Full wwPDB EM Validation Report

Sep 1, 2025 – 01:58 pm BST

PDB ID	:	9QCM / pdb_00009qcm
EMDB ID	:	EMD-53015
Title	:	Botulinum neurotoxin type B1, 14-subunit, Large Progenitor Toxin Complex (L-PTC)
Authors	:	Krc, A.; Persson Kosenina, S.; Masuyer, G.; Stenmark, P.
Deposited on	:	2025-03-04
Resolution	:	2.90 Å(reported)
Based on initial model	:	.

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

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

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

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

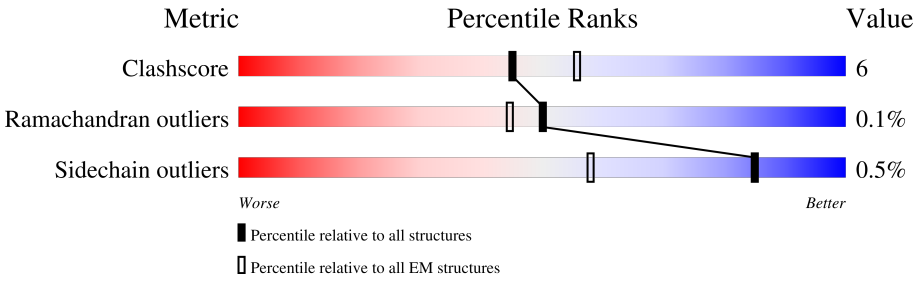
EMDB validation analysis	:	0.0.1.dev126
MolProbity	:	4-5-2 with Phenix2.0rc1
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.45.1

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.90 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	A	1302	84% 12% ·
2	B	1197	87% 11% ·
3	C	626	79% 14% · 6%
3	D	626	77% 14% 9%
3	E	626	73% 16% · 10%
4	F	146	72% 20% · 8%
4	G	146	· 78% 16% 5%
4	H	146	82% 12% 6%

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Mol	Chain	Length	Quality of chain
5	I	294	7% 74% 19% 7%
5	J	294	78% 14% 7%
5	K	294	20% 83% 11% 7%
5	L	294	83% 9% 8%
5	M	294	36% 81% 13% 7%
5	N	294	80% 13% 7%

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 47012 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 Botulinum neurotoxin type B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	1250	9378	6124	1529	1695	30	0	0

There are 14 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	MET	-	initiating methionine	UNP B1INP5
A	2	GLY	-	expression tag	UNP B1INP5
A	232	GLN	GLU	engineered mutation	UNP B1INP5
A	235	TYR	HIS	engineered mutation	UNP B1INP5
A	1293	HIS	-	expression tag	UNP B1INP5
A	1294	HIS	-	expression tag	UNP B1INP5
A	1295	HIS	-	expression tag	UNP B1INP5
A	1296	HIS	-	expression tag	UNP B1INP5
A	1297	HIS	-	expression tag	UNP B1INP5
A	1298	HIS	-	expression tag	UNP B1INP5
A	1299	HIS	-	expression tag	UNP B1INP5
A	1300	HIS	-	expression tag	UNP B1INP5
A	1301	HIS	-	expression tag	UNP B1INP5
A	1302	HIS	-	expression tag	UNP B1INP5

- Molecule 2 is a protein called Botulinum neurotoxin type B1, nontoxic-nonhemagglutinin component, NTNH.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	1187	8877	5797	1463	1592	25	0	0

- Molecule 3 is a protein called Hemagglutinin component HA70.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	588	4694	2989	771	928	6	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
3	D	567	Total	C	N	O	S	0	0
			4384	2818	716	844	6		
3	E	566	Total	C	N	O	S	0	0
			4368	2809	718	835	6		

- Molecule 4 is a protein called Hemagglutinin component HA17.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	F	135	Total	C	N	O	S	0	0
			1024	669	161	192	2		
4	G	138	Total	C	N	O	S	0	0
			1062	696	168	196	2		
4	H	137	Total	C	N	O	S	0	0
			1050	686	166	195	3		

- Molecule 5 is a protein called Hemagglutinin component HA33.

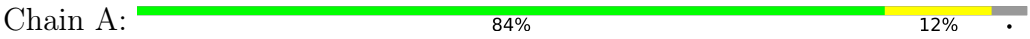
Mol	Chain	Residues	Atoms					AltConf	Trace
5	I	273	Total	C	N	O	S	0	0
			2027	1305	343	376	3		
5	J	273	Total	C	N	O	S	0	0
			2027	1313	335	377	2		
5	K	274	Total	C	N	O	S	0	0
			2044	1319	343	378	4		
5	L	271	Total	C	N	O	S	0	0
			2025	1308	341	375	1		
5	M	274	Total	C	N	O	S	0	0
			2044	1319	343	378	4		
5	N	274	Total	C	N	O	S	0	0
			2008	1295	335	375	3		

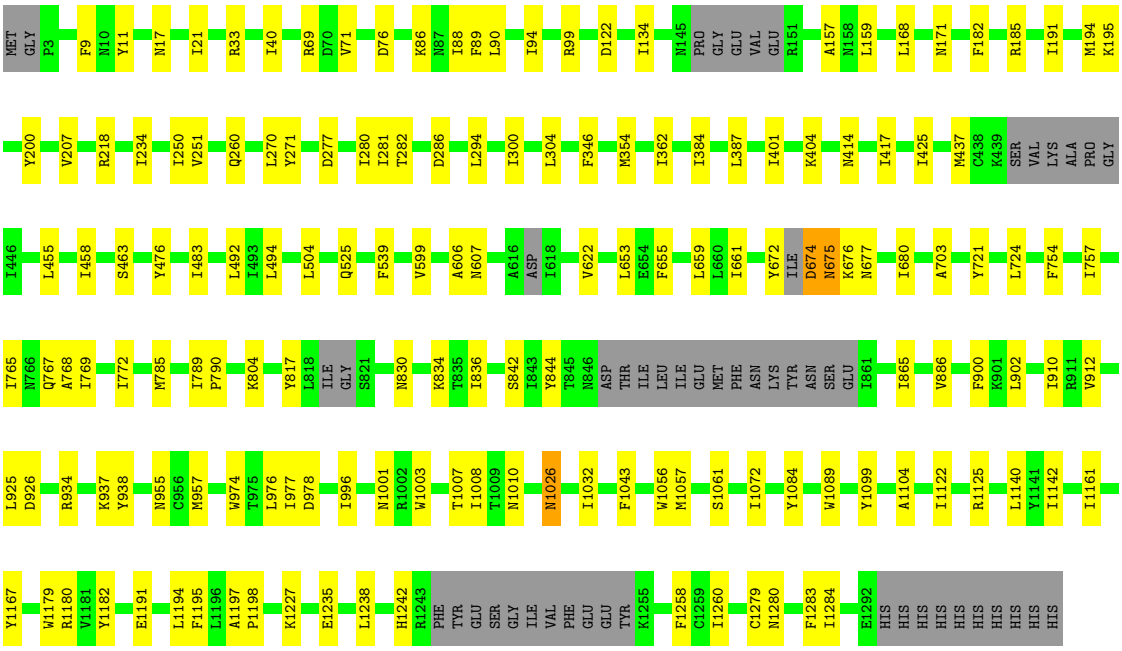
3 Residue-property plots (i)

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: Botulinum neurotoxin type B

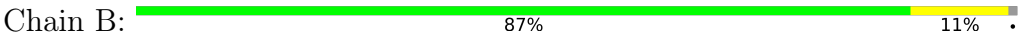
Chain A:

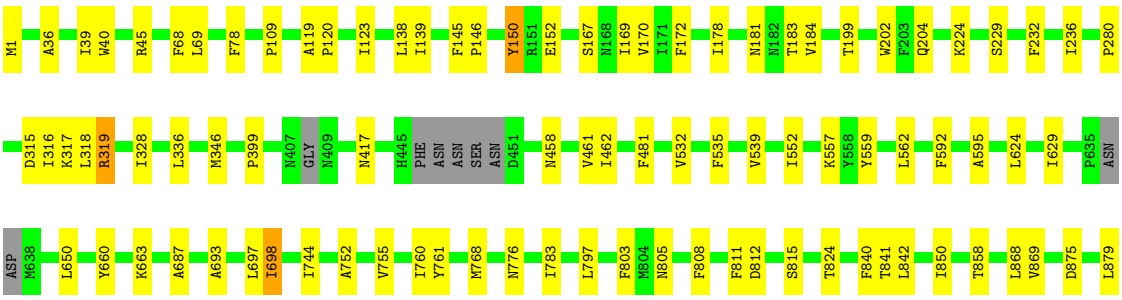


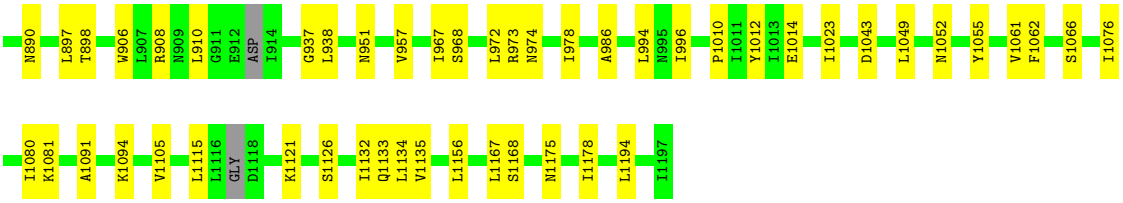


• Molecule 2: Botulinum neurotoxin type B1, nontoxic-nonhemagglutinin component, NTNH

Chain B:

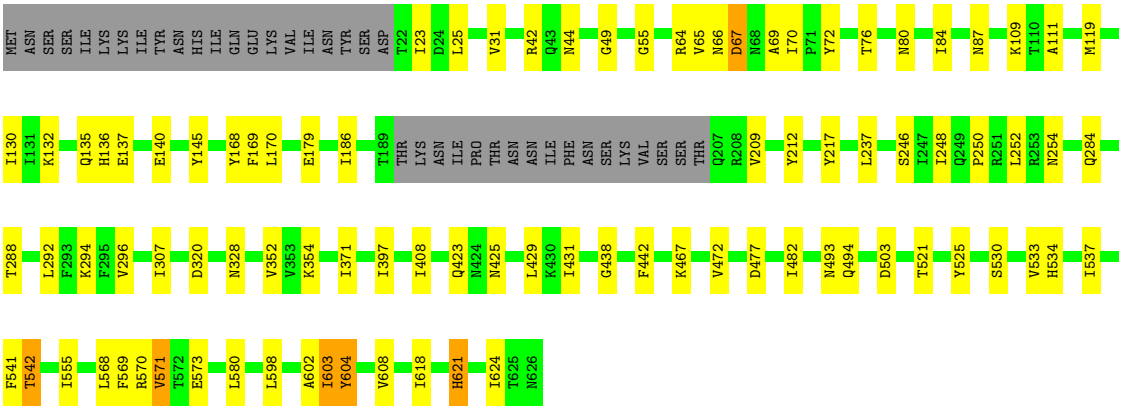






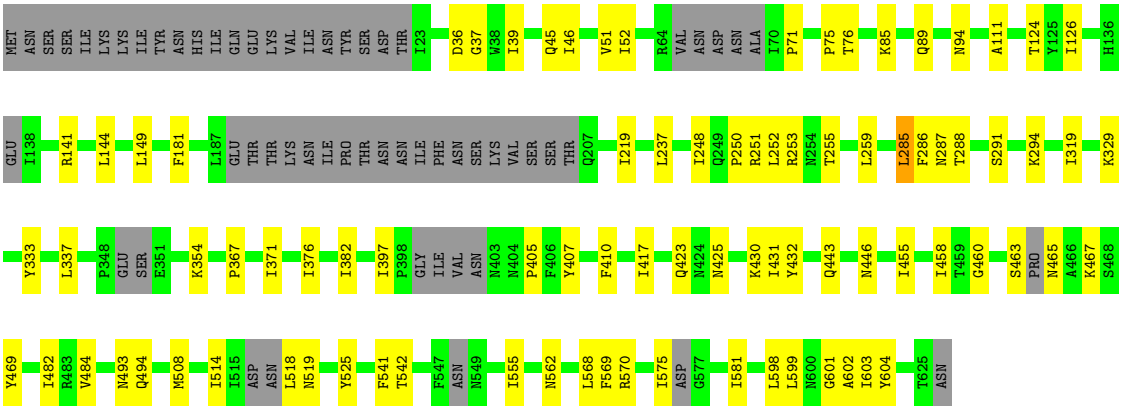
• Molecule 3: Hemagglutinin component HA70

Chain C:



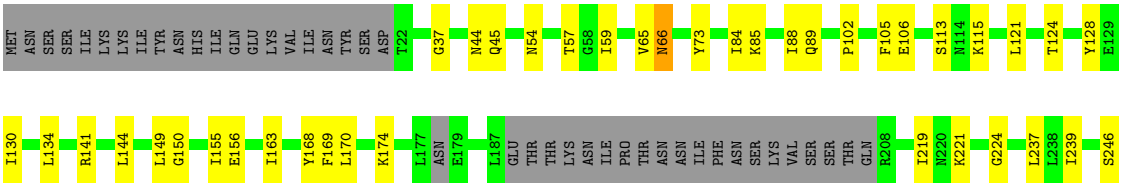
• Molecule 3: Hemagglutinin component HA70

