WORLDWIDE PDB PROTEIN DATA BANK

Full wwPDB EM Validation Report ⓘ

Aug 4, 2025 – 08:55 AM EDT

PDB ID	:	9MII / pdb_00009mii
EMDB ID	:	EMD-48291
Title	:	253-7A03 Fab in complex with HIV-1 BG505 SOSIP Env trimer and RM20A3 Fab
Authors	:	Phulera, S.; Ozorowski, G.; Ward, A.B.
Deposited on	:	2024-12-12
Resolution	:	3.30 Å(reported)

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

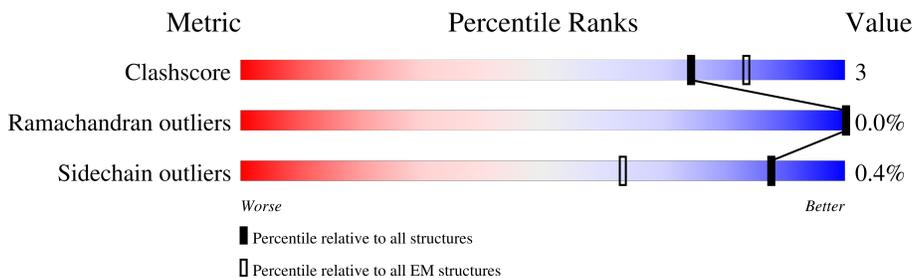|		
EMDB validation analysis	:	0.0.1.dev126
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0rc1
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.45.1

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 3.30 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.
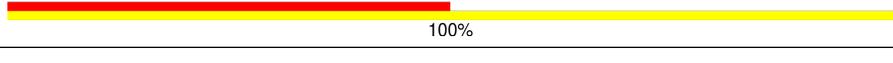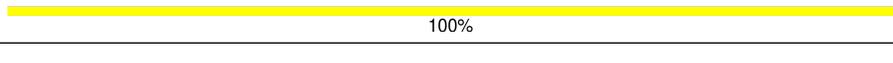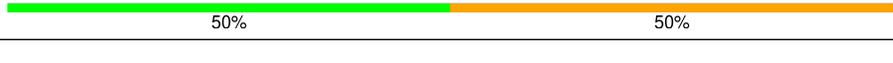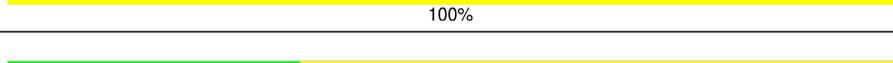
Metric	Percentile Ranks	Value
Clashscore		3
Ramachandran outliers		0.0%
Sidechain outliers		0.4%

Worse *Better*

▮ Percentile relative to all structures

▯ Percentile relative to all EM structures

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

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

Mol	Chain	Length	Quality of chain
1	A	516	78% 6% 16%
1	C	516	76% 7% 17%
1	E	516	76% 7% 17%
2	B	153	74% 6% 20%
2	D	153	76% • 20%
2	F	153	75% • • 20%
3	G	125	5% 89% 10% •
3	J	125	5% 90% 9% •

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Mol	Chain	Length	Quality of chain
3	M	125	7% / 90% / 9%
4	I	128	5% / 80% / 5% / 15%
4	K	128	5% / 78% / 6% / 15%
4	N	128	83% / 15%
5	H	119	87% / 12%
6	L	100	20% / 89% / 8%
7	O	2	50% / 100%
7	P	2	100%
7	Q	2	50% / 50%
7	S	2	50% / 50%
7	T	2	50% / 100%
8	R	3	33% / 67%
9	U	4	100%
10	V	5	40% / 100%
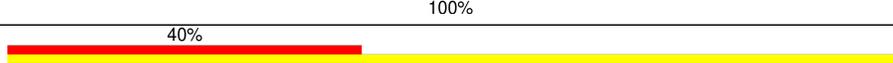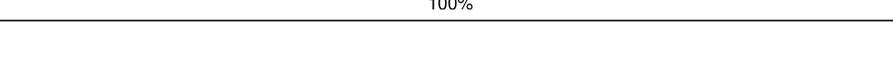
2 Entry composition ⓘ

There are 11 unique types of molecules in this entry. The entry contains 20957 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 HIV-1 Envelope Glycoprotein BG505 SOSIP.664 gp120.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	436	Total	C	N	O	S	0	0
			3428	2155	603	642	28		
1	C	430	Total	C	N	O	S	0	0
			3393	2137	597	631	28		
1	E	430	Total	C	N	O	S	0	0
			3389	2135	596	630	28		

There are 126 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-4	MET	-	expression tag	UNP Q2N0S6
A	-3	ASP	-	expression tag	UNP Q2N0S6
A	-2	ALA	-	expression tag	UNP Q2N0S6
A	-1	MET	-	expression tag	UNP Q2N0S6
A	0	LYS	-	expression tag	UNP Q2N0S6
A	1	ARG	-	expression tag	UNP Q2N0S6
A	2	GLY	-	expression tag	UNP Q2N0S6
A	3	LEU	-	expression tag	UNP Q2N0S6
A	4	CYS	-	expression tag	UNP Q2N0S6
A	5	CYS	-	expression tag	UNP Q2N0S6
A	6	VAL	-	expression tag	UNP Q2N0S6
A	7	LEU	-	expression tag	UNP Q2N0S6
A	8	LEU	-	expression tag	UNP Q2N0S6
A	9	LEU	-	expression tag	UNP Q2N0S6
A	10	CYS	-	expression tag	UNP Q2N0S6
A	11	GLY	-	expression tag	UNP Q2N0S6
A	12	ALA	-	expression tag	UNP Q2N0S6
A	13	VAL	-	expression tag	UNP Q2N0S6
A	14	PHE	-	expression tag	UNP Q2N0S6
A	15	VAL	-	expression tag	UNP Q2N0S6
A	16	SER	-	expression tag	UNP Q2N0S6
A	17	PRO	-	expression tag	UNP Q2N0S6
A	18	SER	-	expression tag	UNP Q2N0S6
A	19	GLN	-	expression tag	UNP Q2N0S6

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Chain	Residue	Modelled	Actual	Comment	Reference
A	20	GLU	-	expression tag	UNP Q2N0S6
A	21	ILE	-	expression tag	UNP Q2N0S6
A	22	HIS	-	expression tag	UNP Q2N0S6
A	23	ALA	-	expression tag	UNP Q2N0S6
A	24	ARG	-	expression tag	UNP Q2N0S6
A	25	PHE	-	expression tag	UNP Q2N0S6
A	26	ARG	-	expression tag	UNP Q2N0S6
A	27	ARG	-	expression tag	UNP Q2N0S6
A	28	GLY	-	expression tag	UNP Q2N0S6
A	29	ALA	-	expression tag	UNP Q2N0S6
A	30	ARG	-	expression tag	UNP Q2N0S6
A	332	ASN	THR	engineered mutation	UNP Q2N0S6
A	501	CYS	ALA	engineered mutation	UNP Q2N0S6
A	509	ARG	-	expression tag	UNP Q2N0S6
A	510	ARG	-	expression tag	UNP Q2N0S6
A	511	ARG	-	expression tag	UNP Q2N0S6
A	512	ARG	-	expression tag	UNP Q2N0S6
A	513	ARG	-	expression tag	UNP Q2N0S6
C	-4	MET	-	expression tag	UNP Q2N0S6
C	-3	ASP	-	expression tag	UNP Q2N0S6
C	-2	ALA	-	expression tag	UNP Q2N0S6
C	-1	MET	-	expression tag	UNP Q2N0S6
C	0	LYS	-	expression tag	UNP Q2N0S6
C	1	ARG	-	expression tag	UNP Q2N0S6
C	2	GLY	-	expression tag	UNP Q2N0S6
C	3	LEU	-	expression tag	UNP Q2N0S6
C	4	CYS	-	expression tag	UNP Q2N0S6
C	5	CYS	-	expression tag	UNP Q2N0S6
C	6	VAL	-	expression tag	UNP Q2N0S6
C	7	LEU	-	expression tag	UNP Q2N0S6
C	8	LEU	-	expression tag	UNP Q2N0S6
C	9	LEU	-	expression tag	UNP Q2N0S6
C	10	CYS	-	expression tag	UNP Q2N0S6
C	11	GLY	-	expression tag	UNP Q2N0S6
C	12	ALA	-	expression tag	UNP Q2N0S6
C	13	VAL	-	expression tag	UNP Q2N0S6
C	14	PHE	-	expression tag	UNP Q2N0S6
C	15	VAL	-	expression tag	UNP Q2N0S6
C	16	SER	-	expression tag	UNP Q2N0S6
C	17	PRO	-	expression tag	UNP Q2N0S6
C	18	SER	-	expression tag	UNP Q2N0S6
C	19	GLN	-	expression tag	UNP Q2N0S6

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Chain	Residue	Modelled	Actual	Comment	Reference
C	20	GLU	-	expression tag	UNP Q2N0S6
C	21	ILE	-	expression tag	UNP Q2N0S6
C	22	HIS	-	expression tag	UNP Q2N0S6
C	23	ALA	-	expression tag	UNP Q2N0S6
C	24	ARG	-	expression tag	UNP Q2N0S6
C	25	PHE	-	expression tag	UNP Q2N0S6
C	26	ARG	-	expression tag	UNP Q2N0S6
C	27	ARG	-	expression tag	UNP Q2N0S6
C	28	GLY	-	expression tag	UNP Q2N0S6
C	29	ALA	-	expression tag	UNP Q2N0S6
C	30	ARG	-	expression tag	UNP Q2N0S6
C	332	ASN	THR	engineered mutation	UNP Q2N0S6
C	501	CYS	ALA	engineered mutation	UNP Q2N0S6
C	509	ARG	-	expression tag	UNP Q2N0S6
C	510	ARG	-	expression tag	UNP Q2N0S6
C	511	ARG	-	expression tag	UNP Q2N0S6
C	512	ARG	-	expression tag	UNP Q2N0S6
C	513	ARG	-	expression tag	UNP Q2N0S6
E	-4	MET	-	expression tag	UNP Q2N0S6
E	-3	ASP	-	expression tag	UNP Q2N0S6
E	-2	ALA	-	expression tag	UNP Q2N0S6
E	-1	MET	-	expression tag	UNP Q2N0S6
E	0	LYS	-	expression tag	UNP Q2N0S6
E	1	ARG	-	expression tag	UNP Q2N0S6
E	2	GLY	-	expression tag	UNP Q2N0S6
E	3	LEU	-	expression tag	UNP Q2N0S6
E	4	CYS	-	expression tag	UNP Q2N0S6
E	5	CYS	-	expression tag	UNP Q2N0S6
E	6	VAL	-	expression tag	UNP Q2N0S6
E	7	LEU	-	expression tag	UNP Q2N0S6
E	8	LEU	-	expression tag	UNP Q2N0S6
E	9	LEU	-	expression tag	UNP Q2N0S6
E	10	CYS	-	expression tag	UNP Q2N0S6
E	11	GLY	-	expression tag	UNP Q2N0S6
E	12	ALA	-	expression tag	UNP Q2N0S6
E	13	VAL	-	expression tag	UNP Q2N0S6
E	14	PHE	-	expression tag	UNP Q2N0S6
E	15	VAL	-	expression tag	UNP Q2N0S6
E	16	SER	-	expression tag	UNP Q2N0S6
E	17	PRO	-	expression tag	UNP Q2N0S6
E	18	SER	-	expression tag	UNP Q2N0S6
E	19	GLN	-	expression tag	UNP Q2N0S6

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Chain	Residue	Modelled	Actual	Comment	Reference
E	20	GLU	-	expression tag	UNP Q2N0S6
E	21	ILE	-	expression tag	UNP Q2N0S6
E	22	HIS	-	expression tag	UNP Q2N0S6
E	23	ALA	-	expression tag	UNP Q2N0S6
E	24	ARG	-	expression tag	UNP Q2N0S6
E	25	PHE	-	expression tag	UNP Q2N0S6
E	26	ARG	-	expression tag	UNP Q2N0S6
E	27	ARG	-	expression tag	UNP Q2N0S6
E	28	GLY	-	expression tag	UNP Q2N0S6
E	29	ALA	-	expression tag	UNP Q2N0S6
E	30	ARG	-	expression tag	UNP Q2N0S6
E	324	ASN	THR	engineered mutation	UNP Q2N0S6
E	493	CYS	ALA	engineered mutation	UNP Q2N0S6
E	501	ARG	-	expression tag	UNP Q2N0S6
E	502	ARG	-	expression tag	UNP Q2N0S6
E	503	ARG	-	expression tag	UNP Q2N0S6
E	504	ARG	-	expression tag	UNP Q2N0S6
E	505	ARG	-	expression tag	UNP Q2N0S6

- Molecule 2 is a protein called Envelope glycoprotein gp160.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	122	Total	C	N	O	S	0	0
			973	614	168	185	6		
2	D	123	Total	C	N	O	S	0	0
			979	617	169	187	6		
2	F	122	Total	C	N	O	S	0	0
			973	614	168	185	6		

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	559	PRO	ILE	conflict	UNP Q2N0S6
B	605	CYS	THR	conflict	UNP Q2N0S6
D	559	PRO	ILE	conflict	UNP Q2N0S6
D	605	CYS	THR	conflict	UNP Q2N0S6
F	559	PRO	ILE	conflict	UNP Q2N0S6
F	605	CYS	THR	conflict	UNP Q2N0S6

- Molecule 3 is a protein called RM20A3 heavy chain Fv.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	G	124	Total	C	N	O	S	0	0
			943	595	161	182	5		
3	J	124	Total	C	N	O	S	0	0
			943	595	161	182	5		
3	M	124	Total	C	N	O	S	0	0
			943	595	161	182	5		

- Molecule 4 is a protein called RM20A3 light chain Fv.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	I	109	Total	C	N	O	S	0	0
			811	505	136	167	3		
4	K	109	Total	C	N	O	S	0	0
			811	505	136	167	3		
4	N	109	Total	C	N	O	S	0	0
			811	505	136	167	3		

