



wwPDB EM Validation Summary Report ⓘ

Mar 19, 2024 – 09:29 PM JST

PDB ID : 6JG3
EMDB ID : EMD-9823
Title : Cryo-EM structure of RyR2 (Ca²⁺ alone dataset)
Authors : Chi, X.M.; Gong, D.S.; Ren, K.; Zhou, G.W.; Huang, G.X.Y.; Lei, J.L.; Zhou, Q.; Yan, N.
Deposited on : 2019-02-13
Resolution : 6.10 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.dev70
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

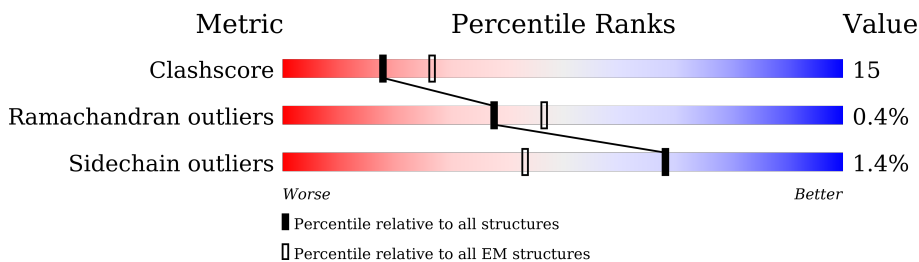
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 6.10 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	4968	
1	B	4968	
1	C	4968	
1	D	4968	

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 106185 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 Ryanodine receptor 2.

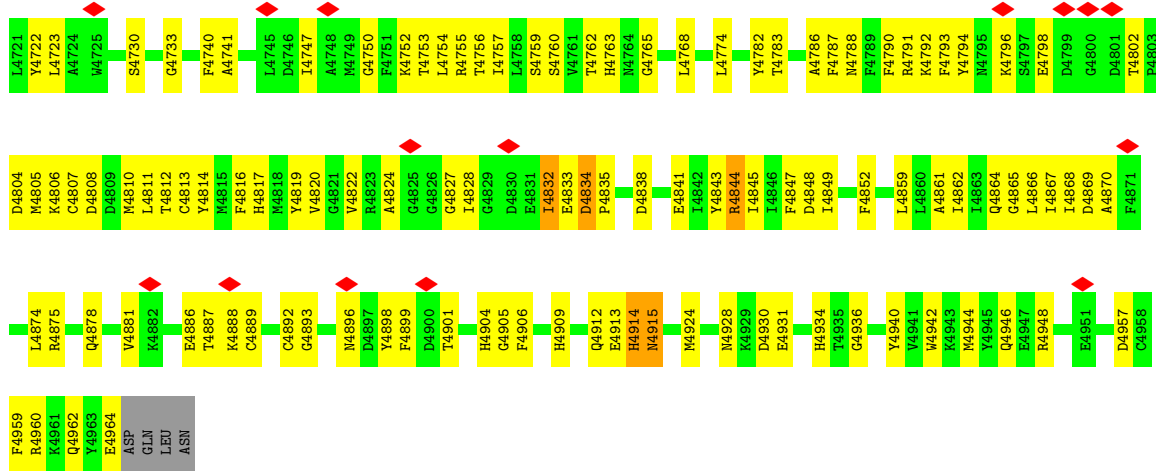
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	3477	26546	16893	4545	4951	157	0	0
1	B	3477	26546	16893	4545	4951	157	0	0
1	C	3477	26546	16893	4545	4951	157	0	0
1	D	3477	26543	16890	4545	4951	157	0	0

- Molecule 2 is ZINC ION (three-letter code: ZN) (formula: Zn).

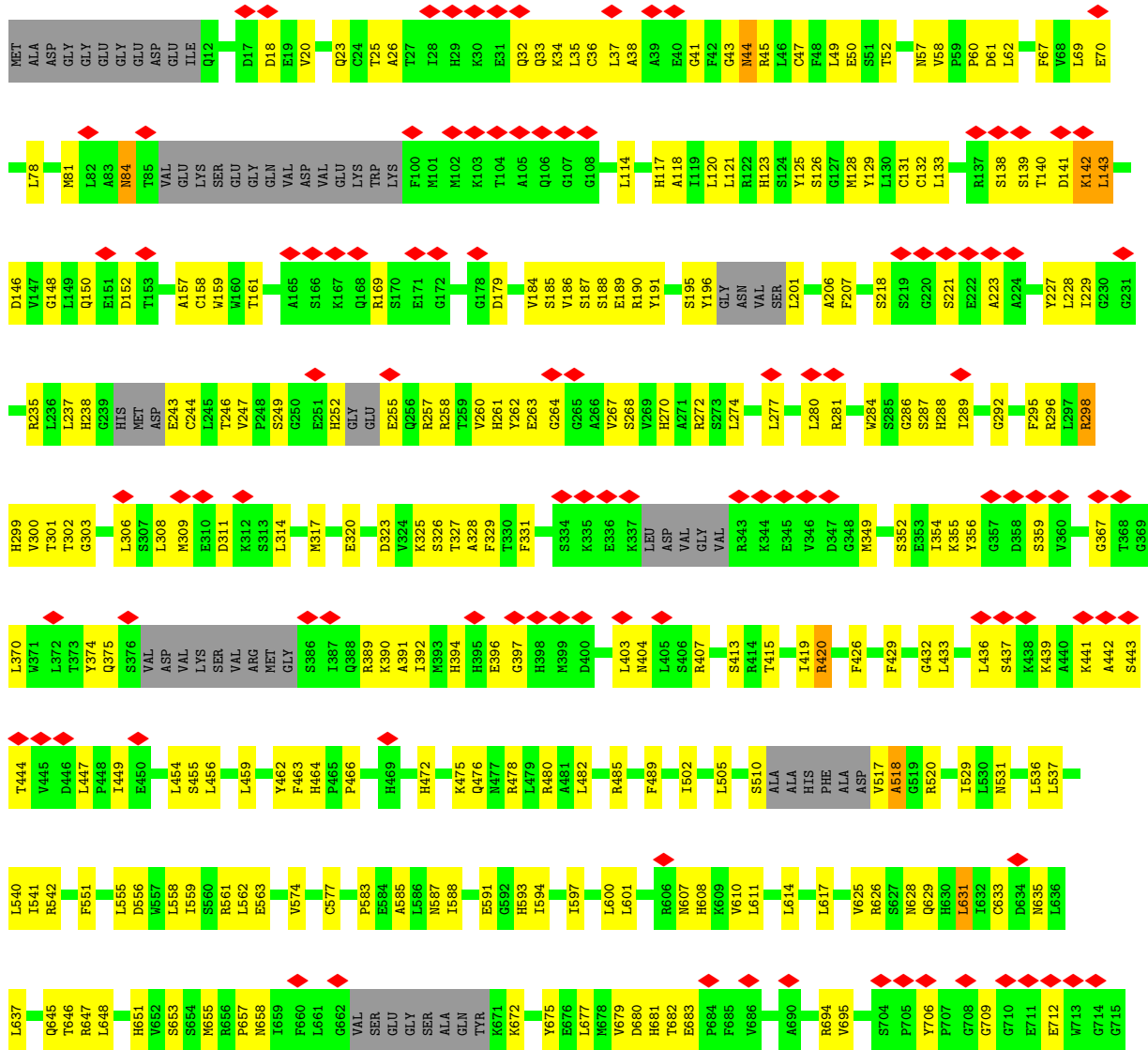
Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
2	A	1	1	1	0
2	B	1	1	1	0
2	C	1	1	1	0
2	D	1	1	1	0

