wwPDB EM Validation Summary Report (i)

Mar 20, 2024 – 01:58 PM JST

PDB ID	:	7CYQ
EMDB ID	:	EMD-30504
Title	:	Cryo-EM structure of an extended SARS-CoV-2 replication and transcription complex reveals an intermediate state in cap synthesis
Authors	:	Yan, L.; Ge, J.; Zheng, L.; Zhang, Y.; Gao, Y.; Wang, T.; Wang, H.; Huang, Y.; Li, M.; Wang, Q.; Rao, Z.; Lou, Z.
Deposited on	:	2020-09-04
Resolution	:	2.83 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 (i) 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 (i)) were used in the production of this report:

EMDB validation analysis	:	0.0.1.dev70
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

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 2.83 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		28
Ramachandran outliers		0.8%
Sidechain outliers		21.3%
RNA backbone		0.60

Worse   *Better*

▐ Percentile relative to all structures
▯ Percentile relative to all EM structures
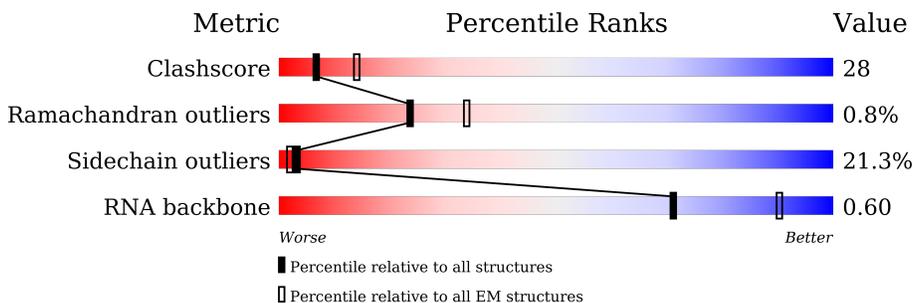
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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	942	73% 20% • ••
2	B	198	64% 24% • • 6%
2	D	198	44% 39% 9% • 6%
3	C	83	55% 28% • 13%
4	I	33	24% 45% 6% 24%
5	J	59	22% 19% • • 54%
6	E	601	28% / 30% 47% 18% • •

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Mol	Chain	Length	Quality of chain
6	F	601	36% / 29% / 46% / 19%
7	G	117	75% / 38% / 49% / 9%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
9	GDP	A	1003	-	-	X	-

2   Entry composition ⓘ

There are 10 unique types of molecules in this entry. The entry contains 21857 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 RNA-directed RNA polymerase.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	926	Total 7458	C 4763	N 1251	O 1390	S 54	0	0

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	933	HIS	-	expression tag	UNP P0DTD1
A	934	HIS	-	expression tag	UNP P0DTD1
A	935	HIS	-	expression tag	UNP P0DTD1
A	936	HIS	-	expression tag	UNP P0DTD1
A	937	HIS	-	expression tag	UNP P0DTD1
A	938	HIS	-	expression tag	UNP P0DTD1
A	939	HIS	-	expression tag	UNP P0DTD1
A	940	HIS	-	expression tag	UNP P0DTD1
A	941	HIS	-	expression tag	UNP P0DTD1
A	942	HIS	-	expression tag	UNP P0DTD1

- Molecule 2 is a protein called Non-structural protein 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	187	Total 1396	C 872	N 240	O 273	S 11	0	0
2	D	186	Total 1414	C 889	N 242	O 272	S 11	0	0

- Molecule 3 is a protein called Non-structural protein 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	72	Total 553	C 349	N 91	O 107	S 6	0	0

- Molecule 4 is a RNA chain called Primer.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	I	25	Total 545	C 242	N 105	O 173	P 25	0	0

- Molecule 5 is a RNA chain called Template.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	J	27	Total 565	C 253	N 94	O 191	P 27	0	0

- Molecule 6 is a protein called Helicase.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	585	Total 4508	C 2875	N 750	O 848	S 35	1	0
6	E	586	Total 4513	C 2878	N 751	O 849	S 35	1	0

- Molecule 7 is a protein called Non-structural protein 9.

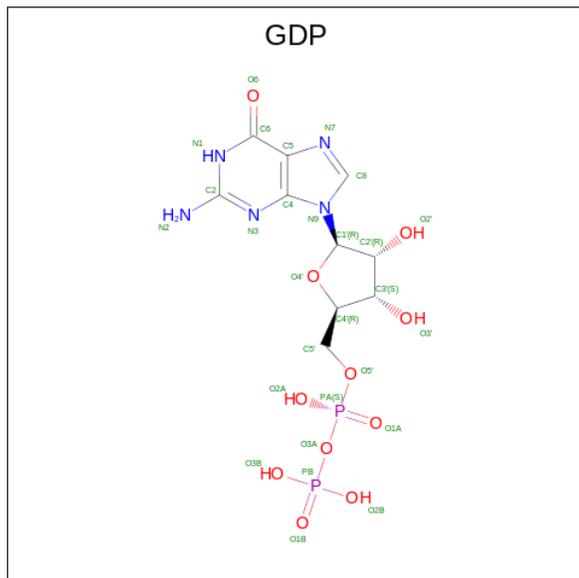| Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	113	Total 868	C 549	N 150	O 164	S 5	0	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G	-3	SER	-	expression tag	UNP P0DTD1
G	-2	ASN	-	expression tag	UNP P0DTD1
G	-1	ALA	-	expression tag	UNP P0DTD1
G	0	MET	-	expression tag	UNP P0DTD1

- Molecule 8 is ZINC ION (three-letter code: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
8	A	2	Total 2	Zn 2	0
8	F	3	Total 3	Zn 3	0
8	E	3	Total 3	Zn 3	0

