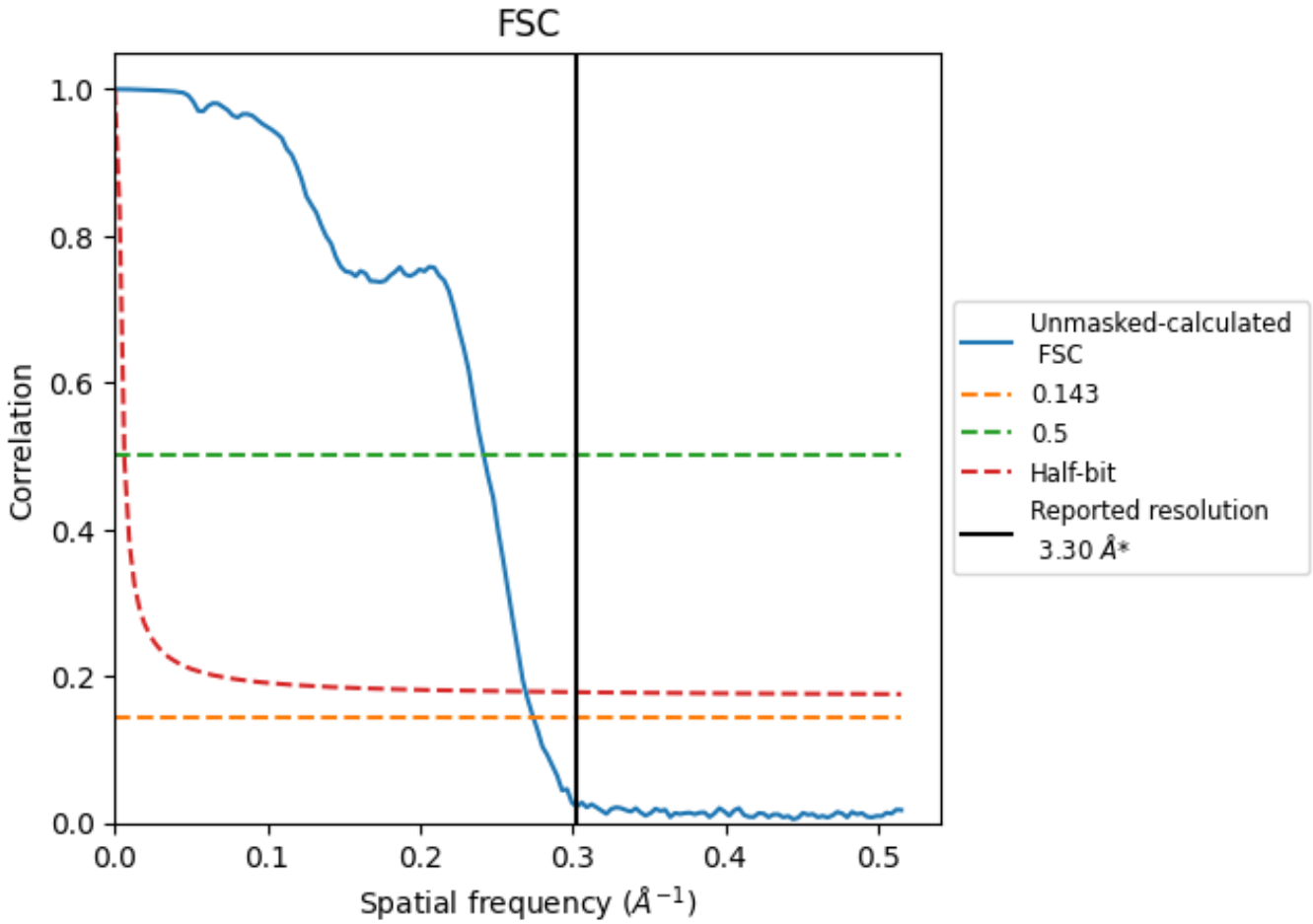


*Reported resolution corresponds to spatial frequency of 0.303 $Å^{-1}$

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 0.303 Å^{-1}

8.2 Resolution estimates (i)

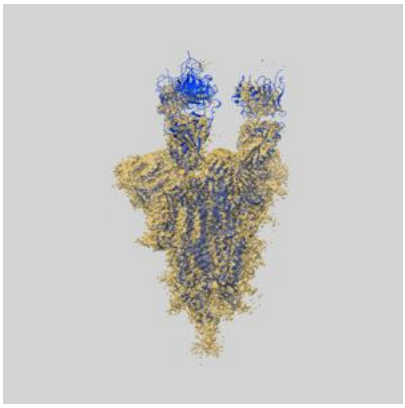
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.30	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.64	4.13	3.71

