Full wwPDB EM Validation Report ⓘ

Nov 11, 2026 – 03:52 pm GMT

PDB ID	:	34LA / pdb_000034la
EMDB ID	:	EMD-100002
Title	:	Cryo-EM Structure of Mavirus VLP - Major Capsid Protein MV18
Authors	:	Glas, F.; Reinstein, J.
Deposited on	:	2026-09-20
Resolution	:	4.10 Å(reported)

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

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

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

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

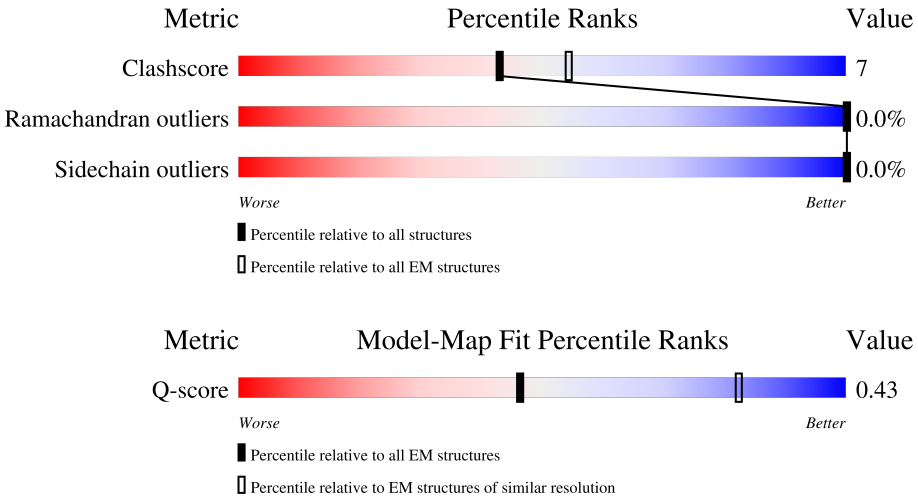
EMDB validation analysis	:	0.0.1.dev133
MolProbity	:	4-5-2 with Phenix2.2
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh &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

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 4.10 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	6458 (3.60 - 4.60)

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

Mol	Chain	Length	Quality of chain
1	A	610	35% 66% 17% 17%
1	B	610	39% 66% 17% 17%
1	C	610	39% 69% 14% 17%
1	D	610	26% 69% 14% 17%

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Mol	Chain	Length	Quality of chain
1	E	610	28% 70% 13% 17%
1	F	610	26% 66% 17% 17%
1	G	610	24% 72% 11% 17%
1	H	610	26% 65% 18% 17%
1	I	610	24% 70% 13% 17%
1	J	610	25% 69% 14% 17%
1	K	610	27% 71% 11% 17%
1	L	610	26% 72% 11% 17%
1	M	610	27% 71% 12% 17%

2 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 50687 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 Putative major capsid protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	505	Total	C	N	O	S	0	0
			3899	2481	650	750	18		
1	B	505	Total	C	N	O	S	0	0
			3899	2481	650	750	18		
1	C	505	Total	C	N	O	S	0	0
			3899	2481	650	750	18		
1	D	505	Total	C	N	O	S	0	0
			3899	2481	650	750	18		
1	E	505	Total	C	N	O	S	0	0
			3899	2481	650	750	18		
1	F	505	Total	C	N	O	S	0	0
			3899	2481	650	750	18		
1	G	505	Total	C	N	O	S	0	0
			3899	2481	650	750	18		
1	H	505	Total	C	N	O	S	0	0
			3899	2481	650	750	18		
1	I	505	Total	C	N	O	S	0	0
			3899	2481	650	750	18		
1	J	505	Total	C	N	O	S	0	0
			3899	2481	650	750	18		
1	K	505	Total	C	N	O	S	0	0
			3899	2481	650	750	18		
1	L	505	Total	C	N	O	S	0	0
			3899	2481	650	750	18		
1	M	505	Total	C	N	O	S	0	0
			3899	2481	650	750	18		

There are 52 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-3	GLY	-	expression tag	UNP A0A1L4BK98
A	-2	ALA	-	expression tag	UNP A0A1L4BK98
A	-1	MET	-	expression tag	UNP A0A1L4BK98
A	0	GLY	-	expression tag	UNP A0A1L4BK98

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-3	GLY	-	expression tag	UNP A0A1L4BK98
B	-2	ALA	-	expression tag	UNP A0A1L4BK98
B	-1	MET	-	expression tag	UNP A0A1L4BK98
B	0	GLY	-	expression tag	UNP A0A1L4BK98
C	-3	GLY	-	expression tag	UNP A0A1L4BK98
C	-2	ALA	-	expression tag	UNP A0A1L4BK98
C	-1	MET	-	expression tag	UNP A0A1L4BK98
C	0	GLY	-	expression tag	UNP A0A1L4BK98
D	-3	GLY	-	expression tag	UNP A0A1L4BK98
D	-2	ALA	-	expression tag	UNP A0A1L4BK98
D	-1	MET	-	expression tag	UNP A0A1L4BK98
D	0	GLY	-	expression tag	UNP A0A1L4BK98
E	-3	GLY	-	expression tag	UNP A0A1L4BK98
E	-2	ALA	-	expression tag	UNP A0A1L4BK98
E	-1	MET	-	expression tag	UNP A0A1L4BK98
E	0	GLY	-	expression tag	UNP A0A1L4BK98
F	-3	GLY	-	expression tag	UNP A0A1L4BK98
F	-2	ALA	-	expression tag	UNP A0A1L4BK98
F	-1	MET	-	expression tag	UNP A0A1L4BK98
F	0	GLY	-	expression tag	UNP A0A1L4BK98
G	-3	GLY	-	expression tag	UNP A0A1L4BK98
G	-2	ALA	-	expression tag	UNP A0A1L4BK98
G	-1	MET	-	expression tag	UNP A0A1L4BK98
G	0	GLY	-	expression tag	UNP A0A1L4BK98
H	-3	GLY	-	expression tag	UNP A0A1L4BK98
H	-2	ALA	-	expression tag	UNP A0A1L4BK98
H	-1	MET	-	expression tag	UNP A0A1L4BK98
H	0	GLY	-	expression tag	UNP A0A1L4BK98
I	-3	GLY	-	expression tag	UNP A0A1L4BK98
I	-2	ALA	-	expression tag	UNP A0A1L4BK98
I	-1	MET	-	expression tag	UNP A0A1L4BK98
I	0	GLY	-	expression tag	UNP A0A1L4BK98
J	-3	GLY	-	expression tag	UNP A0A1L4BK98
J	-2	ALA	-	expression tag	UNP A0A1L4BK98
J	-1	MET	-	expression tag	UNP A0A1L4BK98
J	0	GLY	-	expression tag	UNP A0A1L4BK98
K	-3	GLY	-	expression tag	UNP A0A1L4BK98
K	-2	ALA	-	expression tag	UNP A0A1L4BK98
K	-1	MET	-	expression tag	UNP A0A1L4BK98
K	0	GLY	-	expression tag	UNP A0A1L4BK98
L	-3	GLY	-	expression tag	UNP A0A1L4BK98
L	-2	ALA	-	expression tag	UNP A0A1L4BK98

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Chain	Residue	Modelled	Actual	Comment	Reference
L	-1	MET	-	expression tag	UNP A0A1L4BK98
L	0	GLY	-	expression tag	UNP A0A1L4BK98
M	-3	GLY	-	expression tag	UNP A0A1L4BK98
M	-2	ALA	-	expression tag	UNP A0A1L4BK98
M	-1	MET	-	expression tag	UNP A0A1L4BK98
M	0	GLY	-	expression tag	UNP A0A1L4BK98

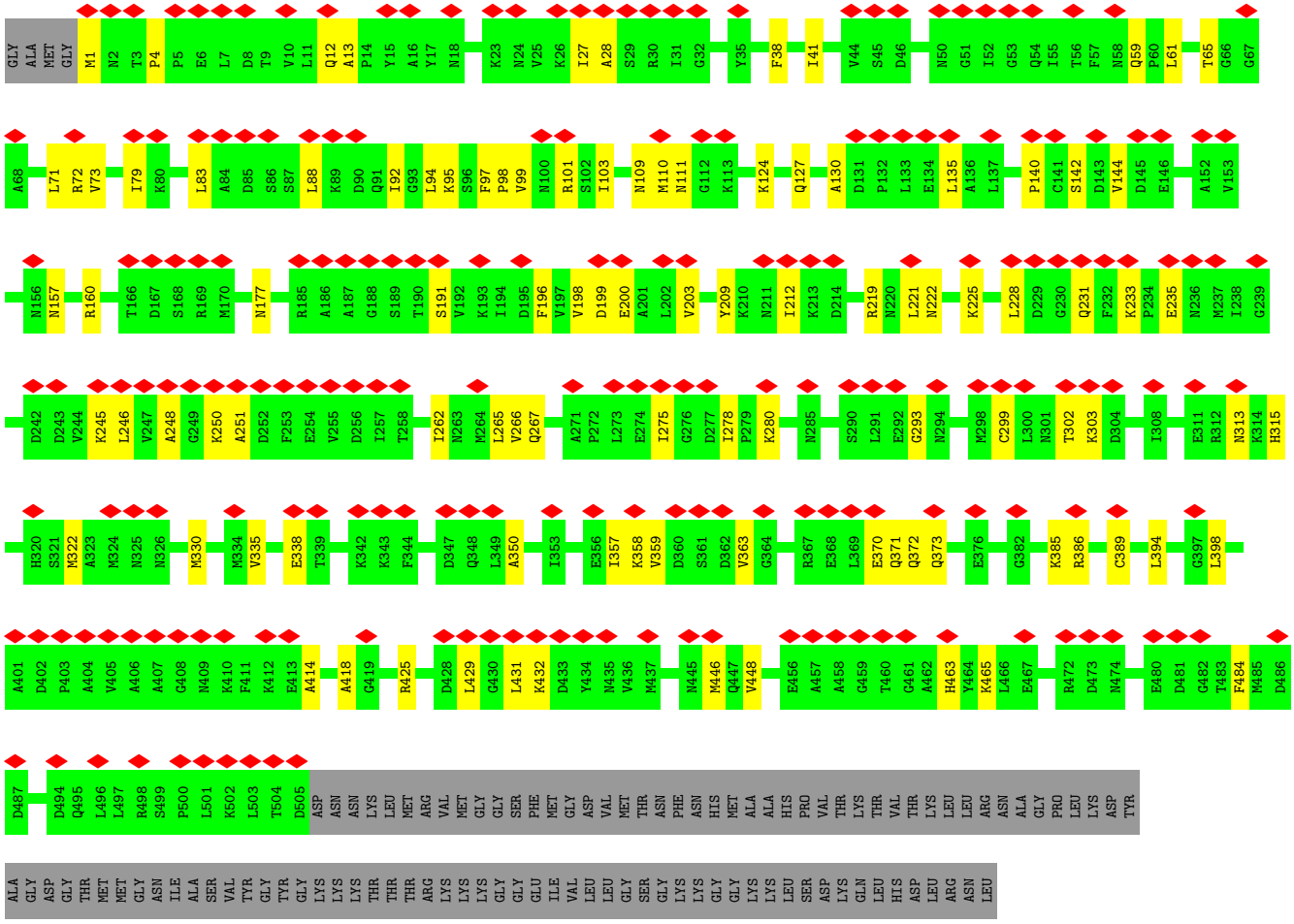
3 Residue-property plots (i)

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: Putative major capsid protein

Chain A:

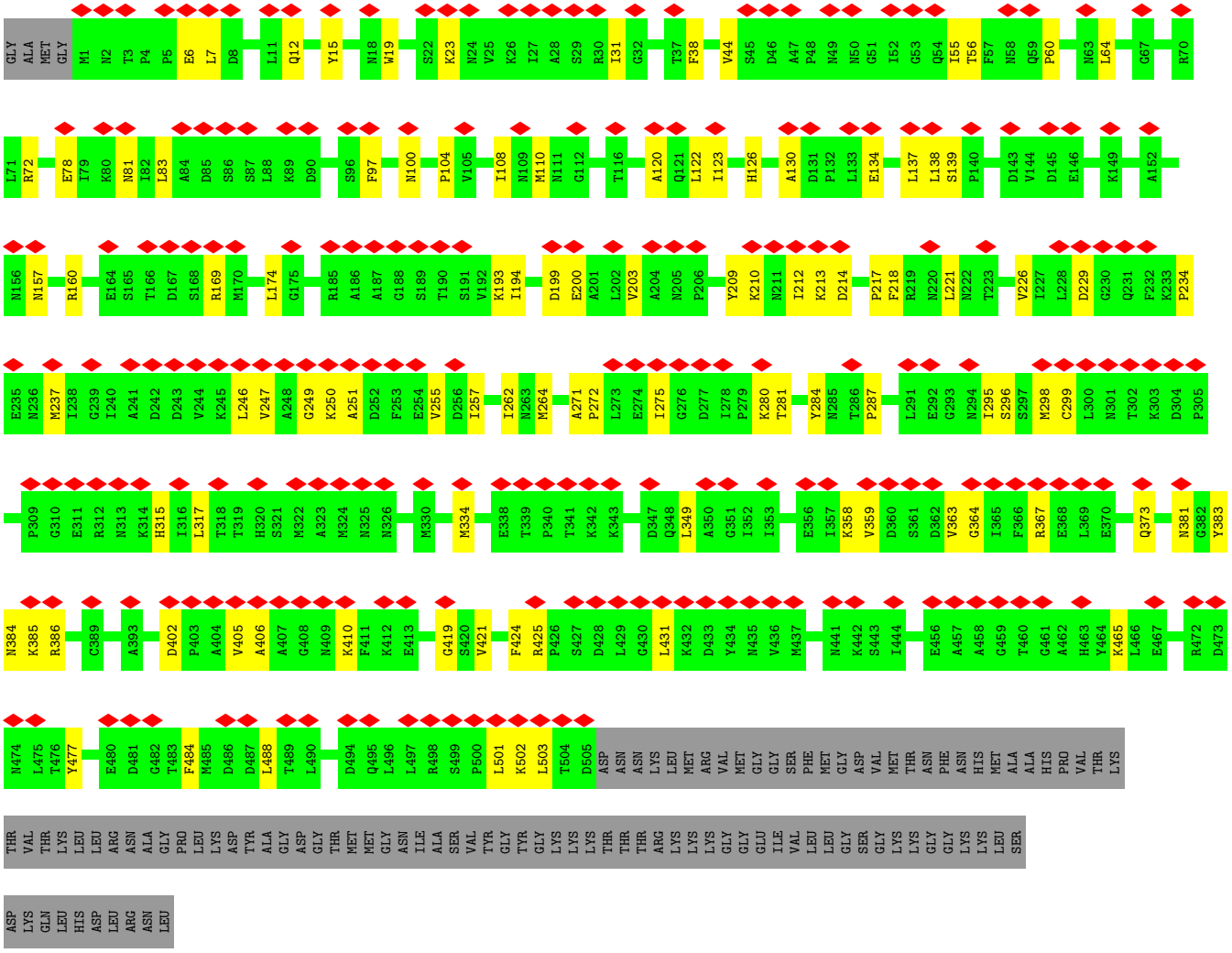




• Molecule 1: Putative major capsid protein

Chain B:

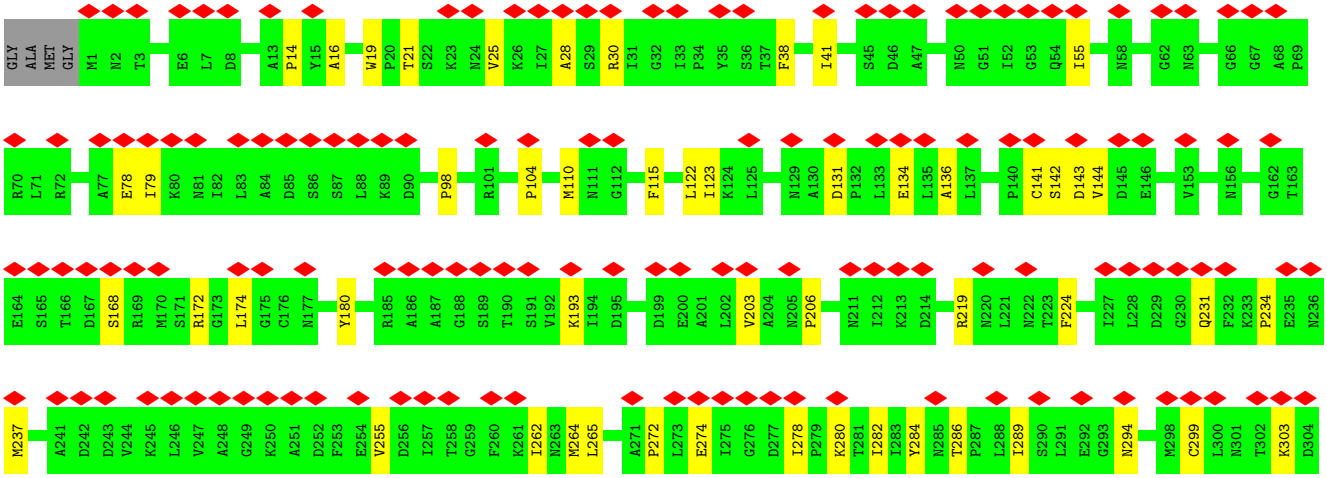


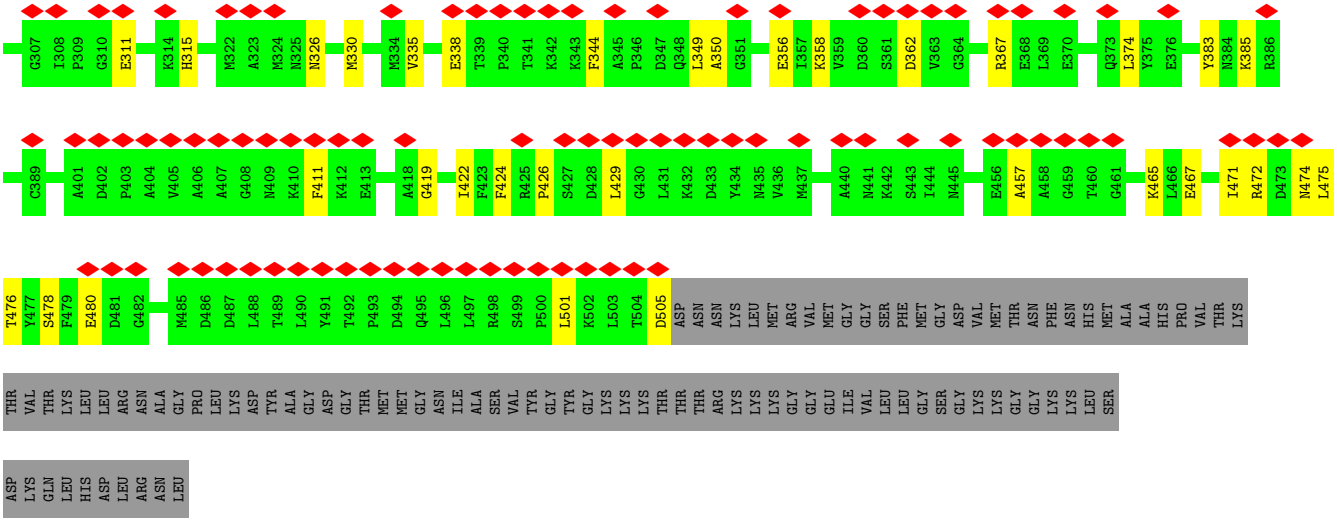


• Molecule 1: Putative major capsid protein

Chain C:



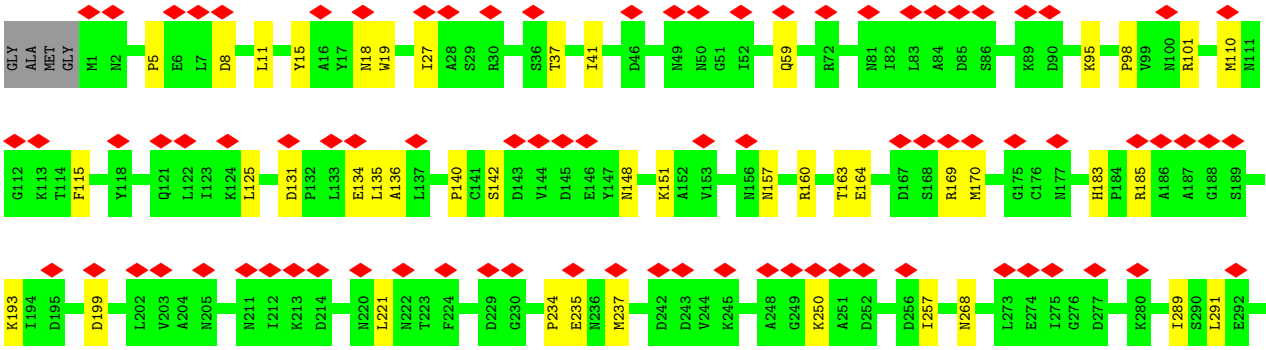




• Molecule 1: Putative major capsid protein

Chain D:

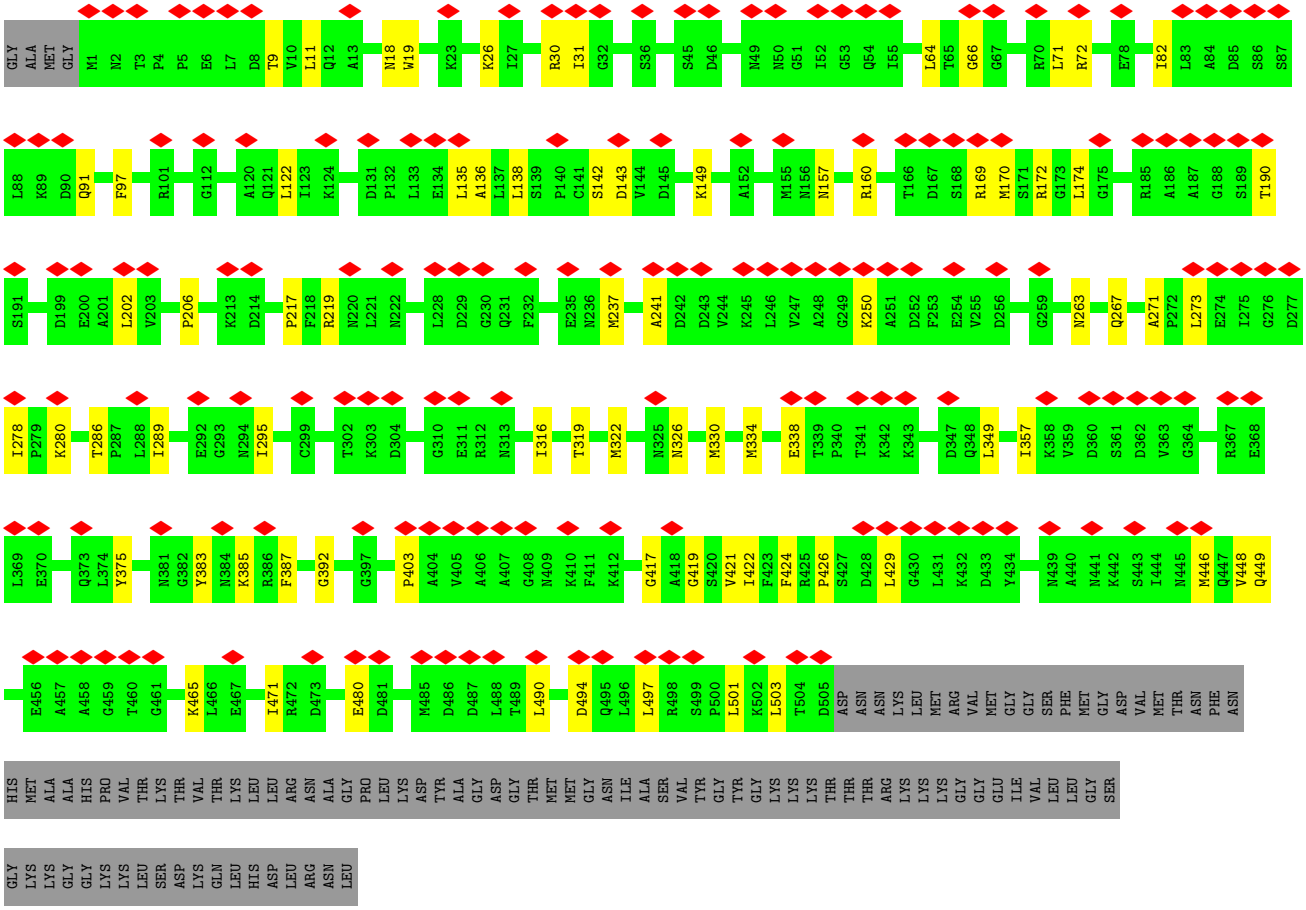




• Molecule 1: Putative major capsid protein

Chain E:

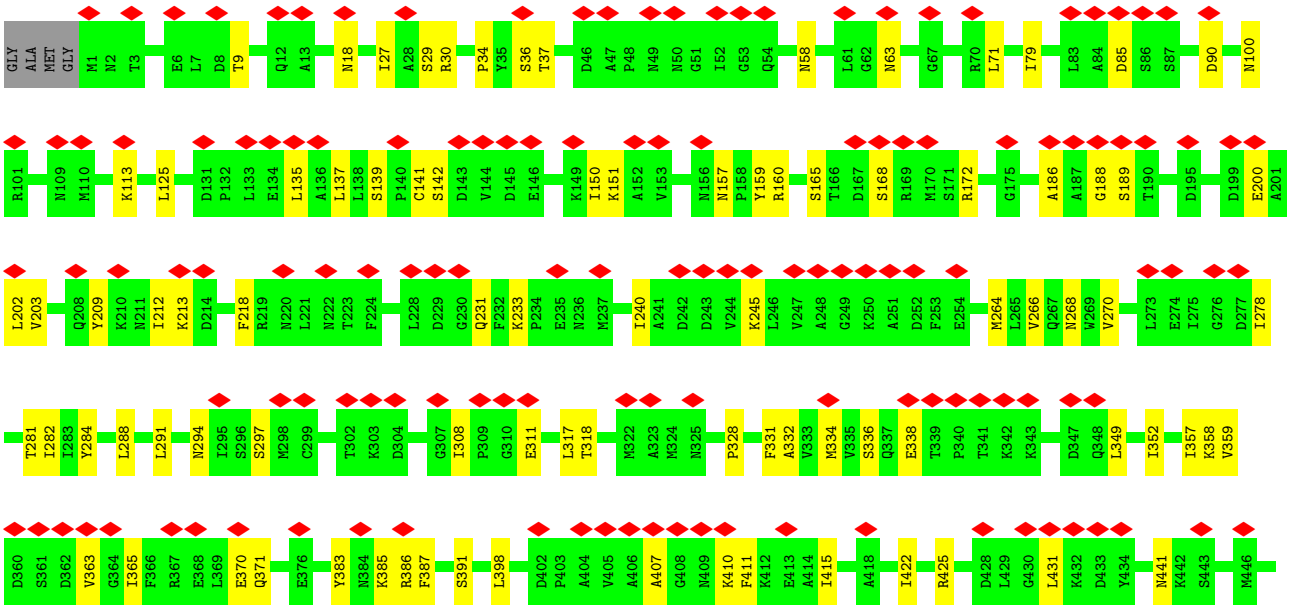


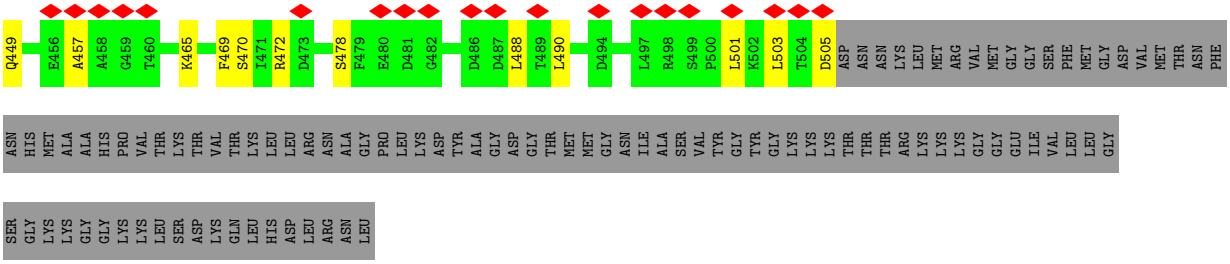


• Molecule 1: Putative major capsid protein

Chain F:



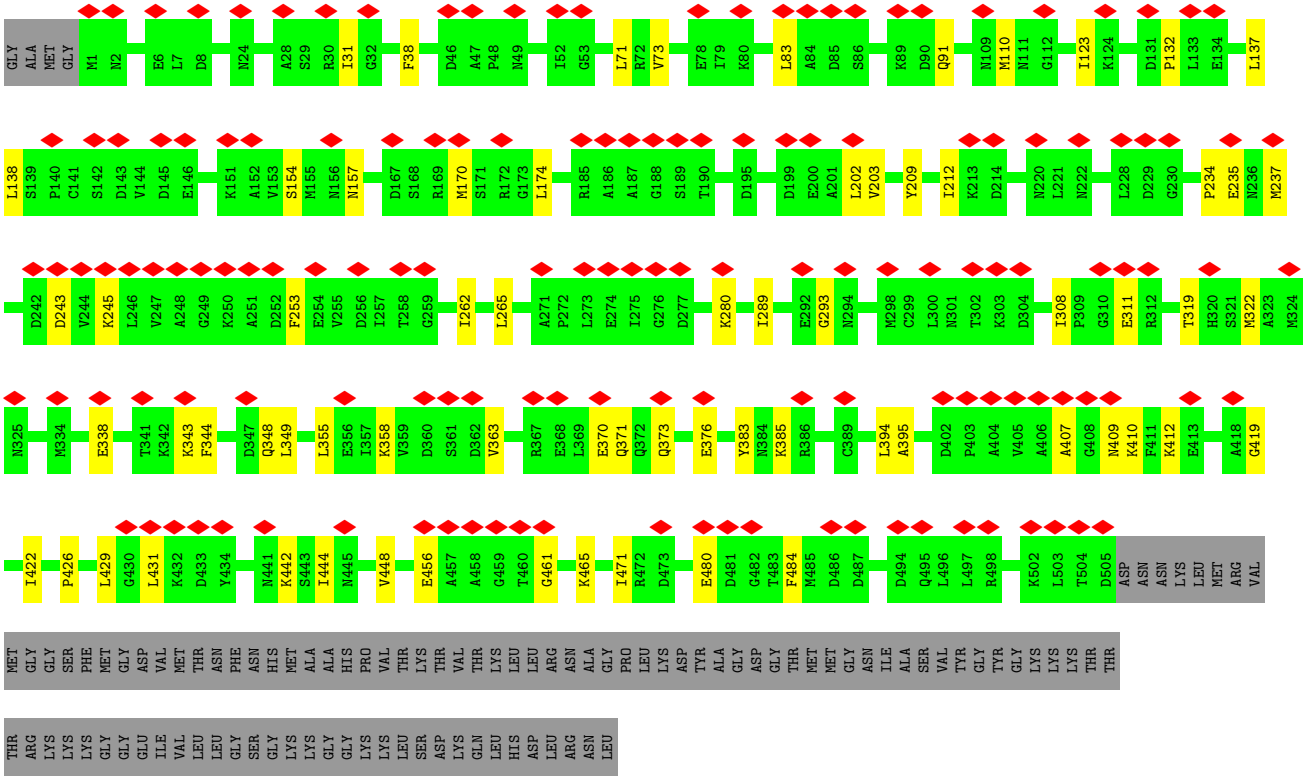




• Molecule 1: Putative major capsid protein

Chain G:

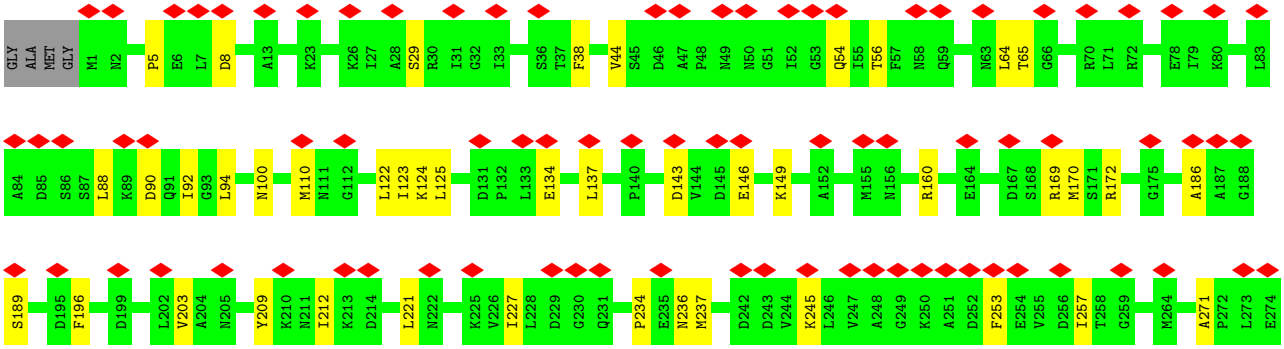


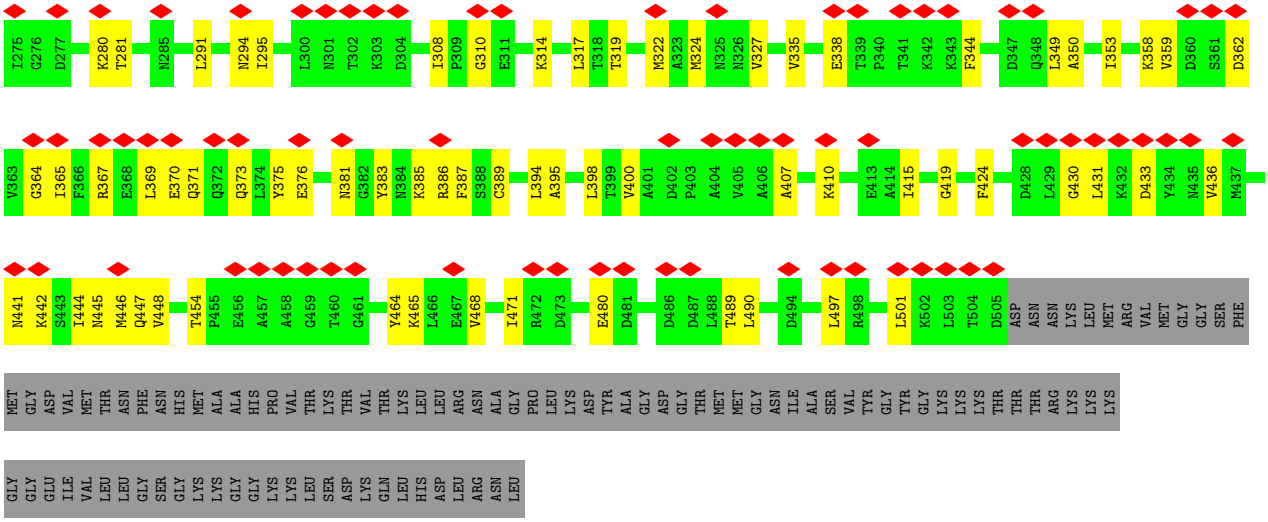


• Molecule 1: Putative major capsid protein

Chain H:



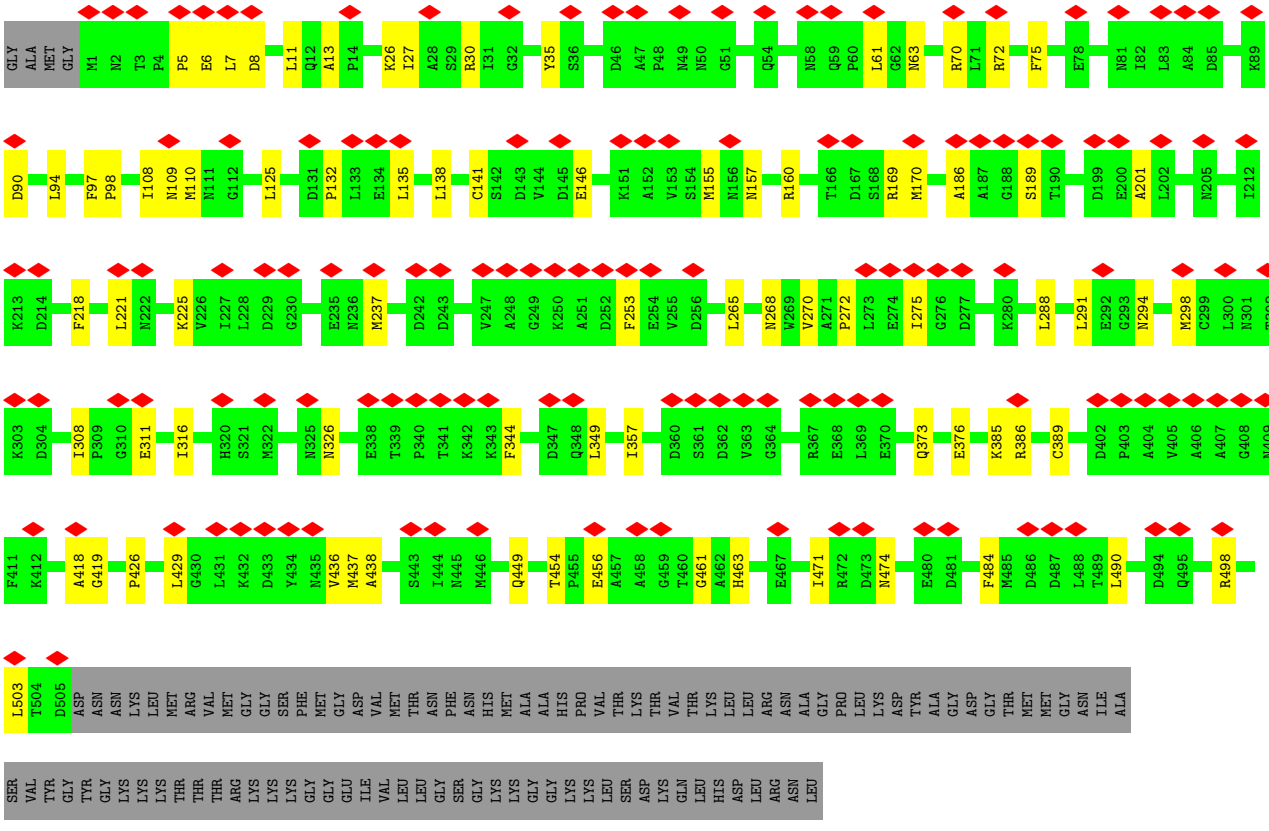




• Molecule 1: Putative major capsid protein

Chain I:

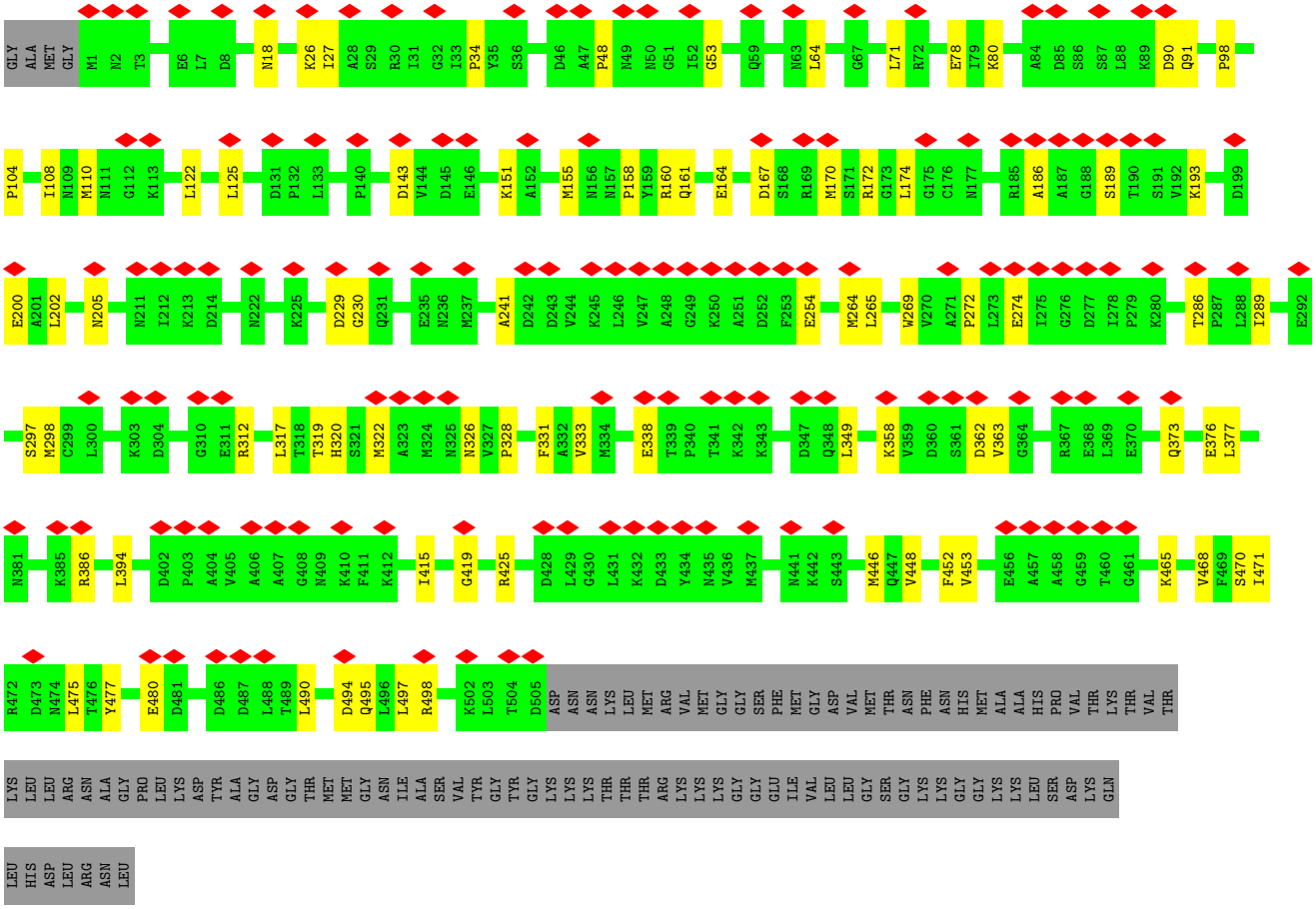




• Molecule 1: Putative major capsid protein

Chain J:

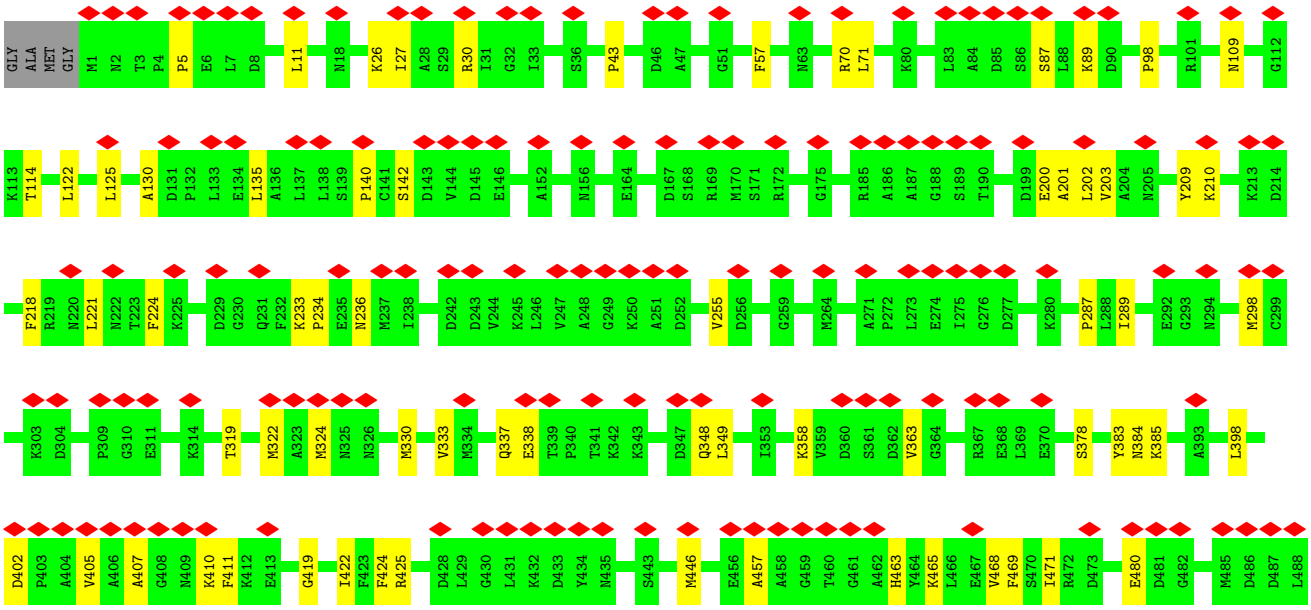


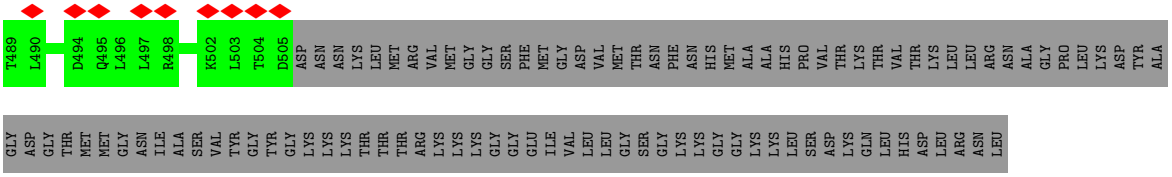


• Molecule 1: Putative major capsid protein

Chain K:



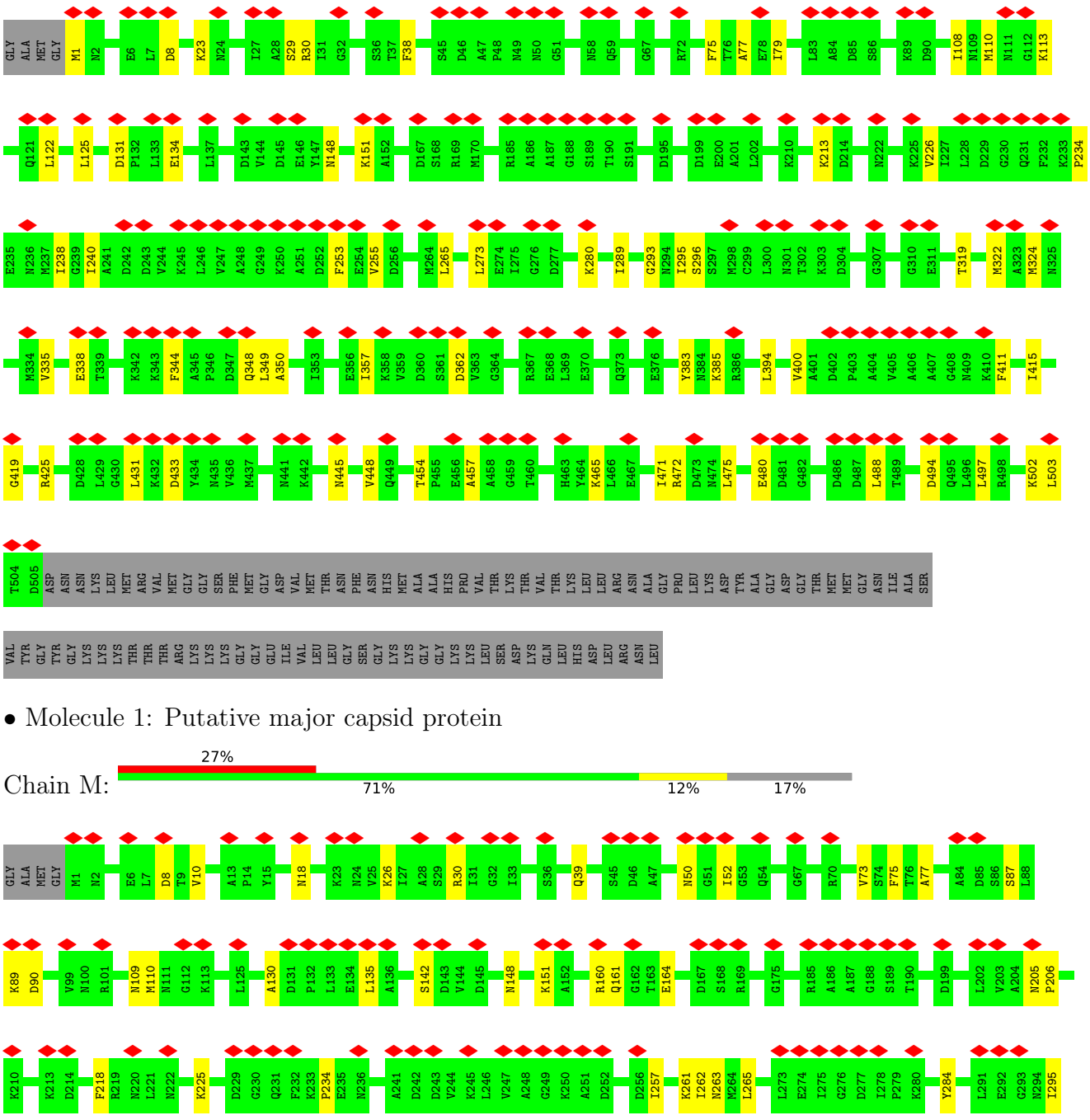




• Molecule 1: Putative major capsid protein

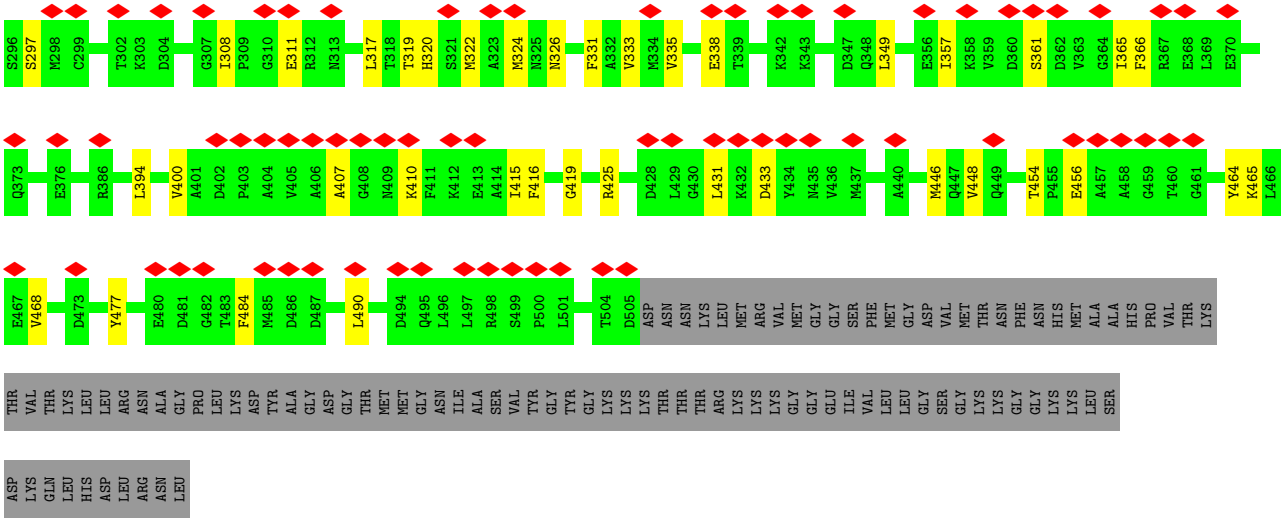
Chain L:





• Molecule 1: Putative major capsid protein

Chain M:


S296 S297 M298 C299 T302 K303 D304 G307 I308 P309 G310 E311 R312 N313 L317 T318 T319 H320 S321 M322 A323 M324 N325 N326 F331 A332 V333 M334 V335 E338 T339 K342 K343 D347 Q348 L349 E356 I357 K358 V359 D360 S361 D362 V363 G364 I365 F366 R367 E368 L369 E370
Q373 E376 R386 L394 V400 A401 D402 P403 A404 V405 A406 A407 G408 N409 K410 F411 K412 E413 A414 I415 F416 G419 R425 D428 L429 G430 L431 K432 D433 Y434 N435 V436 M437 A440 M446 Q447 V448 Q449 T454 P455 E456 A457 A458 G459 T460 G461 Y464 K465 L466
E467 V468 D473 Y477 E480 D481 G482 T483 F484 M485 D486 D487 L490 D494 Q495 L496 L497 R498 S499 P500 L501 T504 D505
ASP ASN ASN LYS LEU MET ARG VAL MET GLY GLY SER PHE MET GLY ASP VAL MET THR ASN PHE ASN HIS MET ALA ALA HIS PRO VAL THR LYS
THR VAL THR LYS LEU LEU ARG ASN ALA GLY PRO LEU LYS ASP TYR ALA GLY ASP GLY THR MET MET GLY ASN ILE ALA SER VAL TYR GLY TYR GLY LYS LYS LYS THR THR THR ARG LYS LYS LYS GLY GLY GLU ILE VAL LEU LEU GLY SER GLY LYS LYS GLY GLY LYS LYS LEU SER
ASP LYS GLN LEU LEU HIS ASP LEU ARG ASN LEU

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, I	Depositor
Number of particles used	47110	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	2100	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.027	Depositor
Minimum map value	-0.010	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.00958	Depositor
Map size (Å)	970.2, 970.2, 970.2	wwPDB
Map dimensions	882, 882, 882	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.1, 1.1, 1.1	Depositor

5 Model quality

5.1 Standard geometry

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|>5$	RMSZ	#$\|Z\|>5$
1	A	0.21	0/3983	0.31	0/5415
1	B	0.19	0/3983	0.31	0/5415
1	C	0.19	0/3983	0.28	0/5415
1	D	0.22	0/3983	0.30	0/5415
1	E	0.22	0/3983	0.32	0/5415
1	F	0.22	0/3983	0.30	0/5415
1	G	0.22	0/3983	0.31	0/5415
1	H	0.23	0/3983	0.32	0/5415
1	I	0.22	0/3983	0.31	0/5415
1	J	0.25	0/3983	0.34	0/5415
1	K	0.22	0/3983	0.30	0/5415
1	L	0.22	0/3983	0.31	0/5415
1	M	0.22	0/3983	0.29	0/5415
All	All	0.22	0/51779	0.31	0/70395

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3899	0	3889	70	0
1	B	3899	0	3889	70	0
1	C	3899	0	3889	56	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	D	3899	0	3889	62	0
1	E	3899	0	3889	51	0
1	F	3899	0	3889	68	0
1	G	3899	0	3889	41	0
1	H	3899	0	3889	78	0
1	I	3899	0	3889	55	0
1	J	3899	0	3889	56	0
1	K	3899	0	3889	47	0
1	L	3899	0	3889	45	0
1	M	3899	0	3889	49	0
All	All	50687	0	50557	666	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 7.

