



Full wwPDB EM Validation Report ⓘ

Nov 22, 2022 – 02:27 PM JST

PDB ID : 7EJU
EMDB ID : EMD-31163
Title : Junin virus(JUNV) RNA polymerase L complexed with Z protein
Authors : Chen, Y.
Deposited on : 2021-04-02
Resolution : 3.50 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

EMDB validation analysis : 0.0.1.dev43
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.3

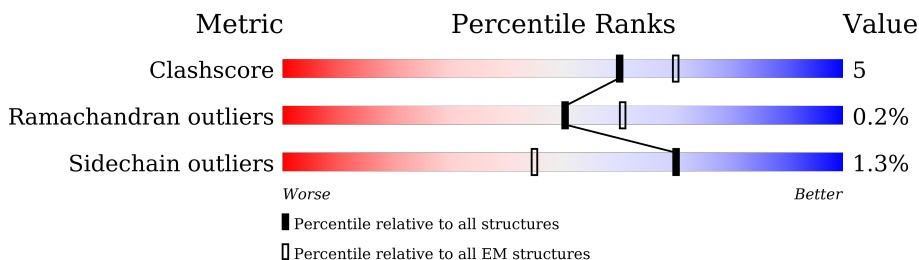
1 Overall quality at a glance

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	2210	
2	B	94	

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 13713 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 L.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	1648	13287	8496	2247	2449	95	0	0

- Molecule 2 is a protein called RING finger protein Z.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	52	423	265	75	74	9	0	0

- Molecule 3 is ZINC ION (three-letter code: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
3	A	1	1	1	0
3	B	1	1	1	0

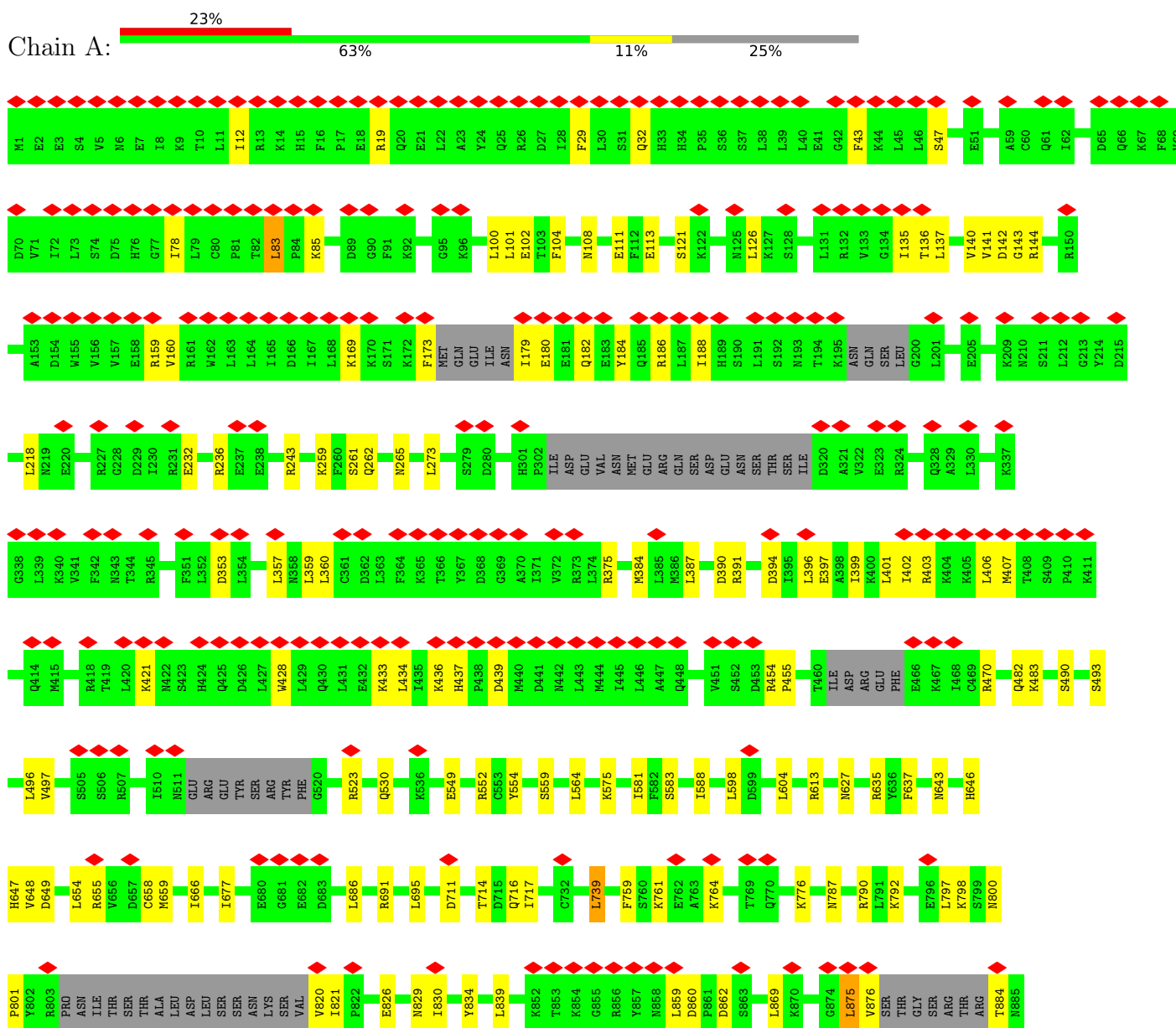
- Molecule 4 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

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

3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

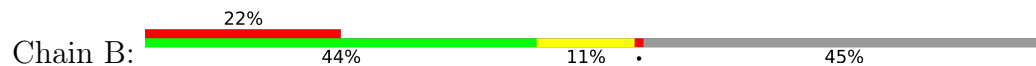
- Molecule 1: RNA-directed RNA polymerase L



GLN
LEU
TRP
PRO
TYR
LEU
LYS
MET
THR
SER
GLN
THR
ILE
LEU
PHE
GLN
PRO
GLU
GLY
ASP
LEU
HIS
GLN
LYS
LEU
ILE
ARG
SER
LEU
ASP
LYS
PHE
GLY
ASP
TRP
LEU
GLU
PHE
SER
ASN
PHE
LYS
VAL
ALA
PHE
SER
SER
SER
LEU
ILE

