



Full wwPDB EM Validation Report ⓘ

Nov 21, 2022 – 06:10 PM JST

PDB ID : 7D7E
EMDB ID : EMD-30606
Title : Structure of PKD1L3-CTD/PKD2L1 in apo state
Authors : Su, Q.; Chen, M.; Li, B.; Wang, Y.; Jing, D.; Zhan, X.; Yu, Y.; Shi, Y.
Deposited on : 2020-10-03
Resolution : 3.40 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:

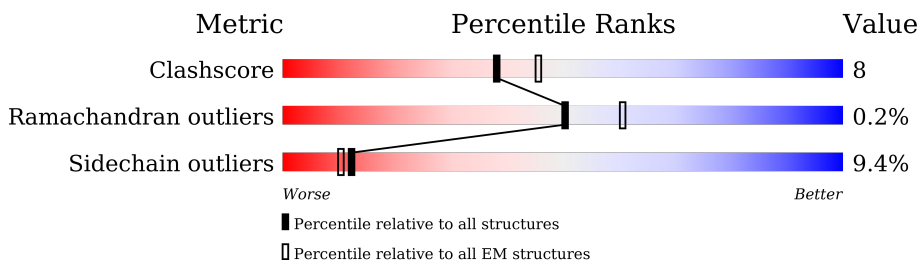
EMDB validation analysis : 0.0.1.dev43
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (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 3.40 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	B	604	
1	C	604	
1	D	604	
2	A	551	

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 15501 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 Polycystic kidney disease 2-like 1 protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	B	482	3960	2610	630	704	16	0	0
1	C	474	3898	2572	619	691	16	0	0
1	D	471	3862	2549	610	687	16	0	0

There are 114 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	26	MET	-	initiating methionine	UNP A2A259
B	27	GLY	-	expression tag	UNP A2A259
B	28	SER	-	expression tag	UNP A2A259
B	29	ALA	-	expression tag	UNP A2A259
B	30	GLY	-	expression tag	UNP A2A259
B	31	TRP	-	expression tag	UNP A2A259
B	32	SER	-	expression tag	UNP A2A259
B	33	HIS	-	expression tag	UNP A2A259
B	34	PRO	-	expression tag	UNP A2A259
B	35	GLN	-	expression tag	UNP A2A259
B	36	PHE	-	expression tag	UNP A2A259
B	37	GLU	-	expression tag	UNP A2A259
B	38	LYS	-	expression tag	UNP A2A259
B	39	GLY	-	expression tag	UNP A2A259
B	40	GLY	-	expression tag	UNP A2A259
B	41	GLY	-	expression tag	UNP A2A259
B	42	SER	-	expression tag	UNP A2A259
B	43	GLY	-	expression tag	UNP A2A259
B	44	GLY	-	expression tag	UNP A2A259
B	45	GLY	-	expression tag	UNP A2A259
B	46	SER	-	expression tag	UNP A2A259
B	47	GLY	-	expression tag	UNP A2A259
B	48	GLY	-	expression tag	UNP A2A259
B	49	SER	-	expression tag	UNP A2A259

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Chain	Residue	Modelled	Actual	Comment	Reference
B	50	ALA	-	expression tag	UNP A2A259
B	51	TRP	-	expression tag	UNP A2A259
B	52	SER	-	expression tag	UNP A2A259
B	53	HIS	-	expression tag	UNP A2A259
B	54	PRO	-	expression tag	UNP A2A259
B	55	GLN	-	expression tag	UNP A2A259
B	56	PHE	-	expression tag	UNP A2A259
B	57	GLU	-	expression tag	UNP A2A259
B	58	LYS	-	expression tag	UNP A2A259
B	59	GLY	-	expression tag	UNP A2A259
B	60	SER	-	expression tag	UNP A2A259
B	61	ALA	-	expression tag	UNP A2A259
B	62	ALA	-	expression tag	UNP A2A259
B	63	ALA	-	expression tag	UNP A2A259
C	26	MET	-	initiating methionine	UNP A2A259
C	27	GLY	-	expression tag	UNP A2A259
C	28	SER	-	expression tag	UNP A2A259
C	29	ALA	-	expression tag	UNP A2A259
C	30	GLY	-	expression tag	UNP A2A259
C	31	TRP	-	expression tag	UNP A2A259
C	32	SER	-	expression tag	UNP A2A259
C	33	HIS	-	expression tag	UNP A2A259
C	34	PRO	-	expression tag	UNP A2A259
C	35	GLN	-	expression tag	UNP A2A259
C	36	PHE	-	expression tag	UNP A2A259
C	37	GLU	-	expression tag	UNP A2A259
C	38	LYS	-	expression tag	UNP A2A259
C	39	GLY	-	expression tag	UNP A2A259
C	40	GLY	-	expression tag	UNP A2A259
C	41	GLY	-	expression tag	UNP A2A259
C	42	SER	-	expression tag	UNP A2A259
C	43	GLY	-	expression tag	UNP A2A259
C	44	GLY	-	expression tag	UNP A2A259
C	45	GLY	-	expression tag	UNP A2A259
C	46	SER	-	expression tag	UNP A2A259
C	47	GLY	-	expression tag	UNP A2A259
C	48	GLY	-	expression tag	UNP A2A259
C	49	SER	-	expression tag	UNP A2A259
C	50	ALA	-	expression tag	UNP A2A259
C	51	TRP	-	expression tag	UNP A2A259
C	52	SER	-	expression tag	UNP A2A259
C	53	HIS	-	expression tag	UNP A2A259

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Chain	Residue	Modelled	Actual	Comment	Reference
C	54	PRO	-	expression tag	UNP A2A259
C	55	GLN	-	expression tag	UNP A2A259
C	56	PHE	-	expression tag	UNP A2A259
C	57	GLU	-	expression tag	UNP A2A259
C	58	LYS	-	expression tag	UNP A2A259
C	59	GLY	-	expression tag	UNP A2A259
C	60	SER	-	expression tag	UNP A2A259
C	61	ALA	-	expression tag	UNP A2A259
C	62	ALA	-	expression tag	UNP A2A259
C	63	ALA	-	expression tag	UNP A2A259
D	26	MET	-	initiating methionine	UNP A2A259
D	27	GLY	-	expression tag	UNP A2A259
D	28	SER	-	expression tag	UNP A2A259
D	29	ALA	-	expression tag	UNP A2A259
D	30	GLY	-	expression tag	UNP A2A259
D	31	TRP	-	expression tag	UNP A2A259
D	32	SER	-	expression tag	UNP A2A259
D	33	HIS	-	expression tag	UNP A2A259
D	34	PRO	-	expression tag	UNP A2A259
D	35	GLN	-	expression tag	UNP A2A259
D	36	PHE	-	expression tag	UNP A2A259
D	37	GLU	-	expression tag	UNP A2A259
D	38	LYS	-	expression tag	UNP A2A259
D	39	GLY	-	expression tag	UNP A2A259
D	40	GLY	-	expression tag	UNP A2A259
D	41	GLY	-	expression tag	UNP A2A259
D	42	SER	-	expression tag	UNP A2A259
D	43	GLY	-	expression tag	UNP A2A259
D	44	GLY	-	expression tag	UNP A2A259
D	45	GLY	-	expression tag	UNP A2A259
D	46	SER	-	expression tag	UNP A2A259
D	47	GLY	-	expression tag	UNP A2A259
D	48	GLY	-	expression tag	UNP A2A259
D	49	SER	-	expression tag	UNP A2A259
D	50	ALA	-	expression tag	UNP A2A259
D	51	TRP	-	expression tag	UNP A2A259
D	52	SER	-	expression tag	UNP A2A259
D	53	HIS	-	expression tag	UNP A2A259
D	54	PRO	-	expression tag	UNP A2A259
D	55	GLN	-	expression tag	UNP A2A259
D	56	PHE	-	expression tag	UNP A2A259
D	57	GLU	-	expression tag	UNP A2A259

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Chain	Residue	Modelled	Actual	Comment	Reference
D	58	LYS	-	expression tag	UNP A2A259
D	59	GLY	-	expression tag	UNP A2A259
D	60	SER	-	expression tag	UNP A2A259
D	61	ALA	-	expression tag	UNP A2A259
D	62	ALA	-	expression tag	UNP A2A259
D	63	ALA	-	expression tag	UNP A2A259

- Molecule 2 is a protein called Polycystic kidney disease protein 1-like 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	A	451	3638	2375	620	631	12	0	0

There are 32 discrepancies between the modelled and reference sequences:

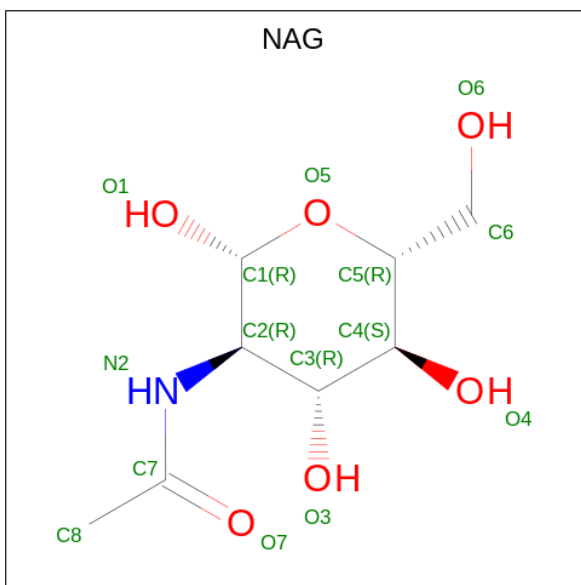
Chain	Residue	Modelled	Actual	Comment	Reference
A	1600	MET	-	initiating methionine	UNP Q2EG98
A	1601	GLY	-	expression tag	UNP Q2EG98
A	1602	SER	-	expression tag	UNP Q2EG98
A	1603	ALA	-	expression tag	UNP Q2EG98
A	1604	GLY	-	expression tag	UNP Q2EG98
A	1605	ASP	-	expression tag	UNP Q2EG98
A	1606	TYR	-	expression tag	UNP Q2EG98
A	1607	LYS	-	expression tag	UNP Q2EG98
A	1608	ASP	-	expression tag	UNP Q2EG98
A	1609	HIS	-	expression tag	UNP Q2EG98
A	1610	ASP	-	expression tag	UNP Q2EG98
A	1611	GLY	-	expression tag	UNP Q2EG98
A	1612	ASP	-	expression tag	UNP Q2EG98
A	1613	TYR	-	expression tag	UNP Q2EG98
A	1614	LYS	-	expression tag	UNP Q2EG98
A	1615	ASP	-	expression tag	UNP Q2EG98
A	1616	HIS	-	expression tag	UNP Q2EG98
A	1617	ASP	-	expression tag	UNP Q2EG98
A	1618	ILE	-	expression tag	UNP Q2EG98
A	1619	ASP	-	expression tag	UNP Q2EG98
A	1620	TYR	-	expression tag	UNP Q2EG98
A	1621	LYS	-	expression tag	UNP Q2EG98
A	1622	ASP	-	expression tag	UNP Q2EG98
A	1623	ASP	-	expression tag	UNP Q2EG98
A	1624	ASP	-	expression tag	UNP Q2EG98
A	1625	ASP	-	expression tag	UNP Q2EG98

