



Full wwPDB EM Validation Report ⓘ

Mar 29, 2026 – 08:26 AM UTC

PDB ID : 8VDE / pdb_00008vde
EMDB ID : EMD-43147
Title : SaPI1 portal-capsid interface in mature capsids with DNA
Authors : Kizziah, J.L.; Mukherjee, A.; Dokland, T.
Deposited on : 2023-12-14
Resolution : 3.40 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:

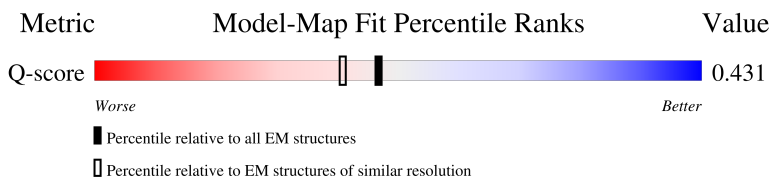
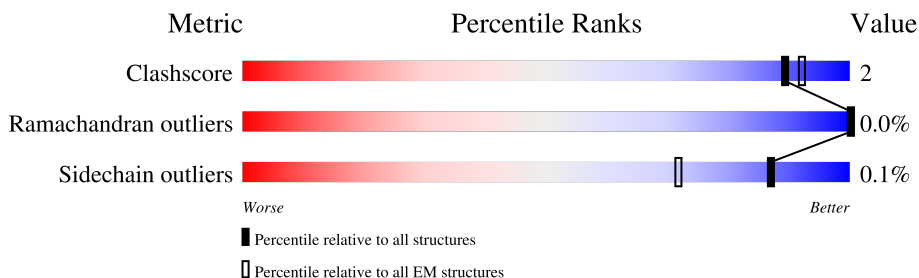
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

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 3.40 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	14717 (2.90 - 3.90)

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

Mol	Chain	Length	Quality of chain
1	B1	324	80% 88% 8%
1	B2	324	64% 88% 8%
1	B3	324	81% 83% 9% 8%
1	B4	324	59% 86% 6% 8%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	B5	324	75% 86% 6% 8%
1	C1	324	9% 10% 90%
1	C2	324	8% 10% 90%
1	C3	324	9% 10% 90%
1	C4	324	8% 10% 90%
1	C5	324	9% 10% 90%
1	D1	324	74% 78% 19%
1	D2	324	74% 76% 5% 19%
1	D3	324	69% 76% 6% 19%
1	D4	324	73% 76% 6% 19%
1	D5	324	75% 78% 19%
2	P1	511	20% 90% 5% 6%
2	P2	511	18% 87% 9%
2	P3	511	21% 90% 6%
2	P4	511	17% 87% 5% 9%
2	P5	511	21% 87% 5% 9%
2	P6	511	21% 91% 6%
2	P7	511	16% 87% 9%
2	P8	511	19% 89% 5% 6%
2	P9	511	17% 87% 5% 9%
2	Q1	511	23% 91% 7%
2	Q2	511	18% 88% 9%
2	Q3	511	18% 88% 9%

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 70177 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 Major capsid protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	B1	298	Total	C	N	O	S	0	0
			2377	1515	389	462	11		
1	B2	298	Total	C	N	O	S	0	0
			2377	1515	389	462	11		
1	B3	298	Total	C	N	O	S	0	0
			2377	1515	389	462	11		
1	B4	298	Total	C	N	O	S	0	0
			2377	1515	389	462	11		
1	B5	298	Total	C	N	O	S	0	0
			2377	1515	389	462	11		
1	C1	34	Total	C	N	O	S	0	0
			276	181	44	50	1		
1	C2	34	Total	C	N	O	S	0	0
			276	181	44	50	1		
1	C3	34	Total	C	N	O	S	0	0
			276	181	44	50	1		
1	C4	34	Total	C	N	O	S	0	0
			276	181	44	50	1		
1	C5	34	Total	C	N	O	S	0	0
			276	181	44	50	1		
1	D1	264	Total	C	N	O	S	0	0
			2101	1334	345	412	10		
1	D2	264	Total	C	N	O	S	0	0
			2101	1334	345	412	10		
1	D3	264	Total	C	N	O	S	0	0
			2101	1334	345	412	10		
1	D4	264	Total	C	N	O	S	0	0
			2101	1334	345	412	10		
1	D5	264	Total	C	N	O	S	0	0
			2101	1334	345	412	10		

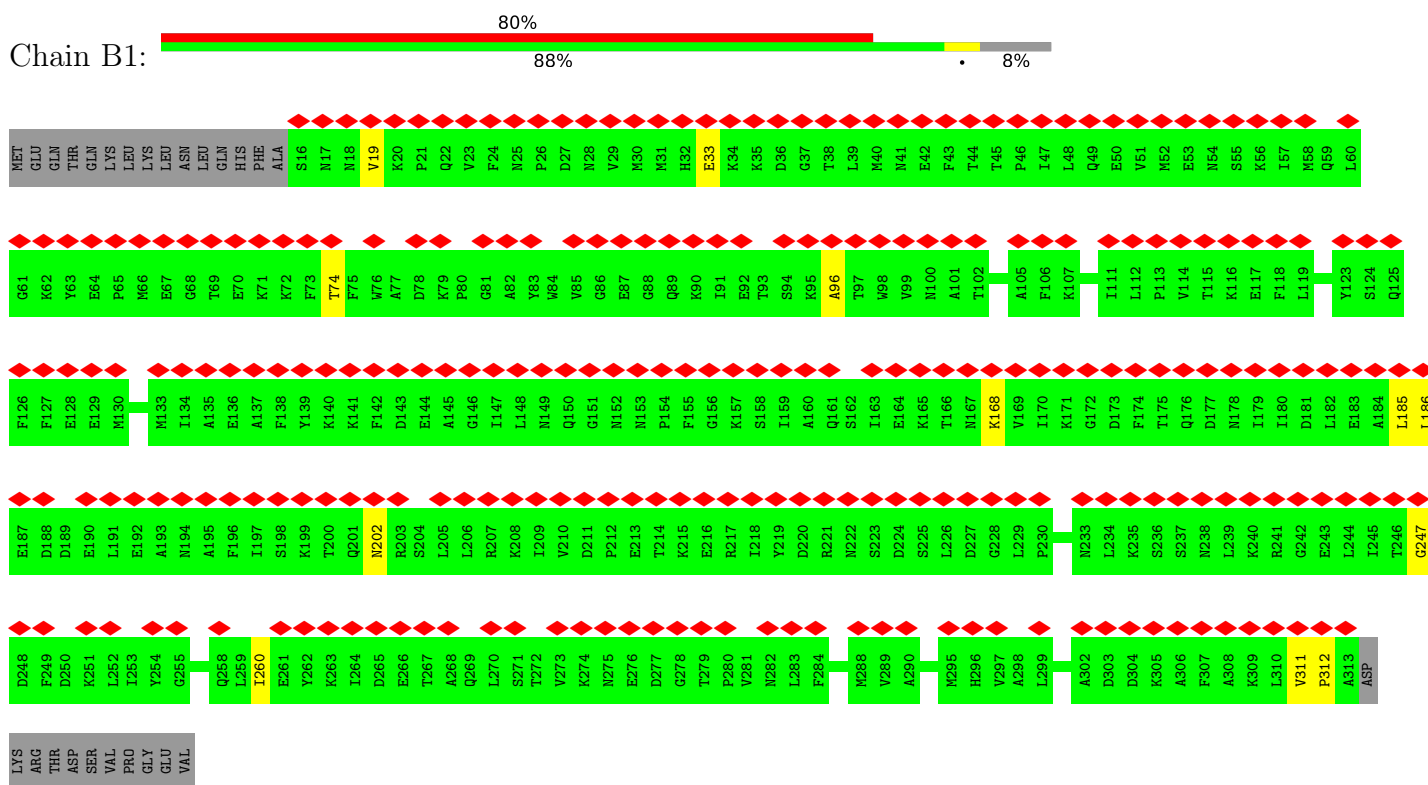
- Molecule 2 is a protein called Portal protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	P1	481	Total	C	N	O	S	0	0
			3941	2467	663	799	12		
2	P2	466	Total	C	N	O	S	0	0
			3819	2392	643	773	11		
2	P3	481	Total	C	N	O	S	0	0
			3941	2467	663	799	12		
2	P4	466	Total	C	N	O	S	0	0
			3819	2392	643	773	11		
2	P5	466	Total	C	N	O	S	0	0
			3819	2392	643	773	11		
2	P6	481	Total	C	N	O	S	0	0
			3941	2467	663	799	12		
2	P7	466	Total	C	N	O	S	0	0
			3819	2392	643	773	11		
2	P8	481	Total	C	N	O	S	0	0
			3941	2467	663	799	12		
2	P9	466	Total	C	N	O	S	0	0
			3819	2392	643	773	11		
2	Q1	477	Total	C	N	O	S	0	0
			3910	2449	656	793	12		
2	Q2	466	Total	C	N	O	S	0	0
			3819	2392	643	773	11		
2	Q3	466	Total	C	N	O	S	0	0
			3819	2392	643	773	11		

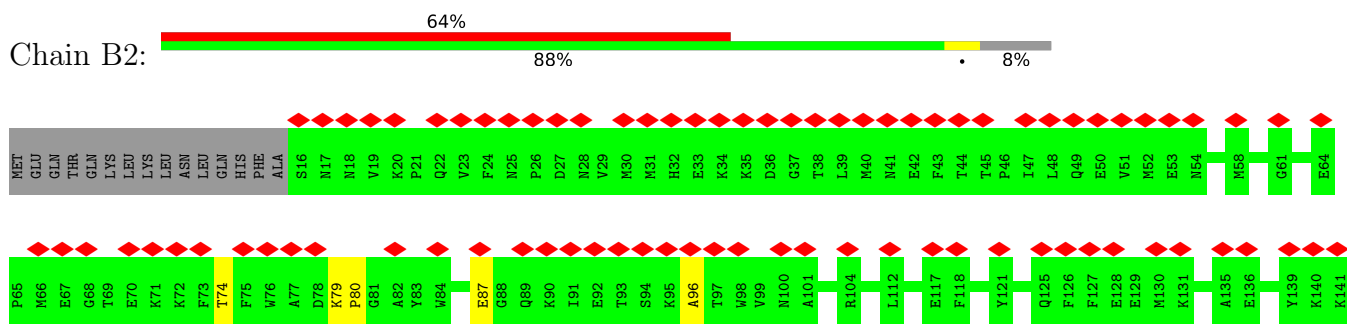
3 Residue-property plots

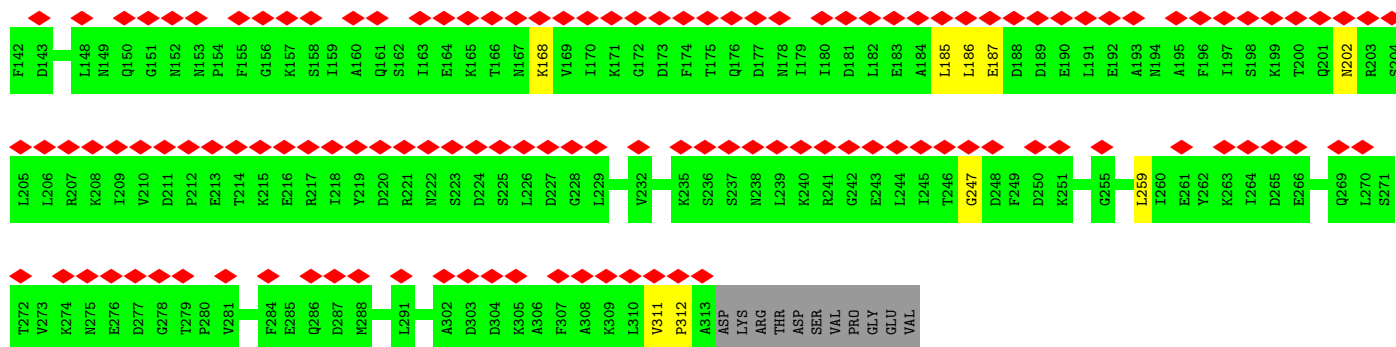
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: Major capsid protein

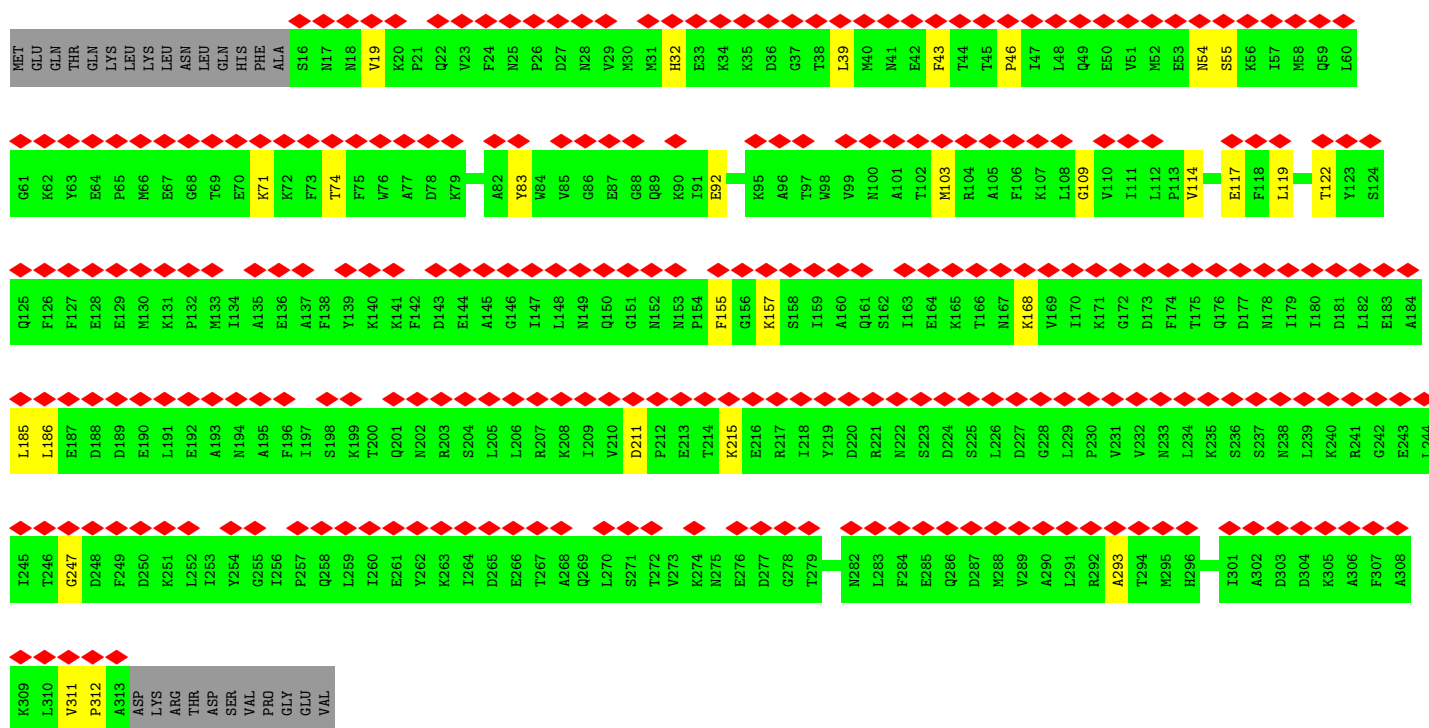
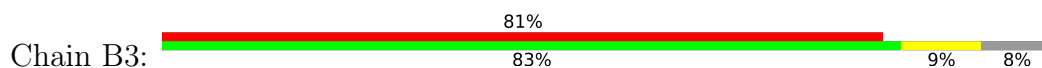


- Molecule 1: Major capsid protein

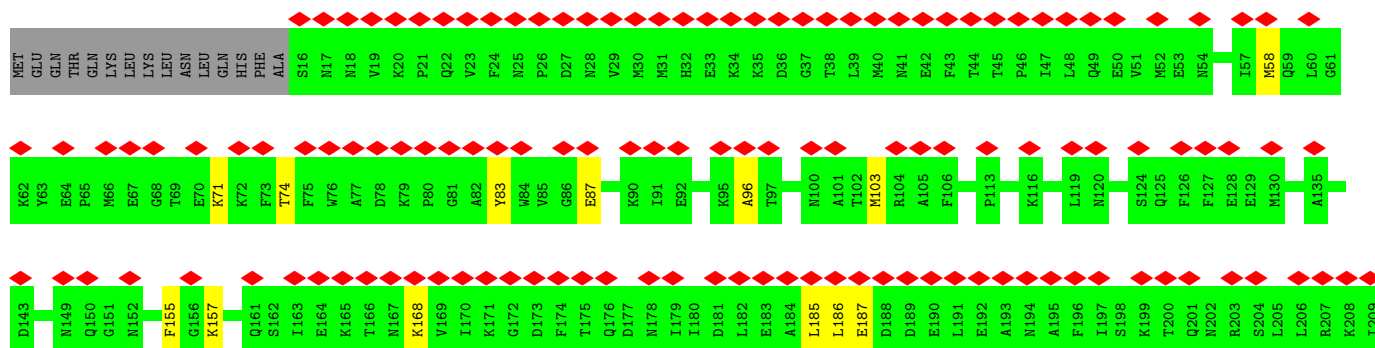
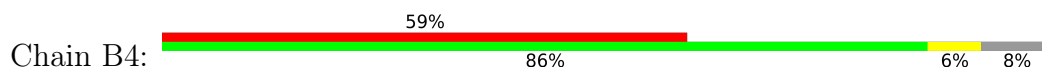


