



Full wwPDB EM Validation Report ⓘ

Nov 20, 2022 – 10:21 am GMT

PDB ID : 6I26
EMDB ID : EMD-0328
Title : Rea1 Wild type AMPPNP state
Authors : Sosnowski, P.; Urnavicius, L.; Boland, A.; Fagiewicz, R.; Busselez, J.; Papai, G.; Schmidt, H.
Deposited on : 2018-10-31
Resolution : 4.30 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

EMDB validation analysis : 0.0.1.dev43
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.2

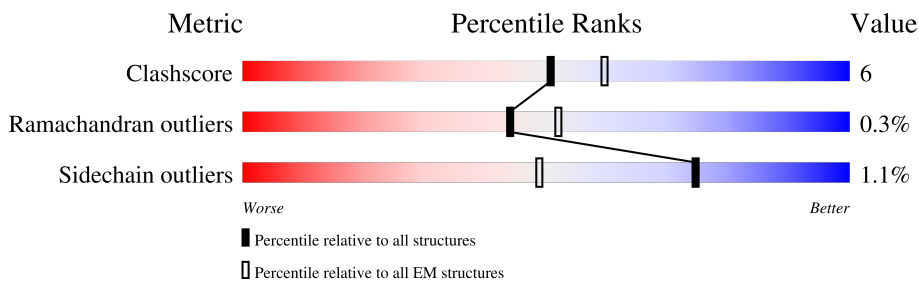
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 4.30 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	4854	

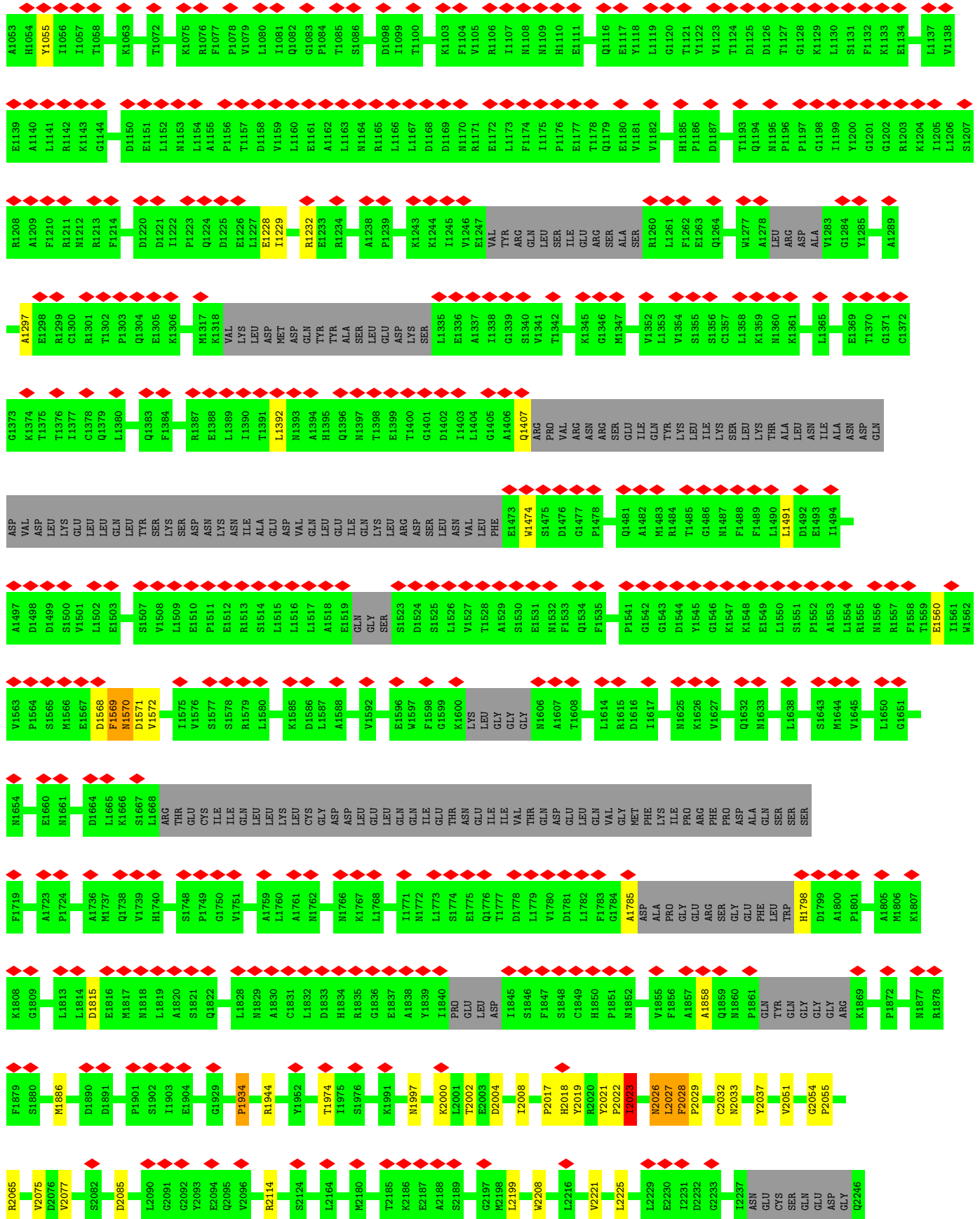
2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 22765 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 Midasin,Midasin,Midasin,Midasin.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	3587	22765	14329	4101	4303	32	0	0



