



wwPDB EM Validation Summary Report ⓘ

May 25, 2024 – 07:32 AM EDT

PDB ID : 7R78
EMDB ID : EMD-24295
Title : cryo-EM structure of DNMT5 quaternary complex with hemimethylated DNA, AMP-PNP and SAH
Authors : Wang, J.; Patel, D.J.
Deposited on : 2021-06-24
Resolution : 3.50 Å(reported)

This is a wwPDB EM Validation Summary 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.dev92
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36.2

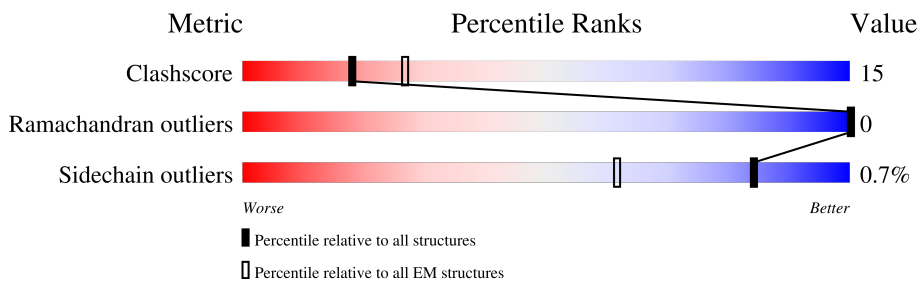
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.50 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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	A	2348	
2	D	36	
3	E	36	

2 Entry composition

There are 7 unique types of molecules in this entry. The entry contains 15238 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 DNA repair protein Rad8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	1880	14810	9284	2675	2780	71	0	0

There are 28 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	30	MET	-	expression tag	UNP J9VI03
A	31	SER	-	expression tag	UNP J9VI03
A	32	TYR	-	expression tag	UNP J9VI03
A	33	TYR	-	expression tag	UNP J9VI03
A	34	HIS	-	expression tag	UNP J9VI03
A	35	HIS	-	expression tag	UNP J9VI03
A	36	HIS	-	expression tag	UNP J9VI03
A	37	HIS	-	expression tag	UNP J9VI03
A	38	HIS	-	expression tag	UNP J9VI03
A	39	HIS	-	expression tag	UNP J9VI03
A	40	ASP	-	expression tag	UNP J9VI03
A	41	TYR	-	expression tag	UNP J9VI03
A	42	ASP	-	expression tag	UNP J9VI03
A	43	ILE	-	expression tag	UNP J9VI03
A	44	PRO	-	expression tag	UNP J9VI03
A	45	THR	-	expression tag	UNP J9VI03
A	46	THR	-	expression tag	UNP J9VI03
A	47	GLU	-	expression tag	UNP J9VI03
A	48	ASN	-	expression tag	UNP J9VI03
A	49	LEU	-	expression tag	UNP J9VI03
A	50	TYR	-	expression tag	UNP J9VI03
A	51	PHE	-	expression tag	UNP J9VI03
A	52	GLN	-	expression tag	UNP J9VI03
A	53	GLY	-	expression tag	UNP J9VI03
A	54	ALA	-	expression tag	UNP J9VI03
A	55	MET	-	expression tag	UNP J9VI03
A	56	GLY	-	expression tag	UNP J9VI03
A	57	SER	-	expression tag	UNP J9VI03

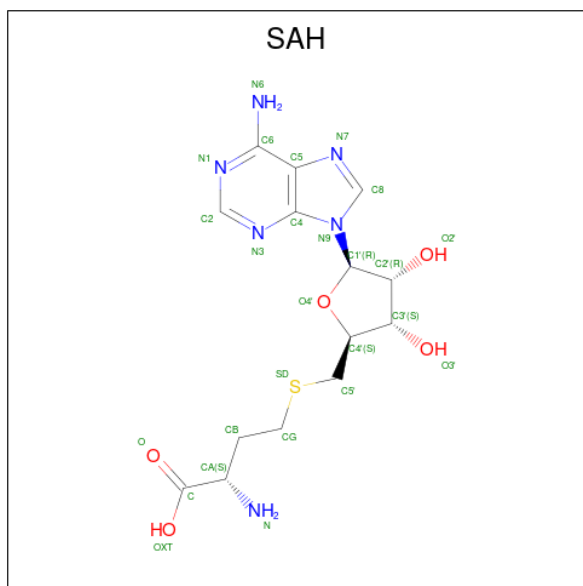
- Molecule 2 is a DNA chain called DNA (5'-D(P*CP*AP*GP*(5CM)P*GP*CP*AP*T)-3').

Mol	Chain	Residues	Atoms				AltConf	Trace	
			Total	C	N	O			P
2	D	8	164	78	31	47	8	0	0

- Molecule 3 is a DNA chain called DNA (5'-D(*TP*GP*CP*GP*CP*TP*GP*AP*CP*A)-3').

Mol	Chain	Residues	Atoms				AltConf	Trace	
			Total	C	N	O			P
3	E	10	201	97	38	57	9	0	0

- Molecule 4 is S-ADENOSYL-L-HOMOCYSTEINE (three-letter code: SAH) (formula: C₁₄H₂₀N₆O₅S) (labeled as "Ligand of Interest" by depositor).



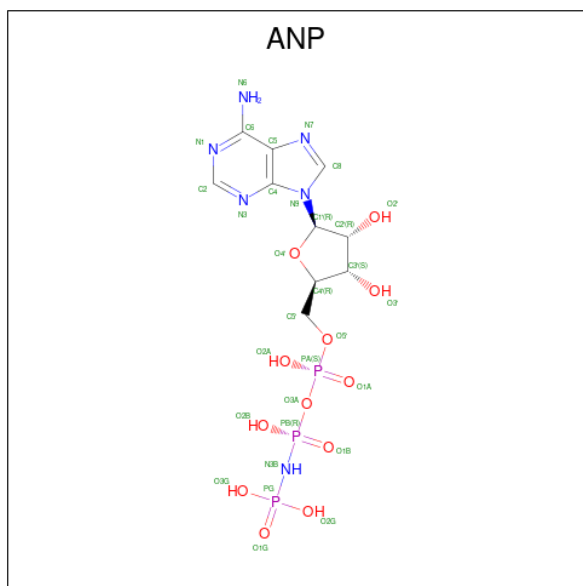
Mol	Chain	Residues	Atoms				AltConf	
			Total	C	N	O		S
4	A	1	26	14	6	5	1	0

- Molecule 5 is ZINC ION (three-letter code: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
5	A	5	5	5	0

- Molecule 6 is PHOSPHOAMINOPHOSPHONIC ACID-ADENYLATE ESTER (three-letter

code: ANP) (formula: C₁₀H₁₇N₆O₁₂P₃) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf	
			Total	C	N	O		P
6	A	1	31	10	6	12	3	0

