Full wwPDB EM Validation Report ⓘ

Jun 17, 2025 – 05:00 PM JST

PDB ID	:	8HEX / pdb_00008hex
EMDB ID	:	EMD-34696
Title	:	C5 portal vertex in HCMV B-capsid
Authors	:	Li, Z.; Yu, X.
Deposited on	:	2022-11-08
Resolution	:	4.00 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:

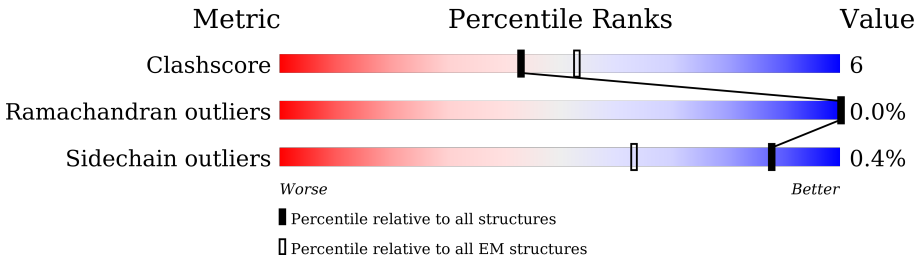
EMDB validation analysis	:	0.0.1.dev118
MolProbity	:	4-5-2 with Phenix2.0rc1
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.44

1 Overall quality at a glance

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

The reported resolution of this entry is 4.00 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	I	306	8% 76% 18% 6%
1	h	306	9% 77% 17% 6%
1	n	306	12% 80% 16% ·
1	o	306	14% 80% 14% 6%
2	g	290	16% 62% 14% 24%
2	m	290	14% 86% 14%
3	M	594	10% 64% 14% · 22%
4	N	642	· 8% · 91%

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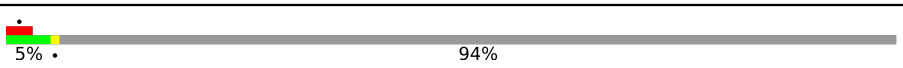
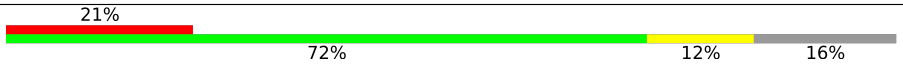
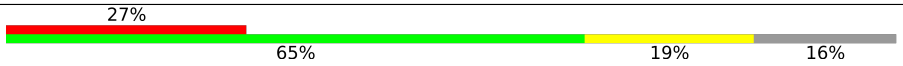
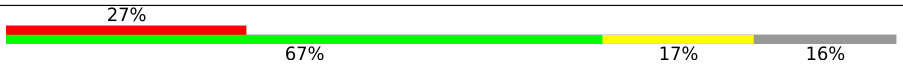
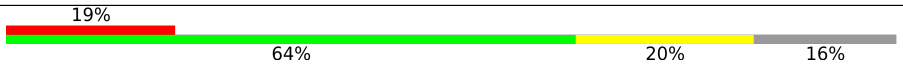
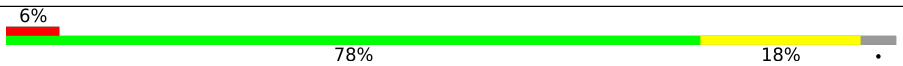
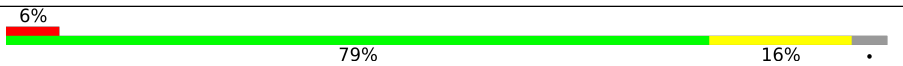
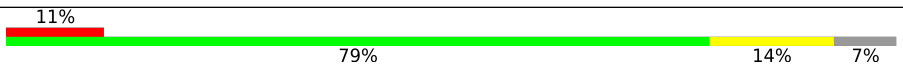
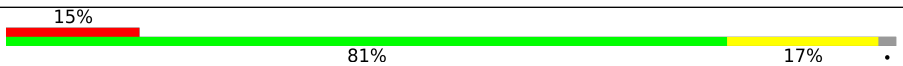
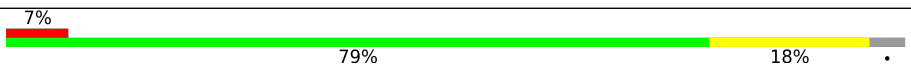
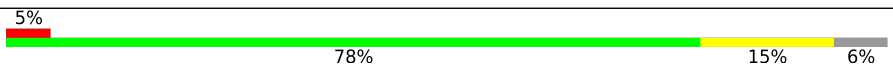
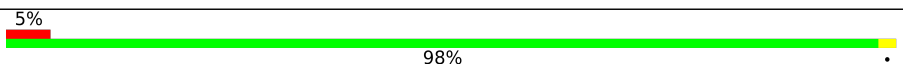
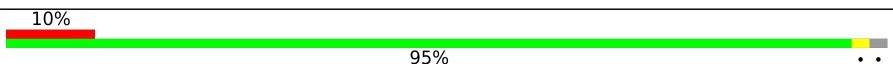
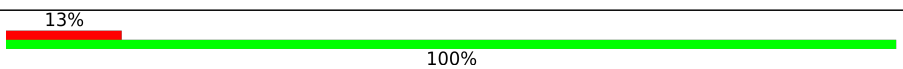
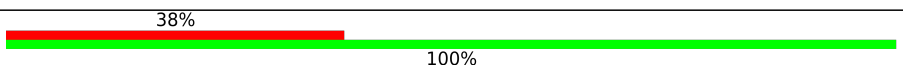
Mol	Chain	Length	Quality of chain
4	O	642	
5	R	75	
5	S	75	
5	i	75	
5	j	75	
6	B	1370	
6	C	1370	
6	D	1370	
6	Y	1370	
6	Z	1370	
6	a	1370	
7	A	42	
7	E	42	
8	F	15	
9	G	13	

2 Entry composition

There are 9 unique types of molecules in this entry. The entry contains 82790 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 Triplex capsid protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	h	288	Total	C	N	O	S	0	0
			2290	1473	394	406	17		
1	I	287	Total	C	N	O	S	0	0
			2282	1466	394	405	17		
1	n	295	Total	C	N	O	S	0	0
			2334	1501	402	412	19		
1	o	289	Total	C	N	O	S	0	0
			2291	1473	393	407	18		

- Molecule 2 is a protein called Triplex capsid protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	g	219	Total	C	N	O	S	0	0
			1758	1129	311	307	11		
2	m	290	Total	C	N	O	S	0	0
			2325	1485	411	417	12		

- Molecule 3 is a protein called Capsid vertex component 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	M	465	Total	C	N	O	S	0	0
			3820	2393	734	679	14		

- Molecule 4 is a protein called Capsid vertex component 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	N	60	Total	C	N	O	S	0	0
			509	325	98	83	3		
4	O	39	Total	C	N	O	S	0	0
			329	214	60	54	1		

- Molecule 5 is a protein called Small capsomere-interacting protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	R	63	Total	C	N	O	S	0	0
			513	321	97	91	4		
5	S	63	Total	C	N	O	S	0	0
			513	321	97	91	4		
5	i	63	Total	C	N	O	S	0	0
			513	321	97	91	4		
5	j	63	Total	C	N	O	S	0	0
			513	321	97	91	4		

- Molecule 6 is a protein called Major capsid protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	a	1286	Total	C	N	O	S	0	0
			10167	6466	1771	1871	59		
6	B	1311	Total	C	N	O	S	0	0
			10389	6624	1797	1909	59		
6	C	1316	Total	C	N	O	S	0	0
			10431	6646	1809	1916	60		
6	D	1278	Total	C	N	O	S	0	0
			10114	6443	1754	1860	57		
6	Y	1347	Total	C	N	O	S	0	0
			10676	6799	1850	1966	61		
6	Z	1322	Total	C	N	O	S	0	0
			10468	6672	1813	1925	58		

- Molecule 7 is a protein called portal protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
7	A	42	Total	C	N	O	0	0
			210	126	42	42		
7	E	41	Total	C	N	O	0	0
			205	123	41	41		

- Molecule 8 is a protein called portal protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
8	F	15	Total	C	N	O	0	0
			75	45	15	15		

- Molecule 9 is a protein called portal protein.

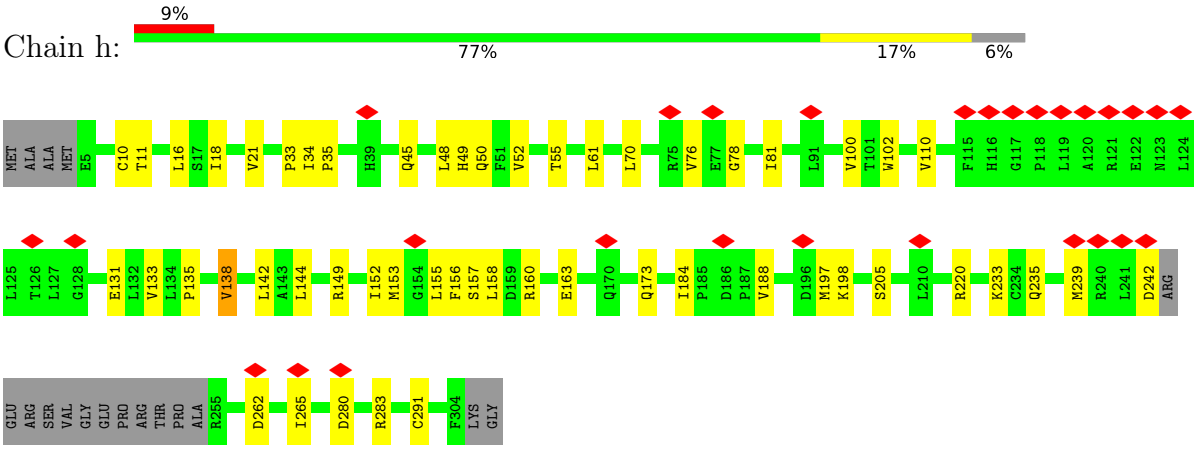
Mol	Chain	Residues	Atoms				AltConf	Trace
9	G	13	Total	C	N	O	0	0
			65	39	13	13		

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.

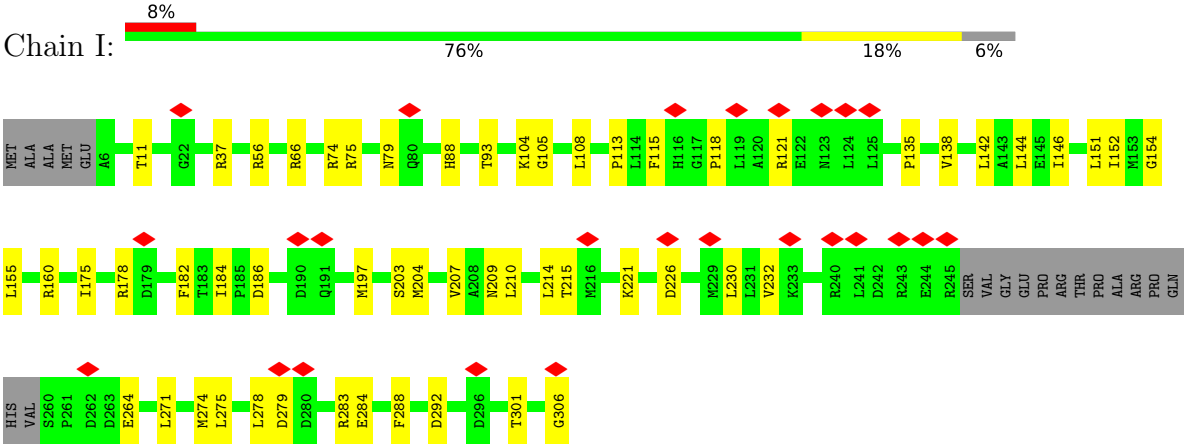
• Molecule 1: Triplex capsid protein 2

Chain h:



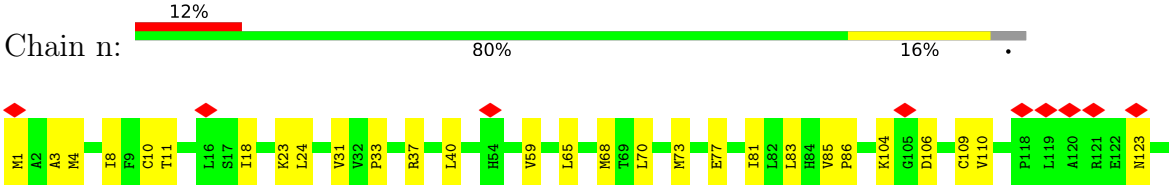
• Molecule 1: Triplex capsid protein 2

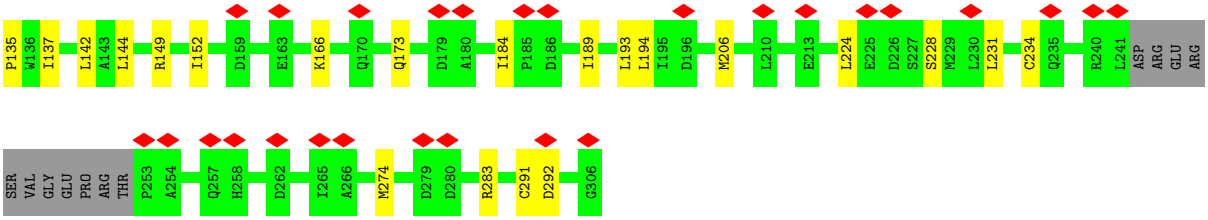
Chain I:



• Molecule 1: Triplex capsid protein 2

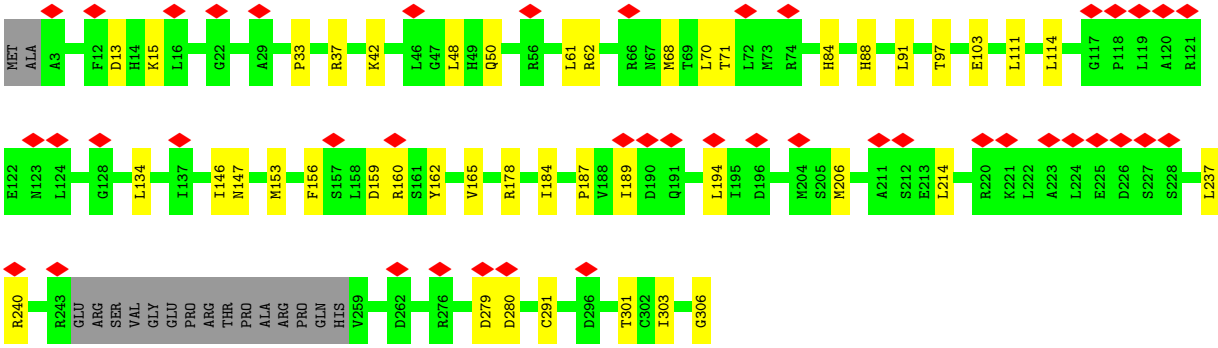
Chain n:





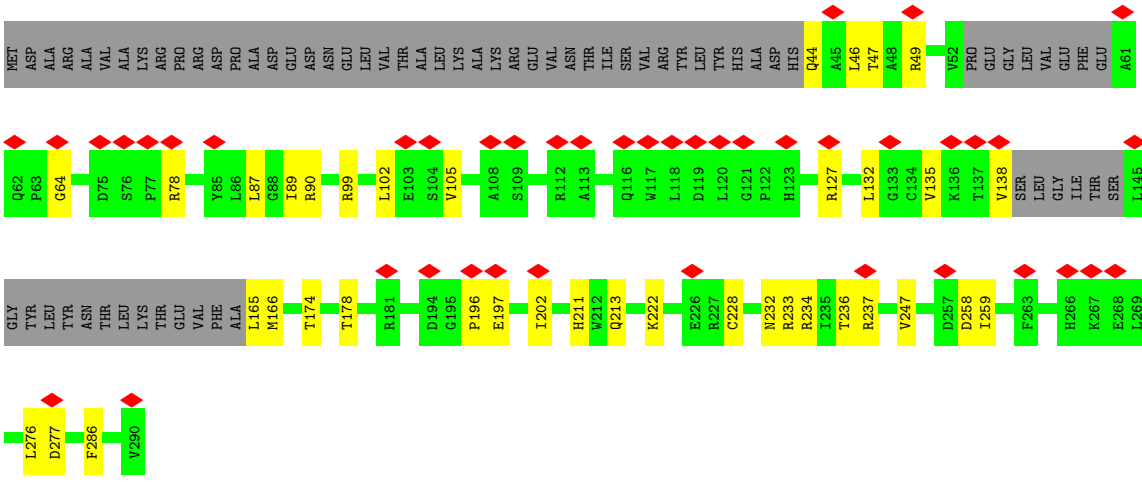
• Molecule 1: Triplex capsid protein 2

Chain o:



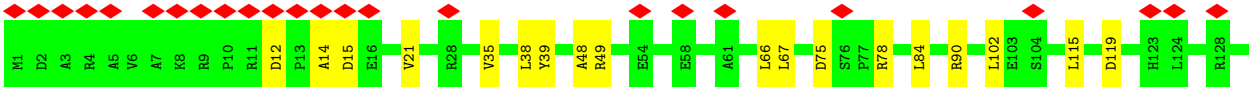
• Molecule 2: Triplex capsid protein 1

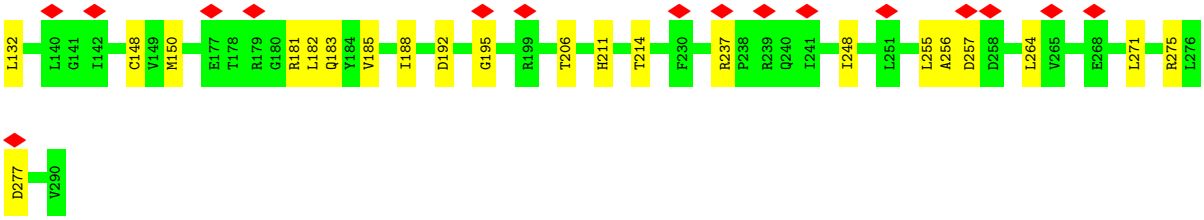
Chain g:



• Molecule 2: Triplex capsid protein 1

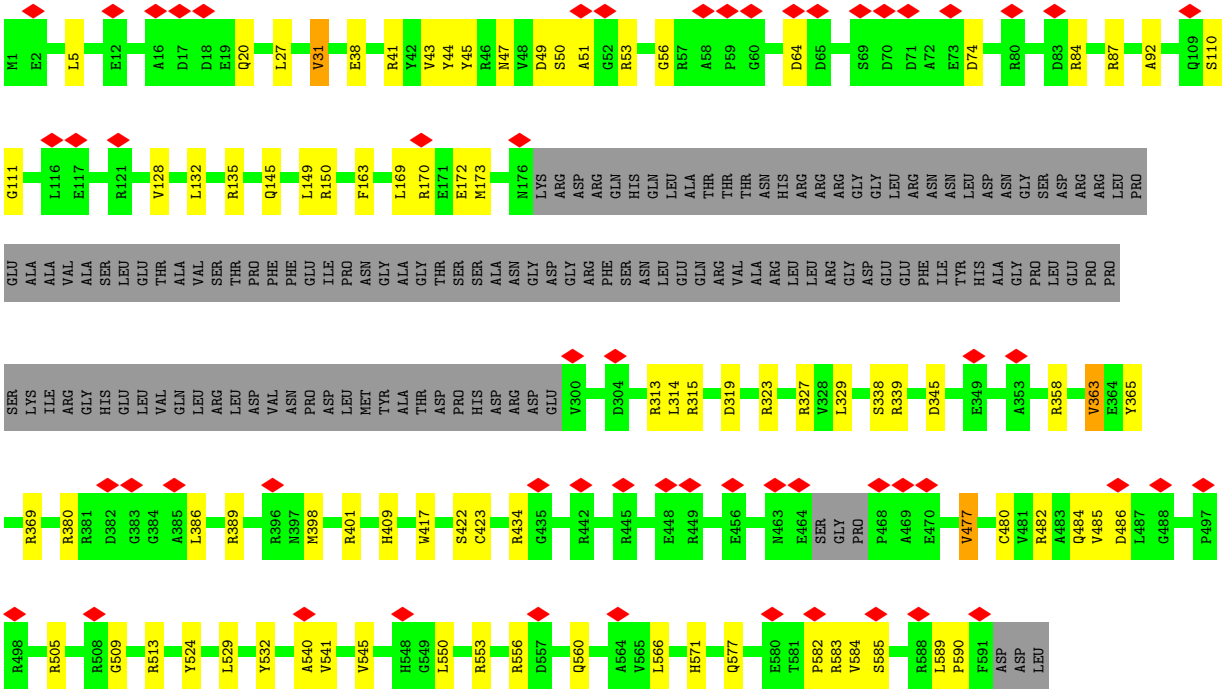
Chain m:





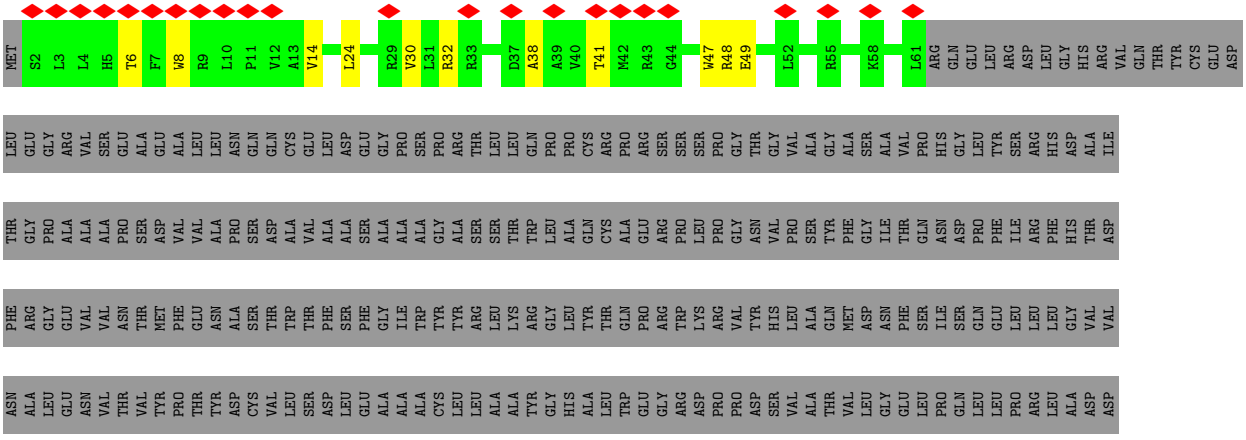
• Molecule 3: Capsid vertex component 1

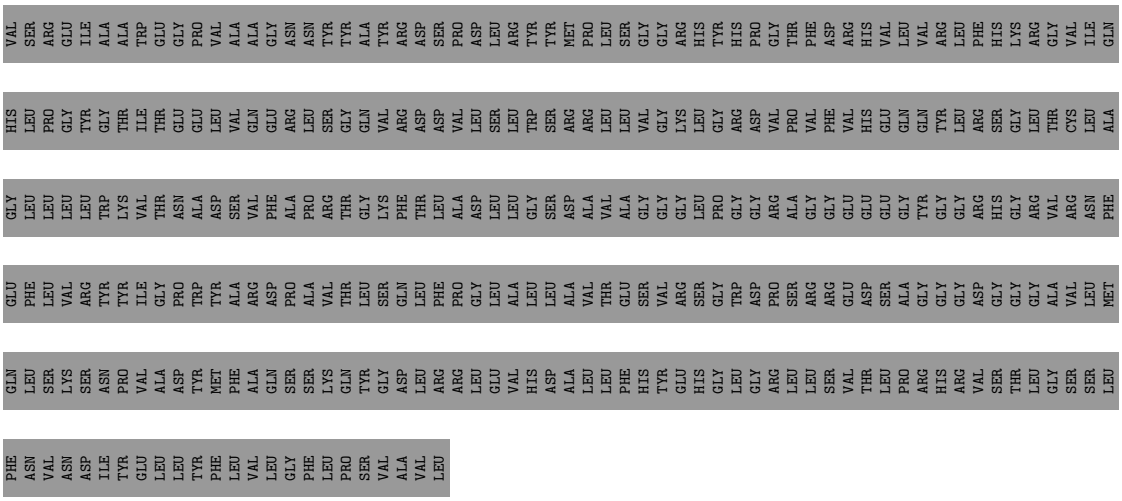
Chain M:



• Molecule 4: Capsid vertex component 2

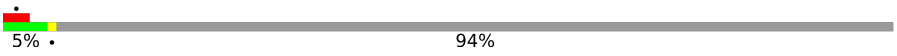
Chain N:

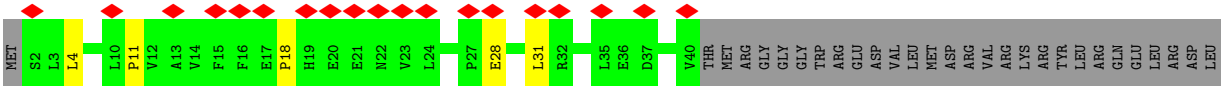


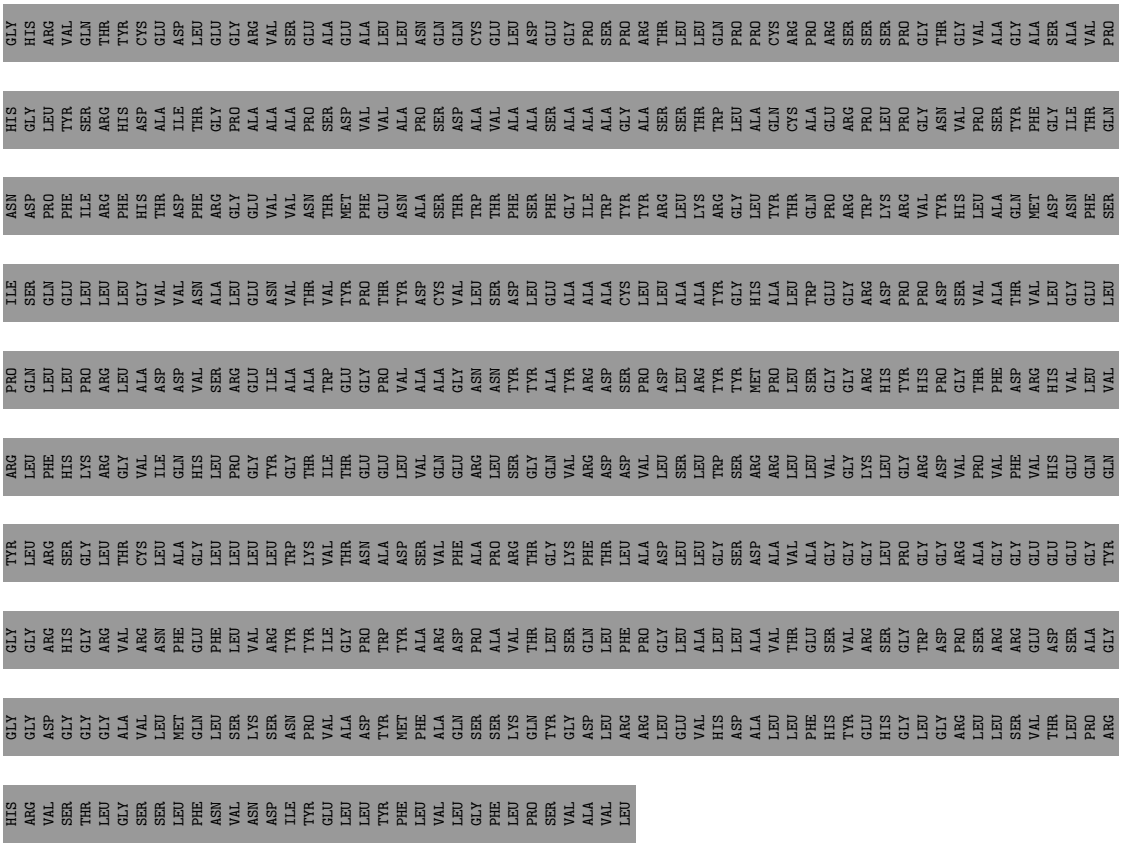


• Molecule 4: Capsid vertex component 2

Chain O:

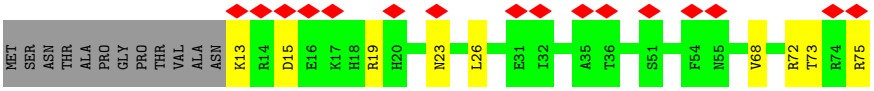




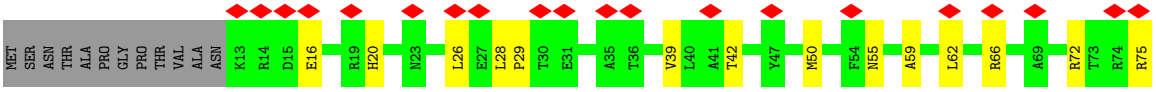


• Molecule 5: Small capsomere-interacting protein

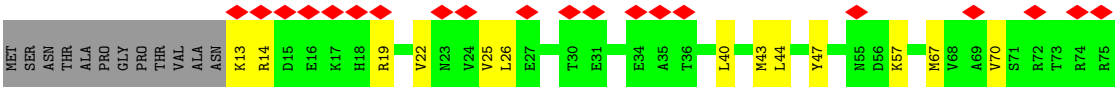
Chain R:



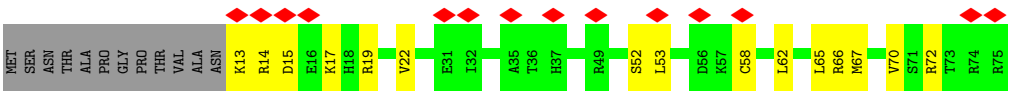
• Molecule 5: Small capsomere-interacting protein



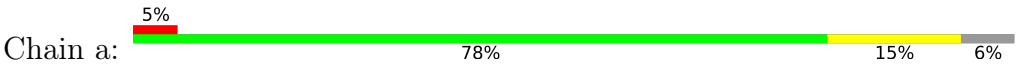
• Molecule 5: Small capsomere-interacting protein

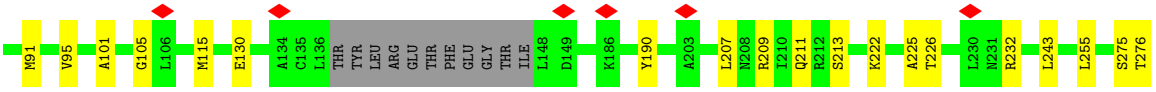


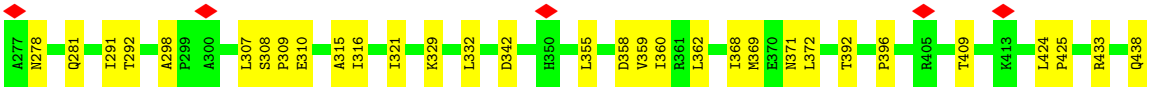
• Molecule 5: Small capsomere-interacting protein

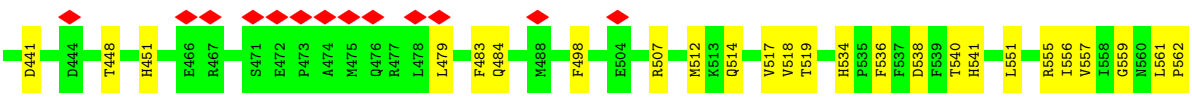


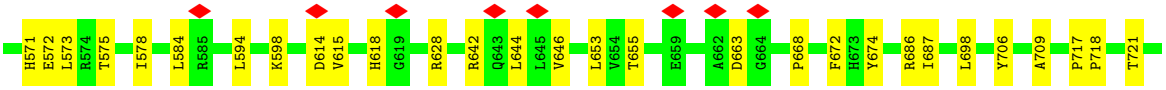
• Molecule 6: Major capsid protein

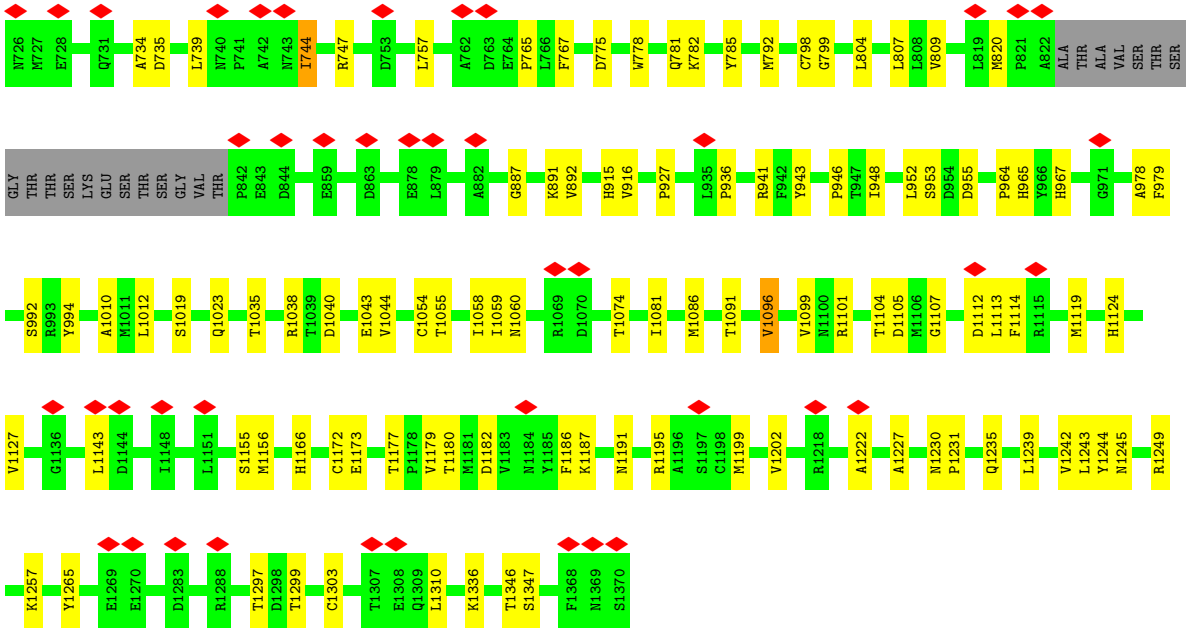






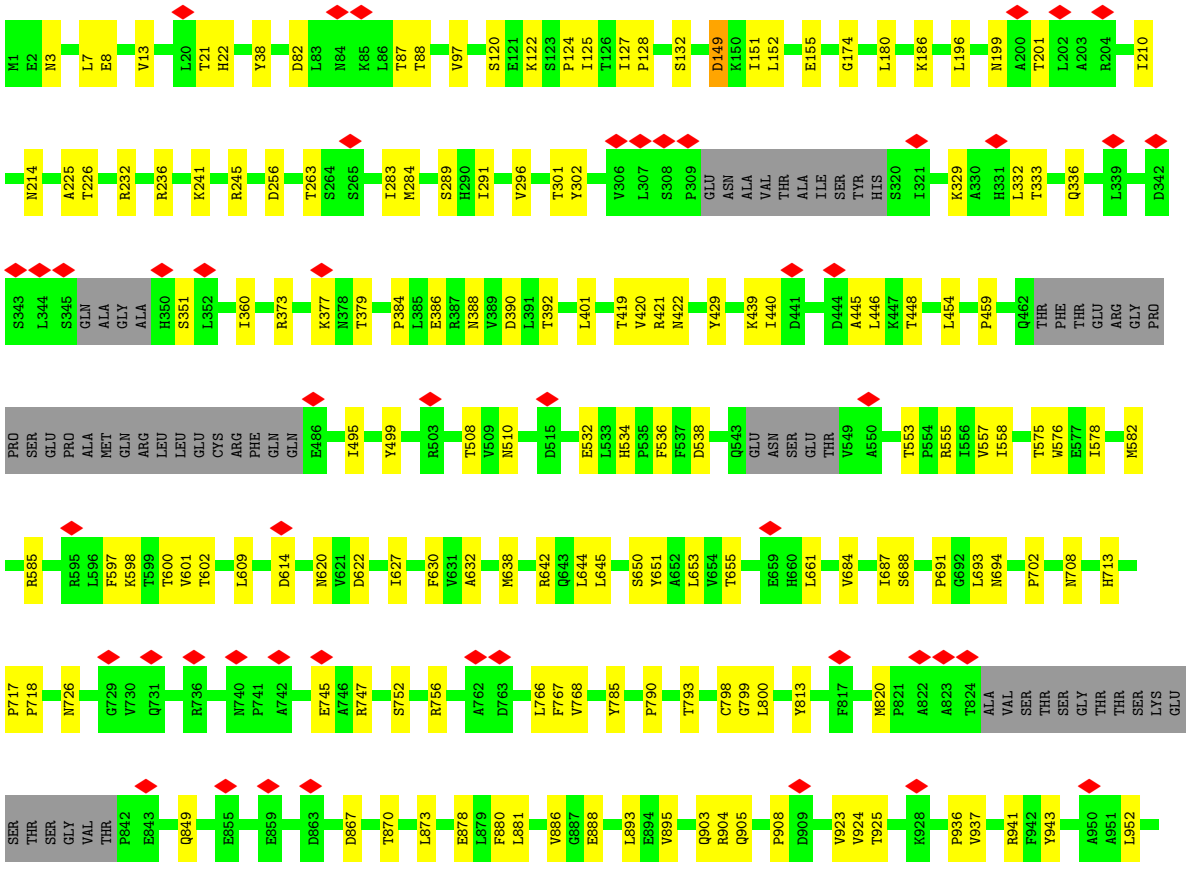


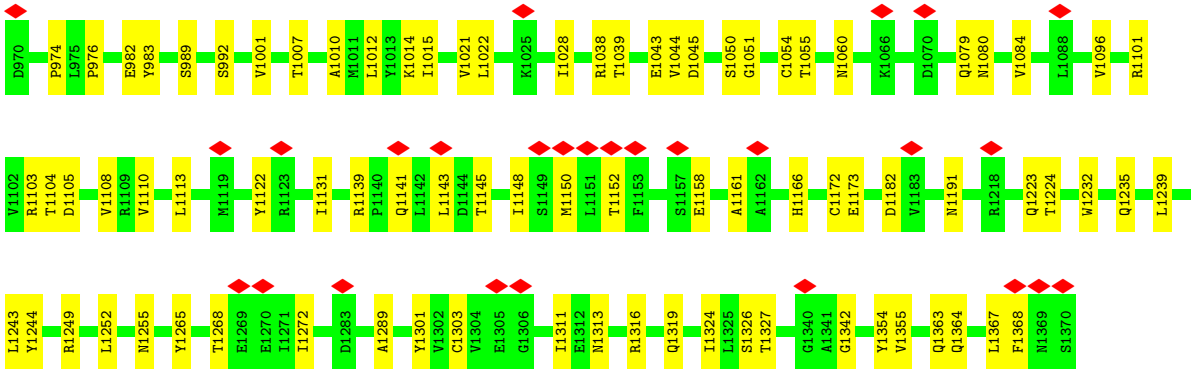




• Molecule 6: Major capsid protein

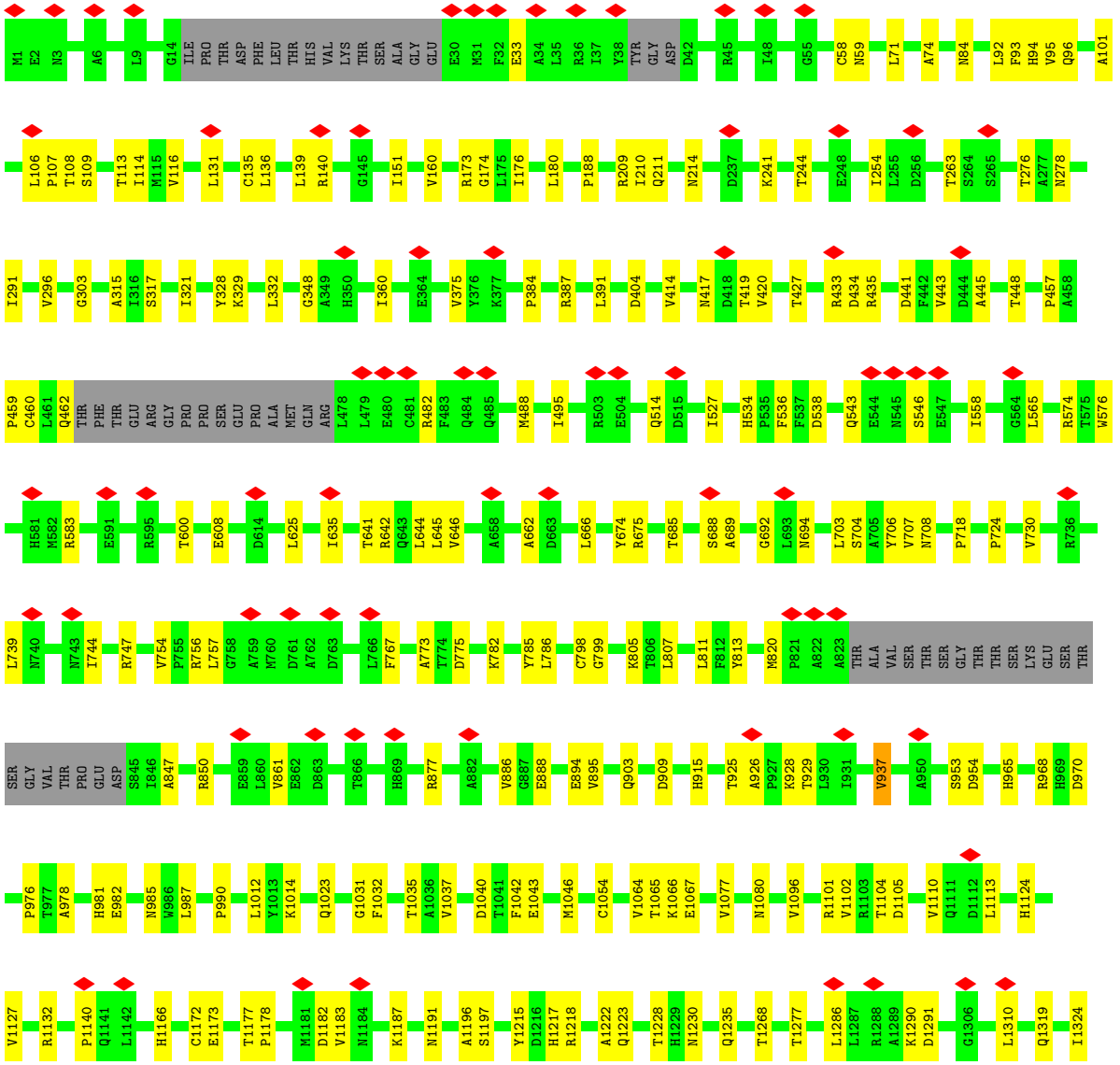
Chain B:

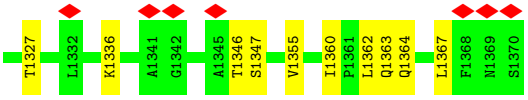




• Molecule 6: Major capsid protein

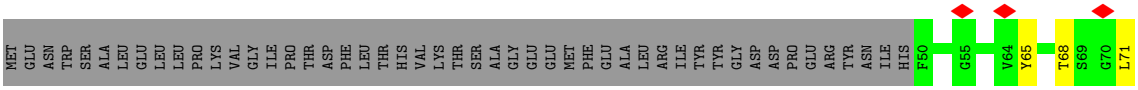
Chain C:

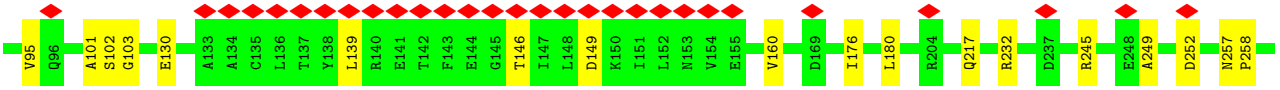


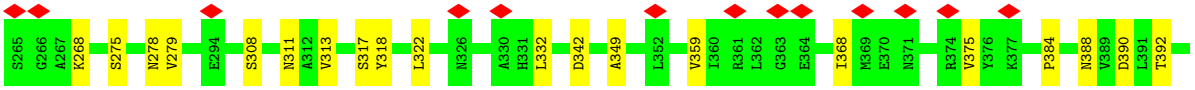


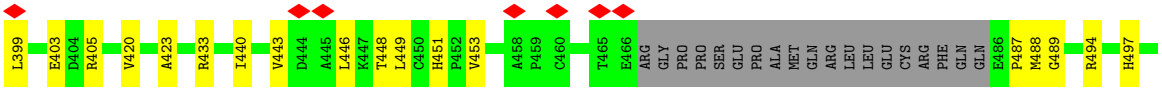
• Molecule 6: Major capsid protein

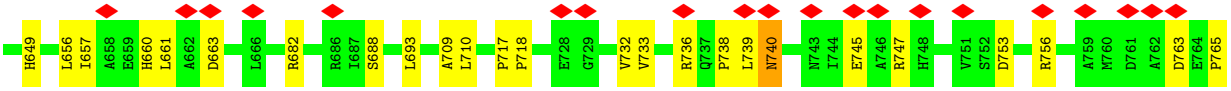
Chain D:

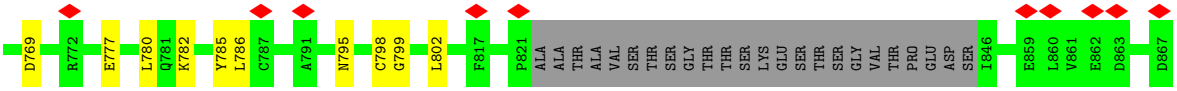


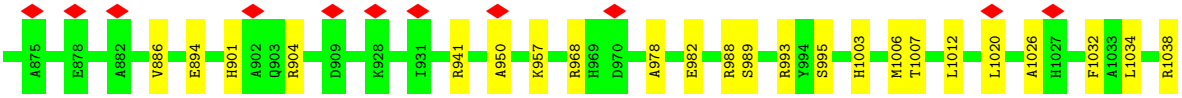


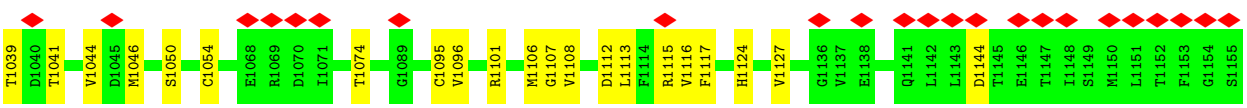


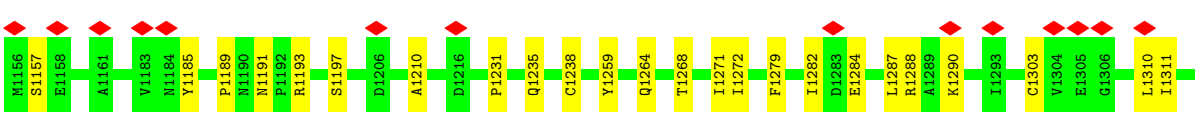


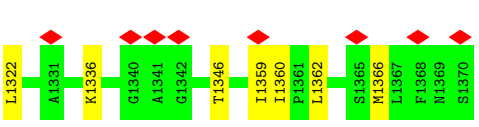






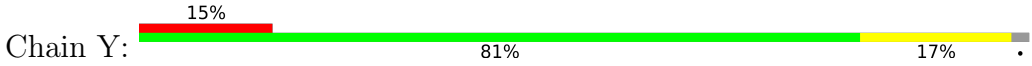


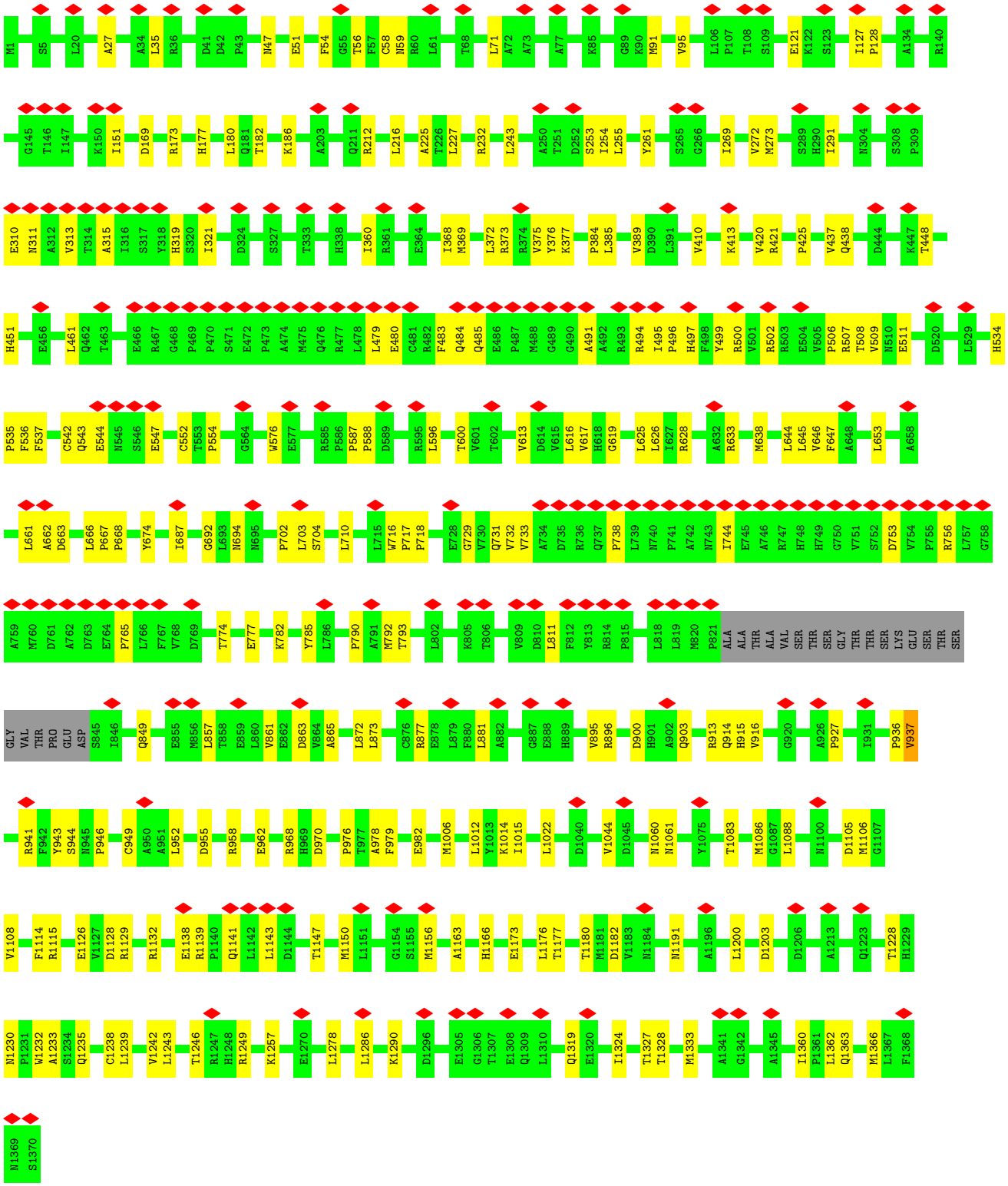




• Molecule 6: Major capsid protein

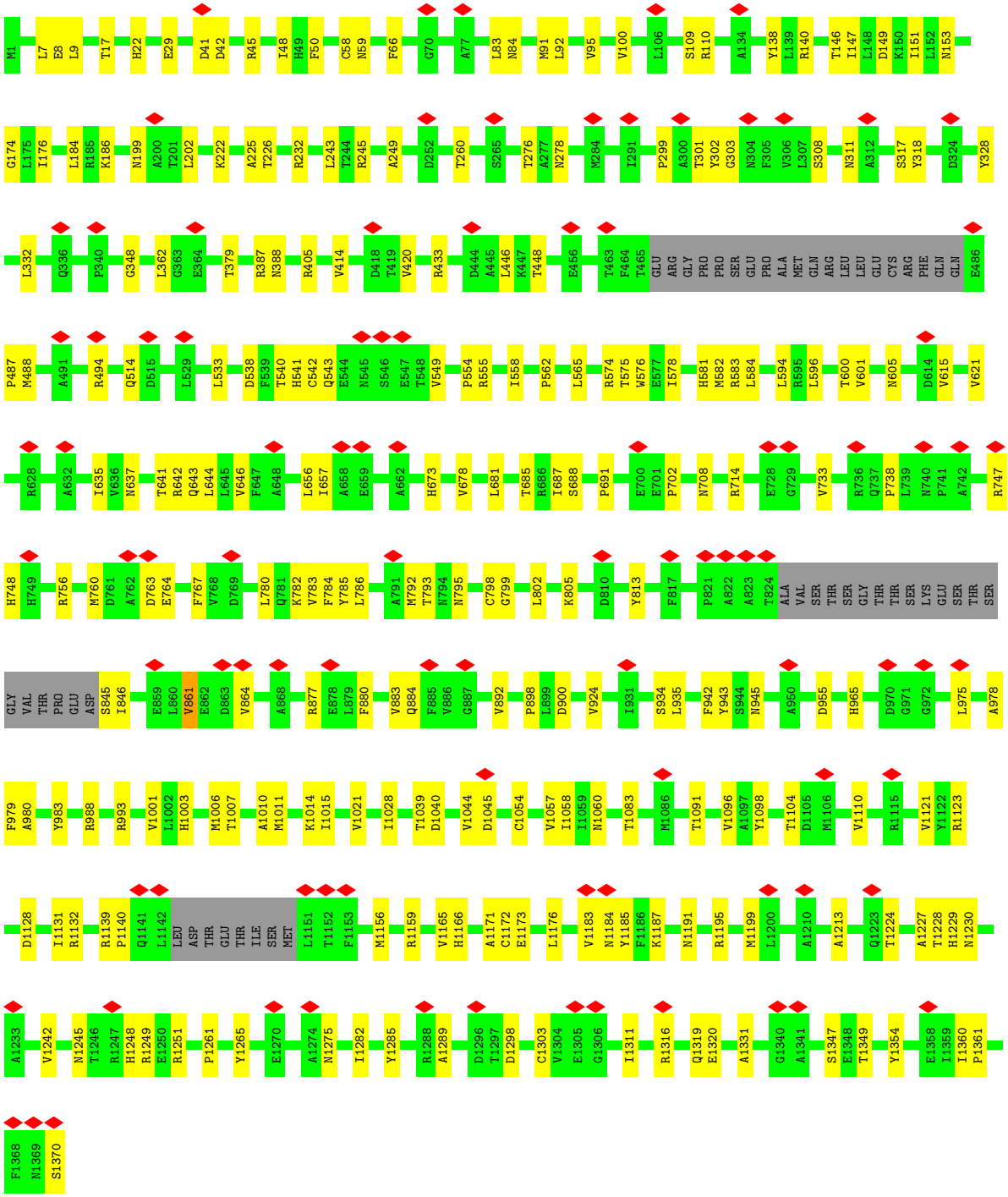
Chain Y:





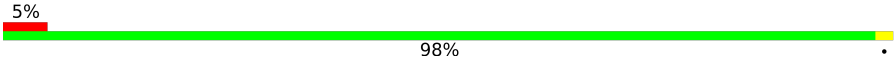
• Molecule 6: Major capsid protein

Chain Z:



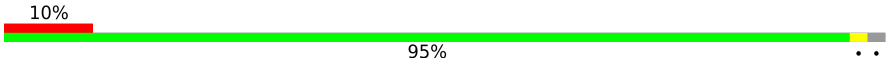
• Molecule 7: portal protein

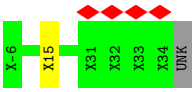
Chain A:



• Molecule 7: portal protein

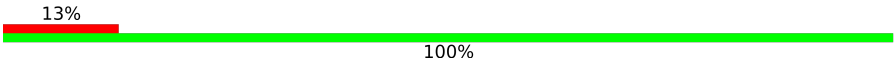
Chain E:

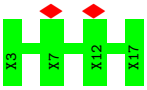




• Molecule 8: portal protein

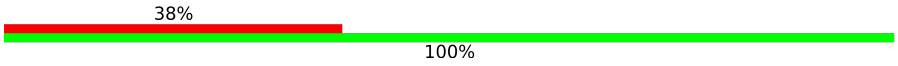
Chain F:

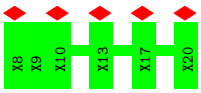




• Molecule 9: portal protein

Chain G:





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	26181	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	30	Depositor
Minimum defocus (nm)	900	Depositor
Maximum defocus (nm)	2300	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.066	Depositor
Minimum map value	-0.039	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.012	Depositor
Map size (Å)	416.0, 416.0, 416.0	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.625, 1.625, 1.625	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	I	0.26	0/2324	0.58	0/3154
1	h	0.25	0/2334	0.61	0/3173
1	n	0.24	0/2379	0.57	0/3230
1	o	0.23	0/2333	0.53	0/3167
2	g	0.23	0/1793	0.57	0/2428
2	m	0.24	0/2374	0.56	0/3221
3	M	0.24	0/3907	0.55	0/5294
4	N	0.24	0/521	0.57	0/703
4	O	0.22	0/338	0.53	0/460
5	R	0.18	0/520	0.48	0/697
5	S	0.21	0/520	0.57	0/697
5	i	0.22	0/520	0.54	0/697
5	j	0.20	0/520	0.59	0/697
6	B	0.27	0/10635	0.57	0/14483
6	C	0.27	0/10676	0.54	0/14538
6	D	0.25	0/10353	0.55	0/14105
6	Y	0.23	0/10932	0.52	0/14892
6	Z	0.25	0/10718	0.54	1/14601 (0.0%)
6	a	0.26	0/10407	0.54	0/14177
All	All	0.25	0/84104	0.55	1/114414 (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
6	B	0	1
6	D	0	2
6	Y	0	1
6	Z	0	1
All	All	0	5

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	Z	883	VAL	N-CA-C	-6.87	105.80	111.91

There are no chirality outliers.

All (5) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
6	B	585	ARG	Peptide
6	D	1303	CYS	Peptide
6	D	585	ARG	Peptide
6	Y	944	SER	Peptide
6	Z	764	GLU	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	I	2282	0	2373	41	0
1	h	2290	0	2375	38	0
1	n	2334	0	2431	36	0
1	o	2291	0	2383	29	0
2	g	1758	0	1797	25	0
2	m	2325	0	2363	28	0
3	M	3820	0	3750	57	0
4	N	509	0	515	10	0
4	O	329	0	330	5	0
5	R	513	0	539	6	0
5	S	513	0	539	12	0
5	i	513	0	539	10	0
5	j	513	0	539	9	0
6	B	10389	0	10345	151	0
6	C	10431	0	10386	150	0
6	D	10114	0	10074	117	0
6	Y	10676	0	10618	147	0
6	Z	10468	0	10413	161	0
6	a	10167	0	10125	146	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
7	A	210	0	44	1	0
7	E	205	0	43	1	0
8	F	75	0	17	0	0
9	G	65	0	15	0	0
All	All	82790	0	82553	1054	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 6.