- Molecule 5 is a protein called 253-7A03 heavy chain Fv.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	H	119	Total	C	N	O	S	0	0
			937	588	162	179	8		

- Molecule 6 is a protein called 253-7A03 lambda chain Fv.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	L	98	Total	C	N	O	S	0	0
			717	442	120	152	3		

- Molecule 7 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-a cetamido-2-deoxy-beta-D-glucopyranose.
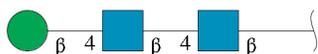

Mol	Chain	Residues	Atoms				AltConf	Trace
7	O	2	Total	C	N	O	0	0
			28	16	2	10		
7	P	2	Total	C	N	O	0	0
			28	16	2	10		
7	Q	2	Total	C	N	O	0	0
			28	16	2	10		

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Mol	Chain	Residues	Atoms				AltConf	Trace
7	S	2	Total 28	C 16	N 2	O 10	0	0
7	T	2	Total 28	C 16	N 2	O 10	0	0

- Molecule 8 is an oligosaccharide called beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.
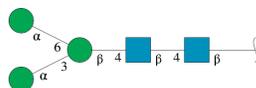

Mol	Chain	Residues	Atoms				AltConf	Trace
8	R	3	Total 39	C 22	N 2	O 15	0	0

- Molecule 9 is an oligosaccharide called alpha-D-mannopyranose-(1-3)-beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.
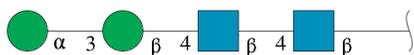
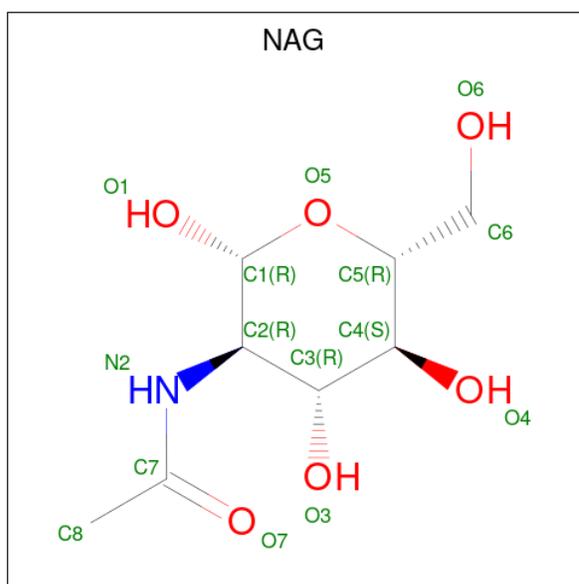| Mol	Chain	Residues	Atoms				AltConf	Trace
9	U	4	Total 50	C 28	N 2	O 20	0	0

- Molecule 10 is an oligosaccharide called alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.

Mol	Chain	Residues	Atoms				AltConf	Trace
10	V	5	Total 61	C 34	N 2	O 25	0	0

- Molecule 11 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula:

$C_8H_{15}NO_6$).

NAG

Mol	Chain	Residues	Atoms				AltConf
11	A	1	Total	C	N	O	0
			14	8	1	5	
11	A	1	Total	C	N	O	0
			14	8	1	5	
11	A	1	Total	C	N	O	0
			14	8	1	5	
11	A	1	Total	C	N	O	0
			14	8	1	5	
11	A	1	Total	C	N	O	0
			14	8	1	5	
11	A	1	Total	C	N	O	0
			14	8	1	5	
11	A	1	Total	C	N	O	0
			14	8	1	5	
11	A	1	Total	C	N	O	0
			14	8	1	5	
11	A	1	Total	C	N	O	0
			14	8	1	5	
11	A	1	Total	C	N	O	0
			14	8	1	5	
11	A	1	Total	C	N	O	0
			14	8	1	5	
11	B	1	Total	C	N	O	0
			14	8	1	5	
11	C	1	Total	C	N	O	0
			14	8	1	5	

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Mol	Chain	Residues	Atoms				AltConf
11	C	1	Total	C	N	O	0
			14	8	1	5	
11	C	1	Total	C	N	O	0
			14	8	1	5	
11	C	1	Total	C	N	O	0
			14	8	1	5	
11	C	1	Total	C	N	O	0
			14	8	1	5	
11	C	1	Total	C	N	O	0
			14	8	1	5	
11	C	1	Total	C	N	O	0
			14	8	1	5	
11	C	1	Total	C	N	O	0
			14	8	1	5	
11	C	1	Total	C	N	O	0
			14	8	1	5	
11	C	1	Total	C	N	O	0
			14	8	1	5	
11	C	1	Total	C	N	O	0
			14	8	1	5	
11	C	1	Total	C	N	O	0
			14	8	1	5	
11	C	1	Total	C	N	O	0
			14	8	1	5	
11	C	1	Total	C	N	O	0
			14	8	1	5	
11	C	1	Total	C	N	O	0
			14	8	1	5	
11	D	1	Total	C	N	O	0
			14	8	1	5	
11	D	1	Total	C	N	O	0
			14	8	1	5	
11	E	1	Total	C	N	O	0
			14	8	1	5	
11	E	1	Total	C	N	O	0
			14	8	1	5	
11	E	1	Total	C	N	O	0
			14	8	1	5	
11	E	1	Total	C	N	O	0
			14	8	1	5	
11	E	1	Total	C	N	O	0
			14	8	1	5	

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Mol	Chain	Residues	Atoms				AltConf
11	E	1	Total	C	N	O	0
			14	8	1	5	
11	E	1	Total	C	N	O	0
			14	8	1	5	
11	E	1	Total	C	N	O	0
			14	8	1	5	
11	E	1	Total	C	N	O	0
			14	8	1	5	
11	E	1	Total	C	N	O	0
			14	8	1	5	
11	E	1	Total	C	N	O	0
			14	8	1	5	
11	E	1	Total	C	N	O	0
			14	8	1	5	
11	F	1	Total	C	N	O	0
			14	8	1	5	
11	F	1	Total	C	N	O	0
			14	8	1	5	
11	F	1	Total	C	N	O	0
			14	8	1	5	

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: HIV-1 Envelope Glycoprotein BG505 SOSIP.664 gp120
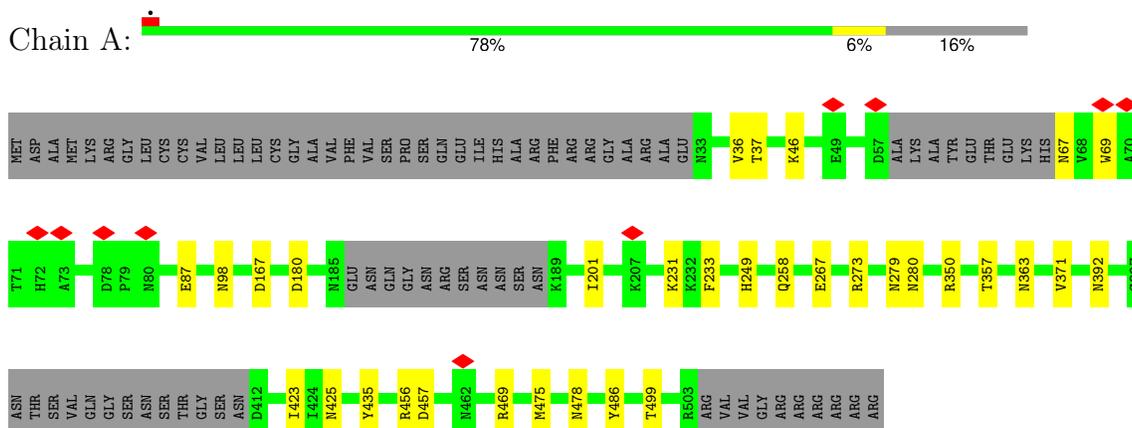
- Molecule 1: HIV-1 Envelope Glycoprotein BG505 SOSIP.664 gp120

- Molecule 1: HIV-1 Envelope Glycoprotein BG505 SOSIP.664 gp120

• Molecule 2: Envelope glycoprotein gp160

Chain B: 74% 6% 20%

• Molecule 2: Envelope glycoprotein gp160

Chain D: 76% 20%

• Molecule 2: Envelope glycoprotein gp160

Chain F: 75% 20%

• Molecule 3: RM20A3 heavy chain Fv

Chain G: 5% 89% 10%

• Molecule 3: RM20A3 heavy chain Fv

Chain J: 5% 90% 9%

• Molecule 3: RM20A3 heavy chain Fv

Chain M:

7%

90%

9%

E1 G9 G10 L11 V12 Q13 V37 R38 Q39 A40 K43 G44 L45 E46 W47 D61 R83 T87 A93 G96 F100H T110 V111 S112 SER

• Molecule 4: RM20A3 light chain Fv

Chain I:

5%

80%

5%

15%

A3 P7 P8 G13 Q17 T26 S27 G41 K42 G57 D81 D82 E83 Y96 L107 GLY GLN PRO LYS ALA SER PRO THR VAL THR LEU PHE PRO PRO SER SER GLU GLU LEU

• Molecule 4: RM20A3 light chain Fv

Chain K:

5%

78%

6%

15%

A3 Q6 Q17 H39 K42 L46 Y49 G57 V58 S59 K66 N69 T70 A71 D81 D82 E83 R94 T102 L107 GLY GLN PRO LYS ALA SER PRO THR VAL THR LEU PHE PRO PRO SER SER GLU GLU LEU

• Molecule 4: RM20A3 light chain Fv

Chain N:

83%

15%

A3 H39 Q79 A80 D81 D82 E83 A84 Y96 L107 GLY GLN PRO LYS ALA SER PRO THR VAL THR LEU PHE PRO PRO SER SER GLU GLU LEU
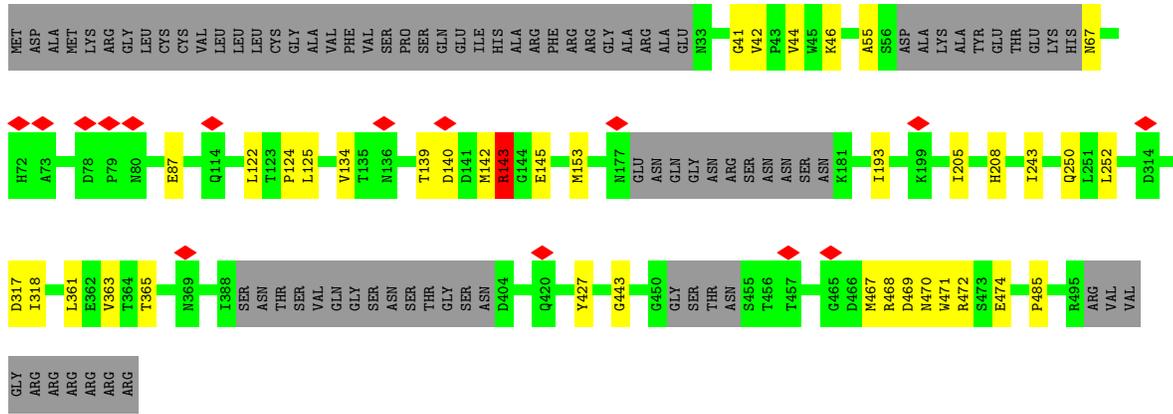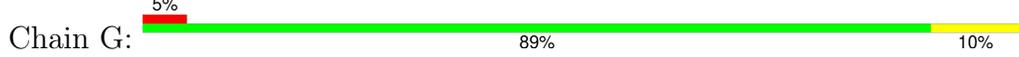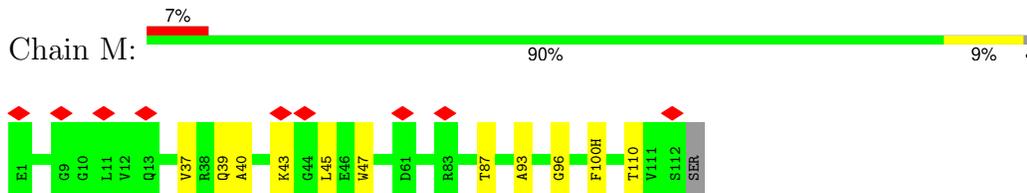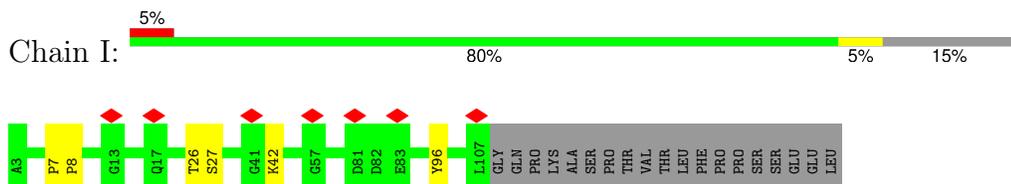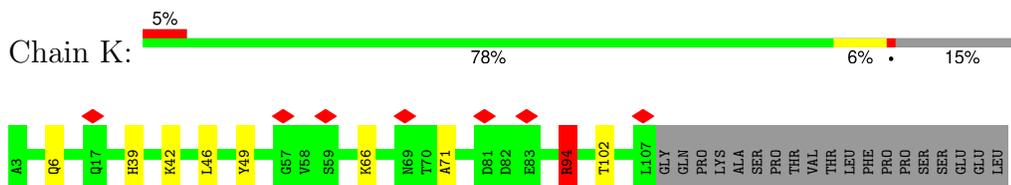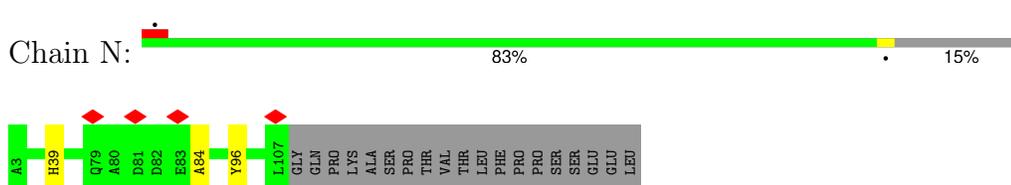
• Molecule 5: 253-7A03 heavy chain Fv

Chain H:

87%

12%

Q1 G8 D30 M34 Q39 M48 Q64 G65 R66 R73 M80 E81 D85 D86 Y96 G99 Y100 P100A L100B D101 F102 W103 S113
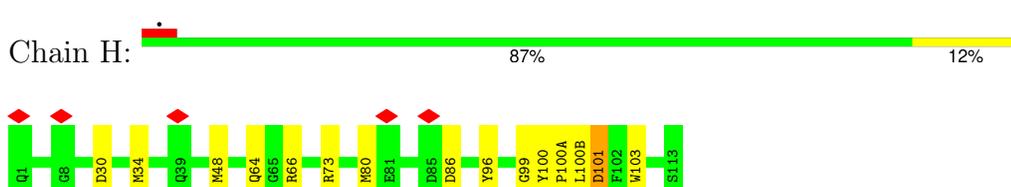
• Molecule 6: 253-7A03 lambda chain Fv
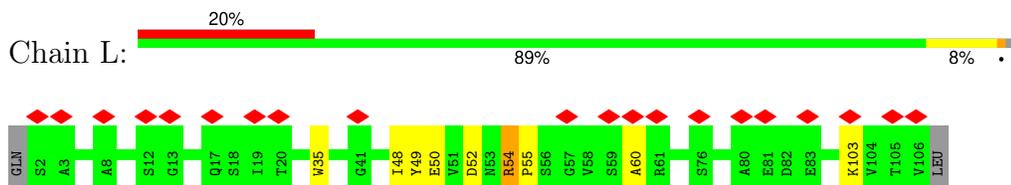
Chain L:

20%

89%

8%

GLN S2 A3 A8 S12 G13 Q17 S18 I19 T20 W35 G41 I48 Y49 E50 V51 D52 N53 R54 P55 S56 G57 V58 S59 A60 R61 S76 A80 E81 D82 E83 K103 V104 T105 V106 LEU

• Molecule 7: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain O:

50%

100%

• Molecule 7: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-gluc opyranose

Chain P:

• Molecule 7: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-gluc opyranose

Chain Q:

• Molecule 7: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-gluc opyranose

Chain S:

• Molecule 7: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-gluc opyranose

Chain T:

• Molecule 8: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-ac etamido-2-deoxy-beta-D-glucopyranose

Chain R:

• Molecule 9: alpha-D-mannopyranose-(1-3)-beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-b eta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain U:

• Molecule 10: alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyran ose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyra nose

Chain V:
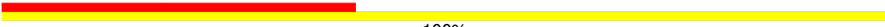
4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	51005	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS GLACIOS	Depositor
Voltage (kV)	200	Depositor
Electron dose $(e^-/\text{Å}^2)$	45.2	Depositor
Minimum defocus (nm)	700	Depositor
Maximum defocus (nm)	1800	Depositor
Magnification	190000	Depositor
Image detector	TFS FALCON 4i (4k x 4k)	Depositor
Maximum map value	0.944	Depositor
Minimum map value	-0.636	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.021	Depositor
Recommended contour level	0.15	Depositor
Map size (Å)	413.56, 413.56, 413.56	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.0339, 1.0339, 1.0339	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: BMA, MAN, NAG

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	0.27	0/3499	0.57	0/4751
1	C	0.28	0/3463	0.63	0/4701
1	E	0.29	0/3459	0.67	0/4695
2	B	0.34	0/990	0.60	0/1343
2	D	0.32	0/996	0.60	0/1351
2	F	0.37	0/990	0.66	1/1343 (0.1%)
3	G	0.28	0/963	0.64	0/1300
3	J	0.28	0/963	0.67	0/1300
3	M	0.28	0/963	0.64	0/1300
4	I	0.28	0/830	0.71	0/1129
4	K	0.29	0/830	0.65	0/1129
4	N	0.25	0/830	0.63	0/1129
5	H	0.39	0/961	0.76	0/1299
6	L	0.33	0/732	0.84	0/995
All	All	0.30	0/20469	0.65	1/27765 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	E	0	1
4	K	0	1
6	L	0	1
All	All	0	3

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	F	663	LEU	N-CA-C	-6.44	97.08	110.80

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	E	143	ARG	Sidechain
4	K	94	ARG	Sidechain
6	L	54	ARG	Sidechain

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	3428	0	3369	23	0
1	C	3393	0	3341	22	0
1	E	3389	0	3341	23	0
2	B	973	0	951	7	0
2	D	979	0	955	5	0
2	F	973	0	949	5	0
3	G	943	0	915	9	0
3	J	943	0	915	7	0
3	M	943	0	915	6	0
4	I	811	0	767	4	0
4	K	811	0	767	5	0
4	N	811	0	767	2	0
5	H	937	0	885	15	0
6	L	717	0	679	5	0
7	O	28	0	25	0	0
7	P	28	0	24	0	0
7	Q	28	0	25	1	0
7	S	28	0	25	1	0
7	T	28	0	25	0	0
8	R	39	0	34	0	0
9	U	50	0	43	0	0
10	V	61	0	52	0	0
11	A	154	0	142	2	0
11	B	14	0	13	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
11	C	210	0	195	2	0
11	D	28	0	26	0	0
11	E	168	0	156	4	0
11	F	42	0	39	0	0
All	All	20957	0	20340	125	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 3.

All (125) 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:67:ASN:ND2	1:A:69:TRP:O	1.72	1.23
3:G:108:LEU:HD12	3:G:108:LEU:O	1.75	0.85
5:H:96:TYR:HB3	5:H:100(A):PRO:HB2	1.71	0.71
5:H:48:MET:HE1	5:H:80:MET:HE2	1.75	0.69
5:H:100:TYR:N	5:H:100(A):PRO:HD3	2.10	0.66
1:E:250:GLN:NE2	1:E:363:VAL:O	2.29	0.66
1:A:279:ASN:HD21	5:H:99:GLY:HA2	1.62	0.65
1:E:87:GLU:HB2	11:E:601:NAG:H82	1.80	0.64
1:A:87:GLU:HB2	11:A:601:NAG:H82	1.82	0.60
1:A:457:ASP:OD2	5:H:64:GLN:NE2	2.34	0.60
5:H:66:ARG:NH2	5:H:86:ASP:OD2	2.36	0.59
1:C:213:ILE:HD12	1:C:214:PRO:HD2	1.83	0.58
3:J:87:THR:HG22	3:J:111:VAL:H	1.69	0.58
4:K:94:ARG:NH2	2:F:663:LEU:O	2.37	0.58
1:A:350:ARG:NH1	1:A:357:THR:O	2.37	0.57
1:E:139:THR:HG22	1:E:140:ASP:N	2.20	0.56
1:A:249:HIS:ND1	1:A:486:TYR:OH	2.36	0.56
5:H:100(B):LEU:HD12	5:H:103:TRP:CZ2	2.41	0.56
1:A:231:LYS:NZ	1:A:267:GLU:OE1	2.37	0.56
1:A:98:ASN:ND2	1:A:486:TYR:O	2.41	0.54
7:Q:1:NAG:H82	7:S:1:NAG:HN2	1.71	0.54
1:A:249:HIS:HD1	1:A:486:TYR:HH	1.55	0.53
1:C:139:THR:OG1	1:C:141:ASP:OD1	2.26	0.53
1:E:469:ASP:OD1	1:E:472:ARG:NH1	2.41	0.53
1:C:44:VAL:HG23	2:D:629:LEU:HD23	1.90	0.53
1:E:143:ARG:O	1:E:145:GLU:HG2	2.09	0.52
1:A:36:VAL:O	2:B:606:THR:OG1	2.26	0.52
1:E:46:LYS:NZ	2:F:632:ASP:OD2	2.41	0.52
1:A:475:MET:SD	1:A:478:ASN:ND2	2.83	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:500:ARG:HH21	3:J:98:SER:HB2	1.75	0.51
1:A:258:GLN:NE2	1:A:371:VAL:O	2.43	0.51
1:C:369:LEU:O	1:C:373:THR:OG1	2.28	0.51
1:C:36:VAL:O	2:D:606:THR:OG1	2.28	0.51
1:E:55:ALA:HB3	1:E:208:HIS:HB2	1.93	0.50
4:K:46:LEU:HD21	4:K:49:TYR:HB3	1.93	0.50
1:C:195:ASN:ND2	1:C:201:ILE:HB	2.27	0.50
1:A:46:LYS:NZ	2:B:632:ASP:OD2	2.43	0.50
1:C:131:CYS:HA	1:C:156:ASN:O	2.10	0.50
1:A:180:ASP:HB3	1:A:423:ILE:HG13	1.94	0.49
2:B:657:GLU:HA	2:B:660:LEU:HD12	1.94	0.49
1:A:67:ASN:CG	1:A:69:TRP:O	2.47	0.49
1:E:140:ASP:O	1:E:143:ARG:HB2	2.13	0.49
11:E:608:NAG:H82	11:E:611:NAG:HN2	1.77	0.49
3:M:93:ALA:HB1	3:M:100(H):PHE:HB3	1.94	0.49
2:B:617:ARG:HE	2:B:626:MET:HE1	1.77	0.49
1:C:298:ARG:NH2	1:C:439:ILE:O	2.41	0.49
3:J:52:ASN:HD22	3:J:56:LEU:HD13	1.78	0.49
6:L:50:GLU:O	6:L:52:ASP:N	2.47	0.48
1:A:363:ASN:O	1:A:469:ARG:NH1	2.38	0.48
1:A:280:ASN:OD1	1:A:456:ARG:NH2	2.47	0.48
1:E:125:LEU:HA	1:E:153:MET:HE1	1.95	0.48
2:B:591:GLN:NE2	2:F:541:ALA:O	2.47	0.48
3:G:108:LEU:HD12	3:G:108:LEU:C	2.38	0.48
2:D:541:ALA:O	2:F:591:GLN:NE2	2.47	0.47
1:E:193:ILE:HD11	1:E:427:TYR:HB2	1.96	0.47
1:C:98:ASN:ND2	1:C:486:TYR:O	2.44	0.47
1:C:171:LYS:HG3	11:C:603:NAG:H82	1.95	0.47
2:D:662:ALA:O	2:D:663:LEU:C	2.57	0.47
1:A:233:PHE:O	1:A:273:ARG:NH1	2.45	0.47
3:G:70:SER:OG	3:G:79:SER:OG	2.32	0.47
1:E:252:LEU:HD12	1:E:443:GLY:HA3	1.97	0.47
1:E:42:VAL:HG12	1:E:44:VAL:HG13	1.97	0.46
3:M:37:VAL:HG22	3:M:47:TRP:HA	1.96	0.46
5:H:96:TYR:HB3	5:H:100(A):PRO:CB	2.43	0.46
4:I:26:THR:OG1	4:I:27:SER:N	2.48	0.46
5:H:101:ASP:O	5:H:103:TRP:CD1	2.69	0.46
1:C:260:LEU:HD12	1:C:451:GLY:HA3	1.98	0.45
1:A:392:ASN:HD22	11:A:607:NAG:H83	1.82	0.45
4:K:6:GLN:NE2	4:K:102:THR:OG1	2.48	0.45
1:E:134:VAL:HG13	11:E:609:NAG:H81	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:H:100(B):LEU:O	5:H:101:ASP:C	2.59	0.44
3:J:52(A):ASP:O	3:J:71:ARG:NH2	2.50	0.44
1:E:361:LEU:O	1:E:365:THR:OG1	2.33	0.44
6:L:35:TRP:HB2	6:L:48:ILE:HG12	1.98	0.44
1:C:166:ARG:NH1	1:E:124:PRO:O	2.50	0.44
1:A:425:ASN:OD1	1:A:425:ASN:N	2.50	0.44
3:G:52:ASN:HB2	3:G:56:LEU:HB2	2.00	0.44
1:C:122:LEU:HD12	1:C:125:LEU:HD22	1.99	0.44
1:C:140:ASP:N	1:C:140:ASP:OD1	2.50	0.44
3:M:96:GLY:O	4:N:96:TYR:OH	2.29	0.44
1:E:67:ASN:ND2	1:E:205:ILE:HD13	2.33	0.44
4:I:7:PRO:HA	4:I:8:PRO:HD3	1.90	0.43
3:G:37:VAL:HG22	3:G:47:TRP:HA	1.99	0.43
3:G:52(A):ASP:O	3:G:71:ARG:NH2	2.51	0.43
5:H:96:TYR:HD2	5:H:100(A):PRO:HG2	1.83	0.43
1:A:37:THR:OG1	1:A:499:THR:OG1	2.32	0.43
1:E:467:MET:SD	1:E:470:ASN:ND2	2.91	0.43
1:C:396:ILE:HD12	11:C:609:NAG:H4	2.01	0.43
5:H:101:ASP:O	5:H:103:TRP:HD1	2.00	0.43
1:A:201:ILE:HD11	1:A:435:TYR:HB2	2.01	0.43
1:C:201:ILE:HD11	1:C:435:TYR:HB2	1.99	0.43
3:J:82(C):LEU:HD12	3:J:82(C):LEU:HA	1.88	0.43
3:M:40:ALA:HB3	3:M:43:LYS:HB2	1.99	0.43
6:L:54:ARG:CZ	6:L:60:ALA:HA	2.49	0.43
1:C:195:ASN:HD21	1:C:201:ILE:HB	1.83	0.42
3:M:39:GLN:HB2	3:M:45:LEU:HD23	2.00	0.42
3:G:93:ALA:HB1	3:G:100(H):PHE:HB3	2.01	0.42
1:E:41:GLY:N	1:E:485:PRO:O	2.50	0.42
3:M:87:THR:HG23	3:M:110:THR:HA	2.00	0.42
1:E:317:ASP:OD1	1:E:318:ILE:N	2.53	0.42
3:J:40:ALA:HB3	3:J:43:LYS:HB2	2.01	0.42
2:B:541:ALA:O	2:D:591:GLN:NE2	2.51	0.42
3:J:30:SER:HA	3:J:71:ARG:HH22	1.85	0.42
4:N:39:HIS:HD2	4:N:84:ALA:HB2	1.85	0.42
5:H:30:ASP:OD2	5:H:73:ARG:NE	2.53	0.42
5:H:34:MET:HE2	5:H:34:MET:HB2	1.92	0.41
1:C:259:LEU:HD12	1:C:374:HIS:CE1	2.55	0.41
1:E:122:LEU:HD13	1:E:125:LEU:HD22	2.01	0.41
3:G:96:GLY:O	4:I:96:TYR:OH	2.26	0.41
1:C:80:ASN:O	1:C:82:GLN:NE2	2.53	0.41
4:K:39:HIS:HB2	4:K:42:LYS:HB2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:H:100:TYR:N	5:H:100(A):PRO:CD	2.81	0.41
1:C:297:THR:HG22	1:C:444:ARG:HA	2.03	0.41
6:L:49:TYR:CE1	6:L:55:PRO:HG3	2.55	0.41
3:G:6:GLU:OE1	3:G:6:GLU:N	2.54	0.41
4:I:42:LYS:HE2	4:I:42:LYS:HB2	1.97	0.41
1:E:243:ILE:HG23	1:E:474:GLU:HG3	2.02	0.41
1:A:167:ASP:O	1:A:167:ASP:OD1	2.39	0.41
4:K:66:LYS:HA	4:K:71:ALA:HA	2.03	0.40
1:E:468:ARG:HA	1:E:471:TRP:CD1	2.57	0.40
6:L:103:LYS:HE3	6:L:103:LYS:HB3	1.80	0.40
2:B:536:THR:O	2:B:536:THR:OG1	2.29	0.40
11:E:601:NAG:O7	2:F:528:SER:OG	2.34	0.40
1:C:358:ILE:HG12	1:C:395:TRP:HE1	1.86	0.40
1:E:139:THR:HG22	1:E:140:ASP:H	1.84	0.40

There are no symmetry-related clashes.