SER
ASP
PRO
GLN
GLY
GLN
PHE
ARG
LEU
LYS
GLY
VAL
THR
CYS
ARG
PRO
LEU
LYS
HIS
LYS
VAL
VAL
ILE
ILE
LYS
ASP
ILE
ASP

● Molecule 2: RING finger protein Z



MET
GLY
ASN
CYS
ASN
GLY
ALA
SER
LYS
SER
ASN
GLN
PRO
ASP
SER
SER
ARG
VAL
THR
GLN
PRO
ALA
ALA
GLU
PHE
ARG
ARG
VAL
HIS
S31
S32
L33
Y34
G35
S36
D46
T47
M48
L49
C52
M53
D54
H55
Y56
H62
Q63
R67
M68
S69
D70
L71
I74
G75
W76

K77
P78
L79
P80
T81
T82
THR
VAL
PRO
VAL
GLU
PRO
THR
ALA
PRO
PRO

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	362657	Depositor
Resolution determination method	Not provided	
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	60	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.067	Depositor
Minimum map value	-0.048	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.0123	Depositor
Map size (\AA)	166.4, 166.4, 166.4	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	0.65, 0.65, 0.65	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: ZN, MG

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	0.44	0/13530	0.71	10/18230 (0.1%)
2	B	0.45	0/434	0.71	0/590
All	All	0.44	0/13964	0.71	10/18820 (0.1%)

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	4
2	B	0	3
All	All	0	7

There are no bond length outliers.

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
1	A	396	LEU	CA-CB-CG	7.07	131.56	115.30
1	A	434	LEU	CA-CB-CG	6.95	131.27	115.30
1	A	1544	LEU	CA-CB-CG	6.25	129.66	115.30
1	A	353	ASP	CB-CG-OD1	6.03	123.73	118.30
1	A	1692	LEU	CA-CB-CG	5.95	128.98	115.30
1	A	1637	LEU	CA-CB-CG	5.21	127.27	115.30
1	A	83	LEU	CA-CB-CG	5.16	127.17	115.30
1	A	1650	LEU	CA-CB-CG	5.09	127.00	115.30
1	A	739	LEU	CA-CB-CG	5.08	126.98	115.30
1	A	218	LEU	CA-CB-CG	5.06	126.94	115.30

There are no chirality outliers.

All (7) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1364	LEU	Peptide
1	A	1506	ARG	Peptide
1	A	19	ARG	Peptide
1	A	949	ALA	Peptide
2	B	35	GLY	Peptide
2	B	36	ARG	Peptide
2	B	76	TRP	Peptide

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	13287	0	13459	124	0
2	B	423	0	403	6	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
4	A	1	0	0	0	0
All	All	13713	0	13862	129	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 5.

All (129) 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:B:52:CYS:HB3	2:B:55:HIS:O	1.92	0.69
1:A:716:GLN:HE22	1:A:1240:ASN:HD22	1.42	0.67
1:A:101:LEU:HA	1:A:140:VAL:O	1.94	0.67
1:A:169:LYS:HD3	1:A:188:ILE:HD11	1.76	0.67
1:A:677:ILE:O	1:A:691:ARG:NH1	2.28	0.66
1:A:1377:PHE:H	2:B:36:ARG:HH22	1.46	0.62
1:A:1122:GLU:HA	1:A:1127:ASN:HD22	1.64	0.62
2:B:52:CYS:SG	2:B:53:ASN:N	2.74	0.61
1:A:1305:THR:HB	1:A:1364:LEU:HD13	1.82	0.61
1:A:390:ASP:OD2	1:A:530:GLN:NE2	2.34	0.61