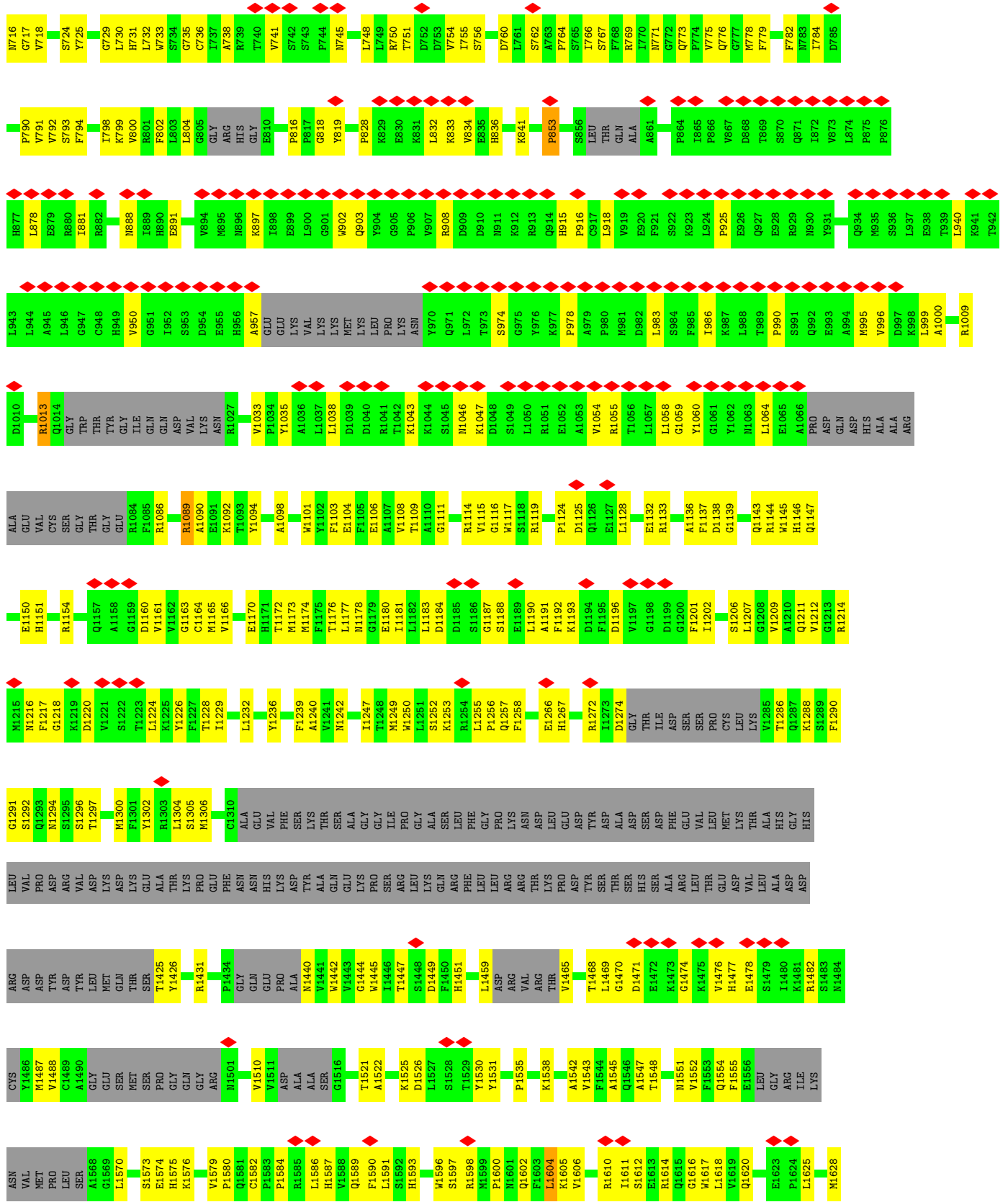
MET	S4696	S4697	S4698	L4699	M4700	S4701	L4702	M4709	F4715	D4716	N4718	S4719	F4720	L4721	Y4722	L4723	A4724	M4725	S4730	V4731	L4732	G4733	M4736	F4740	L4745	D4746	L4747	A4748	M4749	G4750			
ASP																																	
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ALA																																	
LEU																																	
ASP																																	
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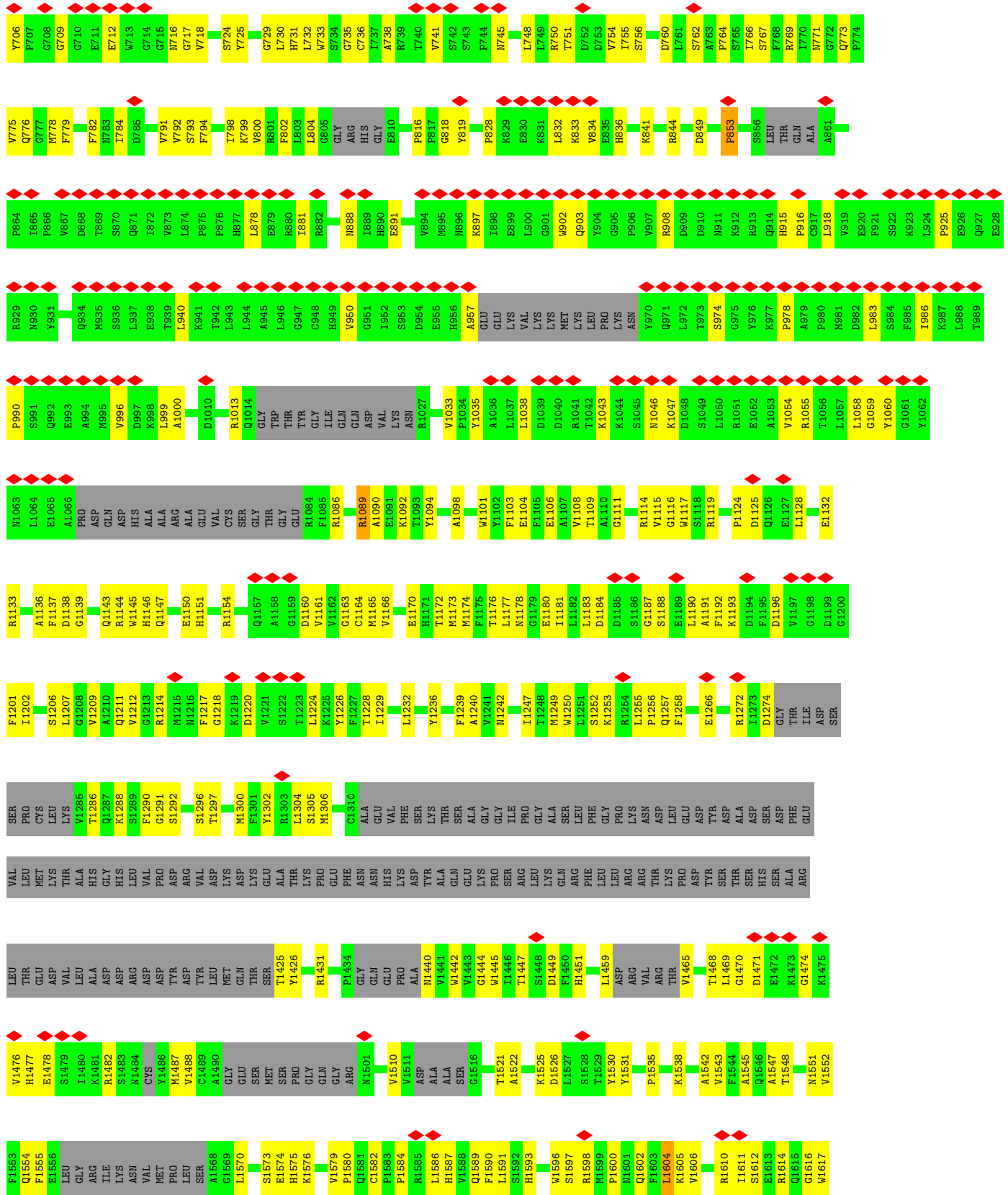
ASP	PRO	ASN	ALA	SER	CYS	ILE	L3124	D3063	E3003	LEU	E2882	Y2822	K2762	F2702
PRO	GLY	GLN	ARG	GLN	SER	TYR	E3125	N3064	M3004	GLU	K2883	S2823	K2763	M2703
GLY	ASN	ILE	ASP	TYR	TYR	ASN	D3126	A3065	M3005	PHE	A2884	P2824	L2764	M2704
THR	LEU	ASN	TYR	SER	LEU	THR	V3127	A3066	THR	GLY	K2885	R2825	S2765	Q2705
VAL	ILE	ASN	ALA	ARG	TRP	SER	Q3128	E3067	LEU	GLY	K2886	A2826	K2766	P2706
ARG	ALA	SER	V3129	D3068	TRP	ARG	F3009	D3068	SER	ARG	R2887	I2827	K2767	V2707
VAL	LEU	THR	S3130	L3069	GLU	GLU	C3010	L3069	SER	SER	E2888	D2828	E2768	D2708
LEU	ALA	ARG	E3070	L3069	GLY	ALA	K3011	K3011	GLY	GLY	K2889	M2829	K2769	T2709
LEU	ALA	ARG	Y3132	K3071	ALA	ALA	L3012	L3012	GLU	GLU	A2890	S2830	E2770	S2710
LEU	ALA	ARG	K3072	K3072	ALA	ALA	G3013	G3013	HIS	HIS	Q2891	M2831	I2771	M2711
ASN	ASN	ASN	M3073	M3073	ASN	ASN	V3014	V3014	PHE	PHE	D2892	Y2832	Y2772	I2712
LEU	LEU	LEU	E3074	E3074	LEU	LEU	L3015	L3015	PRO	PRO	I2893	T2833	R2773	T2713
LEU	LEU	LEU	M3075	M3075	LEU	LEU	V3016	V3016	TYR	TYR	D2894	L2834	W2774	I2714
LEU	LEU	LEU	L3076	L3076	LEU	LEU	H3018	H3018	ILE	ILE	K2895	S2835	P2775	P2715
LEU	LEU	LEU	Q3079	Q3079	LEU	LEU	R3019	R3019	GLN	GLN	F2896	R2836	I2776	E2716
LEU	LEU	LEU	F3081	F3081	LEU	LEU	I3020	I3020	LYS	LYS	L2897	D2837	K2777	K2717
LEU	LEU	LEU	T3082	T3082	LEU	LEU	S3021	S3021	PHE	PHE	Q2898	L2838	E2778	L2718
LEU	LEU	LEU	HIS	HIS	LEU	LEU	L3022	L3022	ALA	ALA	I2899	H2839	S2779	E2719
LEU	LEU	LEU	THR	THR	LEU	LEU	F3023	F3023	VAL	VAL	M2900	A2840	L2780	Y2720
LEU	LEU	LEU	THR	THR	LEU	LEU	G3024	G3024	VAL	VAL	Q2901	M2841	K2781	F2721
LEU	LEU	LEU	ASN	ASN	LEU	LEU	N3025	N3025	ARG	ARG	A2902	E2842	T2782	I2722
LEU	LEU	LEU	D3026	D3026	LEU	LEU	D3026	D3026	PRO	PRO	Y2903	A2843	M2783	M2723
LEU	LEU	LEU	I3027	I3027	LEU	LEU	A3027	A3027	LEU	LEU	S2905	M2844	L2784	K2724
LEU	LEU	LEU	GLY	GLY	LEU	LEU	T3028	T3028	ILE	ILE	R2906	M2845	A2785	Y2725
LEU	LEU	LEU	VAL	VAL	LEU	LEU	SER	SER	ASP	ASP	G2907	A2846	W2786	A2726
LEU	LEU	LEU	THR	THR	LEU	LEU	ILE	ILE	TYR	TYR	PHE	E2847	G2787	E2727
