



Full wwPDB EM Validation Report ⓘ

Sep 9, 2024 – 09:29 AM EDT

PDB ID : 8VUN
EMDB ID : EMD-43534
Title : Human GluN1-2A With Fab 008-218
Authors : Michalski, K.; Furukawa, H.
Deposited on : 2024-01-29
Resolution : 4.01 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.dev112
MolProbity : 4.02b-467
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.38.3

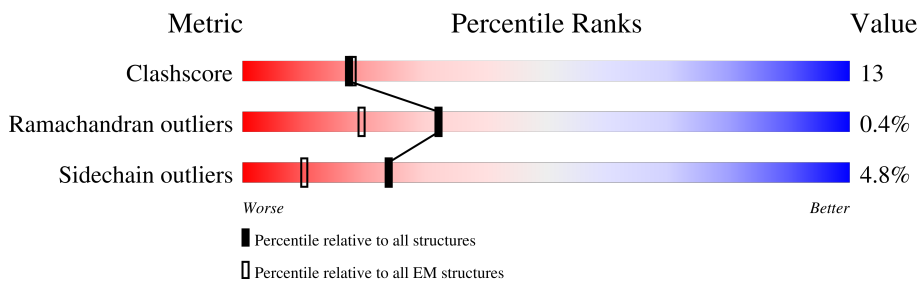
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 4.01 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 $\leq 5\%$. 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	817	
1	C	817	
2	B	808	
2	D	808	
3	G	220	
3	K	220	
4	I	209	
4	L	209	

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 28765 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 Glutamate receptor ionotropic, NMDA 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	789	Total	C	N	O	S	0	0
			5751	3669	1020	1035	27		
1	C	789	Total	C	N	O	S	0	0
			5601	3573	1002	1002	24		

- Molecule 2 is a protein called Glutamate receptor ionotropic, NMDA 2A.

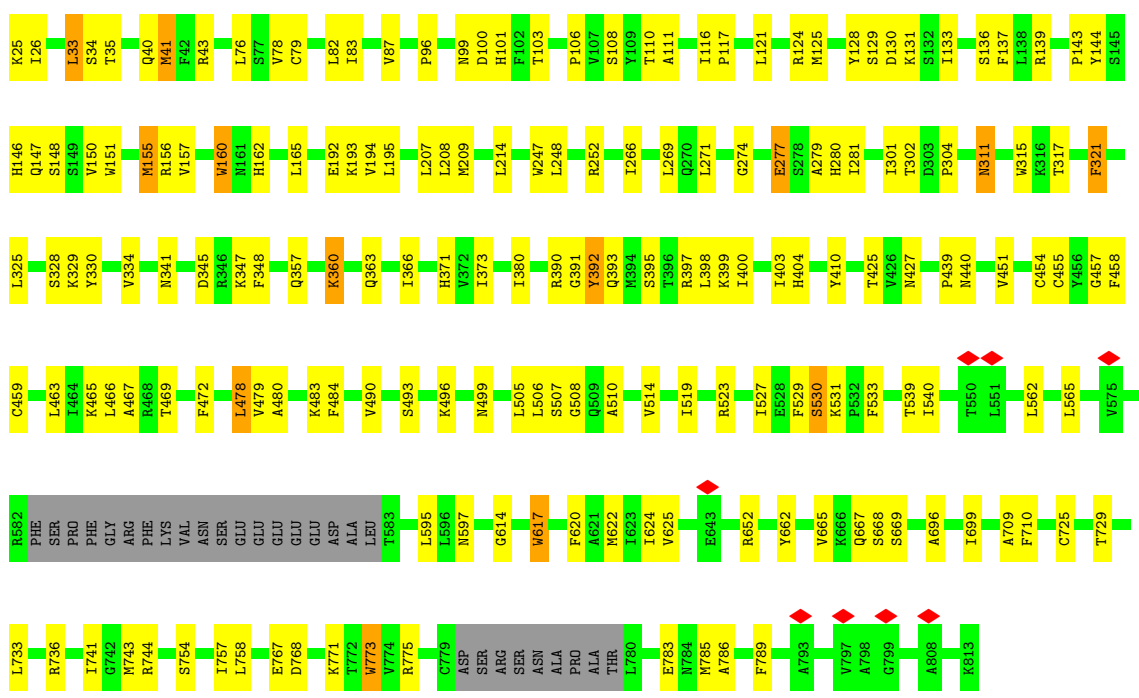
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	781	Total	C	N	O	S	0	0
			5510	3554	945	984	27		
2	D	781	Total	C	N	O	S	0	0
			5473	3542	934	971	26		

- Molecule 3 is a protein called 008-218 Heavy.

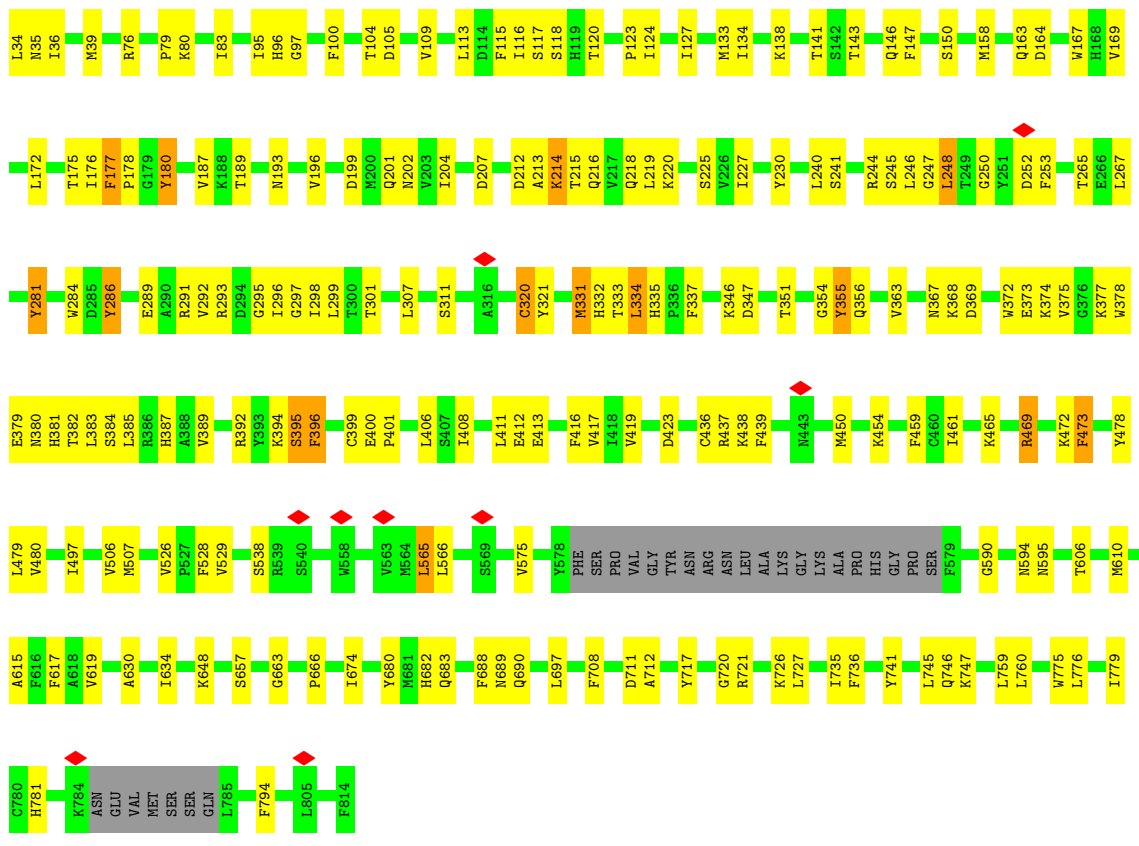
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	G	220	Total	C	N	O	S	0	0
			1643	1036	278	322	7		
3	K	220	Total	C	N	O	S	0	0
			1643	1036	278	322	7		

- Molecule 4 is a protein called 008-218 Light.

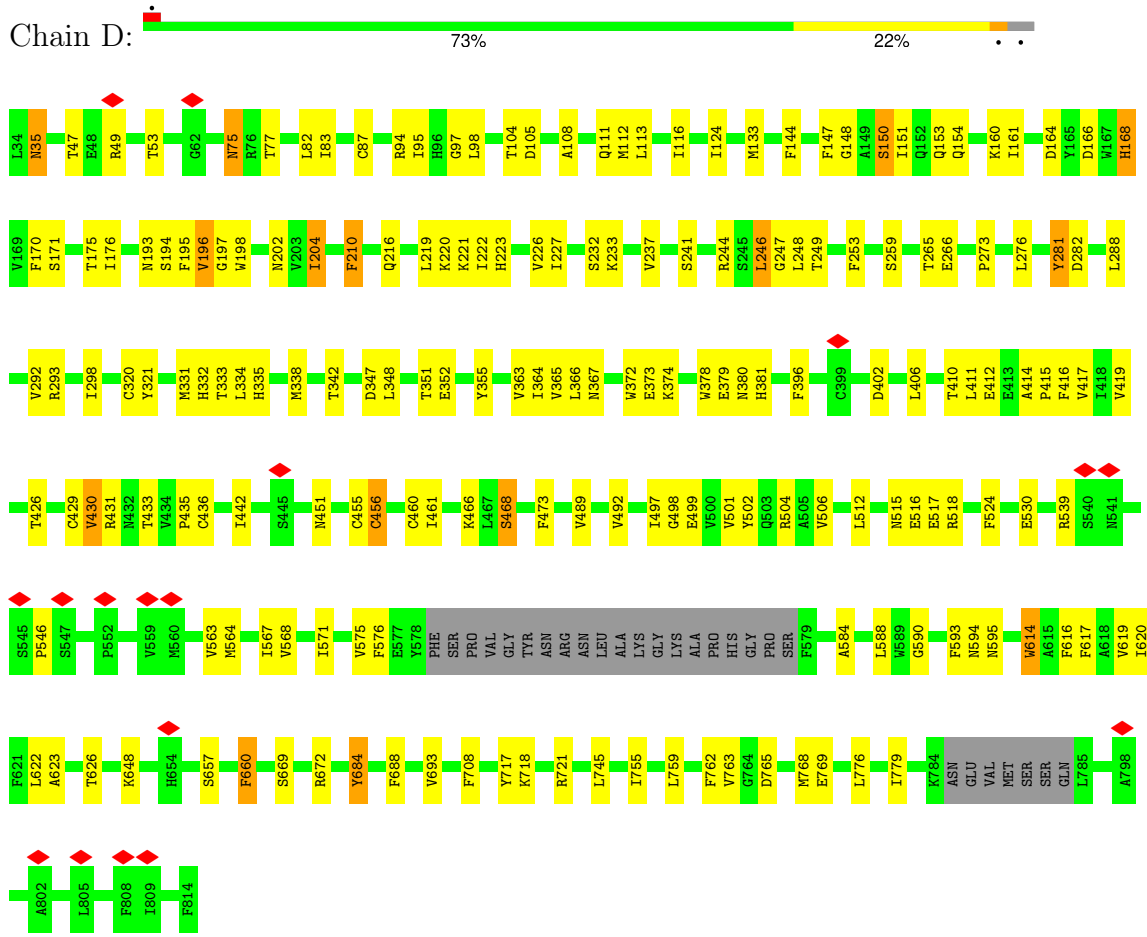
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	I	209	Total	C	N	O	S	0	0
			1572	976	266	325	5		
4	L	209	Total	C	N	O	S	0	0
			1572	976	266	325	5		



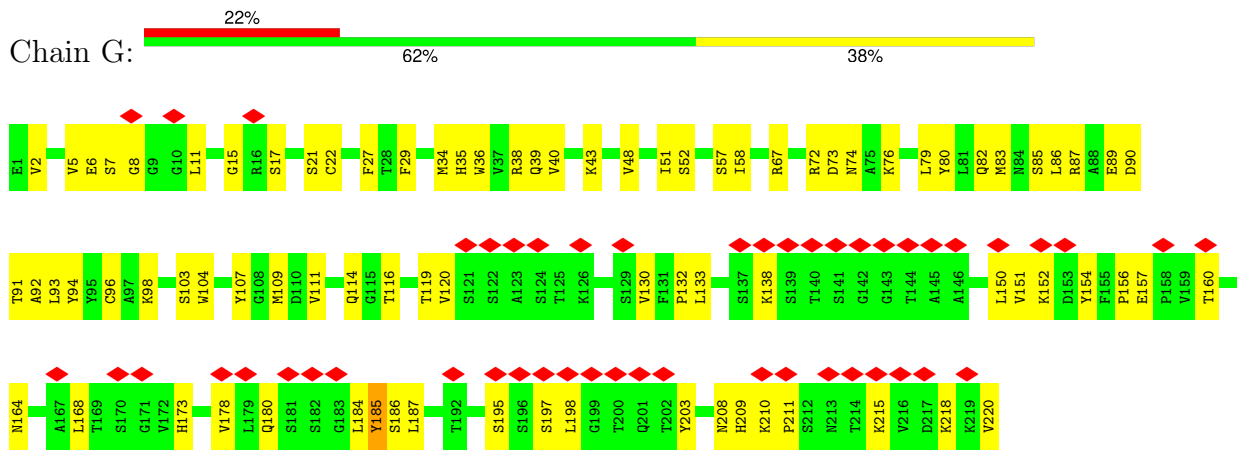
• Molecule 2: Glutamate receptor ionotropic, NMDA 2A



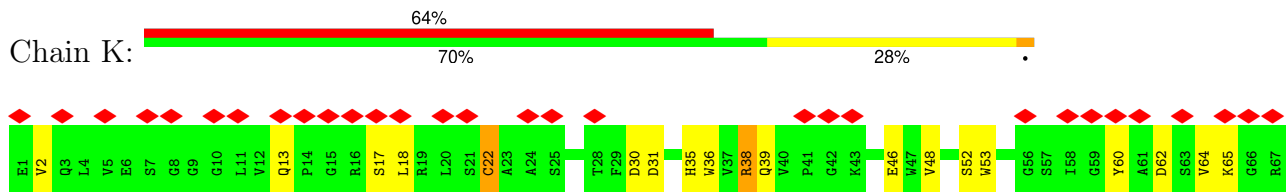
• Molecule 2: Glutamate receptor ionotropic, NMDA 2A

