



Full wwPDB EM Validation Report ⓘ

Jan 7, 2026 – 05:20 PM JST

PDB ID : 9U62 / pdb_00009u62
EMDB ID : EMD-63895
Title : AP pathways C3 convertase C3bBbP and C3 complex
Authors : Yang, X.K.; Xiao, J.Y.
Deposited on : 2025-03-22
Resolution : 2.70 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.dev129
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4-5-2 with Phenix2.0
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.47

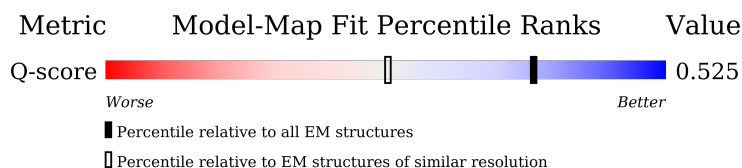
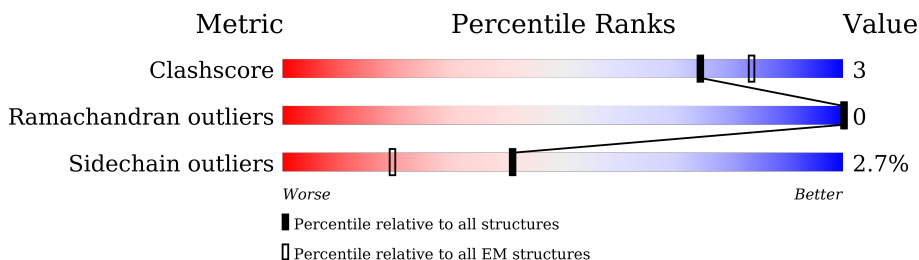
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.70 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	10327 (2.20 - 3.20)

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	C	1663	
1	D	1663	
1	E	1663	
2	B	505	

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Mol	Chain	Length	Quality of chain
3	P	453	21%26%72%
4	A	2	100%100%

2 Entry composition [i](#)

There are 6 unique types of molecules in this entry. The entry contains 29513 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 Complement C3.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	D	970	Total	C	N	O	S	0	0
			7760	4911	1327	1477	45		
1	E	1474	Total	C	N	O	S	0	0
			11688	7426	1968	2243	51		
1	C	632	Total	C	N	O	S	0	0
			4922	3136	831	940	15		

- Molecule 2 is a protein called Complement factor B Bb.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	505	Total	C	N	O	S	0	0
			4012	2548	689	755	20		

- Molecule 3 is a protein called Properdin.

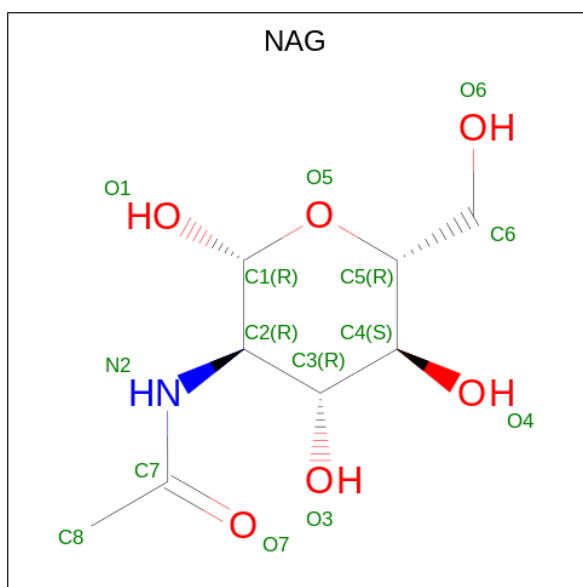
Mol	Chain	Residues	Atoms					AltConf	Trace
3	P	127	Total	C	N	O	S	0	0
			1032	637	201	184	10		

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



Mol	Chain	Residues	Atoms				AltConf	Trace
4	A	2	Total	C	N	O	0	0
			28	16	2	10		

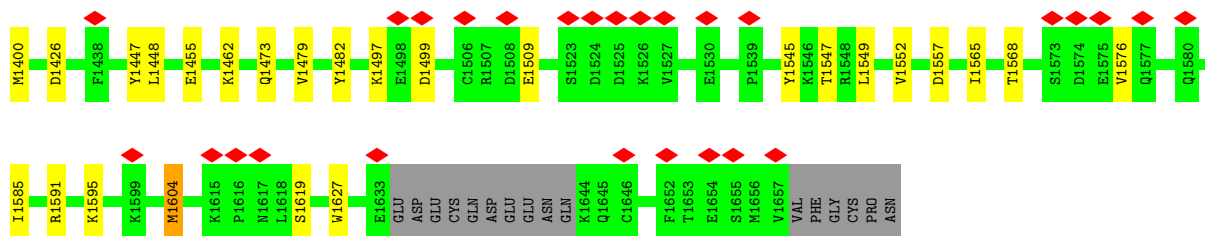
- Molecule 5 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: C₈H₁₅NO₆) (labeled as "Ligand of Interest" by depositor).



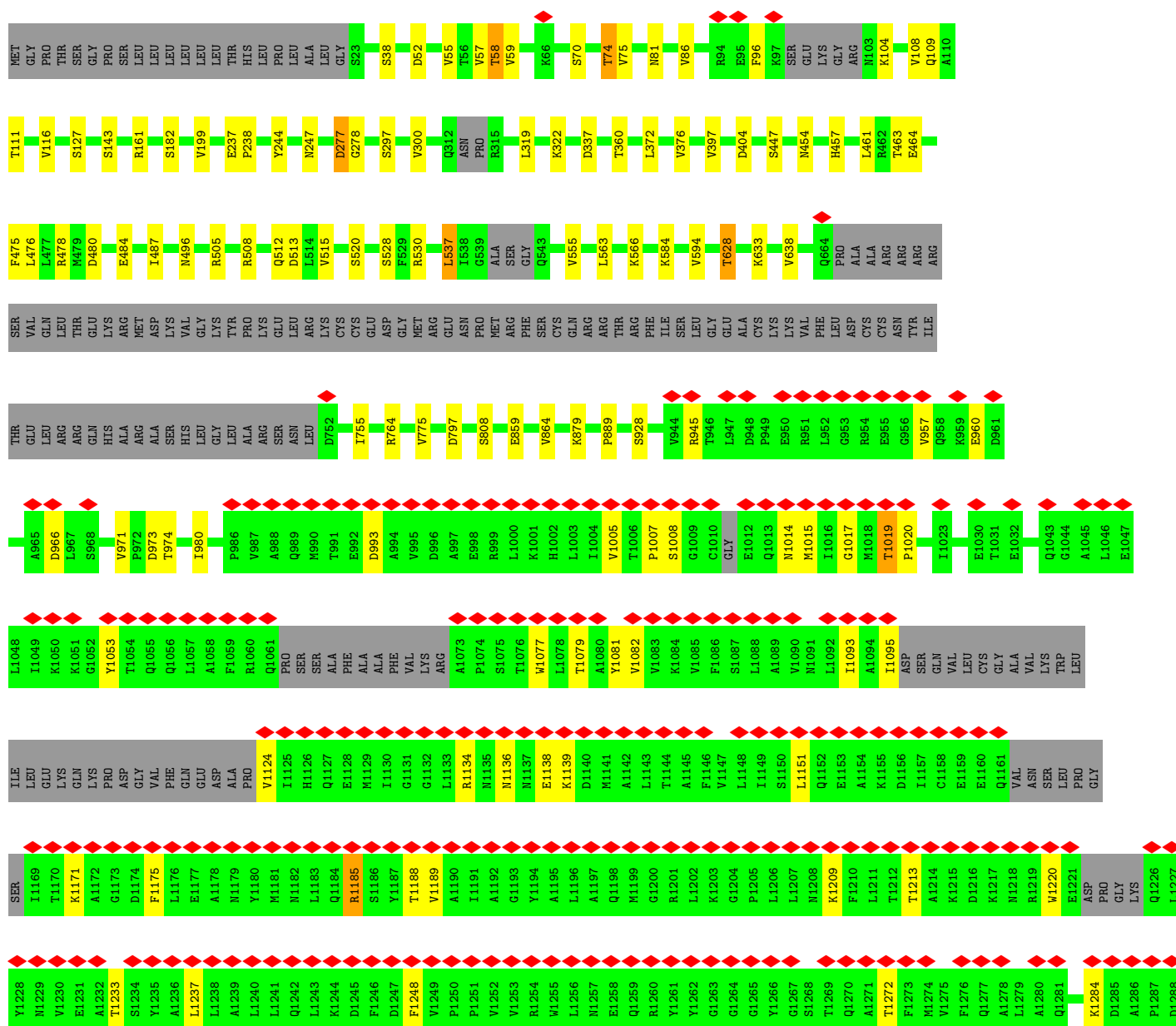
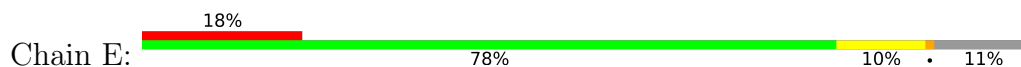
Mol	Chain	Residues	Atoms				AltConf
5	D	1	Total	C	N	O	0
			14	8	1	5	
5	B	1	Total	C	N	O	0
			14	8	1	5	
5	B	1	Total	C	N	O	0
			14	8	1	5	
5	E	1	Total	C	N	O	0
			14	8	1	5	
5	C	1	Total	C	N	O	0
			14	8	1	5	

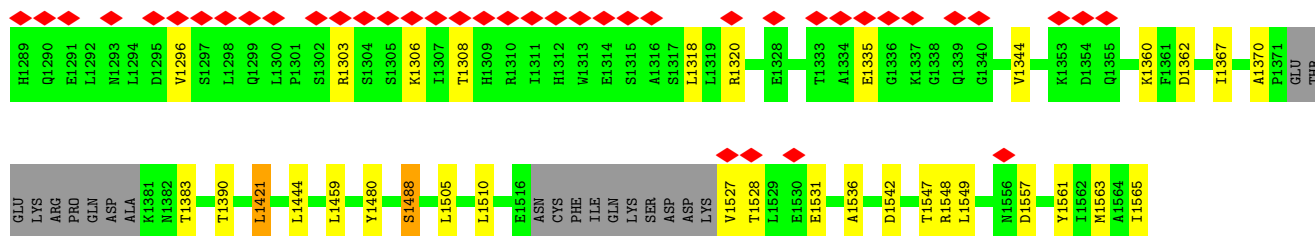
- Molecule 6 is NICKEL (II) ION (CCD ID: NI) (formula: Ni) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
6	B	1	Total	Ni	0
			1	1	