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:78:ILE:HG21	1:A:135:ILE:HD11	1.83	0.59
1:A:1221:GLU:OE2	1:A:1225:ASN:ND2	2.36	0.59
1:A:1189:SER:HB3	1:A:1369:SER:HB3	1.85	0.58
1:A:1443:ASN:ND2	1:A:1461:GLU:OE2	2.36	0.58
1:A:454:ARG:HG3	1:A:523:ARG:HD2	1.86	0.58
1:A:1108:SER:O	1:A:1229:TRP:NE1	2.37	0.57
1:A:1133:GLY:O	1:A:1138:LYS:NZ	2.37	0.57
1:A:83:LEU:HD23	1:A:85:LYS:H	1.70	0.57
1:A:262:GLN:OE1	1:A:265:ASN:ND2	2.38	0.57
1:A:897:THR:H	1:A:900:GLN:HE21	1.53	0.57
1:A:759:PHE:HB3	1:A:776:LYS:HE3	1.87	0.56
1:A:113:GLU:HB3	1:A:821:ILE:HG22	1.88	0.56
1:A:1747:PHE:HA	1:A:1750:HIS:HB2	1.88	0.56
1:A:717:ILE:HG12	1:A:1241:VAL:HG23	1.88	0.56
1:A:236:ARG:HG3	1:A:1315:LEU:HD21	1.89	0.55
1:A:997:LEU:HB2	1:A:1011:LYS:HB3	1.88	0.55
1:A:384:MET:HA	1:A:394:ASP:HA	1.89	0.55
1:A:136:THR:HG21	1:A:914:THR:HG22	1.88	0.55
1:A:635:ARG:HE	1:A:1385:PHE:HZ	1.56	0.54
1:A:1548:TRP:CD1	1:A:1677:ILE:HG23	2.43	0.54
1:A:1493:ILE:HG13	1:A:1678:LEU:HD12	1.89	0.54
1:A:261:SER:OG	1:A:646:HIS:ND1	2.40	0.54
1:A:559:SER:HB3	1:A:564:LEU:HD23	1.90	0.54
1:A:273:LEU:HD11	1:A:655:ARG:HB2	1.90	0.53
1:A:1354:VAL:HG11	1:A:1374:ILE:HD13	1.89	0.53
1:A:43:PHE:HB2	1:A:1095:PHE:HZ	1.73	0.53
1:A:1338:CYS:SG	1:A:1339:LEU:N	2.81	0.53
1:A:1184:CYS:HB3	1:A:1374:ILE:HG23	1.91	0.53
1:A:869:LEU:HD12	1:A:892:MET:HB3	1.90	0.52
1:A:1494:ARG:NH1	1:A:1698:SER:O	2.42	0.52
1:A:875:LEU:HD23	1:A:876:VAL:H	1.73	0.52
1:A:637:PHE:HB2	1:A:654:LEU:HD21	1.91	0.51
2:B:49:LEU:HD13	2:B:56:TYR:HB3	1.92	0.51
1:A:677:ILE:HG13	1:A:695:LEU:HD21	1.93	0.51
1:A:1754:PHE:HA	1:A:1758:LEU:HB2	1.93	0.51
1:A:359:LEU:HD12	1:A:433:LYS:HG2	1.93	0.51
1:A:820:VAL:HG12	1:A:821:ILE:HG12	1.93	0.51
1:A:761:LYS:NZ	1:A:1362:SER:O	2.43	0.50
1:A:399:ILE:HA	1:A:402:ILE:HG22	1.92	0.50
1:A:397:GLU:O	1:A:401:LEU:HB2	2.11	0.50
1:A:102:GLU:HB2	1:A:141:VAL:HG12	1.94	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:421:LYS:HG3	1:A:428:TRP:HZ2	1.77	0.49
1:A:1498:ARG:NH2	1:A:1697:PHE:O	2.45	0.49
1:A:1677:ILE:HD12	1:A:1678:LEU:HD22	1.94	0.49
1:A:797:LEU:HD22	1:A:1209:LEU:HB3	1.94	0.49
1:A:552:ARG:NH2	1:A:554:TYR:OH	2.45	0.49
1:A:1121:LYS:HD2	1:A:1130:LEU:HD13	1.95	0.49
1:A:108:ASN:HB2	1:A:111:GLU:HG2	1.94	0.48
1:A:121:SER:OG	1:A:834:TYR:OH	2.30	0.48
1:A:826:GLU:HB3	1:A:829:ASN:HD22	1.77	0.48
1:A:1186:TYR:HD2	1:A:1330:GLN:HE21	1.59	0.48
1:A:1585:GLN:HE22	1:A:1749:GLU:HB2	1.77	0.48
1:A:184:TYR:HB3	1:A:186:ARG:H	1.78	0.48
1:A:711:ASP:HB3	1:A:714:THR:HG22	1.95	0.48
1:A:159:ARG:HG3	1:A:160:VAL:H	1.79	0.48
1:A:1487:ASP:OD1	1:A:1494:ARG:NH2	2.46	0.48
1:A:1537:GLU:HA	1:A:1540:ILE:HG22	1.96	0.48
1:A:1426:ILE:HD12	1:A:1435:VAL:HG21	1.96	0.48
1:A:839:LEU:HD23	1:A:907:ILE:HD13	1.95	0.48
1:A:104:PHE:O	1:A:143:GLY:HA2	2.13	0.48
1:A:173:PHE:O	1:A:179:ILE:N	2.47	0.48
1:A:439:ASP:OD1	1:A:439:ASP:N	2.47	0.48
1:A:1642:ILE:HG23	1:A:1670:VAL:HG11	1.96	0.48
1:A:1465:LYS:HB2	1:A:1810:ALA:HB1	1.95	0.47
1:A:739:LEU:HD21	1:A:1115:LYS:HE3	1.95	0.47
1:A:1108:SER:OG	1:A:1109:SER:N	2.47	0.47
1:A:259:LYS:HD3	1:A:648:VAL:HG12	1.95	0.47
1:A:357:LEU:HD21	1:A:399:ILE:HG22	1.96	0.47
1:A:860:ASP:N	1:A:860:ASP:OD1	2.45	0.47
1:A:1193:PRO:HA	1:A:1288:ASP:HA	1.96	0.47
1:A:1454:THR:HG22	1:A:1456:PHE:H	1.80	0.47
1:A:180:GLU:OE1	1:A:1085:PHE:N	2.48	0.47
2:B:46:ASP:N	2:B:46:ASP:OD1	2.48	0.47
1:A:482:GLN:OE1	1:A:613:ARG:NH1	2.47	0.46
1:A:12:ILE:HG13	1:A:159:ARG:HH22	1.80	0.46
1:A:830:ILE:HD13	1:A:900:GLN:HB3	1.97	0.45
1:A:1121:LYS:HD3	1:A:1128:ARG:HD3	1.98	0.45
1:A:1517:LEU:HA	1:A:1520:ARG:HE	1.81	0.45
1:A:1339:LEU:O	1:A:1347:ARG:NH1	2.49	0.45
1:A:47:SER:HG	1:A:1094:CYS:HG	1.65	0.45
1:A:967:LYS:HD3	1:A:968:ASP:HB2	1.98	0.45
1:A:1303:LEU:HA	1:A:1325:THR:HG21	1.99	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:403:ARG:HH11	1:A:406:LEU:HD23	1.82	0.44
1:A:436:LYS:HG3	1:A:437:HIS:H	1.82	0.44
1:A:232:GLU:OE1	1:A:790:ARG:NH1	2.50	0.44
1:A:798:LYS:HA	1:A:1212:PRO:HB3	2.00	0.44
1:A:792:LYS:HB2	1:A:1307:GLN:HE21	1.83	0.44
1:A:859:LEU:HD12	1:A:1003:ILE:HG21	2.00	0.43
1:A:647:HIS:HD2	1:A:649:ASP:H	1.66	0.43
1:A:800:ASN:HA	1:A:801:PRO:HD3	1.87	0.43
1:A:598:LEU:HD23	1:A:604:LEU:HG	2.01	0.43
1:A:787:ASN:HD21	1:A:1207:LEU:HA	1.83	0.43
1:A:1359:PHE:O	1:A:1362:SER:OG	2.26	0.43
1:A:490:SER:OG	1:A:581:ILE:O	2.32	0.43
1:A:583:SER:HB3	1:A:1441:ARG:HD2	2.01	0.42
1:A:1116:PHE:HB2	1:A:1235:VAL:HG12	2.01	0.42
1:A:1197:PRO:HA	1:A:1200:PHE:HD2	1.84	0.42
1:A:483:LYS:HG2	1:A:588:ILE:HD13	2.02	0.42
1:A:830:ILE:HA	1:A:1564:LYS:HZ1	1.85	0.42
1:A:549:GLU:O	1:A:575:LYS:NZ	2.47	0.42
1:A:142:ASP:OD1	1:A:142:ASP:N	2.52	0.42
1:A:1107:ILE:HG22	1:A:1232:HIS:CG	2.55	0.42
1:A:29:PHE:HA	1:A:32:GLN:HE22	1.84	0.42
1:A:100:LEU:HD12	1:A:137:LEU:HD11	2.02	0.41
1:A:643:ASN:HD22	1:A:1373:VAL:HG12	1.85	0.41
1:A:1734:HIS:HA	1:A:1737:HIS:HB3	2.02	0.41
1:A:387:LEU:HD23	1:A:391:ARG:HH11	1.85	0.41
1:A:884:THR:HA	1:A:888:GLU:HG2	2.03	0.41
1:A:958:LYS:O	1:A:962:SER:OG	2.26	0.41
1:A:658:CYS:SG	1:A:659:MET:N	2.93	0.41
1:A:360:LEU:HA	1:A:375:ARG:HH12	1.85	0.41
1:A:1550:ASN:OD1	1:A:1551:LEU:N	2.54	0.41
1:A:454:ARG:HA	1:A:455:PRO:HD3	1.80	0.41
2:B:33:LEU:HA	2:B:34:TYR:HA	1.81	0.41
1:A:1514:LEU:HD21	1:A:1532:TYR:HE2	1.86	0.41
1:A:1555:GLY:HA3	1:A:1630:ARG:HD2	2.02	0.40
1:A:493:SER:HA	1:A:496:LEU:HD12	2.04	0.40
1:A:497:VAL:HG21	1:A:581:ILE:HD11	2.03	0.40
1:A:627:ASN:ND2	1:A:666:ILE:HG21	2.37	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	1620/2210 (73%)	1353 (84%)	265 (16%)	2 (0%)	51	84
2	B	50/94 (53%)	30 (60%)	19 (38%)	1 (2%)	7	39
All	All	1670/2304 (72%)	1383 (83%)	284 (17%)	3 (0%)	50	81

