



wwPDB EM Validation Summary Report ⓘ

Dec 16, 2024 – 12:07 PM EST

PDB ID : 9BDE
EMDB ID : EMD-44450
Title : Middle Region of Apolipoprotein B 100 bound to Low Density Lipoprotein Receptor
Authors : Dearborn, A.D.; Reimund, M.; Graziano, G.; Lei, H.; Kumar, A.; Neufeld, E.B.; Remaley, A.T.; Marcotrigiano, J.
Deposited on : 2024-04-11
Resolution : 4.18 Å(reported)

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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.dev113
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4.02b-467
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.40

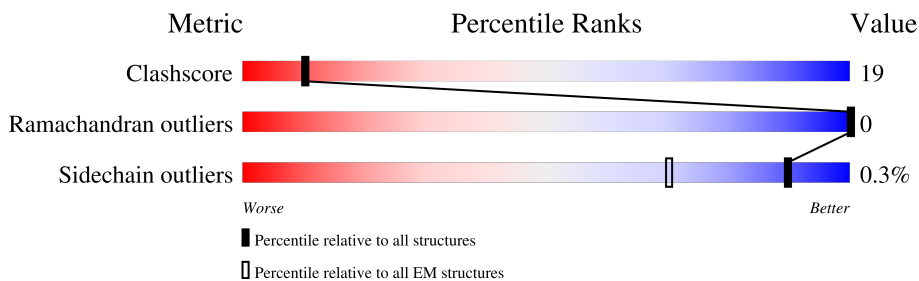
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 4.18 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	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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	H	234	
2	A	4563	
3	L	219	
4	B	545	
5	N	131	
6	R	860	

2 Entry composition i

There are 8 unique types of molecules in this entry. The entry contains 17216 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 Legobody 8D3 Fab Heavy Chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	H	177	1289	818	213	250	8	0	0

- Molecule 2 is a protein called Apolipoprotein B 100.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	A	1121	8453	5327	1437	1677	12	0	0

- Molecule 3 is a protein called Legobody 8D3 Fab light chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	L	180	1244	780	201	258	5	0	0

- Molecule 4 is a protein called Maltose/maltodextrin-binding periplasmic protein, Immunoglobulin G-binding protein A, Immunoglobulin G-binding protein G.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	B	466	3396	2161	545	686	4	0	0

There are 38 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	1	MET	-	initiating methionine	UNP P0AEX9
B	361	ALA	GLN	conflict	UNP P02976
B	362	LEU	ASN	conflict	UNP P02976
B	365	ALA	TYR	conflict	UNP P02976
B	366	GLN	GLU	conflict	UNP P02976
B	369	ILE	HIS	conflict	UNP P02976
B	370	MET	LEU	conflict	UNP P02976
B	404	GLU	ASP	conflict	UNP P02976

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Chain	Residue	Modelled	Actual	Comment	Reference
B	405	HIS	ALA	conflict	UNP P02976
B	410	GLY	-	linker	UNP P02976
B	411	GLY	-	linker	UNP P02976
B	412	SER	-	linker	UNP P02976
B	413	GLY	-	linker	UNP P02976
B	414	GLY	-	linker	UNP P02976
B	415	ALA	-	linker	UNP P02976
B	416	GLY	-	linker	UNP P02976
B	417	SER	-	linker	UNP P02976
B	418	GLY	-	linker	UNP P02976
B	468	GLY	-	linker	UNP P02976
B	469	GLY	-	linker	UNP P02976
B	470	GLY	-	linker	UNP P02976
B	471	SER	-	linker	UNP P02976
B	472	GLY	-	linker	UNP P02976
B	473	GLY	-	linker	UNP P02976
B	474	GLY	-	linker	UNP P02976
B	475	SER	-	linker	UNP P02976
B	476	GLY	-	linker	UNP P02976
B	477	GLY	-	linker	UNP P02976
B	478	SER	-	linker	UNP P02976
B	537	GLY	-	expression tag	UNP P19909
B	538	SER	-	expression tag	UNP P19909
B	539	GLY	-	expression tag	UNP P19909
B	540	HIS	-	expression tag	UNP P19909
B	541	HIS	-	expression tag	UNP P19909
B	542	HIS	-	expression tag	UNP P19909
B	543	HIS	-	expression tag	UNP P19909
B	544	HIS	-	expression tag	UNP P19909
B	545	HIS	-	expression tag	UNP P19909

- Molecule 5 is a protein called ApoB100 nanobody 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	N	124	Total	C	N	O	S	0	0
			859	538	153	164	4		

- Molecule 6 is a protein called Low-density lipoprotein receptor.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	R	272	Total	C	N	O	S	0	0
			1898	1125	322	407	44		

- Molecule 7 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).