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.64 differs from the reported value 3.3 by more than 10 %

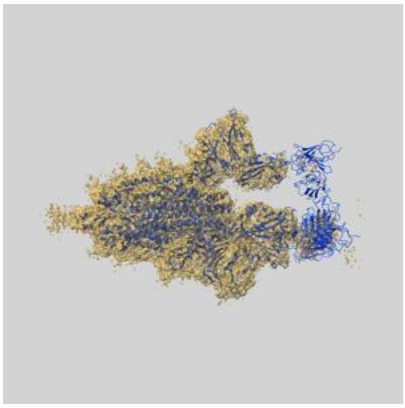
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-33133 and PDB model 7XD2. Per-residue inclusion information can be found in section 3 on page 12.

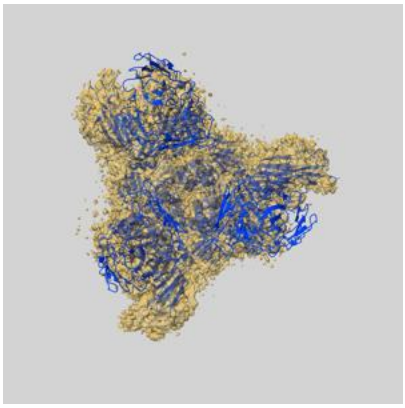
9.1 Map-model overlay



X



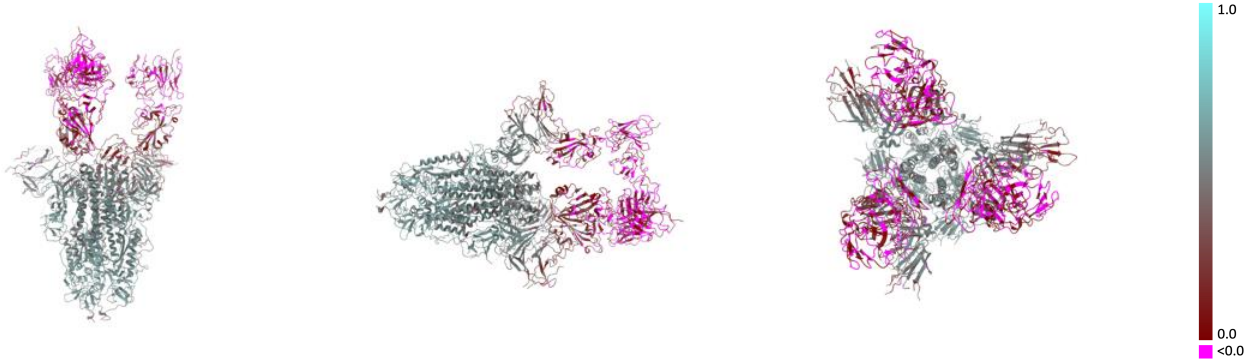
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.22 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.

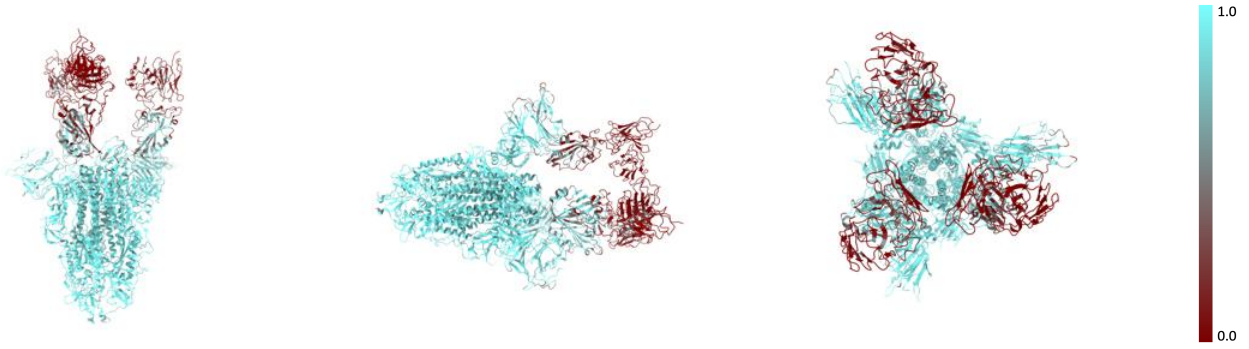
9.2 Q-score mapped to coordinate model



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.