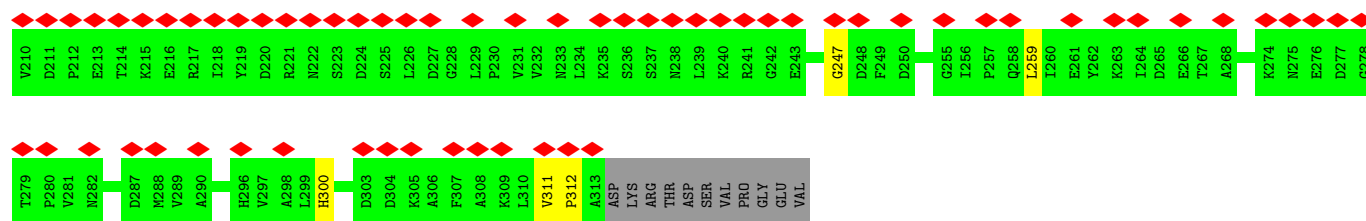


• Molecule 1: Major capsid protein

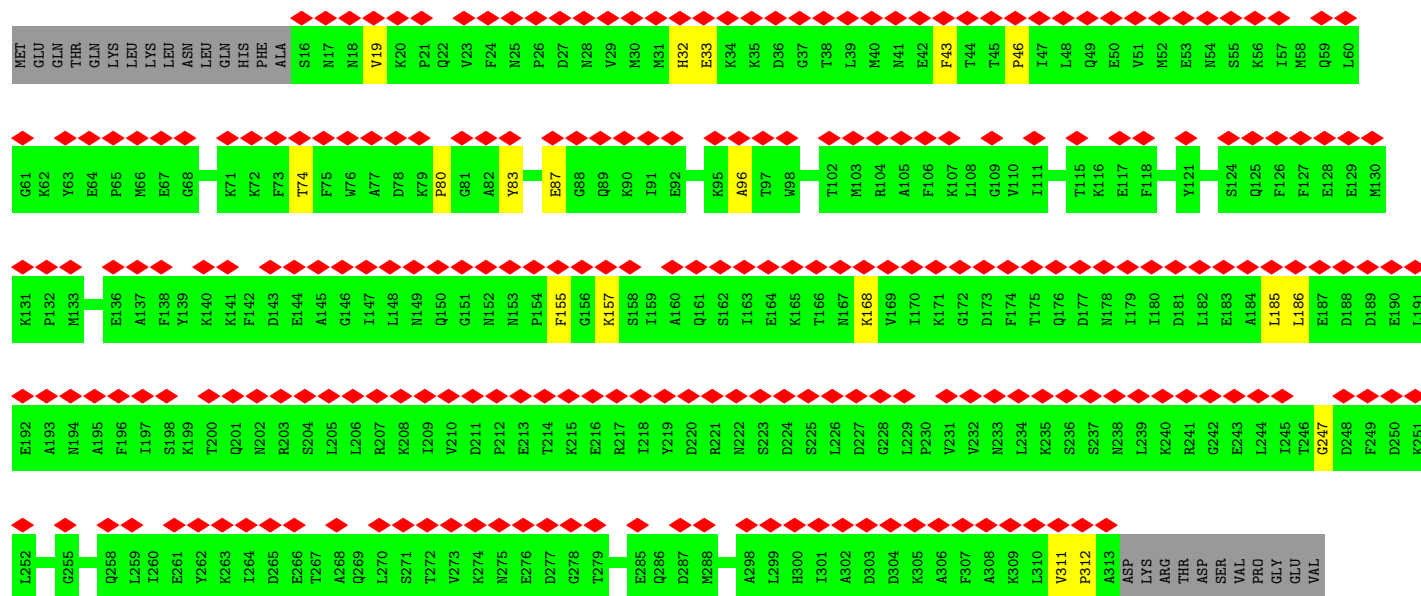
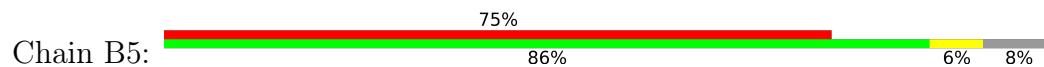


• Molecule 1: Major capsid protein

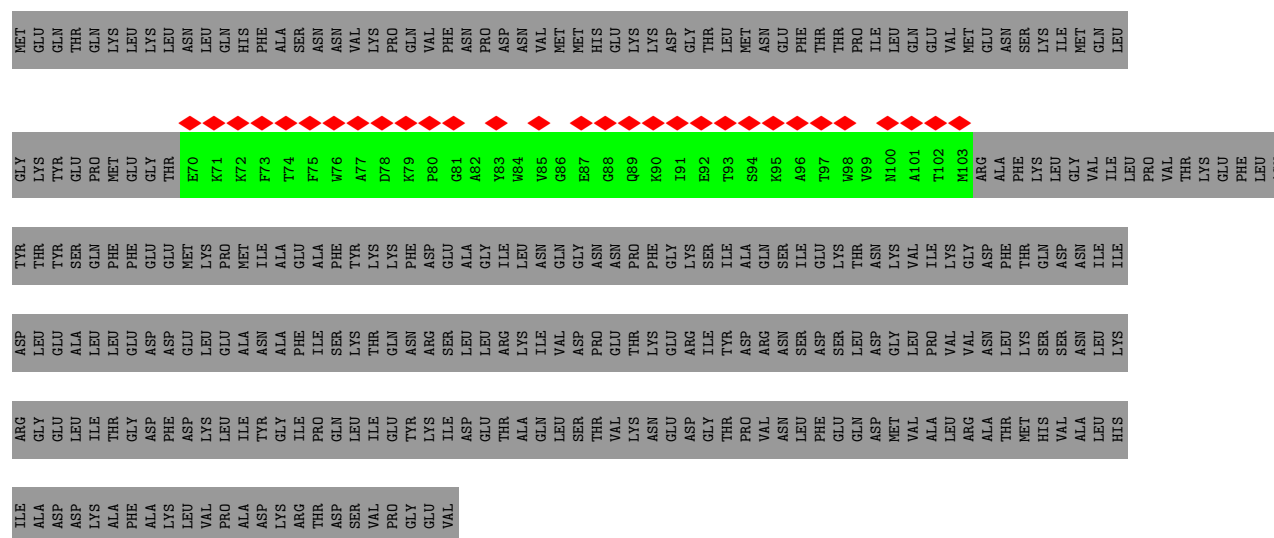




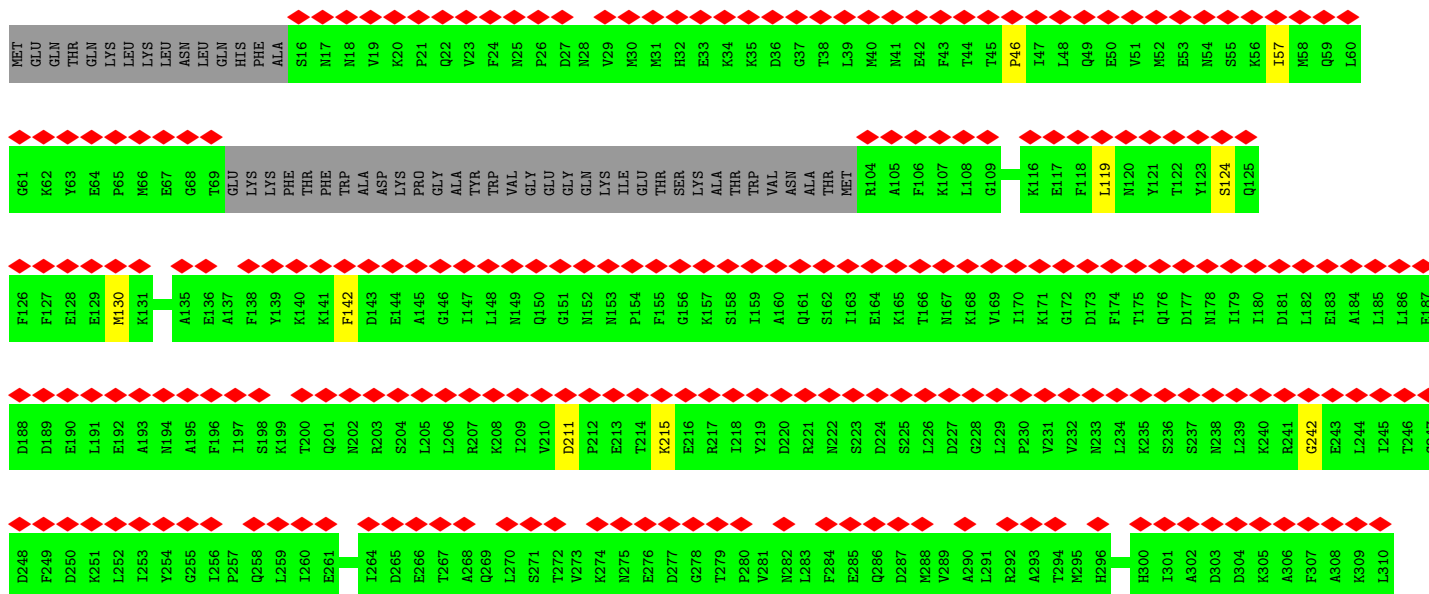
- Molecule 1: Major capsid protein

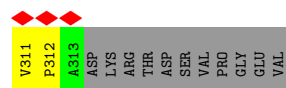


- Molecule 1: Major capsid protein

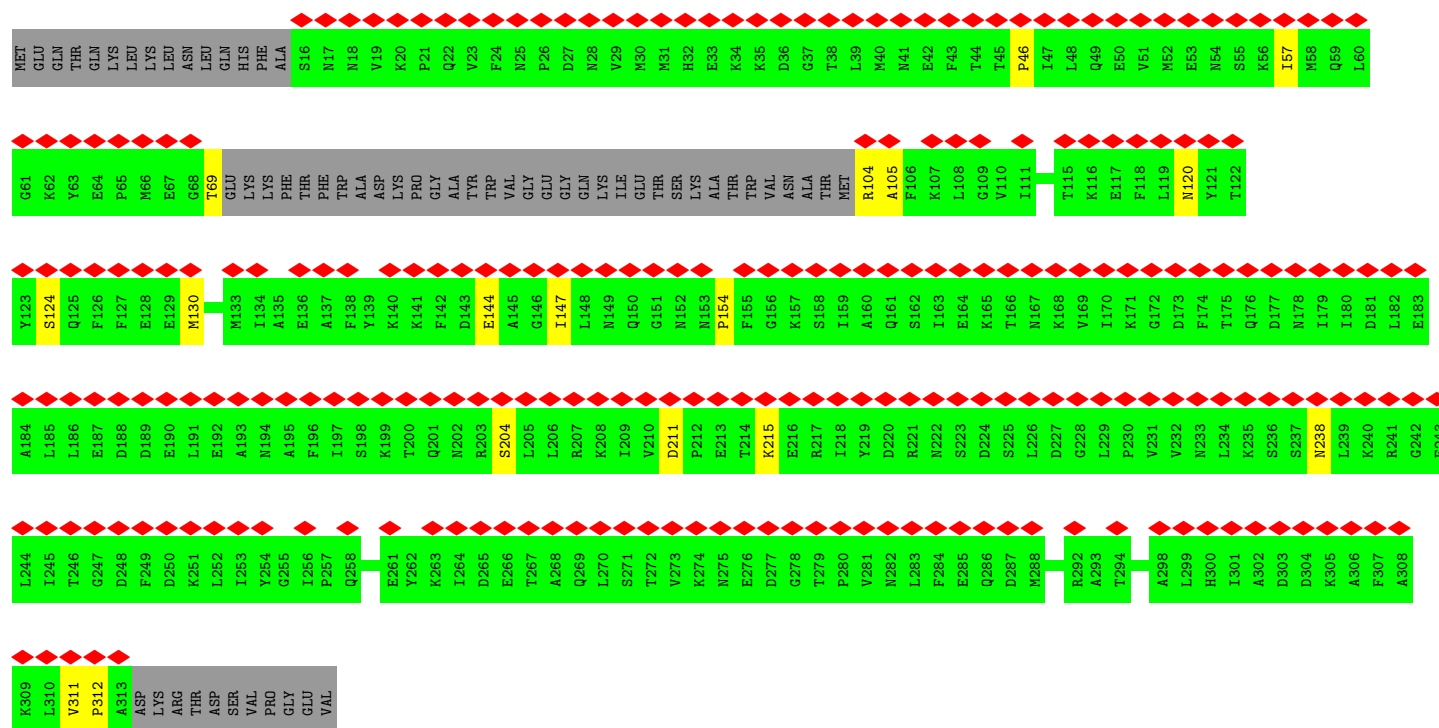
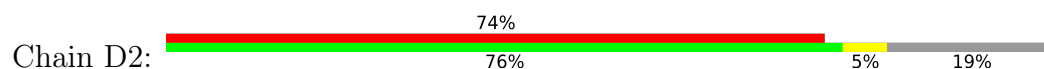


- Molecule 1: Major capsid protein

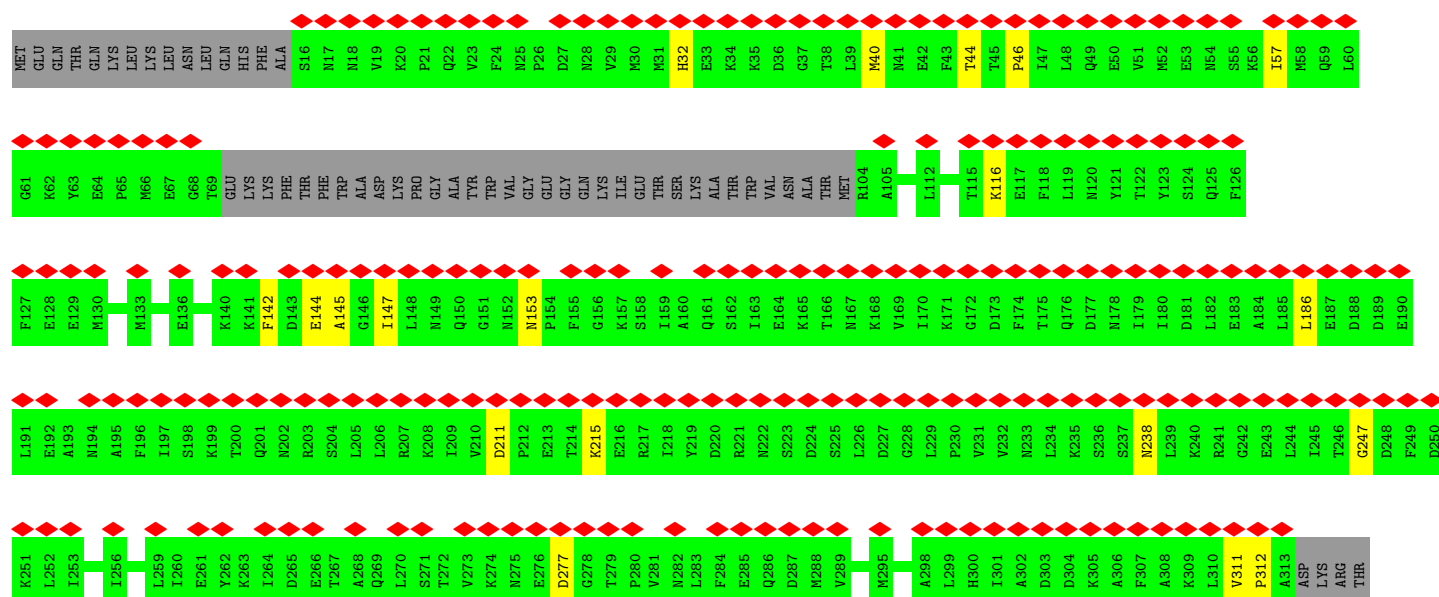
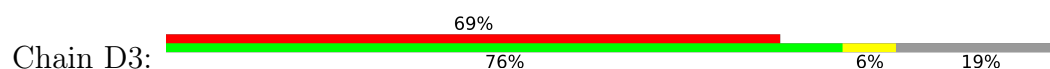