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Chain	Residue	Modelled	Actual	Comment	Reference
A	1626	LYS	-	expression tag	UNP Q2EG98
A	1627	GLY	-	expression tag	UNP Q2EG98
A	1628	SER	-	expression tag	UNP Q2EG98
A	1629	ALA	-	expression tag	UNP Q2EG98
A	1630	ALA	-	expression tag	UNP Q2EG98
A	1631	ALA	-	expression tag	UNP Q2EG98

- Molecule 3 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).



Mol	Chain	Residues	Atoms			AltConf	
			Total	C	N		O
3	B	1	42	24	3	15	0
3	B	1	42	24	3	15	0
3	B	1	42	24	3	15	0
3	C	1	42	24	3	15	0
3	C	1	42	24	3	15	0
3	C	1	42	24	3	15	0
3	D	1	28	16	2	10	0
3	D	1	28	16	2	10	0

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Mol	Chain	Residues	Atoms				AltConf
3	A	1	Total	C	N	O	0
			28	16	2	10	
3	A	1	Total	C	N	O	0
			28	16	2	10	

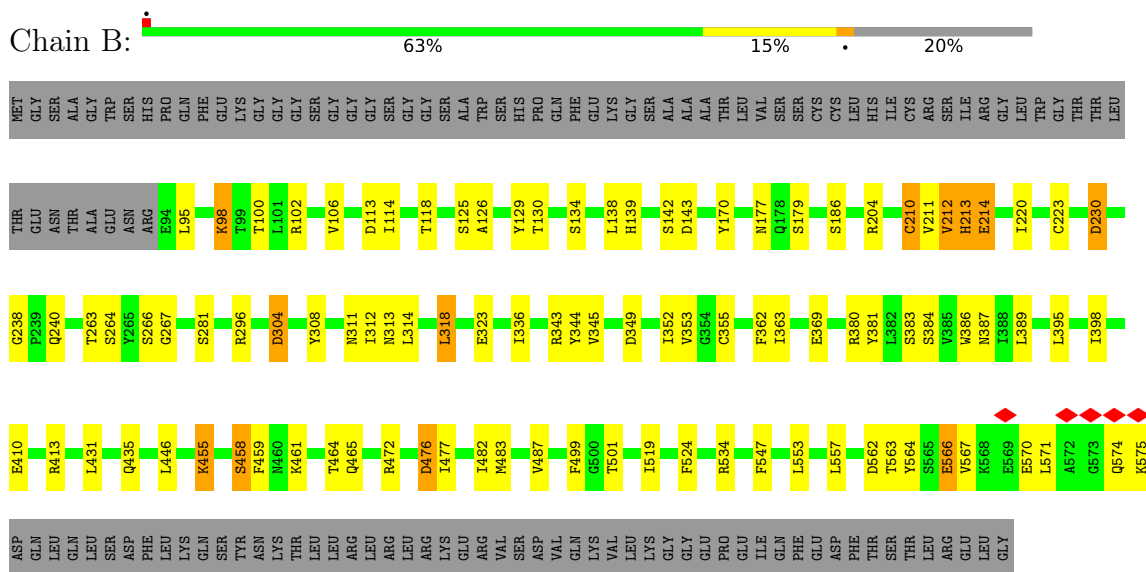
- Molecule 4 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		AltConf
4	B	1	Total	Ca	0
			1	1	
4	C	1	Total	Ca	0
			1	1	
4	D	1	Total	Ca	0
			1	1	

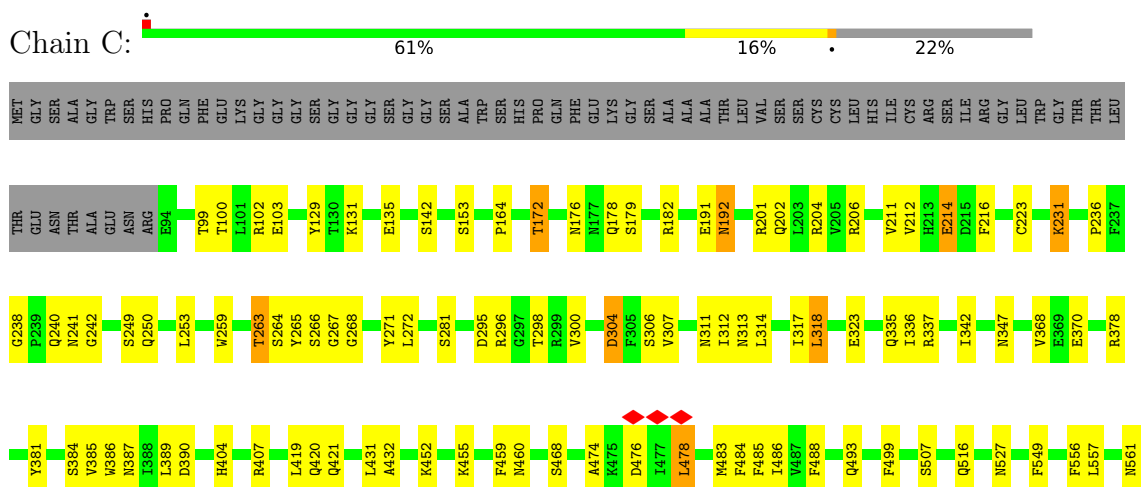
3 Residue-property plots [i](#)

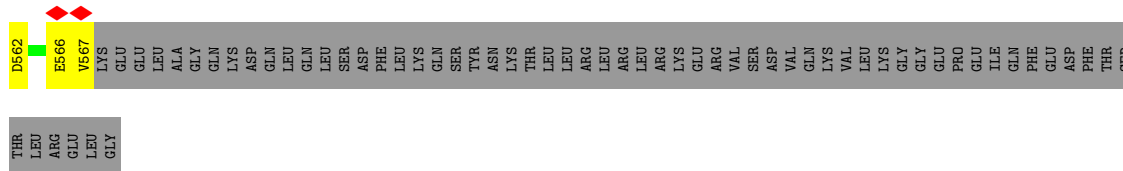
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: Polycystic kidney disease 2-like 1 protein