5.3   Torsion angles   ⓘ

5.3.1   Protein backbone   ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	428/516 (83%)	417 (97%)	11 (3%)	0	100	100
1	C	420/516 (81%)	412 (98%)	8 (2%)	0	100	100
1	E	420/516 (81%)	403 (96%)	17 (4%)	0	100	100
2	B	118/153 (77%)	115 (98%)	3 (2%)	0	100	100
2	D	119/153 (78%)	115 (97%)	4 (3%)	0	100	100
2	F	118/153 (77%)	117 (99%)	1 (1%)	0	100	100
3	G	122/125 (98%)	113 (93%)	9 (7%)	0	100	100
3	J	122/125 (98%)	111 (91%)	11 (9%)	0	100	100
3	M	122/125 (98%)	117 (96%)	5 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	I	107/128 (84%)	96 (90%)	11 (10%)	0	100	100
4	K	107/128 (84%)	100 (94%)	7 (6%)	0	100	100
4	N	107/128 (84%)	99 (92%)	8 (8%)	0	100	100
5	H	117/119 (98%)	114 (97%)	2 (2%)	1 (1%)	14	44
6	L	96/100 (96%)	86 (90%)	10 (10%)	0	100	100
All	All	2523/2985 (84%)	2415 (96%)	107 (4%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
5	H	101	ASP

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	A	390/456 (86%)	390 (100%)	0	100	100
1	C	386/456 (85%)	383 (99%)	3 (1%)	79	87
1	E	385/456 (84%)	383 (100%)	2 (0%)	86	91
2	B	105/129 (81%)	105 (100%)	0	100	100
2	D	106/129 (82%)	106 (100%)	0	100	100
2	F	105/129 (81%)	103 (98%)	2 (2%)	52	72
3	G	101/102 (99%)	101 (100%)	0	100	100
3	J	101/102 (99%)	101 (100%)	0	100	100
3	M	101/102 (99%)	101 (100%)	0	100	100
4	I	89/106 (84%)	89 (100%)	0	100	100
4	K	89/106 (84%)	88 (99%)	1 (1%)	70	82
4	N	89/106 (84%)	89 (100%)	0	100	100
5	H	97/97 (100%)	97 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
6	L	81/83 (98%)	81 (100%)	0	100	100
All	All	2225/2559 (87%)	2217 (100%)	8 (0%)	88	93

All (8) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	160	ASN
1	C	386	ASN
1	C	503	ARG
4	K	94	ARG
1	E	142	MET
1	E	143	ARG
2	F	544	LEU
2	F	660	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (15) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	185	ASN
2	B	543	ASN
2	B	630	GLN
4	I	17	GLN
4	I	95	GLN
1	C	82	GLN
1	C	422	GLN
3	J	13	GLN
3	J	81	GLN
1	E	340	GLN
2	F	540	GLN
2	F	616	ASN
4	N	6	GLN
4	N	69	ASN
5	H	52	ASN

5.3.3　RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

22 monosaccharides are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
7	NAG	O	1	1,7	14,14,15	0.70	0	17,19,21	1.09	1 (5%)
7	NAG	O	2	7	14,14,15	0.71	0	17,19,21	0.83	1 (5%)
7	NAG	P	1	1,7	14,14,15	0.81	0	17,19,21	6.03	1 (5%)
7	NAG	P	2	7	14,14,15	0.64	0	17,19,21	1.30	1 (5%)
7	NAG	Q	1	1,7	14,14,15	0.64	0	17,19,21	1.28	1 (5%)
7	NAG	Q	2	7	14,14,15	0.67	0	17,19,21	0.80	0
8	NAG	R	1	1,8	14,14,15	0.75	0	17,19,21	1.20	1 (5%)
8	NAG	R	2	8	14,14,15	0.74	0	17,19,21	0.89	0
8	BMA	R	3	8	11,11,12	0.90	0	15,15,17	0.88	1 (6%)
7	NAG	S	1	1,7	14,14,15	0.74	0	17,19,21	1.02	1 (5%)
7	NAG	S	2	7	14,14,15	0.86	1 (7%)	17,19,21	0.45	0
7	NAG	T	1	1,7	14,14,15	0.70	0	17,19,21	1.07	1 (5%)
7	NAG	T	2	7	14,14,15	0.66	0	17,19,21	2.09	3 (17%)
9	NAG	U	1	9,1	14,14,15	0.71	0	17,19,21	0.95	1 (5%)
9	NAG	U	2	9	14,14,15	0.77	1 (7%)	17,19,21	0.69	0
9	BMA	U	3	9	11,11,12	0.79	0	15,15,17	0.88	1 (6%)
9	MAN	U	4	9	11,11,12	0.64	0	15,15,17	1.45	1 (6%)
10	NAG	V	1	10,1	14,14,15	0.72	0	17,19,21	1.24	1 (5%)
10	NAG	V	2	10	14,14,15	0.73	0	17,19,21	1.61	2 (11%)
10	BMA	V	3	10	11,11,12	0.79	0	15,15,17	1.03	1 (6%)
10	MAN	V	4	10	11,11,12	0.58	0	15,15,17	2.38	1 (6%)
10	MAN	V	5	10	11,11,12	0.82	0	15,15,17	1.01	1 (6%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
7	NAG	O	1	1,7	-	0/6/23/26	0/1/1/1
7	NAG	O	2	7	-	0/6/23/26	0/1/1/1
7	NAG	P	1	1,7	-	4/6/23/26	0/1/1/1
7	NAG	P	2	7	-	2/6/23/26	0/1/1/1
7	NAG	Q	1	1,7	-	2/6/23/26	0/1/1/1
7	NAG	Q	2	7	-	0/6/23/26	0/1/1/1
8	NAG	R	1	1,8	-	0/6/23/26	0/1/1/1
8	NAG	R	2	8	-	0/6/23/26	0/1/1/1
8	BMA	R	3	8	-	1/2/19/22	0/1/1/1
7	NAG	S	1	1,7	-	2/6/23/26	0/1/1/1
7	NAG	S	2	7	-	2/6/23/26	0/1/1/1
7	NAG	T	1	1,7	-	2/6/23/26	0/1/1/1
7	NAG	T	2	7	-	3/6/23/26	0/1/1/1
9	NAG	U	1	9,1	-	0/6/23/26	0/1/1/1
9	NAG	U	2	9	-	1/6/23/26	0/1/1/1
9	BMA	U	3	9	-	0/2/19/22	0/1/1/1
9	MAN	U	4	9	-	2/2/19/22	0/1/1/1
10	NAG	V	1	10,1	-	2/6/23/26	0/1/1/1
10	NAG	V	2	10	-	0/6/23/26	0/1/1/1
10	BMA	V	3	10	-	0/2/19/22	0/1/1/1
10	MAN	V	4	10	-	0/2/19/22	0/1/1/1
10	MAN	V	5	10	-	0/2/19/22	0/1/1/1

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	S	2	NAG	C1-C2	2.30	1.55	1.52
9	U	2	NAG	C1-C2	2.30	1.55	1.52

All (21) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	P	1	NAG	C2-N2-C7	24.63	155.91	122.90
10	V	4	MAN	C1-O5-C5	8.39	123.42	112.19
7	T	2	NAG	C2-N2-C7	7.02	132.31	122.90
9	U	4	MAN	C1-O5-C5	4.90	118.76	112.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	P	2	NAG	C2-N2-C7	4.88	129.44	122.90
10	V	2	NAG	O5-C1-C2	-4.80	103.87	111.29
7	Q	1	NAG	C2-N2-C7	4.64	129.11	122.90
10	V	1	NAG	C2-N2-C7	4.19	128.52	122.90
7	T	1	NAG	C2-N2-C7	3.70	127.86	122.90
7	T	2	NAG	O7-C7-N2	3.37	127.94	121.98
8	R	1	NAG	C2-N2-C7	3.04	126.98	122.90
10	V	2	NAG	C1-C2-N2	3.02	115.19	110.43
9	U	3	BMA	C1-O5-C5	2.70	115.80	112.19
10	V	3	BMA	C1-O5-C5	2.50	115.53	112.19
7	O	2	NAG	C2-N2-C7	2.35	126.05	122.90
8	R	3	BMA	C1-O5-C5	2.31	115.28	112.19
7	S	1	NAG	C1-O5-C5	2.28	115.24	112.19
10	V	5	MAN	C1-O5-C5	2.28	115.24	112.19
7	T	2	NAG	C8-C7-N2	-2.27	112.36	116.12
7	O	1	NAG	C1-C2-N2	-2.22	106.94	110.43
9	U	1	NAG	C1-O5-C5	2.08	114.97	112.19

There are no chirality outliers.

All (23) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
7	P	1	NAG	C1-C2-N2-C7
7	P	1	NAG	C8-C7-N2-C2
7	P	1	NAG	O7-C7-N2-C2
7	S	2	NAG	C4-C5-C6-O6
7	S	1	NAG	O5-C5-C6-O6
7	S	2	NAG	O5-C5-C6-O6
7	S	1	NAG	C4-C5-C6-O6
7	P	2	NAG	C8-C7-N2-C2
7	P	2	NAG	O7-C7-N2-C2
7	Q	1	NAG	C8-C7-N2-C2
7	Q	1	NAG	O7-C7-N2-C2
7	T	1	NAG	C8-C7-N2-C2
7	T	1	NAG	O7-C7-N2-C2
10	V	1	NAG	C8-C7-N2-C2
10	V	1	NAG	O7-C7-N2-C2
7	T	2	NAG	O5-C5-C6-O6
7	T	2	NAG	C4-C5-C6-O6
7	T	2	NAG	C3-C2-N2-C7
8	R	3	BMA	O5-C5-C6-O6
9	U	4	MAN	C4-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
9	U	4	MAN	O5-C5-C6-O6
9	U	2	NAG	O5-C5-C6-O6
7	P	1	NAG	C3-C2-N2-C7

There are no ring outliers.

2 monomers are involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	Q	1	NAG	1	0
7	S	1	NAG	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