- Molecule 9 is G U A N O S I N E - 5 ' - D I P H O S P H A T E (three-letter code: GDP) (formula: $C_{10}H_{15}N_5O_{11}P_2$) (labeled as "Ligand of Interest" by depositor).
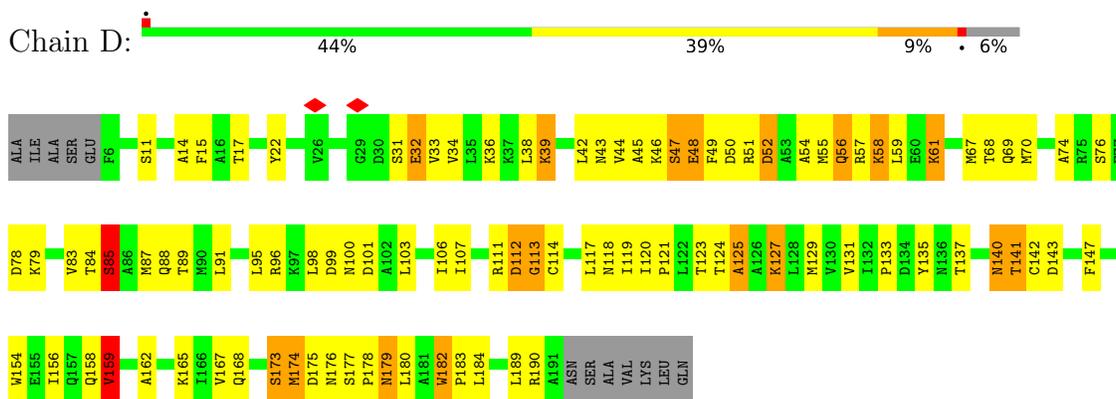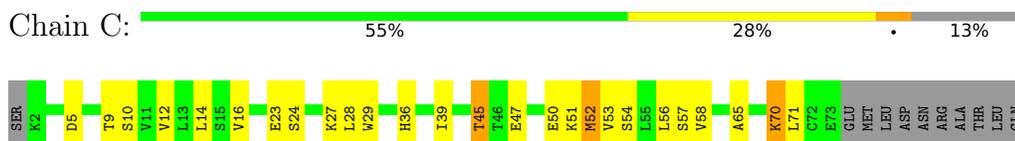

Mol	Chain	Residues	Atoms					AltConf
9	A	1	Total	C	N	O	P	0
			28	10	5	11	2	

- Molecule 10 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).
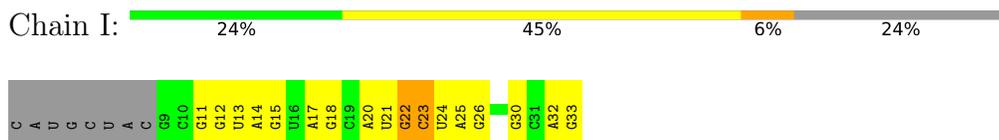
Mol	Chain	Residues	Atoms		AltConf
10	A	1	Total	Mg	0
			1	1	

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: RNA-directed RNA polymerase

Chain A:

- Molecule 2: Non-structural protein 8

Chain B:

• Molecule 2: Non-structural protein 8

Chain D:

• Molecule 3: Non-structural protein 7

Chain C:

• Molecule 4: Primer

Chain I:

• Molecule 5: Template

Chain J:

• Molecule 6: Helicase

Chain F:

• Molecule 6: Helicase

K394 H395 Y396 V397 Y398 I399 G400 D401 Q404 L405 P406 A407 P408 R409 T410 L411 L412 T413 K414 G415 T416 L417 E418 P419 E420 Y421 F422 N423 S424 V425 C426 R427 L428 M429 K430 T431 I432 G433 P434 D435 M436 F437 L438 G439 T440 C441 R442 R443 C444 P445 A446 E447 I448 V449 D450 T451 V452 S453 A454

L455 V456 Y457 D458 N459 K460 L461 K462 A463 H464 K465 D466 K467 S468 A469 Q470 C471 F472 K473 M474 F475 V476 K477 G478 V479 I480 T481 H482 D483 V484 S485 A486 A487 I488 N489 R490 P491 Q492 I493 G494 V495 V496 R497 E498 F499 L500 T501 R502 N503 W506 R507 K508 A509 V510 F511 I512 S513 P514 Y515

N516 S517 Q518 N519 A520 V521 A522 S523 K524 I525 L526 G527 L528 P529 T530 Q531 T532 V533 D534 S535 S536 Q537 G538 S539 E540 Y541 D542 Y543 V544 I545 F546 T547 Q548 T549 T550 E551 T552 A553 H554 S555 C556 N557 V558 N559 R560 F561 N562 V563 A564 I565 T566 R567 A568 K569 V570 G571 I572 L573 C574 I575

M576 S577 D578 R579 D580 L581 Y582 D583 K584 L585 T588 S589 L590 E591 I592 P593 ARG ARG ASN VAL ALA THR LEU GLN

• Molecule 7: Non-structural protein 9

Chain G:

75%

38% 49% 9% • •

SER ASN ALA MET N1 N2 S5 P6 V7 A8 L9 R10 Q11 M12 S13 C14 A15 A16 G17 T18 T19 Q20 T21 A22 C23 T24 D25 D26 N27 A28 L29 A30 Y31 Y32 N33 T34 T35 K36 G37 G38 R39 F40 V41 L42 A43 L44 L45 S46 D47 L48 Q49 D50 L51 K52 W53 A54 R55 F56 P57

K58 S59 D60 G61 T62 G63 T64 I65 Y66 T67 E68 L69 E70 P71 P72 C73 R74 F75 V76 T77 D78 T79 P80 K81 G82 P83 K84 V85 K86 Y87 L88 Y89 F90 I91 K92 G93 L94 N95 N98 G104 S105 L106 A107 A108 T109 V110 R111 L112 Q113

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	529558	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 $(e^-/\text{Å}^2)$	60	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 QUANTUM (4k x 4k)	Depositor
Maximum map value	2.146	Depositor
Minimum map value	-0.897	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.048	Depositor
Recommended contour level	0.25	Depositor
Map size (Å)	367.36, 367.36, 367.36	wwPDB
Map dimensions	448, 448, 448	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.82, 0.82, 0.82	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, ZN, GDP

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	0.73	1/7647 (0.0%)	0.75	32/10379 (0.3%)
2	B	0.60	0/1414	0.83	6/1922 (0.3%)
2	D	0.41	0/1433	0.73	6/1944 (0.3%)
3	C	0.54	0/556	0.56	0/749
4	I	0.89	1/611 (0.2%)	0.88	0/953
5	J	1.07	3/628 (0.5%)	0.84	0/974
6	E	0.37	1/4615 (0.0%)	1.00	41/6290 (0.7%)
6	F	0.37	1/4610 (0.0%)	0.88	32/6283 (0.5%)
7	G	0.36	0/884	0.77	4/1200 (0.3%)
All	All	0.58	7/22398 (0.0%)	0.84	121/30694 (0.4%)

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	A	0	2
2	B	0	1
2	D	0	1
6	E	0	1
6	F	0	2
7	G	0	1
All	All	0	8

The worst 5 of 7 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	J	26	A	O3'-P	-7.94	1.51	1.61
5	J	25	G	O3'-P	-7.63	1.51	1.61
5	J	24	U	O3'-P	-6.42	1.53	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	I	32	A	N9-C4	-6.26	1.34	1.37
6	E	26	CYS	CB-SG	-5.46	1.73	1.81

The worst 5 of 121 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	39	ASN	CB-CA-C	-17.36	75.68	110.40
6	E	235	LEU	CB-CA-C	-16.05	79.70	110.20
6	E	405	LEU	N-CA-CB	-15.54	79.32	110.40
6	E	404	GLN	CB-CA-C	-15.53	79.33	110.40
1	A	855	MET	CB-CA-C	-15.27	79.87	110.40

There are no chirality outliers.