All (666) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:358:LYS:HG3	1:A:363:VAL:HG12	1.62	0.82
1:H:367:ARG:HH22	1:L:362:ASP:HB3	1.46	0.80
1:A:140:PRO:HD2	1:A:200:GLU:HG2	1.66	0.77
1:E:64:LEU:HD13	1:E:271:ALA:HB2	1.65	0.77
1:G:280:LYS:HZ2	1:G:480:GLU:H	1.33	0.76
1:F:151:LYS:HE2	1:F:415:ILE:HD11	1.69	0.75
1:G:349:LEU:HB2	1:G:419:GLY:HA3	1.70	0.74
1:I:291:LEU:HD21	1:I:294:ASN:HB3	1.70	0.74
1:A:12:GLN:HB2	1:C:30:ARG:HG2	1.70	0.73
1:H:295:ILE:HD12	1:H:319:THR:HA	1.70	0.72
1:H:364:GLY:O	1:H:367:ARG:HG3	1.90	0.72
1:A:27:ILE:HD11	1:C:475:LEU:HD11	1.71	0.71
1:B:214:ASP:HB2	1:C:16:ALA:HB2	1.72	0.71
1:M:261:LYS:HZ3	1:M:263:ASN:HB3	1.56	0.70
1:M:90:ASP:HB3	1:M:160:ARG:HA	1.73	0.70
1:H:327:VAL:HG22	1:H:444:ILE:HD13	1.72	0.69
1:E:169:ARG:HB3	1:E:170:MET:HE2	1.74	0.69
1:L:349:LEU:HB2	1:L:419:GLY:HA3	1.74	0.69
1:H:143:ASP:HB3	1:H:172:ARG:HD3	1.74	0.69
1:F:282:ILE:HB	1:F:478:SER:HB3	1.74	0.69
1:D:110:MET:HE1	1:D:221:LEU:HD13	1.74	0.69
1:A:110:MET:HE1	1:A:221:LEU:HA	1.74	0.68
1:I:72:ARG:HD3	1:I:265:LEU:HD13	1.73	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:316:ILE:HG23	1:I:449:GLN:HE21	1.58	0.68
1:C:110:MET:HE1	1:C:224:PHE:HD1	1.59	0.68
1:J:151:LYS:HE2	1:J:415:ILE:HD11	1.76	0.67
1:A:335:VAL:HB	1:A:350:ALA:HB3	1.76	0.67
1:H:54:GLN:HE21	1:H:227:ILE:HG23	1.60	0.67
1:J:297:SER:HB3	1:J:317:LEU:HD11	1.77	0.66
1:M:333:VAL:HG22	1:M:468:VAL:HG22	1.77	0.66
1:B:15:TYR:H	1:C:505:ASP:HA	1.59	0.66
1:H:431:LEU:HG	1:H:433:ASP:H	1.60	0.66
1:H:319:THR:HG22	1:H:448:VAL:H	1.61	0.65
1:G:293:GLY:HA3	1:G:322:MET:HE2	1.79	0.65
1:D:386:ARG:HD3	1:F:168:SER:HB2	1.77	0.65
1:J:338:GLU:HA	1:J:465:LYS:HE2	1.77	0.65
1:H:322:MET:HE1	1:H:468:VAL:HG11	1.79	0.65
1:L:79:ILE:HD13	1:L:240:ILE:HD11	1.78	0.64
1:E:82:ILE:H	1:E:190:THR:HB	1.61	0.64
1:L:322:MET:HB2	1:L:324:MET:HE1	1.79	0.64
1:J:319:THR:HG21	1:J:322:MET:HE1	1.80	0.64
1:F:71:LEU:HD13	1:F:202:LEU:HB2	1.79	0.64
1:K:140:PRO:HD2	1:K:200:GLU:HG2	1.79	0.64
1:F:332:ALA:HB3	1:F:469:PHE:HB2	1.80	0.64
1:K:70:ARG:HA	1:K:201:ALA:HA	1.78	0.64
1:E:219:ARG:HD3	1:E:278:ILE:HG21	1.80	0.63
1:H:324:MET:HB2	1:H:444:ILE:HG13	1.80	0.63
1:L:122:LEU:HD23	1:L:289:ILE:HD13	1.79	0.63
1:I:349:LEU:HB2	1:I:419:GLY:HA3	1.80	0.63
1:H:110:MET:HE1	1:H:221:LEU:HD13	1.81	0.63
1:J:349:LEU:HB2	1:J:419:GLY:HA3	1.80	0.63
1:M:135:LEU:HB3	1:M:142:SER:HB2	1.80	0.62
1:A:157:ASN:HB3	1:A:160:ARG:HG3	1.80	0.62
1:H:137:LEU:HD23	1:H:212:ILE:HG23	1.81	0.62
1:E:349:LEU:HB2	1:E:419:GLY:HA3	1.80	0.62
1:H:444:ILE:HD12	1:H:446:MET:HE3	1.80	0.62
1:A:88:LEU:HD22	1:A:92:ILE:HD11	1.82	0.61
1:E:174:LEU:HB2	1:F:398:LEU:HD11	1.81	0.61
1:E:169:ARG:HE	1:F:386:ARG:HG3	1.64	0.61
1:L:431:LEU:HD23	1:L:433:ASP:H	1.65	0.61
1:D:475:LEU:HD11	1:F:27:ILE:HD11	1.82	0.61
1:H:489:THR:HG21	1:J:27:ILE:HG12	1.83	0.60
1:C:326:ASN:HB3	1:C:472:ARG:HH21	1.65	0.60
1:E:392:GLY:HA2	1:E:417:GLY:HA3	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:338:GLU:HA	1:K:465:LYS:HE2	1.84	0.60
1:E:426:PRO:HA	1:E:429:LEU:HD23	1.83	0.60
1:K:298:MET:HE1	1:K:463:HIS:CD2	2.35	0.60
1:A:110:MET:HE1	1:A:221:LEU:HD12	1.83	0.60
1:F:141:CYS:HB3	1:F:172:ARG:HD2	1.83	0.60
1:E:122:LEU:HD13	1:E:289:ILE:HD13	1.82	0.60
1:B:55:ILE:HD13	1:B:262:ILE:HG21	1.84	0.60
1:B:234:PRO:HG3	1:B:257:ILE:HG12	1.82	0.60
1:K:30:ARG:HD2	1:L:425:ARG:HD3	1.83	0.60
1:B:349:LEU:HB2	1:B:419:GLY:HA3	1.83	0.60
1:C:141:CYS:HB3	1:C:172:ARG:HD2	1.82	0.60
1:K:122:LEU:HD13	1:K:289:ILE:HD13	1.83	0.60
1:A:109:ASN:HB3	1:A:225:LYS:HB2	1.82	0.60
1:F:297:SER:HB3	1:F:317:LEU:HD21	1.84	0.59
1:K:333:VAL:HG22	1:K:468:VAL:HG22	1.85	0.59
1:B:247:VAL:HB	1:B:250:LYS:HE3	1.84	0.59
1:C:338:GLU:HA	1:C:465:LYS:HE2	1.84	0.59
1:D:235:GLU:HG3	1:D:343:LYS:HB3	1.84	0.59
1:A:28:ALA:HB1	1:B:12:GLN:HG3	1.85	0.59
1:D:148:ASN:HB2	1:D:348:GLN:HE22	1.67	0.59
1:C:349:LEU:HB2	1:C:419:GLY:HA3	1.85	0.59
1:A:299:CYS:HB2	1:A:315:HIS:CE1	2.38	0.58
1:E:135:LEU:HG	1:E:142:SER:HB2	1.84	0.58
1:E:316:ILE:HD11	1:E:449:GLN:HG2	1.83	0.58
1:I:157:ASN:HB3	1:I:160:ARG:HG3	1.84	0.58
1:H:64:LEU:HD11	1:H:271:ALA:HB2	1.85	0.58
1:E:357:ILE:HD12	1:E:448:VAL:HG12	1.84	0.58
1:H:362:ASP:HB3	1:H:365:ILE:HD11	1.84	0.58
1:B:425:ARG:CZ	1:C:30:ARG:HD3	2.34	0.58
1:H:398:LEU:HD12	1:J:161:GLN:HE21	1.69	0.58
1:H:353:ILE:HG22	1:H:371:GLN:HE21	1.69	0.58
1:D:234:PRO:HG3	1:D:257:ILE:HG12	1.85	0.57
1:A:98:PRO:HD2	1:A:200:GLU:OE2	2.04	0.57
1:E:330:MET:HB2	1:E:471:ILE:HB	1.86	0.57
1:A:83:LEU:HA	1:A:248:ALA:HB2	1.86	0.57
1:E:237:MET:HA	1:E:237:MET:HE3	1.86	0.57
1:M:446:MET:SD	1:M:448:VAL:HG23	2.45	0.57
1:A:135:LEU:HB3	1:A:142:SER:HB2	1.85	0.57
1:E:30:ARG:HH21	1:F:425:ARG:HD2	1.68	0.57
1:G:383:TYR:CE2	1:G:385:LYS:HB2	2.40	0.57
1:M:234:PRO:HG3	1:M:257:ILE:HG12	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:237:MET:HE2	1:B:237:MET:HA	1.87	0.57
1:B:298:MET:HA	1:B:298:MET:HE3	1.87	0.57
1:D:425:ARG:HD3	1:F:30:ARG:HD2	1.87	0.57
1:G:235:GLU:HG3	1:G:343:LYS:HB3	1.87	0.57
1:I:132:PRO:HB3	1:I:170:MET:HE3	1.87	0.56
1:I:186:ALA:HB3	1:I:189:SER:HB3	1.87	0.56
1:J:326:ASN:HD22	1:J:490:LEU:HD21	1.71	0.56
1:F:407:ALA:HA	1:F:410:LYS:HG3	1.86	0.56
1:H:430:GLY:HA3	1:J:34:PRO:HB3	1.87	0.56
1:F:357:ILE:HG23	1:F:365:ILE:HB	1.87	0.56
1:M:297:SER:HB3	1:M:317:LEU:HD21	1.88	0.56
1:A:330:MET:HG2	1:A:425:ARG:HG2	1.87	0.56
1:H:54:GLN:NE2	1:H:227:ILE:HG23	2.21	0.56
1:I:169:ARG:HB2	1:J:386:ARG:HG3	1.88	0.56
1:M:73:VAL:HG12	1:M:262:ILE:HG13	1.88	0.55
1:B:373:GLN:HE21	1:C:265:LEU:HD21	1.72	0.55
1:F:358:LYS:HG3	1:F:363:VAL:HG12	1.89	0.55
1:H:445:ASN:C	1:H:446:MET:HE2	2.31	0.55
1:K:349:LEU:HB2	1:K:419:GLY:HA3	1.88	0.55
1:E:295:ILE:HD13	1:E:319:THR:HG22	1.88	0.55
1:B:72:ARG:HA	1:B:199:ASP:HA	1.87	0.55
1:J:331:PHE:HE2	1:J:446:MET:HE2	1.72	0.55
1:I:288:LEU:HD21	1:I:474:ASN:HD22	1.72	0.55
1:G:83:LEU:HD22	1:G:245:LYS:HB2	1.89	0.55
1:M:324:MET:HE1	1:M:331:PHE:HE2	1.72	0.55
1:C:374:LEU:HD22	1:C:422:ILE:HD12	1.89	0.54
1:D:5:PRO:HG3	1:F:281:THR:HG21	1.87	0.54
1:B:44:VAL:HG22	1:B:56:THR:HB	1.90	0.54
1:K:338:GLU:HG3	1:K:465:LYS:HD3	1.88	0.54
1:F:85:ASP:HB3	1:F:188:GLY:HA2	1.90	0.54
1:B:386:ARG:HD3	1:C:168:SER:HB3	1.89	0.54
1:F:63:ASN:HD21	1:F:270:VAL:HG13	1.72	0.54
1:F:328:PRO:HG2	1:F:470:SER:HB2	1.89	0.54
1:H:122:LEU:HD21	1:H:209:TYR:CZ	2.43	0.54
1:L:148:ASN:HB2	1:L:348:GLN:HE22	1.72	0.54
1:I:456:GLU:HG2	1:I:461:GLY:HA2	1.89	0.54
1:B:488:LEU:HD12	1:M:361:SER:HB2	1.88	0.54
1:H:280:LYS:HA	1:H:480:GLU:OE2	2.07	0.54
1:K:330:MET:HB3	1:K:471:ILE:HB	1.90	0.54
1:L:293:GLY:HA3	1:L:322:MET:HE1	1.90	0.54
1:A:65:THR:HG21	1:A:221:LEU:HD22	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:338:GLU:HG3	1:G:465:LYS:HD3	1.90	0.54
1:I:125:LEU:HD11	1:I:471:ILE:HD11	1.87	0.54
1:D:8:ASP:HB2	1:E:26:LYS:HG3	1.90	0.53
1:L:38:PHE:HB3	1:L:265:LEU:HD11	1.91	0.53
1:L:503:LEU:HD13	1:M:18:ASN:HB2	1.90	0.53
1:A:73:VAL:HG12	1:A:262:ILE:HG13	1.89	0.53
1:H:398:LEU:HG	1:J:174:LEU:HD11	1.90	0.53
1:B:295:ILE:HG23	1:B:317:LEU:HD21	1.89	0.53
1:M:365:ILE:HG22	1:M:366:PHE:CD1	2.44	0.53
1:E:326:ASN:HD22	1:E:490:LEU:HD21	1.73	0.53
1:D:454:THR:HB	1:D:456:GLU:OE1	2.09	0.53
1:H:349:LEU:HB2	1:H:419:GLY:HA3	1.91	0.53
1:J:158:PRO:HB2	1:J:172:ARG:HG2	1.91	0.52
1:A:61:LEU:HB2	1:A:221:LEU:HD23	1.91	0.52
1:B:81:ASN:HD22	1:B:250:LYS:HD2	1.73	0.52
1:J:64:LEU:HD12	1:J:269:TRP:HE1	1.73	0.52
1:M:110:MET:HE3	1:M:484:PHE:CD2	2.44	0.52
1:M:295:ILE:HG13	1:M:319:THR:HA	1.90	0.52
1:A:278:ILE:HG23	1:B:19:TRP:CE2	2.45	0.52
1:J:319:THR:HG23	1:J:320:HIS:O	2.10	0.52
1:D:349:LEU:HB2	1:D:419:GLY:HA3	1.92	0.52
1:E:9:THR:HG22	1:F:27:ILE:HB	1.90	0.52
1:L:1:MET:HE2	1:L:1:MET:HA	1.92	0.52
1:J:80:LYS:HB2	1:J:254:GLU:HB3	1.91	0.52
1:L:151:LYS:HG3	1:L:415:ILE:HD11	1.91	0.52
1:M:151:LYS:HG3	1:M:415:ILE:HD11	1.92	0.52
1:K:398:LEU:HB2	1:M:161:GLN:NE2	2.25	0.52
1:L:383:TYR:CE2	1:L:385:LYS:HB2	2.44	0.52
1:D:370:GLU:CD	1:D:371:GLN:H	2.18	0.52
1:H:8:ASP:HB2	1:I:26:LYS:HG2	1.91	0.52
1:K:234:PRO:HB3	1:K:255:VAL:HB	1.92	0.52
1:H:359:VAL:HG23	1:H:446:MET:HE1	1.92	0.52
1:M:326:ASN:HD22	1:M:490:LEU:HD21	1.75	0.52
1:I:30:ARG:HD3	1:J:425:ARG:HD3	1.91	0.52
1:B:139:SER:HB2	1:B:200:GLU:HG3	1.92	0.51
1:J:298:MET:HE3	1:J:298:MET:HA	1.92	0.51
1:E:494:ASP:HA	1:E:497:LEU:HD12	1.92	0.51
1:F:328:PRO:HB3	1:F:472:ARG:HG2	1.92	0.51
1:G:370:GLU:HG3	1:G:371:GLN:H	1.74	0.51
1:I:97:PHE:HZ	1:I:135:LEU:HD22	1.74	0.51
1:D:185:ARG:HB2	1:E:403:PRO:HG3	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:332:ALA:HB3	1:D:469:PHE:HB2	1.92	0.51
1:J:272:PRO:HB2	1:J:274:GLU:OE2	2.10	0.51
1:C:55:ILE:HD13	1:C:262:ILE:HG21	1.93	0.51
1:D:432:LYS:HG2	1:L:113:LYS:HZ2	1.75	0.51
1:K:135:LEU:HB3	1:K:142:SER:HB2	1.93	0.51
1:C:330:MET:HB2	1:C:471:ILE:HB	1.92	0.51
1:D:298:MET:HE1	1:D:463:HIS:CG	2.46	0.51
1:E:338:GLU:HA	1:E:465:LYS:HE2	1.92	0.51
1:D:11:LEU:HD21	1:E:31:ILE:HG12	1.92	0.51
1:G:373:GLN:O	1:G:376:GLU:HG3	2.11	0.51
1:L:338:GLU:HA	1:L:465:LYS:HE2	1.91	0.51
1:C:131:ASP:HB3	1:C:134:GLU:OE1	2.10	0.51
1:D:298:MET:HE1	1:D:463:HIS:CD2	2.46	0.51
1:J:373:GLN:O	1:J:376:GLU:HG3	2.11	0.51
1:H:253:PHE:HB2	1:H:344:PHE:CE2	2.46	0.51
1:D:365:ILE:HG23	1:F:36:SER:HB3	1.92	0.50
1:G:71:LEU:HD11	1:G:202:LEU:HD13	1.93	0.50
1:H:446:MET:HE2	1:H:446:MET:N	2.27	0.50
1:L:502:LYS:HE2	1:M:10:VAL:HG11	1.93	0.50
1:H:125:LEU:HD21	1:H:471:ILE:HD11	1.92	0.50
1:L:108:ILE:HG23	1:L:226:VAL:HG22	1.93	0.50
1:I:109:ASN:HB3	1:I:225:LYS:HB2	1.92	0.50
1:J:125:LEU:HD21	1:J:471:ILE:HD11	1.92	0.50
1:L:30:ARG:HD2	1:M:425:ARG:HD3	1.92	0.50
1:C:426:PRO:HA	1:C:429:LEU:HD23	1.94	0.50
1:A:203:VAL:HG23	1:A:209:TYR:CG	2.46	0.50
1:E:383:TYR:CE2	1:E:385:LYS:HB2	2.47	0.50
1:H:369:LEU:HD22	1:H:373:GLN:HG3	1.93	0.50
1:H:394:LEU:HD21	1:H:400:VAL:HG21	1.93	0.50
1:J:71:LEU:HD11	1:J:202:LEU:HD13	1.92	0.50
1:K:27:ILE:HD11	1:L:475:LEU:HD11	1.93	0.50
1:B:383:TYR:CE2	1:B:385:LYS:HB2	2.47	0.50
1:H:291:LEU:HD21	1:H:294:ASN:HB3	1.93	0.50
1:A:219:ARG:HH12	1:A:280:LYS:HA	1.76	0.50
1:F:135:LEU:HB3	1:F:142:SER:HB2	1.92	0.50
1:H:370:GLU:H	1:H:373:GLN:NE2	2.09	0.50
1:L:125:LEU:HD21	1:L:471:ILE:HD11	1.93	0.50
1:M:50:ASN:HD21	1:M:52:ILE:HB	1.77	0.50
1:A:357:ILE:HD12	1:A:448:VAL:HG22	1.94	0.49
1:C:110:MET:HE1	1:C:224:PHE:CD1	2.45	0.49
1:F:383:TYR:CZ	1:F:385:LYS:HB2	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:488:LEU:HB2	1:M:361:SER:HB2	1.94	0.49
1:F:186:ALA:HB3	1:F:189:SER:HB3	1.94	0.49
1:F:338:GLU:HG3	1:F:465:LYS:HD3	1.95	0.49
1:G:355:LEU:HD12	1:G:422:ILE:HD13	1.93	0.49
1:B:299:CYS:HB3	1:B:315:HIS:CE1	2.47	0.49
1:C:411:PHE:CD1	1:C:457:ALA:HB2	2.46	0.49
1:M:338:GLU:HA	1:M:465:LYS:HE2	1.93	0.49
1:A:429:LEU:HB3	1:A:431:LEU:HG	1.93	0.49
1:F:370:GLU:HG2	1:F:371:GLN:H	1.77	0.49
1:D:125:LEU:HD11	1:D:471:ILE:HD11	1.94	0.49
1:D:131:ASP:HB3	1:D:134:GLU:OE1	2.12	0.49
1:G:426:PRO:HA	1:G:429:LEU:HD23	1.95	0.49
1:J:495:GLN:HA	1:J:498:ARG:NH2	2.28	0.49
1:M:349:LEU:HB2	1:M:419:GLY:HA3	1.94	0.49
1:D:136:ALA:HB2	1:D:170:MET:HE1	1.93	0.49
1:B:108:ILE:HG12	1:B:226:VAL:HG23	1.94	0.49
1:F:264:MET:SD	1:F:266:VAL:HG13	2.52	0.49
1:H:373:GLN:O	1:H:376:GLU:HG3	2.12	0.49
1:J:186:ALA:HB3	1:J:189:SER:HB3	1.93	0.49
1:B:364:GLY:HA2	1:B:367:ARG:HD3	1.95	0.49
1:F:318:THR:HG23	1:F:449:GLN:HB2	1.95	0.49
1:K:402:ASP:HB3	1:K:405:VAL:HG23	1.93	0.49
1:C:143:ASP:O	1:C:172:ARG:HD3	2.13	0.49
1:J:312:ARG:HD3	1:J:453:VAL:HG11	1.93	0.49
1:J:358:LYS:HG3	1:J:363:VAL:HG12	1.95	0.49
1:L:75:PHE:HE2	1:L:77:ALA:HB2	1.77	0.49
1:C:303:LYS:HG3	1:C:311:GLU:O	2.12	0.48
1:L:394:LEU:HD21	1:L:400:VAL:HG21	1.95	0.48
1:A:124:LYS:O	1:A:127:GLN:HG2	2.14	0.48
1:C:294:ASN:HB3	1:C:467:GLU:HG2	1.95	0.48
1:C:299:CYS:HB3	1:C:315:HIS:CE1	2.48	0.48
1:H:94:LEU:HD21	1:H:196:PHE:CE1	2.47	0.48
1:M:407:ALA:HA	1:M:410:LYS:HG3	1.95	0.48
1:I:35:TYR:CD2	1:J:377:LEU:HD13	2.48	0.48
1:I:110:MET:HE1	1:I:484:PHE:CD2	2.49	0.48
1:J:333:VAL:HG22	1:J:468:VAL:HG22	1.96	0.48
1:A:103:ILE:HD12	1:A:228:LEU:HB3	1.95	0.48
1:I:70:ARG:HA	1:I:201:ALA:HA	1.95	0.48
1:J:91:GLN:HG2	1:J:241:ALA:HB3	1.96	0.48
1:D:392:GLY:HA2	1:D:417:GLY:HA3	1.95	0.48
1:H:398:LEU:HD11	1:J:174:LEU:HD21	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:328:PRO:HB3	1:J:470:SER:HB2	1.96	0.48
1:B:123:ILE:HD13	1:B:203:VAL:HG21	1.96	0.48
1:F:411:PHE:CE1	1:F:457:ALA:HB2	2.49	0.48
1:A:302:THR:HG22	1:A:303:LYS:HE3	1.95	0.48
1:B:157:ASN:HB3	1:B:160:ARG:HG3	1.96	0.48
1:B:334:MET:HB3	1:B:421:VAL:HG22	1.96	0.48
1:G:132:PRO:HB3	1:G:170:MET:CE	2.44	0.48
1:G:442:LYS:HG2	1:G:444:ILE:HD11	1.96	0.48
1:L:75:PHE:HZ	1:L:238:ILE:HD11	1.78	0.48
1:L:253:PHE:HB2	1:L:344:PHE:CE2	2.48	0.48
1:A:389:CYS:SG	1:A:418:ALA:HB3	2.54	0.48
1:C:219:ARG:HD3	1:C:278:ILE:HG21	1.96	0.48
1:G:154:SER:HB2	1:G:157:ASN:HB2	1.95	0.48
1:H:186:ALA:HB3	1:H:189:SER:HB3	1.95	0.48
1:L:8:ASP:HB2	1:M:26:LYS:HG2	1.96	0.48
1:A:97:PHE:CZ	1:A:135:LEU:HD12	2.49	0.48
1:F:317:LEU:HD23	1:F:317:LEU:HA	1.77	0.48
1:C:78:GLU:HB2	1:C:193:LYS:NZ	2.29	0.47
1:H:65:THR:HG21	1:H:221:LEU:HD11	1.94	0.47
1:H:169:ARG:HB3	1:I:386:ARG:HG3	1.95	0.47
1:D:18:ASN:HB2	1:F:503:LEU:HD13	1.96	0.47
1:M:160:ARG:HH21	1:M:164:GLU:HB3	1.78	0.47
1:C:21:THR:O	1:C:25:VAL:HG12	2.15	0.47
1:D:19:TRP:CH2	1:E:217:PRO:HG2	2.50	0.47
1:H:308:ILE:HG22	1:H:310:GLY:H	1.80	0.47
1:A:266:VAL:HG22	1:A:267:GLN:H	1.79	0.47
1:D:115:PHE:HZ	1:D:484:PHE:HB3	1.79	0.47
1:L:295:ILE:HG22	1:L:319:THR:HG22	1.96	0.47
1:B:120:ALA:O	1:B:123:ILE:HG22	2.15	0.47
1:C:122:LEU:HD22	1:C:289:ILE:HD13	1.97	0.47
1:E:91:GLN:HB3	1:E:241:ALA:HB3	1.97	0.47
1:B:137:LEU:HD23	1:B:212:ILE:HG23	1.97	0.47
1:C:383:TYR:CZ	1:C:385:LYS:HB2	2.49	0.47
1:D:306:TYR:HB2	1:D:394:LEU:HD22	1.96	0.47
1:G:319:THR:HG22	1:G:448:VAL:H	1.80	0.47
1:H:123:ILE:HG13	1:H:124:LYS:N	2.30	0.47
1:H:203:VAL:HG23	1:H:209:TYR:CD2	2.49	0.47
1:I:72:ARG:CD	1:I:265:LEU:HD13	2.44	0.47
1:J:90:ASP:CG	1:J:160:ARG:HD3	2.39	0.47
1:K:203:VAL:HG23	1:K:209:TYR:CG	2.49	0.47
1:E:72:ARG:NH1	1:E:263:ASN:HD21	2.12	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:308:ILE:HB	1:M:311:GLU:HB2	1.97	0.47
1:A:72:ARG:HH12	1:A:265:LEU:HD22	1.80	0.47
1:F:387:PHE:CE1	1:F:391:SER:HB3	2.49	0.47
1:H:407:ALA:HA	1:H:410:LYS:HG3	1.96	0.47
1:I:8:ASP:HB2	1:J:26:LYS:HG2	1.96	0.47
1:I:155:MET:HE1	1:J:155:MET:HE3	1.97	0.47
1:K:337:GLN:HG3	1:K:348:GLN:HB2	1.97	0.47
1:B:100:ASN:ND2	1:B:203:VAL:HG22	2.30	0.47
1:C:335:VAL:HB	1:C:350:ALA:HB3	1.96	0.47
1:E:273:LEU:HD23	1:E:273:LEU:H	1.80	0.47
1:G:132:PRO:HB3	1:G:170:MET:HE2	1.98	0.47
1:I:97:PHE:HE2	1:I:138:LEU:HD22	1.80	0.47
1:J:122:LEU:CD2	1:J:289:ILE:HD13	2.45	0.47
1:I:385:LYS:HD2	1:I:389:CYS:SG	2.54	0.46
1:K:122:LEU:HD21	1:K:209:TYR:CZ	2.51	0.46
1:K:480:GLU:CD	1:K:480:GLU:H	2.23	0.46
1:A:432:LYS:HD2	1:F:113:LYS:NZ	2.30	0.46
1:E:71:LEU:HD13	1:E:202:LEU:HB2	1.97	0.46
1:I:108:ILE:HG22	1:I:110:MET:HB2	1.97	0.46
1:K:383:TYR:CE2	1:K:385:LYS:HB2	2.49	0.46
1:D:430:GLY:HA3	1:F:34:PRO:HB3	1.97	0.46
1:B:110:MET:HE3	1:B:484:PHE:CG	2.51	0.46
1:D:95:LYS:HB3	1:D:101:ARG:HH12	1.81	0.46
1:E:143:ASP:HB3	1:E:172:ARG:HG3	1.98	0.46
1:F:334:MET:HE2	1:F:469:PHE:CE2	2.51	0.46
1:H:146:GLU:HG3	1:H:389:CYS:HB3	1.96	0.46
1:J:104:PRO:HD2	1:J:230:GLY:HA2	1.98	0.46
1:M:394:LEU:HD21	1:M:400:VAL:HG21	1.97	0.46
1:A:95:LYS:HD3	1:A:101:ARG:HH22	1.80	0.46