All (1054) 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)
6:Y:1239:LEU:O	6:Y:1243:LEU:HB2	1.80	0.81
6:D:610:CYS:O	6:D:614:ASP:HB2	1.84	0.77
6:C:543:GLN:HE21	6:C:546:SER:H	1.37	0.71
6:C:92:LEU:HB3	6:Z:7:LEU:HD12	1.72	0.70
6:D:433:ARG:HH22	6:D:1101:ARG:HH21	1.40	0.68
6:Z:578:ILE:HG12	6:Z:1028:ILE:HD12	1.76	0.67
6:Y:694:ASN:HD22	6:Y:704:SER:HB2	1.59	0.66
6:a:479:LEU:HD23	6:a:541:HIS:HB2	1.78	0.66
6:Z:1176:LEU:HD22	6:Z:1230:ASN:HD22	1.61	0.66
6:B:575:THR:HG21	6:B:1007:THR:HA	1.79	0.65
6:Y:600:THR:HG22	6:Y:644:LEU:HB2	1.78	0.65
6:C:433:ARG:HE	6:D:217:GLN:HG2	1.62	0.65
6:Y:180:LEU:HD23	6:Y:384:PRO:HG2	1.80	0.64
6:Y:534:HIS:HD2	6:Y:536:PHE:H	1.44	0.64
1:n:291:CYS:SG	1:o:37:ARG:NH1	2.71	0.64
1:I:74:ARG:HG2	1:I:75:ARG:HG3	1.78	0.64
6:D:1284:GLU:O	6:D:1288:ARG:HB2	1.97	0.63
5:S:16:GLU:O	5:S:20:HIS:HB2	1.98	0.63
5:i:40:LEU:O	5:i:44:LEU:HB2	1.98	0.63
6:B:553:THR:HG21	6:B:983:TYR:HB3	1.80	0.63
2:m:66:LEU:HB2	2:m:84:LEU:HB2	1.81	0.63
6:Y:716:TRP:H	6:Y:914:GLN:HE22	1.46	0.63
6:Z:1172:CYS:SG	6:Z:1173:GLU:N	2.72	0.63
1:h:10:CYS:SG	1:h:11:THR:N	2.72	0.62
6:Y:753:ASP:HB3	6:Y:756:ARG:HE	1.64	0.62
6:C:135:CYS:O	6:C:139:LEU:HB2	1.99	0.62
2:m:12:ASP:HB3	2:m:15:ASP:HB2	1.80	0.62
6:Z:414:VAL:HG21	6:Z:1331:ALA:HB1	1.81	0.62
6:Z:582:MET:HE2	6:Z:691:PRO:HD2	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:Y:58:CYS:SG	6:Y:59:ASN:N	2.73	0.62
1:I:93:THR:HG22	1:I:301:THR:HG22	1.82	0.62
6:B:600:THR:HA	6:B:644:LEU:HD12	1.81	0.62
6:D:747:ARG:HD2	6:D:769:ASP:HB3	1.82	0.62
6:Y:272:VAL:HG12	6:Y:368:ILE:HB	1.81	0.61
3:M:44:TYR:HB2	3:M:150:ARG:HB2	1.82	0.61
6:C:782:LYS:O	6:C:786:LEU:HB2	2.00	0.61
6:D:448:THR:HG23	6:D:1113:LEU:HG	1.83	0.61
6:a:1222:ALA:HB1	6:Z:1165:VAL:H	1.65	0.61
6:a:1336:LYS:NZ	6:a:1346:THR:OG1	2.34	0.61
6:D:139:LEU:HD22	6:D:160:VAL:HG21	1.81	0.61
6:C:495:ILE:HG13	6:C:976:PRO:HG2	1.83	0.61
6:C:798:CYS:SG	6:C:799:GLY:N	2.74	0.61
6:D:901:HIS:HA	6:D:904:ARG:HB2	1.83	0.61
1:n:4:MET:HG3	1:n:37:ARG:HH21	1.65	0.61
3:M:363:VAL:HG23	3:M:550:LEU:HD21	1.82	0.61
6:Y:502:ARG:NH2	6:Y:962:GLU:OE2	2.34	0.61
6:Y:542:CYS:SG	6:Y:543:GLN:N	2.74	0.61
6:B:941:ARG:HH11	6:B:992:SER:HB3	1.64	0.60
6:D:624:PHE:HA	6:D:627:ILE:HG22	1.82	0.60
6:Y:1106:MET:SD	6:Y:1363:GLN:NE2	2.74	0.60
6:B:1239:LEU:O	6:B:1243:LEU:HB2	2.01	0.60
6:Z:798:CYS:SG	6:Z:799:GLY:N	2.75	0.60
6:Y:311:ASN:HB3	6:Y:321:ILE:HG23	1.82	0.60
6:Y:495:ILE:HG23	6:Y:496:PRO:HD3	1.83	0.60
6:Z:575:THR:HG21	6:Z:1007:THR:HA	1.83	0.60
6:Z:687:ILE:HG13	6:Z:1006:MET:HE1	1.84	0.60
2:g:211:HIS:NE2	2:g:213:GLN:OE1	2.35	0.60
6:B:1150:MET:SD	6:B:1255:ASN:ND2	2.75	0.60
1:n:8:ILE:HB	1:n:83:LEU:HB2	1.83	0.60
6:Z:600:THR:HG22	6:Z:644:LEU:HB2	1.84	0.60
1:I:160:ARG:NH2	1:I:186:ASP:OD2	2.34	0.59
1:n:33:PRO:HB2	1:n:68:MET:HG2	1.84	0.59
6:a:557:VAL:HG12	6:a:559:GLY:H	1.67	0.59
6:B:1054:CYS:SG	6:B:1055:THR:N	2.75	0.59
6:B:386:GLU:HA	6:B:1045:ASP:HA	1.85	0.59
6:a:892:VAL:HG11	6:a:979:PHE:HE1	1.66	0.59
6:a:433:ARG:NH1	6:a:1166:HIS:O	2.35	0.59
6:a:798:CYS:SG	6:a:799:GLY:N	2.75	0.59
6:a:1119:MET:HE2	6:a:1143:LEU:HB3	1.85	0.59
1:n:4:MET:HE2	2:m:182:LEU:HB2	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:n:234:CYS:HB3	1:o:206:MET:HE3	1.85	0.59
2:g:47:THR:HG22	2:g:149:VAL:HG12	1.84	0.59
6:D:488:MET:HE1	6:D:978:ALA:HB1	1.84	0.59
6:B:534:HIS:HD2	6:B:536:PHE:H	1.51	0.59
6:C:174:GLY:HA3	6:D:101:ALA:HB3	1.82	0.59
6:a:507:ARG:NH2	6:a:512:MET:SD	2.76	0.59
1:n:65:LEU:HD11	1:n:135:PRO:HB3	1.85	0.59
6:B:1060:ASN:O	6:B:1079:GLN:NE2	2.36	0.59
6:B:578:ILE:HG22	6:B:1028:ILE:HD12	1.84	0.59
6:B:756:ARG:NH2	6:B:886:VAL:O	2.35	0.59
6:C:93:PHE:HB2	6:C:116:VAL:HB	1.84	0.59
6:Y:638:MET:HG2	6:Y:646:VAL:HG13	1.84	0.58
6:Z:58:CYS:SG	6:Z:59:ASN:N	2.76	0.58
6:Z:678:VAL:HA	6:Z:681:LEU:HD12	1.83	0.58
5:S:62:LEU:HB3	6:C:757:LEU:HD13	1.85	0.58
6:C:180:LEU:HD23	6:C:384:PRO:HG2	1.85	0.58
6:D:449:LEU:HD11	6:D:1034:LEU:HD21	1.85	0.58
6:B:1172:CYS:SG	6:B:1173:GLU:N	2.72	0.58
6:Y:692:GLY:HA2	6:Z:993:ARG:HH12	1.67	0.58
1:I:178:ARG:HD3	2:g:78:ARG:HG2	1.85	0.58
1:n:70:LEU:HD21	1:n:110:VAL:HG11	1.86	0.58
6:a:448:THR:HG23	6:a:1113:LEU:HD22	1.86	0.58
6:B:1044:VAL:HG11	6:B:1096:VAL:HG13	1.85	0.58
6:C:433:ARG:NH2	6:C:1102:VAL:O	2.36	0.58
6:Z:138:TYR:O	6:Z:153:ASN:ND2	2.37	0.58
6:a:1231:PRO:O	6:a:1235:GLN:NE2	2.37	0.57
6:B:149:ASP:OD1	6:B:149:ASP:N	2.37	0.57
6:a:717:PRO:HB3	6:a:782:LYS:HA	1.85	0.57
6:B:22:HIS:NE2	6:Z:379:THR:O	2.33	0.57
6:Y:173:ARG:HB3	6:Z:100:VAL:HG12	1.86	0.57
6:Y:1235:GLN:HB2	6:Y:1238:CYS:HB3	1.85	0.57
6:Z:795:ASN:O	6:Z:945:ASN:ND2	2.35	0.57
6:Z:1199:MET:HB3	6:Z:1275:ASN:HB3	1.86	0.57
6:B:849:GLN:HB2	6:B:873:LEU:HD13	1.85	0.57
6:C:675:ARG:NH1	6:D:603:SER:OG	2.36	0.57
1:o:48:LEU:HD23	1:o:61:LEU:HD22	1.86	0.57
1:n:109:CYS:SG	1:n:110:VAL:N	2.77	0.57
6:B:1043:GLU:OE1	6:B:1101:ARG:NH1	2.33	0.57
1:n:3:ALA:O	2:m:181:ARG:NH2	2.37	0.57
6:D:717:PRO:HB3	6:D:782:LYS:HA	1.86	0.57
6:Z:747:ARG:NH2	6:Z:767:PHE:O	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:h:233:LYS:HE2	6:B:1143:LEU:HB2	1.87	0.57
1:I:115:PHE:HB3	1:I:118:PRO:HB3	1.86	0.57
1:I:154:GLY:HA3	1:I:197:MET:HE2	1.87	0.57
6:B:1182:ASP:OD1	6:B:1182:ASP:N	2.38	0.57
6:D:1095:CYS:SG	6:D:1096:VAL:N	2.77	0.57
6:Y:687:ILE:HG21	6:Y:1006:MET:HG2	1.85	0.57
6:Z:601:VAL:HG11	6:Z:793:THR:HG22	1.86	0.57
1:I:56:ARG:NH1	6:B:1152:THR:O	2.38	0.56
3:M:47:ASN:HD21	3:M:135:ARG:HB3	1.70	0.56
1:h:158:LEU:O	1:I:221:LYS:NZ	2.36	0.56
3:M:409:HIS:ND1	3:M:480:CYS:SG	2.78	0.56
3:M:513:ARG:NH2	4:O:18:PRO:O	2.39	0.56
6:Z:1172:CYS:HB2	6:Z:1261:PRO:HD2	1.88	0.56
5:S:75:ARG:NH2	6:C:625:LEU:O	2.39	0.56
6:D:795:ASN:ND2	6:D:995:SER:OG	2.39	0.56
6:Y:941:ARG:HH12	6:Y:982:GLU:HA	1.70	0.56
1:I:104:LYS:NZ	2:g:49:ARG:O	2.39	0.56
1:n:31:VAL:HG11	1:n:137:ILE:HD11	1.88	0.56
6:a:255:LEU:HG	6:a:1086:MET:HG2	1.87	0.56
6:C:482:ARG:HH22	6:C:982:GLU:H	1.51	0.56
6:C:600:THR:HG22	6:C:644:LEU:HB2	1.88	0.56
6:Z:581:HIS:ND1	6:Z:582:MET:SD	2.78	0.56
6:Z:748:HIS:H	6:Z:756:ARG:HH22	1.54	0.56
6:a:91:MET:HE3	6:a:1086:MET:HE3	1.86	0.56
6:Z:900:ASP:OD2	6:Z:1014:LYS:NZ	2.38	0.56
6:a:101:ALA:HB3	6:Z:174:GLY:HA3	1.87	0.56
6:B:196:LEU:O	6:B:201:THR:OG1	2.24	0.56
6:Y:180:LEU:HD21	6:Y:385:LEU:HG	1.86	0.56
6:Z:955:ASP:OD1	6:Z:955:ASP:N	2.39	0.56
1:I:232:VAL:HG21	3:M:5:LEU:HB3	1.86	0.56
6:a:721:THR:HG22	6:a:781:GLN:HE22	1.70	0.56
6:C:151:ILE:HD12	6:D:332:LEU:HG	1.88	0.56
2:m:90:ARG:NH1	2:m:115:LEU:O	2.39	0.55
3:M:386:LEU:HD22	3:M:541:VAL:HG22	1.88	0.55
1:h:48:LEU:HB3	1:h:133:VAL:HG13	1.89	0.55
1:I:118:PRO:HG2	1:I:121:ARG:H	1.71	0.55
3:M:339:ARG:O	3:M:339:ARG:NH1	2.39	0.55
6:a:291:ILE:HD12	6:a:369:MET:HE1	1.88	0.55
6:B:510:ASN:ND2	6:B:538:ASP:OD1	2.39	0.55
6:C:820:MET:HE1	6:C:877:ARG:HG2	1.87	0.55
6:Z:488:MET:HE1	6:Z:978:ALA:HB1	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:315:ALA:HB2	6:C:321:ILE:HD11	1.88	0.55
1:I:207:VAL:HG21	1:I:275:LEU:HB3	1.87	0.55
1:I:210:LEU:O	1:I:214:LEU:HB2	2.06	0.55
6:Y:420:VAL:HG11	6:Y:576:TRP:HB3	1.89	0.55
2:m:14:ALA:O	6:Z:140:ARG:NH2	2.39	0.55
5:j:72:ARG:NH2	6:a:820:MET:O	2.40	0.55
6:B:924:VAL:HG23	6:B:925:THR:HG23	1.89	0.55
6:C:433:ARG:NH1	6:C:1166:HIS:O	2.40	0.55
6:D:740:ASN:OD1	6:D:740:ASN:N	2.36	0.55
6:Y:151:ILE:HD12	6:Z:332:LEU:HG	1.87	0.55
5:j:14:ARG:HH12	5:j:17:LYS:HB2	1.71	0.55
6:a:225:ALA:O	6:a:232:ARG:NH1	2.39	0.55
6:D:521:PHE:O	6:D:526:ASN:ND2	2.40	0.55
6:D:579:MET:HE3	6:D:1006:MET:HG3	1.89	0.55
6:D:1113:LEU:HA	6:D:1116:VAL:HG12	1.88	0.55
6:Z:558:ILE:HG21	6:Z:574:ARG:HH22	1.70	0.55
1:o:103:GLU:OE1	2:m:78:ARG:NH2	2.40	0.55
1:o:189:ILE:HD11	1:o:194:LEU:HD21	1.88	0.55
6:a:718:PRO:HA	6:a:916:VAL:HG12	1.89	0.55
6:C:688:SER:O	6:C:708:ASN:ND2	2.39	0.55
6:C:1191:ASN:ND2	6:C:1319:GLN:O	2.40	0.55
6:Y:666:LEU:HD12	6:Y:667:PRO:HD2	1.89	0.55
1:h:173:GLN:NE2	1:h:184:ILE:O	2.40	0.55
1:o:62:ARG:NH2	1:o:280:ASP:O	2.40	0.55
6:a:584:LEU:HD12	6:a:687:ILE:HD11	1.89	0.55
6:D:1112:ASP:OD1	6:D:1112:ASP:N	2.40	0.55
3:M:110:SER:OG	3:M:111:GLY:N	2.40	0.55
6:B:1223:GLN:HG3	6:B:1224:THR:HG23	1.89	0.55
6:Y:710:LEU:HD12	6:Y:782:LYS:HE2	1.88	0.55
6:Z:1183:VAL:HA	6:Z:1187:LYS:HE2	1.88	0.55
1:h:283:ARG:NH2	1:I:279:ASP:OD1	2.39	0.55
6:C:558:ILE:HD11	6:C:1031:GLY:HA3	1.89	0.55
6:C:724:PRO:HA	6:C:773:ALA:HB3	1.89	0.55
6:D:777:GLU:HA	6:D:780:LEU:HB2	1.88	0.55
1:I:66:ARG:NH2	1:I:284:GLU:OE1	2.40	0.54
6:a:927:PRO:HD2	6:a:952:LEU:HD11	1.89	0.54
6:Y:626:LEU:HD12	6:Y:881:LEU:HD13	1.90	0.54
1:o:153:MET:HE3	1:o:187:PRO:HD3	1.89	0.54
5:i:22:VAL:HA	5:i:26:LEU:HB2	1.89	0.54
6:C:417:ASN:ND2	6:D:403:GLU:O	2.40	0.54
6:Y:56:THR:HG22	6:Z:92:LEU:HB3	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:n:10:CYS:SG	1:n:11:THR:N	2.79	0.54
6:B:598:LYS:HE2	6:B:602:THR:HG21	1.89	0.54
6:D:515:ASP:OD1	6:D:515:ASP:N	2.39	0.54
6:D:756:ARG:NH2	6:D:886:VAL:O	2.36	0.54
6:Y:915:HIS:NE2	6:Y:978:ALA:O	2.41	0.54
5:j:58:CYS:HB3	6:a:809:VAL:HG11	1.90	0.54
6:Y:662:ALA:HB1	6:Z:605:ASN:HD22	1.73	0.54
6:a:584:LEU:HD11	6:a:686:ARG:HH21	1.73	0.54
6:Y:1246:THR:HA	6:Y:1249:ARG:HB3	1.88	0.54
6:Z:621:VAL:HG12	6:Z:656:LEU:HD11	1.89	0.54
5:S:26:LEU:HD22	5:S:28:LEU:HB2	1.89	0.54
6:a:709:ALA:HB3	6:a:1012:LEU:HD12	1.90	0.54
6:Y:729:GLY:O	6:Y:731:GLN:NE2	2.41	0.54
6:a:765:PRO:O	6:a:891:LYS:NZ	2.41	0.54
6:a:1112:ASP:N	6:a:1112:ASP:OD1	2.40	0.54
6:Y:946:PRO:HA	6:Y:949:CYS:HB3	1.89	0.54
1:n:10:CYS:HB3	1:n:81:ILE:HB	1.90	0.54
1:n:18:ILE:HD11	6:Y:51:GLU:HG3	1.90	0.54
1:n:149:ARG:HA	1:n:152:ILE:HG22	1.90	0.54
6:Y:1139:ARG:HD3	6:Y:1141:GLN:HE22	1.72	0.54
6:Z:584:LEU:HD12	6:Z:687:ILE:HD11	1.89	0.54
6:Z:845:SER:OG	6:Z:846:ILE:N	2.41	0.54
5:j:62:LEU:HA	5:j:65:LEU:HB2	1.90	0.54
6:B:1103:ARG:HD2	6:C:210:ILE:HD12	1.90	0.54
6:B:688:SER:OG	6:B:708:ASN:ND2	2.41	0.54
6:Z:8:GLU:OE2	6:Z:45:ARG:NH1	2.40	0.54
6:C:608:GLU:OE2	6:C:928:LYS:N	2.40	0.53
1:I:204:MET:HB3	1:I:278:LEU:HD21	1.89	0.53
6:a:936:PRO:HB3	6:a:952:LEU:HD23	1.90	0.53
6:B:558:ILE:HD13	6:B:1015:ILE:HD13	1.91	0.53
6:D:615:VAL:HG21	6:D:802:LEU:HD23	1.91	0.53
6:Y:495:ILE:HG21	6:Y:937:VAL:HG12	1.90	0.53
1:I:144:LEU:HD11	2:g:127:ARG:HH22	1.73	0.53
2:g:174:THR:HG21	2:g:178:THR:HB	1.90	0.53
6:C:210:ILE:O	6:C:214:ASN:ND2	2.42	0.53
6:Y:1200:LEU:HD21	6:Y:1278:LEU:HD13	1.90	0.53
6:B:1191:ASN:ND2	6:B:1319:GLN:O	2.32	0.53
6:D:1290:LYS:HB2	6:D:1310:LEU:HD23	1.91	0.53
2:m:75:ASP:OD2	2:m:78:ARG:NH1	2.40	0.53
5:i:26:LEU:O	6:Z:813:TYR:OH	2.24	0.53
6:B:941:ARG:NH2	6:B:982:GLU:OE2	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:136:LEU:O	6:C:140:ARG:NH1	2.41	0.53
6:D:782:LYS:O	6:D:786:LEU:HB2	2.09	0.53
6:B:632:ALA:HB2	6:B:661:LEU:HD11	1.89	0.53
2:m:185:VAL:HG12	2:m:206:THR:HG22	1.91	0.53
6:C:968:ARG:HD3	6:C:970:ASP:HB3	1.89	0.53
6:Z:276:THR:HG23	6:Z:278:ASN:H	1.74	0.53
1:h:138:VAL:HG21	1:h:142:LEU:HD22	1.90	0.53
1:o:91:LEU:HA	1:o:303:ILE:HA	1.91	0.53
6:C:488:MET:HE2	6:C:894:GLU:HB2	1.90	0.53
6:D:1336:LYS:NZ	6:D:1346:THR:OG1	2.39	0.53
6:Z:487:PRO:HG2	6:Z:494:ARG:HH12	1.72	0.53
1:n:77:GLU:HB3	6:Y:47:ASN:HD21	1.73	0.53
6:a:1019:SER:OG	6:a:1023:GLN:NE2	2.42	0.53
6:B:210:ILE:O	6:B:214:ASN:ND2	2.42	0.53
6:D:950:ALA:HB1	6:D:957:LYS:HD3	1.91	0.53
6:Y:732:VAL:HG22	6:Y:895:VAL:HG12	1.91	0.53
6:Y:1105:ASP:HB3	6:Y:1166:HIS:HB3	1.91	0.53
2:m:48:ALA:O	2:m:148:CYS:N	2.37	0.52
6:Y:483:PHE:HB3	6:Y:913:ARG:HH12	1.74	0.52
6:Z:782:LYS:O	6:Z:786:LEU:HB2	2.09	0.52
3:M:369:ARG:NH1	4:N:47:TRP:O	2.39	0.52
6:a:517:VAL:HG13	6:a:519:THR:H	1.75	0.52
6:C:807:LEU:O	6:C:811:LEU:HB3	2.08	0.52
6:C:981:HIS:O	6:C:985:ASN:ND2	2.41	0.52
6:C:291:ILE:HA	6:C:360:ILE:HG22	1.91	0.52
6:D:1115:ARG:NH1	6:D:1157:SER:O	2.43	0.52
6:Z:1289:ALA:HB1	6:Z:1316:ARG:HG2	1.91	0.52
2:g:165:LEU:N	2:g:276:LEU:O	2.42	0.52
6:C:694:ASN:O	6:D:968:ARG:NH2	2.42	0.52
6:C:953:SER:OG	6:C:954:ASP:N	2.42	0.52
6:Z:733:VAL:HG12	6:Z:738:PRO:HA	1.92	0.52
6:Z:983:TYR:O	6:Z:988:ARG:NH1	2.41	0.52
1:I:138:VAL:HG11	1:I:142:LEU:HD22	1.90	0.52
5:j:13:LYS:HG3	5:j:15:ASP:H	1.75	0.52
6:B:575:THR:HG22	6:B:1010:ALA:HB3	1.90	0.52
6:Z:1054:CYS:SG	6:Z:1091:THR:OG1	2.64	0.52
1:o:88:HIS:ND1	1:o:306:GLY:OXT	2.42	0.52
5:j:52:SER:OG	5:j:53:LEU:N	2.43	0.52
6:a:332:LEU:HD22	6:Z:151:ILE:HD12	1.91	0.52
6:D:433:ARG:HA	6:D:1106:MET:HE2	1.92	0.52
6:D:537:PHE:HA	6:D:554:PRO:HA	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:D:1185:TYR:OH	6:D:1193:ARG:O	2.27	0.52
3:M:49:ASP:HA	3:M:145:GLN:HG2	1.91	0.52
3:M:50:SER:O	3:M:53:ARG:NH1	2.41	0.52
6:Y:169:ASP:OD2	6:Y:173:ARG:NH2	2.42	0.52
5:R:68:VAL:HG13	6:B:880:PHE:HZ	1.75	0.52
6:B:236:ARG:NH2	6:B:289:SER:OG	2.43	0.52
1:n:206:MET:HB3	1:n:274:MET:HE2	1.92	0.52
2:m:48:ALA:HB3	2:m:148:CYS:HB3	1.92	0.52
6:C:583:ARG:NH1	6:D:572:GLU:OE1	2.42	0.52
6:Y:216:LEU:HD21	6:Y:1200:LEU:HD22	1.92	0.52
6:Y:507:ARG:HH21	6:Y:968:ARG:HH12	1.56	0.52
3:M:398:MET:HE3	4:O:31:LEU:HD21	1.92	0.52
6:C:420:VAL:HG21	6:C:576:TRP:HB3	1.91	0.52
6:C:1336:LYS:NZ	6:C:1346:THR:OG1	2.43	0.52
6:B:532:GLU:OE1	6:B:555:ARG:NH2	2.43	0.51
6:a:717:PRO:HD3	6:a:782:LYS:HE2	1.91	0.51
6:a:1182:ASP:HB2	6:a:1186:PHE:HB2	1.91	0.51
6:a:1239:LEU:HA	6:a:1242:VAL:HG22	1.93	0.51
1:n:40:LEU:O	6:a:105:GLY:N	2.39	0.51
6:a:915:HIS:NE2	6:a:978:ALA:O	2.43	0.51
6:a:1191:ASN:ND2	6:a:1195:ARG:O	2.43	0.51
6:D:180:LEU:HD23	6:D:384:PRO:HG2	1.92	0.51
6:Y:480:GLU:HG2	6:Y:506:PRO:HD2	1.92	0.51
6:Z:186:LYS:NZ	6:Z:1054:CYS:SG	2.82	0.51
3:M:169:LEU:HB3	3:M:173:MET:HB2	1.92	0.51
6:D:488:MET:HG3	6:D:894:GLU:HG3	1.93	0.51
6:Y:373:ARG:HG3	6:Y:377:LYS:HD2	1.92	0.51
6:Z:225:ALA:O	6:Z:232:ARG:NH1	2.44	0.51
1:n:144:LEU:HD21	1:n:283:ARG:HG3	1.92	0.51
1:n:228:SER:HB3	1:n:231:LEU:HD23	1.93	0.51
6:B:329:LYS:HE2	6:B:333:THR:HB	1.92	0.51
6:Y:1327:THR:HG21	6:Y:1333:MET:HB2	1.92	0.51
6:a:1038:ARG:NH1	6:a:1107:GLY:O	2.43	0.51
6:B:694:ASN:HB3	6:C:968:ARG:HH11	1.75	0.51
6:C:909:ASP:OD1	6:C:909:ASP:N	2.44	0.51
1:h:76:VAL:HG12	1:h:81:ILE:HA	1.92	0.51
3:M:20:GLN:HA	3:M:135:ARG:HA	1.93	0.51
6:B:745:GLU:HB2	6:B:768:VAL:HG22	1.92	0.51
6:Y:1360:ILE:HD11	6:Y:1366:MET:HE1	1.93	0.51
6:Z:514:GLN:HE21	6:Z:993:ARG:HD3	1.76	0.51
1:n:23:LYS:NZ	1:n:123:ASN:O	2.42	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:n:104:LYS:NZ	1:n:292:ASP:OD2	2.44	0.51
1:o:280:ASP:OD1	1:o:280:ASP:N	2.43	0.51
6:C:482:ARG:HA	6:C:981:HIS:HE1	1.74	0.51
6:C:574:ARG:HH11	6:C:1023:GLN:HE22	1.57	0.51
6:Y:182:THR:O	6:Y:186:LYS:NZ	2.37	0.51
6:Z:83:LEU:HD11	6:Z:1058:ILE:HG22	1.93	0.51
1:n:24:LEU:HD21	1:n:81:ILE:HD11	1.93	0.51
6:C:915:HIS:NE2	6:C:978:ALA:O	2.44	0.51
1:n:173:GLN:HA	1:n:184:ILE:HD12	1.93	0.51
3:M:505:ARG:NH1	3:M:509:GLY:O	2.44	0.51
6:B:713:HIS:CG	6:B:726:ASN:HD21	2.29	0.51
6:C:427:THR:OG1	6:D:405:ARG:NH1	2.43	0.51
6:D:739:LEU:HD12	6:D:745:GLU:HG3	1.92	0.51
6:Y:495:ILE:HG13	6:Y:976:PRO:HG2	1.92	0.51
6:B:256:ASP:OD1	6:B:256:ASP:N	2.43	0.50
6:B:1327:THR:HG22	6:B:1355:VAL:HG22	1.91	0.50
6:Y:900:ASP:OD2	6:Y:1014:LYS:NZ	2.44	0.50
6:Z:109:SER:OG	6:Z:110:ARG:N	2.44	0.50
6:a:115:MET:HB3	6:B:7:LEU:HD23	1.93	0.50
2:g:197:GLU:HA	2:g:233:ARG:HH22	1.76	0.50
6:a:278:ASN:HA	6:a:281:GLN:HG2	1.91	0.50
6:B:420:VAL:HG21	6:B:576:TRP:HB3	1.91	0.50
6:B:1289:ALA:HB1	6:B:1316:ARG:HG2	1.92	0.50
6:C:1228:THR:HG22	6:C:1230:ASN:H	1.76	0.50
6:D:232:ARG:HG3	6:D:1366:MET:HE1	1.92	0.50
6:Y:507:ARG:HD3	6:Y:511:GLU:HG3	1.92	0.50
6:Z:714:ARG:NE	6:Z:900:ASP:OD1	2.45	0.50
1:n:189:ILE:HD11	1:n:194:LEU:HB3	1.93	0.50
2:m:49:ARG:HH12	6:C:1067:GLU:HG3	1.77	0.50
6:B:745:GLU:HA	6:B:767:PHE:HA	1.93	0.50
3:M:38:GLU:OE1	3:M:583:ARG:NE	2.45	0.50
6:a:734:ALA:HB2	6:a:739:LEU:HD11	1.94	0.50
6:B:1161:ALA:O	6:C:209:ARG:NH2	2.44	0.50
6:C:278:ASN:OD1	6:C:278:ASN:N	2.43	0.50
3:M:172:GLU:OE1	3:M:313:ARG:NE	2.40	0.50
3:M:389:ARG:HB2	3:M:540:ALA:HB3	1.94	0.50
6:B:225:ALA:O	6:B:232:ARG:NH1	2.44	0.50
6:C:1197:SER:O	6:C:1197:SER:OG	2.30	0.50
6:Z:594:LEU:HD12	6:Z:792:MET:HE3	1.92	0.50
6:a:83:LEU:HD11	6:a:1058:ILE:HG22	1.94	0.50
6:a:1182:ASP:OD1	6:a:1187:LYS:NZ	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:59:ASN:HB2	6:D:95:VAL:HA	1.93	0.50
6:C:459:PRO:HA	6:C:462:GLN:HE21	1.77	0.50
6:Z:184:LEU:HD13	6:Z:387:ARG:HH21	1.76	0.50
6:Z:934:SER:OG	6:Z:935:LEU:N	2.44	0.50
6:Z:1007:THR:O	6:Z:1011:MET:HB2	2.12	0.50
6:Z:1349:THR:HA	6:Z:1354:TYR:HA	1.94	0.50
3:M:482:ARG:HH22	6:a:498:PHE:HE1	1.59	0.50
6:B:132:SER:OG	6:Z:41:ASP:O	2.29	0.50
6:Z:1195:ARG:NH1	6:Z:1227:ALA:O	2.44	0.50
5:j:66:ARG:HD3	6:a:757:LEU:HD21	1.94	0.49
6:C:756:ARG:NH1	6:C:886:VAL:O	2.44	0.49
6:D:275:SER:OG	6:D:1046:MET:O	2.30	0.49
5:i:43:MET:HG3	5:i:67:MET:HE2	1.94	0.49
6:D:710:LEU:HD22	6:D:1012:LEU:HD22	1.94	0.49
6:Z:420:VAL:HG21	6:Z:576:TRP:HB3	1.94	0.49
6:Z:1057:VAL:HG12	6:Z:1083:THR:HG22	1.94	0.49
3:M:56:GLY:O	3:M:87:ARG:NH2	2.40	0.49
6:a:747:ARG:HB3	6:a:767:PHE:HB3	1.94	0.49
6:C:419:THR:OG1	6:C:420:VAL:N	2.45	0.49
6:Z:42:ASP:OD1	6:Z:42:ASP:N	2.45	0.49
5:S:28:LEU:HD12	5:S:29:PRO:HD2	1.93	0.49
5:S:50:MET:HE3	6:C:754:VAL:HG12	1.95	0.49
6:a:618:HIS:HE1	6:a:887:GLY:HA3	1.77	0.49
6:B:747:ARG:NH2	6:B:888:GLU:OE1	2.45	0.49
6:Z:681:LEU:HB3	6:Z:780:LEU:HD12	1.94	0.49
2:m:90:ARG:HH22	2:m:119:ASP:HA	1.77	0.49
3:M:163:PHE:HB3	3:M:319:ASP:HA	1.94	0.49
3:M:422:SER:OG	3:M:423:CYS:N	2.45	0.49
6:a:747:ARG:HD2	6:a:767:PHE:HB3	1.95	0.49
6:B:798:CYS:SG	6:B:799:GLY:N	2.86	0.49
6:B:1158:GLU:O	6:B:1301:TYR:OH	2.30	0.49
6:D:718:PRO:HD2	6:D:785:TYR:HB3	1.93	0.49
6:a:953:SER:OG	6:a:955:ASP:OD1	2.27	0.49
6:B:903:GLN:HE22	6:B:1014:LYS:HB3	1.77	0.49
6:C:1124:HIS:HB3	6:C:1127:VAL:HG12	1.93	0.49
6:Y:785:TYR:O	6:Y:943:TYR:OH	2.27	0.49
3:M:64:ASP:HB3	3:M:553:ARG:HB3	1.95	0.49
6:B:180:LEU:HD23	6:B:384:PRO:HG2	1.93	0.49
6:C:925:THR:OG1	6:C:926:ALA:N	2.44	0.49
1:h:235:GLN:O	1:h:239:MET:HB2	2.13	0.49
1:I:226:ASP:OD1	1:I:226:ASP:N	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:D:130:GLU:HA	6:D:1074:THR:HA	1.94	0.49
6:D:620:ASN:HD21	6:D:622:ASP:HB2	1.77	0.49
6:Y:1126:GLU:HA	6:Y:1129:ARG:HD2	1.94	0.49
6:Z:146:THR:HG23	6:Z:149:ASP:H	1.77	0.49
1:h:262:ASP:HA	1:h:265:ILE:HD12	1.95	0.49
6:Y:900:ASP:OD1	6:Y:900:ASP:N	2.40	0.49
6:B:684:VAL:HA	6:B:687:ILE:HG22	1.95	0.49
6:C:1182:ASP:OD1	6:C:1182:ASP:N	2.46	0.49
6:D:390:ASP:HB3	6:D:1041:THR:HG22	1.95	0.49
6:D:1116:VAL:HG13	6:D:1117:PHE:HD1	1.78	0.49
6:Y:484:GLN:O	6:Y:485:GLN:NE2	2.46	0.49
6:Z:748:HIS:O	6:Z:756:ARG:NH1	2.41	0.49
1:h:45:GLN:O	1:h:50:GLN:NE2	2.46	0.48
1:h:48:LEU:HD21	1:h:61:LEU:HD21	1.94	0.48
2:m:211:HIS:HD2	2:m:214:THR:HG23	1.78	0.48
3:M:319:ASP:OD1	3:M:323:ARG:N	2.43	0.48
3:M:529:LEU:HD12	3:M:545:VAL:HG21	1.94	0.48
6:C:747:ARG:HB2	6:C:767:PHE:HB3	1.94	0.48
6:Y:310:GLU:HA	6:Y:313:VAL:HG22	1.95	0.48
6:Y:702:PRO:HB3	6:Z:965:HIS:HB3	1.95	0.48
6:Z:1139:ARG:HE	6:Z:1140:PRO:HD2	1.78	0.48
2:g:89:ILE:HA	2:g:99:ARG:HG3	1.95	0.48
2:g:247:VAL:HG11	2:g:286:PHE:HD2	1.78	0.48
6:a:1239:LEU:O	6:a:1243:LEU:HB2	2.13	0.48
6:Y:485:GLN:OE1	6:Y:896:ARG:NH2	2.45	0.48
6:a:646:VAL:O	6:a:674:TYR:OH	2.31	0.48
6:a:1124:HIS:HB3	6:a:1127:VAL:HG22	1.95	0.48
6:Z:388:ASN:HB2	6:Z:1311:ILE:HD12	1.94	0.48
6:Z:785:TYR:O	6:Z:943:TYR:OH	2.31	0.48
6:Z:861:VAL:HA	6:Z:864:VAL:HG22	1.94	0.48
1:h:152:ILE:O	1:h:156:PHE:HB3	2.13	0.48
6:a:275:SER:OG	6:a:276:THR:N	2.43	0.48
6:a:668:PRO:O	6:a:672:PHE:HB2	2.13	0.48
6:a:698:LEU:HD22	6:a:706:TYR:HE2	1.78	0.48
6:B:401:LEU:HD11	6:B:1354:TYR:HB3	1.95	0.48
6:B:614:ASP:OD2	6:B:650:SER:OG	2.27	0.48
6:C:1064:VAL:HG22	6:C:1077:VAL:HG12	1.95	0.48
6:Y:596:LEU:HD23	6:Y:645:LEU:HD23	1.95	0.48
1:I:104:LYS:HE2	1:I:292:ASP:HA	1.94	0.48
2:g:228:CYS:O	2:g:232:ASN:ND2	2.45	0.48
3:M:589:LEU:HD12	3:M:590:PRO:HD2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:a:84:ASN:OD1	6:a:84:ASN:N	2.44	0.48
6:a:955:ASP:OD1	6:a:955:ASP:N	2.42	0.48
6:B:82:ASP:OD1	6:B:82:ASP:N	2.46	0.48
6:D:614:ASP:OD2	6:D:649:HIS:NE2	2.46	0.48
6:D:1039:THR:HG21	6:D:1259:TYR:HE2	1.78	0.48
6:Y:1176:LEU:HD21	6:Y:1233:ALA:HB2	1.95	0.48
6:Z:260:THR:HB	6:Z:299:PRO:HD3	1.95	0.48
6:Z:448:THR:HG21	6:Z:1173:GLU:HB2	1.95	0.48
6:Z:541:HIS:O	6:Z:543:GLN:NE2	2.46	0.48
6:Y:182:THR:HG21	6:Y:1083:THR:HG21	1.95	0.48
1:I:11:THR:HG21	6:B:124:PRO:HG3	1.94	0.48
1:o:156:PHE:O	1:o:160:ARG:NE	2.44	0.48
6:a:451:HIS:HE2	6:a:1114:PHE:HA	1.79	0.48
6:C:1327:THR:HG23	6:C:1355:VAL:HG22	1.95	0.48
6:Y:253:SER:OG	6:Y:255:LEU:O	2.32	0.48
6:Y:863:ASP:OD1	6:Y:863:ASP:N	2.46	0.48
1:h:220:ARG:NH1	1:h:242:ASP:OD2	2.46	0.48
1:I:113:PRO:HD3	1:I:135:PRO:HA	1.95	0.48
3:M:27:LEU:HB3	3:M:31:VAL:HG11	1.96	0.48
3:M:345:ASP:N	3:M:345:ASP:OD1	2.46	0.48
6:Z:146:THR:OG1	6:Z:147:ILE:N	2.46	0.48
6:Z:317:SER:OG	6:Z:318:TYR:N	2.46	0.48
6:Z:555:ARG:HA	6:Z:988:ARG:HH21	1.79	0.48
6:B:614:ASP:HA	6:B:653:LEU:HD11	1.96	0.48
6:C:173:ARG:NH2	6:C:375:VAL:O	2.46	0.48
6:C:188:PRO:HA	6:C:1286:LEU:HD21	1.95	0.48
6:C:303:GLY:HA3	6:C:348:GLY:HA2	1.96	0.48
6:C:565:LEU:HD22	6:C:1177:THR:HG21	1.95	0.48
6:D:617:VAL:HG13	6:D:619:GLY:H	1.79	0.48
6:Y:744:ILE:HD12	6:Y:765:PRO:HA	1.96	0.48
6:Z:66:PHE:HA	6:Z:176:ILE:HD11	1.96	0.48
1:h:233:LYS:HG2	6:B:1143:LEU:HD12	1.96	0.48
2:m:188:ILE:HG12	2:m:248:ILE:HG13	1.95	0.48
6:B:388:ASN:HB2	6:B:1311:ILE:HD12	1.96	0.48
6:Y:421:ARG:HE	6:Z:405:ARG:HD3	1.79	0.48
6:Z:685:THR:HB	6:Z:783:VAL:HG21	1.96	0.48
6:B:199:ASN:OD1	6:B:199:ASN:N	2.47	0.47
6:B:638:MET:HE1	6:B:642:ARG:HD2	1.96	0.47
6:D:258:PRO:O	6:D:268:LYS:NZ	2.47	0.47
6:D:451:HIS:HD2	6:D:453:VAL:HG23	1.79	0.47
6:D:1144:ASP:OD1	6:D:1144:ASP:N	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:g:150:MET:HB2	2:g:150:MET:HE3	1.79	0.47
6:a:310:GLU:HG3	6:C:329:LYS:HD3	1.97	0.47
6:B:800:LEU:HD22	6:B:923:VAL:HB	1.95	0.47
6:B:1268:THR:O	6:B:1272:ILE:N	2.46	0.47
6:D:941:ARG:HD2	6:D:989:SER:HA	1.96	0.47
6:Y:225:ALA:O	6:Y:232:ARG:NH1	2.47	0.47
6:Y:733:VAL:HG12	6:Y:738:PRO:HA	1.95	0.47
6:Z:84:ASN:OD1	6:Z:84:ASN:N	2.47	0.47
4:O:28:GLU:HA	4:O:31:LEU:HD12	1.96	0.47
6:a:243:LEU:HB3	6:a:362:LEU:HD21	1.95	0.47
6:a:628:ARG:NH1	6:a:663:ASP:OD2	2.47	0.47
6:C:457:PRO:HA	6:C:460:CYS:HB3	1.97	0.47
6:Y:811:LEU:HB3	6:Y:857:LEU:HD11	1.97	0.47
6:Z:1185:TYR:OH	6:Z:1191:ASN:O	2.29	0.47
6:a:360:ILE:HB	6:a:369:MET:HE2	1.97	0.47
6:a:409:THR:HA	6:Z:414:VAL:HG23	1.96	0.47
6:B:532:GLU:OE2	6:B:1232:TRP:NE1	2.39	0.47
6:C:391:LEU:HD12	6:C:1042:PHE:HE2	1.80	0.47
6:Z:1110:VAL:HA	6:Z:1171:ALA:HB3	1.95	0.47
6:a:534:HIS:HD2	6:a:536:PHE:H	1.62	0.47
6:D:656:LEU:O	6:D:660:HIS:HB2	2.15	0.47
6:D:1231:PRO:O	6:D:1235:GLN:NE2	2.47	0.47
6:Z:892:VAL:HG11	6:Z:979:PHE:HE1	1.80	0.47
6:B:120:SER:HB2	6:B:1084:VAL:HG22	1.95	0.47
6:B:263:THR:HA	6:B:296:VAL:HA	1.95	0.47
6:C:538:ASP:OD1	6:C:538:ASP:N	2.41	0.47
6:C:685:THR:O	6:C:689:ALA:HB2	2.14	0.47
6:D:1124:HIS:HB3	6:D:1127:VAL:HG12	1.97	0.47
6:Y:1060:ASN:ND2	6:Y:1061:ASN:O	2.48	0.47
6:Z:1001:VAL:HG13	6:Z:1003:HIS:H	1.78	0.47
6:C:241:LYS:HA	6:C:244:THR:HG22	1.96	0.47
6:C:441:ASP:HB2	6:C:443:VAL:HG12	1.96	0.47
6:C:1046:MET:HE2	6:C:1096:VAL:HG22	1.97	0.47
6:C:1132:ARG:HH22	6:C:1140:PRO:HD3	1.79	0.47
6:D:392:THR:HA	6:D:1039:THR:HA	1.97	0.47
6:Y:451:HIS:HE2	6:Y:1114:PHE:HA	1.77	0.47
6:Z:301:THR:OG1	6:Z:302:TYR:N	2.47	0.47
6:Z:554:PRO:O	6:Z:988:ARG:NH2	2.47	0.47
1:o:33:PRO:HB2	1:o:68:MET:HG2	1.96	0.47
5:i:19:ARG:HA	5:i:22:VAL:HG22	1.96	0.47
6:B:454:LEU:HD22	6:B:1239:LEU:HD12	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B:598:LYS:O	6:B:602:THR:OG1	2.29	0.47
6:C:435:ARG:HG2	6:C:1367:LEU:HD13	1.97	0.47
6:Z:975:LEU:HB2	6:Z:980:ALA:HB2	1.97	0.47
1:o:15:LYS:NZ	6:C:33:GLU:OE2	2.37	0.47
6:B:152:LEU:HD21	6:Z:48:ILE:HD11	1.97	0.47
6:B:867:ASP:OD1	6:B:870:THR:OG1	2.29	0.47
6:D:575:THR:HG21	6:D:1007:THR:HA	1.97	0.47
6:D:628:ARG:NH1	6:D:663:ASP:OD2	2.48	0.47
6:Y:59:ASN:HB2	6:Z:95:VAL:HA	1.96	0.47
6:Z:635:ILE:HD13	6:Z:657:ILE:HD11	1.97	0.47
5:S:55:ASN:OD1	5:S:55:ASN:N	2.48	0.47
6:a:946:PRO:HG2	6:a:967:HIS:HA	1.97	0.47
6:B:1080:ASN:N	6:B:1080:ASN:OD1	2.47	0.47
6:D:538:ASP:N	6:D:553:THR:O	2.48	0.47
6:Y:121:GLU:OE2	6:Y:1083:THR:OG1	2.33	0.47
6:Y:535:PRO:HD3	6:Y:1232:TRP:CG	2.50	0.47
6:Y:955:ASP:HA	6:Y:958:ARG:HG2	1.97	0.47
6:Z:542:CYS:HB3	6:Z:549:VAL:HG23	1.97	0.47
1:o:114:LEU:HD13	1:o:184:ILE:HG22	1.96	0.46