5 of 8 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	60	ASP	Peptide
1	A	903	TYR	Peptide
2	B	182	TRP	Peptide
2	D	38	LEU	Peptide
6	F	415	GLY	Peptide

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	7458	0	7191	174	0
2	B	1396	0	1364	75	0
2	D	1414	0	1416	80	0
3	C	553	0	585	21	0
4	I	545	0	272	23	0
5	J	565	0	291	27	0
6	E	4513	0	4431	370	0
6	F	4508	0	4423	378	0
7	G	868	0	880	61	0
8	A	2	0	0	0	0
8	E	3	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
8	F	3	0	0	0	0
9	A	28	0	12	10	0
10	A	1	0	0	0	0
All	All	21857	0	20865	1177	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 28.

The worst 5 of 1177 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)
2:D:125:ALA:O	2:D:189:LEU:CD1	1.76	1.33
6:E:194:GLN:O	6:E:194:GLN:CG	1.70	1.33
2:B:41:SER:O	2:B:44:VAL:HG23	1.30	1.30
2:B:42:LEU:O	2:B:45:ALA:HB3	1.39	1.22
6:E:549:THR:CG2	6:E:549:THR:O	1.87	1.21

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	924/942 (98%)	853 (92%)	67 (7%)	4 (0%)	34	56
2	B	185/198 (93%)	163 (88%)	19 (10%)	3 (2%)	9	21
2	D	184/198 (93%)	159 (86%)	24 (13%)	1 (0%)	29	51
3	C	70/83 (84%)	69 (99%)	1 (1%)	0	100	100
6	E	581/601 (97%)	485 (84%)	91 (16%)	5 (1%)	17	34
6	F	580/601 (96%)	486 (84%)	87 (15%)	7 (1%)	13	28
7	G	111/117 (95%)	96 (86%)	13 (12%)	2 (2%)	8	19

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
All	All	2635/2740 (96%)	2311 (88%)	302 (12%)	22 (1%)	24 38

5 of 22 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	847	ILE
2	B	183	PRO
2	B	57	ARG
2	B	98	LEU
6	F	352	LEU

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	817/833 (98%)	749 (92%)	68 (8%)	11	24
2	B	144/167 (86%)	123 (85%)	21 (15%)	3	6
2	D	149/167 (89%)	116 (78%)	33 (22%)	1	0
3	C	67/77 (87%)	62 (92%)	5 (8%)	13	28
6	E	498/523 (95%)	327 (66%)	171 (34%)	0	0
6	F	498/523 (95%)	325 (65%)	173 (35%)	0	0
7	G	94/97 (97%)	83 (88%)	11 (12%)	5	10
All	All	2267/2387 (95%)	1785 (79%)	482 (21%)	3	1

5 of 482 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
6	F	405	LEU
6	E	502	ARG
6	F	551	GLU
6	E	488	ILE
7	G	46	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 18 such sidechains are listed below:

Mol	Chain	Res	Type
6	E	464	HIS
7	G	98	ASN
6	E	562	ASN
6	F	464	HIS
6	E	265	ASN

5.3.3   RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
4	I	24/33 (72%)	2 (8%)	1 (4%)
5	J	26/59 (44%)	1 (3%)	1 (3%)
All	All	50/92 (54%)	3 (6%)	2 (4%)

All (3) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
4	I	15	G
4	I	23	C
5	J	25	G

All (2) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
4	I	22	G
5	J	25	G

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 ⓘ

There are no monosaccharides in this entry.

5.6   Ligand geometry ⓘ

Of 10 ligands modelled in this entry, 9 are monoatomic - leaving 1 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	$\#|Z| > 2$
9	GDP	A	1003	10	24,30,30	1.00	1 (4%)	30,47,47	1.25	4 (13%)

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
9	GDP	A	1003	10	-	1/12/32/32	0/3/3/3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
9	A	1003	GDP	C6-N1	-2.77	1.33	1.37

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
9	A	1003	GDP	C3'-C2'-C1'	3.23	105.84	100.98
9	A	1003	GDP	PA-O3A-PB	-2.87	122.99	132.83
9	A	1003	GDP	C5-C6-N1	2.18	117.80	113.95
9	A	1003	GDP	C8-N7-C5	2.17	107.13	102.99

There are no chirality outliers.

All (1) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
9	A	1003	GDP	O4'-C4'-C5'-O5'

There are no ring outliers.

1 monomer is involved in 10 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
9	A	1003	GDP	10	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 then 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.