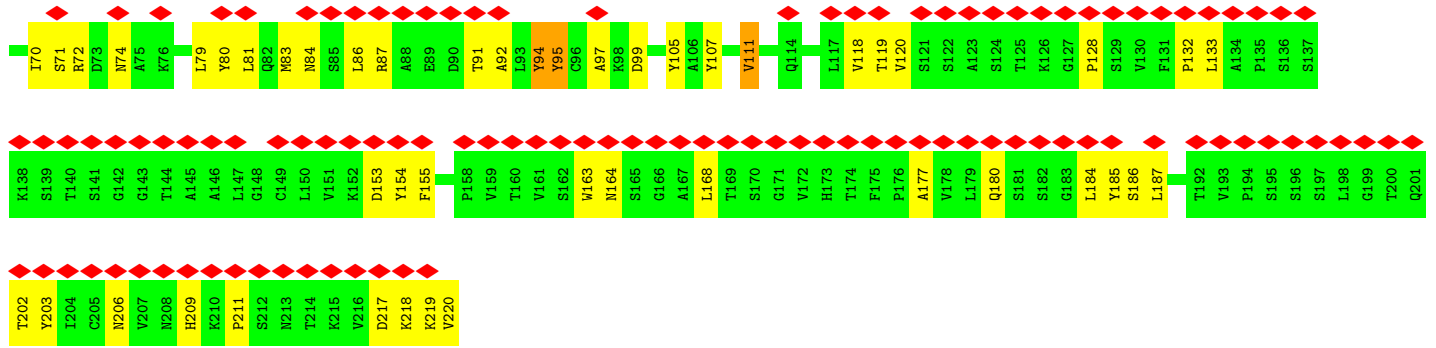


• Molecule 3: 008-218 Heavy

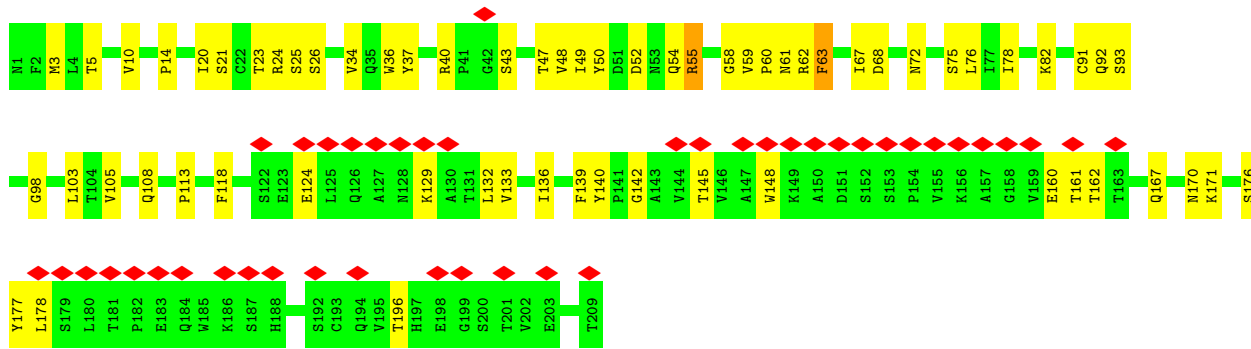


• Molecule 3: 008-218 Heavy

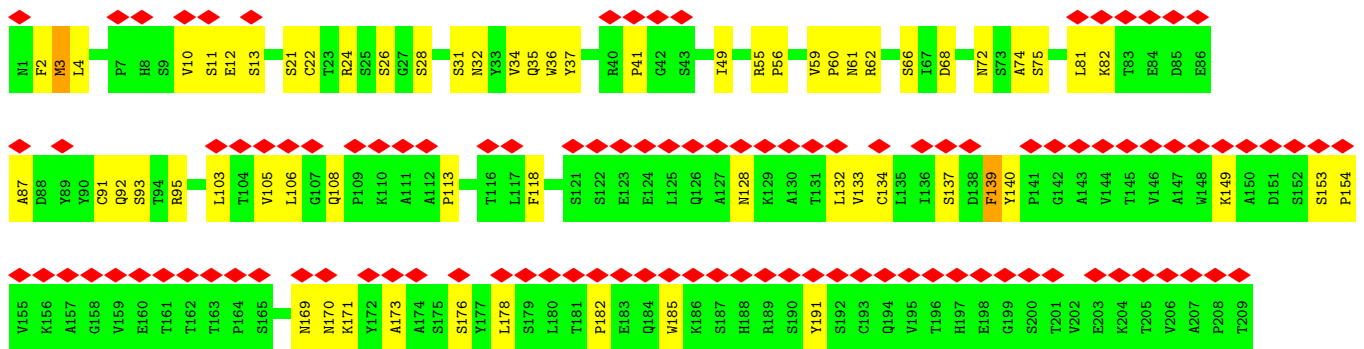




• Molecule 4: 008-218 Light



• Molecule 4: 008-218 Light



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	96610	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	60	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.535	Depositor
Minimum map value	-0.292	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.012	Depositor
Recommended contour level	0.0529	Depositor
Map size (\AA)	376.64, 376.64, 376.64	wwPDB
Map dimensions	440, 440, 440	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	0.856, 0.856, 0.856	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	0.26	0/5879	0.52	1/8021 (0.0%)
1	C	0.27	0/5726	0.51	2/7835 (0.0%)
2	B	0.27	0/5636	0.50	1/7717 (0.0%)
2	D	0.32	2/5602 (0.0%)	0.60	6/7678 (0.1%)
3	G	0.25	0/1683	0.50	0/2291
3	K	0.25	0/1683	0.52	0/2291
4	I	0.24	0/1609	0.49	0/2196
4	L	0.25	0/1609	0.49	0/2196
All	All	0.27	2/29427 (0.0%)	0.53	10/40225 (0.0%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	546	PRO	CG-CD	-10.45	1.16	1.50
2	D	546	PRO	CB-CG	-8.29	1.08	1.50

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	546	PRO	N-CD-CG	-19.88	73.38	103.20
2	D	546	PRO	CA-CB-CG	-18.34	69.16	104.00
2	D	546	PRO	CB-CG-CD	8.75	140.64	106.50
1	C	33	LEU	CA-CB-CG	7.26	132.01	115.30
2	D	546	PRO	CA-N-CD	-6.53	102.36	111.50
1	C	478	LEU	CA-CB-CG	5.82	128.68	115.30
1	A	155	MET	CA-CB-CG	5.70	122.99	113.30
2	D	546	PRO	N-CA-CB	-5.40	96.66	102.60
2	D	246	LEU	CA-CB-CG	5.19	127.23	115.30
2	B	565	LEU	CA-CB-CG	5.12	127.08	115.30

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	5751	0	5377	195	0
1	C	5601	0	5091	123	0
2	B	5510	0	4965	130	0
2	D	5473	0	4859	123	0
3	G	1643	0	1604	54	0
3	K	1643	0	1604	49	0
4	I	1572	0	1521	41	0
4	L	1572	0	1521	41	0
All	All	28765	0	26542	734	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 13.

