



## Full wwPDB EM Validation Report ⓘ

Jun 3, 2024 – 01:51 PM EDT

PDB ID : 8E2D  
EMDB ID : EMD-27832  
Title : Cryo-EM structure of BIRC6 (consensus)  
Authors : Hunkeler, M.; Fischer, E.S.  
Deposited on : 2022-08-15  
Resolution : 2.07 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](mailto: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>.

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

EMDB validation analysis : 0.0.1.dev92  
MolProbity : 4.02b-467  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.36.2

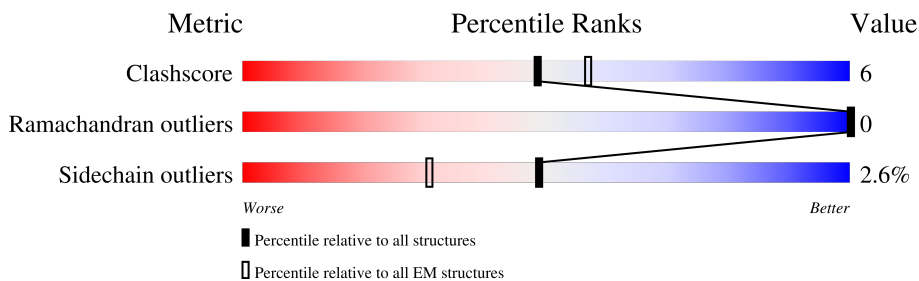
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 2.07 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  $\geq 3$ , 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	4888	
1	B	4888	

## 2 Entry composition i

There is only 1 type of molecule in this entry. The entry contains 62460 atoms, of which 31562 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 Baculoviral IAP repeat-containing protein 6.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
1	A	1968	31230	9895	15781	2628	2813	113	23	0
1	B	1968	31230	9895	15781	2628	2813	113	23	0

There are 64 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-30	MET	-	expression tag	UNP Q9NR09
A	-29	ASP	-	expression tag	UNP Q9NR09
A	-28	TYR	-	expression tag	UNP Q9NR09
A	-27	LYS	-	expression tag	UNP Q9NR09
A	-26	ASP	-	expression tag	UNP Q9NR09
A	-25	ASP	-	expression tag	UNP Q9NR09
A	-24	ASP	-	expression tag	UNP Q9NR09
A	-23	ASP	-	expression tag	UNP Q9NR09
A	-22	LYS	-	expression tag	UNP Q9NR09
A	-21	LEU	-	expression tag	UNP Q9NR09
A	-20	ALA	-	expression tag	UNP Q9NR09
A	-19	ALA	-	expression tag	UNP Q9NR09
A	-18	ALA	-	expression tag	UNP Q9NR09
A	-17	ASN	-	expression tag	UNP Q9NR09
A	-16	SER	-	expression tag	UNP Q9NR09
A	-15	SER	-	expression tag	UNP Q9NR09
A	-14	ILE	-	expression tag	UNP Q9NR09
A	-13	ASP	-	expression tag	UNP Q9NR09
A	-12	LEU	-	expression tag	UNP Q9NR09
A	-11	ILE	-	expression tag	UNP Q9NR09
A	-10	SER	-	expression tag	UNP Q9NR09
A	-9	THR	-	expression tag	UNP Q9NR09
A	-8	SER	-	expression tag	UNP Q9NR09
A	-7	LEU	-	expression tag	UNP Q9NR09
A	-6	TYR	-	expression tag	UNP Q9NR09
A	-5	LYS	-	expression tag	UNP Q9NR09

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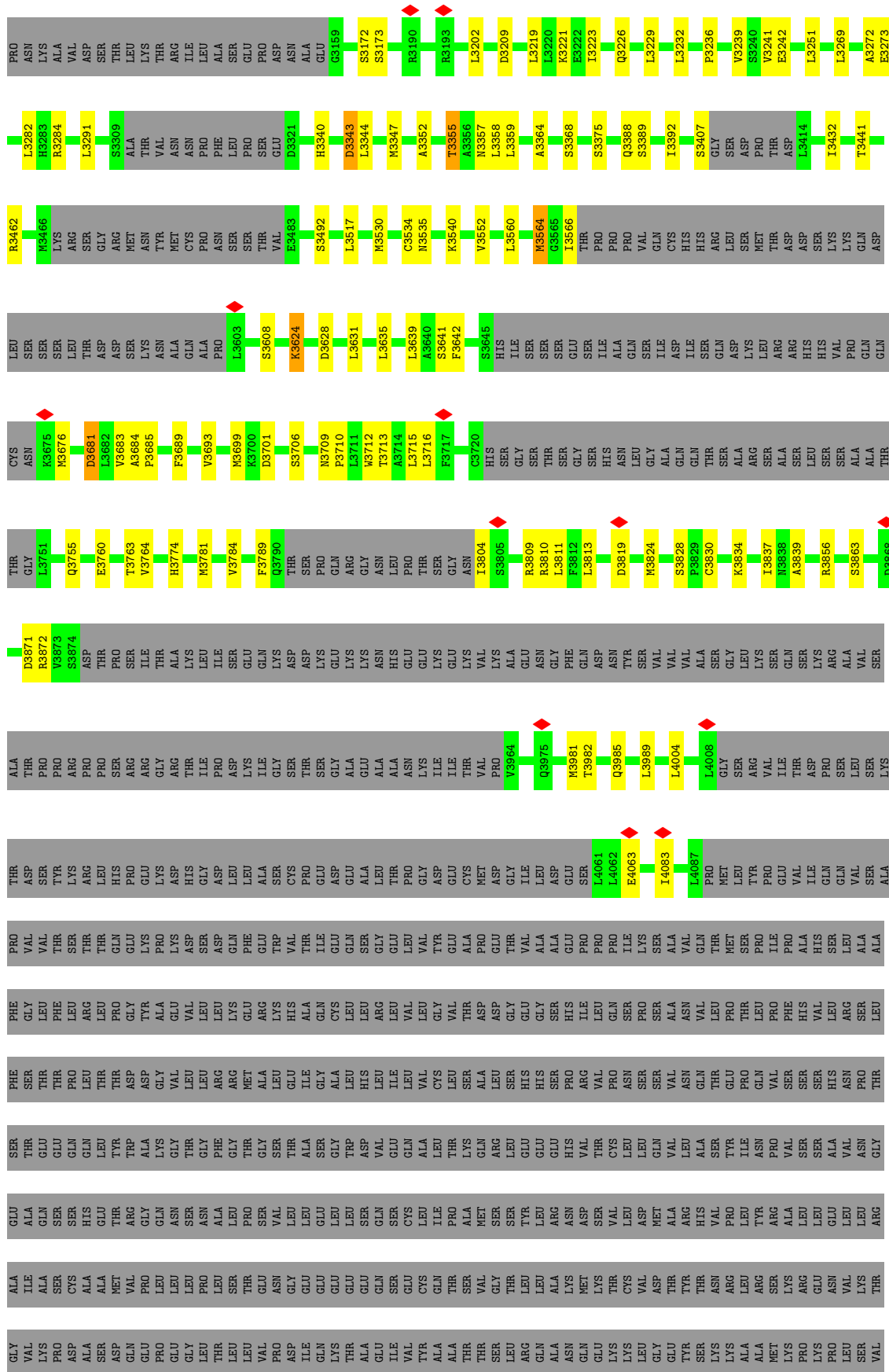
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Chain	Residue	Modelled	Actual	Comment	Reference
A	-4	LYS	-	expression tag	UNP Q9NR09
A	-3	ALA	-	expression tag	UNP Q9NR09
A	-2	GLY	-	expression tag	UNP Q9NR09
A	-1	LEU	-	expression tag	UNP Q9NR09
A	0	THR	-	expression tag	UNP Q9NR09
A	1332	VAL	LEU	conflict	UNP Q9NR09
B	-30	MET	-	expression tag	UNP Q9NR09
B	-29	ASP	-	expression tag	UNP Q9NR09
B	-28	TYR	-	expression tag	UNP Q9NR09
B	-27	LYS	-	expression tag	UNP Q9NR09
B	-26	ASP	-	expression tag	UNP Q9NR09
B	-25	ASP	-	expression tag	UNP Q9NR09
B	-24	ASP	-	expression tag	UNP Q9NR09
B	-23	ASP	-	expression tag	UNP Q9NR09
B	-22	LYS	-	expression tag	UNP Q9NR09
B	-21	LEU	-	expression tag	UNP Q9NR09
B	-20	ALA	-	expression tag	UNP Q9NR09
B	-19	ALA	-	expression tag	UNP Q9NR09
B	-18	ALA	-	expression tag	UNP Q9NR09
B	-17	ASN	-	expression tag	UNP Q9NR09
B	-16	SER	-	expression tag	UNP Q9NR09
B	-15	SER	-	expression tag	UNP Q9NR09
B	-14	ILE	-	expression tag	UNP Q9NR09
B	-13	ASP	-	expression tag	UNP Q9NR09
B	-12	LEU	-	expression tag	UNP Q9NR09
B	-11	ILE	-	expression tag	UNP Q9NR09
B	-10	SER	-	expression tag	UNP Q9NR09
B	-9	THR	-	expression tag	UNP Q9NR09
B	-8	SER	-	expression tag	UNP Q9NR09
B	-7	LEU	-	expression tag	UNP Q9NR09
B	-6	TYR	-	expression tag	UNP Q9NR09
B	-5	LYS	-	expression tag	UNP Q9NR09
B	-4	LYS	-	expression tag	UNP Q9NR09
B	-3	ALA	-	expression tag	UNP Q9NR09
B	-2	GLY	-	expression tag	UNP Q9NR09
B	-1	LEU	-	expression tag	UNP Q9NR09
B	0	THR	-	expression tag	UNP Q9NR09
B	1332	VAL	LEU	conflict	UNP Q9NR09