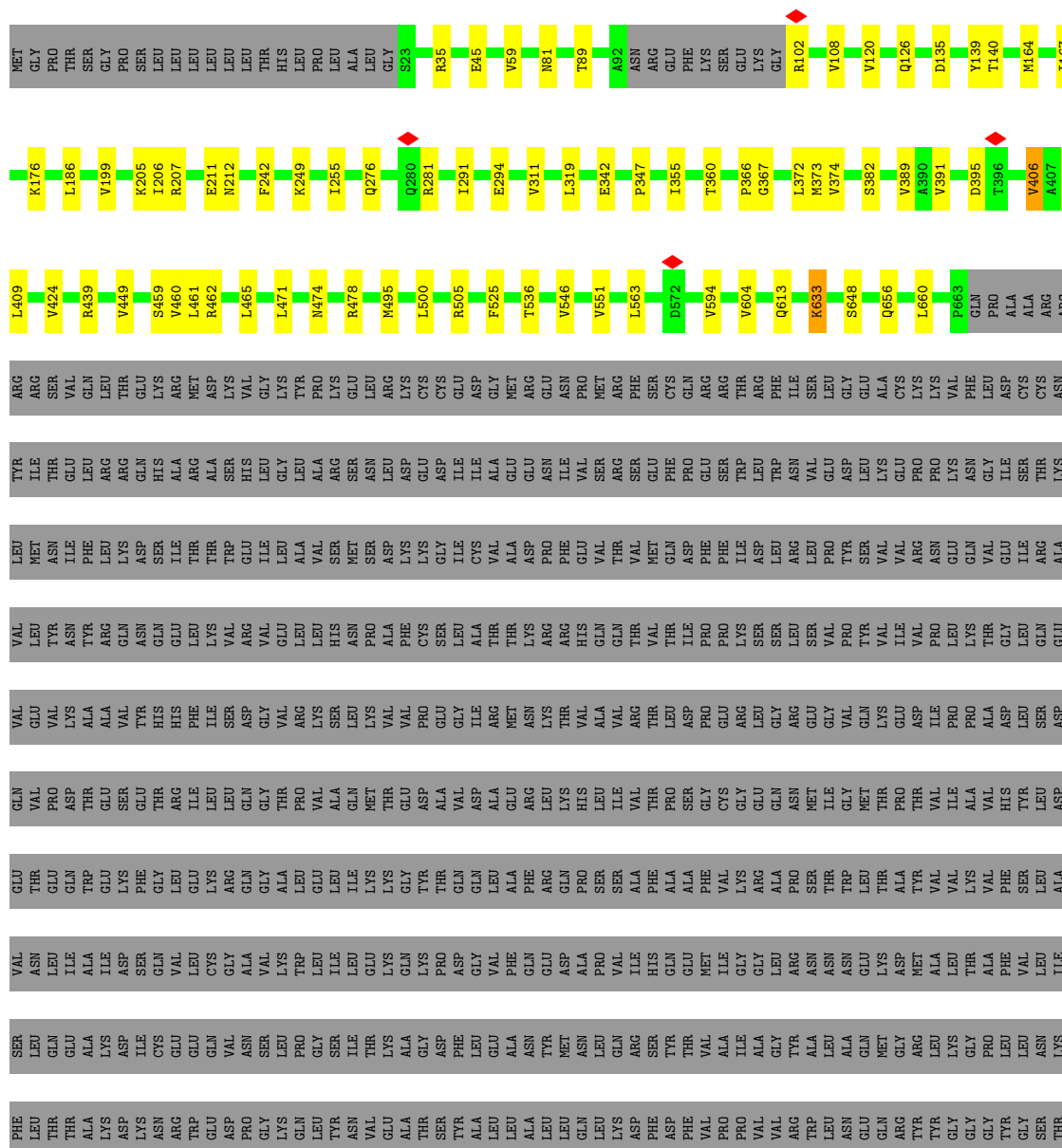
• Molecule 1: Complement C3





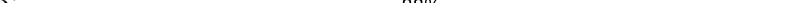
• Molecule 1: Complement C3

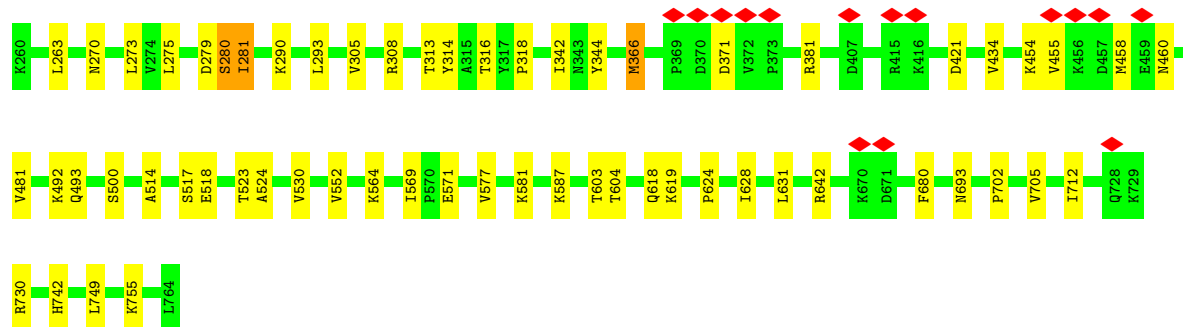
Chain C: 34% 62%



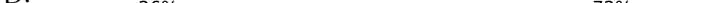
HIS	TRP	LYS	LEU	LYS	THR	PHE	GLN
	PRO	GLY	CYS	VAL	ARG	THR	ALA
	GLU	SER	ARG	SER	TYR	VAL	THR
	GLU	ASP	ALA	SER	GLY	ALA	PHE
	ASP	GLU	GLU	GLU	ASP	GLU	VAL
	GLU	VAL	GLU	ASP	GLN	GLY	PHE
	CYS	GLN	ASP	ASP	GLN	LYS	GLN
	GLN	VAL	CYS	CYS	ALA	GLY	GLN
	ASP	GLY	PHE	GLY	THR	GLN	LEU
	GLU	GLN	ILE	ALA	MET	GLY	ALA
ASN	GLU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

- Molecule 2: Complement factor B Bb

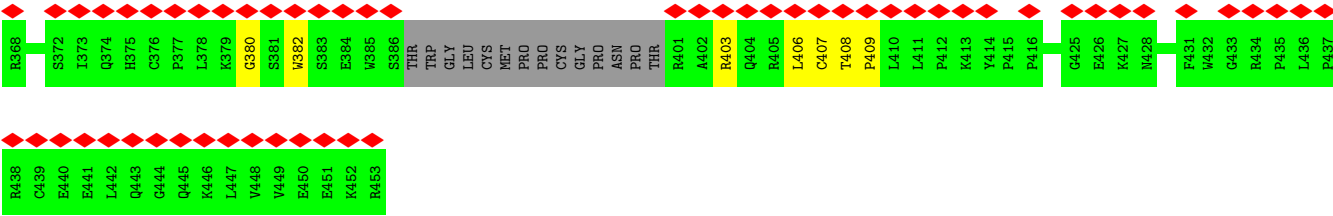
Chain B:  88% 11%



- Molecule 3: Properdin

Chain P:  21% 26% 72%

THR	LEU	SER	GLU	ALA	MET
ARG	ALA	GLU	TRP	PHE	ILE
THR	TYR	ALA	GLN	ALA	THR
HIS	GLU	CYS	LEU	TYR	GLU
ILE	GLN	ASP	GLN	GLN	GLY
CYS	ARG	THR	ALA	LYS	ALA
ASN	ARG	GLN	CYS	ARG	GLN
THR	CYS	GLN	GLU	SER	ALA
ALA	THR	VAL	ASP	GLY	PRO
VAL	GLY	CYS	GLN	GLY	ARG
PRO	LEU	PRO	GLN	LEU	LEU
CYS	PRO	THR	CYS	CYS	LEU
P313	PRO	HIS	CYS	GLN	LEU
V344	PRO	GLY	PRO	PRO	LEU
D315	PRO	ALA	GLU	CYS	PRO
G316	VAL	TRP	MET	ARG	LEU
E317	ALA	TRP	GLY	SER	LEU
W318	GLY	THR	GLY	PRO	LEU
D319	TRP	GLY	SER	ARG	LEU
S320	PRO	PRO	GLY	SER	THR
W321	TRP	THR	TRP	LEU	PRO
G322	GLY	PRO	GLY	TRP	PRO
E323	PRO	CYS	TRP	SER	ALA
	VAL	SER	GLU	THR	THR
	SER	ALA	PRO	TRP	GLY
	PRO	SER	CYS	PRO	SER
I328	CYS	CYS	SER	ASP	ASP
	PRO	HIS	VAL	CYS	PRO
N331	VAL	GLY	THR	SER	VAL
M332	THR	GLY	CYS	THR	LEU
K333	CYS	PRO	SER	VAL	CYS
S334	GLY	HIS	LYS	SER	PHE
I335	LEU	GLU	GLY	SER	THR
S336	GLY	PRO	THR	GLU	GLN
C337	GLN	THR	ARG	SER	TYR
	THR	GLU	THR	GLY	GLY
	MET	THR	ARG	LEU	SER
	GLU	ARG	ARG	GLY	SER
G342	GLN	SER	ARG	TYR	SER
Q343	ARG	ARG	ALA	ARG	LYS
Q344	THR	LYS	CYS	ARG	CYS
S345	CYS	CYS	ASN	CYS	LYS
R346	ASN	SER	HIS	VAL	GLY
G347	HIS	ALA	PRO	GLY	LEU
R348	PRO	PRO	ALA	TRP	LEU
T349	VAL	GLU	PRO	ASN	GLY
C350	PRO	PRO	LYS	GLY	GLY
R351	GLN	SER	GLY	GLN	GLY
R351	HIS	GLN	CYS	CYS	VAL
G352	GLY	PRO	GLY	SER	SER
R353	PRO	PRO	CYS	LYS	VAL
R353	PHE	GLY	PRO	LYS	GLU
F355	CYS	THR	PRO	VAL	ASP
D356	ALA	PRO	GLN	ALA	CYS
K356	GLY	THR	ALA	GLY	LEU
G357	ASP	CYS	GLN	THR	ASN
	ALA	GLY	GLU	LEU	THR



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



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	389342	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TALOS ARCTICA	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	60	Depositor
Minimum defocus (nm)	1100	Depositor
Maximum defocus (nm)	1500	Depositor
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	1.785	Depositor
Minimum map value	-1.168	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.046	Depositor
Recommended contour level	0.13	Depositor
Map size ($\text{\AA}$)	342.0, 342.0, 342.0	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	0.95, 0.95, 0.95	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: NAG, NI

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	C	0.27	0/5021	0.48	2/6825 (0.0%)
1	D	0.18	0/7909	0.45	1/10689 (0.0%)
1	E	0.24	2/11912 (0.0%)	0.49	5/16140 (0.0%)
2	B	0.16	0/4100	0.42	1/5548 (0.0%)
3	P	0.19	0/1059	0.48	0/1425
All	All	0.22	2/30001 (0.0%)	0.47	9/40627 (0.0%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	628	THR	C-N	5.73	1.38	1.33
1	E	633	LYS	CA-C	-5.46	1.45	1.52

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	277	ASP	N-CA-C	-8.94	98.48	110.55
1	E	1248	PHE	CA-C-N	7.87	125.20	120.24
1	E	1248	PHE	C-N-CA	7.87	125.20	120.24
1	E	1077	TRP	N-CA-C	7.03	119.84	111.33
1	C	525	PHE	CA-C-N	5.91	125.06	120.33
1	C	525	PHE	C-N-CA	5.91	125.06	120.33
1	D	1337	LYS	CA-CB-CG	5.83	125.77	114.10
1	E	1633	GLU	CA-CB-CG	5.46	125.02	114.10
2	B	316	THR	N-CA-C	5.34	116.79	110.97

There are no chirality outliers.

There are no planarity outliers.