All (734) 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)
1:A:578:TYR:HH	1:A:583:THR:N	1.61	0.98
1:C:33:LEU:HD12	1:C:34:SER:H	1.33	0.91
1:C:533:PHE:HB3	1:C:757:ILE:HD11	1.55	0.88
1:A:228:ALA:O	1:A:232:TYR:HB2	1.74	0.88
1:C:156:ARG:HD2	1:C:157:VAL:HG13	1.60	0.84
2:B:147:PHE:HA	2:B:356:GLN:HE22	1.49	0.76
1:A:246:VAL:HG12	1:A:382:PRO:HD2	1.68	0.75
2:B:666:PRO:HG3	2:B:689:ASN:HD22	1.51	0.75
2:D:195:PHE:O	2:D:197:GLY:N	2.20	0.75
2:B:389:VAL:HG22	2:B:392:ARG:HH12	1.51	0.74
1:A:450:THR:HB	1:A:453:GLN:HE22	1.50	0.74
3:G:51:ILE:O	3:G:72:ARG:NH2	2.21	0.73
2:D:166:ASP:OD1	2:D:168:HIS:NE2	2.21	0.73
1:A:39:GLU:O	1:A:43:ARG:NH1	2.22	0.72
2:B:438:LYS:NZ	2:B:439:PHE:O	2.22	0.72
1:A:489:ARG:O	1:A:489:ARG:NH1	2.23	0.70
4:L:10:VAL:HG23	4:L:103:LEU:HD13	1.74	0.70
1:A:152:PHE:HA	1:A:155:MET:SD	2.32	0.70
1:A:146:HIS:NE2	1:A:345:ASP:OD2	2.24	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:438:LYS:HD2	2:B:454:LYS:HD2	1.73	0.69
3:K:53:TRP:O	3:K:74:ASN:ND2	2.24	0.69
2:B:199:ASP:O	2:B:201:GLN:NE2	2.25	0.69
1:C:165:LEU:HB3	1:C:194:VAL:HG23	1.74	0.68
1:A:702:VAL:HG12	1:A:707:LEU:HB2	1.76	0.68
1:A:340:PHE:HA	1:A:346:ARG:HA	1.75	0.68
1:A:79:CYS:HA	1:A:83:ILE:HG22	1.76	0.68
1:C:302:THR:O	1:C:315:TRP:NE1	2.26	0.68
2:D:298:ILE:HD11	2:D:348:LEU:HD12	1.76	0.68
2:B:590:GLY:O	2:B:594:ASN:N	2.27	0.68
1:A:262:ALA:O	1:A:359:ARG:NH1	2.26	0.67
2:B:406:LEU:HD23	2:B:473:PHE:HD2	1.59	0.67
2:B:377:LYS:NZ	2:B:384:SER:O	2.27	0.67
2:B:528:PHE:HB3	2:B:759:LEU:HD21	1.77	0.67
3:K:60:TYR:HB3	3:K:64:VAL:HB	1.77	0.67
1:C:463:LEU:HD13	1:C:514:VAL:HG11	1.77	0.67
3:K:35:HIS:NE2	3:K:99:ASP:OD2	2.28	0.67
1:A:205:THR:HA	1:A:208:LEU:HD13	1.76	0.67
1:A:220:ILE:HG12	1:A:248:LEU:HD13	1.77	0.67
3:G:35:HIS:HE1	3:G:107:TYR:HA	1.60	0.66
1:C:315:TRP:NE1	1:C:317:THR:OG1	2.28	0.66
2:D:175:THR:OG1	2:D:176:ILE:N	2.28	0.66
1:A:165:LEU:HA	1:A:220:ILE:HB	1.77	0.66
1:C:34:SER:OG	1:C:35:THR:N	2.24	0.66
2:D:769:GLU:OE2	2:D:769:GLU:N	2.26	0.66
2:D:564:MET:HA	2:D:567:ILE:HD12	1.78	0.66
3:K:132:PRO:HG3	3:K:218:LYS:HD2	1.78	0.66
1:A:214:LEU:HD23	1:A:216:ALA:H	1.62	0.65
2:B:245:SER:OG	2:D:220:LYS:NZ	2.29	0.65
1:C:76:LEU:HD21	2:D:83:ILE:HG21	1.77	0.65
4:I:21:SER:HA	4:I:75:SER:HA	1.76	0.65
1:A:353:ILE:HD12	1:A:353:ILE:H	1.61	0.65
3:G:197:SER:HG	3:G:203:TYR:HH	1.44	0.65
1:A:311:ASN:OD1	1:A:313:ASN:ND2	2.25	0.64
4:L:61:ASN:OD1	4:L:62:ARG:N	2.21	0.64
1:C:519:ILE:HA	1:C:529:PHE:HE2	1.62	0.64
1:C:662:TYR:HA	1:C:709:ALA:HB3	1.77	0.64
1:A:732:GLU:OE2	1:A:732:GLU:N	2.31	0.64
1:A:220:ILE:HG23	1:A:248:LEU:HD22	1.80	0.64
1:A:142:PRO:HB2	1:A:146:HIS:HD2	1.62	0.64
1:A:365:GLY:HA3	1:A:374:PRO:HA	1.78	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:416:PHE:O	2:B:459:PHE:N	2.30	0.64
2:B:307:LEU:HD12	2:B:311:SER:HA	1.79	0.64
1:A:524:ALA:HA	1:A:527:ILE:HG22	1.80	0.63
1:A:501:MET:HG2	1:A:513:ILE:HD11	1.81	0.63
2:B:284:TRP:HZ2	2:B:372:TRP:HB2	1.64	0.63
4:I:132:LEU:HB2	4:I:178:LEU:HB3	1.80	0.63
2:D:584:ALA:O	2:D:588:LEU:HD22	1.99	0.63
2:D:419:VAL:HG12	2:D:456:CYS:HB3	1.79	0.63
2:B:212:ASP:H	2:B:214:LYS:HZ1	1.46	0.62
2:B:469:ARG:O	2:B:472:LYS:NZ	2.32	0.62
1:C:357:GLN:HB2	1:C:380:ILE:HD11	1.80	0.62
3:G:34:MET:H	3:G:72:ARG:HH22	1.45	0.62
4:L:134:CYS:HB3	4:L:176:SER:HB2	1.81	0.62
1:A:36:ARG:NH2	1:A:40:GLN:OE1	2.32	0.62
1:A:543:LYS:HA	1:A:727:LEU:HA	1.81	0.62
3:G:52:SER:HB2	3:G:57:SER:HB3	1.81	0.62
1:A:644:ARG:HE	1:A:730:THR:HG21	1.64	0.62
2:B:526:VAL:HG11	2:B:760:LEU:HD21	1.79	0.62
1:C:279:ALA:HB1	1:C:334:VAL:HG11	1.80	0.62
1:A:661:ILE:HB	1:A:708:HIS:H	1.65	0.62
3:G:57:SER:O	3:G:104:TRP:NE1	2.24	0.62
4:I:52:ASP:HB3	4:I:67:ILE:HD13	1.81	0.62
3:K:36:TRP:HZ3	3:K:79:LEU:HG	1.63	0.62
3:K:71:SER:OG	3:K:80:TYR:O	2.18	0.62
1:A:125:MET:HG3	1:A:127:ILE:HG22	1.83	0.61
2:B:212:ASP:OD1	2:B:214:LYS:NZ	2.32	0.61
2:B:296:ILE:HD12	2:B:296:ILE:H	1.65	0.61
2:D:373:GLU:OE1	2:D:373:GLU:N	2.34	0.61
4:I:55:ARG:HG2	4:I:59:VAL:HB	1.83	0.61
1:A:309:VAL:HG22	2:B:80:LYS:HD2	1.83	0.61
1:A:427:ASN:HD21	1:A:429:ASP:HB2	1.66	0.61
1:A:364:VAL:O	1:A:375:ASN:N	2.33	0.60
3:G:91:THR:HG22	3:G:120:VAL:H	1.65	0.60
1:A:302:THR:HG23	1:A:317:THR:HG23	1.83	0.60
4:I:108:GLN:NE2	4:I:170:ASN:O	2.34	0.60
4:L:113:PRO:HB3	4:L:139:PHE:HB3	1.84	0.60
2:D:502:TYR:HD2	2:D:504:ARG:HH22	1.50	0.60
1:A:251:GLU:O	1:A:255:SER:OG	2.17	0.60
1:A:681:SER:O	1:A:685:ARG:NH1	2.35	0.60
3:G:80:TYR:O	3:G:82:GLN:NE2	2.34	0.60
1:A:195:LEU:HD13	1:A:207:LEU:HD13	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:398:LEU:HD11	1:A:472:PHE:CD1	2.36	0.59
2:B:246:LEU:HD23	2:D:220:LYS:HE2	1.84	0.59
3:K:35:HIS:HE1	3:K:107:TYR:HA	1.67	0.59
2:D:373:GLU:HG2	2:D:374:LYS:H	1.68	0.59
2:D:406:LEU:HD13	2:D:473:PHE:HD2	1.68	0.59
1:A:93:SER:OG	1:A:94:HIS:N	2.34	0.59
4:I:24:ARG:O	4:I:72:ASN:ND2	2.35	0.59
1:C:425:THR:HG23	1:C:427:ASN:H	1.67	0.59
2:B:595:ASN:ND2	1:C:597:ASN:O	2.36	0.59
1:C:209:MET:SD	1:C:209:MET:N	2.76	0.59
1:A:644:ARG:O	1:A:652:ARG:NH2	2.27	0.58
2:D:364:ILE:HB	2:D:372:TRP:HB3	1.85	0.58
1:A:440:ASN:ND2	1:A:450:THR:OG1	2.36	0.58
4:L:24:ARG:NE	4:L:26:SER:O	2.36	0.58
1:A:694:SER:OG	1:A:695:ALA:N	2.37	0.58
2:B:538:SER:HB2	2:B:727:LEU:HD23	1.85	0.58
1:C:347:LYS:HG2	1:C:348:PHE:HD1	1.67	0.58
2:B:615:ALA:O	2:B:619:VAL:HG23	2.04	0.58
1:A:664:THR:HA	1:A:710:PHE:HE1	1.69	0.58
1:A:684:TYR:HB2	1:A:685:ARG:NH1	2.18	0.58
2:D:406:LEU:HB3	2:D:506:VAL:HG11	1.83	0.58
2:B:320:CYS:SG	2:B:321:TYR:N	2.76	0.58
1:C:345:ASP:OD1	1:C:345:ASP:N	2.33	0.58
1:C:457:GLY:HA2	1:C:773:TRP:HE1	1.68	0.58
4:I:145:THR:HB	4:I:196:THR:HB	1.84	0.58
1:A:686:HIS:HA	1:A:689:LYS:HE2	1.85	0.58
3:G:6:GLU:HA	3:G:22:CYS:HB3	1.84	0.58
4:L:21:SER:HA	4:L:75:SER:HA	1.85	0.58
3:G:156:PRO:HA	3:G:185:TYR:HE1	1.69	0.58
1:A:36:ARG:O	1:A:36:ARG:NH1	2.37	0.57
1:A:246:VAL:HA	1:A:382:PRO:HG2	1.84	0.57
1:C:195:LEU:HB3	1:C:207:LEU:HD12	1.87	0.57
4:L:66:SER:OG	4:L:68:ASP:OD1	2.21	0.57
1:A:439:PRO:O	1:A:445:GLY:N	2.37	0.57
1:A:467:ALA:O	1:A:471:ASN:N	2.37	0.57
4:I:34:VAL:HG12	4:I:93:SER:HB2	1.85	0.57
3:K:83:MET:HB3	3:K:86:LEU:HD21	1.85	0.57
1:A:459:CYS:SG	1:A:514:VAL:HG22	2.45	0.57
1:C:144:TYR:HE2	1:C:252:ARG:HB2	1.69	0.57
2:B:123:PRO:HG2	2:B:334:LEU:HD11	1.86	0.57
2:B:720:GLY:O	2:B:779:ILE:N	2.30	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:517:GLU:OE2	2:D:672:ARG:NH1	2.37	0.57
4:I:10:VAL:HG13	4:I:103:LEU:HD13	1.87	0.57
1:C:124:ARG:HA	1:C:139:ARG:HH12	1.69	0.57
2:D:161:ILE:HD11	2:D:363:VAL:HG21	1.87	0.56
3:G:79:LEU:HD23	3:G:96:CYS:HB2	1.87	0.56
1:A:372:VAL:HG22	1:A:374:PRO:HD3	1.87	0.56
1:A:676:ARG:HH22	2:D:765:ASP:HB2	1.69	0.56
2:D:367:ASN:ND2	2:D:373:GLU:OE2	2.39	0.56
3:K:17:SER:HA	3:K:84:ASN:HA	1.88	0.56
4:L:108:GLN:HE21	4:L:171:LYS:HD3	1.70	0.56
1:A:275:LYS:NZ	1:A:277:GLU:OE1	2.34	0.56
2:B:367:ASN:ND2	2:B:369:ASP:OD1	2.32	0.56
1:C:390:ARG:HH21	1:C:392:TYR:HB3	1.69	0.56
3:K:72:ARG:HG3	3:K:79:LEU:HD13	1.85	0.56
2:B:423:ASP:OD1	2:B:423:ASP:N	2.39	0.56
2:B:215:THR:O	2:B:219:LEU:N	2.19	0.56
3:G:87:ARG:NH1	3:G:89:GLU:OE1	2.39	0.56
1:C:124:ARG:HG3	1:C:144:TYR:HE1	1.69	0.56
1:C:733:LEU:HD12	1:C:736:ARG:HH12	1.71	0.56
3:K:18:LEU:N	3:K:83:MET:O	2.37	0.56
1:A:407:PRO:HG3	1:A:719:PHE:CG	2.41	0.56
1:A:400:ILE:HG13	1:A:463:LEU:HD21	1.88	0.56
1:A:403:ILE:HG21	1:A:484:PHE:HE1	1.71	0.56
1:A:661:ILE:O	1:A:708:HIS:N	2.39	0.56
2:B:225:SER:OG	2:B:252:ASP:O	2.20	0.55
3:G:11:LEU:HD22	3:G:119:THR:HB	1.89	0.55
1:A:441:ASP:O	1:A:444:PRO:HD3	2.06	0.55
1:C:459:CYS:SG	1:C:514:VAL:HG22	2.47	0.55
2:D:53:THR:O	2:D:293:ARG:NH2	2.39	0.55
2:B:265:THR:O	2:B:267:LEU:HD12	2.06	0.55
1:C:440:ASN:OD1	1:C:451:VAL:N	2.39	0.55
2:B:115:PHE:O	2:B:118:SER:OG	2.25	0.55
1:C:131:LYS:NZ	1:C:137:PHE:O	2.26	0.55
2:D:95:ILE:HD12	2:D:95:ILE:H	1.72	0.55
2:D:281:TYR:HD1	2:D:282:ASP:H	1.54	0.55
3:G:2:VAL:HG12	3:G:27:PHE:HB3	1.88	0.55
3:G:209:HIS:CD2	3:G:211:PRO:HD2	2.42	0.55
1:A:34:SER:OG	1:A:35:THR:N	2.37	0.55
1:A:77:SER:HA	1:A:80:GLU:HB2	1.89	0.55
2:B:104:THR:OG1	2:B:105:ASP:N	2.40	0.55
2:B:690:GLN:N	2:B:690:GLN:OE1	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:568:VAL:HG11	2:D:614:TRP:CE3	2.42	0.55
3:K:70:ILE:HG13	3:K:81:LEU:HD12	1.88	0.55
3:K:155:PHE:HB2	3:K:184:LEU:HA	1.87	0.55
1:A:152:PHE:CE1	1:A:184:LEU:HB2	2.41	0.54
1:C:277:GLU:HA	1:C:280:HIS:HB2	1.89	0.54
1:A:341:ASN:ND2	1:A:343:ASP:OD1	2.41	0.54
3:G:154:TYR:HE1	3:G:157:GLU:HA	1.71	0.54
1:A:414:THR:HA	1:A:420:CYS:HA	1.89	0.54
1:A:722:SER:OG	1:A:777:GLN:O	2.21	0.54
1:A:151:TRP:HA	1:A:154:MET:SD	2.48	0.54
3:G:160:THR:HB	3:G:208:ASN:HB3	1.88	0.54
2:D:430:VAL:HG13	2:D:431:ARG:H	1.72	0.54
1:A:125:MET:HA	1:A:144:TYR:HE2	1.71	0.54
1:A:178:LYS:O	1:A:182:THR:HG23	2.08	0.54
3:G:94:TYR:N	3:G:116:THR:O	2.34	0.54
4:I:20:ILE:HD11	4:I:76:LEU:HD23	1.90	0.54
2:B:215:THR:HA	2:B:218:GLN:HB2	1.90	0.54
2:B:250:GLY:H	2:B:253:PHE:HD2	1.55	0.54
3:G:67:ARG:HH21	3:G:86:LEU:HA	1.73	0.54
2:D:148:GLY:HA2	2:D:281:TYR:HE2	1.73	0.53
2:B:207:ASP:OD1	2:B:207:ASP:N	2.41	0.53
2:D:380:ASN:O	2:D:381:HIS:ND1	2.41	0.53
3:G:178:VAL:HB	4:I:162:THR:HG22	1.90	0.53
1:A:578:TYR:OH	1:A:583:THR:N	2.36	0.53
1:C:125:MET:HB2	1:C:128:TYR:HE1	1.72	0.53
1:C:151:TRP:HZ3	1:C:248:LEU:HD22	1.72	0.53
2:D:265:THR:O	2:D:266:GLU:HG2	2.09	0.53
3:G:208:ASN:HD22	3:G:215:LYS:HD2	1.74	0.53
1:A:183:LEU:O	1:A:187:ARG:NH2	2.34	0.53
1:C:99:ASN:H	1:C:101:HIS:CE1	2.26	0.53
2:D:210:PHE:CG	2:D:210:PHE:O	2.62	0.53
1:C:121:LEU:HD12	1:C:280:HIS:HB3	1.91	0.53
4:I:132:LEU:HD22	4:I:178:LEU:HD23	1.91	0.53
3:K:209:HIS:CD2	3:K:211:PRO:HD2	2.44	0.53
2:B:180:TYR:HA	2:B:230:TYR:HE2	1.73	0.53
2:B:711:ASP:OD1	2:B:712:ALA:N	2.42	0.53
2:D:415:PRO:HG3	2:D:717:TYR:CD1	2.43	0.53
2:B:212:ASP:H	2:B:214:LYS:NZ	2.07	0.53
4:L:28:SER:HB3	4:L:31:SER:HB3	1.91	0.52
2:D:466:LYS:HB3	2:D:762:PHE:CZ	2.44	0.52
2:B:331:MET:HG2	2:B:333:THR:H	1.73	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:240:LEU:O	2:B:244:ARG:HB2	2.09	0.52
1:C:208:LEU:HD12	1:C:208:LEU:H	1.73	0.52
2:D:202:ASN:OD1	2:D:202:ASN:N	2.41	0.52
2:D:320:CYS:SG	2:D:321:TYR:N	2.82	0.52
4:I:14:PRO:HB3	4:I:82:LYS:HB2	1.92	0.52
4:I:108:GLN:HE21	4:I:171:LYS:HD3	1.74	0.52
1:A:144:TYR:OH	1:A:252:ARG:NH2	2.40	0.52
1:C:133:ILE:O	2:D:111:GLN:NE2	2.43	0.52
1:C:478:LEU:HD23	1:C:479:VAL:N	2.24	0.52
2:D:112:MET:O	2:D:116:ILE:HG12	2.10	0.52
2:D:660:PHE:O	2:D:684:TYR:OH	2.24	0.52
4:L:12:GLU:HB3	4:L:82:LYS:HE3	1.92	0.52
2:B:175:THR:OG1	2:B:176:ILE:N	2.43	0.52
2:D:515:ASN:OD1	2:D:516:GLU:N	2.42	0.52
3:G:36:TRP:HB3	3:G:48:VAL:HB	1.92	0.52
3:K:128:PRO:HB3	3:K:154:TYR:HB3	1.92	0.52
1:A:166:LEU:HB2	1:A:219:ILE:HD11	1.92	0.52
2:B:79:PRO:O	2:B:83:ILE:HG12	2.09	0.52
2:B:333:THR:OG1	2:B:334:LEU:N	2.42	0.52
1:C:33:LEU:HD12	1:C:34:SER:N	2.15	0.52
1:C:505:LEU:HA	1:C:510:ALA:HA	1.92	0.52
4:I:124:GLU:HG2	4:I:129:LYS:HB2	1.91	0.52
4:L:35:GLN:N	4:L:92:GLN:O	2.37	0.52
