Full wwPDB EM Validation Report

Nov 18, 2026 – 04:38 PM JST

PDB ID	:	24IX / pdb_000024ix
EMDB ID	:	EMD-69553
Title	:	Cryo-EM structure of Claus mycobacteriophage baselate complex
Authors	:	Tewary, S.K.; Wang, C.H.; Shen, M.C.; Tsai, L.A.; Lowary, T.L.; Maharana, J.; Ho, M.C.
Deposited on	:	2026-03-05
Resolution	:	2.71 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:

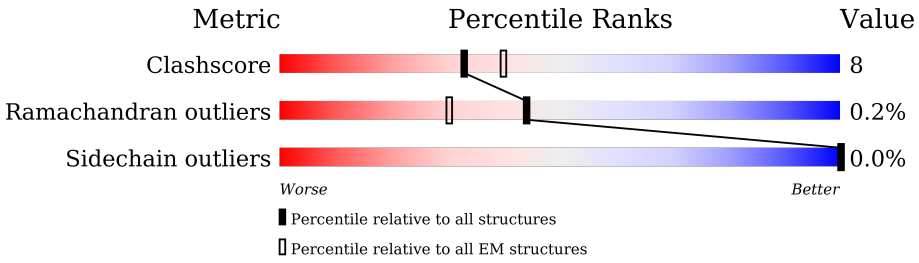
EMDB validation analysis	:	0.0.1.dev133
MolProbity	:	4-5-2 with Phenix2.2
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.51

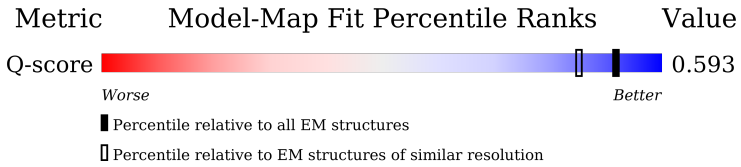
1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.71 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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	10297 (2.21 - 3.21)

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	G	304	78% 22%
1	H	304	77% 23%
1	I	304	80% 19%
1	J	304	82% 18%

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Mol	Chain	Length	Quality of chain
1	K	304	82% 17%
1	L	304	81% 19%
2	M	577	82% 18%
2	N	577	76% 23%
2	O	577	76% 24%
3	P	598	9% 88%
3	Q	598	9% 88%
3	R	598	9% 88%
4	S	313	80% 20%
4	T	313	79% 21%
4	U	313	81% 19%
4	V	313	76% 23%
4	W	313	82% 18%
4	X	313	79% 20%
4	Y	313	76% 24%
4	Z	313	82% 18%
4	a	313	78% 22%
4	b	313	77% 23%
4	c	313	77% 23%
4	d	313	75% 25%
5	A	299	64% 14% 22%
5	B	299	63% 15% 22%
5	C	299	68% 10% 22%
5	D	299	63% 15% 22%
5	E	299	60% 18% 22%

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Mol	Chain	Length	Quality of chain
5	F	299	

2 Entry composition (i)

There are 5 unique types of molecules in this entry. The entry contains 69999 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 Claus baseplate distal tail protein gp17.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	G	303	Total	C	N	O	S	0	0
			2419	1544	418	449	8		
1	H	303	Total	C	N	O	S	0	0
			2419	1544	418	449	8		
1	I	303	Total	C	N	O	S	0	0
			2419	1544	418	449	8		
1	L	303	Total	C	N	O	S	0	0
			2419	1544	418	449	8		
1	K	303	Total	C	N	O	S	0	0
			2419	1544	418	449	8		
1	J	303	Total	C	N	O	S	0	0
			2419	1544	418	449	8		

- Molecule 2 is a protein called Claus baseplate hub protein gp18.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	M	575	Total	C	N	O	S	0	0
			4548	2919	762	848	19		
2	N	575	Total	C	N	O	S	0	0
			4548	2919	762	848	19		
2	O	575	Total	C	N	O	S	0	0
			4548	2919	762	848	19		

- Molecule 3 is a protein called Claus baseplate central fiber protein gp20.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	P	69	Total	C	N	O	S	0	0
			509	319	87	102	1		
3	Q	69	Total	C	N	O	S	0	0
			509	319	87	102	1		
3	R	69	Total	C	N	O	S	0	0
			509	319	87	102	1		

- Molecule 4 is a protein called Claus baseplate upper protein gp26.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	S	313	Total	C	N	O	S	0	0
			2442	1567	410	459	6		
4	T	313	Total	C	N	O	S	0	0
			2442	1567	410	459	6		
4	a	313	Total	C	N	O	S	0	0
			2442	1567	410	459	6		
4	U	313	Total	C	N	O	S	0	0
			2442	1567	410	459	6		
4	V	313	Total	C	N	O	S	0	0
			2442	1567	410	459	6		
4	W	313	Total	C	N	O	S	0	0
			2442	1567	410	459	6		
4	X	313	Total	C	N	O	S	0	0
			2442	1567	410	459	6		
4	Y	313	Total	C	N	O	S	0	0
			2442	1567	410	459	6		
4	Z	313	Total	C	N	O	S	0	0
			2442	1567	410	459	6		
4	d	313	Total	C	N	O	S	0	0
			2442	1567	410	459	6		
4	b	313	Total	C	N	O	S	0	0
			2442	1567	410	459	6		
4	c	313	Total	C	N	O	S	0	0
			2442	1567	410	459	6		

- Molecule 5 is a protein called Claus tail tube protein gp13.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	A	233	Total	C	N	O	S	0	0
			1835	1175	300	357	3		
5	B	233	Total	C	N	O	S	0	0
			1835	1175	300	357	3		
5	C	233	Total	C	N	O	S	0	0
			1835	1175	300	357	3		
5	D	233	Total	C	N	O	S	0	0
			1835	1175	300	357	3		
5	E	233	Total	C	N	O	S	0	0
			1835	1175	300	357	3		
5	F	233	Total	C	N	O	S	0	0
			1835	1175	300	357	3		

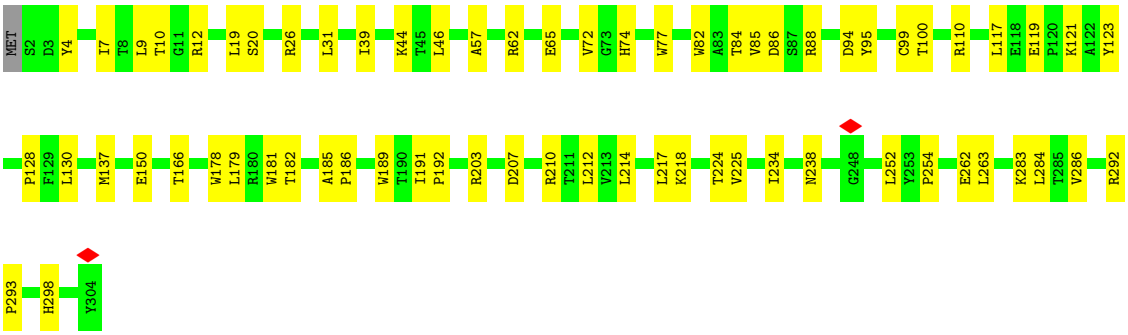
3 Residue-property plots (i)

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: Claus baseplate distal tail protein gp17

Chain G:

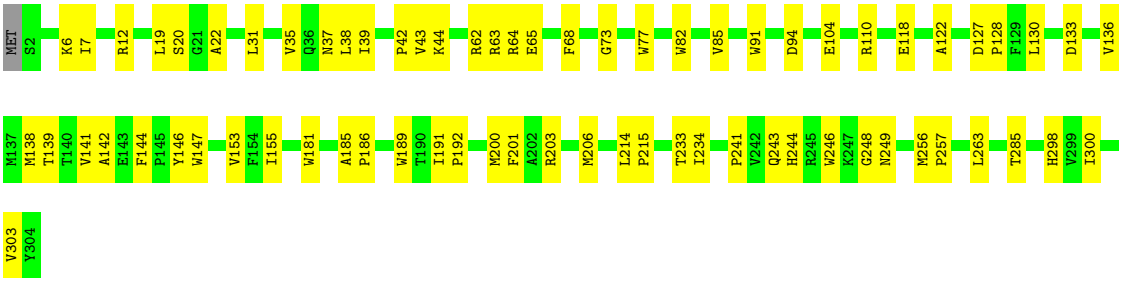




• Molecule 1: Claus baseplate distal tail protein gp17

Chain H:

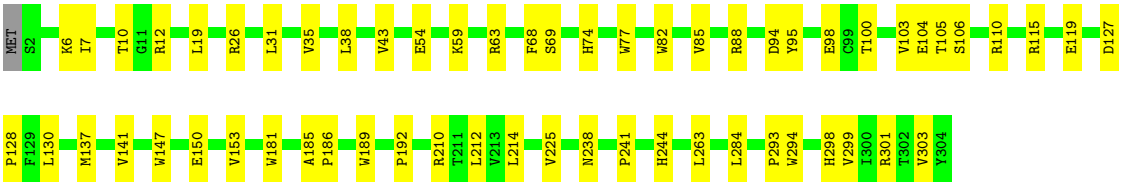




• Molecule 1: Claus baseplate distal tail protein gp17

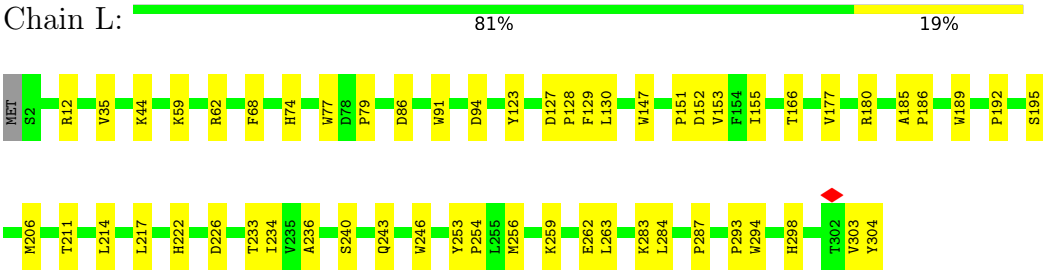
Chain I:





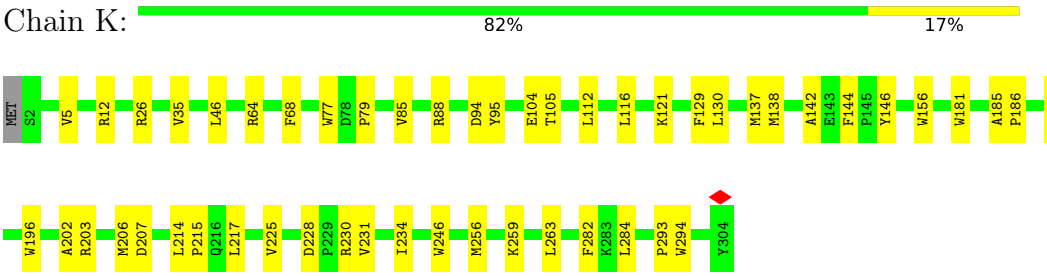
• Molecule 1: Claus baseplate distal tail protein gp17

Chain L:



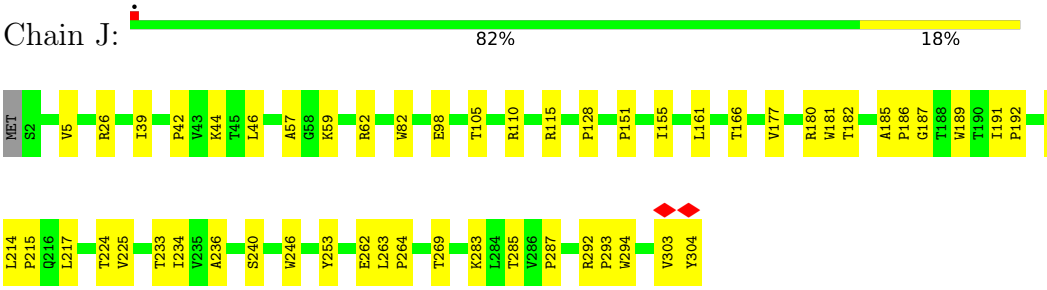
• Molecule 1: Claus baseplate distal tail protein gp17

Chain K:



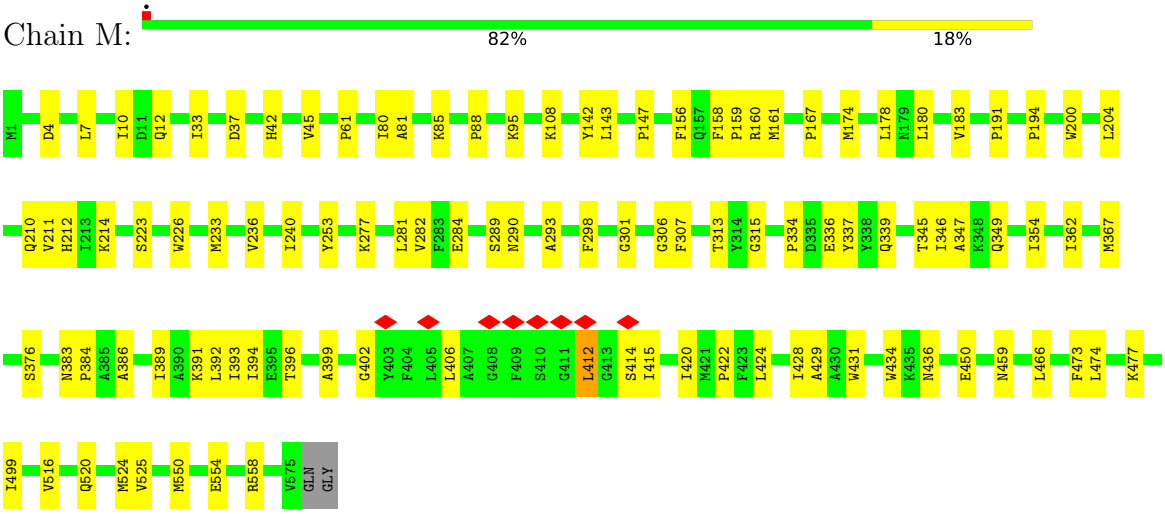
• Molecule 1: Claus baseplate distal tail protein gp17

Chain J:



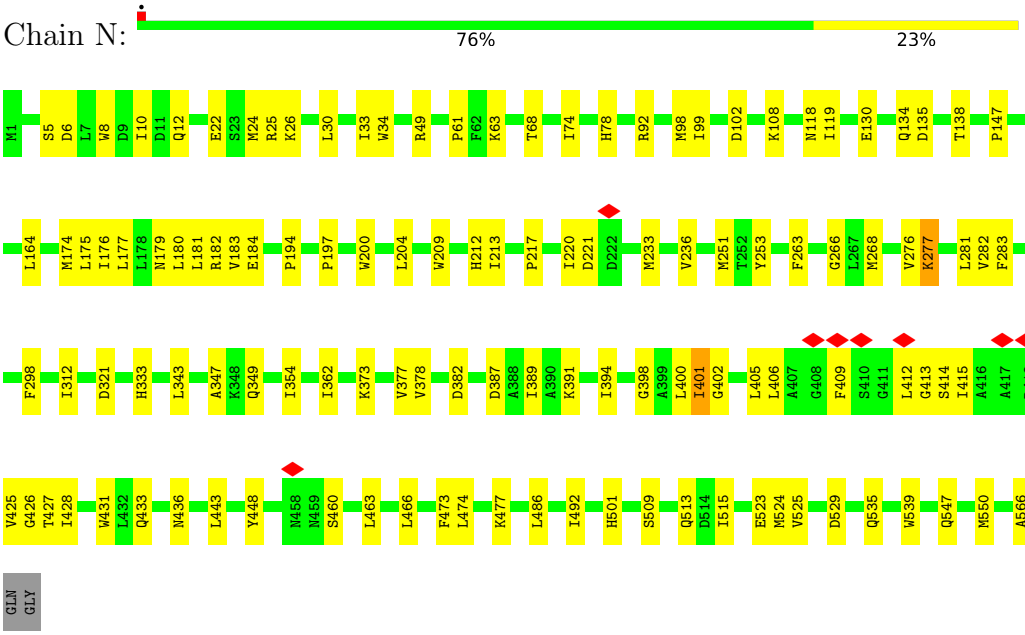
• Molecule 2: Claus baseplate hub protein gp18

Chain M:



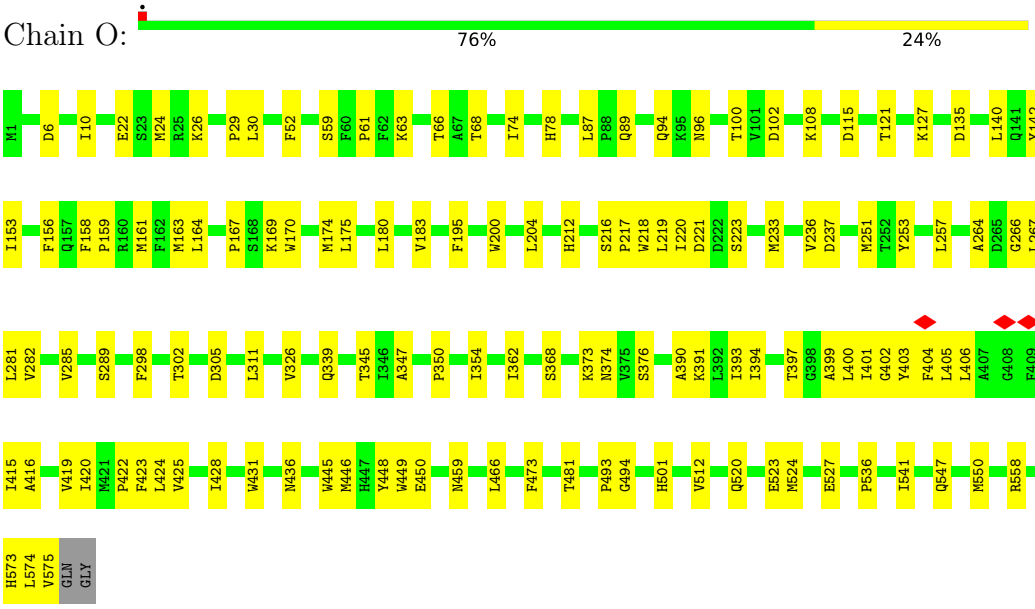
• Molecule 2: Claus baseplate hub protein gp18

Chain N:



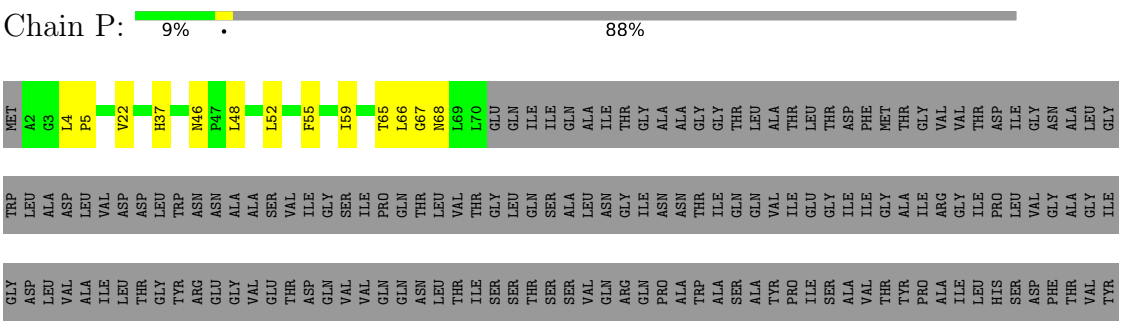
• Molecule 2: Claus baseplate hub protein gp18

Chain O:



• Molecule 3: Claus baseplate central fiber protein gp20

Chain P:





• Molecule 3: Claus baseplate central fiber protein gp20

Chain Q:

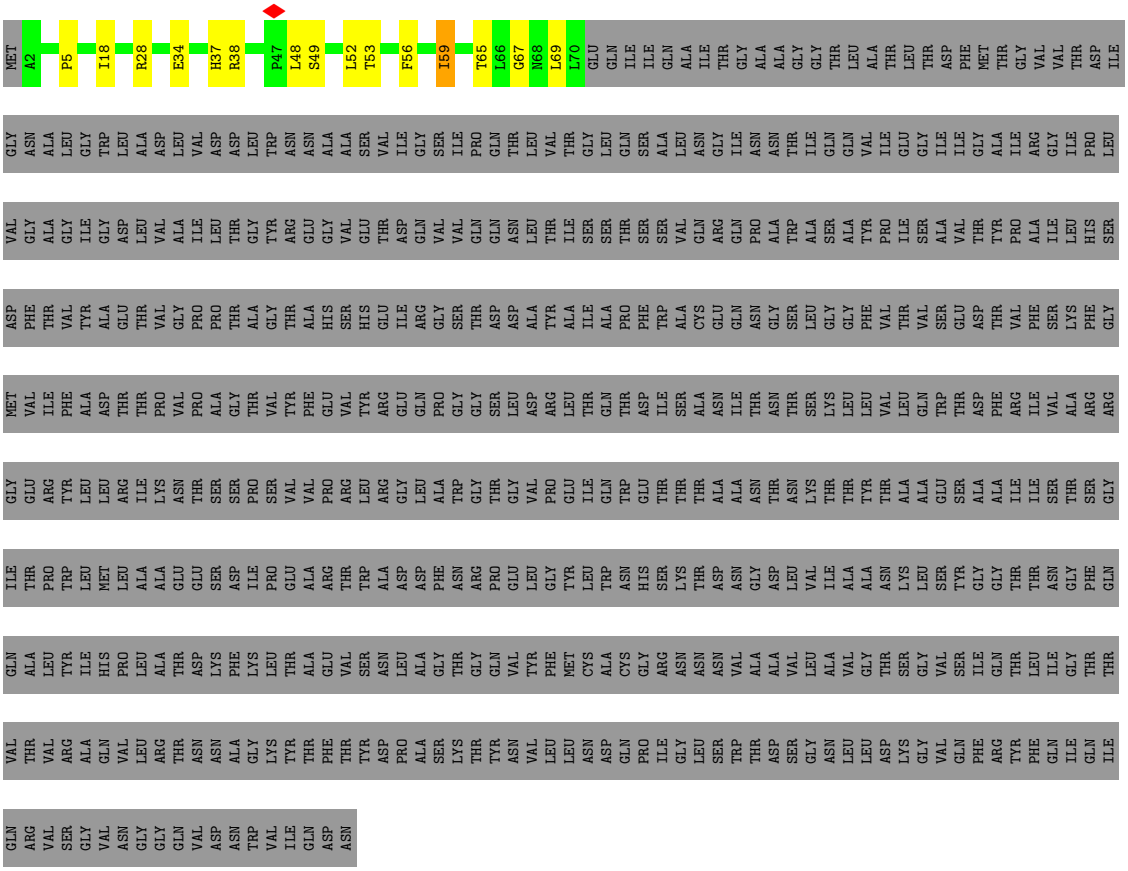




• Molecule 3: Claus baseplate central fiber protein gp20

Chain R:

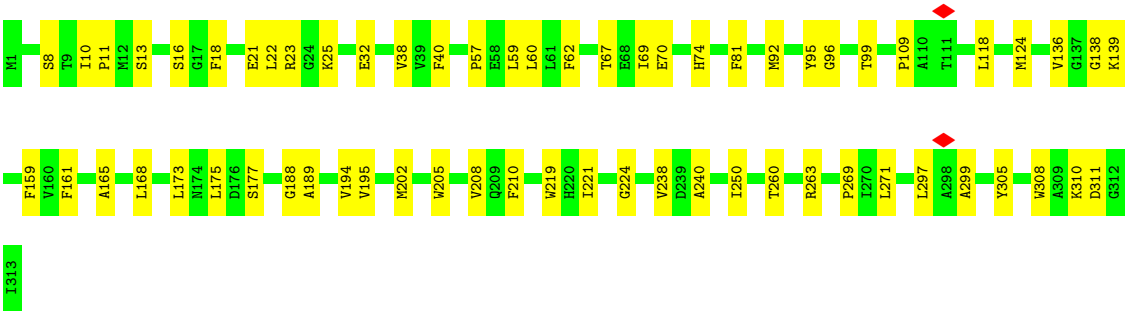




• Molecule 4: Claus baseplate upper protein gp26

Chain S:

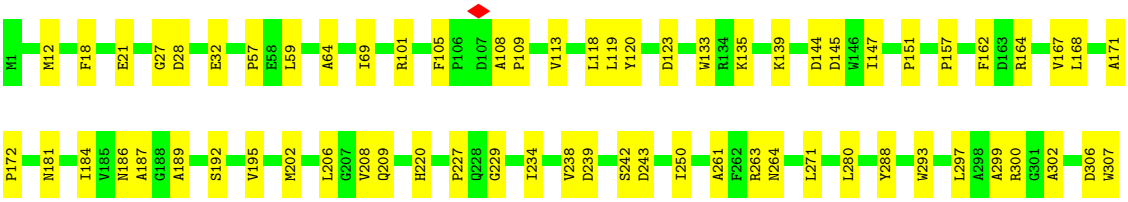




• Molecule 4: Claus baseplate upper protein gp26

Chain T:



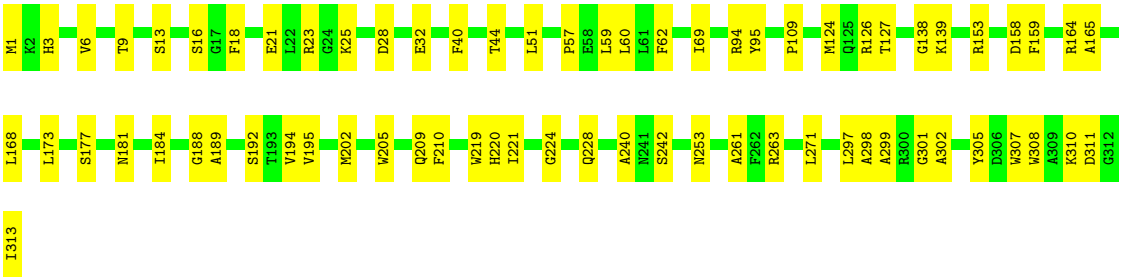




• Molecule 4: Claus baseplate upper protein gp26

Chain a:

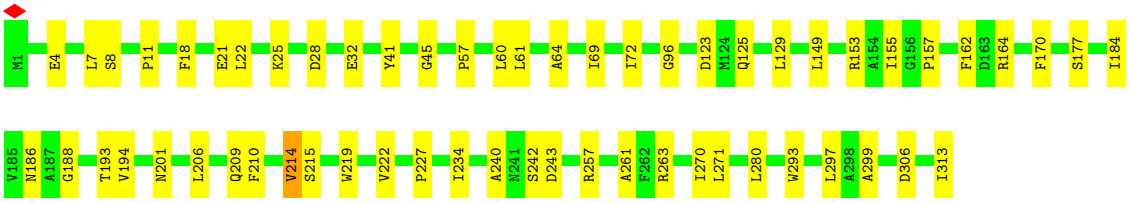




• Molecule 4: Claus baseplate upper protein gp26

Chain U:

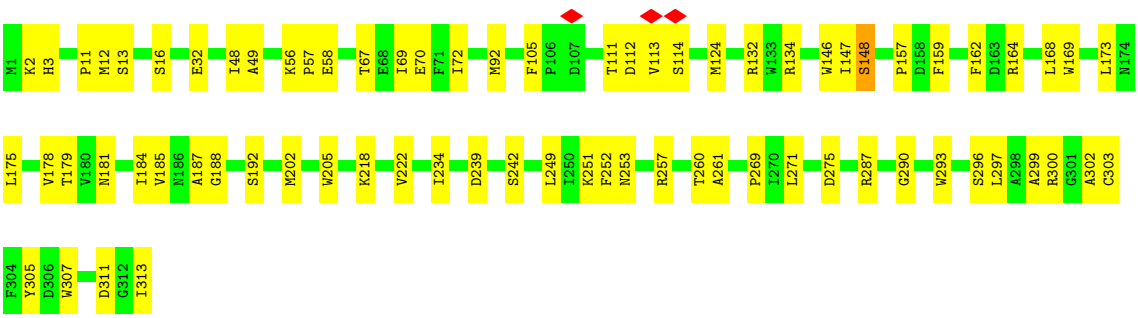




• Molecule 4: Claus baseplate upper protein gp26

Chain V:

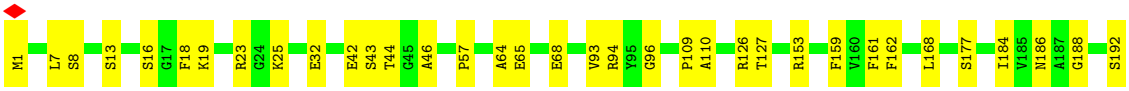


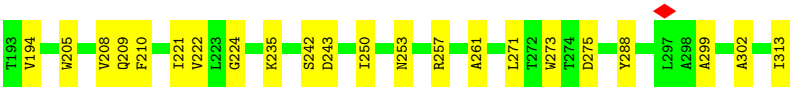


• Molecule 4: Claus baseplate upper protein gp26

Chain W:



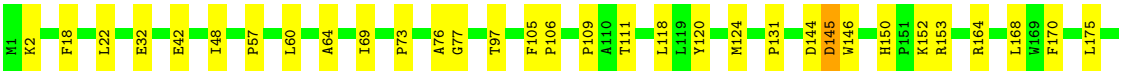


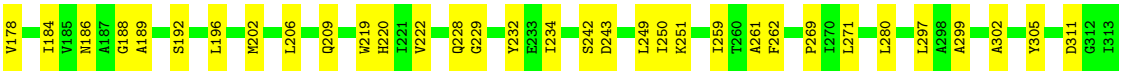


• Molecule 4: Claus baseplate upper protein gp26

Chain X:



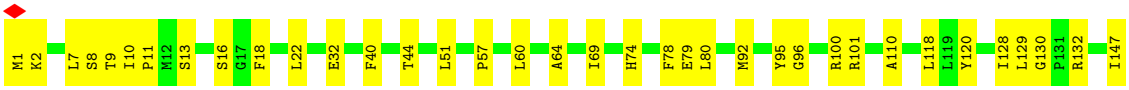


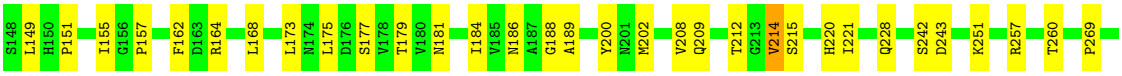


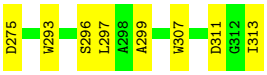
• Molecule 4: Claus baseplate upper protein gp26

Chain Y:





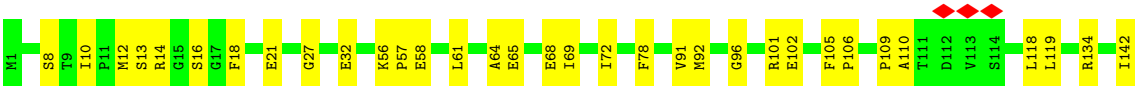


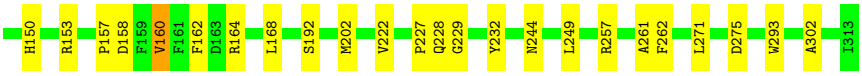


• Molecule 4: Claus baseplate upper protein gp26

Chain Z:



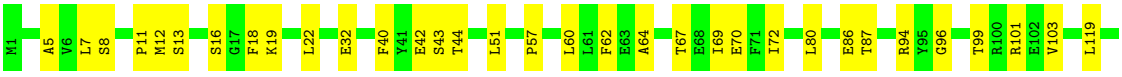


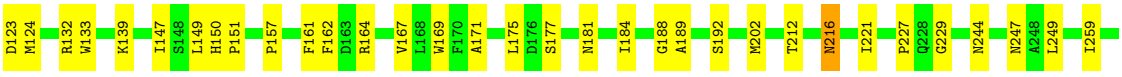


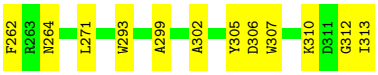
• Molecule 4: Claus baseplate upper protein gp26

Chain d:



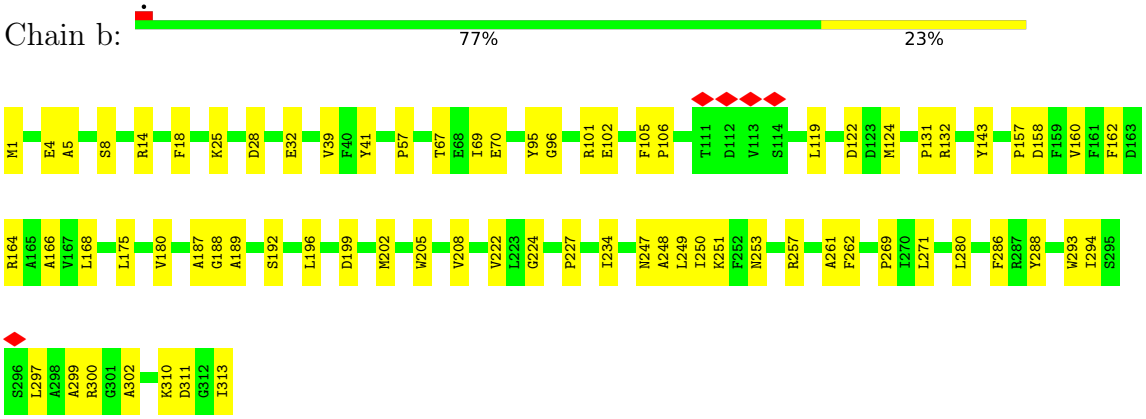






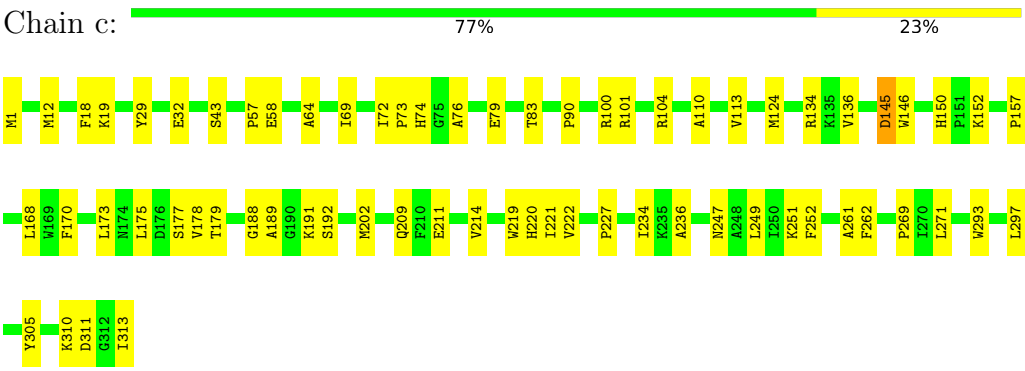
• Molecule 4: Claus baseplate upper protein gp26

Chain b:



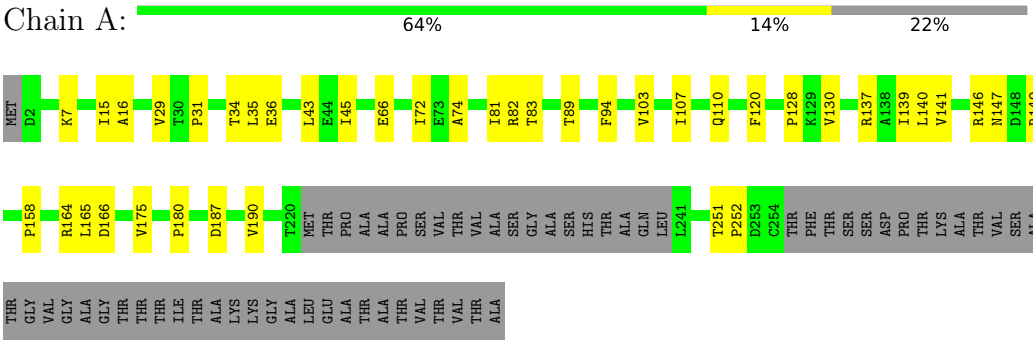
• Molecule 4: Claus baseplate upper protein gp26

Chain c:



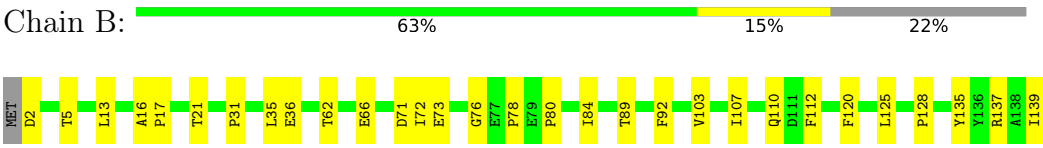
• Molecule 5: Claus tail tube protein gp13

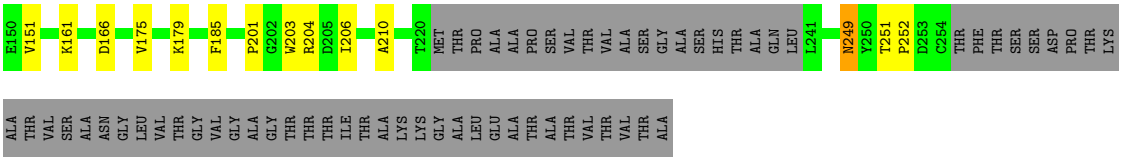
Chain A:



• Molecule 5: Claus tail tube protein gp13

Chain B:

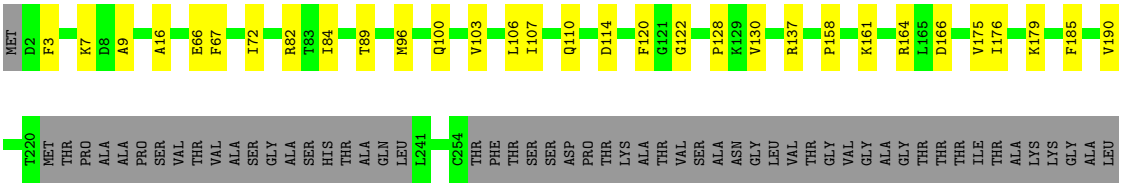




• Molecule 5: Claus tail tube protein gp13

Chain C:

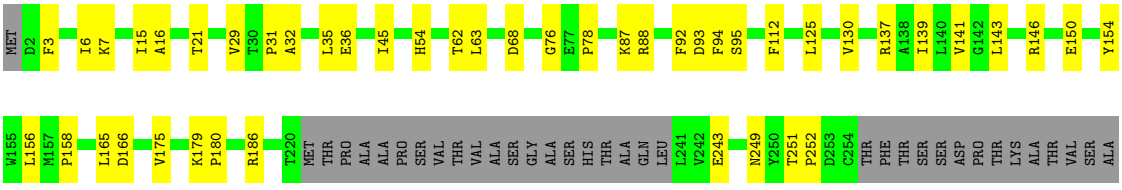




• Molecule 5: Claus tail tube protein gp13

Chain D:

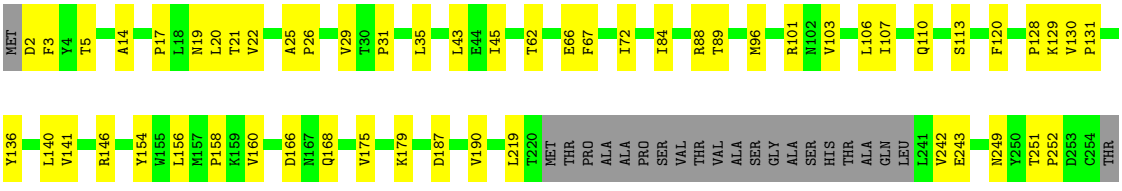




• Molecule 5: Claus tail tube protein gp13

Chain E:

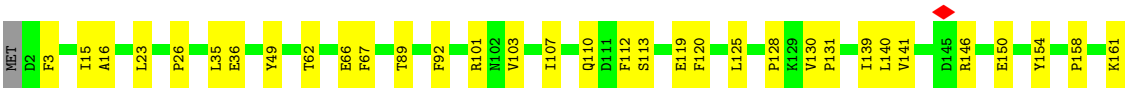


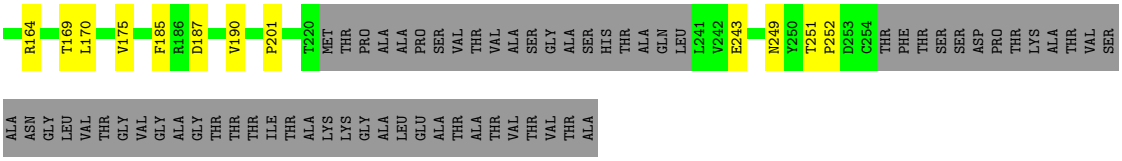


• Molecule 5: Claus tail tube protein gp13

Chain F:






R164
T169
L170
V175
F185
R186
D187
V190
P201
T220
MET THR PRO ALA ALA PRO SER VAL THR VAL ALA SER GLY ALA SER HIS THR ALA GLN LEU
L241
V242
E243
N249
Y250
T251
P252
D253
C254
THR PHE THR SER SER ASP PRO THR LYS ALA THR VAL SER
ALA ASN GLY LEU VAL THR GLY VAL GLY ALA GLY THR THR THR ILE THR ALA LYS LYS GLY ALA LEU GLU ALA THR ALA THR VAL THR VAL THR ALA

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	47425	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 ($e^-/Å^2$)	25.9	Depositor
Minimum defocus (nm)	352	Depositor
Maximum defocus (nm)	3500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	4.536	Depositor
Minimum map value	-2.296	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.119	Depositor
Recommended contour level	0.4	Depositor
Map size (Å)	543.232, 543.232, 543.232	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.061, 1.061, 1.061	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	G	0.13	0/2496	0.35	0/3416
1	H	0.13	0/2496	0.35	0/3416
1	I	0.11	0/2496	0.31	0/3416
1	J	0.13	0/2496	0.33	0/3416
1	K	0.12	0/2496	0.34	0/3416
1	L	0.13	0/2496	0.33	0/3416
2	M	0.14	0/4677	0.37	0/6376
2	N	0.14	0/4677	0.36	0/6376
2	O	0.14	0/4677	0.37	0/6376
3	P	0.14	0/518	0.41	0/706
3	Q	0.16	0/518	0.39	0/706
3	R	0.14	0/518	0.40	0/706
4	S	0.13	0/2512	0.32	0/3427
4	T	0.12	0/2512	0.36	0/3427
4	U	0.13	0/2512	0.35	0/3427
4	V	0.14	0/2512	0.38	0/3427
4	W	0.12	0/2512	0.35	0/3427
4	X	0.12	0/2512	0.36	0/3427
4	Y	0.13	0/2512	0.33	0/3427
4	Z	0.14	0/2512	0.39	1/3427 (0.0%)
4	a	0.17	0/2512	0.47	0/3427
4	b	0.15	0/2512	0.44	1/3427 (0.0%)
4	c	0.17	0/2512	0.52	2/3427 (0.1%)
4	d	0.17	0/2512	0.48	0/3427
5	A	0.13	0/1876	0.30	0/2557
5	B	0.11	0/1876	0.29	0/2557
5	C	0.12	0/1876	0.30	0/2557
5	D	0.11	0/1876	0.27	0/2557
5	E	0.13	0/1876	0.32	0/2557
5	F	0.11	0/1876	0.29	0/2557
All	All	0.14	0/71961	0.37	4/98208 (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
4	X	0	1

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	Z	160	VAL	N-CA-C	-8.38	105.32	113.53
4	c	160	VAL	N-CA-C	-5.75	106.20	111.67
4	b	160	VAL	N-CA-C	-5.34	107.62	112.96
4	c	214	VAL	N-CA-C	-5.29	108.35	113.53

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
4	X	111	THR	Peptide

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	G	2419	0	2328	51	0
1	H	2419	0	2328	56	0
1	I	2419	0	2328	42	0
1	J	2419	0	2328	38	0
1	K	2419	0	2328	35	0
1	L	2419	0	2328	41	0
2	M	4548	0	4375	80	0
2	N	4548	0	4375	103	0
2	O	4548	0	4375	121	0
3	P	509	0	495	13	0
3	Q	509	0	495	24	0
3	R	509	0	495	17	0
4	S	2442	0	2356	41	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	T	2442	0	2356	45	0
4	U	2442	0	2356	39	0
4	V	2442	0	2356	46	0
4	W	2442	0	2356	34	0
4	X	2442	0	2356	36	0
4	Y	2442	0	2356	51	0
4	Z	2442	0	2356	38	0
4	a	2442	0	2356	50	0
4	b	2442	0	2356	47	0
4	c	2442	0	2356	47	0
4	d	2442	0	2356	55	0
5	A	1835	0	1793	34	0
5	B	1835	0	1793	35	0
5	C	1835	0	1793	23	0
5	D	1835	0	1793	39	0
5	E	1835	0	1793	45	0
5	F	1835	0	1793	32	0
All	All	69999	0	67608	1162	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 8.