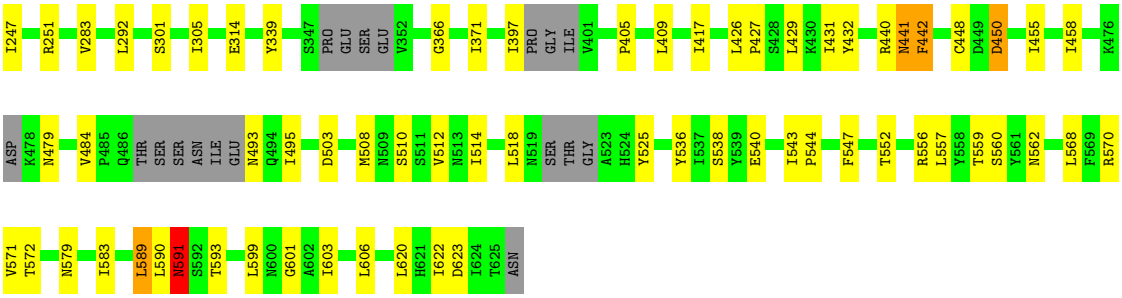
Chain D:



• Molecule 3: Hemagglutinin component HA70

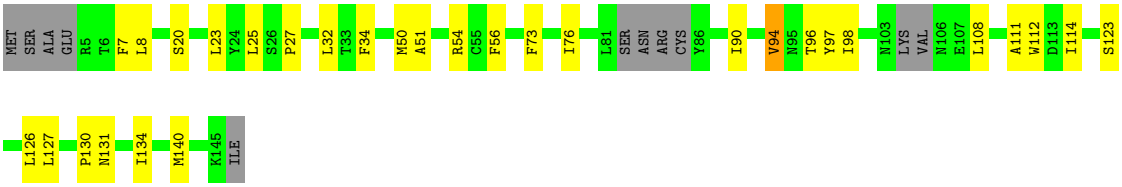
Chain E:





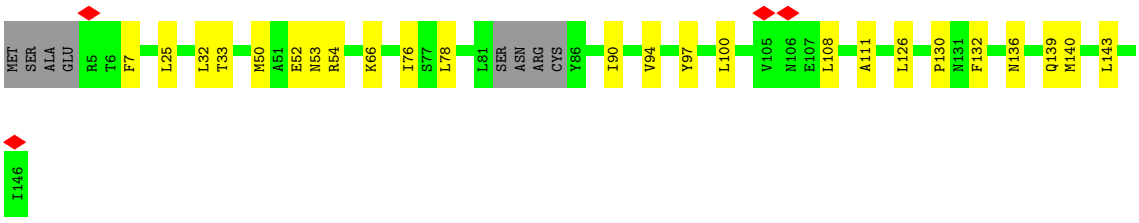
• Molecule 4: Hemagglutinin component HA17

Chain F:



• Molecule 4: Hemagglutinin component HA17

Chain G:

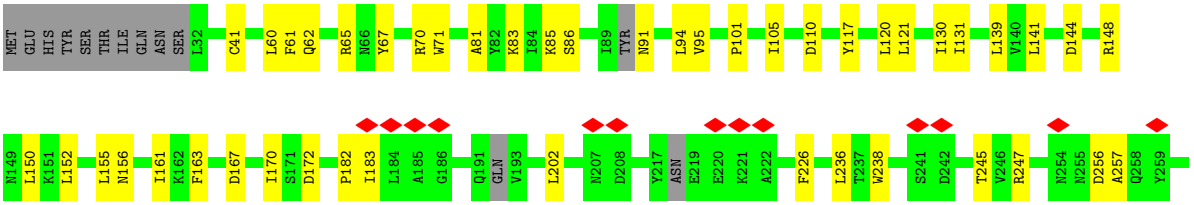


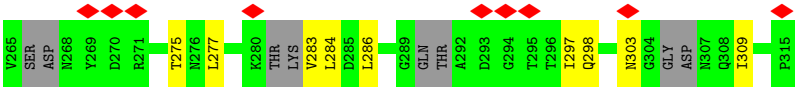
• Molecule 4: Hemagglutinin component HA17

Chain H:

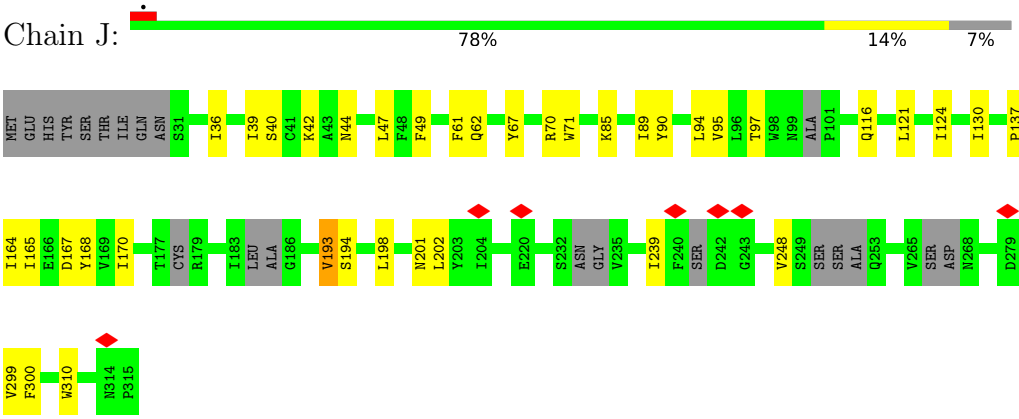
• Molecule 5: Hemagglutinin component HA33

Chain I:

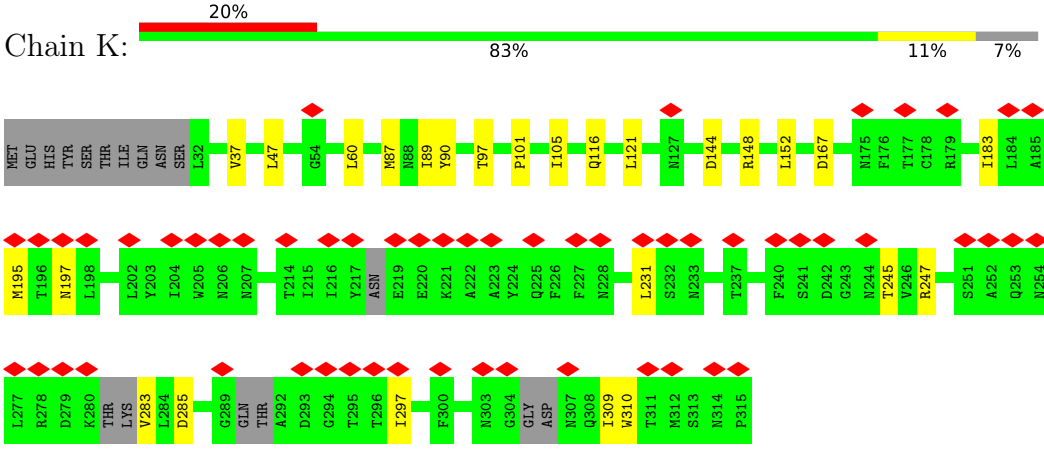




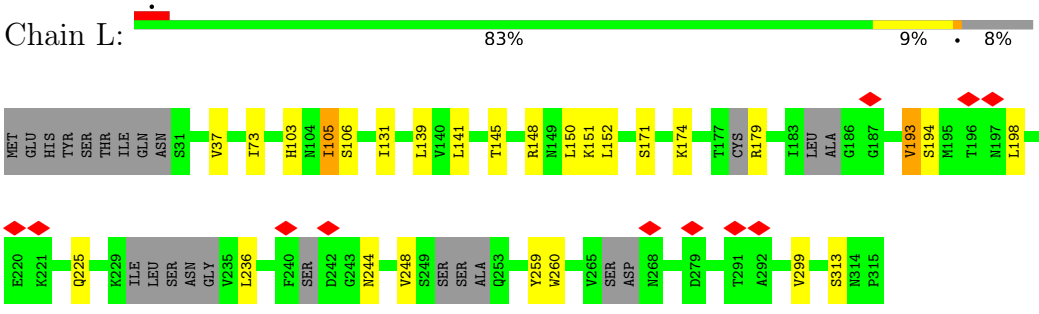
• Molecule 5: Hemagglutinin component HA33



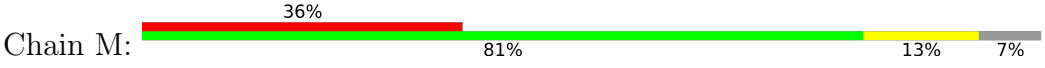
• Molecule 5: Hemagglutinin component HA33

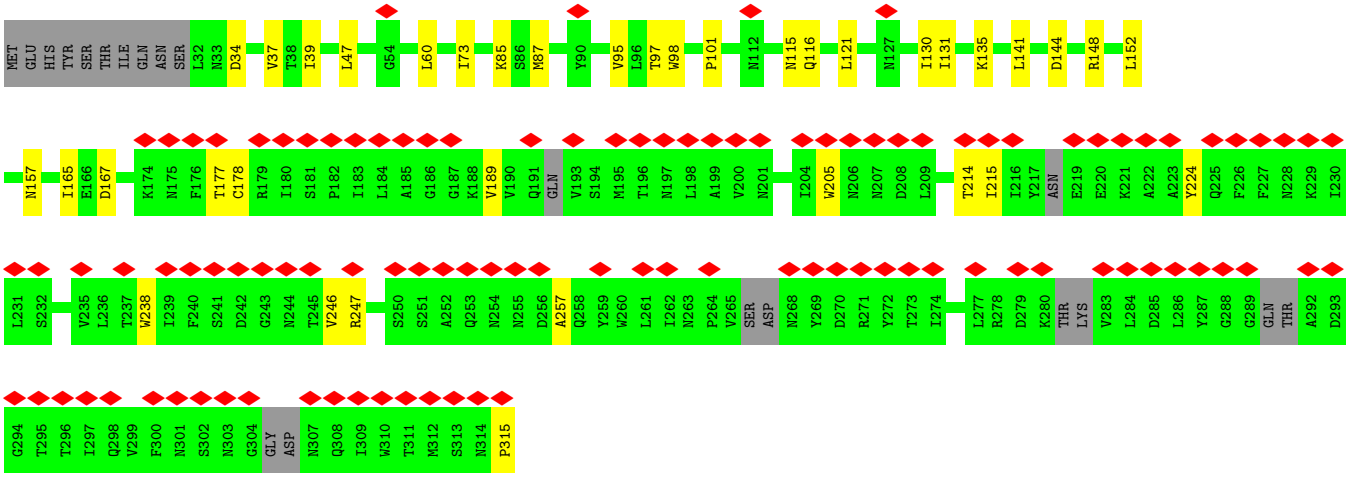


• Molecule 5: Hemagglutinin component HA33



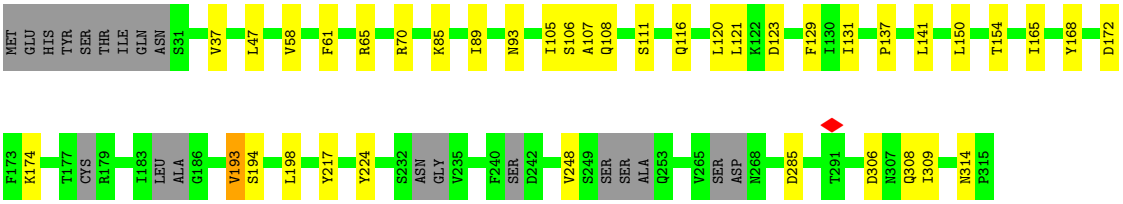
• Molecule 5: Hemagglutinin component HA33





• Molecule 5: Hemagglutinin component HA33

Chain N:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	139594	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	40	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	2400	Depositor
Magnification	105000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	74.186	Depositor
Minimum map value	-33.058	Depositor
Average map value	-0.003	Depositor
Map value standard deviation	1.002	Depositor
Recommended contour level	4	Depositor
Map size (Å)	659.98804, 659.98804, 659.98804	wwPDB
Map dimensions	540, 540, 540	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.2222, 1.2222, 1.2222	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	A	0.15	0/9595	0.33	6/13091 (0.0%)
2	B	0.19	0/9079	0.36	6/12392 (0.0%)
3	C	0.22	0/4787	0.46	6/6509 (0.1%)
3	D	0.21	0/4468	0.47	5/6087 (0.1%)
3	E	0.21	0/4453	0.46	5/6069 (0.1%)
4	F	0.33	1/1051 (0.1%)	0.47	0/1439
4	G	0.09	0/1090	0.31	0/1487
4	H	0.09	0/1077	0.28	0/1470
5	I	0.11	0/2066	0.33	0/2827
5	J	0.11	0/2066	0.35	0/2829
5	K	0.10	0/2085	0.33	0/2852
5	L	0.17	1/2064 (0.0%)	0.36	1/2825 (0.0%)
5	M	0.09	0/2085	0.27	0/2852
5	N	0.16	1/2044 (0.0%)	0.30	0/2801
All	All	0.18	3/48010 (0.0%)	0.38	29/65530 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
2	B	0	1
3	D	0	1
3	E	0	1
All	All	0	3

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	F	27	PRO	N-CD	-5.69	1.39	1.47
5	L	105	ILE	CA-C	5.69	1.59	1.52
5	N	107	ALA	C-N	-5.57	1.28	1.33

All (29) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	E	66	ASN	CB-CA-C	-11.57	94.61	112.31
3	D	286	PHE	N-CA-C	-9.23	101.28	112.54
3	D	75	PRO	N-CA-CB	-8.42	94.41	103.25
3	C	569	PHE	CA-CB-CG	7.34	121.14	113.80
3	E	442	PHE	CA-CB-CG	7.15	120.95	113.80
3	D	562	ASN	N-CA-C	7.04	120.71	110.28
2	B	974	ASN	N-CA-C	-6.56	102.33	111.52
3	C	569	PHE	N-CA-CB	-6.54	101.02	111.62
2	B	973	ARG	N-CA-C	6.37	121.21	113.38
3	E	591	ASN	N-CA-C	6.11	119.84	111.54
3	C	542	THR	CA-CB-OG1	-6.04	100.55	109.60
2	B	150	TYR	N-CA-CB	-6.02	101.82	110.80
3	D	286	PHE	N-CA-CB	5.87	120.13	110.39
2	B	319	ARG	N-CA-C	-5.85	104.31	112.45
1	A	71	VAL	N-CA-C	5.80	116.47	108.12
5	L	106	SER	N-CA-C	-5.75	101.77	110.28
3	E	589	LEU	N-CA-C	5.72	121.69	114.31
1	A	844	TYR	N-CA-C	5.58	119.93	113.18
2	B	315	ASP	CB-CA-C	-5.52	100.08	110.67
1	A	1026	ASN	CB-CA-C	-5.51	99.94	109.86
3	E	57	THR	N-CA-C	5.49	117.91	109.07
1	A	842	SER	N-CA-C	-5.39	105.56	111.82
3	D	285	LEU	CA-C-O	5.19	125.56	119.28
2	B	974	ASN	N-CA-CB	5.19	119.79	111.91
1	A	789	ILE	N-CA-C	5.14	119.98	108.88
3	C	604	TYR	N-CA-CB	-5.08	102.59	110.46
3	C	541	PHE	CA-CB-CG	5.06	118.86	113.80
3	C	137	GLU	N-CA-CB	5.05	120.17	111.13
1	A	834	LYS	N-CA-C	-5.04	106.64	112.89

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	B	319	ARG	Sidechain
3	D	141	ARG	Sidechain
3	E	440	ARG	Sidechain

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	9378	0	8519	97	0
2	B	8877	0	8115	97	0
3	C	4694	0	4578	60	0
3	D	4384	0	4164	55	0
3	E	4368	0	4155	74	0
4	F	1024	0	915	22	0
4	G	1062	0	984	19	0
4	H	1050	0	971	13	0
5	I	2027	0	1831	36	0
5	J	2027	0	1835	26	0
5	K	2044	0	1859	22	0
5	L	2025	0	1855	21	0
5	M	2044	0	1859	22	0
5	N	2008	0	1809	24	0
All	All	47012	0	43449	553	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 6.