1:A:596:LEU:HD21	2:D:616:PHE:CD2	2.45	0.51
1:C:530:SER:OG	1:C:531:LYS:N	2.42	0.51
2:B:746:GLN:HG2	2:B:747:LYS:H	1.75	0.51
2:D:429:CYS:HB3	2:D:433:THR:HG23	1.93	0.51
1:A:409:VAL:HA	1:A:457:GLY:HA3	1.92	0.51
1:A:440:ASN:O	1:A:452:PRO:HA	2.10	0.51
1:C:783:GLU:HA	1:C:786:ALA:HB3	1.92	0.51
3:K:91:THR:HG23	3:K:119:THR:HA	1.92	0.51
4:L:34:VAL:HA	4:L:93:SER:HA	1.92	0.51
4:L:60:PRO:HB2	4:L:62:ARG:HH12	1.76	0.51
4:I:3:MET:N	4:I:25:SER:OG	2.43	0.51
4:L:13:SER:HB3	4:L:106:LEU:HD12	1.92	0.51
2:B:36:ILE:HG21	2:B:296:ILE:HG23	1.92	0.51
3:K:36:TRP:NE1	3:K:81:LEU:HD22	2.26	0.51
2:B:281:TYR:OH	2:B:291:ARG:NH1	2.44	0.51
1:C:40:GLN:OE1	1:C:43:ARG:NH1	2.43	0.51
1:A:761:HIS:O	1:A:764:GLY:N	2.44	0.51
1:C:507:SER:OG	1:C:508:GLY:N	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:G:133:LEU:HD21	4:I:133:VAL:HG21	1.92	0.51
4:I:160:GLU:N	4:I:177:TYR:O	2.44	0.51
1:A:703:ARG:HD3	1:A:724:LYS:HZ1	1.76	0.51
2:B:735:ILE:HG22	2:B:736:PHE:H	1.76	0.51
1:A:145:SER:HB3	1:A:179:ARG:HD3	1.93	0.50
1:A:152:PHE:HE1	1:A:184:LEU:HB2	1.76	0.50
2:B:575:VAL:HB	2:B:610:MET:HE1	1.93	0.50
1:C:76:LEU:H	1:C:76:LEU:HD22	1.76	0.50
1:C:496:LYS:NZ	2:D:193:ASN:O	2.35	0.50
3:G:7:SER:OG	3:G:8:GLY:N	2.44	0.50
2:B:127:ILE:HD11	2:B:291:ARG:HD3	1.93	0.50
4:L:24:ARG:O	4:L:72:ASN:ND2	2.44	0.50
2:B:109:VAL:O	2:B:113:LEU:HD12	2.11	0.50
2:B:408:ILE:HG13	2:B:507:MET:HB2	1.92	0.50
1:C:484:PHE:HB2	1:C:668:SER:HB3	1.92	0.50
1:C:505:LEU:HD11	1:C:744:ARG:HB2	1.93	0.50
1:A:339:GLU:O	1:A:347:LYS:N	2.44	0.50
4:L:36:TRP:N	4:L:49:ILE:O	2.42	0.50
1:A:301:ILE:HA	1:A:317:THR:HG21	1.92	0.50
4:L:149:LYS:HA	4:L:154:PRO:HA	1.93	0.50
1:A:37:LYS:O	1:A:37:LYS:NZ	2.29	0.50
1:C:271:LEU:HD22	1:C:274:GLY:H	1.77	0.50
1:C:530:SER:HB3	1:C:741:ILE:HG22	1.94	0.50
2:D:435:PRO:HA	2:D:455:CYS:HB3	1.93	0.50
1:A:513:ILE:HG22	1:A:742:GLY:H	1.77	0.50
1:A:440:ASN:ND2	1:A:450:THR:H	2.10	0.50
1:A:505:LEU:HA	1:A:510:ALA:HB3	1.94	0.50
2:D:564:MET:HE2	2:D:568:VAL:HG23	1.94	0.50
4:L:105:VAL:O	4:L:140:TYR:OH	2.30	0.49
1:A:113:PHE:CE2	2:B:79:PRO:HG3	2.46	0.49
1:A:151:TRP:O	1:A:155:MET:HG3	2.13	0.49
1:C:143:PRO:HD2	1:C:146:HIS:CD2	2.47	0.49
2:D:150:SER:N	2:D:153:GLN:OE1	2.42	0.49
3:G:38:ARG:HH21	3:G:92:ALA:HB3	1.77	0.49
4:I:118:PHE:HB2	4:I:133:VAL:HB	1.93	0.49
4:L:35:GLN:OE1	4:L:37:TYR:OH	2.23	0.49
2:B:95:ILE:HD12	2:B:95:ILE:H	1.77	0.49
2:D:402:ASP:OD1	2:D:402:ASP:N	2.40	0.49
2:D:417:VAL:HG23	2:D:461:ILE:HG12	1.93	0.49
4:I:40:ARG:HB2	4:I:43:SER:HB3	1.92	0.49
2:B:383:LEU:HD12	2:B:385:LEU:H	1.76	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:465:LYS:O	2:B:469:ARG:NH2	2.46	0.49
2:B:117:SER:HG	2:B:143:THR:H	1.60	0.49
1:C:371:HIS:CE1	1:C:373:ILE:HG13	2.48	0.49
4:L:2:PHE:CD2	4:L:24:ARG:HG3	2.48	0.49
2:B:248:LEU:HB2	2:B:253:PHE:CG	2.48	0.49
2:B:606:THR:O	2:B:610:MET:HG2	2.13	0.49
2:D:333:THR:OG1	2:D:334:LEU:HD12	2.13	0.49
2:D:499:GLU:OE1	2:D:504:ARG:NH2	2.36	0.49
4:I:139:PHE:HE2	4:I:142:GLY:HA2	1.78	0.49
1:A:330:TYR:O	1:A:337:ARG:NH2	2.46	0.49
2:B:396:PHE:HD2	2:B:399:CYS:HG	1.59	0.49
2:B:538:SER:OG	2:B:726:LYS:O	2.19	0.49
2:D:221:LYS:O	2:D:223:HIS:ND1	2.43	0.49
2:B:163:GLN:HE22	2:B:196:VAL:HG21	1.78	0.49
1:C:540:ILE:O	1:C:729:THR:OG1	2.30	0.49
2:D:204:ILE:HG12	2:D:221:LYS:HD2	1.95	0.49
3:K:36:TRP:CE2	3:K:81:LEU:HD22	2.48	0.49
2:B:116:ILE:O	2:B:120:THR:OG1	2.25	0.48
4:I:91:CYS:O	4:I:98:GLY:N	2.46	0.48
1:A:424:PHE:HB3	1:A:428:GLY:HA2	1.95	0.48
1:A:143:PRO:HD2	1:A:345:ASP:OD2	2.13	0.48
1:C:139:ARG:HH11	1:C:143:PRO:HB3	1.78	0.48
3:G:15:GLY:HA2	3:G:85:SER:HA	1.95	0.48
1:C:148:SER:HA	1:C:151:TRP:HD1	1.78	0.48
1:C:465:LYS:O	1:C:469:THR:OG1	2.28	0.48
3:G:21:SER:HA	3:G:79:LEU:O	2.13	0.48
4:I:48:VAL:HG23	4:I:49:ILE:HD12	1.95	0.48
1:A:146:HIS:O	1:A:149:SER:OG	2.22	0.48
1:A:397:ARG:HD2	1:A:397:ARG:O	2.14	0.48
1:A:446:SER:HB2	1:A:447:PRO:HD2	1.94	0.48
2:B:663:GLY:HA3	2:B:708:PHE:HD1	1.79	0.48
3:K:36:TRP:CG	3:K:81:LEU:HD13	2.48	0.48
1:A:94:HIS:ND1	1:A:95:PRO:O	2.41	0.48
2:B:289:GLU:O	2:B:293:ARG:HG3	2.13	0.48
2:B:506:VAL:HG12	2:B:507:MET:HG2	1.95	0.48
1:C:562:LEU:HA	1:C:565:LEU:HB2	1.95	0.48
4:L:56:PRO:HD2	4:L:59:VAL:HG21	1.96	0.48
1:A:177:GLN:HG3	1:A:194:VAL:HG11	1.96	0.48
1:A:350:ASN:OD1	1:A:351:TYR:N	2.47	0.48
1:A:390:ARG:HH21	1:A:394:MET:H	1.62	0.48
1:A:664:THR:OG1	1:A:665:VAL:N	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:617:PHE:HE2	1:C:789:PHE:HA	1.77	0.48
2:B:413:GLU:H	2:B:417:VAL:HG23	1.78	0.48
4:I:113:PRO:HB2	4:I:136:ILE:HD11	1.95	0.48
3:K:35:HIS:CD2	3:K:99:ASP:HB2	2.48	0.48
4:L:62:ARG:HD3	4:L:81:LEU:HD21	1.95	0.48
1:A:696:ALA:O	1:A:699:ILE:HG13	2.14	0.48
2:D:721:ARG:HA	2:D:779:ILE:HG22	1.96	0.48
3:G:35:HIS:ND1	3:G:109:MET:SD	2.86	0.48
4:L:11:SER:HB2	4:L:106:LEU:HD21	1.96	0.48
1:A:400:ILE:N	1:A:475:GLU:O	2.46	0.47
2:B:717:TYR:HB2	2:B:776:LEU:HD11	1.94	0.47
1:C:139:ARG:NH1	1:C:143:PRO:HB3	2.28	0.47
3:G:180:GLN:HE21	3:G:184:LEU:HB2	1.80	0.47
3:K:38:ARG:HH12	3:K:46:GLU:HB2	1.79	0.47
1:A:437:THR:HA	1:A:441:ASP:HB2	1.95	0.47
1:A:487:GLN:HB3	1:A:498:TRP:CE3	2.49	0.47
1:A:520:ASN:OD1	1:A:522:GLU:N	2.45	0.47
2:B:412:GLU:HA	2:B:417:VAL:HG23	1.96	0.47
2:D:332:HIS:HB3	2:D:335:HIS:HB2	1.97	0.47
3:K:180:GLN:NE2	3:K:186:SER:OG	2.45	0.47
2:D:216:GLN:HE22	2:D:246:LEU:HD21	1.79	0.47
2:D:595:ASN:OD1	2:D:595:ASN:N	2.47	0.47
3:G:132:PRO:HB2	3:G:220:VAL:HG13	1.97	0.47
1:A:53:HIS:CE1	3:K:105:TYR:HB2	2.50	0.47
1:C:111:ALA:HB1	1:C:116:ILE:HG13	1.95	0.47
2:D:498:GLY:HA2	2:D:501:VAL:HG12	1.96	0.47
4:I:24:ARG:NE	4:I:26:SER:O	2.48	0.47
1:A:27:VAL:HG11	1:A:292:VAL:HG21	1.97	0.47
1:A:337:ARG:HH12	3:K:31:ASP:HB2	1.79	0.47
1:A:498:TRP:O	1:A:503:GLY:HA3	2.15	0.47
1:A:665:VAL:HB	1:A:668:SER:HB3	1.96	0.47
2:B:380:ASN:O	2:B:381:HIS:ND1	2.48	0.47
1:C:25:LYS:HG3	1:C:26:ILE:HG12	1.97	0.47
1:C:148:SER:HA	1:C:151:TRP:CD1	2.50	0.47
1:C:150:VAL:HG11	1:C:269:LEU:HD11	1.97	0.47
2:D:35:ASN:ND2	2:D:94:ARG:O	2.29	0.47
2:D:171:SER:OG	2:D:202:ASN:O	2.32	0.47
2:D:216:GLN:NE2	2:D:246:LEU:HD21	2.29	0.47
3:K:91:THR:HA	3:K:118:VAL:O	2.13	0.47
4:L:3:MET:SD	4:L:4:LEU:N	2.87	0.47
1:C:155:MET:HA	1:C:160:TRP:HE1	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:483:LYS:HE2	1:C:499:ASN:HD21	1.79	0.47
1:C:539:THR:HG22	1:C:539:THR:O	2.13	0.47
1:C:467:ALA:HA	1:C:472:PHE:CE1	2.50	0.47
1:A:130:ASP:OD1	1:A:130:ASP:N	2.46	0.46
1:A:541:LEU:HB3	1:A:710:PHE:HB3	1.98	0.46
2:D:616:PHE:O	2:D:620:ILE:HG12	2.15	0.46
3:K:38:ARG:HA	3:K:95:TYR:HD1	1.80	0.46
1:A:166:LEU:HD23	1:A:195:LEU:HB2	1.97	0.46
1:A:440:ASN:HA	1:A:444:PRO:HA	1.96	0.46
2:B:363:VAL:HG23	2:B:375:VAL:HB	1.97	0.46
1:C:124:ARG:HA	1:C:139:ARG:NH1	2.30	0.46
2:D:113:LEU:HD11	2:D:124:ILE:HG21	1.97	0.46
1:A:736:ARG:NE	2:D:530:GLU:OE1	2.45	0.46
2:B:134:ILE:HG21	2:B:150:SER:HA	1.96	0.46
2:D:273:PRO:HA	2:D:396:PHE:HE1	1.79	0.46
1:A:381:TRP:HD1	1:A:386:THR:HA	1.80	0.46
1:A:462:LEU:HD12	1:A:466:LEU:HD23	1.98	0.46
2:B:138:LYS:NZ	2:B:354:GLY:HA3	2.31	0.46
1:C:139:ARG:HG3	1:C:345:ASP:HA	1.97	0.46
1:C:614:GLY:HA2	1:C:617:TRP:HE3	1.80	0.46
2:D:412:GLU:HA	2:D:417:VAL:HG13	1.97	0.46
2:D:416:PHE:HB3	2:D:460:CYS:SG	2.55	0.46
2:D:619:VAL:O	2:D:622:LEU:HG	2.16	0.46
2:D:745:LEU:HD11	2:D:755:ILE:HD11	1.97	0.46
3:K:39:GLN:O	3:K:92:ALA:HB1	2.16	0.46
3:K:177:ALA:HB2	3:K:187:LEU:HD23	1.96	0.46
4:L:137:SER:HA	4:L:173:ALA:HA	1.97	0.46
1:A:220:ILE:HA	1:A:248:LEU:HB3	1.97	0.46
1:A:470:MET:HB2	1:A:472:PHE:CE2	2.51	0.46
3:G:73:ASP:OD1	3:G:76:LYS:N	2.40	0.46
4:I:63:PHE:HD1	4:I:78:ILE:HG23	1.80	0.46
3:K:52:SER:O	3:K:72:ARG:NH1	2.40	0.46
2:B:292:VAL:O	2:B:296:ILE:HD12	2.16	0.46
2:B:717:TYR:OH	2:B:721:ARG:NH1	2.49	0.46
3:G:164:ASN:HD21	3:G:168:LEU:HD12	1.81	0.46
4:L:36:TRP:HB2	4:L:49:ILE:HB	1.96	0.46
1:A:570:VAL:HG23	1:A:617:TRP:CZ2	2.51	0.46
2:B:143:THR:HG23	2:B:335:HIS:CD2	2.51	0.46
2:B:332:HIS:HB3	2:B:335:HIS:HB2	1.97	0.46
2:B:436:CYS:HB3	2:B:454:LYS:O	2.15	0.46
1:C:620:PHE:O	1:C:624:ILE:HG13	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:196:VAL:HG11	2:D:198:TRP:CE2	2.51	0.46
1:A:164:ILE:HD11	1:A:214:LEU:HD22	1.98	0.46
2:B:216:GLN:O	2:B:220:LYS:HB2	2.16	0.46
1:C:483:LYS:NZ	1:C:667:GLN:O	2.42	0.46
2:D:104:THR:OG1	2:D:105:ASP:N	2.49	0.46
3:G:34:MET:HB2	3:G:72:ARG:NH2	2.31	0.46
3:K:206:ASN:ND2	3:K:217:ASP:OD1	2.45	0.46
1:A:692:TYR:CE2	1:A:707:LEU:HD11	2.51	0.46
4:I:37:TYR:HE1	4:I:47:THR:HG22	1.81	0.46
3:K:22:CYS:O	3:K:79:LEU:N	2.49	0.46
1:A:438:GLY:HA2	1:A:478:LEU:HB2	1.98	0.46
1:A:164:ILE:HD11	1:A:216:ALA:HB3	1.98	0.45
1:A:592:TRP:O	1:A:596:LEU:HB2	2.16	0.45
2:D:451:ASN:OD1	2:D:451:ASN:N	2.48	0.45
1:A:433:LYS:HG2	1:A:456:TYR:HB3	1.98	0.45
2:D:244:ARG:HG2	2:D:249:THR:HB	1.98	0.45
2:D:366:LEU:HD23	2:D:366:LEU:HA	1.80	0.45
3:G:5:VAL:HA	3:G:114:GLN:HE22	1.80	0.45
1:A:77:SER:O	1:A:81:ASP:N	2.47	0.45
1:A:118:VAL:HG13	1:A:137:PHE:HD1	1.81	0.45
1:A:124:ARG:HD2	1:A:144:TYR:CZ	2.51	0.45
1:C:505:LEU:HD12	1:C:510:ALA:HB1	1.97	0.45
1:C:595:LEU:HD21	1:C:617:TRP:NE1	2.31	0.45
4:L:24:ARG:NH1	4:L:32:ASN:HD22	2.15	0.45
1:A:351:TYR:N	1:A:367:TYR:O	2.49	0.45
1:A:593:GLY:O	1:A:597:ASN:N	2.50	0.45
1:C:34:SER:HB2	1:C:96:PRO:HD3	1.99	0.45
1:C:696:ALA:O	1:C:699:ILE:HG22	2.17	0.45
3:G:91:THR:HB	3:G:119:THR:HG23	1.98	0.45
3:G:168:LEU:HD23	3:G:168:LEU:HA	1.85	0.45
1:A:82:LEU:HD13	1:A:87:VAL:HG11	1.98	0.45
2:B:113:LEU:HD23	2:B:124:ILE:HD11	1.99	0.45
2:B:246:LEU:HD12	2:B:247:GLY:N	2.32	0.45
2:D:763:VAL:HG22	2:D:768:MET:HG3	1.98	0.45
4:L:169:ASN:O	4:L:170:ASN:ND2	2.49	0.45
1:A:240:MET:SD	1:A:240:MET:N	2.89	0.45
2:B:674:ILE:HG22	2:B:682:HIS:HB2	1.98	0.45
1:C:78:VAL:HA	1:C:82:LEU:HD23	1.98	0.45
2:D:373:GLU:HG2	2:D:374:LYS:N	2.30	0.45
3:G:40:VAL:HG13	3:G:43:LYS:HB3	1.98	0.45
1:A:353:ILE:HD11	1:A:367:TYR:CD2	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:368:LYS:HA	2:B:368:LYS:HD3	1.69	0.45
2:B:437:ARG:O	2:B:478:TYR:HA	2.17	0.45
4:I:60:PRO:O	4:I:62:ARG:HG2	2.16	0.45
1:A:134:HIS:O	1:A:136:SER:N	2.50	0.45
1:A:543:LYS:HZ3	1:A:705:ASN:HA	1.81	0.45
1:C:129:SER:O	1:C:129:SER:OG	2.30	0.45
2:D:226:VAL:O	2:D:227:ILE:HD13	2.17	0.45
2:D:334:LEU:O	2:D:338:MET:HG2	2.16	0.45
3:G:51:ILE:HG23	3:G:72:ARG:HE	1.81	0.45
1:A:509:GLN:O	1:A:509:GLN:NE2	2.50	0.45
2:B:172:LEU:HD21	2:B:187:VAL:HG11	1.99	0.45
2:D:351:THR:OG1	2:D:352:GLU:N	2.50	0.45
3:K:36:TRP:CZ3	3:K:79:LEU:HG	2.49	0.45
1:A:95:PRO:HB2	1:A:98:PRO:HD2	1.99	0.45
1:A:675:ARG:HD3	1:A:675:ARG:HA	1.79	0.45
2:B:35:ASN:O	2:B:36:ILE:HD13	2.16	0.45
2:D:374:LYS:HE2	2:D:374:LYS:HB2	1.85	0.45
1:A:175:ALA:O	1:A:178:LYS:HG2	2.16	0.44
1:A:530:SER:OG	1:A:531:LYS:N	2.49	0.44
2:D:246:LEU:HD12	2:D:247:GLY:N	2.31	0.44
2:D:410:THR:OG1	2:D:411:LEU:N	2.49	0.44
2:B:334:LEU:HA	2:B:337:PHE:HD2	1.82	0.44
4:I:148:TRP:HE1	4:I:176:SER:HG	1.64	0.44
3:K:30:ASP:OD1	3:K:31:ASP:N	2.51	0.44
2:B:34:LEU:HB3	2:B:96:HIS:CE1	2.51	0.44