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	C	4922	0	4981	37	0
1	D	7760	0	7738	33	0
1	E	11688	0	11676	79	0
2	B	4012	0	3993	29	0
3	P	1032	0	994	6	0
4	A	28	0	25	0	0
5	B	28	0	26	0	0
5	C	14	0	13	0	0
5	D	14	0	13	0	0
5	E	14	0	13	0	0
6	B	1	0	0	0	0
All	All	29513	0	29472	178	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 (178) 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:C:459:SER:HB3	1:C:474:ASN:HB2	1.83	0.61
2:B:514:ALA:HB2	2:B:702:PRO:HG3	1.82	0.60
1:C:366:PRO:O	1:C:478:ARG:NH2	2.35	0.60
2:B:455:VAL:HA	2:B:458:MET:HG2	1.83	0.59
1:E:1007:PRO:HB3	1:E:1017:GLY:HA3	1.84	0.59
1:E:1008:SER:O	1:E:1014:ASN:ND2	2.37	0.58
2:B:263:LEU:HD22	2:B:305:VAL:HG21	1.87	0.57
1:E:1480:TYR:HB3	1:E:1488:SER:HB3	1.85	0.57
2:B:381:ARG:NH1	2:B:421:ASP:OD2	2.38	0.56
2:B:693:ASN:O	2:B:730:ARG:NH1	2.38	0.56
1:E:1536:ALA:O	1:E:1570:LYS:NZ	2.39	0.56
1:C:374:VAL:HG11	1:C:424:VAL:HG11	1.86	0.56
2:B:275:LEU:HB3	2:B:313:THR:HG22	1.88	0.56
1:E:457:HIS:HB3	1:E:476:LEU:HB3	1.88	0.55
1:E:1557:ASP:OD1	1:E:1557:ASP:N	2.39	0.55
2:B:564:LYS:HZ2	2:B:569:ILE:HG13	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:594:VAL:HG12	1:E:775:VAL:HG22	1.88	0.54
1:E:1136:ASN:HA	1:E:1139:LYS:HE3	1.88	0.54
1:E:480:ASP:N	1:E:480:ASP:OD1	2.40	0.54
1:D:1225:LYS:O	1:D:1229:ASN:ND2	2.41	0.54
1:E:1209:LYS:O	1:E:1213:THR:OG1	2.26	0.53
1:E:1079:THR:O	1:E:1082:VAL:HB	2.08	0.53
1:E:1505:LEU:HD21	1:E:1587:PRO:HB3	1.91	0.53
1:D:859:GLU:HG3	1:D:889:PRO:HA	1.91	0.53
1:E:1604:MET:HA	1:E:1627:TRP:O	2.08	0.53
1:D:816:CYS:HA	1:C:613:GLN:HE21	1.74	0.53
1:E:1318:LEU:HD23	1:E:1320:ARG:HH12	1.74	0.52
1:E:57:VAL:HG11	1:E:86:VAL:HG21	1.90	0.52
1:E:454:ASN:HA	1:E:478:ARG:O	2.10	0.52
1:E:945:ARG:NH1	1:E:960:GLU:OE1	2.42	0.52
1:D:1426:ASP:OD1	1:D:1426:ASP:N	2.40	0.51
1:E:59:VAL:HB	1:E:70:SER:HB2	1.93	0.51
1:E:277:ASP:O	1:E:278:GLY:C	2.52	0.51
1:E:319:LEU:HA	1:E:322:LYS:HE2	1.93	0.51
1:E:496:ASN:ND2	1:E:528:SER:O	2.43	0.51
1:E:1138:GLU:HG3	1:E:1185:ARG:HD3	1.93	0.51
1:E:1296:VAL:HA	1:E:1308:THR:HG23	1.93	0.50
2:B:434:VAL:HG11	2:B:454:LYS:HE3	1.93	0.50
1:E:74:THR:OG1	1:E:75:VAL:N	2.45	0.50
1:E:508:ARG:NH1	1:E:512:GLN:O	2.44	0.50
1:D:1557:ASP:OD1	1:D:1557:ASP:N	2.40	0.50
2:B:552:VAL:HG12	2:B:581:LYS:HB3	1.92	0.50
1:E:1421:LEU:HD21	1:E:1459:LEU:HD13	1.94	0.50
1:E:1303:ARG:O	1:E:1306:LYS:NZ	2.45	0.50
1:C:374:VAL:HG21	1:C:389:VAL:HG11	1.93	0.50
1:E:859:GLU:HG3	1:E:889:PRO:HA	1.94	0.49
1:C:81:ASN:O	1:C:505:ARG:NH1	2.45	0.49
1:C:276:GLN:HG2	1:C:281:ARG:HG2	1.93	0.49
1:C:255:ILE:HD12	1:C:291:ILE:HD11	1.95	0.49
2:B:270:ASN:OD1	2:B:308:ARG:NH1	2.46	0.49
1:E:59:VAL:HG22	1:E:108:VAL:HG13	1.95	0.49
1:D:971:VAL:O	1:D:974:THR:OG1	2.29	0.48
1:C:281:ARG:NH1	1:C:342:GLU:OE2	2.46	0.48
1:D:808:SER:HB3	1:C:563:LEU:HD22	1.94	0.48
1:D:940:LYS:NZ	1:D:966:ASP:O	2.39	0.48
1:D:951:ARG:HD2	1:D:1254:ARG:HH21	1.78	0.48
1:C:465:LEU:HD11	1:C:471:LEU:HD13	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:1181:MET:HE3	1:D:1181:MET:HB3	1.79	0.48
2:B:523:THR:OG1	2:B:524:ALA:N	2.47	0.48
1:E:563:LEU:HD22	1:E:808:SER:HB3	1.95	0.47
2:B:273:LEU:HD22	2:B:293:LEU:HD22	1.94	0.47
2:B:458:MET:SD	2:B:458:MET:N	2.86	0.47
1:C:536:THR:HG22	1:C:546:VAL:HG22	1.96	0.47
1:D:775:VAL:HG22	1:C:594:VAL:HG12	1.96	0.47
1:D:1547:THR:HG22	1:D:1565:ILE:HA	1.95	0.47
1:E:1610:ASP:HB3	1:E:1621:ILE:HB	1.96	0.47
1:C:35:ARG:HD2	1:C:126:GLN:HE21	1.79	0.47
1:D:1400:MET:HA	1:D:1448:LEU:O	2.14	0.47
1:E:360:THR:HG21	1:E:372:LEU:HD23	1.96	0.47
1:C:373:MET:HE2	1:C:408:LYS:HE3	1.96	0.47
1:E:1015:MET:HE3	1:E:1081:TYR:HD2	1.80	0.47
2:B:603:THR:HG23	2:B:712:ILE:HG12	1.96	0.47
1:E:1220:TRP:HD1	1:E:1233:THR:HG22	1.80	0.47
2:B:493:GLN:HE21	2:B:642:ARG:HE	1.61	0.47
2:B:624:PRO:HD2	2:B:628:ILE:HG12	1.97	0.47
1:E:1053:TYR:OH	1:E:1095:ILE:O	2.33	0.46
1:E:993:ASP:N	1:E:993:ASP:OD1	2.43	0.46
3:P:315:ASP:OD1	3:P:315:ASP:N	2.47	0.46
2:B:680:PHE:HA	2:B:742:HIS:O	2.16	0.46
1:E:404:ASP:OD1	1:E:404:ASP:N	2.40	0.46
1:E:566:LYS:HE3	1:E:584:LYS:HD2	1.97	0.46
1:C:135:ASP:OD1	1:C:139:TYR:OH	2.31	0.46
1:D:1323:GLU:N	1:D:1323:GLU:OE2	2.49	0.46
2:B:280:SER:OG	1:E:1663:ASN:OXT	2.34	0.46
1:E:1548:ARG:NH1	1:E:1566:GLU:OE2	2.49	0.46
1:D:1499:ASP:O	1:D:1591:ARG:NH1	2.45	0.46
1:E:966:ASP:OD1	1:E:966:ASP:N	2.43	0.46
1:C:495:MET:HE3	1:C:495:MET:HB3	1.81	0.46
1:C:205:LYS:HD2	1:C:207:ARG:HH21	1.81	0.45
2:B:481:VAL:HG13	2:B:492:LYS:HA	1.98	0.45
1:E:55:VAL:HA	1:E:111:THR:O	2.16	0.45
1:D:682:LYS:HB3	1:D:698:MET:HE1	1.99	0.45
1:C:395:ASP:OD1	1:C:395:ASP:N	2.49	0.45
1:D:840:VAL:HG11	1:D:1473:GLN:HG3	1.99	0.45
1:D:1225:LYS:HB3	1:D:1228:TYR:HD2	1.82	0.45
1:C:212:ASN:N	1:C:212:ASN:OD1	2.50	0.45
1:D:970:GLN:HG3	1:D:1348:TYR:HD2	1.82	0.45
2:B:314:TYR:HA	2:B:318:PRO:HA	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1542:ASP:HB2	1:E:1608:SER:HB2	1.98	0.44
1:E:475:PHE:HB2	1:E:515:VAL:HG22	2.00	0.44
1:E:971:VAL:O	1:E:974:THR:OG1	2.34	0.44
1:C:373:MET:HG3	1:C:462:ARG:HH22	1.83	0.44
1:D:1363:LEU:HD22	1:D:1479:VAL:HG12	1.99	0.44
1:D:1497:LYS:HD2	1:D:1497:LYS:HA	1.72	0.44
1:E:484:GLU:O	1:E:508:ARG:NH2	2.50	0.44
1:C:355:ILE:HG23	1:C:439:ARG:HB2	1.98	0.44
1:D:1008:SER:O	1:D:1447:TYR:OH	2.34	0.44
1:E:1189:VAL:HG21	1:E:1213:THR:HG21	2.00	0.44
1:E:1577:GLN:N	1:E:1580:GLN:OE1	2.47	0.44
1:C:167:ILE:HB	1:C:176:LYS:HB3	1.99	0.44
2:B:290:LYS:NZ	2:B:342:ILE:O	2.51	0.43
1:E:1597:GLU:N	1:E:1597:GLU:OE2	2.49	0.43
2:B:604:THR:OG1	2:B:618:GLN:OE1	2.35	0.43
1:E:980:ILE:HG22	1:E:1344:VAL:HG22	2.00	0.43
3:P:380:GLY:HA3	3:P:409:PRO:HA	2.00	0.43
2:B:371:ASP:OD1	2:B:371:ASP:N	2.49	0.43
1:C:102:ARG:HG3	1:C:660:LEU:HD12	2.01	0.43
1:D:1296:VAL:HG22	1:D:1309:HIS:HB2	2.00	0.43
1:E:1547:THR:HG22	1:E:1565:ILE:HA	2.01	0.43
1:E:1656:MET:HE3	1:E:1656:MET:HB3	1.84	0.43
1:C:242:PHE:HA	1:C:347:PRO:HD2	1.99	0.43
1:E:1360:LYS:HA	1:E:1360:LYS:HD2	1.83	0.42
1:C:374:VAL:O	1:C:406:VAL:HA	2.18	0.42
1:D:1036:LYS:NZ	1:D:1313:TRP:O	2.43	0.42
2:B:749:LEU:HD23	2:B:749:LEU:HA	1.93	0.42
1:E:487:ILE:HD11	1:E:537:LEU:HB3	2.01	0.42
1:C:367:GLY:HA3	1:C:478:ARG:HH22	1.84	0.42
1:D:1297:SER:HA	1:D:1307:ILE:O	2.20	0.42
3:P:318:TRP:NE1	3:P:361:ALA:O	2.45	0.42
1:E:530:ARG:NH1	1:E:628:THR:O	2.46	0.42
1:C:59:VAL:HG22	1:C:108:VAL:HG22	2.02	0.42
1:E:81:ASN:O	1:E:505:ARG:NH1	2.52	0.42
1:E:1644:LYS:HD3	1:E:1644:LYS:HA	1.77	0.42
2:B:517:SER:OG	2:B:518:GLU:N	2.51	0.42
1:E:1362:ASP:O	1:E:1390:THR:HA	2.20	0.42
1:C:164:MET:HE3	1:C:211:GLU:HG3	2.02	0.42
1:C:205:LYS:HE3	1:C:205:LYS:HB2	1.94	0.42
2:B:279:ASP:HB2	1:E:1663:ASN:HA	2.02	0.42
1:E:463:THR:OG1	1:E:464:GLU:N	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:957:VAL:HG12	1:E:1335:GLU:HB3	2.02	0.42
1:C:311:VAL:HG21	1:C:319:LEU:HD21	2.01	0.42
2:B:755:LYS:HA	2:B:755:LYS:HD3	1.85	0.41
3:P:318:TRP:CE2	3:P:360:CYS:HB3	2.55	0.41
3:P:382:TRP:HA	3:P:407:CYS:HA	2.02	0.41
1:E:1547:THR:HB	1:E:1563:MET:HB3	2.02	0.41
1:E:1134:ARG:HD2	1:E:1134:ARG:HA	1.76	0.41
1:D:1120:GLU:HG3	1:D:1122:ALA:H	1.85	0.41
2:B:281:ILE:O	2:B:344:TYR:OH	2.33	0.41
1:E:1370:ALA:HB3	1:E:1383:THR:HG23	2.03	0.41
1:E:1527:VAL:HG12	1:E:1531:GLU:HB2	2.02	0.41
1:E:1549:LEU:HD11	1:E:1561:TYR:HB3	2.01	0.41
1:D:972:PRO:HG2	1:D:1585:ILE:HD13	2.02	0.41
1:E:244:TYR:HB3	1:E:247:ASN:HB2	2.02	0.41
3:P:406:LEU:HD23	3:P:406:LEU:HA	1.91	0.41
1:E:1171:LYS:O	1:E:1175:PHE:HB2	2.20	0.41
2:B:366:MET:H	2:B:366:MET:HG2	1.62	0.41
1:E:1019:THR:HG23	1:E:1020:PRO:HD3	2.02	0.41
1:C:167:ILE:HG12	1:C:206:ILE:HG12	2.02	0.41
1:D:1007:PRO:O	1:D:1482:TYR:OH	2.33	0.41
1:E:96:PHE:HD1	1:E:104:LYS:HG2	1.85	0.41
1:E:127:SER:OG	1:E:161:ARG:NH1	2.51	0.41
1:E:337:ASP:OD1	1:E:337:ASP:N	2.54	0.41
1:E:764:ARG:HB3	1:E:797:ASP:HB3	2.03	0.41
1:C:633:LYS:HE3	1:C:633:LYS:HB2	1.68	0.41
1:E:1510:LEU:HD12	1:E:1510:LEU:HA	1.96	0.40
1:D:1385:ILE:HG12	1:D:1462:LYS:HG2	2.03	0.40
1:D:1604:MET:HA	1:D:1627:TRP:O	2.21	0.40
1:E:58:THR:HG23	1:E:109:GLN:HG2	2.03	0.40
1:C:120:VAL:O	1:C:656:GLN:NE2	2.54	0.40
1:D:1545:TYR:HE1	1:D:1568:THR:HG23	1.86	0.40
1:E:461:LEU:HD13	1:C:461:LEU:HB2	2.03	0.40
1:E:478:ARG:HD2	1:E:478:ARG:HA	1.85	0.40
1:E:237:GLU:HA	1:E:238:PRO:HD3	1.97	0.40
1:E:1284:LYS:HB3	1:E:1284:LYS:HE3	1.87	0.40
1:C:249:LYS:HE2	1:C:249:LYS:HB3	1.86	0.40
1:D:833:LEU:HD23	1:D:927:LYS:HB2	2.02	0.40
1:D:1293:ASN:HA	1:D:1311:ILE:O	2.21	0.40
1:C:391:VAL:HG23	1:C:409:LEU:HD22	2.03	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	C	628/1663 (38%)	619 (99%)	9 (1%)	0	100	100
1	D	964/1663 (58%)	942 (98%)	22 (2%)	0	100	100
1	E	1450/1663 (87%)	1400 (97%)	50 (3%)	0	100	100
2	B	503/505 (100%)	487 (97%)	16 (3%)	0	100	100
3	P	123/453 (27%)	117 (95%)	6 (5%)	0	100	100
All	All	3668/5947 (62%)	3565 (97%)	103 (3%)	0	100	100

There are no Ramachandran outliers to report.