2:g:234:ARG:HD2	2:g:234:ARG:HA	1.69	0.46
3:M:313:ARG:HH22	3:M:315:ARG:HD2	1.80	0.46
5:R:72:ARG:HG3	6:B:820:MET:HE3	1.97	0.46
6:B:8:GLU:OE2	6:B:38:TYR:OH	2.34	0.46
6:B:1326:SER:O	6:B:1326:SER:OG	2.32	0.46
6:B:1342:GLY:H	6:B:1364:GLN:HE22	1.62	0.46
6:Y:227:LEU:H	6:Y:232:ARG:HH22	1.62	0.46
6:Z:637:ASN:O	6:Z:641:THR:OG1	2.31	0.46
2:m:15:ASP:HA	6:Z:140:ARG:HH22	1.80	0.46
3:M:365:TYR:O	3:M:369:ARG:NH2	2.48	0.46
5:S:66:ARG:HD2	6:C:757:LEU:HD11	1.97	0.46
6:B:905:GLN:HG3	6:B:1122:TYR:HD1	1.80	0.46
6:C:1105:ASP:HB2	6:C:1166:HIS:HB3	1.97	0.46
6:D:317:SER:OG	6:D:318:TYR:N	2.47	0.46
6:Y:71:LEU:HD22	6:Y:372:LEU:HD11	1.96	0.46
1:h:155:LEU:HD13	1:h:197:MET:HG2	1.97	0.46
1:I:79:ASN:HD22	6:B:122:LYS:HG3	1.80	0.46
1:I:175:ILE:HG22	1:I:182:PHE:H	1.80	0.46
3:M:358:ARG:NH1	4:N:49:GLU:O	2.49	0.46
6:B:936:PRO:HB3	6:B:952:LEU:HD23	1.97	0.46
6:C:739:LEU:HD22	6:C:744:ILE:HD11	1.97	0.46
4:N:6:THR:HG21	6:Z:1123:ARG:HG2	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:a:518:VAL:HB	6:a:1179:VAL:HG11	1.96	0.46
6:C:775:ASP:OD1	6:C:775:ASP:N	2.46	0.46
6:Y:173:ARG:HG2	6:Y:375:VAL:HG13	1.97	0.46
6:Z:1121:VAL:HG12	6:Z:1132:ARG:HH11	1.80	0.46
3:M:132:LEU:HD11	3:M:149:LEU:HD13	1.97	0.46
5:S:39:VAL:HA	5:S:42:THR:HG22	1.96	0.46
6:B:941:ARG:HE	6:B:941:ARG:HB3	1.59	0.46
6:C:608:GLU:OE1	6:C:929:THR:OG1	2.26	0.46
6:D:1038:ARG:NH1	6:D:1107:GLY:O	2.39	0.46
6:Z:540:THR:OG1	6:Z:541:HIS:N	2.48	0.46
1:I:146:ILE:HD11	1:I:184:ILE:HG12	1.96	0.46
1:n:73:MET:HE2	1:n:81:ILE:HG21	1.98	0.46
1:n:106:ASP:OD1	1:n:106:ASP:N	2.40	0.46
3:M:313:ARG:HH12	3:M:315:ARG:HB3	1.80	0.46
6:a:358:ASP:OD1	6:a:358:ASP:N	2.45	0.46
6:B:557:VAL:HG11	6:B:1012:LEU:HD23	1.97	0.46
6:B:597:PHE:HA	6:B:600:THR:HG22	1.98	0.46
6:B:600:THR:OG1	6:B:645:LEU:O	2.28	0.46
6:B:800:LEU:HA	6:B:936:PRO:HA	1.98	0.46
6:D:342:ASP:OD1	6:D:342:ASP:N	2.44	0.46
6:Z:199:ASN:HA	6:Z:202:LEU:HD23	1.97	0.46
6:Z:1040:ASP:OD1	6:Z:1104:THR:OG1	2.33	0.46
6:B:582:MET:HE3	6:B:691:PRO:HD2	1.97	0.46
6:B:1045:ASP:OD1	6:B:1045:ASP:N	2.43	0.46
6:B:1139:ARG:O	6:B:1141:GLN:NE2	2.46	0.46
6:C:84:ASN:HB3	6:C:1080:ASN:HD21	1.80	0.46
6:D:311:ASN:ND2	6:D:322:LEU:O	2.42	0.46
6:D:443:VAL:HA	6:D:446:LEU:HD23	1.98	0.46
6:Y:27:ALA:HB1	6:Y:35:LEU:HD21	1.97	0.46
6:Y:91:MET:HE1	6:Y:1086:MET:HE3	1.98	0.46
6:Y:243:LEU:HD22	6:Y:273:MET:HE1	1.97	0.46
6:Y:790:PRO:HA	6:Y:793:THR:HG22	1.98	0.46
1:h:188:VAL:HG23	3:M:571:HIS:HA	1.98	0.46
1:o:13:ASP:OD1	1:o:42:LYS:NZ	2.47	0.46
2:g:236:THR:HG23	2:g:237:ARG:HG2	1.97	0.46
6:a:209:ARG:NE	6:Z:1298:ASP:OD1	2.49	0.46
6:a:514:GLN:HE22	6:a:562:PRO:HB3	1.81	0.46
6:a:798:CYS:HB3	6:a:948:ILE:HD13	1.98	0.46
6:B:1235:GLN:H	6:B:1235:GLN:HG2	1.58	0.46
6:C:263:THR:HG22	6:C:296:VAL:HG12	1.97	0.46
6:D:388:ASN:HB2	6:D:1311:ILE:HD12	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:D:487:PRO:HB3	6:D:736:ARG:HH11	1.81	0.46
6:a:785:TYR:O	6:a:943:TYR:OH	2.31	0.46
6:B:241:LYS:HG2	6:B:245:ARG:HH21	1.79	0.46
6:C:58:CYS:SG	6:C:59:ASN:N	2.89	0.46
6:D:102:SER:OG	6:D:103:GLY:N	2.48	0.46
6:D:733:VAL:HG12	6:D:738:PRO:HA	1.98	0.46
6:Y:936:PRO:HB3	6:Y:952:LEU:HD12	1.98	0.46
6:Z:243:LEU:HB3	6:Z:362:LEU:HD21	1.98	0.46
3:M:417:TRP:HE3	3:M:485:VAL:HG22	1.81	0.46
6:B:429:TYR:OH	6:B:439:LYS:NZ	2.48	0.46
6:D:252:ASP:OD1	6:D:252:ASP:N	2.46	0.46
6:D:575:THR:HG1	6:D:1003:HIS:HE2	1.60	0.46
6:D:613:VAL:HA	6:D:616:LEU:HG	1.98	0.46
3:M:41:ARG:HH22	3:M:582:PRO:HG2	1.81	0.45
6:a:292:THR:O	6:a:292:THR:OG1	2.34	0.45
6:a:572:GLU:OE2	6:a:994:TYR:OH	2.33	0.45
6:C:434:ASP:OD1	6:D:217:GLN:NE2	2.49	0.45
6:Y:873:LEU:O	6:Y:877:ARG:NH1	2.49	0.45
6:Z:1045:ASP:HB2	6:Z:1098:TYR:HB3	1.97	0.45
3:M:314:LEU:HD21	3:M:327:ARG:HD3	1.97	0.45
6:a:213:SER:OG	6:Z:433:ARG:NH1	2.43	0.45
6:a:298:ALA:HB3	6:a:355:LEU:HD21	1.97	0.45
6:a:941:ARG:HD3	6:a:992:SER:HB3	1.98	0.45
6:D:507:ARG:HE	6:D:512:MET:HG3	1.80	0.45
6:Y:372:LEU:HD23	6:Y:372:LEU:HA	1.84	0.45
6:Z:83:LEU:HD12	6:Z:1060:ASN:HB3	1.98	0.45
3:M:369:ARG:HG3	4:N:47:TRP:CE2	2.52	0.45
6:a:130:GLU:HB3	6:a:1074:THR:HG22	1.98	0.45
6:a:642:ARG:HB3	6:a:644:LEU:HD23	1.98	0.45
6:a:804:LEU:HA	6:a:807:LEU:HB3	1.98	0.45
6:C:1032:PHE:HA	6:C:1178:PRO:HD3	1.98	0.45
6:D:1191:ASN:HD22	6:D:1197:SER:H	1.62	0.45
6:Y:1128:ASP:OD2	6:Y:1132:ARG:NH2	2.50	0.45
1:o:146:ILE:HD12	1:o:184:ILE:HG21	1.97	0.45
3:M:524:TYR:HB2	3:M:532:TYR:HB2	1.98	0.45
6:a:396:PRO:HA	6:a:1035:THR:HA	1.97	0.45
6:C:94:HIS:HB2	6:Z:7:LEU:HD21	1.98	0.45
6:C:328:TYR:O	6:C:332:LEU:HB2	2.17	0.45
6:C:1037:VAL:HG23	6:C:1172:CYS:HB3	1.99	0.45
6:Y:127:ILE:HD12	6:Y:128:PRO:HD2	1.99	0.45
6:Y:315:ALA:HA	6:Y:319:HIS:HA	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:Y:437:VAL:HG13	6:Z:1184:ASN:HB3	1.97	0.45
6:Z:1316:ARG:O	6:Z:1319:GLN:NE2	2.46	0.45
1:I:108:LEU:HB2	1:I:288:PHE:HB2	1.99	0.45
2:m:39:TYR:HB2	6:C:1065:THR:HG22	1.98	0.45
6:a:614:ASP:HA	6:a:653:LEU:HD11	1.98	0.45
6:C:558:ILE:HG21	6:C:574:ARG:HH12	1.82	0.45
6:Y:703:LEU:HD12	6:Y:1022:LEU:HD11	1.99	0.45
1:h:157:SER:HB3	3:M:566:LEU:HD12	1.99	0.45
1:h:220:ARG:NH2	1:h:242:ASP:OD1	2.50	0.45
6:a:86:LEU:HA	6:Z:50:PHE:HB2	1.99	0.45
6:a:438:GLN:HE22	6:a:1107:GLY:HA2	1.81	0.45
6:C:662:ALA:O	6:D:642:ARG:NH2	2.49	0.45
6:Y:410:VAL:HG22	6:Y:413:LYS:HB2	1.98	0.45
6:Z:303:GLY:HA2	6:Z:348:GLY:HA3	1.99	0.45
6:Z:877:ARG:HA	6:Z:880:PHE:HB3	1.98	0.45
1:h:18:ILE:HA	1:h:21:VAL:HG12	1.98	0.45
1:h:55:THR:HG21	3:M:577:GLN:HB3	1.98	0.45
2:m:67:LEU:HD23	2:m:132:LEU:HD23	1.99	0.45
2:m:275:ARG:NH1	2:m:277:ASP:OD1	2.50	0.45
3:M:556:ARG:HH21	3:M:560:GLN:HG3	1.82	0.45
5:i:70:VAL:HG22	6:Z:884:GLN:HE22	1.80	0.45
6:a:1054:CYS:SG	6:a:1055:THR:N	2.89	0.45
6:B:124:PRO:HA	6:B:1080:ASN:HA	1.98	0.45
6:C:635:ILE:HD11	6:C:666:LEU:HD21	1.98	0.45
6:D:753:ASP:OD1	6:D:753:ASP:N	2.49	0.45
1:h:144:LEU:HD21	1:h:283:ARG:HE	1.82	0.45
1:h:163:GLU:H	1:h:163:GLU:HG2	1.62	0.45
1:h:205:SER:HB3	1:I:215:THR:HG21	1.99	0.45
1:h:291:CYS:SG	1:I:37:ARG:NH2	2.87	0.45
2:g:259:ILE:HG12	2:g:276:LEU:HG	1.99	0.45
4:N:14:VAL:HB	4:O:11:PRO:HB2	1.99	0.45
6:a:369:MET:HE3	6:a:369:MET:HB2	1.78	0.45
6:Y:461:LEU:HD13	6:Y:552:CYS:HB2	1.98	0.45
6:Y:1156:MET:HG2	6:Y:1257:LYS:HZ1	1.82	0.45
6:Z:538:ASP:OD1	6:Z:555:ARG:NH1	2.49	0.45
6:a:424:LEU:HD13	6:a:573:LEU:HD23	1.98	0.45
6:a:775:ASP:HA	6:a:778:TRP:HB3	1.99	0.45
6:C:445:ALA:HA	6:C:1110:VAL:HG21	1.97	0.45
6:D:1020:LEU:HD21	6:D:1032:PHE:HE2	1.82	0.45
1:h:35:PRO:HG3	1:h:50:GLN:HE22	1.82	0.44
1:o:97:THR:HG21	1:o:134:LEU:HD23	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:g:222:LYS:HA	2:g:222:LYS:HD3	1.78	0.44
3:M:51:ALA:O	3:M:53:ARG:NH2	2.50	0.44
3:M:329:LEU:HD23	3:M:329:LEU:HA	1.82	0.44
6:C:534:HIS:HD2	6:C:536:PHE:H	1.64	0.44
6:C:641:THR:HG23	6:C:642:ARG:HG3	1.98	0.44
6:Y:438:GLN:HE21	6:Y:1108:VAL:HG13	1.83	0.44
6:Y:508:THR:OG1	6:Y:509:VAL:N	2.50	0.44
6:Y:1115:ARG:NH2	6:Y:1138:GLU:OE2	2.49	0.44
1:I:292:ASP:OD1	1:I:301:THR:OG1	2.35	0.44
1:n:59:VAL:HG11	1:n:193:LEU:HD13	1.98	0.44
6:a:1199:MET:HE3	6:a:1202:VAL:HG11	1.98	0.44
6:C:106:LEU:HD12	6:C:107:PRO:HD2	1.99	0.44
6:C:131:LEU:HD11	6:C:160:VAL:HG23	1.98	0.44
6:Y:1327:THR:OG1	6:Y:1328:THR:N	2.50	0.44
6:a:598:LYS:HB2	6:a:792:MET:HE3	2.00	0.44
6:C:448:THR:HG21	6:C:1173:GLU:HG2	1.98	0.44
6:C:703:LEU:HA	6:C:706:TYR:HD2	1.82	0.44
6:C:704:SER:HA	6:C:707:VAL:HG12	2.00	0.44
6:D:1189:PRO:HB3	6:D:1322:LEU:HD23	1.98	0.44
6:Y:613:VAL:HA	6:Y:616:LEU:HG	2.00	0.44
6:Y:955:ASP:N	6:Y:955:ASP:OD1	2.49	0.44
1:h:100:VAL:HG23	1:h:102:TRP:HE1	1.82	0.44
1:I:209:ASN:HD22	1:I:209:ASN:HA	1.62	0.44
2:g:102:LEU:HA	2:g:105:VAL:HG12	1.99	0.44
6:a:1043:GLU:HB2	6:a:1101:ARG:HB2	1.98	0.44
6:B:392:THR:OG1	6:B:1265:TYR:OH	2.26	0.44
6:C:1172:CYS:SG	6:C:1173:GLU:N	2.89	0.44
6:Y:495:ILE:HD12	6:Y:979:PHE:HE2	1.83	0.44
6:Y:625:LEU:HA	6:Y:628:ARG:HG3	1.99	0.44
1:o:301:THR:O	1:o:301:THR:OG1	2.36	0.44
6:B:291:ILE:HG12	6:B:360:ILE:HG22	1.99	0.44
6:B:332:LEU:O	6:B:336:GLN:N	2.51	0.44
6:B:440:ILE:HD13	6:B:1108:VAL:HB	2.00	0.44
6:Z:795:ASN:HD21	6:Z:942:PHE:HD1	1.65	0.44
5:j:19:ARG:HA	5:j:22:VAL:HG22	2.00	0.44
6:a:1059:ILE:HG22	6:a:1081:ILE:HG13	1.99	0.44
6:B:785:TYR:O	6:B:943:TYR:OH	2.29	0.44
6:D:1279:PHE:HA	6:D:1282:ILE:HG12	1.99	0.44
6:Z:763:ASP:OD1	6:Z:763:ASP:N	2.50	0.44
1:I:204:MET:HA	1:I:207:VAL:HG12	2.00	0.44
1:o:237:LEU:HD12	1:o:240:ARG:HE	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:j:67:MET:HA	5:j:70:VAL:HG12	2.00	0.44
6:a:207:LEU:HD22	6:a:211:GLN:HB3	2.00	0.44
6:a:718:PRO:HD2	6:a:785:TYR:HB3	2.00	0.44
6:a:1245:ASN:O	6:a:1249:ARG:N	2.49	0.44
1:h:16:LEU:HD21	1:h:78:GLY:HA2	1.99	0.44
1:n:166:LYS:HA	1:n:166:LYS:HD2	1.80	0.44
6:B:379:THR:O	6:Z:22:HIS:NE2	2.43	0.44
6:C:495:ILE:HD13	6:C:937:VAL:HA	1.99	0.44
6:C:756:ARG:NE	6:C:888:GLU:OE2	2.50	0.44
1:h:280:ASP:OD1	1:I:283:ARG:NH2	2.51	0.44
2:g:135:VAL:HG11	2:g:138:VAL:HG22	2.00	0.44
2:g:258:ASP:HB2	2:g:277:ASP:HB2	1.98	0.44
2:m:38:LEU:HD23	6:C:1066:LYS:HB2	2.00	0.44
6:a:316:ILE:HD11	6:B:151:ILE:HG21	2.00	0.44
6:a:964:PRO:HG2	6:Z:702:PRO:HD3	1.99	0.44
6:C:1277:THR:OG1	6:Z:29:GLU:OE2	2.27	0.44
6:D:657:ILE:HG23	6:D:661:LEU:HD12	2.00	0.44
6:Y:177:HIS:ND1	6:Y:376:TYR:OH	2.38	0.44
1:h:34:ILE:HD13	1:h:34:ILE:HA	1.82	0.43
6:B:127:ILE:HD12	6:B:128:PRO:HD2	1.99	0.43
6:B:174:GLY:HA3	6:C:101:ALA:HB3	2.00	0.43
6:B:351:SER:O	6:B:351:SER:OG	2.36	0.43
6:B:499:TYR:OH	6:B:974:PRO:O	2.34	0.43
6:C:254:ILE:HG22	6:Z:17:THR:HG22	1.99	0.43
6:C:387:ARG:HA	6:C:387:ARG:HD3	1.70	0.43
6:Y:448:THR:HG21	6:Y:1173:GLU:HG3	2.00	0.43
1:h:198:LYS:HE3	1:I:230:LEU:HD23	2.00	0.43
2:g:89:ILE:O	2:g:99:ARG:NE	2.46	0.43
2:m:183:GLN:HG2	2:m:256:ALA:HB2	2.00	0.43
6:Z:446:LEU:HD22	6:Z:1021:VAL:HG22	2.00	0.43
6:Z:681:LEU:HD21	6:Z:784:PHE:HD1	1.83	0.43
6:a:308:SER:OG	6:a:310:GLU:OE2	2.34	0.43
6:B:495:ILE:HG13	6:B:976:PRO:HG2	2.00	0.43
6:B:1145:THR:HA	6:B:1148:ILE:HG12	1.99	0.43
6:C:646:VAL:O	6:C:674:TYR:OH	2.27	0.43
6:Z:1242:VAL:HA	6:Z:1248:HIS:CD2	2.53	0.43
6:D:65:TYR:HB2	6:D:68:THR:HG22	1.99	0.43
6:Y:1177:THR:HG1	6:Y:1180:THR:HG1	1.57	0.43
1:h:70:LEU:HD21	1:h:110:VAL:HG21	1.99	0.43
6:D:709:ALA:HB3	6:D:1012:LEU:HD23	2.01	0.43
6:a:538:ASP:OD1	6:a:555:ARG:NE	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:a:615:VAL:O	6:a:618:HIS:NE2	2.52	0.43
6:C:71:LEU:HD23	6:C:176:ILE:HG23	2.00	0.43
6:C:805:LYS:HB3	6:C:805:LYS:HE2	1.79	0.43
6:C:1291:ASP:OD1	6:C:1291:ASP:N	2.51	0.43
6:D:420:VAL:HA	6:D:423:ALA:HB3	2.00	0.43
6:Z:1128:ASP:HA	6:Z:1131:ILE:HG22	2.00	0.43
1:I:152:ILE:HG22	1:I:155:LEU:HD12	2.00	0.43
2:g:87:LEU:HB3	2:g:202:ILE:HG13	2.01	0.43
5:S:26:LEU:O	6:C:813:TYR:OH	2.30	0.43
5:S:72:ARG:HG2	6:C:820:MET:HB3	2.00	0.43
6:a:329:LYS:HB3	6:a:329:LYS:HE2	1.82	0.43
6:a:1230:ASN:OD1	6:a:1230:ASN:N	2.51	0.43
6:B:373:ARG:HH12	6:B:377:LYS:HG3	1.83	0.43
6:C:730:VAL:HG13	6:C:895:VAL:HG13	2.00	0.43
6:Y:1147:THR:HA	6:Y:1150:MET:HE3	1.99	0.43
6:Z:245:ARG:O	6:Z:249:ALA:HB2	2.18	0.43
6:Z:575:THR:HG22	6:Z:1010:ALA:HB3	2.00	0.43
4:N:8:TRP:HD1	6:Z:1121:VAL:HG21	1.83	0.43
5:i:44:LEU:HD22	5:i:47:TYR:HD1	1.84	0.43
6:a:483:PHE:HE2	6:a:551:LEU:HD22	1.84	0.43
6:B:459:PRO:HG2	6:B:1252:LEU:HD11	2.01	0.43
6:B:702:PRO:HB3	6:C:965:HIS:HB3	2.01	0.43
6:C:1215:TYR:OH	6:C:1268:THR:OG1	2.30	0.43
6:Y:717:PRO:HA	6:Y:718:PRO:HD3	1.79	0.43
6:Y:1143:LEU:O	6:Y:1147:THR:OG1	2.27	0.43
6:Z:1360:ILE:HD12	6:Z:1361:PRO:HD2	1.99	0.43
6:a:359:VAL:HG22	6:a:368:ILE:HD13	2.00	0.43
6:B:445:ALA:HA	6:B:1110:VAL:HG11	2.00	0.43
6:D:245:ARG:O	6:D:249:ALA:HB2	2.19	0.43
6:D:693:LEU:HD11	6:D:1026:ALA:HB2	2.01	0.43
6:Y:718:PRO:HA	6:Y:916:VAL:HG23	2.01	0.43
6:Z:1228:THR:OG1	6:Z:1229:HIS:N	2.52	0.43
1:o:103:GLU:OE2	1:o:178:ARG:NH1	2.52	0.43
5:R:13:LYS:HE3	5:R:15:ASP:HB2	2.01	0.43
6:B:1050:SER:OG	6:B:1051:GLY:N	2.51	0.43
6:C:276:THR:OG1	6:C:278:ASN:OD1	2.37	0.43
6:C:1324:ILE:HD11	6:C:1363:GLN:HE21	1.83	0.43
6:Y:291:ILE:HG12	6:Y:360:ILE:HB	2.01	0.43
6:Y:1115:ARG:HA	6:Y:1115:ARG:HD3	1.89	0.43
1:h:33:PRO:HD3	1:h:135:PRO:HG3	2.00	0.42
6:a:1105:ASP:HB2	6:a:1166:HIS:HB3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B:627:ILE:HG22	6:B:630:PHE:HB3	2.01	0.42
6:B:752:SER:O	6:B:752:SER:OG	2.34	0.42
6:B:1244:TYR:HA	6:B:1249:ARG:HD2	2.01	0.42
6:B:1364:GLN:O	6:B:1368:PHE:HB2	2.19	0.42
6:C:527:ILE:HG22	6:C:1218:ARG:HH12	1.83	0.42
6:C:847:ALA:HA	6:C:850:ARG:HB3	2.01	0.42
6:D:313:VAL:O	6:D:317:SER:HB3	2.18	0.42
6:D:1210:ALA:HB1	6:D:1272:ILE:HG12	2.00	0.42
6:Y:261:TYR:HB3	6:Y:269:ILE:HD12	2.00	0.42
1:h:160:ARG:NH1	1:I:264:GLU:OE2	2.43	0.42
6:a:594:LEU:HD12	6:a:792:MET:HE2	2.01	0.42
6:a:744:ILE:HG22	6:a:765:PRO:HA	2.00	0.42
6:a:1044:VAL:HG22	6:a:1099:VAL:HG22	2.00	0.42
6:a:1177:THR:OG1	6:a:1180:THR:OG1	2.34	0.42
6:a:1297:THR:OG1	6:a:1299:THR:O	2.37	0.42
6:a:1347:SER:O	6:a:1347:SER:OG	2.32	0.42
6:B:155:GLU:HG3	6:Z:9:LEU:HD13	2.00	0.42
6:B:283:ILE:HG22	6:B:284:MET:HE2	2.01	0.42
6:B:790:PRO:HA	6:B:793:THR:HG22	2.01	0.42
6:D:278:ASN:OD1	6:D:278:ASN:N	2.51	0.42
6:D:308:SER:OG	6:D:311:ASN:OD1	2.36	0.42
6:D:494:ARG:HG2	6:D:497:HIS:HD2	1.83	0.42
6:Y:502:ARG:HH21	6:Y:962:GLU:HB2	1.84	0.42
6:Z:615:VAL:HG21	6:Z:802:LEU:HD23	2.01	0.42
1:n:73:MET:HE3	1:n:73:MET:HB2	1.91	0.42
6:C:1183:VAL:HA	6:C:1187:LYS:HD2	2.00	0.42
6:Y:774:THR:OG1	6:Y:777:GLU:OE1	2.32	0.42
6:Y:903:GLN:HE22	6:Y:1014:LYS:HB3	1.85	0.42
6:Z:1006:MET:HE3	6:Z:1006:MET:HB3	1.84	0.42
3:M:401:ARG:H	3:M:401:ARG:HG2	1.53	0.42
5:R:73:THR:HG22	5:R:75:ARG:H	1.85	0.42
6:a:95:VAL:HG12	6:Z:59:ASN:HB2	2.00	0.42
6:a:315:ALA:HB2	6:a:321:ILE:HD11	2.00	0.42
6:a:371:ASN:OD1	6:a:371:ASN:N	2.51	0.42
6:B:620:ASN:HD21	6:B:622:ASP:HB2	1.83	0.42
6:Y:425:PRO:HB3	6:Y:1328:THR:HB	2.01	0.42
6:Y:537:PHE:HA	6:Y:554:PRO:HA	2.00	0.42
6:Y:903:GLN:HE22	6:Y:1014:LYS:HE2	1.84	0.42
6:Y:927:PRO:HD2	6:Y:952:LEU:HD21	2.01	0.42
6:Y:1191:ASN:ND2	6:Y:1319:GLN:O	2.53	0.42
6:Z:1156:MET:O	6:Z:1159:ARG:NH2	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:Z:1245:ASN:O	6:Z:1249:ARG:N	2.51	0.42
1:o:111:LEU:HD12	1:o:111:LEU:HA	1.83	0.42
3:M:43:VAL:HG23	3:M:92:ALA:HB3	2.02	0.42
6:B:21:THR:OG1	6:B:22:HIS:N	2.52	0.42
6:B:601:VAL:HG13	6:B:924:VAL:HG11	2.01	0.42
6:C:74:ALA:O	6:C:1054:CYS:N	2.48	0.42
6:C:96:GLN:HG2	6:C:113:THR:HG22	2.01	0.42
6:C:718:PRO:HD2	6:C:785:TYR:HB3	2.01	0.42
6:C:1360:ILE:HG13	6:C:1362:LEU:HD22	2.02	0.42
6:D:533:LEU:HD12	6:D:1238:CYS:HA	2.01	0.42
6:Y:212:ARG:NH1	6:Y:1203:ASP:OD1	2.45	0.42
6:Y:849:GLN:HG3	6:Y:872:LEU:HD12	2.00	0.42
6:Z:542:CYS:N	6:Z:549:VAL:O	2.53	0.42
1:I:203:SER:OG	1:I:274:MET:O	2.37	0.42
3:M:64:ASP:OD1	3:M:84:ARG:NH2	2.53	0.42
6:B:186:LYS:HD3	6:B:186:LYS:HA	1.84	0.42
6:B:766:LEU:HD11	6:B:893:LEU:HD21	2.02	0.42
6:Y:1362:LEU:HD12	6:Y:1366:MET:HB2	2.01	0.42
6:Z:714:ARG:NH1	6:Z:898:PRO:O	2.52	0.42
1:n:1:MET:N	2:m:257:ASP:OD2	2.45	0.42
6:a:556:ILE:HG23	6:a:557:VAL:HG23	2.02	0.42
6:a:1044:VAL:HG11	6:a:1096:VAL:HG23	2.02	0.42
6:B:392:THR:OG1	6:B:392:THR:O	2.37	0.42
6:C:1040:ASP:HA	6:C:1104:THR:HG21	2.00	0.42
6:Y:360:ILE:HG21	6:Y:369:MET:HE3	2.02	0.42
6:Y:491:ALA:HA	6:Y:494:ARG:HG3	2.00	0.42
6:Y:1324:ILE:HD12	6:Y:1324:ILE:HA	1.91	0.42
6:Z:1347:SER:O	6:Z:1347:SER:OG	2.37	0.42
1:n:33:PRO:HD3	1:n:135:PRO:HD3	2.02	0.42
2:m:264:LEU:HB2	2:m:271:LEU:HB3	2.02	0.42
3:M:45:TYR:HB3	3:M:132:LEU:HD22	2.01	0.42
5:R:26:LEU:O	6:B:813:TYR:OH	2.34	0.42
6:a:441:ASP:N	6:a:441:ASP:OD1	2.53	0.42
6:a:717:PRO:HA	6:a:718:PRO:HD3	1.84	0.42
6:C:95:VAL:HG13	6:C:114:ILE:HB	2.01	0.42
6:D:982:GLU:HG2	6:D:988:ARG:HG3	2.02	0.42
6:D:1050:SER:HG	6:D:1054:CYS:HG	1.68	0.42
6:Y:668:PRO:HB2	6:Z:643:GLN:HB2	2.00	0.42
6:Z:222:LYS:O	6:Z:226:THR:OG1	2.33	0.42
5:S:59:ALA:HA	6:C:805:LYS:HZ2	1.85	0.42
6:a:575:THR:HG22	6:a:1010:ALA:HB3	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:D:146:THR:HB	6:D:149:ASP:HB2	2.02	0.42
6:D:392:THR:HG21	6:D:1264:GLN:HE22	1.85	0.42
6:Y:970:ASP:OD1	6:Y:970:ASP:N	2.50	0.42
6:Z:1044:VAL:HG11	6:Z:1096:VAL:HG13	2.02	0.42
6:Z:1230:ASN:OD1	6:Z:1230:ASN:N	2.53	0.42
1:n:3:ALA:HA	2:m:255:LEU:HD21	2.02	0.42
2:m:21:VAL:HG22	2:m:35:VAL:HG13	2.02	0.42
3:M:380:ARG:HB2	4:N:32:ARG:HH11	1.84	0.42
6:a:534:HIS:CE1	6:a:1239:LEU:HB3	2.55	0.42
6:C:987:LEU:HD11	6:C:1012:LEU:HD21	2.01	0.42
6:D:1268:THR:HA	6:D:1271:ILE:HG22	2.01	0.42
6:Y:663:ASP:O	6:Z:642:ARG:NH2	2.53	0.42
1:o:62:ARG:NH1	1:o:147:ASN:OD1	2.53	0.41
1:o:71:THR:OG1	1:o:84:HIS:O	2.37	0.41
3:M:170:ARG:HB3	3:M:315:ARG:HH12	1.84	0.41
4:N:24:LEU:HA	4:O:4:LEU:HB2	2.02	0.41
6:a:424:LEU:HD12	6:a:425:PRO:HD2	2.02	0.41
6:a:1040:ASP:HA	6:a:1104:THR:HG21	2.01	0.41
6:B:125:ILE:HG13	6:B:1079:GLN:HB3	2.02	0.41
6:B:422:ASN:ND2	6:C:404:ASP:O	2.53	0.41
6:B:448:THR:HG23	6:B:1113:LEU:HG	2.02	0.41
6:C:211:GLN:HA	6:C:214:ASN:HD22	1.84	0.41
6:C:435:ARG:NH2	6:C:1364:GLN:OE1	2.53	0.41
6:D:440:ILE:HD12	6:D:1108:VAL:HB	2.02	0.41
7:A:6:UNK:CB	7:E:15:UNK:CB	2.98	0.41
1:o:159:ASP:OD2	1:o:159:ASP:N	2.51	0.41
3:M:74:ASP:OD1	3:M:74:ASP:N	2.49	0.41
3:M:484:GLN:HE21	6:a:484:GLN:HE21	1.68	0.41
6:a:1195:ARG:NH1	6:a:1227:ALA:O	2.53	0.41
6:B:609:LEU:HD11	6:B:630:PHE:HZ	1.85	0.41
6:B:904:ARG:HG2	6:B:908:PRO:HA	2.02	0.41
6:C:692:GLY:HA2	6:D:993:ARG:HH12	1.85	0.41
1:o:50:GLN:H	1:o:50:GLN:HG2	1.70	0.41
2:m:195:GLY:HA2	2:m:237:ARG:HH12	1.84	0.41
6:C:448:THR:HA	6:C:1113:LEU:HB2	2.03	0.41
6:D:1287:LEU:HD12	6:D:1288:ARG:HG2	2.02	0.41
6:Y:1163:ALA:HB2	6:Z:1213:ALA:HB1	2.03	0.41
6:Z:760:MET:HE3	6:Z:760:MET:HB2	1.99	0.41
1:n:142:LEU:HD12	1:n:142:LEU:HA	1.92	0.41
6:Y:544:GLU:HB2	6:Y:547:GLU:HG3	2.01	0.41
6:Y:633:ARG:HH21	6:Y:865:ALA:HB1	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:Z:596:LEU:HD12	6:Z:673:HIS:CD2	2.55	0.41
6:Z:688:SER:O	6:Z:708:ASN:ND2	2.46	0.41
6:Z:1165:VAL:HG12	6:Z:1166:HIS:HD2	1.86	0.41
1:o:291:CYS:HA	2:m:150:MET:HE1	2.02	0.41
6:B:693:LEU:HB3	6:B:1022:LEU:HD12	2.01	0.41
6:B:878:GLU:HA	6:B:881:LEU:HB2	2.02	0.41
6:D:941:ARG:HE	6:D:941:ARG:HB2	1.67	0.41
6:Y:497:HIS:HA	6:Y:500:ARG:HG2	2.01	0.41
6:Y:1286:LEU:O	6:Y:1290:LYS:NZ	2.52	0.41
1:o:33:PRO:HA	1:o:70:LEU:HA	2.03	0.41
1:o:162:TYR:HB2	1:o:165:VAL:HG12	2.02	0.41
2:g:64:GLY:HA3	2:g:166:MET:HG2	2.01	0.41
4:N:48:ARG:HD3	4:N:48:ARG:HA	1.88	0.41
5:i:13:LYS:HG3	5:i:14:ARG:H	1.86	0.41
5:i:25:VAL:HG13	5:i:57:LYS:HA	2.02	0.41
6:a:1054:CYS:HB2	6:a:1091:THR:HG21	2.03	0.41
6:a:1155:SER:OG	6:a:1156:MET:N	2.51	0.41
6:a:1172:CYS:SG	6:a:1244:TYR:OH	2.65	0.41
6:B:3:ASN:ND2	6:C:317:SER:O	2.53	0.41
6:B:152:LEU:HD23	6:B:152:LEU:HA	1.89	0.41
6:B:390:ASP:OD1	6:B:1039:THR:OG1	2.35	0.41
6:B:1166:HIS:NE2	6:C:1223:GLN:O	2.51	0.41
6:D:359:VAL:HG12	6:D:368:ILE:HD13	2.03	0.41
6:D:399:LEU:HD23	6:D:399:LEU:HA	1.84	0.41
6:Y:54:PHE:HB2	6:Z:91:MET:HG2	2.01	0.41
6:Y:647:PHE:HB3	6:Y:653:LEU:HB3	2.01	0.41
6:Y:792:MET:HE3	6:Y:792:MET:HB3	1.93	0.41
6:Z:601:VAL:HG13	6:Z:924:VAL:HG11	2.03	0.41
1:I:88:HIS:ND1	1:I:306:GLY:OXT	2.42	0.41
1:n:283:ARG:NE	1:o:279:ASP:OD2	2.54	0.41
2:g:90:ARG:HD2	2:g:90:ARG:HA	1.83	0.41
6:a:540:THR:OG1	6:a:541:HIS:N	2.54	0.41
6:a:1257:LYS:HA	6:a:1257:LYS:HD2	1.86	0.41
6:C:1290:LYS:HD3	6:C:1310:LEU:HB3	2.03	0.41
6:Y:496:PRO:HA	6:Y:499:TYR:HD2	1.86	0.41
6:Y:1228:THR:HG22	6:Y:1230:ASN:H	1.86	0.41
1:I:56:ARG:H	1:I:56:ARG:HG2	1.67	0.41
2:m:192:ASP:OD1	2:m:192:ASP:N	2.54	0.41
6:a:316:ILE:HD12	6:C:332:LEU:HD21	2.03	0.41
6:a:571:HIS:O	6:a:575:THR:HG23	2.21	0.41
6:a:1310:LEU:HD12	6:a:1310:LEU:HA	1.98	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B:717:PRO:HA	6:B:718:PRO:HD3	1.91	0.41
6:B:820:MET:HE3	6:B:820:MET:HB2	1.81	0.41
6:B:1104:THR:OG1	6:B:1105:ASP:N	2.48	0.41
6:C:514:GLN:HE22	6:C:990:PRO:HD3	1.85	0.41
6:C:1196:ALA:HB3	6:C:1222:ALA:HB3	2.03	0.41
6:D:176:ILE:HG21	6:D:375:VAL:HG21	2.03	0.41
6:Y:254:ILE:HD11	6:Y:1088:LEU:HB2	2.03	0.41
6:Z:1248:HIS:CE1	6:Z:1251:ARG:HH11	2.38	0.41
1:h:149:ARG:O	1:h:153:MET:HG2	2.20	0.41
1:I:105:GLY:HA3	2:g:132:LEU:HD21	2.03	0.41
4:N:38:ALA:HA	4:N:41:THR:HG22	2.03	0.41
5:R:19:ARG:O	5:R:23:ASN:HB2	2.20	0.41
6:a:309:PRO:HB2	6:C:329:LYS:HG3	2.02	0.41
6:a:342:ASP:HB3	6:B:13:VAL:HG11	2.03	0.41
6:a:392:THR:HG21	6:a:1265:TYR:HE2	1.86	0.41
6:a:575:THR:HA	6:a:578:ILE:HG22	2.03	0.41
6:a:735:ASP:OD1	6:a:735:ASP:N	2.53	0.41
6:B:301:THR:OG1	6:B:302:TYR:N	2.54	0.41
6:B:446:LEU:HD22	6:B:1021:VAL:HG23	2.02	0.41
6:B:651:TYR:O	6:B:655:THR:OG1	2.34	0.41
6:C:903:GLN:HE22	6:C:1014:LYS:HE2	1.85	0.41
6:D:71:LEU:HD21	6:D:180:LEU:HD13	2.02	0.41
6:Y:1239:LEU:HA	6:Y:1242:VAL:HG12	2.01	0.41
6:Z:533:LEU:HD23	6:Z:533:LEU:HA	1.91	0.41
6:Z:1265:TYR:OH	6:Z:1320:GLU:O	2.30	0.41
1:I:151:LEU:HD11	1:I:204:MET:HE1	2.03	0.41
1:I:207:VAL:HG23	1:I:271:LEU:HD12	2.03	0.41
1:n:85:VAL:HA	1:n:86:PRO:HD3	1.95	0.41
2:g:44:GLN:HE22	2:g:46:LEU:HD21	1.86	0.41
6:a:561:LEU:HD23	6:a:561:LEU:HA	1.89	0.41
6:a:1199:MET:N	6:a:1199:MET:SD	2.94	0.41
6:B:419:THR:HG22	6:B:421:ARG:H	1.86	0.41
6:B:1313:ASN:N	6:B:1313:ASN:OD1	2.54	0.41
6:C:645:LEU:HD12	6:C:674:TYR:CZ	2.56	0.41
6:D:1359:ILE:HG23	6:D:1360:ILE:HG13	2.03	0.41
6:Y:389:VAL:HG13	6:Y:1044:VAL:HG21	2.03	0.41
6:Y:646:VAL:O	6:Y:674:TYR:OH	2.33	0.41
6:Z:562:PRO:HD2	6:Z:565:LEU:HD12	2.03	0.41
1:h:49:HIS:HA	1:h:52:VAL:HG12	2.03	0.40
3:M:583:ARG:O	3:M:585:SER:OG	2.36	0.40
6:B:510:ASN:O	6:B:989:SER:OG	2.39	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B:1131:ILE:HD13	6:B:1131:ILE:HA	1.93	0.40
6:B:1363:GLN:O	6:B:1367:LEU:HB2	2.22	0.40
6:C:108:THR:OG1	6:C:109:SER:N	2.54	0.40
6:D:663:ASP:OD1	6:D:663:ASP:N	2.53	0.40
6:Z:1282:ILE:HA	6:Z:1285:TYR:HB3	2.04	0.40
3:M:477:VAL:HG13	3:M:486:ASP:HB2	2.02	0.40
6:a:372:LEU:HD23	6:a:372:LEU:HA	1.85	0.40
6:C:1043:GLU:OE2	6:C:1101:ARG:NH1	2.54	0.40
6:D:257:ASN:HD21	6:D:349:ALA:HB2	1.86	0.40
6:Y:710:LEU:HD13	6:Y:1012:LEU:HD22	2.03	0.40
6:Y:1182:ASP:OD1	6:Y:1182:ASP:N	2.39	0.40
6:Z:760:MET:HE1	6:Z:805:LYS:HB3	2.02	0.40
3:M:338:SER:O	3:M:338:SER:OG	2.35	0.40
5:i:40:LEU:HA	5:i:44:LEU:HD23	2.03	0.40
6:a:307:LEU:HD12	6:a:307:LEU:HA	1.94	0.40
6:B:87:THR:HG22	6:B:88:THR:HG23	2.02	0.40
6:C:1217:HIS:CE1	6:C:1235:GLN:HG3	2.56	0.40
6:Y:479:LEU:HG	6:Y:543:GLN:HB2	2.03	0.40
6:Y:587:PRO:HA	6:Y:588:PRO:HD3	1.87	0.40
6:Y:617:VAL:HG23	6:Y:619:GLY:H	1.86	0.40
6:Z:308:SER:H	6:Z:311:ASN:HD22	1.69	0.40
6:Z:328:TYR:O	6:Z:332:LEU:HB2	2.21	0.40
6:Z:583:ARG:HE	6:Z:583:ARG:HB3	1.69	0.40
1:h:49:HIS:NE2	1:h:131:GLU:OE1	2.54	0.40
1:h:163:GLU:OE1	3:M:434:ARG:NH2	2.55	0.40
6:a:83:LEU:HD12	6:a:1060:ASN:HB3	2.03	0.40
6:a:190:TYR:HE2	6:a:226:THR:HG21	1.86	0.40
6:a:243:LEU:HD23	6:a:243:LEU:HA	1.91	0.40
6:C:1347:SER:O	6:C:1347:SER:OG	2.34	0.40
6:D:688:SER:O	6:D:688:SER:OG	2.34	0.40
6:Y:661:LEU:HD12	6:Y:661:LEU:HA	1.86	0.40
6:Z:83:LEU:HD23	6:Z:83:LEU:HA	1.92	0.40
6:a:222:LYS:NZ	6:Z:1370:SER:OXT	2.54	0.40
6:a:965:HIS:HB3	6:Z:702:PRO:HB3	2.04	0.40
6:a:1172:CYS:SG	6:a:1173:GLU:N	2.95	0.40
6:B:1038:ARG:HH22	6:B:1324:ILE:HG21	1.87	0.40
6:C:321:ILE:HD13	6:C:321:ILE:HA	1.92	0.40
6:D:489:GLY:HA2	6:D:763:ASP:HB3	2.02	0.40
6:D:682:ARG:HA	6:D:682:ARG:HD2	1.89	0.40
6:D:798:CYS:SG	6:D:799:GLY:N	2.95	0.40
6:D:1362:LEU:HD13	6:D:1366:MET:HG3	2.03	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	I	283/306 (92%)	267 (94%)	16 (6%)	0	100	100
1	h	284/306 (93%)	263 (93%)	21 (7%)	0	100	100
1	n	291/306 (95%)	266 (91%)	25 (9%)	0	100	100
1	o	285/306 (93%)	270 (95%)	15 (5%)	0	100	100
2	g	211/290 (73%)	195 (92%)	15 (7%)	1 (0%)	25	61
2	m	288/290 (99%)	264 (92%)	24 (8%)	0	100	100
3	M	459/594 (77%)	431 (94%)	28 (6%)	0	100	100
4	N	58/642 (9%)	53 (91%)	5 (9%)	0	100	100
4	O	37/642 (6%)	33 (89%)	4 (11%)	0	100	100
5	R	61/75 (81%)	60 (98%)	1 (2%)	0	100	100
5	S	61/75 (81%)	57 (93%)	4 (7%)	0	100	100
5	i	61/75 (81%)	60 (98%)	1 (2%)	0	100	100
5	j	61/75 (81%)	59 (97%)	2 (3%)	0	100	100
6	B	1299/1370 (95%)	1202 (92%)	97 (8%)	0	100	100
6	C	1306/1370 (95%)	1229 (94%)	77 (6%)	0	100	100
6	D	1272/1370 (93%)	1193 (94%)	78 (6%)	1 (0%)	48	81
6	Y	1343/1370 (98%)	1271 (95%)	72 (5%)	0	100	100
6	Z	1314/1370 (96%)	1237 (94%)	77 (6%)	0	100	100
6	a	1280/1370 (93%)	1214 (95%)	66 (5%)	0	100	100
All	All	10254/12202 (84%)	9624 (94%)	628 (6%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	g	196	PRO
6	D	765	PRO