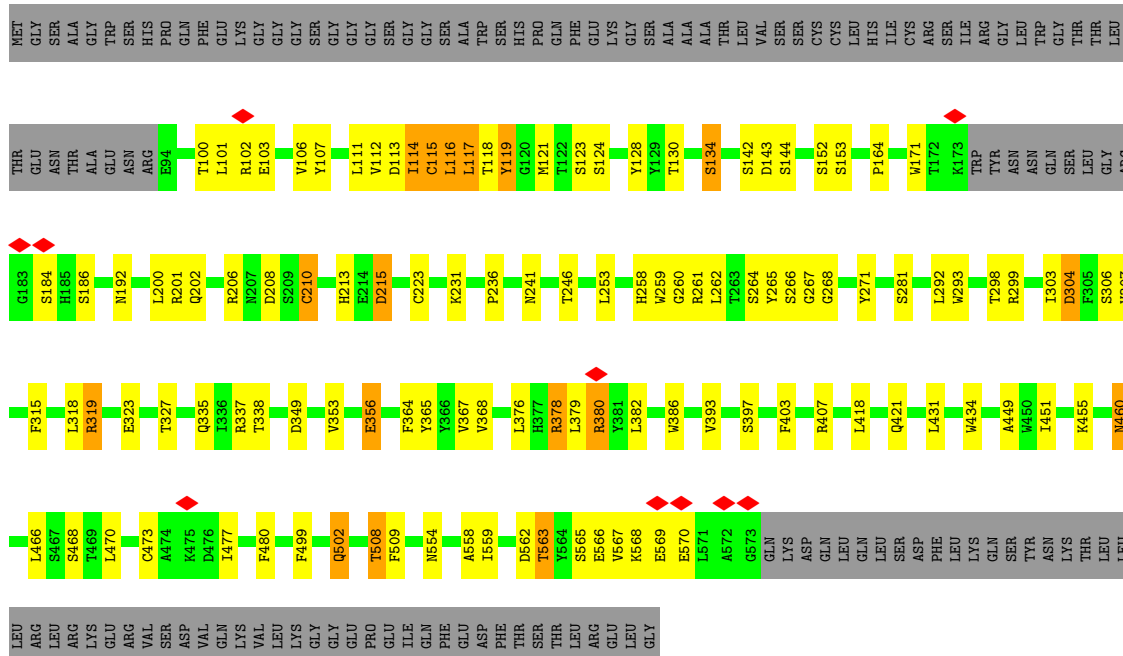


- Molecule 1: Polycystic kidney disease 2-like 1 protein

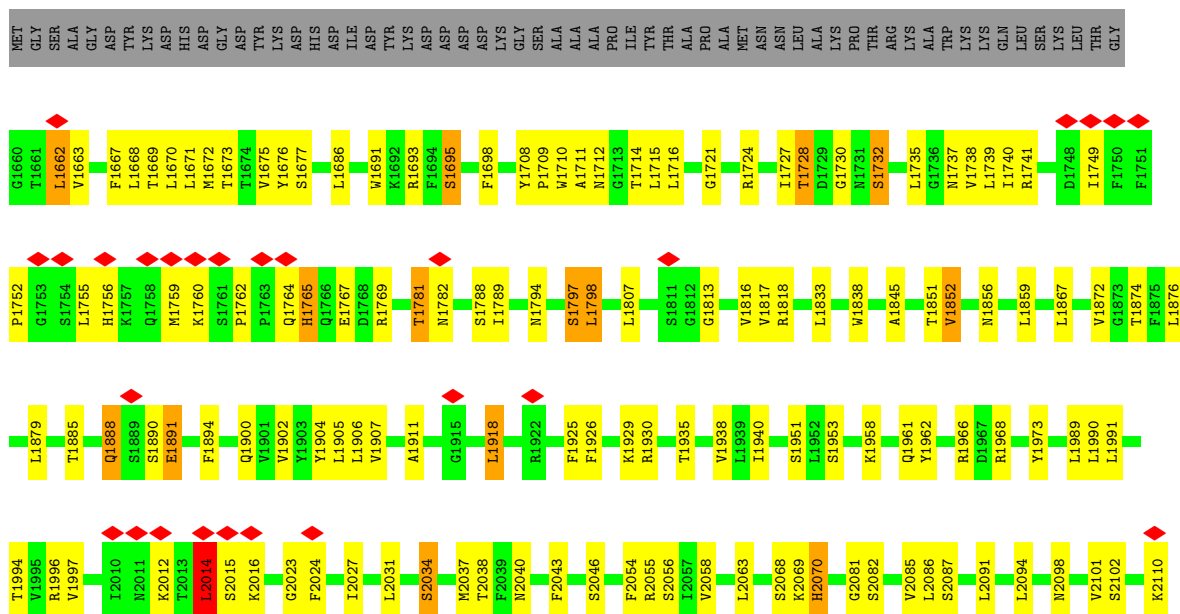




• Molecule 1: Polycystic kidney disease 2-like 1 protein



• Molecule 2: Polycystic kidney disease protein 1-like 3



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

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	549716	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.149	Depositor
Minimum map value	-0.084	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.018	Depositor
Map size (\AA)	260.88, 260.88, 260.88	wwPDB
Map dimensions	240, 240, 240	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.087, 1.087, 1.087	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: CA, NAG

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	B	0.43	0/4073	0.48	0/5540
1	C	0.44	0/4011	0.47	0/5459
1	D	0.40	0/3971	0.46	0/5401
2	A	0.36	0/3727	0.49	1/5056 (0.0%)
All	All	0.41	0/15782	0.48	1/21456 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	B	0	1

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	2014	LEU	CA-CB-CG	5.89	128.86	115.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	213	HIS	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	B	3960	0	3864	56	0
1	C	3898	0	3799	56	0
1	D	3862	0	3774	70	0
2	A	3638	0	3696	89	0
3	A	28	0	26	0	0
3	B	42	0	39	2	0
3	C	42	0	39	1	0
3	D	28	0	26	1	0
4	B	1	0	0	0	0
4	C	1	0	0	0	0
4	D	1	0	0	0	0
All	All	15501	0	15263	245	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 8.