All (1162) 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:G:150:GLU:HG3	4:b:106:PRO:HG3	1.55	0.88
4:U:214:VAL:HG13	4:U:215:SER:H	1.41	0.85
5:C:7:LYS:HD2	5:D:21:THR:HG22	1.61	0.82
1:H:44:LYS:HB3	1:H:62:ARG:HH21	1.45	0.81
1:L:214:LEU:HA	1:L:246:TRP:HZ3	1.46	0.81
1:G:238:ASN:HA	4:d:132:ARG:HH12	1.46	0.80
1:L:152:ASP:HA	4:T:109:PRO:HG3	1.65	0.79
1:J:225:VAL:HG12	1:J:234:ILE:HG12	1.65	0.77
4:d:18:PHE:HB3	4:d:64:ALA:HB3	1.68	0.76
2:M:406:LEU:HB3	3:R:52:LEU:HD13	1.68	0.76
2:N:400:LEU:HD13	2:N:414:SER:H	1.49	0.75
4:b:168:LEU:HD11	4:b:288:TYR:HB3	1.68	0.75
1:H:6:LYS:HB3	1:H:104:GLU:HB3	1.68	0.75
2:N:402:GLY:HA2	3:Q:48:LEU:HD22	1.68	0.75
2:M:161:MET:HE1	2:M:459:ASN:HD22	1.54	0.73
2:O:121:THR:HG22	2:O:127:LYS:HG2	1.69	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:O:63:LYS:HG2	2:O:523:GLU:HG2	1.71	0.73
1:H:214:LEU:HA	1:H:246:TRP:HZ3	1.55	0.72
4:d:123:ASP:HA	4:d:306:ASP:HA	1.71	0.72
4:X:164:ARG:HH12	4:X:229:GLY:HA2	1.54	0.72
4:c:202:MET:HB2	4:c:227:PRO:HG3	1.71	0.72
1:I:12:ARG:HD3	1:I:94:ASP:HB2	1.72	0.72
5:A:164:ARG:HH22	5:A:166:ASP:HB3	1.55	0.71
4:U:184:ILE:HG21	4:U:242:SER:HB3	1.73	0.71
2:N:547:GLN:HA	2:N:550:MET:HE2	1.71	0.71
4:Z:18:PHE:HB2	4:Z:69:ILE:HD13	1.73	0.70
4:a:18:PHE:HB2	4:a:69:ILE:HD13	1.74	0.70
4:Y:18:PHE:HB3	4:Y:64:ALA:HB3	1.73	0.70
2:M:210:GLN:HG3	2:M:211:VAL:HG23	1.73	0.70
5:A:72:ILE:HD13	5:A:82:ARG:HB3	1.74	0.69
2:O:550:MET:HE1	2:O:558:ARG:HD2	1.74	0.69
2:M:376:SER:HB2	2:M:450:GLU:HB3	1.74	0.69
5:E:17:PRO:HG3	5:F:170:LEU:HD22	1.73	0.69
2:M:212:HIS:HB2	2:M:282:VAL:HG22	1.74	0.69
4:Y:188:GLY:HA3	4:Y:299:ALA:HB1	1.74	0.69
1:I:85:VAL:HG22	1:I:88:ARG:HH21	1.58	0.68
1:I:192:PRO:HG3	1:I:263:LEU:HB3	1.75	0.68
4:W:168:LEU:HD11	4:W:288:TYR:HB3	1.76	0.68
4:U:123:ASP:HA	4:U:306:ASP:HA	1.74	0.68
4:T:32:GLU:HA	4:T:57:PRO:HG3	1.73	0.68
2:N:25:ARG:HG3	2:N:492:ILE:HG12	1.76	0.68
2:N:174:MET:HE1	2:N:194:PRO:HD2	1.76	0.68
2:O:524:MET:HG2	2:O:541:ILE:HG22	1.74	0.67
5:B:16:ALA:HB2	5:C:175:VAL:HG12	1.76	0.67
4:U:18:PHE:HB3	4:U:64:ALA:HB3	1.77	0.67
4:d:216:ASN:O	4:d:216:ASN:ND2	2.18	0.67
2:O:158:PHE:HB3	2:O:159:PRO:HD3	1.77	0.67
2:O:22:GLU:HG2	2:O:26:LYS:HE2	1.76	0.67
4:d:18:PHE:HB2	4:d:69:ILE:HD13	1.76	0.67
1:J:189:TRP:HB2	1:J:214:LEU:HD12	1.75	0.67
1:G:121:LYS:HB2	1:G:137:MET:HE3	1.77	0.66
4:T:238:VAL:HG12	4:T:239:ASP:H	1.60	0.66
2:N:382:ASP:HB3	2:N:426:GLY:HA2	1.77	0.66
4:U:25:LYS:HB2	4:U:28:ASP:HB3	1.77	0.66
5:B:249:ASN:O	5:B:249:ASN:ND2	2.28	0.66
4:T:206:LEU:HB2	4:T:280:LEU:HD11	1.78	0.66
4:X:32:GLU:HA	4:X:57:PRO:HG3	1.78	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:d:216:ASN:C	4:d:216:ASN:HD22	2.02	0.66
4:b:247:ASN:HD22	4:b:248:ALA:N	1.94	0.66
1:H:12:ARG:HD3	1:H:94:ASP:HB2	1.78	0.65
4:a:209:GLN:HB2	4:a:220:HIS:HB2	1.77	0.65
4:b:251:LYS:HB3	4:b:313:ILE:HG13	1.77	0.65
2:M:354:ILE:HG22	2:M:362:ILE:HD13	1.78	0.65
2:N:400:LEU:HD23	2:N:401:ILE:HG12	1.78	0.65
1:H:189:TRP:HB2	1:H:214:LEU:HD12	1.77	0.65
4:W:184:ILE:HG21	4:W:242:SER:HB3	1.79	0.65
1:L:177:VAL:HB	1:L:287:PRO:HG2	1.78	0.65
2:O:251:MET:HE1	2:O:285:VAL:HG22	1.80	0.64
4:d:177:SER:HB3	4:d:313:ILE:HG23	1.79	0.64
2:O:264:ALA:HB1	2:O:267:LEU:HD12	1.80	0.64
4:U:32:GLU:HA	4:U:57:PRO:HG3	1.79	0.64
4:S:18:PHE:HB2	4:S:69:ILE:HD13	1.79	0.64
4:Y:1:MET:SD	4:Y:2:LYS:HG2	2.38	0.64
1:I:150:GLU:HG3	4:Z:106:PRO:HG3	1.78	0.64
2:N:118:ASN:HB2	2:N:130:GLU:HB3	1.78	0.64
4:Y:32:GLU:HA	4:Y:57:PRO:HG3	1.78	0.64
1:G:4:TYR:HE1	4:b:101:ARG:HH22	1.46	0.64
2:M:158:PHE:HB3	2:M:159:PRO:HD3	1.80	0.63
4:T:27:GLY:HA3	5:A:29:VAL:HG13	1.79	0.63
1:J:215:PRO:HD3	1:J:246:TRP:CE3	2.33	0.63
2:M:424:LEU:HD23	2:M:428:ILE:HD11	1.79	0.63
4:a:44:THR:HG21	4:c:110:ALA:HA	1.79	0.63
4:d:202:MET:HB2	4:d:227:PRO:HG3	1.79	0.63
1:H:234:ILE:HB	1:H:243:GLN:HG2	1.81	0.63
5:C:164:ARG:HH22	5:C:166:ASP:HB3	1.64	0.63
4:V:113:VAL:HG22	4:V:114:SER:H	1.63	0.63
4:c:209:GLN:HE21	4:c:222:VAL:HG21	1.61	0.63
1:J:214:LEU:HA	1:J:246:TRP:HZ3	1.63	0.63
4:V:32:GLU:HA	4:V:57:PRO:HG3	1.81	0.63
1:G:12:ARG:HD3	1:G:94:ASP:HB2	1.79	0.62
2:M:554:GLU:O	2:M:558:ARG:HG3	2.00	0.62
4:b:32:GLU:HA	4:b:57:PRO:HG3	1.80	0.62
1:L:234:ILE:H	1:L:243:GLN:NE2	1.97	0.62
4:S:175:LEU:HB2	4:T:119:LEU:HD21	1.80	0.62
2:O:424:LEU:HD23	2:O:428:ILE:HD11	1.82	0.62
4:X:206:LEU:HB2	4:X:280:LEU:HD11	1.80	0.62
4:c:83:THR:HG22	4:c:90:PRO:HA	1.80	0.62
1:J:44:LYS:HB2	1:J:62:ARG:HH21	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:98:GLU:HG2	1:J:115:ARG:HB3	1.82	0.62
1:L:234:ILE:H	1:L:243:GLN:HE21	1.47	0.62
2:N:160:ARG:HH12	2:O:575:VAL:HG13	1.64	0.62
2:O:61:PRO:HG2	2:O:68:THR:HB	1.82	0.62
4:V:184:ILE:HG21	4:V:242:SER:HB3	1.81	0.62
5:A:34:THR:HG22	5:A:36:GLU:H	1.64	0.62
2:N:460:SER:HA	2:N:463:LEU:HD23	1.82	0.61
4:X:18:PHE:HB3	4:X:64:ALA:HB3	1.82	0.61
4:Y:260:THR:HG23	4:Y:269:PRO:HB3	1.82	0.61
4:b:261:ALA:HB3	4:b:271:LEU:HB2	1.82	0.61
1:J:5:VAL:HG13	1:J:105:THR:HG22	1.81	0.61
4:a:177:SER:HB3	4:a:313:ILE:HG23	1.82	0.61
2:M:42:HIS:HD1	2:O:445:TRP:CD1	2.19	0.61
5:C:66:GLU:HB3	5:C:89:THR:HB	1.81	0.61
5:B:72:ILE:HD11	5:B:84:ILE:HG12	1.83	0.61
5:E:110:GLN:HB2	5:E:128:PRO:HG3	1.82	0.61
1:H:127:ASP:HB3	1:H:130:LEU:HG	1.83	0.61
4:b:189:ALA:HB3	4:b:297:LEU:HD22	1.80	0.61
5:C:16:ALA:HB2	5:D:175:VAL:HG12	1.82	0.61
2:M:499:ILE:HD11	2:M:524:MET:HG2	1.82	0.60
1:J:215:PRO:HD3	1:J:246:TRP:HE3	1.63	0.60
2:M:420:ILE:HD12	3:R:37:HIS:HB3	1.81	0.60
4:T:192:SER:HB2	4:T:302:ALA:HB3	1.82	0.60
5:A:15:ILE:HG12	5:A:146:ARG:HH21	1.67	0.60
1:J:236:ALA:HB3	1:J:240:SER:H	1.67	0.60
2:N:354:ILE:HG22	2:N:362:ILE:HD13	1.84	0.60
4:Z:12:MET:HE1	4:Z:72:ILE:HD12	1.84	0.60
4:c:18:PHE:HB3	4:c:64:ALA:HB3	1.82	0.60
3:R:65:THR:HG22	3:R:67:GLY:H	1.67	0.60
4:a:159:PHE:HZ	4:a:298:ALA:HA	1.66	0.60
4:W:261:ALA:HB3	4:W:271:LEU:HB2	1.83	0.60
4:b:188:GLY:HA3	4:b:299:ALA:HB1	1.83	0.60
1:J:192:PRO:HG2	1:J:263:LEU:HB3	1.84	0.60
4:T:208:VAL:HG21	4:T:250:ILE:HG12	1.82	0.60
5:F:243:GLU:HA	5:F:249:ASN:HA	1.84	0.60
5:A:66:GLU:HB3	5:A:89:THR:HB	1.84	0.60
4:T:187:ALA:HB3	4:T:300:ARG:HB2	1.84	0.60
1:H:192:PRO:HG3	1:H:263:LEU:HB3	1.84	0.60
2:N:466:LEU:HD21	3:R:5:PRO:HD2	1.84	0.60
4:Y:184:ILE:HG21	4:Y:242:SER:HB2	1.82	0.60
5:D:78:PRO:HG3	5:F:130:VAL:HG22	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:35:LEU:HD11	5:E:156:LEU:HD21	1.84	0.59
1:H:64:ARG:HB3	1:H:142:ALA:HB3	1.84	0.59
2:M:191:PRO:HD2	2:M:194:PRO:HG3	1.83	0.59
2:N:406:LEU:HB3	3:Q:52:LEU:HD13	1.84	0.59
4:T:18:PHE:HB2	4:T:69:ILE:HD13	1.84	0.59
4:S:240:ALA:HB1	4:S:263:ARG:HD2	1.83	0.59
4:b:166:ALA:HB1	4:b:202:MET:HE1	1.83	0.59
2:M:402:GLY:HA2	3:R:48:LEU:HD22	1.85	0.59
4:X:18:PHE:HB2	4:X:69:ILE:HD13	1.83	0.59
4:Y:18:PHE:HB2	4:Y:69:ILE:HD13	1.83	0.59
2:N:400:LEU:HB2	2:N:414:SER:HB2	1.83	0.59
3:P:65:THR:HG22	3:P:67:GLY:H	1.67	0.59
4:V:192:SER:HB2	4:V:302:ALA:HB3	1.83	0.59
5:D:3:PHE:HE2	5:E:19:ASN:HD22	1.51	0.59
1:G:182:THR:HG22	1:G:224:THR:HG22	1.85	0.59
2:O:399:ALA:O	2:O:403:TYR:HB2	2.02	0.59
2:N:212:HIS:HB2	2:N:282:VAL:HG22	1.85	0.59
4:X:73:PRO:HG2	4:X:76:ALA:HB2	1.85	0.59
2:N:181:LEU:HD23	2:N:209:TRP:HH2	1.68	0.58
4:V:175:LEU:HD12	4:V:311:ASP:HB3	1.85	0.58
2:O:163:MET:HB3	3:Q:17:VAL:HG13	1.84	0.58
4:T:209:GLN:HB3	4:T:220:HIS:HB2	1.84	0.58
5:C:166:ASP:OD1	5:C:179:LYS:HB3	2.04	0.58
4:S:13:SER:HB2	4:S:16:SER:HB3	1.86	0.58
4:c:124:MET:HE2	4:c:305:TYR:HA	1.84	0.58
4:X:175:LEU:HD12	4:X:311:ASP:HB3	1.86	0.58
4:c:177:SER:HB3	4:c:313:ILE:HG23	1.85	0.58
4:c:175:LEU:HD12	4:c:311:ASP:HB3	1.86	0.58
4:a:124:MET:HE2	4:a:305:TYR:HA	1.84	0.58
1:L:127:ASP:HB3	1:L:130:LEU:HG	1.85	0.58
4:a:188:GLY:HA3	4:a:299:ALA:HB1	1.86	0.58
1:H:303:VAL:HG11	4:b:132:ARG:HE	1.69	0.58
2:N:159:PRO:HG3	3:R:28:ARG:HH11	1.69	0.58
2:M:394:ILE:HG13	2:O:394:ILE:HD12	1.86	0.57
2:N:378:VAL:HG22	2:N:433:GLN:HG2	1.86	0.57
1:H:6:LYS:HE2	1:H:22:ALA:O	2.04	0.57
4:V:124:MET:HE2	4:V:305:TYR:HA	1.85	0.57
4:W:18:PHE:HB3	4:W:64:ALA:HB3	1.86	0.57
4:W:186:ASN:HB2	4:W:243:ASP:HA	1.85	0.57
4:W:257:ARG:HG2	4:W:275:ASP:HB3	1.85	0.57
1:J:177:VAL:HB	1:J:287:PRO:HG2	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:V:261:ALA:HB3	4:V:271:LEU:HB2	1.85	0.57
4:X:124:MET:HE2	4:X:305:TYR:HA	1.85	0.57
5:E:14:ALA:HB1	5:F:175:VAL:HG11	1.85	0.57
5:E:72:ILE:HD11	5:E:84:ILE:HG13	1.86	0.57
4:c:261:ALA:HB3	4:c:271:LEU:HB2	1.86	0.57
5:C:72:ILE:HD11	5:C:82:ARG:HB2	1.86	0.57
2:O:6:ASP:O	2:O:10:ILE:HG13	2.04	0.57
2:O:59:SER:HA	2:O:527:GLU:HG2	1.87	0.57
2:O:400:LEU:HD13	2:O:415:ILE:HA	1.84	0.57
4:a:192:SER:HB2	4:a:302:ALA:HB3	1.87	0.57
1:G:72:VAL:HG11	1:G:86:ASP:HB3	1.87	0.57
1:G:298:HIS:HB2	1:L:91:TRP:CE2	2.40	0.57
1:H:35:VAL:HG13	1:H:68:PHE:HB3	1.87	0.57
2:M:174:MET:HE2	3:P:22:VAL:HG21	1.86	0.57
4:c:219:TRP:HB3	4:c:271:LEU:HD11	1.85	0.57
5:B:149:ARG:HE	5:B:201:PRO:HB2	1.69	0.57
1:I:127:ASP:HB3	1:I:130:LEU:HG	1.87	0.57
1:J:182:THR:HB	1:J:283:LYS:HG2	1.86	0.57
4:U:188:GLY:HA3	4:U:299:ALA:HB1	1.85	0.57
2:M:389:ILE:O	2:M:393:ILE:HG22	2.04	0.57
2:O:140:LEU:HB3	2:O:237:ASP:HB3	1.86	0.57
4:d:175:LEU:HB2	4:b:119:LEU:HD21	1.86	0.56
4:b:202:MET:HE3	4:b:227:PRO:HA	1.85	0.56
5:A:175:VAL:HG12	5:F:16:ALA:HB2	1.86	0.56
2:M:415:ILE:HB	3:R:38:ARG:HG2	1.86	0.56
2:N:134:GLN:HG3	2:N:138:THR:HG21	1.87	0.56
2:O:390:ALA:O	2:O:394:ILE:HG12	2.04	0.56
4:Z:202:MET:HE2	4:Z:227:PRO:HA	1.86	0.56
5:E:187:ASP:HB3	5:E:190:VAL:HG22	1.87	0.56
5:F:66:GLU:HB3	5:F:89:THR:HB	1.86	0.56
1:L:185:ALA:HB3	1:L:186:PRO:HD3	1.87	0.56
1:L:189:TRP:HB2	1:L:214:LEU:HD12	1.88	0.56
4:S:21:GLU:HB2	4:S:59:LEU:HD11	1.88	0.56
4:T:172:PRO:HG3	4:T:288:TYR:CZ	2.39	0.56
4:Y:189:ALA:HA	4:Y:212:THR:HG23	1.86	0.56
2:O:100:THR:HG21	2:O:257:LEU:HD11	1.86	0.56
2:M:160:ARG:NH1	2:O:425:VAL:HG23	2.20	0.56
2:O:218:TRP:HD1	2:O:219:LEU:HD22	1.71	0.56
4:d:124:MET:HE2	4:d:305:TYR:HA	1.86	0.56
4:d:164:ARG:HD3	4:d:229:GLY:H	1.70	0.56
1:K:228:ASP:HB3	1:K:231:VAL:HG22	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:78:PRO:HG3	5:D:130:VAL:HG22	1.87	0.56
5:E:66:GLU:HB3	5:E:89:THR:HB	1.86	0.56
2:O:217:PRO:HD2	2:O:220:ILE:HB	1.88	0.56
4:Z:32:GLU:HA	4:Z:57:PRO:HG3	1.86	0.56
4:V:202:MET:HG3	4:V:205:TRP:CD1	2.41	0.56
1:G:19:LEU:HB3	1:G:31:LEU:HB2	1.86	0.55
2:N:61:PRO:HG2	2:N:68:THR:HB	1.87	0.55
2:N:156:PHE:CE2	2:N:158:PHE:HB2	2.41	0.55
4:a:194:VAL:HG23	4:a:210:PHE:HE2	1.71	0.55
4:a:205:TRP:CE2	4:a:224:GLY:HA3	2.42	0.55
4:c:189:ALA:HB3	4:c:297:LEU:HD21	1.89	0.55
1:H:215:PRO:HD3	1:H:246:TRP:CE3	2.41	0.55
4:Y:168:LEU:HG	4:Y:202:MET:HE3	1.88	0.55
1:K:26:ARG:NH1	4:U:11:PRO:HG3	2.22	0.55
2:O:175:LEU:HD23	2:O:236:VAL:HG13	1.87	0.55
4:U:69:ILE:HA	4:U:72:ILE:HD12	1.89	0.55
2:N:164:LEU:HD12	3:R:18:ILE:HB	1.88	0.55
4:W:177:SER:HB3	4:W:313:ILE:HG23	1.88	0.55
4:X:249:LEU:HD21	4:X:251:LYS:HE3	1.87	0.55
2:M:210:GLN:OE1	2:O:446:MET:HA	2.06	0.55
5:B:66:GLU:HB3	5:B:89:THR:HB	1.89	0.55
1:L:185:ALA:O	1:L:217:LEU:HB2	2.06	0.55
4:S:195:VAL:HG21	4:S:202:MET:HE3	1.88	0.55
1:I:98:GLU:HG2	1:I:115:ARG:HB3	1.87	0.55
3:Q:34:GLU:O	3:Q:38:ARG:HG3	2.05	0.55
4:a:32:GLU:HA	4:a:57:PRO:HG3	1.89	0.55
1:H:110:ARG:HB3	1:H:147:TRP:HB3	1.89	0.55
1:I:105:THR:HG22	1:I:106:SER:H	1.72	0.55
2:N:398:GLY:O	2:N:402:GLY:HA3	2.06	0.55
2:O:164:LEU:HD21	2:O:174:MET:HB2	1.88	0.55
4:V:48:ILE:HA	4:X:131:PRO:HB3	1.88	0.55
4:b:180:VAL:HG21	4:b:196:LEU:HD21	1.88	0.55
5:A:16:ALA:HB2	5:B:175:VAL:HG12	1.89	0.55
2:M:391:LYS:HE3	2:O:393:ILE:HD11	1.89	0.55
3:Q:65:THR:HA	3:R:59:ILE:HA	1.89	0.55
5:A:141:VAL:HG12	5:F:3:PHE:HE1	1.71	0.55
5:E:166:ASP:HB3	5:E:179:LYS:HB3	1.89	0.55
1:G:26:ARG:HH22	4:d:99:THR:HG21	1.72	0.54
4:V:13:SER:HB2	4:V:16:SER:HB3	1.89	0.54
4:d:162:PHE:HE2	4:d:164:ARG:HB2	1.71	0.54
5:D:16:ALA:HB2	5:E:175:VAL:HG12	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:M:474:LEU:HA	2:M:477:LYS:HE2	1.89	0.54
2:O:402:GLY:HA2	3:P:46:ASN:HD21	1.72	0.54
4:X:144:ASP:HB3	4:X:153:ARG:NH1	2.23	0.54
1:L:298:HIS:HE1	1:K:88:ARG:HG2	1.73	0.54
2:M:392:LEU:O	2:M:396:THR:HG23	2.08	0.54
2:N:266:GLY:H	4:S:161:PHE:HE2	1.54	0.54
4:X:22:LEU:HD12	4:X:60:LEU:HD23	1.90	0.54
2:O:420:ILE:HG23	2:O:423:PHE:HD2	1.71	0.54
4:b:25:LYS:HE3	5:F:26:PRO:HB2	1.90	0.54
1:I:189:TRP:HB2	1:I:214:LEU:HD12	1.89	0.54
2:M:108:LYS:HE2	2:M:524:MET:HE2	1.89	0.54
4:T:21:GLU:HB2	4:T:59:LEU:HD11	1.90	0.54
2:O:400:LEU:HD13	2:O:415:ILE:HG13	1.90	0.54
4:S:124:MET:HE2	4:S:305:TYR:HA	1.89	0.54
4:c:73:PRO:HD2	4:c:76:ALA:HB2	1.90	0.54
4:c:179:THR:HB	4:c:310:LYS:HG2	1.90	0.54
1:K:185:ALA:O	1:K:217:LEU:HB2	2.08	0.53
2:O:266:GLY:H	4:W:161:PHE:HE2	1.55	0.53
1:L:203:ARG:HB3	1:L:206:MET:HB3	1.91	0.53
2:O:376:SER:HB3	2:O:450:GLU:HB3	1.89	0.53
4:d:86:GLU:OE1	4:d:87:THR:HG23	2.08	0.53
1:H:6:LYS:HE3	4:a:9:THR:HG21	1.90	0.53
2:N:6:ASP:O	2:N:10:ILE:HG13	2.09	0.53
4:a:195:VAL:HG11	4:a:202:MET:HE3	1.91	0.53
4:a:253:ASN:HB2	4:a:313:ILE:HD13	1.90	0.53
4:Y:162:PHE:HE2	4:Y:164:ARG:HB2	1.73	0.53
5:F:158:PRO:HG3	5:F:190:VAL:HG21	1.89	0.53
1:H:82:TRP:CH2	1:H:128:PRO:HB2	2.44	0.53
1:K:26:ARG:HH12	4:U:11:PRO:HG3	1.72	0.53
4:X:168:LEU:HG	4:X:202:MET:HE3	1.90	0.53
4:X:186:ASN:ND2	4:X:243:ASP:HA	2.23	0.53
4:X:220:HIS:HB3	4:X:234:ILE:HG23	1.89	0.53
4:d:40:PHE:HE2	4:d:51:LEU:HD13	1.74	0.53
5:B:17:PRO:HD3	5:C:176:ILE:HG13	1.90	0.53
2:N:420:ILE:HG22	2:N:424:LEU:HD13	1.91	0.53
4:S:188:GLY:HA3	4:S:299:ALA:HB1	1.90	0.53
4:a:261:ALA:HB3	4:a:271:LEU:HB2	1.91	0.53
4:X:261:ALA:HB3	4:X:271:LEU:HB2	1.91	0.53
1:K:64:ARG:HD3	1:K:112:LEU:HD21	1.91	0.53
4:S:194:VAL:HG23	4:S:210:PHE:HE2	1.74	0.53
4:Y:129:LEU:HD11	4:Y:155:ILE:HD12	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:185:ALA:HB3	1:G:186:PRO:HD3	1.91	0.52
1:I:147:TRP:CZ2	1:I:293:PRO:HG3	2.44	0.52
4:T:147:ILE:HD12	4:T:151:PRO:HA	1.91	0.52
1:G:207:ASP:CG	1:G:210:ARG:HD2	2.35	0.52
1:J:46:LEU:HB2	1:J:57:ALA:O	2.09	0.52
2:M:345:THR:HG22	2:M:347:ALA:H	1.74	0.52
2:N:474:LEU:HA	2:N:477:LYS:HE2	1.90	0.52
2:O:147:PRO:HB3	2:O:159:PRO:O	2.08	0.52
2:O:156:PHE:CE1	2:O:158:PHE:HB2	2.45	0.52
4:T:12:MET:HG2	4:T:18:PHE:HD1	1.74	0.52
4:c:220:HIS:HB3	4:c:234:ILE:HG23	1.89	0.52
4:V:49:ALA:HB3	4:V:72:ILE:HD11	1.90	0.52
4:Y:40:PHE:HE2	4:Y:51:LEU:HD13	1.73	0.52
4:U:18:PHE:HB2	4:U:69:ILE:HD13	1.89	0.52
4:a:1:MET:HG3	4:a:3:HIS:H	1.74	0.52
4:V:260:THR:HG23	4:V:269:PRO:HB3	1.91	0.52
4:a:127:THR:HA	4:a:153:ARG:HH21	1.74	0.52
2:O:420:ILE:HG23	2:O:423:PHE:CD2	2.44	0.52
4:b:14:ARG:HG3	4:b:102:GLU:OE1	2.10	0.52
4:c:18:PHE:HB2	4:c:69:ILE:HD13	1.92	0.52
1:L:44:LYS:HB2	1:L:62:ARG:HE	1.74	0.52
4:S:32:GLU:HA	4:S:57:PRO:HG3	1.92	0.52
4:S:189:ALA:HB3	4:S:297:LEU:HD11	1.90	0.52
4:Y:110:ALA:HA	4:Z:118:LEU:HD21	1.91	0.52
1:K:185:ALA:HB3	1:K:186:PRO:HD3	1.92	0.51
2:M:214:LYS:HB3	2:M:284:GLU:HG3	1.91	0.51
4:Y:22:LEU:HB2	4:Y:60:LEU:HB3	1.92	0.51
1:I:181:TRP:HB2	1:I:225:VAL:HB	1.93	0.51
2:M:466:LEU:HD21	3:P:5:PRO:HD2	1.91	0.51
2:N:415:ILE:HG23	2:N:419:VAL:HG11	1.91	0.51
3:P:66:LEU:HD11	3:Q:60:MET:HE3	1.91	0.51
5:C:110:GLN:HB2	5:C:128:PRO:HG3	1.91	0.51
2:M:253:TYR:HB2	2:M:281:LEU:HD11	1.92	0.51
2:O:419:VAL:HG13	2:O:420:ILE:HD12	1.93	0.51
4:S:175:LEU:HB3	4:S:311:ASP:HB2	1.92	0.51
4:Y:162:PHE:CE2	4:Y:164:ARG:HB2	2.45	0.51
4:b:205:TRP:CE2	4:b:224:GLY:HA3	2.46	0.51
5:A:165:LEU:HB3	5:F:67:PHE:HE1	1.76	0.51
1:K:5:VAL:HG22	1:K:105:THR:HG22	1.92	0.51
4:d:249:LEU:HB3	4:d:262:PHE:HB2	1.92	0.51
1:G:189:TRP:HB2	1:G:214:LEU:HD12	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:63:ARG:HH11	1:H:141:VAL:HG21	1.76	0.51
2:N:415:ILE:HG21	3:Q:38:ARG:HG2	1.92	0.51
2:M:367:MET:HE3	2:N:119:ILE:HD12	1.91	0.51
4:T:202:MET:HB2	4:T:227:PRO:HG3	1.93	0.51
4:V:92:MET:HE3	4:W:13:SER:HB3	1.93	0.51
4:X:189:ALA:HB3	4:X:297:LEU:HD22	1.92	0.51
4:b:247:ASN:HD22	4:b:248:ALA:H	1.56	0.51
4:c:157:PRO:HD3	4:c:293:TRP:CG	2.46	0.51
4:T:18:PHE:HB3	4:T:64:ALA:HB3	1.93	0.51
4:a:1:MET:HE3	4:a:3:HIS:HA	1.92	0.51
4:d:44:THR:HA	4:b:105:PHE:HB3	1.93	0.51
4:b:164:ARG:HE	4:b:294:ILE:HG23	1.76	0.51
2:M:61:PRO:HB3	2:M:525:VAL:HG22	1.93	0.51
4:X:192:SER:HB2	4:X:302:ALA:HB3	1.93	0.51
5:E:96:MET:HE1	5:E:106:LEU:HD23	1.92	0.51
2:O:212:HIS:HB2	2:O:282:VAL:HG22	1.91	0.51
1:G:181:TRP:CD1	1:G:191:ILE:HD11	2.47	0.50
4:S:74:HIS:HE1	4:S:99:THR:HG23	1.76	0.50
4:a:240:ALA:HB1	4:a:263:ARG:HD2	1.94	0.50
4:V:218:LYS:HD2	4:V:239:ASP:HA	1.92	0.50
5:B:31:PRO:HB3	5:B:137:ARG:NH1	2.26	0.50
1:H:233:THR:HG23	1:H:234:ILE:HG13	1.92	0.50
1:J:155:ILE:HD12	4:X:109:PRO:HG2	1.93	0.50
2:O:406:LEU:HB3	3:P:52:LEU:HD22	1.93	0.50
4:T:189:ALA:HB3	4:T:297:LEU:HD21	1.93	0.50
4:V:132:ARG:HH11	4:V:169:TRP:HH2	1.57	0.50
4:X:209:GLN:HE21	4:X:222:VAL:HG21	1.75	0.50
5:A:147:ASN:O	5:A:149:ARG:HG2	2.11	0.50
1:G:44:LYS:HB2	1:G:62:ARG:HD2	1.94	0.50
2:M:37:ASP:OD1	2:M:45:VAL:HG13	2.10	0.50
4:T:220:HIS:HB3	4:T:234:ILE:HG23	1.93	0.50
2:M:147:PRO:HB3	2:M:159:PRO:O	2.11	0.50
2:M:394:ILE:HG21	2:O:394:ILE:HG23	1.93	0.50
2:N:486:LEU:HD12	2:N:539:TRP:HB2	1.94	0.50
4:T:184:ILE:HG21	4:T:242:SER:HB3	1.94	0.50
4:Z:192:SER:HB2	4:Z:302:ALA:HB3	1.93	0.50
1:G:84:THR:O	1:G:88:ARG:HG3	2.12	0.50
1:J:26:ARG:HG2	1:J:26:ARG:HH11	1.76	0.50
1:J:185:ALA:HB3	1:J:186:PRO:HD3	1.94	0.50
2:O:311:LEU:HD23	2:O:326:VAL:HG21	1.94	0.50
3:R:34:GLU:HB3	3:R:38:ARG:NH2	2.27	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:V:3:HIS:CD2	4:W:19:LYS:HB3	2.46	0.50
4:W:194:VAL:HG23	4:W:210:PHE:HE2	1.76	0.50
4:X:219:TRP:HB3	4:X:271:LEU:HD11	1.93	0.50
4:T:168:LEU:HG	4:T:202:MET:HE3	1.94	0.50
4:Z:13:SER:HB2	4:Z:16:SER:OG	2.12	0.50
1:I:301:ARG:HB3	1:I:303:VAL:HG23	1.94	0.50
1:K:256:MET:HE2	1:K:256:MET:HA	1.94	0.50
1:J:185:ALA:O	1:J:217:LEU:HB2	2.11	0.50
4:V:187:ALA:HB3	4:V:300:ARG:HB2	1.93	0.50
4:Y:60:LEU:HD21	4:Y:80:LEU:HD21	1.94	0.50
1:H:248:GLY:O	2:M:306:GLY:HA2	2.11	0.50