F3998	F4002	F4003	F4004	N4008	N4009	L4014	E4015	R4016	Y4020	Y4021	T4022	G4027	I4030	L4031	I4034	L4038	N4041	PHE	CYS	SER	PRO	GLN	PRO	PRO	SER	GLU	T3944	D3945	D3946	N3947	N3948	A3951	M3957	L3962	L3963	O3964	S3965	S3966	N3971	A3975	L3976	F3982	F3983	F3984	E3986	S3989	I3990	Y3991	S3994																																		
S3748	L3749	S3752	H3758	F3763	L3770	H3774	L3777	E3778	T3781	G3782	L3783	K3784	G3785	D3786	H3789	E3803	D3811	A3825	S3842	H3846	F3853	D3854	R3863	N3877	E3880	T3881	G3882	N3883	A3884	F3885	N3887	K3889	GLY	GLY	PRO	PRO	I3894	L3895	L3896	L3897	L3898	L3899	L3900	L3901	L3902	L3903	L3904	L3905																																			
R3427	L3444	L3451	I3461	L3466	R3467	I3471	Q3484	L3488	E3491	K3498	S3499	L3500	L3509	K3514	D3515	D3519	Q3523	K3527	I3535	V3536	R3537	D3546	E3552	A3553	Y3557	UNK	X3559	X3560	X3562	X3563	X3564	X3565	X3568	X3569	X3570	X3571	X3574	X3575	X3579																																												
X3580	X3581	X3582	X3594	X3595	D3602	T3603	R3607	S3610	K3614	I3615	S3616	S3617	Q3618	E3619	F3620	F3623	D3629	F3630	F3630	Y3631	A3632	E3633	R3636	L3637	R3638	K3639	E3640	T3641	P3642	N3643	V3644	Y3645	THR	GLY	ASN	LYS	LYS	R3652	L3653	A3654	Y3655	T3656	Q3659	K3660	S3661	K3662	D3666	A3667	L3668																																		
K3669	E3670	L3671	R3672	R3673	I3674	G3675	L3676	LYS	VAL	ASN	PHE	ARG	GLU	D3683	I3684	V3687	Q3688	S3689	T3693	N3697	L3706	N3707	S3708	S3709	F3712	K3715	I3716	L3717	D3718	L3719	L3723	R3724	S3725	A3726	SER	ASN	PRO	SER	ASP	ASP	ILE	PRO	V3736	A3737	A3738	I3739	E3740	R3741	A3744																																		
S3748	L3749	S3752	H3758	F3763	L3770	H3774	L3777	E3778	T3781	G3782	L3783	K3784	G3785	D3786	H3789	E3803	D3811	A3825	S3842	H3846	F3853	D3854	R3863	N3877	E3880	T3881	G3882	N3883	A3884	F3885	N3887	K3889	GLY	GLY	PRO	PRO	I3894	L3895	L3896	L3897	L3898	L3899	L3900	L3901	L3902	L3903	L3904	L3905																																			
ARG	GLY	PRO	SER	VAL	E3913	R3921	T3922	F3923	T3924	S3925	L3928	S3923	K3932	V3933	I3934	G3935	D3936	G3937	I3938	E3939	S3940	ILE	SER	GLU	T3944	D3945	D3946	N3947	N3948	A3951	M3957	L3962	L3963	O3964	S3965	S3966	N3971	A3975	L3976	F3982	F3983	F3984	E3986	S3989	I3990	Y3991	S3994																																				
H2253	F2254	N2255	E2268	L2269	R2274	N2275	G2277	E2278	E2279	I2280	F2292	T2296	L2297	G2298	F2299	GLU	LEU	GLY	GLY	ASN	ASN	ILE	ASP	PHE	VAL	SER	ILE	ASP	ASP	GLY	ILE	LYS	LYS	ILE	LYS	LEU	ASN	GLU	F2322	D2323	M2324	K2329	H2330	Y2331	Q2344	I2348	L2351	F2356																																			
S2360	V2364	V2364	E2372	N2378	N2379	N2382	T2400	T2403	I2410	K2411	N2412	N2419	L2420	K2421	Q2423	L2428	H2429	L2442	P2460	L2463	Y2464	L2465	L2466	S2467	S2468	R2470	L2471	L2472	T2495	Y2496	L2497	G2506	P2513	P2516	L2521	N2531	L2532	S2536	Y2544	Q2545	Y2547	W2548	L2551	E2559	T2560	A2561	T2562	T2563	K2564	D2565	K2573	I2576	I2580	S2587	N2595	W2596	L2597	N2598	F2601	D2602	D2603	V2604	L2605	W2617	L2632	K2646	V2647	R2648	D2661	N2676	K2677	L2678	S2679	P2683	L2683	N2687	R2687	D2690	E2694	E2694	L2697		
I2698	K2701	H2708	D2715	L2739	L2744	L2747	I2748	N2753	Y2754	L2761	E2764	LYS	ASN	ALA	LYS	LYS	LEU	THR	SER	F2772	T2773	I2800	I2815	L2815	L2822	L2837	G2846	G2847	E2863	I2877	W2897	I2898	K2931	T2932	F2933	S2940	W2941	R2942	M2943	V2944	R2945	K2946	I2947	N2948	I2949	E2950	D2951	E2952	E2953	T2956	K2958	L2959	L2960	I2963	S2964	A2968	G2978	D2982	D2986	E2987	W2988	S3012	D3013	Q3014	R3017	R3018	L3019	Y3037	S3038	D3042	L3043	S3053	I3054	K3062	A3070	S3071	M3080	D3081	N3084	K3124	L3132	I3135	F3136
E3137	R3151	E3155	Q3156	GLU	ASN	ASN	LYS	LYS	SER	ASN	MET	PHE	LYS	PHE	ASN	ASN	ASP	ASN	ASP	SER	ASP	ASP	Y3174	F3182	PRO	TYR	GLU	ASP	THR	ALA	ALA	LEU	VAL	THR	ASN	LYS	ASP	ILE	SER	SER	PRO	K3202	L3203	D3204	V3217	K3220	L3230	D3243	SER	GLU	LYS	LYS	GLU	THR	ALA	PRO																											
GLU	VAL	PHE	GLY	ASN	I3281	D3281	F3282	I3297	L3306	K3307	L3308	L3309	K3310	W3312	P3313	E3314	H3315	A3316	R3323	Q3326	K3334	Y3357	A3358	S3359	S3360	S3363	N3365	N3366	K3369	L3370	T3385	W3386	K3387	E3410	I3414	F3417	VAL	SER	GLU	LYS	LYS	GLU	THR	ALA	PRO																																						

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	55442	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 ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1800	Depositor
Maximum defocus (nm)	3400	Depositor
Magnification	105000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.067	Depositor
Minimum map value	-0.029	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.0156	Depositor
Map size (Å)	418.56, 418.56, 418.56	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.09, 1.09, 1.09	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	0.30	2/21930 (0.0%)	0.56	8/30028 (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	4

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	462	SER	C-N	17.86	1.75	1.34
1	A	1934	PRO	C-N	-14.43	1.00	1.34

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
1	A	462	SER	O-C-N	-43.22	53.55	122.70
1	A	1934	PRO	O-C-N	-18.52	93.06	122.70
1	A	1934	PRO	CA-C-N	11.05	141.51	117.20
1	A	1934	PRO	C-N-CA	9.52	145.51	121.70
1	A	2595	LEU	CA-CB-CG	6.03	129.16	115.30
1	A	2605	LEU	CA-CB-CG	5.74	128.49	115.30
1	A	2753	ASN	C-N-CA	5.61	135.72	121.70
1	A	2521	LEU	CA-CB-CG	5.55	128.07	115.30

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1934	PRO	Mainchain
1	A	3312	TRP	Peptide
1	A	3515	ASP	Peptide
1	A	734	LYS	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	22765	0	17093	235	0
All	All	22765	0	17093	235	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 (235) 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:2344:GLN:OE1	1:A:2947:VAL:CG1	1.67	1.39
1:A:2410:LYS:HE3	1:A:2536:SER:CB	1.51	1.39
1:A:2351:LEU:HD21	1:A:2942:ARG:NH1	1.40	1.34
1:A:2410:LYS:CE	1:A:2536:SER:CB	2.11	1.28
1:A:2344:GLN:CD	1:A:2947:VAL:HG13	1.53	1.28
1:A:2351:LEU:CD2	1:A:2942:ARG:NH1	2.02	1.23
1:A:1055:TYR:O	1:A:1232:ARG:HA	1.42	1.18
1:A:2000:LYS:HD2	1:A:2948:ILE:HD13	1.26	1.16
1:A:2410:LYS:HG2	1:A:2536:SER:HA	1.24	1.15
1:A:2351:LEU:CD2	1:A:2942:ARG:HH12	1.56	1.14
1:A:2344:GLN:OE1	1:A:2947:VAL:HG12	1.43	1.11
1:A:2348:ILE:HG23	1:A:2943:ASN:HB2	1.18	1.09
1:A:2464:TYR:CE2	1:A:2545:GLN:NE2	2.24	1.05
1:A:2344:GLN:CD	1:A:2947:VAL:CG1	2.20	1.03
1:A:2356:PRO:HB2	1:A:2940:SER:OG	1.59	1.00
1:A:2356:PRO:CB	1:A:2940:SER:OG	2.10	1.00
1:A:2356:PRO:HB3	1:A:2940:SER:HA	1.44	0.99
1:A:2464:TYR:CE2	1:A:2545:GLN:OE1	2.15	0.99
1:A:2464:TYR:CE2	1:A:2545:GLN:CD	2.36	0.99