Ligand GDP A 1003

Bond lengths　　　Bond angles

Torsions　　　Rings
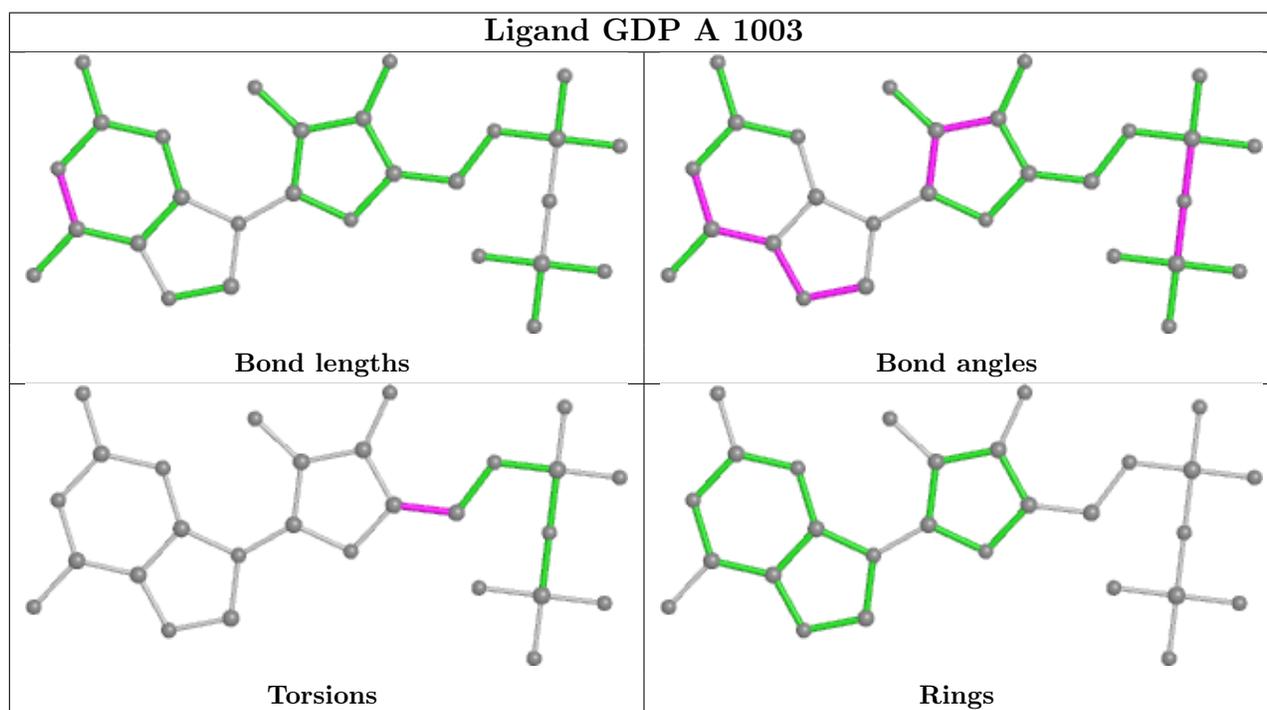
5.7 Other polymers ⓘ

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-30504. 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 ⓘ

6.1.1   Primary map

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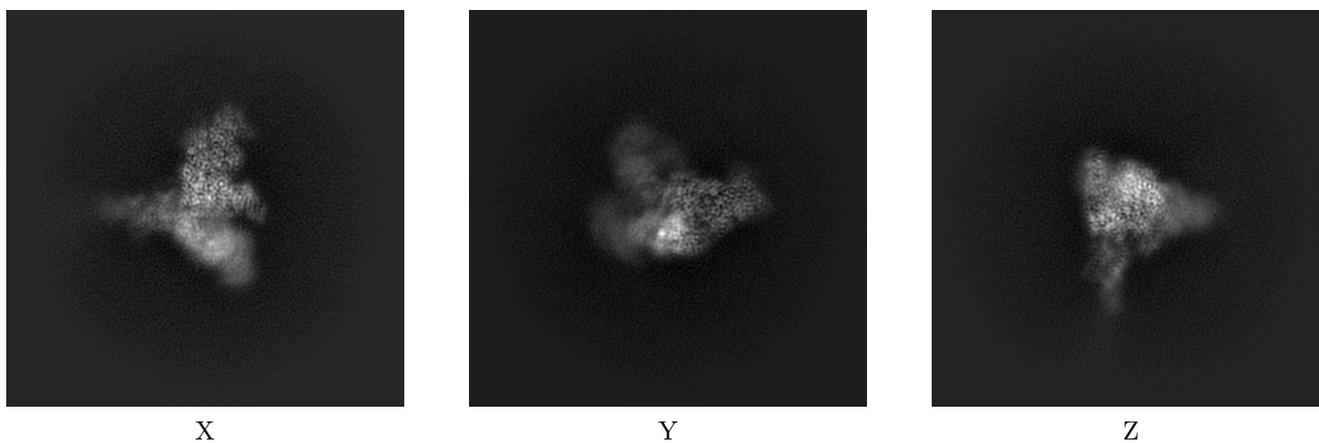
The images above show the map projected in three orthogonal directions.

6.2   Central slices ⓘ

6.2.1   Primary map

X Index: 224   Y Index: 224   Z Index: 224
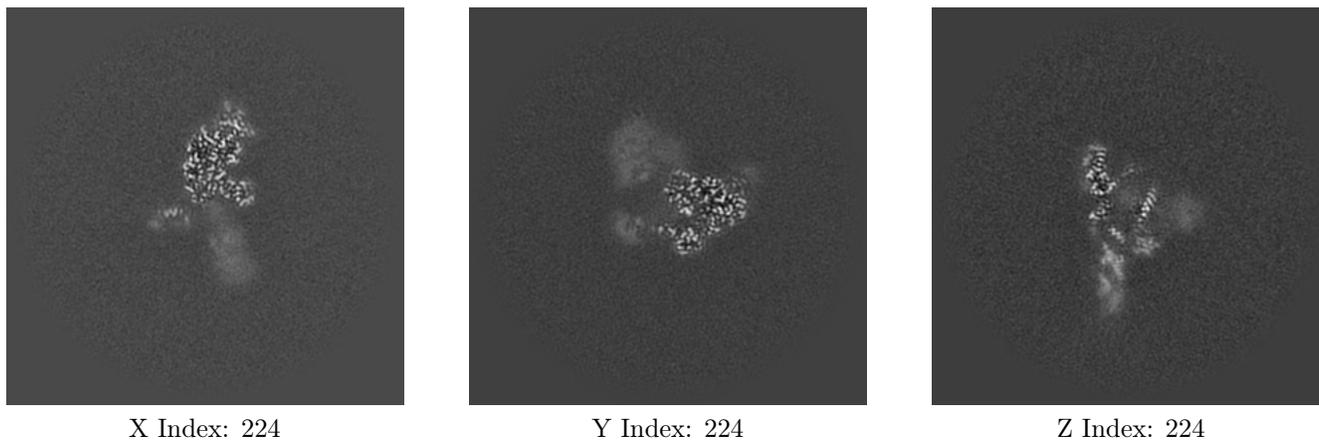
The images above show central slices of the map in three orthogonal directions.