4:b:199:ASP:HB3	4:b:286:PHE:CE1	2.47	0.50
5:C:96:MET:HE1	5:C:106:LEU:HD23	1.94	0.50
1:G:123:TYR:HE2	1:H:39:ILE:HG21	1.76	0.49
1:I:35:VAL:HG13	1:I:68:PHE:HB3	1.94	0.49
2:O:399:ALA:HB2	3:Q:48:LEU:HD12	1.94	0.49
4:Z:222:VAL:HG13	4:Z:232:TYR:HB2	1.93	0.49
4:b:175:LEU:HD12	4:b:311:ASP:HB3	1.94	0.49
1:L:192:PRO:HA	1:L:211:THR:HG22	1.94	0.49
2:M:167:PRO:HB3	2:M:223:SER:HB2	1.92	0.49
4:T:133:TRP:HB3	4:T:167:VAL:HG21	1.94	0.49
4:V:188:GLY:HA3	4:V:299:ALA:HB1	1.93	0.49
4:W:208:VAL:HG21	4:W:250:ILE:HG12	1.94	0.49
4:Z:257:ARG:HB3	4:Z:275:ASP:HB3	1.93	0.49
2:N:197:PRO:HA	2:N:268:MET:HE1	1.93	0.49
4:Z:158:ASP:OD1	4:Z:160:VAL:HG22	2.12	0.49
5:F:62:THR:O	5:F:92:PHE:HA	2.12	0.49
1:H:185:ALA:HB3	1:H:186:PRO:HD3	1.94	0.49
1:L:206:MET:HE3	4:U:170:PHE:HB2	1.93	0.49
2:N:420:ILE:HG22	2:N:420:ILE:O	2.12	0.49
4:T:195:VAL:HG21	4:T:202:MET:HE2	1.93	0.49
4:Z:27:GLY:HA3	5:D:29:VAL:HG13	1.94	0.49
1:I:19:LEU:HB3	1:I:31:LEU:HB2	1.93	0.49
2:N:570:VAL:HG13	2:O:573:HIS:CE1	2.47	0.49
5:B:35:LEU:HD21	5:B:139:ILE:HD13	1.93	0.49
1:G:178:TRP:CH2	1:G:254:PRO:HG3	2.48	0.49
1:H:122:ALA:HA	1:H:136:VAL:HG23	1.95	0.49
4:U:4:GLU:HG2	4:V:11:PRO:HB2	1.94	0.49
4:W:7:LEU:HD12	4:W:96:GLY:HA2	1.94	0.49
4:W:109:PRO:HG3	4:X:170:PHE:CE2	2.47	0.49
5:A:120:PHE:HB2	5:F:36:GLU:OE2	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:a:189:ALA:HB3	4:a:297:LEU:HD11	1.95	0.49
4:d:8:SER:O	4:d:96:GLY:HA3	2.13	0.49
5:D:6:ILE:HD11	5:E:45:ILE:HG13	1.93	0.49
2:N:415:ILE:HD12	2:N:415:ILE:H	1.76	0.49
4:S:208:VAL:HG22	4:S:221:ILE:HD13	1.95	0.49
4:V:157:PRO:HD3	4:V:293:TRP:CD1	2.48	0.49
4:Y:257:ARG:HG3	4:Y:275:ASP:HB3	1.95	0.49
4:d:60:LEU:HD21	4:d:80:LEU:HD21	1.95	0.49
4:a:1:MET:HB3	4:a:28:ASP:OD1	2.13	0.49
4:d:32:GLU:HA	4:d:57:PRO:HG3	1.95	0.49
5:A:103:VAL:O	5:A:107:ILE:HG12	2.13	0.49
1:L:222:HIS:HB3	2:N:10:ILE:HD13	1.95	0.49
2:N:387:ASP:OD1	2:N:389:ILE:HG12	2.13	0.49
4:a:109:PRO:HG3	4:c:170:PHE:CZ	2.48	0.49
4:X:77:GLY:HA2	4:X:97:THR:HA	1.94	0.49
4:d:11:PRO:HB3	4:d:101:ARG:HD3	1.95	0.49
2:N:422:PRO:HA	2:N:425:VAL:HG23	1.95	0.48
2:O:167:PRO:HB3	2:O:223:SER:HB2	1.95	0.48
2:O:566:ALA:O	2:O:570:VAL:HG23	2.12	0.48
4:b:192:SER:HB2	4:b:302:ALA:HB3	1.95	0.48
5:F:251:THR:HB	5:F:252:PRO:HD3	1.95	0.48
1:G:82:TRP:CH2	1:G:123:TYR:HE1	2.32	0.48
2:N:253:TYR:HB2	2:N:281:LEU:HD11	1.95	0.48
2:O:422:PRO:HA	2:O:425:VAL:HG13	1.94	0.48
3:P:55:PHE:HD1	3:P:59:ILE:HD12	1.79	0.48
4:a:95:TYR:CE1	4:c:101:ARG:HB3	2.48	0.48
4:a:138:GLY:HA3	4:a:165:ALA:HA	1.94	0.48
4:V:56:LYS:NZ	4:V:58:GLU:HB2	2.28	0.48
4:V:296:SER:O	4:V:297:LEU:HD23	2.13	0.48
4:W:8:SER:O	4:W:96:GLY:HA3	2.13	0.48
4:W:253:ASN:HB2	4:W:313:ILE:HD13	1.94	0.48
4:d:157:PRO:HD3	4:d:293:TRP:CD1	2.47	0.48
1:H:37:ASN:HB2	1:H:65:GLU:O	2.13	0.48
2:M:399:ALA:HB2	3:P:48:LEU:HD12	1.94	0.48
4:Z:164:ARG:HB3	4:Z:228:GLN:HG3	1.95	0.48
4:d:5:ALA:O	4:b:101:ARG:HD3	2.14	0.48
4:b:18:PHE:HB2	4:b:69:ILE:HD13	1.93	0.48
5:B:2:ASP:HB3	5:B:5:THR:HG23	1.94	0.48
5:D:7:LYS:HD2	5:E:21:THR:HB	1.95	0.48
1:I:74:HIS:HB3	1:I:77:TRP:CE2	2.49	0.48
2:M:236:VAL:O	2:M:240:ILE:HG12	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:O:29:PRO:HD2	2:O:52:PHE:CD1	2.48	0.48
4:S:159:PHE:HZ	4:S:299:ALA:H	1.61	0.48
4:c:1:MET:CE	5:E:31:PRO:HD3	2.44	0.48
1:I:210:ARG:HH12	1:I:212:LEU:HD11	1.79	0.48
1:L:303:VAL:HG23	1:L:304:TYR:CD1	2.48	0.48
1:K:35:VAL:HG13	1:K:68:PHE:HB3	1.95	0.48
2:N:175:LEU:HD23	2:N:236:VAL:HG13	1.94	0.48
4:S:238:VAL:HG12	4:S:271:LEU:HD13	1.95	0.48
1:H:181:TRP:CD1	1:H:191:ILE:HD11	2.48	0.48
1:I:82:TRP:CH2	1:I:128:PRO:HB2	2.48	0.48
1:J:214:LEU:HD23	1:J:246:TRP:CZ3	2.48	0.48
4:U:261:ALA:HB3	4:U:271:LEU:HB2	1.96	0.48
4:c:168:LEU:HG	4:c:202:MET:HE3	1.94	0.48
5:F:187:ASP:HB3	5:F:190:VAL:HG22	1.94	0.48
1:J:181:TRP:HB2	1:J:225:VAL:CG2	2.43	0.48
1:J:187:GLY:HA2	1:J:269:THR:HB	1.96	0.48
2:N:74:ILE:HD12	2:N:78:HIS:HB3	1.95	0.48
2:O:373:LYS:O	2:O:448:TYR:HB2	2.13	0.48
4:V:162:PHE:CE2	4:V:164:ARG:HB2	2.48	0.48
1:K:203:ARG:HD2	1:K:207:ASP:OD2	2.14	0.48
1:J:180:ARG:HB2	1:J:285:THR:HB	1.95	0.48
2:N:515:ILE:HG13	2:O:89:GLN:HE21	1.77	0.48
3:P:68:ASN:O	3:P:68:ASN:ND2	2.47	0.48
4:d:124:MET:HE1	4:d:307:TRP:HB3	1.95	0.48
5:F:243:GLU:HG2	5:F:249:ASN:HB3	1.94	0.48
1:I:105:THR:HG22	1:I:106:SER:N	2.28	0.48
1:I:185:ALA:HB3	1:I:186:PRO:HD3	1.96	0.48
5:A:7:LYS:HD2	5:B:21:THR:HB	1.95	0.48
5:D:16:ALA:HA	5:E:175:VAL:HA	1.95	0.48
1:G:192:PRO:HG3	1:G:263:LEU:HB3	1.95	0.48
2:O:74:ILE:HD12	2:O:78:HIS:HB3	1.95	0.48
5:D:93:ASP:HB3	5:D:179:LYS:HE3	1.96	0.48
5:D:95:SER:HB2	5:D:179:LYS:HD3	1.95	0.48
5:E:26:PRO:O	5:E:29:VAL:HG22	2.14	0.48
4:a:308:TRP:CZ3	4:a:310:LYS:HE3	2.49	0.47
1:L:214:LEU:HA	1:L:246:TRP:CZ3	2.37	0.47
2:M:12:GLN:HG3	4:c:113:VAL:HG21	1.96	0.47
4:a:139:LYS:HB3	4:a:158:ASP:OD1	2.14	0.47
4:Y:209:GLN:HB3	4:Y:220:HIS:HB2	1.96	0.47
5:A:251:THR:OG1	5:A:252:PRO:HD3	2.14	0.47
5:B:36:GLU:OE2	5:C:120:PHE:HB2	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:133:ASP:OD2	5:C:84:ILE:HD11	2.14	0.47
2:N:566:ALA:O	2:N:570:VAL:HG23	2.15	0.47
2:O:87:LEU:HD11	2:O:94:GLN:O	2.15	0.47
2:O:298:PHE:HB2	2:O:350:PRO:HG2	1.96	0.47
4:V:222:VAL:HG12	4:V:234:ILE:HD13	1.96	0.47
4:b:257:ARG:NH2	4:b:280:LEU:HB3	2.30	0.47
4:c:192:SER:OG	4:c:302:ALA:HB3	2.14	0.47
5:D:62:THR:O	5:D:92:PHE:HA	2.15	0.47
4:Y:74:HIS:HB2	4:Y:100:ARG:HG3	1.97	0.47
4:Z:142:ILE:HG22	4:Z:153:ARG:HH21	1.80	0.47
1:H:215:PRO:HD3	1:H:246:TRP:CZ3	2.50	0.47
1:K:192:PRO:HG3	1:K:263:LEU:HB3	1.95	0.47
4:S:10:ILE:HD11	4:S:40:PHE:HE1	1.79	0.47
4:U:257:ARG:HG2	4:U:257:ARG:HH11	1.78	0.47
4:Z:14:ARG:NH1	4:Z:105:PHE:HE2	2.12	0.47
5:A:31:PRO:HB3	5:A:137:ARG:NH1	2.28	0.47
5:A:35:LEU:HD12	5:A:154:TYR:CG	2.49	0.47
5:A:139:ILE:HG22	5:A:141:VAL:HG23	1.97	0.47
5:D:141:VAL:HG23	5:D:154:TYR:HB3	1.95	0.47
5:D:166:ASP:OD1	5:D:179:LYS:HB3	2.15	0.47
1:H:214:LEU:HD23	1:H:246:TRP:CZ3	2.49	0.47
4:S:168:LEU:HD11	4:S:202:MET:HG3	1.96	0.47
4:a:25:LYS:HB2	4:a:28:ASP:HB3	1.97	0.47
5:E:67:PHE:CD2	5:F:164:ARG:HA	2.49	0.47
5:E:96:MET:SD	5:E:103:VAL:HG13	2.55	0.47
1:H:256:MET:HE3	1:H:257:PRO:HD2	1.96	0.47
1:L:155:ILE:HG12	1:L:283:LYS:HB3	1.97	0.47
1:K:181:TRP:CD1	1:K:191:ILE:HD11	2.49	0.47
4:W:65:GLU:HB2	4:W:68:GLU:HG3	1.95	0.47
4:Y:175:LEU:HD13	4:Z:119:LEU:HD21	1.97	0.47
4:d:149:LEU:HD23	4:d:149:LEU:H	1.80	0.47
4:b:208:VAL:HG21	4:b:250:ILE:HG12	1.96	0.47
4:c:150:HIS:CD2	4:c:152:LYS:HB2	2.50	0.47
1:J:181:TRP:HB2	1:J:225:VAL:HG22	1.96	0.47
2:N:30:LEU:HB3	2:N:102:ASP:HB2	1.97	0.47
2:N:263:PHE:CZ	4:S:139:LYS:HD2	2.50	0.47
2:O:339:GLN:OE1	4:W:126:ARG:HB2	2.15	0.47
4:a:21:GLU:HB2	4:a:59:LEU:HD11	1.95	0.47
4:a:40:PHE:HE2	4:a:51:LEU:HD13	1.80	0.47
4:U:194:VAL:HG23	4:U:210:PHE:HE2	1.79	0.47
4:W:1:MET:HB3	5:C:114:ASP:OD2	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Y:13:SER:HB2	4:Y:16:SER:HB3	1.97	0.47
5:A:36:GLU:OE2	5:B:120:PHE:HB2	2.14	0.47
1:H:203:ARG:HB3	1:H:206:MET:HB3	1.96	0.47
1:I:77:TRP:CH2	1:I:85:VAL:HG21	2.49	0.47
1:K:46:LEU:HD23	2:O:536:PRO:HB3	1.96	0.47
1:K:202:ALA:HB2	2:O:24:MET:HA	1.97	0.47
2:O:159:PRO:HG2	3:Q:28:ARG:NH1	2.29	0.47
4:b:162:PHE:CE2	4:b:164:ARG:HB2	2.50	0.47
5:B:110:GLN:NE2	5:B:128:PRO:HB3	2.29	0.47
1:G:123:TYR:CE2	1:H:39:ILE:HG21	2.49	0.47
1:L:195:SER:HA	1:L:253:TYR:CG	2.50	0.47
1:K:12:ARG:HD3	1:K:94:ASP:HB2	1.97	0.47
2:N:22:GLU:HG2	2:N:26:LYS:HE2	1.97	0.47
4:S:22:LEU:HB2	4:S:60:LEU:HB3	1.97	0.47
4:V:181:ASN:O	4:V:307:TRP:HA	2.15	0.47
4:Y:44:THR:HG21	4:Z:110:ALA:HA	1.96	0.47
1:G:252:LEU:HD23	2:N:49:ARG:NH1	2.31	0.46
1:J:161:LEU:HD12	1:J:269:THR:HG23	1.97	0.46
1:J:225:VAL:HA	1:J:233:THR:O	2.15	0.46
4:T:162:PHE:HD1	4:T:164:ARG:H	1.63	0.46
4:a:13:SER:HB3	4:Z:92:MET:HE2	1.97	0.46
4:X:188:GLY:HA3	4:X:299:ALA:HB1	1.97	0.46
4:d:188:GLY:HA3	4:d:299:ALA:HB1	1.96	0.46
1:J:82:TRP:CH2	1:J:128:PRO:HB2	2.50	0.46
4:a:173:LEU:HB3	4:a:311:ASP:OD1	2.16	0.46
5:F:150:GLU:HG2	5:F:201:PRO:HD2	1.97	0.46
1:I:10:THR:HB	1:I:100:THR:HG22	1.97	0.46
2:N:108:LYS:HE2	2:N:524:MET:SD	2.54	0.46
2:O:401:ILE:HA	2:O:405:LEU:HD13	1.98	0.46
2:O:436:ASN:HB2	2:O:473:PHE:CE1	2.50	0.46
4:d:22:LEU:HD22	4:d:94:ARG:HH21	1.79	0.46
5:E:103:VAL:O	5:E:107:ILE:HG12	2.15	0.46
1:I:43:VAL:HG11	1:I:59:LYS:HE2	1.96	0.46
2:O:30:LEU:HB3	2:O:102:ASP:HB2	1.96	0.46
5:D:35:LEU:HD12	5:D:154:TYR:CG	2.50	0.46
5:E:158:PRO:HG3	5:E:190:VAL:HG21	1.98	0.46
2:O:289:SER:HB2	2:O:520:GLN:OE1	2.14	0.46
3:Q:60:MET:HE2	3:R:59:ILE:HG23	1.96	0.46
4:a:221:ILE:HG12	4:a:271:LEU:HD22	1.98	0.46
4:X:164:ARG:HB3	4:X:228:GLN:HG3	1.97	0.46
4:Z:18:PHE:HB3	4:Z:64:ALA:HB3	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:82:TRP:CH2	1:G:128:PRO:HB2	2.50	0.46
1:K:256:MET:HB2	1:K:259:LYS:HG3	1.97	0.46
2:M:160:ARG:HH11	2:O:425:VAL:HG23	1.80	0.46
2:O:420:ILE:HG12	3:P:37:HIS:HB3	1.98	0.46
4:W:43:SER:O	4:X:106:PRO:HD2	2.16	0.46
1:H:246:TRP:HE1	1:H:249:ASN:C	2.23	0.46
2:N:8:TRP:O	2:N:12:GLN:HG2	2.14	0.46
2:N:377:VAL:HG12	2:N:473:PHE:CZ	2.51	0.46
2:O:302:THR:HG23	2:O:305:ASP:H	1.81	0.46
4:W:93:VAL:HG23	4:W:94:ARG:HG2	1.98	0.46
4:Z:12:MET:CE	4:Z:69:ILE:HB	2.46	0.46
4:Z:56:LYS:NZ	4:Z:58:GLU:HB2	2.30	0.46
4:Z:134:ARG:HH21	4:Z:168:LEU:HD12	1.81	0.46
1:G:185:ALA:O	1:G:217:LEU:HB2	2.16	0.46
2:M:406:LEU:HB2	3:R:56:PHE:HZ	1.80	0.46
2:M:422:PRO:HB2	2:N:389:ILE:HA	1.98	0.46
2:N:184:GLU:HG3	2:N:209:TRP:CE2	2.50	0.46
4:a:127:THR:HA	4:a:153:ARG:NH2	2.31	0.46
5:D:15:ILE:HG12	5:D:146:ARG:HH22	1.79	0.46
1:G:88:ARG:HA	1:H:298:HIS:HE1	1.81	0.46
1:L:127:ASP:HB2	5:D:76:GLY:HA2	1.98	0.46
2:N:61:PRO:HB3	2:N:525:VAL:HG22	1.97	0.46
4:S:136:VAL:HG12	4:S:136:VAL:O	2.15	0.46
4:a:184:ILE:HG21	4:a:242:SER:HB3	1.97	0.46
4:b:1:MET:SD	4:b:28:ASP:HA	2.56	0.46
5:E:43:LEU:HD21	5:E:141:VAL:HG11	1.98	0.46
5:F:35:LEU:HD21	5:F:139:ILE:HD13	1.97	0.46
1:L:256:MET:HB2	1:L:259:LYS:HG3	1.98	0.46
2:M:233:MET:HG3	2:O:431:TRP:CZ3	2.51	0.46
2:M:434:TRP:HD1	2:M:473:PHE:HE2	1.63	0.46
2:N:68:THR:H	2:N:135:ASP:CG	2.24	0.46
4:U:8:SER:O	4:U:96:GLY:HA3	2.16	0.46
4:Y:11:PRO:HB3	4:Y:101:ARG:HD3	1.98	0.46
4:Y:22:LEU:HD12	4:Y:60:LEU:HD23	1.98	0.46
4:Z:164:ARG:NH1	4:Z:229:GLY:HA2	2.31	0.46
5:B:71:ASP:HB3	5:B:80:PRO:HB3	1.98	0.46
1:I:26:ARG:HD3	4:Y:101:ARG:CZ	2.46	0.45
1:J:181:TRP:CD1	1:J:191:ILE:HD11	2.50	0.45
2:N:220:ILE:HD12	2:N:220:ILE:H	1.80	0.45
2:O:466:LEU:HD21	3:Q:5:PRO:HD2	1.98	0.45
4:Y:95:TYR:CE1	4:Z:101:ARG:HD3	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:b:253:ASN:HB2	4:b:313:ILE:HD12	1.98	0.45
5:E:35:LEU:HD13	5:E:154:TYR:CD1	2.51	0.45
1:H:19:LEU:HB3	1:H:31:LEU:HB2	1.98	0.45
1:H:303:VAL:HG22	4:b:131:PRO:HD2	1.98	0.45
3:Q:47:PRO:O	3:Q:50:PRO:HD2	2.17	0.45
4:U:129:LEU:HD11	4:U:155:ILE:HD12	1.99	0.45
4:Y:186:ASN:OD1	4:Y:243:ASP:HA	2.16	0.45
4:c:32:GLU:HA	4:c:57:PRO:HG3	1.98	0.45
5:B:103:VAL:O	5:B:107:ILE:HG12	2.16	0.45
1:H:63:ARG:HD3	1:I:54:GLU:HB2	1.98	0.45
1:I:130:LEU:O	5:C:130:VAL:HG11	2.17	0.45
1:L:12:ARG:HD3	1:L:94:ASP:HB2	1.97	0.45
2:M:85:LYS:HB3	2:O:512:VAL:HG13	1.98	0.45
4:T:263:ARG:HG2	4:T:264:ASN:OD1	2.16	0.45
4:U:162:PHE:HE2	4:U:164:ARG:HB2	1.81	0.45
4:d:150:HIS:HB2	4:d:244:ASN:HD22	1.81	0.45
4:d:192:SER:OG	4:d:302:ALA:HB3	2.16	0.45
4:b:143:TYR:OH	4:b:158:ASP:HA	2.17	0.45
5:D:137:ARG:HG2	5:D:158:PRO:O	2.17	0.45
1:G:9:LEU:HD11	1:G:99:CYS:HB3	1.98	0.45
1:L:147:TRP:CZ2	1:L:293:PRO:HG3	2.52	0.45
2:M:143:LEU:O	2:M:236:VAL:HG23	2.16	0.45
2:M:436:ASN:HB2	2:M:473:PHE:CZ	2.52	0.45
2:N:180:LEU:HA	2:N:183:VAL:HG22	1.98	0.45
2:O:354:ILE:HG22	2:O:362:ILE:HD13	1.97	0.45
2:O:393:ILE:O	2:O:397:THR:HG22	2.17	0.45
4:V:12:MET:CE	4:V:69:ILE:HB	2.45	0.45
4:V:113:VAL:HG22	4:V:114:SER:N	2.31	0.45
4:b:249:LEU:HB3	4:b:262:PHE:HB2	1.98	0.45
5:A:175:VAL:HA	5:F:16:ALA:HA	1.98	0.45
1:I:293:PRO:HB2	1:I:294:TRP:CE3	2.52	0.45
1:J:303:VAL:HG12	1:J:304:TYR:HD1	1.82	0.45
2:N:400:LEU:C	2:N:402:GLY:H	2.24	0.45
2:O:420:ILE:HG22	2:O:424:LEU:HD13	1.98	0.45
4:S:8:SER:O	4:S:96:GLY:HA3	2.16	0.45
4:S:11:PRO:HG2	4:b:4:GLU:OE1	2.16	0.45
4:U:157:PRO:HD3	4:U:293:TRP:CD1	2.51	0.45
4:U:297:LEU:HD12	4:U:299:ALA:H	1.82	0.45
4:Y:149:LEU:HD23	4:Y:149:LEU:H	1.82	0.45
5:A:16:ALA:HA	5:B:175:VAL:HA	1.98	0.45
5:E:3:PHE:HE1	5:F:141:VAL:HG12	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:95:TYR:CZ	1:H:43:VAL:HG21	2.51	0.45
1:I:95:TYR:HB2	1:J:59:LYS:HD3	1.98	0.45
1:L:74:HIS:HB3	1:L:77:TRP:CD2	2.52	0.45
1:L:293:PRO:HB2	1:L:294:TRP:CE3	2.52	0.45
2:N:373:LYS:O	2:N:448:TYR:HB2	2.17	0.45
2:N:420:ILE:HD12	3:Q:37:HIS:HB3	1.98	0.45
2:N:424:LEU:HD23	2:N:428:ILE:HD11	1.98	0.45
4:T:28:ASP:O	4:T:28:ASP:OD1	2.34	0.45
4:U:257:ARG:HG2	4:U:257:ARG:NH1	2.32	0.45
4:V:146:TRP:CE2	4:V:185:VAL:HG11	2.52	0.45
5:A:35:LEU:HD21	5:A:139:ILE:HD13	1.98	0.45
2:N:174:MET:CE	2:N:194:PRO:HD2	2.46	0.45
2:N:443:LEU:HB3	2:O:96:ASN:ND2	2.32	0.45
4:X:178:VAL:HG13	4:X:196:LEU:HD23	1.99	0.45
4:d:12:MET:HE1	4:d:72:ILE:HD12	1.98	0.45
5:B:249:ASN:HD22	5:B:249:ASN:C	2.16	0.45
5:E:251:THR:HB	5:E:252:PRO:HD3	1.99	0.45
1:H:77:TRP:CH2	1:H:85:VAL:HG21	2.52	0.45
1:H:300:ILE:H	4:c:43:SER:HB2	1.82	0.45
2:M:88:PRO:HA	2:M:95:LYS:HE3	1.98	0.45
2:N:448:TYR:HB3	2:O:142:TYR:CG	2.52	0.45
4:T:123:ASP:HA	4:T:306:ASP:HA	1.99	0.45
4:U:297:LEU:HD12	4:U:299:ALA:N	2.32	0.45
4:c:157:PRO:HD3	4:c:293:TRP:CD1	2.52	0.45
5:E:101:ARG:HH21	5:E:113:SER:HA	1.81	0.45
1:J:151:PRO:HB3	1:J:287:PRO:HA	1.98	0.45
2:O:68:THR:H	2:O:135:ASP:CG	2.25	0.45
4:V:249:LEU:HD21	4:V:251:LYS:HE3	1.99	0.45
4:b:294:ILE:HG22	4:b:294:ILE:O	2.16	0.45
4:c:134:ARG:HH21	4:c:136:VAL:HG22	1.82	0.45
5:A:43:LEU:HD22	5:A:152:TRP:CD1	2.52	0.45
1:G:10:THR:HB	1:G:100:THR:HG22	1.98	0.45
1:H:153:VAL:HG22	1:H:285:THR:HG23	1.99	0.45
1:H:155:ILE:HG21	2:M:4:ASP:OD1	2.17	0.45
1:H:246:TRP:CE2	1:H:249:ASN:HB2	2.52	0.45
1:K:104:GLU:HG2	4:U:7:LEU:HD21	1.98	0.45
2:M:33:ILE:HG13	2:M:80:ILE:HG21	1.99	0.45
2:M:393:ILE:HD11	2:N:391:LYS:HE3	1.99	0.45
2:M:431:TRP:CZ3	2:N:233:MET:HG3	2.52	0.45
2:N:24:MET:HE1	2:N:343:LEU:HD13	1.99	0.45
3:R:49:SER:O	3:R:53:THR:HG23	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:T:108:ALA:N	4:T:109:PRO:HD3	2.31	0.45
4:d:119:LEU:HD13	4:d:310:LYS:HB3	1.98	0.45
4:d:162:PHE:CE2	4:d:164:ARG:HB2	2.51	0.45
4:b:39:VAL:HG13	4:b:41:TYR:CE2	2.52	0.45
4:c:249:LEU:HD21	4:c:251:LYS:HE3	1.97	0.45
5:B:36:GLU:OE1	5:C:122:GLY:HA3	2.17	0.45
1:G:46:LEU:HB2	1:G:57:ALA:HB3	1.99	0.44
2:N:394:ILE:HD12	2:O:394:ILE:HG13	1.99	0.44
2:O:573:HIS:O	2:O:573:HIS:CD2	2.70	0.44
4:a:168:LEU:HD11	4:a:202:MET:HG3	1.99	0.44
4:W:23:ARG:NH1	4:W:25:LYS:HG2	2.32	0.44
5:A:74:ALA:HB2	5:A:81:ILE:HD13	1.99	0.44
5:A:164:ARG:HH11	5:A:164:ARG:HG2	1.82	0.44
1:G:166:THR:OG1	1:G:262:GLU:HB3	2.17	0.44
1:G:210:ARG:HH12	1:G:212:LEU:HD11	1.82	0.44
4:a:13:SER:HB2	4:a:16:SER:OG	2.17	0.44
4:W:188:GLY:HA3	4:W:299:ALA:HB1	1.99	0.44
4:b:187:ALA:HB3	4:b:300:ARG:HB3	1.99	0.44
1:G:119:GLU:HG3	1:H:42:PRO:HA	1.99	0.44
1:K:293:PRO:HB2	1:K:294:TRP:CE3	2.53	0.44
3:Q:38:ARG:O	3:Q:42:GLU:OE1	2.35	0.44
3:Q:70:LEU:HD11	3:R:69:LEU:HD11	1.99	0.44
4:T:157:PRO:HD3	4:T:293:TRP:CG	2.52	0.44
4:d:40:PHE:CE2	4:d:51:LEU:HD13	2.52	0.44
1:H:200:MET:HE3	1:H:201:PHE:CE2	2.52	0.44
2:N:147:PRO:HB3	2:N:159:PRO:O	2.17	0.44
2:O:415:ILE:HD12	2:O:415:ILE:H	1.82	0.44
4:U:222:VAL:HG12	4:U:234:ILE:HD13	1.99	0.44
5:B:251:THR:HB	5:B:252:PRO:HD3	1.99	0.44
4:T:135:LYS:NZ	4:T:139:LYS:HA	2.32	0.44
4:a:16:SER:HB2	4:Z:91:VAL:HA	1.98	0.44
4:V:159:PHE:HE1	4:V:300:ARG:HD3	1.82	0.44
4:W:13:SER:HB2	4:W:16:SER:HB3	1.99	0.44
4:W:205:TRP:CE2	4:W:224:GLY:HA3	2.52	0.44
4:Y:8:SER:O	4:Y:96:GLY:HA3	2.17	0.44
5:F:103:VAL:O	5:F:107:ILE:HG12	2.18	0.44
1:G:7:ILE:HD13	1:G:20:SER:HB3	2.00	0.44
1:H:73:GLY:HA3	1:H:133:ASP:OD1	2.18	0.44
2:M:550:MET:HE1	2:M:558:ARG:HD3	1.98	0.44
2:N:33:ILE:HD13	2:N:99:ILE:HG13	1.99	0.44
2:O:345:THR:HG22	2:O:347:ALA:H	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:S:109:PRO:HG2	4:T:171:ALA:HB2	1.99	0.44
4:a:21:GLU:HA	4:a:60:LEU:O	2.17	0.44
4:Y:79:GLU:HG2	4:Y:92:MET:SD	2.58	0.44
4:d:181:ASN:O	4:d:307:TRP:HA	2.17	0.44
1:G:210:ARG:CZ	1:G:212:LEU:HD21	2.48	0.44
1:L:192:PRO:HG3	1:L:263:LEU:HB3	1.99	0.44
1:K:121:LYS:HB2	1:K:137:MET:HB3	1.99	0.44
2:M:394:ILE:HG21	2:O:394:ILE:HD12	1.99	0.44
2:O:253:TYR:HB2	2:O:281:LEU:HD11	2.00	0.44
4:a:3:HIS:NE2	4:c:19:LYS:HB3	2.32	0.44
4:Y:147:ILE:HD12	4:Y:151:PRO:HA	2.00	0.44
4:c:262:PHE:CE2	4:c:269:PRO:HG3	2.53	0.44
5:B:135:TYR:CZ	5:B:161:LYS:HD2	2.53	0.44
5:F:112:PHE:CZ	5:F:125:LEU:HB3	2.53	0.44
1:G:119:GLU:CG	1:H:42:PRO:HA	2.47	0.44
1:G:181:TRP:CE2	1:G:284:LEU:HD13	2.52	0.44
2:M:200:TRP:CD2	2:M:204:LEU:HD11	2.53	0.44
2:M:406:LEU:HB2	3:R:56:PHE:CZ	2.53	0.44
2:N:431:TRP:HB2	2:O:153:ILE:HG22	1.98	0.44
4:T:135:LYS:HZ2	4:T:139:LYS:HA	1.83	0.44
4:V:173:LEU:H	4:V:287:ARG:HB3	1.82	0.44
4:W:192:SER:HB2	4:W:302:ALA:HB3	2.00	0.44
4:Y:157:PRO:HD3	4:Y:293:TRP:CD1	2.53	0.44
4:b:8:SER:O	4:b:96:GLY:HA3	2.17	0.44
4:c:69:ILE:HA	4:c:72:ILE:HD12	2.00	0.44
5:D:3:PHE:HE1	5:E:141:VAL:HG12	1.83	0.44
5:D:112:PHE:CZ	5:D:125:LEU:HB3	2.53	0.44
1:K:79:PRO:HB3	1:K:129:PHE:HD1	1.83	0.44
2:M:434:TRP:CD1	2:M:473:PHE:HE2	2.36	0.44
2:N:412:LEU:HD23	2:N:413:GLY:N	2.32	0.44
4:W:208:VAL:HG22	4:W:221:ILE:HD13	2.00	0.44
4:d:189:ALA:HA	4:d:212:THR:HG23	2.00	0.44
5:D:243:GLU:HG2	5:D:249:ASN:HA	2.00	0.44
1:I:153:VAL:HB	4:Z:109:PRO:HD2	1.98	0.43
1:L:123:TYR:CD2	1:L:128:PRO:HG2	2.53	0.43
4:S:138:GLY:HA3	4:S:165:ALA:HA	1.99	0.43
4:U:149:LEU:HD23	4:U:149:LEU:H	1.81	0.43
5:C:158:PRO:HG3	5:C:190:VAL:HG21	2.00	0.43
2:O:400:LEU:HD22	2:O:415:ILE:HG13	1.99	0.43
3:R:65:THR:HG22	3:R:67:GLY:N	2.33	0.43
2:M:334:PRO:HD2	2:M:337:TYR:CD2	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:O:573:HIS:O	2:O:574:LEU:HD22	2.18	0.43
4:S:205:TRP:CZ2	4:S:224:GLY:HA3	2.53	0.43