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	36	ARG
1	A	862	ASP
1	A	1798	ASN

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	1514/2034 (74%)	1494 (99%)	20 (1%)	69	86
2	B	50/85 (59%)	50 (100%)	0	100	100
All	All	1564/2119 (74%)	1544 (99%)	20 (1%)	70	86

All (20) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	126	LEU
1	A	144	ARG
1	A	182	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	243	ARG
1	A	407	MET
1	A	470	ARG
1	A	686	LEU
1	A	764	LYS
1	A	875	LEU
1	A	908	ARG
1	A	975	ARG
1	A	1091	ARG
1	A	1110	ASN
1	A	1156	ARG
1	A	1271	GLN
1	A	1289	MET
1	A	1339	LEU
1	A	1633	LYS
1	A	1686	LEU
1	A	1724	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	76	HIS
1	A	265	ASN
1	A	347	ASN
1	A	471	HIS
1	A	787	ASN
1	A	900	GLN
1	A	1110	ASN
1	A	1127	ASN
1	A	1232	HIS
1	A	1240	ASN
1	A	1307	GLN
1	A	1585	GLN
1	A	1734	HIS
1	A	1790	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 3 ligands modelled in this entry, 3 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

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.

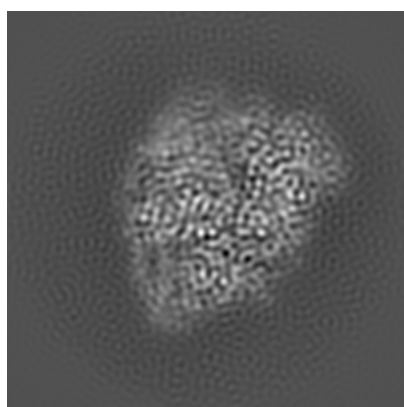
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-31163. These allow visual inspection of the internal detail of the map and identification of artifacts.

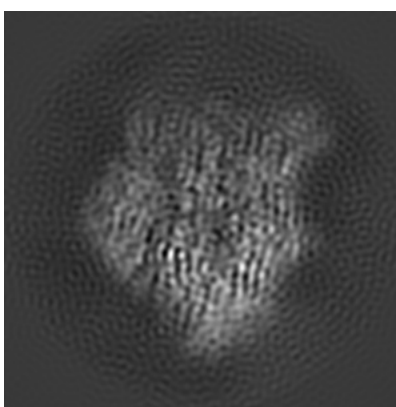
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

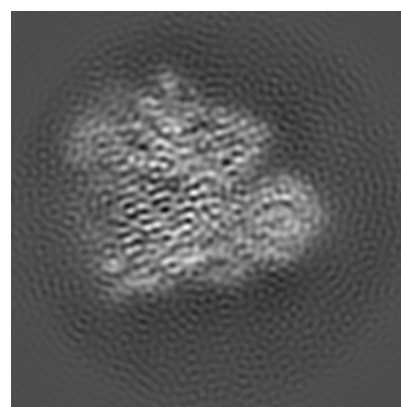
6.1.1 Primary map



X



Y

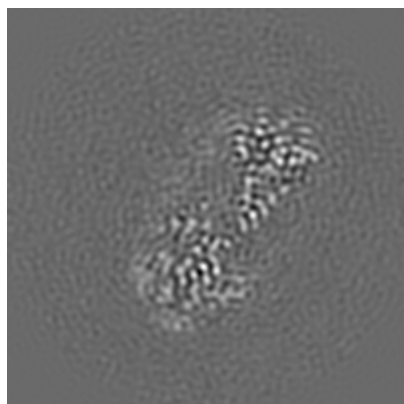


Z

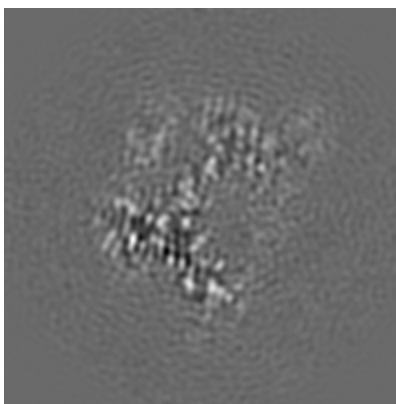
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