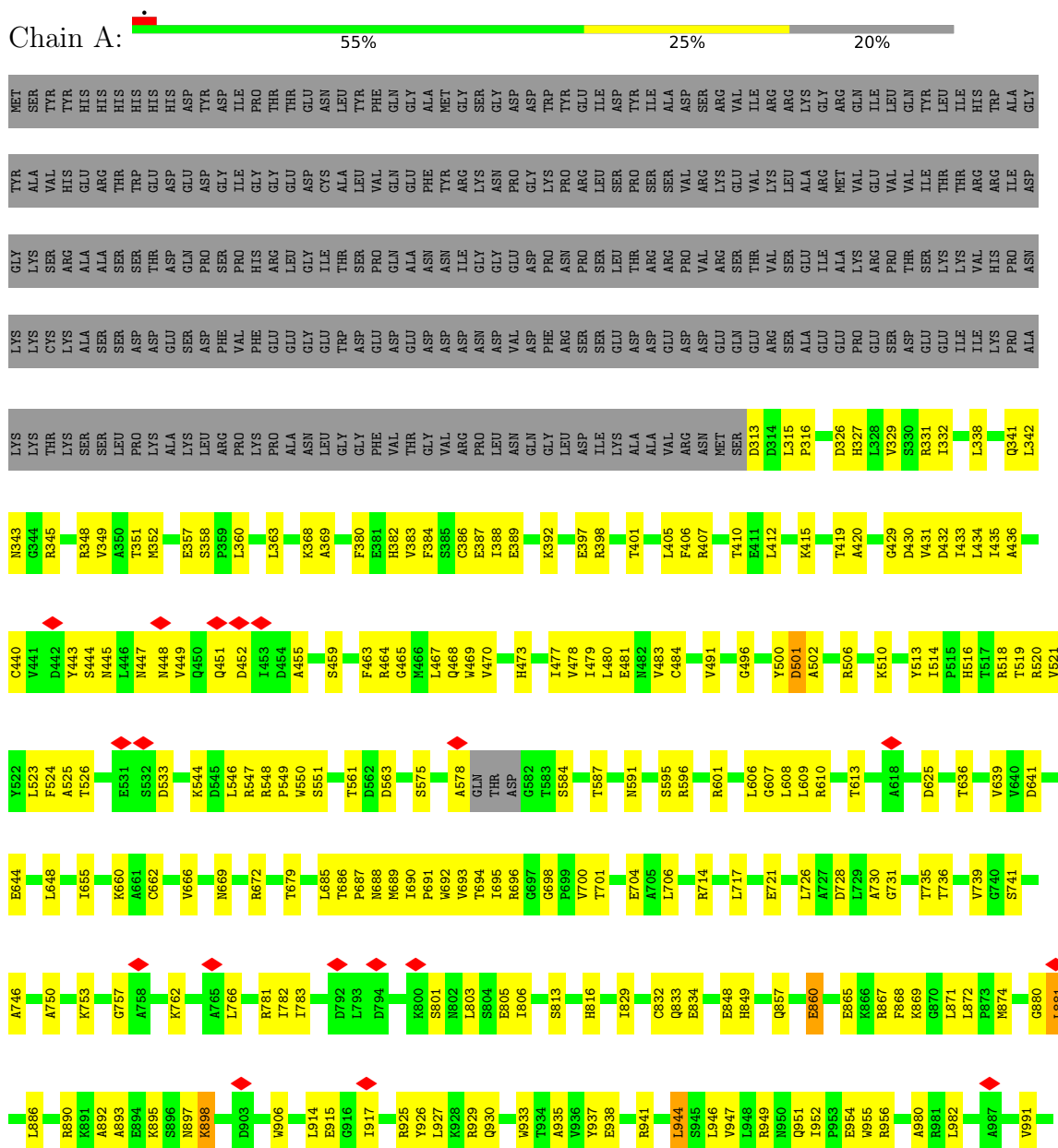
- Molecule 7 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
7	A	1	1	1	0

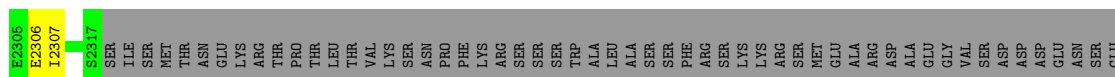
3 Residue-property plots

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: DNA repair protein Rad8

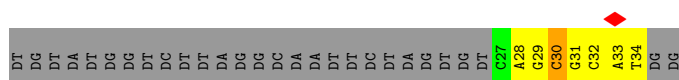


S2202	S2062	D1967	E1871	Y1745	GLU	G1606	L1496	S1396	SER	L1206	T1108	P986
N2206	K2067	D1968	THR	L1749	ALA	S1607	K1497	Q1397	THR	L1207	E1111	4996
T2206	G2068	E1969	LYS	P1754	SER	A1609	A1498	Q1397	ILE	L1207	R1112	E997
L2207	K2069	R1970	PHE	L1755	GLU	A1609	A1498	S1397	ILE	L1208	L1113	L998
Q2211	S2070	Q1971	ASP	P1756	ASP	R1612	T1499	F1401	ASP	P1212	R1124	C999
V2220	Q2073	V1972	ASP	S1756	ASP	A1613	L1501	R1406	F1304	P1215	L1126	I1000
L2222	L2074	W1976	ASP	D1757	ASP	M1614	P1504	K1407	E1305	◆	L1127	I1008
L2222	V2075	I1983	GLU	A1760	ASP	E1615	H1506	Q1409	A1310	◆	H1128	E1009
D2227	E2077	H1986	ASN	I1761	ASN	D1616	L1507	R1411	E1314	◆	W1129	I1010
A2228	S2078	S1987	SER	I1770	SER	K1617	F1518	R1412	P1321	◆	R1137	S1019
S2233	E2080	D1989	THR	H1771	THR	K1618	T1519	W1415	Q1327	◆	K1139	G1025
N2234	L2235	I1990	TYR	D1777	TYR	S1620	I1528	M1416	L1328	◆	K1140	R1035
L2235	K2084	E1991	PRO	D1780	PRO	L1621	I1532	E1420	R1329	◆	L1141	E1038
N2239	P2085	S1992	ILE	◆	ILE	V1622	K1592	E1432	L1330	◆	W1147	I1041
H2240	S2086	A1993	LYS	D1781	LYS	D1623	D1593	E1433	D1231	◆	V1148	E1046
L2244	T2087	L1997	PHE	VAL	PHE	S1627	L1594	I1434	L1232	◆	K1149	T1050
G2245	N2088	I2000	HIS	GLN	HIS	K1628	E1535	I1435	D1233	◆	P1151	L1051
P2246	P2089	E2001	SER	TYR	SER	K1629	E1536	I1436	H1234	◆	H1154	D1052
L2247	C2099	V2005	THR	GLM	THR	E1630	E1537	E1442	Q1235	◆	L1155	I1052
N2250	H2105	K2006	GLY	ALA	GLY	V1632	T1538	E1443	W1245	◆	GLY	T1054
Y2255	R2109	R2006	VAL	ALA	VAL	H1633	I1547	G1444	I1246	◆	ASP	Y1059
E2259	C2117	D2007	ALA	ARG	ALA	E1633	T1548	W1444	K1257	◆	GLY	Q1060
T2260	V2118	G2008	ALA	GLM	ALA	V1633	V1549	R1445	M1258	◆	ASP	Q1060
Q2261	T2130	N2009	ALA	TYR	TYR	M1550	M1550	R1446	M1259	◆	ASP	L1061
A2262	K2134	M2011	ASP	GLY	GLY	A1551	A1551	E1447	W1259	◆	ASP	L1062
G2264	L2138	D2016	SER	PHE	SER	I1554	I1554	G1448	A1260	◆	ALA	P1063
R2285	L2144	K2017	VAL	LYS	VAL	E1557	I1557	E1449	L1381	◆	VAL	R1064
V2286	S2145	Q2018	LYS	LYS	LYS	S1564	L1564	K1449	L1358	◆	VAL	Q1067
R2287	R2148	S2019	ASP	ASP	ASP	E1565	E1565	V1466	T1358	◆	ALA	Q1068
Q2271	Y2149	P2020	TYR	TYR	TYR	Y1566	Y1566	I1461	K1362	◆	ALA	A1068
Q2272	K2273	Q2018	TYR	ALA	ALA	L1567	L1567	A1462	I1363	◆	ASP	R1076
K2274	K2274	K2024	ALA	ALA	ALA	D1577	D1577	D1463	I1364	◆	ALA	P1077
V2275	E2167	G2025	ALA	ALA	ALA	T1578	T1578	G1468	S1365	◆	ALA	D1078
T2285	R2169	A2026	ALA	ARG	ARG	Q1579	Q1579	K1469	L1366	◆	ALA	L1079
L2286	L2170	K2027	HIS	HIS	HIS	R1582	R1582	T1471	S1367	◆	ASN	S1080
R2289	L2173	V2031	SER	SER	SER	F1583	F1583	I1472	W1367	◆	ILE	G1083
E2297	S2183	R2036	SER	SER	SER	F1584	F1584	A4475	H1372	◆	HIS	L1084
L2298	S2187	R2036	SER	SER	SER	R1587	R1587	L1476	H1373	◆	ARG	P1085
K2299	S2187	R2043	SER	SER	SER	L1588	L1588	T1480	E1376	◆	ASP	Q1086
E2300	S2187	R2043	SER	SER	SER	M1592	M1592	T1486	S1377	◆	GLY	L1087
K2301	R2190	V2046	PRO	PRO	PRO	E1593	E1593	P1486	P1378	◆	LYS	D1092
T2302	R2190	V2053	ILE	ILE	ILE	S1594	S1594	P1488	Q1379	◆	ASN	S1099
D2303	H2193	L2056	THR	THR	THR	L1595	L1595	T1490	P1380	◆	LYS	R1100
W2304	R2201	R2057	GLU	GLU	GLU	V1596	V1596	P1491	L1386	◆	LYS	E1101
		F2059	LEU	LEU	LEU	K1605	K1605	L1492	P1387	◆	GLY	H1102
			ARG	ARG	ARG			G1493	S1388	◆	ASN	R1103
			TRP	TRP	TRP				K1389	◆	THR	S1107