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	I	258/273 (94%)	258 (100%)	0	100	100
1	h	260/273 (95%)	259 (100%)	1 (0%)	89	91
1	n	263/273 (96%)	262 (100%)	1 (0%)	89	91
1	o	259/273 (95%)	258 (100%)	1 (0%)	89	91
2	g	192/252 (76%)	192 (100%)	0	100	100
2	m	252/252 (100%)	251 (100%)	1 (0%)	89	91
3	M	392/500 (78%)	387 (99%)	5 (1%)	65	77
4	N	54/526 (10%)	53 (98%)	1 (2%)	52	70
4	O	36/526 (7%)	36 (100%)	0	100	100
5	R	59/68 (87%)	59 (100%)	0	100	100
5	S	59/68 (87%)	59 (100%)	0	100	100
5	i	59/68 (87%)	59 (100%)	0	100	100
5	j	59/68 (87%)	59 (100%)	0	100	100
6	B	1143/1192 (96%)	1135 (99%)	8 (1%)	81	86
6	C	1146/1192 (96%)	1142 (100%)	4 (0%)	91	92
6	D	1113/1192 (93%)	1109 (100%)	4 (0%)	89	91
6	Y	1174/1192 (98%)	1170 (100%)	4 (0%)	91	92
6	Z	1149/1192 (96%)	1143 (100%)	6 (0%)	86	89
6	a	1120/1192 (94%)	1116 (100%)	4 (0%)	89	91
All	All	9047/10572 (86%)	9007 (100%)	40 (0%)	88	91