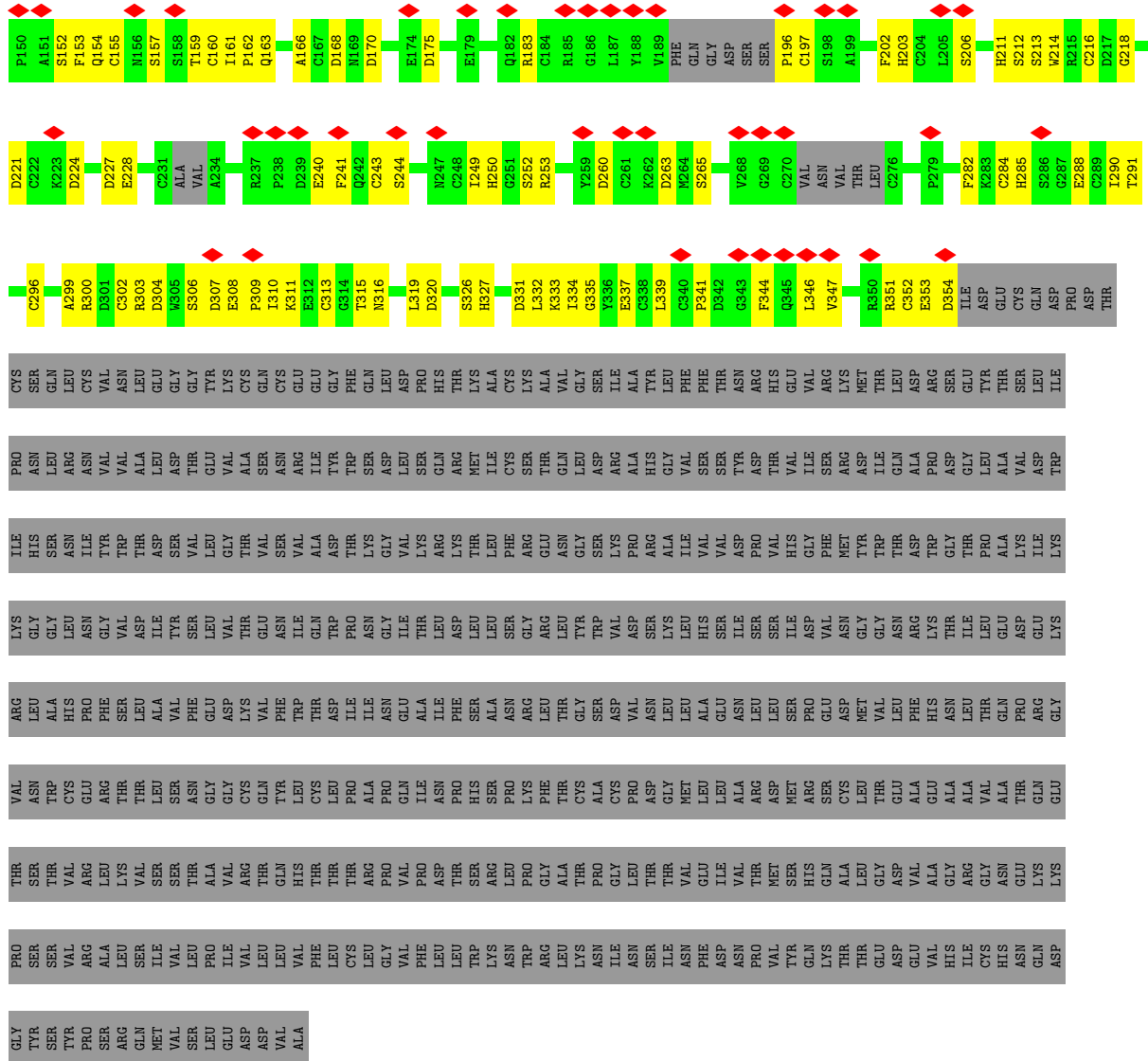


Mol	Chain	Residues	Atoms				AltConf
7	A	1	Total	C	N	O	0
			14	8	1	5	
7	A	1	Total	C	N	O	0
			14	8	1	5	
7	A	1	Total	C	N	O	0
			14	8	1	5	
7	A	1	Total	C	N	O	0
			14	8	1	5	

- Molecule 8 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		AltConf
8	R	7	Total	Ca	0
			7	7	

ASP	F2769	A2858	C2953	K3028	Q3095	A3176	THR	F3357	Q3442	S3536	E3636	G3700
ILE	D2772	S2859	D2938	K3031	Y3096	Q3176	LEU	N3358	E3443	K3537	V3637	H3701
PRO	A2773	L2860	E2939	G3035	K3097	Y3177	ILE	Q3359	L3444	R3538	R3638	L3702
LEU	N2779	L2861	C2940	K3034	Y3098	N3180	HIS	S3360	N3447	D3539	S3638	R3703
ARG	G2780	E2862	C2941	N3035	N3099	LYS	GLU	I3361	N3448	W3542	S3643	F3704
ALA	T2781	T2867	H2942	N3036	Q3100	ARG	LEU	I3362	K3449	K3547	F3644	T3711
ILE	G2782	E2868	H2943	S3036	Q3105	HIS	PRO	I3363	S3450	K3548	Q3645	K3712
THR	THR	L2869	Q2945	L3037	N3106	ARG	ARG	H3365	K3451	A3551	Q3647	R3713
LEU	ALA	S2870	S2946	F3038	N3113	ILE	VAL	S3372	T3452	I3559	V3648	S3714
PRO	ASN	N2871	F2946	F3039	A3113	ASN	THR	D3375	V3454	Y3560	E3649	A3715
ASP	ASU	A2787	T2949	Q3042	I3117	PRO	ILE	D3376	M3458	L3561	L3650	G3716
PHE	GLU	G2788	G2952	P3043	N3118	PRO	VAL	E3382	E3459	L3562	N3651	S3717
GLU	PRO	I2789	P2953	F3044	G3119	GLY	ARG	C3383	F3460	C3563	N3652	S3718
ILE	ALA	L2799	P2954	E3045	E3120	VAL	ASN	T3384	F3461	D3654	Q3654	S3719
ILE	ALA	K2800	L2959	I3046	A3121	THR	VAL	R3385	Y3462	H3655	PRO	S3720
PRO	ILE	L2801	L2960	T3047	N3122	PRO	PRO	R3386	D3463	K3656	VAL	T3721
GLU	PHE	E2802	N2961	A3048	F3125	PHE	VAL	R3389	F3464	A3657	LYS	L3722
PHE	L2804	V2803	N2965	S3049	L3126	ILE	VAL	C3392	N3465	G3574	VAL	L3723
I2722	I2723	Q2813	V2970	T3050	N3127	SER	VAL	G3393	S3466	G3575	LEU	L3724
T2725	T2726	S2815	N2971	N3051	N3128	GLN	VAL	K3394	S3467	L3576	LEU	L2726
L2726	R2727	S2816	Q2972	E3052	F3129	SER	VAL	L3395	S3471	E3582	LEU	R2728
R2728	R2729	N2817	N2974	E3053	L3130	ILE	THR	L3396	V3477	T3588	PRO	T2729
R2730	R2731	K2818	G2979	G3054	L3131	ASP	ILE	S3400	L3483	F3590	HIS	L2730
Q2732	V2733	I2819	S2980	G3055	F3132	GLY	ILE	L3401	E3484	L3591	GLY	D2730
V2733	P2734	N2820	L2981	G3056	L3133	ASN	THR	L3402	S3485	L3592	LEU	F2731
P2734	L2824	A2823	L2982	L3056	E3134	PRO	THR	K3404	L3486	S3597	PHE	Q2732
D2735	K2825	L2824	L2983	L3067	MET	THR	ALA	F3405	Y3489	A3598	LEU	V2733
L2736	S2832	L2737	Q2989	I3068	ARG	ILE	PHE	F3406	F3490	L3599	LEU	R2734
H2737	K2833	L2738	S2990	D3069	LEU	GLU	ILE	V3406	S3494	G3601	ASN	Q2734
L2738	Y2834	L2835	Q2991	L3070	PRO	VAL	THR	E3407	V3504	Q3602	ILE	V2734
P2739	L2835	H2839	V2992	N3072	THR	SER	PRO	G3408	Y3509	H3603	LEU	D2735
E2740	E2839	G2840	D2993	N3073	THR	MET	ALA	S3409	Y3519	L3603	PRO	L2736
L2746	S2841	L2844	H2999	Y3074	ILE	PRO	THR	H3410	E3516	S3608	VAL	L2737
SER	L2844	F2845	S3001	A3075	T3143	PRO	PRO	L3416	A3517	S3609	VAL	H2737
HIS	F2846	G2847	V3004	L3076	T3144	ALA	ALA	M3421	S3503	F3610	THR	H2738
THR	G2847	N2848	A3004	L3077	T3145	VAL	VAL	K3425	V3504	R3611	PRO	L2738
ILE	N2849	G2848	A3008	L3078	F3146	SER	THR	Y3426	Y3509	D3612	THR	P2739
GLU	A2849	S2923	L3009	L3078	P3147	THR	LEU	A3426	E3516	F3613	THR	E2740
V2752	P2753	A2850	F3010	Q3083	L3152	GLY	GLY	T3427	A3517	D3614	VAL	L2746
P2753	T2754	E2851	G3012	Q3084	L3153	ASP	ASP	T3427	N3518	P3615	VAL	H2746
L2758	G2852	K2853	E3013	S3086	E3154	VAL	VAL	K3431	T3519	D3615	VAL	F2845
L2762	S2854	N2855	F3017	Q3088	K3155	ARG	ARG	Q3432	Y3520	L3619	VAL	G2847
L2764	T2856	V2931	R3020	V3089	L3167	VAL	VAL	L3433	L3521	F3620	VAL	N2848
P2767	V2857	A2932	H3021	R3092	F3169	PRO	PRO	T3435	N3522	L3622	VAL	A2849
L2768	K2853	F3030	F3017	F3093	D3170	THR	THR	L3436	R3527	Q3629	THR	A2849
L2769	N2855	W2931	R3020	N3094	S3172	TYR	TYR	R3437	V3527	K3630	THR	A2849
L2770	V2856	A2932	H3021	N3094	S3173	ALA	ALA	N3438	K3531	I3631	SER	A2849
L2771	V2857	A2932	H3021	N3094	K3174			E3535	F3440	R3632	GLY	A2849
L2772	V2857	A2932	H3021	N3094	K3174			L3356	L3356	F3441	ARG	A2849