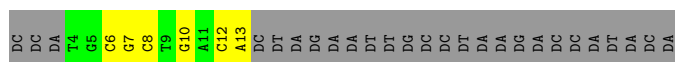


LEU	SER	ASP	ILE	ILE
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- Molecule 2: DNA (5'-D(P*CP*AP*GP*(5CM)P*GP*CP*AP*T)-3')



- Molecule 3: DNA (5'-D(*TP*GP*CP*GP*CP*TP*GP*AP*CP*A)-3')



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	23621	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 ($e^-/\text{\AA}^2$)	53	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	47262	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.146	Depositor
Minimum map value	-0.078	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.02	Depositor
Map size (Å)	272.384, 272.384, 272.384	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.064, 1.064, 1.064	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: MG, 5CM, ANP, ZN, SAH

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	0.38	0/15111	0.50	0/20456
2	D	0.55	0/160	0.85	0/242
3	E	0.64	0/225	0.87	0/346
All	All	0.39	0/15496	0.52	0/21044

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [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	A	14810	0	14758	434	0
2	D	164	0	92	12	0
3	E	201	0	111	7	0
4	A	26	0	19	5	0
5	A	5	0	0	0	0
6	A	31	0	13	2	0
7	A	1	0	0	0	0
All	All	15238	0	14993	446	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 15.

The worst 5 of 446 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:1379:GLN:HG3	1:A:1380:PRO:HD3	1.54	0.87
1:A:2265:ARG:HG2	1:A:2265:ARG:HH21	1.40	0.84
1:A:636:THR:HG21	2:D:28:DA:H5'	1.61	0.83
1:A:2265:ARG:HG2	1:A:2265:ARG:NH2	1.98	0.79
1:A:880:GLY:HA3	1:A:917:ILE:HD11	1.64	0.78

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	1866/2348 (80%)	1622 (87%)	244 (13%)	0	100 100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	1607/2015 (80%)	1596 (99%)	11 (1%)	84 93

5 of 11 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1532	LYS
1	A	1797	LYS
1	A	2265	ARG
1	A	2187	SER
1	A	930	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 24 such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1879	GLN
1	A	2101	HIS
1	A	2038	GLN
1	A	2211	GLN
1	A	1342	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](#)

1 non-standard protein/DNA/RNA residue is 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
2	5CM	D	30	3,2	17,21,22	1.01	2 (11%)	24,30,33	1.33	2 (8%)

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
2	5CM	D	30	3,2	-	2/7/21/22	0/2/2/2

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	30	5CM	C6-C5	2.84	1.39	1.34
2	D	30	5CM	C6-N1	-2.20	1.34	1.38

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	30	5CM	C5-C6-N1	-3.58	119.66	123.34
2	D	30	5CM	C5-C4-N3	-2.50	118.98	121.67

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	D	30	5CM	C3'-C4'-C5'-O5'
2	D	30	5CM	O4'-C4'-C5'-O5'

There are no ring outliers.

1 monomer is involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	D	30	5CM	3	0

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 8 ligands modelled in this entry, 6 are monoatomic - leaving 2 for Mogul analysis.

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$
6	ANP	A	2407	7	29,33,33	1.20	5 (17%)	31,52,52	1.07	4 (12%)
4	SAH	A	2401	-	24,28,28	0.66	0	25,40,40	0.66	0

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
6	ANP	A	2407	7	-	6/14/38/38	0/3/3/3
4	SAH	A	2401	-	-	8/11/31/31	0/3/3/3

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	A	2407	ANP	PG-O1G	3.20	1.51	1.46
6	A	2407	ANP	PB-O1B	2.97	1.50	1.46
6	A	2407	ANP	PB-O2B	-2.21	1.50	1.56
6	A	2407	ANP	PG-O3G	-2.04	1.51	1.56
6	A	2407	ANP	PG-O2G	-2.03	1.51	1.56

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	A	2407	ANP	O2B-PB-O1B	4.08	118.48	109.92
6	A	2407	ANP	C5-C6-N6	2.07	123.49	120.35
6	A	2407	ANP	O3G-PG-O1G	-2.02	108.37	113.45
6	A	2407	ANP	O2G-PG-O1G	-2.01	108.41	113.45

There are no chirality outliers.