GLN	G2894	HIS	L2575	VAL	L2329	THR	E2089	L1982	I1873	G1796
GLY	P2977	GLY	E2576	GLN	V2332	LYS	S2106	Q1953	THR	R1797
LEU	V2994	THR	Q2577	LEU	V2336	ILE	S2106	L1984	GLN	R1797
PHE	V2994	ALA	Q2578	GLU	V2336	THR	GLU	L1875	SER	P1799
ALA	V2781	ASP	A2579	THR	D2349	TRP	ILE	L1800	LEU	L1801
ASN	V2781	ASP	E2580	ASP	L2350	TYR	ASP	T1802	LEU	L1802
LEU	L2784	ILE	M2585	ASP	L2358	ASP	GLU	T1882	GLY	T1882
ILE	L2784	THR	D2592	GLU	L2358	TRP	LEU	Y1883	SER	Y1883
ARG	L2784	GLY	L2598	PRO	L2366	TYR	PRO	I1884	GLY	I1884
PRO	L2790	ASP	T2599	THR	R2366	ASP	THR	E1888	SER	E1888
ARG	Q2795	THR	M2600	HIS	T2374	ASP	ILE	S1889	SER	S1889
ASP	R2795	THR	THR	ASP	L2380	THR	THR	E1890	SER	E1890
ALA	L2796	THR	THR	ILE	L2384	THR	THR	L1891	LEU	L1891
ALA	L2797	ALA	THR	THR	L2387	ALA	ALA	K1892	GLY	K1892
ALA	L2800	PRO	SER	ALA	L2387	THR	THR	L1814	THR	L1814
MET	L2800	ASN	THR	PRO	L2394	THR	ASP	M1894	SER	M1894
VAL	L2804	THR	THR	PRO	R2394	THR	ASP	H1895	ASN	H1895
CYS	L2806	GLN	THR	LEU	L2408	THR	ASP	D1896	THR	D1896
VAL	L2807	THR	THR	GLY	E2419	THR	THR	P1897	GLY	P1897
VAL	L2811	GLN	THR	GLY	L2420	THR	THR	L1898	LYS	L1898
ILE	L2812	PRO	THR	LEU	L2420	THR	THR	L1826	GLY	L1826
GLY	L2813	GLY	THR	LYS	L2420	THR	THR	D1827	GLU	D1827
ALA	L2817	THR	THR	ASP	L2420	THR	THR	G1828	GLY	G1828
THR	L2818	ASP	THR	GLU	L2420	THR	THR	R1829	GLY	R1829
GLY	L2823	SER	THR	ILE	L2420	THR	THR	Y1830	SER	Y1830
HIS	L2823	VAL	THR	ALA	L2420	THR	THR	R1831	SER	R1831
GLU	L2826	ALA	THR	LEU	L2420	THR	THR	V1832	ASN	V1832
ASN	L2826	LEU	THR	LEU	L2420	THR	THR	Y1833	GLN	Y1833
PHE	L2826	LEU	THR	LEU	L2420	THR	THR	A1834	GLY	A1834
HIS	L2826	LEU	THR	LEU	L2420	THR	THR	T1835	ILE	T1835
GLY	L2832	LEU	THR	LEU	L2420	THR	THR	D1836	GLY	D1836
LEU	L2833	LEU	THR	LEU	L2420	THR	THR	I1837	GLY	I1837
THR	L2833	LEU	THR	LEU	L2420	THR	THR	S1838	GLY	S1838
ALA	L2833	LEU	THR	LEU	L2420	THR	THR	T1839	GLY	T1839
ASP	L2833	LEU	THR	LEU	L2420	THR	THR	I1848	GLY	I1848
THR	L2833	LEU	THR	LEU	L2420	THR	THR	V1852	GLY	V1852
ASP	L2839	LEU	THR	LEU	L2420	THR	THR	C1853	GLY	C1853
SER	L2840	LEU	THR	LEU	L2420	THR	THR	M1856	GLY	M1856
VAL	L2840	LEU	THR	LEU	L2420	THR	THR	R1857	GLY	R1857
ASP	L2840	LEU	THR	LEU	L2420	THR	THR	I1858	GLY	I1858
ASP	L2840	LEU	THR	LEU	L2420	THR	THR	T1859	GLY	T1859
GLY	L2840	LEU	THR	LEU	L2420	THR	THR	V1860	GLY	V1860
LYS	L2840	LEU	THR	LEU	L2420	THR	THR	I1861	GLY	I1861
ASP	L2840	LEU	THR	LEU	L2420	THR	THR	G1862	GLY	G1862
GLY	L2840	LEU	THR	LEU	L2420	THR	THR	R1863	GLY	R1863
LYS	L2840	LEU	THR	LEU	L2420	THR	THR	Y1864	GLY	Y1864
ASP	L2840	LEU	THR	LEU	L2420	THR	THR	I1974	GLY	I1974
LYS	L2840	LEU	THR	LEU	L2420	THR	THR	L1978	GLY	L1978
ASP	L2840	LEU	THR	LEU	L2420	THR	THR	S1866	GLY	S1866
GLY	L2840	LEU	THR	LEU	L2420	THR	THR	T1867	GLY	T1867
LYS	L2840	LEU	THR	LEU	L2420	THR	THR	R1868	GLY	R1868
ASP	L2840	LEU	THR	LEU	L2420	THR	THR	A1869	GLY	A1869
GLY	L2840	LEU	THR	LEU	L2420	THR	THR	R1870	GLY	R1870
ASN	L2840	LEU	THR	LEU	L2420	THR	THR	A1871	GLY	A1871
GLY	L2840	LEU	THR	LEU	L2420	THR	THR	K1872	GLY	K1872













LEU ARG  
VAL ASN  
TYR GLN  
HIS ALA  
GLU ASP  
THR ASN  
MET GLN  
SER GLU  
GLN LYS  
LYS LYS  
GLY LEU  
GLY ASN  
GLY ASN  
GLU ALA  
TYR ASN  
SER SER

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

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

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

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

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

PHE  
GLN  
LEU

## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C2	Depositor
Number of particles used	1116481	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	52.5	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	105000	Depositor
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	4.697	Depositor
Minimum map value	-2.490	Depositor
Average map value	-0.002	Depositor
Map value standard deviation	0.093	Depositor
Recommended contour level	0.481	Depositor
Map size ( $\text{\AA}$ )	422.4, 422.4, 422.4	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	0.88, 0.88, 0.88	Depositor

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

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	0.25	0/15822	0.47	0/21477
1	B	0.25	0/15822	0.47	0/21477
All	All	0.25	0/31644	0.47	0/42954

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	15449	15781	15692	203	0
1	B	15449	15781	15692	194	0
All	All	30898	31562	31384	384	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 6.