• Molecule 1: Major capsid protein



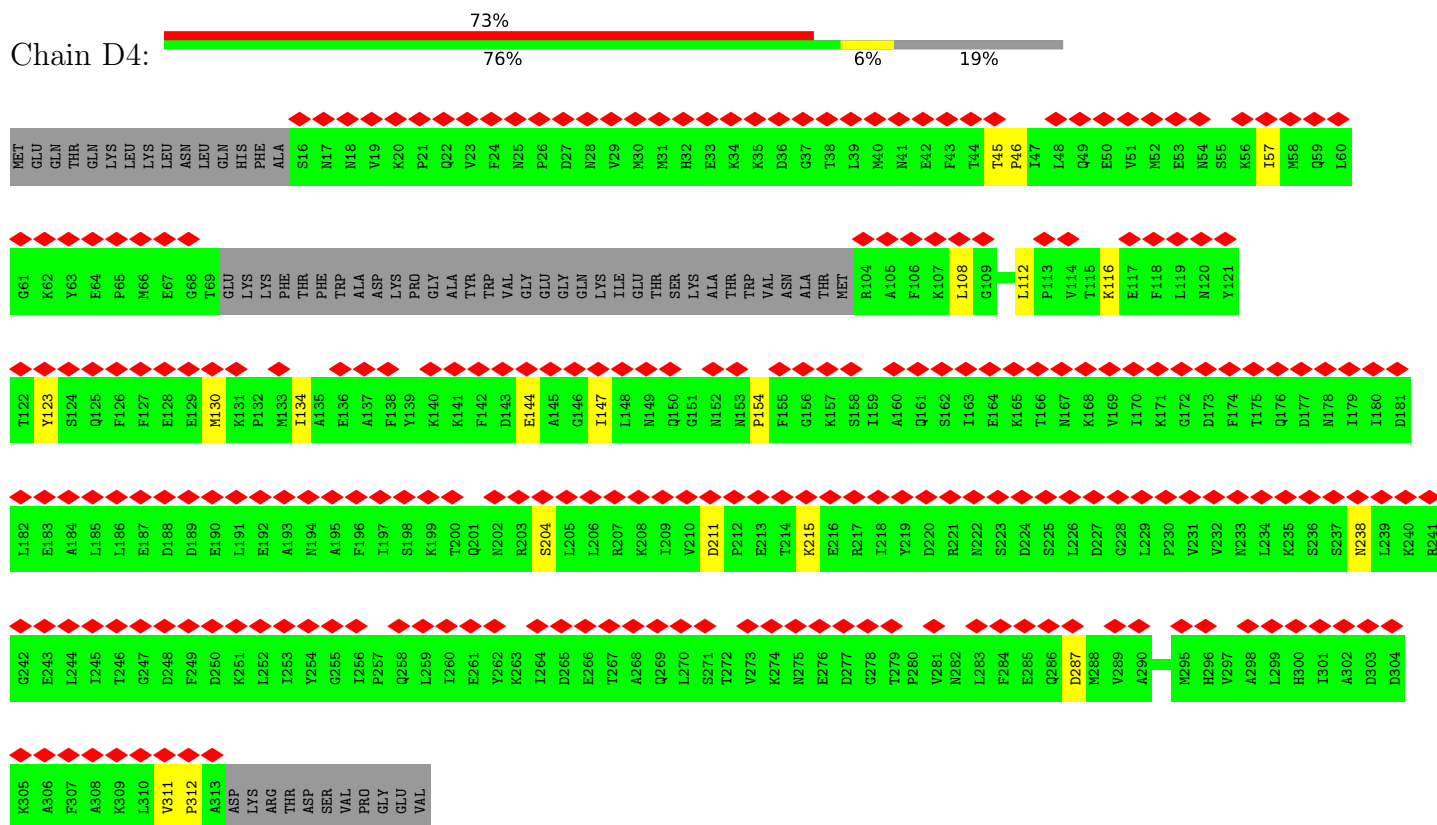
• Molecule 1: Major capsid protein



ASP
SER
VAL
PRO
GLY
GLU
VAL

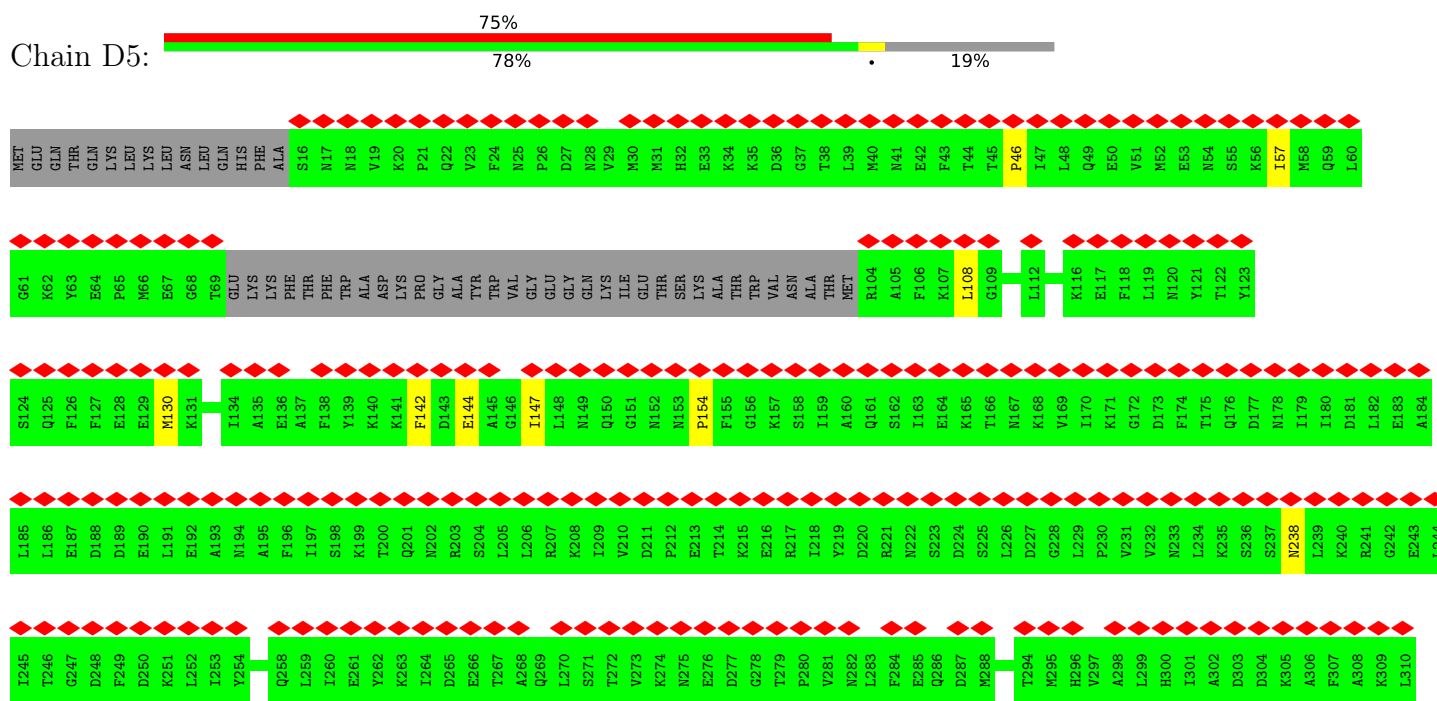
• Molecule 1: Major capsid protein

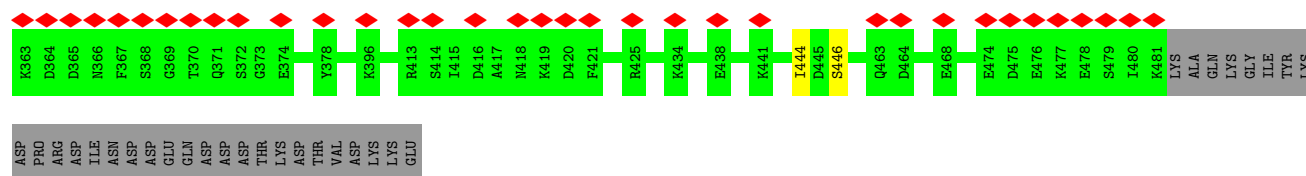
Chain D4:



• Molecule 1: Major capsid protein

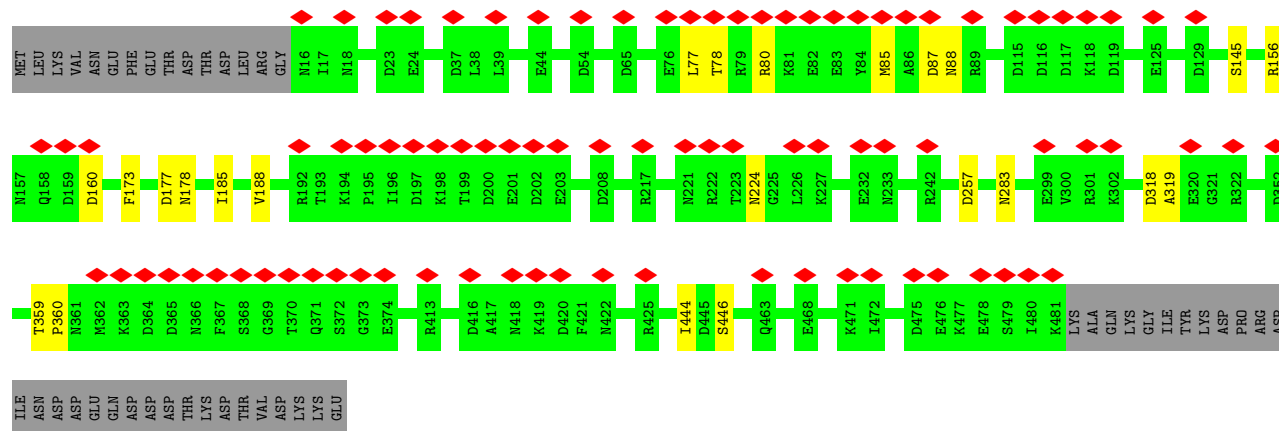
Chain D5:





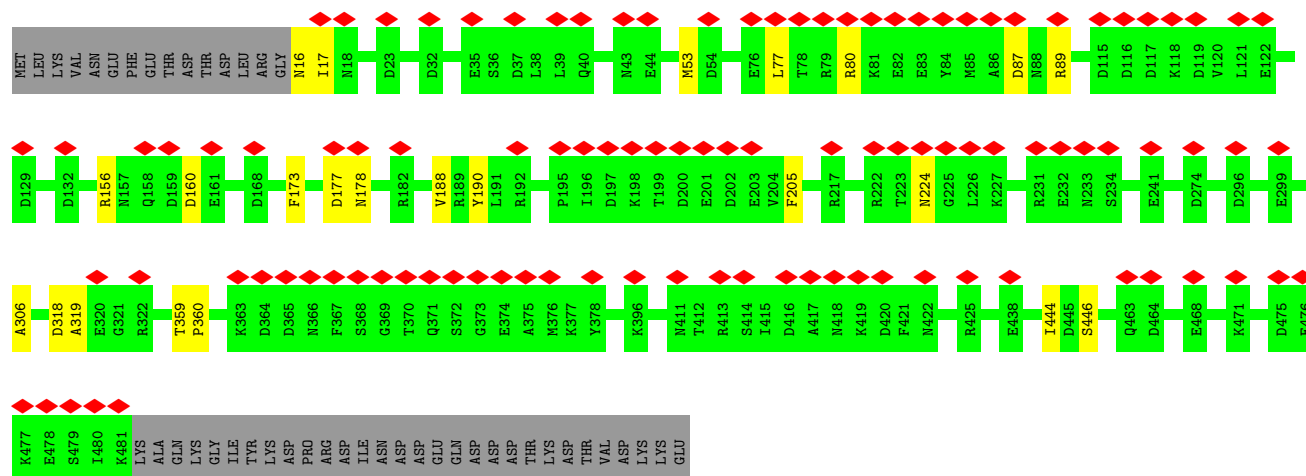
• Molecule 2: Portal protein

Chain P4: 17% 87% 5% 9%



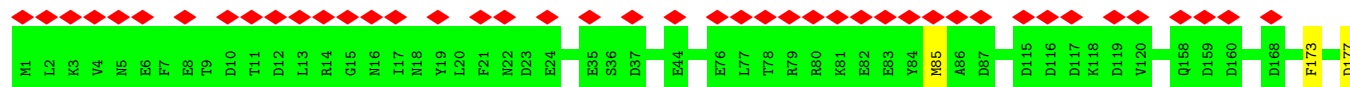
• Molecule 2: Portal protein

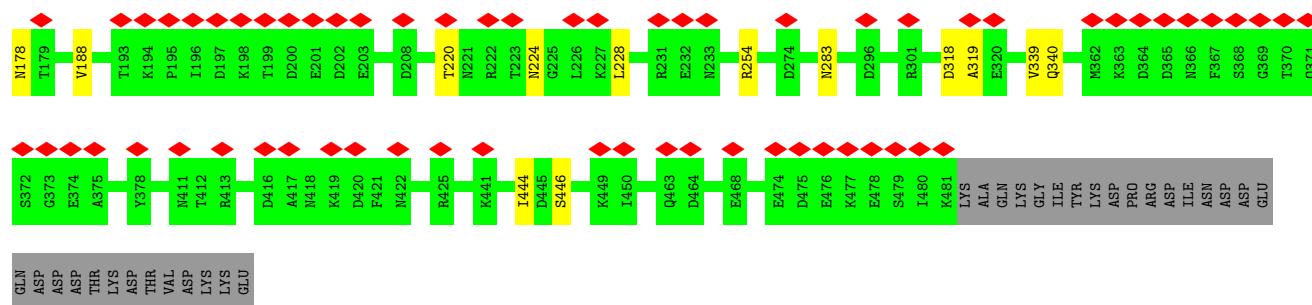
Chain P5: 21% 87% 5% 9%



• Molecule 2: Portal protein

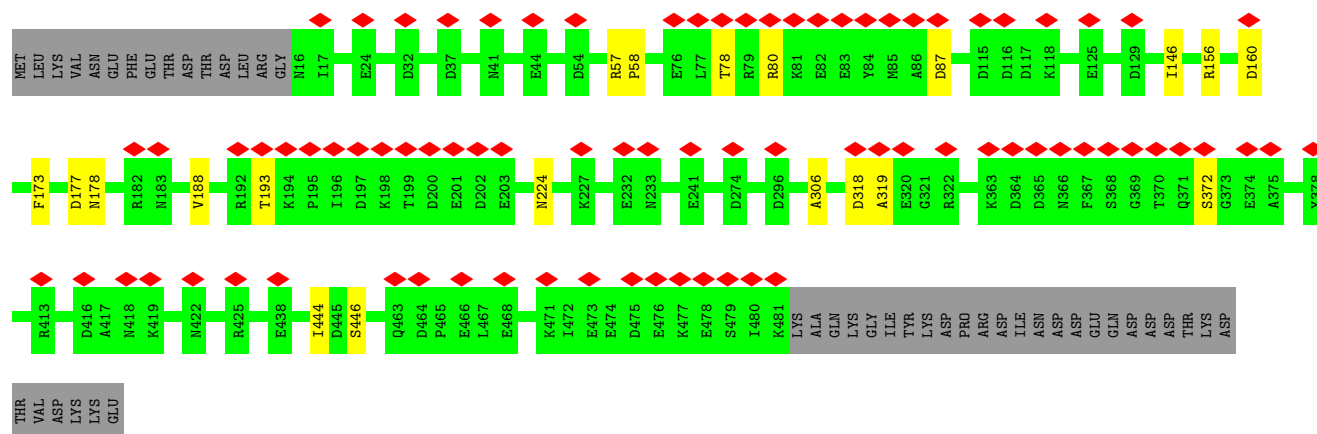
Chain P6: 21% 91% 6%





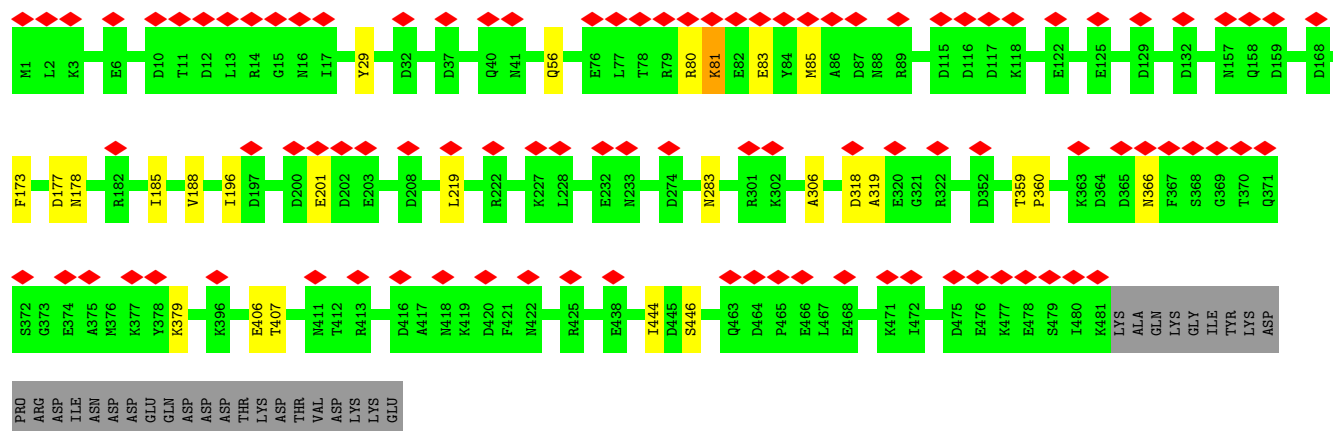
- Molecule 2: Portal protein

Chain P7: 16% 87% 9%



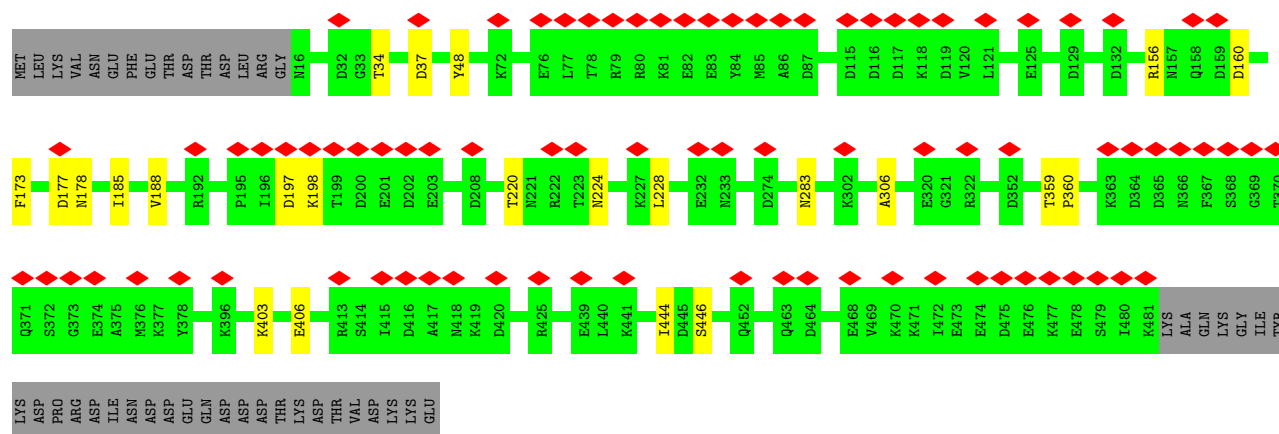
- Molecule 2: Portal protein

Chain P8: 19% 89% 5% 6%

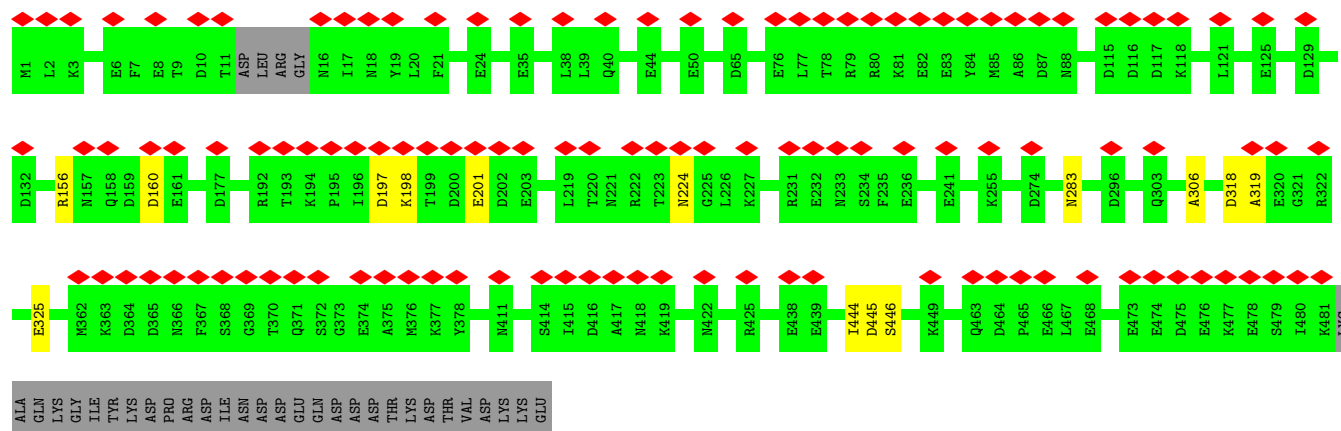
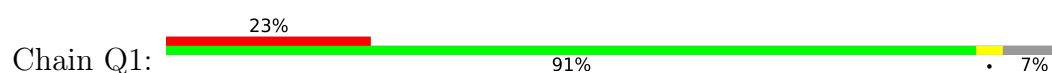


- Molecule 2: Portal protein

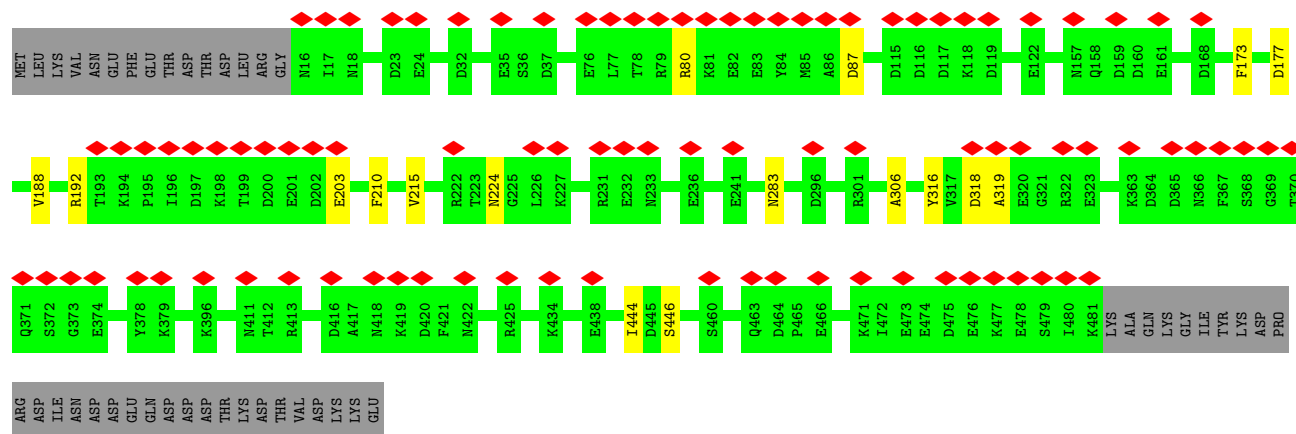
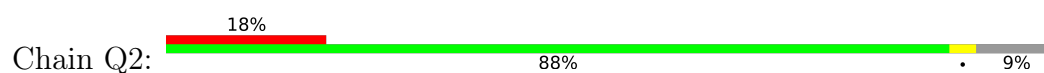
Chain P9: 17% 87% 5% 9%



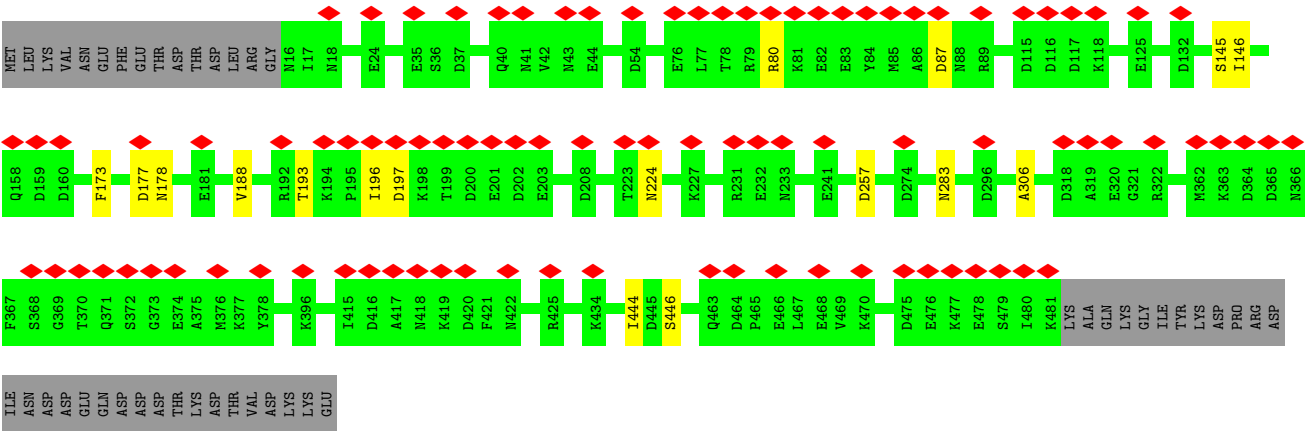
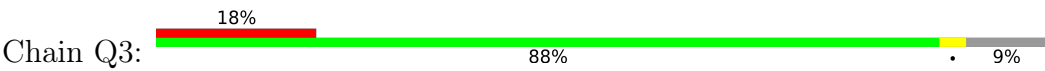
• Molecule 2: Portal protein



• Molecule 2: Portal protein



• Molecule 2: Portal protein



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	59457	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 ($e^-/\text{\AA}^2$)	35.26	Depositor
Minimum defocus (nm)	700	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	2.499	Depositor
Minimum map value	-1.503	Depositor
Average map value	0.026	Depositor
Map value standard deviation	0.161	Depositor
Recommended contour level	0.645	Depositor
Map size (Å)	319.2, 319.2, 319.2	wwPDB
Map dimensions	240, 240, 240	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.33, 1.33, 1.33	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	B1	0.20	0/2422	0.54	0/3269
1	B2	0.20	0/2422	0.53	0/3269
1	B3	0.19	0/2422	0.52	0/3269
1	B4	0.20	0/2422	0.55	0/3269
1	B5	0.19	0/2422	0.52	0/3269
1	C1	0.24	0/285	0.52	0/385
1	C2	0.27	0/285	0.53	0/385
1	C3	0.23	0/285	0.53	0/385
1	C4	0.27	0/285	0.57	0/385
1	C5	0.24	0/285	0.50	0/385
1	D1	0.20	0/2135	0.53	0/2878
1	D2	0.18	0/2135	0.51	0/2878
1	D3	0.19	0/2135	0.53	0/2878
1	D4	0.18	0/2135	0.49	0/2878
1	D5	0.18	0/2135	0.50	0/2878
2	P1	0.31	0/4008	0.56	0/5405
2	P2	0.31	0/3885	0.55	0/5240
2	P3	0.31	0/4008	0.57	0/5405
2	P4	0.31	0/3885	0.54	0/5240
2	P5	0.31	0/3885	0.57	0/5240
2	P6	0.31	0/4008	0.58	0/5405
2	P7	0.32	0/3885	0.56	0/5240
2	P8	0.31	0/4008	0.56	0/5405
2	P9	0.31	0/3885	0.55	0/5240
2	Q1	0.31	0/3976	0.54	0/5361
2	Q2	0.31	0/3885	0.54	0/5240
2	Q3	0.31	0/3885	0.55	0/5240
All	All	0.28	0/71413	0.54	0/96321

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

Mol	Chain	#Chirality outliers	#Planarity outliers
2	P5	0	1
2	P6	0	1
All	All	0	2

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	P5	89	ARG	Sidechain
2	P6	254	ARG	Sidechain

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	B1	2377	0	2370	9	0
1	B2	2377	0	2370	13	0
1	B3	2377	0	2370	18	0
1	B4	2377	0	2370	15	0
1	B5	2377	0	2370	14	0
1	C1	276	0	264	0	0
1	C2	276	0	264	0	0
1	C3	276	0	264	1	0
1	C4	276	0	264	0	0
1	C5	276	0	264	0	0
1	D1	2101	0	2104	9	0
1	D2	2101	0	2104	16	0
1	D3	2101	0	2104	14	0
1	D4	2101	0	2104	14	0
1	D5	2101	0	2104	11	0
2	P1	3941	0	3812	17	0
2	P2	3819	0	3691	16	0
2	P3	3941	0	3812	15	0
2	P4	3819	0	3691	19	0
2	P5	3819	0	3691	16	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	P6	3941	0	3812	12	0
2	P7	3819	0	3691	15	0
2	P8	3941	0	3812	19	0
2	P9	3819	0	3691	18	0
2	Q1	3910	0	3780	13	0
2	Q2	3819	0	3691	13	0
2	Q3	3819	0	3691	14	0
All	All	70177	0	68555	255	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 2.

All (255) 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:B5:74:THR:HG23	1:D5:46:PRO:HA	1.67	0.76
1:B4:74:THR:HG23	1:D4:46:PRO:HA	1.68	0.75
1:B4:96:ALA:HB2	1:D4:130:MET:HE1	1.70	0.73
1:B2:96:ALA:HB2	1:D2:130:MET:HE1	1.70	0.73
1:D2:120:ASN:O	2:P4:78:THR:HG23	1.89	0.73
1:B1:74:THR:HG23	1:D1:46:PRO:HA	1.74	0.70
2:P1:283:ASN:ND2	2:Q3:306:ALA:O	2.23	0.69
1:B2:96:ALA:HB2	1:D2:130:MET:CE	2.23	0.69
1:B3:74:THR:HG23	1:D3:46:PRO:HA	1.76	0.68
2:P3:224:ASN:OD1	2:P3:226:LEU:N	2.31	0.64
2:P3:306:ALA:O	2:P4:283:ASN:ND2	2.32	0.62
1:B4:96:ALA:HB2	1:D4:130:MET:CE	2.31	0.61
2:P7:444:ILE:HD12	2:P8:446:SER:HB2	1.82	0.61
2:P2:444:ILE:HD12	2:P3:446:SER:HB2	1.82	0.60
2:P5:306:ALA:O	2:P6:283:ASN:ND2	2.35	0.60
1:D4:144:GLU:OE2	1:D4:238:ASN:ND2	2.36	0.59
2:Q1:306:ALA:O	2:Q2:283:ASN:ND2	2.36	0.59
2:P7:306:ALA:O	2:P8:283:ASN:ND2	2.36	0.58
2:P4:177:ASP:OD1	2:P4:178:ASN:N	2.37	0.58
1:B3:39:LEU:HD21	1:D2:69:THR:OG1	2.04	0.57
2:P1:177:ASP:OD1	2:P1:178:ASN:N	2.37	0.57
2:P9:173:PHE:CZ	2:P9:188:VAL:HG21	2.39	0.57
1:B5:96:ALA:HB2	1:D5:130:MET:CE	2.34	0.57
2:P3:173:PHE:CZ	2:P3:188:VAL:HG21	2.40	0.56
2:P8:444:ILE:HD12	2:P9:446:SER:HB2	1.88	0.56
2:Q3:177:ASP:OD1	2:Q3:178:ASN:N	2.39	0.56