5 of 14 torsion outliers are listed below:

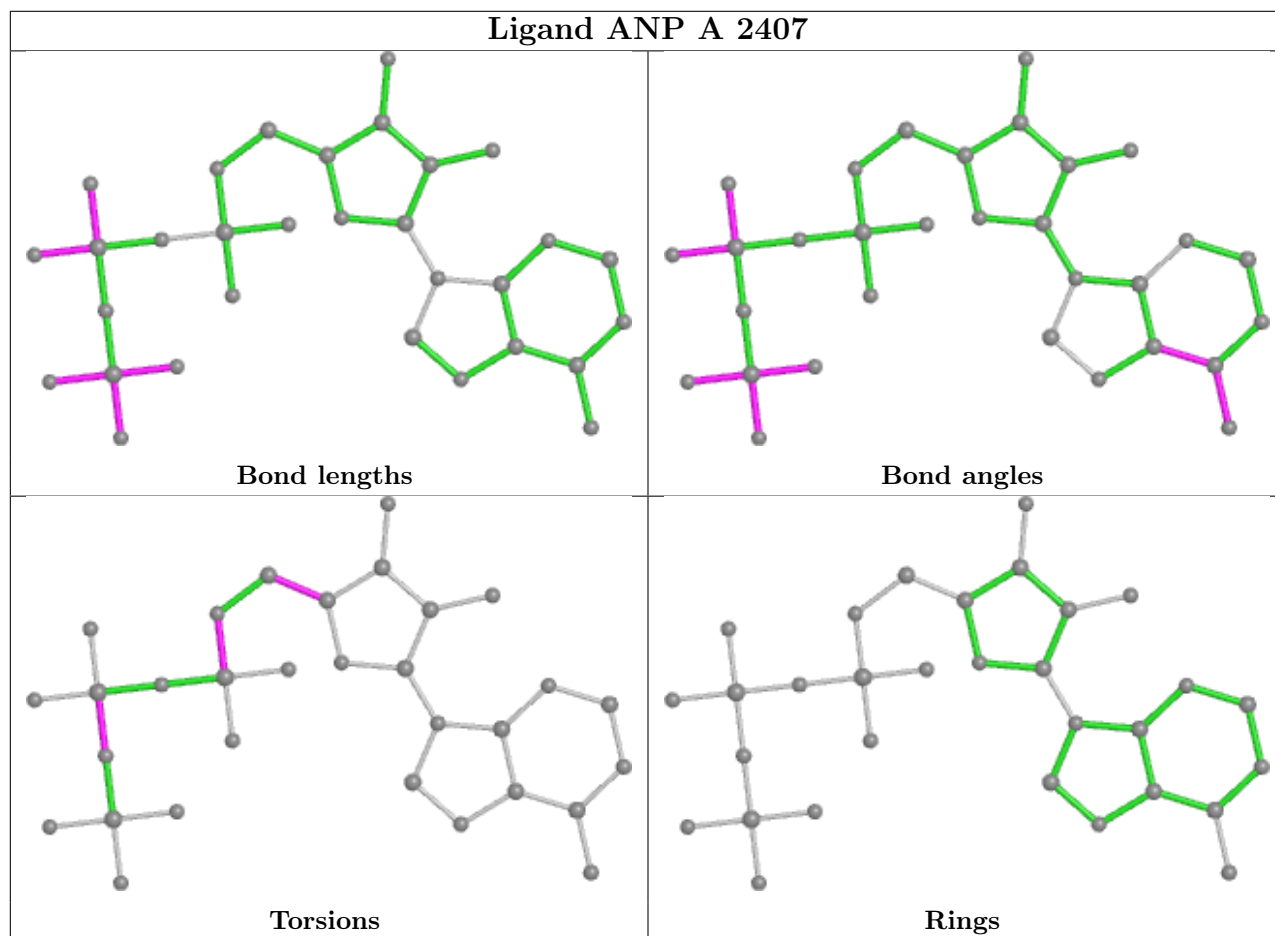
Mol	Chain	Res	Type	Atoms
4	A	2401	SAH	N-CA-CB-CG
4	A	2401	SAH	C-CA-CB-CG
4	A	2401	SAH	O4'-C4'-C5'-SD
4	A	2401	SAH	C3'-C4'-C5'-SD
6	A	2407	ANP	C5'-O5'-PA-O2A

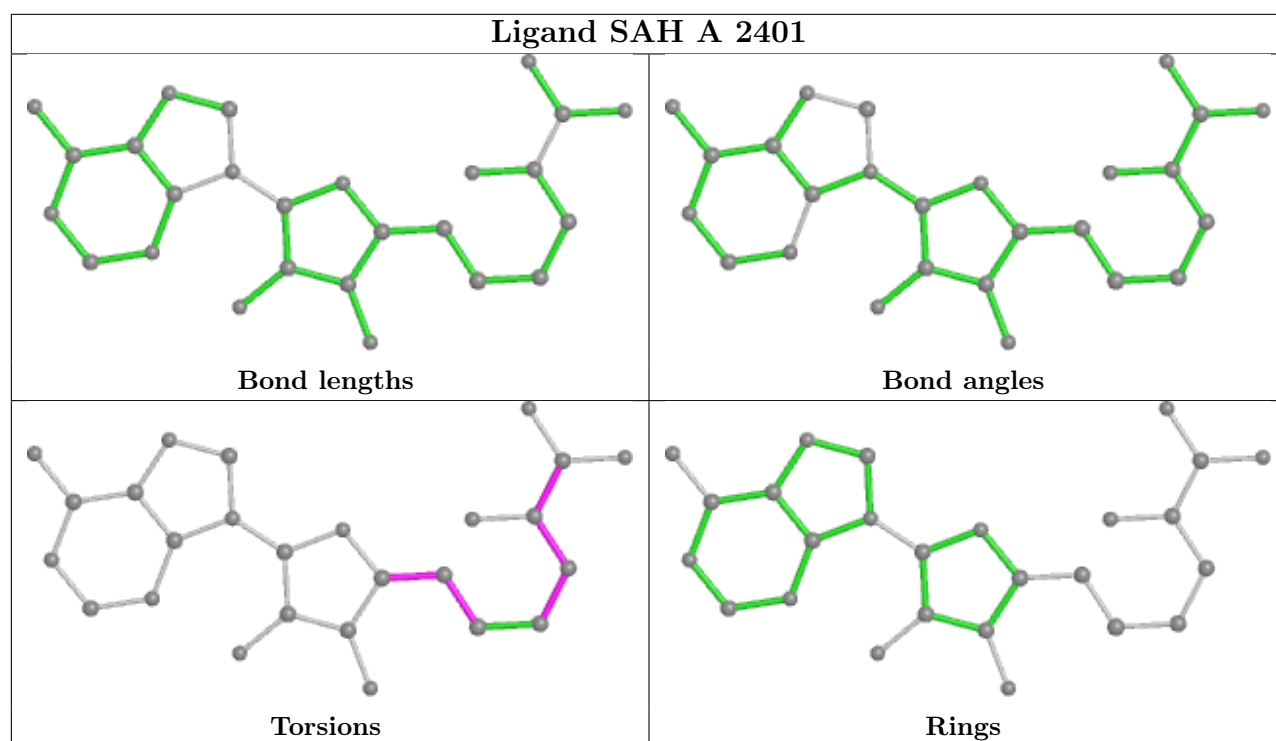
There are no ring outliers.

2 monomers are involved in 7 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	A	2407	ANP	2	0
4	A	2401	SAH	5	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.





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.

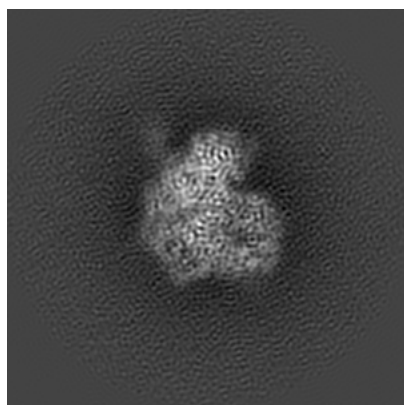
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-24295. These allow visual inspection of the internal detail of the map and identification of artifacts.