LEU	LEU	LEU	GLN	GLN	LEU	LEU	VAL	VAL	PHE	PHE	LYS	M2848	W2788	H2728
LEU	LEU	LEU	GLN	GLN	LEU	LEU	ASN	ASN	ASN	ASN	LYS	Y2849	R2789	S2729
LEU	LEU	LEU	ILE	ILE	LEU	LEU	ILE	ILE	HIS	HIS	ASN	H2850	I2790	H2730
LEU	LEU	LEU	ASN	ASN	LEU	LEU	L3034	L3034	ARG	ARG	LEU	N2851	E2791	D2731
LEU	LEU	LEU	TYR	TYR	LEU	LEU	H3035	H3035	LEU	LEU	LEU	I2852	R2792	D2732
LEU	LEU	LEU	T3098	T3098	LEU	LEU	L3036	L3036	ASP	ASP	ASP	W2853	R2792	K2732
LEU	LEU	LEU	T3099	T3099	LEU	LEU	L3037	L3037	THR	THR	THR	A2854	T2793	W2733
LEU	LEU	LEU	V3100	V3100	LEU	LEU	G3038	G3038	PRO	PRO	PRO	R2854	R2794	S2734
LEU	LEU	LEU	A3101	A3101	LEU	LEU	Q3039	Q3039	SER	SER	SER	K2855	E2795	M2735
LEU	LEU	LEU	L3102	L3102	LEU	LEU	T3040	T3040	ILE	ILE	ILE	K2856	G2796	D2736
LEU	LEU	LEU	L3103	L3103	LEU	LEU	L3041	L3041	GLY	GLY	GLY	Y2857	K2797	K2737
LEU	LEU	LEU	P3104	P3104	LEU	LEU	L3042	L3042	ARG	ARG	ARG	K2858	L2738	L2738
LEU	LEU	LEU	M3105	M3105	LEU	LEU	A3043	A3043	PHE	PHE	PHE	L2859	A2739	A2739
LEU	LEU	LEU	S3107	S3107	LEU	LEU	R3044	R3044	ALA	ALA	ALA	E2860	ALA	M2740
LEU	LEU	LEU	S3108	S3108	LEU	LEU	T3045	T3045	SER	SER	SER	L2861	TYR	G2741
LEU	LEU	LEU	L3109	L3109	LEU	LEU	M3047	M3047	PHE	PHE	PHE	E2862	THR	W2742
LEU	LEU	LEU	F3110	F3110	LEU	LEU	K3048	K3048	LEU	LEU	LEU	S2863	ARG	K2743
LEU	LEU	LEU	E3111	E3111	LEU	LEU	T3049	T3049	GLN	GLN	GLN	K2864	THR	W2744
LEU	LEU	LEU	H3112	H3112	LEU	LEU	G3050	G3050	LEU	LEU	LEU	G2865	ARG	G2745
LEU	LEU	LEU	I3113	I3113	LEU	LEU	A2997	A2997	ARG	ARG	ARG	G2866	ILE	E2746
LEU	LEU	LEU	G3114	G3114	LEU	LEU	S2998	S2998	VAL	VAL	VAL	G2867	SER	I2747
LEU	LEU	LEU	Q3115	Q3115	LEU	LEU	E3052	E3052	THR	THR	THR	G2868	GLN	D2748
LEU	LEU	LEU	H3116	H3116	LEU	LEU	S3053	S3053	ASP	ASP	ASP	H2869	SER	S2749
LEU	LEU	LEU	Q3117	Q3117	LEU	LEU	V3054	V3054	GLU	GLU	GLU	P2870	GLN	D2750
LEU	LEU	LEU	F3118	F3118	LEU	LEU	K3055	K3055	ALA	ALA	ALA	L2872	SER	S2751
LEU	LEU	LEU	GLY	GLY	LEU	LEU	SER	SER	ALA	ALA	ALA	V2816	V2816	S2752
LEU	LEU	LEU	ASP	ASP	LEU	LEU	ALA	ALA	LEU	LEU	LEU	D2817	D2817	K2753
LEU	LEU	LEU	LEU	LEU	LEU	LEU	ARG	ARG	ARG	ARG	ARG	Y2874	Y2874	W2754
LEU	LEU	LEU	ILE	ILE	LEU	LEU	ALA	ALA	ALA	ALA	ALA	P2875	P2875	Q2755
LEU	LEU	LEU	ILE	ILE	LEU	LEU	F3061	F3061	ALA	ALA	ALA	D2876	D2876	F2756
LEU	LEU	LEU	S3183	S3183	LEU	LEU	L3062	L3062	LEU	LEU	LEU	T2877	T2877	L2757
LEU	LEU	LEU			LEU	LEU			LEU	LEU	LEU	L2878	L2878	K2758
LEU	LEU	LEU			LEU	LEU			LEU	LEU	LEU	T2879	T2879	K2759
LEU	LEU	LEU			LEU	LEU			LEU	LEU	LEU	A2880	A2880	P2760
LEU	LEU	LEU			LEU	LEU			LEU	LEU	LEU	K2881	K2881	Y2761