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	527598	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 ($e^-/\text{\AA}^2$)	51.38	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOCONTINUUM (6k x 4k)	Depositor
Maximum map value	0.494	Depositor
Minimum map value	-0.235	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.1	Depositor
Map size (\AA)	557.76, 557.76, 557.76	wwPDB
Map dimensions	336, 336, 336	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.6600001, 1.6600001, 1.6600001	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: NAG, CA

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	H	0.27	0/1320	0.50	0/1803
2	A	0.25	0/8603	0.50	0/11684
3	L	0.25	0/1267	0.53	1/1743 (0.1%)
4	B	0.25	0/3468	0.43	0/4753
5	N	0.28	0/877	0.53	0/1196
6	R	0.25	0/1932	0.50	0/2622
All	All	0.25	0/17467	0.49	1/23801 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	L	89	LEU	CA-CB-CG	5.25	127.38	115.30

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	H	1289	0	1173	55	0
2	A	8453	0	8047	300	0
3	L	1244	0	1077	38	0
4	B	3396	0	3063	132	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	N	859	0	767	27	0
6	R	1898	0	1496	85	0
7	A	70	0	65	5	0
8	R	7	0	0	0	0
All	All	17216	0	15688	614	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 19.

The worst 5 of 614 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:3565:HIS:HE2	2:A:3567:THR:HG1	1.20	0.88
2:A:3060:PHE:HB2	2:A:3064:LEU:HB2	1.64	0.77
2:A:2931:TRP:NE1	2:A:2933:CYS:SG	2.58	0.77
1:H:22:CYS:HB3	1:H:79:LEU:HB3	1.66	0.77
2:A:3017:PHE:HB3	2:A:3039:PHE:HB3	1.67	0.77

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	H	167/234 (71%)	160 (96%)	7 (4%)	0	100	100
2	A	1099/4563 (24%)	1019 (93%)	80 (7%)	0	100	100
3	L	170/219 (78%)	161 (95%)	9 (5%)	0	100	100
4	B	452/545 (83%)	438 (97%)	14 (3%)	0	100	100
5	N	122/131 (93%)	109 (89%)	13 (11%)	0	100	100
6	R	262/860 (30%)	232 (88%)	30 (12%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
All	All	2272/6552 (35%)	2119 (93%)	153 (7%)	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	H	135/199 (68%)	135 (100%)	0	100	100
2	A	902/4080 (22%)	897 (99%)	5 (1%)	84	88
3	L	124/192 (65%)	124 (100%)	0	100	100
4	B	323/433 (75%)	323 (100%)	0	100	100
5	N	75/103 (73%)	75 (100%)	0	100	100
6	R	202/755 (27%)	202 (100%)	0	100	100
All	All	1761/5762 (31%)	1756 (100%)	5 (0%)	90	92

All (5) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	A	1867	ARG
2	A	2012	ARG
2	A	2444	ARG
2	A	2945	GLN
2	A	3386	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
2	A	3167	GLN
2	A	3635	ASN
4	B	119	ASN
4	B	420	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 oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 12 ligands modelled in this entry, 7 are monoatomic - leaving 5 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
7	NAG	A	4601	2	14,14,15	0.73	0	17,19,21	1.10	1 (5%)
7	NAG	A	4602	2	14,14,15	0.73	0	17,19,21	0.92	1 (5%)
7	NAG	A	4603	2	14,14,15	0.74	0	17,19,21	2.31	3 (17%)
7	NAG	A	4604	2	14,14,15	0.71	0	17,19,21	0.91	1 (5%)
7	NAG	A	4605	2	14,14,15	0.84	0	17,19,21	1.84	2 (11%)

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
7	NAG	A	4601	2	-	1/6/23/26	0/1/1/1
7	NAG	A	4602	2	-	2/6/23/26	0/1/1/1
7	NAG	A	4603	2	-	4/6/23/26	0/1/1/1
7	NAG	A	4604	2	-	1/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
7	NAG	A	4605	2	-	1/6/23/26	0/1/1/1

There are no bond length outliers.

The worst 5 of 8 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	A	4603	NAG	C2-N2-C7	8.23	133.94	122.90
7	A	4605	NAG	C1-O5-C5	6.44	120.82	112.19
7	A	4601	NAG	C2-N2-C7	3.05	126.99	122.90
7	A	4603	NAG	C8-C7-N2	2.62	120.47	116.12
7	A	4604	NAG	O5-C1-C2	-2.18	107.91	111.29

There are no chirality outliers.

5 of 9 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
7	A	4602	NAG	C8-C7-N2-C2
7	A	4602	NAG	O7-C7-N2-C2
7	A	4603	NAG	C8-C7-N2-C2
7	A	4603	NAG	O7-C7-N2-C2
7	A	4604	NAG	O5-C5-C6-O6

There are no ring outliers.

3 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	A	4601	NAG	2	0
7	A	4604	NAG	1	0
7	A	4605	NAG	2	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.

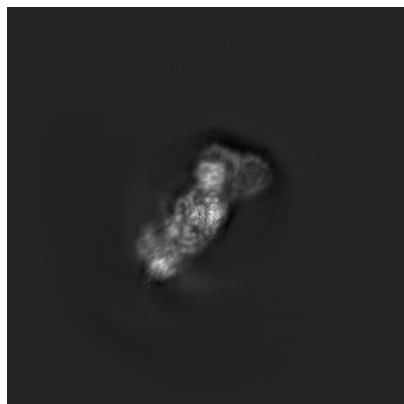
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-44450. These allow visual inspection of the internal detail of the map and identification of artifacts.

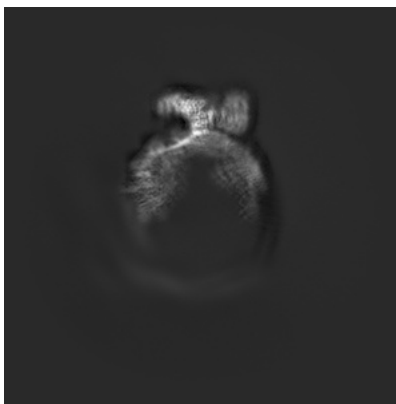
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