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:P5:53:MET:HE1	2:P5:205:PHE:CE2	2.41	0.56
2:Q3:80:ARG:HE	2:Q3:87:ASP:HA	1.71	0.56
2:P4:444:ILE:HD12	2:P5:446:SER:HB2	1.89	0.55
2:P7:177:ASP:OD1	2:P7:178:ASN:N	2.40	0.55
2:P9:444:ILE:HD12	2:Q1:446:SER:HB2	1.88	0.55
1:D3:144:GLU:OE2	1:D3:238:ASN:ND2	2.40	0.55
2:P1:306:ALA:O	2:P2:283:ASN:ND2	2.40	0.55
1:D5:144:GLU:OE2	1:D5:238:ASN:ND2	2.39	0.55
2:P3:177:ASP:OD1	2:P3:178:ASN:N	2.40	0.55
2:P8:177:ASP:OD1	2:P8:178:ASN:N	2.41	0.54
1:B1:96:ALA:HB2	1:D1:130:MET:CE	2.37	0.54
2:P5:444:ILE:HD12	2:P6:446:SER:HB2	1.90	0.54
2:P1:173:PHE:CZ	2:P1:188:VAL:HG21	2.42	0.54
2:P9:306:ALA:O	2:Q1:283:ASN:ND2	2.36	0.54
1:D2:104:ARG:NH1	1:D2:105:ALA:O	2.41	0.54
2:P6:177:ASP:OD1	2:P6:178:ASN:N	2.41	0.54
1:B4:259:LEU:HD12	1:B4:259:LEU:H	1.73	0.54
2:P3:200:ASP:OD1	2:P3:200:ASP:N	2.41	0.54
2:P8:306:ALA:O	2:P9:283:ASN:ND2	2.41	0.53
2:P1:446:SER:HB2	2:Q3:444:ILE:HD12	1.90	0.53
2:P8:173:PHE:CZ	2:P8:188:VAL:HG21	2.44	0.53
2:P5:177:ASP:OD1	2:P5:178:ASN:N	2.42	0.53
2:Q3:196:ILE:HD12	2:Q3:196:ILE:C	2.33	0.53
2:P8:366:ASN:O	2:P8:379:LYS:NZ	2.37	0.53
2:P5:173:PHE:CZ	2:P5:188:VAL:HG21	2.43	0.53
2:P2:80:ARG:NH2	2:P2:86:ALA:O	2.40	0.53
2:Q2:173:PHE:CZ	2:Q2:188:VAL:HG21	2.44	0.53
2:Q2:444:ILE:HD12	2:Q3:446:SER:HB2	1.90	0.52
2:Q2:306:ALA:O	2:Q3:283:ASN:ND2	2.40	0.52
1:B5:96:ALA:HB2	1:D5:130:MET:HE1	1.91	0.52
2:P3:444:ILE:HD12	2:P4:446:SER:HB2	1.90	0.52
2:P9:34:THR:N	2:P9:37:ASP:OD2	2.34	0.52
2:P2:80:ARG:HE	2:P2:87:ASP:HA	1.75	0.52
1:D2:144:GLU:OE2	1:D2:238:ASN:ND2	2.40	0.52
1:B1:311:VAL:HG13	1:B1:312:PRO:HD2	1.93	0.51
2:Q3:177:ASP:OD1	2:Q3:177:ASP:C	2.53	0.51
1:D1:311:VAL:HG23	1:D1:312:PRO:HD2	1.92	0.51
2:P2:173:PHE:CZ	2:P2:188:VAL:HG21	2.45	0.51
2:P7:173:PHE:CZ	2:P7:188:VAL:HG21	2.45	0.51
2:P9:156:ARG:NH2	2:P9:160:ASP:OD1	2.43	0.51
2:P4:173:PHE:CZ	2:P4:188:VAL:HG21	2.46	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:Q2:177:ASP:OD1	2:Q2:177:ASP:C	2.53	0.51
1:B1:96:ALA:HB2	1:D1:130:MET:HE2	1.93	0.50
1:D5:57:ILE:HG22	1:D5:147:ILE:HD11	1.93	0.50
2:P9:177:ASP:OD1	2:P9:178:ASN:N	2.43	0.50
1:B4:311:VAL:HG13	1:B4:312:PRO:HD2	1.93	0.50
2:P4:177:ASP:OD1	2:P4:177:ASP:C	2.54	0.50
2:P2:177:ASP:OD1	2:P2:178:ASN:N	2.44	0.50
2:P6:444:ILE:HD12	2:P7:446:SER:HB2	1.93	0.50
2:Q3:173:PHE:CZ	2:Q3:188:VAL:HG21	2.46	0.50
1:D2:311:VAL:HG23	1:D2:312:PRO:HD2	1.93	0.50
2:P5:77:LEU:HD12	2:P5:80:ARG:HB3	1.94	0.50
2:P8:177:ASP:OD1	2:P8:177:ASP:C	2.55	0.50
1:D4:311:VAL:HG23	1:D4:312:PRO:HD2	1.94	0.50
1:D5:311:VAL:HG23	1:D5:312:PRO:HD2	1.94	0.49
1:B3:71:LYS:HB3	1:B3:103:MET:HG2	1.92	0.49
2:P6:177:ASP:OD1	2:P6:177:ASP:C	2.55	0.49
2:P9:403:LYS:NZ	2:P9:406:GLU:OE2	2.40	0.49
2:P6:173:PHE:CZ	2:P6:188:VAL:HG21	2.48	0.49
1:B5:311:VAL:HG13	1:B5:312:PRO:HD2	1.94	0.49
2:P7:177:ASP:OD1	2:P7:177:ASP:C	2.55	0.49
1:C3:78:ASP:HB2	1:C3:97:THR:HB	1.93	0.49
1:B4:186:LEU:HD21	1:B4:247:GLY:HA2	1.94	0.49
1:B5:19:VAL:HG11	1:D4:154:PRO:HB3	1.94	0.49
2:Q1:197:ASP:OD1	2:Q1:198:LYS:N	2.41	0.49
2:P1:177:ASP:OD1	2:P1:177:ASP:C	2.54	0.49
2:P9:197:ASP:OD1	2:P9:198:LYS:N	2.38	0.49
2:Q3:196:ILE:HD12	2:Q3:197:ASP:N	2.28	0.49
2:P5:177:ASP:OD1	2:P5:177:ASP:C	2.56	0.49
1:B2:87:GLU:OE2	1:B3:32:HIS:HB3	2.12	0.48
1:B5:83:TYR:O	1:D5:108:LEU:HA	2.13	0.48
2:P3:177:ASP:OD1	2:P3:177:ASP:C	2.56	0.48
1:B4:87:GLU:OE2	1:B5:32:HIS:HB3	2.13	0.48
2:P1:224:ASN:OD1	2:P1:224:ASN:C	2.56	0.48
1:B1:186:LEU:HD21	1:B1:247:GLY:HA2	1.96	0.48
1:D3:311:VAL:HG23	1:D3:312:PRO:HD2	1.96	0.48
2:P2:318:ASP:OD1	2:P2:319:ALA:N	2.46	0.48
1:B5:168:LYS:HG2	1:B5:185:LEU:HD23	1.94	0.48
2:P2:306:ALA:O	2:P3:283:ASN:ND2	2.46	0.48
2:P9:224:ASN:OD1	2:P9:224:ASN:C	2.57	0.48
1:B5:80:PRO:HD3	1:D5:130:MET:CE	2.43	0.48
1:B2:311:VAL:HG13	1:B2:312:PRO:HD2	1.94	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:P1:444:ILE:HD12	2:P2:446:SER:HB2	1.95	0.47
2:P4:224:ASN:C	2:P4:224:ASN:OD1	2.56	0.47
1:B3:114:VAL:HG11	1:B3:119:LEU:HD13	1.96	0.47
1:B2:259:LEU:H	1:B2:259:LEU:HD12	1.78	0.47
2:P4:145:SER:OG	2:P4:257:ASP:OD2	2.29	0.47
1:D1:211:ASP:O	1:D1:215:LYS:N	2.44	0.47
2:Q1:224:ASN:OD1	2:Q1:224:ASN:C	2.57	0.47
2:Q2:224:ASN:OD1	2:Q2:224:ASN:C	2.58	0.47
1:B4:58:MET:HG3	2:P8:201:GLU:OE1	2.14	0.47
2:P2:177:ASP:OD1	2:P2:177:ASP:C	2.57	0.47
2:P6:224:ASN:OD1	2:P6:224:ASN:C	2.57	0.47
1:B3:168:LYS:HG2	1:B3:185:LEU:HD23	1.96	0.47
1:D3:211:ASP:O	1:D3:215:LYS:N	2.46	0.47
1:D4:311:VAL:CG2	1:D4:312:PRO:HD2	2.45	0.47
1:B3:186:LEU:HD21	1:B3:247:GLY:HA2	1.96	0.47
1:B4:71:LYS:HB3	1:B4:103:MET:HG2	1.98	0.46
2:P5:80:ARG:HE	2:P5:87:ASP:HA	1.79	0.46
2:P9:177:ASP:OD1	2:P9:177:ASP:C	2.58	0.46
2:P9:177:ASP:HA	2:P9:185:ILE:HD11	1.97	0.46
1:B4:87:GLU:OE1	1:B5:33:GLU:N	2.48	0.46
2:Q2:192:ARG:NH1	2:Q2:203:GLU:OE2	2.48	0.46
2:P4:80:ARG:HE	2:P4:87:ASP:HA	1.80	0.46
2:P2:366:ASN:O	2:P2:379:LYS:NZ	2.47	0.46
2:P4:85:MET:SD	2:P4:85:MET:N	2.86	0.46
2:Q1:444:ILE:HD12	2:Q2:446:SER:HB2	1.96	0.46
2:P3:444:ILE:CD1	2:P4:446:SER:HB2	2.46	0.46
2:P5:156:ARG:NH2	2:P5:160:ASP:OD1	2.46	0.46
1:B1:33:GLU:N	1:B5:87:GLU:OE1	2.48	0.45
1:D3:186:LEU:HD11	1:D3:247:GLY:HA2	1.99	0.45
1:B4:168:LYS:HG2	1:B4:185:LEU:HD23	1.98	0.45
1:D3:116:LYS:HD2	2:P7:78:THR:HG23	1.98	0.45
1:B2:87:GLU:OE2	1:B3:117:GLU:HB2	2.17	0.45
2:P3:156:ARG:NH2	2:P3:160:ASP:OD1	2.47	0.45
1:B3:83:TYR:CD2	1:B3:92:GLU:HB2	2.52	0.45
1:B2:187:GLU:OE2	1:D2:204:SER:N	2.39	0.45
2:P1:9:THR:HB	2:P1:11:THR:HG22	1.99	0.45
1:B2:80:PRO:HD3	1:D2:130:MET:HE3	1.99	0.45
1:B3:311:VAL:HG13	1:B3:312:PRO:HD2	1.99	0.45
2:P1:318:ASP:OD1	2:P1:319:ALA:N	2.50	0.44
2:P3:318:ASP:OD1	2:P3:319:ALA:N	2.50	0.44
2:P7:193:THR:HG23	2:P7:193:THR:O	2.18	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B3:32:HIS:ND1	1:B3:122:THR:OG1	2.43	0.44
2:Q2:318:ASP:OD1	2:Q2:319:ALA:N	2.50	0.44
2:P6:444:ILE:CD1	2:P7:446:SER:HB2	2.47	0.44
1:D3:32:HIS:O	1:D3:40:MET:HE2	2.16	0.44
1:B1:19:VAL:HG11	1:D5:154:PRO:HB3	1.99	0.44
1:D1:311:VAL:CG2	1:D1:312:PRO:HD2	2.48	0.44
1:D5:311:VAL:CG2	1:D5:312:PRO:HD2	2.48	0.44
2:P5:318:ASP:OD1	2:P5:319:ALA:N	2.49	0.44
1:D4:112:LEU:CD1	1:D4:134:ILE:HD11	2.47	0.44
2:P7:444:ILE:CD1	2:P8:446:SER:HB2	2.48	0.44
2:Q1:325:GLU:OE2	2:Q2:316:TYR:OH	2.32	0.44
2:Q2:210:PHE:CD2	2:Q2:215:VAL:HG22	2.53	0.44
1:D3:57:ILE:HG22	1:D3:147:ILE:HD11	2.00	0.43
2:P4:156:ARG:NH2	2:P4:160:ASP:OD1	2.46	0.43
1:B2:168:LYS:HG2	1:B2:185:LEU:HD23	1.98	0.43
1:B2:186:LEU:HD21	1:B2:247:GLY:HA2	2.00	0.43
1:B3:211:ASP:O	1:B3:215:LYS:HA	2.18	0.43
2:P5:16:ASN:O	2:P5:17:ILE:C	2.60	0.43
2:P9:220:THR:HG22	2:P9:228:LEU:HA	1.99	0.43
2:P8:83:GLU:C	2:P8:85:MET:H	2.26	0.43
1:B4:187:GLU:OE2	1:D4:204:SER:N	2.50	0.43
1:D3:311:VAL:CG2	1:D3:312:PRO:HD2	2.49	0.43
1:B4:83:TYR:O	1:D4:108:LEU:HA	2.18	0.43
2:Q1:156:ARG:NH2	2:Q1:160:ASP:OD1	2.47	0.43
1:B5:186:LEU:HD21	1:B5:247:GLY:HA2	2.00	0.43
2:P7:224:ASN:C	2:P7:224:ASN:OD1	2.61	0.43
2:P9:444:ILE:CD1	2:Q1:446:SER:HB2	2.49	0.43
2:P4:444:ILE:CD1	2:P5:446:SER:HB2	2.48	0.43
1:B2:79:LYS:HB3	1:B2:80:PRO:HD2	2.01	0.43
1:B3:19:VAL:HG11	1:D2:154:PRO:HB3	2.01	0.43
2:P4:318:ASP:OD1	2:P4:319:ALA:N	2.52	0.43
1:D5:57:ILE:HD11	1:D5:142:PHE:CD2	2.54	0.42
1:D3:57:ILE:CG2	1:D3:147:ILE:HD11	2.49	0.42
2:P2:359:THR:HG23	2:P2:360:PRO:HD2	2.01	0.42
2:P7:156:ARG:NH2	2:P7:160:ASP:OD1	2.49	0.42
2:P8:29:TYR:CZ	2:P8:56:GLN:NE2	2.87	0.42
2:Q1:318:ASP:OD1	2:Q1:319:ALA:N	2.52	0.42
2:Q1:444:ILE:CD1	2:Q2:446:SER:HB2	2.48	0.42
1:B5:155:PHE:C	1:B5:157:LYS:H	2.27	0.42
1:D2:211:ASP:O	1:D2:215:LYS:N	2.51	0.42
2:P5:224:ASN:OD1	2:P5:224:ASN:C	2.62	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:P7:80:ARG:HE	2:P7:87:ASP:HA	1.85	0.42
1:B1:202:ASN:OD1	1:B1:202:ASN:C	2.63	0.42
2:P1:446:SER:HB2	2:Q3:444:ILE:CD1	2.49	0.42
1:D4:211:ASP:O	1:D4:215:LYS:N	2.52	0.42
2:P2:278:TYR:CD1	2:P2:278:TYR:C	2.98	0.42
2:P4:359:THR:HG23	2:P4:360:PRO:HD2	2.01	0.42
1:D2:311:VAL:CG2	1:D2:312:PRO:HD2	2.49	0.42
2:P6:220:THR:HG22	2:P6:228:LEU:HA	2.01	0.42
2:P5:359:THR:HG23	2:P5:360:PRO:HD2	2.02	0.42
2:Q3:145:SER:OG	2:Q3:257:ASP:OD2	2.36	0.42
2:Q3:193:THR:HG23	2:Q3:193:THR:O	2.20	0.42
2:P6:318:ASP:OD1	2:P6:319:ALA:N	2.53	0.42
2:P7:57:ARG:O	2:P7:58:PRO:C	2.63	0.42
1:B3:109:GLY:HA2	1:B3:293:ALA:O	2.20	0.42
1:D2:57:ILE:HG22	1:D2:147:ILE:HD11	2.00	0.42
2:P8:177:ASP:HA	2:P8:185:ILE:HD11	2.02	0.42
1:D4:57:ILE:CG2	1:D4:147:ILE:HD11	2.50	0.41
1:D4:116:LYS:NZ	1:D4:287:ASP:OD1	2.48	0.41
2:P1:406:GLU:HG3	2:P1:407:THR:N	2.34	0.41
2:P3:80:ARG:HE	2:P3:87:ASP:HA	1.85	0.41
1:D1:57:ILE:HD11	1:D1:142:PHE:CD2	2.55	0.41
1:D1:119:LEU:O	1:D1:124:SER:HA	2.19	0.41
2:P8:444:ILE:CD1	2:P9:446:SER:HB2	2.50	0.41
2:P1:22:ASN:OD1	2:P1:23:ASP:N	2.53	0.41
1:B3:74:THR:HG21	1:D3:44:THR:O	2.20	0.41
1:D4:45:THR:HG23	1:D4:123:TYR:CZ	2.55	0.41
2:P1:80:ARG:HE	2:P1:87:ASP:HA	1.86	0.41
2:P1:359:THR:HG23	2:P1:360:PRO:HD2	2.01	0.41
2:P8:359:THR:HG23	2:P8:360:PRO:HD2	2.01	0.41
2:P5:53:MET:HE2	2:P5:190:TYR:CE2	2.55	0.41
1:B1:168:LYS:HG2	1:B1:185:LEU:HD23	2.02	0.41
2:P4:87:ASP:OD1	2:P4:88:ASN:N	2.53	0.41
2:P8:406:GLU:HG3	2:P8:407:THR:N	2.34	0.41
2:Q1:445:ASP:O	2:Q1:446:SER:CB	2.68	0.41
1:B2:202:ASN:C	1:B2:202:ASN:OD1	2.64	0.41
1:D2:124:SER:OG	2:P4:77:LEU:HD21	2.21	0.41
2:P2:173:PHE:CZ	2:P2:188:VAL:CG2	3.04	0.41
2:P6:85:MET:SD	2:P6:85:MET:N	2.89	0.41
1:B3:43:PHE:CE2	1:B3:46:PRO:HD3	2.55	0.41
1:D1:242:GLY:O	1:D1:312:PRO:HD3	2.21	0.41
2:P1:444:ILE:CD1	2:P2:446:SER:HB2	2.50	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:P3:10:ASP:O	2:P3:10:ASP:CG	2.63	0.41
2:P6:339:VAL:HG13	2:P6:340:GLN:N	2.35	0.41
2:P7:318:ASP:OD1	2:P7:319:ALA:N	2.53	0.41
2:P8:196:ILE:HD13	2:P9:48:TYR:CD1	2.56	0.41
2:Q1:445:ASP:O	2:Q1:446:SER:OG	2.36	0.41
2:Q2:80:ARG:HE	2:Q2:87:ASP:HA	1.86	0.41
2:P8:81:LYS:H	2:P8:81:LYS:HD2	1.86	0.41
1:B2:74:THR:HG23	1:D2:46:PRO:HA	2.02	0.40
1:D2:57:ILE:CG2	1:D2:147:ILE:HD11	2.51	0.40
2:P1:246:THR:HG23	2:P1:400:ARG:HD3	2.03	0.40
2:P3:359:THR:HG23	2:P3:360:PRO:HD2	2.02	0.40
2:P8:318:ASP:OD1	2:P8:319:ALA:N	2.54	0.40
2:P4:177:ASP:HA	2:P4:185:ILE:HD11	2.04	0.40
1:B4:103:MET:HE3	1:B4:300:HIS:HB2	2.03	0.40
1:B4:155:PHE:C	1:B4:157:LYS:H	2.29	0.40
1:B5:43:PHE:CE2	1:B5:46:PRO:HD3	2.57	0.40
1:D3:57:ILE:HD11	1:D3:142:PHE:CD2	2.57	0.40
1:D3:145:ALA:HB1	1:D3:153:ASN:HB2	2.03	0.40
1:D3:277:ASP:OD1	1:D3:277:ASP:C	2.65	0.40
2:P2:16:ASN:O	2:P2:17:ILE:C	2.65	0.40
1:B3:54:ASN:OD1	1:B3:55:SER:N	2.54	0.40
1:B3:155:PHE:C	1:B3:157:LYS:H	2.30	0.40
2:P9:359:THR:HG23	2:P9:360:PRO:HD2	2.02	0.40
2:Q3:224:ASN:OD1	2:Q3:224:ASN:C	2.63	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	B1	296/324 (91%)	285 (96%)	10 (3%)	1 (0%)	36 65