All (384) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2083:VAL:HG22	1:A:2124:ILE:HG23	1.57	0.87
1:A:3981:MET:O	1:A:3982:THR:OG1	1.97	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3981:MET:O	1:B:3982:THR:OG1	1.97	0.81
1:B:1504:ASP:O	1:B:1981:GLN:NE2	2.17	0.78
1:A:1797:ARG:NH2	1:A:1882:THR:O	2.19	0.75
1:B:1461:GLU:N	1:B:1461:GLU:OE2	2.21	0.73
1:A:1329:GLU:OE2	1:A:1333:ASN:ND2	2.21	0.73
1:A:2079:GLY:O	1:A:2083:VAL:HG23	1.89	0.72
1:B:1329:GLU:OE2	1:B:1333:ASN:ND2	2.23	0.72
1:A:3242:GLU:OE2	1:B:2784:THR:OG1	2.06	0.71
1:B:2781:VAL:HG13	1:B:2832:PRO:HB3	1.73	0.71
1:B:2336:VAL:HG23	1:B:2358:LEU:HD11	1.73	0.70
1:A:1799:ILE:HD12	1:A:1799:ILE:O	1.92	0.69
1:A:1461:GLU:OE2	1:A:1461:GLU:N	2.23	0.69
1:B:2384:LEU:HD12	1:B:2642[A]:CYS:SG	2.32	0.69
1:A:1504:ASP:O	1:A:1981:GLN:NE2	2.26	0.69
1:A:2781:VAL:HG13	1:A:2832:PRO:HB3	1.74	0.69
1:A:2784:THR:OG1	1:B:3242:GLU:OE2	2.07	0.69
1:B:1799:ILE:HD12	1:B:1799:ILE:O	1.93	0.69
1:A:2336:VAL:HG23	1:A:2358:LEU:HD11	1.74	0.69
1:A:2384:LEU:HD12	1:A:2642[A]:CYS:SG	2.33	0.69
1:B:2083:VAL:HG22	1:B:2124:ILE:HG23	1.76	0.68
1:A:3819:ASP:OD2	1:A:3863:SER:OG	2.09	0.67
1:B:2079:GLY:O	1:B:2083:VAL:HG23	1.96	0.66
1:A:3172:SER:OG	1:A:3209:ASP:OD2	2.08	0.65
1:B:1403:LYS:HG3	1:B:1848:ILE:HD12	1.79	0.65
1:A:2106:SER:OG	1:A:2164:ASP:OD1	2.14	0.65
1:A:3236:PRO:HB3	1:A:3291:LEU:HD11	1.80	0.64
1:B:3535:ASN:O	1:B:3540:LYS:NZ	2.30	0.64
1:B:3236:PRO:HB3	1:B:3291:LEU:HD11	1.80	0.64
1:B:3819:ASP:OD2	1:B:3863:SER:OG	2.09	0.63
1:A:1575:ASP:OD2	1:A:1789:ARG:NH2	2.31	0.63
1:B:1958:ARG:O	1:B:1958:ARG:NE	2.25	0.63
1:B:1093:LEU:HD21	1:B:1301:VAL:HG11	1.80	0.63
1:A:1403:LYS:HG3	1:A:1848:ILE:HD12	1.80	0.62
1:A:1105:ASP:OD2	1:A:1304:ARG:NH1	2.31	0.62
1:A:2336:VAL:CG2	1:A:2358:LEU:HD11	2.29	0.62
1:A:1093:LEU:HD21	1:A:1301:VAL:HG11	1.81	0.62
1:B:2106:SER:OG	1:B:2164:ASP:OD1	2.17	0.61
1:B:2872:THR:HG22	1:B:3000:LEU:CD1	2.30	0.61
1:B:1925:GLN:HG2	1:B:1984:LEU:HD21	1.83	0.61
1:A:1925:GLN:HG2	1:A:1984:LEU:HD21	1.83	0.61
1:B:2876:LYS:NZ	1:B:3273:GLU:OE2	2.34	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3352:ALA:O	1:B:3355:THR:HG22	2.00	0.61
1:A:3352:ALA:O	1:A:3355:THR:HG22	2.00	0.61
1:B:2336:VAL:CG2	1:B:2358:LEU:HD11	2.30	0.60
1:B:1105:ASP:OD2	1:B:1304:ARG:NH1	2.32	0.60
1:B:3837:ILE:HG22	1:B:3839:ALA:H	1.67	0.60
1:A:1958:ARG:O	1:A:1958:ARG:NE	2.25	0.60
1:B:2804:CYS:SG	1:B:2807:ILE:HG23	2.41	0.60
1:A:3221:LYS:HE2	1:A:3272:ALA:HB2	1.84	0.60
1:A:2876:LYS:NZ	1:A:3273:GLU:OE2	2.34	0.59
1:A:2804:CYS:SG	1:A:2807:ILE:HG23	2.42	0.59
1:B:2891:ALA:O	1:B:3031:SER:OG	2.17	0.59
1:A:2872:THR:HG22	1:A:3000:LEU:CD1	2.32	0.59
1:B:3530:MET:HE3	1:B:3530:MET:HA	1.85	0.59
1:A:2349:ASP:OD1	1:A:2350:LEU:N	2.36	0.59
1:B:2349:ASP:OD1	1:B:2350:LEU:N	2.35	0.59
1:A:2762:LEU:HD12	1:A:2811:PHE:HZ	1.67	0.59
1:B:3221:LYS:HE2	1:B:3272:ALA:HB2	1.84	0.59
1:A:3269:LEU:HD23	1:A:3273:GLU:HG3	1.85	0.59
1:B:3269:LEU:HD23	1:B:3273:GLU:HG3	1.85	0.59
1:B:4063:GLU:OE1	1:B:4063:GLU:N	2.31	0.59
1:B:3388:GLN:HG3	1:B:3392[B]:ILE:HD11	1.85	0.58
1:A:3624:LYS:NZ	1:A:3628:ASP:OD2	2.34	0.58
1:A:3388:GLN:HG3	1:A:3392[B]:ILE:HD11	1.85	0.58
1:B:3108:CYS:HB3	1:B:3355:THR:HG21	1.85	0.58
1:B:3202:LEU:O	1:B:3284:ARG:NH2	2.35	0.58
1:B:1093:LEU:HD23	1:B:1303:ILE:HD11	1.86	0.58
1:B:2914:THR:HG23	1:B:2917:GLN:H	1.69	0.58
1:A:3530:MET:HE3	1:A:3530:MET:HA	1.85	0.58
1:B:2762:LEU:HD12	1:B:2811:PHE:HZ	1.67	0.57
1:A:1557:LEU:HB3	1:A:1560:LEU:HD21	1.87	0.57
1:A:3202:LEU:O	1:A:3284:ARG:NH2	2.37	0.57
1:B:1849:PRO:O	1:B:2570:ARG:NH1	2.37	0.57
1:A:2914:THR:HG23	1:A:2917:GLN:H	1.68	0.56
1:B:3639:LEU:HD11	1:B:3683:VAL:HG13	1.87	0.56
1:A:3108:CYS:HB3	1:A:3355:THR:HG21	1.85	0.56
1:A:1093:LEU:HD23	1:A:1303:ILE:HD11	1.88	0.56
1:B:1575:ASP:OD2	1:B:1789:ARG:NH2	2.37	0.56
1:A:2013:ASP:OD1	1:A:2013:ASP:N	2.39	0.56
1:A:2868:HIS:O	1:A:2872:THR:HG23	2.06	0.56
1:A:2998:LEU:HD22	1:A:3040:LEU:HD12	1.89	0.55
1:A:1463:LEU:HD22	1:A:2037:LEU:HD23	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1441:ALA:HB2	1:A:2014:LEU:HD23	1.89	0.55
1:B:1797:ARG:NH2	1:B:1882:THR:O	2.39	0.55
1:B:2998:LEU:HD22	1:B:3040:LEU:HD12	1.88	0.55
1:A:3534:CYS:HG	1:A:3608:SER:HG	1.53	0.55
1:B:2868:HIS:O	1:B:2872:THR:HG23	2.07	0.55
1:A:3689:PHE:O	1:A:3693:VAL:HG22	2.07	0.55
1:A:3639:LEU:HD11	1:A:3683:VAL:HG13	1.89	0.54
1:B:3344:LEU:HD22	1:B:3347:MET:HE2	1.88	0.54
1:B:3357:ASN:OD1	1:B:3407:SER:N	2.39	0.54
1:A:2930:VAL:HG12	1:A:2984:VAL:HG21	1.89	0.54
1:A:4063:GLU:OE1	1:A:4063:GLU:N	2.32	0.54
1:A:1385:LEU:HD11	1:A:1408:LEU:HD11	1.89	0.54
1:B:1406:ARG:NH2	1:B:2580:GLU:OE1	2.40	0.54
1:B:1484:ARG:NH1	1:B:2018:SER:O	2.41	0.54
1:B:2325:HIS:N	1:B:2326:GLU:OE1	2.40	0.54
1:A:3074[A]:THR:HG21	1:A:3114:SER:HB3	1.90	0.54
1:A:3357:ASN:OD1	1:A:3407:SER:N	2.39	0.54
1:A:3813:LEU:HD13	1:B:1930:LEU:HD11	1.88	0.53
1:B:2930:VAL:HG12	1:B:2984:VAL:HG21	1.89	0.53
1:A:1484:ARG:NH1	1:A:2018:SER:O	2.41	0.53
1:A:1406:ARG:NH2	1:A:2580:GLU:OE1	2.42	0.53
1:B:3624:LYS:NZ	1:B:3628:ASP:OD2	2.35	0.53
1:B:1946:PRO:O	1:B:1952:ASN:ND2	2.33	0.53
1:A:1930:LEU:HD11	1:B:3813:LEU:HD13	1.89	0.53
1:A:2707:VAL:O	1:A:2711:TYR:N	2.42	0.53
1:A:1471:ALA:O	1:A:1475:THR:HG23	2.09	0.53
1:A:2325:HIS:N	1:A:2326:GLU:OE1	2.42	0.53
1:B:2336:VAL:HG21	1:B:2374:ILE:CG2	2.39	0.52
1:B:2707:VAL:O	1:B:2711:TYR:N	2.42	0.52
1:B:3074[A]:THR:HG21	1:B:3114:SER:HB3	1.91	0.52
1:B:3789:PHE:CE1	1:B:4083:ILE:HD11	2.45	0.52
1:B:3635:LEU:HD23	1:B:3676:MET:HE1	1.92	0.52
1:A:3804:ILE:HD11	1:A:3809:ARG:HA	1.90	0.52
1:B:3090:ASP:O	1:B:3340:HIS:NE2	2.40	0.52
1:B:3344:LEU:HD22	1:B:3347:MET:CE	2.39	0.52
1:B:3804:ILE:HD11	1:B:3809:ARG:HA	1.91	0.52
1:A:3096:LYS:HE2	1:A:3344:LEU:HD21	1.92	0.52
1:B:1471:ALA:O	1:B:1475:THR:HG23	2.08	0.52
1:A:3359:LEU:HD11	1:A:3392[A]:ILE:HG23	1.92	0.51
1:B:1193:ASP:OD1	1:B:1194:LEU:N	2.41	0.51
1:B:3693:VAL:HG23	1:B:3699:MET:HG2	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1408:LEU:HD12	1:A:1428:LEU:HD13	1.93	0.51
1:A:3642:PHE:CE2	1:A:3683:VAL:HG21	2.45	0.51
1:B:2120:LEU:O	1:B:2124:ILE:HG12	2.10	0.51
1:A:2326:GLU:OE1	1:A:2326:GLU:N	2.43	0.51
1:A:3715:LEU:HD13	1:A:3763:THR:HG23	1.93	0.51
1:A:2336:VAL:HG21	1:A:2374:ILE:CG2	2.41	0.51
1:A:3837:ILE:HG22	1:A:3839:ALA:H	1.76	0.51
1:A:3344:LEU:HD22	1:A:3347:MET:CE	2.41	0.51
1:A:3535:ASN:O	1:A:3540:LYS:NZ	2.29	0.51
1:B:1441:ALA:HB2	1:B:2014:LEU:HD23	1.93	0.51
1:A:2325:HIS:NE2	1:A:2329:ILE:HD11	2.26	0.50
1:B:3359:LEU:HD11	1:B:3392[A]:ILE:HG23	1.92	0.50
1:B:3642:PHE:CE2	1:B:3683:VAL:HG21	2.46	0.50
1:A:3344:LEU:HD22	1:A:3347:MET:HE2	1.93	0.50
1:B:1402:HIS:HB3	1:B:1848:ILE:HD11	1.93	0.50
1:B:1403:LYS:CG	1:B:1848:ILE:HD12	2.42	0.50
1:A:2692:PRO:HG3	1:A:2728:LEU:HB3	1.94	0.50
1:B:1501:SER:OG	1:B:2024:ARG:NH2	2.44	0.50
1:A:1314:GLU:OE1	1:A:1318:ARG:NH2	2.43	0.50
1:A:1485:LEU:HD22	1:A:2069:SER:HB2	1.92	0.50
1:B:3359:LEU:HD11	1:B:3392[A]:ILE:CG2	2.42	0.50
1:B:3701:ASP:OD1	1:B:3774:HIS:NE2	2.40	0.50
1:A:2380:LEU:HD23	1:A:2642[B]:CYS:SG	2.51	0.50
1:A:3090:ASP:O	1:A:3340:HIS:NE2	2.40	0.50
1:B:1485:LEU:HD22	1:B:2069:SER:HB2	1.92	0.50
1:B:2692:PRO:HG3	1:B:2728:LEU:HB3	1.93	0.50
1:A:2049:VAL:HG22	1:A:2050:LEU:H	1.77	0.49
1:A:3359:LEU:HD11	1:A:3392[A]:ILE:CG2	2.42	0.49
1:B:3355:THR:HG23	1:B:3358:LEU:HB2	1.93	0.49
1:A:3074[A]:THR:HG23	1:B:2394:ARG:HH2	1.77	0.49
1:A:1093:LEU:CD2	1:A:1301:VAL:HG11	2.43	0.49
1:B:2049:VAL:HG22	1:B:2050:LEU:H	1.77	0.49
1:A:3355:THR:HG23	1:A:3358:LEU:HB2	1.94	0.49
1:B:3096:LYS:HE2	1:B:3344:LEU:HD21	1.94	0.49
1:A:1510:LEU:HD22	1:A:1982:LEU:HD11	1.94	0.49
1:B:1477:VAL:HG13	1:B:2023:LEU:HD22	1.94	0.49
1:B:3389:SER:HB3	1:B:3392[B]:ILE:HD13	1.95	0.49
1:A:3701:ASP:OD1	1:A:3774:HIS:NE2	2.39	0.49
1:B:1510:LEU:HD22	1:B:1982:LEU:HD11	1.94	0.49
1:B:2080:LEU:HD12	1:B:2598:LEU:HD22	1.94	0.49
1:B:3824:MET:SD	1:B:4004:LEU:HD12	2.52	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1092:GLU:OE2	1:A:1094:VAL:HG23	2.12	0.49
1:A:1404:CYS:O	1:A:1408:LEU:HD23	2.12	0.49
1:A:3789:PHE:CE2	1:A:4083:ILE:HD11	2.48	0.49
1:A:1867:THR:HG22	1:A:1867:THR:O	2.13	0.49
1:A:2763:VAL:HG21	1:A:2818:ILE:HG21	1.95	0.49
1:A:1477:VAL:HG13	1:A:2023:LEU:HD22	1.95	0.48
1:A:2394:ARG:HH22	1:B:3074[A]:THR:HG23	1.78	0.48
1:A:3389:SER:HB3	1:A:3392[B]:ILE:HD13	1.95	0.48
1:B:2763:VAL:HG21	1:B:2818:ILE:HG21	1.95	0.48
1:A:1501:SER:OG	1:A:2024:ARG:NH2	2.47	0.48
1:B:2326:GLU:OE1	1:B:2326:GLU:N	2.44	0.48
1:B:3689:PHE:O	1:B:3693:VAL:HG22	2.13	0.48
1:B:1449:TYR:CD1	1:B:1558:THR:HG21	2.48	0.48
1:B:1867:THR:O	1:B:1867:THR:HG22	2.14	0.48
1:A:2762:LEU:HD12	1:A:2811:PHE:CZ	2.49	0.48
1:A:3229:LEU:HD22	1:A:3229:LEU:H	1.78	0.48
1:B:1092:GLU:OE2	1:B:1094:VAL:HG23	2.12	0.48
1:A:2384:LEU:HD22	1:A:2663:LEU:HD21	1.96	0.48
1:A:2833:LEU:HD21	1:A:2914:THR:C	2.34	0.48
1:A:3635:LEU:HD23	1:A:3676:MET:HE1	1.96	0.48
1:A:3824:MET:SD	1:A:4004:LEU:HD12	2.53	0.47
1:B:1314:GLU:OE1	1:B:1318:ARG:NH2	2.45	0.47
1:B:3229:LEU:HD12	1:B:3229:LEU:H	1.79	0.47
1:A:1436:MET:HG3	1:A:1473:LEU:HD22	1.95	0.47