All (40) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	h	138	VAL
1	n	224	LEU
1	o	214	LEU
2	m	102	LEU
3	M	31	VAL
3	M	128	VAL
3	M	363	VAL
3	M	477	VAL
3	M	584	VAL
4	N	30	VAL
6	a	655	THR
6	a	744	ILE
6	a	1096	VAL
6	a	1303	CYS
6	B	97	VAL
6	B	149	ASP
6	B	226	THR
6	B	508	THR
6	B	895	VAL
6	B	937	VAL
6	B	1001	VAL
6	B	1303	CYS
6	C	414	VAL
6	C	861	VAL
6	C	937	VAL
6	C	1035	THR
6	D	279	VAL
6	D	732	VAL
6	D	740	ASN
6	D	1044	VAL
6	Y	95	VAL
6	Y	861	VAL
6	Y	937	VAL
6	Y	1015	ILE
6	Z	646	VAL
6	Z	861	VAL
6	Z	1015	ILE
6	Z	1039	THR
6	Z	1224	THR
6	Z	1303	CYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (154) such sidechains are listed below:

Mol	Chain	Res	Type
1	h	36	GLN
1	h	50	GLN
1	h	80	GLN
1	h	129	GLN
1	h	209	ASN
1	h	277	GLN
1	I	96	ASN
1	I	209	ASN
1	I	235	GLN
1	n	79	ASN
1	n	277	GLN
1	o	36	GLN
2	g	44	GLN
2	g	240	GLN
2	m	18	ASN
2	m	31	ASN
2	m	43	HIS
2	m	211	HIS
3	M	176	ASN
6	a	111	GLN
6	a	205	GLN
6	a	208	ASN
6	a	319	HIS
6	a	336	GLN
6	a	378	ASN
6	a	438	GLN
6	a	484	GLN
6	a	534	HIS
6	a	545	ASN
6	a	676	ASN
6	a	722	HIS
6	a	726	ASN
6	a	749	HIS
6	a	781	GLN
6	a	945	ASN
6	a	965	HIS
6	a	1000	ASN
6	a	1003	HIS
6	a	1023	GLN
6	a	1029	HIS
6	a	1076	HIS
6	a	1111	GLN
6	a	1255	ASN

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Mol	Chain	Res	Type
6	a	1350	HIS
6	a	1353	ASN
6	a	1363	GLN
6	B	59	ASN
6	B	153	ASN
6	B	166	ASN
6	B	177	HIS
6	B	214	ASN
6	B	388	ASN
6	B	422	ASN
6	B	534	HIS
6	B	605	ASN
6	B	726	ASN
6	B	748	HIS
6	B	781	GLN
6	B	851	GLN
6	B	1000	ASN
6	B	1076	HIS
6	B	1100	ASN
6	B	1120	ASN
6	B	1353	ASN
6	B	1364	GLN
6	C	94	HIS
6	C	214	ASN
6	C	217	GLN
6	C	290	HIS
6	C	326	ASN
6	C	422	ASN
6	C	462	GLN
6	C	514	GLN
6	C	543	GLN
6	C	560	ASN
6	C	637	ASN
6	C	643	GLN
6	C	794	ASN
6	C	849	GLN
6	C	901	HIS
6	C	981	HIS
6	C	985	ASN
6	C	1000	ASN
6	C	1023	GLN
6	C	1093	ASN

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Mol	Chain	Res	Type
6	C	1124	HIS
6	C	1168	GLN
6	C	1275	ASN
6	C	1319	GLN
6	C	1363	GLN
6	C	1369	ASN
6	D	205	GLN
6	D	214	ASN
6	D	217	GLN
6	D	432	ASN
6	D	438	GLN
6	D	451	HIS
6	D	620	ASN
6	D	673	HIS
6	D	743	ASN
6	D	781	GLN
6	D	794	ASN
6	D	795	ASN
6	D	969	HIS
6	D	1027	HIS
6	D	1079	GLN
6	D	1168	GLN
6	Y	3	ASN
6	Y	22	HIS
6	Y	47	ASN
6	Y	231	ASN
6	Y	371	ASN
6	Y	388	ASN
6	Y	534	HIS
6	Y	713	HIS
6	Y	731	GLN
6	Y	740	ASN
6	Y	781	GLN
6	Y	794	ASN
6	Y	795	ASN
6	Y	903	GLN
6	Y	914	GLN
6	Y	981	HIS
6	Y	1061	ASN
6	Y	1093	ASN
6	Y	1141	GLN
6	Z	153	ASN

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Mol	Chain	Res	Type
6	Z	158	HIS
6	Z	181	GLN
6	Z	311	ASN
6	Z	319	HIS
6	Z	331	HIS
6	Z	336	GLN
6	Z	388	ASN
6	Z	497	HIS
6	Z	510	ASN
6	Z	560	ASN
6	Z	618	HIS
6	Z	676	ASN
6	Z	697	GLN
6	Z	781	GLN
6	Z	901	HIS
6	Z	905	GLN
6	Z	919	ASN
6	Z	940	HIS
6	Z	945	ASN
6	Z	969	HIS
6	Z	1027	HIS
6	Z	1093	ASN
6	Z	1124	HIS
6	Z	1141	GLN
6	Z	1166	HIS
6	Z	1248	HIS
6	Z	1364	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

There are no ligands in this entry.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

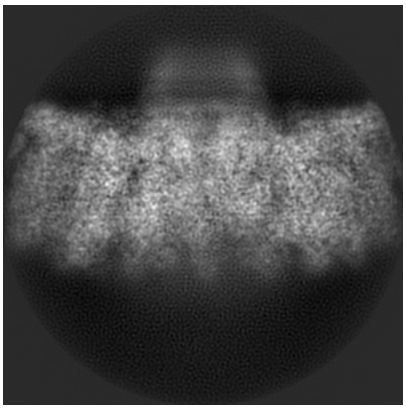
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-34696. These allow visual inspection of the internal detail of the map and identification of artifacts.

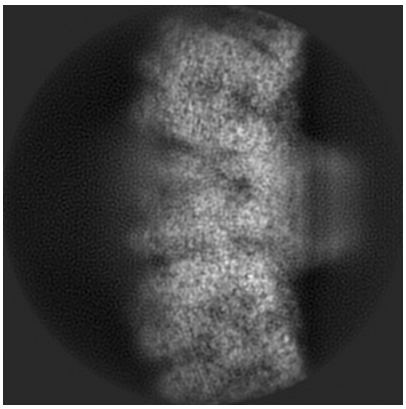
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

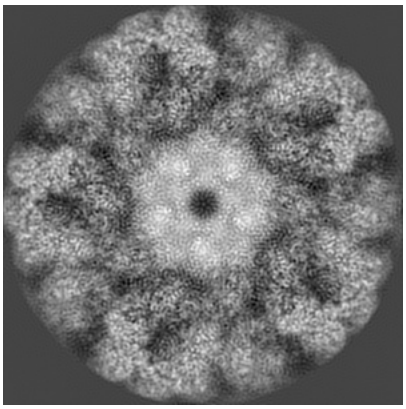
6.1.1 Primary map



X

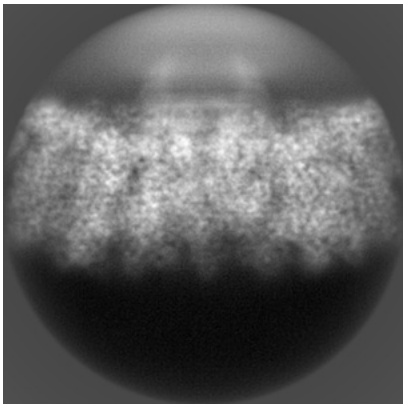


Y

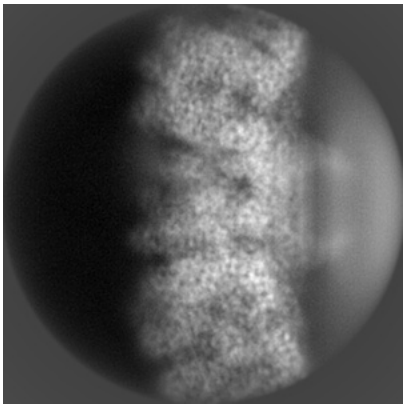


Z

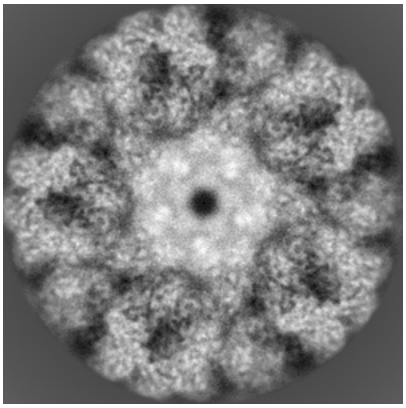
6.1.2 Raw map



X



Y

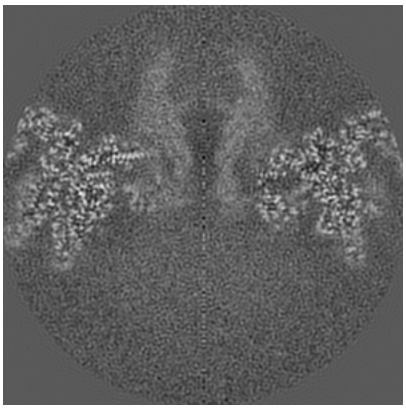


Z

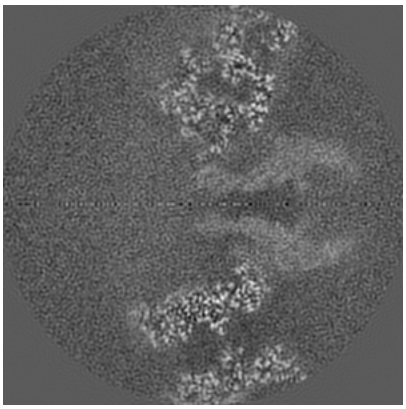
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

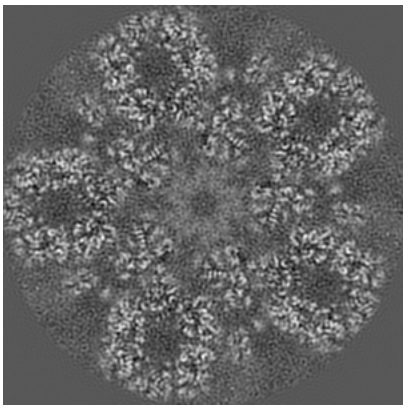
6.2.1 Primary map



X Index: 128

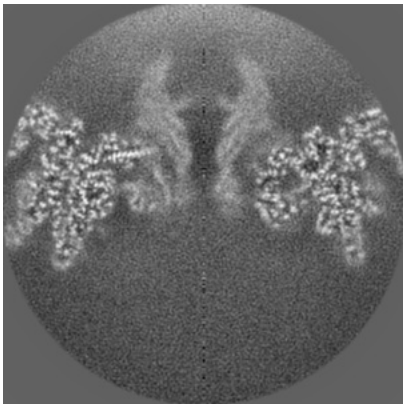


Y Index: 128

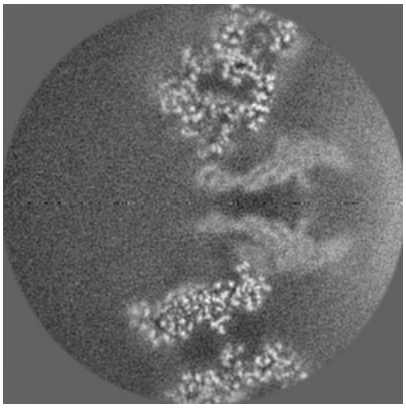


Z Index: 128

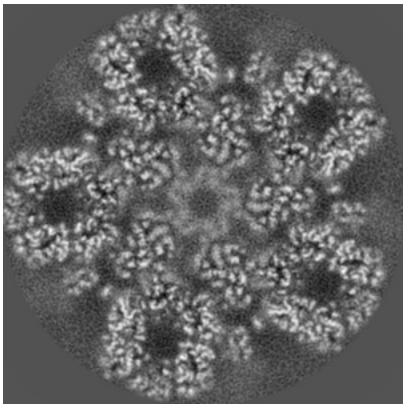
6.2.2 Raw map



X Index: 128



Y Index: 128

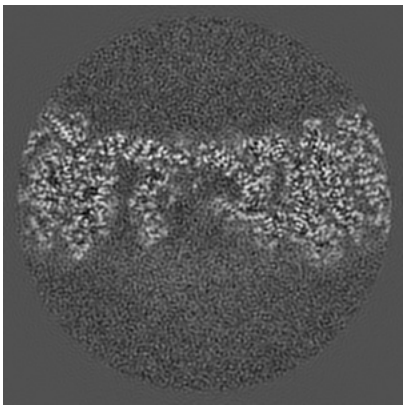


Z Index: 128

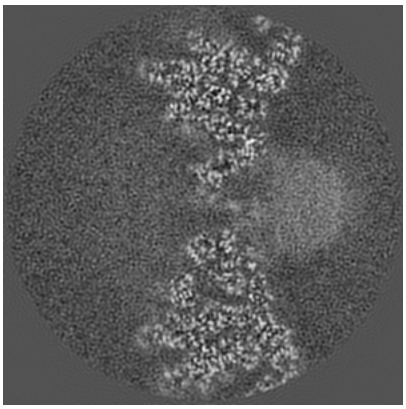
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

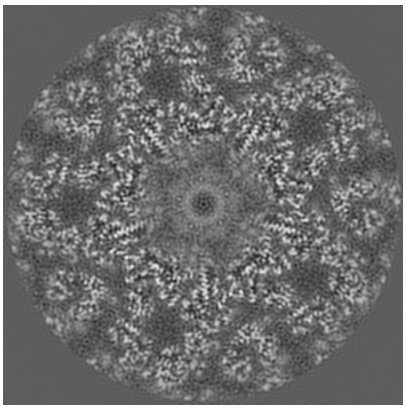
6.3.1 Primary map



X Index: 79

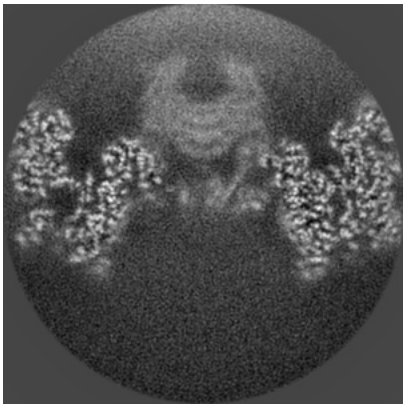


Y Index: 98

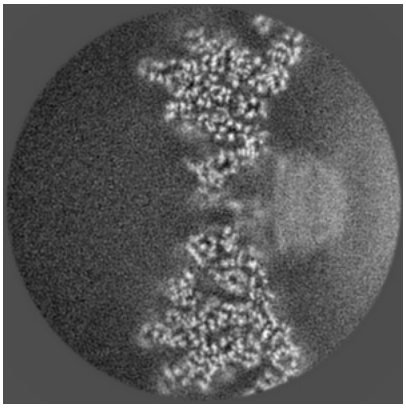


Z Index: 158

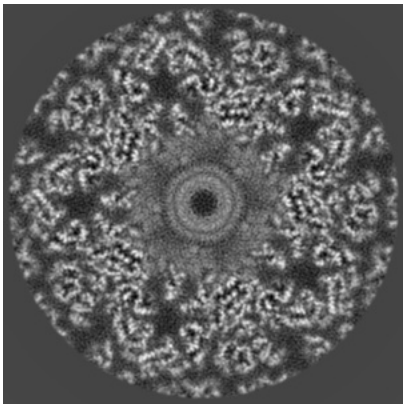
6.3.2 Raw map



X Index: 109



Y Index: 98

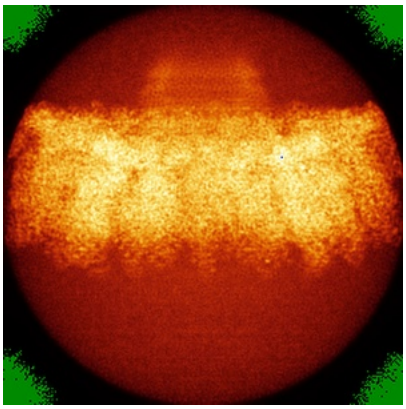


Z Index: 164

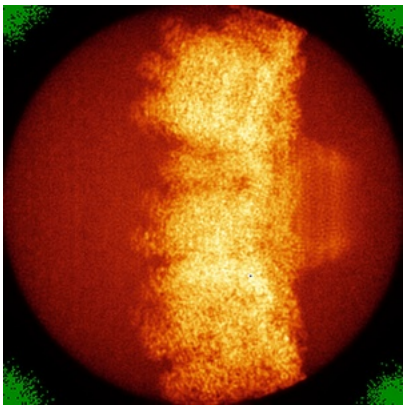
The images above show the largest variance slices of the map in three orthogonal directions.

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

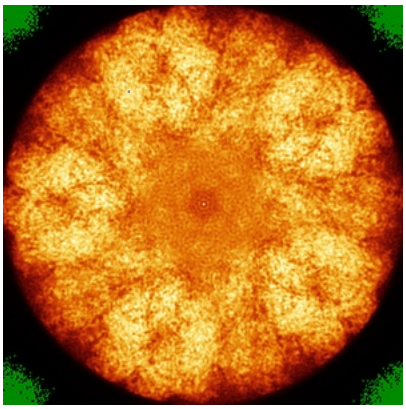
6.4.1 Primary map



X

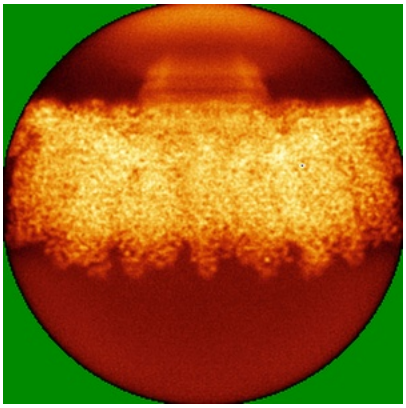


Y

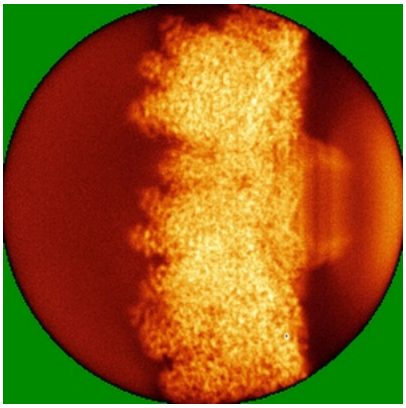


Z

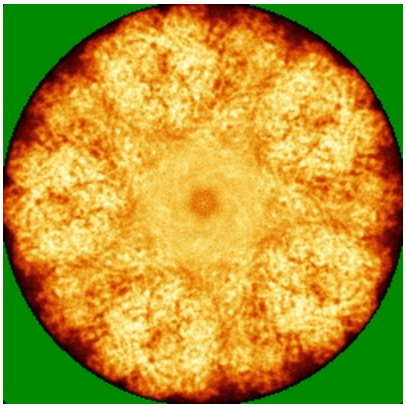
6.4.2 Raw map



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 0.012. 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.