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B2	296/324 (91%)	285 (96%)	11 (4%)	0	100	100
1	B3	296/324 (91%)	281 (95%)	15 (5%)	0	100	100
1	B4	296/324 (91%)	285 (96%)	11 (4%)	0	100	100
1	B5	296/324 (91%)	283 (96%)	13 (4%)	0	100	100
1	C1	32/324 (10%)	32 (100%)	0	0	100	100
1	C2	32/324 (10%)	32 (100%)	0	0	100	100
1	C3	32/324 (10%)	31 (97%)	1 (3%)	0	100	100
1	C4	32/324 (10%)	32 (100%)	0	0	100	100
1	C5	32/324 (10%)	31 (97%)	1 (3%)	0	100	100
1	D1	260/324 (80%)	254 (98%)	6 (2%)	0	100	100
1	D2	260/324 (80%)	252 (97%)	8 (3%)	0	100	100
1	D3	260/324 (80%)	253 (97%)	7 (3%)	0	100	100
1	D4	260/324 (80%)	254 (98%)	6 (2%)	0	100	100
1	D5	260/324 (80%)	255 (98%)	5 (2%)	0	100	100
2	P1	479/511 (94%)	461 (96%)	18 (4%)	0	100	100
2	P2	464/511 (91%)	454 (98%)	10 (2%)	0	100	100
2	P3	479/511 (94%)	460 (96%)	19 (4%)	0	100	100
2	P4	464/511 (91%)	452 (97%)	12 (3%)	0	100	100
2	P5	464/511 (91%)	447 (96%)	17 (4%)	0	100	100
2	P6	479/511 (94%)	462 (96%)	17 (4%)	0	100	100
2	P7	464/511 (91%)	447 (96%)	17 (4%)	0	100	100
2	P8	479/511 (94%)	461 (96%)	18 (4%)	0	100	100
2	P9	464/511 (91%)	447 (96%)	17 (4%)	0	100	100
2	Q1	473/511 (93%)	452 (96%)	21 (4%)	0	100	100
2	Q2	464/511 (91%)	452 (97%)	12 (3%)	0	100	100
2	Q3	464/511 (91%)	448 (97%)	16 (3%)	0	100	100
All	All	8577/10992 (78%)	8288 (97%)	288 (3%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B1	260	ILE

5.3.2 Protein sidechains ⓘ

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	B1	262/286 (92%)	262 (100%)	0	100	100
1	B2	262/286 (92%)	262 (100%)	0	100	100
1	B3	262/286 (92%)	262 (100%)	0	100	100
1	B4	262/286 (92%)	262 (100%)	0	100	100
1	B5	262/286 (92%)	262 (100%)	0	100	100
1	C1	27/286 (9%)	27 (100%)	0	100	100
1	C2	27/286 (9%)	27 (100%)	0	100	100
1	C3	27/286 (9%)	27 (100%)	0	100	100
1	C4	27/286 (9%)	27 (100%)	0	100	100
1	C5	27/286 (9%)	27 (100%)	0	100	100
1	D1	235/286 (82%)	235 (100%)	0	100	100
1	D2	235/286 (82%)	235 (100%)	0	100	100
1	D3	235/286 (82%)	235 (100%)	0	100	100
1	D4	235/286 (82%)	235 (100%)	0	100	100
1	D5	235/286 (82%)	235 (100%)	0	100	100
2	P1	438/466 (94%)	438 (100%)	0	100	100
2	P2	424/466 (91%)	424 (100%)	0	100	100
2	P3	438/466 (94%)	438 (100%)	0	100	100
2	P4	424/466 (91%)	424 (100%)	0	100	100
2	P5	424/466 (91%)	424 (100%)	0	100	100
2	P6	438/466 (94%)	438 (100%)	0	100	100
2	P7	424/466 (91%)	422 (100%)	2 (0%)	81	81
2	P8	438/466 (94%)	435 (99%)	3 (1%)	76	78
2	P9	424/466 (91%)	424 (100%)	0	100	100
2	Q1	435/466 (93%)	434 (100%)	1 (0%)	87	85
2	Q2	424/466 (91%)	424 (100%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	Q3	424/466 (91%)	423 (100%)	1 (0%)	87	85
All	All	7775/9882 (79%)	7768 (100%)	7 (0%)	87	89

All (7) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	P7	146	ILE
2	P7	372	SER
2	P8	80	ARG
2	P8	81	LYS
2	P8	219	LEU
2	Q1	201	GLU
2	Q3	146	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (81) such sidechains are listed below:

Mol	Chain	Res	Type
1	B1	28	ASN
1	B1	41	ASN
1	B1	258	GLN
1	B2	22	GLN
1	B2	28	ASN
1	B2	125	GLN
1	B2	233	ASN
1	B2	258	GLN
1	B2	275	ASN
1	B2	286	GLN
1	B2	296	HIS
1	B3	120	ASN
1	B3	275	ASN
1	B3	286	GLN
1	B3	296	HIS
1	B4	22	GLN
1	B4	258	GLN
1	B4	269	GLN
1	B4	275	ASN
1	B4	286	GLN
1	B4	296	HIS
1	B4	300	HIS
1	B5	28	ASN
1	B5	275	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B5	286	GLN
1	D2	32	HIS
1	D2	41	ASN
1	D2	258	GLN
1	D2	275	ASN
1	D2	286	GLN
1	D3	161	GLN
1	D3	258	GLN
1	D3	275	ASN
1	D3	286	GLN
1	D4	32	HIS
1	D4	275	ASN
1	D4	286	GLN
1	D4	296	HIS
1	D5	275	ASN
1	D5	282	ASN
1	D5	286	GLN
1	D5	296	HIS
2	P1	178	ASN
2	P1	270	ASN
2	P1	350	ASN
2	P2	26	ASN
2	P2	43	ASN
2	P2	178	ASN
2	P2	270	ASN
2	P3	26	ASN
2	P3	178	ASN
2	P3	270	ASN
2	P4	178	ASN
2	P4	183	ASN
2	P4	350	ASN
2	P4	354	HIS
2	P5	26	ASN
2	P5	183	ASN
2	P5	270	ASN
2	P5	371	GLN
2	P6	26	ASN
2	P6	128	ASN
2	P6	178	ASN
2	P6	270	ASN
2	P6	350	ASN
2	P6	358	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	P7	88	ASN
2	P7	114	GLN
2	P7	270	ASN
2	P7	358	ASN
2	P8	178	ASN
2	P9	43	ASN
2	P9	178	ASN
2	P9	183	ASN
2	P9	270	ASN
2	P9	350	ASN
2	Q1	270	ASN
2	Q2	26	ASN
2	Q2	183	ASN
2	Q3	178	ASN
2	Q3	270	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

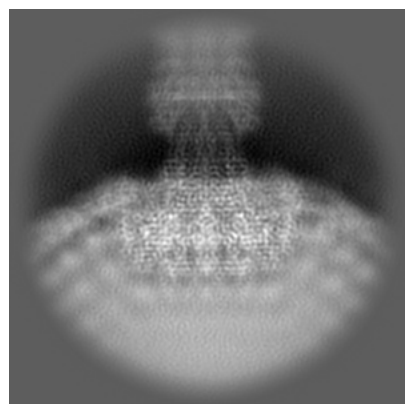
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-43147. These allow visual inspection of the internal detail of the map and identification of artifacts.

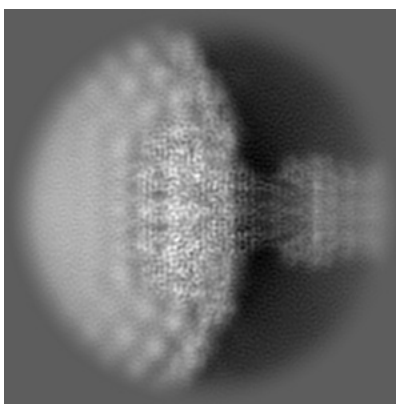
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

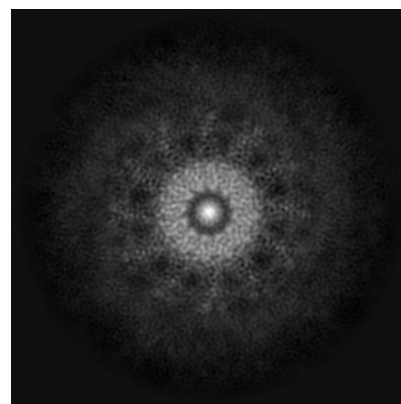
6.1.1 Primary map



X

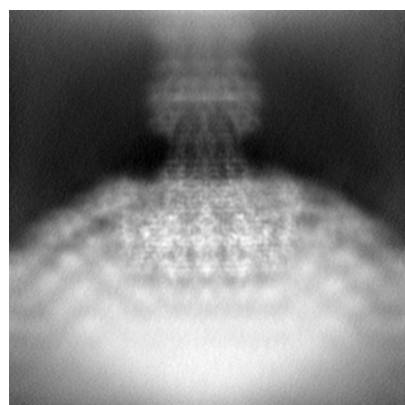


Y

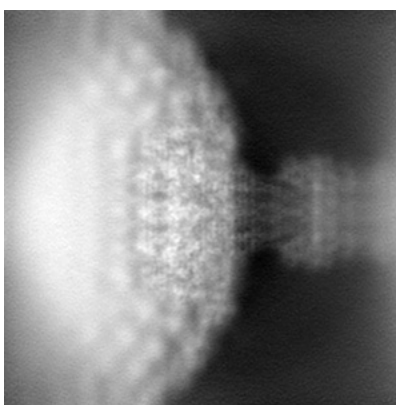


Z

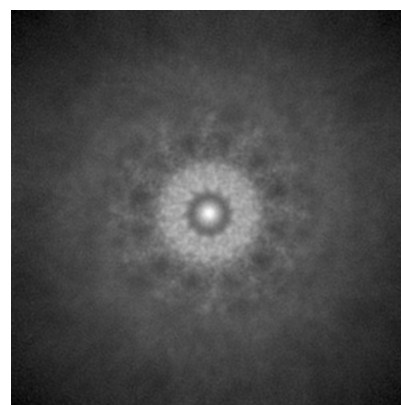
6.1.2 Raw map



X



Y

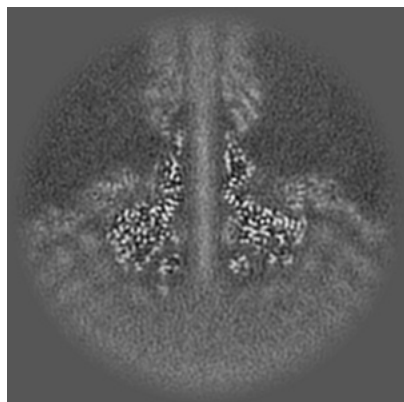


Z

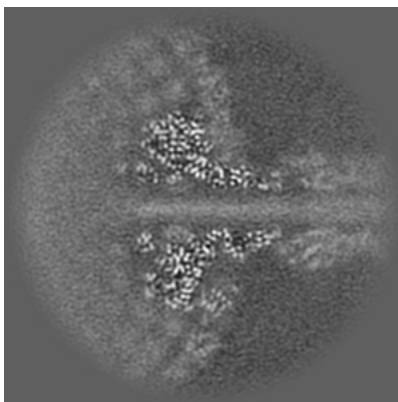
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

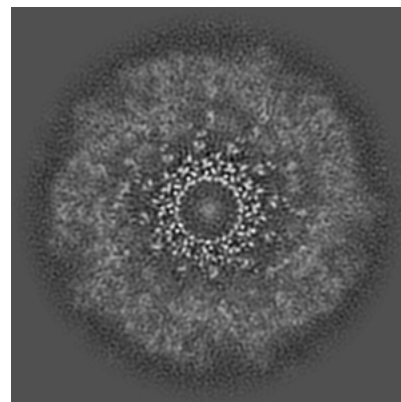
6.2.1 Primary map



X Index: 120

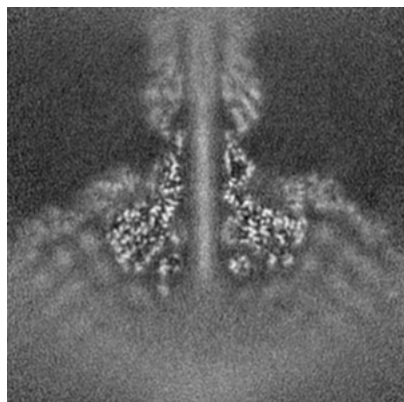


Y Index: 120

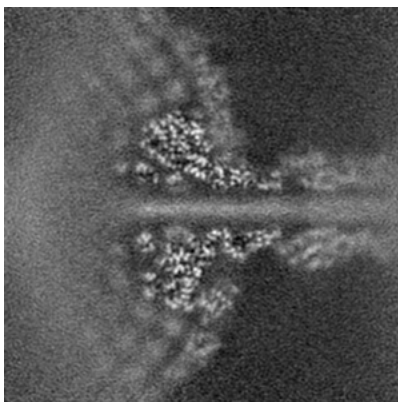


Z Index: 120

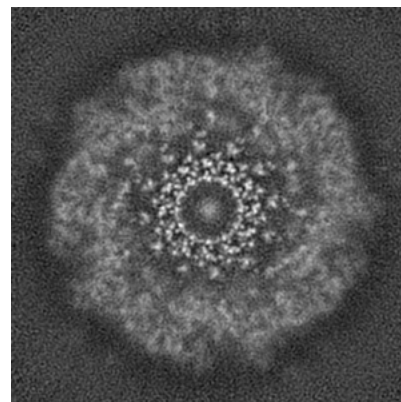
6.2.2 Raw map



X Index: 120



Y Index: 120

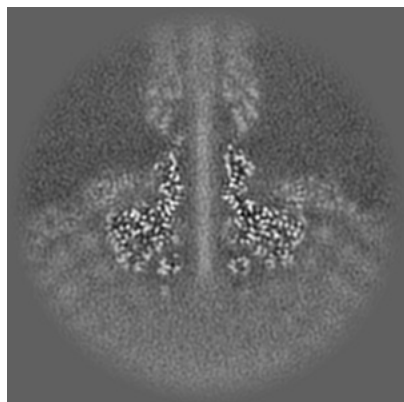


Z Index: 120

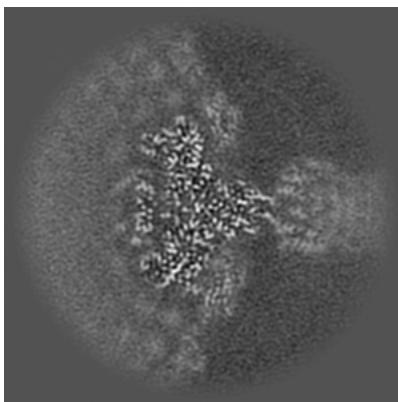
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

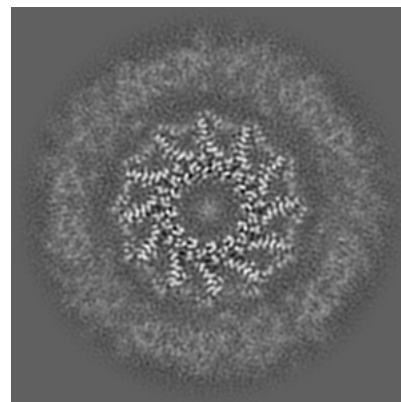
6.3.1 Primary map



X Index: 119

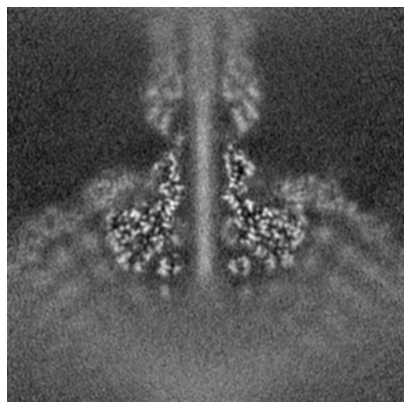


Y Index: 97

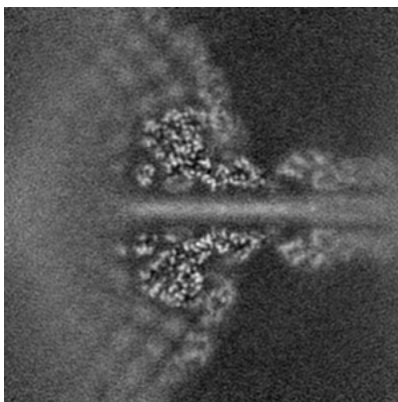


Z Index: 115

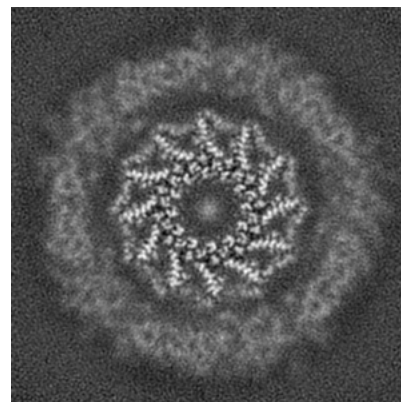
6.3.2 Raw map



X Index: 119



Y Index: 117

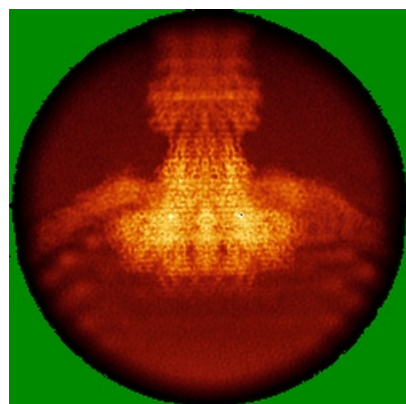


Z Index: 115

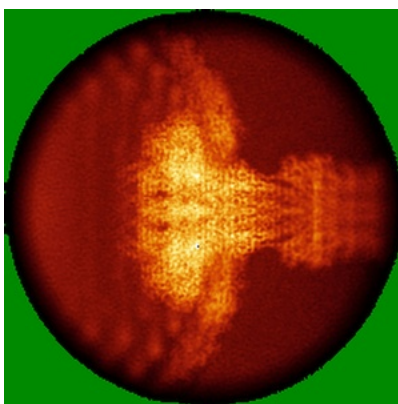
The images above show the largest variance slices of the map in three orthogonal directions.