1:B:1337:ARG:NE	1:B:1349:GLN:OE1	2.47	0.47
1:B:1428:LEU:HD23	1:B:1458:VAL:HG11	1.96	0.47
1:B:1981:GLN:O	1:B:1985:ASN:ND2	2.47	0.47
1:B:2180:ASP:OD1	1:B:2181:TYR:N	2.47	0.47
1:A:3811:LEU:C	1:A:3811:LEU:HD23	2.34	0.47
1:B:2833:LEU:HD21	1:B:2914:THR:C	2.35	0.47
1:B:2762:LEU:HD12	1:B:2811:PHE:CZ	2.49	0.47
1:A:2419:GLU:OE2	1:A:2635:SER:OG	2.27	0.47
1:B:1801:LEU:HD11	1:B:1804:VAL:HG23	1.97	0.47
1:B:2384:LEU:HD22	1:B:2663:LEU:HD21	1.96	0.47
1:B:2870:TYR:OH	1:B:2916:ASP:OD1	2.18	0.47
1:B:3715:LEU:HD13	1:B:3763:THR:HG23	1.96	0.47
1:B:2167:MET:HE2	1:B:2171:VAL:HG23	1.96	0.47
1:B:2804:CYS:SG	1:B:2806:GLN:NE2	2.88	0.47
1:A:2180:ASP:OD1	1:A:2181:TYR:N	2.47	0.47
1:B:3517:LEU:HD12	1:B:3552:VAL:HG11	1.97	0.47
1:A:2138:LEU:HD12	1:A:2178:LEU:HD12	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3560:LEU:O	1:A:3564:MET:HG3	2.15	0.47
1:B:3811:LEU:C	1:B:3811:LEU:HD23	2.35	0.47
1:A:1390:ARG:HB2	1:A:1390:ARG:NH1	2.30	0.46
1:A:1801:LEU:HD11	1:A:1804:VAL:HG23	1.96	0.46
1:A:1992:GLN:O	1:A:1996:VAL:HG23	2.16	0.46
1:A:3219:LEU:HG	1:A:3272:ALA:HB1	1.97	0.46
1:B:2138:LEU:HD12	1:B:2178:LEU:HD12	1.96	0.46
1:A:2080:LEU:HD12	1:A:2598:LEU:HD22	1.98	0.46
1:A:3517:LEU:HD12	1:A:3552:VAL:HG11	1.98	0.46
1:B:2336:VAL:HG21	1:B:2374:ILE:HG22	1.96	0.46
1:A:1946:PRO:O	1:A:1952:ASN:ND2	2.39	0.46
1:A:3716:LEU:HD12	1:A:3784:VAL:HG12	1.97	0.46
1:B:1018:THR:HG22	1:B:1019:LEU:N	2.31	0.46
1:B:2325:HIS:NE2	1:B:2329:ILE:HD11	2.31	0.46
1:A:1402:HIS:HB3	1:A:1848:ILE:HD11	1.97	0.46
1:A:3828:SER:OG	1:A:3830:CYS:O	2.28	0.45
1:A:1566:LEU:HD13	1:A:1799:ILE:HD13	1.96	0.45
1:A:2891:ALA:O	1:A:3031:SER:OG	2.23	0.45
1:A:3566:ILE:HG12	1:A:3631:LEU:HD13	1.97	0.45
1:B:2705:LEU:HD11	1:B:2752:LEU:HD23	1.98	0.45
1:B:1093:LEU:CD2	1:B:1301:VAL:HG11	2.44	0.45
1:A:2394:ARG:NH2	1:B:3074[A]:THR:HG23	2.32	0.45
1:A:3123:ARG:O	1:B:1954:GLN:NE2	2.50	0.45
1:B:3219:LEU:HG	1:B:3272:ALA:HB1	1.97	0.45
1:A:2083:VAL:HG21	1:A:2124:ILE:HD12	1.99	0.45
1:B:2840:LEU:HD11	1:B:2922:LEU:HD23	1.99	0.45
1:B:3684:ALA:HB3	1:B:3685:PRO:HD3	1.99	0.45
1:A:1981:GLN:O	1:A:1985:ASN:ND2	2.50	0.45
1:A:2083:VAL:CG2	1:A:2124:ILE:HD12	2.47	0.45
1:A:2705:LEU:HD11	1:A:2752:LEU:HD23	1.99	0.45
1:A:2046:VAL:N	1:A:2047:PRO:CD	2.80	0.45
1:A:2336:VAL:HG21	1:A:2374:ILE:HG22	1.99	0.45
1:A:3834:LYS:O	1:A:3856:ARG:NH2	2.44	0.45
1:B:1013:VAL:HG13	1:B:1327:PHE:HB2	1.99	0.45
1:A:1481:LEU:HD22	1:A:2027:ILE:CD1	2.46	0.44
1:A:2120:LEU:O	1:A:2124:ILE:HG12	2.17	0.44
1:A:2840:LEU:HD11	1:A:2922:LEU:HD23	2.00	0.44
1:A:3074[A]:THR:HG23	1:B:2394:ARG:NH2	2.31	0.44
1:B:2083:VAL:CG2	1:B:2124:ILE:HD12	2.47	0.44
1:B:2391:ASP:OD1	1:B:2391:ASP:N	2.44	0.44
1:A:1393:PHE:HA	1:A:1447:SER:OG	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3566:ILE:CG1	1:A:3631:LEU:HD13	2.47	0.44
1:A:2804:CYS:SG	1:A:2806:GLN:NE2	2.90	0.44
1:A:3709:ASN:OD1	1:A:3710:PRO:HD3	2.17	0.44
1:B:1013:VAL:HG11	1:B:1324:PHE:HD2	1.82	0.44
1:B:1436:MET:HG3	1:B:1473:LEU:HD22	1.98	0.44
1:A:1459:LYS:HD3	1:A:2037:LEU:HG	2.00	0.44
1:B:2826:PHE:HB3	1:B:2866:LEU:HD21	1.99	0.44
1:A:2051:GLN:HA	1:A:2051:GLN:OE1	2.18	0.44
1:A:3226:GLN:OE1	1:A:3229:LEU:HD11	2.17	0.44
1:B:1830:ARG:HD3	1:B:1833:VAL:HG23	1.99	0.44
1:B:2692:PRO:HG2	1:B:2732:MET:HG3	1.99	0.44
1:A:1848:ILE:HD13	1:A:1848:ILE:HA	1.92	0.44
1:A:2826:PHE:HB3	1:A:2866:LEU:HD21	1.99	0.44
1:B:1023:THR:HG23	1:B:1893:LEU:HD21	2.00	0.44
1:A:1192:LEU:HD23	1:A:1198:ALA:O	2.18	0.44
1:A:1498:LEU:HD13	1:A:1974:TYR:CD1	2.53	0.44
1:A:3684:ALA:HB3	1:A:3685:PRO:HD3	1.99	0.44
1:A:1013:VAL:HG11	1:A:1324:PHE:HD2	1.83	0.43
1:A:3364:ALA:O	1:A:3368[A]:SER:OG	2.31	0.43
1:A:3709:ASN:OD1	1:A:3709:ASN:C	2.56	0.43
1:B:1463:LEU:HD22	1:B:2037:LEU:HD23	2.00	0.43
1:B:3566:ILE:HG12	1:B:3631:LEU:HD22	2.00	0.43
1:A:2692:PRO:HG2	1:A:2732:MET:HG3	1.99	0.43
1:B:1512:MET:O	1:B:1513:SER:OG	2.26	0.43
1:A:1193:ASP:OD1	1:A:1194:LEU:N	2.41	0.43
1:B:3432:ILE:HD11	1:B:3492:SER:HB3	2.00	0.43
1:A:3681:ASP:OD2	1:A:3681:ASP:N	2.52	0.43
1:A:1403:LYS:CG	1:A:1848:ILE:HD12	2.48	0.43
1:B:1940:GLN:OE1	1:B:1940:GLN:HA	2.19	0.43
1:B:3209:ASP:OD1	1:B:3209:ASP:C	2.56	0.43
1:B:3566:ILE:CG1	1:B:3631:LEU:HD13	2.49	0.43
1:A:2180:ASP:OD1	1:A:2180:ASP:C	2.56	0.43
1:B:2180:ASP:OD1	1:B:2180:ASP:C	2.56	0.43
1:B:3343:ASP:OD1	1:B:3343:ASP:N	2.51	0.43
1:A:1459:LYS:O	1:A:1463:LEU:HD23	2.18	0.43
1:A:1962:LYS:HG3	1:B:3837:ILE:HD11	2.01	0.43
1:A:3432:ILE:HD11	1:A:3492:SER:HB3	2.01	0.43
1:B:1974:TYR:O	1:B:1978:ILE:HG12	2.19	0.43
1:B:3560:LEU:O	1:B:3564:MET:HG3	2.19	0.43
1:A:2079:GLY:HA3	1:A:2120:LEU:HD11	2.01	0.43
1:A:3709:ASN:N	1:A:3710:PRO:CD	2.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1345:THR:HG22	1:B:1346:GLU:N	2.34	0.43
1:B:1498:LEU:HD13	1:B:1974:TYR:CD1	2.54	0.43
1:B:3709:ASN:C	1:B:3709:ASN:OD1	2.57	0.43
1:A:1512:MET:O	1:A:1513:SER:OG	2.26	0.43
1:A:2766:LEU:CD1	1:A:2839:LEU:HD22	2.49	0.43
1:A:3760:GLU:O	1:A:3764:VAL:HG23	2.19	0.43
1:A:1974:TYR:O	1:A:1978:ILE:HG12	2.19	0.42
1:A:2685:LEU:HD12	1:A:2686:TYR:N	2.34	0.42
1:A:3343:ASP:OD2	1:A:3343:ASP:N	2.51	0.42
1:A:3985:GLN:O	1:A:3989:LEU:HG	2.19	0.42
1:B:2685:LEU:HD12	1:B:2686:TYR:N	2.34	0.42
1:B:2766:LEU:CD1	1:B:2839:LEU:HD22	2.49	0.42
1:B:3239:VAL:HG22	1:B:3282:LEU:HD23	2.01	0.42
1:A:3251:LEU:HD21	1:B:2721:LEU:HD21	2.01	0.42
1:B:2813:LEU:HD12	1:B:2851:VAL:HG11	2.01	0.42
1:B:3355:THR:CG2	1:B:3358:LEU:HD22	2.48	0.42
1:A:1054:GLN:NE2	1:A:1298:GLU:OE2	2.52	0.42
1:A:1346:GLU:HG3	1:A:1996:VAL:HG13	2.00	0.42
1:B:1557:LEU:HB3	1:B:1560:LEU:HD21	2.00	0.42
1:B:2734:LEU:HD13	1:B:2748[A]:THR:HG22	2.00	0.42
1:B:3709:ASN:OD1	1:B:3710:PRO:HD3	2.20	0.42
1:B:2046:VAL:N	1:B:2047:PRO:CD	2.82	0.42
1:B:2790:GLN:HG3	1:B:2838:LYS:HD2	2.01	0.42
1:B:3712:TRP:HZ3	1:B:3781:MET:HB2	1.85	0.42
1:A:3713:THR:HG22	1:A:3784:VAL:HG13	2.01	0.42
1:B:1481:LEU:HD13	1:B:2027:ILE:HD12	2.02	0.42
1:A:2167:MET:HE2	1:A:2171:VAL:HG23	2.01	0.42
1:A:2790:GLN:HG3	1:A:2838:LYS:HD2	2.00	0.42
1:A:3355:THR:CG2	1:A:3358:LEU:HD22	2.49	0.42
1:A:3239:VAL:HG22	1:A:3282:LEU:HD23	2.01	0.42
1:A:3681:ASP:OD2	1:A:3755:GLN:NE2	2.53	0.42
1:B:1914:LEU:HD23	1:B:1914:LEU:C	2.40	0.42
1:B:3709:ASN:N	1:B:3710:PRO:CD	2.83	0.42
1:A:1830:ARG:HD3	1:A:1833:VAL:HG23	2.00	0.42
1:A:1914:LEU:C	1:A:1914:LEU:HD23	2.40	0.42
1:B:3223:ILE:CD1	1:B:3241:VAL:HG11	2.49	0.42
1:B:3760:GLU:O	1:B:3764:VAL:HG23	2.19	0.42
1:A:2332:VAL:HG13	1:A:2358:LEU:CD2	2.50	0.42
1:A:1398:ARG:NH2	1:A:1803:ASP:OD2	2.45	0.41
1:A:2813:LEU:HD12	1:A:2851:VAL:HG11	2.01	0.41
1:A:3872:ARG:HG3	1:A:3872:ARG:HH11	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1459:LYS:O	1:B:1463:LEU:HD23	2.20	0.41
1:A:2327:ARG:HD2	1:A:2328:CYS:N	2.35	0.41
1:A:3223:ILE:CD1	1:A:3241:VAL:HG11	2.50	0.41
1:B:1481:LEU:HD11	1:B:2024:ARG:HG2	2.02	0.41
1:A:2727:THR:HG23	1:A:2795:ARG:HG3	2.01	0.41
1:B:1477:VAL:HG12	1:B:2027:ILE:HD11	2.02	0.41
1:B:1832:VAL:HG23	1:B:2567:LEU:O	2.20	0.41
1:A:1790:PHE:CD1	1:A:1790:PHE:C	2.93	0.41
1:A:3712:TRP:HZ3	1:A:3781:MET:HB2	1.86	0.41
1:B:1820:TRP:HB3	1:B:1828:GLY:HA2	2.03	0.41
1:B:2727:THR:HG23	1:B:2795:ARG:HG3	2.01	0.41
1:B:2753[B]:VAL:HG21	1:B:2800:LEU:HD11	2.03	0.41
1:A:2200:GLN:OE1	1:A:2200:GLN:N	2.33	0.41
1:A:2753[B]:VAL:HG21	1:A:2800:LEU:HD11	2.03	0.41
1:A:2049:VAL:O	1:A:2050:LEU:HB2	2.20	0.41
1:A:2721:LEU:HD21	1:B:3251:LEU:HD21	2.02	0.41
1:B:2332:VAL:HG13	1:B:2358:LEU:CD2	2.51	0.41
1:A:1345:THR:HG22	1:A:1346:GLU:N	2.36	0.41
1:A:1402:HIS:CG	1:A:1848:ILE:HD11	2.56	0.41
1:B:1393:PHE:HA	1:B:1447:SER:OG	2.21	0.41
1:B:1398:ARG:NH2	1:B:1803:ASP:OD2	2.47	0.41
1:B:1566:LEU:HD13	1:B:1799:ILE:HD13	2.03	0.41
1:B:2387:LEU:HD21	1:B:2408:LEU:HB2	2.02	0.41
1:B:3108:CYS:CB	1:B:3355:THR:HG21	2.51	0.41
1:B:3111:MET:HE2	1:B:3331:LEU:HA	2.01	0.41
1:B:3711:LEU:HD22	1:B:3711:LEU:O	2.21	0.41
1:A:1852:VAL:CG1	1:A:1884:ILE:HD13	2.51	0.41
1:A:2387:LEU:HD21	1:A:2408:LEU:HB2	2.02	0.41
1:B:1054:GLN:NE2	1:B:1298:GLU:OE2	2.54	0.41
1:B:1498:LEU:HD13	1:B:1974:TYR:CG	2.56	0.41
1:B:2049:VAL:O	1:B:2050:LEU:HB2	2.20	0.41
1:A:3534:CYS:SG	1:A:3608:SER:OG	2.65	0.40
1:B:2059:CYS:SG	1:B:2082:LEU:HD22	2.61	0.40
1:A:1023:THR:HG23	1:A:1893:LEU:HD21	2.02	0.40
1:A:1103:HIS:NE2	1:A:2573:VAL:O	2.50	0.40
1:A:2059:CYS:SG	1:A:2082:LEU:HD22	2.61	0.40
1:B:1103:HIS:NE2	1:B:2573:VAL:O	2.50	0.40
1:B:1790:PHE:CD1	1:B:1790:PHE:C	2.93	0.40
1:B:1817:ILE:HB	1:B:1832:VAL:HG12	2.03	0.40
1:B:3204:GLU:OE1	1:B:3204:GLU:N	2.54	0.40
1:B:3712:TRP:N	1:B:3712:TRP:CD1	2.90	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3837:ILE:HD11	1:B:1962:LYS:HG3	2.03	0.40
1:B:2988:GLN:HA	1:B:2988:GLN:OE1	2.22	0.40
1:A:1202:THR:O	1:A:1202:THR:HG22	2.21	0.40
1:A:1385:LEU:HD23	1:A:1427:VAL:HG12	2.03	0.40
1:B:3790:GLN:HE21	1:B:4082:LEU:HD11	1.87	0.40
1:B:2843:THR:HG22	1:B:2848:PHE:HZ	1.87	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	1927/4888 (39%)	1889 (98%)	38 (2%)	0	100	100
1	B	1927/4888 (39%)	1889 (98%)	38 (2%)	0	100	100
All	All	3854/9776 (39%)	3778 (98%)	76 (2%)	0	100	100