1:C:277:GLU:O	1:C:281:ILE:HG22	2.17	0.44
2:D:133:MET:SD	2:D:133:MET:N	2.87	0.44
2:D:406:LEU:HD23	2:D:506:VAL:HG21	1.99	0.44
1:A:363:GLN:N	1:A:363:GLN:OE1	2.51	0.44
1:A:650:ASP:OD1	1:A:650:ASP:N	2.50	0.44
2:B:189:THR:O	2:B:193:ASN:HB2	2.17	0.44
2:D:98:LEU:HB3	2:D:124:ILE:HG12	2.00	0.44
2:D:436:CYS:SG	2:D:456:CYS:N	2.90	0.44
3:G:29:PHE:CD2	3:G:74:ASN:HA	2.52	0.44
1:C:157:VAL:HG23	1:C:157:VAL:O	2.17	0.44
2:D:276:LEU:HD23	2:D:276:LEU:HA	1.85	0.44
2:D:466:LYS:HD2	2:D:762:PHE:CE1	2.52	0.44
4:I:5:THR:HB	4:I:23:THR:HB	1.99	0.44
4:L:68:ASP:OD1	4:L:68:ASP:N	2.51	0.44
1:A:229:ALA:HB1	1:A:233:ARG:HH22	1.83	0.44
2:B:416:PHE:HE2	2:B:741:TYR:CE2	2.35	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:G:39:GLN:HB3	3:G:93:LEU:HB2	1.99	0.44
4:L:24:ARG:HH12	4:L:32:ASN:HD22	1.64	0.44
1:A:717:LEU:O	1:A:720:GLU:HG3	2.18	0.44
2:B:167:TRP:O	2:B:169:VAL:N	2.46	0.44
1:C:311:ASN:OD1	1:C:311:ASN:N	2.50	0.44
1:C:622:MET:HA	1:C:625:VAL:HG12	2.00	0.44
1:C:758:LEU:HD23	1:C:758:LEU:HA	1.80	0.44
1:A:119:LEU:HD12	1:A:119:LEU:HA	1.79	0.44
1:A:399:LYS:HD2	1:A:509:GLN:O	2.17	0.44
1:C:100:ASP:O	1:C:103:THR:HG23	2.18	0.44
1:C:130:ASP:OD1	1:C:130:ASP:N	2.48	0.44
1:C:304:PRO:HD3	1:C:315:TRP:CE2	2.53	0.44
4:I:61:ASN:O	4:I:63:PHE:N	2.47	0.44
3:K:36:TRP:O	3:K:48:VAL:HB	2.18	0.44
3:K:38:ARG:HD2	3:K:94:TYR:CE1	2.52	0.44
4:L:36:TRP:CZ3	4:L:91:CYS:HB3	2.53	0.44
1:A:577:LEU:HA	1:A:580:LEU:HD23	1.99	0.44
3:K:2:VAL:HB	3:K:111:VAL:HG21	2.00	0.44
1:A:643:GLU:N	1:A:643:GLU:OE1	2.51	0.43
2:B:248:LEU:HB2	2:B:253:PHE:CD1	2.52	0.43
1:C:162:HIS:HB2	1:C:192:GLU:OE1	2.18	0.43
1:C:397:ARG:HG3	1:C:397:ARG:O	2.18	0.43
2:D:151:ILE:H	2:D:151:ILE:HD12	1.83	0.43
3:G:132:PRO:HD3	3:G:218:LYS:HD2	1.99	0.43
4:I:59:VAL:HA	4:I:60:PRO:HD3	1.87	0.43
3:K:86:LEU:HB3	3:K:120:VAL:HG21	2.00	0.43
1:A:304:PRO:HA	1:A:305:PRO:HD3	1.88	0.43
1:A:534:LYS:HD3	1:A:534:LYS:HA	1.80	0.43
1:A:712:TRP:HB3	1:A:717:LEU:HD21	1.99	0.43
2:D:489:VAL:O	2:D:492:VAL:HG12	2.18	0.43
4:I:50:TYR:CE1	4:I:54:GLN:HB3	2.54	0.43
4:I:161:THR:HA	4:I:176:SER:HA	2.00	0.43
1:A:214:LEU:O	1:A:217:ARG:NH2	2.51	0.43
1:A:437:THR:OG1	1:A:438:GLY:N	2.51	0.43
2:B:177:PHE:CG	2:B:178:PRO:HD2	2.54	0.43
2:B:396:PHE:HD2	2:B:399:CYS:SG	2.40	0.43
1:C:106:PRO:O	1:C:110:THR:HG23	2.19	0.43
1:C:767:GLU:HG3	1:C:768:ASP:N	2.33	0.43
4:I:55:ARG:NH2	4:I:58:GLY:H	2.16	0.43
1:C:117:PRO:HA	1:C:136:SER:HB2	1.98	0.43
1:C:347:LYS:HE2	1:C:347:LYS:HB3	1.62	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:87:CYS:HB2	2:D:320:CYS:HB2	1.30	0.43
1:A:322:LYS:HA	1:A:325:LEU:HB2	2.01	0.43
1:A:733:LEU:HD21	1:A:736:ARG:HH12	1.83	0.43
1:C:505:LEU:HD21	1:C:743:MET:O	2.18	0.43
3:K:35:HIS:N	3:K:97:ALA:O	2.51	0.43
2:B:246:LEU:HD22	2:D:220:LYS:HB3	2.00	0.43
1:C:506:LEU:HD23	1:C:506:LEU:HA	1.83	0.43
4:I:167:GLN:NE2	4:I:171:LYS:HB3	2.33	0.43
1:C:321:PHE:HD1	1:C:325:LEU:HD23	1.84	0.43
3:G:51:ILE:HD13	3:G:58:ILE:HG13	2.00	0.43
3:K:163:TRP:HZ3	3:K:203:TYR:HB3	1.83	0.43
4:L:108:GLN:NE2	4:L:170:ASN:O	2.52	0.43
1:A:124:ARG:HA	1:A:139:ARG:HH22	1.82	0.43
1:A:490:VAL:HG23	1:A:493:SER:HB3	2.00	0.43
1:A:699:ILE:HA	1:A:702:VAL:HG22	2.00	0.43
2:B:297:GLY:O	2:B:301:THR:HG23	2.19	0.43
2:D:273:PRO:HA	2:D:396:PHE:CE1	2.53	0.43
4:L:128:ASN:HA	4:L:182:PRO:HG2	2.00	0.43
2:B:351:THR:OG1	2:B:355:TYR:N	2.39	0.43
2:D:365:VAL:O	2:D:372:TRP:HA	2.19	0.43
2:D:518:ARG:NH2	2:D:669:SER:HB2	2.34	0.43
3:K:133:LEU:HB3	4:L:118:PHE:CD1	2.54	0.43
1:A:648:ILE:O	1:A:654:ARG:HG3	2.18	0.43
2:B:395:SER:O	2:B:395:SER:OG	2.37	0.43
2:D:332:HIS:C	2:D:333:THR:HG1	2.22	0.43
2:D:468:SER:OG	2:D:473:PHE:O	2.36	0.43
3:G:91:THR:O	3:G:91:THR:OG1	2.37	0.43
1:A:668:SER:OG	1:A:670:VAL:HG22	2.19	0.42
2:B:213:ALA:HB2	2:D:246:LEU:HA	2.01	0.42
1:C:403:ILE:HD12	1:C:404:HIS:H	1.84	0.42
3:K:132:PRO:HB3	3:K:220:VAL:HA	2.01	0.42
4:L:41:PRO:HD3	4:L:87:ALA:HA	2.00	0.42
1:A:32:VAL:HG12	1:A:67:HIS:HD2	1.83	0.42
1:A:146:HIS:HA	1:A:179:ARG:HH22	1.84	0.42
1:A:163:ILE:O	1:A:192:GLU:HB2	2.18	0.42
2:B:378:TRP:HA	2:B:383:LEU:HA	2.01	0.42
2:B:680:TYR:O	2:B:683:GLN:HG3	2.18	0.42
1:C:490:VAL:HG23	1:C:493:SER:HB2	2.01	0.42
1:C:523:ARG:NH1	1:C:669:SER:OG	2.46	0.42
2:D:47:THR:O	2:D:49:ARG:N	2.52	0.42
2:D:693:VAL:HG12	2:D:718:LYS:NZ	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:G:210:LYS:HB2	3:G:211:PRO:HD3	2.01	0.42
4:I:82:LYS:HB3	4:I:105:VAL:HG23	2.01	0.42
4:L:132:LEU:HB2	4:L:178:LEU:HB3	2.01	0.42
1:A:124:ARG:HD2	1:A:144:TYR:CE2	2.54	0.42
1:A:132:SER:HA	2:B:178:PRO:HB3	2.02	0.42
1:A:142:PRO:HB2	1:A:146:HIS:CD2	2.50	0.42
1:A:566:VAL:O	1:A:570:VAL:HG12	2.19	0.42
1:A:646:THR:HG22	1:A:731:GLY:HA2	2.01	0.42
3:G:6:GLU:OE2	3:G:114:GLN:N	2.50	0.42
4:L:185:TRP:HZ3	4:L:191:TYR:HB2	1.84	0.42
1:A:468:ARG:NH2	1:A:469:THR:HA	2.34	0.42
2:D:248:LEU:HD12	2:D:253:PHE:CD1	2.54	0.42
1:A:83:ILE:HG13	1:A:307:GLY:HA2	2.00	0.42
2:B:133:MET:O	2:B:146:GLN:NE2	2.42	0.42
2:B:379:GLU:HG2	2:B:380:ASN:H	1.84	0.42
2:B:400:GLU:HA	2:B:401:PRO:HD3	1.92	0.42
1:C:83:ILE:HA	1:C:87:VAL:HG22	2.01	0.42
1:C:247:TRP:HB2	1:C:266:ILE:HG23	2.00	0.42
1:C:652:ARG:H	1:C:652:ARG:HG2	1.61	0.42
2:D:77:THR:HG23	2:D:82:LEU:HD21	2.01	0.42
2:D:219:LEU:O	2:D:222:ILE:HG22	2.20	0.42
3:K:62:ASP:OD1	4:L:95:ARG:NH1	2.53	0.42
2:B:95:ILE:HG22	2:B:97:GLY:H	1.85	0.42
2:B:202:ASN:OD1	2:B:202:ASN:N	2.50	0.42
2:B:745:LEU:HD12	2:B:745:LEU:HA	1.88	0.42
1:C:479:VAL:HG22	1:C:480:ALA:H	1.84	0.42
2:D:95:ILE:HG22	2:D:97:GLY:H	1.84	0.42
2:D:571:ILE:O	2:D:575:VAL:HG23	2.19	0.42
3:K:38:ARG:HA	3:K:95:TYR:CD1	2.54	0.42
1:A:58:ILE:HG12	1:A:60:LEU:HD21	2.02	0.42
4:I:68:ASP:OD1	4:I:68:ASP:N	2.49	0.42
1:A:356:LEU:HA	1:A:360:LYS:O	2.19	0.42
1:A:489:ARG:HG2	1:A:490:VAL:O	2.20	0.42
2:B:227:ILE:HD11	2:B:248:LEU:HD11	2.01	0.42
2:B:630:ALA:O	2:B:634:ILE:HG23	2.20	0.42
1:C:79:CYS:HA	1:C:83:ILE:HG12	2.01	0.42
1:C:301:ILE:HA	1:C:317:THR:HG21	2.01	0.42
3:G:38:ARG:NH1	3:G:94:TYR:OH	2.53	0.42
2:B:417:VAL:HG12	2:B:461:ILE:HG12	2.01	0.42
2:B:528:PHE:HD1	2:B:529:VAL:HG23	1.85	0.42
2:B:735:ILE:HG22	2:B:736:PHE:N	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:498:TRP:NE1	1:A:526:TYR:OH	2.45	0.41
1:A:743:MET:N	1:A:743:MET:SD	2.94	0.41
2:B:373:GLU:O	2:B:374:LYS:HB2	2.19	0.41
2:B:379:GLU:N	2:B:382:THR:O	2.45	0.41
2:B:394:LYS:C	2:B:396:PHE:H	2.22	0.41
2:B:565:LEU:HD12	2:B:566:LEU:N	2.35	0.41
1:C:131:LYS:HD2	1:C:131:LYS:HA	1.88	0.41
3:K:155:PHE:HD1	3:K:185:TYR:HE1	1.67	0.41
4:L:22:CYS:HB2	4:L:36:TRP:CH2	2.55	0.41
1:A:177:GLN:O	1:A:181:GLU:HG2	2.20	0.41
1:A:408:PHE:HD1	1:A:458:PHE:CD2	2.38	0.41
1:A:756:SER:O	1:A:759:LYS:HG3	2.19	0.41
2:B:39:MET:HG3	2:B:100:PHE:CD1	2.55	0.41
1:C:391:GLY:O	1:C:393:GLN:NE2	2.53	0.41
1:C:527:ILE:HD11	1:C:529:PHE:HE1	1.84	0.41
3:K:202:THR:HB	3:K:219:LYS:HD3	2.03	0.41
1:A:32:VAL:HG12	1:A:67:HIS:CD2	2.55	0.41
1:A:279:ALA:HB1	1:A:334:VAL:HB	2.02	0.41
1:C:214:LEU:HD23	1:C:214:LEU:HA	1.93	0.41
1:C:439:PRO:HD2	1:C:478:LEU:HD22	2.02	0.41
2:D:171:SER:HB3	2:D:222:ILE:HD13	2.01	0.41
2:D:342:THR:HG23	2:D:347:ASP:HA	2.01	0.41
2:D:379:GLU:HG3	2:D:380:ASN:H	1.85	0.41
2:D:430:VAL:HG13	2:D:431:ARG:N	2.35	0.41
3:K:164:ASN:HD21	3:K:168:LEU:HB2	1.84	0.41
2:B:286:TYR:CD1	2:B:291:ARG:HG2	2.56	0.41
2:B:419:VAL:HG11	2:B:479:LEU:HD21	2.02	0.41
1:C:193:LYS:HB2	1:C:193:LYS:HE2	1.80	0.41
1:C:341:ASN:HB3	1:C:347:LYS:HB2	2.02	0.41
2:D:563:VAL:O	2:D:567:ILE:HG13	2.21	0.41
1:C:41:MET:SD	1:C:41:MET:N	2.90	0.41
2:D:160:LYS:HD2	2:D:160:LYS:HA	1.97	0.41
2:D:415:PRO:HG3	2:D:717:TYR:CG	2.56	0.41
3:K:22:CYS:HB3	3:K:79:LEU:HB3	2.02	0.41
1:A:308:CYS:HB3	2:B:80:LYS:HB3	2.03	0.41
1:A:390:ARG:HD2	1:A:392:TYR:CE1	2.55	0.41
1:C:99:ASN:H	1:C:101:HIS:HE1	1.66	0.41
1:C:360:LYS:HD3	1:C:360:LYS:HA	1.87	0.41
1:C:410:TYR:O	1:C:455:CYS:HA	2.20	0.41
2:D:233:LYS:O	2:D:237:VAL:HG23	2.20	0.41
4:I:55:ARG:O	4:I:55:ARG:HD3	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:147:GLN:O	1:A:151:TRP:N	2.39	0.41
1:A:645:ILE:HA	1:A:652:ARG:HE	1.86	0.41
2:B:214:LYS:HB2	2:B:214:LYS:HE2	1.71	0.41
2:B:411:LEU:HD13	2:B:480:VAL:HG12	2.02	0.41
2:B:416:PHE:HA	2:B:459:PHE:HB3	2.03	0.41
1:C:363:GLN:HE21	1:C:366:ILE:HG12	1.85	0.41
1:C:399:LYS:O	1:C:400:ILE:HG13	2.20	0.41
2:D:75:ASN:N	2:D:75:ASN:OD1	2.53	0.41
3:G:34:MET:H	3:G:72:ARG:NH2	2.15	0.41
3:G:90:ASP:OD1	3:G:120:VAL:HB	2.21	0.41
3:K:18:LEU:HD12	3:K:18:LEU:HA	1.83	0.41
1:A:217:ARG:HD3	1:A:217:ARG:HA	1.80	0.41
1:A:449:HIS:CD2	1:A:450:THR:HG23	2.55	0.41
1:A:634:ALA:O	1:A:637:VAL:HG12	2.21	0.41
2:D:429:CYS:HB3	2:D:433:THR:CG2	2.50	0.41
1:A:124:ARG:HA	1:A:139:ARG:NH2	2.36	0.41
1:A:270:GLN:NE2	1:A:271:LEU:O	2.51	0.41
2:B:497:ILE:HD13	2:B:497:ILE:HA	1.91	0.41
1:C:398:LEU:HD21	1:C:472:PHE:CD2	2.56	0.41
1:C:466:LEU:HA	1:C:466:LEU:HD23	1.78	0.41
2:D:333:THR:OG1	2:D:334:LEU:N	2.51	0.41
2:D:406:LEU:HD23	2:D:506:VAL:HG11	2.02	0.41
2:D:590:GLY:O	2:D:594:ASN:N	2.54	0.41
3:G:150:LEU:HD11	3:G:152:LYS:HE2	2.02	0.41
3:G:195:SER:HA	3:G:198:LEU:HG	2.02	0.41
4:L:118:PHE:HB2	4:L:133:VAL:HB	2.02	0.41
1:A:498:TRP:HB3	1:A:503:GLY:HA2	2.03	0.41
2:B:295:GLY:O	2:B:298:ILE:HG12	2.21	0.41
2:D:288:LEU:H	2:D:288:LEU:HD23	1.86	0.41
2:D:497:ILE:HD11	2:D:512:LEU:HD11	2.02	0.41
4:I:36:TRP:CZ3	4:I:91:CYS:HB3	2.56	0.41
4:L:22:CYS:N	4:L:74:ALA:O	2.53	0.41
1:A:305:PRO:HB3	1:A:311:ASN:HD22	1.86	0.40
1:A:748:PRO:HG2	1:A:749:TRP:NE1	2.36	0.40
1:C:125:MET:HB2	1:C:128:TYR:CE1	2.55	0.40
2:D:154:GLN:NE2	2:D:259:SER:OG	2.54	0.40
3:G:151:VAL:HB	3:G:187:LEU:HD23	2.03	0.40
1:A:139:ARG:HH11	1:A:143:PRO:HD3	1.87	0.40
1:A:478:LEU:HD23	1:A:478:LEU:HA	1.93	0.40
1:A:790:MET:SD	1:A:791:LEU:N	2.94	0.40
1:C:207:LEU:HD13	1:C:207:LEU:HA	1.96	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:328:SER:HG	1:C:329:LYS:H	1.67	0.40
1:C:425:THR:HG23	1:C:427:ASN:N	2.35	0.40
2:D:108:ALA:HA	2:D:111:GLN:OE1	2.21	0.40
3:G:152:LYS:HD3	3:G:186:SER:OG	2.20	0.40
1:A:179:ARG:HE	1:A:179:ARG:HB3	1.50	0.40
2:B:141:THR:HA	2:B:332:HIS:NE2	2.37	0.40
2:D:426:THR:O	2:D:426:THR:OG1	2.38	0.40
1:C:315:TRP:HH2	1:C:321:PHE:HD2	1.68	0.40
1:C:771:LYS:HA	1:C:775:ARG:HG3	2.03	0.40
2:D:288:LEU:O	2:D:292:VAL:HG12	2.22	0.40
2:D:759:LEU:HD23	2:D:759:LEU:HA	1.87	0.40
3:G:130:VAL:HA	3:G:150:LEU:O	2.20	0.40
3:K:153:ASP:HA	3:K:184:LEU:HD22	2.02	0.40
1:A:170:ASP:HB3	1:A:199:PRO:HG2	2.04	0.40
1:A:425:THR:OG1	1:A:429:ASP:N	2.54	0.40
2:D:623:ALA:O	2:D:626:THR:OG1	2.35	0.40
3:G:138:LYS:HD2	3:G:138:LYS:HA	1.78	0.40
4:I:171:LYS:HD3	4:I:171:LYS:HA	1.84	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	783/817 (96%)	666 (85%)	114 (15%)	3 (0%)	30	66
1	C	783/817 (96%)	677 (86%)	105 (13%)	1 (0%)	48	81
2	B	775/808 (96%)	645 (83%)	127 (16%)	3 (0%)	30	66
2	D	775/808 (96%)	664 (86%)	105 (14%)	6 (1%)	16	53
3	G	218/220 (99%)	198 (91%)	19 (9%)	1 (0%)	25	61
3	K	218/220 (99%)	204 (94%)	13 (6%)	1 (0%)	25	61