1:B:218:PHE:HA	1:B:284:TYR:OH	2.16	0.46
1:C:123:ILE:HD13	1:C:203:VAL:HG21	1.97	0.46
1:I:326:ASN:HD22	1:I:490:LEU:HD21	1.81	0.46
1:A:394:LEU:HD11	1:A:414:ALA:HB1	1.98	0.46
1:G:237:MET:HE2	1:G:237:MET:HA	1.96	0.46
1:D:125:LEU:HD13	1:D:289:ILE:HD12	1.97	0.46
1:F:371:GLN:HE21	1:F:391:SER:HA	1.81	0.46
1:K:398:LEU:HB2	1:M:161:GLN:HE21	1.80	0.46
1:L:411:PHE:CE2	1:L:457:ALA:HB2	2.50	0.46
1:D:338:GLU:HG2	1:D:465:LYS:HD3	1.98	0.46
1:F:328:PRO:HD2	1:F:331:PHE:CZ	2.50	0.46
1:H:454:THR:HG22	1:H:464:TYR:HE2	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:143:ASP:OD2	1:J:158:PRO:HB3	2.16	0.46
1:A:111:ASN:OD1	1:A:222:ASN:HB3	2.16	0.46
1:G:394:LEU:HD12	1:G:395:ALA:H	1.80	0.46
1:J:160:ARG:HB3	1:J:164:GLU:HB2	1.97	0.46
1:M:431:LEU:HG	1:M:433:ASP:H	1.80	0.46
1:B:23:LYS:H	1:B:23:LYS:HD2	1.82	0.45
1:B:134:GLU:HG3	1:B:213:LYS:HE2	1.98	0.45
1:D:503:LEU:HD13	1:E:18:ASN:HB2	1.97	0.45
1:A:385:LYS:HA	1:A:385:LYS:HD3	1.59	0.45
1:C:278:ILE:HD12	1:C:278:ILE:H	1.82	0.45
1:D:11:LEU:HD22	1:F:501:LEU:HD22	1.98	0.45
1:D:37:THR:HB	1:D:268:ASN:O	2.17	0.45
1:G:308:ILE:O	1:G:311:GLU:HG2	2.16	0.45
1:G:358:LYS:HG3	1:G:363:VAL:HG22	1.98	0.45
1:H:436:VAL:HG22	1:H:442:LYS:NZ	2.32	0.45
1:D:358:LYS:HG3	1:D:363:VAL:HG22	1.98	0.45
1:F:308:ILE:HB	1:F:311:GLU:HG3	1.98	0.45
1:A:94:LEU:HD21	1:A:196:PHE:CE2	2.51	0.45
1:B:296:SER:HA	1:B:465:LYS:HA	1.99	0.45
1:F:137:LEU:HD23	1:F:212:ILE:HG23	1.98	0.45
1:F:160:ARG:HB2	1:F:165:SER:HB2	1.99	0.45
1:F:203:VAL:HG23	1:F:209:TYR:CG	2.52	0.45
1:A:144:VAL:HB	1:A:385:LYS:HE3	1.99	0.45
1:A:275:ILE:HA	1:C:501:LEU:HD21	1.98	0.45
1:B:83:LEU:HA	1:B:247:VAL:HG22	1.98	0.45
1:C:272:PRO:HB2	1:C:274:GLU:OE1	2.16	0.45
1:G:234:PRO:HA	1:G:237:MET:HB2	1.99	0.45
1:H:149:LYS:HB3	1:H:415:ILE:HG12	1.99	0.45
1:C:282:ILE:HB	1:C:478:SER:HB3	1.99	0.45
1:A:72:ARG:HH22	1:A:265:LEU:HD22	1.81	0.45
1:A:198:VAL:HG12	1:A:200:GLU:HG3	1.99	0.45
1:E:295:ILE:HD13	1:E:319:THR:HA	1.98	0.45
1:F:150:ILE:HD11	1:F:157:ASN:HA	1.98	0.45
1:G:138:LEU:HD13	1:G:212:ILE:HD12	1.97	0.45
1:B:122:LEU:HD21	1:B:209:TYR:CZ	2.52	0.45
1:L:335:VAL:HG21	1:L:350:ALA:HB3	1.98	0.45
1:A:372:GLN:HB2	1:A:373:GLN:NE2	2.32	0.44
1:D:148:ASN:HB2	1:D:348:GLN:NE2	2.33	0.44
1:G:203:VAL:HG13	1:G:209:TYR:CG	2.52	0.44
1:K:43:PRO:HA	1:K:57:PHE:HD1	1.83	0.44
1:K:98:PRO:HD2	1:K:200:GLU:OE2	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:83:LEU:HB2	1:A:245:LYS:O	2.16	0.44
1:A:386:ARG:HD3	1:B:169:ARG:HG3	1.98	0.44
1:G:123:ILE:HA	1:G:123:ILE:HD12	1.84	0.44
1:M:320:HIS:HB2	1:M:322:MET:CE	2.48	0.44
1:A:246:LEU:HD23	1:A:246:LEU:H	1.82	0.44
1:A:250:LYS:HG2	1:A:251:ALA:H	1.82	0.44
1:A:338:GLU:HA	1:A:465:LYS:HE2	1.99	0.44
1:B:210:LYS:HG3	1:B:287:PRO:HG3	1.99	0.44
1:B:406:ALA:O	1:B:410:LYS:HG3	2.16	0.44
1:E:375:TYR:CE2	1:E:387:PHE:HB2	2.52	0.44
1:A:338:GLU:HB3	1:A:463:HIS:HB2	2.00	0.44
1:A:373:GLN:HG2	1:B:38:PHE:HD2	1.82	0.44
1:H:203:VAL:HG13	1:H:203:VAL:O	2.18	0.44
1:K:71:LEU:CD1	1:K:202:LEU:HB2	2.47	0.44
1:L:296:SER:HB3	1:L:465:LYS:HB3	2.00	0.44
1:M:218:PHE:HA	1:M:284:TYR:OH	2.18	0.44
1:A:79:ILE:O	1:A:191:SER:HA	2.17	0.44
1:B:218:PHE:HB3	1:B:221:LEU:HD21	1.98	0.44
1:B:226:VAL:HG11	1:B:264:MET:HE1	2.00	0.44
1:D:250:LYS:HD3	1:D:250:LYS:HA	1.88	0.44
1:F:336:SER:HA	1:F:349:LEU:HD23	1.99	0.44
1:J:264:MET:HG3	1:J:265:LEU:N	2.32	0.44
1:L:79:ILE:HG23	1:L:255:VAL:HG22	2.00	0.44
1:B:78:GLU:O	1:B:255:VAL:HA	2.17	0.44
1:D:163:THR:HG23	1:D:164:GLU:HG2	1.99	0.44
1:K:109:ASN:HB2	1:K:114:THR:HG22	2.00	0.44
1:C:144:VAL:HB	1:C:385:LYS:HE3	1.99	0.44
1:E:322:MET:HB2	1:E:446:MET:O	2.16	0.44
1:E:334:MET:HG3	1:E:421:VAL:HG22	1.99	0.44
1:G:407:ALA:HA	1:G:410:LYS:HG3	2.00	0.44
1:J:125:LEU:HD23	1:J:289:ILE:HG12	2.00	0.44
1:A:12:GLN:HG3	1:C:28:ALA:HB1	2.00	0.44
1:A:95:LYS:HB3	1:A:101:ARG:HH12	1.82	0.44
1:A:370:GLU:HG3	1:A:371:GLN:H	1.82	0.44
1:D:98:PRO:O	1:D:237:MET:HE1	2.18	0.44
1:D:326:ASN:HD21	1:D:472:ARG:HE	1.66	0.44
1:J:104:PRO:HD2	1:J:229:ASP:O	2.18	0.44
1:K:218:PHE:HB3	1:K:221:LEU:HD11	2.00	0.44
1:A:233:LYS:HG3	1:A:235:GLU:HB3	2.00	0.44
1:B:6:GLU:C	1:B:7:LEU:HD12	2.43	0.44
1:D:319:THR:HG22	1:D:448:VAL:H	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:432:LYS:HG2	1:L:113:LYS:NZ	2.33	0.44
1:H:29:SER:HB2	1:I:438:ALA:HB3	1.99	0.44
1:H:317:LEU:HD23	1:H:317:LEU:HA	1.87	0.44
1:H:394:LEU:HD12	1:H:395:ALA:H	1.82	0.44
1:I:110:MET:HE1	1:I:484:PHE:CE2	2.53	0.44
1:A:110:MET:HE2	1:A:484:PHE:CE1	2.52	0.43
1:C:286:THR:O	1:C:474:ASN:HB3	2.18	0.43
1:D:374:LEU:HD22	1:D:422:ILE:HD13	2.00	0.43
1:I:373:GLN:O	1:I:376:GLU:HG3	2.18	0.43
1:B:64:LEU:HD13	1:B:271:ALA:HB2	2.00	0.43
1:B:130:ALA:H	1:B:384:ASN:HD22	1.65	0.43
1:B:358:LYS:HD2	1:B:363:VAL:HG12	2.00	0.43
1:G:110:MET:HE1	1:G:484:PHE:CZ	2.53	0.43
1:H:501:LEU:HD12	1:I:11:LEU:O	2.18	0.43
1:K:125:LEU:HD11	1:K:469:PHE:CB	2.49	0.43
1:K:425:ARG:HD3	1:M:30:ARG:HD2	1.99	0.43
1:L:131:ASP:HB3	1:L:134:GLU:HG3	1.99	0.43
1:L:494:ASP:HA	1:L:497:LEU:HB2	2.01	0.43
1:A:293:GLY:HA3	1:A:322:MET:HE1	1.99	0.43
1:E:97:PHE:CE2	1:E:138:LEU:HD23	2.54	0.43
1:E:136:ALA:HA	1:E:142:SER:OG	2.18	0.43
1:F:139:SER:HB2	1:F:200:GLU:HG3	2.01	0.43
1:H:441:ASN:HB2	1:H:490:LEU:HB3	2.00	0.43
1:A:4:PRO:HB3	1:B:477:TYR:CE2	2.54	0.43
1:B:381:ASN:ND2	1:B:424:PHE:HA	2.34	0.43
1:D:383:TYR:CE2	1:D:385:LYS:HB2	2.53	0.43
1:K:26:LYS:HG2	1:M:8:ASP:HB3	2.00	0.43
1:D:370:GLU:CD	1:D:371:GLN:N	2.76	0.43
1:I:436:VAL:O	1:I:437:MET:HE2	2.18	0.43
1:I:498:ARG:HD3	1:I:498:ARG:O	2.18	0.43
1:K:87:SER:HB2	1:K:89:LYS:HE3	2.01	0.43
1:K:407:ALA:HA	1:K:410:LYS:HE2	2.00	0.43
1:M:357:ILE:HD12	1:M:448:VAL:HG22	2.01	0.43
1:A:13:ALA:HB3	1:B:503:LEU:HD23	2.01	0.43
1:C:338:GLU:HG3	1:C:465:LYS:HD3	1.99	0.43
1:E:19:TRP:CZ2	1:F:278:ILE:HD12	2.54	0.43
1:G:348:GLN:O	1:G:349:LEU:HD23	2.19	0.43
1:I:90:ASP:CG	1:I:160:ARG:HA	2.44	0.43
1:L:472:ARG:HD3	1:L:488:LEU:HD21	2.01	0.43
1:B:104:PRO:HD2	1:B:229:ASP:O	2.19	0.43
1:B:249:GLY:C	1:B:250:LYS:HG2	2.44	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:402:ASP:HB3	1:B:405:VAL:HG23	2.00	0.43
1:C:41:ILE:HB	1:C:264:MET:HB3	2.00	0.43
1:D:15:TYR:HB2	1:F:505:ASP:HA	2.01	0.43
1:H:100:ASN:CG	1:H:203:VAL:HG12	2.44	0.43
1:I:94:LEU:HD12	1:I:141:CYS:SG	2.58	0.43
1:D:135:LEU:HB3	1:D:142:SER:HB2	2.00	0.43
1:F:359:VAL:HB	1:F:431:LEU:HD11	2.01	0.43
1:G:137:LEU:HD23	1:G:137:LEU:HA	1.87	0.43
1:H:38:PHE:CE2	1:I:373:GLN:HG3	2.53	0.43
1:J:78:GLU:HG2	1:J:193:LYS:HG2	2.00	0.43
1:M:130:ALA:HB3	1:M:135:LEU:HD21	2.01	0.43
1:A:1:MET:HG3	1:L:273:LEU:HD11	2.00	0.43
1:B:386:ARG:NH1	1:C:168:SER:H	2.17	0.43
1:C:385:LYS:HD3	1:C:385:LYS:HA	1.84	0.43
1:F:352:ILE:HD12	1:F:422:ILE:HD13	2.01	0.43
1:G:38:PHE:CE2	1:G:265:LEU:HD21	2.53	0.43
1:G:409:ASN:HB3	1:G:412:LYS:HE3	2.01	0.43
1:M:39:GLN:O	1:M:265:LEU:HD12	2.19	0.43
1:B:502:LYS:HE3	1:B:502:LYS:HB3	1.89	0.43
1:D:27:ILE:HG23	1:F:9:THR:HG22	2.00	0.43
1:D:157:ASN:O	1:D:160:ARG:HG2	2.19	0.43
1:I:75:PHE:CZ	1:I:237:MET:HE2	2.54	0.43
1:A:398:LEU:HD11	1:B:174:LEU:HD12	2.01	0.42
1:B:97:PHE:HE2	1:B:138:LEU:HD22	1.82	0.42
1:C:98:PRO:HB2	1:C:237:MET:SD	2.58	0.42
1:D:95:LYS:HD3	1:D:101:ARG:HH22	1.84	0.42
1:F:79:ILE:HD13	1:F:240:ILE:HD11	2.01	0.42
1:H:338:GLU:HA	1:H:465:LYS:HE2	2.00	0.42
1:K:298:MET:N	1:K:298:MET:HE2	2.33	0.42
1:M:454:THR:HB	1:M:456:GLU:OE1	2.18	0.42
1:D:41:ILE:HG12	1:D:59:GLN:HG2	2.00	0.42
1:G:456:GLU:HG2	1:G:461:GLY:HA2	2.01	0.42
1:I:146:GLU:C	1:I:418:ALA:HB2	2.44	0.42
1:A:302:THR:HB	1:A:313:ASN:HD21	1.84	0.42
1:B:217:PRO:HG2	1:C:19:TRP:CH2	2.54	0.42
1:G:319:THR:CG2	1:G:448:VAL:H	2.32	0.42
1:I:503:LEU:HG	1:J:18:ASN:HB2	2.00	0.42
1:J:494:ASP:HA	1:J:497:LEU:HG	2.02	0.42
1:K:319:THR:OG1	1:K:322:MET:HE1	2.19	0.42
1:A:130:ALA:HB3	1:A:135:LEU:HD21	2.00	0.42
1:D:357:ILE:HD12	1:D:448:VAL:HG22	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:250:LYS:HD3	1:E:250:LYS:HA	1.62	0.42
1:F:213:LYS:H	1:F:213:LYS:HG2	1.64	0.42
1:I:253:PHE:HB2	1:I:344:PHE:CE2	2.54	0.42
1:K:11:LEU:HD12	1:L:29:SER:O	2.19	0.42
1:K:407:ALA:HA	1:K:410:LYS:HG3	2.01	0.42
1:M:148:ASN:HD21	1:M:416:PHE:HD2	1.67	0.42
1:A:212:ILE:HD12	1:A:212:ILE:HA	1.92	0.42
1:H:501:LEU:HD11	1:I:13:ALA:HB2	2.01	0.42
1:L:280:LYS:HB2	1:L:480:GLU:OE2	2.20	0.42
1:E:66:GLY:HA3	1:E:267:GLN:HB3	2.02	0.42
1:E:280:LYS:HD3	1:E:480:GLU:OE2	2.19	0.42
1:E:422:ILE:HG22	1:E:424:PHE:HD1	1.84	0.42
1:G:319:THR:HG22	1:G:448:VAL:O	2.20	0.42
1:I:61:LEU:HD12	1:I:268:ASN:HB2	2.01	0.42
1:I:288:LEU:HD11	1:I:474:ASN:ND2	2.34	0.42
1:H:375:TYR:CG	1:H:387:PHE:HD1	2.37	0.42
1:K:324:MET:HE1	1:K:446:MET:HG2	2.02	0.42
1:M:320:HIS:HB2	1:M:322:MET:HE1	2.02	0.42
1:B:60:PRO:HD2	1:F:58:ASN:ND2	2.34	0.42
1:H:88:LEU:HD22	1:H:92:ILE:HD11	2.01	0.42
1:H:236:ASN:O	1:H:237:MET:HE2	2.18	0.42
1:H:370:GLU:H	1:H:373:GLN:CD	2.28	0.42
1:J:108:ILE:HG22	1:J:110:MET:SD	2.60	0.42
1:A:71:LEU:O	1:A:199:ASP:HA	2.20	0.42
1:B:31:ILE:O	1:C:14:PRO:HD3	2.20	0.42
1:B:280:LYS:HD2	1:B:281:THR:OG1	2.20	0.42
1:E:446:MET:SD	1:E:448:VAL:HG13	2.59	0.42
1:F:63:ASN:ND2	1:F:270:VAL:HG13	2.35	0.42
1:K:358:LYS:HG3	1:K:363:VAL:HG12	2.02	0.42
1:L:357:ILE:HD12	1:L:448:VAL:HG12	2.02	0.42
1:B:126:HIS:HE1	1:B:210:LYS:HD3	1.85	0.42
1:E:501:LEU:HD23	1:E:501:LEU:H	1.85	0.42
1:G:253:PHE:HB2	1:G:344:PHE:CE2	2.55	0.42
1:K:130:ALA:H	1:K:384:ASN:ND2	2.18	0.42
1:C:104:PRO:HG2	1:C:231:GLN:NE2	2.34	0.41
1:D:326:ASN:ND2	1:D:472:ARG:HE	2.18	0.41
1:G:91:GLN:HE21	1:G:243:ASP:CG	2.27	0.41
1:H:5:PRO:HD2	1:J:477:TYR:CE2	2.55	0.41
1:I:454:THR:HB	1:I:456:GLU:OE1	2.20	0.41
1:K:71:LEU:HD13	1:K:202:LEU:HB2	2.01	0.41
1:L:134:GLU:HG2	1:L:213:LYS:HE2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:338:GLU:HG3	1:M:465:LYS:HD3	2.00	0.41
1:M:407:ALA:HA	1:M:410:LYS:HE2	2.01	0.41
1:A:38:PHE:HB3	1:A:265:LEU:HD11	2.02	0.41
1:C:424:PHE:HD2	1:C:429:LEU:HD21	1.85	0.41
1:D:183:HIS:HB2	1:D:193:LYS:HB2	2.02	0.41
1:F:441:ASN:HB3	1:F:490:LEU:HD12	2.02	0.41
1:I:426:PRO:HA	1:I:429:LEU:HD12	2.01	0.41
1:J:170:MET:HE3	1:J:170:MET:HA	2.02	0.41
1:L:322:MET:O	1:L:445:ASN:HA	2.20	0.41
1:A:99:VAL:HG22	1:A:200:GLU:OE1	2.19	0.41
1:B:78:GLU:HG3	1:B:193:LYS:HG2	2.03	0.41
1:C:358:LYS:HG2	1:C:362:ASP:O	2.19	0.41
1:D:140:PRO:HD3	1:D:199:ASP:O	2.19	0.41
1:F:37:THR:HB	1:F:268:ASN:O	2.20	0.41
1:I:288:LEU:HG	1:I:474:ASN:HB2	2.03	0.41
1:K:411:PHE:CE2	1:K:457:ALA:HB2	2.55	0.41
1:D:291:LEU:HD13	1:D:469:PHE:CE1	2.55	0.41
1:D:488:LEU:HD23	1:D:488:LEU:HA	1.83	0.41
1:E:206:PRO:HA	1:E:286:THR:HG21	2.02	0.41
1:H:44:VAL:HG22	1:H:56:THR:HB	2.03	0.41
1:H:90:ASP:CG	1:H:160:ARG:HA	2.45	0.41
1:K:422:ILE:HG22	1:K:424:PHE:HD1	1.85	0.41
1:C:284:TYR:HB2	1:C:476:THR:OG1	2.20	0.41
1:E:157:ASN:HB3	1:E:160:ARG:HG3	2.02	0.41
1:F:125:LEU:HD11	1:F:469:PHE:HB3	2.03	0.41
1:I:63:ASN:ND2	1:I:270:VAL:HA	2.35	0.41
1:I:298:MET:HG2	1:I:463:HIS:CE1	2.55	0.41
1:L:350:ALA:HB2	1:L:454:THR:HG22	2.00	0.41
1:A:359:VAL:HG23	1:A:446:MET:HB3	2.01	0.41
1:B:359:VAL:HG11	1:B:431:LEU:HD22	2.03	0.41
1:K:221:LEU:HD23	1:K:224:PHE:CD1	2.56	0.41
1:K:233:LYS:HE2	1:K:236:ASN:ND2	2.36	0.41
1:A:231:GLN:HG3	1:A:231:GLN:O	2.21	0.41
1:C:38:PHE:HD2	1:C:265:LEU:HD11	1.86	0.41
1:C:174:LEU:HD22	1:C:180:TYR:CD2	2.56	0.41
1:E:149:LYS:HE3	1:E:149:LYS:HB3	1.90	0.41
1:G:31:ILE:O	1:G:31:ILE:HG13	2.20	0.41
1:H:143:ASP:HB2	1:H:170:MET:O	2.20	0.41
1:H:383:TYR:CZ	1:H:385:LYS:HB2	2.55	0.41
1:M:75:PHE:HE2	1:M:77:ALA:HB2	1.85	0.41
1:M:87:SER:HB2	1:M:89:LYS:HD3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:280:LYS:NZ	1:C:480:GLU:H	2.18	0.41
1:E:503:LEU:HD22	1:F:18:ASN:HB2	2.03	0.41
1:H:281:THR:HG21	1:I:5:PRO:HG3	2.02	0.41
1:H:381:ASN:ND2	1:H:424:PHE:HA	2.36	0.41
1:I:98:PRO:HB2	1:I:237:MET:HE1	2.03	0.41
1:J:317:LEU:HD23	1:J:452:PHE:CZ	2.56	0.41
1:J:394:LEU:HD12	1:J:394:LEU:HA	1.92	0.41
1:M:109:ASN:HB3	1:M:225:LYS:HB2	2.03	0.41
1:M:110:MET:HG3	1:M:110:MET:O	2.20	0.41
1:M:335:VAL:HG12	1:M:464:TYR:HD2	1.85	0.41
1:B:81:ASN:ND2	1:B:250:LYS:HD2	2.35	0.41
1:C:79:ILE:HG12	1:C:255:VAL:HG22	2.02	0.41
1:C:115:PHE:CE2	1:C:206:PRO:HG3	2.56	0.41
1:C:136:ALA:HA	1:C:142:SER:HB3	2.02	0.41
1:C:356:GLU:HG2	1:C:367:ARG:HA	2.03	0.41
1:D:151:LYS:NZ	1:D:413:GLU:HA	2.35	0.41
1:F:90:ASP:HA	1:F:159:TYR:O	2.21	0.41
1:F:100:ASN:ND2	1:F:203:VAL:HG12	2.36	0.41
1:H:134:GLU:OE2	1:H:212:ILE:HG22	2.21	0.41
1:J:48:PRO:HG2	1:J:53:GLY:HA3	2.02	0.41
1:K:5:PRO:HD2	1:M:477:TYR:CE1	2.56	0.41
1:L:23:LYS:HE2	1:L:23:LYS:HB2	1.91	0.41
1:B:174:LEU:HD11	1:B:194:ILE:HD13	2.03	0.41
1:B:246:LEU:HD13	1:B:251:ALA:HA	2.03	0.41
1:C:234:PRO:HB2	1:C:344:PHE:HE1	1.86	0.41
1:E:385:LYS:HD2	1:E:385:LYS:HA	1.82	0.41
1:H:245:LYS:HD3	1:H:245:LYS:HA	1.77	0.41
1:I:272:PRO:HG2	1:I:275:ILE:HG23	2.03	0.41
1:J:480:GLU:H	1:J:480:GLU:CD	2.29	0.41
1:K:210:LYS:HD2	1:K:287:PRO:HG3	2.02	0.41
1:A:27:ILE:HD13	1:A:27:ILE:HA	1.92	0.40
1:E:11:LEU:HD13	1:F:29:SER:O	2.21	0.40
1:F:288:LEU:HD12	1:F:488:LEU:HD21	2.04	0.40
1:F:291:LEU:HD21	1:F:294:ASN:HB3	2.02	0.40
1:G:73:VAL:HG12	1:G:262:ILE:HD13	2.03	0.40
1:H:497:LEU:HD23	1:H:497:LEU:HA	1.85	0.40
1:I:357:ILE:HG21	1:I:429:LEU:HD22	2.02	0.40
1:K:378:SER:OG	1:K:422:ILE:HA	2.21	0.40
1:L:234:PRO:HG2	1:L:255:VAL:O	2.20	0.40
1:D:357:ILE:CD1	1:D:448:VAL:HG22	2.50	0.40
1:D:357:ILE:HD11	1:D:446:MET:SD	2.60	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:314:LYS:HG2	1:H:353:ILE:HD11	2.03	0.40
1:H:386:ARG:NH2	1:J:167:ASP:HA	2.36	0.40
1:I:218:PHE:HB3	1:I:221:LEU:HD21	2.03	0.40
1:I:308:ILE:O	1:I:311:GLU:HG2	2.22	0.40
1:B:272:PRO:O	1:B:275:ILE:HG12	2.22	0.40
1:B:501:LEU:HD23	1:B:501:LEU:H	1.87	0.40
1:D:407:ALA:HA	1:D:410:LYS:HE2	2.03	0.40
1:F:218:PHE:HA	1:F:284:TYR:OH	2.21	0.40
1:G:431:LEU:HD23	1:G:431:LEU:HA	1.79	0.40
1:H:335:VAL:HB	1:H:350:ALA:HB3	2.02	0.40
1:J:319:THR:HG21	1:J:448:VAL:HG22	2.03	0.40
1:K:348:GLN:O	1:K:349:LEU:HD23	2.21	0.40
1:M:205:ASN:HA	1:M:206:PRO:HA	1.92	0.40
1:A:41:ILE:HD13	1:A:59:GLN:HB3	2.03	0.40
1:G:174:LEU:HD23	1:G:174:LEU:HA	1.81	0.40
1:H:358:LYS:HB3	1:H:447:GLN:HB3	2.03	0.40
1:I:6:GLU:O	1:I:7:LEU:HD23	2.21	0.40
1:J:98:PRO:HD2	1:J:200:GLU:OE1	2.21	0.40
1:J:205:ASN:ND2	1:J:286:THR:HB	2.36	0.40
1:D:169:ARG:C	1:D:170:MET:HE2	2.46	0.40
1:F:125:LEU:HD21	1:F:469:PHE:CD2	2.57	0.40
1:F:231:GLN:HE22	1:F:233:LYS:HB3	1.85	0.40
1:F:245:LYS:HD2	1:F:245:LYS:HA	1.81	0.40
1:G:289:ILE:CD1	1:G:471:ILE:HG12	2.51	0.40
1:H:234:PRO:HG3	1:H:257:ILE:HG13	2.04	0.40
1:H:385:LYS:HA	1:H:385:LYS:HD2	1.90	0.40
1:I:27:ILE:HD11	1:J:475:LEU:HD11	2.02	0.40
1:L:108:ILE:HG22	1:L:110:MET:SD	2.61	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	503/610 (82%)	479 (95%)	23 (5%)	1 (0%)	43	76
1	B	503/610 (82%)	471 (94%)	32 (6%)	0	100	100
1	C	503/610 (82%)	485 (96%)	18 (4%)	0	100	100
1	D	503/610 (82%)	480 (95%)	23 (5%)	0	100	100
1	E	503/610 (82%)	480 (95%)	23 (5%)	0	100	100
1	F	503/610 (82%)	482 (96%)	21 (4%)	0	100	100
1	G	503/610 (82%)	486 (97%)	17 (3%)	0	100	100
1	H	503/610 (82%)	478 (95%)	25 (5%)	0	100	100
1	I	503/610 (82%)	484 (96%)	19 (4%)	0	100	100
1	J	503/610 (82%)	479 (95%)	24 (5%)	0	100	100
1	K	503/610 (82%)	494 (98%)	9 (2%)	0	100	100
1	L	503/610 (82%)	486 (97%)	17 (3%)	0	100	100
1	M	503/610 (82%)	488 (97%)	15 (3%)	0	100	100
All	All	6539/7930 (82%)	6272 (96%)	266 (4%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	177	ASN