6.3   Largest variance slices ⓘ
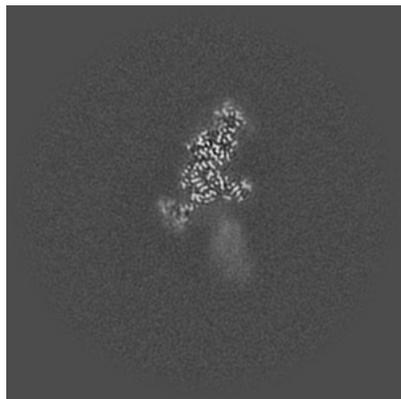
6.3.1   Primary map
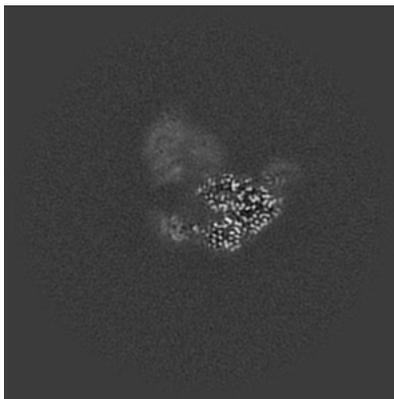
| X Index: 232 | Y Index: 218 | Z Index: 236 |
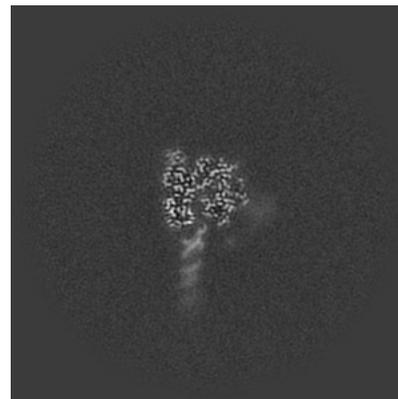
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1   Primary map

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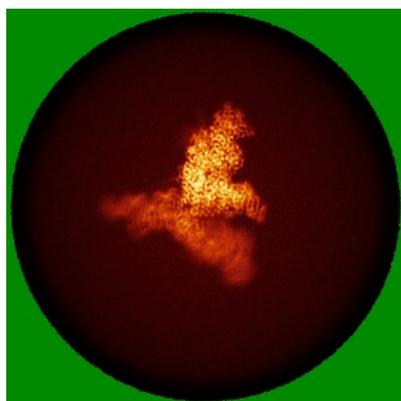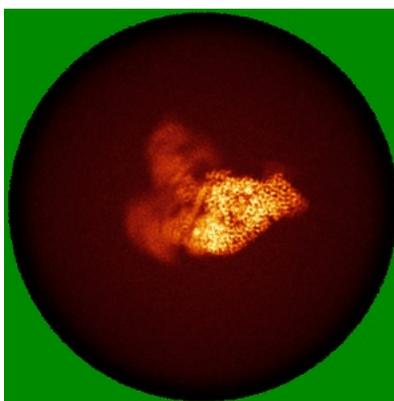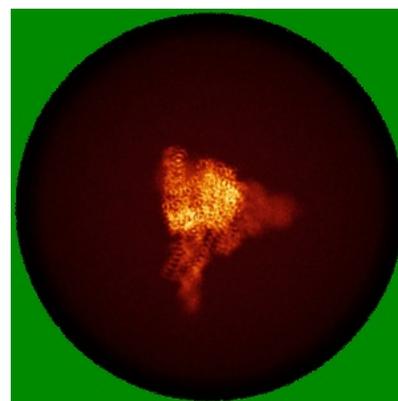
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5   Orthogonal surface views ⓘ

6.5.1   Primary map

X   Y   Z
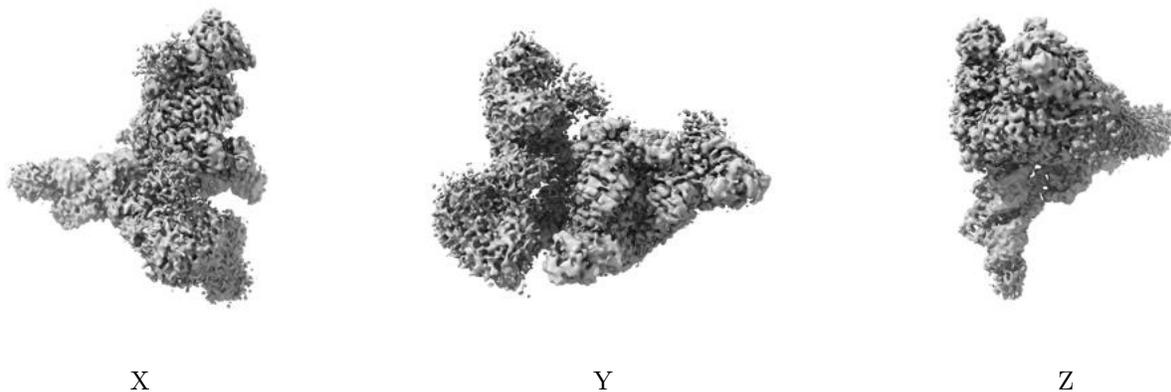
The images above show the 3D surface view of the map at the recommended contour level 0.25. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.6   Mask visualisation ⓘ

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

7   Map analysis ⓘ

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

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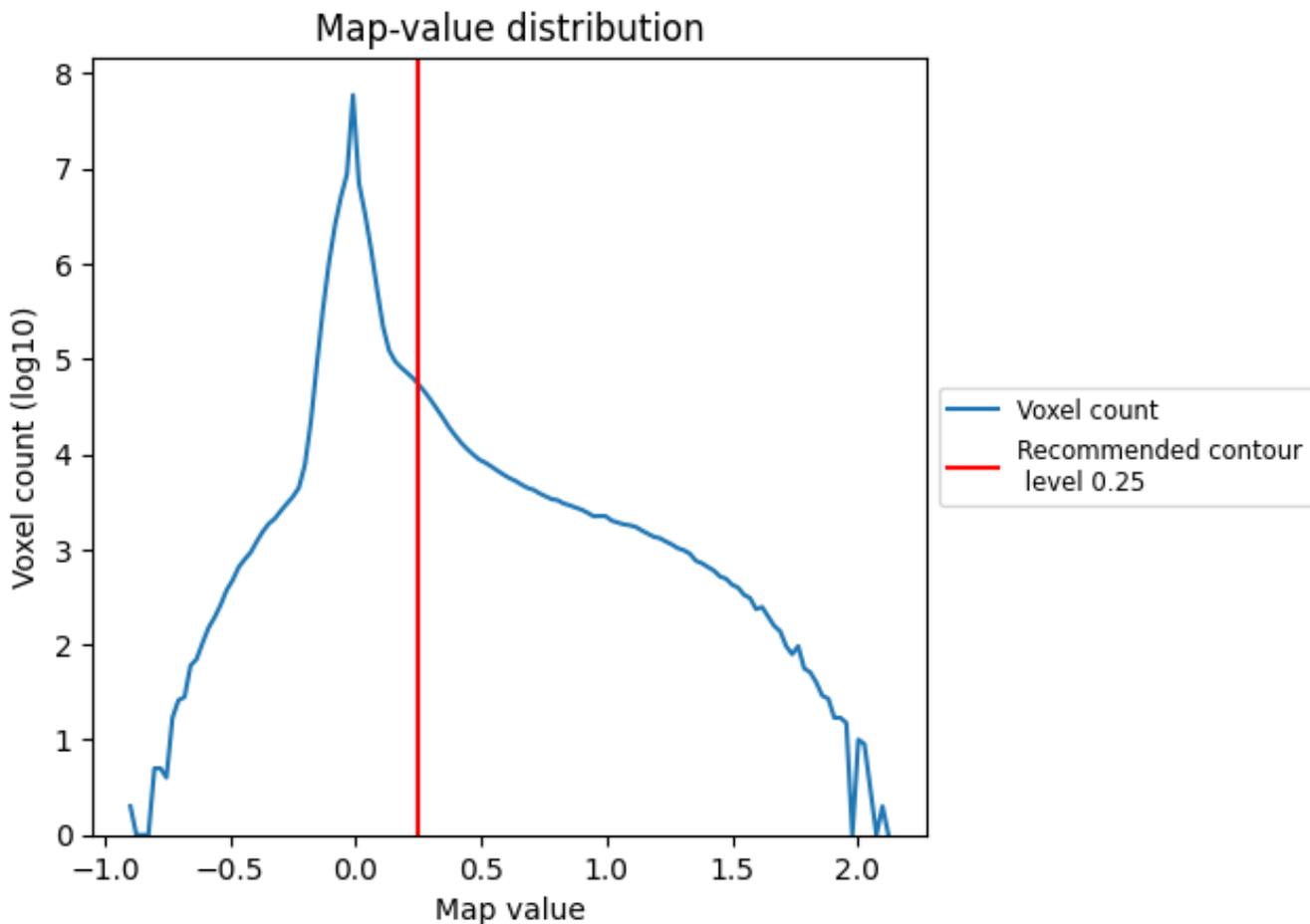
The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