There are no Ramachandran outliers to report.

### 5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	1766/4242 (42%)	1720 (97%)	46 (3%)	46	40
1	B	1766/4242 (42%)	1722 (98%)	44 (2%)	47	41

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	3532/8484 (42%)	3442 (98%)	90 (2%)	49 41

All (90) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1112	SER
1	A	1205	SER
1	A	1305	ARG
1	A	1308	LYS
1	A	1315	ARG
1	A	1326	GLU
1	A	1430	LYS
1	A	1511	GLU
1	A	1578	ARG
1	A	1771	GLN
1	A	1788	ARG
1	A	1794	ASP
1	A	1853	CYS
1	A	1877	PHE
1	A	1894	MET
1	A	1911	ASP
1	A	1934	ARG
1	A	1954	GLN
1	A	1958	ARG
1	A	2073	LYS
1	A	2084	GLN
1	A	2089	GLU
1	A	2137	SER
1	A	2577	GLN
1	A	2585	MET
1	A	2592	ASP
1	A	2689	ASN
1	A	2690	ARG
1	A	2795	ARG
1	A	2797	GLN
1	A	3093	ASP
1	A	3173	SER
1	A	3232	LEU
1	A	3343	ASP
1	A	3355	THR
1	A	3375	SER
1	A	3441	THR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	3462	ARG
1	A	3564	MET
1	A	3624	LYS
1	A	3641	SER
1	A	3681	ASP
1	A	3699	MET
1	A	3706	SER
1	A	3810	ARG
1	A	3871	ASP
1	B	1112	SER
1	B	1205	SER
1	B	1305	ARG
1	B	1308	LYS
1	B	1315	ARG
1	B	1326	GLU
1	B	1430	LYS
1	B	1435	ASN
1	B	1481	LEU
1	B	1578	ARG
1	B	1771	GLN
1	B	1788	ARG
1	B	1797	ARG
1	B	1894	MET
1	B	1934	ARG
1	B	1958	ARG
1	B	1996	VAL
1	B	2051	GLN
1	B	2060	GLU
1	B	2073	LYS
1	B	2089	GLU
1	B	2137	SER
1	B	2391	ASP
1	B	2577	GLN
1	B	2585	MET
1	B	2592	ASP
1	B	2690	ARG
1	B	2795	ARG
1	B	2797	GLN
1	B	3093	ASP
1	B	3229	LEU
1	B	3343	ASP
1	B	3355	THR

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Mol	Chain	Res	Type
1	B	3375	SER
1	B	3441	THR
1	B	3462	ARG
1	B	3483	GLU
1	B	3564	MET
1	B	3624	LYS
1	B	3641	SER
1	B	3681	ASP
1	B	3706	SER
1	B	3810	ARG
1	B	3836	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (6) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1223	HIS
1	A	1940	GLN
1	A	2806	GLN
1	B	1223	HIS
1	B	1981	GLN
1	B	2806	GLN

### 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](#)

There are no ligands in this entry.

## 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.

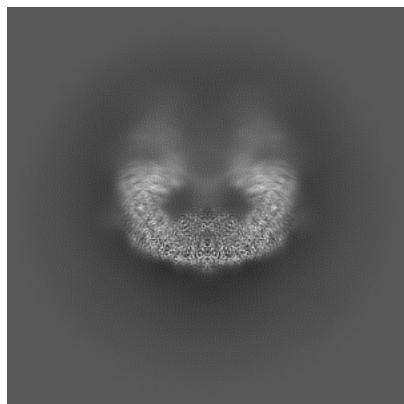
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-27832. These allow visual inspection of the internal detail of the map and identification of artifacts.

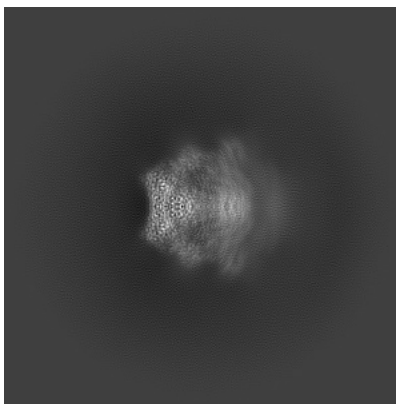
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections [i](#)

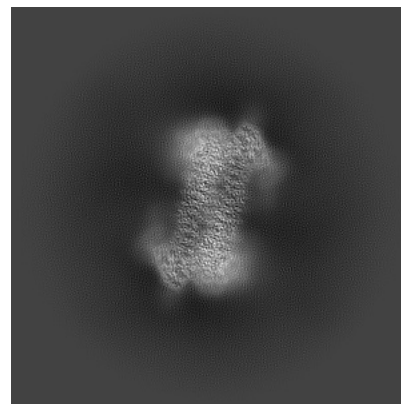
#### 6.1.1 Primary map



X

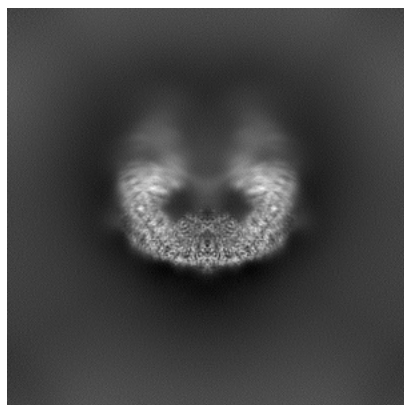


Y

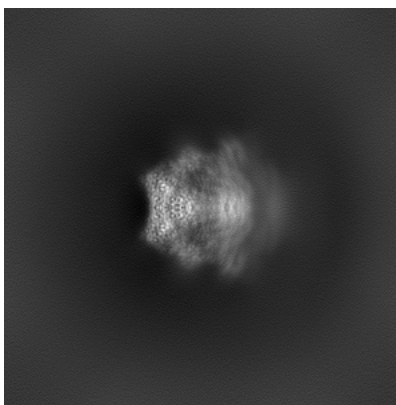


Z

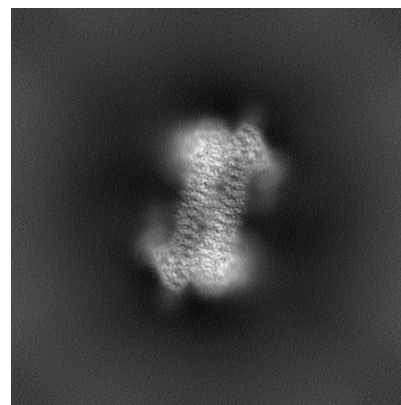
#### 6.1.2 Raw map



X



Y

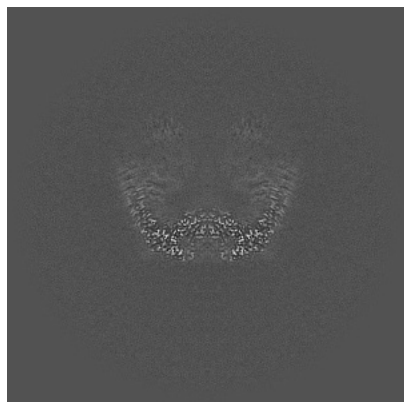


Z

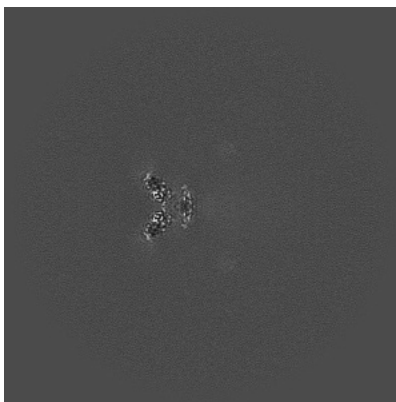
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