Oligosaccharide Chain O

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain P

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain Q

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain S

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain T

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain R

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain U

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain V

Bond lengths

Bond angles

Torsions

Rings

5.6 Ligand geometry (i)

44 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
11	NAG	E	606	1	14,14,15	0.73	0	17,19,21	0.79	0
11	NAG	E	611	1	14,14,15	0.82	1 (7%)	17,19,21	1.33	3 (17%)
11	NAG	E	612	1	14,14,15	0.71	0	17,19,21	0.73	1 (5%)
11	NAG	E	609	1	14,14,15	0.62	0	17,19,21	1.13	2 (11%)
11	NAG	E	603	1	14,14,15	0.64	0	17,19,21	1.07	2 (11%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
11	NAG	D	702	2	14,14,15	0.71	0	17,19,21	0.98	1 (5%)
11	NAG	C	612	1	14,14,15	0.69	0	17,19,21	0.60	0
11	NAG	C	615	1	14,14,15	0.84	1 (7%)	17,19,21	0.61	0
11	NAG	C	601	1	14,14,15	0.88	1 (7%)	17,19,21	1.65	1 (5%)
11	NAG	E	601	1	14,14,15	0.77	0	17,19,21	1.06	1 (5%)
11	NAG	A	603	1	14,14,15	0.78	0	17,19,21	1.06	3 (17%)
11	NAG	C	609	1	14,14,15	0.69	0	17,19,21	1.16	1 (5%)
11	NAG	C	614	1	14,14,15	0.74	0	17,19,21	0.63	0
11	NAG	A	601	1	14,14,15	0.79	0	17,19,21	0.60	0
11	NAG	C	610	1	14,14,15	0.69	0	17,19,21	0.52	0
11	NAG	E	608	1	14,14,15	0.72	0	17,19,21	1.18	1 (5%)
11	NAG	F	701	2	14,14,15	0.64	0	17,19,21	1.43	2 (11%)
11	NAG	A	602	1	14,14,15	0.71	0	17,19,21	1.17	2 (11%)
11	NAG	A	604	1	14,14,15	0.59	0	17,19,21	1.45	3 (17%)
11	NAG	E	602	1	14,14,15	0.66	0	17,19,21	1.22	1 (5%)
11	NAG	C	603	1	14,14,15	0.76	0	17,19,21	0.71	0
11	NAG	E	610	1	14,14,15	0.68	0	17,19,21	0.86	1 (5%)
11	NAG	A	608	1	14,14,15	0.74	0	17,19,21	0.89	1 (5%)
11	NAG	C	602	-	14,14,15	0.72	0	17,19,21	3.26	4 (23%)
11	NAG	C	607	1	14,14,15	0.73	0	17,19,21	0.62	0
11	NAG	A	607	1	14,14,15	0.78	1 (7%)	17,19,21	1.50	3 (17%)
11	NAG	A	610	1	14,14,15	0.77	1 (7%)	17,19,21	3.96	2 (11%)
11	NAG	C	606	1	14,14,15	0.74	0	17,19,21	0.72	0
11	NAG	C	613	1	14,14,15	0.72	0	17,19,21	0.82	1 (5%)
11	NAG	A	611	1	14,14,15	0.80	1 (7%)	17,19,21	0.77	1 (5%)
11	NAG	B	701	2	14,14,15	0.77	0	17,19,21	1.09	2 (11%)
11	NAG	C	611	1	14,14,15	0.69	0	17,19,21	0.58	0
11	NAG	C	605	1	14,14,15	0.75	0	17,19,21	0.96	2 (11%)
11	NAG	E	604	1	14,14,15	0.72	0	17,19,21	0.62	0
11	NAG	F	703	2	14,14,15	0.66	0	17,19,21	0.94	1 (5%)
11	NAG	E	605	1	14,14,15	0.66	0	17,19,21	1.24	2 (11%)
11	NAG	F	702	2	14,14,15	0.77	0	17,19,21	0.75	0
11	NAG	A	606	1	14,14,15	0.78	1 (7%)	17,19,21	0.80	0
11	NAG	A	605	1	14,14,15	0.72	0	17,19,21	0.68	0
11	NAG	A	609	1	14,14,15	0.80	1 (7%)	17,19,21	0.77	0
11	NAG	C	604	1	14,14,15	0.75	0	17,19,21	1.05	1 (5%)
11	NAG	C	608	1	14,14,15	0.71	0	17,19,21	0.80	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
11	NAG	D	701	2	14,14,15	0.68	0	17,19,21	1.28	1 (5%)
11	NAG	E	607	1	14,14,15	0.69	0	17,19,21	0.89	1 (5%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
11	NAG	E	606	1	-	0/6/23/26	0/1/1/1
11	NAG	E	611	1	-	1/6/23/26	0/1/1/1
11	NAG	E	612	1	-	1/6/23/26	0/1/1/1
11	NAG	E	609	1	-	3/6/23/26	0/1/1/1
11	NAG	E	603	1	-	1/6/23/26	0/1/1/1
11	NAG	D	702	2	-	0/6/23/26	0/1/1/1
11	NAG	C	612	1	-	1/6/23/26	0/1/1/1
11	NAG	C	615	1	-	1/6/23/26	0/1/1/1
11	NAG	C	601	1	-	1/6/23/26	0/1/1/1
11	NAG	E	601	1	-	0/6/23/26	0/1/1/1
11	NAG	A	603	1	-	0/6/23/26	0/1/1/1
11	NAG	C	609	1	-	2/6/23/26	0/1/1/1
11	NAG	C	614	1	-	1/6/23/26	0/1/1/1
11	NAG	A	601	1	-	0/6/23/26	0/1/1/1
11	NAG	C	610	1	-	1/6/23/26	0/1/1/1
11	NAG	E	608	1	-	2/6/23/26	0/1/1/1
11	NAG	F	701	2	-	0/6/23/26	0/1/1/1
11	NAG	A	602	1	-	1/6/23/26	0/1/1/1
11	NAG	A	604	1	-	0/6/23/26	0/1/1/1
11	NAG	E	602	1	-	0/6/23/26	0/1/1/1
11	NAG	C	603	1	-	1/6/23/26	0/1/1/1
11	NAG	E	610	1	-	0/6/23/26	0/1/1/1
11	NAG	A	608	1	-	1/6/23/26	0/1/1/1
11	NAG	C	602	-	-	3/6/23/26	0/1/1/1
11	NAG	C	607	1	-	1/6/23/26	0/1/1/1
11	NAG	A	607	1	-	2/6/23/26	0/1/1/1
11	NAG	A	610	1	-	4/6/23/26	0/1/1/1
11	NAG	C	606	1	-	0/6/23/26	0/1/1/1
11	NAG	C	613	1	-	1/6/23/26	0/1/1/1
11	NAG	A	611	1	-	1/6/23/26	0/1/1/1
11	NAG	B	701	2	-	4/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
11	NAG	C	611	1	-	2/6/23/26	0/1/1/1
11	NAG	C	605	1	-	1/6/23/26	0/1/1/1
11	NAG	E	604	1	-	0/6/23/26	0/1/1/1
11	NAG	F	703	2	-	3/6/23/26	0/1/1/1
11	NAG	E	605	1	-	2/6/23/26	0/1/1/1
11	NAG	F	702	2	-	0/6/23/26	0/1/1/1
11	NAG	A	606	1	-	1/6/23/26	0/1/1/1
11	NAG	A	605	1	-	2/6/23/26	0/1/1/1
11	NAG	A	609	1	-	2/6/23/26	0/1/1/1
11	NAG	C	604	1	-	1/6/23/26	0/1/1/1
11	NAG	C	608	1	-	2/6/23/26	0/1/1/1
11	NAG	D	701	2	-	4/6/23/26	0/1/1/1
11	NAG	E	607	1	-	3/6/23/26	0/1/1/1

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	C	601	NAG	C2-N2	-2.47	1.42	1.46
11	A	610	NAG	C1-C2	2.33	1.55	1.52
11	A	611	NAG	C1-C2	2.29	1.55	1.52
11	A	606	NAG	C1-C2	2.23	1.55	1.52
11	C	615	NAG	C1-C2	2.21	1.55	1.52
11	E	611	NAG	C1-C2	2.14	1.55	1.52
11	A	609	NAG	C1-C2	2.11	1.55	1.52
11	A	607	NAG	C1-C2	2.07	1.55	1.52

All (48) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
11	A	610	NAG	C2-N2-C7	15.80	144.07	122.90
11	C	602	NAG	C2-N2-C7	11.77	138.67	122.90
11	C	601	NAG	C2-N2-C7	-5.83	115.09	122.90
11	F	701	NAG	C2-N2-C7	4.51	128.95	122.90
11	D	701	NAG	C2-N2-C7	4.50	128.93	122.90
11	C	602	NAG	O7-C7-N2	4.24	129.48	121.98
11	E	605	NAG	C2-N2-C7	3.82	128.01	122.90
11	A	604	NAG	O5-C1-C2	-3.81	105.40	111.29
11	E	608	NAG	C2-N2-C7	3.64	127.78	122.90
11	E	602	NAG	C1-O5-C5	3.55	116.95	112.19
11	E	609	NAG	C2-N2-C7	3.46	127.54	122.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
11	A	607	NAG	C1-O5-C5	3.37	116.70	112.19
11	A	607	NAG	C2-N2-C7	3.33	127.36	122.90
11	E	601	NAG	O5-C1-C2	-3.32	106.15	111.29
11	E	603	NAG	O5-C1-C2	-3.32	106.16	111.29
11	C	604	NAG	C2-N2-C7	3.26	127.27	122.90
11	C	609	NAG	O5-C1-C2	-3.10	106.49	111.29
11	F	703	NAG	C2-N2-C7	3.05	126.99	122.90
11	D	702	NAG	O5-C1-C2	-3.00	106.65	111.29
11	E	611	NAG	C2-N2-C7	2.99	126.90	122.90
11	E	611	NAG	O5-C1-C2	-2.95	106.73	111.29
11	A	602	NAG	C1-C2-N2	2.85	114.92	110.43
11	A	607	NAG	O5-C1-C2	2.77	115.57	111.29
11	E	607	NAG	C2-N2-C7	2.74	126.57	122.90
11	A	608	NAG	C2-N2-C7	2.64	126.44	122.90
11	F	701	NAG	C1-O5-C5	2.60	115.68	112.19
11	A	603	NAG	O5-C1-C2	-2.56	107.33	111.29
11	A	604	NAG	C1-C2-N2	2.54	114.43	110.43
11	A	604	NAG	C1-O5-C5	2.53	115.57	112.19
11	A	610	NAG	C8-C7-N2	2.52	120.30	116.12
11	C	602	NAG	C8-C7-N2	-2.51	111.95	116.12
11	C	602	NAG	C1-C2-N2	2.44	114.28	110.43
11	B	701	NAG	C1-O5-C5	2.41	115.42	112.19
11	B	701	NAG	C2-N2-C7	2.32	126.01	122.90
11	C	605	NAG	C1-O5-C5	2.28	115.24	112.19
11	E	610	NAG	C1-O5-C5	2.22	115.16	112.19
11	C	613	NAG	C1-O5-C5	2.19	115.11	112.19
11	A	602	NAG	C1-O5-C5	2.17	115.09	112.19
11	E	611	NAG	C1-O5-C5	2.16	115.09	112.19
11	A	611	NAG	C1-O5-C5	2.15	115.07	112.19
11	E	612	NAG	C1-O5-C5	2.15	115.07	112.19
11	C	605	NAG	C2-N2-C7	2.14	125.77	122.90
11	A	603	NAG	C1-O5-C5	2.13	115.04	112.19
11	C	608	NAG	C2-N2-C7	-2.13	120.05	122.90
11	A	603	NAG	C1-C2-N2	-2.09	107.13	110.43
11	E	609	NAG	O5-C1-C2	-2.09	108.06	111.29
11	E	603	NAG	C2-N2-C7	2.01	125.59	122.90
11	E	605	NAG	C1-O5-C5	2.01	114.88	112.19

There are no chirality outliers.

All (57) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
11	A	610	NAG	C8-C7-N2-C2
11	C	602	NAG	C1-C2-N2-C7
11	C	609	NAG	C4-C5-C6-O6
11	A	605	NAG	O5-C5-C6-O6
11	C	609	NAG	O5-C5-C6-O6
11	D	701	NAG	O5-C5-C6-O6
11	A	605	NAG	C4-C5-C6-O6
11	D	701	NAG	C4-C5-C6-O6
11	A	609	NAG	O5-C5-C6-O6
11	C	602	NAG	O5-C5-C6-O6
11	A	609	NAG	C4-C5-C6-O6
11	C	602	NAG	C4-C5-C6-O6
11	A	607	NAG	C8-C7-N2-C2
11	A	607	NAG	O7-C7-N2-C2
11	A	610	NAG	O7-C7-N2-C2
11	B	701	NAG	C8-C7-N2-C2
11	B	701	NAG	O7-C7-N2-C2
11	D	701	NAG	C8-C7-N2-C2
11	D	701	NAG	O7-C7-N2-C2
11	E	605	NAG	C8-C7-N2-C2
11	E	605	NAG	O7-C7-N2-C2
11	E	607	NAG	C8-C7-N2-C2
11	E	607	NAG	O7-C7-N2-C2
11	E	608	NAG	C8-C7-N2-C2
11	E	608	NAG	O7-C7-N2-C2
11	E	609	NAG	C8-C7-N2-C2
11	E	609	NAG	O7-C7-N2-C2
11	F	703	NAG	C8-C7-N2-C2
11	F	703	NAG	O7-C7-N2-C2
11	C	611	NAG	C4-C5-C6-O6
11	A	610	NAG	O5-C5-C6-O6
11	A	610	NAG	C4-C5-C6-O6
11	C	610	NAG	O5-C5-C6-O6
11	E	603	NAG	O5-C5-C6-O6
11	B	701	NAG	O5-C5-C6-O6
11	E	609	NAG	O5-C5-C6-O6
11	C	615	NAG	O5-C5-C6-O6
11	C	613	NAG	O5-C5-C6-O6
11	E	607	NAG	O5-C5-C6-O6
11	A	602	NAG	O5-C5-C6-O6
11	C	611	NAG	O5-C5-C6-O6
11	F	703	NAG	O5-C5-C6-O6
11	C	612	NAG	O5-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
11	C	607	NAG	O5-C5-C6-O6
11	C	608	NAG	O5-C5-C6-O6
11	E	611	NAG	O5-C5-C6-O6
11	C	614	NAG	O5-C5-C6-O6
11	A	611	NAG	O5-C5-C6-O6
11	A	608	NAG	O5-C5-C6-O6
11	A	606	NAG	O5-C5-C6-O6
11	C	605	NAG	O5-C5-C6-O6
11	E	612	NAG	O5-C5-C6-O6
11	C	604	NAG	O5-C5-C6-O6
11	B	701	NAG	C4-C5-C6-O6
11	C	601	NAG	O5-C5-C6-O6
11	C	603	NAG	O5-C5-C6-O6
11	C	608	NAG	C1-C2-N2-C7

There are no ring outliers.