7.2　Volume estimate ⓘ
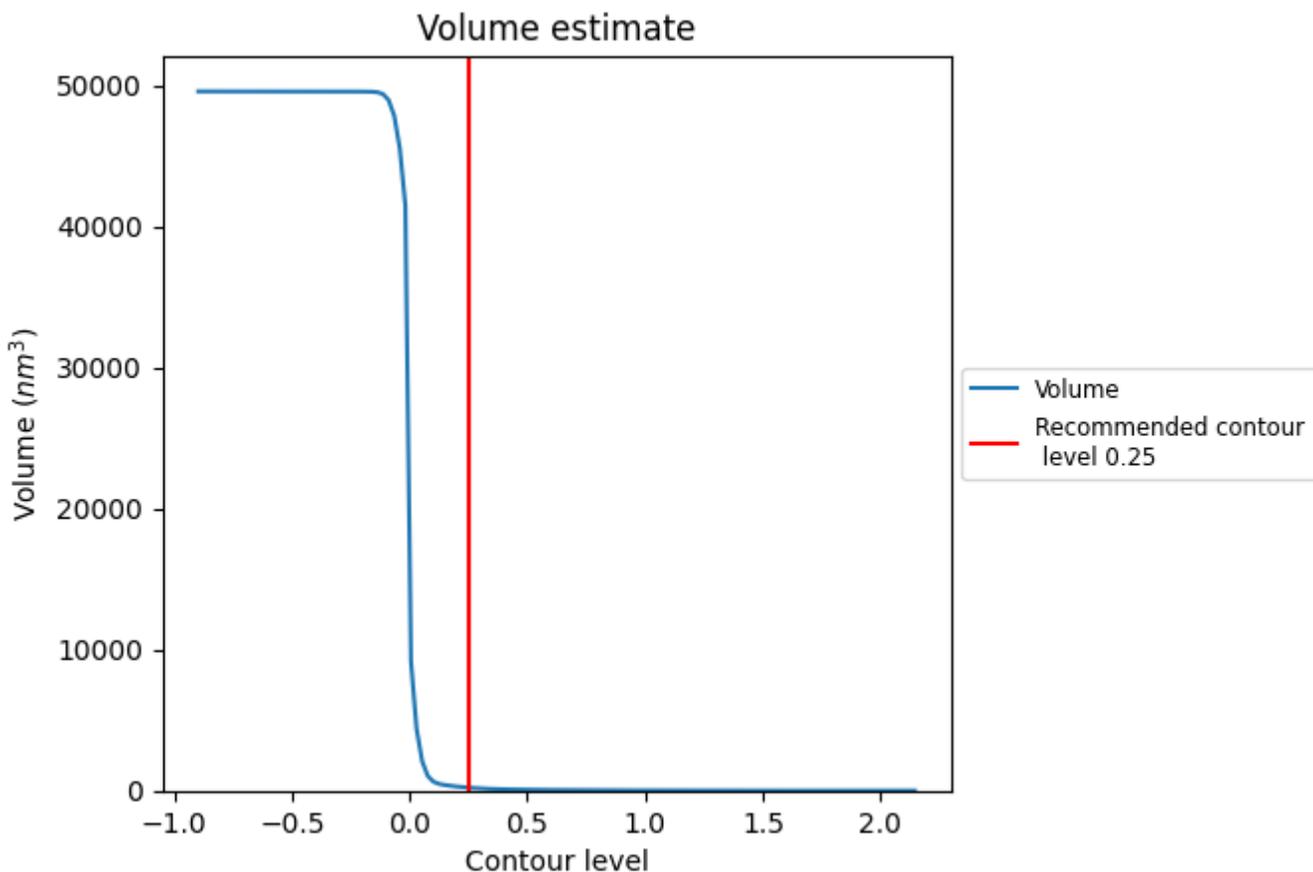
The volume at the recommended contour level is 213 nm^3; this corresponds to an approximate mass of 192 kDa.