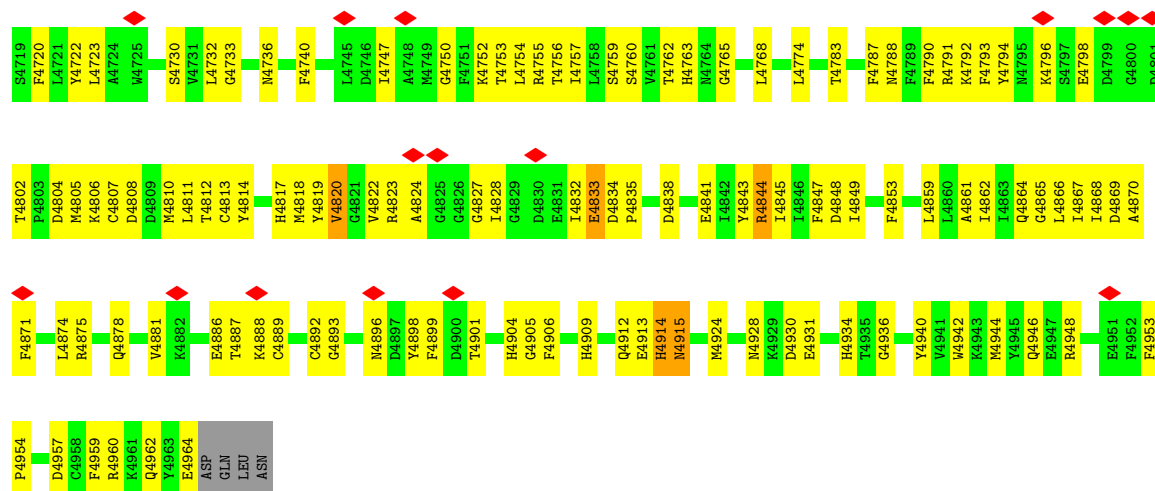


• Molecule 1: Ryanodine receptor 2









4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C4	Depositor
Number of particles used	24250	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 ($e^-/\text{\AA}^2$)	48.6	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.258	Depositor
Minimum map value	-0.089	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.012	Depositor
Recommended contour level	0.065	Depositor
Map size (Å)	522.6, 522.6, 522.6	wwPDB
Map dimensions	200, 200, 200	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	2.613, 2.613, 2.613	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

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	0.40	0/27034	0.64	13/36550 (0.0%)
1	B	0.40	0/27034	0.64	13/36550 (0.0%)
1	C	0.40	0/27034	0.65	16/36550 (0.0%)
1	D	0.40	0/27031	0.64	17/36546 (0.0%)
All	All	0.40	0/108133	0.64	59/146196 (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	A	0	37
1	B	0	37
1	C	0	37
1	D	0	37
All	All	0	148

There are no bond length outliers.

The worst 5 of 59 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	4820	VAL	CB-CA-C	-7.94	96.32	111.40
1	C	4833	GLU	CB-CA-C	7.71	125.81	110.40
1	D	4833	GLU	CB-CA-C	7.64	125.67	110.40
1	D	4519	LEU	CB-CA-C	-6.91	97.06	110.20
1	A	3742	LEU	CA-CB-CG	6.63	130.55	115.30

There are no chirality outliers.

5 of 148 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	141	ASP	Peptide
1	A	142	LYS	Peptide
1	A	221	SER	Peptide
1	A	518	ALA	Peptide
1	A	729	GLY	Peptide

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	26546	0	25084	786	0
1	B	26546	0	25084	830	0
1	C	26546	0	25084	831	0
1	D	26543	0	25075	820	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
All	All	106185	0	100327	3072	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 15.

The worst 5 of 3072 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:4820:VAL:O	1:D:4824:ALA:HB2	1.31	1.25
1:A:4783:THR:HG23	1:A:4817:HIS:CD2	1.75	1.21
1:B:4811:LEU:HB2	1:C:4519:LEU:CD1	1.71	1.18
1:A:4519:LEU:HD12	1:C:4811:LEU:HB2	1.28	1.16
1:B:4519:LEU:HD11	1:D:4811:LEU:HD13	1.28	1.13

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	3355/4968 (68%)	2934 (88%)	408 (12%)	13 (0%)	34	72
1	B	3355/4968 (68%)	2936 (88%)	407 (12%)	12 (0%)	34	72
1	C	3355/4968 (68%)	2934 (88%)	408 (12%)	13 (0%)	34	72
1	D	3355/4968 (68%)	2938 (88%)	405 (12%)	12 (0%)	34	72
All	All	13420/19872 (68%)	11742 (88%)	1628 (12%)	50 (0%)	38	72

5 of 50 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	143	LEU
1	B	143	LEU
1	C	143	LEU
1	D	143	LEU
1	A	142	LYS

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	2678/4355 (62%)	2640 (99%)	38 (1%)	67	80
1	B	2678/4355 (62%)	2640 (99%)	38 (1%)	67	80
1	C	2677/4355 (62%)	2641 (99%)	36 (1%)	69	82
1	D	2676/4355 (61%)	2642 (99%)	34 (1%)	69	82
All	All	10709/17420 (62%)	10563 (99%)	146 (1%)	68	80

5 of 146 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	D	84	ASN
1	D	4792	LYS
1	D	625	VAL
1	D	2118	ILE
1	B	841	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 230 such sidechains are listed below:

Mol	Chain	Res	Type
1	C	44	ASN
1	D	3993	ASN
1	C	2211	ASN
1	D	3976	GLN
1	D	1710	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 4 ligands modelled in this entry, 4 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

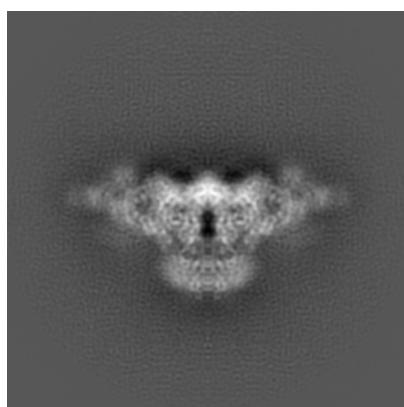
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-9823. These allow visual inspection of the internal detail of the map and identification of artifacts.

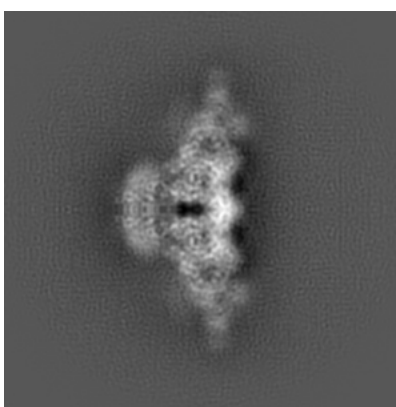
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

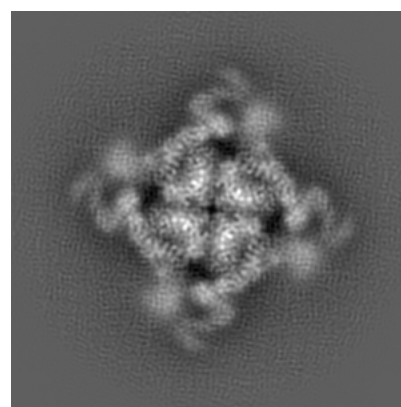
6.1.1 Primary map



X



Y

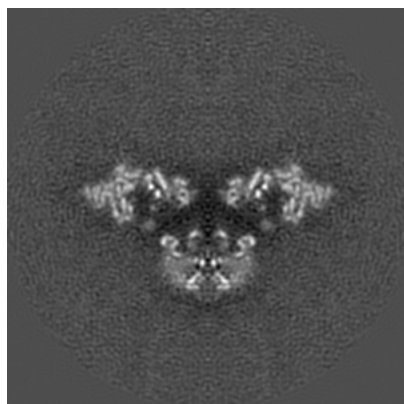


Z

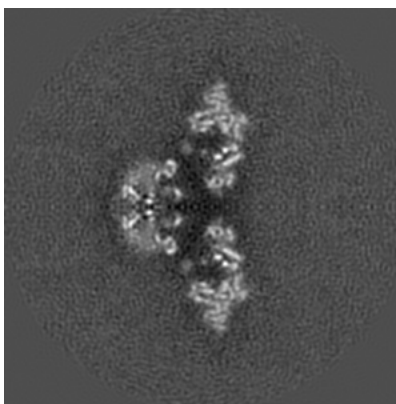
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