All (553) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1080:ILE:HD11	2:B:1167:LEU:HD13	1.24	1.16
2:B:1080:ILE:HD12	2:B:1175:ASN:HB2	1.29	1.08
2:B:1080:ILE:HD12	2:B:1175:ASN:CB	1.87	1.02
5:M:144:ASP:O	5:M:148:ARG:HA	1.64	0.96
1:A:69:ARG:NE	1:A:525:GLN:OE1	2.00	0.95
2:B:1080:ILE:HD11	2:B:1167:LEU:CD1	1.99	0.92
5:K:285:ASP:O	5:K:297:ILE:HG23	1.69	0.92
5:K:144:ASP:O	5:K:148:ARG:HA	1.71	0.89
5:K:190:VAL:HG22	5:K:297:ILE:CD1	2.04	0.87
3:C:248:ILE:HG22	3:C:294:LYS:HG3	1.60	0.83
3:E:560:SER:O	3:E:590:LEU:HD11	1.80	0.82
2:B:1156:LEU:HD21	2:B:1194:LEU:HD23	1.62	0.81
5:I:144:ASP:O	5:I:148:ARG:HA	1.78	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:G:140:MET:HE3	4:G:140:MET:H	1.44	0.81
3:C:84:ILE:HG22	3:C:130:ILE:HD12	1.65	0.79
3:E:560:SER:O	3:E:590:LEU:CD1	2.30	0.79
1:A:69:ARG:CZ	1:A:525:GLN:OE1	2.32	0.78
5:N:105:ILE:HD13	5:N:150:LEU:HB2	1.66	0.78
5:K:190:VAL:HG22	5:K:297:ILE:HD11	1.65	0.78
2:B:879:LEU:O	2:B:1010:PRO:HA	1.84	0.76
1:A:69:ARG:NH2	1:A:525:GLN:OE1	2.18	0.76
3:C:135:GLN:O	3:C:136:HIS:HD2	1.68	0.75
4:F:94:VAL:O	4:F:96:THR:HG23	1.88	0.73
5:I:105:ILE:HD13	5:I:150:LEU:HD23	1.70	0.73
3:E:65:VAL:HG23	3:E:102:PRO:HG3	1.70	0.72
3:C:135:GLN:O	3:C:136:HIS:CD2	2.42	0.72
1:A:401:ILE:HG22	1:A:404:LYS:H	1.56	0.70
5:M:131:ILE:HB	5:M:141:LEU:HD23	1.71	0.70
1:A:437:MET:HE1	1:A:539:PHE:CD2	2.26	0.70
5:J:61:PHE:CD2	5:J:62:GLN:N	2.59	0.70
5:J:284:LEU:HB3	5:J:310:TRP:HE1	1.56	0.70
2:B:693:ALA:O	2:B:697:LEU:HD13	1.91	0.69
4:H:23:LEU:HA	4:H:35:SER:O	1.92	0.69
1:A:926:ASP:HA	1:A:1010:ASN:O	1.93	0.69
5:J:40:SER:HB3	5:J:164:ILE:HD11	1.75	0.68
5:L:105:ILE:CD1	5:L:150:LEU:HB2	2.23	0.67
2:B:1055:TYR:HB3	2:B:1194:LEU:HD12	1.75	0.67
3:E:65:VAL:CG2	3:E:102:PRO:HG3	2.25	0.67
4:F:108:LEU:HD11	4:F:130:PRO:HB3	1.76	0.67
3:C:66:ASN:O	3:C:67:ASP:HB2	1.93	0.67
3:D:251:ARG:HG3	3:D:291:SER:O	1.95	0.67
2:B:1080:ILE:CD1	2:B:1175:ASN:HB2	2.15	0.66
5:L:105:ILE:HD11	5:L:150:LEU:HB2	1.77	0.66
2:B:178:ILE:HG23	2:B:204:GLN:HE21	1.59	0.66
5:N:106:SER:HB2	5:N:108:GLN:HE22	1.60	0.66
3:E:65:VAL:HG13	3:E:66:ASN:N	2.11	0.65
5:M:238:TRP:H	5:M:257:ALA:HB1	1.61	0.65
2:B:897:LEU:HG	2:B:898:THR:HG23	1.78	0.65
5:J:39:ILE:HG13	5:J:165:ILE:HG13	1.79	0.65
2:B:559:TYR:HB3	2:B:994:LEU:HD12	1.79	0.65
5:I:67:TYR:HA	5:I:70:ARG:HE	1.61	0.65
3:C:65:VAL:HG13	3:C:66:ASN:H	1.60	0.64
1:A:1084:TYR:HB3	1:A:1161:ILE:HD12	1.78	0.64
3:E:44:ASN:HD21	3:E:170:LEU:HB2	1.62	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:408:ILE:HG12	3:C:482:ILE:HB	1.80	0.64
5:N:47:LEU:HD12	5:N:61:PHE:HA	1.80	0.64
2:B:776:ASN:HD21	2:B:803:PHE:HB2	1.64	0.63
3:E:88:ILE:HD12	3:E:128:TYR:HB3	1.81	0.63
5:L:198:LEU:HD13	5:L:248:VAL:HG23	1.79	0.63
5:I:130:ILE:HD12	5:I:161:ILE:HG13	1.80	0.63
1:A:934:ARG:HB3	1:A:1056:TRP:HB2	1.81	0.62
5:J:193:VAL:HG13	5:J:194:SER:H	1.63	0.62
5:J:202:LEU:HD12	5:J:295:THR:HB	1.81	0.62
5:K:190:VAL:CG2	5:K:297:ILE:CD1	2.77	0.62
5:L:225:GLN:HE21	5:L:259:TYR:HE2	1.47	0.62
2:B:40:TRP:CD1	2:B:167:SER:HB2	2.34	0.62
3:E:547:PHE:HD2	4:H:96:THR:HG21	1.63	0.62
4:H:33:THR:HB	5:M:101:PRO:HG3	1.81	0.62
5:I:226:PHE:HB2	5:I:236:LEU:HD22	1.81	0.62
1:A:99:ARG:HH11	1:A:99:ARG:HG3	1.63	0.62
5:L:193:VAL:HG13	5:L:194:SER:H	1.64	0.62
3:E:431:ILE:HG23	3:E:458:ILE:HB	1.80	0.62
1:A:1195:PHE:CE1	1:A:1197:ALA:HB2	2.35	0.62
3:E:429:LEU:HD21	3:E:495:ILE:HD12	1.82	0.62
1:A:675:ASN:C	1:A:677:ASN:H	2.08	0.61
2:B:812:ASP:HB3	2:B:815:SER:HB2	1.81	0.61
5:L:145:THR:HA	5:L:148:ARG:HH22	1.64	0.61
2:B:938:LEU:HD12	2:B:957:VAL:HG21	1.83	0.61
3:E:84:ILE:HG22	3:E:130:ILE:HG13	1.82	0.61
3:D:36:ASP:HB3	3:D:126:ILE:HG12	1.82	0.61
5:I:65:ARG:HH21	5:I:172:ASP:HA	1.65	0.61
2:B:624:LEU:HD11	2:B:760:ILE:HG23	1.82	0.61
5:K:87:MET:HE2	5:K:87:MET:HA	1.83	0.61
5:N:193:VAL:HG13	5:N:194:SER:H	1.65	0.61
3:D:570:ARG:HB3	3:D:581:ILE:HD11	1.83	0.60
1:A:234:ILE:HD11	1:A:362:ILE:HD12	1.83	0.60
3:D:46:ILE:HD12	3:E:283:VAL:HG22	1.83	0.60
3:C:571:VAL:HB	3:C:603:ILE:O	2.01	0.60
1:A:606:ALA:HB1	1:A:768:ALA:HB2	1.84	0.60
4:F:23:LEU:HB3	4:F:34:PHE:HB3	1.84	0.60
4:G:100:LEU:HD23	4:G:111:ALA:HB2	1.84	0.60
1:A:886:VAL:HG22	1:A:912:VAL:HG22	1.84	0.59
3:C:555:ILE:CD1	3:C:624:ILE:HG13	2.32	0.59
5:N:131:ILE:HB	5:N:141:LEU:HD23	1.84	0.59
5:J:299:VAL:HG12	5:J:300:PHE:H	1.67	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:I:275:THR:HG22	5:I:283:VAL:HG22	1.83	0.59
3:E:224:GLY:HA3	3:E:366:GLY:H	1.68	0.59
2:B:170:VAL:CG1	2:B:172:PHE:CE1	2.86	0.59
4:G:136:ASN:HB3	4:G:139:GLN:HG3	1.83	0.59
3:C:530:SER:HB2	3:C:618:ILE:HB	1.85	0.59
3:E:556:ARG:HE	3:E:593:THR:HA	1.68	0.58
5:I:245:THR:HG23	5:I:247:ARG:HE	1.67	0.58
5:K:190:VAL:HG22	5:K:297:ILE:HD12	1.85	0.58
1:A:271:TYR:HD2	1:A:354:MET:HE3	1.69	0.58
2:B:170:VAL:HG11	2:B:172:PHE:CE1	2.39	0.58
2:B:1121:LYS:HA	2:B:1135:VAL:O	2.03	0.58
3:D:397:ILE:HD12	3:D:493:ASN:HB3	1.84	0.58
5:L:171:SER:HA	5:L:174:LYS:HZ2	1.68	0.58
5:M:157:ASN:HB2	5:N:137:PRO:HG3	1.86	0.58
3:E:405:PRO:HA	3:E:484:VAL:O	2.02	0.58
5:I:85:LYS:HA	5:I:95:VAL:HG22	1.86	0.58
3:C:555:ILE:HD13	3:C:624:ILE:HG13	1.85	0.58
1:A:865:ILE:HD11	1:A:1061:SER:HB3	1.86	0.57
5:I:297:ILE:HD12	5:I:298:GLN:N	2.20	0.57
2:B:280:PRO:HG2	2:B:663:LYS:HG3	1.85	0.57
5:J:61:PHE:CG	5:J:62:GLN:N	2.58	0.57
3:D:599:LEU:HD12	3:D:599:LEU:H	1.68	0.57
2:B:199:THR:HG21	2:B:229:SER:HB2	1.87	0.57
3:D:85:LYS:O	3:D:89:GLN:HG2	2.04	0.57
3:D:248:ILE:HG23	3:D:294:LYS:HB2	1.86	0.57
5:M:87:MET:HE2	5:M:87:MET:HA	1.87	0.57
3:D:248:ILE:HG12	3:D:294:LYS:HG3	1.87	0.56
4:F:111:ALA:HB3	4:F:131:ASN:HD21	1.70	0.56
5:N:58:VAL:HB	5:N:105:ILE:HD12	1.88	0.56
2:B:346:MET:HB3	2:B:824:THR:HG23	1.86	0.56
2:B:937:GLY:HA2	2:B:957:VAL:HB	1.86	0.56
3:E:590:LEU:HG	3:E:591:ASN:OD1	2.05	0.56
5:J:49:PHE:HB3	5:J:71:TRP:HE1	1.70	0.56
5:L:139:LEU:HB3	5:L:152:LEU:HG	1.87	0.56
3:D:52:ILE:HG13	3:D:111:ALA:HB2	1.87	0.56
4:F:123:SER:HA	5:I:101:PRO:HG3	1.87	0.56
4:H:45:TRP:HB3	4:H:58:ILE:HD11	1.88	0.56
3:C:525:TYR:HB3	3:C:621:HIS:CE1	2.41	0.56
5:J:44:ASN:HB3	5:J:47:LEU:HD23	1.88	0.56
1:A:672:TYR:HB2	1:A:675:ASN:CB	2.36	0.56
3:E:105:PHE:HE2	3:E:121:LEU:HD11	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:260:GLN:HB2	1:A:455:LEU:HB2	1.88	0.55
1:A:724:LEU:HB3	1:A:765:ILE:HD12	1.87	0.55
2:B:687:ALA:HB1	2:B:744:ILE:HD13	1.88	0.55
3:C:246:SER:HB2	3:C:296:VAL:HG22	1.87	0.55
3:E:37:GLY:HA2	3:E:124:THR:HB	1.88	0.55
3:E:570:ARG:HH21	3:E:599:LEU:HD12	1.72	0.55
5:I:91:ASN:HB3	5:I:94:LEU:HD23	1.89	0.55
1:A:659:LEU:HD23	1:A:661:ILE:HD11	1.88	0.55
5:K:275:THR:HG22	5:K:283:VAL:HG22	1.87	0.55
3:E:426:LEU:HB3	3:E:427:PRO:HD3	1.89	0.55
5:J:97:THR:HG23	5:J:116:GLN:HG3	1.88	0.55
2:B:539:VAL:HG11	2:B:698:ILE:HD11	1.89	0.55
2:B:532:VAL:HG21	2:B:697:LEU:HD21	1.88	0.54
4:G:66:LYS:HB3	4:G:78:LEU:HB3	1.89	0.54
5:L:37:VAL:HG21	5:L:73:ILE:HD11	1.88	0.54
2:B:138:LEU:HD13	3:C:246:SER:HB3	1.88	0.54
1:A:476:TYR:HB3	1:A:672:TYR:HE2	1.73	0.54
1:A:910:ILE:HB	1:A:1043:PHE:HB2	1.88	0.54
5:I:41:CYS:HA	5:I:163:PHE:HD1	1.73	0.54
5:I:120:LEU:HD13	5:J:124:ILE:HD11	1.88	0.54
2:B:906:TRP:HB2	2:B:1014:GLU:HB3	1.89	0.54
5:I:121:LEU:HB3	5:J:121:LEU:HB3	1.87	0.54
3:E:409:LEU:HD11	3:E:479:ASN:HB3	1.89	0.54
5:M:215:ILE:HD11	5:M:224:TYR:HB3	1.88	0.54
3:C:44:ASN:HD21	3:C:170:LEU:HB2	1.72	0.54
3:E:106:GLU:HG2	3:E:246:SER:HB3	1.90	0.54
3:D:181:PHE:HB3	3:D:354:LYS:HA	1.90	0.54
1:A:159:LEU:HD11	1:A:194:MET:HE2	1.91	0.53
2:B:768:MET:HA	2:B:768:MET:HE2	1.91	0.53
2:B:1052:ASN:HA	2:B:1094:LYS:HD3	1.91	0.53
3:C:179:GLU:HB3	3:C:352:VAL:HG12	1.90	0.53
5:M:115:ASN:HB3	5:M:135:LYS:HE3	1.90	0.53
3:D:149:LEU:HD13	3:D:237:LEU:HD13	1.89	0.53
1:A:207:VAL:HA	1:A:218:ARG:HD3	1.91	0.53
3:D:555:ILE:HG13	3:D:598:LEU:HD12	1.89	0.53
3:C:76:THR:HG21	3:C:140:GLU:HG3	1.91	0.53
3:E:397:ILE:HD12	3:E:493:ASN:HB3	1.91	0.53
3:E:552:THR:HG22	3:E:599:LEU:HA	1.91	0.53
3:D:463:SER:HB3	3:D:465:ASN:HA	1.91	0.52
5:K:245:THR:HG22	5:K:247:ARG:HH21	1.74	0.52
5:L:179:ARG:NH2	5:L:213:TRP:H	2.06	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:N:217:TYR:HB2	5:N:224:TYR:HD1	1.73	0.52
2:B:752:ALA:O	2:B:755:VAL:HG12	2.10	0.52
4:F:127:LEU:HD11	5:I:139:LEU:HD21	1.91	0.52
2:B:224:LYS:HB2	2:B:336:LEU:HD11	1.91	0.52
3:E:560:SER:C	3:E:590:LEU:CD1	2.81	0.52
5:J:167:ASP:HB3	5:J:170:ILE:HG12	1.90	0.52
3:D:219:ILE:HA	3:D:371:ILE:O	2.10	0.52
3:C:397:ILE:HD12	3:C:493:ASN:HB2	1.92	0.52
1:A:182:PHE:HB2	1:A:185:ARG:HG3	1.91	0.51
3:D:598:LEU:HD22	3:D:604:TYR:CE2	2.44	0.51
5:I:131:ILE:HB	5:I:141:LEU:HD23	1.91	0.51