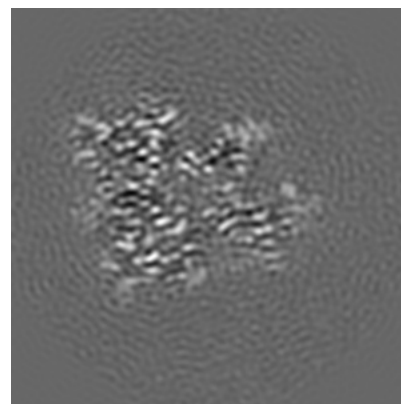
6.2.1 Primary map



X Index: 128



Y Index: 128

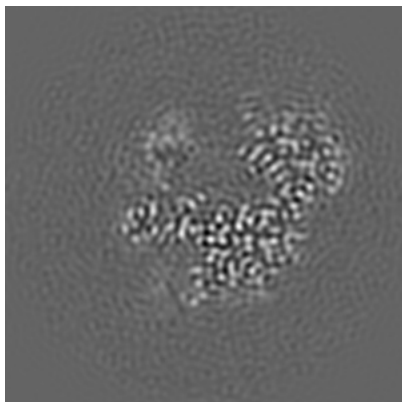


Z Index: 128

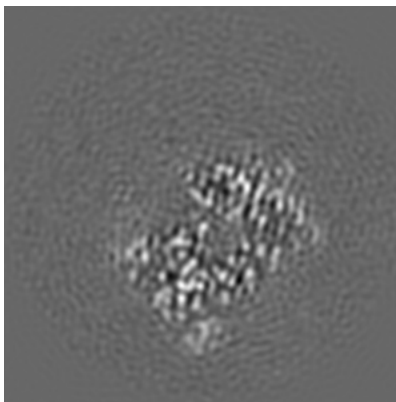
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

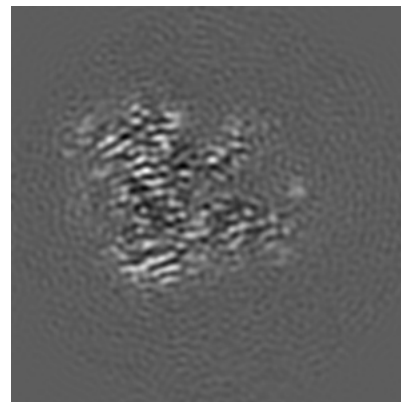
6.3.1 Primary map



X Index: 98



Y Index: 162



Z Index: 123

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

6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0123. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