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2464:TYR:CD2	1:A:2545:GLN:NE2	2.31	0.98
1:A:2356:PRO:HA	1:A:2940:SER:HB2	1.40	0.98
1:A:2410:LYS:HE2	1:A:2536:SER:CB	1.93	0.98
1:A:2472:LEU:HD23	1:A:2551:LEU:HD11	1.46	0.97
1:A:2348:ILE:HG23	1:A:2943:ASN:CB	1.95	0.97
1:A:2344:GLN:CG	1:A:2947:VAL:HG13	1.96	0.95
1:A:2351:LEU:HD21	1:A:2942:ARG:HH12	0.97	0.95
1:A:1055:TYR:O	1:A:1232:ARG:CA	2.08	0.94
1:A:2410:LYS:HE2	1:A:2536:SER:CA	1.98	0.94
1:A:2348:ILE:HA	1:A:2943:ASN:HB3	1.53	0.91
1:A:402:LEU:HD21	1:A:453:TRP:HE1	1.36	0.90
1:A:1569:PHE:O	1:A:1571:ASP:N	2.04	0.90
1:A:2410:LYS:CG	1:A:2536:SER:HA	2.01	0.90
1:A:2027:LEU:HD12	1:A:2027:LEU:H	1.35	0.89
1:A:2000:LYS:CD	1:A:2948:ILE:HD13	2.03	0.89
1:A:2021:TYR:HD2	1:A:2023:ILE:HG23	1.39	0.86
1:A:2472:LEU:CD2	1:A:2551:LEU:HD11	2.05	0.86
1:A:2465:LEU:HA	1:A:2544:TYR:CD1	2.10	0.86
1:A:79:UNK:O	1:A:2017:PRO:HB2	1.75	0.85
1:A:2000:LYS:HD2	1:A:2948:ILE:CD1	2.05	0.85
1:A:2356:PRO:CA	1:A:2940:SER:OG	2.24	0.85
1:A:2464:TYR:HE2	1:A:2545:GLN:NE2	1.72	0.85
1:A:2356:PRO:HA	1:A:2940:SER:CB	2.07	0.84
1:A:2351:LEU:HD22	1:A:2943:ASN:OD1	1.78	0.84
1:A:2467:SER:O	1:A:2548:TRP:HZ3	1.60	0.83
1:A:2348:ILE:HD13	1:A:2944:VAL:HG22	1.59	0.82
1:A:2464:TYR:HB3	1:A:2544:TYR:O	1.79	0.81
1:A:2497:ILE:CB	1:A:2561:ALA:O	2.28	0.81
1:A:2019:TYR:HE1	1:A:2114:ARG:HH11	1.27	0.80
1:A:2460:PRO:O	1:A:2545:GLN:NE2	2.15	0.79
1:A:2021:TYR:HD2	1:A:2023:ILE:CG2	1.95	0.79
1:A:2356:PRO:CA	1:A:2940:SER:CB	2.62	0.78
1:A:1569:PHE:O	1:A:1572:VAL:N	2.12	0.77
1:A:2356:PRO:CB	1:A:2940:SER:CB	2.63	0.77
1:A:2019:TYR:HE1	1:A:2114:ARG:NH1	1.82	0.76
1:A:2000:LYS:HB3	1:A:2948:ILE:HD13	1.68	0.75
1:A:2464:TYR:CB	1:A:2544:TYR:O	2.35	0.75
1:A:2463:LEU:CD2	1:A:2960:ILE:HD13	2.17	0.75
1:A:22:UNK:HA	1:A:2331:TYR:CD2	2.22	0.74
1:A:653:GLY:HA2	1:A:877:MET:HB2	1.68	0.74
1:A:25:UNK:CB	1:A:2331:TYR:HB3	2.17	0.74

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:288:PHE:CD2	1:A:290:PRO:HD3	2.23	0.74
1:A:2464:TYR:HE2	1:A:2545:GLN:HE22	1.30	0.73
1:A:2410:LYS:CE	1:A:2536:SER:CA	2.61	0.72
1:A:2274:ARG:NH1	1:A:2279:GLU:OE1	2.23	0.72
1:A:2464:TYR:HD2	1:A:2545:GLN:NE2	1.85	0.71
1:A:2348:ILE:CD1	1:A:2944:VAL:HG22	2.20	0.71
1:A:316:LYS:O	1:A:321:LYS:NZ	2.24	0.71
1:A:2464:TYR:CD2	1:A:2545:GLN:CD	2.63	0.71
1:A:2019:TYR:CE1	1:A:2114:ARG:NH1	2.57	0.71
1:A:2351:LEU:HD21	1:A:2942:ARG:HH11	1.53	0.70
1:A:2351:LEU:CD2	1:A:2943:ASN:OD1	2.38	0.70
1:A:2410:LYS:HE2	1:A:2536:SER:N	2.07	0.70
1:A:1997:ASN:CB	1:A:2950:GLY:N	2.55	0.69
1:A:79:UNK:O	1:A:2017:PRO:CB	2.41	0.68
1:A:288:PHE:CE2	1:A:290:PRO:HD3	2.29	0.68
1:A:2356:PRO:HB3	1:A:2940:SER:CA	2.20	0.67
1:A:2356:PRO:C	1:A:2940:SER:OG	2.33	0.67
1:A:2496:TYR:CB	1:A:2563:THR:O	2.43	0.66
1:A:2364:VAL:CG2	1:A:2944:VAL:HG13	2.26	0.66
1:A:2000:LYS:H	1:A:2948:ILE:HG23	1.60	0.66
1:A:1297:ALA:HA	1:A:1560:GLU:O	1.95	0.65
1:A:2617:TRP:HE1	1:A:3042:ASP:HB3	1.60	0.65
1:A:2344:GLN:CB	1:A:2947:VAL:HG13	2.26	0.65
1:A:402:LEU:HD11	1:A:453:TRP:CE2	2.32	0.65
1:A:2463:LEU:HD22	1:A:2960:ILE:HD13	1.77	0.65
1:A:2464:TYR:HE2	1:A:2545:GLN:OE1	1.71	0.65
1:A:2344:GLN:HB3	1:A:2947:VAL:CG1	2.26	0.65
1:A:288:PHE:CD2	1:A:289:VAL:N	2.63	0.65
1:A:2469:LEU:HD21	1:A:2532:LEU:HD13	1.77	0.64
1:A:2344:GLN:OE1	1:A:2947:VAL:HG11	1.88	0.63
1:A:2000:LYS:H	1:A:2948:ILE:CG2	2.12	0.63
1:A:2000:LYS:HB3	1:A:2948:ILE:CD1	2.28	0.63
1:A:2460:PRO:C	1:A:2545:GLN:HE21	2.01	0.62
1:A:2000:LYS:N	1:A:2948:ILE:HG23	2.12	0.62
1:A:2026:ASN:O	1:A:2026:ASN:ND2	2.23	0.62
1:A:2351:LEU:HD23	1:A:2942:ARG:HH12	1.57	0.61
1:A:1055:TYR:CB	1:A:1228:GLU:O	2.48	0.61
1:A:2000:LYS:CB	1:A:2948:ILE:HD13	2.29	0.61
1:A:1055:TYR:CB	1:A:1229:ILE:HA	2.30	0.61
1:A:2051:VAL:HG21	1:A:2269:LEU:HD21	1.83	0.60
1:A:2464:TYR:HE2	1:A:2545:GLN:CD	1.89	0.60