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)
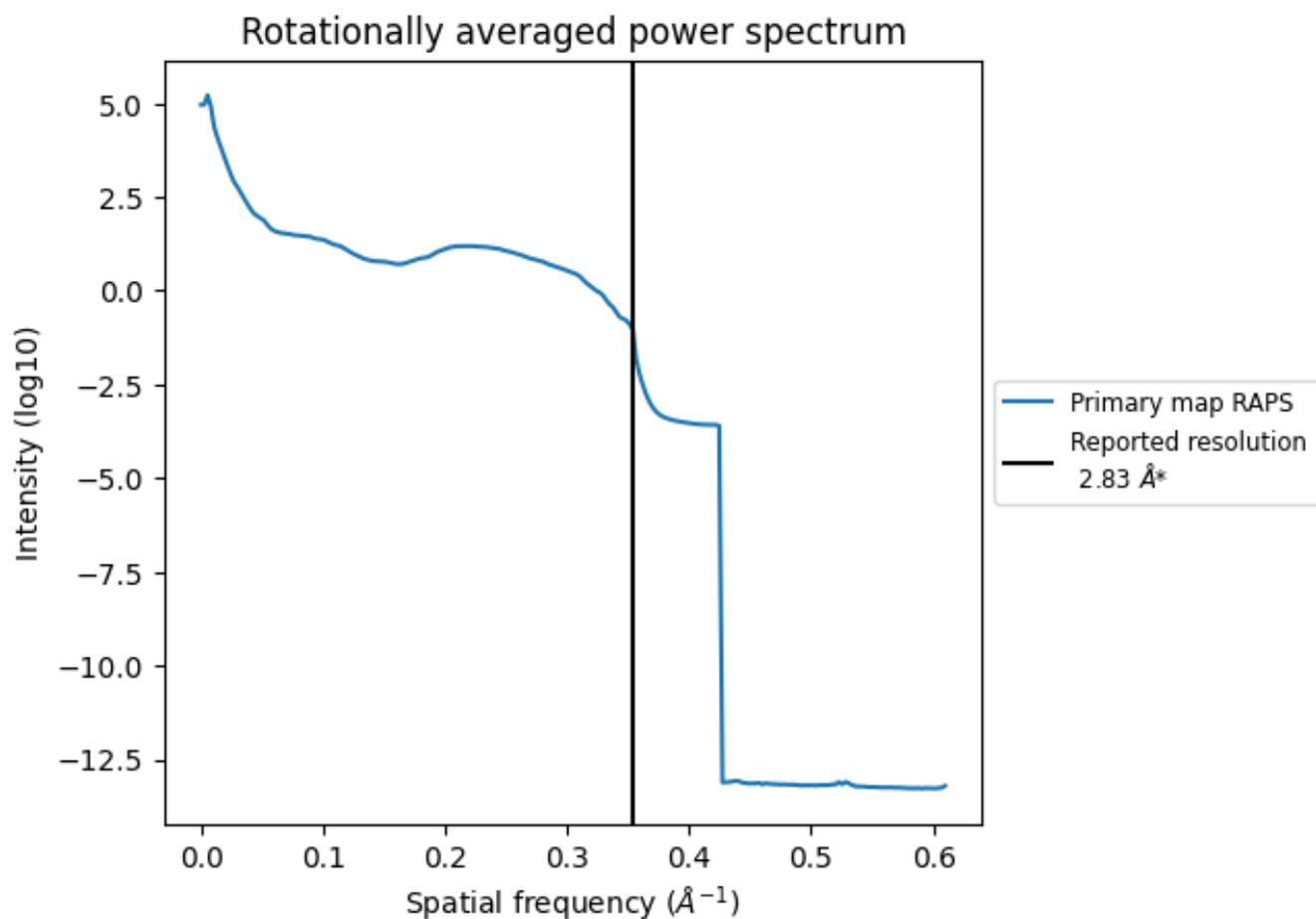
*Reported resolution corresponds to spatial frequency of 0.353 Å^{-1}

8   Fourier-Shell correlation (i)

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-30504 and PDB model 7CYQ. Per-residue inclusion information can be found in section 3 on page 7.

9.1 Map-model overlay (i)

|		
X	Y	Z
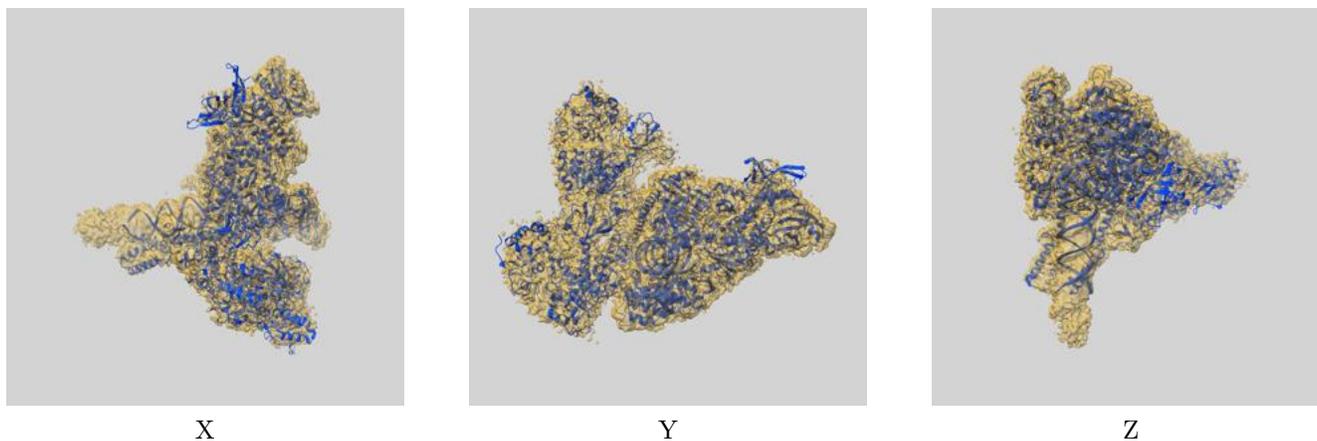
The images above show the 3D surface view of the map at the recommended contour level 0.25 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