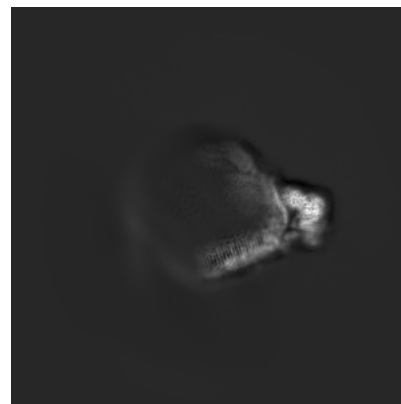
6.1.1 Primary map



X

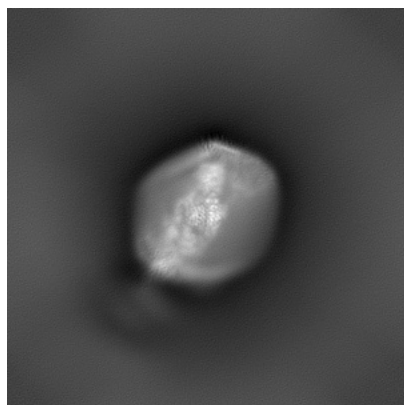


Y

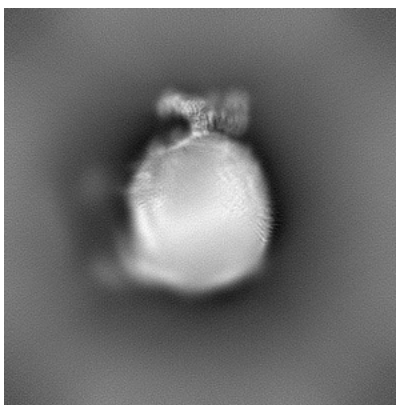


Z

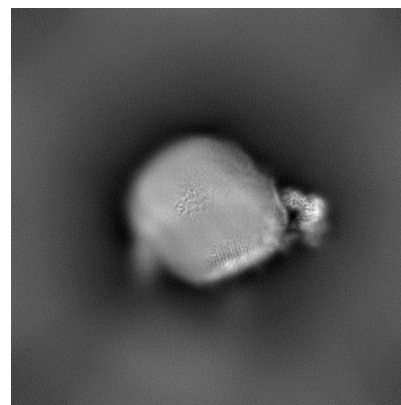
6.1.2 Raw map



X



Y

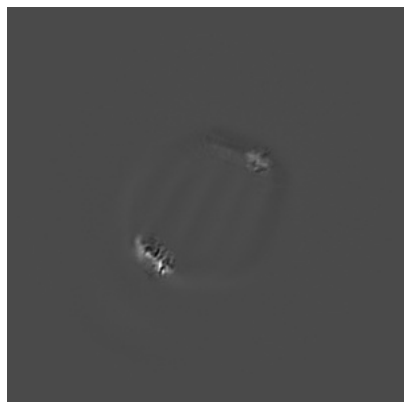


Z

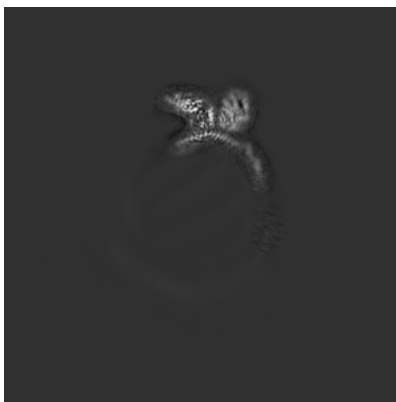
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

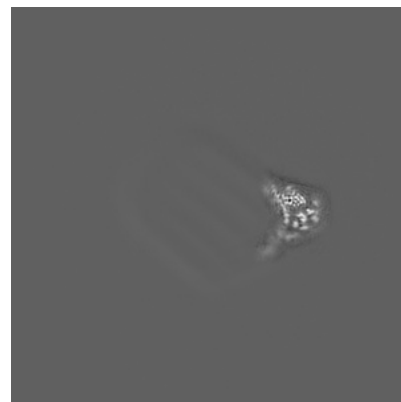
6.2.1 Primary map



X Index: 168

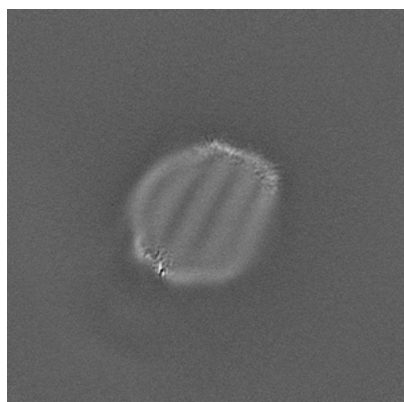


Y Index: 168

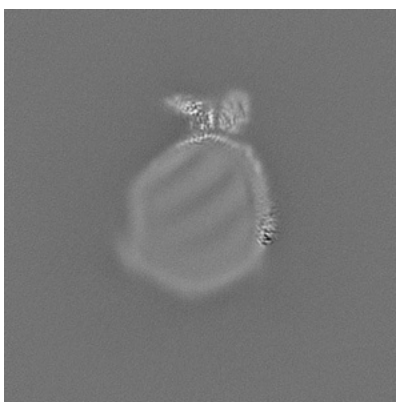


Z Index: 168

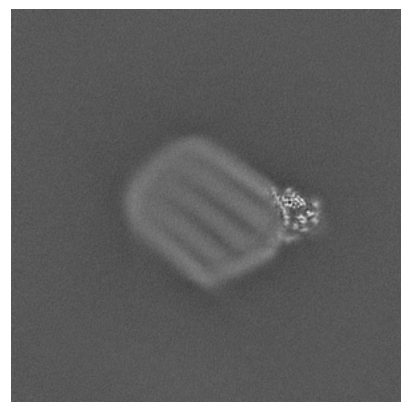
6.2.2 Raw map



X Index: 168



Y Index: 168

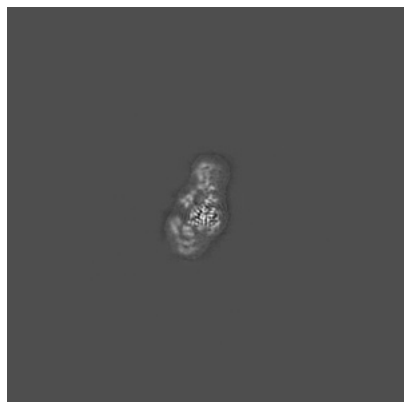


Z Index: 168

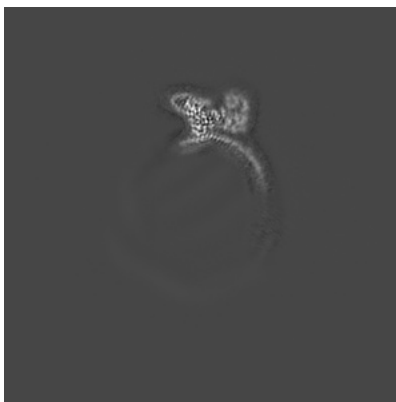
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