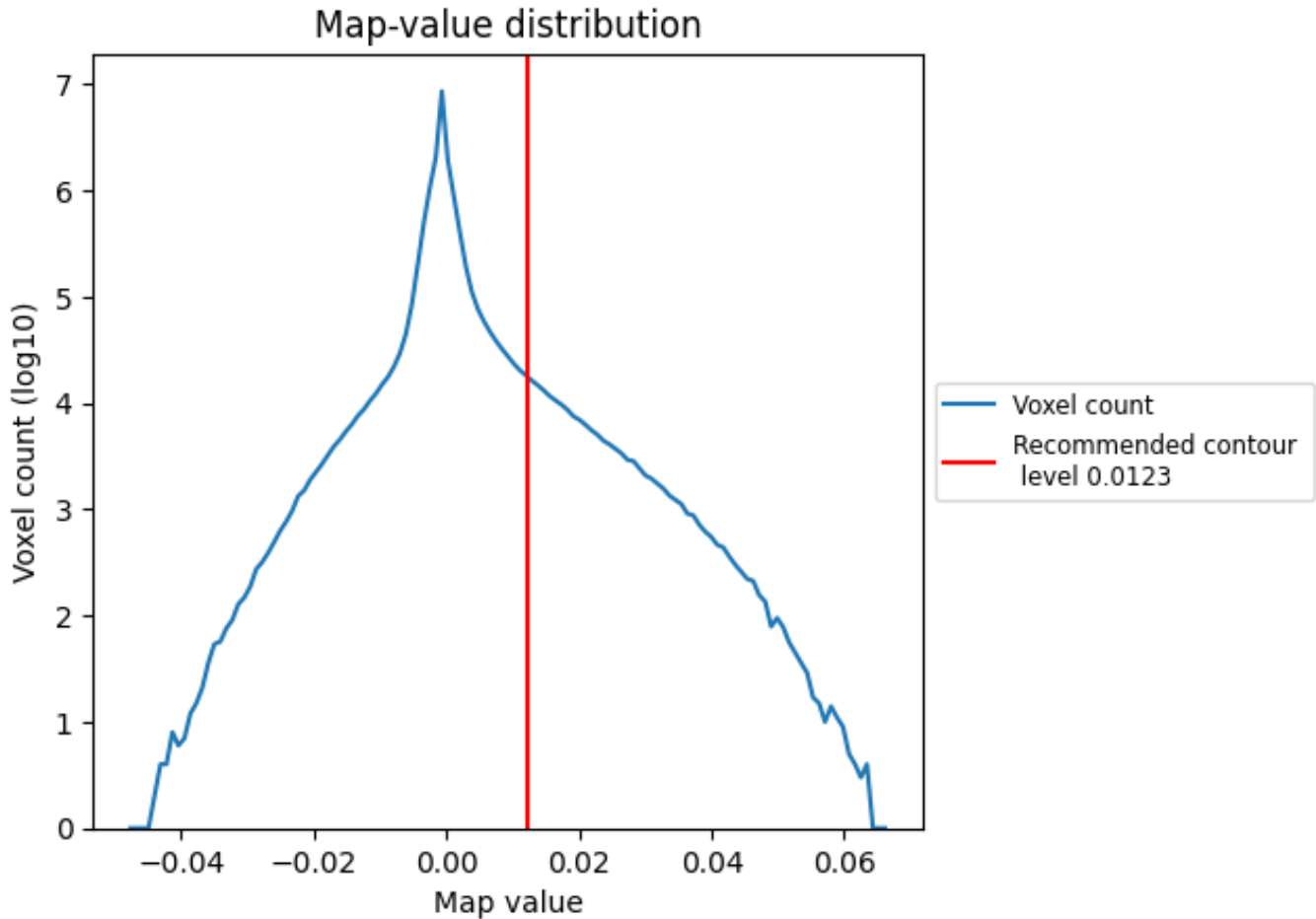
6.5 Mask visualisation

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

7 Map analysis [i](#)

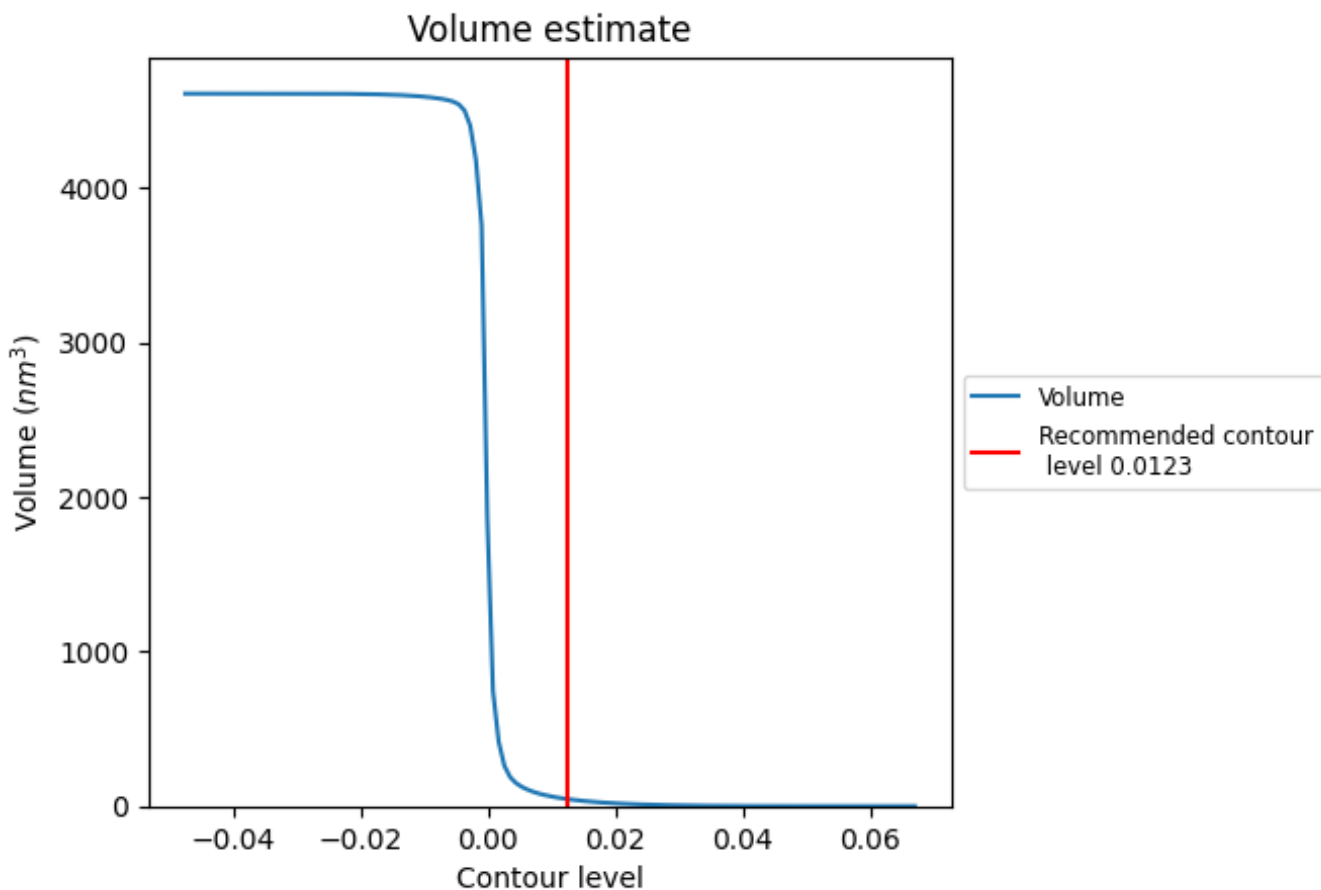
This section contains the results of statistical analysis of the map.

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.