8 monomers are involved in 8 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
11	E	611	NAG	1	0
11	E	609	NAG	1	0
11	E	601	NAG	2	0
11	C	609	NAG	1	0
11	A	601	NAG	1	0
11	E	608	NAG	1	0
11	C	603	NAG	1	0
11	A	607	NAG	1	0

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-48291. 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 ⓘ
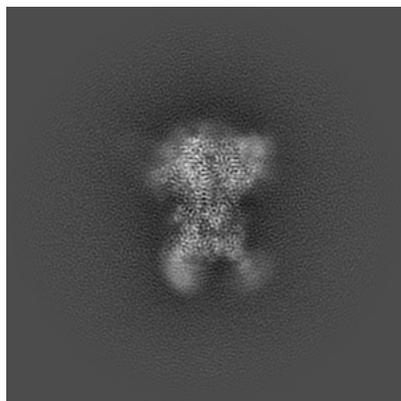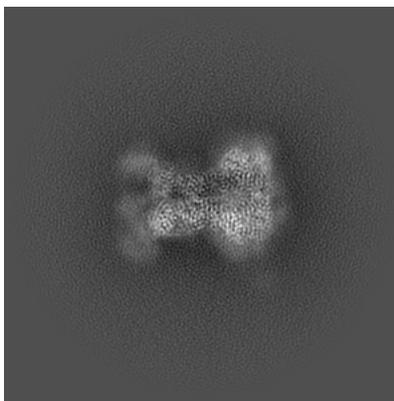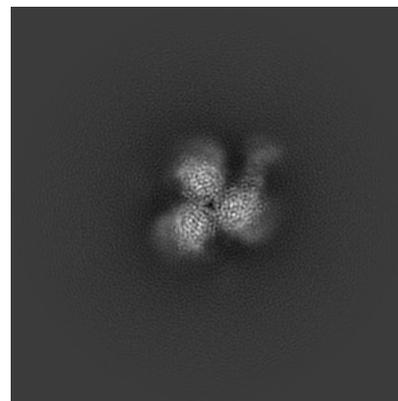
6.1.1 Primary map

X   Y   Z

6.1.2 Raw map

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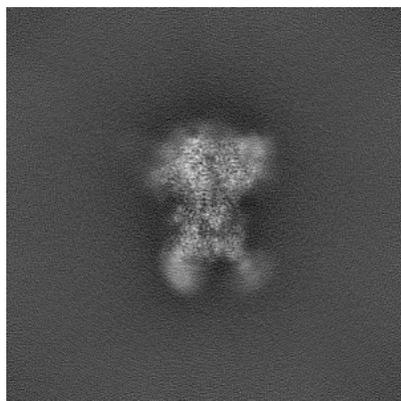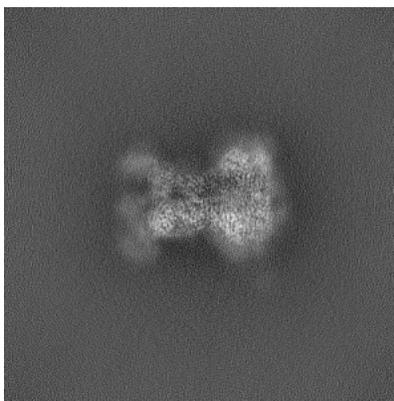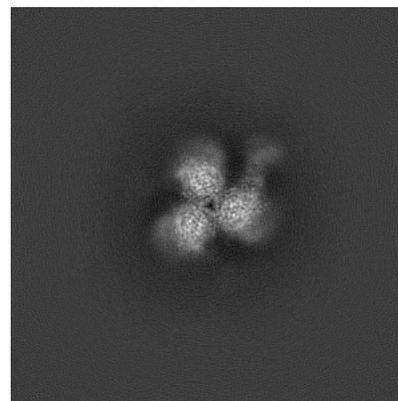
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ
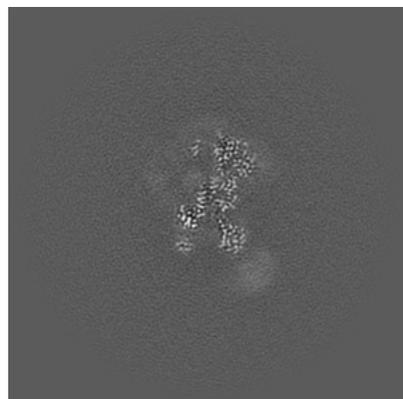
6.2.1 Primary map
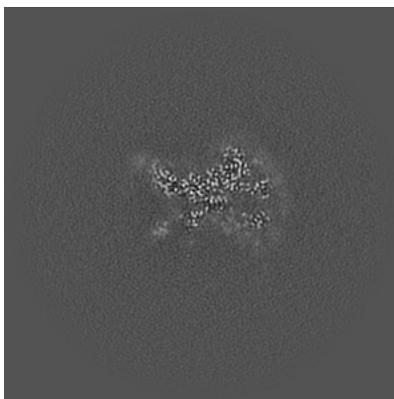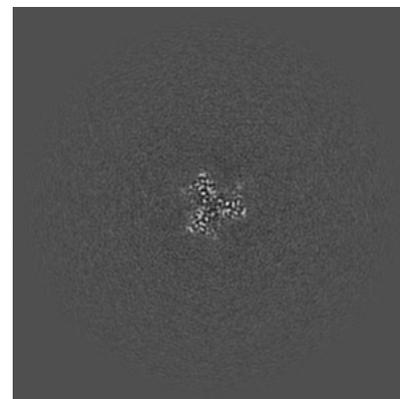
| X Index: 200 | Y Index: 200 | Z Index: 200 |

6.2.2 Raw map
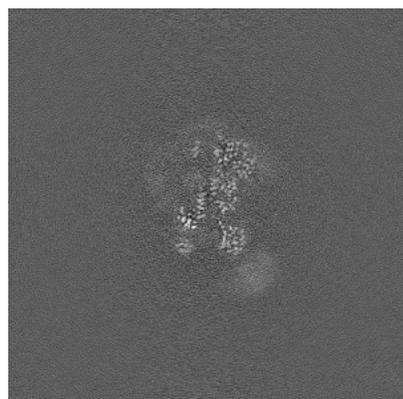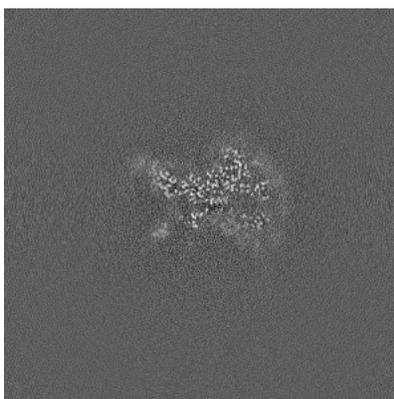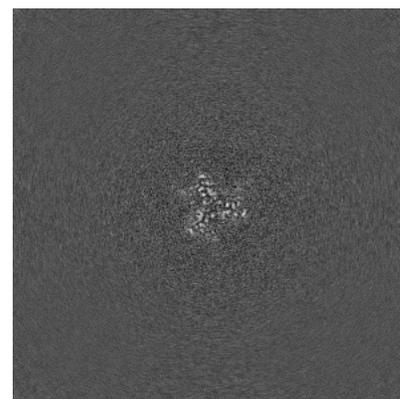
| X Index: 200 | Y Index: 200 | Z Index: 200 |

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

6.3 Largest variance slices (i)

6.3.1 Primary map
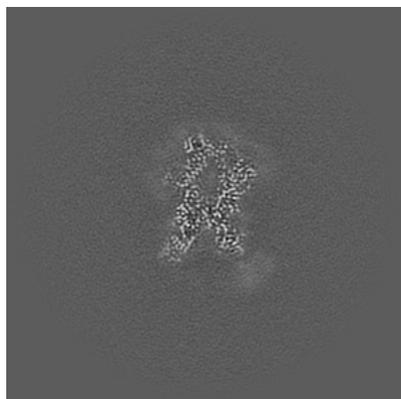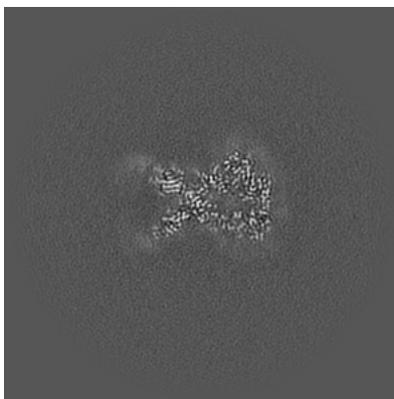
| X Index: 190 | Y Index: 191 | Z Index: 233 |
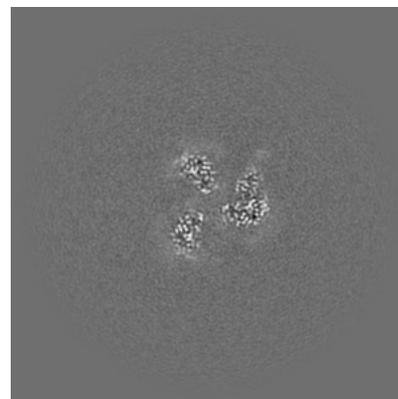
6.3.2 Raw map
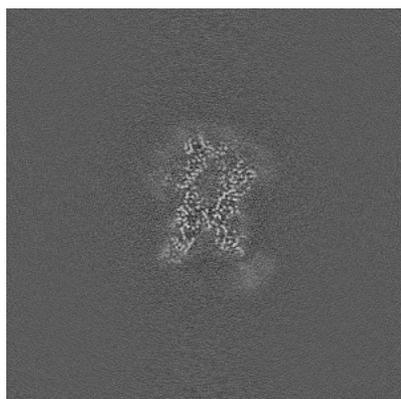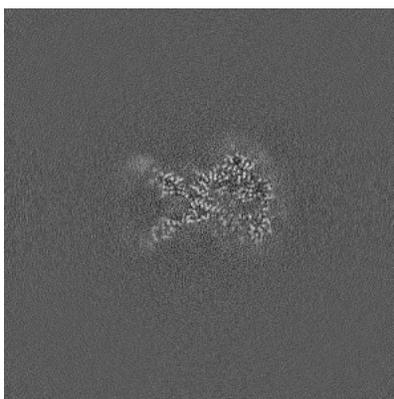
| X Index: 190 | Y Index: 193 | Z Index: 229 |
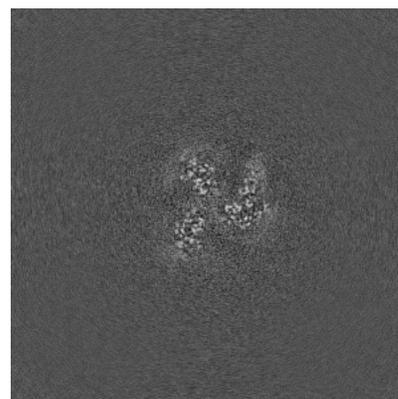
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map
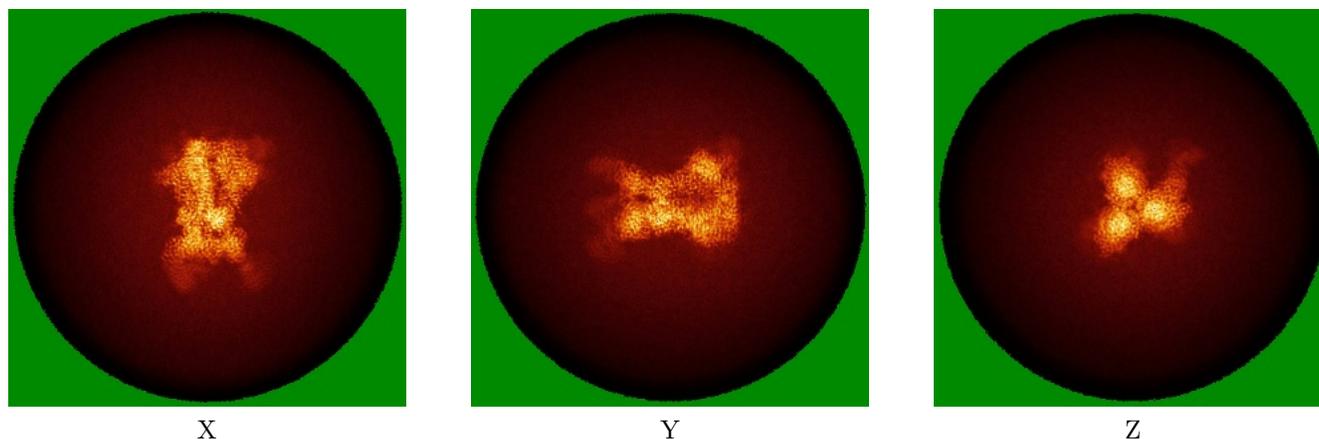
X	Y	Z

6.4.2 Raw map

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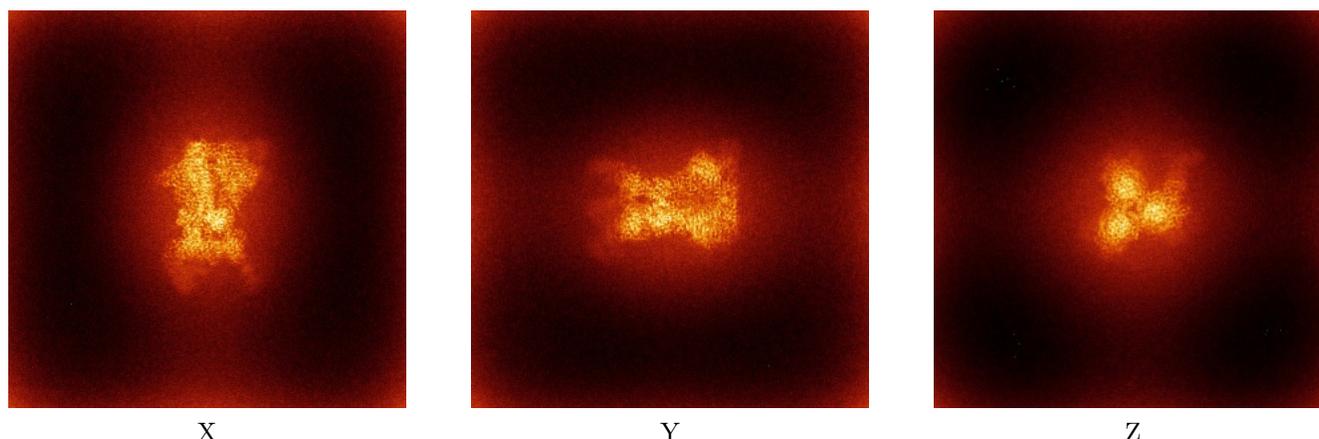
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views ⓘ

6.5.1 Primary map

| X | Y | Z |
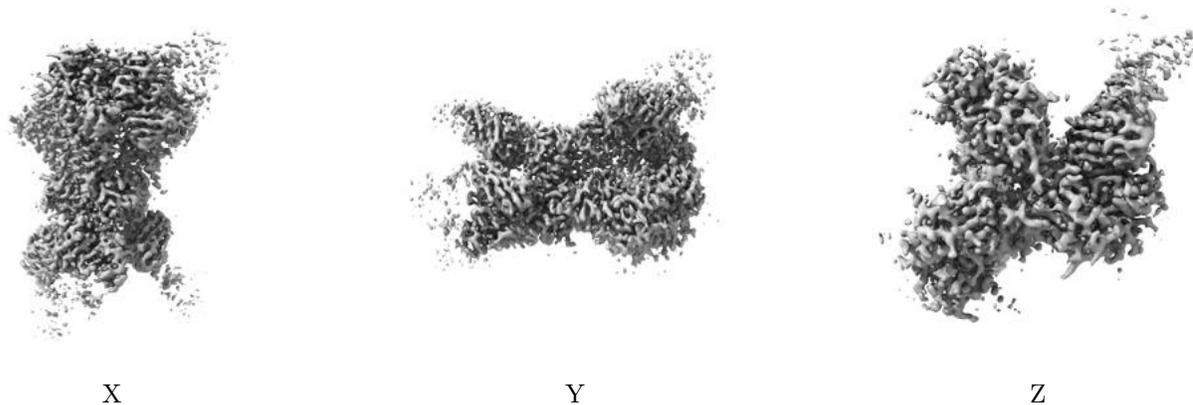
The images above show the 3D surface view of the map at the recommended contour level 0.15. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