1:A:1180:ARG:HB3	1:A:1182:TYR:CZ	2.44	0.51
3:D:376:ILE:HG21	3:D:382:ILE:HD11	1.91	0.51
5:M:98:TRP:CE2	5:M:152:LEU:HD22	2.45	0.51
5:N:37:VAL:HG21	5:N:165:ILE:HB	1.91	0.51
4:G:140:MET:HE3	4:G:140:MET:N	2.22	0.51
5:M:177:THR:HA	5:M:214:THR:HA	1.92	0.51
3:C:65:VAL:HG11	3:D:253:ARG:NH2	2.25	0.51
4:F:76:ILE:HD11	4:F:126:LEU:HD22	1.93	0.51
1:A:1125:ARG:HG2	1:A:1142:ILE:HD11	1.92	0.51
2:B:139:ILE:HG23	3:E:59:ILE:HD11	1.93	0.51
3:C:320:ASP:HB3	3:C:328:ASN:HB2	1.92	0.51
3:C:64:ARG:HG2	3:C:69:ALA:HB2	1.93	0.51
2:B:145:PHE:HB3	2:B:146:PRO:HD3	1.93	0.51
2:B:841:THR:HG22	2:B:850:ILE:HG13	1.93	0.51
3:C:254:ASN:HB2	3:C:288:THR:HG23	1.92	0.51
4:G:132:PHE:HZ	5:L:139:LEU:HD21	1.76	0.51
2:B:968:SER:HB2	2:B:1023:ILE:HG12	1.92	0.50
3:D:319:ILE:HG22	3:D:329:LYS:HG3	1.94	0.50
5:I:60:LEU:HB2	5:I:148:ARG:HG2	1.93	0.50
5:N:89:ILE:HD12	5:N:89:ILE:H	1.75	0.50
5:M:47:LEU:HD23	5:M:60:LEU:HD13	1.93	0.50
2:B:1168:SER:HB3	2:B:1178:ILE:HG12	1.93	0.50
4:F:112:TRP:HB3	4:F:126:LEU:HD21	1.91	0.50
1:A:925:LEU:HD21	1:A:976:LEU:HD22	1.92	0.50
2:B:562:LEU:HD23	2:B:897:LEU:HD23	1.92	0.50
2:B:978:ILE:HB	2:B:986:ALA:HB3	1.93	0.50
2:B:1066:SER:H	2:B:1081:LYS:HZ3	1.59	0.50
1:A:836:ILE:HG12	2:B:951:ASN:O	2.12	0.50
4:G:140:MET:H	4:G:140:MET:CE	2.18	0.50
1:A:250:ILE:HA	1:A:463:SER:HB2	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:430:LYS:HG2	3:D:460:GLY:HA3	1.94	0.50
3:D:603:ILE:O	3:D:603:ILE:HD12	2.12	0.50
5:I:139:LEU:HB3	5:I:152:LEU:HD13	1.93	0.50
3:E:543:ILE:HB	3:E:601:GLY:H	1.77	0.50
5:J:67:TYR:HA	5:J:70:ARG:HE	1.75	0.50
5:K:37:VAL:HG12	5:K:167:ASP:HA	1.94	0.50
2:B:592:PHE:HD1	2:B:744:ILE:HD11	1.76	0.49
2:B:908:ARG:HB3	2:B:1012:TYR:HB2	1.94	0.49
3:D:71:PRO:HB2	3:D:144:LEU:HD11	1.94	0.49
3:E:557:LEU:HD23	3:E:622:ILE:HD12	1.94	0.49
1:A:414:ASN:HB3	1:A:417:ILE:HB	1.93	0.49
1:A:1003:TRP:CH2	1:A:1056:TRP:HB3	2.47	0.49
3:C:109:LYS:HB3	3:C:119:MET:HE1	1.93	0.49
5:I:167:ASP:HB3	5:I:170:ILE:HG12	1.94	0.49
5:J:85:LYS:HG2	5:J:95:VAL:HG12	1.94	0.49
3:C:31:VAL:HG23	3:C:186:ILE:HD11	1.95	0.49
5:I:297:ILE:HD12	5:I:298:GLN:H	1.77	0.49
4:H:91:LYS:HB2	4:H:97:TYR:CE2	2.47	0.49
3:C:602:ALA:HB3	3:C:604:TYR:CE1	2.47	0.49
3:D:542:THR:HG22	3:D:603:ILE:HG22	1.94	0.49
3:C:431:ILE:HG21	3:C:472:VAL:HG11	1.94	0.49
3:D:431:ILE:HG23	3:D:458:ILE:HB	1.95	0.49
5:J:67:TYR:HB3	5:J:70:ARG:HH21	1.78	0.49
1:A:282:THR:HG22	1:A:703:ALA:HB3	1.95	0.48
1:A:476:TYR:HB3	1:A:672:TYR:CE2	2.48	0.48
2:B:910:LEU:HB2	2:B:1010:PRO:HG2	1.94	0.48
3:E:514:ILE:HG22	3:E:540:GLU:HB3	1.94	0.48
5:L:105:ILE:HD13	5:L:150:LEU:HB2	1.94	0.48
5:N:70:ARG:HE	5:N:168:TYR:HD2	1.60	0.48
1:A:674:ASP:OD2	1:A:674:ASP:N	2.46	0.48
1:A:974:TRP:CG	1:A:1008:ILE:HG21	2.48	0.48
3:C:132:LYS:HB3	3:C:140:GLU:HB3	1.94	0.48
3:E:503:ASP:HB3	3:E:579:ASN:HA	1.95	0.48
5:M:37:VAL:HG12	5:M:167:ASP:HA	1.94	0.48
1:A:1235:GLU:OE2	1:A:1235:GLU:N	2.46	0.48
3:D:285:LEU:O	3:D:285:LEU:HG	2.14	0.48
5:M:178:CYS:HA	5:M:315:PRO:HD3	1.95	0.48
1:A:99:ARG:HG3	1:A:99:ARG:NH1	2.27	0.48
1:A:458:ILE:HD13	1:A:655:PHE:HD2	1.79	0.48
3:C:537:ILE:HG22	3:C:608:VAL:HB	1.95	0.48
1:A:676:LYS:O	1:A:680:ILE:HD11	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:382:ILE:HG12	3:D:407:TYR:HB2	1.95	0.48
3:E:559:THR:HG22	3:E:589:LEU:C	2.38	0.48
4:G:76:ILE:HD11	4:G:126:LEU:HB2	1.94	0.48
1:A:1191:GLU:HG2	1:A:1242:HIS:CG	2.49	0.48
5:M:97:THR:HG23	5:M:116:GLN:HG3	1.96	0.48
3:D:432:TYR:HB3	3:D:455:ILE:HB	1.95	0.48
3:E:441:ASN:N	3:E:441:ASN:HD22	2.12	0.48
5:K:97:THR:HG23	5:K:116:GLN:HB3	1.95	0.48
2:B:123:ILE:HD13	3:D:250:PRO:HB3	1.96	0.48
2:B:535:PHE:CD2	2:B:595:ALA:HB2	2.48	0.48
1:A:1179:TRP:CE2	1:A:1198:PRO:HG3	2.49	0.47
2:B:1091:ALA:HB1	2:B:1115:LEU:HD11	1.96	0.47
2:B:120:PRO:HB2	2:B:146:PRO:HD2	1.94	0.47
1:A:437:MET:HE1	1:A:539:PHE:CE2	2.48	0.47
1:A:957:MET:HE1	1:A:977:ILE:HD13	1.96	0.47
1:A:270:LEU:HD12	1:A:281:ILE:HD11	1.97	0.47
3:D:423:GLN:HG2	3:D:494:GLN:HB3	1.95	0.47
5:M:189:VAL:HG21	5:M:205:TRP:HE3	1.79	0.47
1:A:754:PHE:HA	1:A:757:ILE:HG22	1.96	0.47
3:C:72:TYR:HB2	3:C:145:TYR:HB2	1.95	0.47
4:F:8:LEU:HD21	4:F:56:PHE:HE2	1.79	0.47
4:G:90:ILE:HG13	4:G:100:LEU:HD12	1.97	0.47
3:C:80:ASN:O	3:C:84:ILE:HG12	2.14	0.47
4:H:129:LEU:HD13	5:N:154:THR:HG21	1.95	0.47
5:L:179:ARG:NE	5:L:179:ARG:HA	2.30	0.47
5:M:85:LYS:HG2	5:M:95:VAL:HG12	1.97	0.47
3:C:429:LEU:H	3:C:429:LEU:HD23	1.77	0.47
1:A:1122:ILE:HD11	1:A:1258:PHE:HB2	1.97	0.47
2:B:850:ILE:HD11	2:B:868:LEU:HD21	1.97	0.47
3:E:417:ILE:HD11	3:E:508:MET:HG3	1.97	0.47
3:E:432:TYR:HB3	3:E:455:ILE:HB	1.97	0.47
4:F:98:ILE:HG22	4:F:140:MET:HA	1.96	0.47
4:G:108:LEU:HD11	4:G:130:PRO:HB3	1.97	0.47
2:B:199:THR:HG23	2:B:232:PHE:HD2	1.80	0.46
3:D:601:GLY:O	4:G:94:VAL:HG12	2.16	0.46
3:E:45:GLN:NE2	3:E:168:TYR:HB3	2.29	0.46
3:E:570:ARG:HB2	3:E:583:ILE:HD11	1.97	0.46
1:A:607:ASN:HD21	1:A:767:GLN:HB3	1.81	0.46
3:D:525:TYR:H	3:D:525:TYR:HD2	1.63	0.46
3:E:239:ILE:HB	3:E:305:ILE:HG22	1.97	0.46
5:I:61:PHE:HD1	5:I:62:GLN:H	1.63	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:I:202:LEU:HD12	5:I:286:LEU:HD11	1.96	0.46
1:A:76:ASP:HB3	1:A:168:LEU:HD11	1.98	0.46
3:D:568:LEU:C	3:D:569:PHE:HD2	2.23	0.46
3:E:85:LYS:O	3:E:89:GLN:HG2	2.15	0.46
1:A:286:ASP:HB3	1:A:483:ILE:HG21	1.98	0.46
2:B:858:THR:HG22	2:B:890:ASN:HD22	1.81	0.46
3:D:37:GLY:HA2	3:D:124:THR:HB	1.98	0.46
4:F:34:PHE:HE2	4:F:114:ILE:HG13	1.80	0.46
2:B:1121:LYS:HB3	2:B:1134:LEU:HB3	1.98	0.46
3:E:512:VAL:HA	3:E:538:SER:HB2	1.97	0.46
1:A:785:MET:O	1:A:790:PRO:HD3	2.16	0.46
3:C:442:PHE:HB3	3:E:141:ARG:HB3	1.97	0.46
3:D:541:PHE:CE2	3:D:604:TYR:HB2	2.51	0.46
3:D:39:ILE:HD11	3:D:124:THR:HG22	1.98	0.46
5:I:247:ARG:HA	5:I:247:ARG:HD3	1.71	0.46
1:A:122:ASP:OD2	1:A:134:ILE:HG21	2.16	0.46
2:B:967:ILE:HG12	2:B:978:ILE:HG12	1.98	0.46
3:C:42:ARG:HG2	3:C:169:PHE:CZ	2.51	0.46
3:C:292:LEU:H	3:C:292:LEU:HD12	1.81	0.46
3:C:423:GLN:HG2	3:C:494:GLN:H	1.80	0.46
3:E:44:ASN:HD21	3:E:170:LEU:CB	2.26	0.46
3:E:65:VAL:HG13	3:E:66:ASN:H	1.78	0.46
3:E:547:PHE:CE2	4:H:92:ILE:HD11	2.51	0.46
3:C:521:THR:HA	3:C:624:ILE:HG23	1.98	0.45
3:D:51:VAL:HB	3:E:339:TYR:HD1	1.81	0.45
3:E:510:SER:HB3	3:E:536:TYR:HB2	1.98	0.45
4:H:122:LEU:HD23	4:H:122:LEU:H	1.81	0.45
5:M:130:ILE:HD12	5:N:121:LEU:HD21	1.98	0.45
1:A:171:ASN:HA	1:A:195:LYS:O	2.16	0.45
3:E:149:LEU:HD13	3:E:237:LEU:HG	1.98	0.45
5:M:121:LEU:HB3	5:N:121:LEU:HB3	1.98	0.45
1:A:653:LEU:HD23	1:A:653:LEU:HA	1.82	0.45
1:A:1238:LEU:HB3	1:A:1279:CYS:SG	2.56	0.45
2:B:458:ASN:O	2:B:462:ILE:HG12	2.16	0.45
4:F:50:MET:O	4:F:54:ARG:HA	2.16	0.45
1:A:978:ASP:HB3	1:A:1032:ILE:HG23	1.99	0.45
1:A:974:TRP:HE1	1:A:976:LEU:HD11	1.81	0.45
2:B:805:ASN:HA	2:B:808:PHE:CE1	2.51	0.45
3:C:371:ILE:HD11	3:E:168:TYR:HB2	1.98	0.45
3:E:556:ARG:HB3	3:E:623:ASP:HB2	1.98	0.45
5:I:155:LEU:HD23	5:I:155:LEU:H	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:I:182:PRO:HB2	5:I:286:LEU:HD22	1.99	0.45
1:A:200:TYR:HE2	1:A:425:ILE:HD11	1.82	0.45
1:A:937:LYS:HG2	1:A:938:TYR:N	2.32	0.45
2:B:399:PRO:HB3	2:B:417:ASN:HB3	1.97	0.45
3:C:284:GLN:OE1	3:C:284:GLN:HA	2.16	0.45
3:E:571:VAL:HB	3:E:603:ILE:HB	1.99	0.45
4:G:25:LEU:HD23	4:G:25:LEU:HA	1.85	0.45
3:C:23:ILE:HD11	3:C:354:LYS:HD2	1.97	0.45
3:C:209:VAL:HG13	3:C:209:VAL:O	2.17	0.45
5:J:36:ILE:HB	5:J:168:TYR:CD1	2.52	0.45
1:A:902:LEU:HD11	1:A:1043:PHE:HB3	1.99	0.45
5:I:81:ALA:HB1	5:I:117:TYR:HB3	1.98	0.45
5:J:47:LEU:HD11	5:J:148:ARG:HE	1.80	0.45
1:A:599:VAL:HG21	1:A:757:ILE:HG13	2.00	0.44
3:C:425:ASN:HB2	3:C:467:LYS:HG2	1.99	0.44
4:F:8:LEU:HD21	4:F:56:PHE:CE2	2.53	0.44
1:A:622:VAL:HG11	1:A:772:ILE:HD11	1.98	0.44
2:B:170:VAL:HG12	2:B:172:PHE:CE1	2.51	0.44
2:B:592:PHE:CD1	2:B:744:ILE:HD11	2.52	0.44
2:B:869:VAL:O	2:B:875:ASP:HA	2.17	0.44
2:B:910:LEU:HD11	2:B:1012:TYR:CE2	2.52	0.44
3:D:252:LEU:HB3	3:D:255:THR:HB	1.99	0.44
4:G:50:MET:SD	4:G:52:GLU:HG3	2.56	0.44
2:B:45:ARG:NH1	2:B:68:PHE:HB3	2.33	0.44
2:B:184:VAL:HG21	2:B:481:PHE:HE1	1.81	0.44
2:B:761:TYR:CZ	2:B:811:PHE:HB2	2.52	0.44
5:L:179:ARG:HH22	5:L:213:TRP:HB2	1.81	0.44
1:A:9:PHE:HB2	1:A:90:LEU:HD21	2.00	0.44
1:A:955:ASN:OD1	1:A:957:MET:HG3	2.17	0.44
3:D:259:LEU:HB2	3:D:333:TYR:HB2	1.98	0.44
5:L:152:LEU:HD12	5:L:152:LEU:HA	1.81	0.44
1:A:483:ILE:HD12	1:A:483:ILE:HA	1.88	0.44
3:E:65:VAL:CG1	3:E:66:ASN:N	2.79	0.44
3:E:251:ARG:HB2	3:E:292:LEU:HB3	2.00	0.44
5:I:156:ASN:HA	5:J:137:PRO:HG2	2.00	0.44
5:M:121:LEU:HD23	5:N:123:ASP:HB2	2.00	0.44
2:B:316:ILE:O	2:B:317:LYS:C	2.58	0.44
3:C:533:VAL:HG12	3:C:534:HIS:ND1	2.32	0.44