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

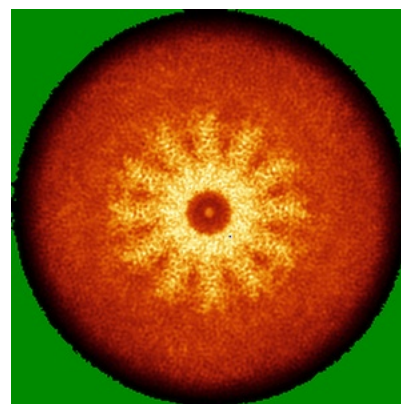
6.4.1 Primary map



X

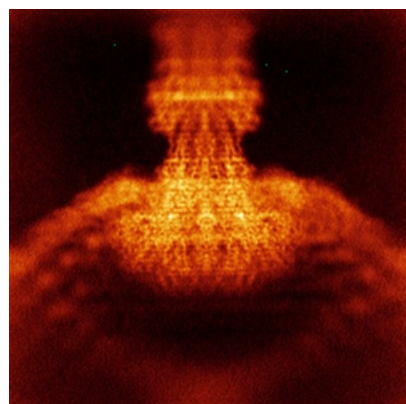


Y

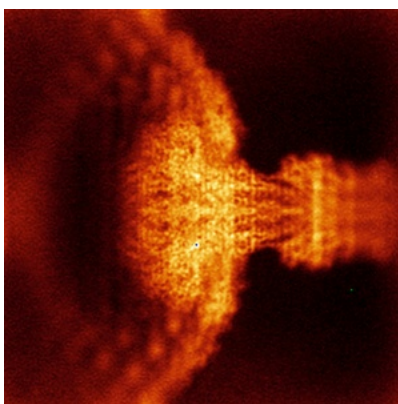


Z

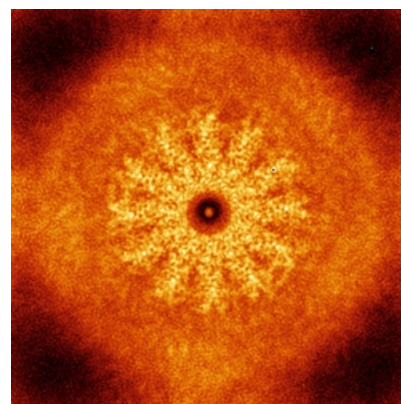
6.4.2 Raw map



X



Y

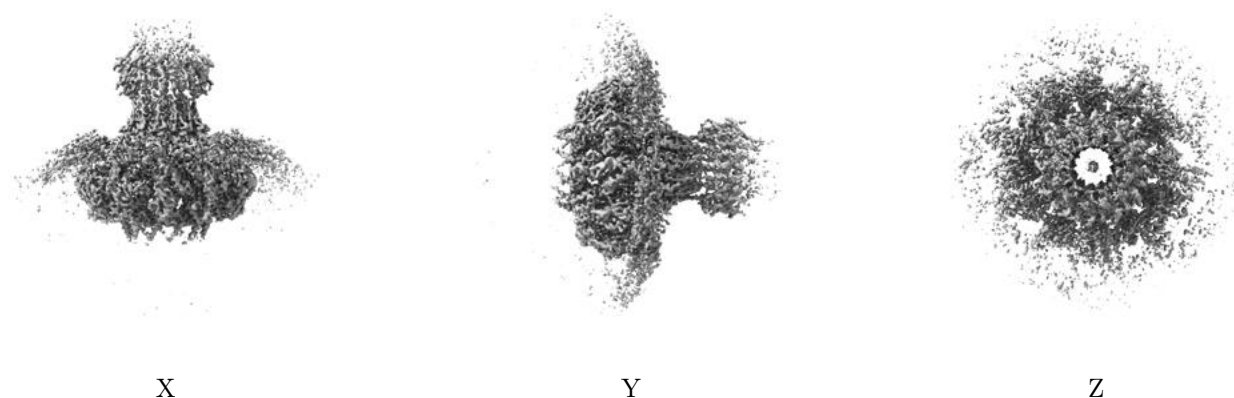


Z

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.

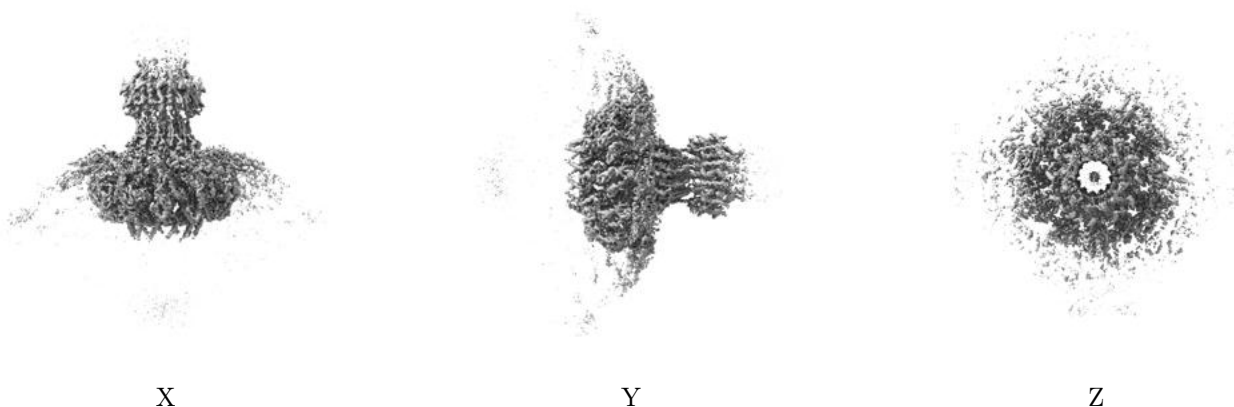
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.645. 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



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.

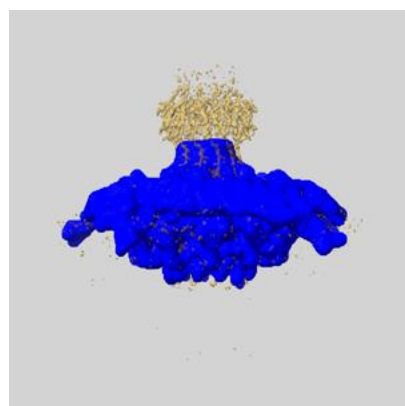
6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

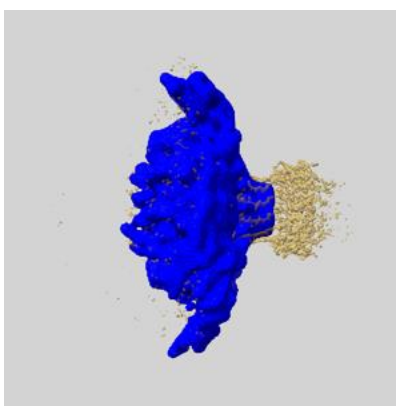
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

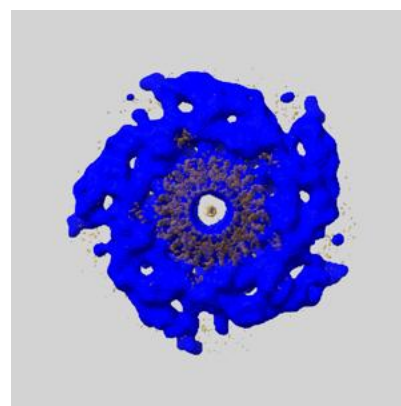
6.6.1 emd_43147_msk_1.map [i](#)



X



Y

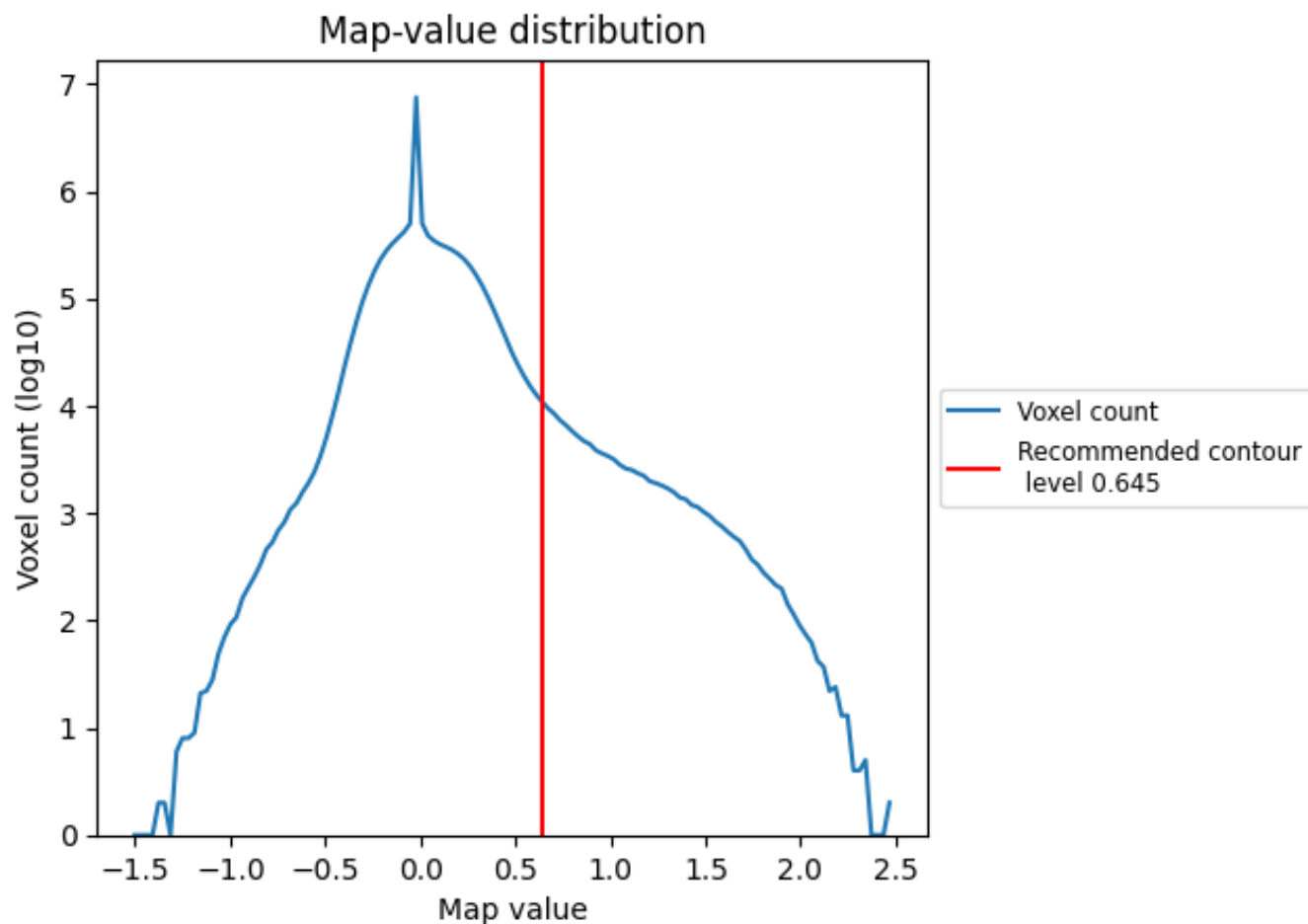


Z

7 Map analysis [i](#)

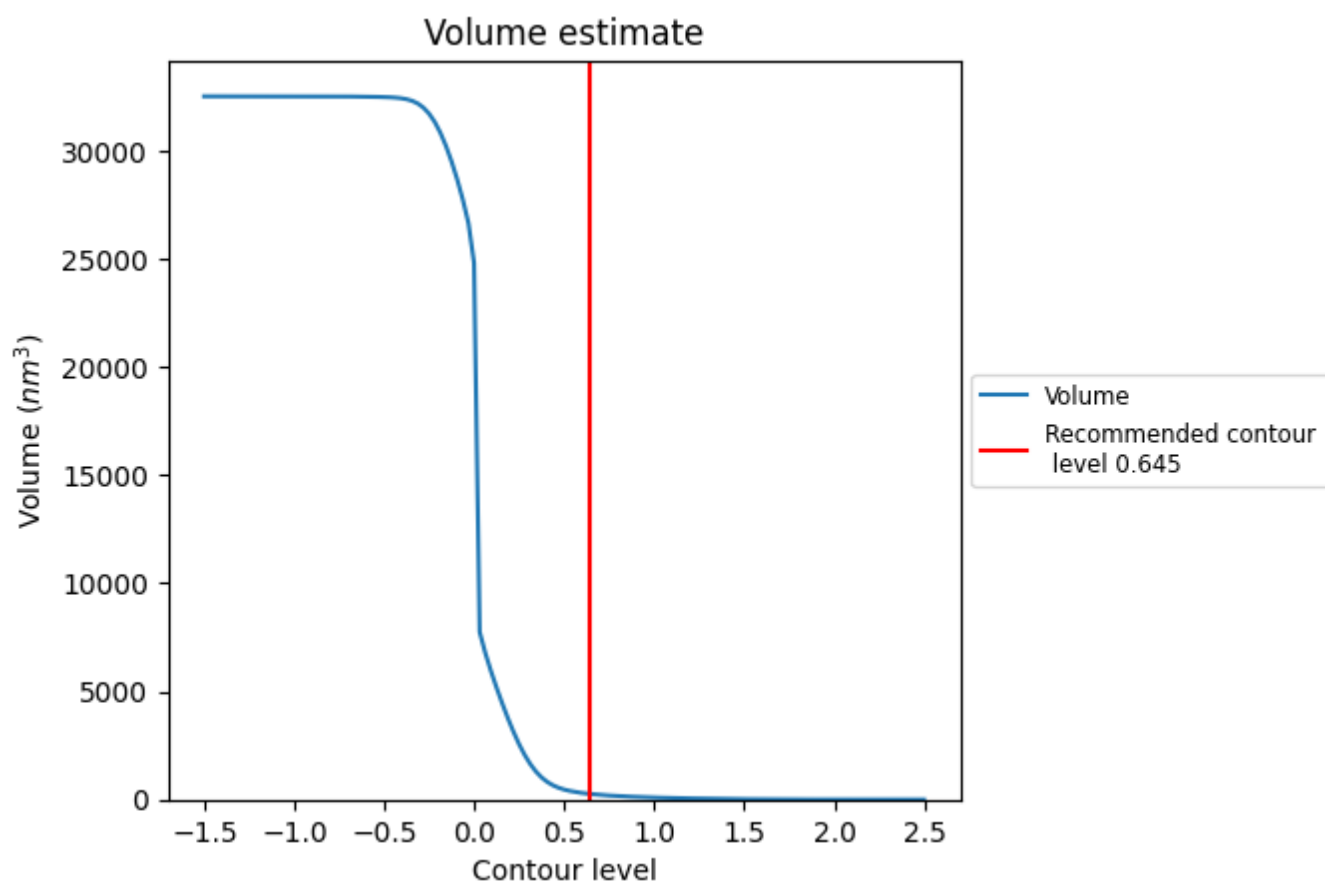
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