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	C	557/1468 (38%)	540 (97%)	17 (3%)	35	64
1	D	859/1468 (58%)	842 (98%)	17 (2%)	50	78
1	E	1307/1468 (89%)	1267 (97%)	40 (3%)	35	64
2	B	445/446 (100%)	433 (97%)	12 (3%)	40	69
3	P	113/378 (30%)	111 (98%)	2 (2%)	54	80
All	All	3281/5228 (63%)	3193 (97%)	88 (3%)	41	69

All (88) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	D	722	LYS
1	D	762	VAL
1	D	783	LYS
1	D	1097	SER
1	D	1261	TYR
1	D	1294	LEU
1	D	1310	ARG
1	D	1321	SER
1	D	1324	THR
1	D	1455	GLU
1	D	1509	GLU
1	D	1549	LEU
1	D	1552	VAL
1	D	1576	VAL
1	D	1595	LYS
1	D	1604	MET
1	D	1619	SER
2	B	280	SER
2	B	281	ILE
2	B	366	MET
2	B	460	ASN
2	B	500	SER
2	B	530	VAL
2	B	571	GLU
2	B	577	VAL
2	B	587	LYS
2	B	619	LYS
2	B	631	LEU
2	B	705	VAL
3	P	403	ARG
3	P	408	THR
1	E	38	SER
1	E	52	ASP
1	E	58	THR
1	E	74	THR
1	E	116	VAL
1	E	143	SER
1	E	182	SER
1	E	199	VAL
1	E	297	SER
1	E	300	VAL
1	E	376	VAL
1	E	397	VAL

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Mol	Chain	Res	Type
1	E	447	SER
1	E	513	ASP
1	E	520	SER
1	E	537	LEU
1	E	555	VAL
1	E	638	VAL
1	E	755	ILE
1	E	864	VAL
1	E	879	LYS
1	E	928	SER
1	E	973	ASP
1	E	1005	VAL
1	E	1019	THR
1	E	1093	ILE
1	E	1124	VAL
1	E	1151	LEU
1	E	1185	ARG
1	E	1188	THR
1	E	1237	LEU
1	E	1272	THR
1	E	1367	ILE
1	E	1421	LEU
1	E	1444	LEU
1	E	1488	SER
1	E	1528	THR
1	E	1569	ILE
1	E	1609	SER
1	E	1626	THR
1	C	45	GLU
1	C	89	THR
1	C	140	THR
1	C	186	LEU
1	C	199	VAL
1	C	294	GLU
1	C	360	THR
1	C	372	LEU
1	C	382	SER
1	C	406	VAL
1	C	449	VAL
1	C	460	VAL
1	C	500	LEU
1	C	551	VAL

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Mol	Chain	Res	Type
1	C	604	VAL
1	C	633	LYS
1	C	648	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (28) such sidechains are listed below:

Mol	Chain	Res	Type
1	D	853	ASN
1	D	1026	HIS
1	D	1198	GLN
1	D	1355	GLN
1	D	1494	HIS
1	D	1553	GLN
2	B	354	ASN
2	B	417	ASN
2	B	440	ASN
2	B	493	GLN
2	B	562	ASN
3	P	364	GLN
3	P	365	GLN
3	P	369	HIS
1	E	103	ASN
1	E	126	GLN
1	E	185	GLN
1	E	276	GLN
1	E	333	HIS
1	E	354	GLN
1	E	436	GLN
1	E	512	GLN
1	E	1014	ASN
1	E	1226	GLN
1	C	126	GLN
1	C	333	HIS
1	C	496	ASN
1	C	613	GLN

5.3.3 RNA ⓘ

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](#)

2 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	$\# Z > 2$
4	NAG	A	1	4,3	14,14,15	0.23	0	17,19,21	0.47	0
4	NAG	A	2	4	14,14,15	0.57	0	17,19,21	0.45	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
4	NAG	A	1	4,3	-	0/6/23/26	0/1/1/1
4	NAG	A	2	4	-	2/6/23/26	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (2) torsion outliers are listed below:

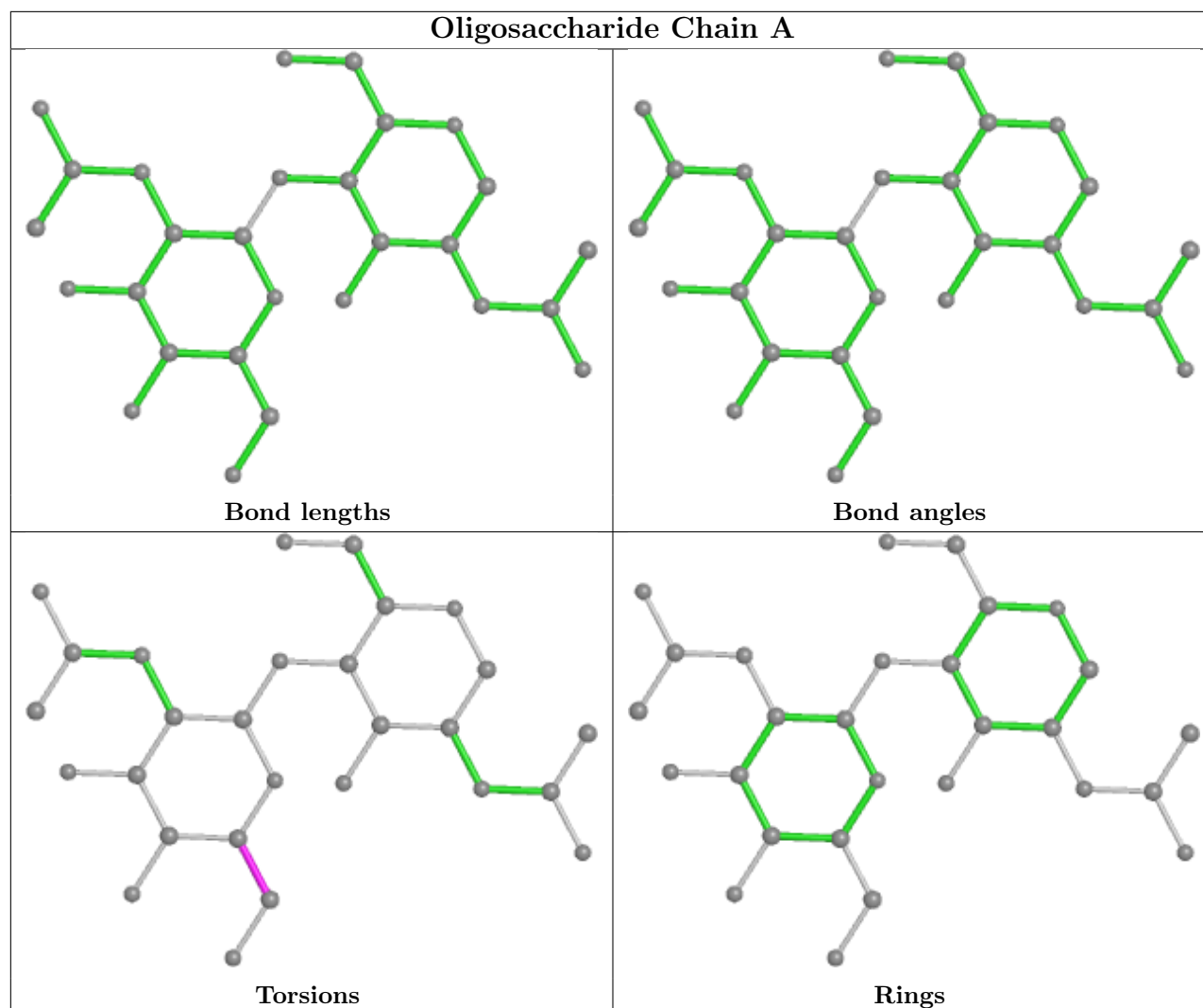
Mol	Chain	Res	Type	Atoms
4	A	2	NAG	O5-C5-C6-O6
4	A	2	NAG	C4-C5-C6-O6

There are no ring outliers.

No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths,

bond angles, torsion angles, and ring geometry for oligosaccharide.



5.6 Ligand geometry [i](#)

Of 6 ligands modelled in this entry, 1 is monoatomic - leaving 5 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	$\# Z > 2$
5	NAG	C	1701	1	14,14,15	0.28	0	17,19,21	0.51	0
5	NAG	E	1701	1	14,14,15	0.35	0	17,19,21	0.44	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
5	NAG	D	1701	1	14,14,15	0.35	0	17,19,21	0.50	0
5	NAG	B	801	2	14,14,15	0.59	0	17,19,21	0.45	0
5	NAG	B	802	2	14,14,15	0.42	0	17,19,21	0.54	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
5	NAG	C	1701	1	-	4/6/23/26	0/1/1/1
5	NAG	E	1701	1	-	0/6/23/26	0/1/1/1
5	NAG	D	1701	1	-	2/6/23/26	0/1/1/1
5	NAG	B	801	2	-	2/6/23/26	0/1/1/1
5	NAG	B	802	2	-	0/6/23/26	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (8) torsion outliers are listed below:

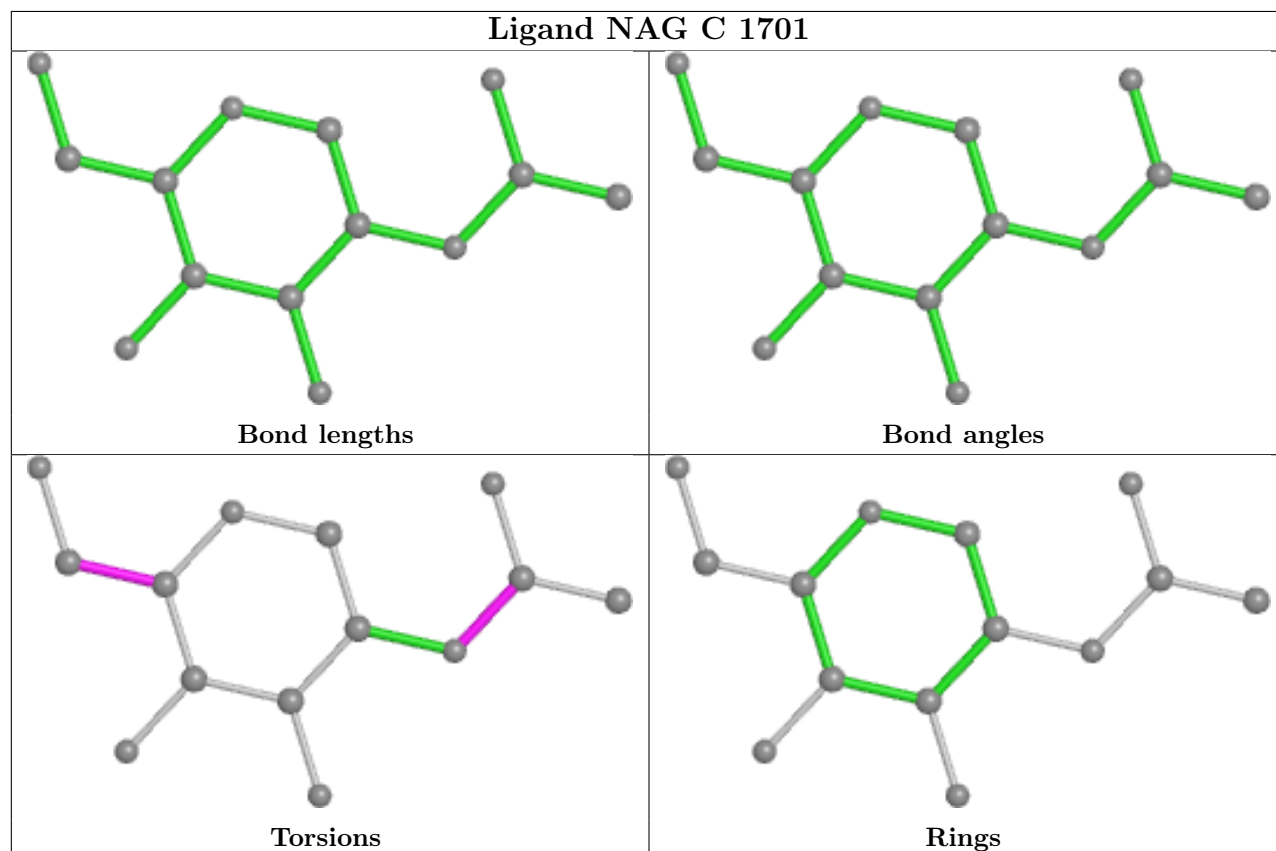
Mol	Chain	Res	Type	Atoms
5	D	1701	NAG	O5-C5-C6-O6
5	D	1701	NAG	C4-C5-C6-O6
5	C	1701	NAG	C8-C7-N2-C2
5	C	1701	NAG	O7-C7-N2-C2
5	B	801	NAG	O5-C5-C6-O6
5	C	1701	NAG	C4-C5-C6-O6
5	B	801	NAG	C4-C5-C6-O6
5	C	1701	NAG	O5-C5-C6-O6