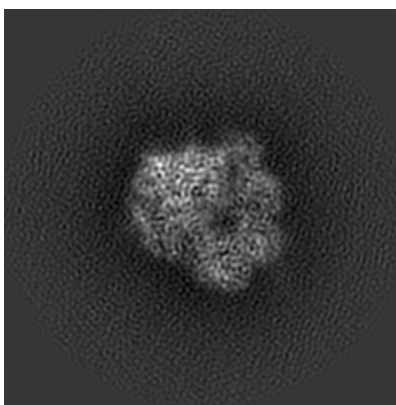
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

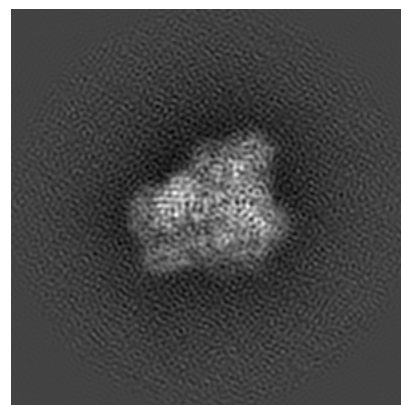
6.1.1 Primary map



X



Y

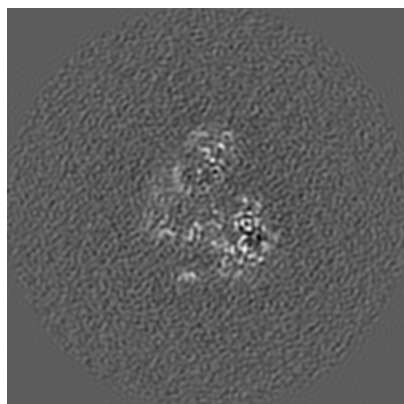


Z

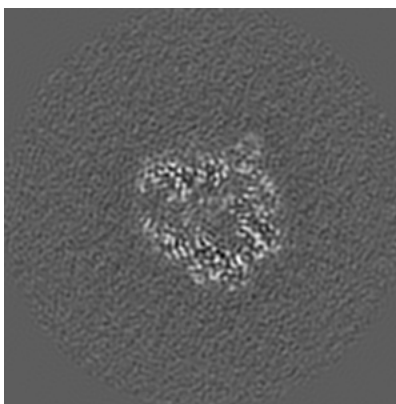
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

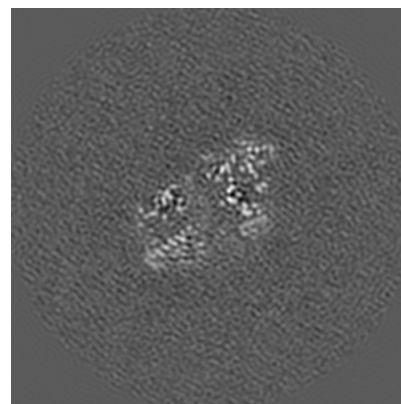
6.2.1 Primary map



X Index: 128



Y Index: 128

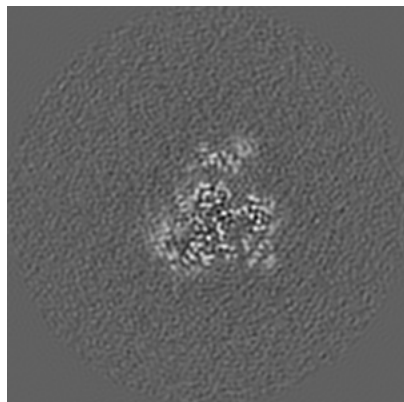


Z Index: 128

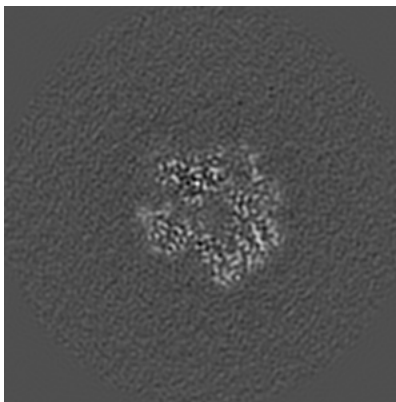
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

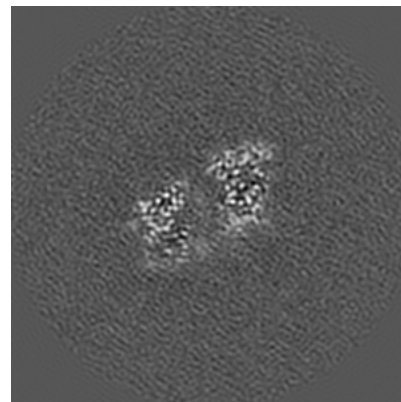
6.3.1 Primary map



X Index: 149



Y Index: 133

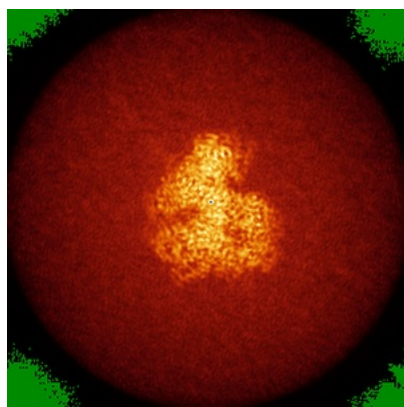


Z Index: 132

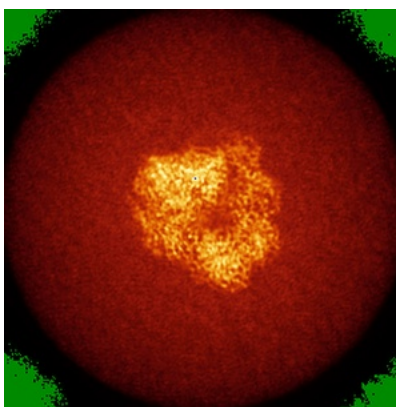
The images above show the largest variance slices of the map in three orthogonal directions.