4:a:253:ASN:HD21	4:c:247:ASN:ND2	2.16	0.43
4:W:42:GLU:OE2	4:W:46:ALA:HB3	2.19	0.43
5:C:161:LYS:HB3	5:C:185:PHE:HE2	1.83	0.43
5:D:94:PHE:O	5:D:180:PRO:HD2	2.19	0.43
1:G:65:GLU:OE1	1:G:117:LEU:HD22	2.18	0.43
1:J:293:PRO:HB2	1:J:294:TRP:CE3	2.53	0.43
2:N:431:TRP:CZ3	2:O:233:MET:HG3	2.53	0.43
2:O:393:ILE:HD12	2:O:422:PRO:HD3	1.98	0.43
2:O:570:VAL:HG12	2:O:573:HIS:CE1	2.53	0.43
4:Y:296:SER:C	4:Y:297:LEU:HD12	2.43	0.43
4:Z:12:MET:HE3	4:Z:69:ILE:HB	1.98	0.43
4:Z:157:PRO:HD3	4:Z:293:TRP:CD1	2.52	0.43
4:d:221:ILE:HD11	4:d:271:LEU:HB3	2.00	0.43
4:c:221:ILE:HB	4:c:236:ALA:HB3	1.99	0.43
5:B:13:LEU:HD23	5:B:206:ILE:HD12	2.00	0.43
5:D:88:ARG:HB2	5:E:131:PRO:HG3	2.01	0.43
1:L:233:THR:H	1:L:243:GLN:HE22	1.66	0.43
1:K:77:TRP:CH2	1:K:85:VAL:HG21	2.53	0.43
2:M:301:GLY:C	2:M:516:VAL:HG12	2.43	0.43
2:N:419:VAL:HG22	2:O:391:LYS:NZ	2.33	0.43
2:N:509:SER:O	2:N:513:GLN:HG3	2.18	0.43
2:O:108:LYS:HD2	2:O:494:GLY:HA3	2.01	0.43
4:T:181:ASN:O	4:T:307:TRP:HA	2.19	0.43
4:T:186:ASN:ND2	4:T:243:ASP:HA	2.33	0.43
4:T:297:LEU:HD12	4:T:299:ALA:H	1.83	0.43
4:a:23:ARG:NH2	4:a:25:LYS:HG2	2.34	0.43
4:V:67:THR:HA	4:V:70:GLU:HG3	2.01	0.43
5:E:62:THR:HA	5:F:169:THR:HA	2.01	0.43
2:N:177:LEU:O	2:N:181:LEU:HG	2.18	0.43
3:Q:24:ALA:O	3:Q:28:ARG:HG3	2.18	0.43
4:S:175:LEU:HD23	4:S:177:SER:HB2	2.00	0.43
4:Z:65:GLU:HB2	4:Z:68:GLU:HG3	2.01	0.43
4:b:122:ASP:HB3	4:b:124:MET:HE2	2.01	0.43
1:I:241:PRO:HB3	1:I:244:HIS:ND1	2.33	0.43
1:L:59:LYS:HD3	1:K:95:TYR:HB2	1.99	0.43
1:K:181:TRP:CE2	1:K:284:LEU:HD13	2.53	0.43
1:K:189:TRP:HB2	1:K:214:LEU:HD12	2.00	0.43
2:M:142:TYR:O	2:O:449:TRP:HB2	2.18	0.43
2:M:161:MET:HE1	2:M:459:ASN:HB2	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:M:298:PHE:CG	2:M:307:PHE:HB3	2.54	0.43
2:O:143:LEU:HD23	2:O:236:VAL:HG21	2.01	0.43
4:Y:95:TYR:CZ	4:Z:101:ARG:HB3	2.53	0.43
4:d:147:ILE:HD12	4:d:151:PRO:HA	2.01	0.43
4:c:173:LEU:HB3	4:c:311:ASP:OD1	2.17	0.43
1:G:130:LEU:O	5:E:130:VAL:HG11	2.19	0.43
1:L:74:HIS:HB3	1:L:77:TRP:CE2	2.54	0.43
2:N:200:TRP:CD2	2:N:204:LEU:HD11	2.53	0.43
2:O:415:ILE:CG2	2:O:419:VAL:HG11	2.48	0.43
2:O:416:ALA:O	2:O:419:VAL:HG12	2.18	0.43
3:Q:65:THR:HG23	3:Q:68:ASN:H	1.83	0.43
4:U:41:TYR:CG	4:V:105:PHE:HZ	2.37	0.43
5:C:103:VAL:O	5:C:107:ILE:HG12	2.17	0.43
5:F:161:LYS:HB3	5:F:185:PHE:HE2	1.84	0.43
1:J:195:SER:HA	1:J:253:TYR:CG	2.54	0.43
2:M:226:TRP:HB2	3:P:4:LEU:HB2	2.00	0.43
2:M:298:PHE:CE2	2:M:349:GLN:HG3	2.54	0.43
4:U:177:SER:HB3	4:U:313:ILE:HG23	1.99	0.43
4:Y:181:ASN:O	4:Y:307:TRP:HA	2.18	0.43
4:d:164:ARG:CD	4:d:229:GLY:H	2.32	0.43
1:I:7:ILE:HG13	1:I:103:VAL:HG22	1.99	0.43
1:K:225:VAL:HG22	1:K:234:ILE:HG12	1.99	0.43
2:N:5:SER:HA	4:T:113:VAL:HG23	2.01	0.43
2:N:427:THR:HG23	2:O:158:PHE:HA	2.01	0.43
2:N:433:GLN:OE1	2:O:153:ILE:HD12	2.18	0.43
2:O:404:PHE:CZ	3:Q:50:PRO:HB2	2.54	0.43
4:S:219:TRP:CH2	4:S:263:ARG:HG2	2.54	0.43
4:T:261:ALA:HB3	4:T:271:LEU:HB2	2.00	0.43
4:V:168:LEU:HD23	4:V:290:GLY:HA3	2.00	0.43
4:W:42:GLU:HG2	4:W:44:THR:H	1.84	0.43
4:W:159:PHE:HA	4:W:162:PHE:O	2.19	0.43
4:Y:10:ILE:HG13	4:Y:78:PHE:CZ	2.54	0.43
4:c:12:MET:O	4:c:100:ARG:HA	2.19	0.43
5:B:144:ASP:HB3	5:B:151:VAL:HB	1.99	0.43
5:D:63:LEU:HB2	5:E:168:GLN:HB2	2.01	0.43
5:D:166:ASP:CG	5:D:179:LYS:HB3	2.44	0.43
2:N:298:PHE:CE2	2:N:349:GLN:HG3	2.54	0.42
2:O:404:PHE:CE1	3:Q:50:PRO:HB2	2.54	0.42
3:Q:49:SER:OG	3:Q:50:PRO:HD3	2.19	0.42
4:Z:8:SER:O	4:Z:96:GLY:HA3	2.19	0.42
4:Z:261:ALA:HB3	4:Z:271:LEU:HB3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:d:169:TRP:CD1	4:d:171:ALA:H	2.36	0.42
4:b:222:VAL:HG12	4:b:234:ILE:HD13	2.01	0.42
5:A:94:PHE:O	5:A:180:PRO:HD2	2.19	0.42
1:G:179:LEU:HD22	1:G:286:VAL:HG22	2.01	0.42
1:I:104:GLU:HG2	4:Y:7:LEU:HD21	2.00	0.42
1:L:153:VAL:HA	1:L:284:LEU:O	2.19	0.42
2:N:177:LEU:HB2	2:N:213:ILE:HG21	2.00	0.42
2:O:368:SER:HB3	2:O:481:THR:HG22	2.00	0.42
4:S:67:THR:HA	4:S:70:GLU:HG3	2.01	0.42
4:a:124:MET:HE1	4:a:307:TRP:HB3	2.00	0.42
4:a:164:ARG:HB3	4:a:228:GLN:HB2	2.00	0.42
4:U:201:ASN:O	4:U:227:PRO:HG3	2.19	0.42
4:Y:128:ILE:HG22	4:Y:130:GLY:N	2.34	0.42
4:d:139:LYS:HG3	4:d:161:PHE:CD2	2.54	0.42
4:c:1:MET:HE1	5:E:31:PRO:HD3	2.01	0.42
5:B:210:ALA:HB1	5:C:100:GLN:HA	2.01	0.42
5:D:35:LEU:HD22	5:D:45:ILE:HD13	2.00	0.42
5:E:25:ALA:HB1	5:E:29:VAL:HG21	2.02	0.42
1:H:127:ASP:HB2	5:B:76:GLY:HA2	2.00	0.42
2:O:180:LEU:HA	2:O:183:VAL:HG22	2.01	0.42
4:T:157:PRO:HD3	4:T:293:TRP:CD1	2.55	0.42
4:X:184:ILE:HG21	4:X:242:SER:HB3	2.01	0.42
5:A:35:LEU:HD22	5:A:45:ILE:HD13	2.00	0.42
5:E:20:LEU:HD12	5:E:141:VAL:O	2.19	0.42
1:H:118:GLU:OE2	1:H:139:THR:HG21	2.19	0.42
4:W:235:LYS:HB3	4:W:273:TRP:CD1	2.55	0.42
5:A:137:ARG:HG2	5:A:158:PRO:O	2.20	0.42
5:E:140:LEU:O	5:E:154:TYR:HA	2.19	0.42
1:H:91:TRP:CE2	1:I:298:HIS:HB2	2.54	0.42
1:K:228:ASP:OD1	1:K:230:ARG:HG2	2.20	0.42
2:O:216:SER:HB2	2:O:221:ASP:HA	2.02	0.42
2:O:570:VAL:HG12	2:O:573:HIS:HE1	1.83	0.42
4:S:260:THR:HB	4:S:269:PRO:HB3	2.00	0.42
4:U:219:TRP:CZ3	4:U:270:ILE:HD11	2.55	0.42
4:X:145:ASP:HB2	4:X:146:TRP:CE3	2.54	0.42
4:X:262:PHE:CE2	4:X:269:PRO:HG3	2.55	0.42
4:Y:92:MET:SD	4:Y:95:TYR:HB3	2.60	0.42
4:Y:208:VAL:HG22	4:Y:221:ILE:HD13	2.01	0.42
4:Z:150:HIS:HB2	4:Z:244:ASN:HD22	1.83	0.42
4:Z:249:LEU:HB3	4:Z:262:PHE:HB2	2.00	0.42
5:C:67:PHE:HE1	5:D:165:LEU:HB3	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:D:68:ASP:HB3	5:D:87:LYS:HG2	2.01	0.42
1:G:123:TYR:HD1	1:G:128:PRO:HB3	1.83	0.42
1:G:185:ALA:HB1	1:G:218:LYS:O	2.19	0.42
1:I:147:TRP:CE2	1:I:293:PRO:HG3	2.55	0.42
1:L:200:MET:HE1	1:L:254:PRO:HD2	2.00	0.42
2:N:176:ILE:O	2:N:180:LEU:HG	2.19	0.42
2:O:170:TRP:O	2:O:174:MET:HG2	2.19	0.42
4:U:22:LEU:HB2	4:U:60:LEU:HB3	2.02	0.42
4:d:7:LEU:HD12	4:d:96:GLY:HA2	2.01	0.42
4:d:42:GLU:CD	4:d:43:SER:H	2.28	0.42
4:b:67:THR:HA	4:b:70:GLU:HG3	2.02	0.42
4:c:188:GLY:HA3	4:c:299:ALA:HB1	2.02	0.42
5:A:164:ARG:HG2	5:A:164:ARG:NH1	2.35	0.42
5:D:251:THR:HB	5:D:252:PRO:HD3	2.01	0.42
5:F:15:ILE:HG12	5:F:146:ARG:HH21	1.85	0.42
1:K:196:TRP:HZ2	1:K:263:LEU:HD21	1.85	0.42
1:K:203:ARG:HG3	1:K:206:MET:HE2	2.01	0.42
2:N:290:ASN:OD1	2:N:293:ALA:HB3	2.19	0.42
2:O:161:MET:HE3	2:O:459:ASN:HB2	2.01	0.42
4:S:95:TYR:CZ	4:T:101:ARG:HB3	2.55	0.42
4:S:205:TRP:CE2	4:S:224:GLY:HA3	2.54	0.42
4:V:179:THR:HG23	4:V:251:LYS:HG2	2.02	0.42
4:Z:21:GLU:HB3	4:Z:61:LEU:HD13	2.02	0.42
4:c:72:ILE:HA	4:c:73:PRO:HD3	1.90	0.42
4:c:74:HIS:CG	4:c:104:ARG:HH21	2.38	0.42
5:B:112:PHE:CE2	5:B:125:LEU:HD13	2.54	0.42
5:D:186:ARG:NH1	5:E:129:LYS:HE2	2.35	0.42
1:I:110:ARG:HD2	1:I:293:PRO:O	2.19	0.42
1:L:236:ALA:HB3	1:L:240:SER:H	1.85	0.42
1:K:130:LEU:O	5:A:130:VAL:HG11	2.20	0.42
2:M:383:ASN:HD22	2:M:429:ALA:HB3	1.85	0.42
2:N:382:ASP:OD1	2:O:574:LEU:HG	2.19	0.42
2:N:405:LEU:HB3	2:N:409:PHE:CD2	2.55	0.42
4:U:193:THR:OG1	4:U:209:GLN:HG3	2.19	0.42
4:U:240:ALA:HB1	4:U:263:ARG:HD2	2.02	0.42
4:W:209:GLN:HG3	4:W:222:VAL:HG11	2.01	0.42
5:D:36:GLU:OE2	5:E:120:PHE:HB2	2.20	0.42
5:F:101:ARG:HH21	5:F:113:SER:HA	1.84	0.42
1:G:74:HIS:HB3	1:G:77:TRP:CE2	2.55	0.42
1:G:203:ARG:O	1:G:207:ASP:HB2	2.20	0.42
1:I:238:ASN:HA	4:Y:132:ARG:HH12	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:241:PRO:HB3	1:I:244:HIS:HD1	1.85	0.42
2:M:339:GLN:OE1	4:a:126:ARG:HB2	2.20	0.42
2:M:384:PRO:HG3	2:N:574:LEU:HD21	2.01	0.42
2:O:347:ALA:HB2	2:O:501:HIS:HD2	1.85	0.42
2:O:573:HIS:C	2:O:574:LEU:HD22	2.45	0.42
4:a:6:VAL:HB	4:a:94:ARG:HD3	2.02	0.42
4:V:185:VAL:HB	4:V:303:CYS:HB2	2.01	0.42
4:Z:202:MET:HE2	4:Z:202:MET:HB3	1.83	0.42
2:M:386:ALA:HB1	2:M:389:ILE:HD12	2.02	0.42
2:M:412:LEU:CD2	2:M:414:SER:H	2.32	0.42
2:N:276:VAL:O	2:N:277:LYS:HB2	2.20	0.42
4:T:144:ASP:OD1	4:T:147:ILE:HB	2.19	0.42
4:a:18:PHE:HE2	4:a:62:PHE:HB3	1.85	0.42
4:V:111:THR:HG22	4:V:112:ASP:N	2.35	0.42
4:V:134:ARG:NH2	4:V:168:LEU:HD12	2.34	0.42
4:d:133:TRP:HB3	4:d:167:VAL:CG2	2.50	0.42
4:d:202:MET:HE2	4:d:202:MET:HB3	1.78	0.42
4:d:312:GLY:HA3	4:b:310:LYS:HE2	2.01	0.42
5:E:2:ASP:HB3	5:E:5:THR:HG22	2.02	0.42
5:E:88:ARG:HB2	5:F:131:PRO:HG3	2.02	0.42
5:E:243:GLU:HA	5:E:249:ASN:HA	2.02	0.42
1:G:39:ILE:O	1:G:292:ARG:HA	2.20	0.41
1:I:35:VAL:HG11	1:I:38:LEU:HD22	2.02	0.41
1:K:215:PRO:HD3	1:K:246:TRP:CD1	2.55	0.41
2:N:277:LYS:HA	2:N:277:LYS:HD3	1.73	0.41
2:N:288:ASN:HB3	2:N:501:HIS:HD2	1.85	0.41
2:O:159:PRO:HG2	3:Q:28:ARG:HH11	1.85	0.41
2:O:195:PHE:C	2:O:268:MET:HE1	2.45	0.41
2:O:200:TRP:CD2	2:O:204:LEU:HD11	2.54	0.41
4:U:45:GLY:HA2	4:V:105:PHE:CE1	2.55	0.41
4:Z:10:ILE:HG13	4:Z:78:PHE:CE2	2.55	0.41
4:c:178:VAL:HG22	4:c:252:PHE:HB3	2.01	0.41
5:F:119:GLU:HG3	5:F:120:PHE:CD2	2.55	0.41
1:G:225:VAL:HG22	1:G:234:ILE:HG12	2.02	0.41
1:H:42:PRO:HG3	1:H:64:ARG:HA	2.01	0.41
1:I:181:TRP:CE2	1:I:284:LEU:HD13	2.55	0.41
1:J:210:ARG:HA	4:Y:200:TYR:CD1	2.55	0.41
4:T:192:SER:OG	4:T:293:TRP:HD1	2.04	0.41
4:W:32:GLU:HA	4:W:57:PRO:HG3	2.02	0.41
4:X:42:GLU:HB3	4:X:48:ILE:HD11	2.02	0.41
4:d:19:LYS:HA	4:d:62:PHE:O	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:c:29:TYR:HE1	4:c:58:GLU:HG3	1.85	0.41
4:c:159:PHE:HE1	4:c:300:ARG:CZ	2.34	0.41
1:H:12:ARG:HH11	1:H:94:ASP:CG	2.28	0.41
1:J:166:THR:OG1	1:J:262:GLU:HB3	2.20	0.41
2:M:290:ASN:OD1	2:M:293:ALA:HB3	2.20	0.41
2:N:179:ASN:HA	2:N:182:ARG:HG2	2.02	0.41
4:S:308:TRP:CZ3	4:S:310:LYS:HE2	2.55	0.41
4:U:206:LEU:HD22	4:U:280:LEU:HD21	2.01	0.41
4:V:147:ILE:O	4:V:148:SER:HB3	2.21	0.41
4:V:253:ASN:HB2	4:V:313:ILE:HG21	2.03	0.41
4:X:222:VAL:CG1	4:X:232:TYR:HB2	2.49	0.41
4:c:209:GLN:NE2	4:c:222:VAL:HG21	2.34	0.41
5:B:151:VAL:HG13	5:B:203:TRP:HB2	2.02	0.41
1:G:26:ARG:NH2	4:d:99:THR:HG21	2.34	0.41
1:J:192:PRO:HG3	1:J:264:PRO:O	2.20	0.41
2:N:217:PRO:O	2:N:221:ASP:HB2	2.21	0.41
2:N:394:ILE:CD1	2:O:394:ILE:HG13	2.49	0.41
2:N:529:ASP:HB3	2:N:535:GLN:H	1.85	0.41
4:S:208:VAL:HG21	4:S:250:ILE:HG12	2.02	0.41
4:Y:173:LEU:HB3	4:Y:311:ASP:OD1	2.20	0.41
4:d:221:ILE:HD13	4:d:259:ILE:HG23	2.02	0.41
4:b:247:ASN:ND2	4:b:248:ALA:N	2.66	0.41
5:B:62:THR:O	5:B:92:PHE:HA	2.21	0.41
1:H:138:MET:HE3	1:H:138:MET:HB3	1.83	0.41
1:L:35:VAL:HG13	1:L:68:PHE:HB3	2.02	0.41
1:L:79:PRO:HB2	1:L:129:PHE:HD1	1.84	0.41
1:K:64:ARG:HB3	1:K:142:ALA:HB3	2.03	0.41
2:M:336:GLU:HB2	2:M:346:ILE:HD11	2.03	0.41
2:N:251:MET:HE2	2:N:283:PHE:HB3	2.03	0.41
4:S:38:VAL:HG23	4:S:62:PHE:CE2	2.56	0.41
4:T:164:ARG:NH1	4:T:229:GLY:HA2	2.35	0.41
4:a:219:TRP:CH2	4:a:263:ARG:HG2	2.56	0.41
4:X:250:ILE:HG22	4:X:259:ILE:HD11	2.02	0.41
5:B:73:GLU:OE2	5:B:80:PRO:HG3	2.20	0.41
5:D:31:PRO:HB3	5:D:137:ARG:NH1	2.35	0.41
5:E:219:LEU:HD23	5:E:242:VAL:HG11	2.01	0.41
5:F:110:GLN:HE21	5:F:128:PRO:HG3	1.86	0.41
1:H:35:VAL:HG11	1:H:38:LEU:HD22	2.02	0.41
1:H:241:PRO:HB3	1:H:244:HIS:ND1	2.35	0.41
1:I:119:GLU:HB3	1:J:42:PRO:HA	2.02	0.41
1:K:116:LEU:HD21	1:K:138:MET:HE1	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:110:ARG:HD2	1:J:293:PRO:O	2.21	0.41
2:M:391:LYS:HE2	2:M:391:LYS:HA	2.02	0.41
2:M:394:ILE:HG13	2:O:394:ILE:CD1	2.49	0.41
3:Q:52:LEU:HD23	3:Q:52:LEU:HA	1.92	0.41
4:V:178:VAL:HG12	4:V:252:PHE:HB3	2.01	0.41
4:W:127:THR:HA	4:W:153:ARG:NH2	2.36	0.41
4:X:118:LEU:HD13	4:X:120:TYR:OH	2.20	0.41
4:Y:164:ARG:HD3	4:Y:228:GLN:HB2	2.03	0.41
4:Y:214:VAL:HG22	4:Y:215:SER:H	1.85	0.41
5:F:23:LEU:HB3	5:F:49:TYR:HB3	2.01	0.41
1:G:77:TRP:CH2	1:G:85:VAL:HG21	2.55	0.41
2:N:34:TRP:HB2	2:N:98:MET:HE2	2.03	0.41
2:O:169:LYS:HG2	2:O:285:VAL:HG12	2.01	0.41
4:U:125:GLN:HE22	4:U:153:ARG:H	1.67	0.41
4:d:13:SER:HB2	4:d:16:SER:HB3	2.01	0.41
4:d:103:VAL:HG22	4:c:79:GLU:OE2	2.21	0.41
4:d:175:LEU:HG	4:d:177:SER:H	1.84	0.41
4:b:157:PRO:HD3	4:b:293:TRP:CD1	2.55	0.41
5:B:204:ARG:HG2	5:B:204:ARG:HH11	1.85	0.41
5:C:137:ARG:HG2	5:C:158:PRO:O	2.20	0.41
5:D:143:LEU:HD11	5:D:150:GLU:HB2	2.02	0.41
5:F:23:LEU:HB2	5:F:139:ILE:HB	2.02	0.41
1:H:303:VAL:HG11	4:b:132:ARG:NE	2.33	0.41
1:L:214:LEU:HD23	1:L:246:TRP:CZ3	2.56	0.41
2:M:81:ALA:O	2:M:85:LYS:HG3	2.21	0.41
2:O:419:VAL:CG1	2:O:420:ILE:HD12	2.51	0.41
4:d:184:ILE:HG23	4:d:302:ALA:HB1	2.03	0.41
5:F:140:LEU:O	5:F:154:TYR:HA	2.21	0.41
1:G:110:ARG:HD2	1:G:293:PRO:O	2.20	0.41
1:G:182:THR:OG1	1:G:283:LYS:HB3	2.21	0.41
1:I:299:VAL:HG12	1:I:301:ARG:HG3	2.02	0.41
2:M:7:LEU:HA	2:M:10:ILE:HD12	2.03	0.41
2:M:174:MET:HE3	2:M:178:LEU:HG	2.02	0.41
2:O:59:SER:H	2:O:527:GLU:HA	1.86	0.41
2:O:143:LEU:O	2:O:236:VAL:HG23	2.21	0.41
4:S:23:ARG:NH2	4:S:25:LYS:HG2	2.36	0.41
4:T:238:VAL:HG12	4:T:239:ASP:N	2.32	0.41
4:T:238:VAL:HG23	4:T:271:LEU:HD23	2.02	0.41
4:a:181:ASN:O	4:a:307:TRP:HA	2.21	0.41
4:a:188:GLY:O	4:a:301:GLY:HA2	2.21	0.41
4:U:21:GLU:HG2	4:U:61:LEU:HD12	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:V:162:PHE:HE2	4:V:164:ARG:HB2	1.86	0.41
4:Y:118:LEU:HD13	4:Y:120:TYR:OH	2.21	0.41
4:Y:177:SER:HB3	4:Y:313:ILE:HG23	2.01	0.41
4:Y:214:VAL:HG13	4:Y:215:SER:H	1.85	0.41
4:b:262:PHE:CZ	4:b:269:PRO:HG3	2.56	0.41
4:c:12:MET:HE1	4:c:72:ILE:HB	2.01	0.41
4:c:191:LYS:HG2	4:c:211:GLU:HG3	2.02	0.41
5:E:101:ARG:NH2	5:E:113:SER:HA	2.36	0.41
5:E:136:TYR:HB2	5:E:160:VAL:HG23	2.02	0.41
1:L:151:PRO:HB3	1:L:287:PRO:HA	2.03	0.41
2:O:195:PHE:HA	2:O:268:MET:HE1	2.03	0.41
2:O:404:PHE:HB3	2:O:411:GLY:O	2.21	0.41
2:O:547:GLN:HA	2:O:550:MET:SD	2.61	0.41
4:V:2:LYS:O	4:V:2:LYS:HG3	2.21	0.41
5:B:166:ASP:HB3	5:B:179:LYS:HB3	2.03	0.41
5:D:6:ILE:HD11	5:E:45:ILE:CG1	2.51	0.41
1:G:65:GLU:CD	1:G:117:LEU:HD22	2.46	0.40
1:H:144:PHE:CE2	1:H:146:TYR:HB2	2.56	0.40
1:I:63:ARG:HD2	1:I:141:VAL:HG21	2.02	0.40
1:I:69:SER:HB2	1:I:137:MET:SD	2.60	0.40
1:J:182:THR:OG1	1:J:224:THR:HG22	2.21	0.40
2:M:313:THR:HG22	2:M:315:GLY:H	1.86	0.40
2:N:312:ILE:HD11	2:N:321:ASP:HB2	2.03	0.40
2:O:374:ASN:HB2	2:O:450:GLU:HA	2.03	0.40
2:O:493:PRO:HB3	2:O:524:MET:SD	2.60	0.40
4:X:188:GLY:HA3	4:X:299:ALA:CB	2.51	0.40
4:b:5:ALA:HB1	4:b:95:TYR:HD1	1.86	0.40
5:A:110:GLN:HB2	5:A:128:PRO:HG3	2.03	0.40
5:A:187:ASP:OD2	5:A:190:VAL:HG23	2.21	0.40
1:K:144:PHE:CE2	1:K:146:TYR:HB2	2.56	0.40
2:N:63:LYS:HG2	2:N:523:GLU:HB3	2.02	0.40
2:N:174:MET:HE2	2:N:174:MET:HA	2.04	0.40
2:N:409:PHE:HE2	3:Q:46:ASN:HD22	1.67	0.40
4:a:219:TRP:CD1	4:a:240:ALA:HB3	2.56	0.40
4:V:159:PHE:CE1	4:V:300:ARG:HD3	2.56	0.40
4:d:67:THR:HA	4:d:70:GLU:HG2	2.03	0.40
5:B:161:LYS:HB3	5:B:185:PHE:HE2	1.87	0.40
5:C:3:PHE:CZ	5:D:21:THR:HG23	2.56	0.40
1:L:166:THR:OG1	1:L:262:GLU:HB3	2.21	0.40
2:M:156:PHE:CE2	2:M:158:PHE:HB2	2.56	0.40
2:N:159:PRO:HG3	3:R:28:ARG:NH1	2.35	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:O:66:THR:HG21	2:O:558:ARG:HH22	1.86	0.40
2:O:402:GLY:O	3:P:52:LEU:HD11	2.22	0.40
4:S:22:LEU:HD12	4:S:60:LEU:HD23	2.02	0.40
4:S:81:PHE:CE1	4:S:92:MET:HB2	2.55	0.40
4:S:118:LEU:HD12	4:S:173:LEU:HA	2.03	0.40
4:V:257:ARG:HB3	4:V:275:ASP:HB3	2.02	0.40
4:X:150:HIS:CD2	4:X:152:LYS:HB2	2.56	0.40
4:c:145:ASP:HB2	4:c:146:TRP:CE3	2.57	0.40
5:B:149:ARG:HH21	5:B:201:PRO:HB2	1.85	0.40
5:C:9:ALA:HB1	5:D:54:HIS:CD2	2.56	0.40
5:D:32:ALA:O	5:D:156:LEU:HD13	2.21	0.40
5:D:35:LEU:HD21	5:D:139:ILE:HD13	2.03	0.40
1:G:82:TRP:HH2	1:G:123:TYR:HE1	1.68	0.40
1:L:86:ASP:OD2	1:L:123:TYR:HE1	2.03	0.40
1:L:180:ARG:HG2	1:L:226:ASP:OD1	2.22	0.40
1:K:156:TRP:HB3	1:K:282:PHE:CE1	2.57	0.40
2:M:289:SER:HB2	2:M:520:GLN:OE1	2.21	0.40
2:N:373:LYS:NZ	2:O:115:ASP:HA	2.36	0.40
4:U:186:ASN:ND2	4:U:243:ASP:HA	2.36	0.40
4:Y:189:ALA:HB3	4:Y:297:LEU:HD22	2.02	0.40
4:Z:14:ARG:HB2	4:Z:102:GLU:OE2	2.22	0.40
4:d:157:PRO:HD3	4:d:293:TRP:CG	2.57	0.40
5:A:140:LEU:O	5:A:154:TYR:HA	2.22	0.40
1:H:7:ILE:HB	1:H:20:SER:HB3	2.02	0.40
1:I:6:LYS:HE3	4:Y:9:THR:HB	2.02	0.40
1:J:39:ILE:O	1:J:292:ARG:HA	2.21	0.40
2:M:143:LEU:HD13	2:O:449:TRP:CD1	2.56	0.40
2:M:180:LEU:HA	2:M:183:VAL:HG22	2.02	0.40
2:N:92:ARG:HG3	2:N:92:ARG:HH11	1.86	0.40
2:N:436:ASN:HB2	2:N:473:PHE:CE1	2.57	0.40
3:P:66:LEU:HD12	3:Q:60:MET:HA	2.02	0.40
4:S:10:ILE:O	4:S:10:ILE:HG13	2.22	0.40
4:T:118:LEU:HD13	4:T:120:TYR:OH	2.22	0.40
4:U:162:PHE:CE2	4:U:164:ARG:HB2	2.57	0.40
4:Y:179:THR:HG23	4:Y:251:LYS:HG2	2.02	0.40
4:d:247:ASN:HB3	4:d:264:ASN:HA	2.04	0.40
5:A:83:THR:O	5:B:161:LYS:HE3	2.21	0.40
5:E:22:VAL:HG22	5:E:140:LEU:HD22	2.02	0.40
5:E:146:ARG:H	5:E:146:ARG:HD2	1.87	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	G	301/304 (99%)	288 (96%)	13 (4%)	0	100	100
1	H	301/304 (99%)	285 (95%)	16 (5%)	0	100	100
1	I	301/304 (99%)	289 (96%)	12 (4%)	0	100	100
1	J	301/304 (99%)	285 (95%)	16 (5%)	0	100	100
1	K	301/304 (99%)	286 (95%)	15 (5%)	0	100	100
1	L	301/304 (99%)	288 (96%)	13 (4%)	0	100	100
2	M	573/577 (99%)	540 (94%)	31 (5%)	2 (0%)	36	59
2	N	573/577 (99%)	533 (93%)	36 (6%)	4 (1%)	18	39
2	O	573/577 (99%)	535 (93%)	37 (6%)	1 (0%)	43	66
3	P	67/598 (11%)	64 (96%)	3 (4%)	0	100	100
3	Q	67/598 (11%)	62 (92%)	5 (8%)	0	100	100
3	R	67/598 (11%)	61 (91%)	5 (8%)	1 (2%)	8	20
4	S	311/313 (99%)	298 (96%)	13 (4%)	0	100	100
4	T	311/313 (99%)	294 (94%)	15 (5%)	2 (1%)	21	42
4	U	311/313 (99%)	303 (97%)	7 (2%)	1 (0%)	36	59
4	V	311/313 (99%)	294 (94%)	16 (5%)	1 (0%)	36	59
4	W	311/313 (99%)	296 (95%)	14 (4%)	1 (0%)	36	59
4	X	311/313 (99%)	288 (93%)	20 (6%)	3 (1%)	12	30
4	Y	311/313 (99%)	300 (96%)	10 (3%)	1 (0%)	36	59
4	Z	311/313 (99%)	299 (96%)	11 (4%)	1 (0%)	36	59
4	a	311/313 (99%)	303 (97%)	8 (3%)	0	100	100
4	b	311/313 (99%)	295 (95%)	16 (5%)	0	100	100
4	c	311/313 (99%)	295 (95%)	14 (4%)	2 (1%)	21	42
4	d	311/313 (99%)	300 (96%)	11 (4%)	0	100	100
5	A	229/299 (77%)	218 (95%)	11 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	B	229/299 (77%)	222 (97%)	7 (3%)	0	100	100
5	C	229/299 (77%)	222 (97%)	7 (3%)	0	100	100
5	D	229/299 (77%)	220 (96%)	9 (4%)	0	100	100
5	E	229/299 (77%)	217 (95%)	12 (5%)	0	100	100
5	F	229/299 (77%)	218 (95%)	11 (5%)	0	100	100
All	All	8832/10899 (81%)	8398 (95%)	414 (5%)	20 (0%)	44	66