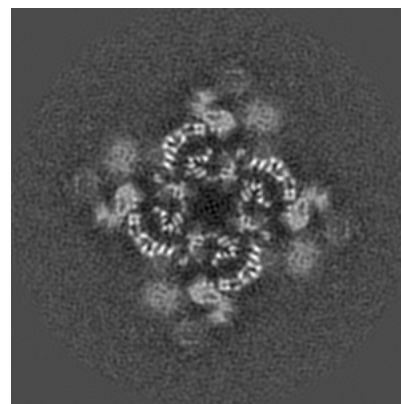
6.2.1 Primary map



X Index: 100



Y Index: 100

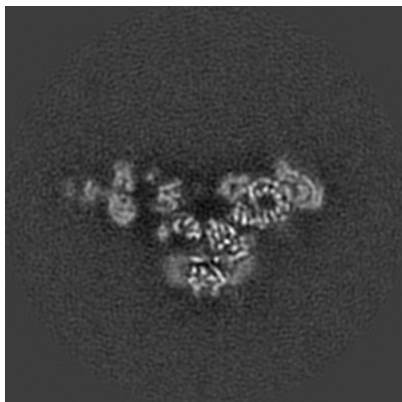


Z Index: 100

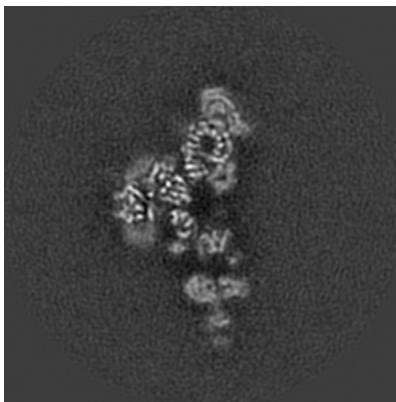
The images above show central slices of the map in three orthogonal directions.

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

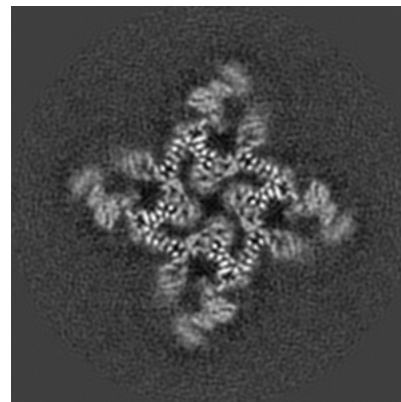
6.3.1 Primary map



X Index: 95



Y Index: 105

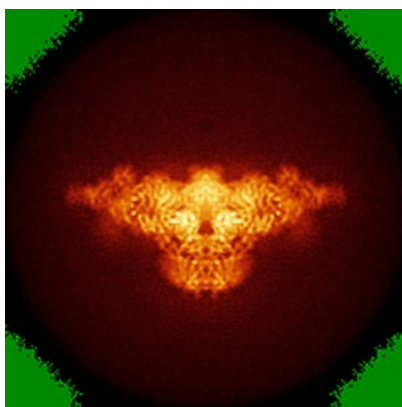


Z Index: 107

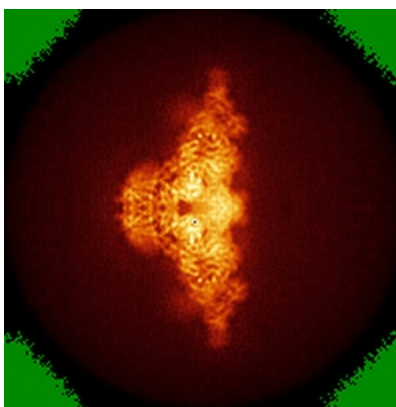
The images above show the largest variance slices of the map in three orthogonal directions.