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 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_48291_msk_1.map (i)

X   Y   Z
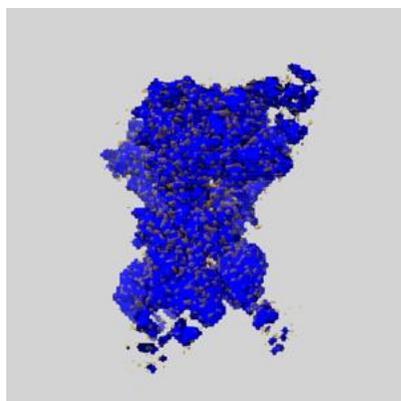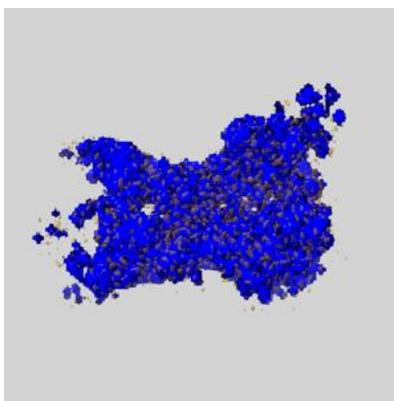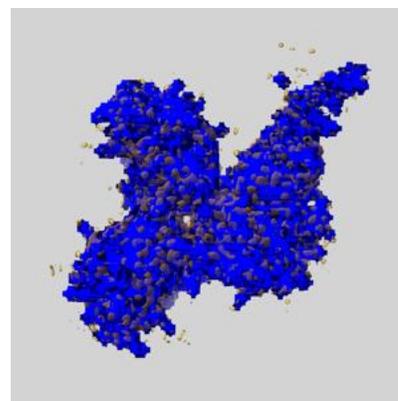
7 Map analysis ⓘ

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

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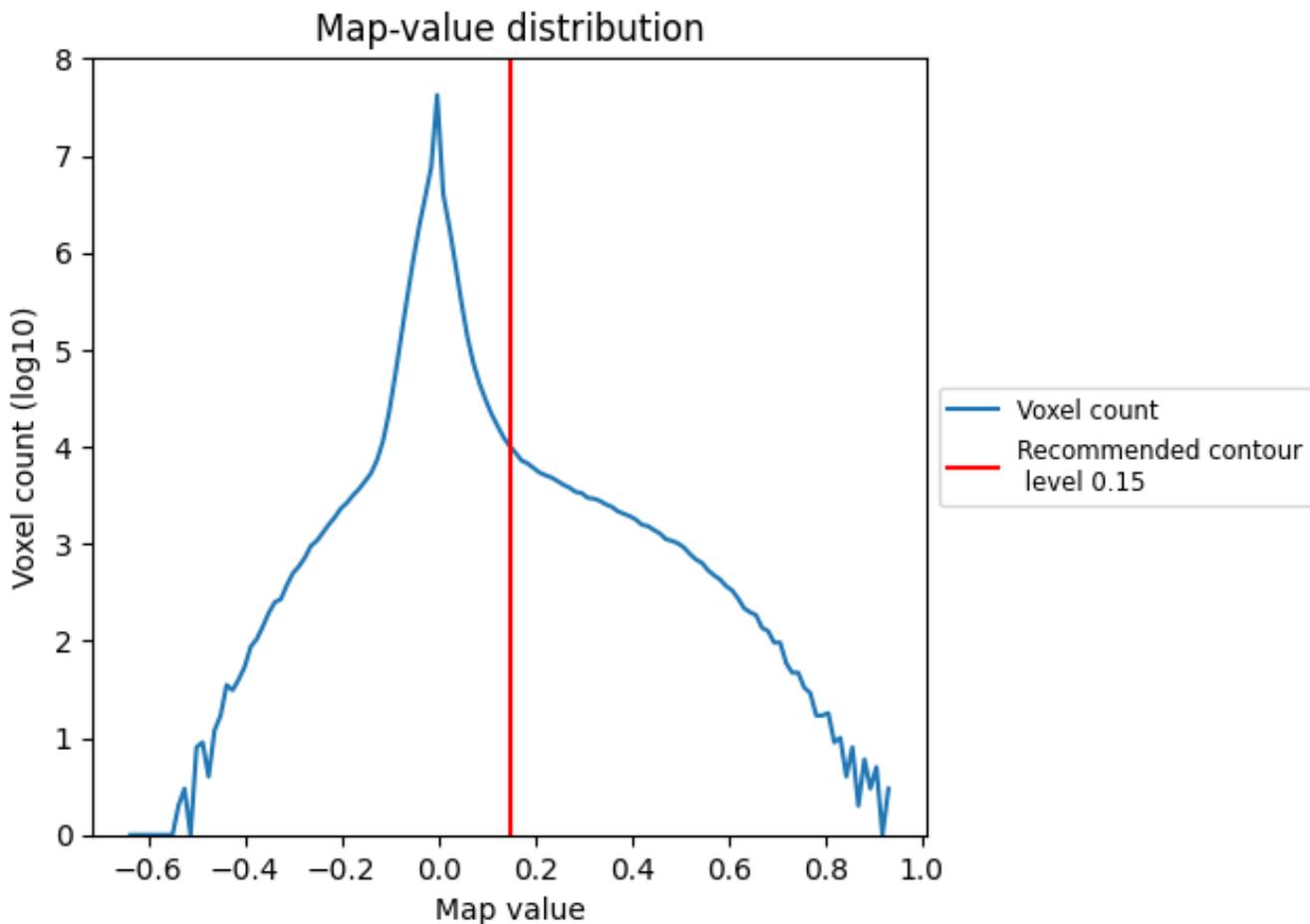
The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

7.2   Volume estimate ⓘ
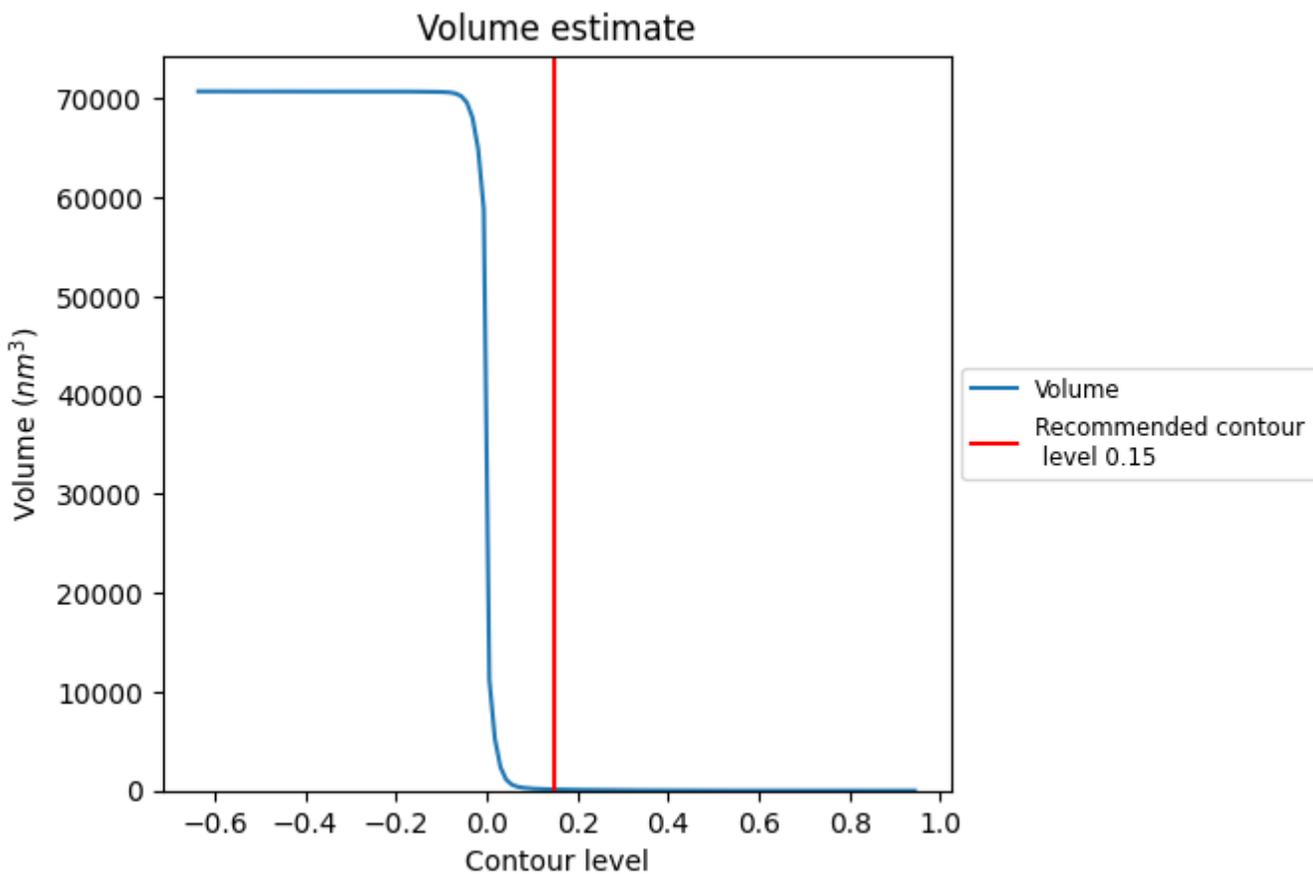
The volume at the recommended contour level is 120 nm^3; this corresponds to an approximate mass of 108 kDa.

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)
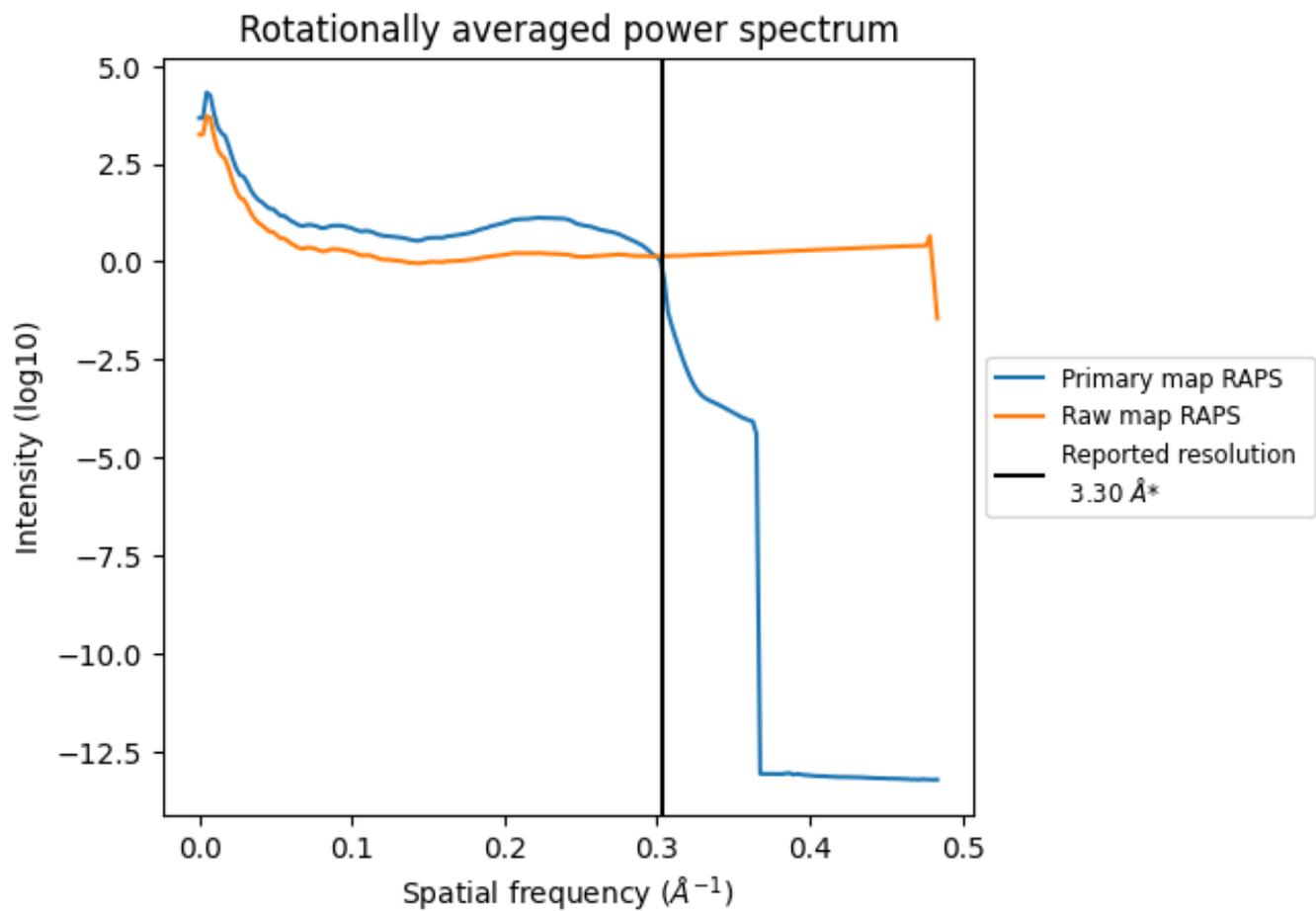
*Reported resolution corresponds to spatial frequency of 0.303 Å^{-1}