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2471:LEU:HD13	1:A:2551:LEU:O	2.01	0.60
1:A:2000:LYS:CG	1:A:2948:ILE:HG21	2.31	0.60
1:A:2065:ARG:HH21	1:A:2077:VAL:HG21	1.66	0.60
1:A:1944:ARG:NH2	1:A:2277:GLY:O	2.30	0.60
1:A:2947:VAL:HG12	1:A:2948:ILE:HG13	1.84	0.60
1:A:2292:PHE:CD2	1:A:2946:LYS:HB3	2.36	0.59
1:A:1568:ASP:C	1:A:1570:ASN:H	2.06	0.59
1:A:2465:LEU:CA	1:A:2544:TYR:CD1	2.85	0.59
1:A:2356:PRO:CB	1:A:2940:SER:HA	2.27	0.58
1:A:80:UNK:HA	1:A:2017:PRO:HB3	1.84	0.58
1:A:2032:CYS:SG	1:A:2033:ASN:N	2.77	0.58
1:A:2026:ASN:HD22	1:A:2026:ASN:C	2.03	0.58
1:A:2344:GLN:HB3	1:A:2947:VAL:HG13	1.86	0.57
1:A:402:LEU:HD11	1:A:453:TRP:NE1	2.20	0.57
1:A:2351:LEU:HD23	1:A:2942:ARG:NH1	2.09	0.57
1:A:2442:LEU:O	1:A:2956:THR:HG23	2.04	0.57
1:A:2000:LYS:HG2	1:A:2948:ILE:HG21	1.87	0.57
1:A:2021:TYR:CD2	1:A:2023:ILE:CG2	2.84	0.56
1:A:402:LEU:CD2	1:A:453:TRP:HE1	2.15	0.56
1:A:2356:PRO:CB	1:A:2940:SER:CA	2.83	0.56
1:A:2467:SER:O	1:A:2548:TRP:CZ3	2.51	0.56
1:A:2945:ARG:NH1	1:A:2951:ASP:OD1	2.38	0.56
1:A:2463:LEU:HD21	1:A:2960:ILE:HD13	1.85	0.56
1:A:2000:LYS:HB3	1:A:2948:ILE:CG2	2.36	0.56
1:A:3124:LYS:HB2	1:A:3217:VAL:HG22	1.87	0.55
1:A:2360:SER:CB	1:A:2940:SER:O	2.54	0.55
1:A:2028:PHE:HD1	1:A:2028:PHE:H	1.54	0.55
1:A:2423:GLN:NE2	1:A:2429:HIS:O	2.40	0.55
1:A:3297:ILE:HD11	1:A:3370:LEU:HB3	1.88	0.55
1:A:1997:ASN:CB	1:A:2950:GLY:CA	2.85	0.54
1:A:2021:TYR:CD1	1:A:2022:PRO:HD2	2.43	0.54
1:A:1569:PHE:C	1:A:1571:ASP:N	2.60	0.54
1:A:2253:HIS:ND1	1:A:2255:ASN:OD1	2.40	0.54
1:A:2463:LEU:HD22	1:A:2960:ILE:CD1	2.38	0.53
1:A:3282:PHE:H	1:A:3385:THR:HG21	1.73	0.53
1:A:2460:PRO:HB2	1:A:2545:GLN:NE2	2.23	0.53
1:A:2531:ASN:ND2	1:A:2547:TYR:OH	2.42	0.53
1:A:80:UNK:C	1:A:2017:PRO:HB3	2.39	0.53
1:A:2008:ILE:HD13	1:A:2037:TYR:HB3	1.91	0.52
1:A:3014:GLN:OE1	1:A:3017:ARG:NH2	2.42	0.52
1:A:2021:TYR:CD2	1:A:2023:ILE:HG23	2.31	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2344:GLN:CB	1:A:2947:VAL:CG1	2.87	0.51
1:A:288:PHE:CG	1:A:289:VAL:N	2.79	0.51
1:A:2028:PHE:CE2	1:A:2296:THR:OG1	2.62	0.51
1:A:3789:HIS:HE1	1:A:3853:PHE:H	1.58	0.51
1:A:2292:PHE:CG	1:A:2946:LYS:CG	2.94	0.51
1:A:288:PHE:HD2	1:A:290:PRO:HD3	1.73	0.50
1:A:1569:PHE:O	1:A:1570:ASN:C	2.49	0.50
1:A:2292:PHE:CG	1:A:2946:LYS:HG3	2.47	0.50
1:A:1297:ALA:CA	1:A:1560:GLU:O	2.60	0.50
1:A:2761:LEU:HD13	1:A:2773:THR:HG22	1.94	0.50
1:A:1569:PHE:C	1:A:1571:ASP:H	2.15	0.50
1:A:2027:LEU:H	1:A:2027:LEU:CD1	2.13	0.50
1:A:80:UNK:CA	1:A:2017:PRO:HB3	2.41	0.50
1:A:1785:ALA:O	1:A:1798:HIS:N	2.46	0.49
1:A:2000:LYS:HB3	1:A:2948:ILE:HG21	1.95	0.49
1:A:2580:ILE:HD11	1:A:2597:ILE:HD11	1.94	0.49
1:A:3081:ASP:OD2	1:A:3084:ASN:ND2	2.37	0.49
1:A:2028:PHE:HD2	1:A:2329:LYS:HB3	1.78	0.49
1:A:3923:PHE:HE1	1:A:4002:VAL:HG21	1.77	0.49
1:A:3080:MET:HA	1:A:3230:LEU:HD22	1.96	0.48
1:A:3410:GLU:HA	1:A:3414:ILE:HD12	1.95	0.48
1:A:22:UNK:HA	1:A:2331:TYR:CE2	2.48	0.48
1:A:3929:SER:HB2	1:A:3964:ARG:HE	1.79	0.48
1:A:1815:ASP:HA	1:A:1858:ALA:HB3	1.96	0.48
1:A:2945:ARG:O	1:A:2949:SER:OG	2.32	0.48
1:A:80:UNK:HA	1:A:2017:PRO:CB	2.44	0.47
1:A:2356:PRO:CA	1:A:2940:SER:HB2	2.20	0.47
1:A:3461:ILE:HD13	1:A:3471:ILE:HG23	1.94	0.47
1:A:2463:LEU:CD1	1:A:2960:ILE:HB	2.44	0.47
1:A:2410:LYS:CE	1:A:2536:SER:HA	2.43	0.47
1:A:2348:ILE:CA	1:A:2943:ASN:HB3	2.36	0.47
1:A:2344:GLN:HB3	1:A:2947:VAL:HG11	1.97	0.47
1:A:2442:LEU:CB	1:A:2956:THR:HG22	2.44	0.47
1:A:402:LEU:HD21	1:A:453:TRP:NE1	2.19	0.46
1:A:2410:LYS:HE2	1:A:2536:SER:HA	1.94	0.46
1:A:356:TYR:O	1:A:808:VAL:HA	2.16	0.46
1:A:2822:LEU:HD11	1:A:3885:PHE:HB3	1.97	0.46
1:A:3670:GLU:OE2	1:A:3673:ARG:NH2	2.42	0.46
1:A:2199:LEU:HD21	1:A:2225:LEU:HD21	1.97	0.46
1:A:2000:LYS:CB	1:A:2948:ILE:HG21	2.45	0.46
1:A:3689:SER:HB2	1:A:3693:THR:HG21	1.97	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3500:LEU:HD22	1:A:3535:ILE:HG23	1.97	0.45
1:A:3603:THR:O	1:A:3607:ASN:ND2	2.50	0.45
1:A:2000:LYS:HB3	1:A:2948:ILE:CG1	2.47	0.45
1:A:2028:PHE:N	1:A:2028:PHE:CD1	2.84	0.45
1:A:2648:ARG:NH2	1:A:2739:LEU:O	2.50	0.45
1:A:2028:PHE:HB2	1:A:2029:PRO:HD2	1.99	0.44
1:A:3763:PHE:HE2	1:A:4014:LEU:HB2	1.82	0.44
1:A:402:LEU:HD11	1:A:453:TRP:CZ2	2.53	0.44
1:A:1392:LEU:HA	1:A:1491:LEU:HA	2.00	0.44
1:A:2410:LYS:CG	1:A:2536:SER:CA	2.87	0.44
1:A:2495:THR:CB	1:A:2562:VAL:O	2.66	0.44
1:A:2744:LEU:HD12	1:A:2747:LEU:HD12	2.00	0.44
1:A:654:GLU:O	1:A:878:ASN:O	2.35	0.44
1:A:2988:TRP:HH2	1:A:3043:LEU:HB3	1.83	0.44
1:A:1407:GLN:HA	1:A:1474:TRP:HA	2.00	0.44
1:A:3631:TYR:HD1	1:A:4034:ILE:HD11	1.82	0.44
1:A:2837:LEU:HD11	1:A:2877:ILE:HG23	2.00	0.43
1:A:2576:ILE:HB	1:A:2598:ASN:HD21	1.83	0.43
1:A:1568:ASP:C	1:A:1570:ASN:N	2.71	0.43
1:A:2931:LYS:HA	1:A:2963:ILE:HG21	2.00	0.43
1:A:3132:LEU:HD23	1:A:3135:ILE:HD11	1.99	0.43
1:A:3929:SER:OG	1:A:3963:LEU:O	2.36	0.43
1:A:2028:PHE:HD1	1:A:2028:PHE:N	2.15	0.43
1:A:2296:THR:HG23	1:A:2297:LEU:HD12	2.00	0.43
1:A:2027:LEU:HD12	1:A:2027:LEU:N	2.12	0.42
1:A:3709:SER:HA	1:A:4022:THR:HG22	2.01	0.42
1:A:825:TRP:CD2	1:A:874:PHE:HE2	2.36	0.42
1:A:2021:TYR:CD2	1:A:2023:ILE:HG22	2.54	0.42
1:A:2085:ASP:HA	1:A:2221:VAL:HG13	2.01	0.42
1:A:2469:LEU:HD21	1:A:2532:LEU:CD1	2.45	0.42
1:A:4004:THR:O	1:A:4008:ASN:ND2	2.51	0.42
1:A:2463:LEU:HD11	1:A:2960:ILE:HB	2.02	0.42
1:A:1974:THR:H	1:A:2281:TYR:HD2	1.66	0.42
1:A:2573:LYS:HB3	1:A:2601:PHE:HE2	1.84	0.42
1:A:3484:GLN:HE21	1:A:3715:LYS:HD3	1.85	0.42
1:A:2400:THR:HA	1:A:2403:THR:HG22	2.01	0.41
1:A:2054:GLY:HA2	1:A:2055:PRO:HD3	1.84	0.41
1:A:2000:LYS:CG	1:A:2948:ILE:HD13	2.48	0.41
1:A:2028:PHE:HE2	1:A:2296:THR:OG1	2.03	0.41
1:A:2898:ILE:HG13	1:A:3054:ILE:HG13	2.02	0.41
1:A:3019:LEU:HD23	1:A:3062:LYS:HE3	2.02	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:628:PHE:CB	1:A:913:SER:CB	2.98	0.41
1:A:2364:VAL:HG22	1:A:2944:VAL:HG13	1.99	0.41
1:A:3081:ASP:N	1:A:3081:ASP:OD1	2.52	0.41
1:A:1568:ASP:O	1:A:1570:ASN:N	2.49	0.41
1:A:2002:THR:OG1	1:A:2004:ASP:O	2.34	0.41
1:A:802:SER:HA	1:A:803:ILE:HA	1.66	0.40
1:A:2471:LEU:HD21	1:A:2933:PHE:CE2	2.55	0.40
1:A:2815:ILE:HG23	1:A:3883:ASN:HD21	1.86	0.40
1:A:82:UNK:O	1:A:2018:HIS:O	2.38	0.40
1:A:2897:TRP:HE1	1:A:3053:SER:HB2	1.85	0.40
1:A:2075:VAL:HG12	1:A:2208:TRP:HB2	2.04	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	3305/4854 (68%)	3081 (93%)	213 (6%)	11 (0%)	41 76