All (20) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	N	401	ILE
4	T	145	ASP
4	W	110	ALA
4	X	145	ASP
2	N	347	ALA
3	R	59	ILE
4	U	214	VAL
4	V	148	SER
4	c	145	ASP
4	X	2	LYS
4	Y	214	VAL
2	M	412	LEU
4	Z	162	PHE
2	M	277	LYS
2	N	277	LYS
4	X	105	PHE
2	O	277	LYS
4	c	162	PHE
2	N	333	HIS
4	T	105	PHE

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	G	260/261 (100%)	260 (100%)	0	100	100
1	H	260/261 (100%)	260 (100%)	0	100	100
1	I	260/261 (100%)	260 (100%)	0	100	100
1	J	260/261 (100%)	260 (100%)	0	100	100
1	K	260/261 (100%)	260 (100%)	0	100	100
1	L	260/261 (100%)	260 (100%)	0	100	100
2	M	481/482 (100%)	481 (100%)	0	100	100
2	N	481/482 (100%)	481 (100%)	0	100	100
2	O	481/482 (100%)	481 (100%)	0	100	100
3	P	53/480 (11%)	53 (100%)	0	100	100
3	Q	53/480 (11%)	53 (100%)	0	100	100
3	R	53/480 (11%)	53 (100%)	0	100	100
4	S	255/255 (100%)	255 (100%)	0	100	100
4	T	255/255 (100%)	255 (100%)	0	100	100
4	U	255/255 (100%)	255 (100%)	0	100	100
4	V	255/255 (100%)	255 (100%)	0	100	100
4	W	255/255 (100%)	255 (100%)	0	100	100
4	X	255/255 (100%)	255 (100%)	0	100	100
4	Y	255/255 (100%)	255 (100%)	0	100	100
4	Z	255/255 (100%)	255 (100%)	0	100	100
4	a	255/255 (100%)	255 (100%)	0	100	100
4	b	255/255 (100%)	255 (100%)	0	100	100
4	c	255/255 (100%)	255 (100%)	0	100	100
4	d	255/255 (100%)	254 (100%)	1 (0%)	84	92
5	A	197/244 (81%)	197 (100%)	0	100	100
5	B	197/244 (81%)	196 (100%)	1 (0%)	81	91
5	C	197/244 (81%)	197 (100%)	0	100	100
5	D	197/244 (81%)	197 (100%)	0	100	100
5	E	197/244 (81%)	197 (100%)	0	100	100
5	F	197/244 (81%)	197 (100%)	0	100	100
All	All	7404/8976 (82%)	7402 (100%)	2 (0%)	100	100