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	I	207/209 (99%)	190 (92%)	17 (8%)	0	100	100
4	L	207/209 (99%)	189 (91%)	18 (9%)	0	100	100
All	All	3966/4108 (96%)	3433 (87%)	518 (13%)	15 (0%)	32	66

All (15) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	D	196	VAL
2	D	442	ILE
1	A	135	LEU
1	A	446	SER
2	D	430	VAL
2	B	781	HIS
2	D	657	SER
2	B	657	SER
3	G	111	VAL
3	K	111	VAL
2	B	204	ILE
2	D	204	ILE
1	C	665	VAL
1	A	406	GLU
2	D	414	ALA

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	546/705 (77%)	515 (94%)	31 (6%)	17	41
1	C	501/705 (71%)	480 (96%)	21 (4%)	25	49
2	B	491/706 (70%)	463 (94%)	28 (6%)	17	41
2	D	471/706 (67%)	441 (94%)	30 (6%)	14	38
3	G	182/182 (100%)	176 (97%)	6 (3%)	33	55
3	K	182/182 (100%)	175 (96%)	7 (4%)	28	51

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	I	182/182 (100%)	178 (98%)	4 (2%)	47	65
4	L	182/182 (100%)	178 (98%)	4 (2%)	47	65
All	All	2737/3550 (77%)	2606 (95%)	131 (5%)	24	45

All (131) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	41	MET
1	A	42	PHE
1	A	43	ARG
1	A	93	SER
1	A	101	HIS
1	A	113	PHE
1	A	124	ARG
1	A	135	LEU
1	A	138	LEU
1	A	155	MET
1	A	158	TYR
1	A	217	ARG
1	A	232	TYR
1	A	315	TRP
1	A	321	PHE
1	A	330	TYR
1	A	348	PHE
1	A	395	SER
1	A	398	LEU
1	A	405	GLN
1	A	410	TYR
1	A	454	CYS
1	A	456	TYR
1	A	468	ARG
1	A	489	ARG
1	A	543	LYS
1	A	590	PHE
1	A	635	PHE
1	A	745	LYS
1	A	790	MET
1	A	804	PHE
2	B	76	ARG
2	B	158	MET
2	B	164	ASP

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Mol	Chain	Res	Type
2	B	177	PHE
2	B	180	TYR
2	B	214	LYS
2	B	241	SER
2	B	248	LEU
2	B	281	TYR
2	B	286	TYR
2	B	299	LEU
2	B	320	CYS
2	B	331	MET
2	B	334	LEU
2	B	346	LYS
2	B	347	ASP
2	B	355	TYR
2	B	387	HIS
2	B	395	SER
2	B	396	PHE
2	B	450	MET
2	B	469	ARG
2	B	473	PHE
2	B	648	LYS
2	B	688	PHE
2	B	697	LEU
2	B	775	TRP
2	B	794	PHE
1	C	41	MET
1	C	108	SER
1	C	147	GLN
1	C	155	MET
1	C	160	TRP
1	C	277	GLU
1	C	311	ASN
1	C	321	PHE
1	C	330	TYR
1	C	360	LYS
1	C	392	TYR
1	C	395	SER
1	C	454	CYS
1	C	458	PHE
1	C	530	SER
1	C	617	TRP
1	C	710	PHE

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Mol	Chain	Res	Type
1	C	725	CYS
1	C	754	SER
1	C	773	TRP
1	C	785	MET
2	D	35	ASN
2	D	75	ASN
2	D	144	PHE
2	D	147	PHE
2	D	150	SER
2	D	164	ASP
2	D	168	HIS
2	D	170	PHE
2	D	194	SER
2	D	210	PHE
2	D	232	SER
2	D	241	SER
2	D	281	TYR
2	D	331	MET
2	D	355	TYR
2	D	378	TRP
2	D	456	CYS
2	D	468	SER
2	D	524	PHE
2	D	539	ARG
2	D	576	PHE
2	D	593	PHE
2	D	614	TRP
2	D	617	PHE
2	D	648	LYS
2	D	660	PHE
2	D	684	TYR
2	D	688	PHE
2	D	708	PHE
2	D	776	LEU
3	G	17	SER
3	G	83	MET
3	G	98	LYS
3	G	103	SER
3	G	173	HIS
3	G	185	TYR
4	I	55	ARG
4	I	63	PHE

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Mol	Chain	Res	Type
4	I	92	GLN
4	I	140	TYR
3	K	13	GLN
3	K	22	CYS
3	K	38	ARG
3	K	65	LYS
3	K	87	ARG
3	K	94	TYR
3	K	95	TYR
4	L	3	MET
4	L	55	ARG
4	L	139	PHE
4	L	153	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (7) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	440	ASN
1	A	453	GLN
2	B	163	GLN
1	C	101	HIS
3	G	180	GLN
4	I	108	GLN
4	L	32	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

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.

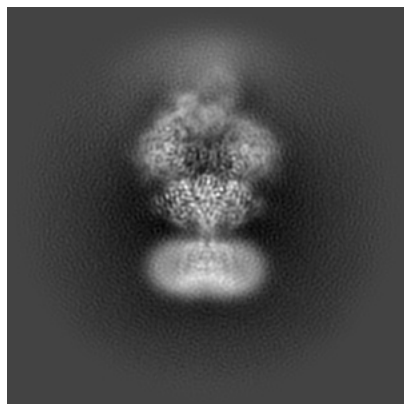
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-43534. These allow visual inspection of the internal detail of the map and identification of artifacts.

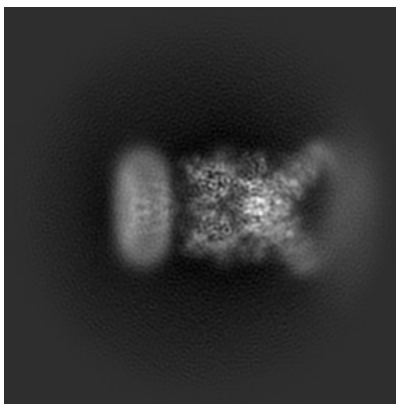
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

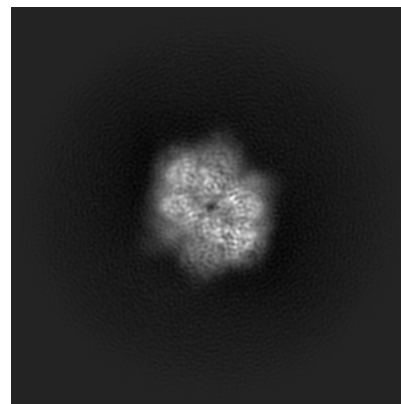
6.1.1 Primary map



X

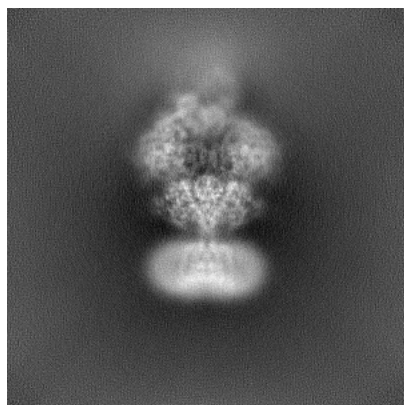


Y

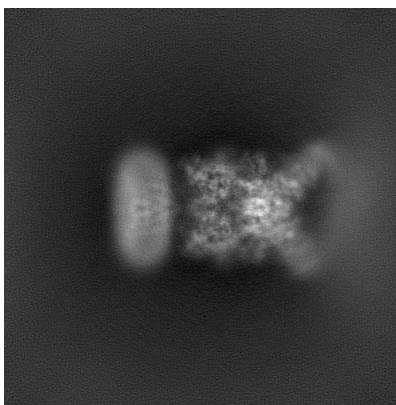


Z

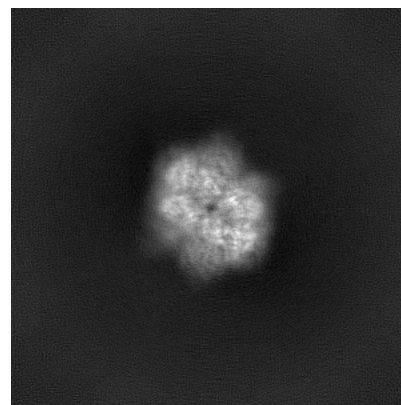
6.1.2 Raw map



X



Y

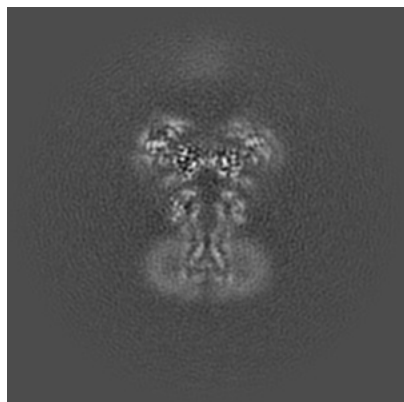


Z

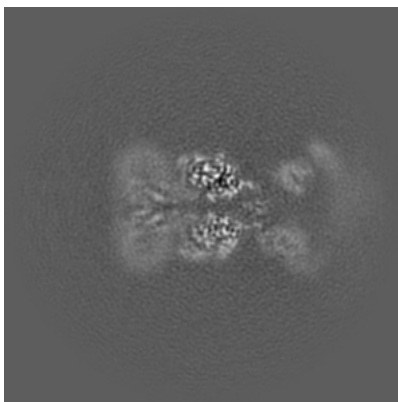
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

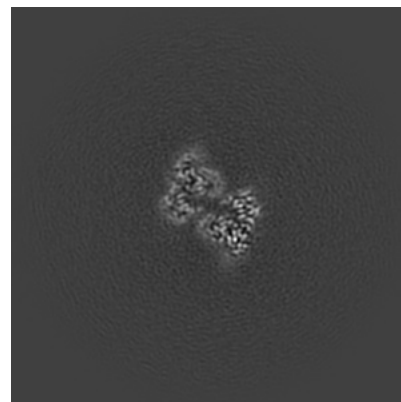
6.2.1 Primary map



X Index: 220

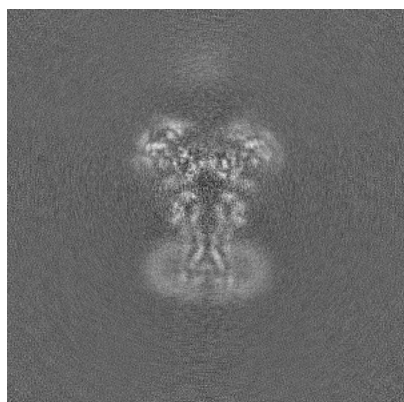


Y Index: 220

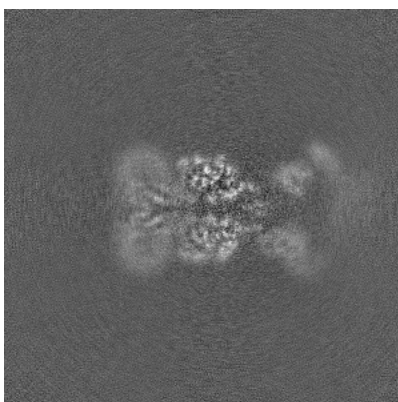


Z Index: 220

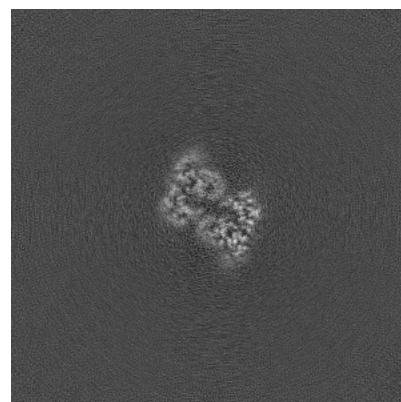
6.2.2 Raw map



X Index: 220



Y Index: 220

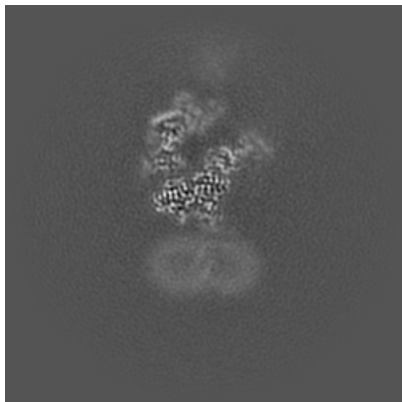


Z Index: 220

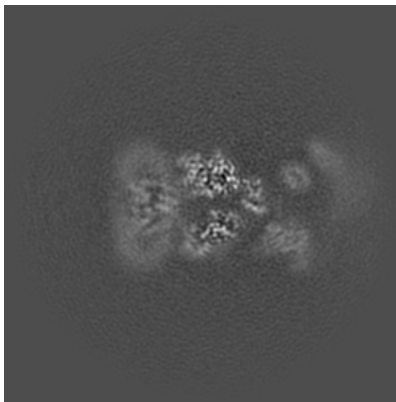
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