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	433/515 (84%)	433 (100%)	0	100	100
1	B	433/515 (84%)	433 (100%)	0	100	100
1	C	433/515 (84%)	433 (100%)	0	100	100
1	D	433/515 (84%)	433 (100%)	0	100	100
1	E	433/515 (84%)	433 (100%)	0	100	100
1	F	433/515 (84%)	433 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	G	433/515 (84%)	433 (100%)	0	100 100
1	H	433/515 (84%)	433 (100%)	0	100 100
1	I	433/515 (84%)	433 (100%)	0	100 100
1	J	433/515 (84%)	432 (100%)	1 (0%)	87 87
1	K	433/515 (84%)	433 (100%)	0	100 100
1	L	433/515 (84%)	433 (100%)	0	100 100
1	M	433/515 (84%)	433 (100%)	0	100 100
All	All	5629/6695 (84%)	5628 (100%)	1 (0%)	100 100

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	J	362	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (56) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	121	GLN
1	A	474	ASN
1	B	59	GLN
1	B	127	GLN
1	B	301	ASN
1	B	320	HIS
1	B	495	GLN
1	C	49	ASN
1	C	161	GLN
1	C	208	GLN
1	C	236	ASN
1	D	59	GLN
1	D	222	ASN
1	D	231	GLN
1	D	371	GLN
1	D	409	ASN
1	D	449	GLN
1	E	161	GLN
1	E	231	GLN
1	E	263	ASN
1	F	100	ASN

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Mol	Chain	Res	Type
1	F	156	ASN
1	F	439	ASN
1	G	381	ASN
1	G	463	HIS
1	G	495	GLN
1	H	54	GLN
1	H	313	ASN
1	H	449	GLN
1	H	463	HIS
1	I	100	ASN
1	I	320	HIS
1	I	449	GLN
1	I	474	ASN
1	J	12	GLN
1	J	161	GLN
1	J	268	ASN
1	J	435	ASN
1	K	49	ASN
1	K	161	GLN
1	K	177	ASN
1	K	263	ASN
1	K	268	ASN
1	K	313	ASN
1	L	49	ASN
1	L	121	GLN
1	L	320	HIS
1	L	447	GLN
1	M	39	GLN
1	M	42	GLN
1	M	49	ASN
1	M	231	GLN
1	M	263	ASN
1	M	371	GLN
1	M	372	GLN
1	M	439	ASN

5.3.3 RNA

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.

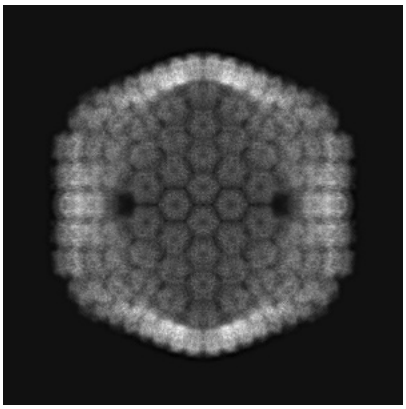
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-100002. These allow visual inspection of the internal detail of the map and identification of artifacts.