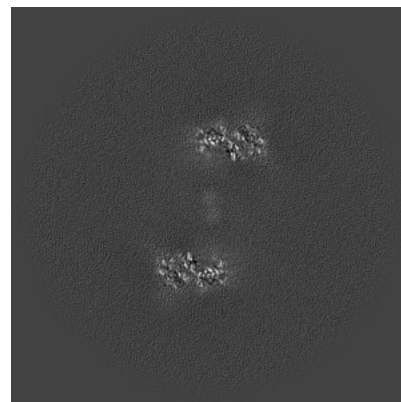
### 6.2.1 Primary map



X Index: 240

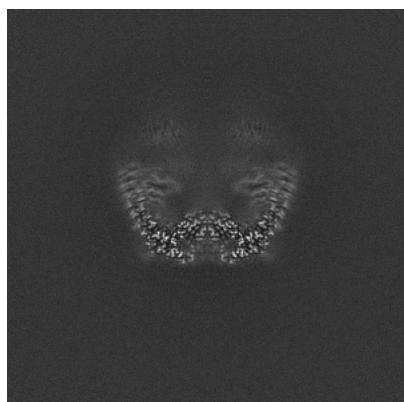


Y Index: 240

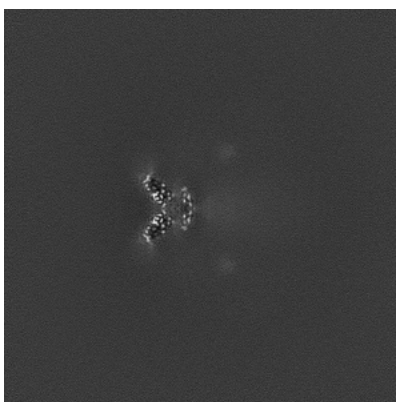


Z Index: 240

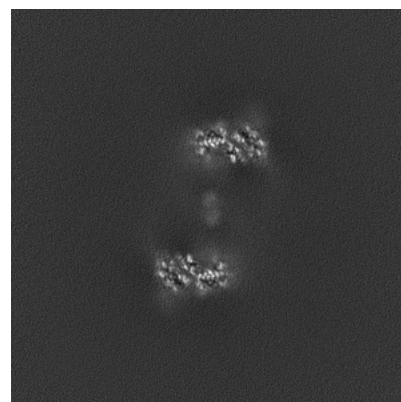
### 6.2.2 Raw map



X Index: 240



Y Index: 240

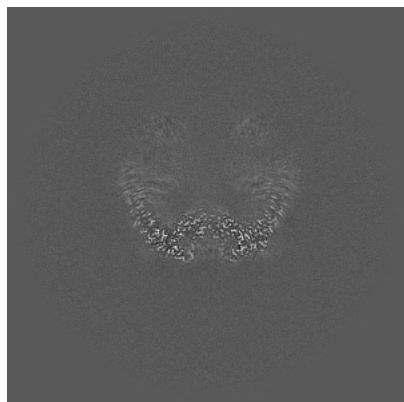


Z Index: 240

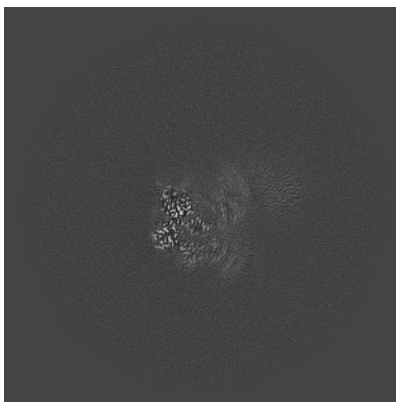
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

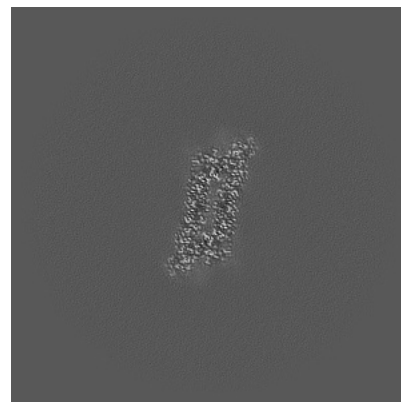
### 6.3.1 Primary map



X Index: 241

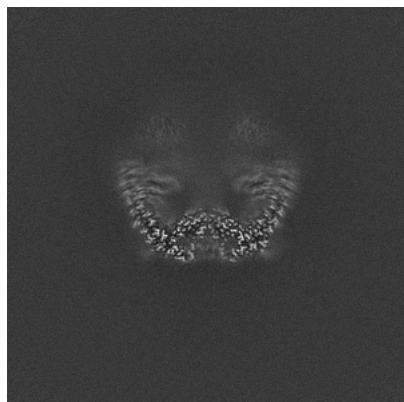


Y Index: 177

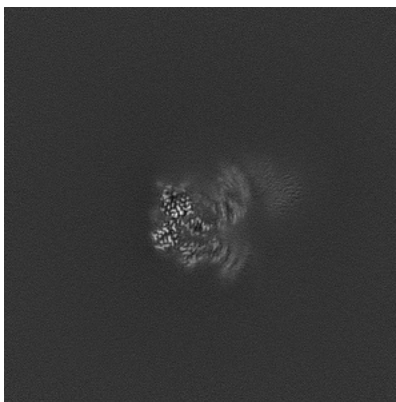


Z Index: 191

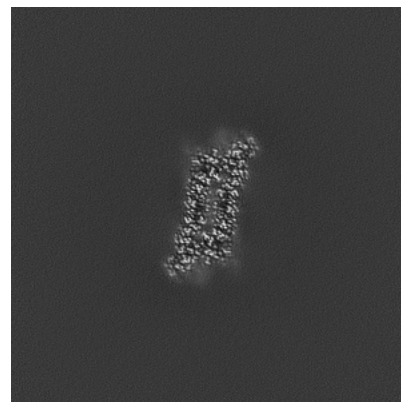
### 6.3.2 Raw map



X Index: 241



Y Index: 177



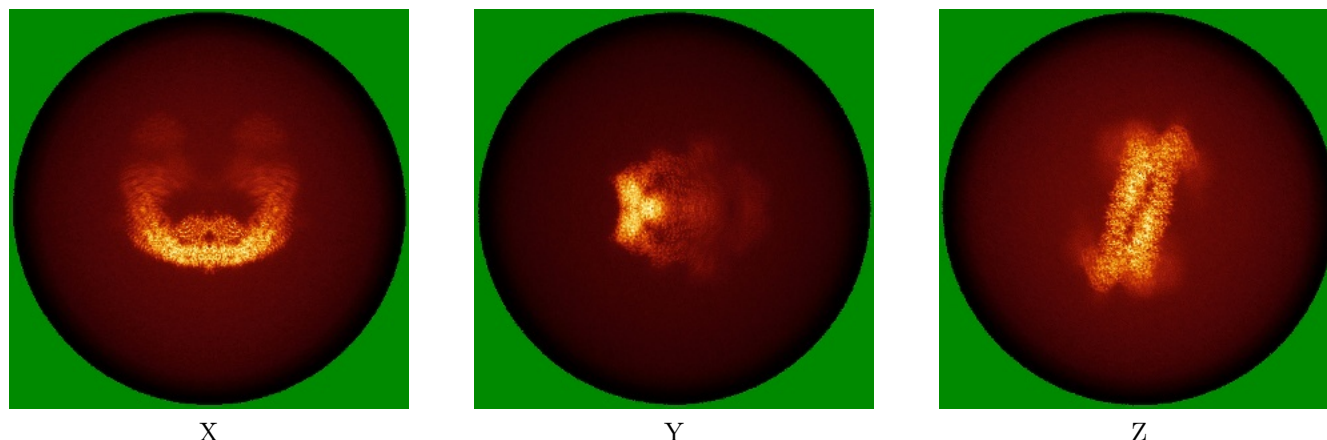
Z Index: 191

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

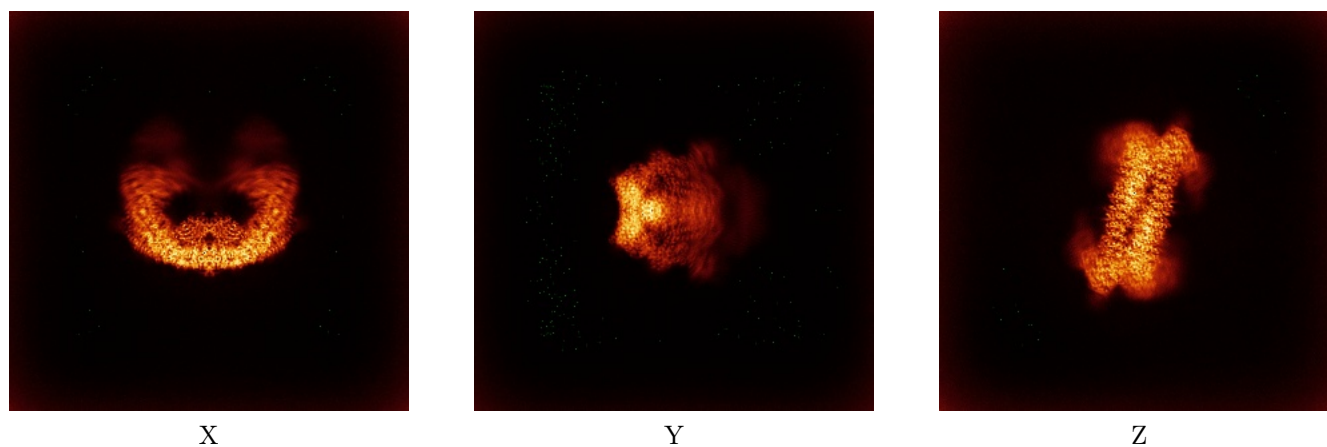


## 6.4 Orthogonal standard-deviation projections (False-color) [i](#)

### 6.4.1 Primary map



### 6.4.2 Raw map



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



X



Y



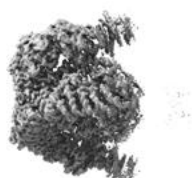
Z

The images above show the 3D surface view of the map at the recommended contour level 0.481. 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



X



Y



Z

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.

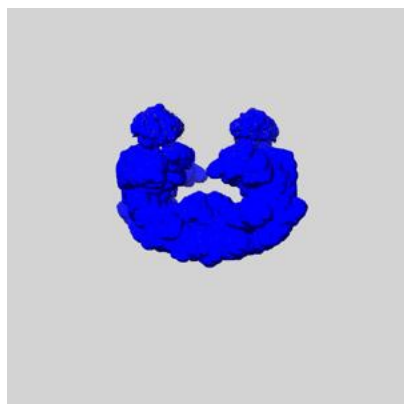
## 6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

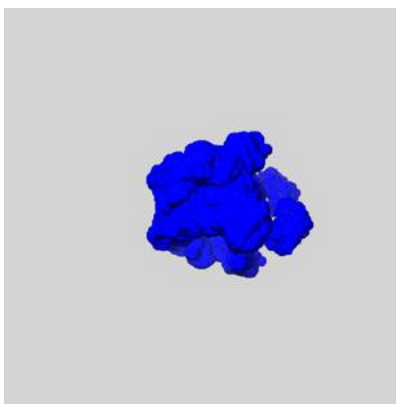
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

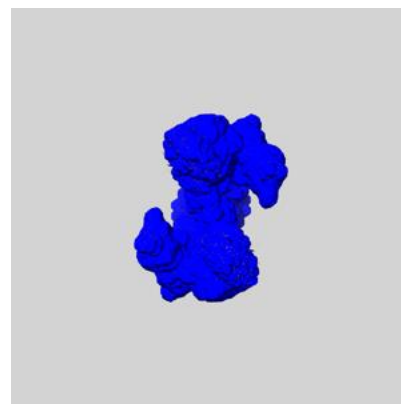
### 6.6.1 emd\_27832\_msk\_1.map [i](#)