All (245) 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:D:128:TYR:CZ	2:A:1876:LEU:HD21	1.83	1.12
1:C:474:ALA:O	1:C:478:LEU:HB2	1.65	0.95
2:A:1888:GLN:HB2	2:A:1891:GLU:HG2	1.61	0.82
1:B:212:VAL:O	1:B:213:HIS:ND1	2.13	0.81
1:D:119:TYR:OH	2:A:2040:ASN:ND2	2.13	0.81
1:D:128:TYR:CE2	2:A:1876:LEU:HD21	2.16	0.81
1:D:128:TYR:OH	2:A:1876:LEU:CD2	2.29	0.80
1:D:117:LEU:CD1	1:D:356:GLU:HG2	2.13	0.78
1:C:304:ASP:N	1:C:304:ASP:OD1	2.15	0.77
1:D:128:TYR:CZ	2:A:1876:LEU:CD2	2.67	0.76
2:A:1907:VAL:HG13	2:A:1938:VAL:HG23	1.67	0.75
2:A:1888:GLN:HA	2:A:1888:GLN:OE1	1.86	0.75
1:B:304:ASP:OD1	1:B:304:ASP:N	2.22	0.73
1:D:202:GLN:NE2	1:D:298:THR:OG1	2.21	0.72
1:D:142:SER:HB2	1:D:164:PRO:HD3	1.71	0.71
2:A:1911:ALA:HB2	2:A:1938:VAL:HG21	1.71	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:1667:PHE:HB2	2:A:1906:LEU:HD23	1.73	0.71
1:C:99:THR:O	1:C:100:THR:OG1	2.08	0.71
1:D:117:LEU:O	1:D:117:LEU:HG	1.90	0.71
1:C:176:ASN:HD21	1:C:178:GLN:HE21	1.39	0.69
1:D:115:CYS:O	1:D:115:CYS:SG	2.50	0.69
1:D:128:TYR:OH	2:A:1876:LEU:HD23	1.92	0.69
1:D:130:THR:O	1:D:134:SER:HB3	1.94	0.68
2:A:1767:GLU:OE2	2:A:1769:ARG:NH2	2.26	0.67
2:A:2014:LEU:HD13	2:A:2015:SER:H	1.59	0.67
2:A:1756:HIS:O	2:A:1760:LYS:NZ	2.26	0.67
2:A:1671:LEU:HD11	2:A:1989:LEU:HD11	1.76	0.67
1:B:263:THR:HG22	1:B:264:SER:H	1.60	0.66
2:A:1845:ALA:HA	2:A:1867:LEU:O	1.96	0.66
1:D:128:TYR:OH	2:A:1876:LEU:HD21	1.90	0.66
1:B:465:GLN:HG3	1:D:558:ALA:HB2	1.78	0.66
1:D:266:SER:OG	1:D:267:GLY:N	2.25	0.64
1:D:117:LEU:HD11	1:D:356:GLU:HG2	1.79	0.64
1:D:117:LEU:HD13	1:D:356:GLU:HG2	1.80	0.64
2:A:1708:TYR:N	2:A:1709:PRO:HD2	2.13	0.63
1:D:386:TRP:CE2	1:D:455:LYS:HB2	2.34	0.62
2:A:1741:ARG:HG3	2:A:1816:VAL:HG22	1.80	0.62
1:D:100:THR:HG22	1:D:102:ARG:H	1.65	0.60
1:D:335:GLN:OE1	1:D:337:ARG:NH1	2.34	0.60
1:C:202:GLN:NE2	1:C:298:THR:OG1	2.35	0.60
2:A:1693:ARG:CZ	2:A:1728:THR:HG21	2.32	0.60
1:D:210:CYS:HB3	1:D:223:CYS:SG	2.43	0.59
3:D:802:NAG:H3	3:D:802:NAG:H83	1.85	0.59
1:C:265:TYR:OH	1:C:323:GLU:OE1	2.17	0.58
1:D:201:ARG:NH1	1:D:268:GLY:O	2.35	0.58
2:A:1695:SER:O	2:A:1695:SER:OG	2.16	0.58
1:C:312:ILE:HD12	1:C:314:LEU:HD12	1.85	0.58
1:B:476:ASP:OD1	1:B:476:ASP:N	2.36	0.58
1:D:259:TRP:HD1	1:D:264:SER:HB2	1.69	0.58
1:C:317:ILE:HD13	1:C:432:ALA:HB2	1.86	0.57
1:D:470:LEU:HD12	2:A:2094:LEU:HD21	1.87	0.57
1:C:201:ARG:NH1	1:C:268:GLY:O	2.37	0.57
1:C:241:ASN:OD1	1:C:242:GLY:N	2.37	0.57
1:C:527:ASN:HD22	2:A:2055:ARG:HH12	1.53	0.57
2:A:1900:GLN:OE1	2:A:1904:TYR:HE2	1.88	0.56
1:D:265:TYR:OH	1:D:323:GLU:OE1	2.20	0.56
3:B:703:NAG:H83	3:B:703:NAG:H3	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:223:CYS:SG	1:C:311:ASN:HA	2.45	0.56
1:D:259:TRP:HA	1:D:264:SER:HA	1.88	0.56
1:C:263:THR:OG1	1:C:264:SER:N	2.40	0.55
1:D:111:LEU:HA	1:D:114:ILE:HG22	1.87	0.55
1:D:213:HIS:ND1	1:D:215:ASP:OD1	2.40	0.55
1:B:472:ARG:NH1	1:B:562:ASP:OD1	2.40	0.55
1:C:100:THR:OG1	1:C:103:GLU:OE2	2.25	0.55
2:A:1762:PRO:HG2	2:A:1765:HIS:CD2	2.43	0.54
3:C:701:NAG:H3	3:C:701:NAG:H83	1.89	0.54
1:C:266:SER:OG	1:C:267:GLY:N	2.40	0.54
1:C:223:CYS:SG	2:A:1856:ASN:HA	2.48	0.54
1:C:100:THR:HG22	1:C:102:ARG:H	1.72	0.54
2:A:1708:TYR:N	2:A:1709:PRO:CD	2.71	0.54
1:B:461:LYS:O	1:B:465:GLN:NE2	2.41	0.53
1:C:296:ARG:HD3	2:A:1730:GLY:HA3	1.89	0.53
1:B:311:ASN:HA	1:D:223:CYS:SG	2.48	0.53
1:D:192:ASN:HD21	2:A:1872:VAL:HG23	1.73	0.53
1:D:379:LEU:HB3	1:D:380:ARG:HE	1.73	0.53
1:D:563:THR:HG21	2:A:2101:VAL:HG23	1.90	0.53
2:A:2023:GLY:O	2:A:2027:ILE:HG12	2.09	0.53
1:D:378:ARG:HG3	1:D:382:LEU:HD21	1.91	0.53
1:B:266:SER:OG	1:B:267:GLY:N	2.42	0.52
1:D:382:LEU:H	1:D:382:LEU:HD23	1.74	0.52
1:D:107:TYR:OH	1:D:449:ALA:O	2.26	0.52
1:C:384:SER:O	1:C:386:TRP:N	2.43	0.52
1:B:345:VAL:HB	1:D:213:HIS:HD2	1.76	0.51
1:C:204:ARG:NH2	1:C:295:ASP:OD2	2.44	0.51
2:A:1990:LEU:O	2:A:1994:THR:HG23	2.09	0.51
1:B:349:ASP:O	1:B:352:ILE:HG13	2.11	0.51
2:A:1918:LEU:HD11	2:A:1925:PHE:CG	2.46	0.51
1:C:474:ALA:HB1	1:C:478:LEU:HD22	1.92	0.51
2:A:1698:PHE:CD1	2:A:1710:TRP:CZ2	2.99	0.50
2:A:1781:THR:HG22	2:A:1782:ASN:H	1.76	0.50
1:D:128:TYR:CE2	2:A:1876:LEU:CD2	2.93	0.50
1:B:296:ARG:HD2	1:C:182:ARG:HH11	1.77	0.50
2:A:1752:PRO:HB2	2:A:1755:LEU:HA	1.93	0.50
2:A:1693:ARG:NH1	2:A:1728:THR:HG21	2.26	0.50
2:A:1740:ILE:HB	2:A:1817:VAL:HG12	1.94	0.50
1:B:410:GLU:OE2	1:B:413:ARG:NH2	2.40	0.50
1:D:184:SER:O	1:D:184:SER:OG	2.27	0.50
1:C:192:ASN:HB3	1:C:307:VAL:HG13	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:313:ASN:ND2	1:C:342:ILE:O	2.45	0.49
2:A:1732:SER:HB3	2:A:1852:VAL:CG2	2.41	0.49
1:B:482:ILE:HD11	1:C:459:PHE:CE1	2.47	0.49
2:A:1732:SER:HB3	2:A:1852:VAL:HG21	1.94	0.49
1:C:192:ASN:OD1	1:C:192:ASN:N	2.45	0.49
1:D:236:PRO:HB3	1:D:246:THR:HG22	1.94	0.49
2:A:1891:GLU:HA	2:A:1891:GLU:OE1	2.13	0.49
1:B:142:SER:OG	1:B:143:ASP:N	2.45	0.49
1:D:200:LEU:HD23	1:D:303:ILE:HG12	1.94	0.49
1:B:230:ASP:OD1	1:B:230:ASP:N	2.44	0.49
1:D:253:LEU:HD11	1:D:271:TYR:CE2	2.48	0.49
2:A:1817:VAL:HG11	2:A:1833:LEU:HD11	1.95	0.49
2:A:2034:SER:O	2:A:2038:THR:HG22	2.13	0.49
1:C:142:SER:HB2	1:C:164:PRO:HD3	1.95	0.48
2:A:1712:ASN:O	2:A:1712:ASN:ND2	2.46	0.48
1:D:508:THR:OG1	1:D:509:PHE:N	2.47	0.48
1:B:344:TYR:HE2	1:B:352:ILE:HD11	1.77	0.48
2:A:1711:ALA:HA	2:A:1715:LEU:HB3	1.94	0.48
1:B:352:ILE:HA	1:B:355:CYS:HB2	1.95	0.48
2:A:2014:LEU:HD22	2:A:2016:LYS:H	1.78	0.48
2:A:1961:GLN:HE21	2:A:1968:ARG:HH12	1.62	0.48
1:C:216:PHE:HE1	2:A:1735:LEU:HD21	1.79	0.47
2:A:1930:ARG:HE	2:A:1996:ARG:HH12	1.62	0.47
1:B:95:LEU:HD22	1:B:459:PHE:HD1	1.79	0.47
2:A:1670:LEU:HD21	2:A:1902:VAL:HG13	1.96	0.47
1:B:296:ARG:HD2	1:C:182:ARG:NH1	2.30	0.47
2:A:1668:LEU:O	2:A:1672:MET:HE2	2.15	0.47
2:A:1737:ASN:OD1	2:A:1738:VAL:N	2.47	0.47
2:A:1940:ILE:HG21	2:A:1989:LEU:HB2	1.97	0.47
1:C:206:ARG:NH1	1:C:231:LYS:HA	2.30	0.47
1:C:318:LEU:HD23	1:C:336:ILE:HG12	1.96	0.47
1:D:103:GLU:HA	1:D:106:VAL:HG12	1.97	0.47
1:D:407:ARG:HG3	1:D:431:LEU:HD11	1.97	0.47
2:A:1662:LEU:HD13	2:A:1662:LEU:H	1.81	0.46
1:B:114:ILE:O	1:B:118:THR:HG22	2.15	0.46
1:D:206:ARG:NH1	1:D:231:LYS:HA	2.30	0.46
2:A:1900:GLN:O	2:A:1904:TYR:HD2	1.97	0.46
1:C:231:LYS:HB3	1:C:231:LYS:HE2	1.60	0.46
1:C:478:LEU:HD12	1:C:478:LEU:HA	1.71	0.46
1:D:192:ASN:HB3	1:D:307:VAL:CG1	2.46	0.46
1:D:304:ASP:OD2	1:D:319:ARG:NH2	2.44	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2031:LEU:HD13	2:A:2091:LEU:HD21	1.96	0.46
2:A:1762:PRO:O	2:A:1764:GLN:N	2.49	0.46
1:C:335:GLN:OE1	1:C:337:ARG:NH1	2.48	0.46
1:C:420:GLN:HG3	1:C:421:GLN:N	2.31	0.46
2:A:1739:LEU:HD12	2:A:1818:ARG:HG2	1.97	0.46
1:B:386:TRP:HB3	1:B:455:LYS:HE2	1.98	0.46
2:A:2070:HIS:H	2:A:2070:HIS:CD2	2.34	0.46
1:C:253:LEU:HD11	1:C:271:TYR:CE2	2.51	0.45
1:D:460:ASN:N	1:D:460:ASN:OD1	2.49	0.45
2:A:1675:VAL:HG13	2:A:1676:TYR:HD1	1.81	0.45
1:B:349:ASP:O	1:B:353:VAL:HG23	2.16	0.45
1:B:563:THR:O	1:B:566:GLU:HG3	2.15	0.45
1:D:393:VAL:O	1:D:397:SER:OG	2.28	0.45
2:A:1672:MET:HA	2:A:1675:VAL:HG12	1.97	0.45
1:B:210:CYS:HB2	1:B:223:CYS:HB3	1.78	0.45
1:B:557:LEU:HD23	1:B:557:LEU:HA	1.75	0.45
1:B:567:VAL:O	1:B:570:GLU:HG3	2.17	0.45
1:B:575:LYS:HA	1:B:575:LYS:HD3	1.62	0.45
1:D:364:PHE:O	1:D:367:VAL:HG12	2.17	0.45
1:D:386:TRP:CD2	1:D:455:LYS:HB2	2.52	0.45
1:B:138:LEU:HD12	1:B:139:HIS:HD2	1.80	0.45
2:A:2086:LEU:HD12	2:A:2086:LEU:HA	1.84	0.45
1:C:131:LYS:O	1:C:135:GLU:HG3	2.17	0.45
2:A:2098:ASN:HA	2:A:2101:VAL:HG12	1.99	0.44
1:D:292:LEU:HD23	1:D:292:LEU:HA	1.84	0.44
2:A:1691:TRP:O	2:A:1695:SER:HB3	2.17	0.44
2:A:1794:ASN:HB2	2:A:1797:SER:HB3	2.00	0.44
1:C:476:ASP:OD1	1:C:476:ASP:N	2.37	0.44
2:A:1669:THR:O	2:A:1673:THR:OG1	2.33	0.44
1:B:483:MET:O	1:B:487:VAL:HG12	2.17	0.44
1:D:473:CYS:HB2	1:D:477:ILE:HG12	1.99	0.44
2:A:1966:ARG:HE	2:A:1966:ARG:HB2	1.52	0.44
1:B:431:LEU:HD12	1:B:431:LEU:HA	1.85	0.43
1:B:102:ARG:O	1:B:106:VAL:HG13	2.18	0.43
1:B:263:THR:HG22	1:B:264:SER:N	2.30	0.43
1:B:318:LEU:HD23	1:B:336:ILE:HG12	1.99	0.43
1:B:383:SER:OG	1:B:384:SER:N	2.51	0.43
2:A:1670:LEU:HD12	2:A:1670:LEU:HA	1.85	0.43
1:D:142:SER:OG	1:D:143:ASP:N	2.52	0.43
2:A:1662:LEU:HD23	2:A:1663:VAL:HG13	2.00	0.43
1:B:571:LEU:HD21	1:D:568:LYS:HG2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:403:PHE:CE1	1:D:434:TRP:HB3	2.53	0.43
1:C:172:THR:O	1:C:172:THR:OG1	2.34	0.43
1:B:477:ILE:HD13	1:B:477:ILE:HA	1.87	0.43
1:D:119:TYR:HE2	2:A:2037:MET:HG3	1.83	0.43
1:B:126:ALA:O	1:B:130:THR:HG23	2.18	0.43
1:B:343:ARG:NH1	1:B:435:GLN:HE22	2.17	0.43
2:A:2054:PHE:O	2:A:2058:VAL:HG23	2.18	0.43
2:A:1798:LEU:HD11	2:A:1816:VAL:HG21	2.00	0.43
2:A:2063:LEU:HD23	2:A:2068:SER:O	2.19	0.43
1:C:390:ASP:OD1	1:C:455:LYS:NZ	2.52	0.43
1:D:299:ARG:HD3	1:D:299:ARG:HA	1.87	0.43
1:D:502:GLN:HE21	1:D:502:GLN:HB3	1.68	0.43
1:C:384:SER:O	1:C:387:ASN:N	2.34	0.42
1:D:152:SER:O	1:D:152:SER:OG	2.36	0.42
1:B:482:ILE:HD11	1:C:459:PHE:HE1	1.84	0.42
2:A:1935:THR:O	2:A:1938:VAL:HG12	2.19	0.42
1:B:395:LEU:O	1:B:398:ILE:HG12	2.20	0.42
1:C:236:PRO:HB2	1:C:240:GLN:HG2	2.00	0.42
1:B:118:THR:HG21	1:B:446:LEU:HD22	2.02	0.42
1:B:482:ILE:HG13	1:B:483:MET:N	2.35	0.42
1:B:553:LEU:HD12	1:B:553:LEU:HA	1.79	0.42
2:A:1668:LEU:HD23	2:A:1997:VAL:CG2	2.50	0.42
1:D:261:ARG:HB3	1:D:323:GLU:OE2	2.20	0.42
2:A:1724:ARG:NE	2:A:1724:ARG:HA	2.34	0.42
1:C:370:GLU:OE1	1:C:381:TYR:OH	2.18	0.42
1:C:527:ASN:ND2	2:A:2055:ARG:HH12	2.18	0.42
2:A:1686:LEU:HD23	2:A:1859:LEU:HD23	2.00	0.42
2:A:1962:TYR:CE2	2:A:1966:ARG:HG3	2.55	0.42
1:B:312:ILE:HD12	1:B:314:LEU:HD12	2.01	0.41
1:C:420:GLN:HG3	1:C:421:GLN:H	1.85	0.41
1:B:212:VAL:HG11	1:B:220:ILE:HB	2.02	0.41
1:C:389:LEU:HD23	1:C:452:LYS:HG3	2.02	0.41
1:C:493:GLN:HG3	2:A:1676:TYR:CE1	2.55	0.41
1:D:208:ASP:OD1	1:D:208:ASP:N	2.51	0.41
1:C:214:GLU:H	1:C:214:GLU:HG2	1.69	0.41
2:A:1711:ALA:O	2:A:1716:LEU:HG	2.20	0.41
2:A:1789:ILE:HG22	2:A:1838:TRP:NE1	2.36	0.41
1:C:557:LEU:O	1:C:561:ASN:ND2	2.47	0.41
1:B:98:LYS:HE3	1:B:458:SER:HB2	2.02	0.41
1:D:315:PHE:O	1:D:338:THR:HA	2.21	0.41
1:D:473:CYS:HB3	1:D:559:ILE:HD11	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:1749:ILE:HA	2:A:1752:PRO:HD2	2.02	0.41
1:B:534:ARG:NH1	1:C:259:TRP:O	2.53	0.41
1:B:238:GLY:O	1:B:240:GLN:HG3	2.20	0.41
1:C:488:PHE:CZ	1:C:516:GLN:HB2	2.56	0.41
1:D:365:TYR:O	1:D:368:VAL:HG12	2.21	0.41
1:C:249:SER:OG	1:C:250:GLN:N	2.54	0.41
1:D:349:ASP:O	1:D:353:VAL:HG23	2.20	0.41
2:A:1794:ASN:O	2:A:1813:GLY:HA3	2.20	0.41
1:B:170:TYR:HA	1:B:186:SER:OG	2.20	0.41
1:B:177:ASN:HD22	3:B:701:NAG:H83	1.86	0.41
2:A:2081:GLY:O	2:A:2085:VAL:HG23	2.21	0.41
1:B:308:TYR:OH	1:B:313:ASN:ND2	2.54	0.40
1:C:238:GLY:O	1:C:240:GLN:HG3	2.21	0.40
1:D:112:VAL:O	1:D:116:LEU:HB2	2.20	0.40
1:B:519:ILE:HG12	1:B:524:PHE:HB3	2.03	0.40
1:B:564:TYR:OH	1:C:567:VAL:O	2.36	0.40
1:C:407:ARG:HG3	1:C:431:LEU:HD11	2.02	0.40
2:A:1902:VAL:HA	2:A:1905:LEU:HG	2.02	0.40
1:D:261:ARG:HG3	1:D:262:LEU:HG	2.04	0.40
2:A:1668:LEU:HD23	2:A:1997:VAL:HG23	2.04	0.40
2:A:1735:LEU:HD23	2:A:1735:LEU:HA	1.88	0.40
1:D:258:HIS:O	1:D:260:GLY:N	2.53	0.40
1:B:381:TYR:CZ	1:B:387:ASN:HB3	2.57	0.40
1:D:304:ASP:HB3	1:D:319:ARG:HB2	2.02	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	B	480/604 (80%)	442 (92%)	37 (8%)	1 (0%)	47 78