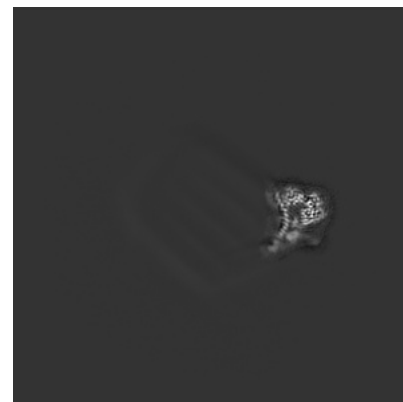
6.3.1 Primary map



X Index: 248

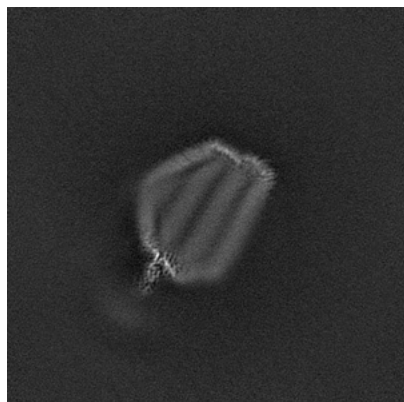


Y Index: 171

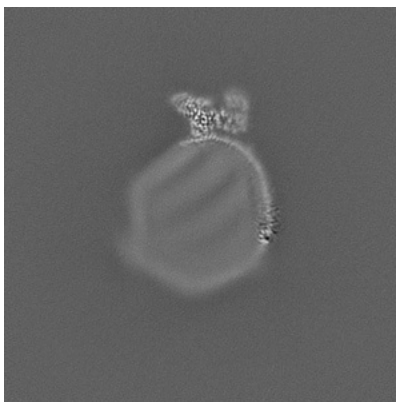


Z Index: 160

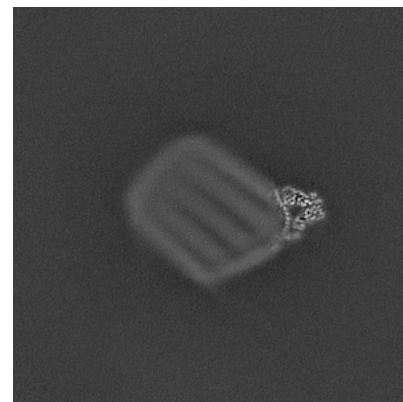
6.3.2 Raw map



X Index: 184



Y Index: 172

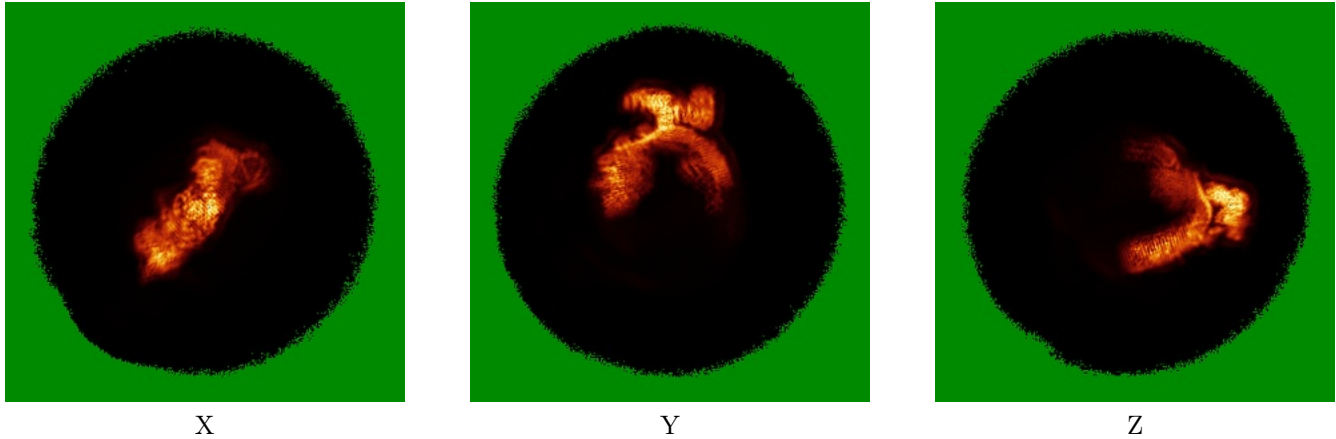


Z Index: 163

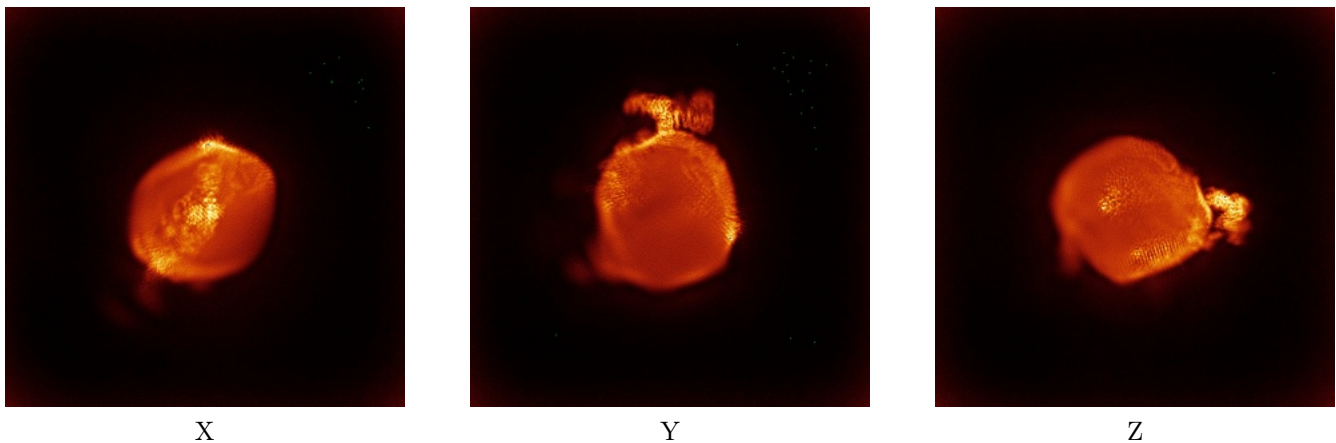
The images above show the largest variance slices of the map in three orthogonal directions.

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



The images above show the 3D surface view of the map at the recommended contour level 0.1. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

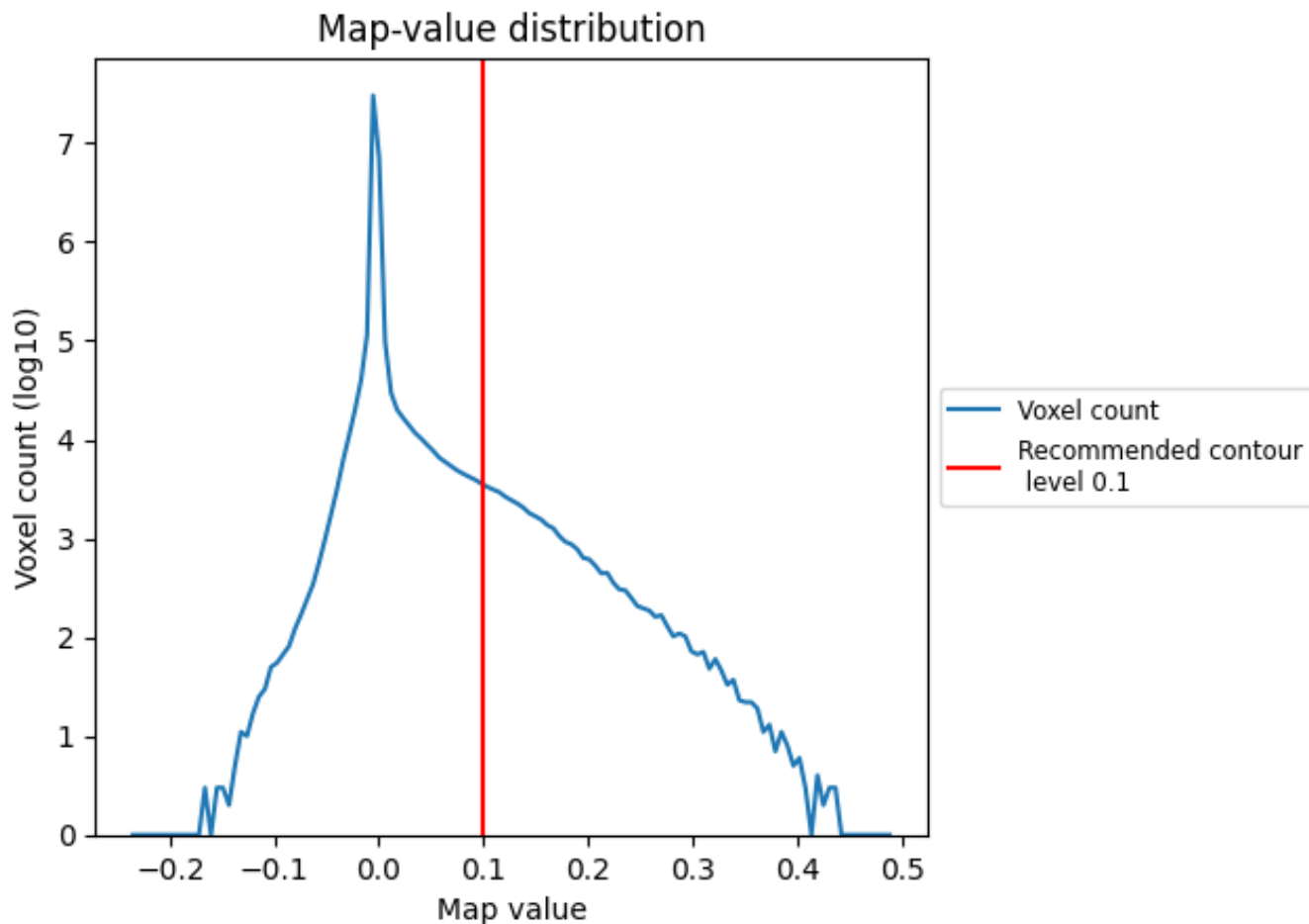
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