X



Y

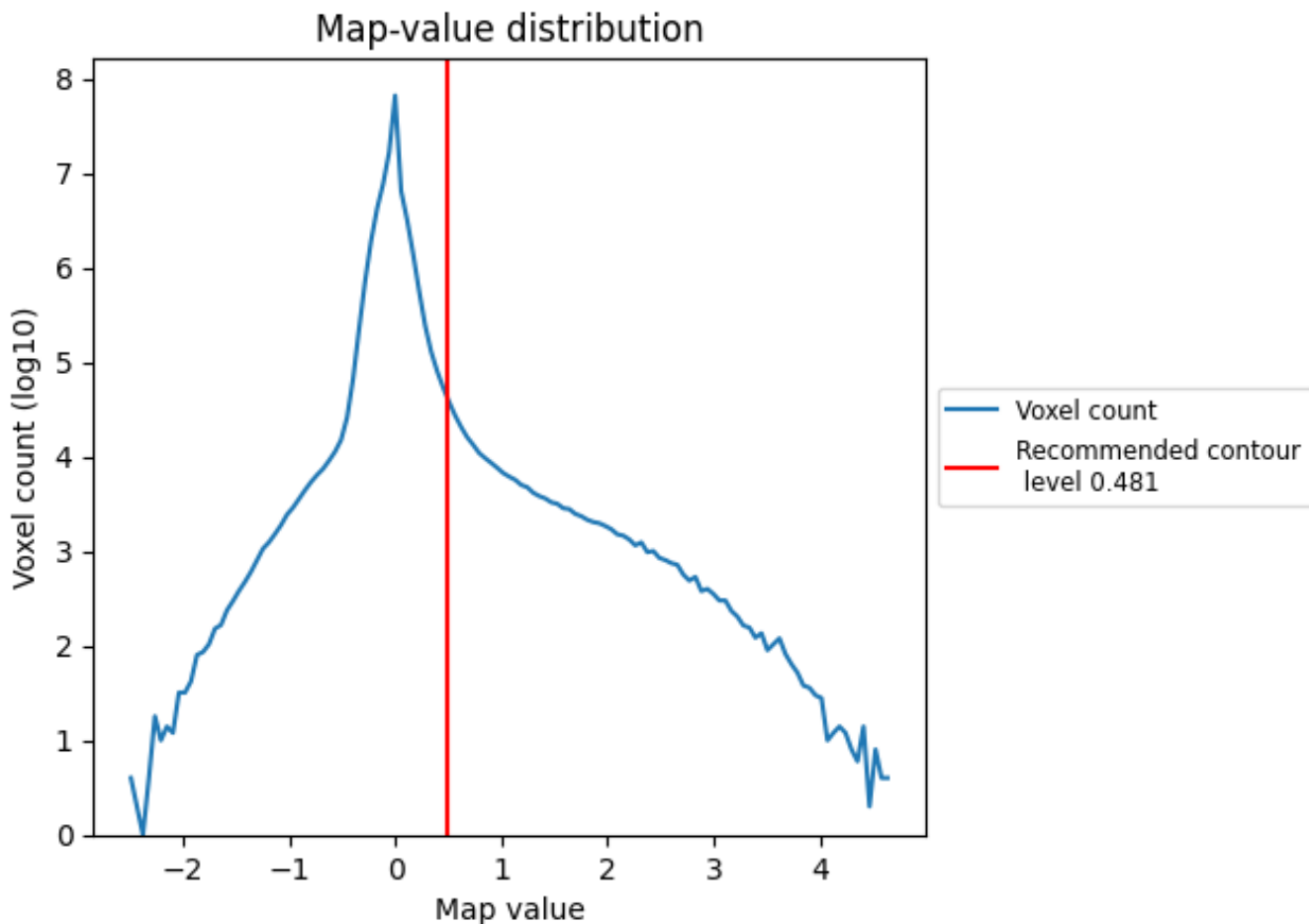


Z

## 7 Map analysis [i](#)

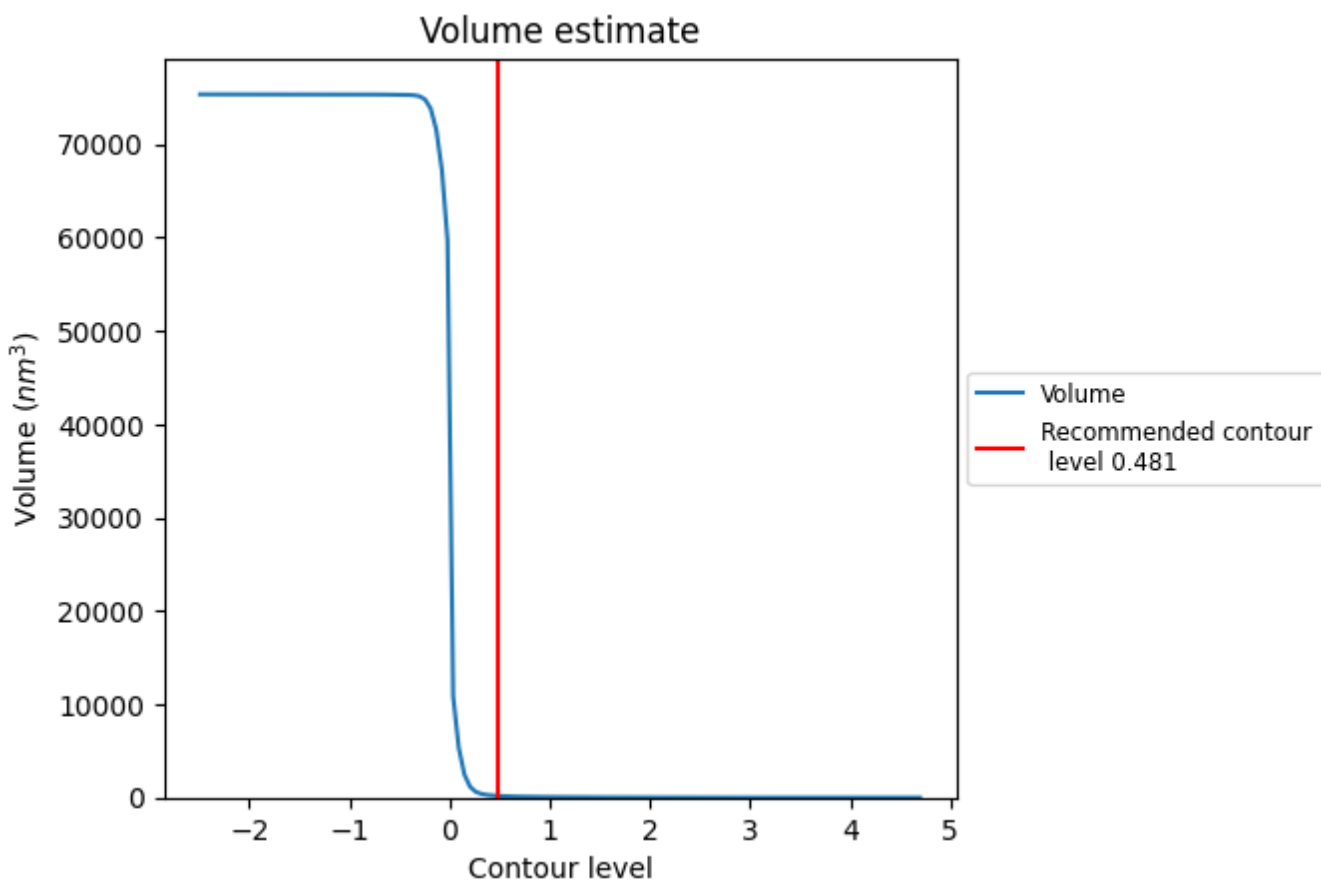
This section contains the results of statistical analysis of the map.

### 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.

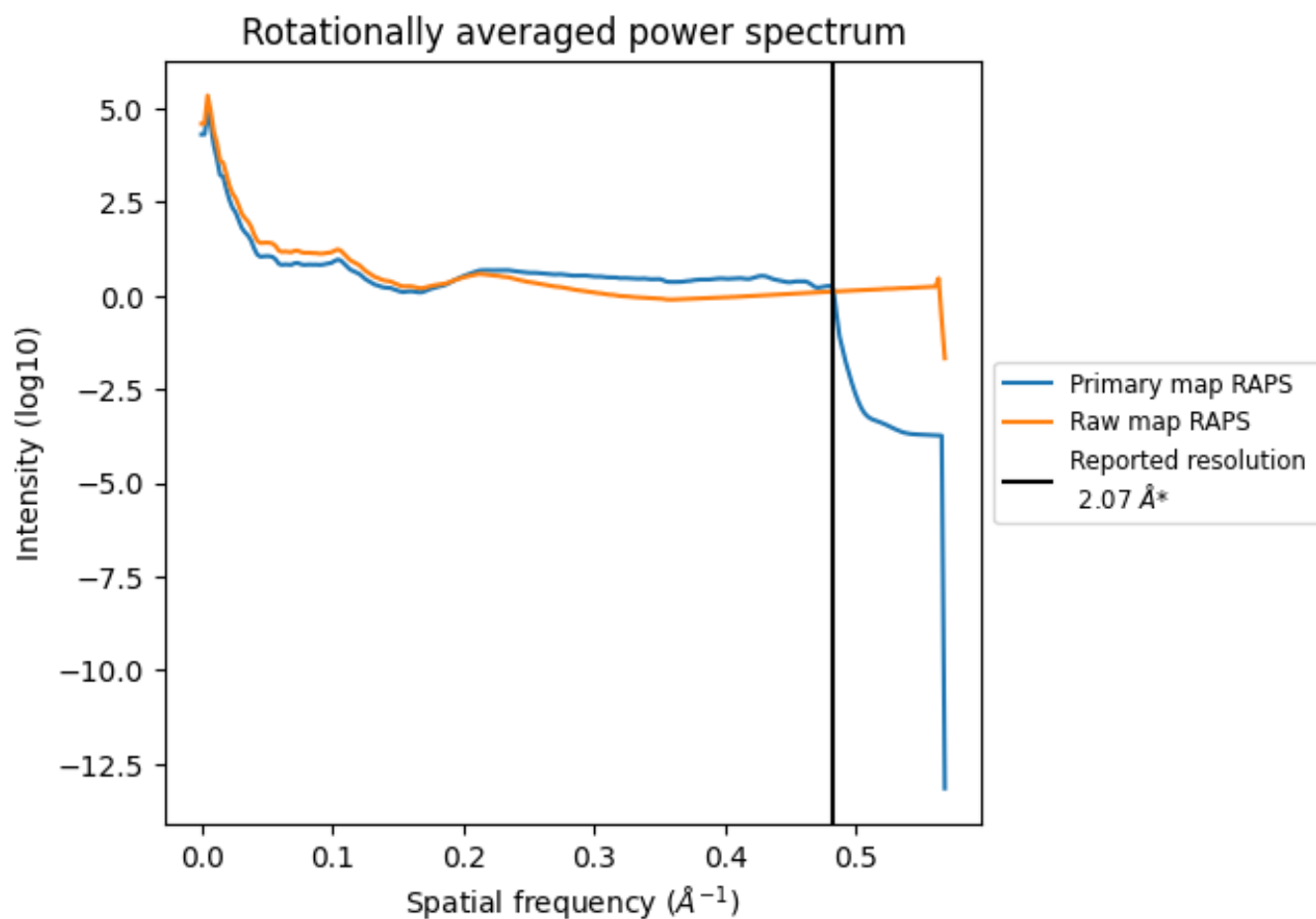
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 178  $\text{nm}^3$ ; this corresponds to an approximate mass of 161 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