All (11) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	257	PRO
1	A	1570	ASN
1	A	2516	PRO
1	A	864	PRO
1	A	2023	ILE
1	A	2513	PRO
1	A	1886	MET
1	A	463	GLU
1	A	1569	PHE
1	A	2754	TYR

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	238	PRO

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	1413/4180 (34%)	1397 (99%)	16 (1%)	73 85

All (16) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2023	ILE
1	A	2026	ASN
1	A	2027	LEU
1	A	2028	PHE
1	A	2275	ASN
1	A	2378	ASN
1	A	2379	ASN
1	A	2382	ASN
1	A	2412	ASN
1	A	2419	ASN
1	A	2470	ARG
1	A	2676	ASN
1	A	3151	ARG
1	A	3706	LEU
1	A	3897	ASN
1	A	3964	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (18) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	2275	ASN
1	A	2378	ASN
1	A	2379	ASN
1	A	2382	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	2412	ASN
1	A	2419	ASN
1	A	2531	ASN
1	A	2545	GLN
1	A	2598	ASN
1	A	2676	ASN
1	A	2716	ASN
1	A	2844	HIS
1	A	3011	ASN
1	A	3262	ASN
1	A	3618	GLN
1	A	3789	HIS
1	A	3883	ASN
1	A	3897	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

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](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	A	7

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	31:UNK	C	70:UNK	N	16.07
1	A	3575:UNK	C	3579:UNK	N	7.33
1	A	3587:UNK	C	3591:UNK	N	5.27
1	A	3596:UNK	C	3599:ARG	N	5.16
1	A	3560:UNK	C	3562:UNK	N	3.64
1	A	462:SER	C	463:GLU	N	1.75
1	A	1934:PRO	C	1935:TRP	N	1.00

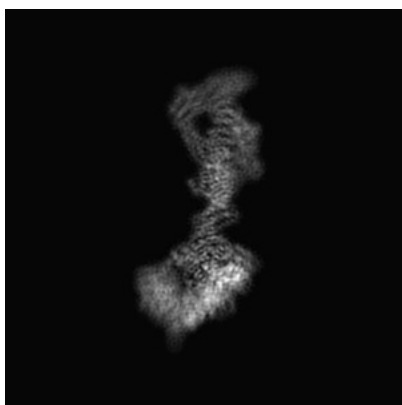
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-0328. These allow visual inspection of the internal detail of the map and identification of artifacts.

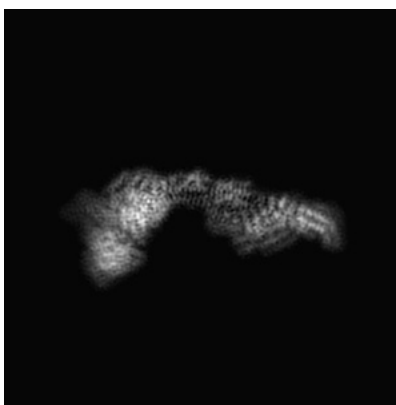
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

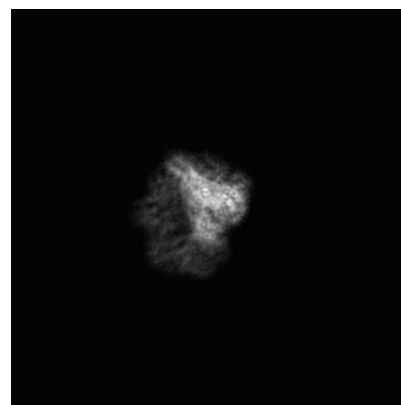
6.1.1 Primary map



X



Y

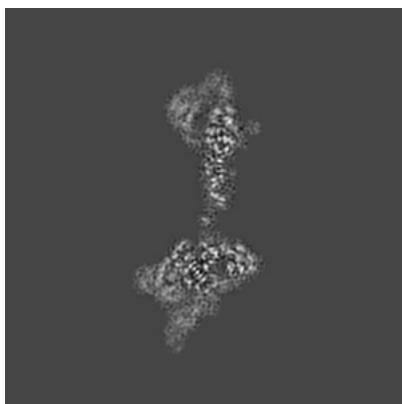


Z

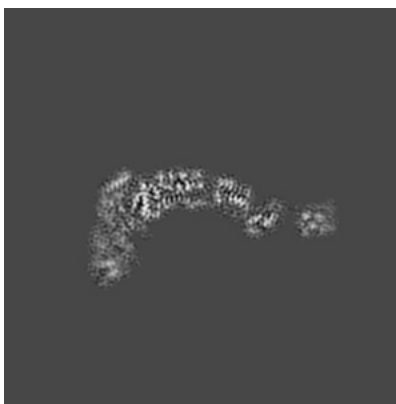
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

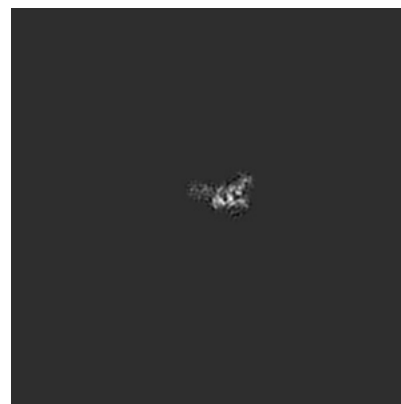
6.2.1 Primary map



X Index: 192



Y Index: 192

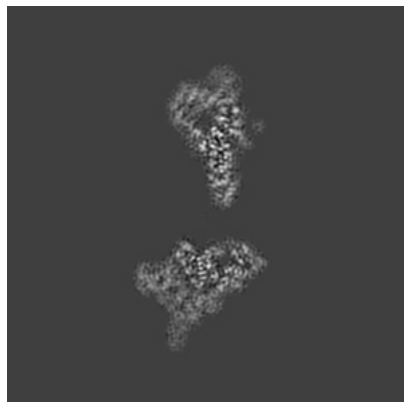


Z Index: 192

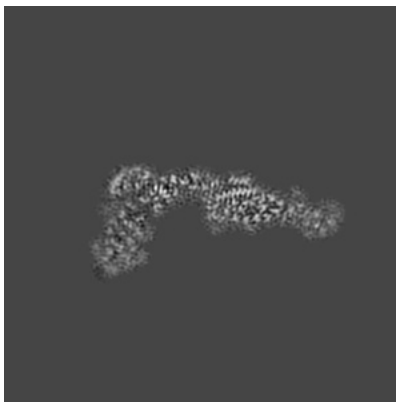
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

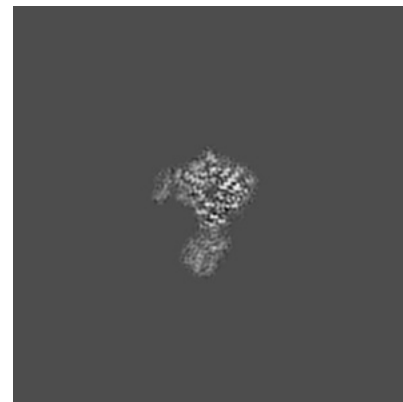
6.3.1 Primary map



X Index: 186



Y Index: 203



Z Index: 133

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

6.4 Orthogonal surface views [i](#)

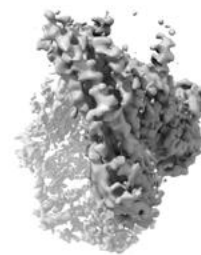
6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0156. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