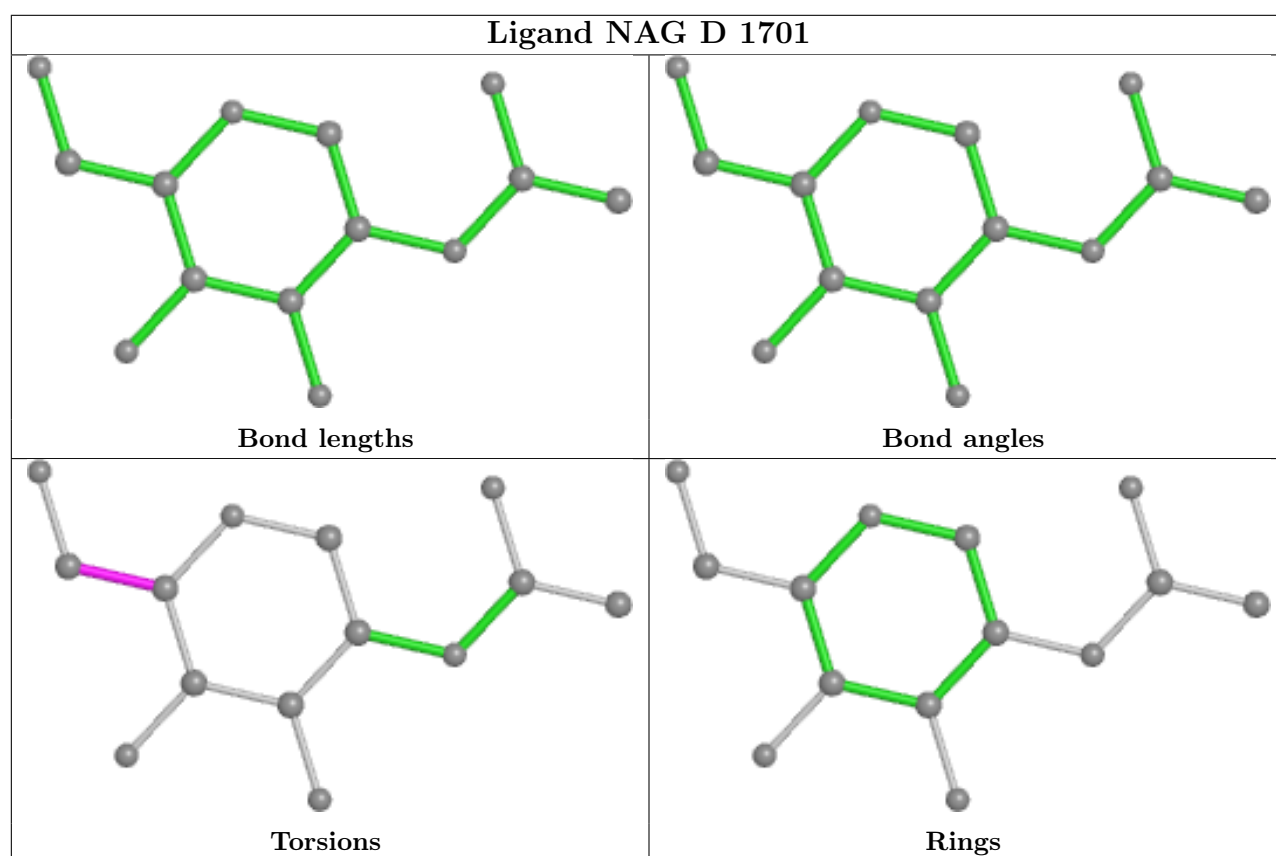
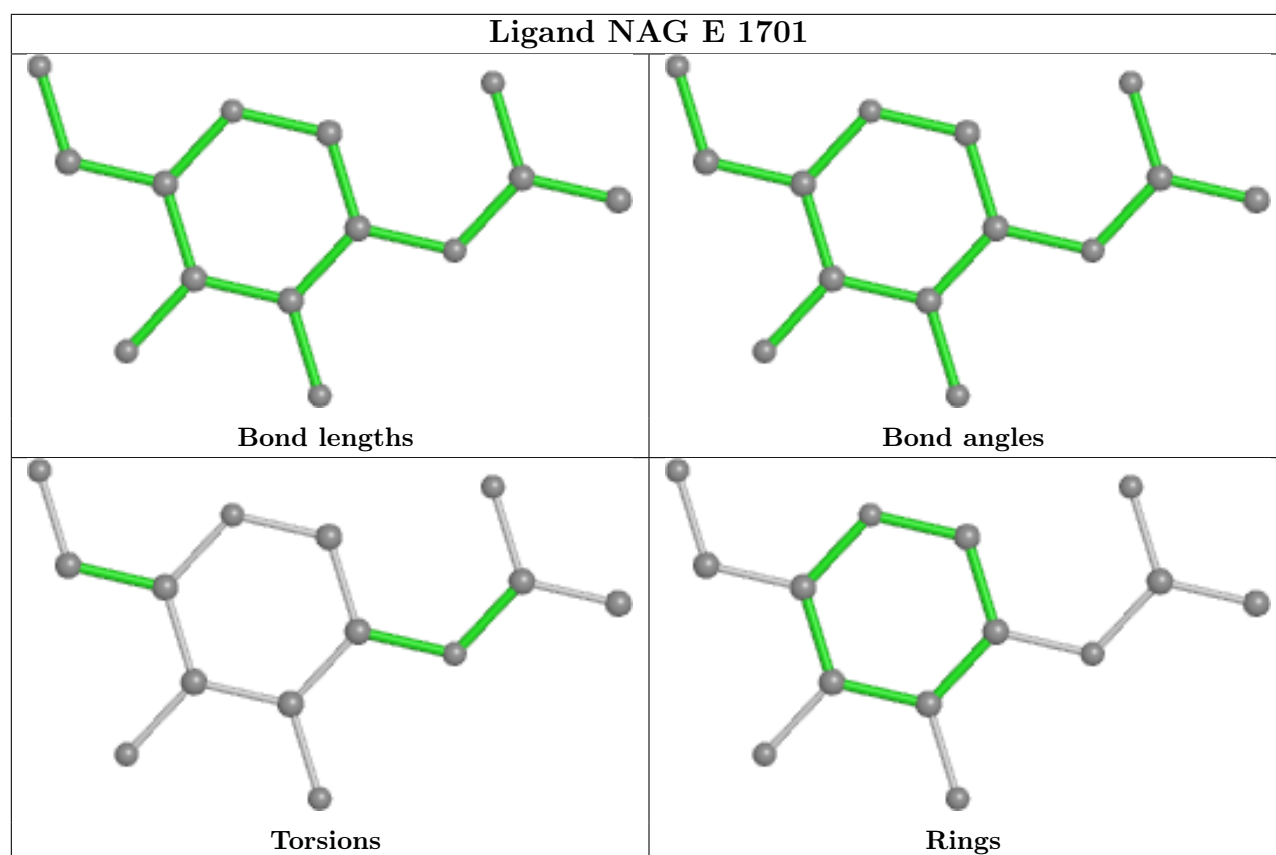
There are no ring outliers.

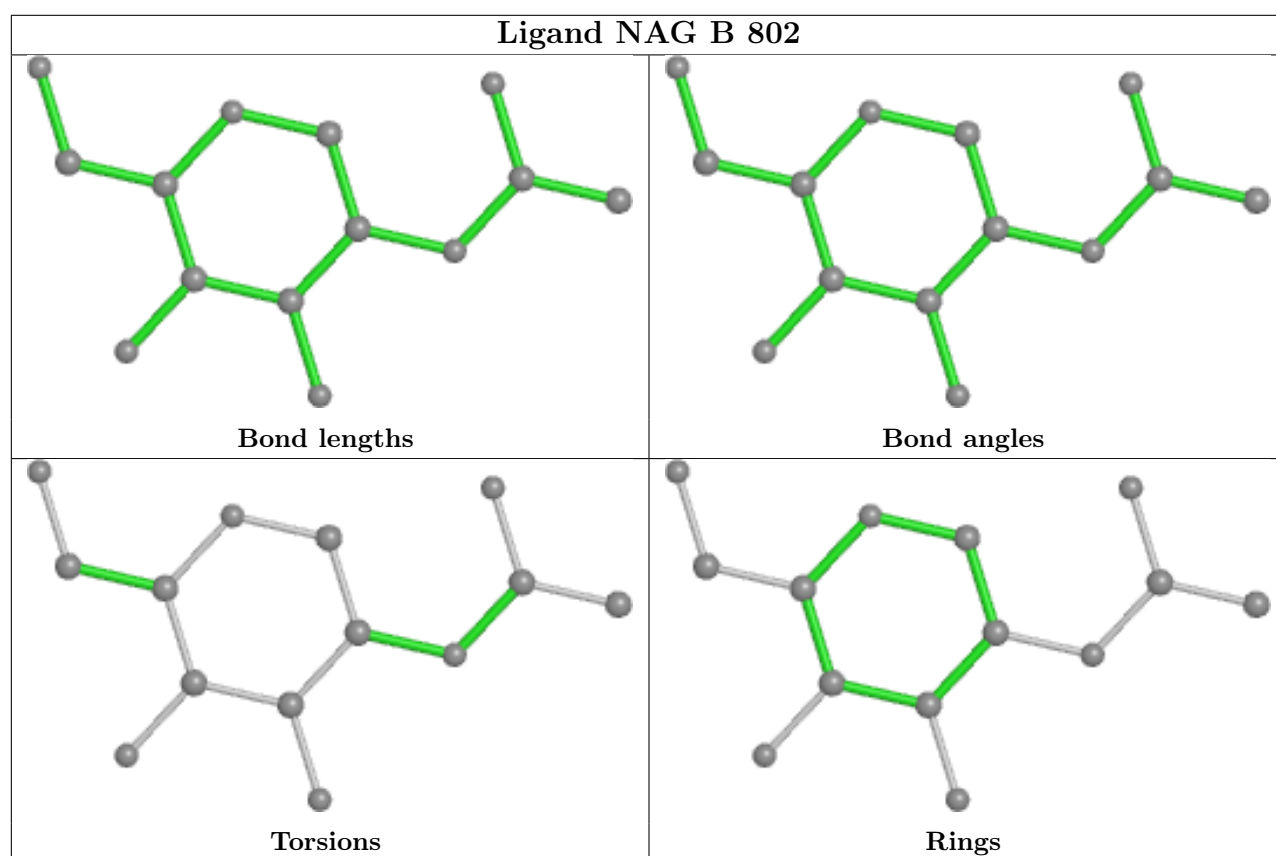
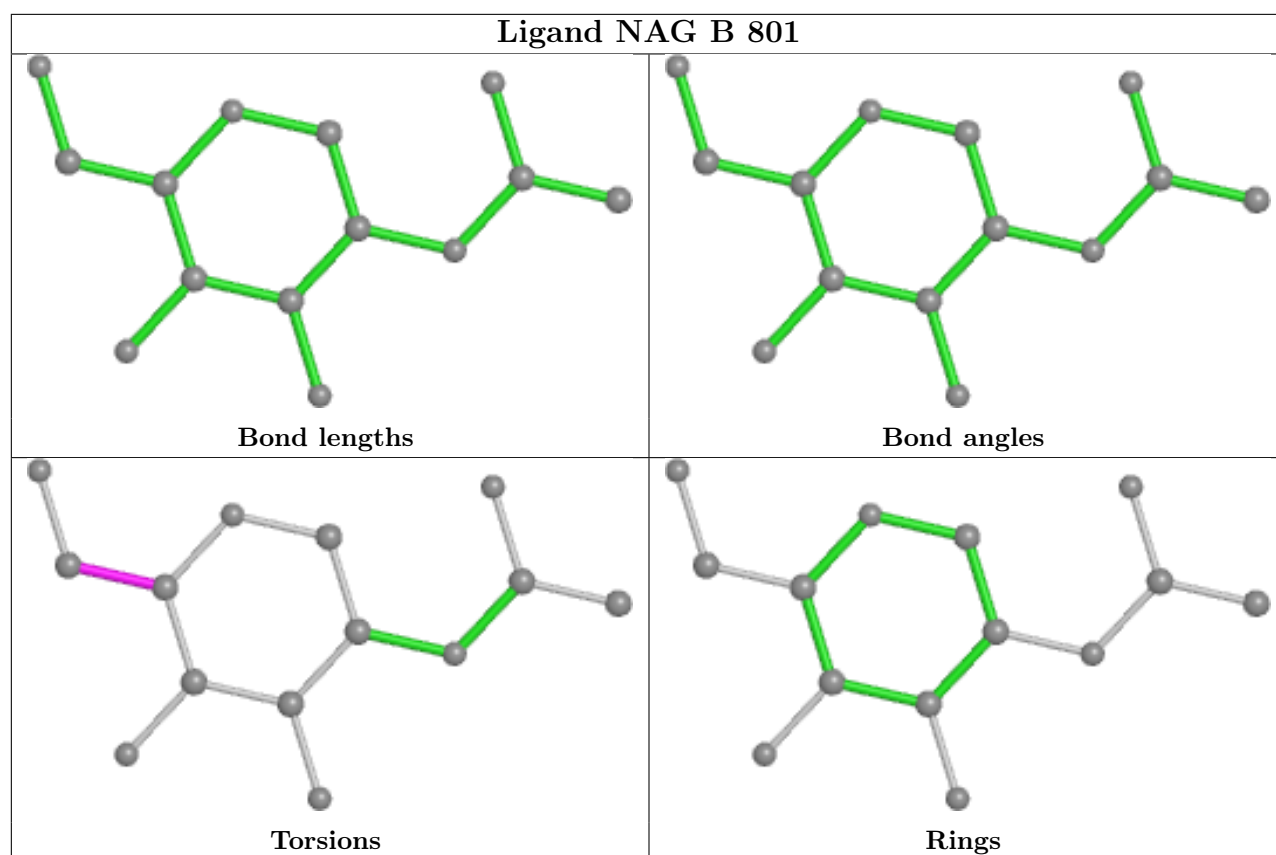
No monomer is involved in short contacts.

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.

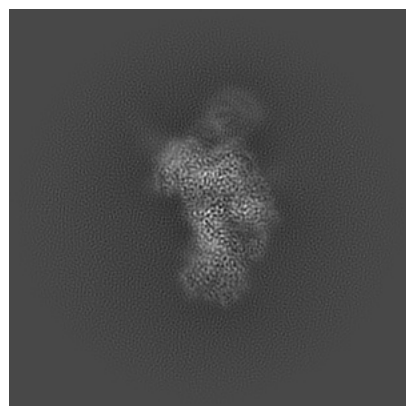
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-63895. These allow visual inspection of the internal detail of the map and identification of artifacts.