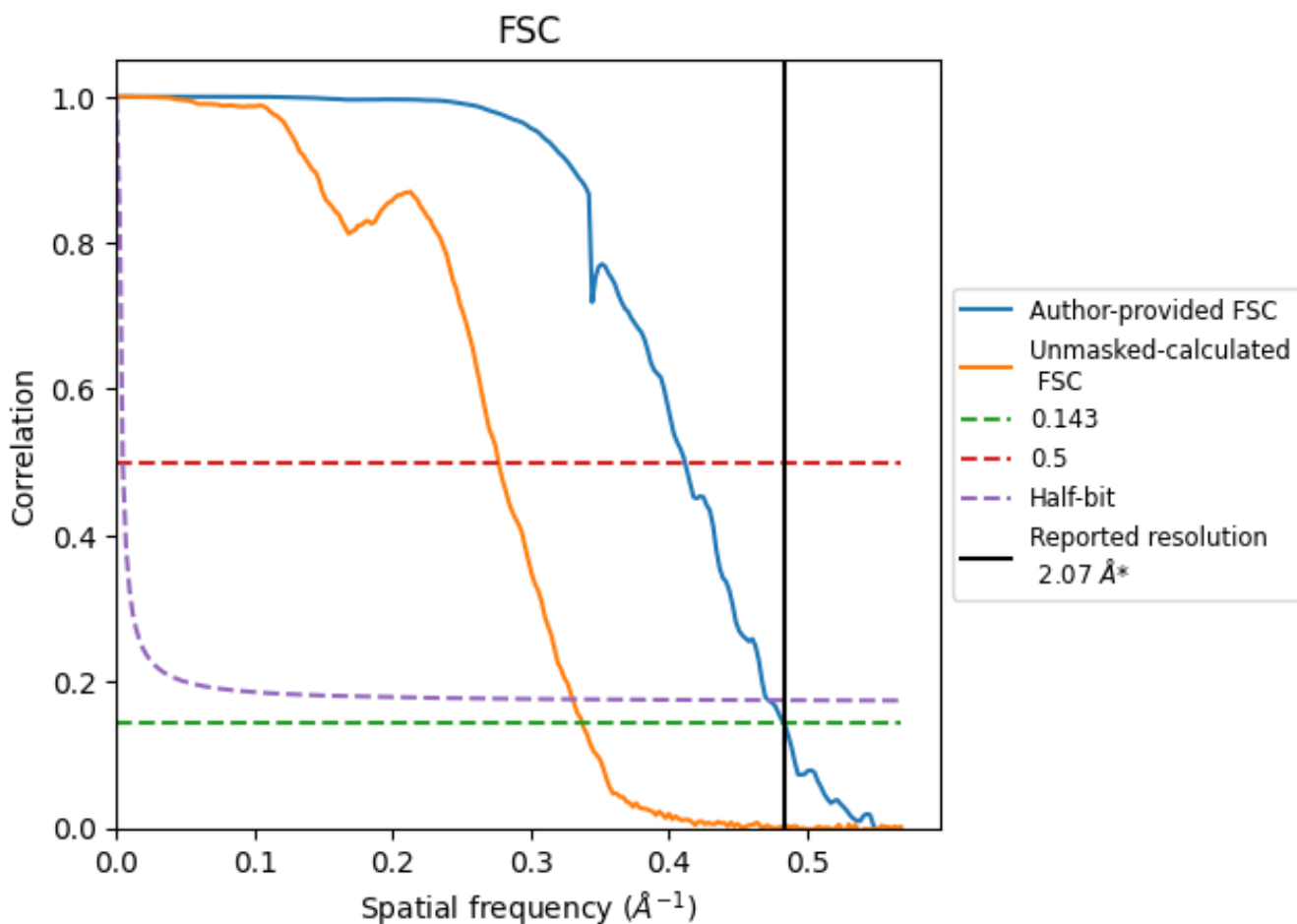


\*Reported resolution corresponds to spatial frequency of  $0.483 \text{ \AA}^{-1}$

## 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 0.483 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.07	-	-
Author-provided FSC curve	2.07	2.43	2.12
Unmasked-calculated*	2.96	3.62	3.03

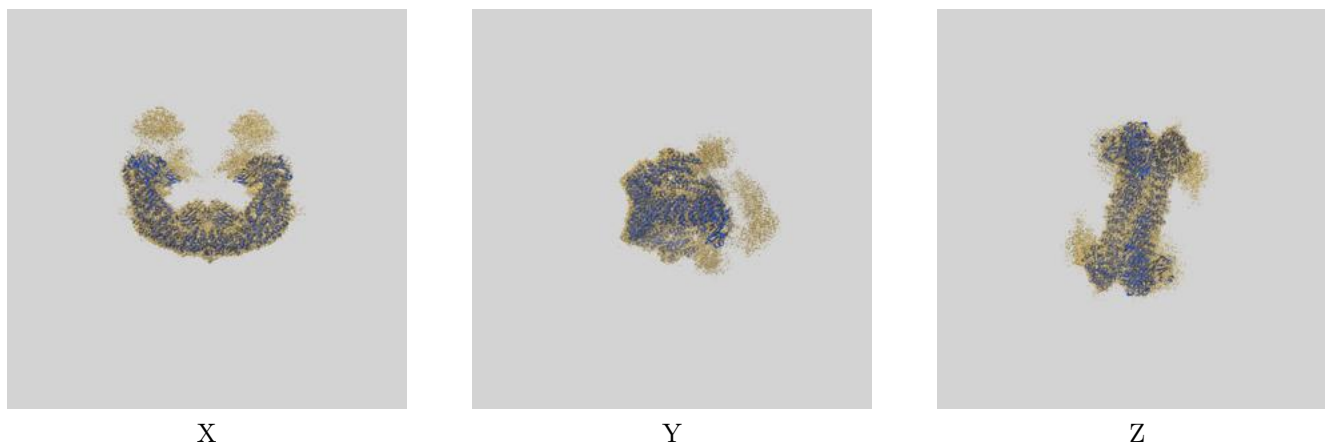
\*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 2.96 differs from the reported value 2.07 by more than 10 %



## 9 Map-model fit [i](#)

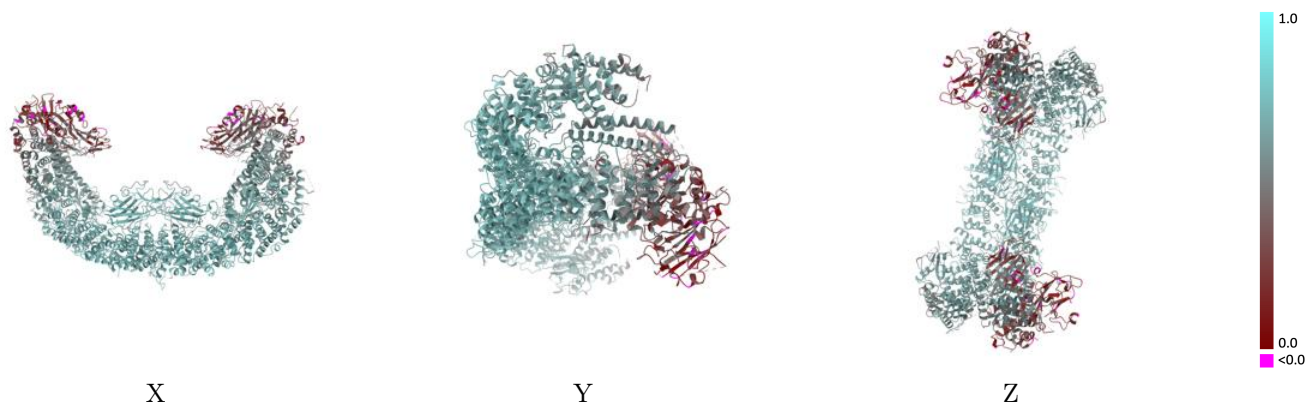
This section contains information regarding the fit between EMDB map EMD-27832 and PDB model 8E2D. Per-residue inclusion information can be found in section 3 on page 5.

### 9.1 Map-model overlay [i](#)



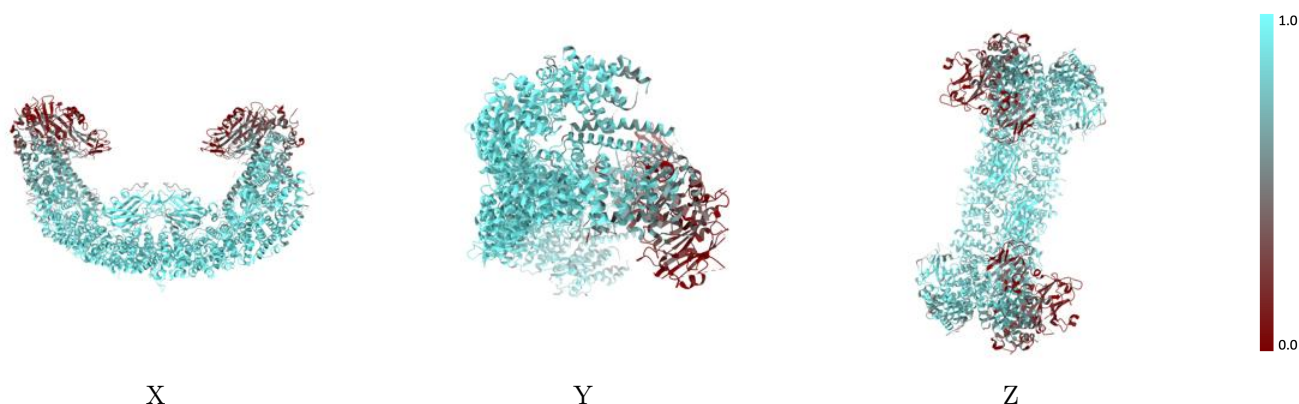
The images above show the 3D surface view of the map at the recommended contour level 0.481 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



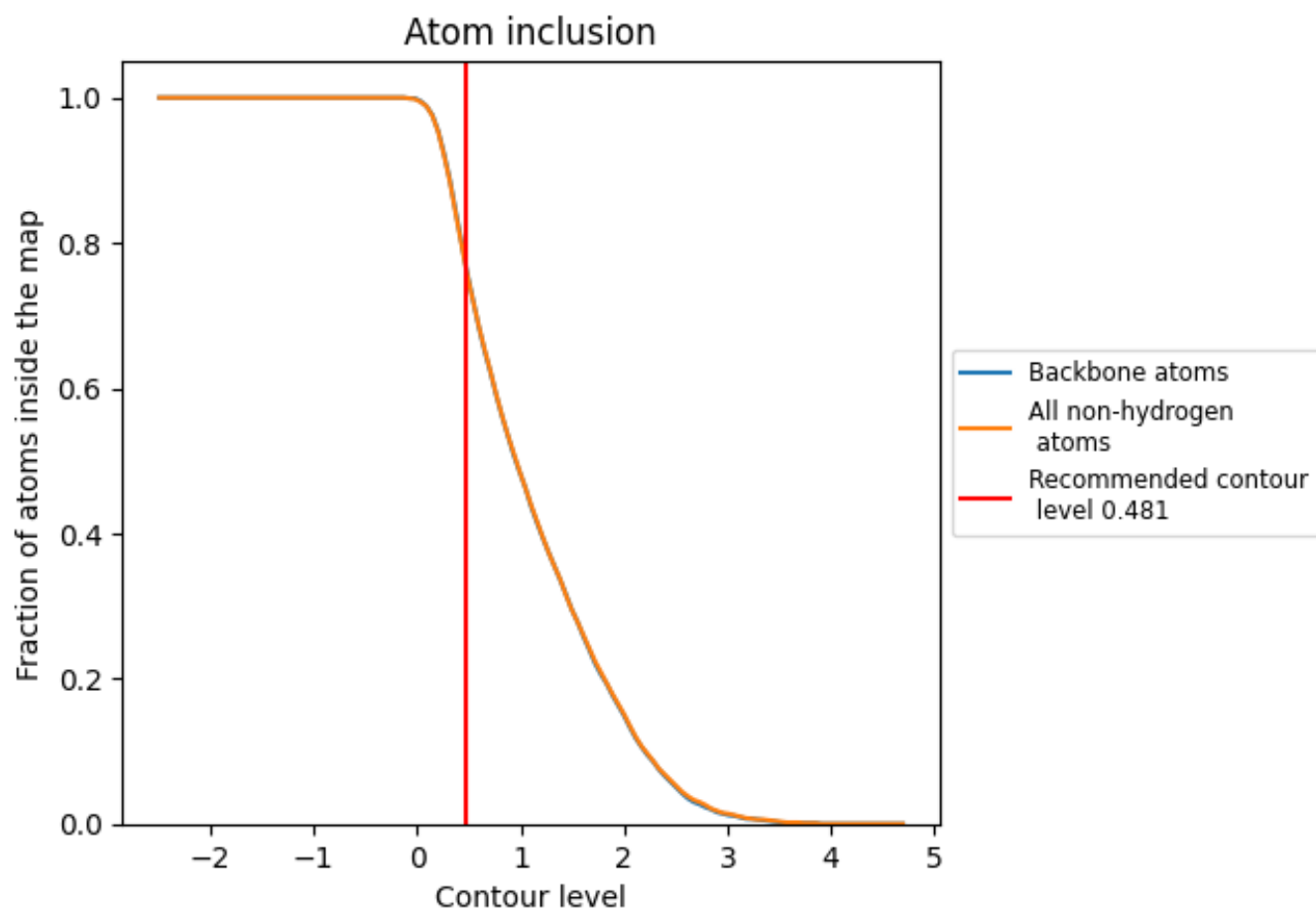
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.481).







## 9.4 Atom inclusion [i](#)



At the recommended contour level, 76% of all backbone atoms, 76% 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 (0.481) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7600	 0.5750
A	 0.7660	 0.5740
B	 0.7670	 0.5750