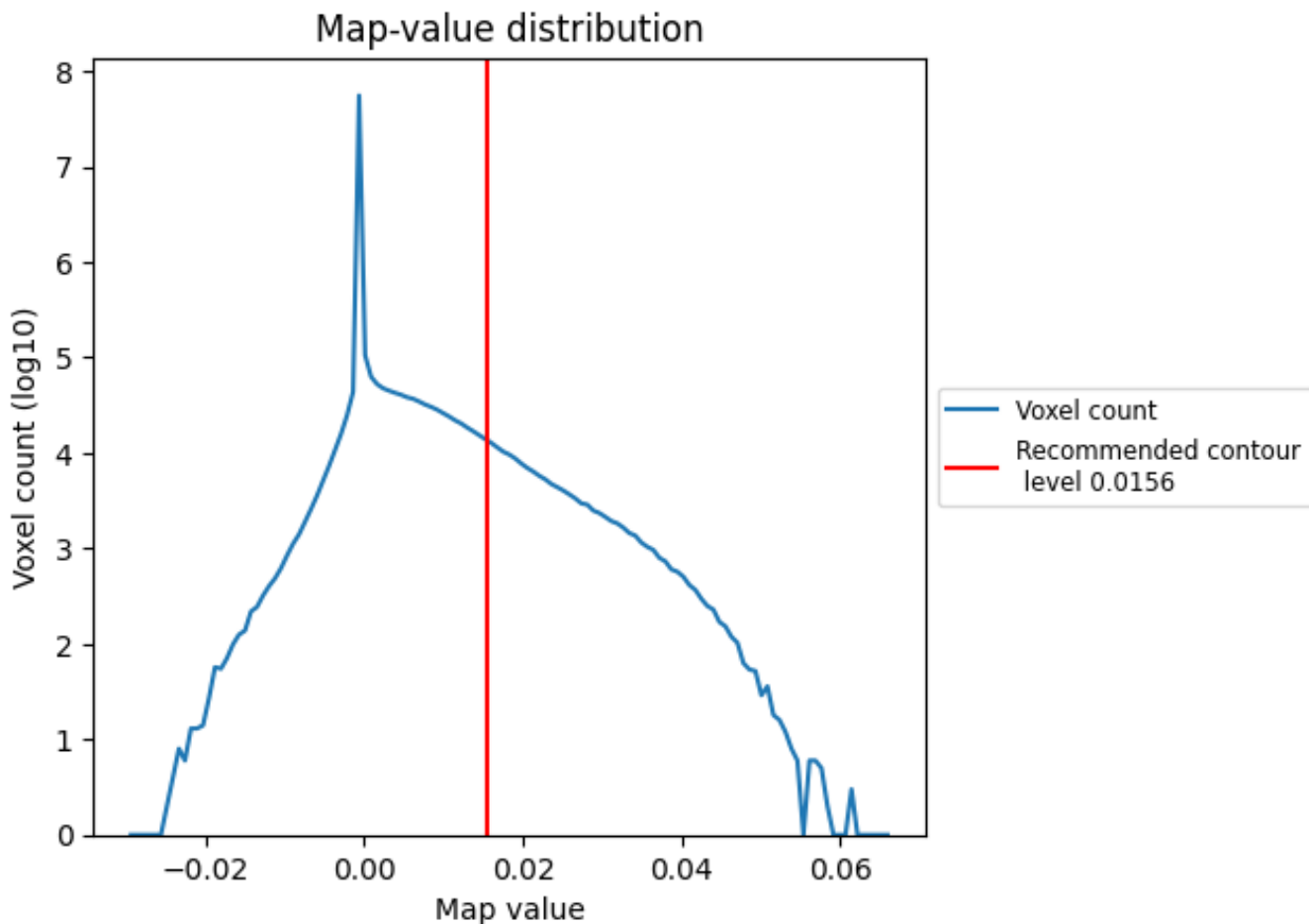
6.5 Mask visualisation

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

7 Map analysis [i](#)

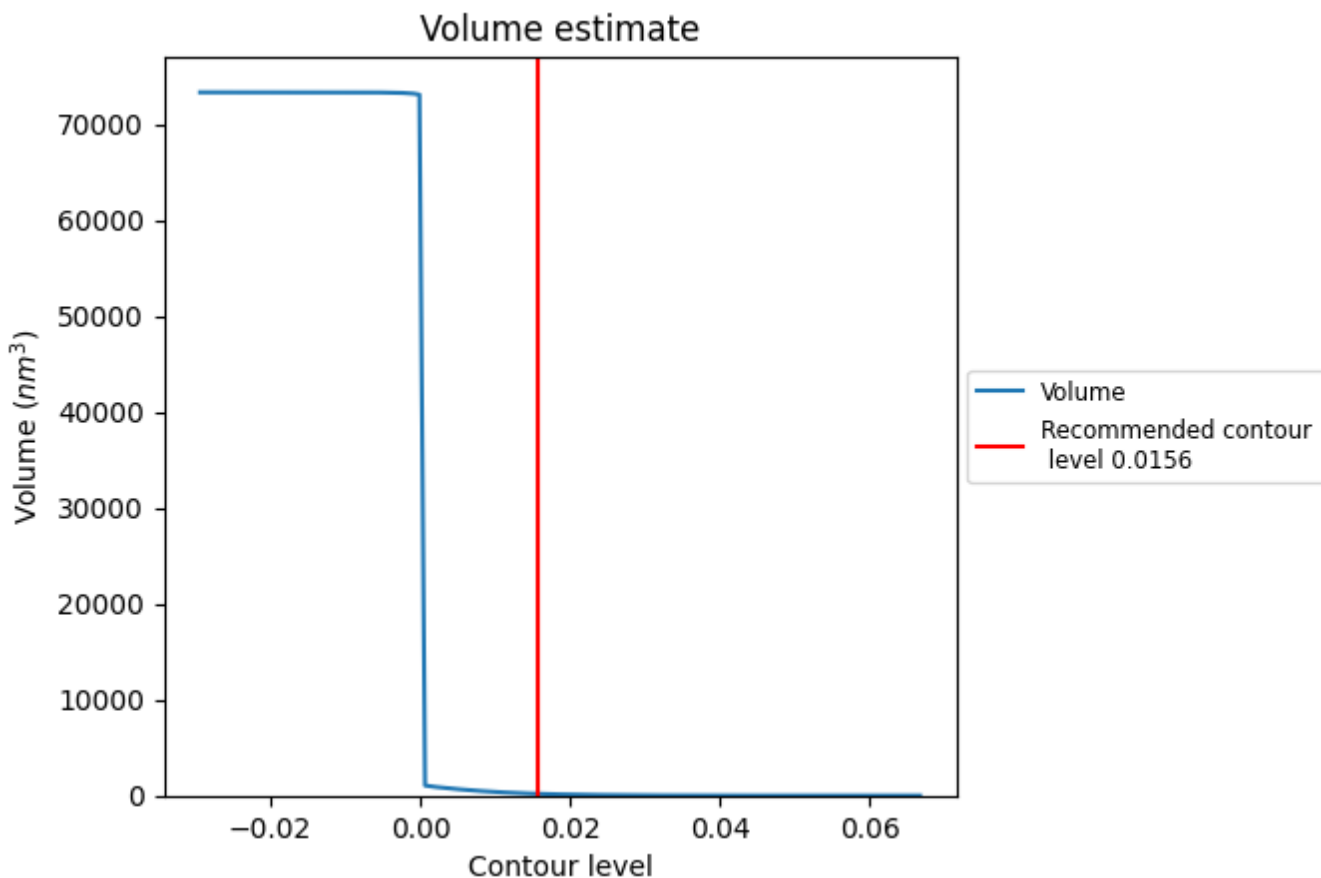
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