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

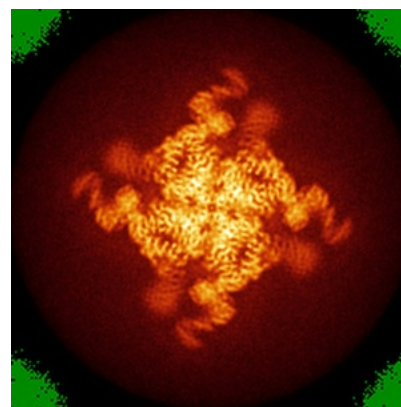
6.4.1 Primary map



X



Y

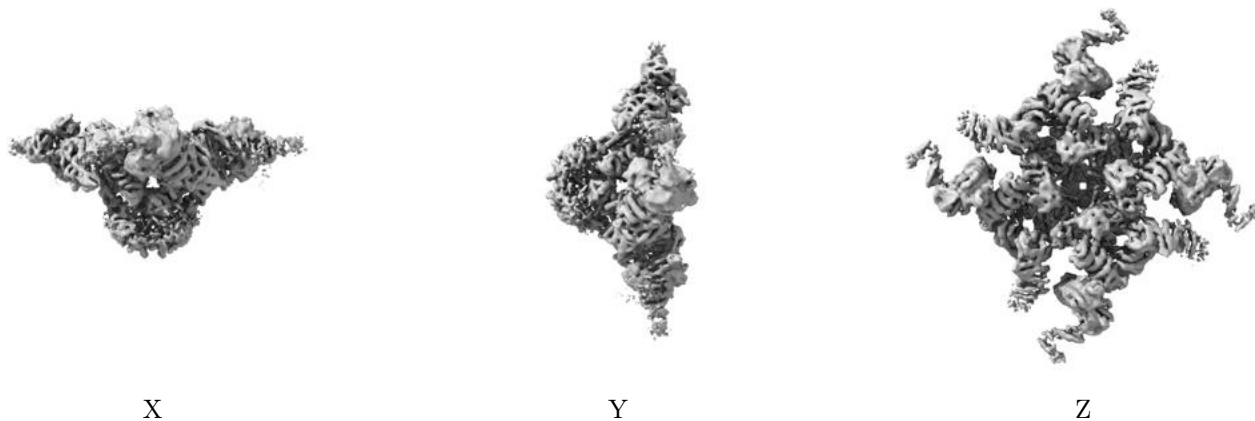


Z

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

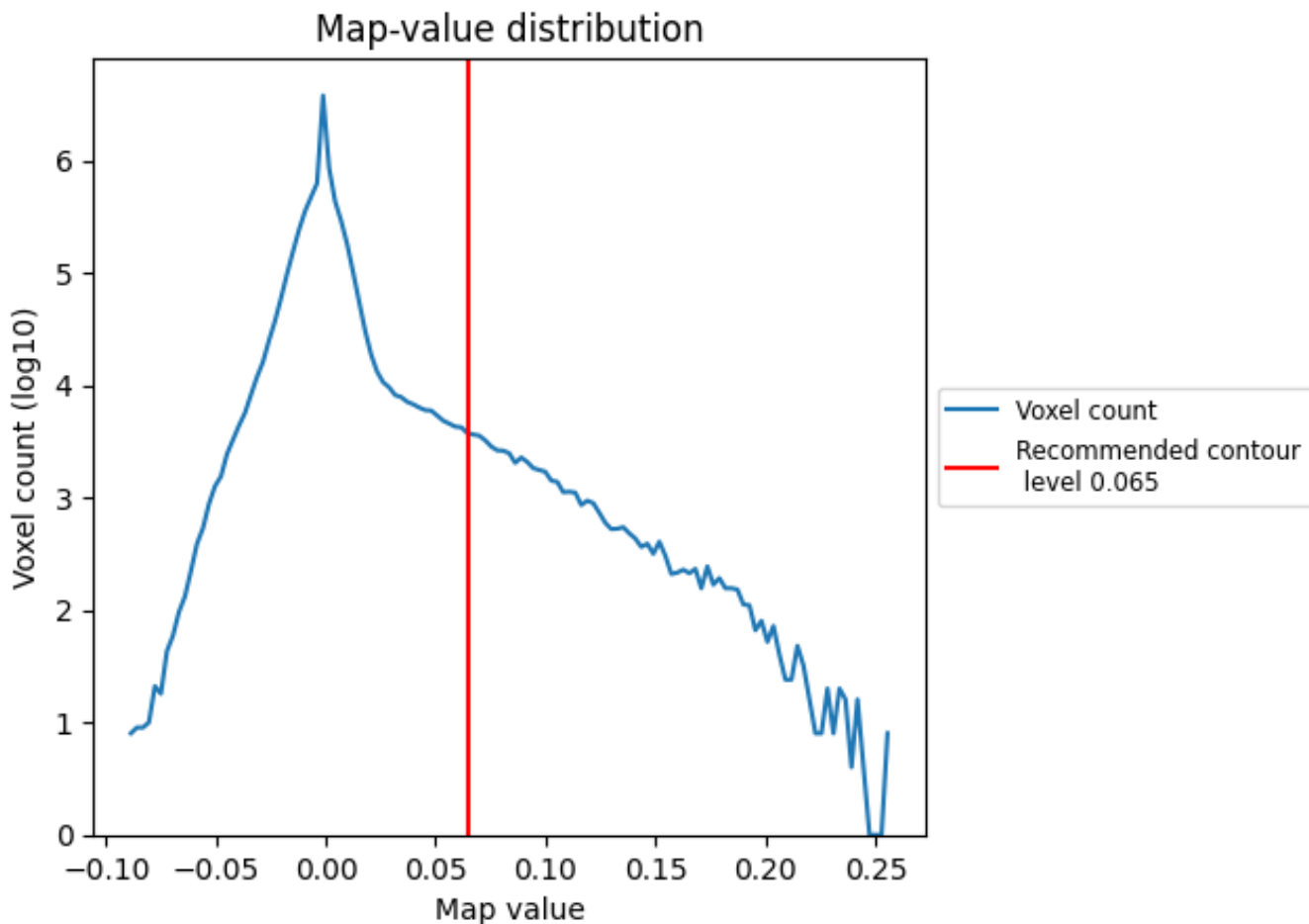
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

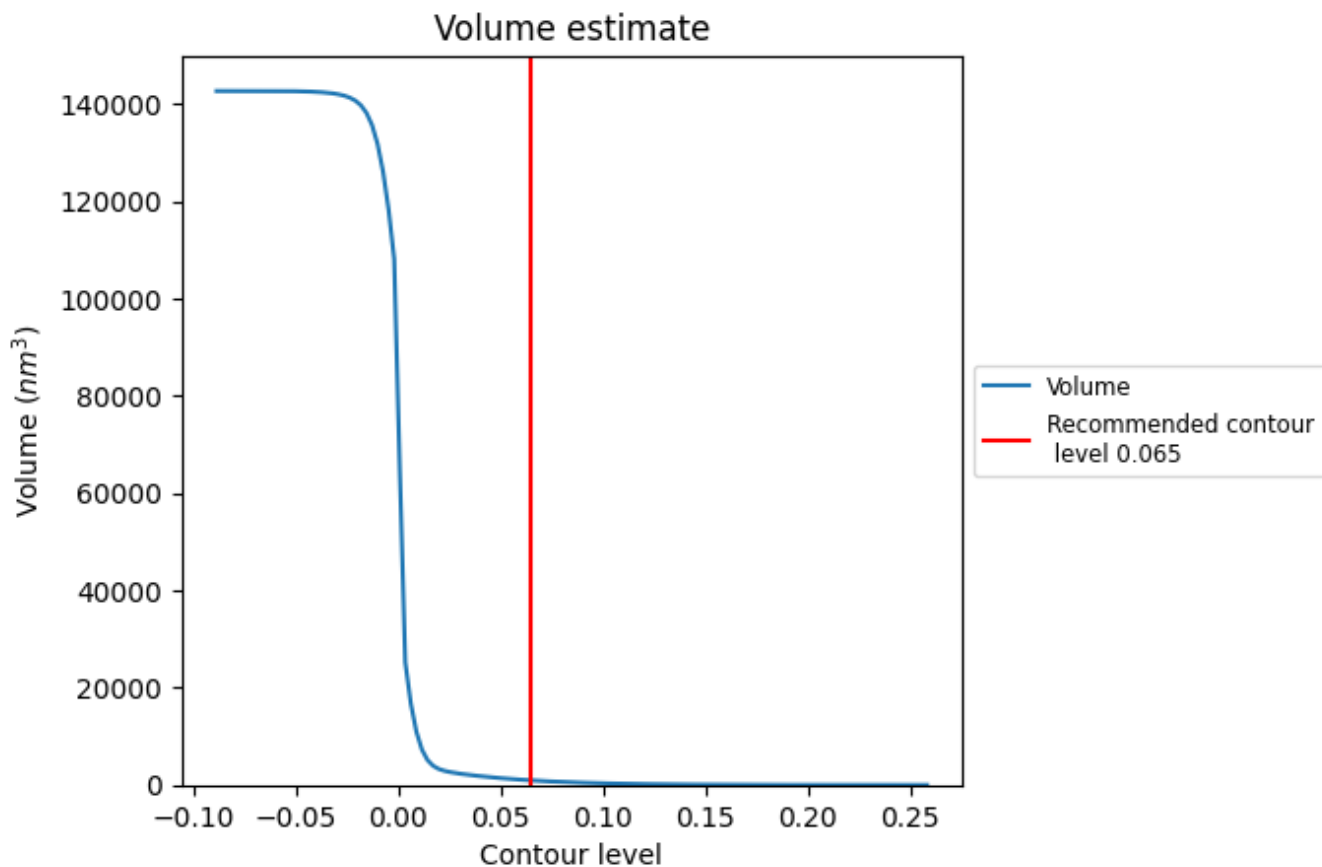
This section contains the results of statistical analysis of the map.

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.