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

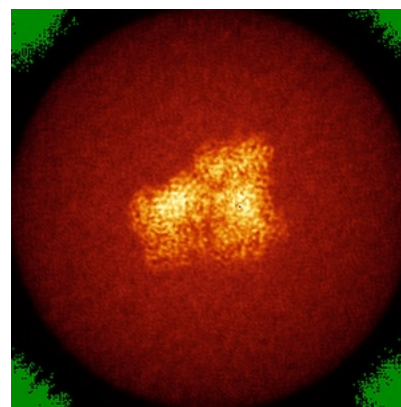
6.4.1 Primary map



X



Y

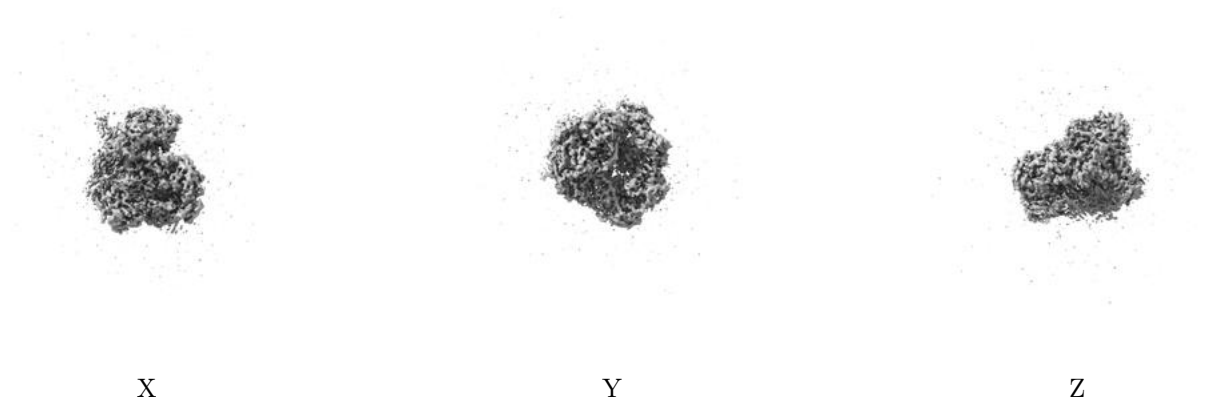


Z

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

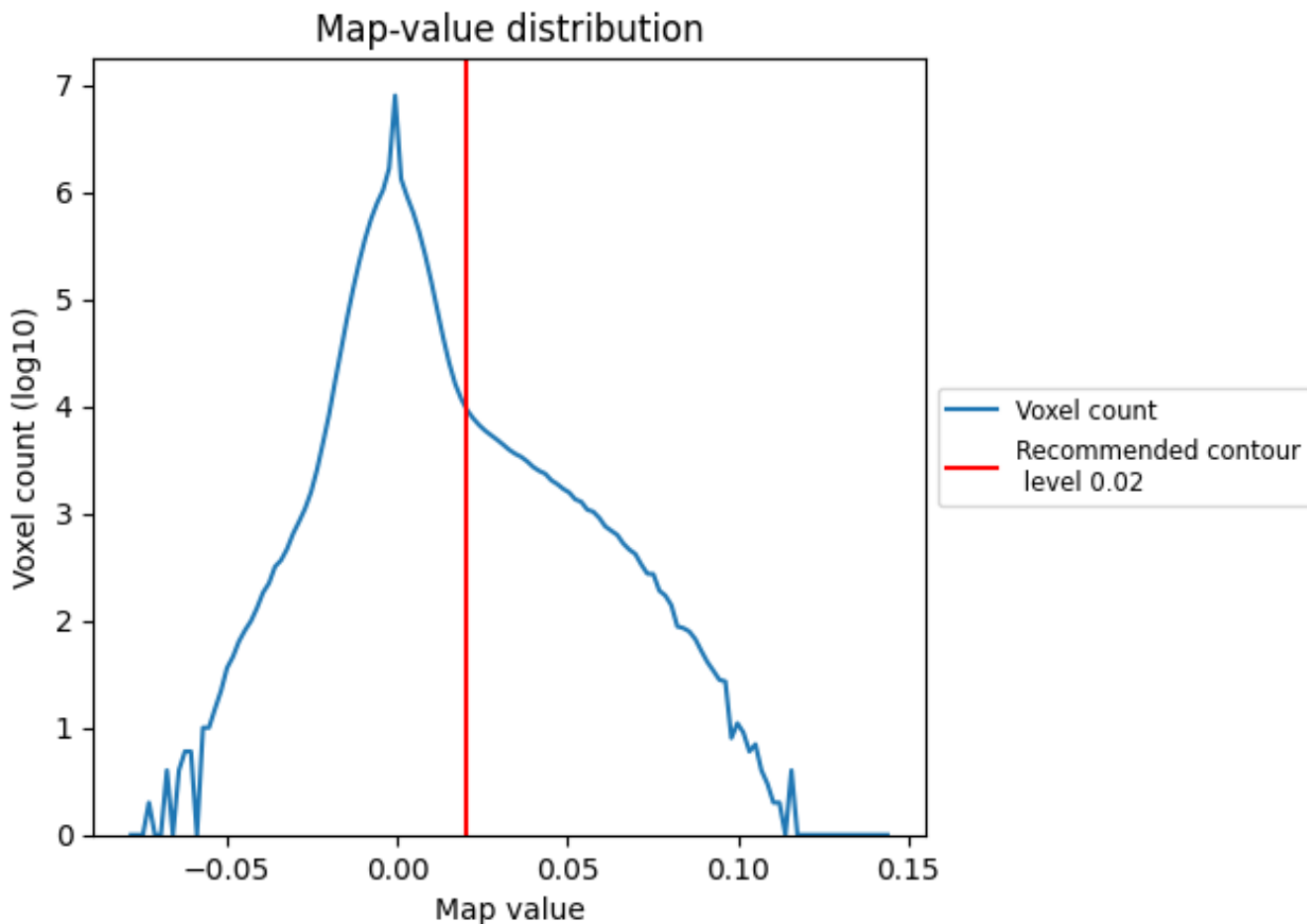
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

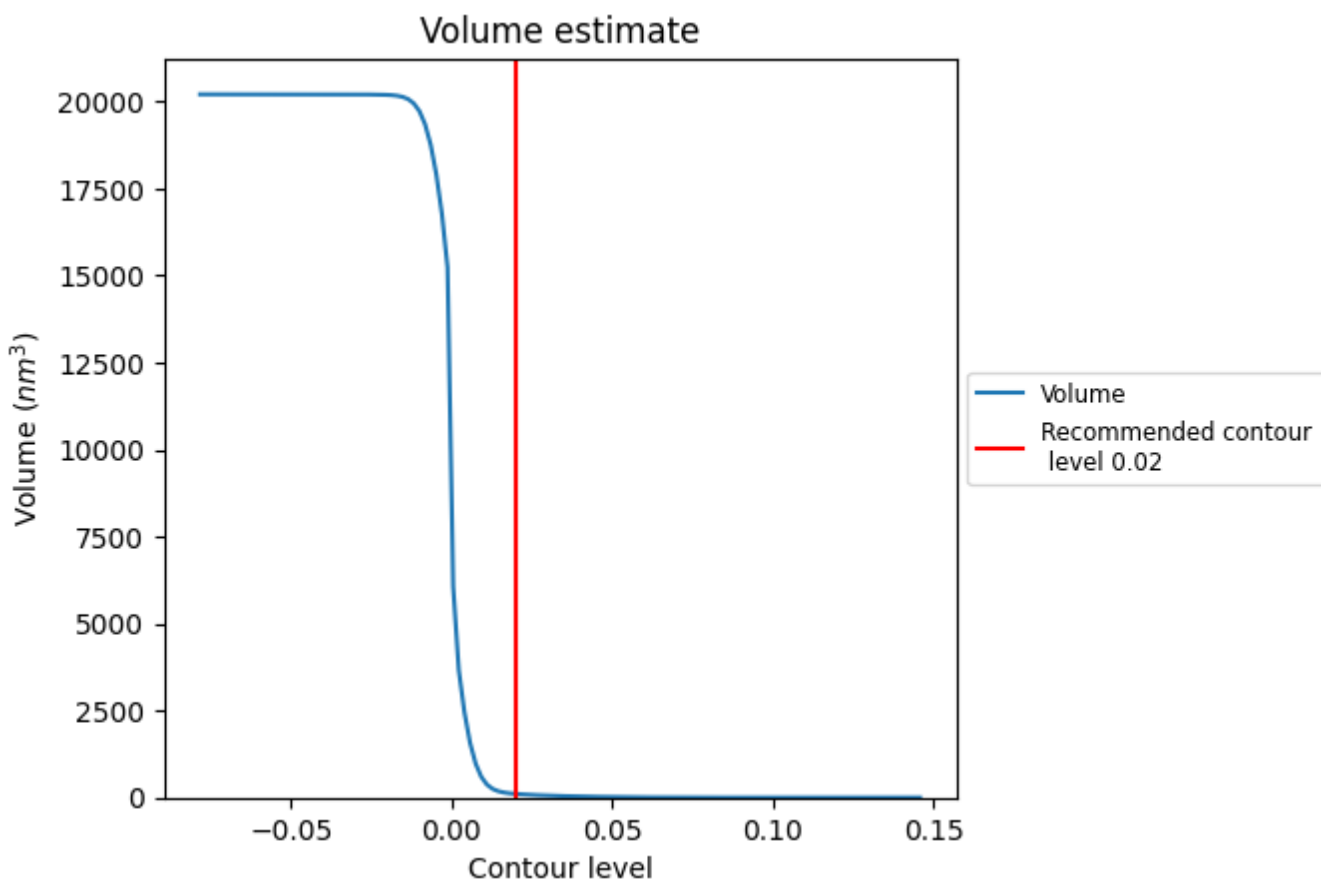
This section contains the results of statistical analysis of the map.