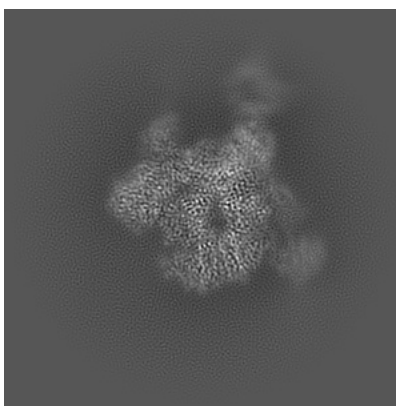
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

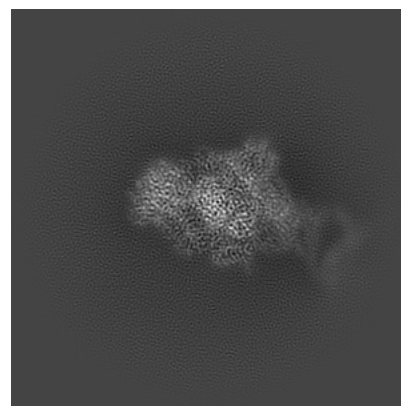
6.1.1 Primary map



X

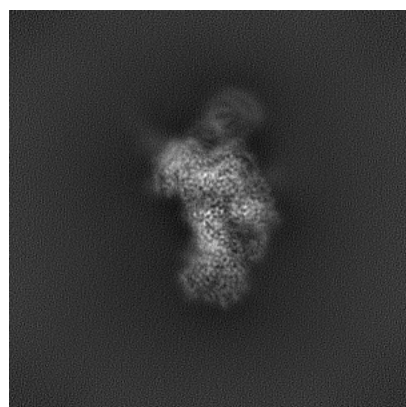


Y

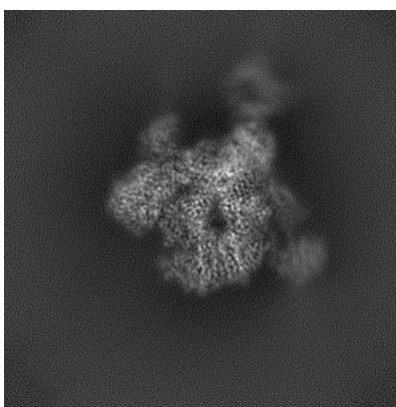


Z

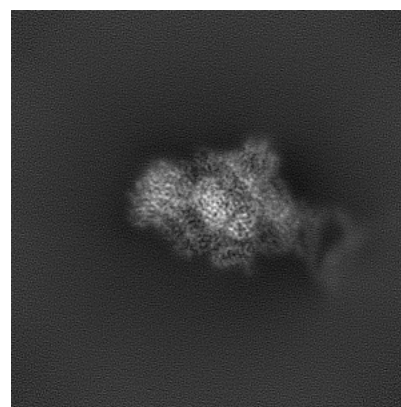
6.1.2 Raw map



X



Y

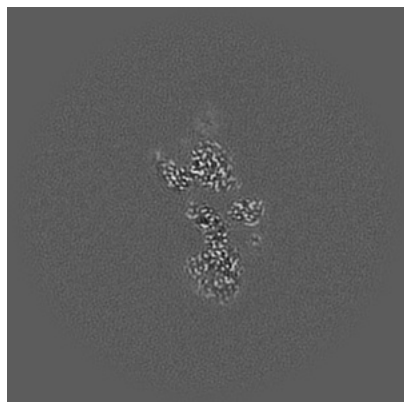


Z

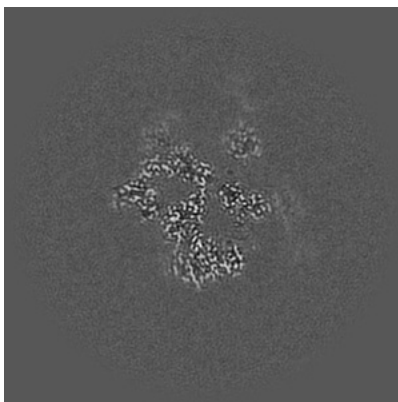
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

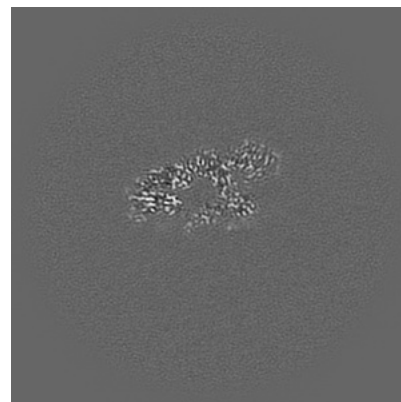
6.2.1 Primary map



X Index: 180

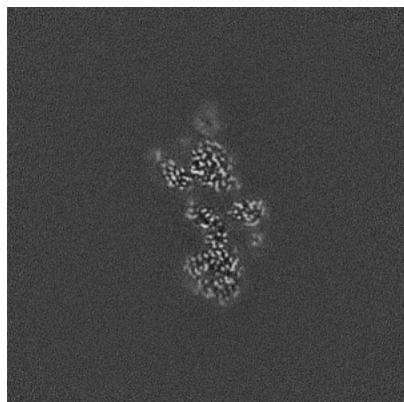


Y Index: 180

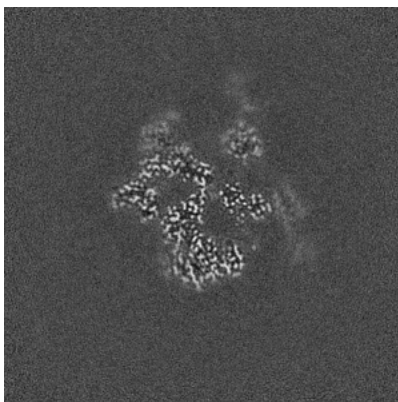


Z Index: 180

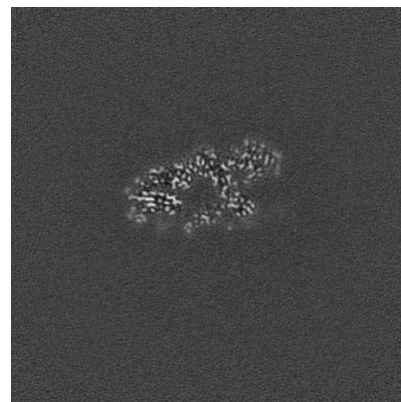
6.2.2 Raw map



X Index: 180



Y Index: 180

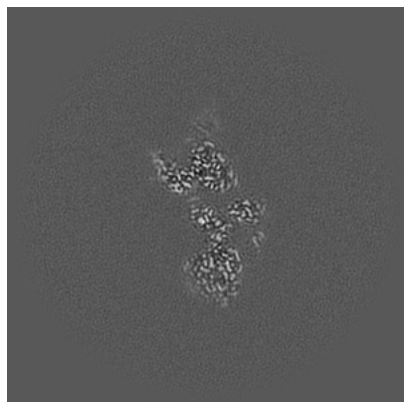


Z Index: 180

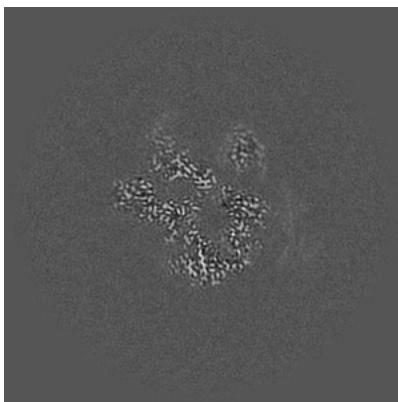
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

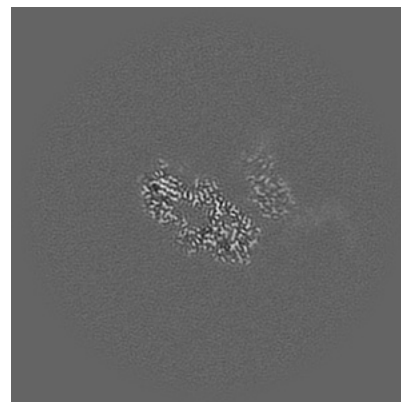
6.3.1 Primary map



X Index: 182

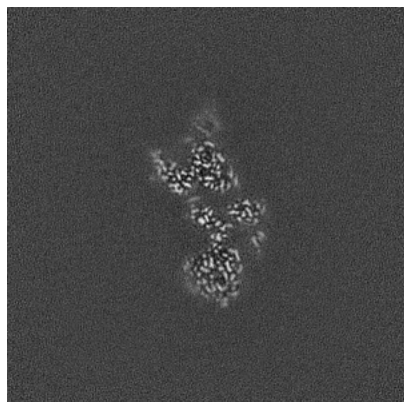


Y Index: 186

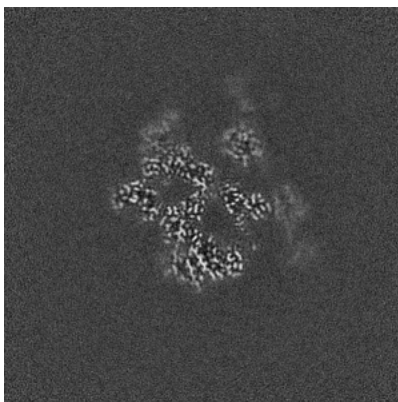


Z Index: 209

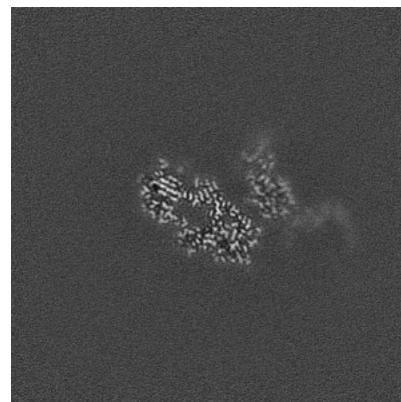
6.3.2 Raw map



X Index: 182



Y Index: 181

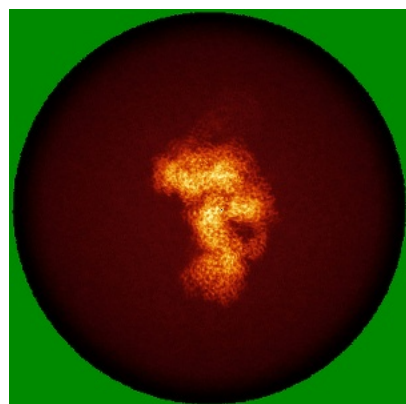


Z Index: 209

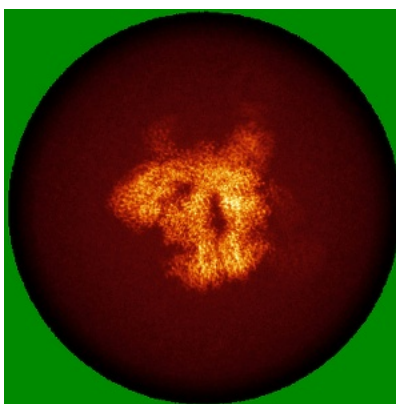
The images above show the largest variance slices of the map in three orthogonal directions.

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

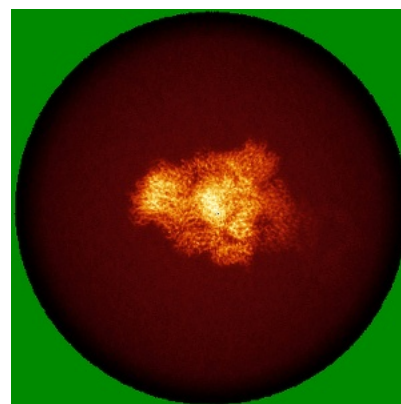
6.4.1 Primary map



X

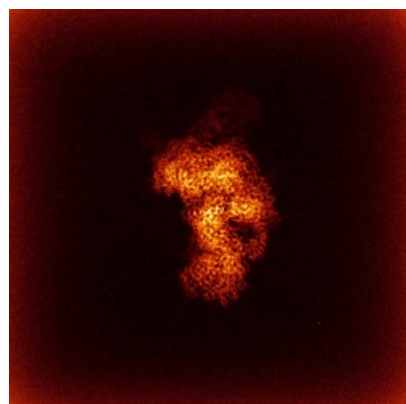


Y

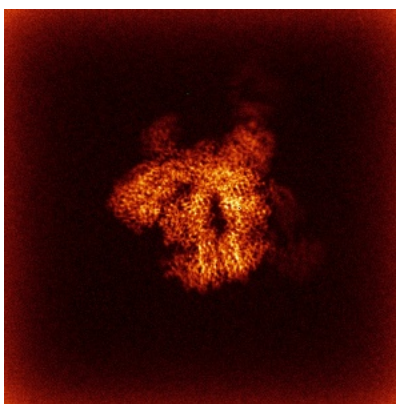


Z

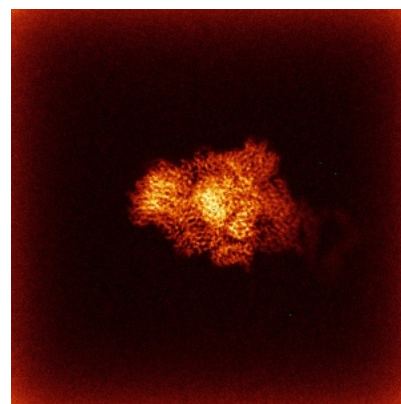
6.4.2 Raw map



X



Y

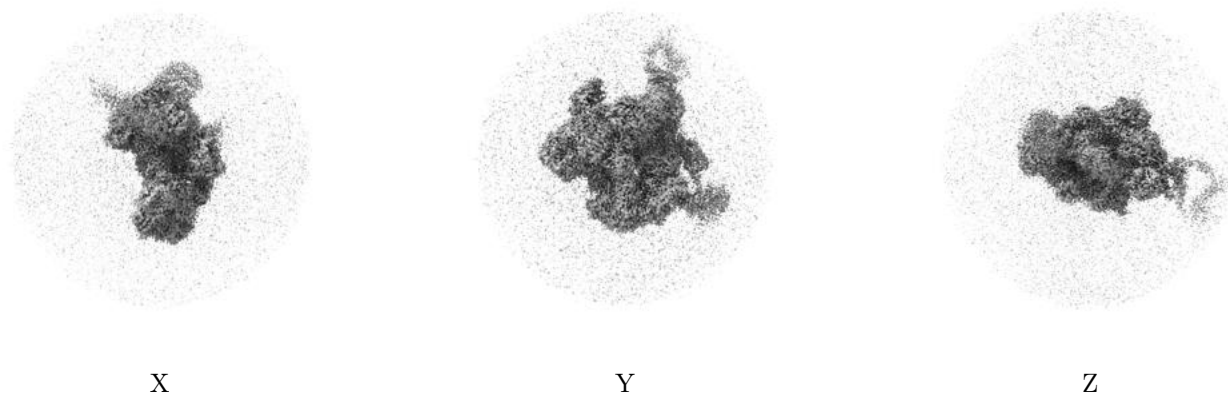


Z

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

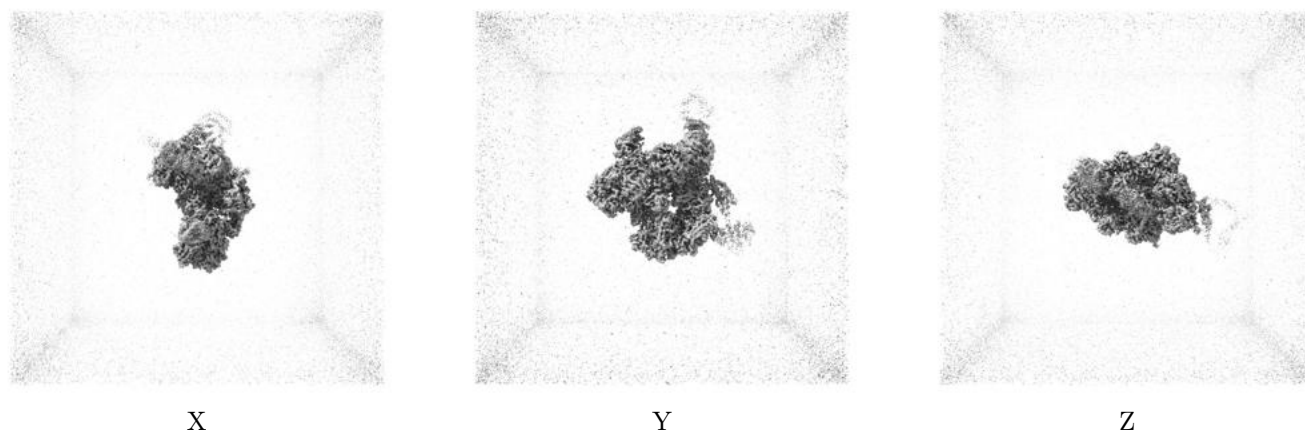
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.13. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