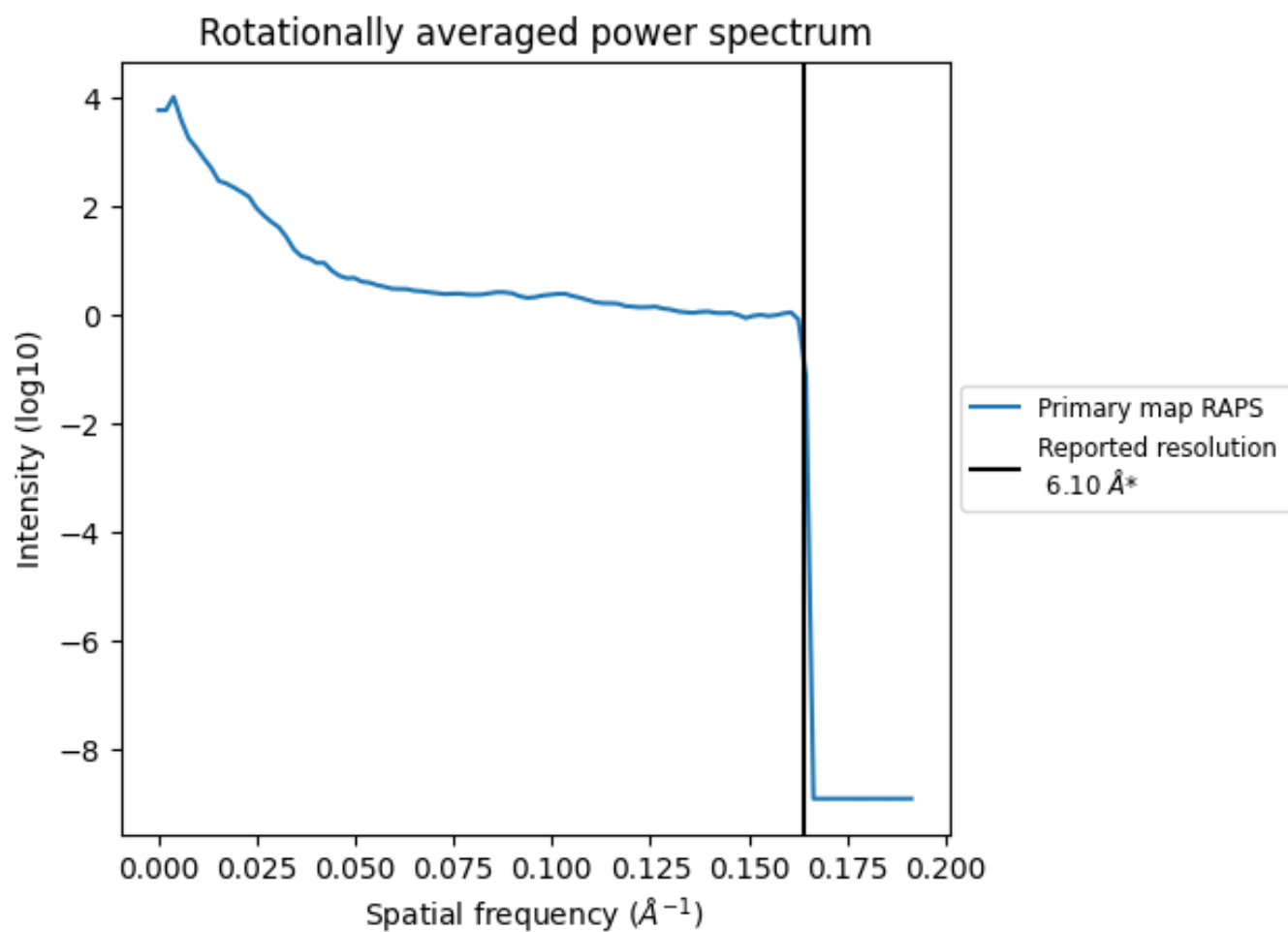
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 947 nm³; this corresponds to an approximate mass of 855 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](#)

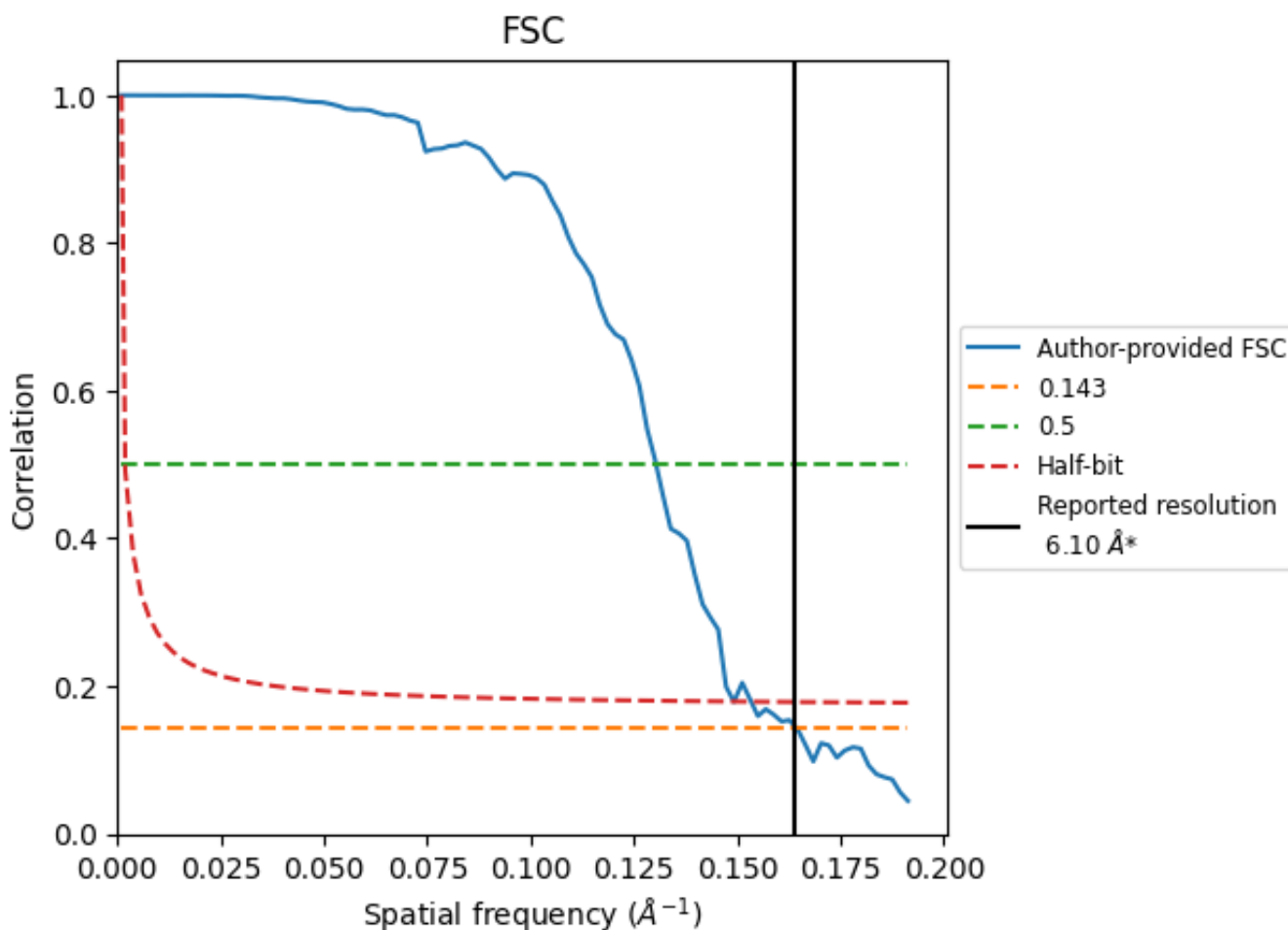


*Reported resolution corresponds to spatial frequency of 0.164 Å⁻¹

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 0.164 Å⁻¹

8.2 Resolution estimates [i](#)

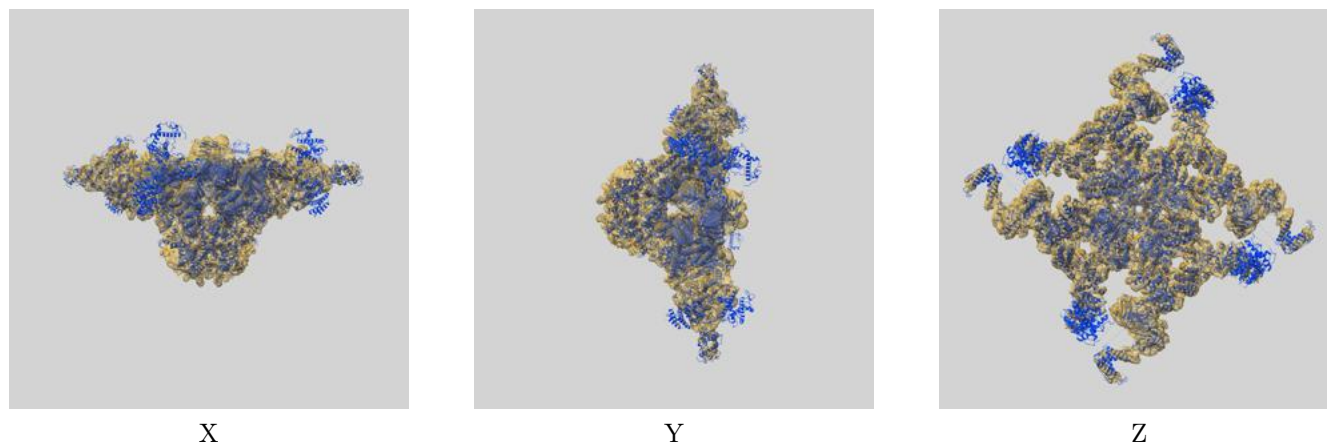
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	6.10	-	-
Author-provided FSC curve	6.09	7.67	6.70
Unmasked-calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