5:K:183:ILE:HD13	5:K:309:ILE:HG13	1.98	0.44
1:A:1001:ASN:HB3	1:A:1089:TRP:CZ3	2.53	0.44
1:A:1167:TYR:HE1	1:A:1227:LYS:HD3	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:170:VAL:HG12	2:B:172:PHE:CD1	2.52	0.44
3:E:54:ASN:HB2	3:E:113:SER:O	2.18	0.44
2:B:840:PHE:CZ	2:B:842:LEU:HB2	2.53	0.44
3:E:105:PHE:CE2	3:E:150:GLY:HA3	2.52	0.44
3:E:518:LEU:HD22	3:E:544:PRO:HD3	1.99	0.44
4:H:131:ASN:HB2	4:H:139:GLN:HE22	1.83	0.44
5:J:42:LYS:HE2	5:J:42:LYS:HB2	1.83	0.44
3:C:212:TYR:HB3	3:C:217:TYR:CZ	2.52	0.44
3:D:469:TYR:HE1	3:D:514:ILE:HD11	1.83	0.43
5:I:256:ASP:HB2	5:I:277:LEU:HD21	2.00	0.43
5:I:238:TRP:H	5:I:257:ALA:HB1	1.82	0.43
2:B:629:ILE:HG23	2:B:660:TYR:HE2	1.83	0.43
2:B:1126:SER:HB2	2:B:1133:GLN:CD	2.43	0.43
3:D:410:PHE:HE1	3:D:482:ILE:HG13	1.82	0.43
3:E:155:ILE:HD13	3:E:163:ILE:HD12	2.00	0.43
3:E:219:ILE:HA	3:E:371:ILE:O	2.17	0.43
5:K:195:MET:HA	5:K:231:LEU:HD11	2.01	0.43
2:B:1:MET:HE3	2:B:1:MET:HB3	1.74	0.43
2:B:36:ALA:HB3	2:B:39:ILE:HB	2.00	0.43
2:B:552:ILE:HG23	2:B:557:LYS:HB2	2.01	0.43
3:C:371:ILE:HD13	3:E:169:PHE:HB2	2.01	0.43
3:D:425:ASN:O	3:D:467:LYS:HA	2.18	0.43
4:F:73:PHE:N	4:F:73:PHE:CD1	2.85	0.43
5:K:297:ILE:HD13	5:K:310:TRP:CH2	2.53	0.43
1:A:69:ARG:HE	1:A:525:GLN:CD	2.24	0.43
1:A:900:PHE:CZ	1:A:1057:MET:HB3	2.53	0.43
1:A:1104:ALA:HB3	1:A:1280:ASN:HB2	2.01	0.43
5:I:284:LEU:HD23	5:I:297:ILE:HD13	2.00	0.43
5:K:193:VAL:HB	5:K:197:ASN:HD21	1.83	0.43
5:L:179:ARG:N	5:L:313:SER:H	2.16	0.43
1:A:17:ASN:HA	1:A:21:ILE:HG22	1.99	0.43
5:L:236:LEU:HB3	5:L:260:TRP:NE1	2.33	0.43
3:C:438:GLY:HA3	3:C:477:ASP:O	2.19	0.43
3:D:45:GLN:O	3:D:46:ILE:HD13	2.19	0.43
5:I:283:VAL:HG21	5:I:303:ASN:N	2.33	0.43
5:N:120:LEU:HD22	5:N:129:PHE:HD2	1.83	0.43
1:A:974:TRP:CD2	1:A:1008:ILE:HG21	2.53	0.43
2:B:109:PRO:HB3	2:B:152:GLU:HG3	2.01	0.43
3:E:65:VAL:HB	3:E:102:PRO:HB3	2.01	0.43
4:H:134:ILE:HD12	4:H:134:ILE:N	2.33	0.43
5:J:89:ILE:HD12	5:J:90:TYR:N	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:N:285:ASP:HA	5:N:308:GLN:HA	2.00	0.43
1:A:675:ASN:C	1:A:677:ASN:N	2.72	0.43
2:B:776:ASN:ND2	2:B:803:PHE:HB2	2.31	0.43
3:E:557:LEU:HD11	3:E:568:LEU:HD12	2.00	0.43
3:E:559:THR:CG2	3:E:590:LEU:HA	2.49	0.43
1:A:1140:LEU:HB3	1:A:1284:ILE:HD13	1.99	0.43
5:I:183:ILE:HB	5:I:309:ILE:HB	2.01	0.43
5:L:244:ASN:HA	5:L:299:VAL:HG22	2.01	0.43
2:B:336:LEU:HD23	2:B:336:LEU:HA	1.88	0.42
3:C:250:PRO:HG2	3:C:252:LEU:HG	2.01	0.42
3:D:287:ASN:O	3:D:288:THR:HG22	2.19	0.42
5:M:39:ILE:HG23	5:M:165:ILE:HG12	2.00	0.42
1:A:1007:THR:HG21	1:A:1072:ILE:HG12	2.01	0.42
4:G:53:ASN:C	4:G:54:ARG:HG3	2.43	0.42
3:C:23:ILE:HG23	3:C:25:LEU:H	1.85	0.42
3:C:237:LEU:HD22	3:C:307:ILE:HD11	2.02	0.42
3:D:252:LEU:HD12	3:D:252:LEU:HA	1.76	0.42
3:E:559:THR:HG21	3:E:562:ASN:O	2.18	0.42
3:E:224:GLY:HA3	3:E:366:GLY:N	2.34	0.42
4:F:51:ALA:HA	4:F:54:ARG:HH11	1.83	0.42
5:N:174:LYS:HD2	5:N:217:TYR:HB3	2.00	0.42
1:A:1194:LEU:HD21	1:A:1260:ILE:HG23	2.02	0.42
2:B:169:ILE:HD13	2:B:199:THR:HB	2.02	0.42
2:B:458:ASN:HB2	2:B:461:VAL:HB	2.00	0.42
5:N:85:LYS:NZ	5:N:93:ASN:HA	2.35	0.42
1:A:384:ILE:HG21	1:A:387:LEU:HG	2.01	0.42
4:F:25:LEU:HD21	4:F:32:LEU:HD23	2.01	0.42
4:G:33:THR:HB	5:K:101:PRO:HG3	2.01	0.42
5:K:47:LEU:HD23	5:K:47:LEU:HA	1.85	0.42
4:H:50:MET:HE3	4:H:53:ASN:H	1.85	0.42
3:C:598:LEU:HD21	3:C:604:TYR:CE1	2.55	0.42
3:D:89:GLN:OE1	3:D:94:ASN:HA	2.20	0.42
3:E:221:LYS:HB2	3:E:221:LYS:HE3	1.86	0.42
1:A:996:ILE:HD12	1:A:1140:LEU:HD21	2.02	0.42
2:B:650:LEU:HD13	2:B:650:LEU:HA	1.93	0.42
2:B:1043:ASP:HB2	2:B:1194:LEU:O	2.20	0.42
2:B:1076:ILE:HG13	2:B:1134:LEU:HD12	2.02	0.42
3:D:575:ILE:HG13	4:G:7:PHE:CD2	2.55	0.42
5:M:246:VAL:C	5:M:247:ARG:HD3	2.45	0.42
5:N:65:ARG:HG2	5:N:172:ASP:HB3	2.01	0.42
1:A:494:LEU:HD22	2:B:1061:VAL:HG11	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:994:LEU:O	2:B:996:ILE:HG23	2.20	0.42
4:F:90:ILE:HD13	4:F:90:ILE:HA	1.87	0.42
4:G:25:LEU:HD13	4:G:32:LEU:HD23	2.02	0.42
1:A:277:ASP:HA	1:A:280:ILE:HD12	2.02	0.41
3:C:573:GLU:OE1	3:C:573:GLU:HA	2.20	0.41
3:E:73:TYR:HD2	3:E:84:ILE:HD11	1.85	0.41
5:I:94:LEU:HD13	5:I:94:LEU:HA	1.92	0.41
5:J:130:ILE:HD11	5:J:162:LYS:HD3	2.01	0.41
1:A:157:ALA:O	1:A:191:ILE:HG12	2.20	0.41
3:C:570:ARG:HA	3:C:604:TYR:CD2	2.54	0.41
3:E:115:LYS:HE2	3:E:156:GLU:HG2	2.02	0.41
3:E:237:LEU:HD12	3:E:247:ILE:HG13	2.02	0.41
5:K:47:LEU:HD22	5:K:60:LEU:HB3	2.02	0.41
1:A:88:ILE:HG13	1:A:89:PHE:N	2.34	0.41
2:B:119:ALA:HB1	3:C:252:LEU:HB3	2.02	0.41
2:B:1049:LEU:HD23	2:B:1105:VAL:HG21	2.01	0.41
3:E:170:LEU:HD11	3:E:174:LYS:HD3	2.01	0.41
5:J:94:LEU:HD23	5:J:94:LEU:HA	1.89	0.41
1:A:294:LEU:HD13	1:A:346:PHE:CE2	2.56	0.41
2:B:181:ASN:HA	2:B:202:TRP:O	2.20	0.41
3:C:168:TYR:OH	3:D:367:PRO:HB2	2.20	0.41
3:D:405:PRO:HA	3:D:484:VAL:O	2.20	0.41
4:F:20:SER:OG	4:F:23:LEU:HB2	2.21	0.41
1:A:1099:TYR:CG	1:A:1283:PHE:HB3	2.56	0.41
2:B:783:ILE:HD11	2:B:797:LEU:HB3	2.03	0.41
3:C:49:GLY:C	3:D:337:LEU:HB2	2.45	0.41
5:K:105:ILE:HD11	5:K:152:LEU:HG	2.02	0.41
2:B:69:LEU:HD21	2:B:78:PHE:HB2	2.02	0.41
2:B:858:THR:HG22	2:B:890:ASN:ND2	2.36	0.41
5:I:71:TRP:NE1	5:I:86:SER:HB2	2.35	0.41
5:K:190:VAL:CG2	5:K:297:ILE:HD11	2.44	0.41
5:N:306:ASP:HA	5:N:309:ILE:HD12	2.03	0.41
1:A:33:ARG:HA	1:A:33:ARG:HD2	1.86	0.41
1:A:504:LEU:HD23	1:A:504:LEU:HA	1.92	0.41
1:A:769:ILE:HD13	1:A:769:ILE:HA	1.83	0.41
2:B:972:LEU:HA	2:B:972:LEU:HD23	1.86	0.41
2:B:1080:ILE:HD12	2:B:1175:ASN:CG	2.44	0.41
3:C:573:GLU:HG3	4:F:7:PHE:CE1	2.56	0.41
3:D:443:GLN:HG2	3:D:446:ASN:HB2	2.01	0.41
3:E:134:LEU:HD12	3:E:134:LEU:HA	1.86	0.41
1:A:11:TYR:CZ	1:A:86:LYS:HD3	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:202:TRP:N	2:B:202:TRP:CD1	2.87	0.41
3:D:45:GLN:HB3	3:E:314:GLU:OE1	2.21	0.41
3:D:149:LEU:HD23	3:D:149:LEU:HA	1.85	0.41
3:D:417:ILE:HD11	3:D:508:MET:HE2	2.03	0.41
3:D:518:LEU:HB3	3:D:519:ASN:H	1.73	0.41
3:E:557:LEU:CD2	3:E:622:ILE:HD12	2.51	0.41
4:F:90:ILE:O	4:F:97:TYR:HA	2.21	0.41
1:A:804:LYS:HE2	1:A:830:ASN:HA	2.02	0.41
2:B:236:ILE:HG21	2:B:328:ILE:HD12	2.02	0.41
3:E:450:ASP:OD1	3:E:479:ASN:ND2	2.54	0.41
5:J:201:ASN:OD1	5:J:294:GLY:HA2	2.20	0.41
1:A:492:LEU:HD12	1:A:492:LEU:HA	1.85	0.40
1:A:674:ASP:O	1:A:675:ASN:C	2.63	0.40
1:A:721:TYR:HA	1:A:769:ILE:HD11	2.03	0.40
3:C:55:GLY:HA2	3:C:111:ALA:O	2.21	0.40
3:C:70:ILE:O	3:C:70:ILE:HD12	2.21	0.40
4:H:134:ILE:HG22	4:H:134:ILE:O	2.22	0.40
5:J:198:LEU:HB3	5:J:248:VAL:HB	2.03	0.40
5:L:103:HIS:NE2	5:L:151:LYS:HB3	2.36	0.40
5:M:34:ASP:HA	5:M:73:ILE:O	2.21	0.40
5:N:198:LEU:HD13	5:N:198:LEU:HA	1.90	0.40
1:A:251:VAL:H	1:A:463:SER:HB3	1.86	0.40
1:A:300:ILE:O	1:A:304:LEU:HG	2.22	0.40
1:A:1195:PHE:C	1:A:1195:PHE:CD1	2.98	0.40
2:B:184:VAL:HG21	2:B:481:PHE:CE1	2.56	0.40
3:C:573:GLU:HG3	4:F:7:PHE:HE1	1.86	0.40
4:F:127:LEU:HD13	4:F:127:LEU:HA	1.93	0.40
4:G:25:LEU:HD21	4:G:126:LEU:HD11	2.03	0.40
4:G:97:TYR:CE2	4:G:143:LEU:HB2	2.56	0.40
5:K:89:ILE:HG13	5:K:90:TYR:N	2.37	0.40
1:A:40:ILE:HD12	1:A:94:ILE:HD13	2.03	0.40
3:C:31:VAL:HG21	3:C:87:ASN:HB3	2.03	0.40
3:C:503:ASP:HB3	3:C:580:LEU:H	1.86	0.40
3:D:570:ARG:HH11	3:D:602:ALA:HB1	1.84	0.40
3:E:572:THR:OG1	3:E:579:ASN:HB2	2.22	0.40
5:N:198:LEU:HD12	5:N:248:VAL:HB	2.04	0.40
3:E:525:TYR:CD1	3:E:525:TYR:C	2.99	0.40
5:I:83:LYS:HD3	5:I:110:ASP:OD1	2.22	0.40
5:L:131:ILE:HB	5:L:141:LEU:HD23	2.02	0.40
5:N:111:SER:HB2	5:N:116:GLN:HE22	1.86	0.40
1:A:494:LEU:HD23	2:B:1062:PHE:HE2	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:183:THR:HG22	2:B:232:PHE:CE2	2.57	0.40
2:B:693:ALA:O	2:B:697:LEU:CD1	2.66	0.40
2:B:1132:ILE:HD12	2:B:1132:ILE:C	2.47	0.40
3:E:606:LEU:HD23	3:E:620:LEU:HD21	2.04	0.40
4:H:137:SER:HA	4:H:140:MET:SD	2.61	0.40
5:K:265:VAL:HG12	5:K:273:THR:HG23	2.03	0.40
5:L:139:LEU:HD23	5:L:152:LEU:HD23	2.02	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	1234/1302 (95%)	1208 (98%)	25 (2%)	1 (0%)	48 77
2	B	1175/1197 (98%)	1125 (96%)	50 (4%)	0	100 100
3	C	584/626 (93%)	554 (95%)	28 (5%)	2 (0%)	37 66
3	D	547/626 (87%)	513 (94%)	34 (6%)	0	100 100
3	E	550/626 (88%)	528 (96%)	22 (4%)	0	100 100
4	F	129/146 (88%)	116 (90%)	13 (10%)	0	100 100
4	G	134/146 (92%)	132 (98%)	2 (2%)	0	100 100
4	H	133/146 (91%)	130 (98%)	3 (2%)	0	100 100
5	I	257/294 (87%)	240 (93%)	17 (7%)	0	100 100
5	J	257/294 (87%)	243 (95%)	12 (5%)	2 (1%)	16 45
5	K	260/294 (88%)	247 (95%)	13 (5%)	0	100 100
5	L	257/294 (87%)	234 (91%)	22 (9%)	1 (0%)	30 60
5	M	260/294 (88%)	244 (94%)	16 (6%)	0	100 100
5	N	260/294 (88%)	243 (94%)	15 (6%)	2 (1%)	16 45