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	C	472/604 (78%)	436 (92%)	35 (7%)	1 (0%)	47	78
1	D	467/604 (77%)	427 (91%)	40 (9%)	0	100	100
2	A	449/551 (82%)	395 (88%)	52 (12%)	2 (0%)	34	67
All	All	1868/2363 (79%)	1700 (91%)	164 (9%)	4 (0%)	50	78

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	A	1721	GLY
2	A	1727	ILE
1	B	214	GLU
1	C	385	VAL

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	B	430/530 (81%)	399 (93%)	31 (7%)	14	43
1	C	424/530 (80%)	389 (92%)	35 (8%)	11	36
1	D	420/530 (79%)	372 (89%)	48 (11%)	5	21
2	A	400/482 (83%)	357 (89%)	43 (11%)	6	24
All	All	1674/2072 (81%)	1517 (91%)	157 (9%)	12	30

All (157) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	98	LYS
1	B	100	THR
1	B	113	ASP
1	B	125	SER
1	B	129	TYR
1	B	134	SER
1	B	179	SER

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Mol	Chain	Res	Type
1	B	204	ARG
1	B	210	CYS
1	B	211	VAL
1	B	212	VAL
1	B	214	GLU
1	B	230	ASP
1	B	281	SER
1	B	304	ASP
1	B	318	LEU
1	B	323	GLU
1	B	362	PHE
1	B	363	ILE
1	B	369	GLU
1	B	380	ARG
1	B	389	LEU
1	B	455	LYS
1	B	458	SER
1	B	464	THR
1	B	476	ASP
1	B	499	PHE
1	B	501	THR
1	B	547	PHE
1	B	566	GLU
1	B	574	GLN
1	C	129	TYR
1	C	153	SER
1	C	172	THR
1	C	179	SER
1	C	191	GLU
1	C	192	ASN
1	C	211	VAL
1	C	212	VAL
1	C	214	GLU
1	C	231	LYS
1	C	263	THR
1	C	272	LEU
1	C	281	SER
1	C	300	VAL
1	C	304	ASP
1	C	306	SER
1	C	318	LEU
1	C	347	ASN

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Mol	Chain	Res	Type
1	C	368	VAL
1	C	378	ARG
1	C	404	HIS
1	C	419	LEU
1	C	460	ASN
1	C	468	SER
1	C	478	LEU
1	C	483	MET
1	C	484	PHE
1	C	485	PHE
1	C	486	ILE
1	C	499	PHE
1	C	507	SER
1	C	549	PHE
1	C	556	PHE
1	C	562	ASP
1	C	566	GLU
1	D	101	LEU
1	D	113	ASP
1	D	114	ILE
1	D	115	CYS
1	D	116	LEU
1	D	117	LEU
1	D	118	THR
1	D	119	TYR
1	D	121	MET
1	D	123	SER
1	D	124	SER
1	D	134	SER
1	D	144	SER
1	D	153	SER
1	D	171	TRP
1	D	186	SER
1	D	210	CYS
1	D	215	ASP
1	D	241	ASN
1	D	281	SER
1	D	293	TRP
1	D	304	ASP
1	D	306	SER
1	D	318	LEU
1	D	319	ARG

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Mol	Chain	Res	Type
1	D	327	THR
1	D	356	GLU
1	D	376	LEU
1	D	378	ARG
1	D	380	ARG
1	D	418	LEU
1	D	421	GLN
1	D	451	ILE
1	D	460	ASN
1	D	466	LEU
1	D	468	SER
1	D	480	PHE
1	D	499	PHE
1	D	502	GLN
1	D	508	THR
1	D	554	ASN
1	D	562	ASP
1	D	563	THR
1	D	565	SER
1	D	566	GLU
1	D	567	VAL
1	D	569	GLU
1	D	570	GLU
2	A	1662	LEU
2	A	1677	SER
2	A	1695	SER
2	A	1714	THR
2	A	1728	THR
2	A	1732	SER
2	A	1759	MET
2	A	1765	HIS
2	A	1781	THR
2	A	1788	SER
2	A	1797	SER
2	A	1798	LEU
2	A	1807	LEU
2	A	1851	THR
2	A	1852	VAL
2	A	1874	THR
2	A	1879	LEU
2	A	1885	THR
2	A	1888	GLN

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Mol	Chain	Res	Type
2	A	1890	SER
2	A	1891	GLU
2	A	1894	PHE
2	A	1918	LEU
2	A	1926	PHE
2	A	1929	LYS
2	A	1951	SER
2	A	1953	SER
2	A	1958	LYS
2	A	1973	TYR
2	A	1991	LEU
2	A	2012	LYS
2	A	2014	LEU
2	A	2024	PHE
2	A	2034	SER
2	A	2043	PHE
2	A	2046	SER
2	A	2056	SER
2	A	2069	LYS
2	A	2070	HIS
2	A	2082	SER
2	A	2087	SER
2	A	2102	SER
2	A	2110	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (35) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	139	HIS
1	B	258	HIS
1	B	313	ASN
1	B	375	HIS
1	B	377	HIS
1	B	412	ASN
1	B	516	GLN
1	B	574	GLN
1	C	139	HIS
1	C	178	GLN
1	C	202	GLN
1	C	222	ASN
1	C	258	HIS
1	C	412	ASN