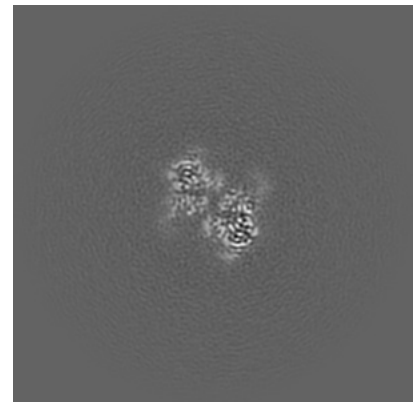
6.3.1 Primary map



X Index: 247

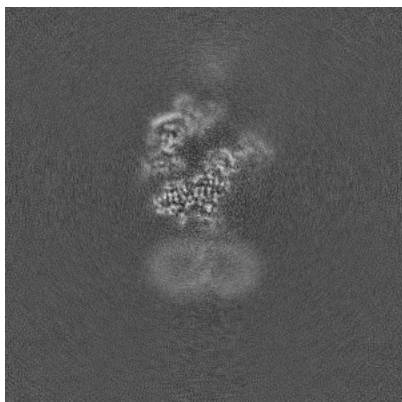


Y Index: 226

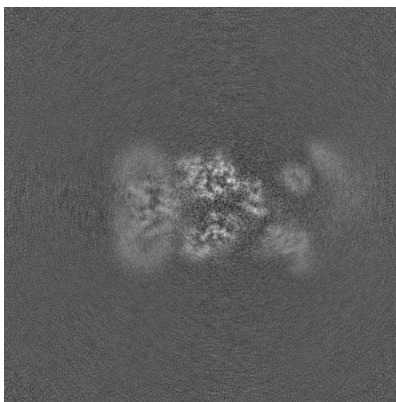


Z Index: 230

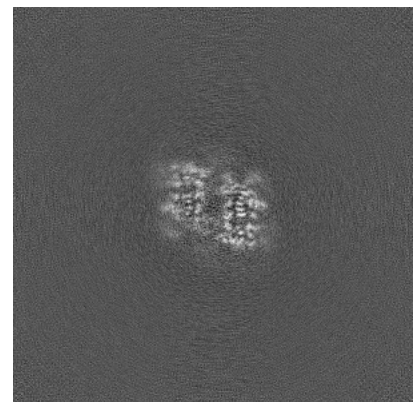
6.3.2 Raw map



X Index: 247



Y Index: 226

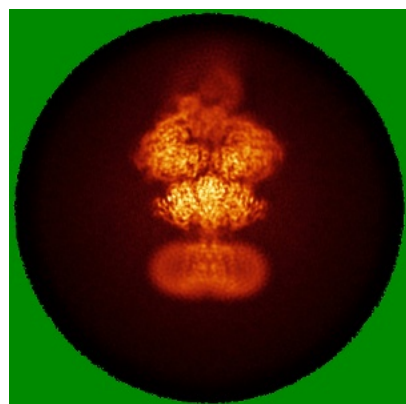


Z Index: 240

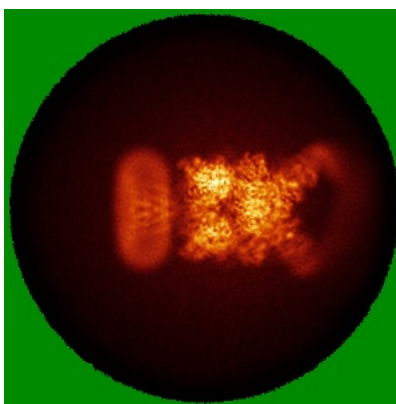
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

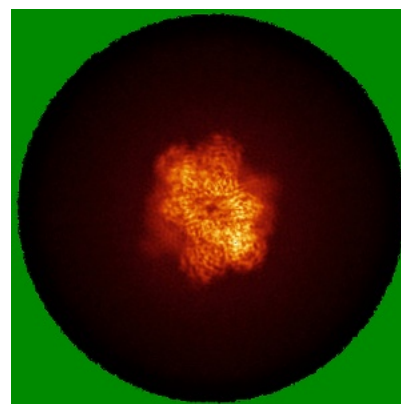
6.4.1 Primary map



X

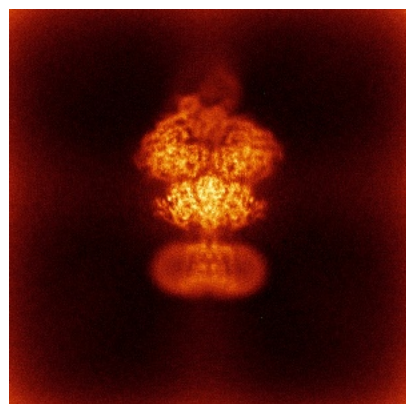


Y

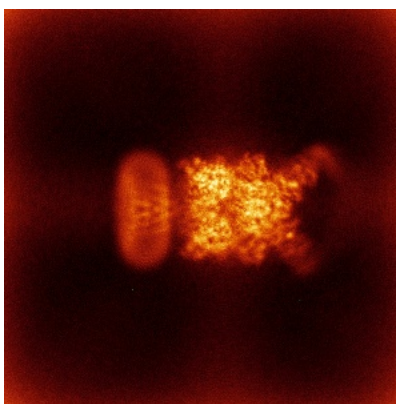


Z

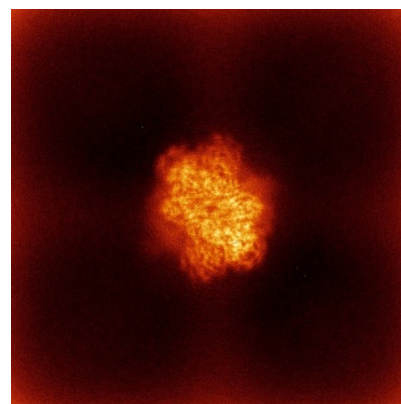
6.4.2 Raw map



X



Y

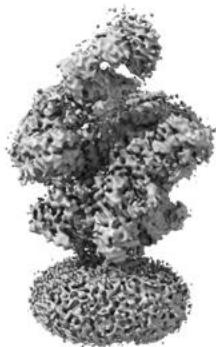


Z

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](#)

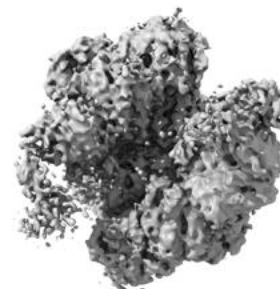
6.5.1 Primary map



X



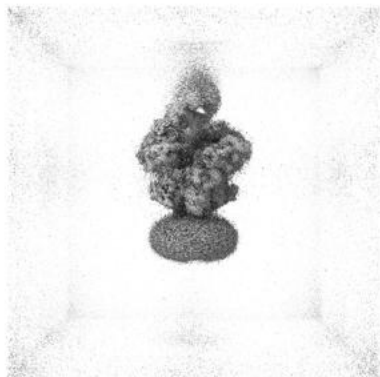
Y



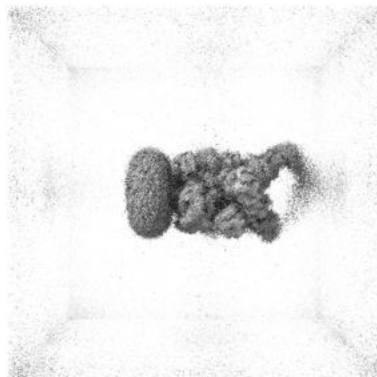
Z

The images above show the 3D surface view of the map at the recommended contour level 0.0529. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

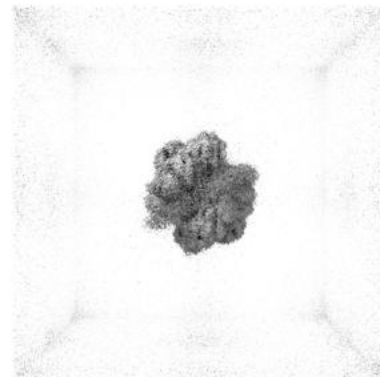
6.5.2 Raw map



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.

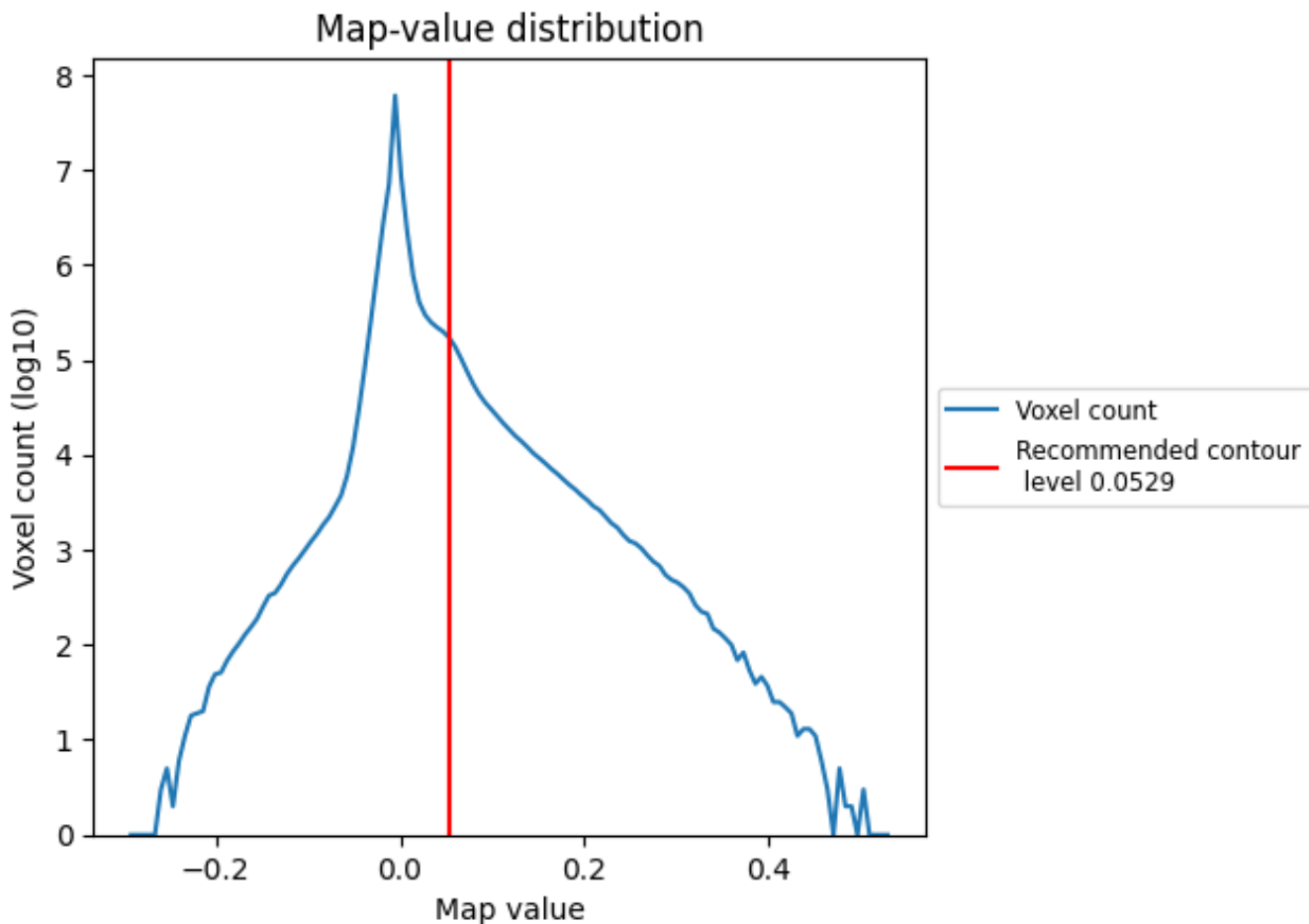
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

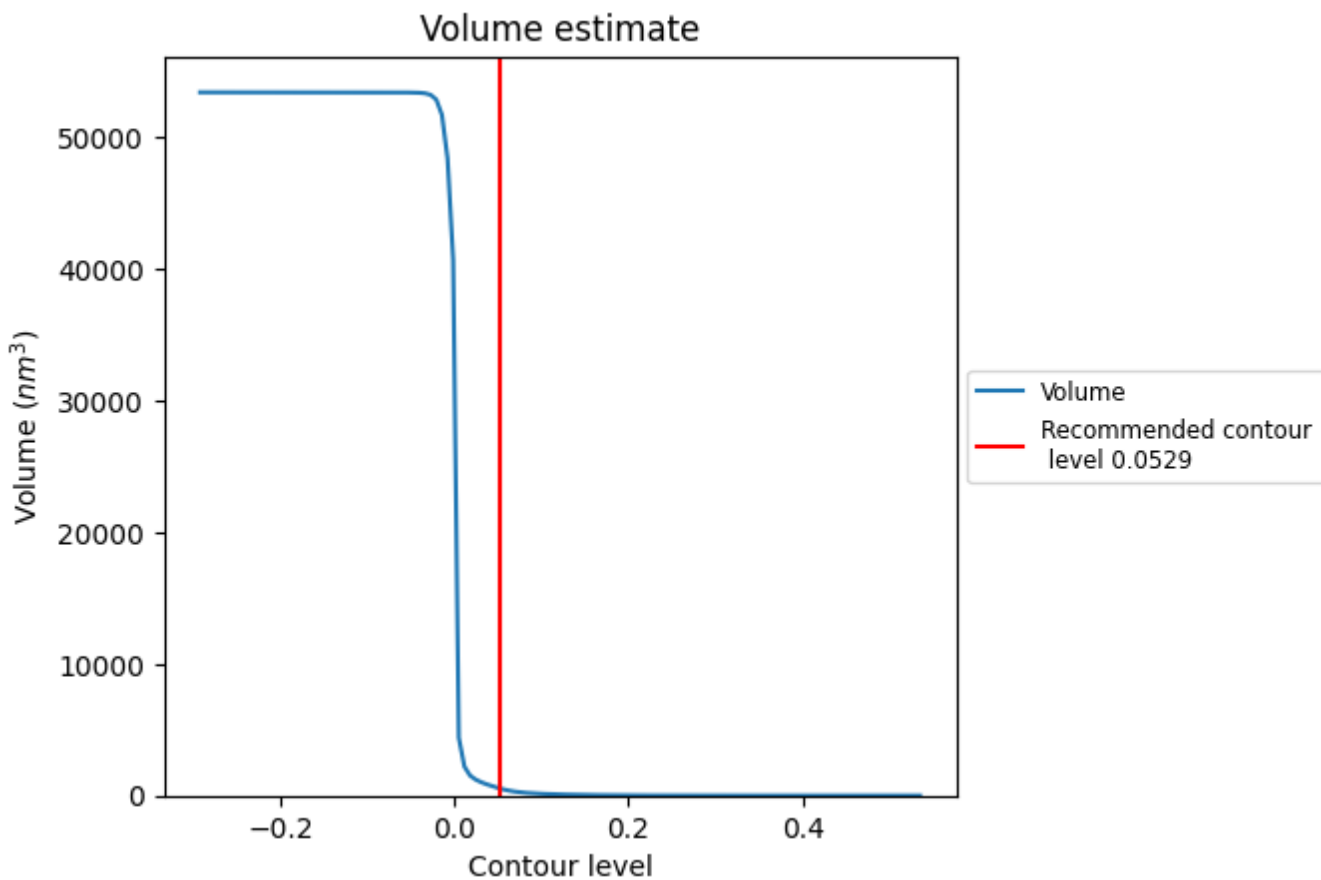
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