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
All	All	6037/6579 (92%)	5757 (95%)	272 (4%)	8 (0%)	50 77

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	675	ASN
5	J	193	VAL
5	L	193	VAL
5	N	193	VAL
3	C	67	ASP
5	J	239	ILE
3	C	571	VAL
5	N	314	ASN

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	880/1200 (73%)	877 (100%)	3 (0%)	91 97
2	B	836/1114 (75%)	833 (100%)	3 (0%)	89 97
3	C	525/570 (92%)	521 (99%)	4 (1%)	79 93
3	D	462/570 (81%)	461 (100%)	1 (0%)	92 98
3	E	458/570 (80%)	451 (98%)	7 (2%)	60 85
4	F	103/136 (76%)	101 (98%)	2 (2%)	52 81
4	G	109/136 (80%)	109 (100%)	0	100 100
4	H	108/136 (79%)	108 (100%)	0	100 100
5	I	193/266 (73%)	193 (100%)	0	100 100
5	J	193/266 (73%)	193 (100%)	0	100 100
5	K	196/266 (74%)	195 (100%)	1 (0%)	86 96
5	L	194/266 (73%)	194 (100%)	0	100 100
5	M	196/266 (74%)	196 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
5	N	188/266 (71%)	188 (100%)	0	100 100
All	All	4641/6028 (77%)	4620 (100%)	21 (0%)	85 96

All (21) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	674	ASP
1	A	817	TYR
1	A	1026	ASN
2	B	150	TYR
2	B	318	LEU
2	B	698	ILE
3	C	542	THR
3	C	568	LEU
3	C	603	ILE
3	C	621	HIS
3	D	76	THR
3	E	144	LEU
3	E	301	SER
3	E	441	ASN
3	E	442	PHE
3	E	448	CYS
3	E	450	ASP
3	E	591	ASN
4	F	94	VAL
4	F	134	ILE
5	K	121	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (59) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	12	ASN
1	A	68	ASN
1	A	193	GLN
1	A	232	GLN
1	A	471	ASN
1	A	536	ASN
1	A	727	GLN
1	A	777	ASN
1	A	1026	ASN
1	A	1106	ASN

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Mol	Chain	Res	Type
2	B	93	ASN
2	B	259	GLN
2	B	371	ASN
2	B	472	ASN
2	B	538	ASN
2	B	759	ASN
2	B	814	GLN
2	B	1052	ASN
3	C	89	GLN
3	C	136	HIS
3	C	328	ASN
3	C	584	GLN
3	C	615	ASN
3	C	621	HIS
3	D	99	ASN
3	D	563	GLN
3	D	614	ASN
3	D	617	ASN
3	E	44	ASN
3	E	66	ASN
3	E	87	ASN
3	E	158	ASN
3	E	180	GLN
3	E	249	GLN
3	E	323	ASN
3	E	441	ASN
3	E	579	ASN
4	F	138	ASN
4	G	60	ASN
4	H	14	ASN
4	H	136	ASN
4	H	139	GLN
5	I	138	ASN
5	I	156	ASN
5	I	207	ASN
5	J	175	ASN
5	J	225	GLN
5	K	201	ASN
5	K	258	GLN
5	K	276	ASN
5	L	78	ASN
5	L	99	ASN

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Mol	Chain	Res	Type
5	L	108	GLN
5	L	225	GLN
5	M	109	GLN
5	M	211	GLN
5	N	33	ASN
5	N	108	GLN
5	N	149	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

There are no ligands in this entry.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

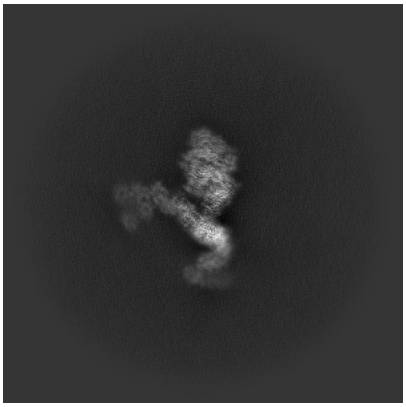
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-53015. These allow visual inspection of the internal detail of the map and identification of artifacts.