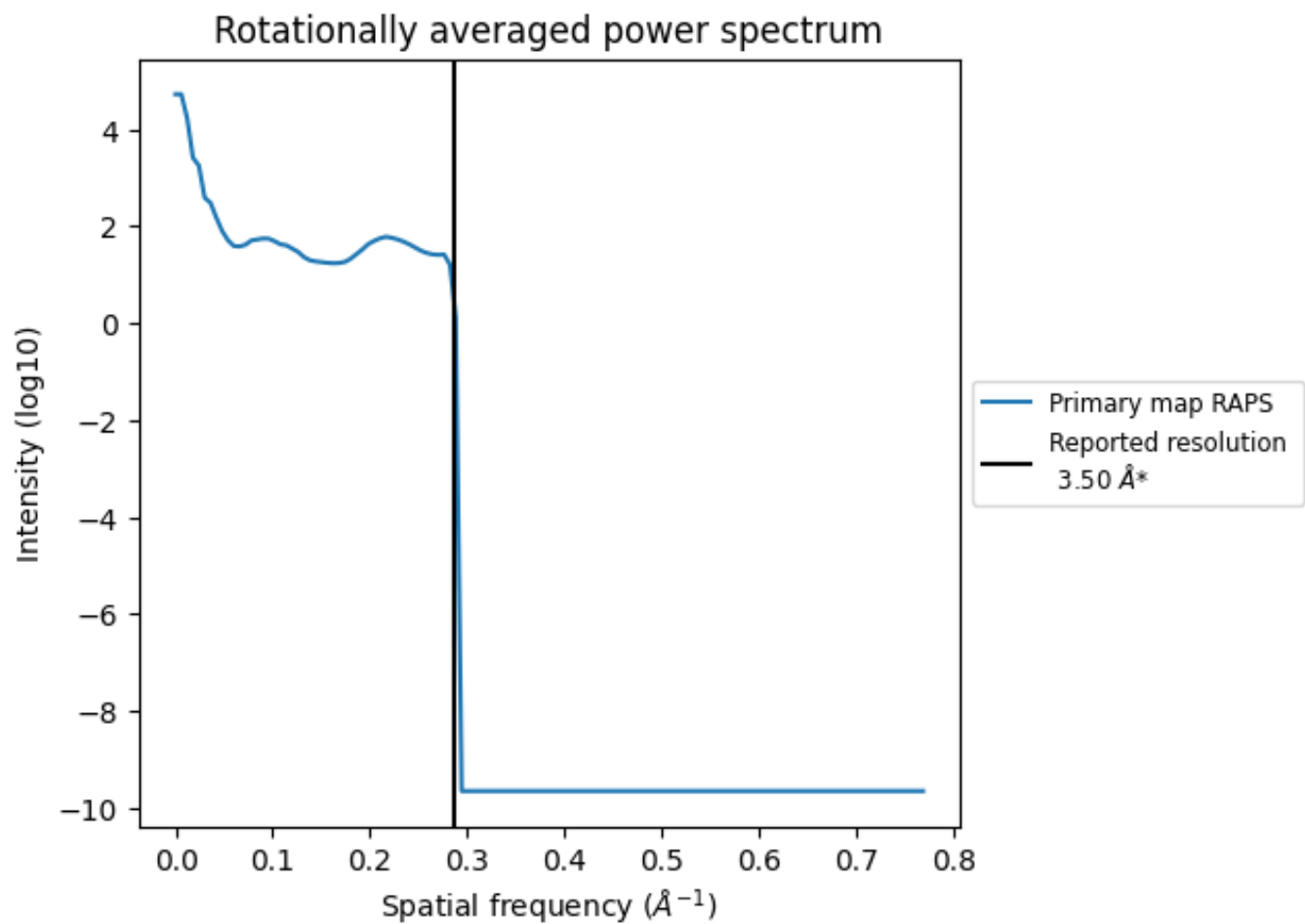
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 46 nm^3 ; this corresponds to an approximate mass of 42 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 Å⁻¹

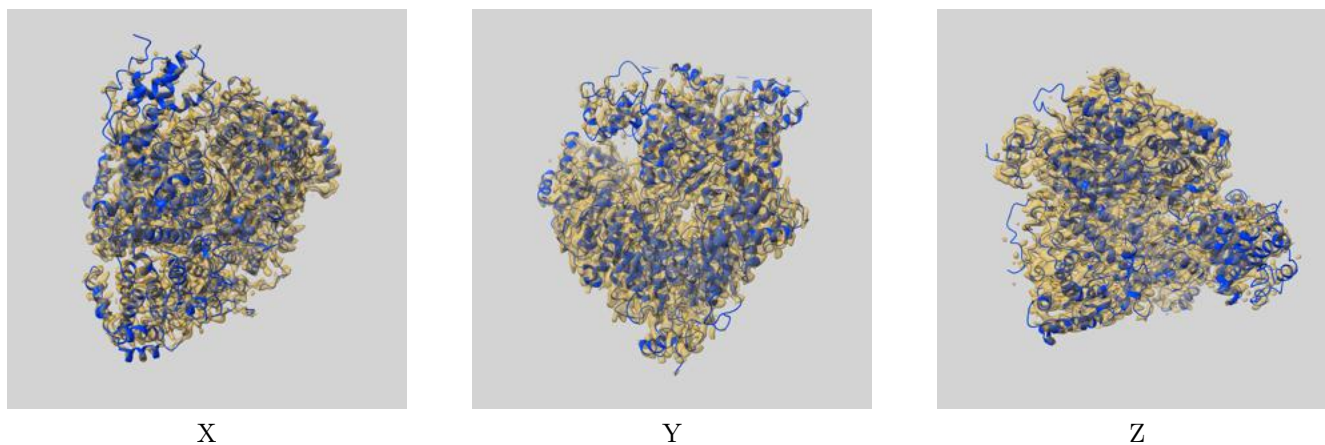
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

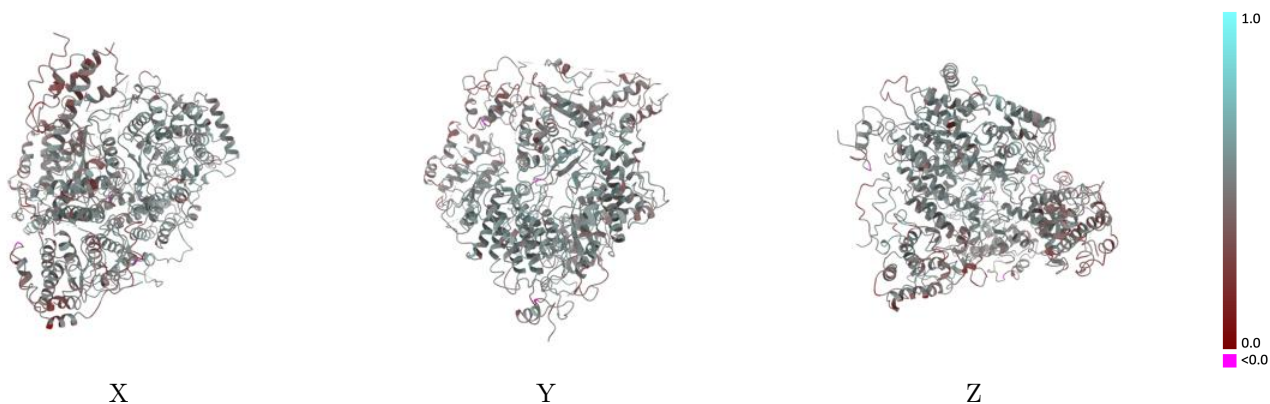
This section contains information regarding the fit between EMDB map EMD-31163 and PDB model 7EJU. Per-residue inclusion information can be found in section 3 on page 4.