All (2) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	d	216	ASN
5	B	249	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (53) such sidechains are listed below:

Mol	Chain	Res	Type
1	G	34	ASN
1	G	55	GLN
1	G	244	HIS
1	H	243	GLN
1	I	55	GLN
1	L	55	GLN
1	L	243	GLN
1	L	298	HIS
2	M	459	ASN
2	M	573	HIS
2	N	40	ASN
2	N	118	ASN
2	N	234	ASN
2	N	339	GLN
2	N	441	ASN
2	N	530	ASN
2	N	569	ASN
2	O	3	GLN
3	P	27	GLN
3	P	68	ASN
3	Q	27	GLN
3	Q	32	ASN
3	Q	64	GLN
3	R	37	HIS
4	S	74	HIS
4	S	217	ASN
4	S	228	GLN
4	S	258	GLN
4	a	201	ASN
4	a	253	ASN
4	U	228	GLN
4	U	246	ASN
4	U	264	ASN
4	V	174	ASN
4	V	217	ASN
4	W	228	GLN
4	W	253	ASN

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Mol	Chain	Res	Type
4	X	181	ASN
4	Y	220	HIS
4	Y	247	ASN
4	Y	258	GLN
4	Z	201	ASN
4	d	183	ASN
4	d	201	ASN
4	d	241	ASN
4	b	174	ASN
4	b	247	ASN
4	b	258	GLN
4	c	181	ASN
5	E	10	GLN
5	E	19	ASN
5	E	54	HIS
5	E	171	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 (i)

There are no chain breaks in this entry.

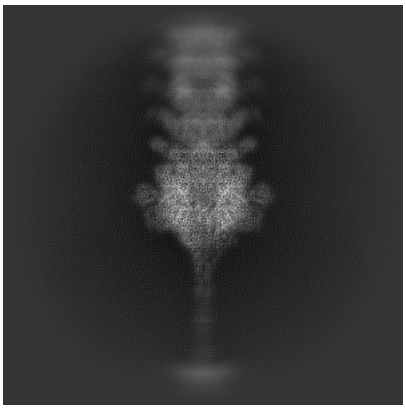
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-69553. These allow visual inspection of the internal detail of the map and identification of artifacts.

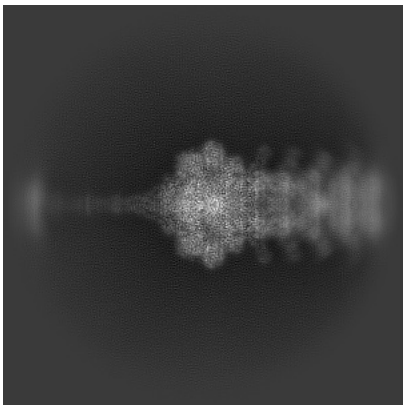
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

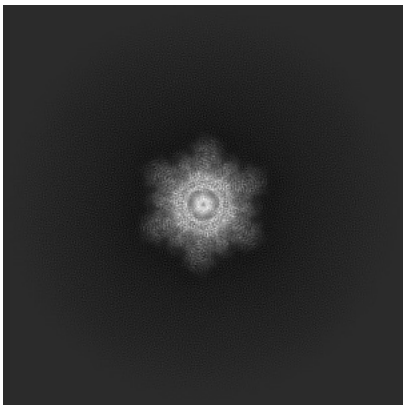
6.1.1 Primary map



X

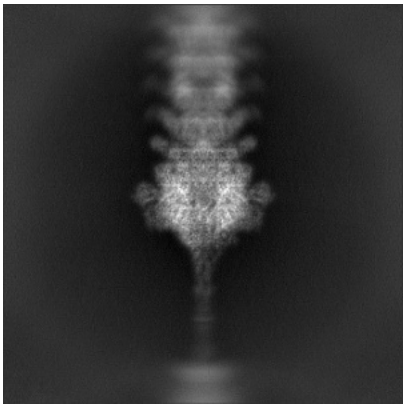


Y

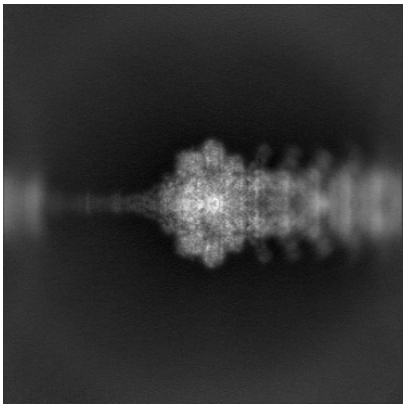


Z

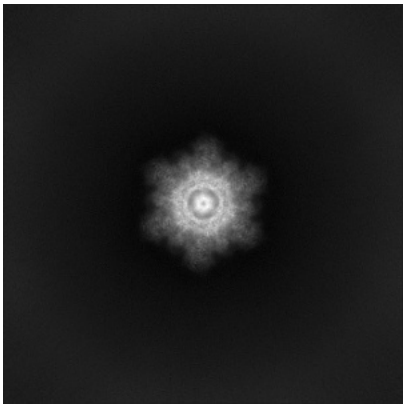
6.1.2 Raw map



X



Y

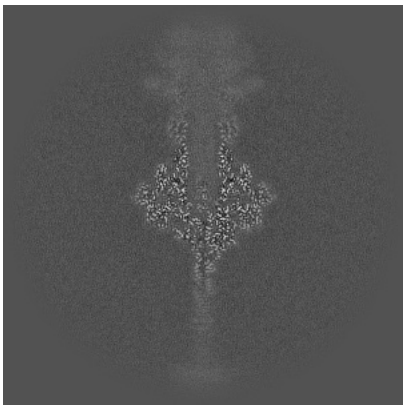


Z

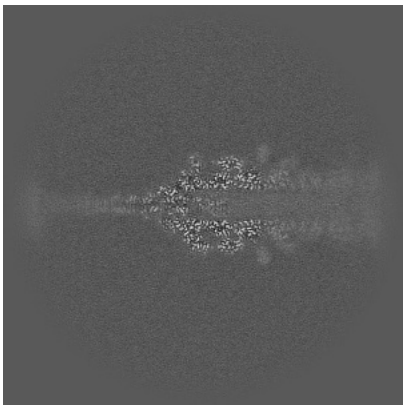
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

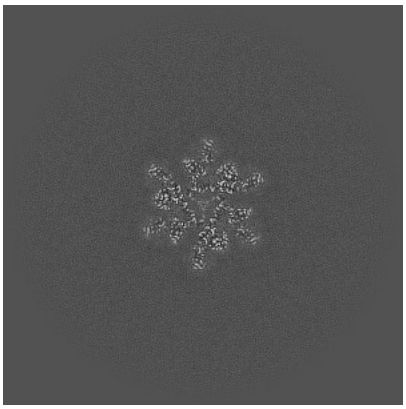
6.2.1 Primary map



X Index: 256

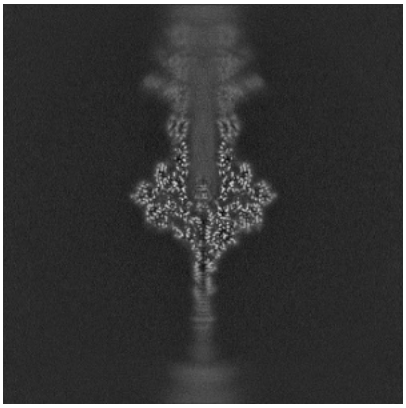


Y Index: 256

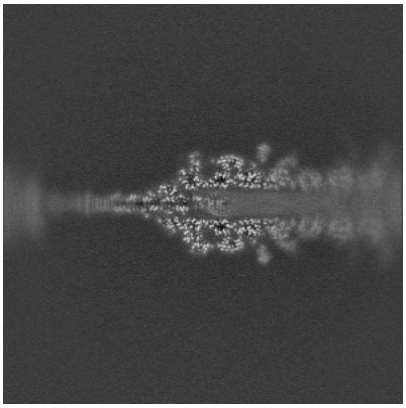


Z Index: 256

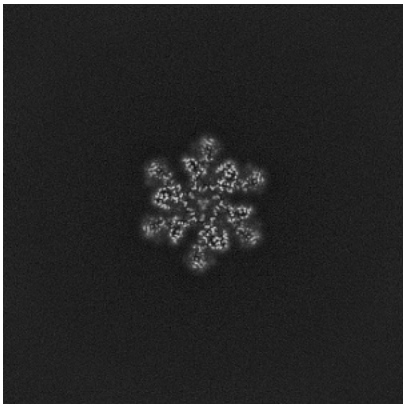
6.2.2 Raw map



X Index: 256



Y Index: 256

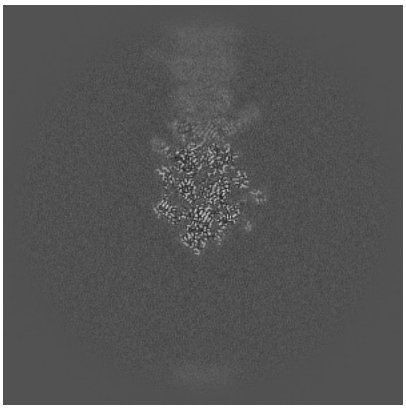


Z Index: 256

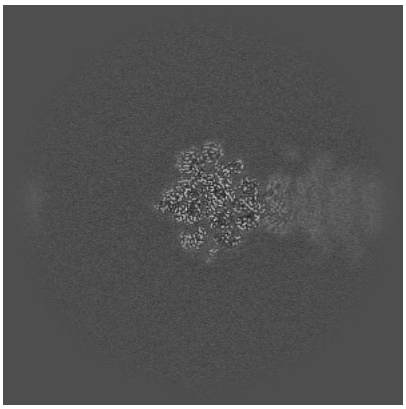
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

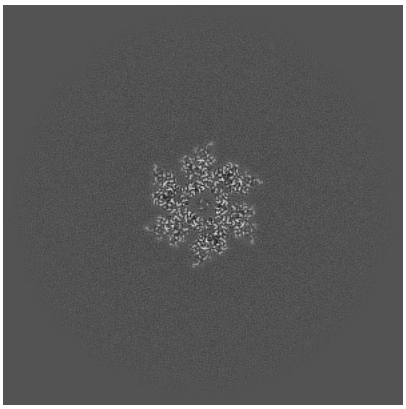
6.3.1 Primary map



X Index: 277

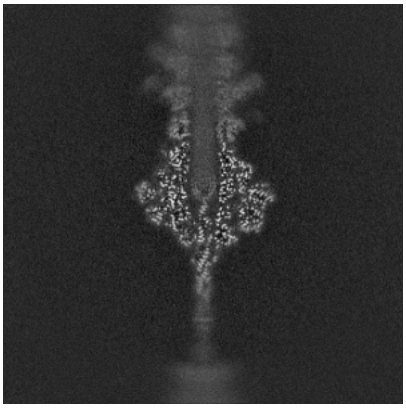


Y Index: 280

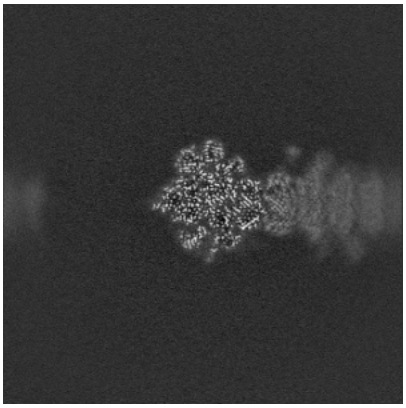


Z Index: 250

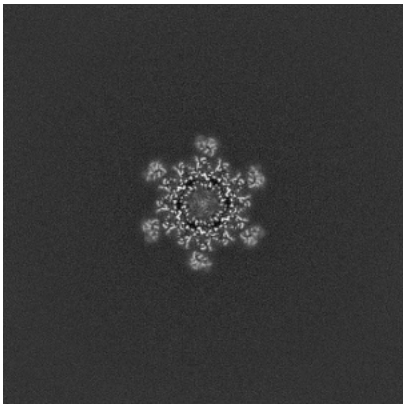
6.3.2 Raw map



X Index: 262



Y Index: 279

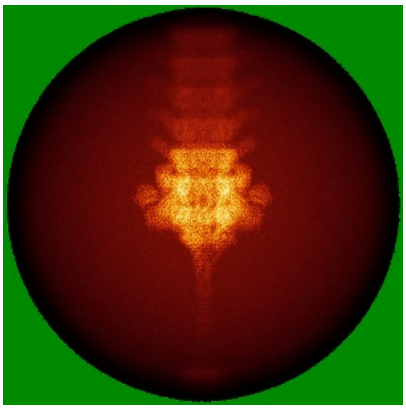


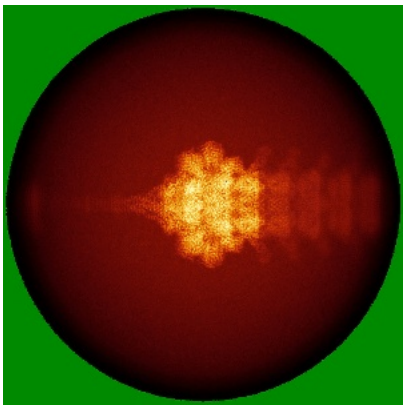
Z Index: 279

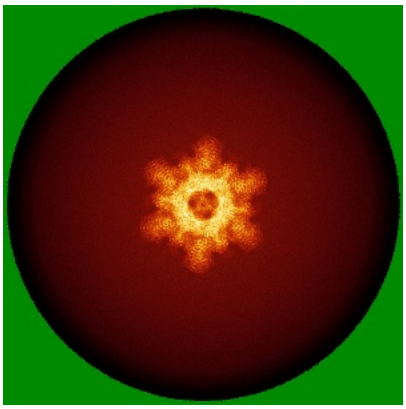
The images above show the largest variance slices of the map in three orthogonal directions.

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

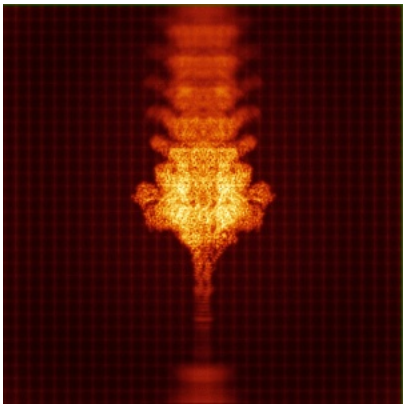
6.4.1 Primary map

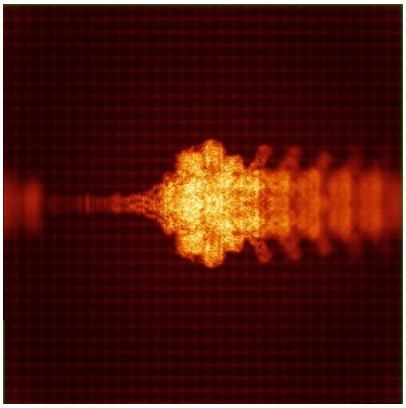

X

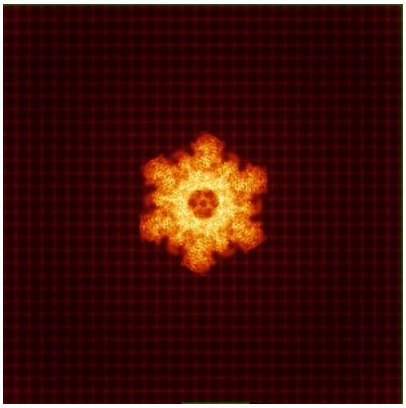

Y


Z

6.4.2 Raw map


X

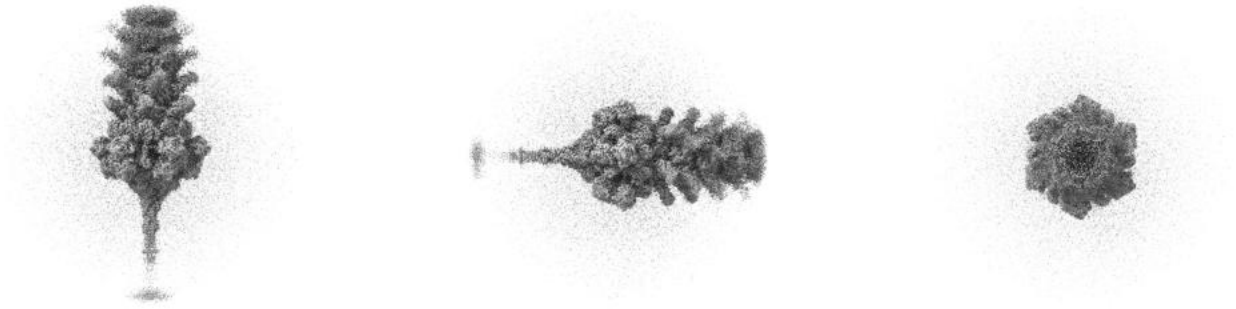

Y


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

6.5.2 Raw map



X Y Z

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

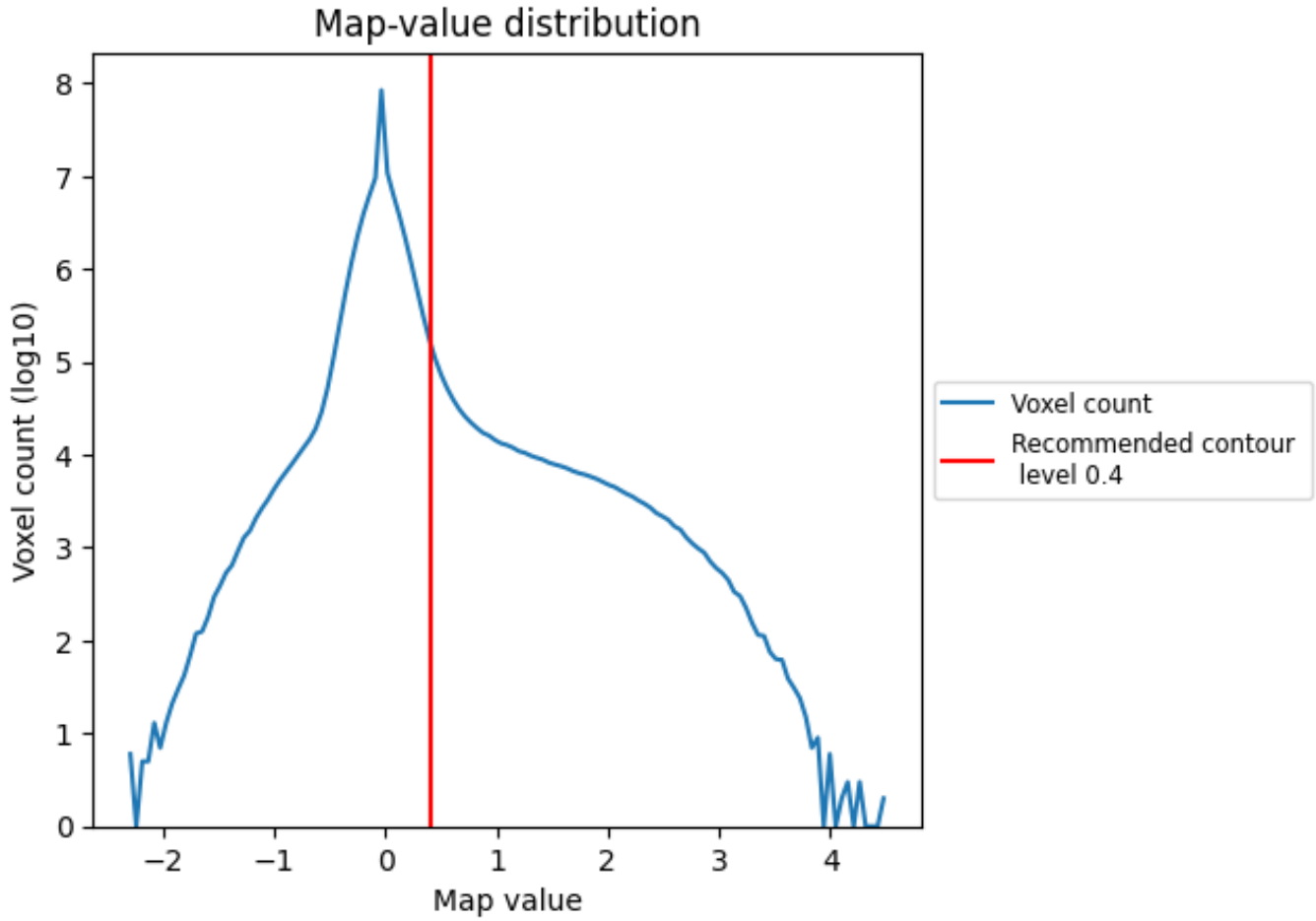
6.6 Mask visualisation (i)