## 9.2   Q-score mapped to coordinate model ⓘ

X   Y   Z
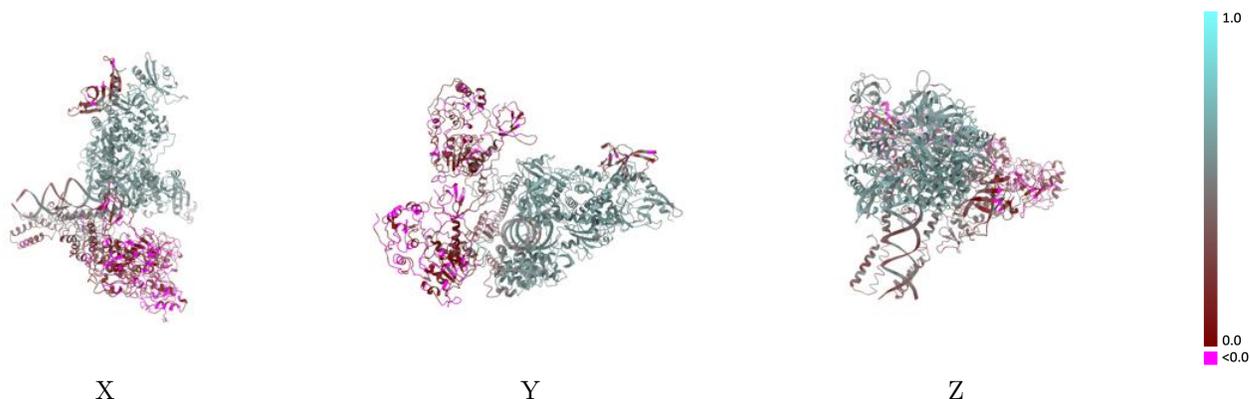
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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
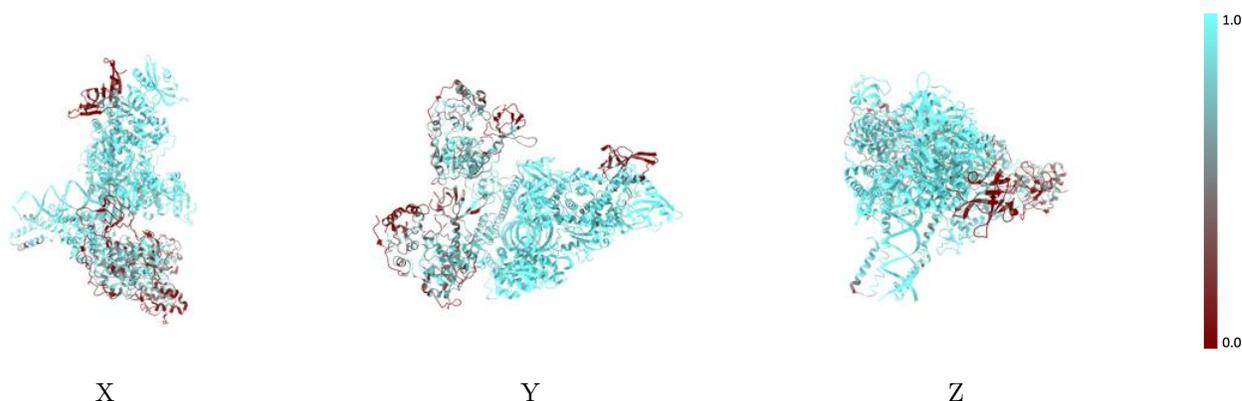
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.25).

9.4   Atom inclusion (i)
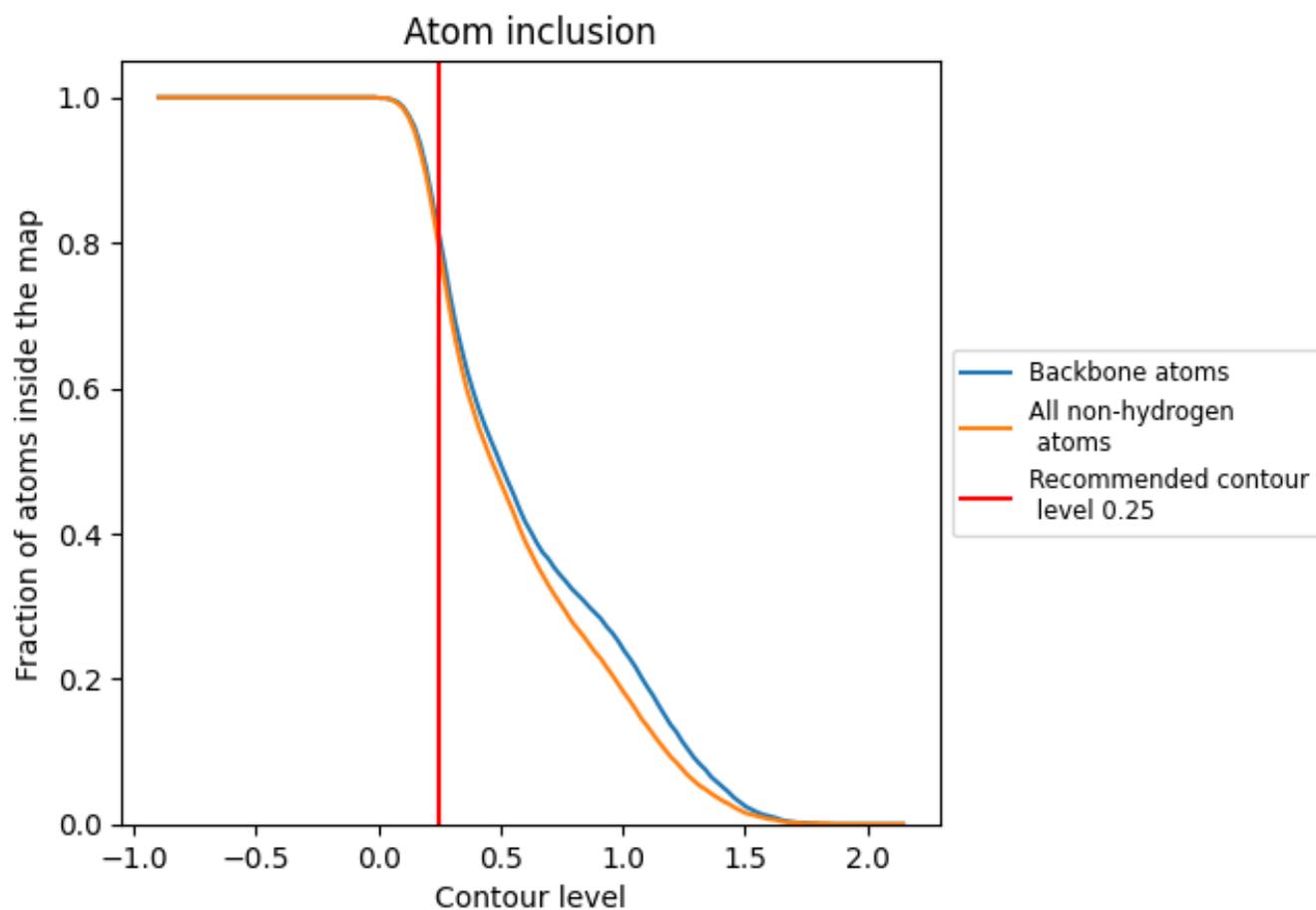
At the recommended contour level, 81% of all backbone atoms, 79% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.25) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7890	0.3840
A	0.9860	0.5900
B	0.9390	0.5000
C	0.9780	0.5660
D	0.9420	0.4740
E	0.6220	0.2140
F	0.5620	0.1140
G	0.2540	0.3280
I	0.9980	0.4550
J	0.9820	0.4770

1.0

0.0
<0.0