9 Map-model fit [i](#)

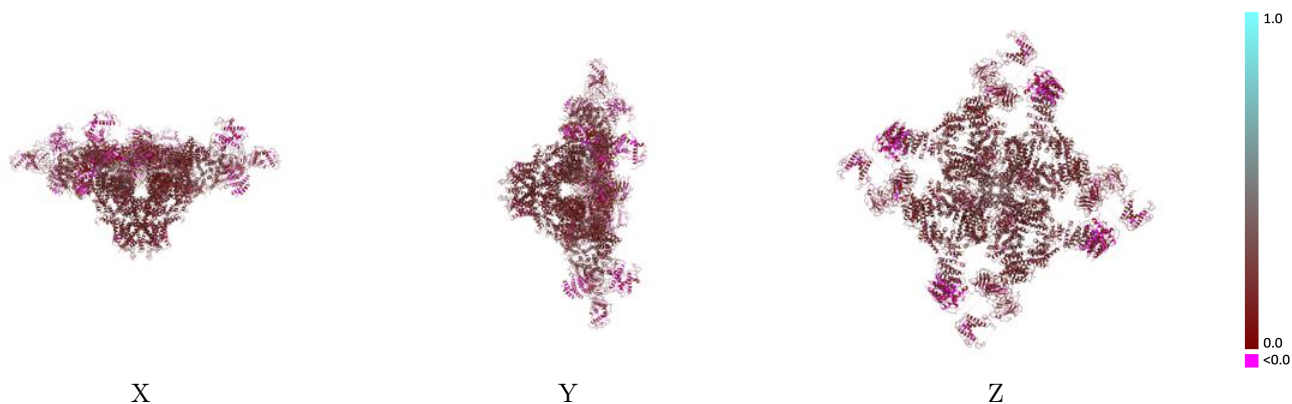
This section contains information regarding the fit between EMDB map EMD-9823 and PDB model 6JG3. Per-residue inclusion information can be found in section 3 on page 4.

9.1 Map-model overlay [i](#)



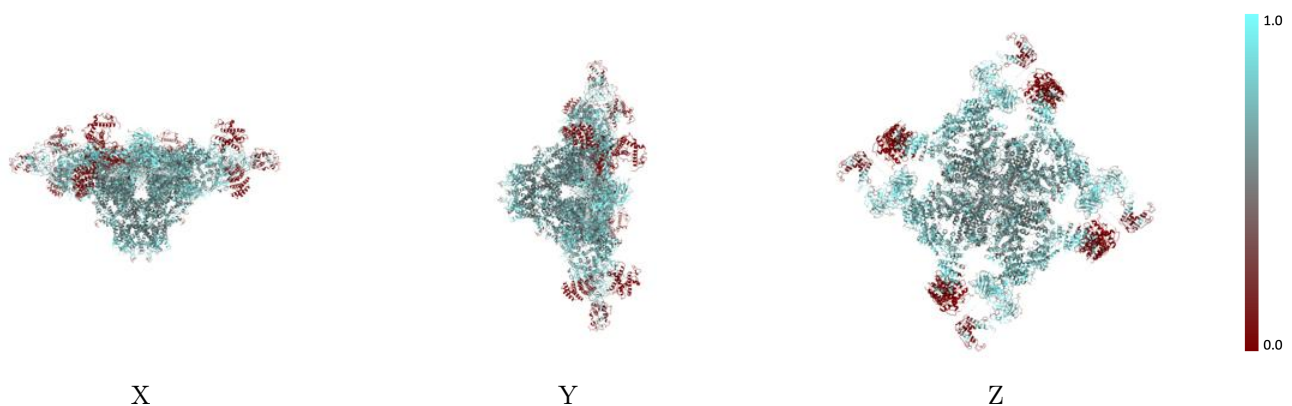
The images above show the 3D surface view of the map at the recommended contour level 0.065 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



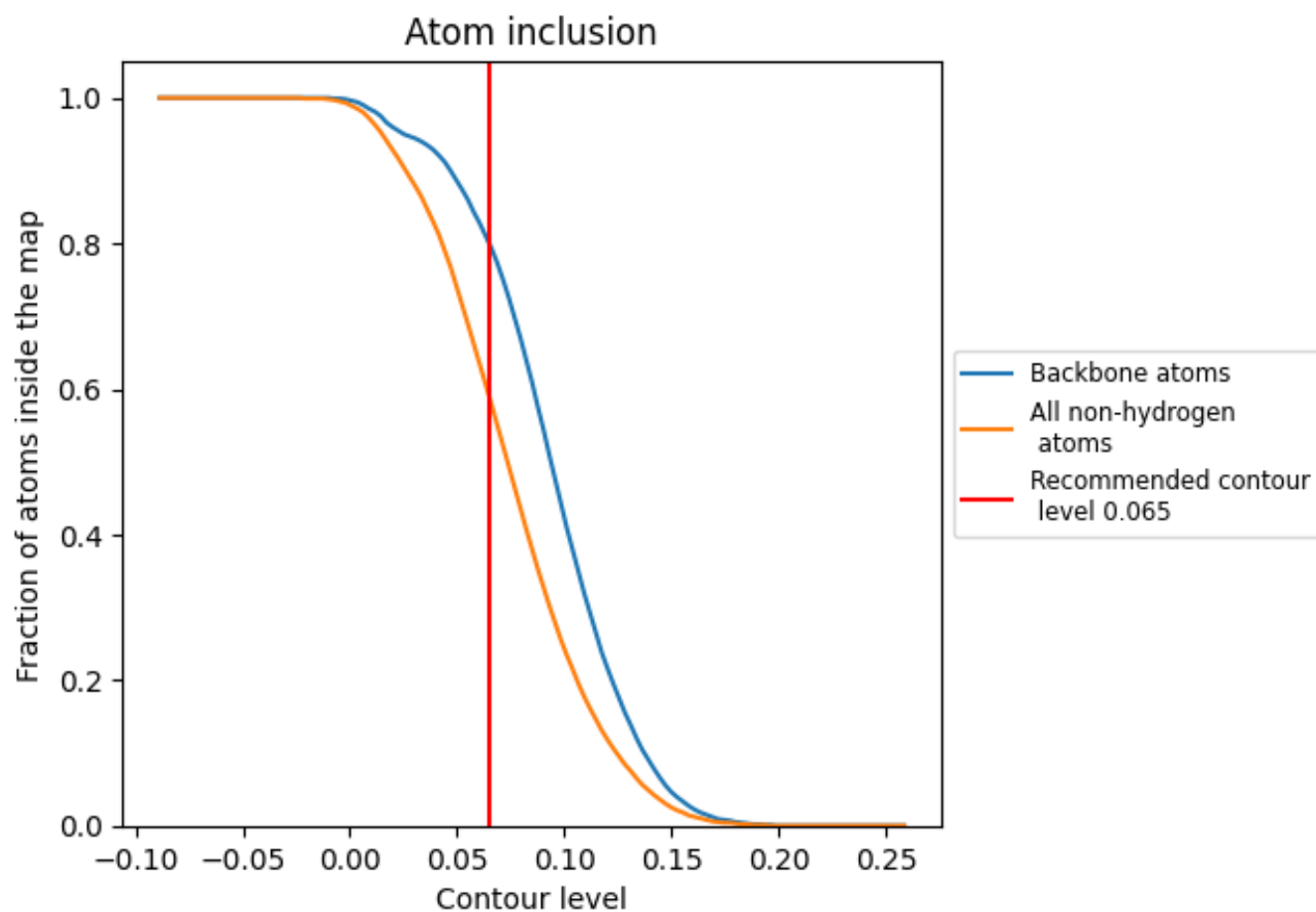
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.065).


9.4 Atom inclusion [i](#)



At the recommended contour level, 80% of all backbone atoms, 59% 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 (0.065) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5900	 0.1840
A	 0.5900	 0.1830
B	 0.5900	 0.1850
C	 0.5900	 0.1840
D	 0.5900	 0.1840