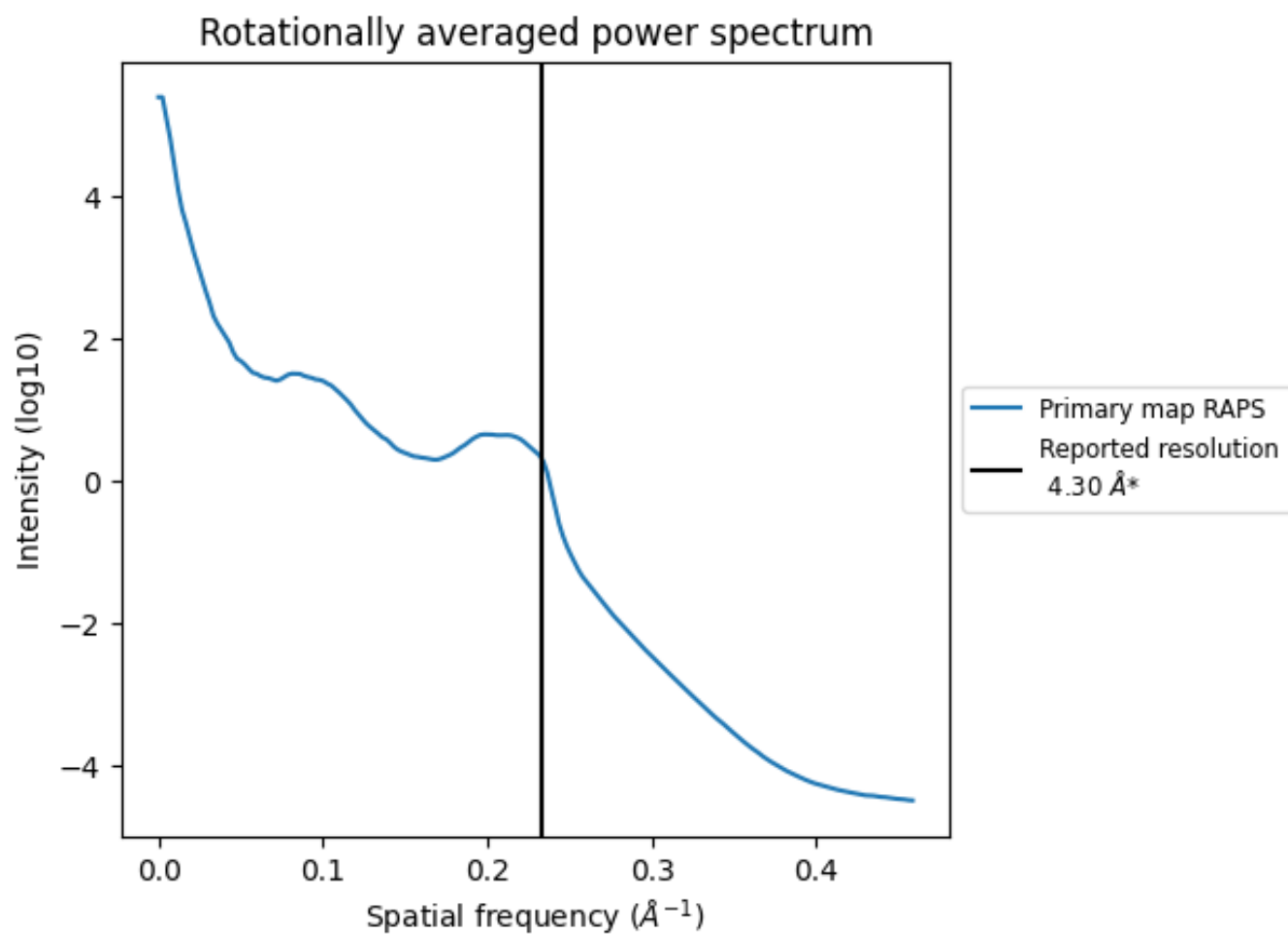
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 185 nm³; this corresponds to an approximate mass of 167 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](#)

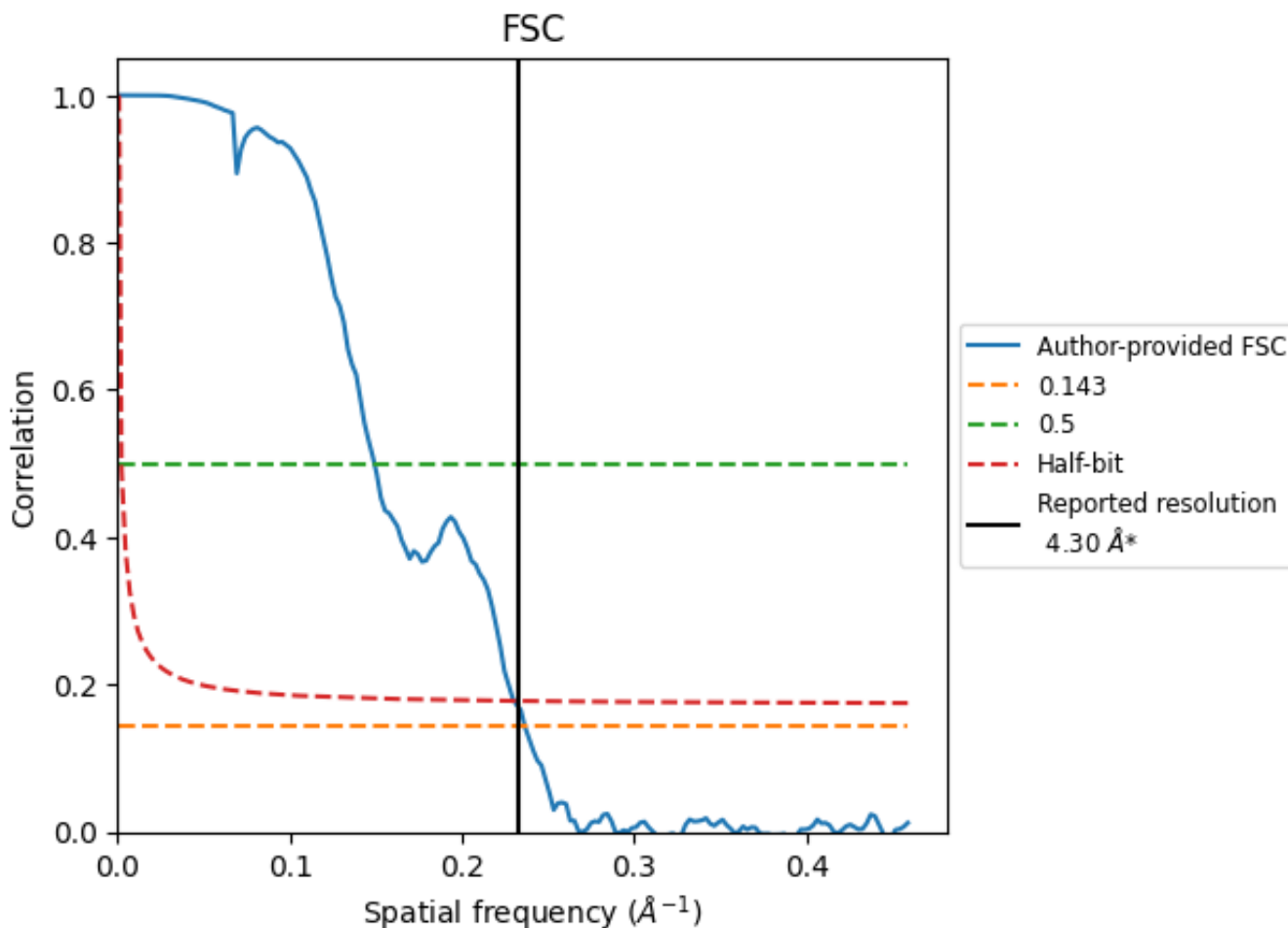


*Reported resolution corresponds to spatial frequency of 0.233\AA^{-1}

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 0.233 Å⁻¹

8.2 Resolution estimates [i](#)

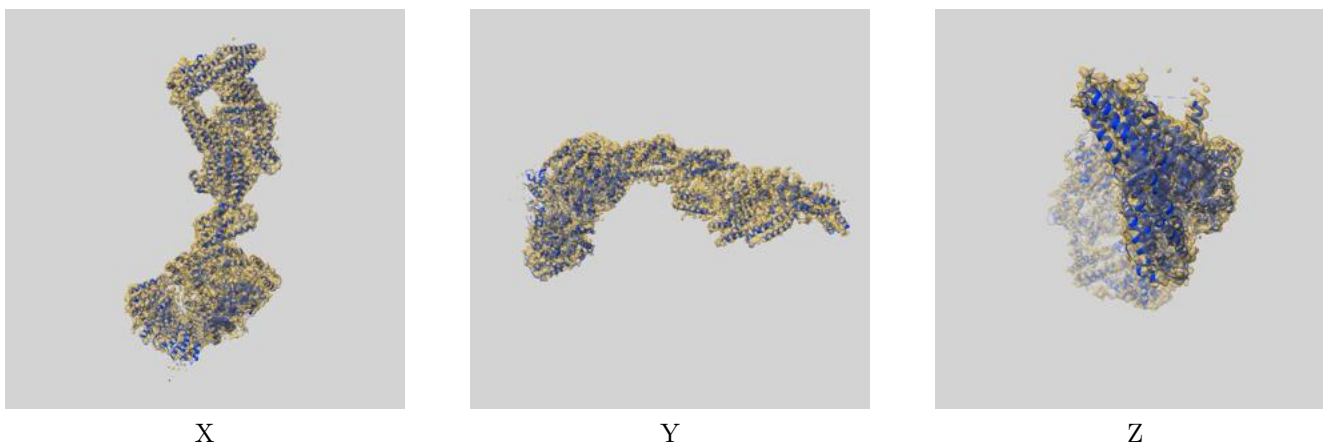
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.30	-	-
Author-provided FSC curve	4.23	6.71	4.34
Unmasked-calculated*	-	-	-