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.

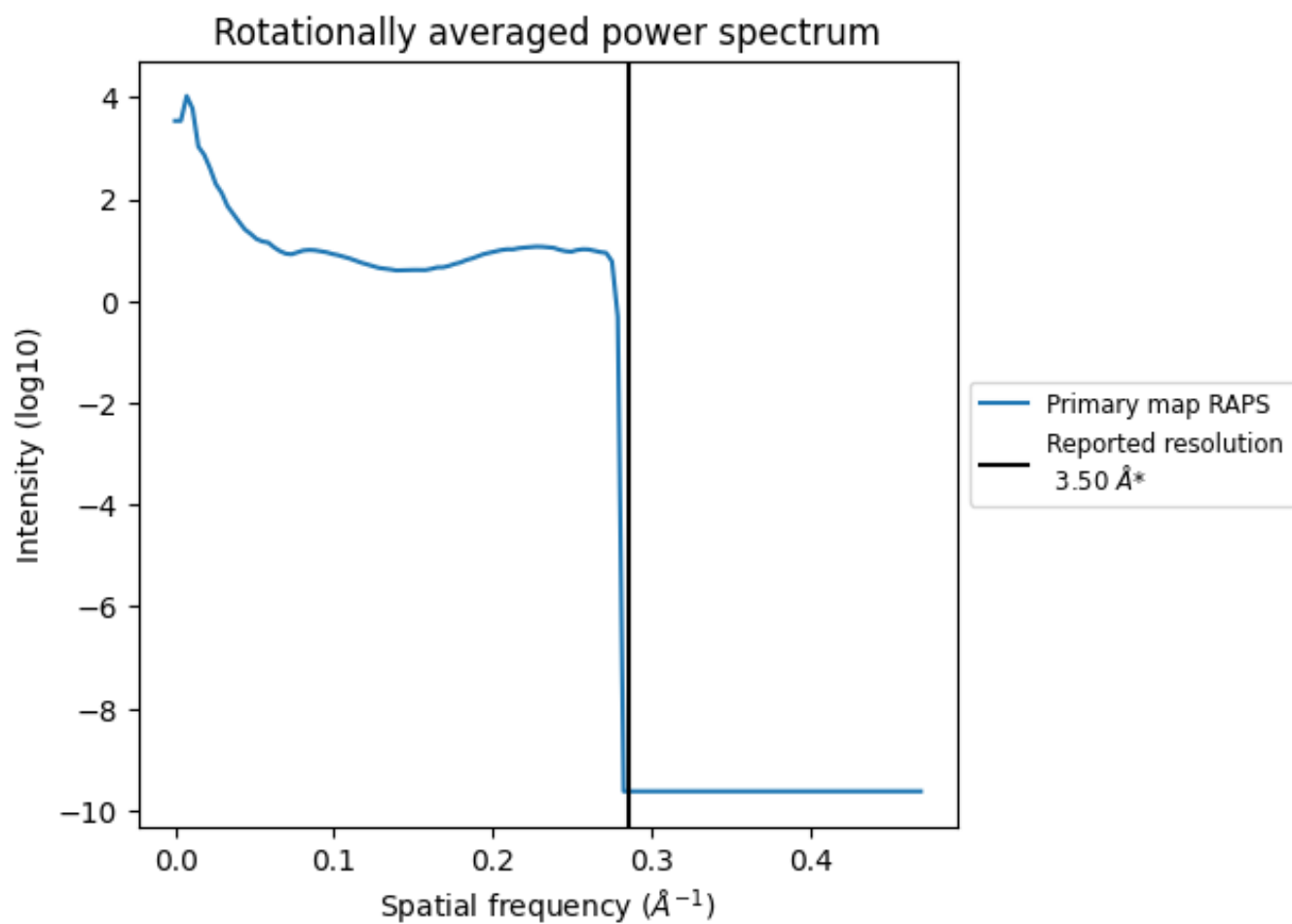
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 105 nm³; this corresponds to an approximate mass of 95 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 0.286\AA^{-1}

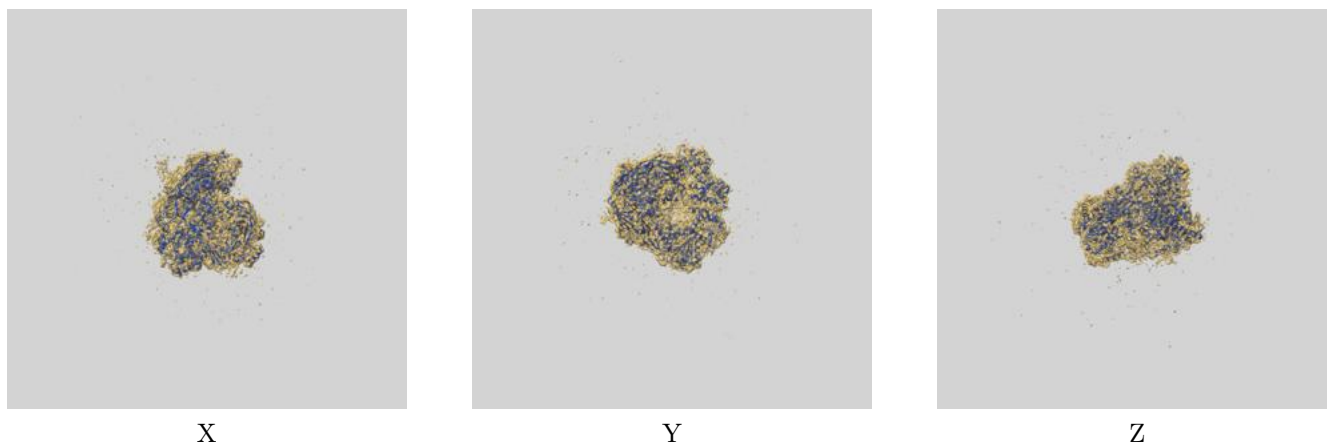
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit [i](#)