9.1 Map-model overlay [i](#)



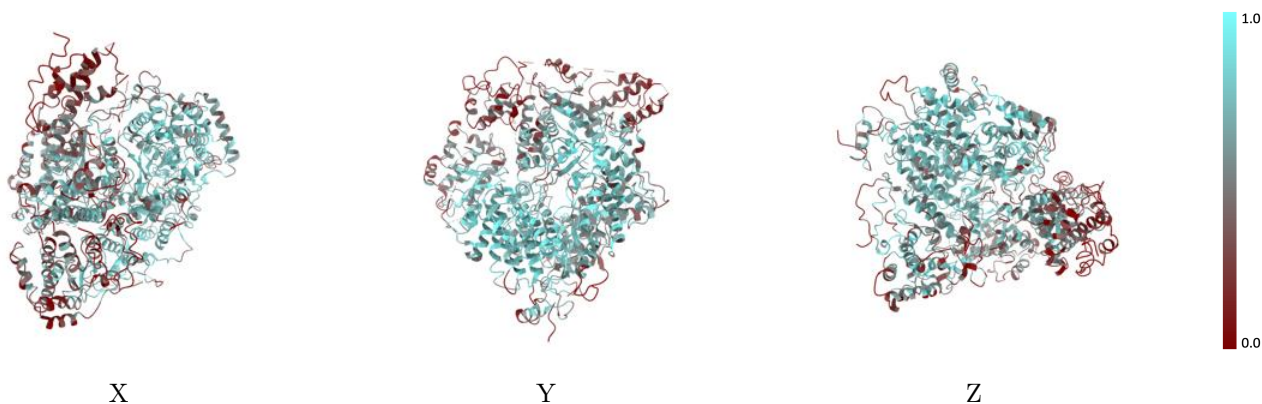
The images above show the 3D surface view of the map at the recommended contour level 0.0123 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



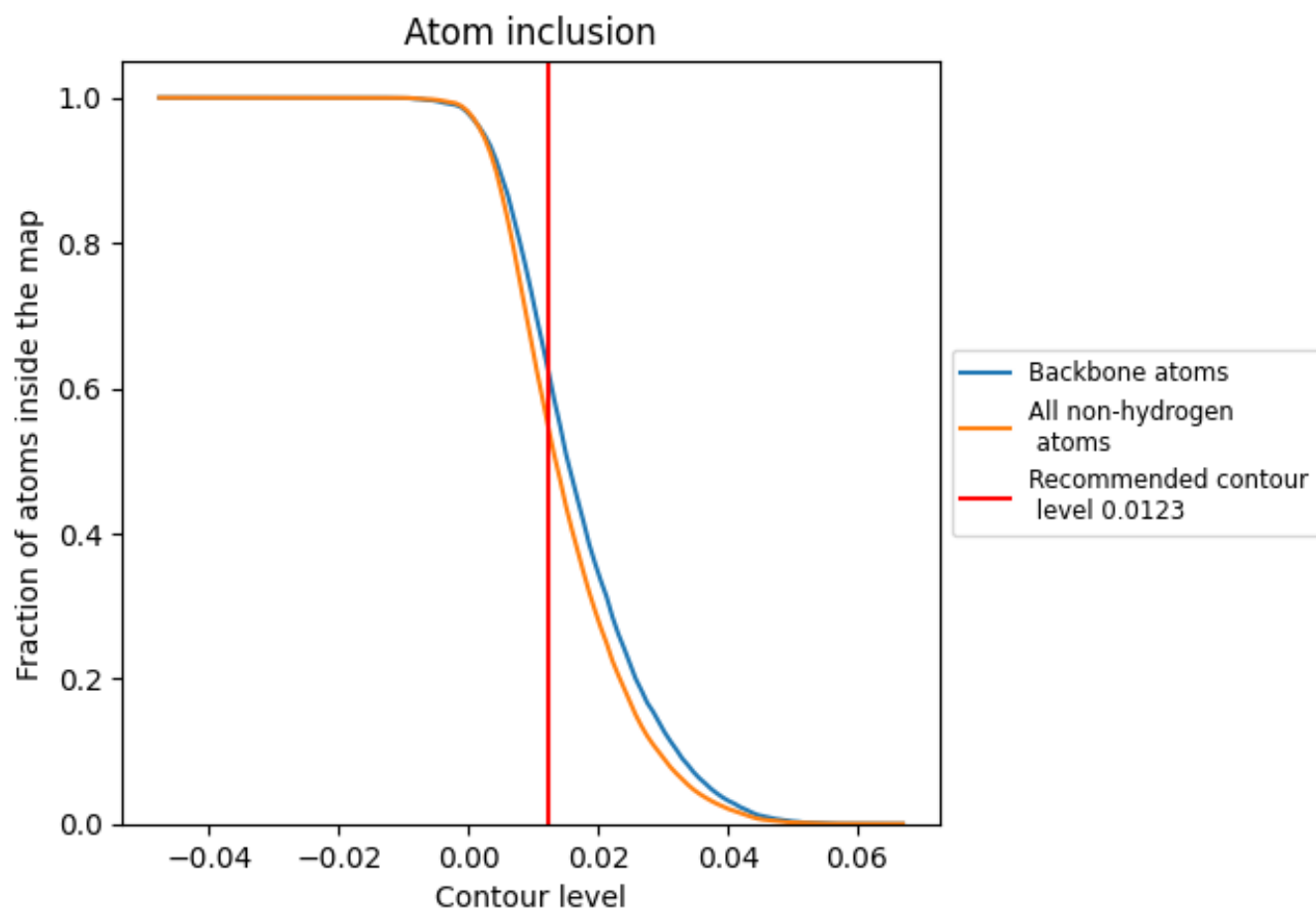
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0123).







9.4 Atom inclusion [i](#)



At the recommended contour level, 63% of all backbone atoms, 55% 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 (0.0123) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5487	 0.4730
A	 0.5507	 0.4740
B	 0.4867	 0.4520