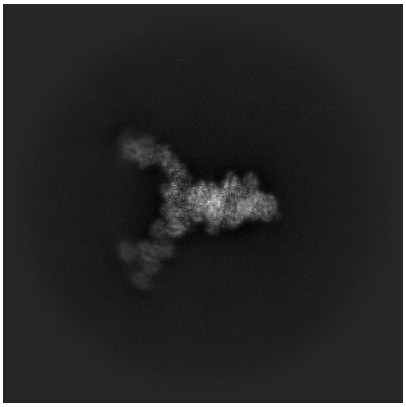
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

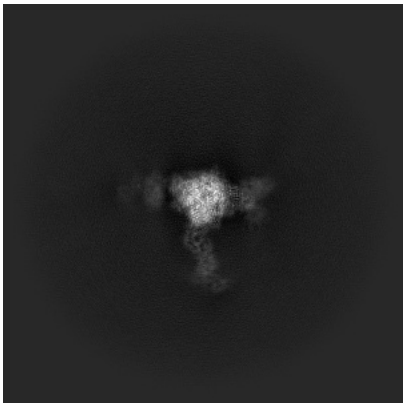
6.1.1 Primary map



X



Y

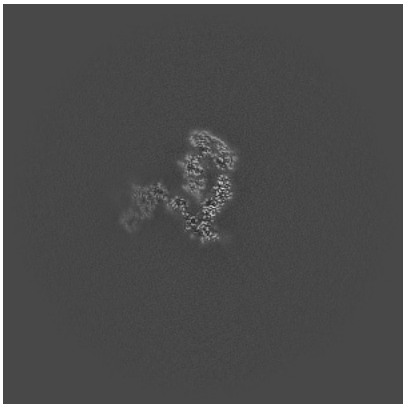


Z

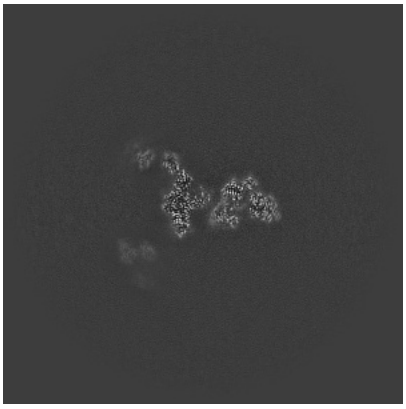
The images above show the map projected in three orthogonal directions.

6.2 Central slices

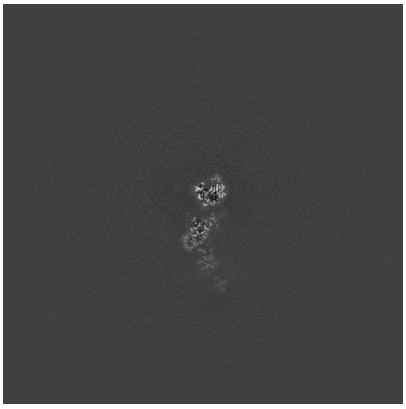
6.2.1 Primary map



X Index: 270



Y Index: 270

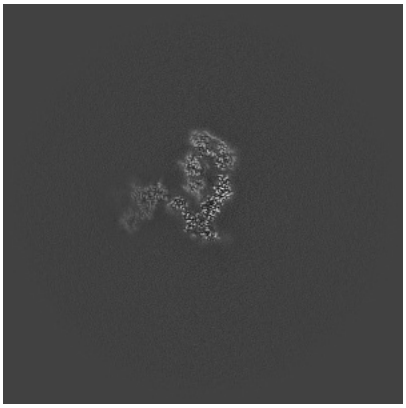


Z Index: 270

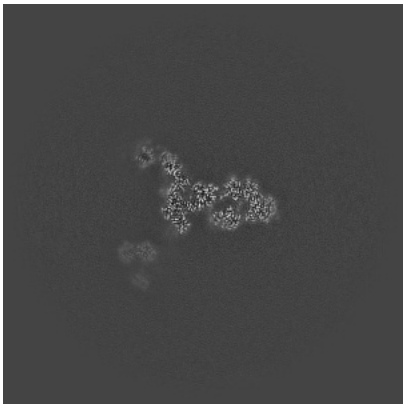
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

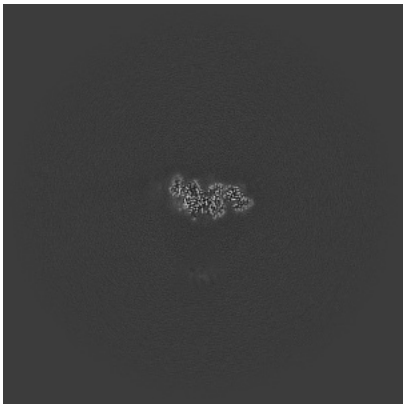
6.3.1 Primary map



X Index: 271



Y Index: 276

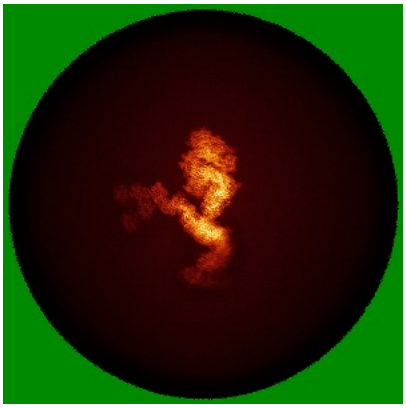


Z Index: 231

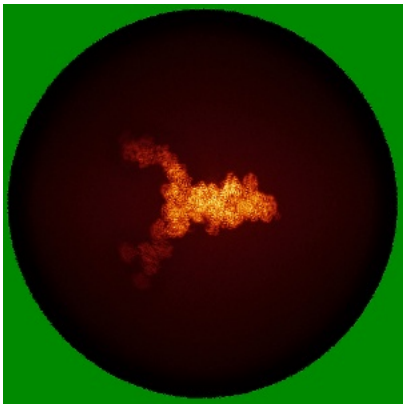
The images above show the largest variance slices of the map in three orthogonal directions.

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

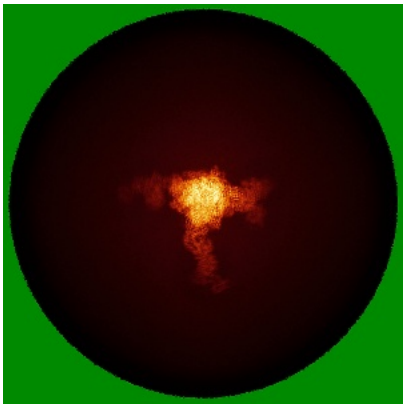
6.4.1 Primary map



X



Y

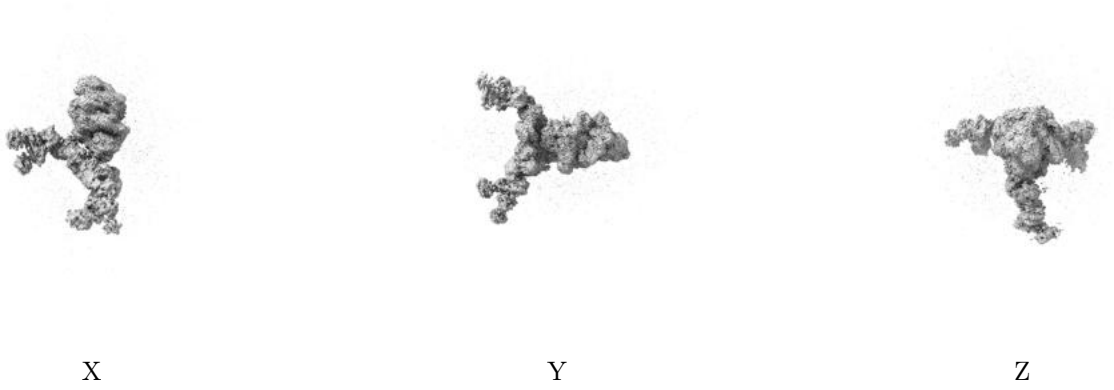


Z

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 4.0. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

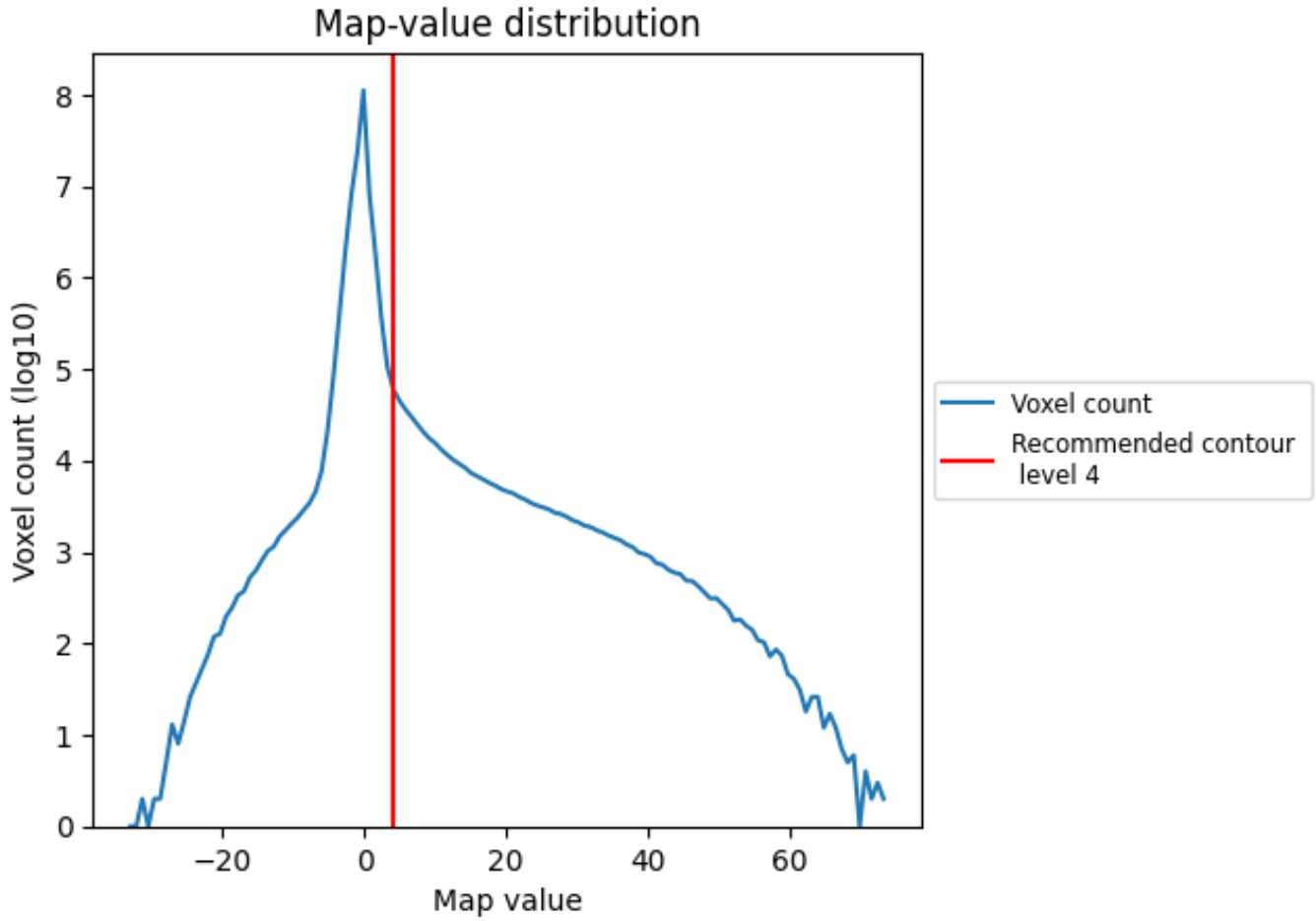
6.6 Mask visualisation (i)

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

7 Map analysis

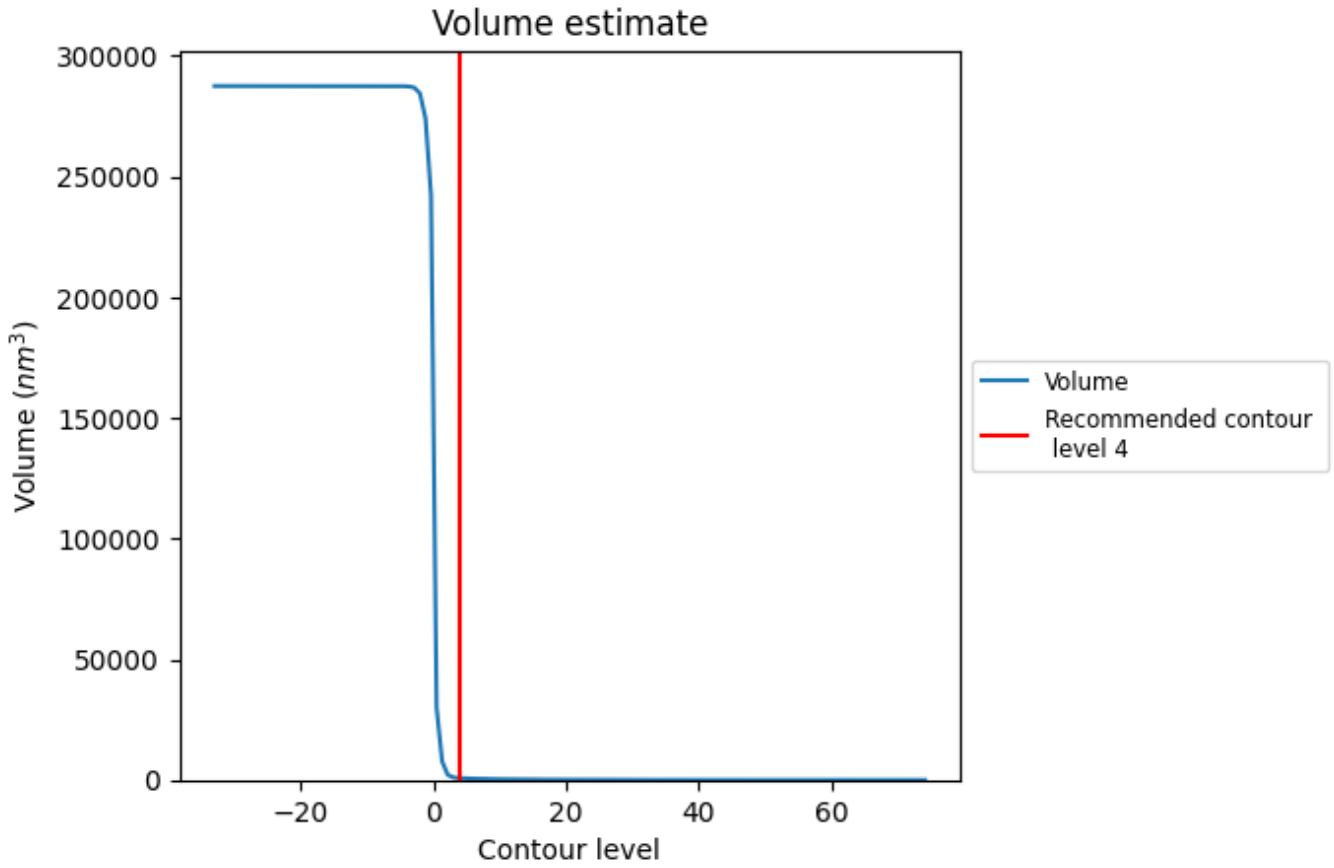
This section contains the results of statistical analysis of the map.