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Mol	Chain	Res	Type
1	C	421	GLN
1	C	460	ASN
1	C	516	GLN
1	C	527	ASN
1	C	554	ASN
1	D	139	HIS
1	D	192	ASN
1	D	202	GLN
1	D	377	HIS
1	D	493	GLN
1	D	502	GLN
1	D	516	GLN
1	D	554	ASN
2	A	1756	HIS
2	A	1823	HIS
2	A	1856	ASN
2	A	1950	GLN
2	A	1956	HIS
2	A	1961	GLN
2	A	2004	HIS
2	A	2040	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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 13 ligands modelled in this entry, 3 are monoatomic - leaving 10 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
3	NAG	C	703	1	14,14,15	0.24	0	17,19,21	0.40	0
3	NAG	B	702	1	14,14,15	0.22	0	17,19,21	0.39	0
3	NAG	D	802	1	14,14,15	0.45	0	17,19,21	1.22	1 (5%)
3	NAG	C	702	1	14,14,15	0.30	0	17,19,21	0.52	0
3	NAG	B	703	1	14,14,15	0.45	0	17,19,21	1.25	2 (11%)
3	NAG	B	701	1	14,14,15	0.25	0	17,19,21	0.42	0
3	NAG	A	2501	2	14,14,15	0.24	0	17,19,21	0.41	0
3	NAG	D	801	1	14,14,15	0.19	0	17,19,21	0.38	0
3	NAG	C	701	1	14,14,15	0.37	0	17,19,21	1.26	1 (5%)
3	NAG	A	2500	2	14,14,15	0.28	0	17,19,21	0.37	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
3	NAG	C	703	1	-	2/6/23/26	0/1/1/1
3	NAG	B	702	1	-	2/6/23/26	0/1/1/1
3	NAG	D	802	1	-	3/6/23/26	0/1/1/1
3	NAG	C	702	1	-	3/6/23/26	0/1/1/1
3	NAG	B	703	1	-	4/6/23/26	0/1/1/1
3	NAG	B	701	1	-	4/6/23/26	0/1/1/1
3	NAG	A	2501	2	-	2/6/23/26	0/1/1/1
3	NAG	D	801	1	-	0/6/23/26	0/1/1/1
3	NAG	C	701	1	-	3/6/23/26	0/1/1/1
3	NAG	A	2500	2	-	2/6/23/26	0/1/1/1

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	C	701	NAG	C2-N2-C7	4.33	129.07	122.90
3	D	802	NAG	C2-N2-C7	4.29	129.01	122.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	703	NAG	C2-N2-C7	4.28	129.00	122.90
3	B	703	NAG	C1-C2-N2	2.00	113.91	110.49

There are no chirality outliers.

All (25) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	B	702	NAG	C4-C5-C6-O6
3	A	2501	NAG	O5-C5-C6-O6
3	B	702	NAG	O5-C5-C6-O6
3	C	702	NAG	C4-C5-C6-O6
3	B	701	NAG	O5-C5-C6-O6
3	C	702	NAG	O5-C5-C6-O6
3	C	703	NAG	O5-C5-C6-O6
3	A	2501	NAG	C4-C5-C6-O6
3	C	703	NAG	C4-C5-C6-O6
3	B	701	NAG	C8-C7-N2-C2
3	B	701	NAG	O7-C7-N2-C2
3	B	703	NAG	C8-C7-N2-C2
3	B	703	NAG	O7-C7-N2-C2
3	C	701	NAG	C8-C7-N2-C2
3	C	701	NAG	O7-C7-N2-C2
3	D	802	NAG	C8-C7-N2-C2
3	D	802	NAG	O7-C7-N2-C2
3	A	2500	NAG	O5-C5-C6-O6
3	A	2500	NAG	C4-C5-C6-O6
3	B	701	NAG	C4-C5-C6-O6
3	C	702	NAG	C3-C2-N2-C7
3	B	703	NAG	O5-C5-C6-O6
3	B	703	NAG	C3-C2-N2-C7
3	C	701	NAG	C3-C2-N2-C7
3	D	802	NAG	C3-C2-N2-C7

There are no ring outliers.

4 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	D	802	NAG	1	0
3	B	703	NAG	1	0
3	B	701	NAG	1	0
3	C	701	NAG	1	0

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.

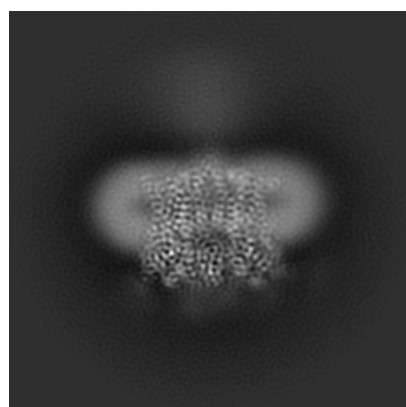
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-30606. These allow visual inspection of the internal detail of the map and identification of artifacts.

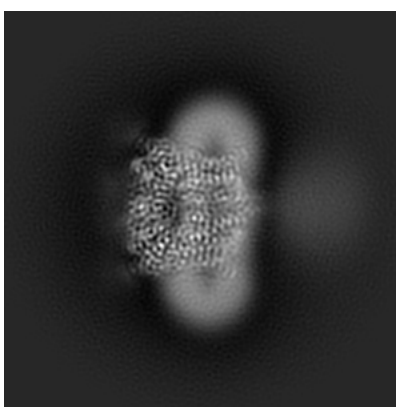
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

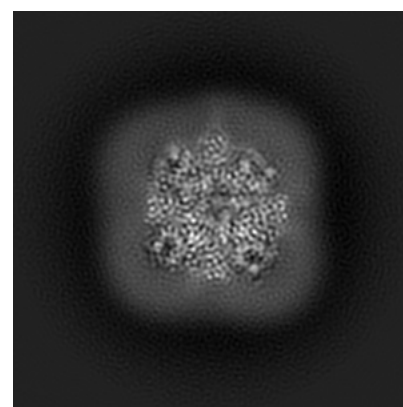
6.1.1 Primary map



X



Y

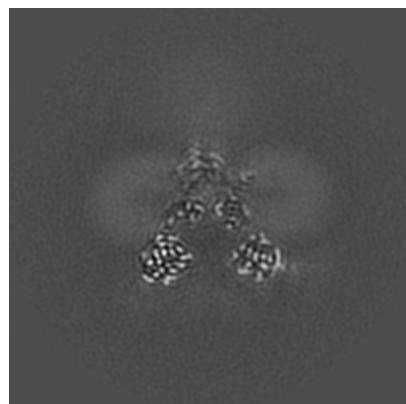


Z

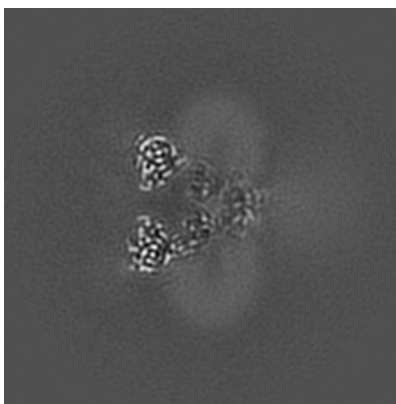
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

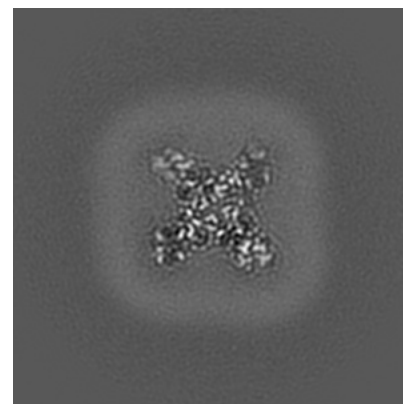
6.2.1 Primary map



X Index: 120



Y Index: 120

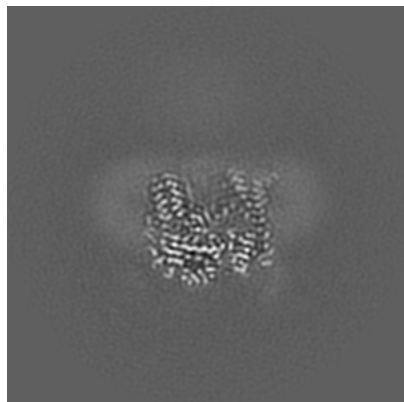


Z Index: 120

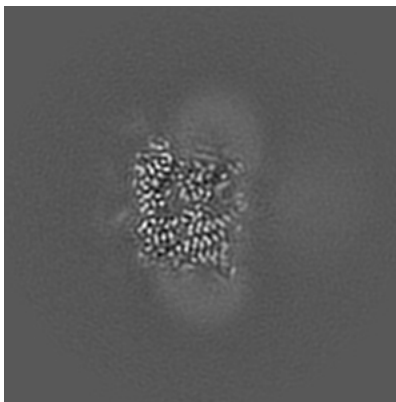
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

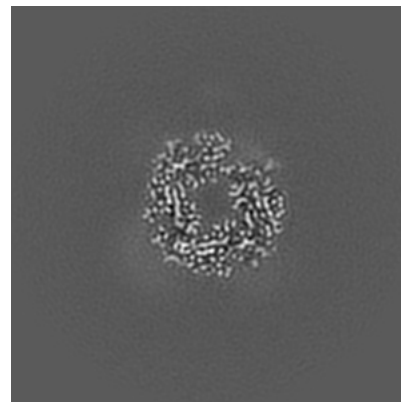
6.3.1 Primary map



X Index: 99



Y Index: 103

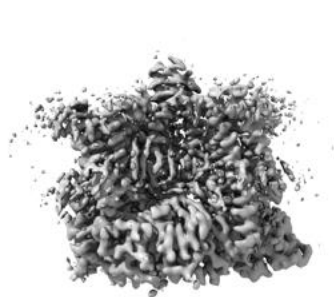


Z Index: 93

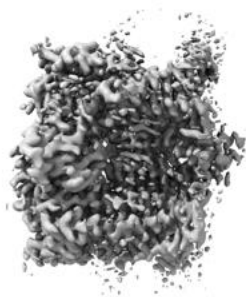
The images above show the largest variance slices of the map in three orthogonal directions.