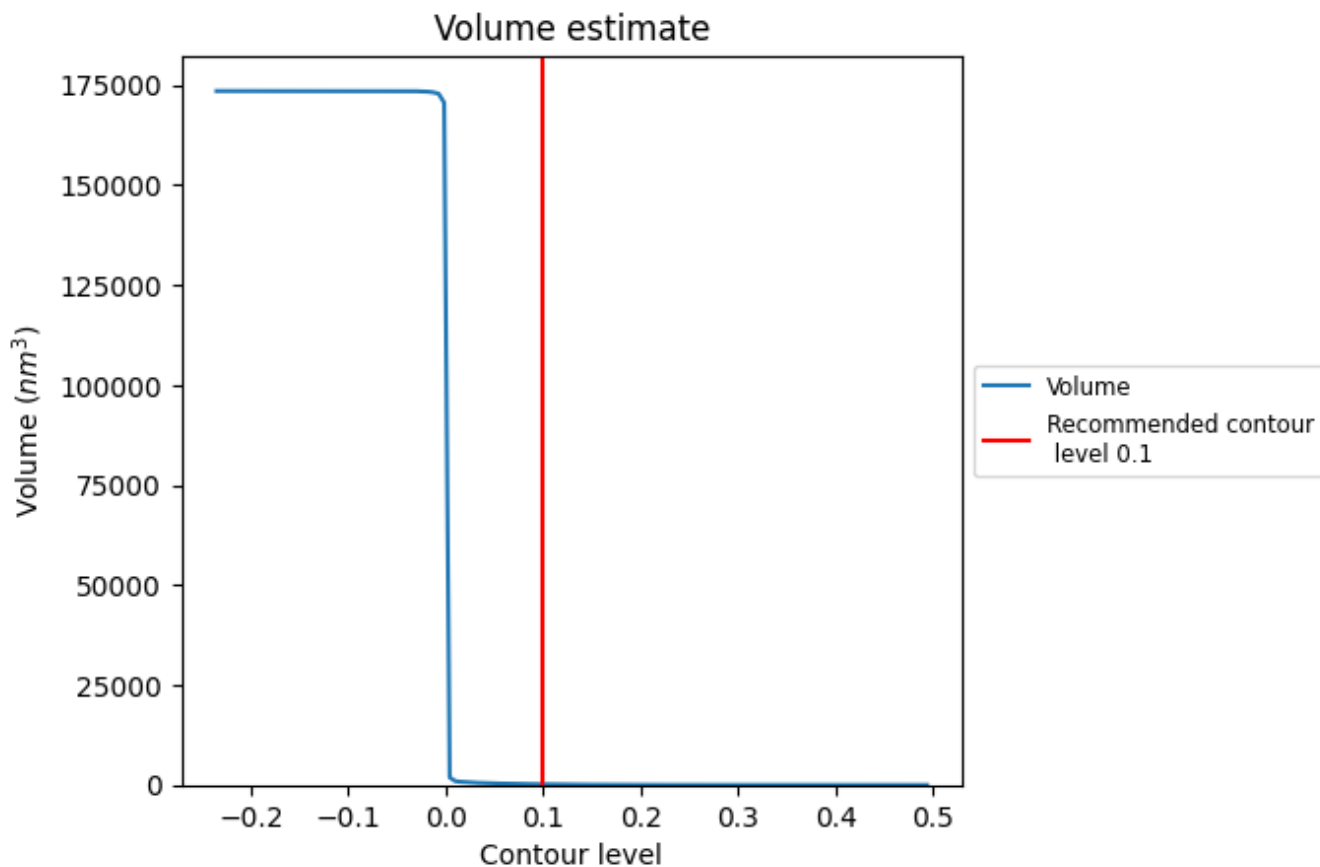
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

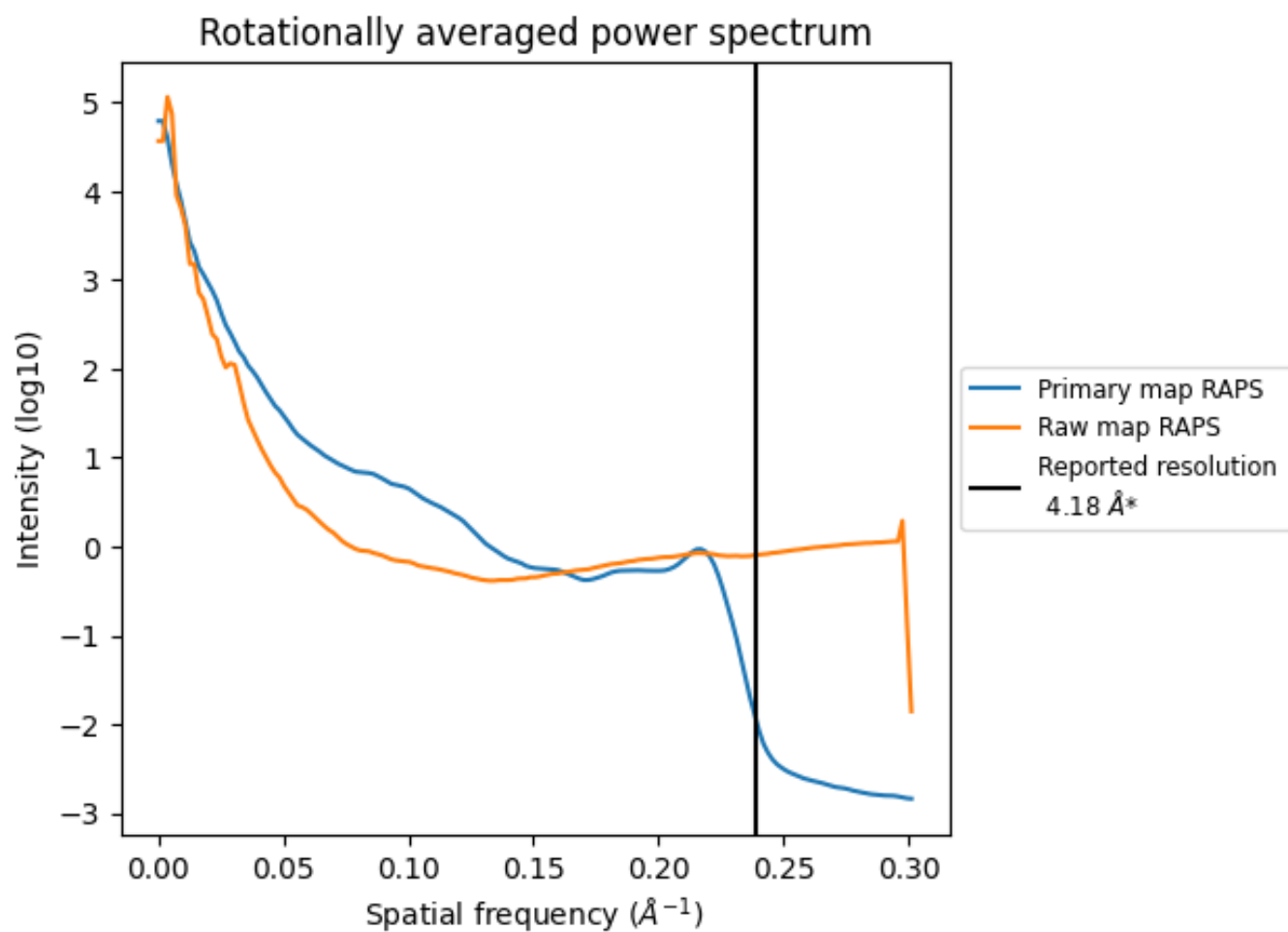
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 174 nm³; this corresponds to an approximate mass of 157 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