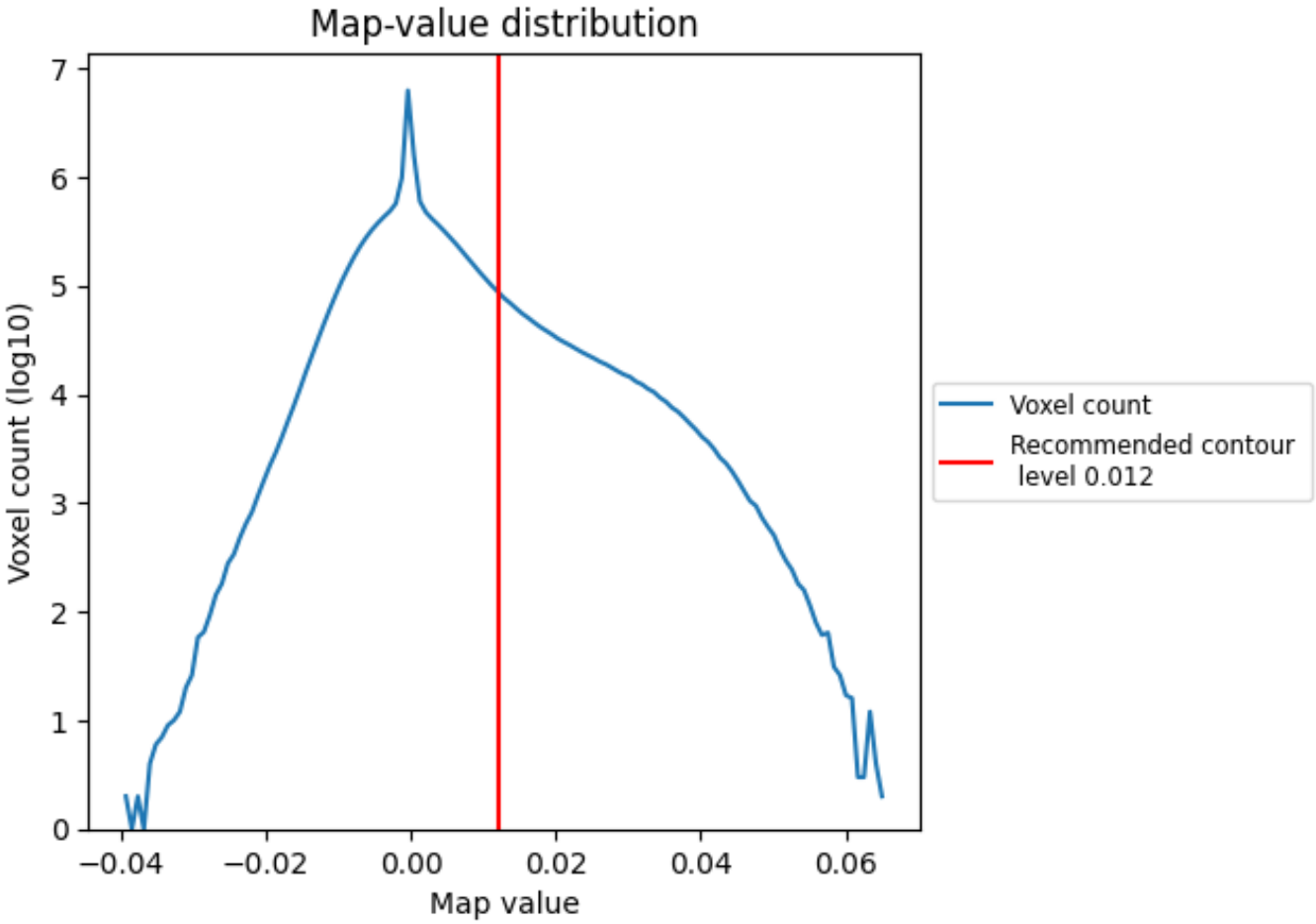
6.6 Mask visualisation (i)

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

7 Map analysis

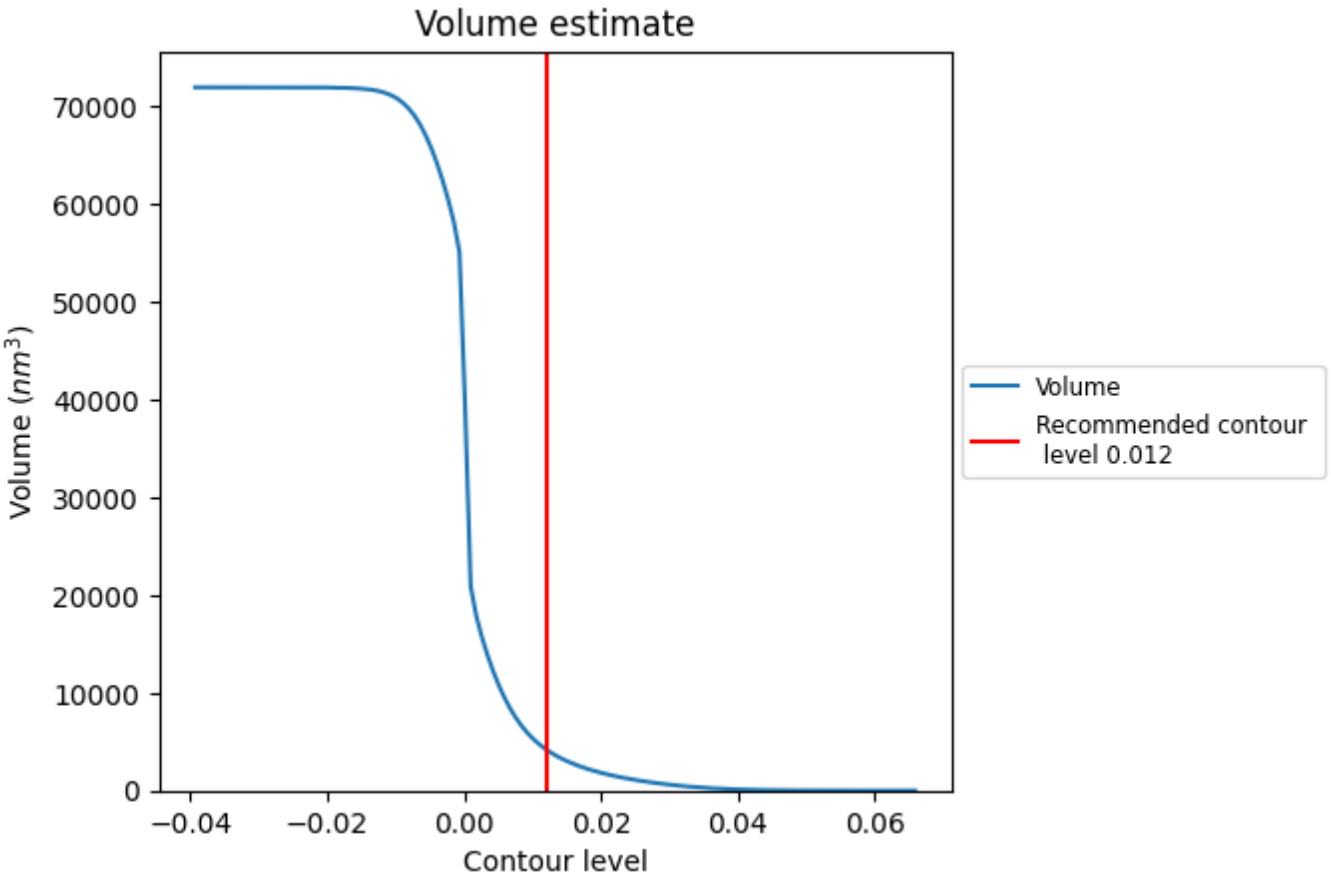
This section contains the results of statistical analysis of the map.

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.

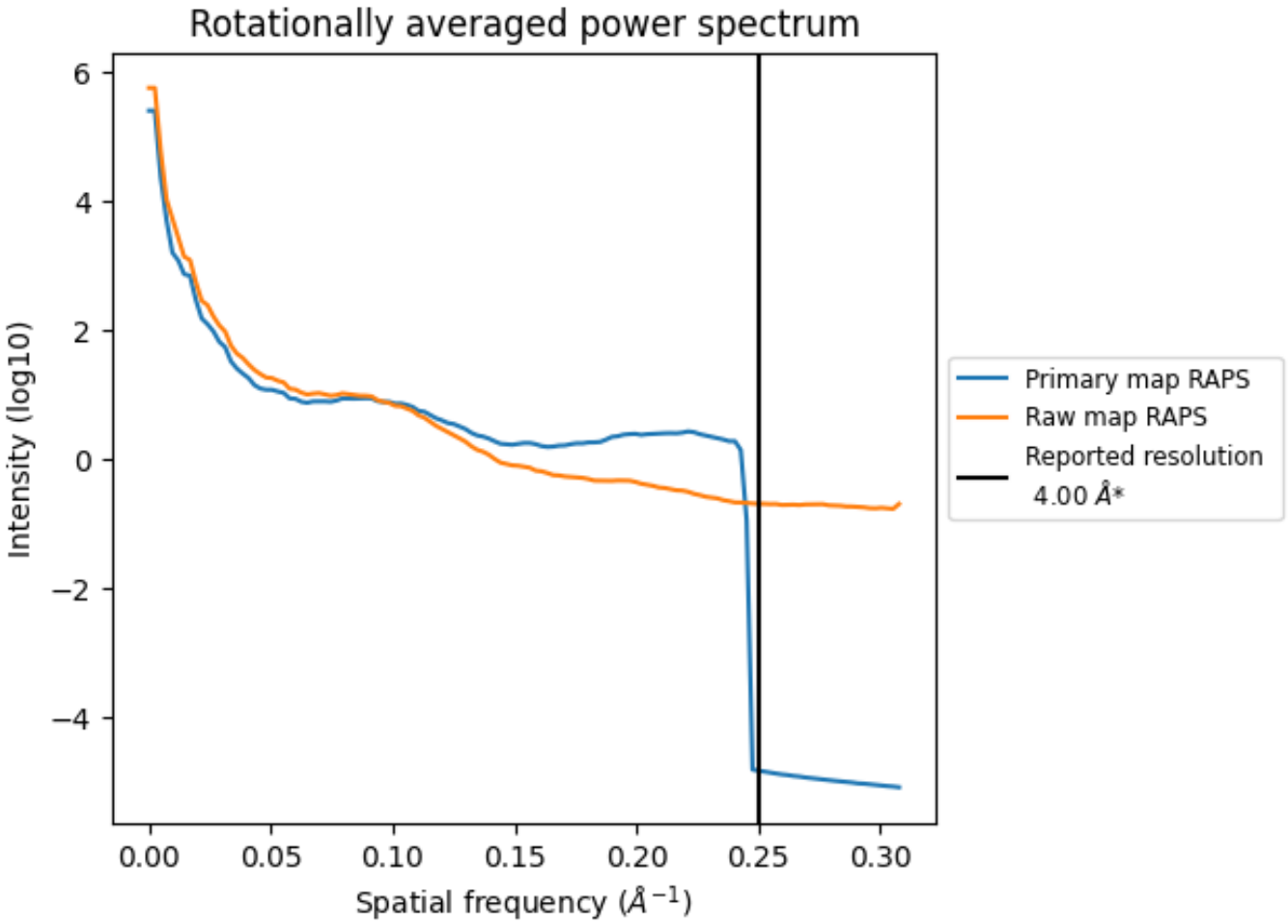
7.2 Volume estimate (i)



The volume at the recommended contour level is 4197 nm^3; this corresponds to an approximate mass of 3791 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)

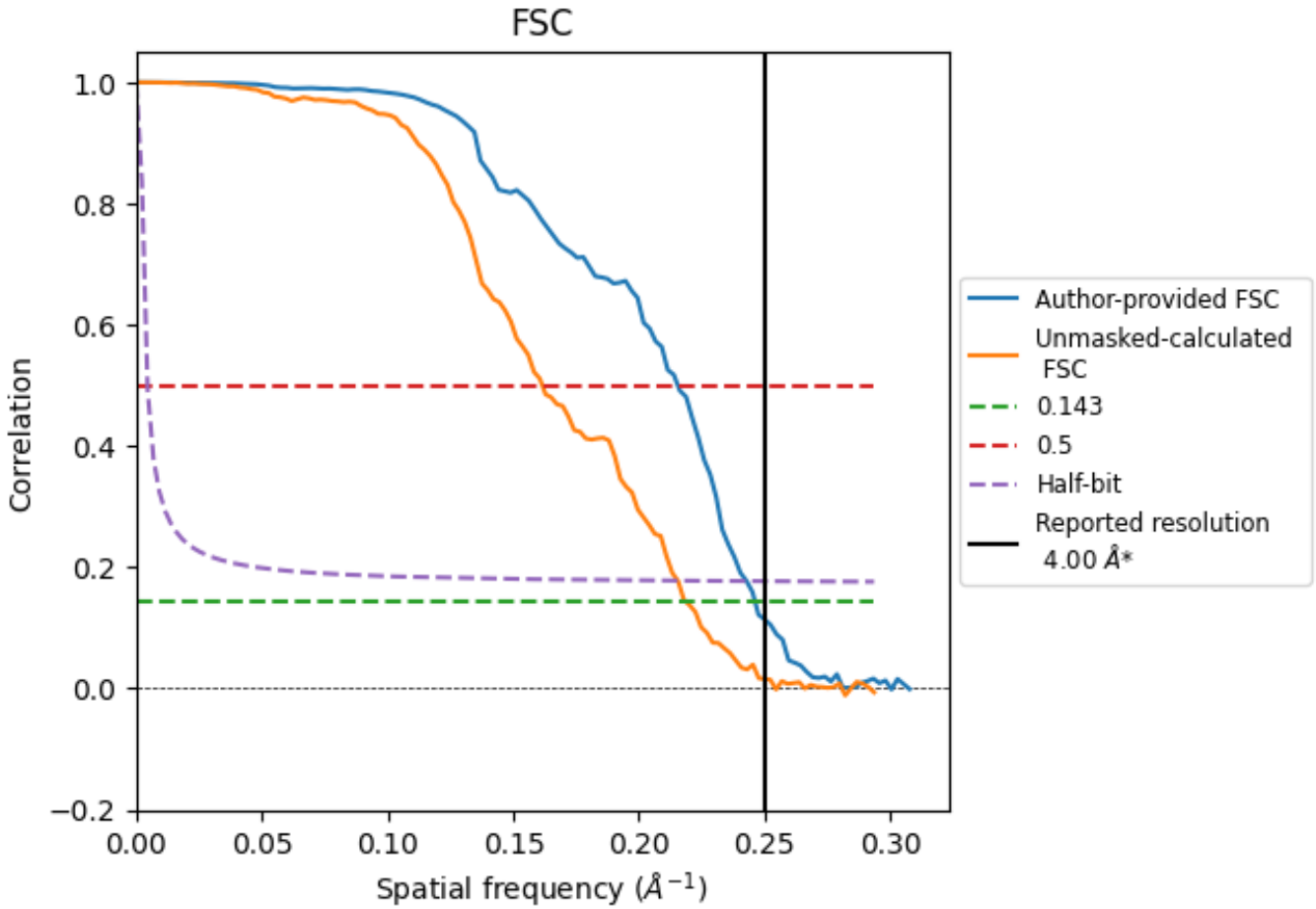


*Reported resolution corresponds to spatial frequency of 0.250 Å^{-1}

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 0.250 Å^{-1}

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.00	-	-
Author-provided FSC curve	4.06	4.64	4.12
Unmasked-calculated*	4.57	6.19	4.64

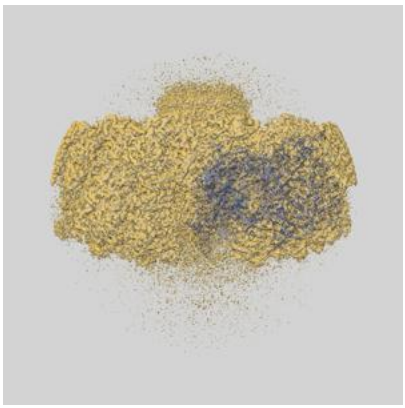
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.57 differs from the reported value 4.0 by more than 10 %

9 Map-model fit

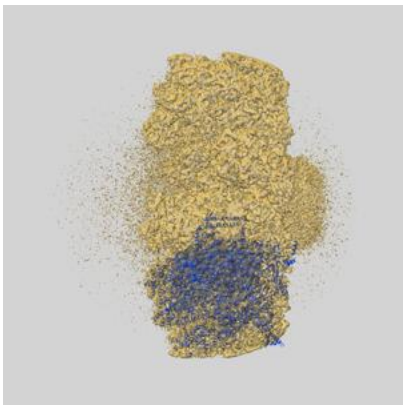
This section contains information regarding the fit between EMDB map EMD-34696 and PDB model 8HEX. Per-residue inclusion information can be found in section 3 on page 7.

9.1 Map-model overlays

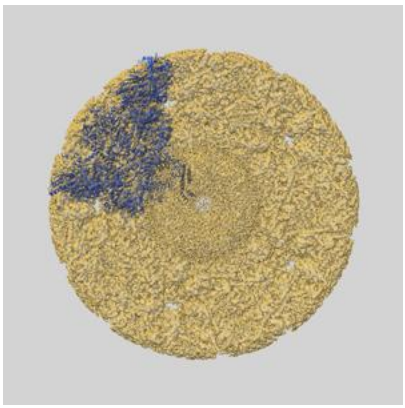
9.1.1 Map-model overlay



X

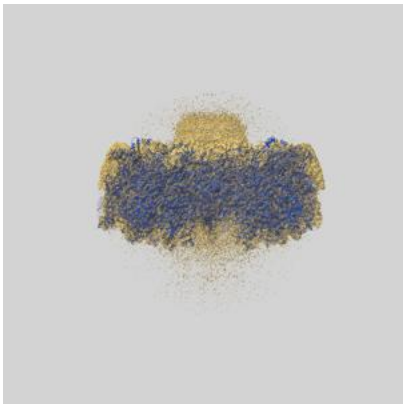


Y

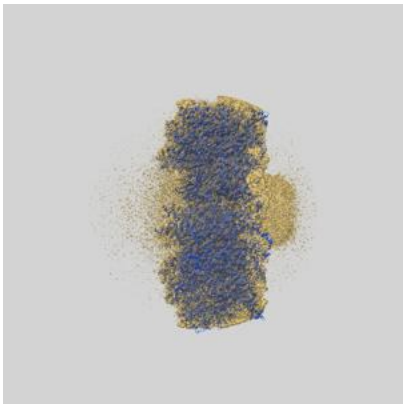


Z

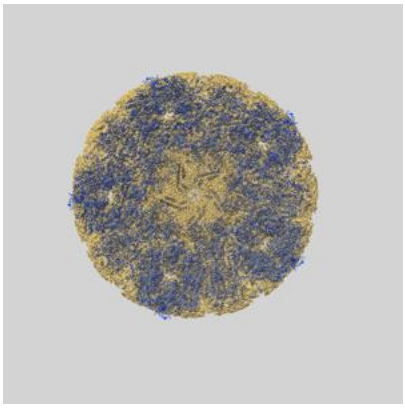
9.1.2 Map-model assembly overlay



X



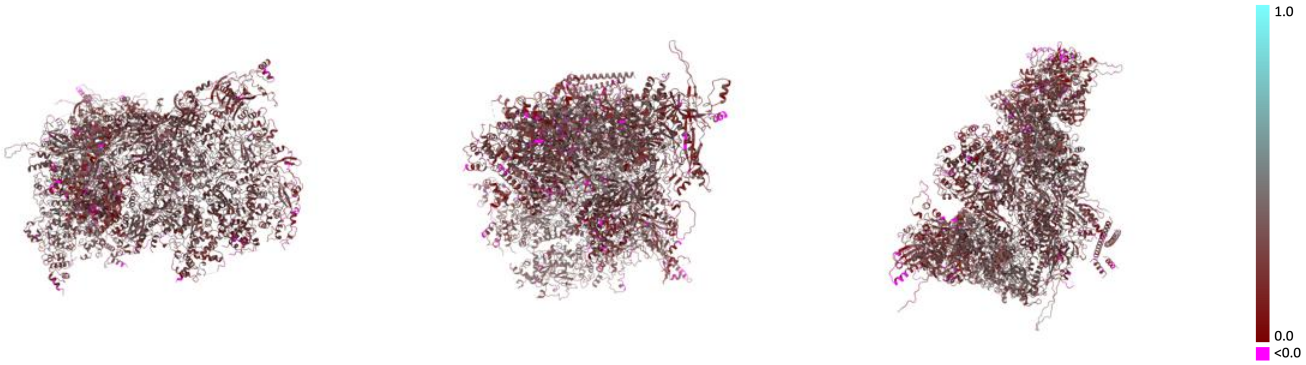
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.012 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.

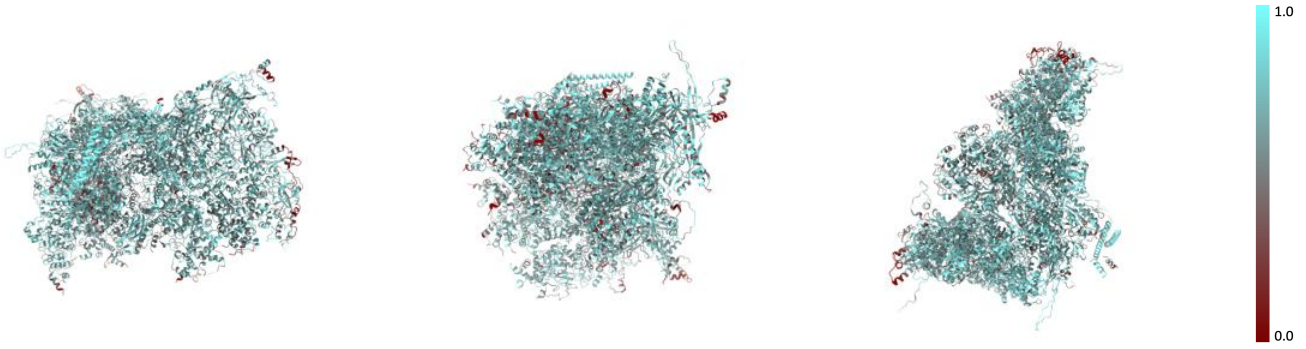
9.2 Q-score mapped to coordinate model (i)



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.

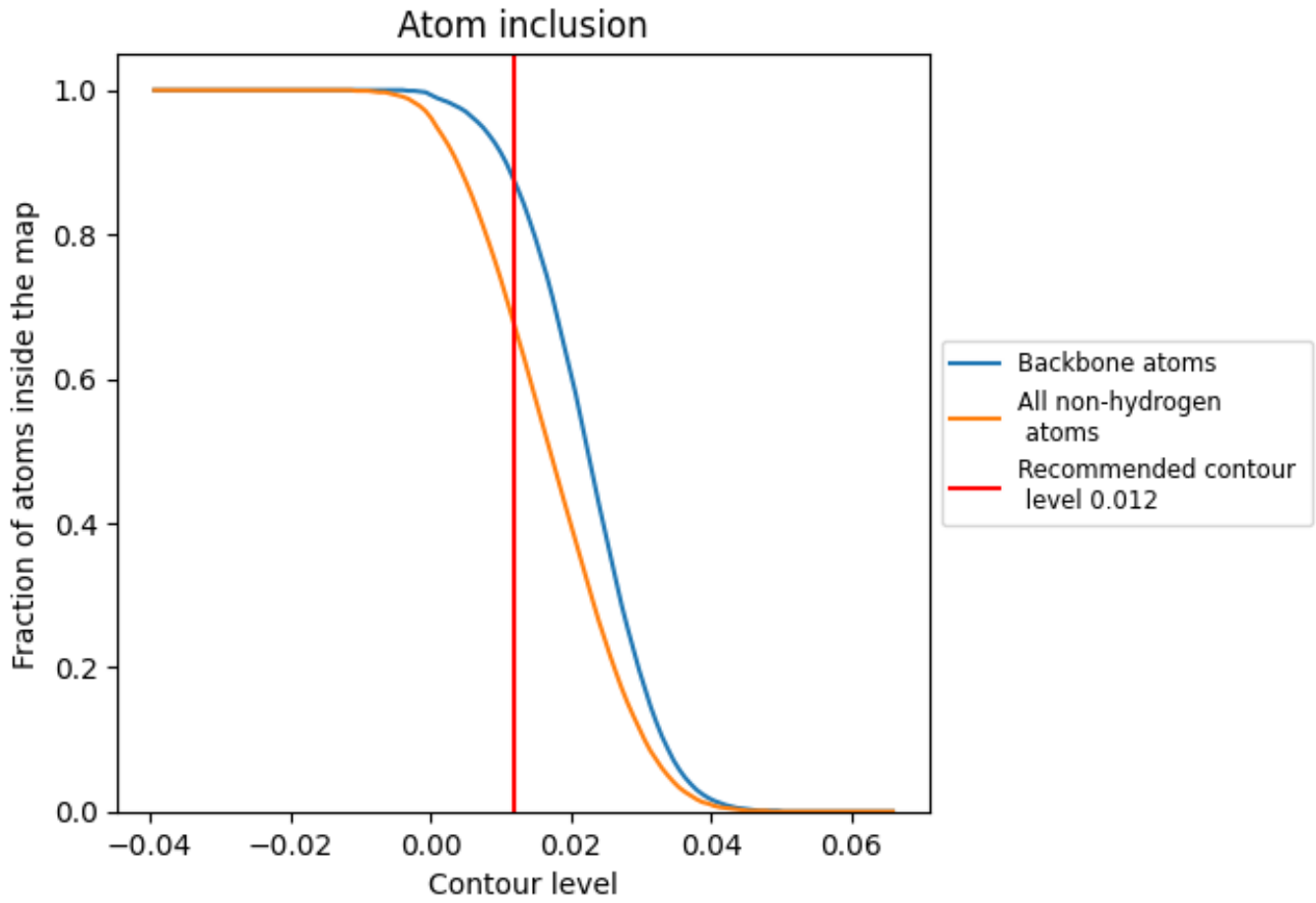
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.012).

9.4 Atom inclusion (i)



At the recommended contour level, 87% of all backbone atoms, 67% 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 (0.012) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6730	0.2830
A	0.8380	0.2410
B	0.7140	0.3210
C	0.7110	0.3070
D	0.6590	0.2660
E	0.8240	0.2480
F	0.7870	0.2240
G	0.5230	0.1340
I	0.6740	0.2800
M	0.6630	0.2920
N	0.5100	0.1960
O	0.4590	0.1660
R	0.5460	0.1830
S	0.5020	0.1390
Y	0.6300	0.2550
Z	0.6950	0.2950
a	0.7120	0.3200
g	0.5900	0.2070
h	0.6620	0.2890
i	0.4860	0.1630
j	0.5620	0.2110
m	0.6380	0.2620
n	0.6330	0.2480
o	0.6220	0.2340