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

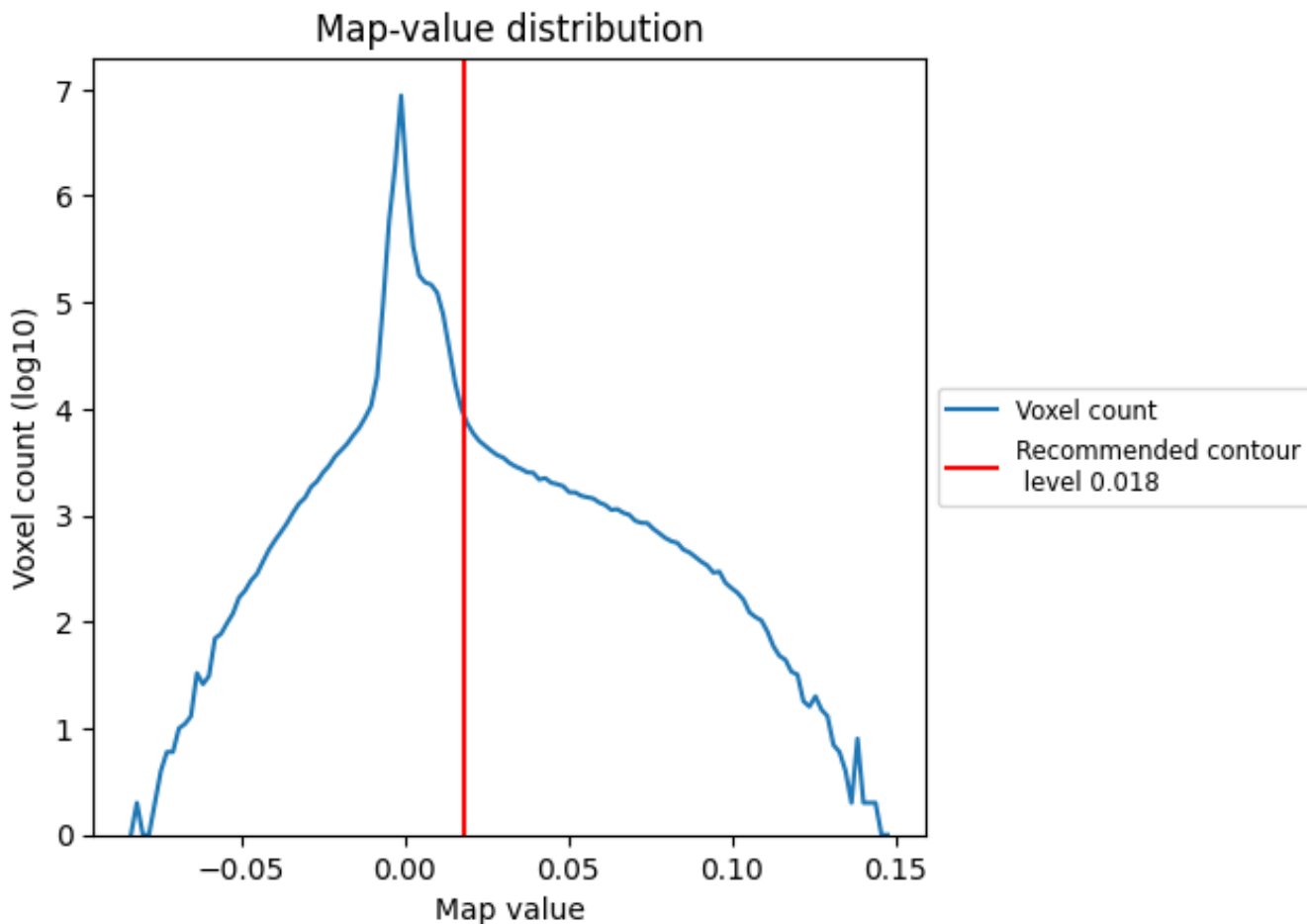
6.5 Mask visualisation

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

7 Map analysis [i](#)

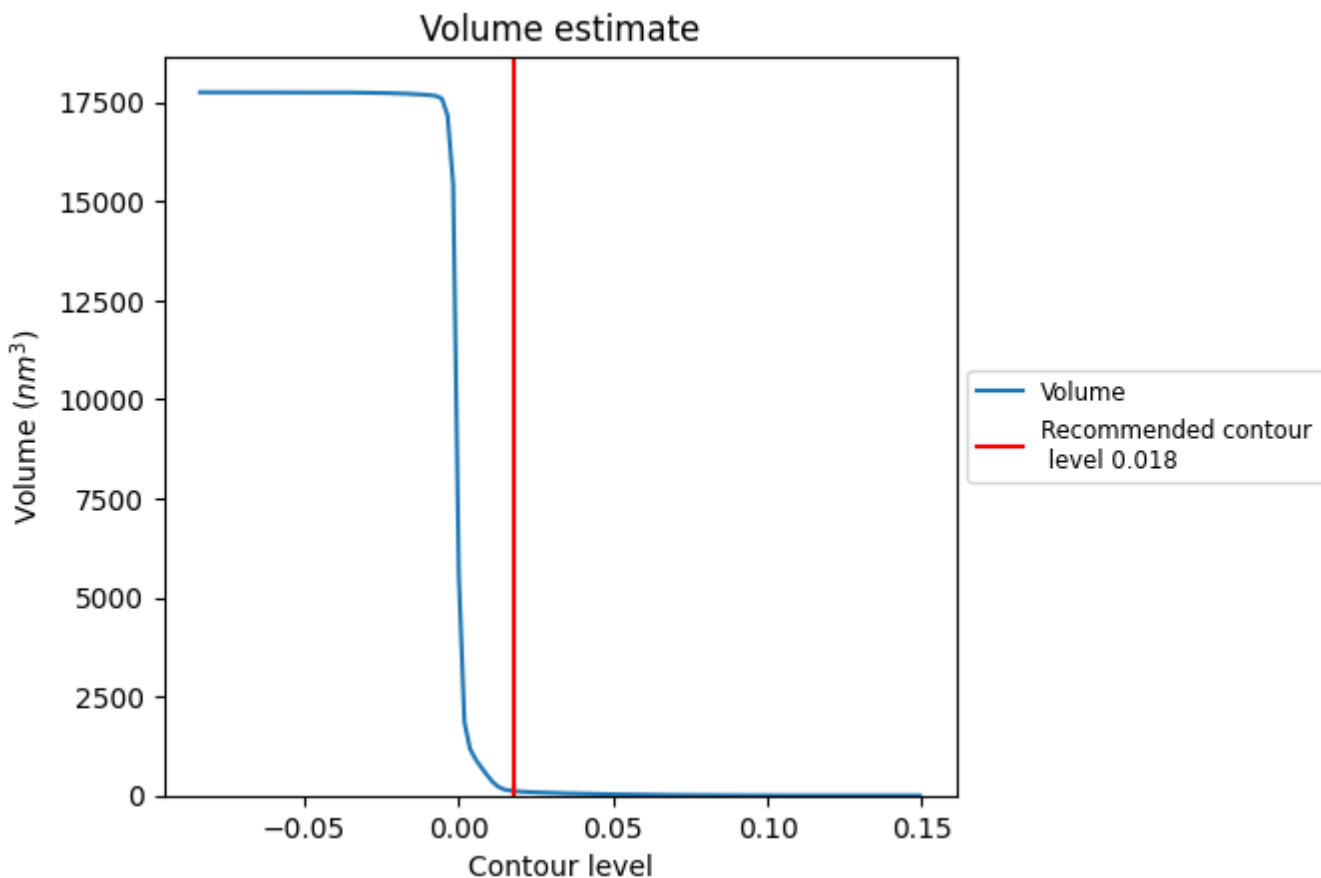
This section contains the results of statistical analysis of the map.

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.

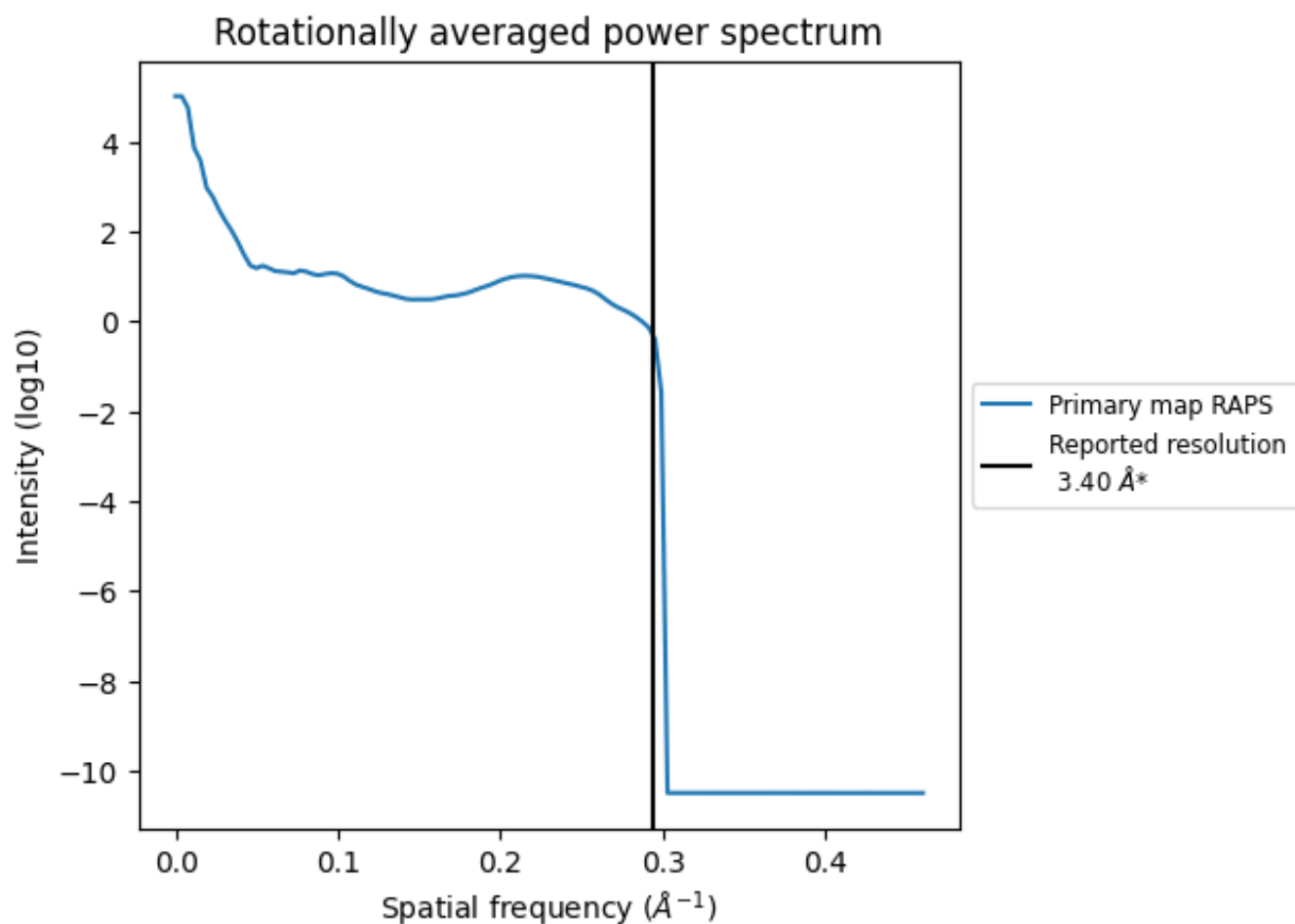
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 114 nm^3 ; this corresponds to an approximate mass of 103 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 0.294 Å⁻¹