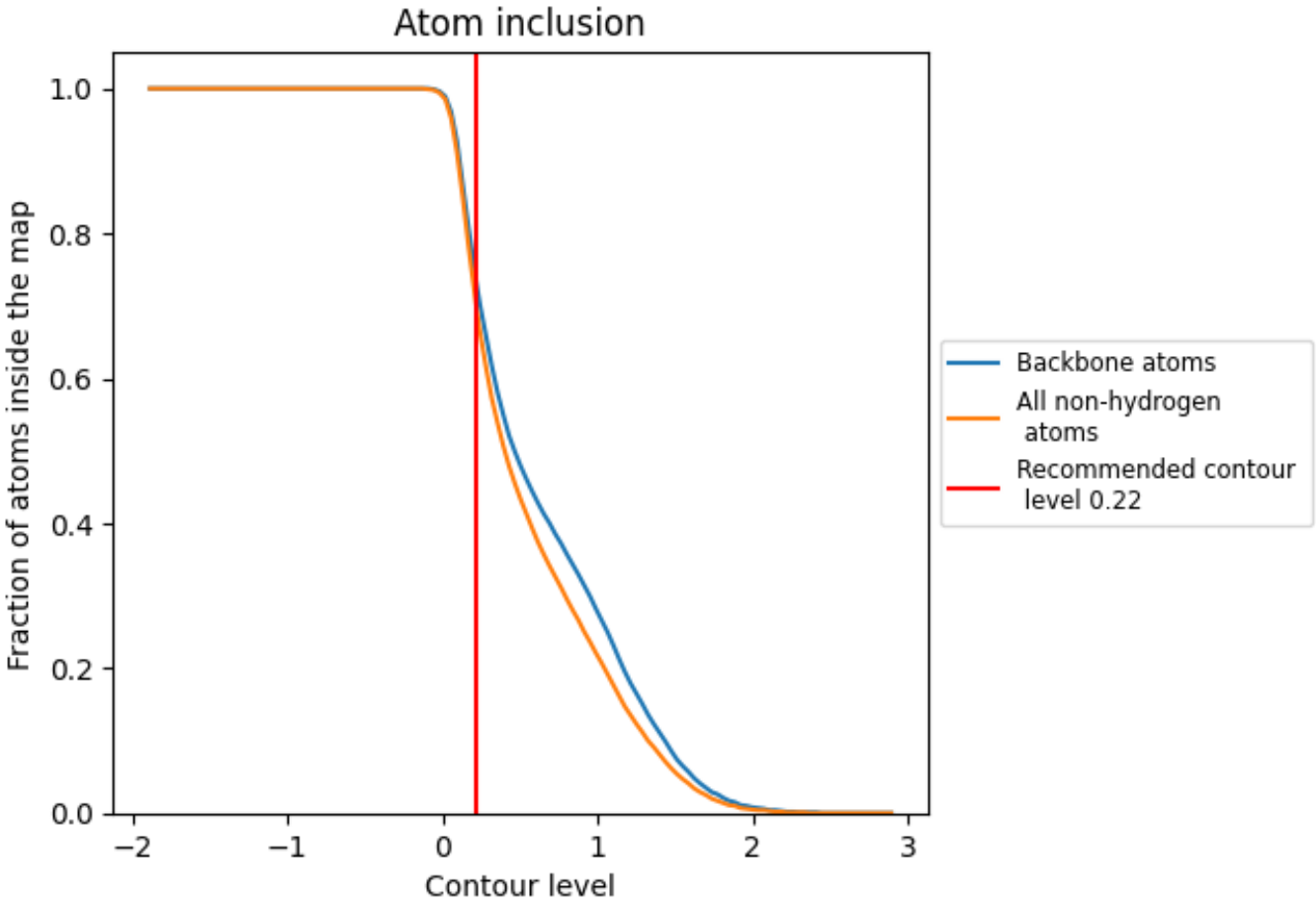
9.3 Atom inclusion mapped to coordinate model



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 (0.22).

9.4 Atom inclusion (i)



At the recommended contour level, 73% of all backbone atoms, 70% 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 (0.22) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6960	0.3670
A	0.8190	0.4300
B	0.8560	0.4470
C	0.7960	0.4390
D	0.0030	-0.0130
E	0.1120	0.0170
H	0.0880	0.0310
I	0.0680	0.0140
J	0.0050	0.0120
L	0.0520	0.0290