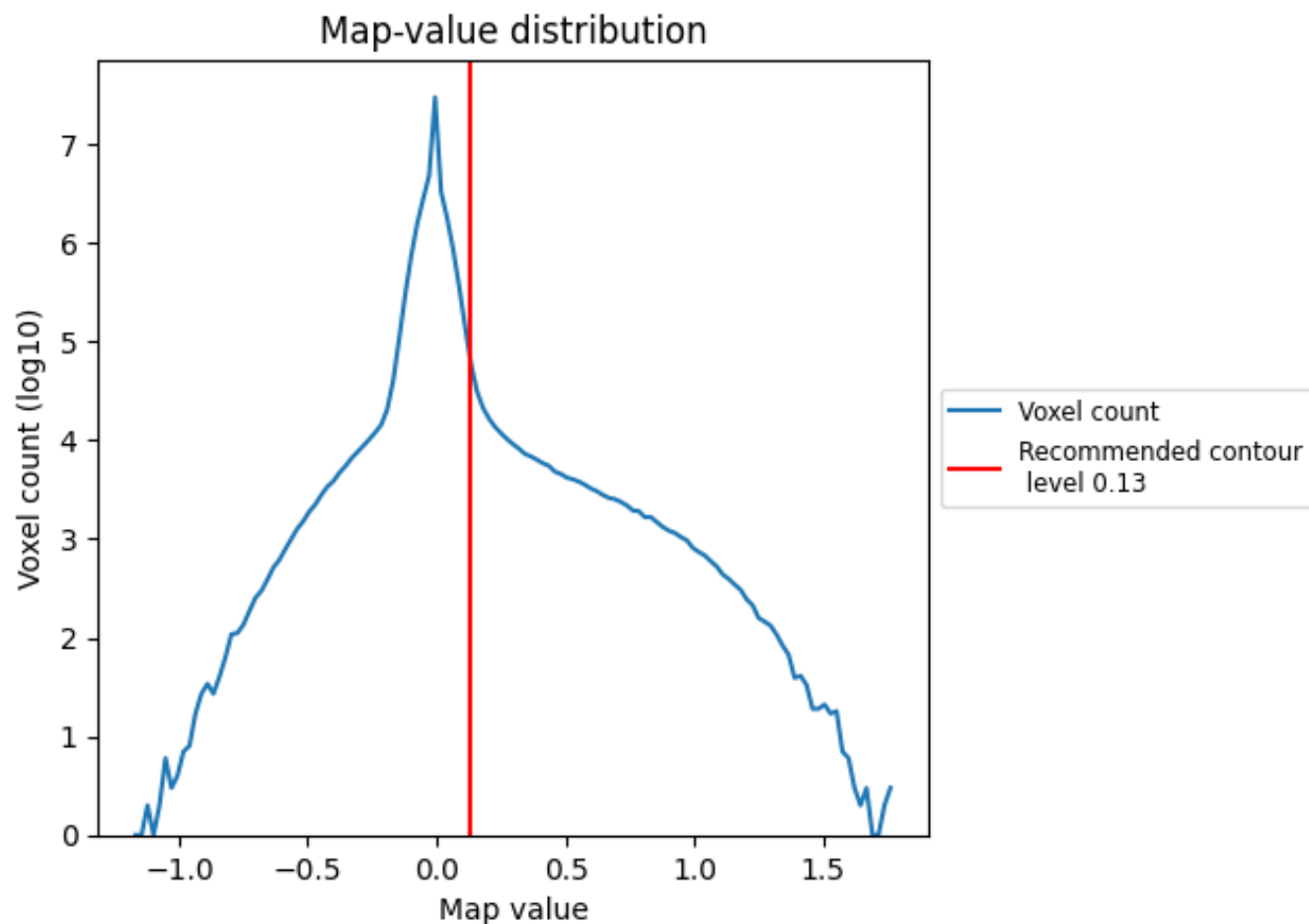
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

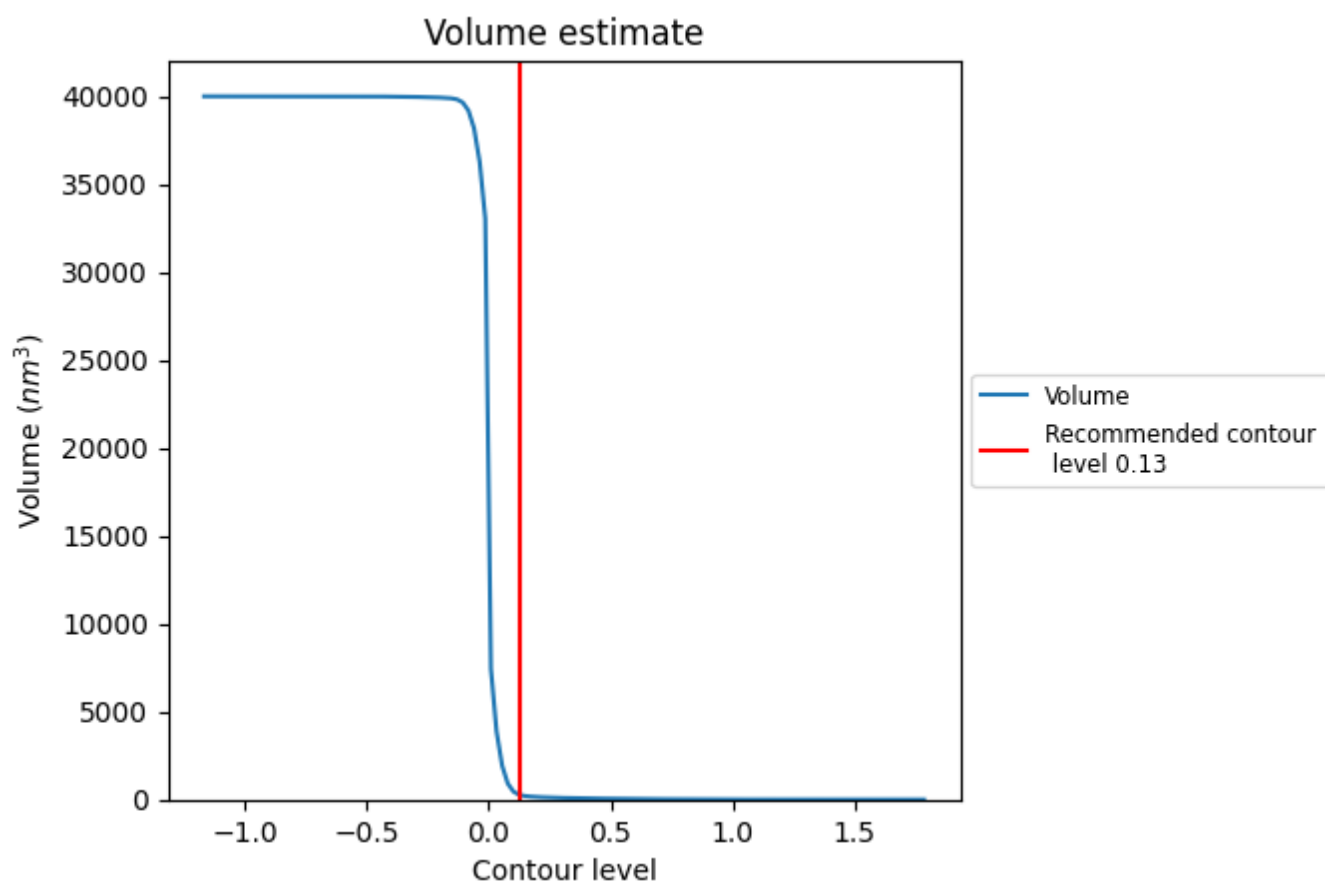
This section contains the results of statistical analysis of the map.

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.

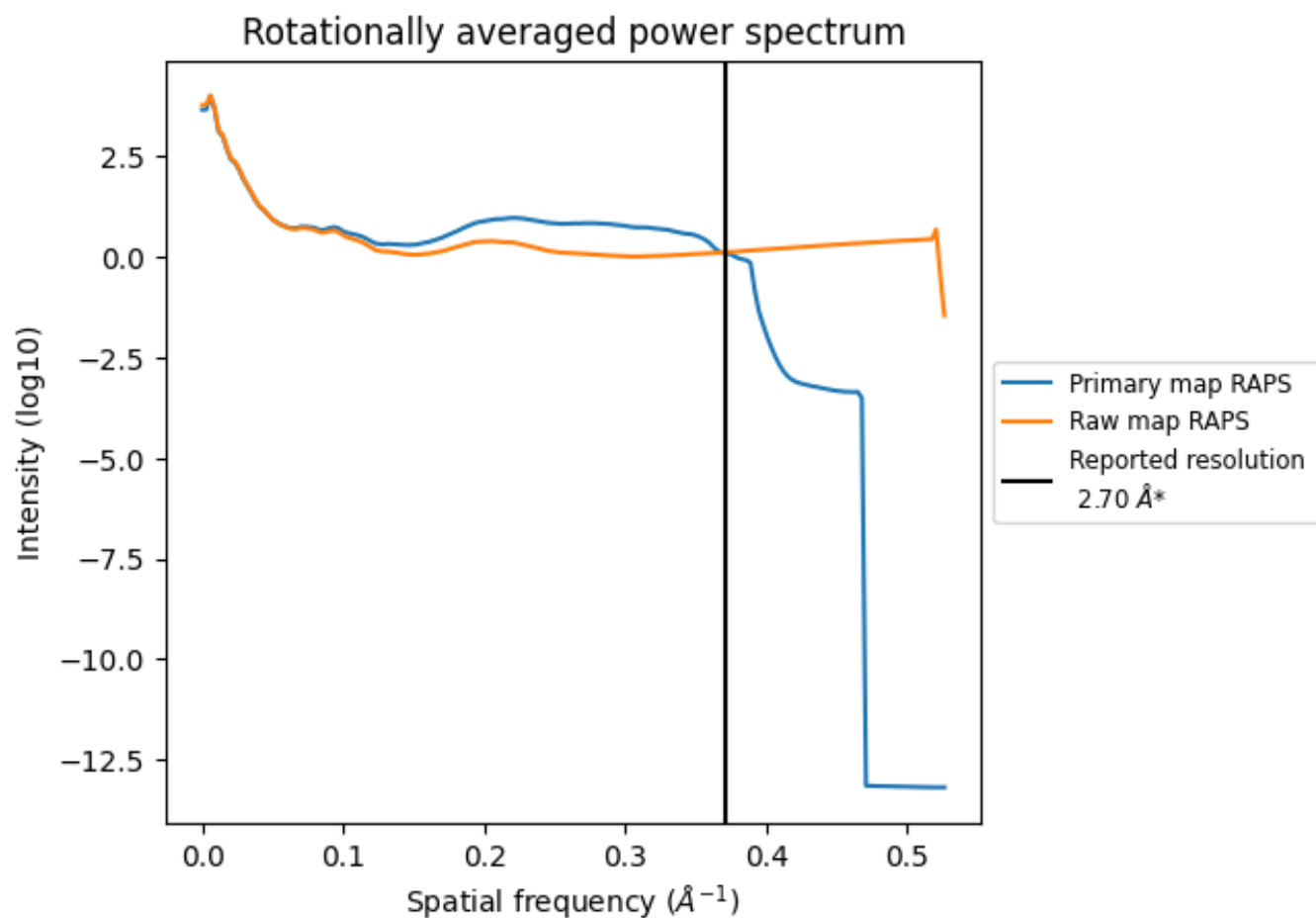
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 257 nm³; this corresponds to an approximate mass of 232 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum ⓘ