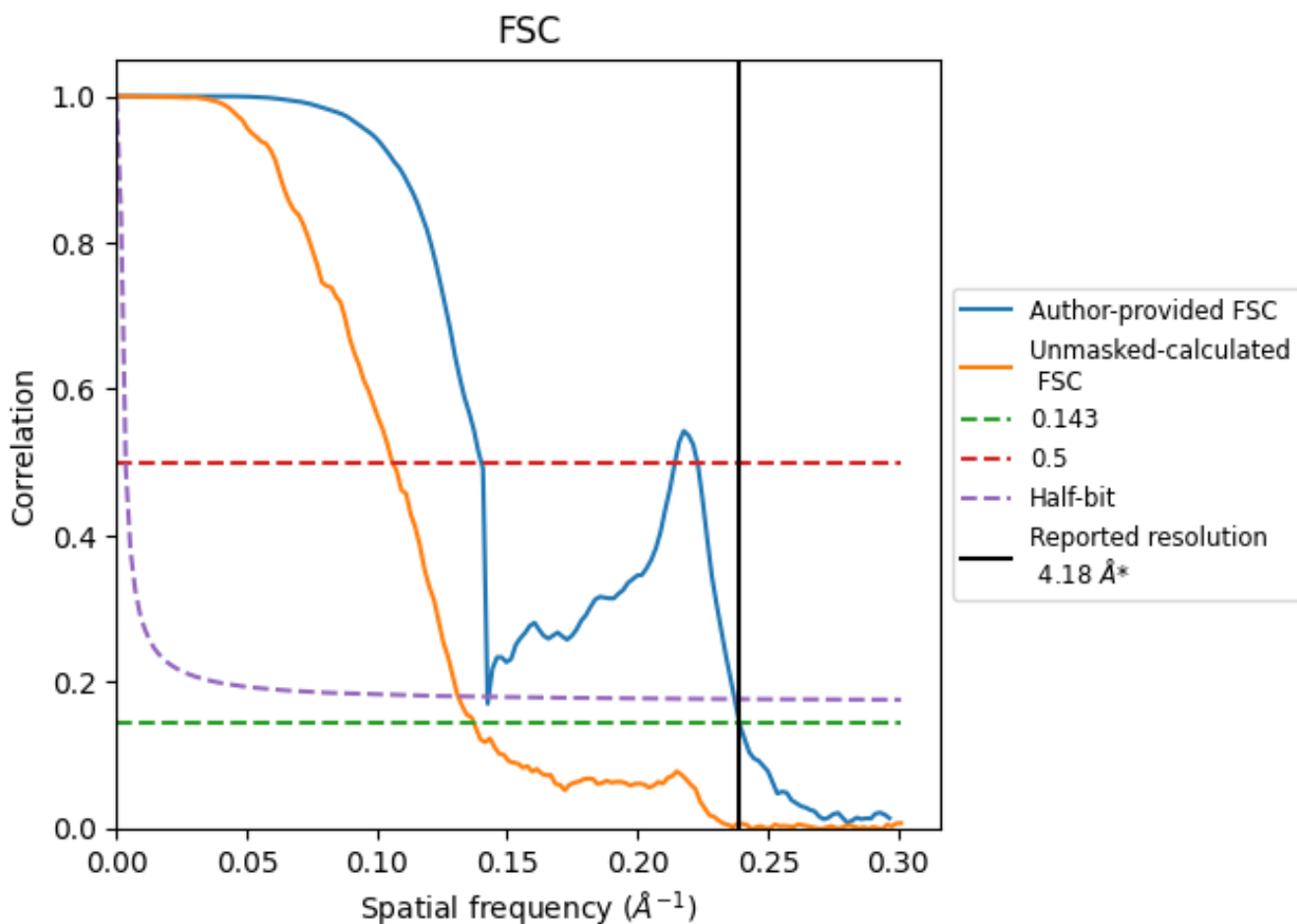


*Reported resolution corresponds to spatial frequency of 0.239 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.239 Å⁻¹

8.2 Resolution estimates [i](#)

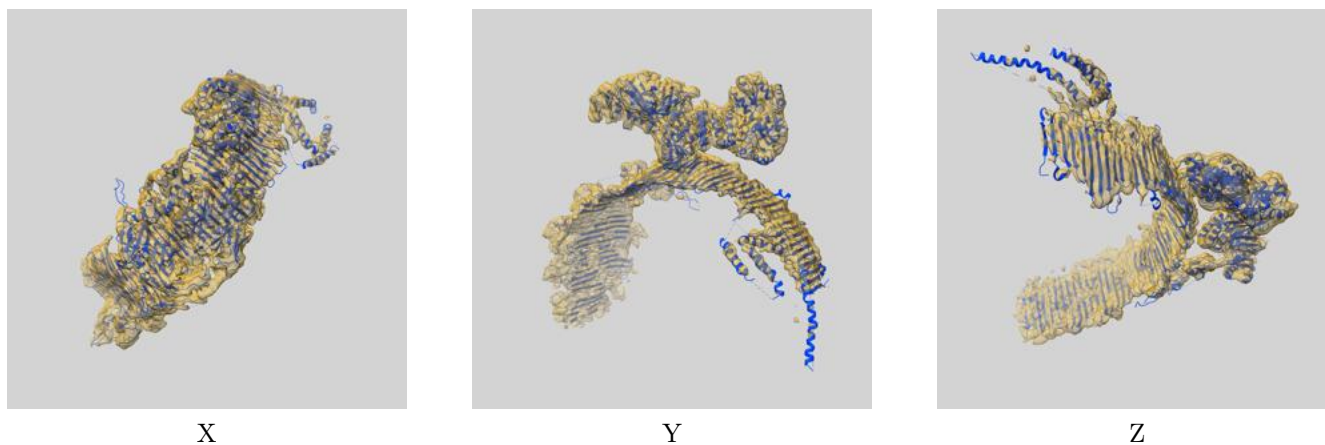
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.18	-	-
Author-provided FSC curve	4.18	7.14	7.02
Unmasked-calculated*	7.29	9.45	7.63

*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 7.29 differs from the reported value 4.18 by more than 10 %