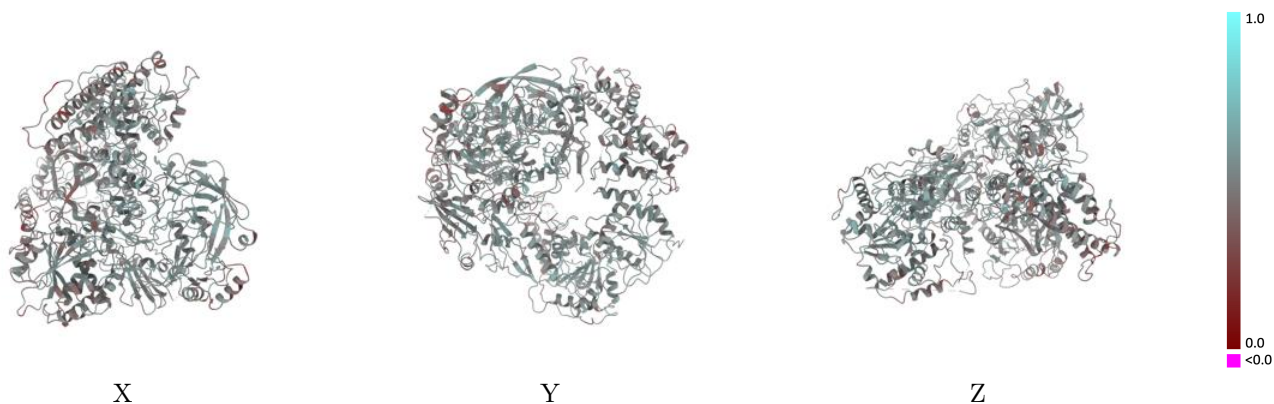
This section contains information regarding the fit between EMDB map EMD-24295 and PDB model 7R78. Per-residue inclusion information can be found in section 3 on page 6.

9.1 Map-model overlay [i](#)



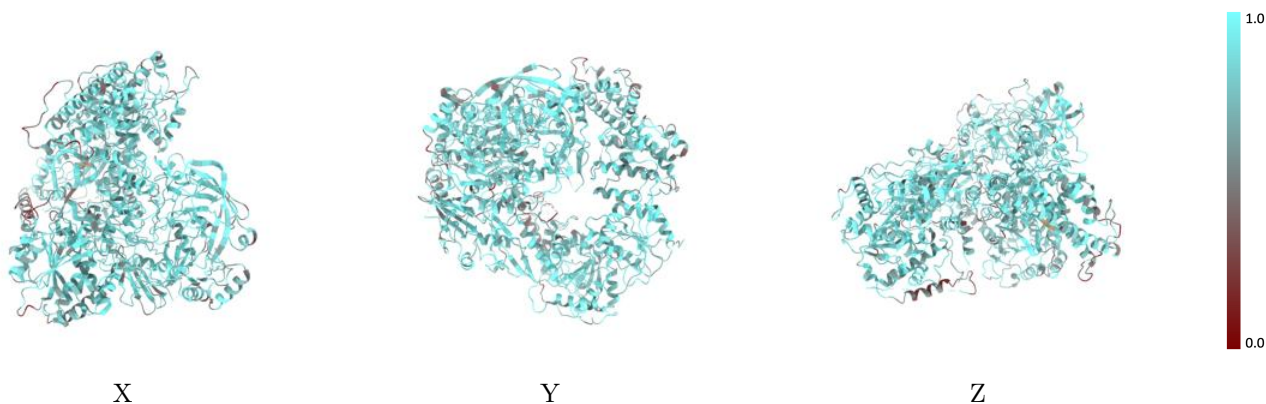
The images above show the 3D surface view of the map at the recommended contour level 0.02 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



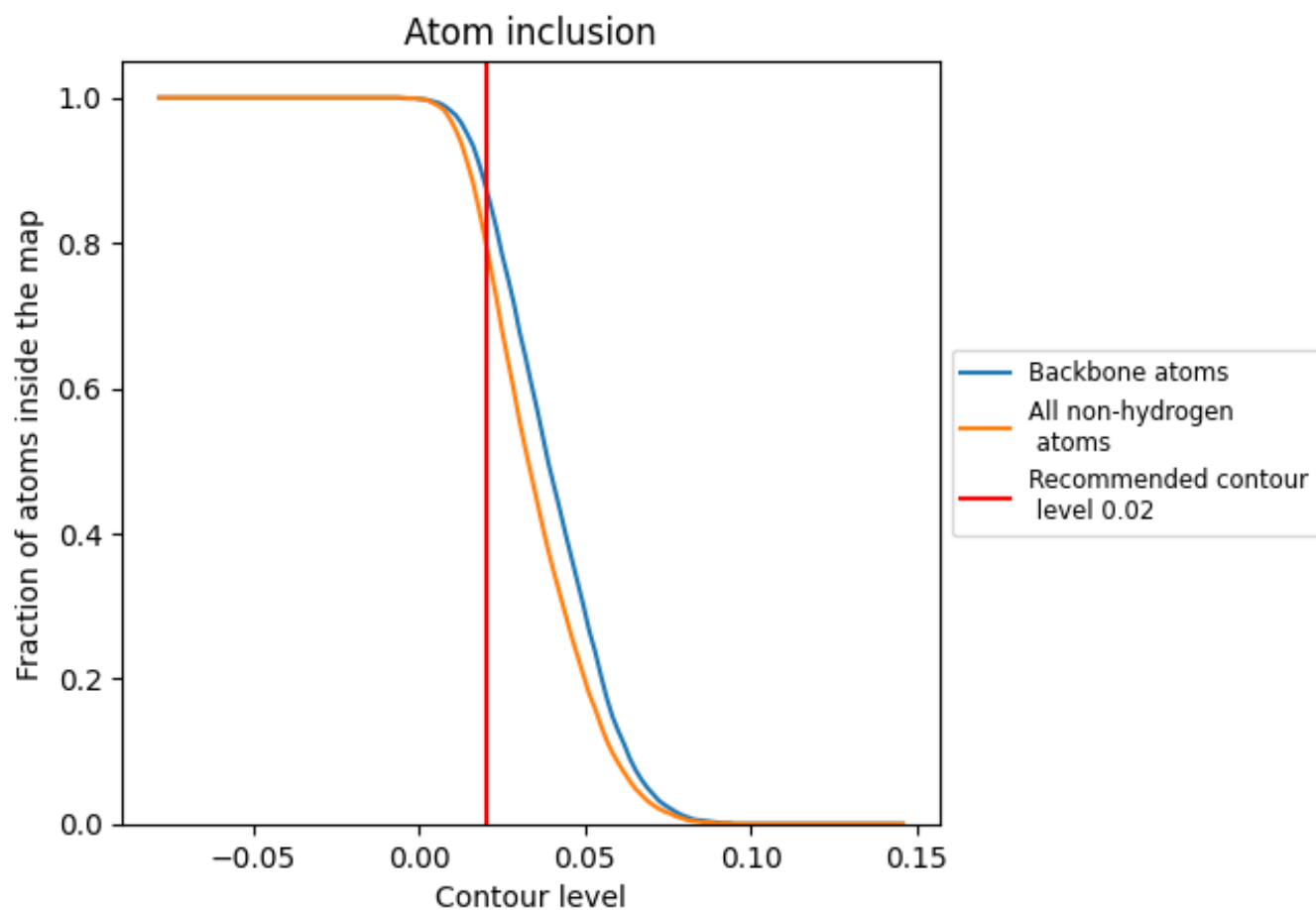
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.02).









9.4 Atom inclusion [i](#)



At the recommended contour level, 88% of all backbone atoms, 80% 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 (0.02) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8030	 0.4980
A	 0.8030	 0.4990
D	 0.7870	 0.4410
E	 0.8360	 0.4690