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

9 Map-model fit [i](#)

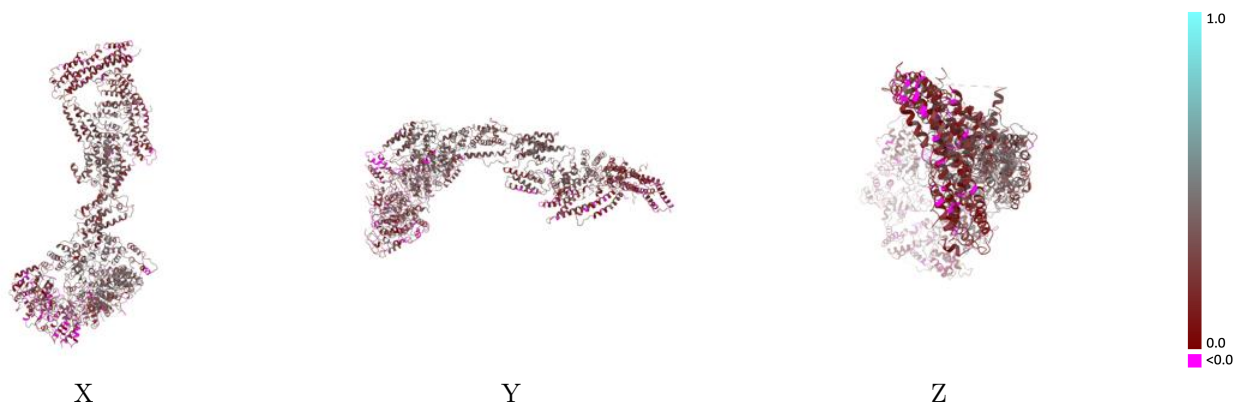
This section contains information regarding the fit between EMDB map EMD-0328 and PDB model 6I26. Per-residue inclusion information can be found in section [3](#) on page [4](#).

9.1 Map-model overlay [i](#)



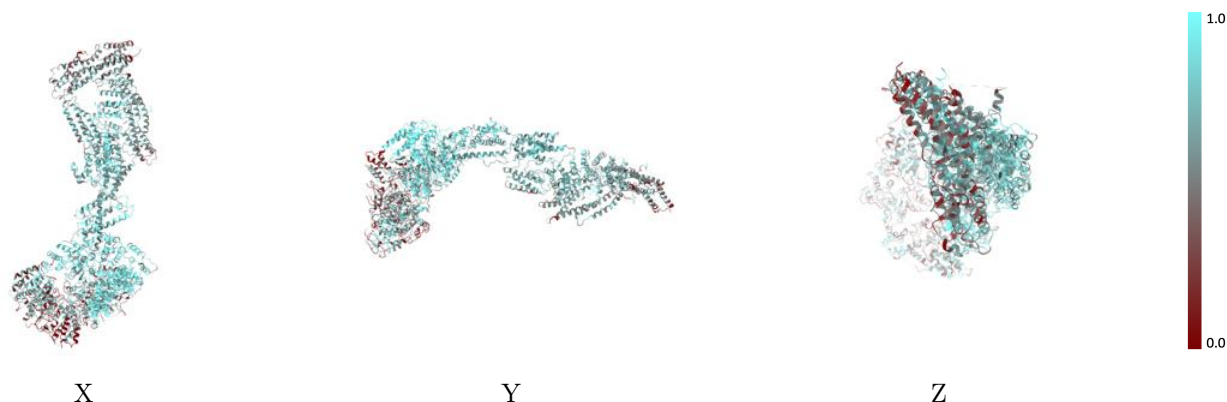
The images above show the 3D surface view of the map at the recommended contour level 0.0156 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



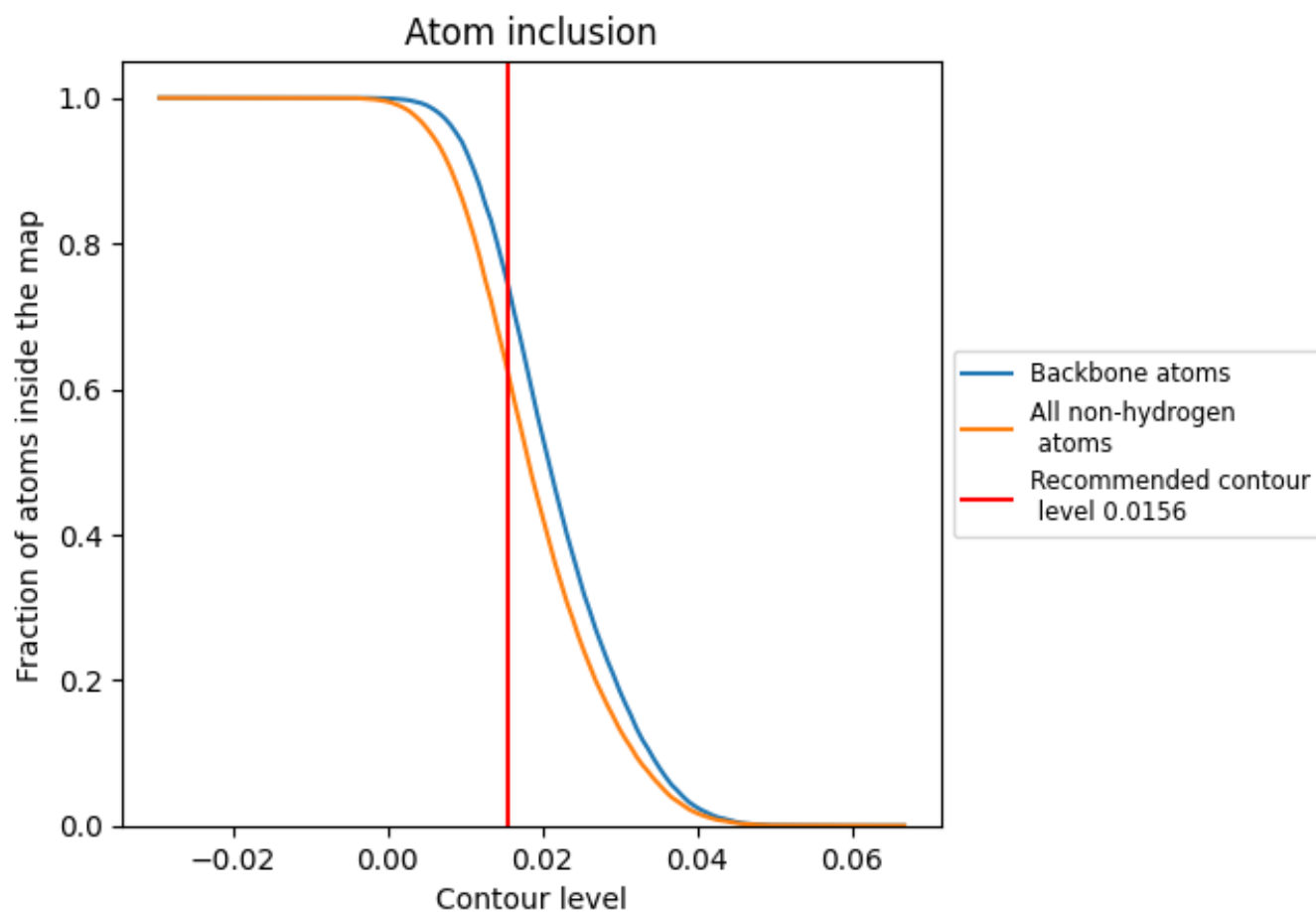
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0156).



9.4 Atom inclusion [i](#)



At the recommended contour level, 74% of all backbone atoms, 62% 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 (0.0156) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6214	 0.2710
A	 0.6214	 0.2710