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.

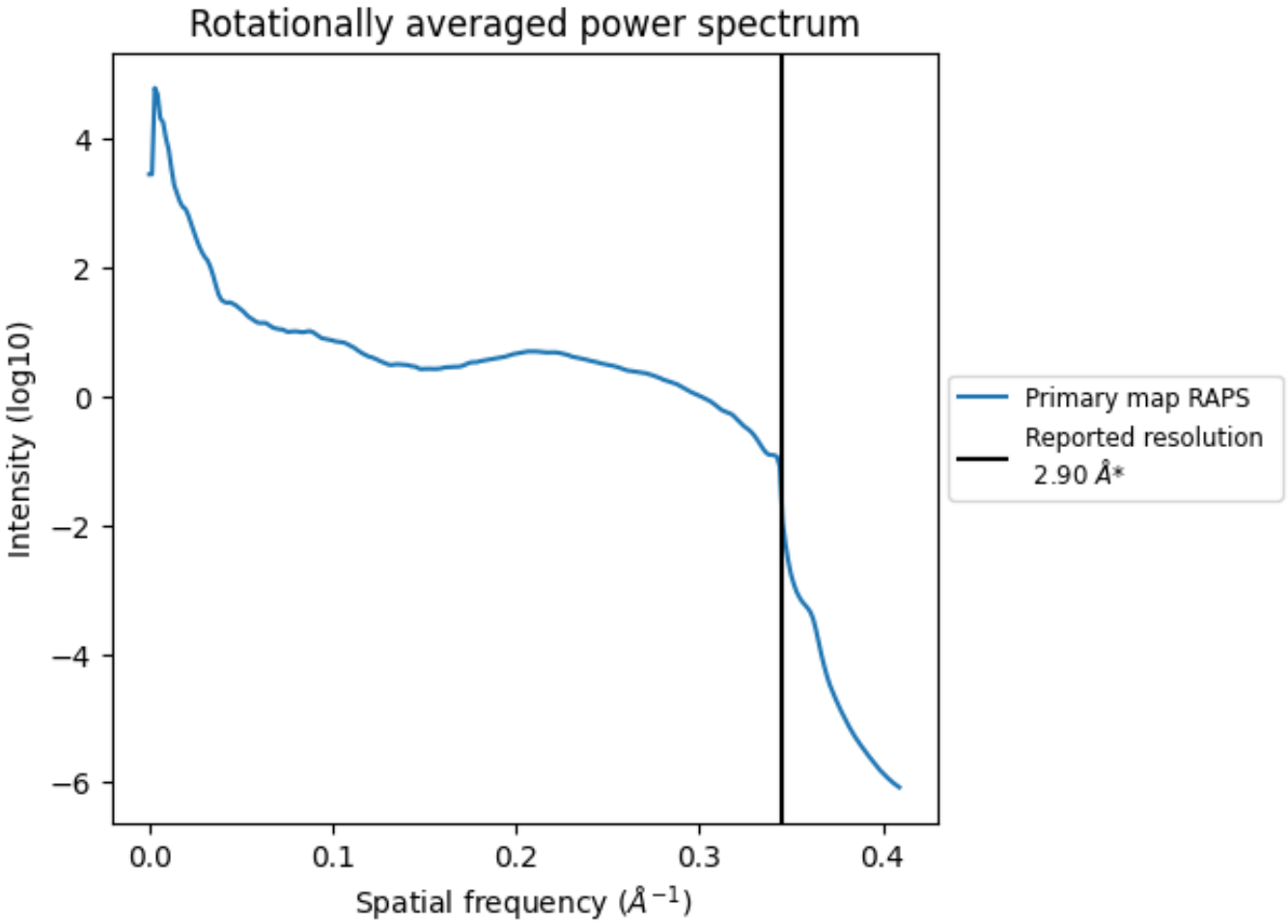
7.2 Volume estimate



The volume at the recommended contour level is 758 nm^3; this corresponds to an approximate mass of 685 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 0.345 Å^{-1}

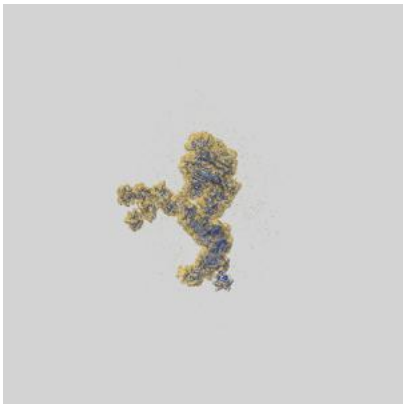
8 Fourier-Shell correlation (i)

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

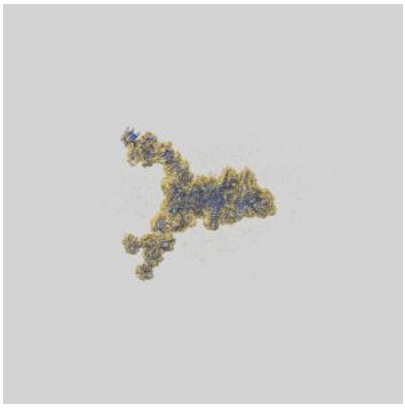
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-53015 and PDB model 9QCM. Per-residue inclusion information can be found in section 3 on page 6.

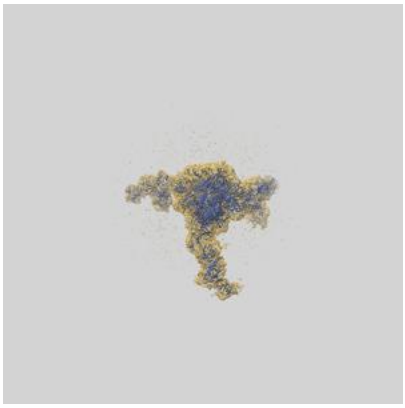
9.1 Map-model overlay



X



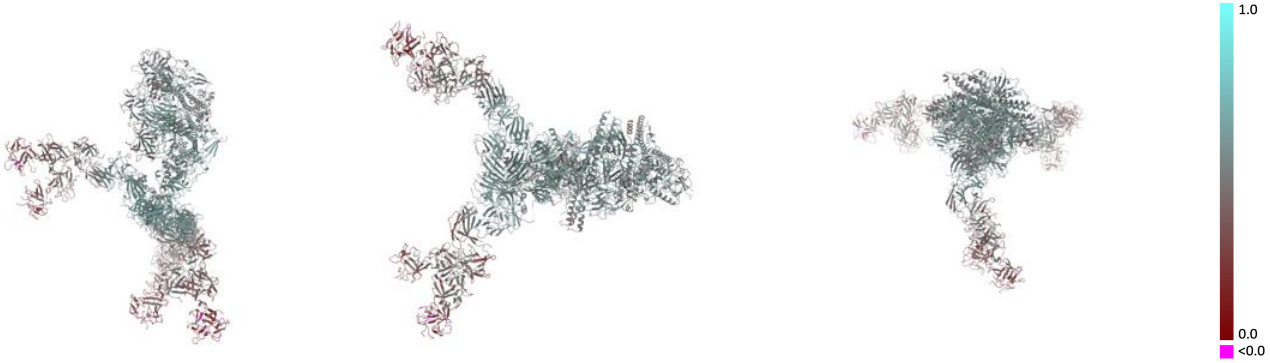
Y



Z

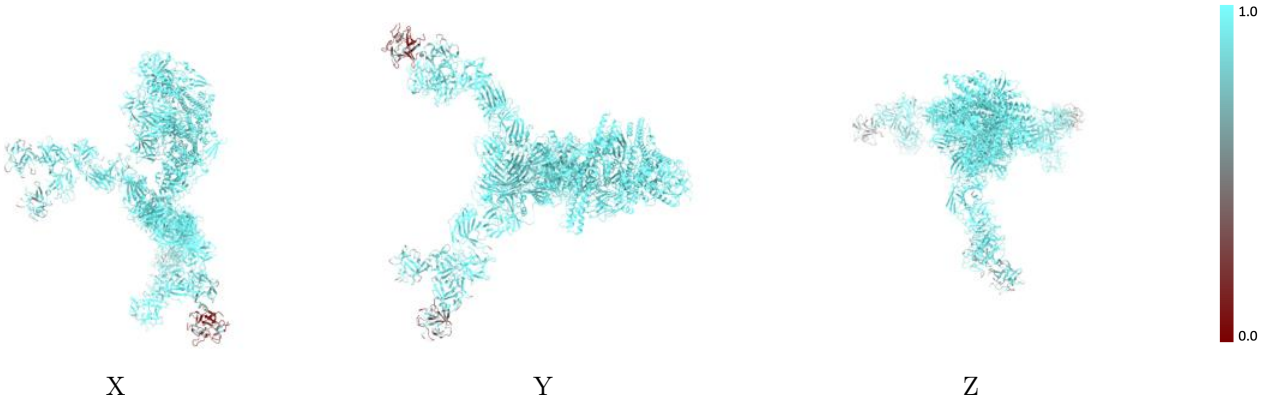
The images above show the 3D surface view of the map at the recommended contour level 4.0 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model (i)



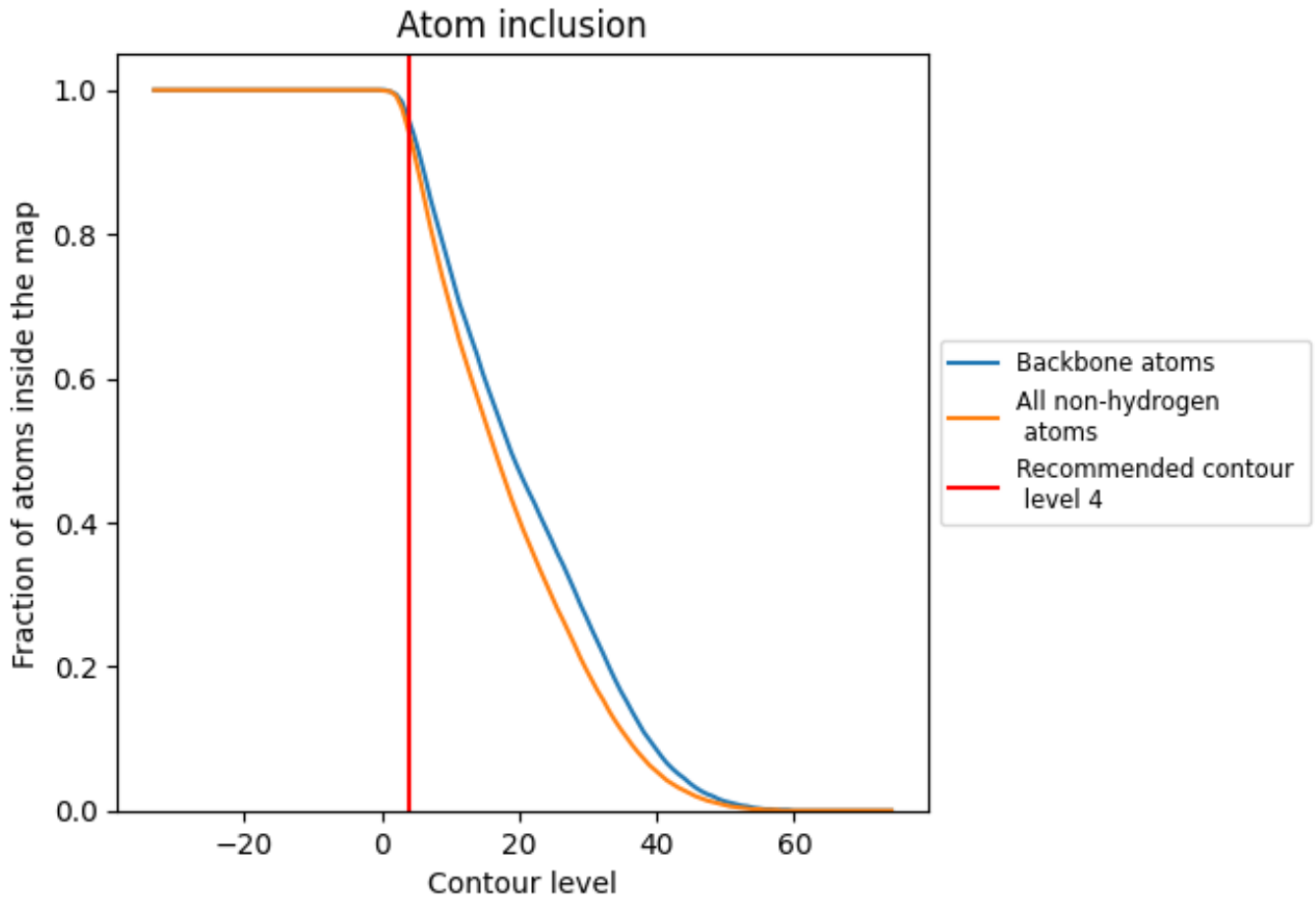
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3 Atom inclusion mapped to coordinate model (i)



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 (4).

9.4 Atom inclusion (i)



At the recommended contour level, 96% of all backbone atoms, 94% 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 (4) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9410	0.4800
A	0.9990	0.5200
B	0.9990	0.5530
C	0.9930	0.5460
D	0.9960	0.5230
E	0.9940	0.5600
F	0.9690	0.4230
G	0.9200	0.3790
H	0.9800	0.4200
I	0.8240	0.3480
J	0.8420	0.3510
K	0.6870	0.3410
L	0.8730	0.3670
M	0.5710	0.3150
N	0.9640	0.3590