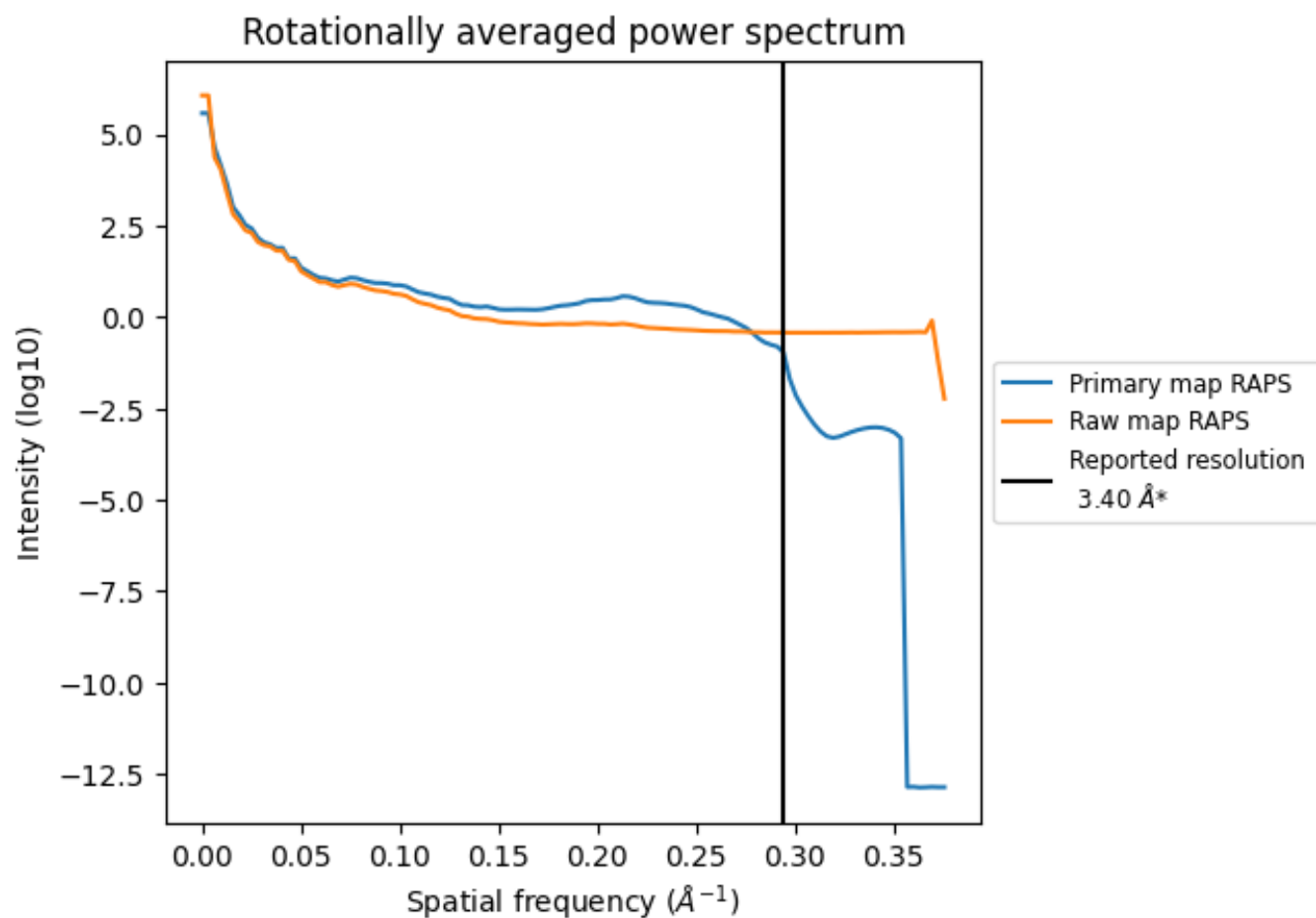
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 259 nm³; this corresponds to an approximate mass of 234 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 ⓘ

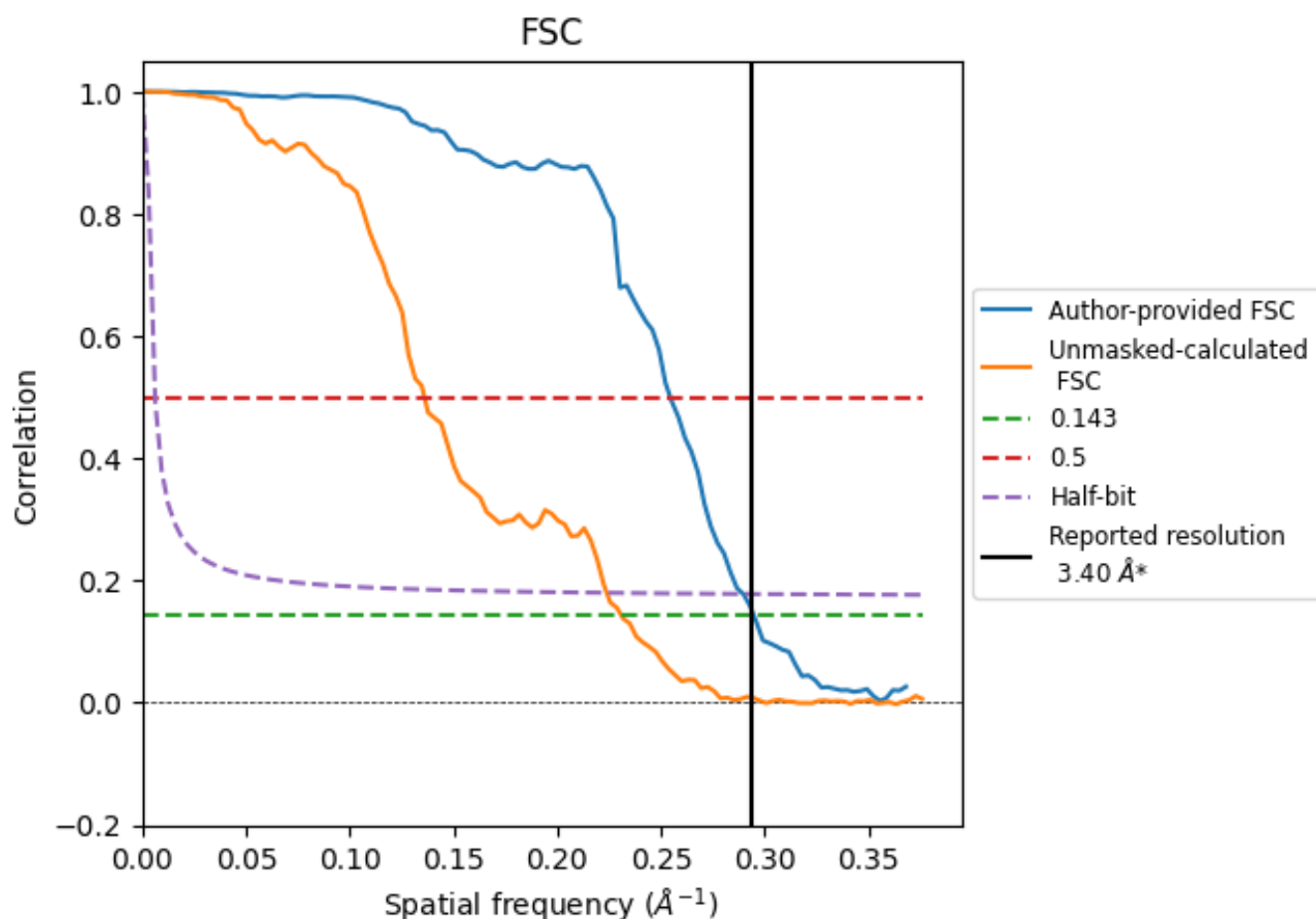


*Reported resolution corresponds to spatial frequency of 0.294 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.294 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

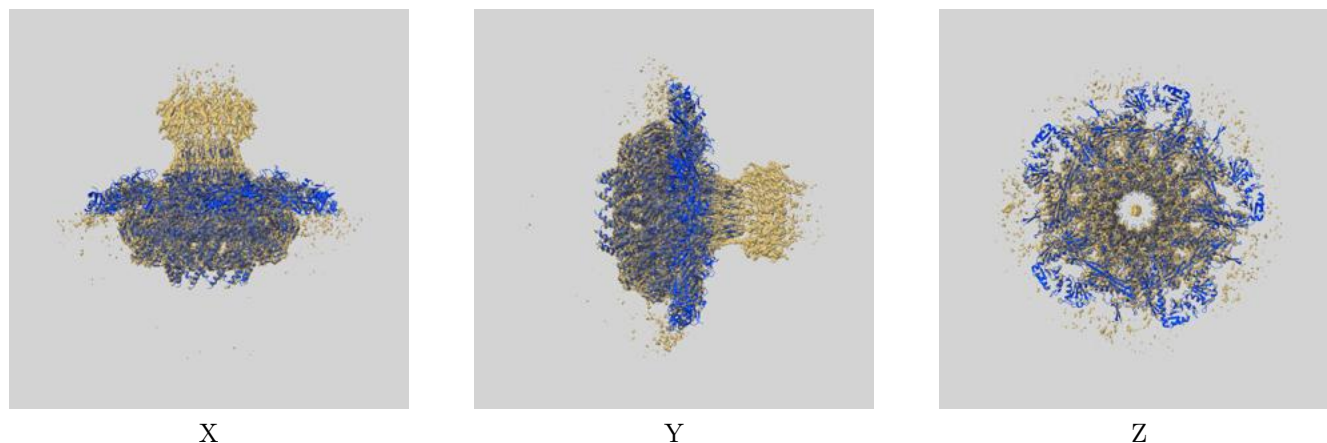
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.40	-	-
Author-provided FSC curve	3.39	3.93	3.45
Unmasked-calculated*	4.33	7.35	4.47

*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 4.33 differs from the reported value 3.4 by more than 10 %

9 Map-model fit [i](#)

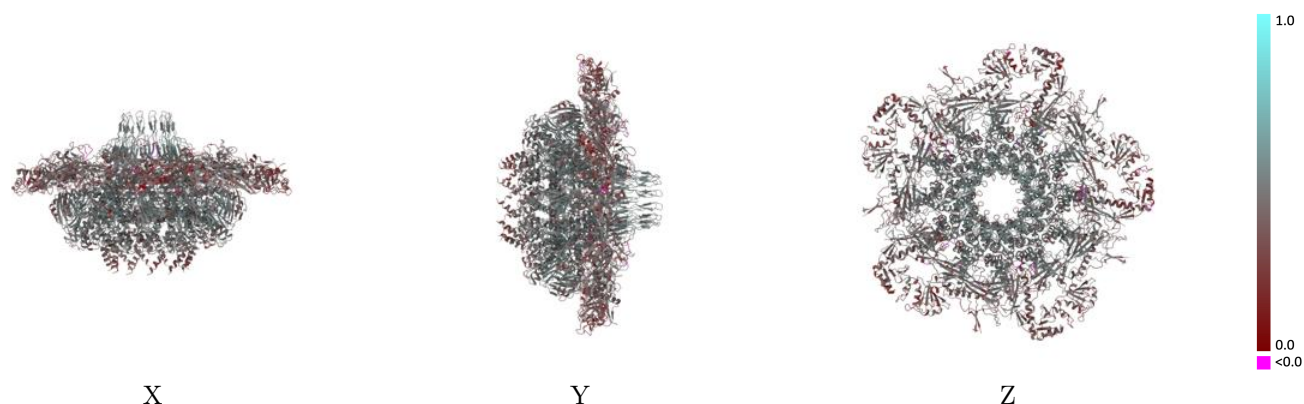
This section contains information regarding the fit between EMDB map EMD-43147 and PDB model 8VDE. Per-residue inclusion information can be found in section [3](#) on page [6](#).

9.1 Map-model overlay [i](#)



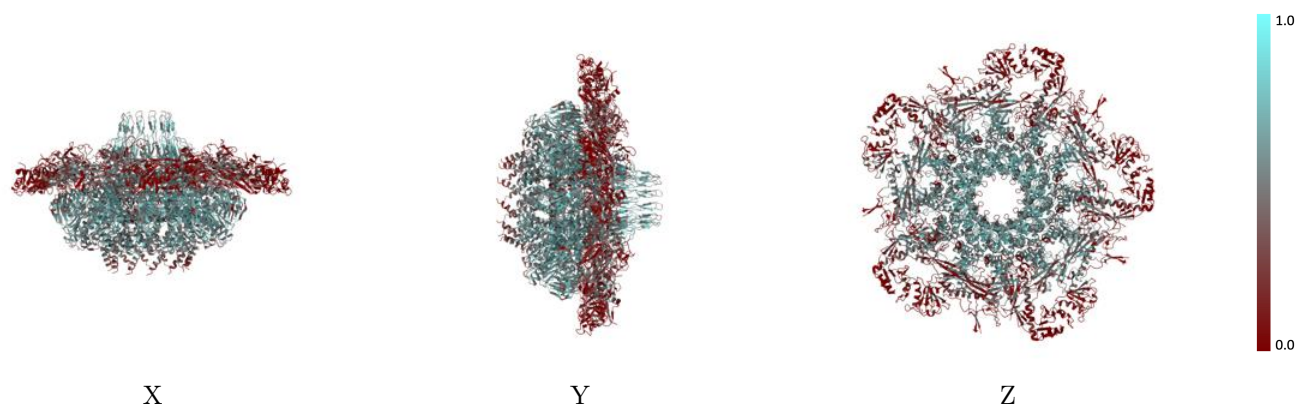
The images above show the 3D surface view of the map at the recommended contour level 0.645 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



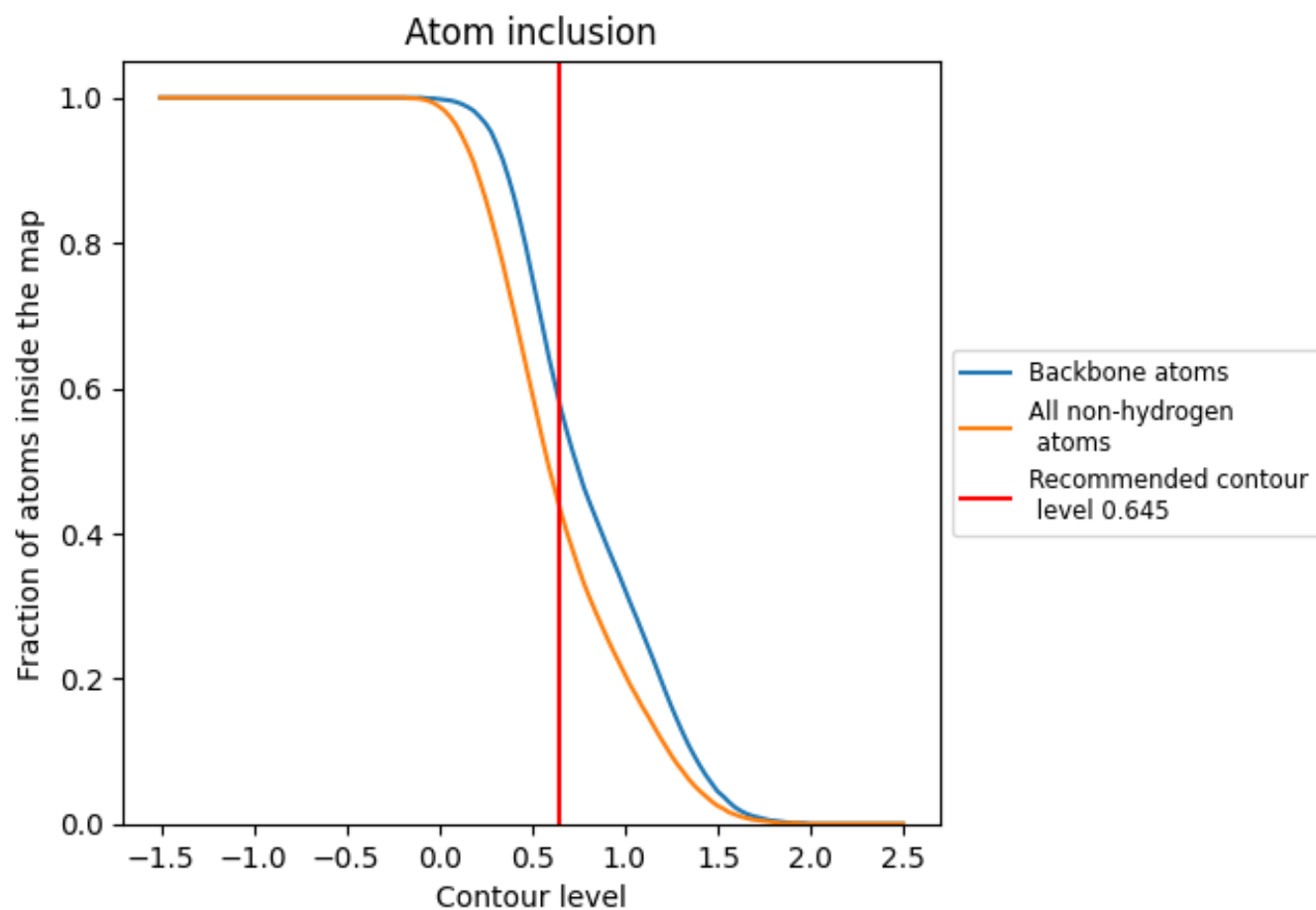
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.645).

9.4 Atom inclusion [i](#)



At the recommended contour level, 58% of all backbone atoms, 44% 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 (0.645) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.4380	 0.4310
B1	 0.1960	 0.3800
B2	 0.2890	 0.3940
B3	 0.1710	 0.3630
B4	 0.2970	 0.3940
B5	 0.2020	 0.3840
C1	 0.1540	 0.4060
C2	 0.2680	 0.4410
C3	 0.2240	 0.3890
C4	 0.2240	 0.4150
C5	 0.1880	 0.3810
D1	 0.1200	 0.2990
D2	 0.1200	 0.3390
D3	 0.1670	 0.3450
D4	 0.1490	 0.3350
D5	 0.1130	 0.3270
P1	 0.5700	 0.4710
P2	 0.5720	 0.4700
P3	 0.5540	 0.4660
P4	 0.5730	 0.4670
P5	 0.5610	 0.4620
P6	 0.5550	 0.4610
P7	 0.5830	 0.4710
P8	 0.5660	 0.4690
P9	 0.5830	 0.4660
Q1	 0.5550	 0.4650
Q2	 0.5730	 0.4710
Q3	 0.5730	 0.4720