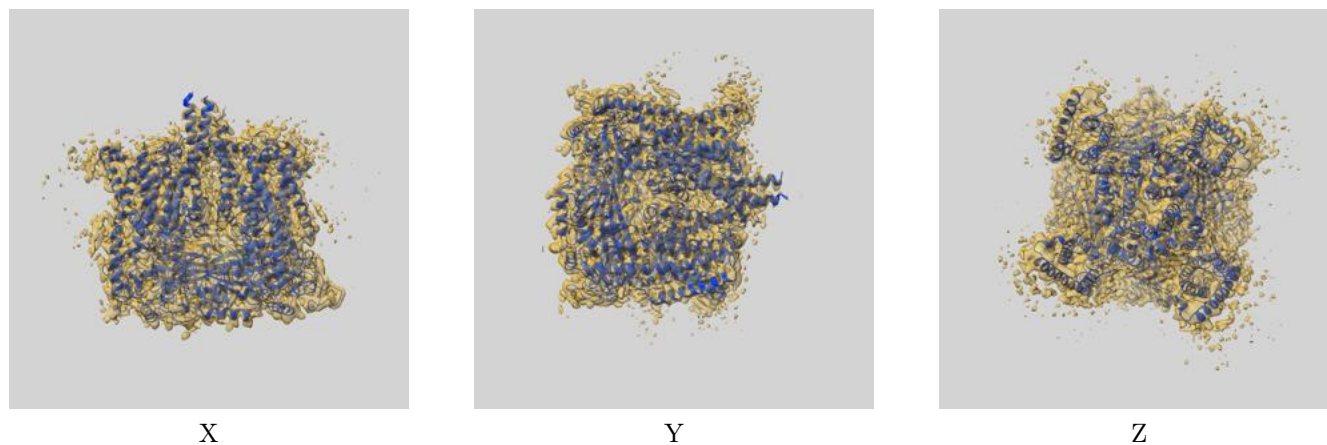
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

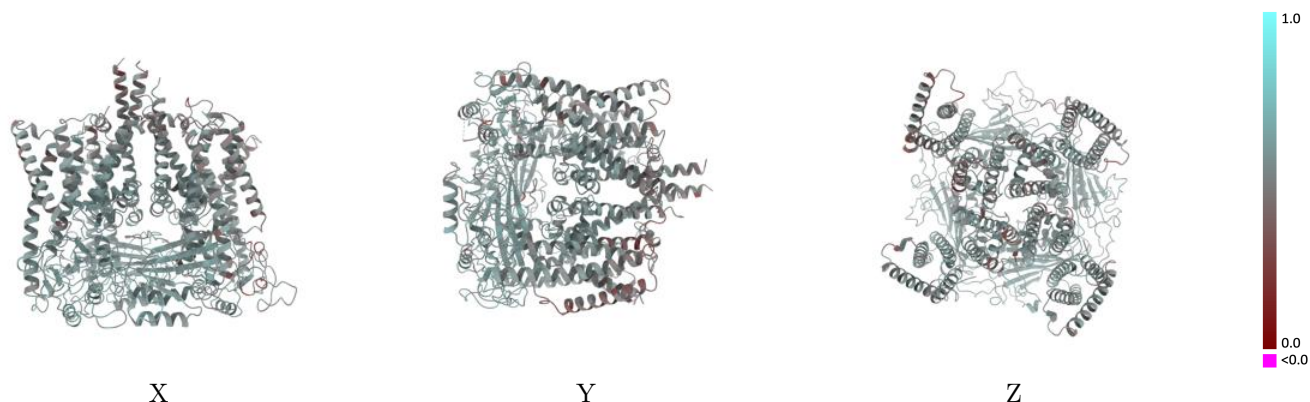
This section contains information regarding the fit between EMDB map EMD-30606 and PDB model 7D7E. Per-residue inclusion information can be found in section 3 on page 9.

9.1 Map-model overlay [i](#)



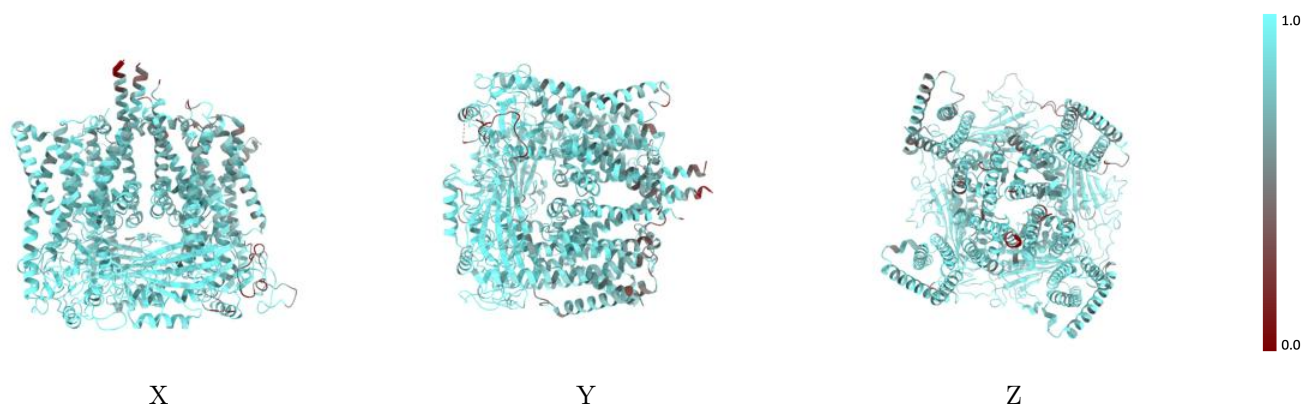
The images above show the 3D surface view of the map at the recommended contour level 0.018 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



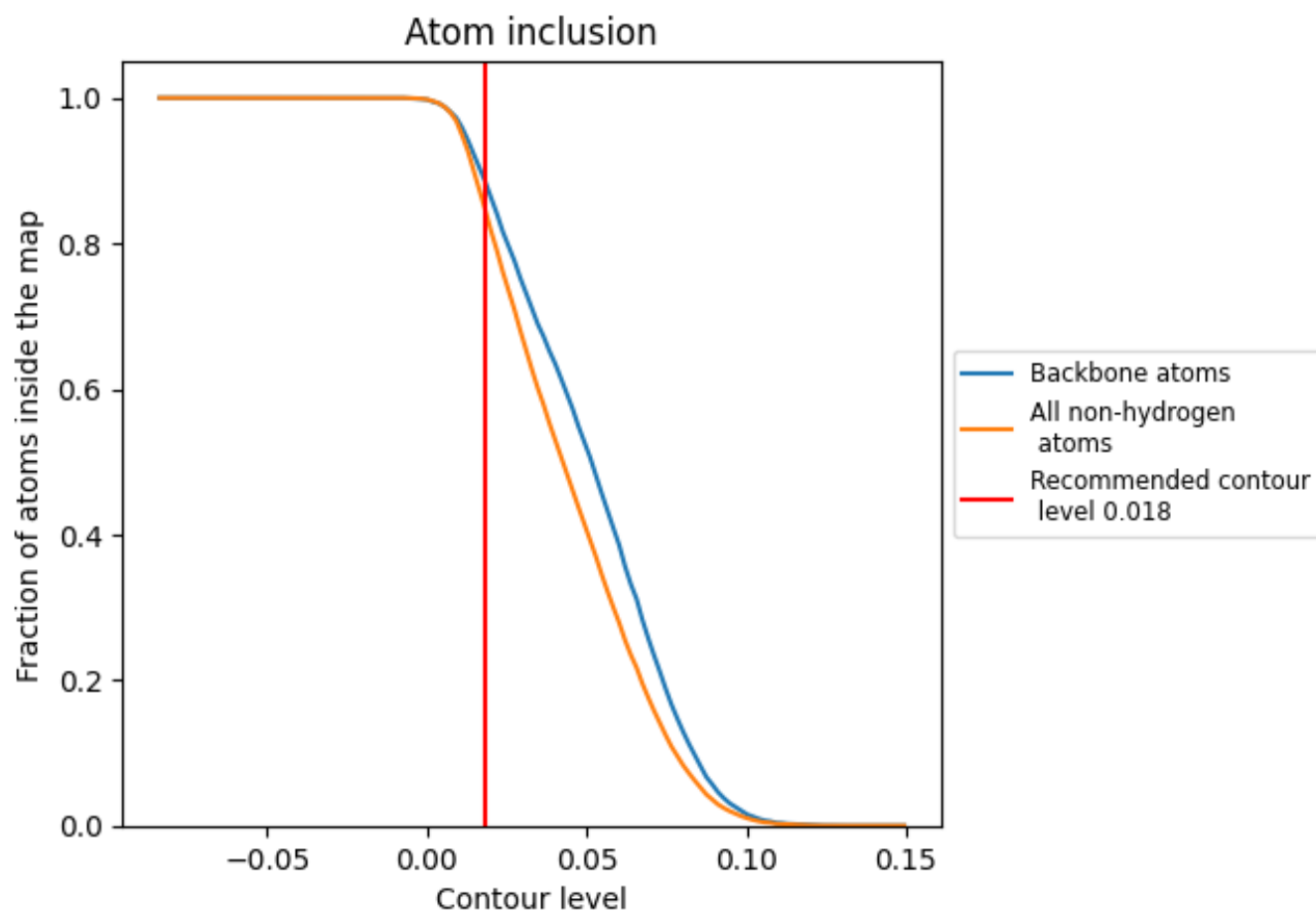
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.018).




9.4 Atom inclusion [i](#)



At the recommended contour level, 89% of all backbone atoms, 85% 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 (0.018) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8506	 0.5350
A	 0.7809	 0.5070
B	 0.8870	 0.5500
C	 0.8839	 0.5490
D	 0.8450	 0.5340