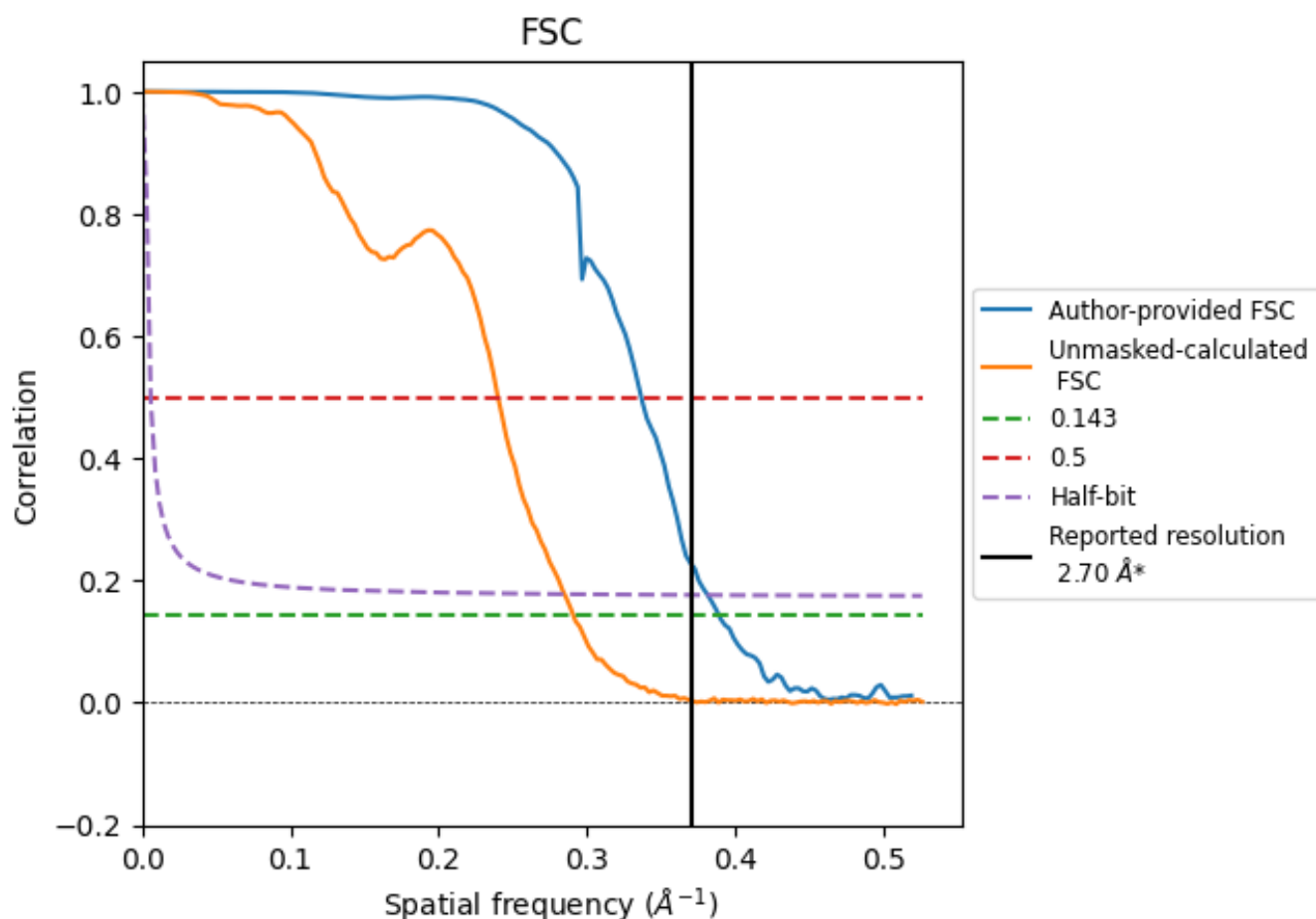


*Reported resolution corresponds to spatial frequency of 0.370 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.370 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

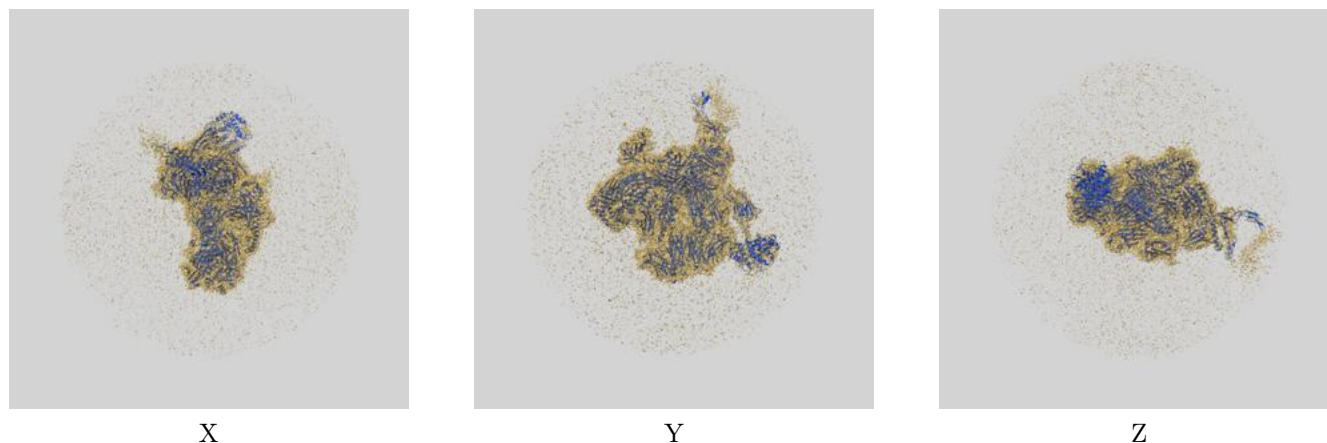
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.70	-	-
Author-provided FSC curve	2.57	2.97	2.62
Unmasked-calculated*	3.44	4.17	3.51

*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 3.44 differs from the reported value 2.7 by more than 10 %

9 Map-model fit [i](#)

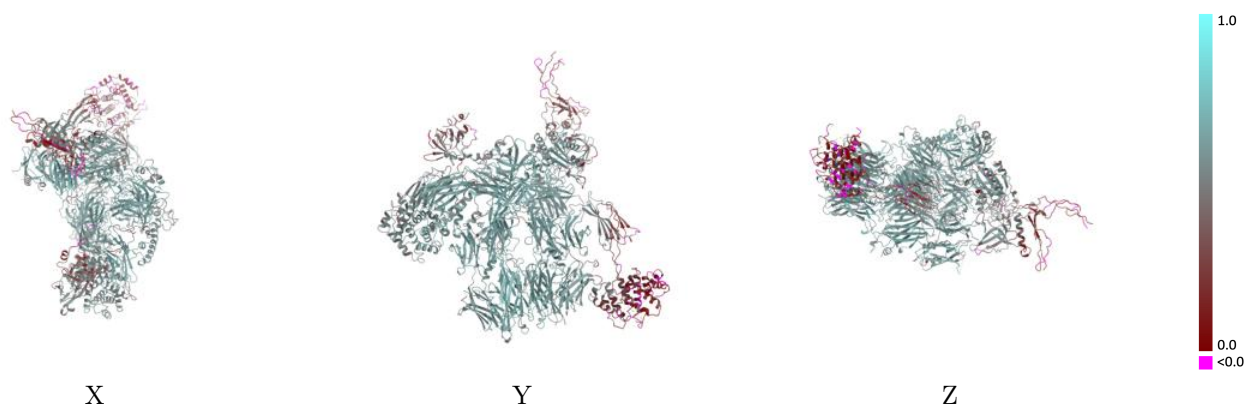
This section contains information regarding the fit between EMDB map EMD-63895 and PDB model 9U62. Per-residue inclusion information can be found in [section 3](#) on [page 6](#).

9.1 Map-model overlay [i](#)



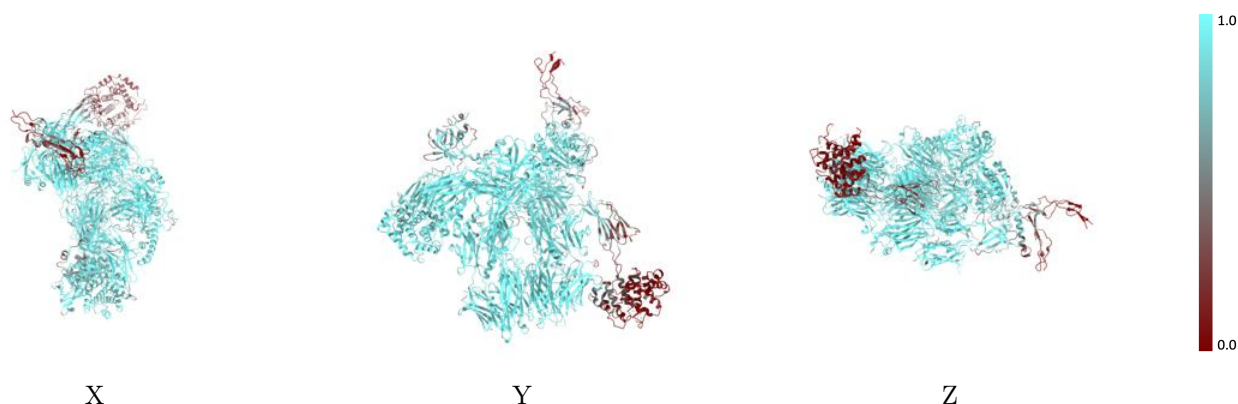
The images above show the 3D surface view of the map at the recommended contour level 0.13 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



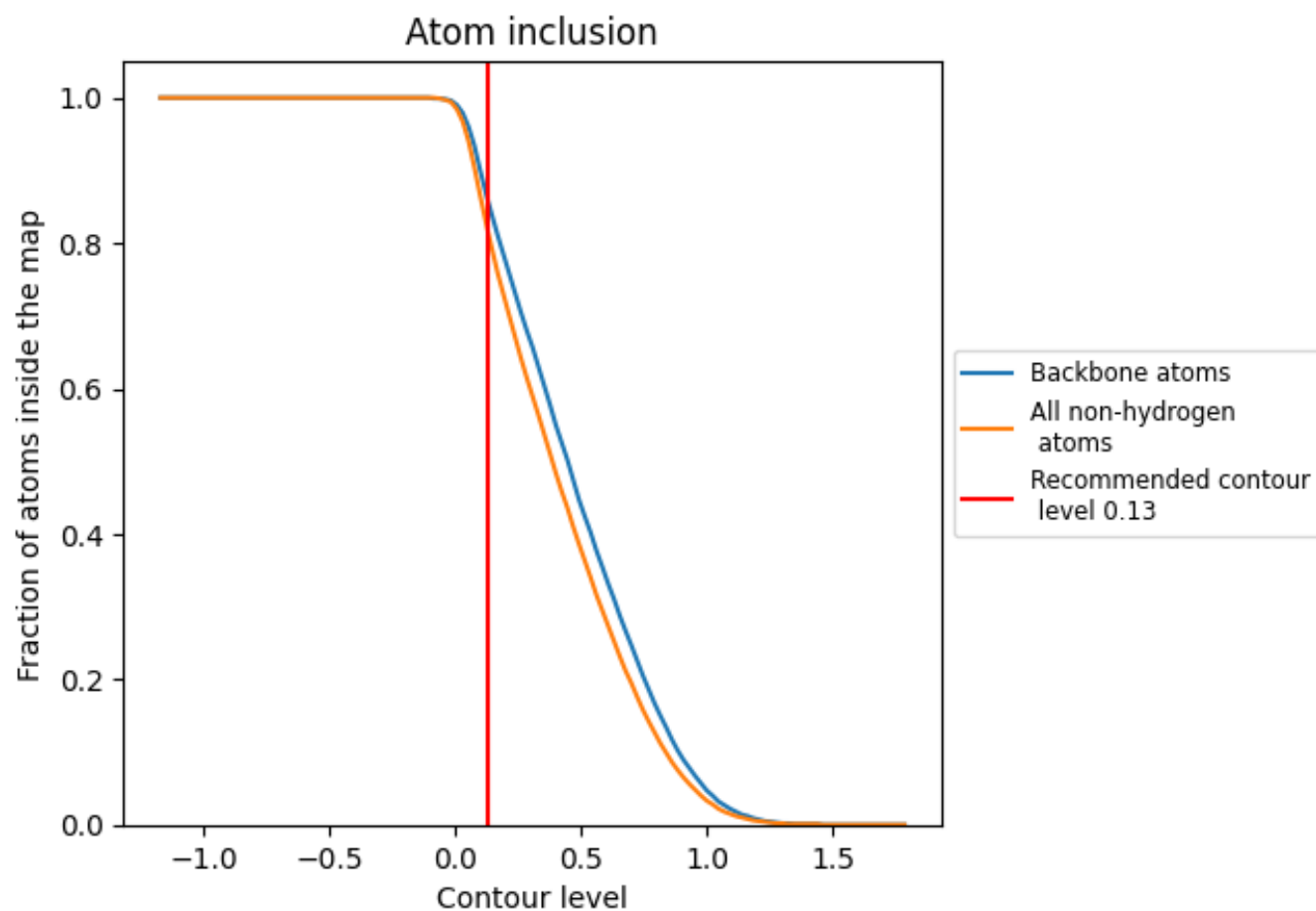
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.13).

9.4 Atom inclusion [i](#)



At the recommended contour level, 86% of all backbone atoms, 82% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.13) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8180	0.5250
A	0.0710	0.2770
B	0.8810	0.5570
C	0.9510	0.6140
D	0.8780	0.5400
E	0.7530	0.4960
P	0.2380	0.1890