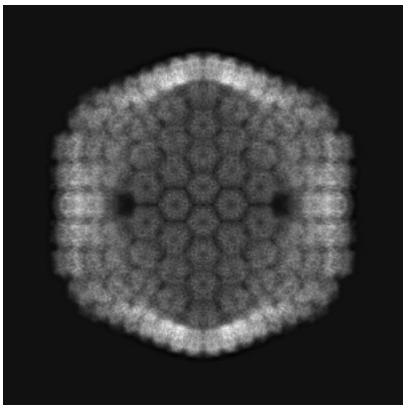
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

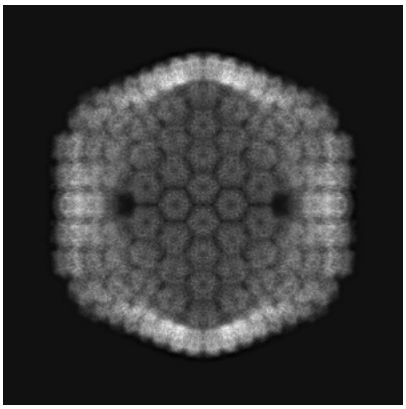
6.1.1 Primary map



X

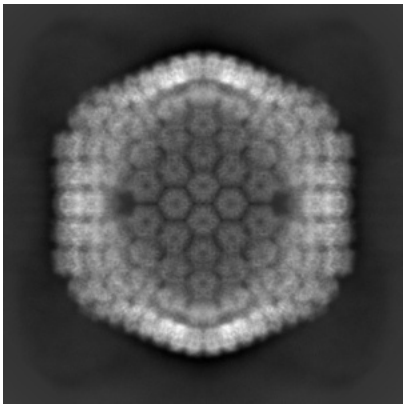


Y

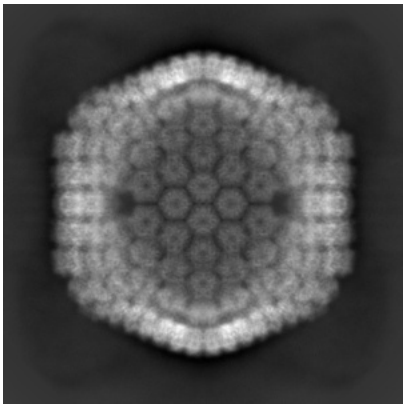


Z

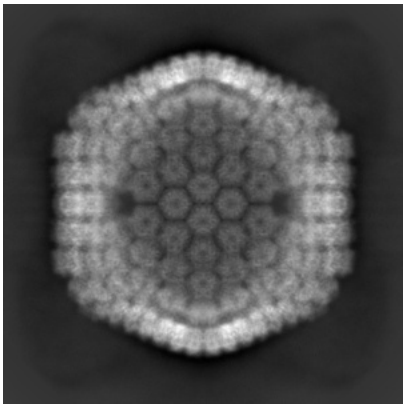
6.1.2 Raw map



X



Y

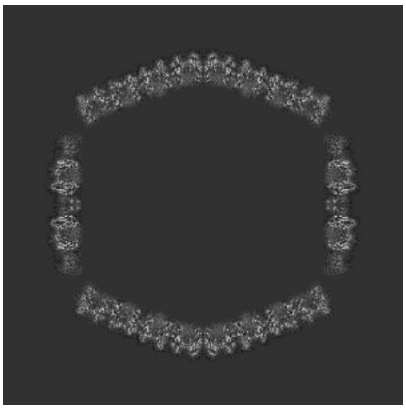


Z

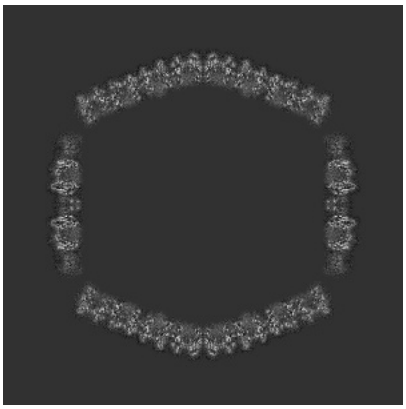
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

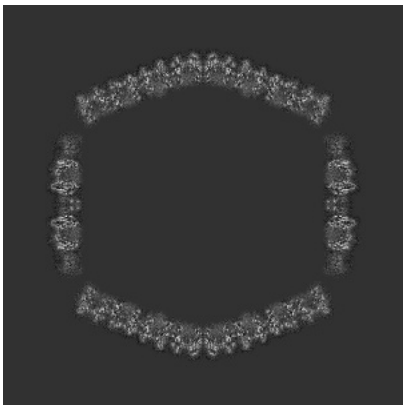
6.2.1 Primary map



X Index: 441

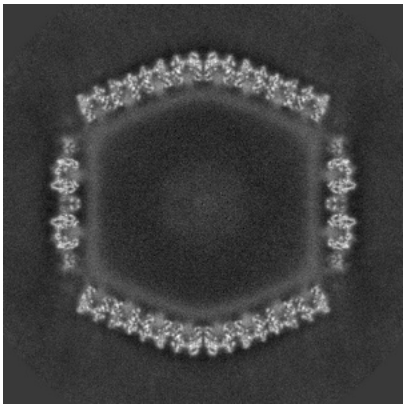


Y Index: 441

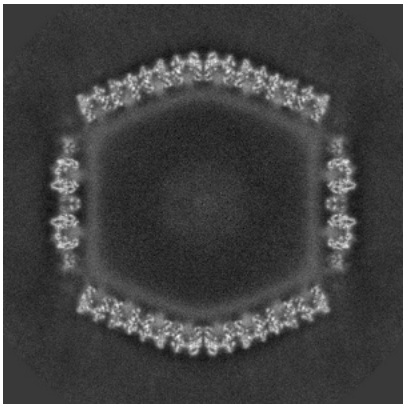


Z Index: 441

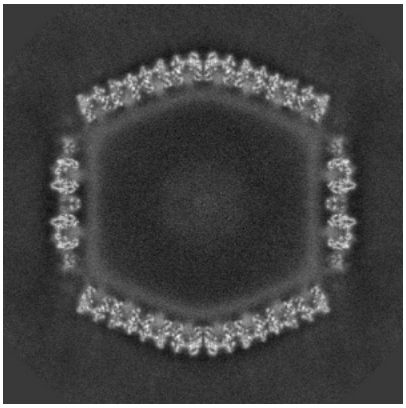
6.2.2 Raw map



X Index: 441



Y Index: 441

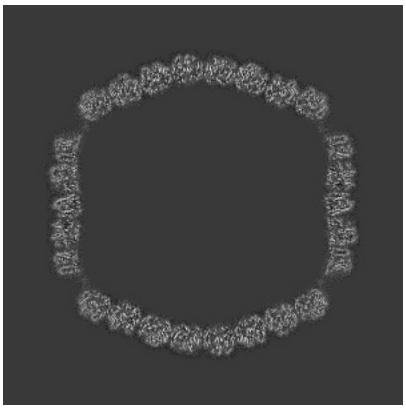


Z Index: 441

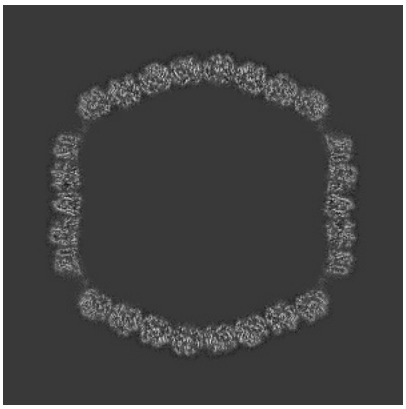
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

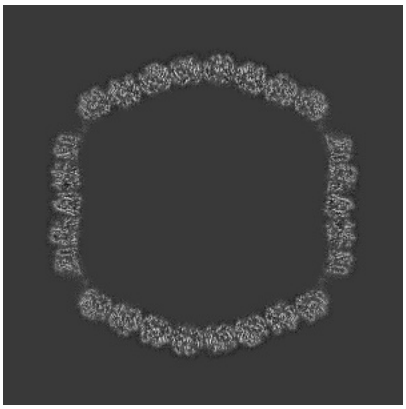
6.3.1 Primary map



X Index: 456

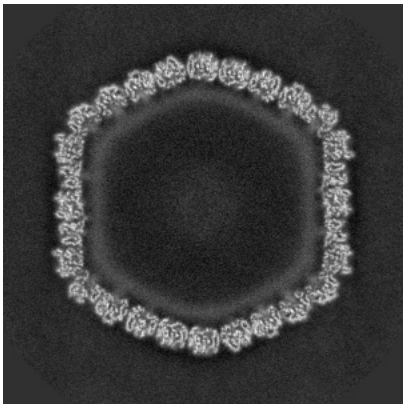


Y Index: 426

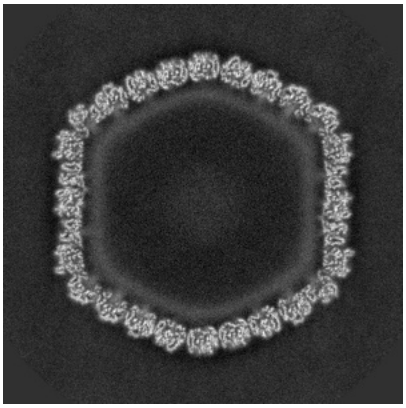


Z Index: 426

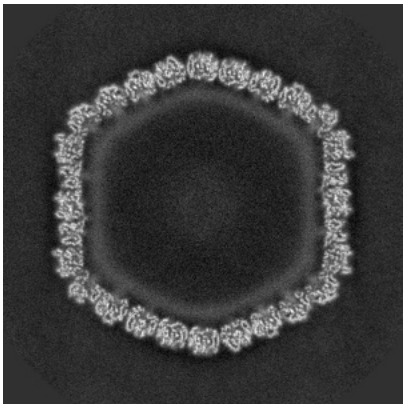
6.3.2 Raw map



X Index: 489



Y Index: 393

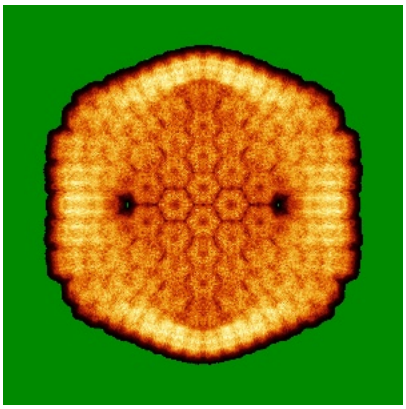


Z Index: 489

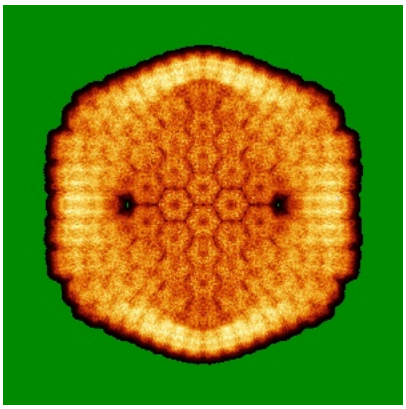
The images above show the largest variance slices of the map in three orthogonal directions.

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

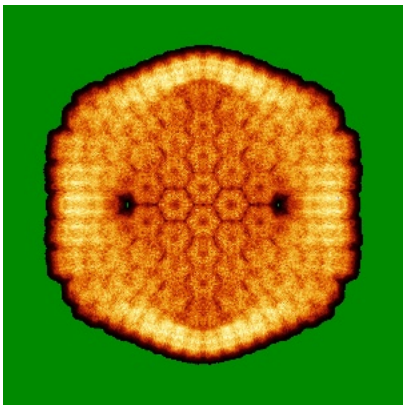
6.4.1 Primary map



X

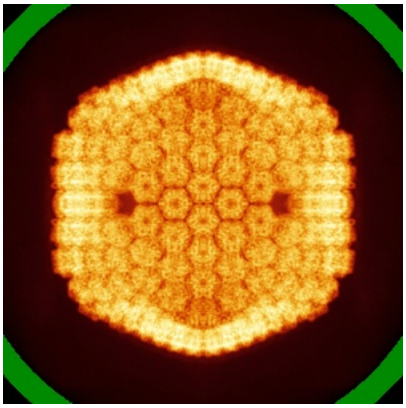


Y

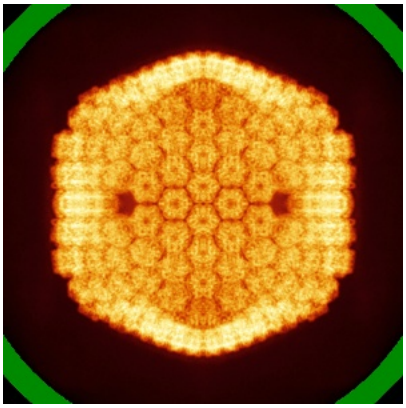


Z

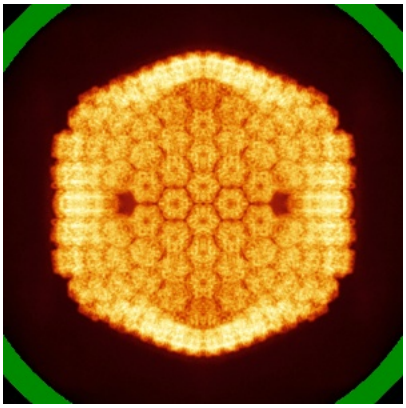
6.4.2 Raw map



X



Y

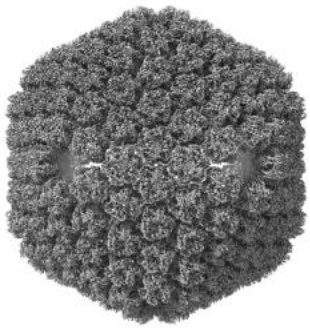


Z

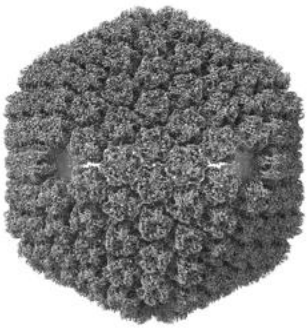
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views (i)

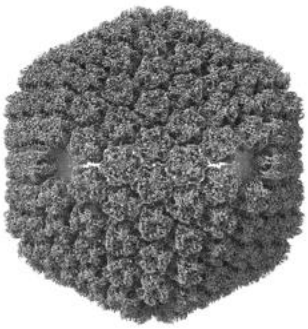
6.5.1 Primary map



X



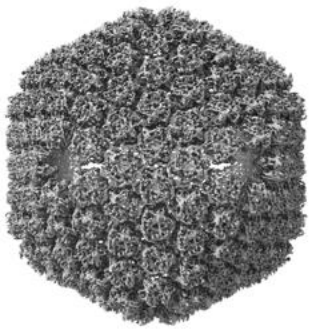
Y



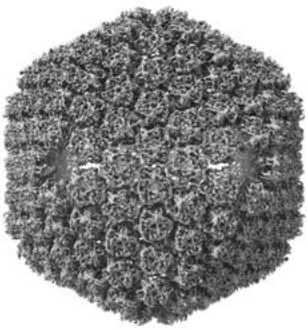
Z

The images above show the 3D surface view of the map at the recommended contour level 0.00958. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

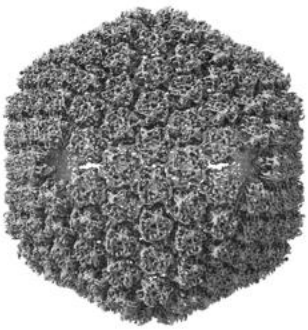
6.5.2 Raw map



X



Y



Z

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

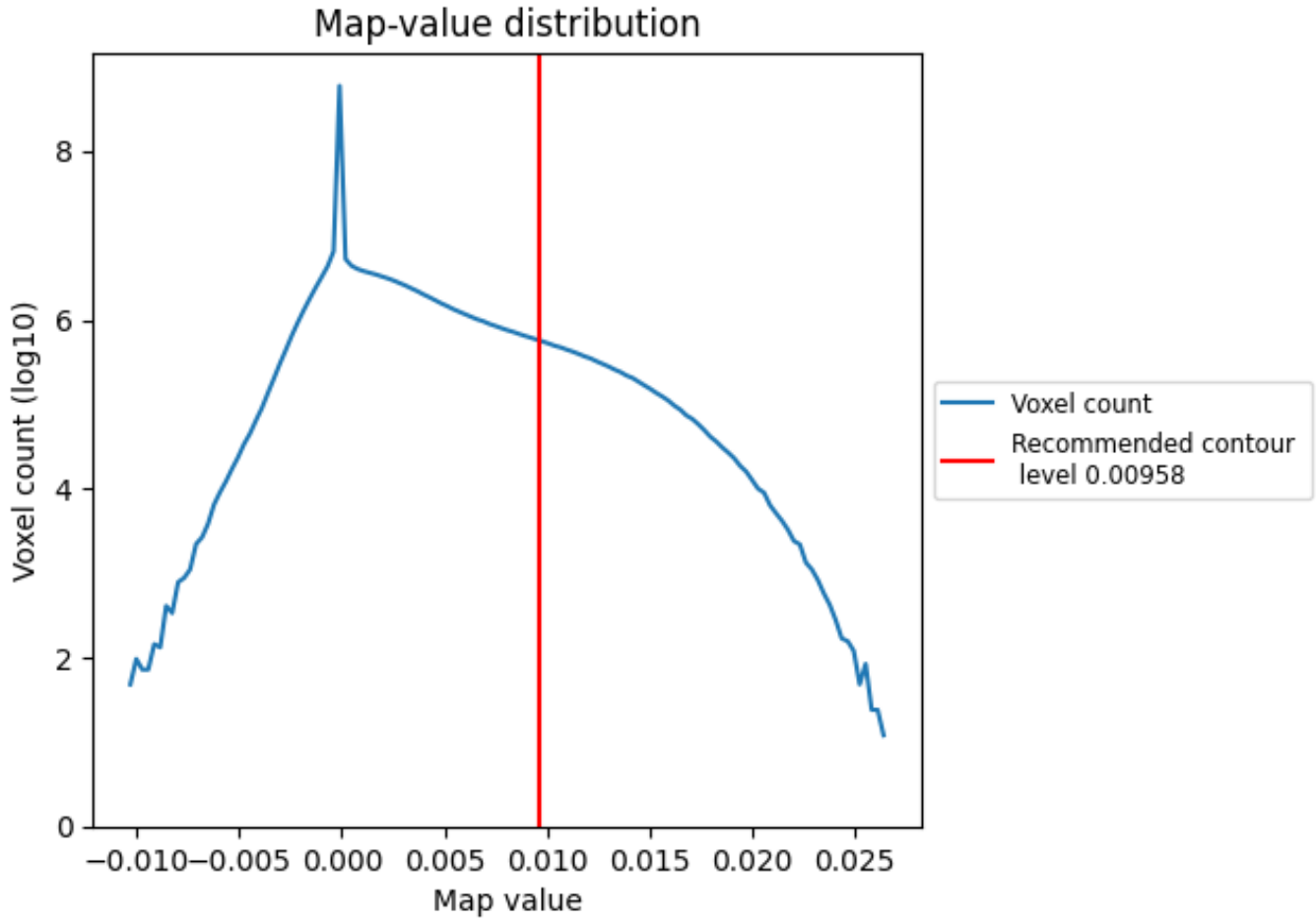
6.6 Mask visualisation (i)

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

7 Map analysis

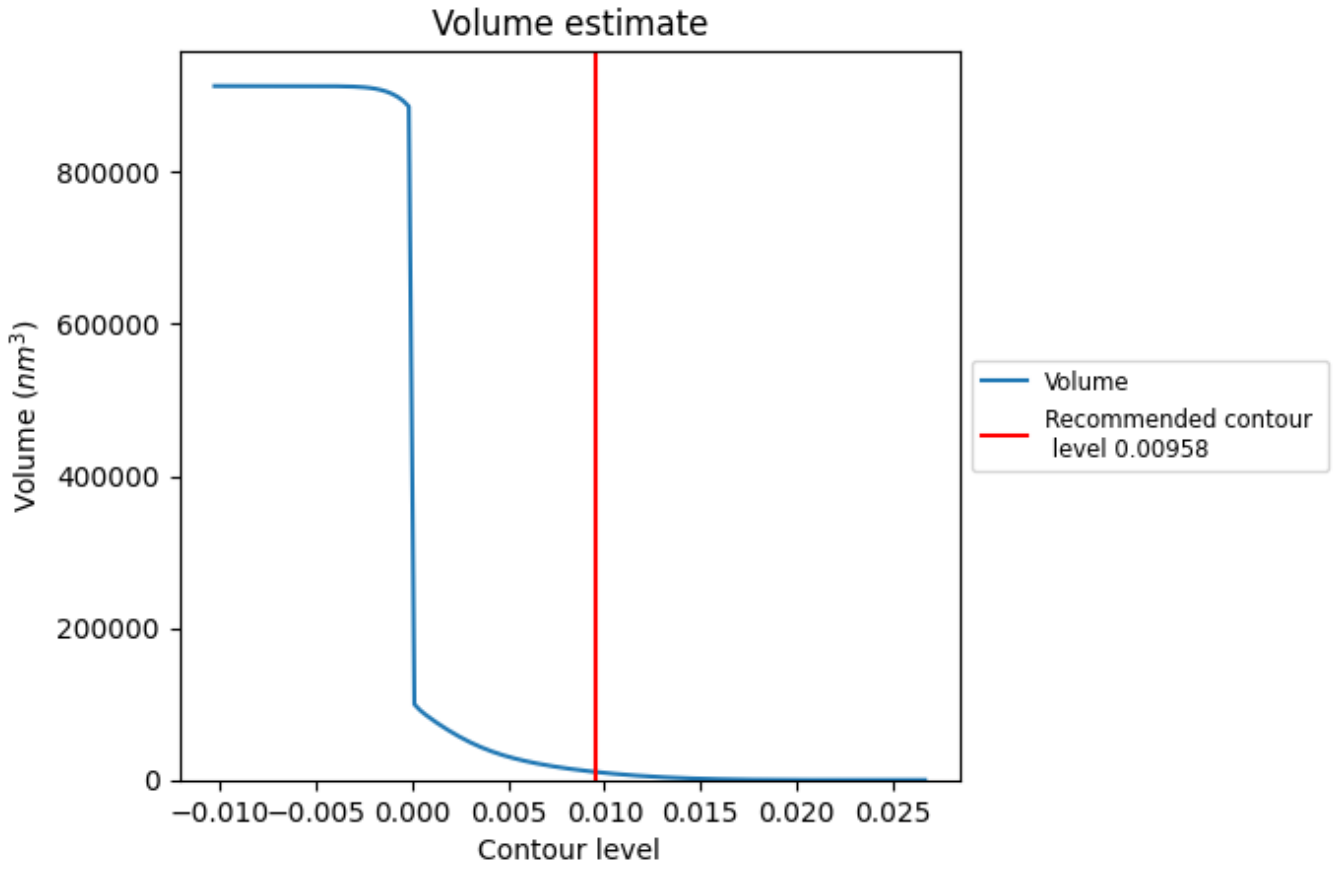
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