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 ⓘ
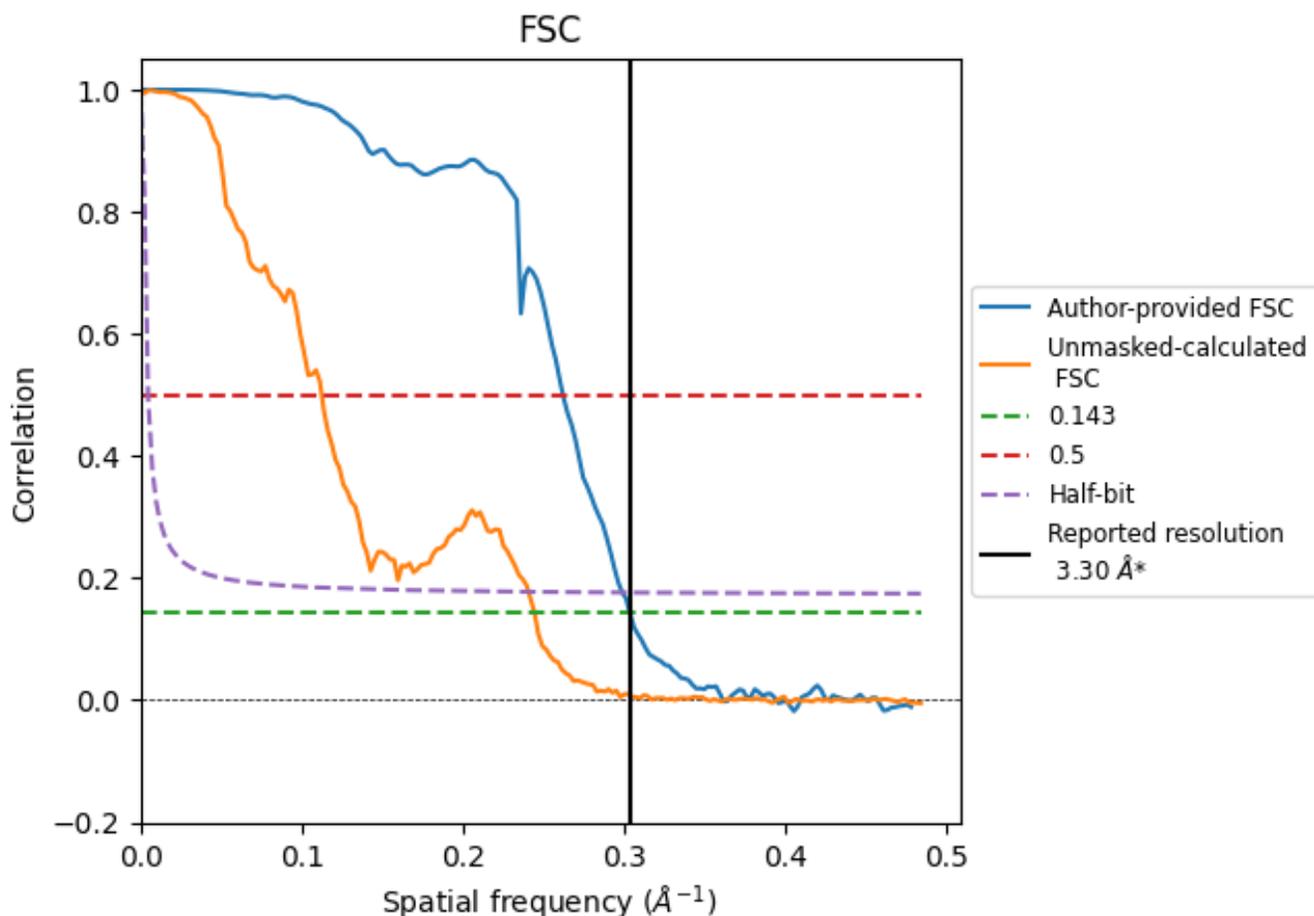
*Reported resolution corresponds to spatial frequency of 0.303 Å^{-1}

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.30	-	-
Author-provided FSC curve	3.30	3.82	3.35
Unmasked-calculated*	4.09	8.90	4.16

*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 4.09 differs from the reported value 3.3 by more than 10 %

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-48291 and PDB model 9MII. Per-residue inclusion information can be found in section 3 on page 13.

9.1 Map-model overlay ⓘ

X   Y   Z
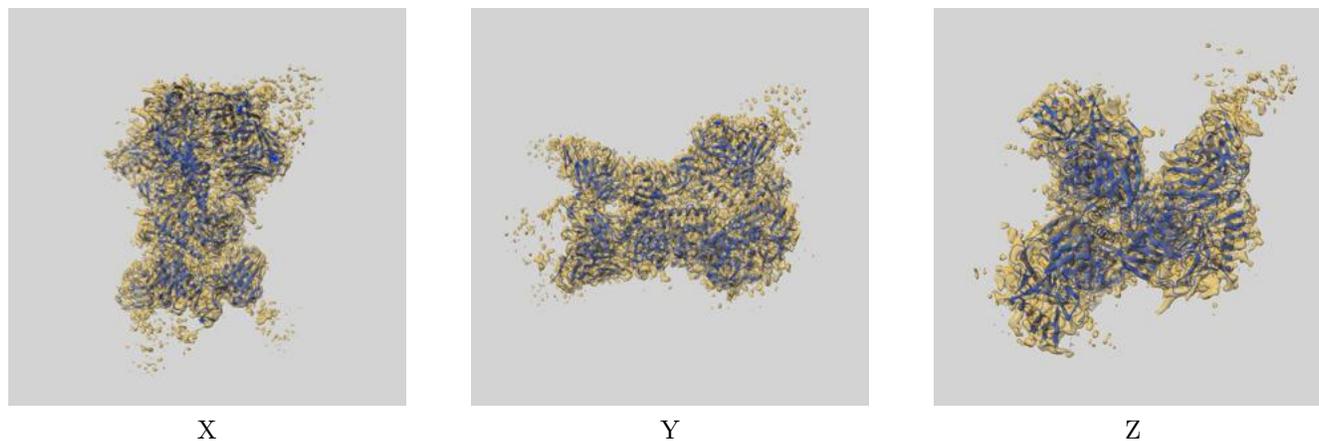
The images above show the 3D surface view of the map at the recommended contour level 0.15 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model ⓘ

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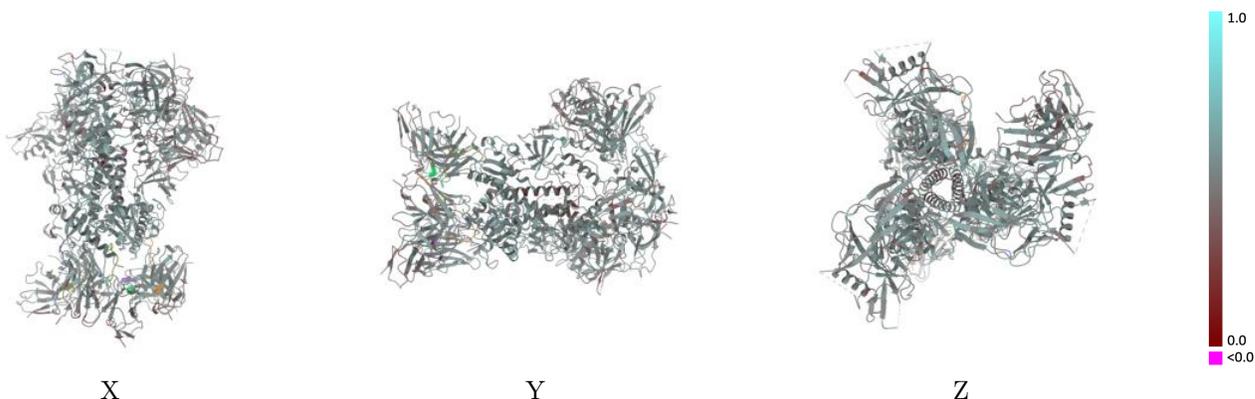
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

X   Y   Z
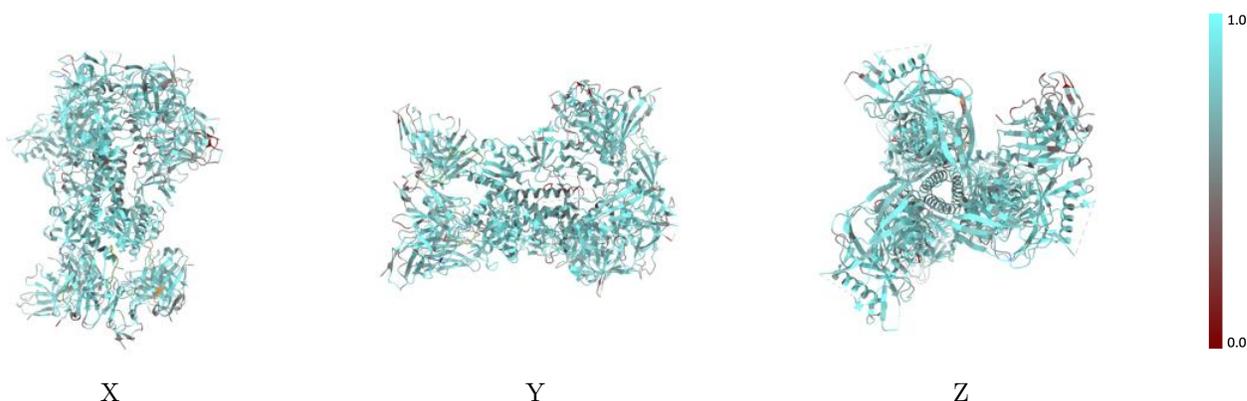
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.15).

9.4 Atom inclusion ⓘ
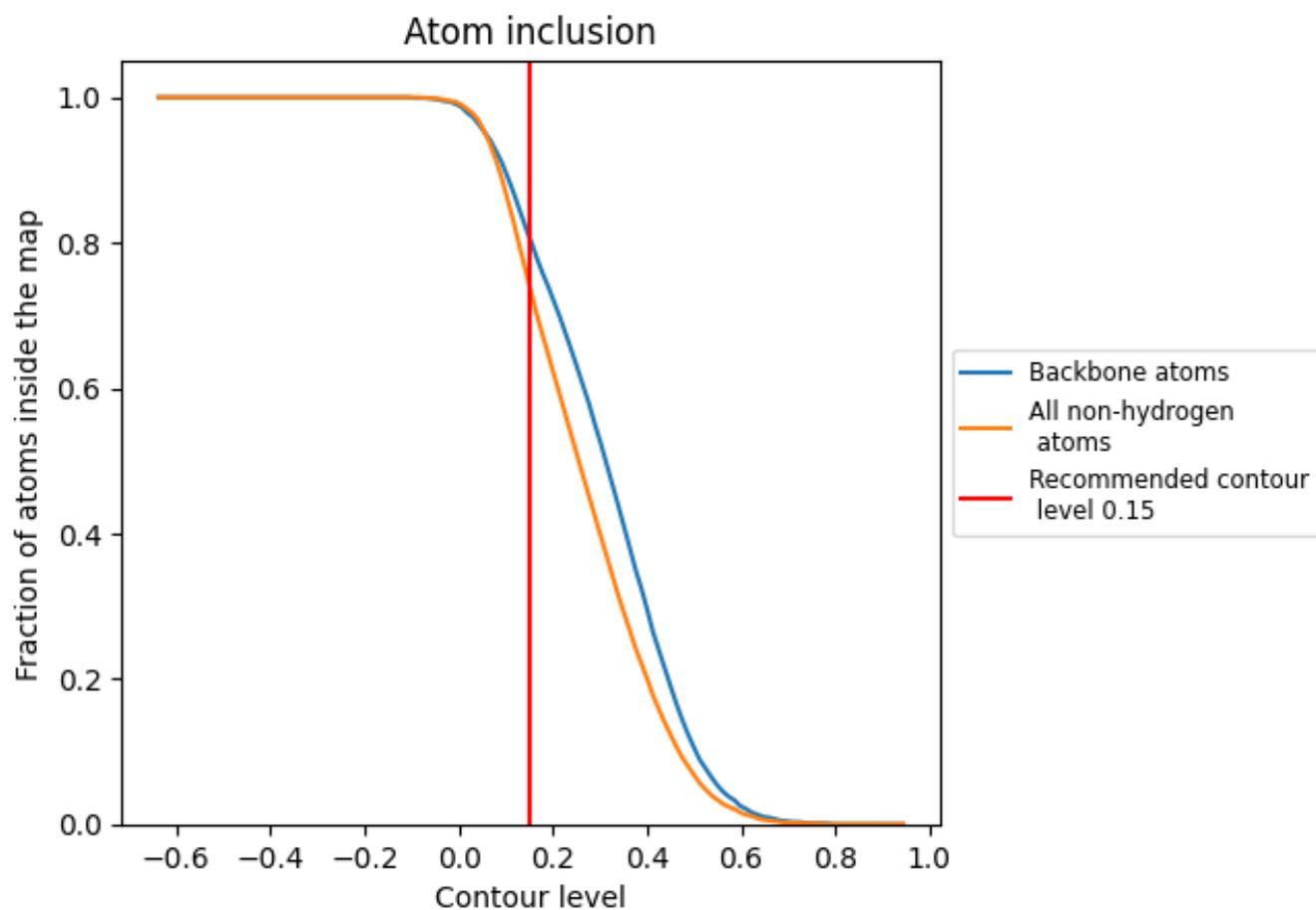
At the recommended contour level, 81% of all backbone atoms, 74% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.15) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7430	0.5090
A	0.7570	0.5250
B	0.7910	0.5300
C	0.7340	0.5090
D	0.7900	0.5280
E	0.7380	0.5100
F	0.7790	0.5230
G	0.7500	0.5010
H	0.7360	0.5060
I	0.7340	0.4890
J	0.7720	0.5120
K	0.7430	0.4750
L	0.5900	0.4480
M	0.7350	0.4980
N	0.7440	0.4920
O	0.5000	0.5060
P	0.6430	0.5030
Q	0.7140	0.5060
R	0.7690	0.5310
S	0.6070	0.4790
T	0.4640	0.4260
U	0.6600	0.5010
V	0.4920	0.4740

1.0

0.0
<0.0