9 Map-model fit [i](#)

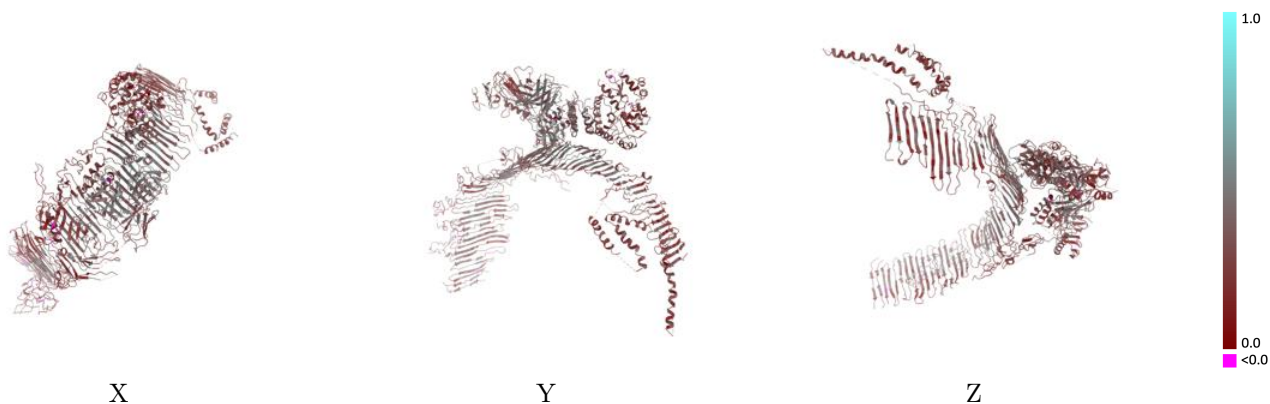
This section contains information regarding the fit between EMDB map EMD-44450 and PDB model 9BDE. Per-residue inclusion information can be found in section 3 on page 6.

9.1 Map-model overlay [i](#)



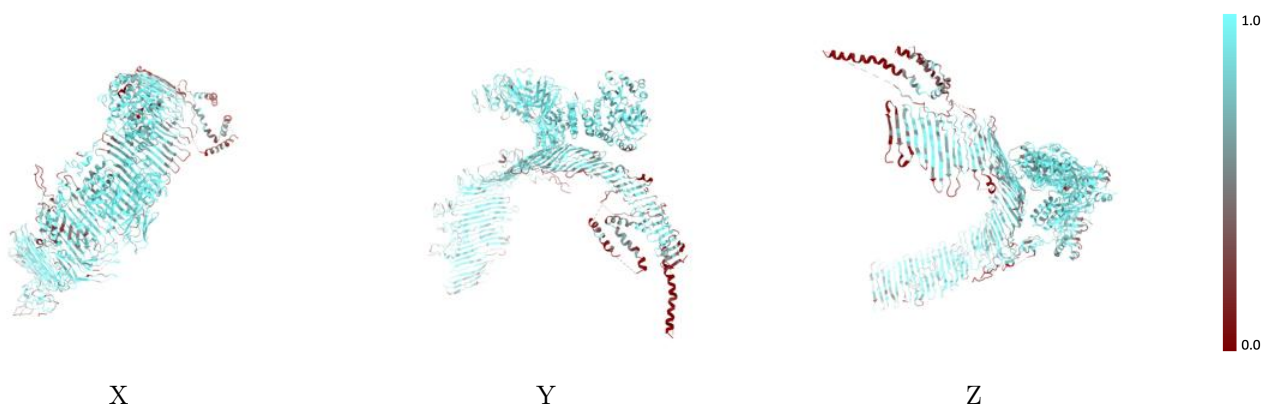
The images above show the 3D surface view of the map at the recommended contour level 0.1 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



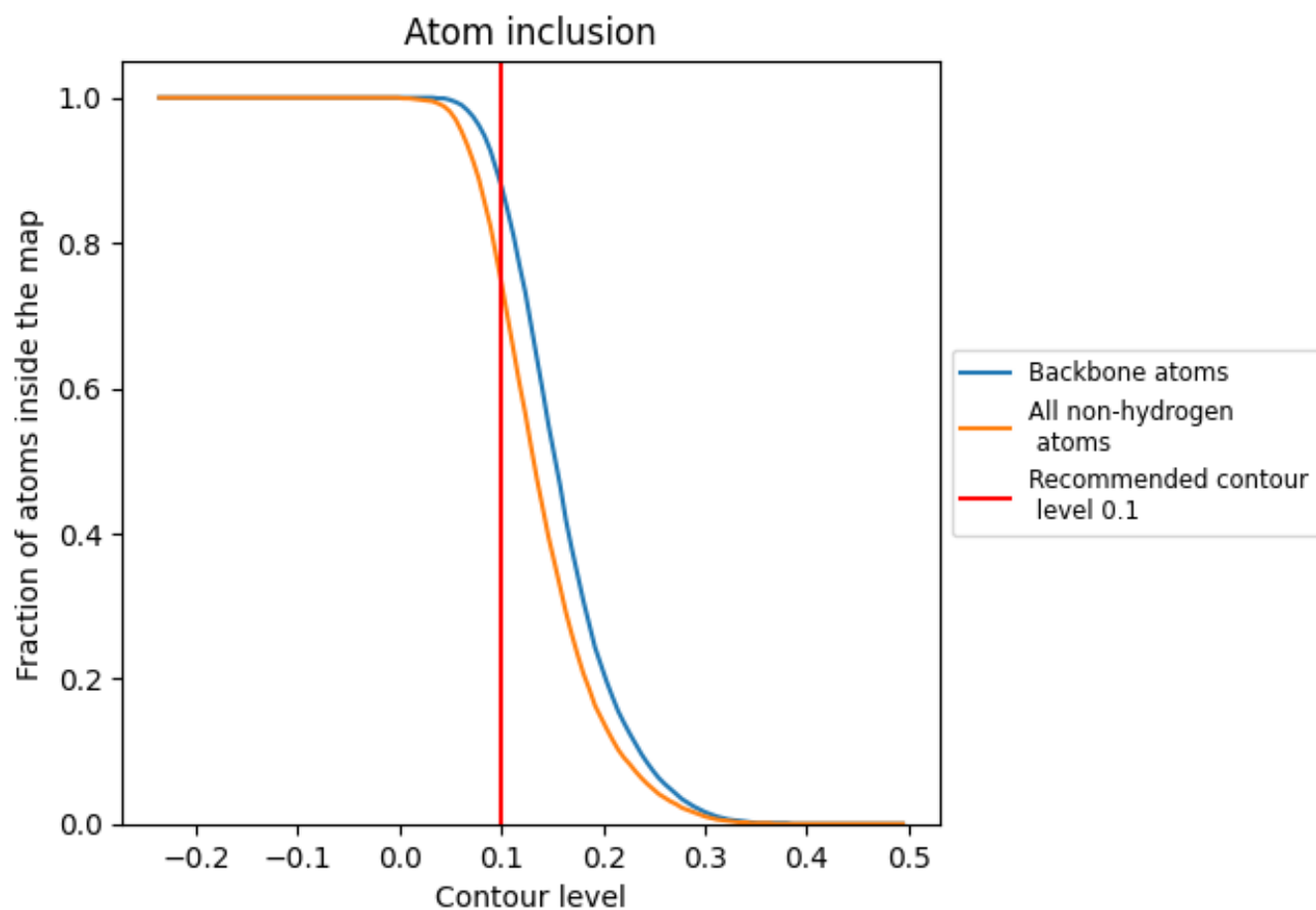
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.1).















9.4 Atom inclusion [i](#)



At the recommended contour level, 88% of all backbone atoms, 75% 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 (0.1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7470	 0.3110
A	 0.6640	 0.3150
B	 0.8210	 0.2770
H	 0.8730	 0.3790
L	 0.8660	 0.3440
N	 0.9450	 0.4300
R	 0.7410	 0.2350