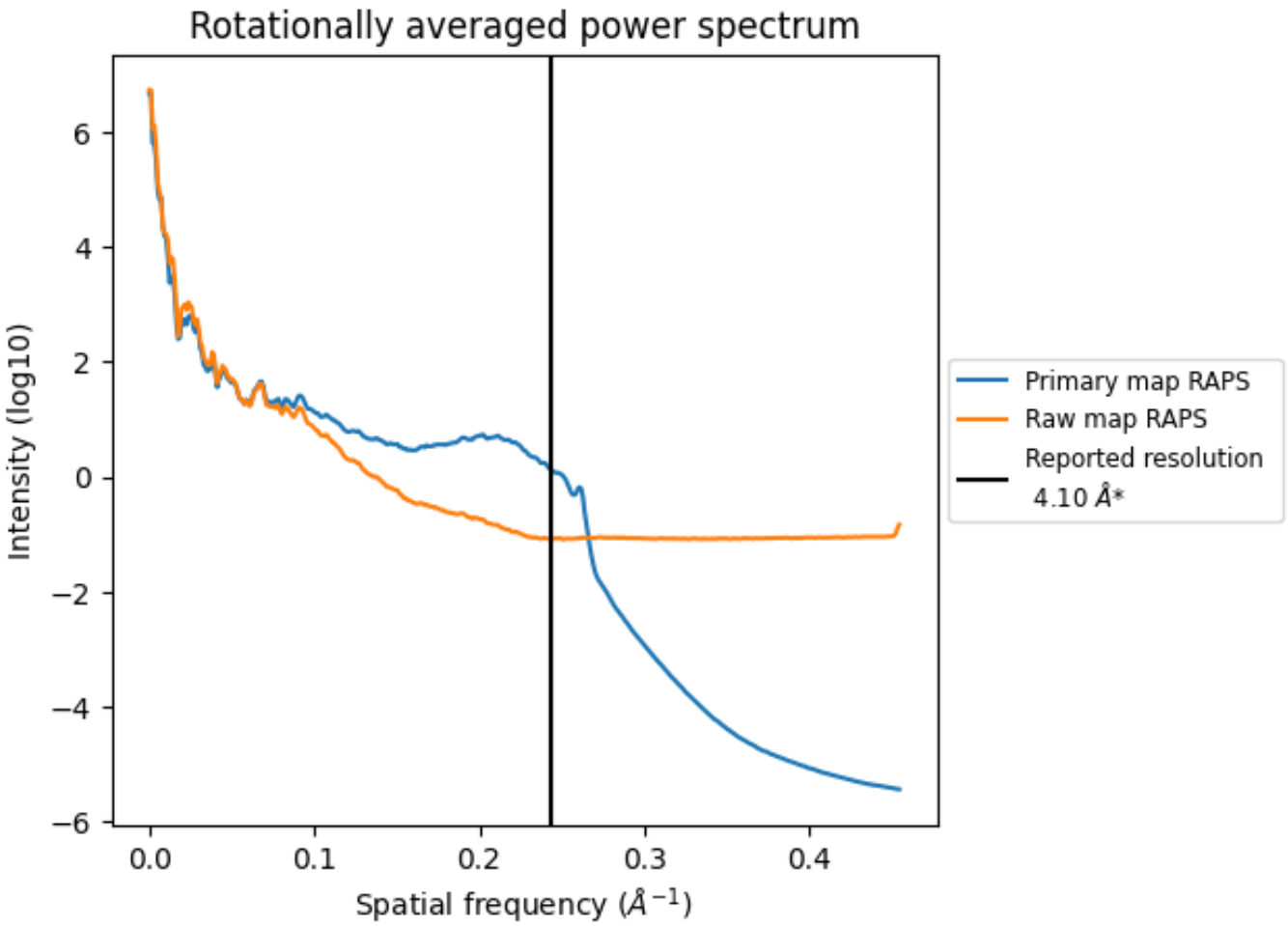
7.2 Volume estimate



The volume at the recommended contour level is 10428 nm^3; this corresponds to an approximate mass of 9420 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)

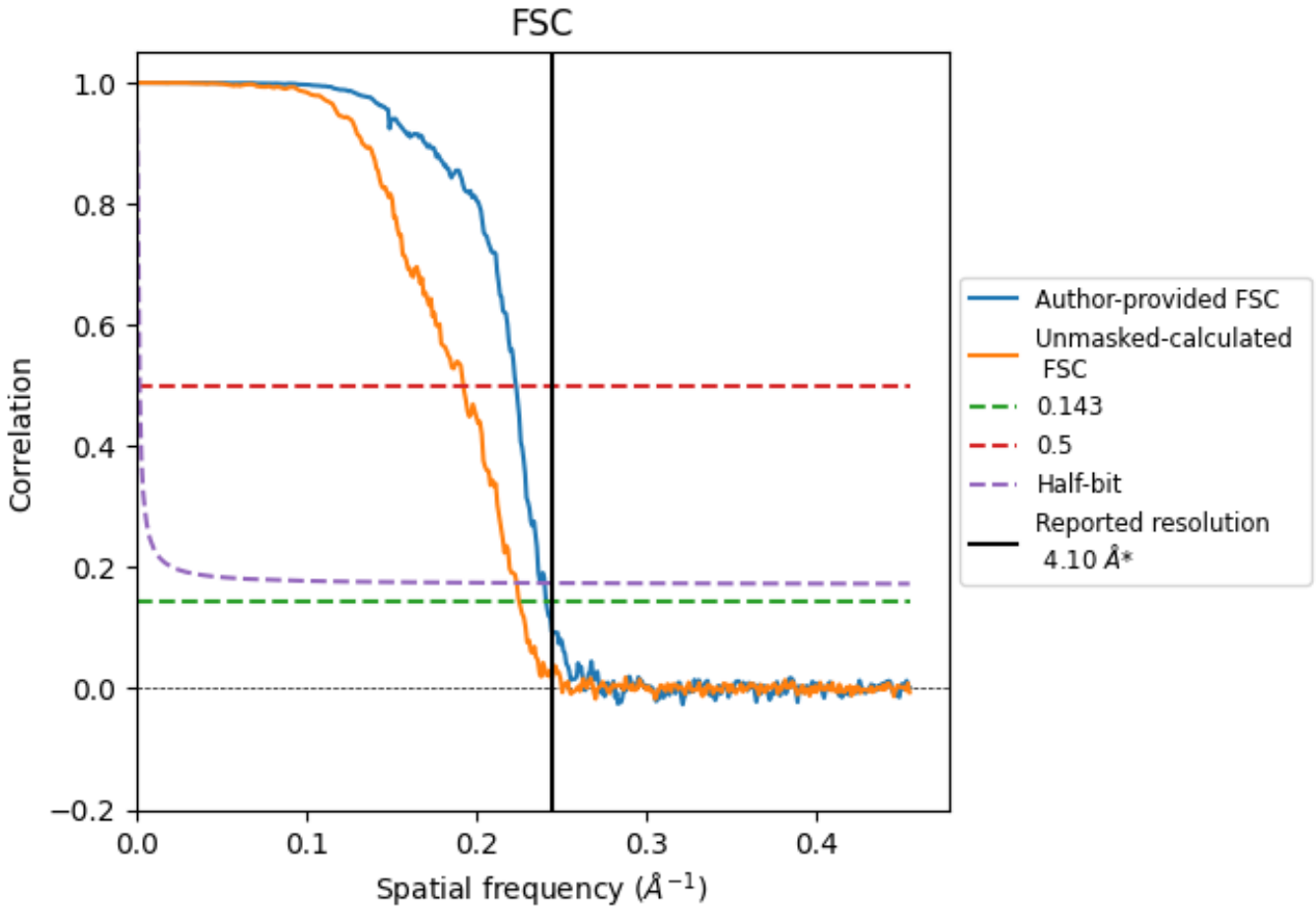


*Reported resolution corresponds to spatial frequency of 0.244 $Å^{-1}$

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 0.244 Å^{-1}

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.10	-	-
Author-provided FSC curve	4.15	4.48	4.16
Unmasked-calculated*	4.44	5.20	4.47

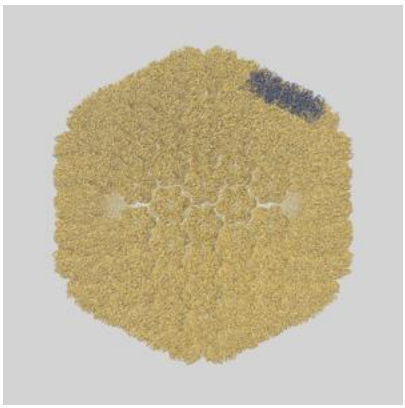
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

9 Map-model fit

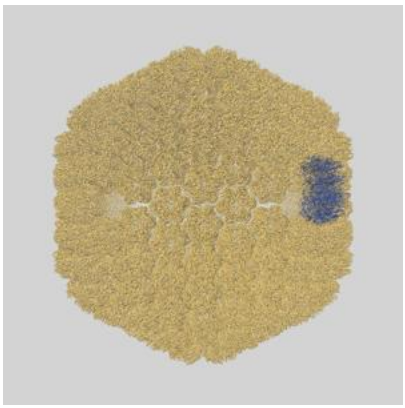
This section contains information regarding the fit between EMDB map EMD-100002 and PDB model 34LA. Per-residue inclusion information can be found in section 3 on page 7.

9.1 Map-model overlays

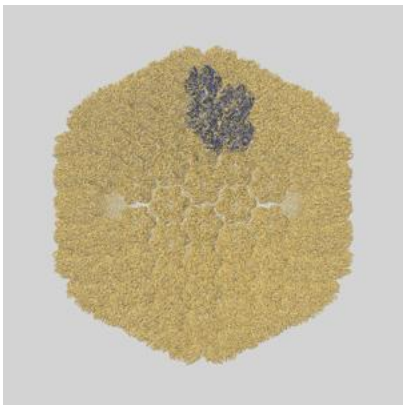
9.1.1 Map-model overlay



X

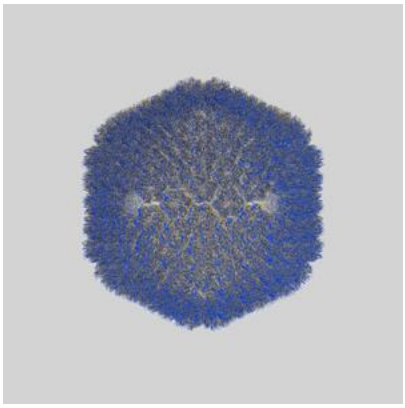


Y

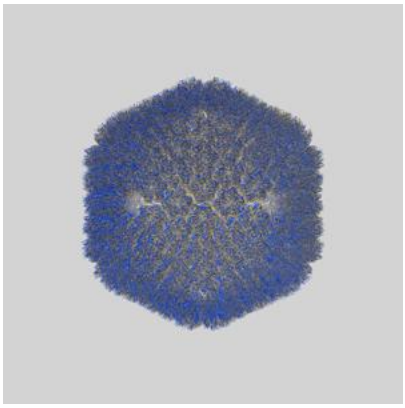


Z

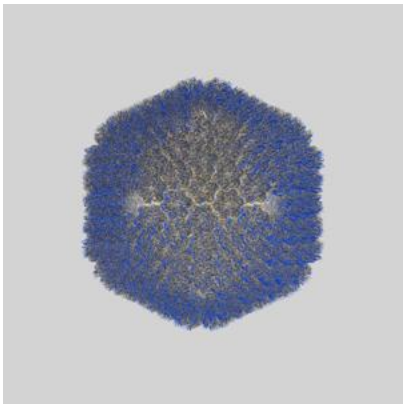
9.1.2 Map-model assembly overlay



X



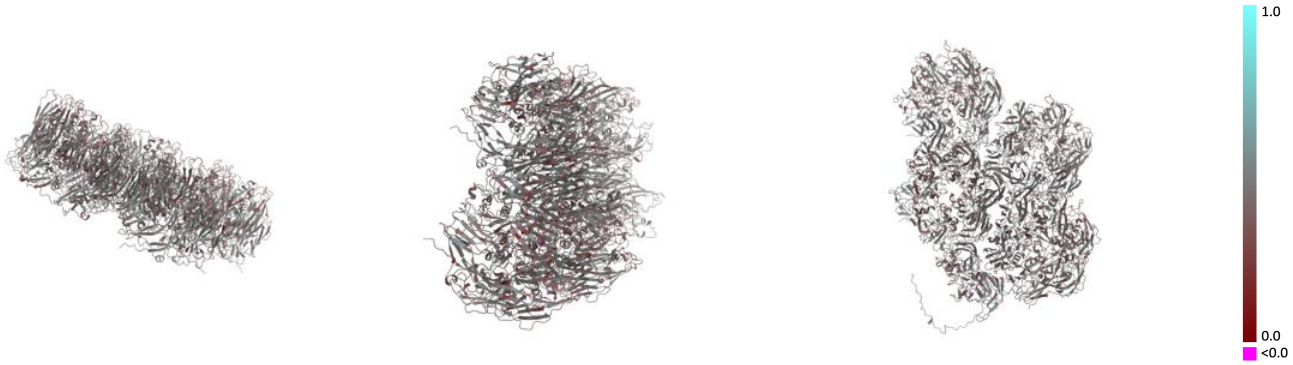
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.00958 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.

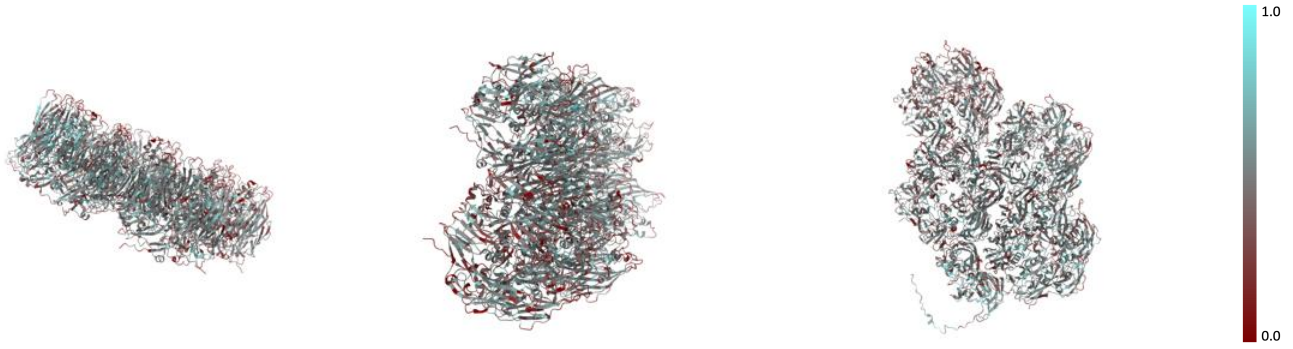
9.2 Q-score mapped to coordinate model (i)



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.

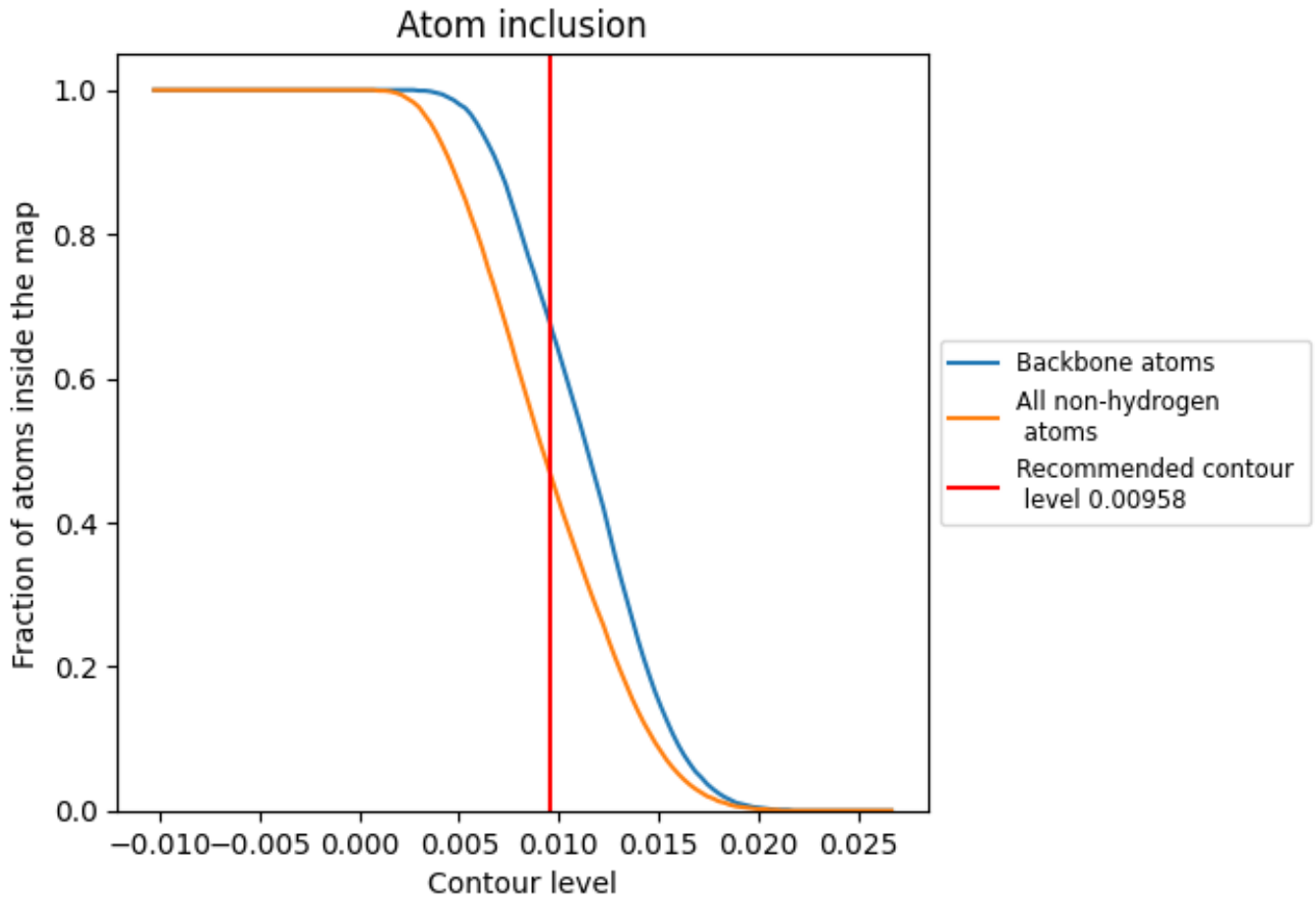
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.00958).

9.4 Atom inclusion (i)



At the recommended contour level, 68% of all backbone atoms, 47% 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 (0.00958) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.4670	0.4300
A	0.4290	0.4240
B	0.4060	0.4240
C	0.3990	0.4190
D	0.4790	0.4380
E	0.4720	0.4290
F	0.4790	0.4320
G	0.5030	0.4330
H	0.4870	0.4310
I	0.4920	0.4300
J	0.4950	0.4330
K	0.4760	0.4330
L	0.4800	0.4370
M	0.4720	0.4260