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

7 Map analysis

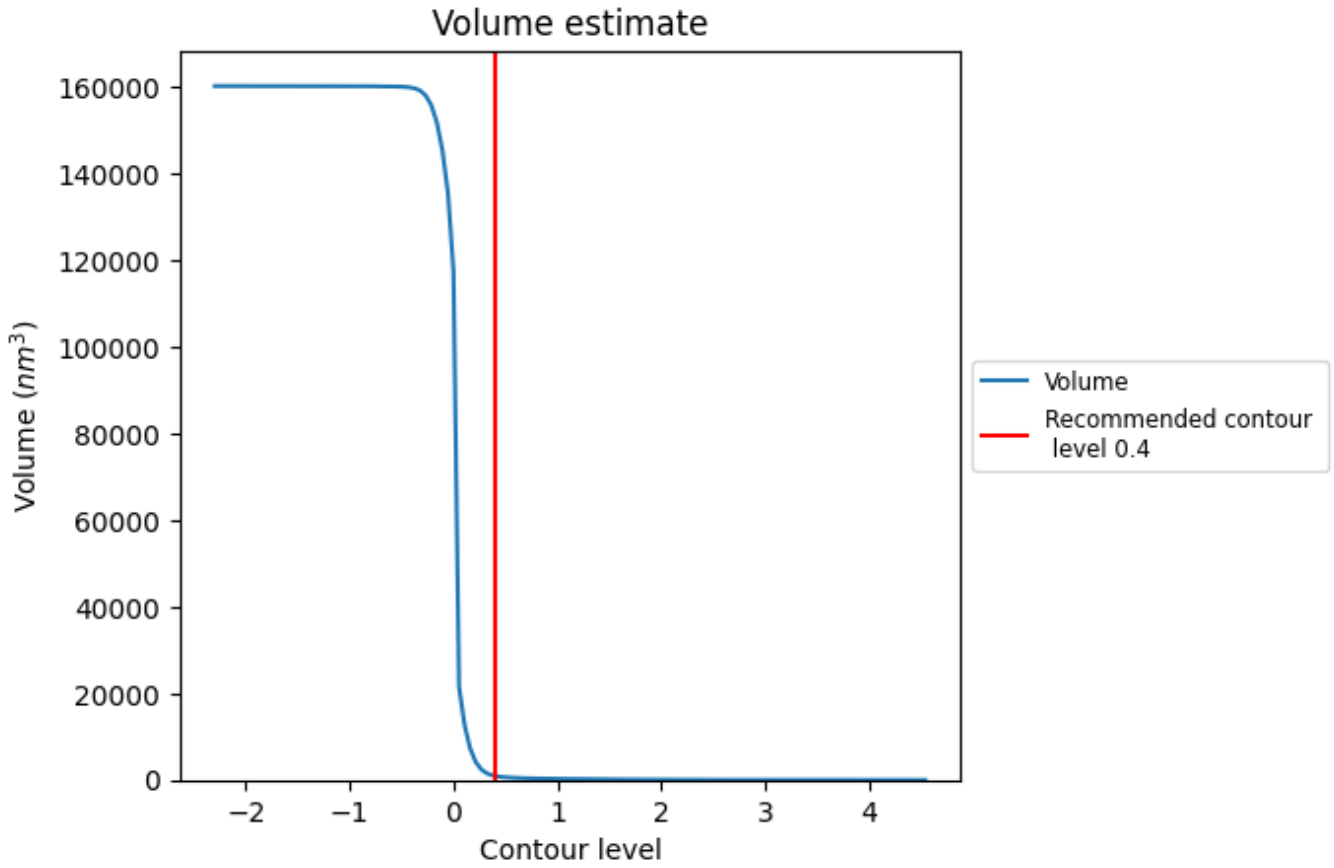
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

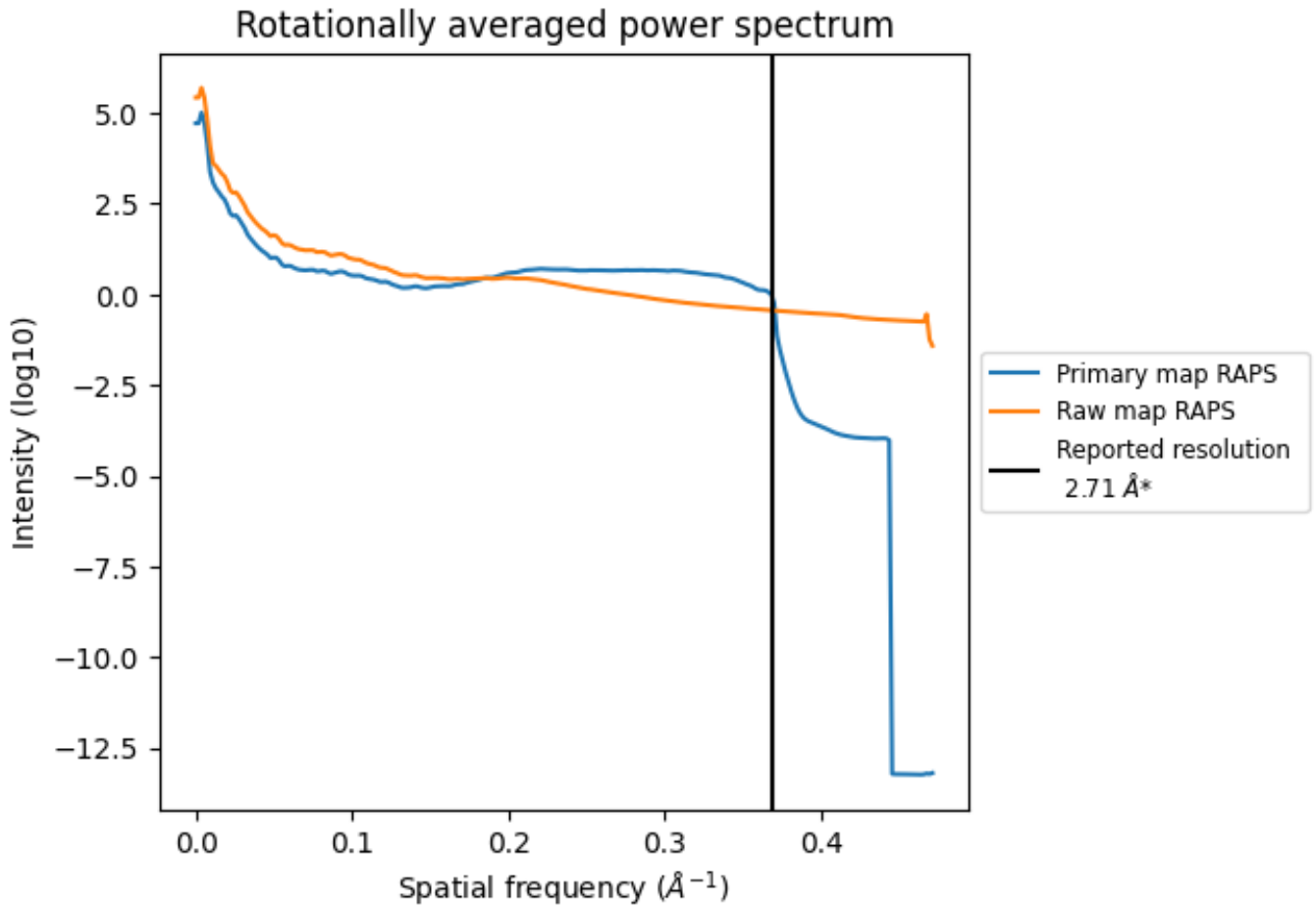
7.2 Volume estimate



The volume at the recommended contour level is 934 nm^3; this corresponds to an approximate mass of 844 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)

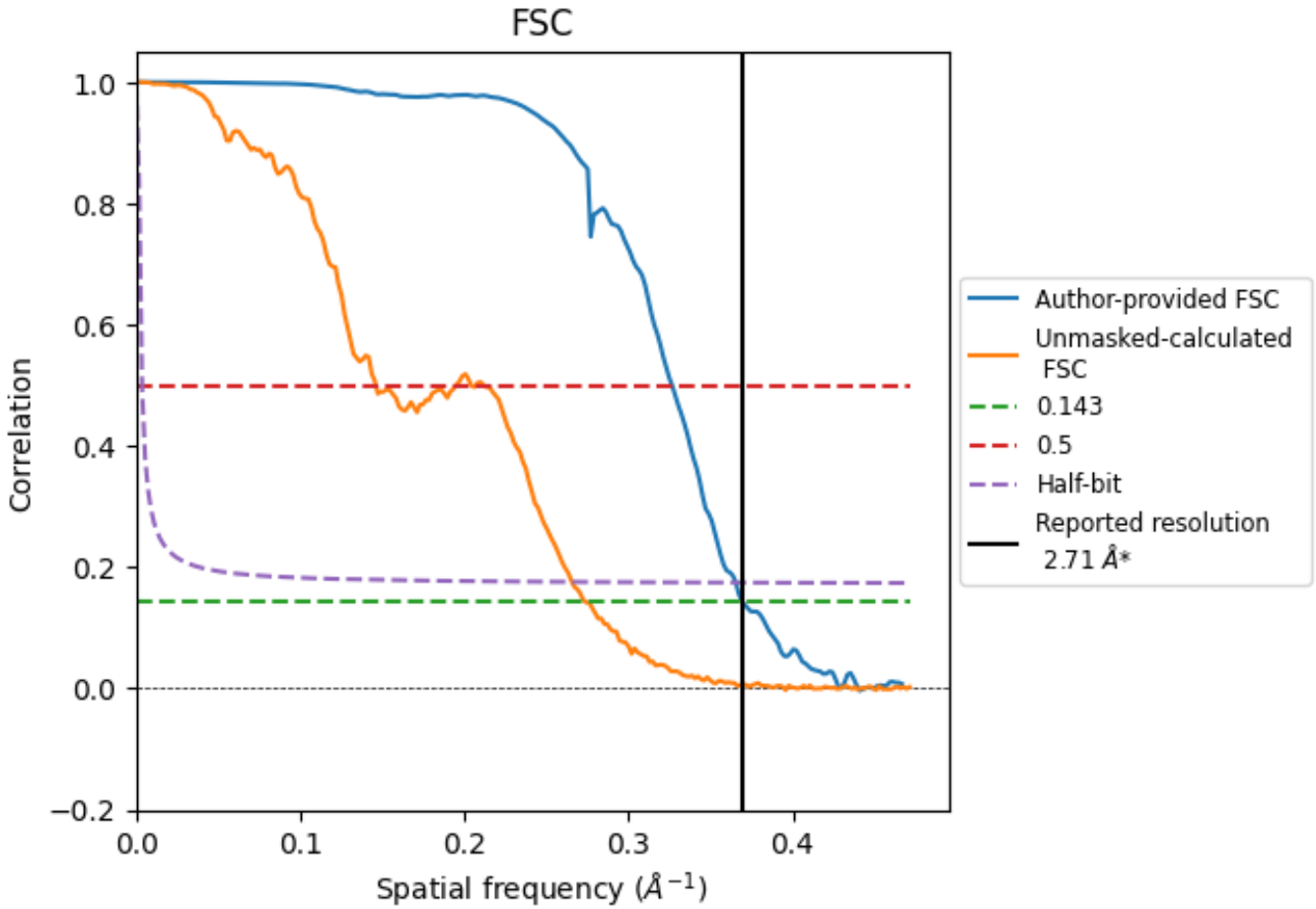


*Reported resolution corresponds to spatial frequency of 0.369 $Å^{-1}$

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.369 Å^{-1}

8.2 Resolution estimates (i)

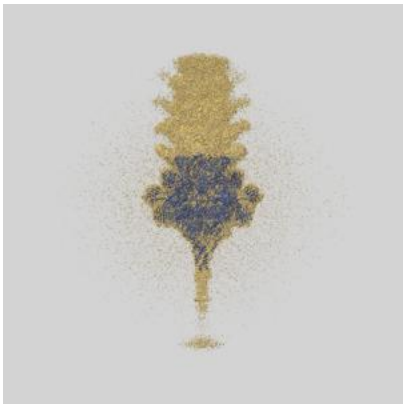
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.71	-	-
Author-provided FSC curve	2.71	3.06	2.74
Unmasked-calculated*	3.65	6.84	3.77

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.65 differs from the reported value 2.71 by more than 10 %

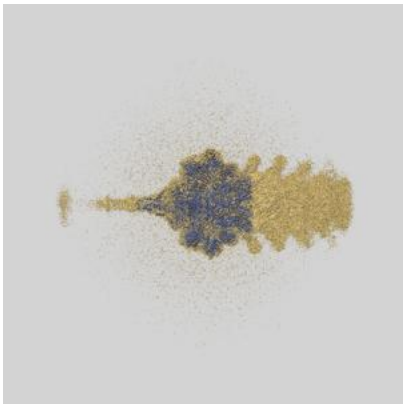
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-69553 and PDB model 24IX. Per-residue inclusion information can be found in section 3 on page 7.

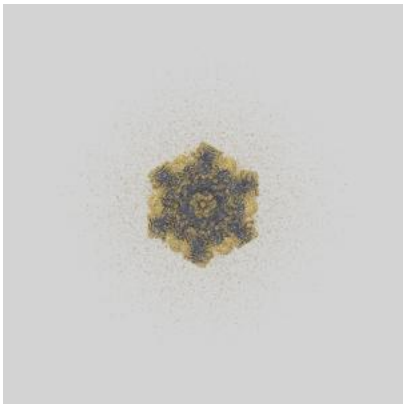
9.1 Map-model overlay



X



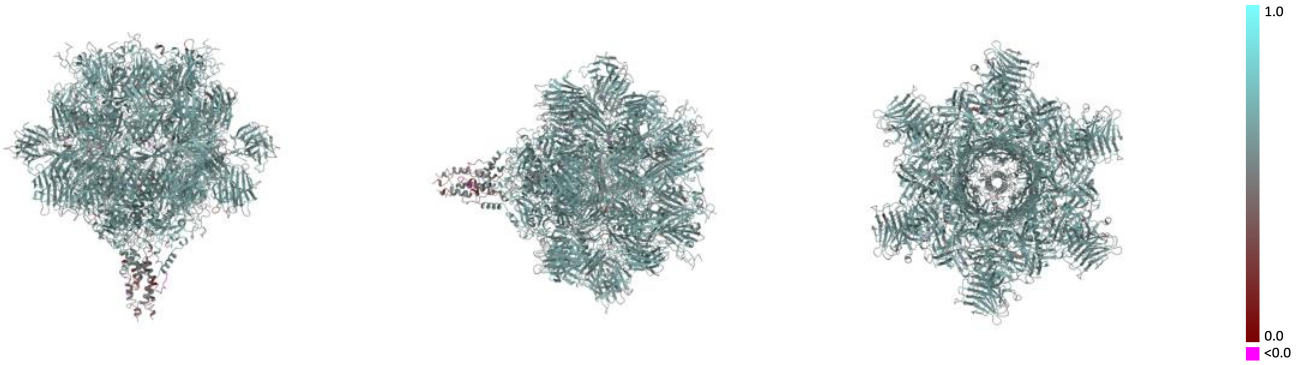
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.4 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

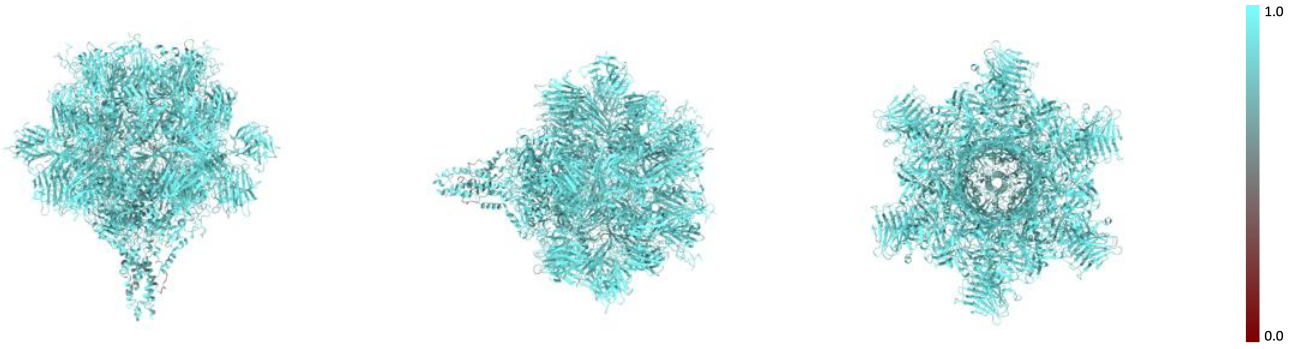
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

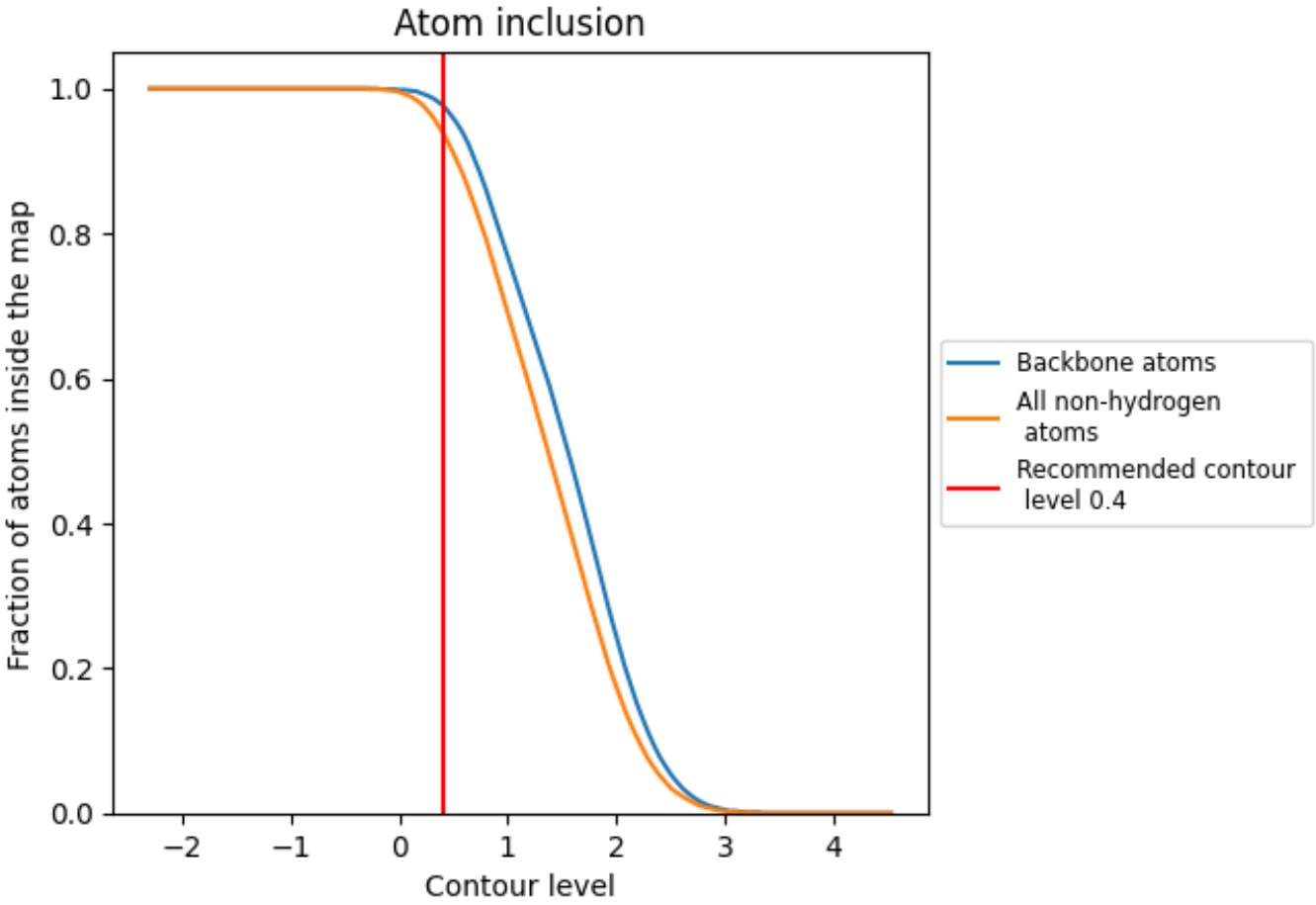
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.4).

9.4 Atom inclusion (i)



At the recommended contour level, 98% 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 (0.4) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9390	0.5930
A	0.9360	0.5940
B	0.9420	0.5990
C	0.9440	0.5970
D	0.9400	0.5940
E	0.9390	0.5970
F	0.9370	0.5970
G	0.9470	0.6060
H	0.9610	0.6150
I	0.9530	0.6110
J	0.9560	0.6140
K	0.9540	0.6100
L	0.9660	0.6240
M	0.9340	0.5970
N	0.9340	0.5930
O	0.9350	0.5910
P	0.8890	0.5110
Q	0.8970	0.5320
R	0.8930	0.5170
S	0.9400	0.5870
T	0.9280	0.5710
U	0.9420	0.5940
V	0.9310	0.5830
W	0.9400	0.5930
X	0.9300	0.5730
Y	0.9410	0.5960
Z	0.9330	0.5850
a	0.9360	0.5890
b	0.9330	0.5830
c	0.9340	0.5790
d	0.9420	0.5980