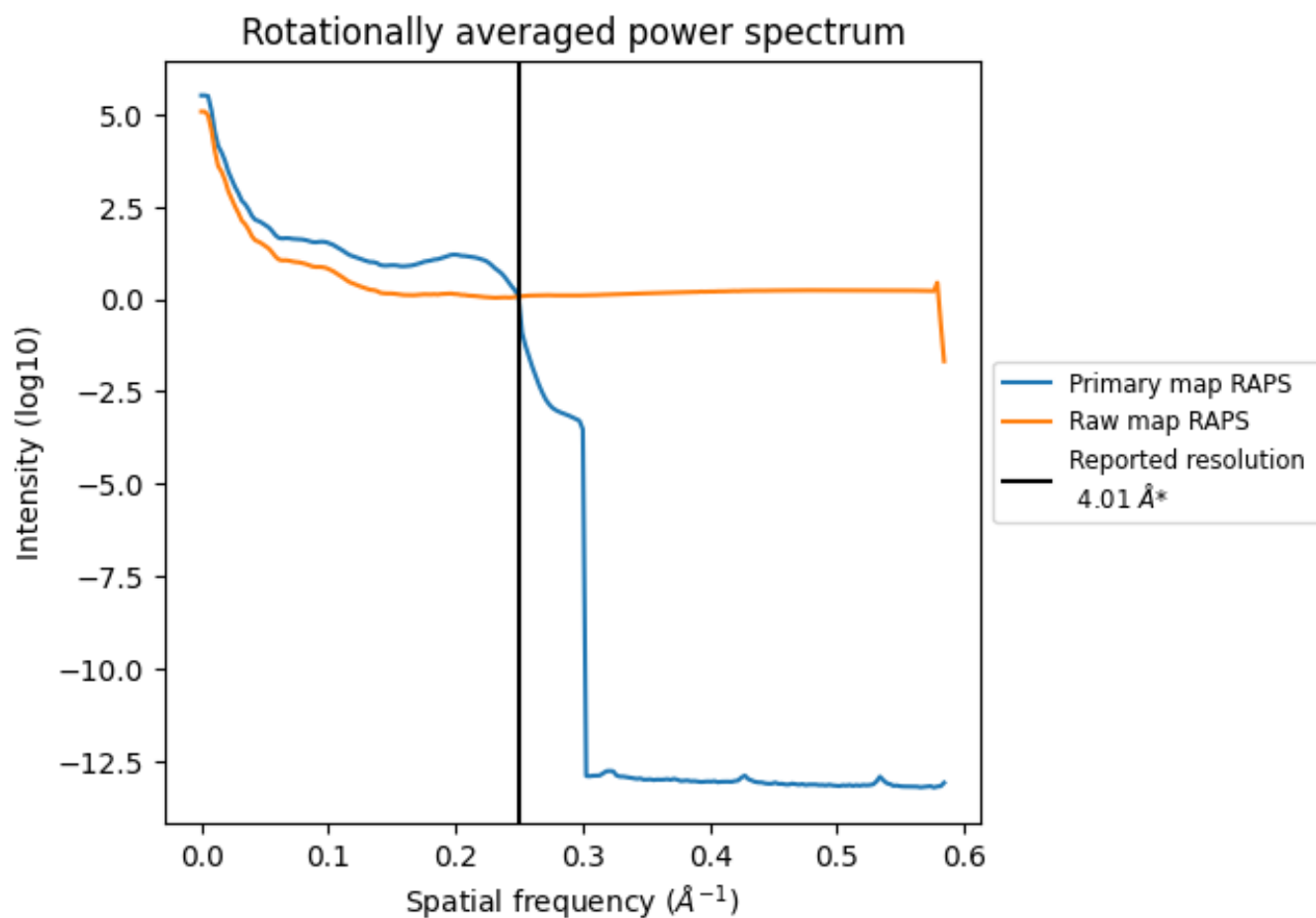
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 536 nm³; this corresponds to an approximate mass of 484 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

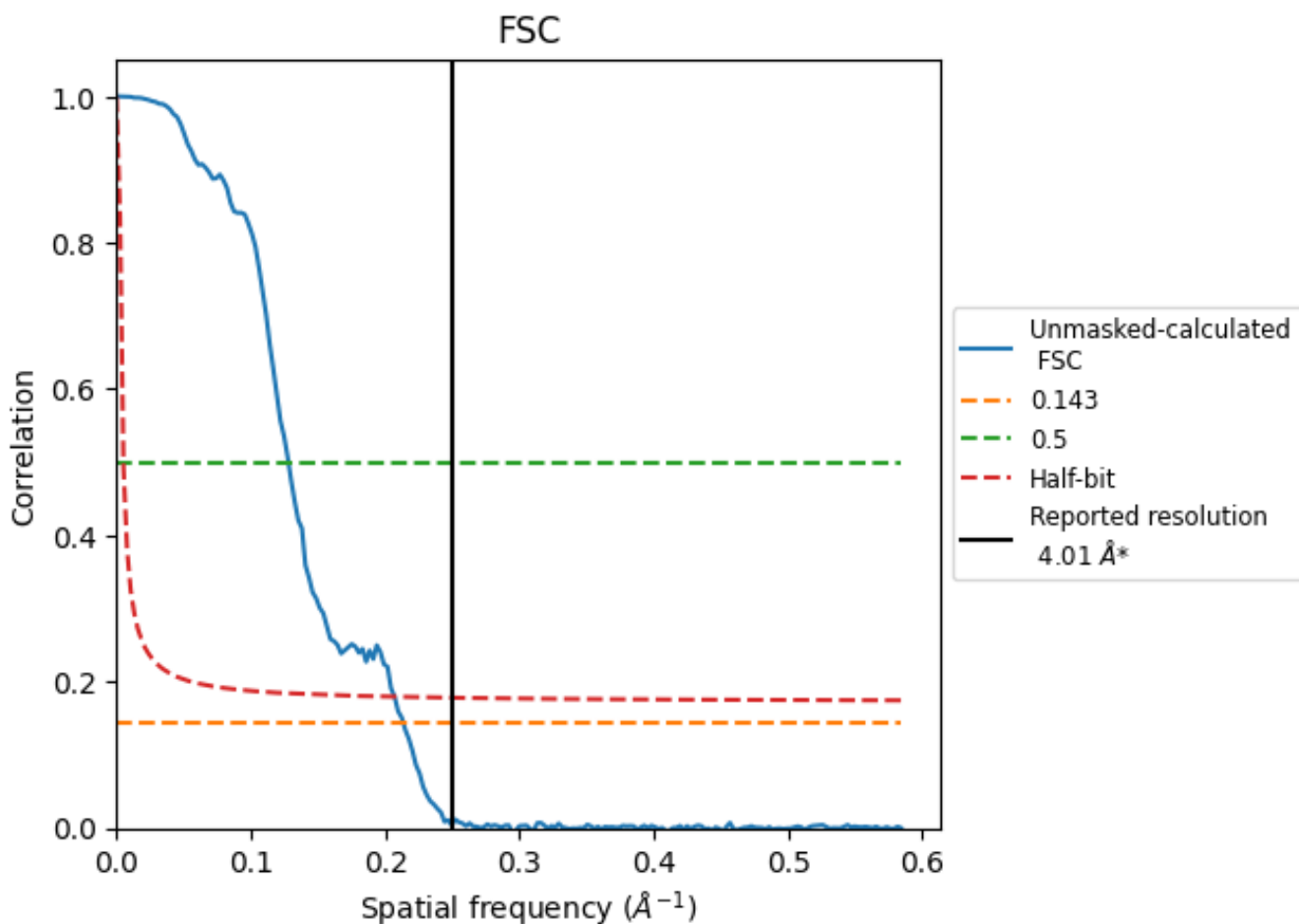


*Reported resolution corresponds to spatial frequency of 0.249 Å⁻¹

8 Fourier-Shell correlation [i](#)

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 [i](#)



*Reported resolution corresponds to spatial frequency of 0.249 Å⁻¹

8.2 Resolution estimates [i](#)

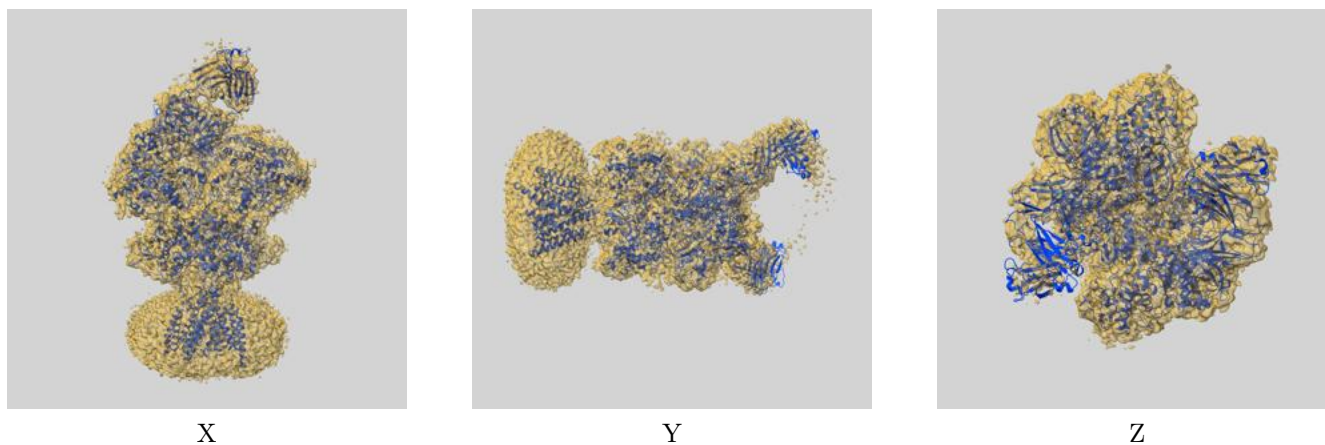
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.01	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.68	7.81	4.83

*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 4.68 differs from the reported value 4.01 by more than 10 %

9 Map-model fit [i](#)

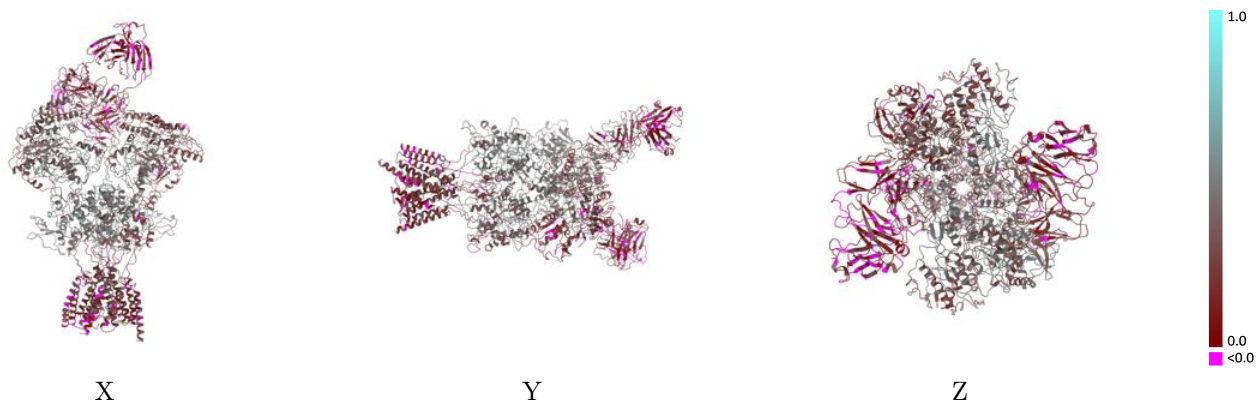
This section contains information regarding the fit between EMDB map EMD-43534 and PDB model 8VUN. Per-residue inclusion information can be found in section [3](#) on page [4](#).

9.1 Map-model overlay [i](#)



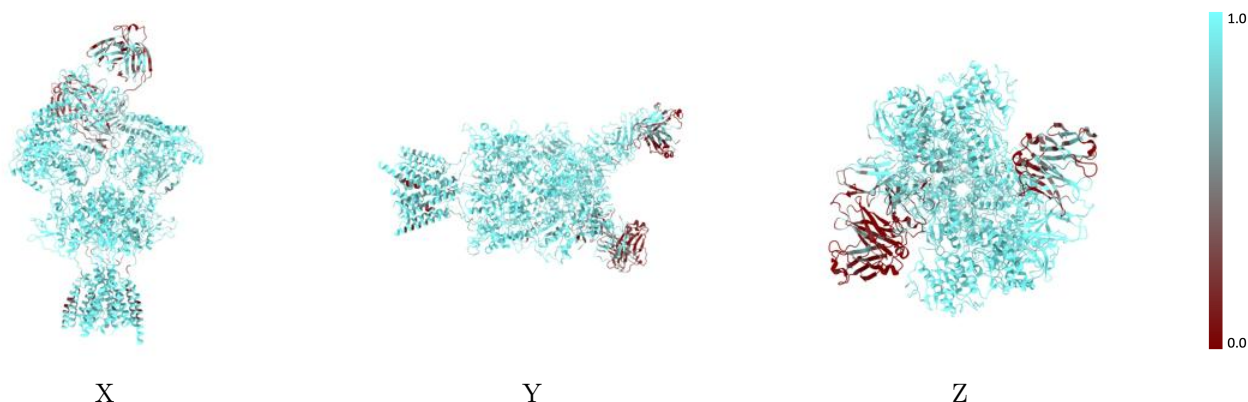
The images above show the 3D surface view of the map at the recommended contour level 0.0529 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



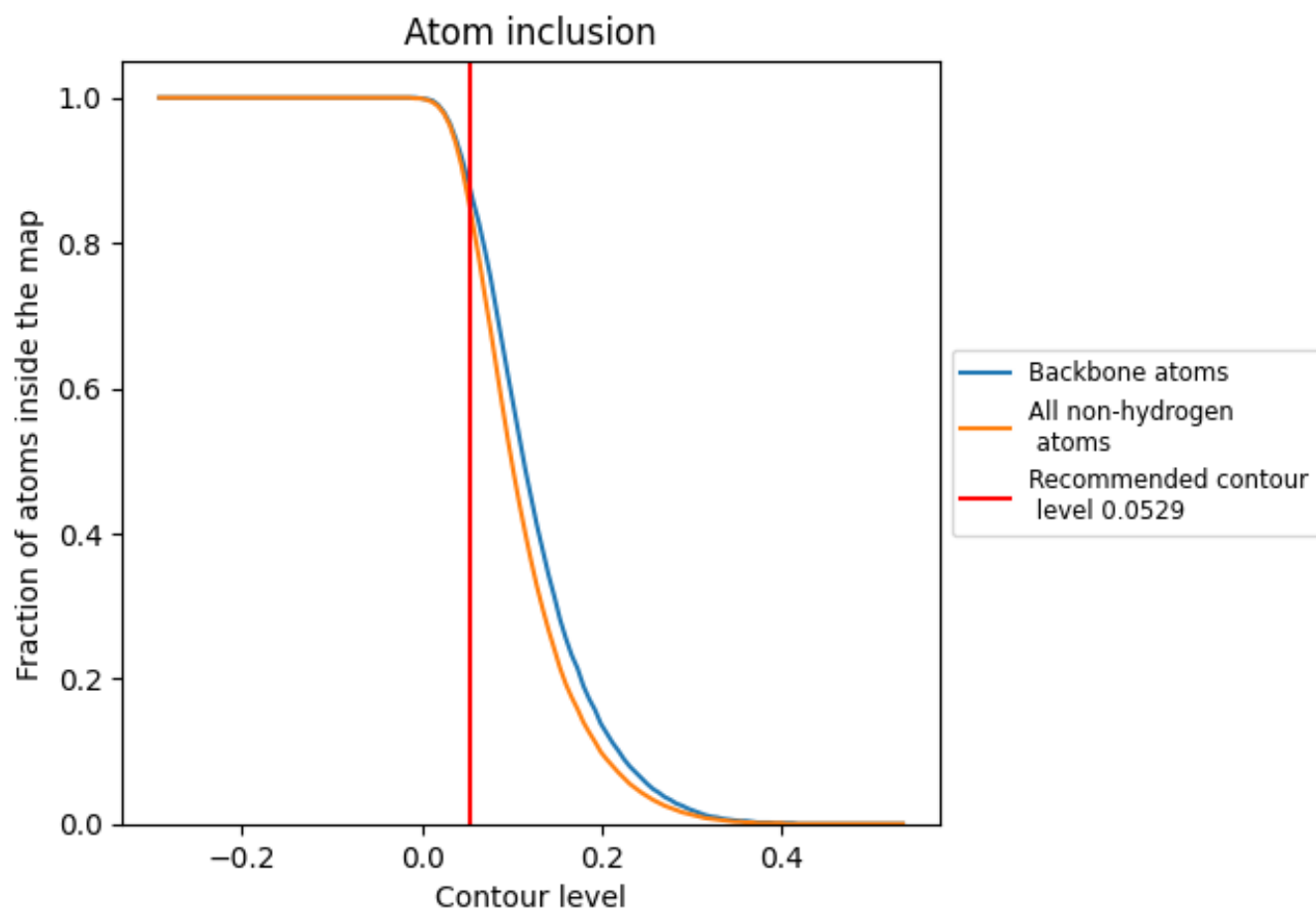
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0529).



















9.4 Atom inclusion [i](#)



At the recommended contour level, 88% of all backbone atoms, 85% 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 (0.0529) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8530	 0.3250
A	 0.9120	 0.3050
B	 0.9500	 0.3880
C	 0.9570	 0.4050
D	 0.9370	 0.3800
G	 0.7070	 0.2050
I	 0.7310	 0.2030
K	 0.3440	 0.1230
L	 0.4360	 0.1600

