



## Full wwPDB EM Validation Report ⓘ

Nov 23, 2024 – 06:24 am GMT

PDB ID : 8QRI  
EMDB ID : EMD-18619  
Title : TRRAP and EP400 in the human Tip60 complex  
Authors : Li, C.; Smirnova, E.; Schnitzler, C.; Crucifix, C.; Concordet, J.P.; Brion, A.; Poterszman, A.; Schultze, P.; Papai, G.; Ben-Shem, A.  
Deposited on : 2023-10-09  
Resolution : 3.50 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.dev113  
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

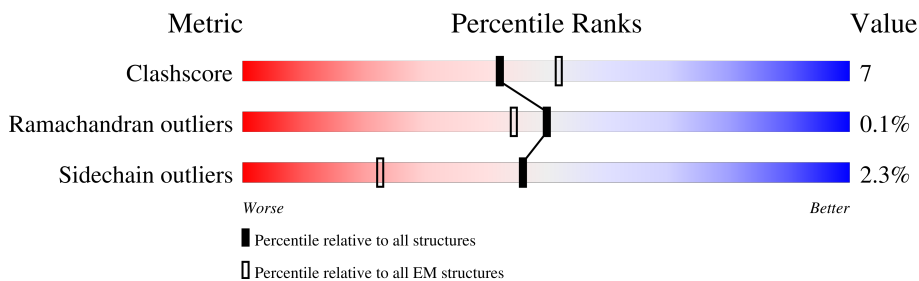
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.50 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  $\geq 3$ , 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	C	3859	
2	A	3159	

## 2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 55049 atoms, of which 27845 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 Transformation/transcription domain-associated protein.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
1	C	3246	52887	16810	26759	4496	4634	188	0	0

- Molecule 2 is a protein called E1A-binding protein p400.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
2	A	134	2162	674	1086	197	201	4	0	0



T2509	ASP	42528	T2388	GLN	F2307	N2163	L1942	SER	V1757	THR	PRO	R1383	L1291	S909
G2510	HIS	42528	L2389	ALA	F2307	Y2164	T1943	K1857	K1769	ALA	LEU	I1386	LYS	0920
T2511	ASP	42528	E2390	ALA	F2307	G2165	H1944	L1858	K1774	VAL	SER	I1386	ASP	1924
			E2391	ALA	F2307	N2166	R1947	R1859	Q1774	ARG	PRO	L1390	GLU	1924
			L2395	SER	F2307	I2167	M1862	M1862	M1778	PRO	CYS	M1395	E1225	D930
			L2396	SER	F2307	D2090	T1863	T1863	S1784	SER	GLN	E1406	E1229	C931
			M2399	THR	H2093	H2093	F1864	F1864	P1863	THR	PHE	E1509	D1244	1943
			M2400	GLU	T2094	T2094	A1865	A1865	W1866	THR	THR	M1409	E1248	1943
			I2403	ALA	D2095	D2095	V1951	V1951	M1867	SER	M1511	M1409	E1248	C969
			E2404	ALA	T2096	T2096	E1952	E1952	C1868	THR	R1410	M1409	E1248	F970
			K2485	ALA	V2097	V2097	E1953	E1953	L1869	THR	K1411	M1409	E1248	
			R2406	PHE	N2099	N2099	GLY	GLY	C1868	THR	F1412	M1409	E1248	
			E2409	ALA	V2324	V2324	HIS	HIS	L1870	THR	R1635	M1409	E1248	
			D2410	VAL	M2325	M2325	THR	THR	L1870	THR	D1637	M1409	E1248	
			L2411	THR	T2333	T2333	VAL	VAL	S1871	THR	L1657	M1409	E1248	
			E2412	HIS	R2334	R2334	PRO	PRO	K1872	THR	L1423	M1409	E1248	
			L2413	VAL	T2333	T2333	GLN	GLN	A1873	THR	H1424	M1409	E1248	
			N2414	GLN	R2334	R2334	VAL	VAL	C1874	THR	T1425	M1409	E1248	
			A2415	GLU	V2337	V2337	GLN	GLN	H1884	THR	L1429	M1409	E1248	
			V2421	PRO	M2338	M2338	LEU	LEU	I1890	THR	P1429	M1409	E1248	
			N2422	ARG	S2339	S2339	LEU	LEU	I1891	THR	L1430	M1409	E1248	
			Y2423	GLU	M2340	M2340	GLY	GLY	A1892	THR	M1433	M1409	E1248	
			Y2424	ARG	E2341	E2341	VAL	VAL	K1893	THR	R1447	M1409	E1248	
			Y2425	ASN	M2342	M2342	VAL	VAL	A1894	THR	T1452	M1409	E1248	
			R2426	ASN	R2343	R2343	ASP	ASP	F1894	THR	R1452	M1409	E1248	
			D2427	SER	T2350	T2350	ALA	ALA	A1895	THR	R1453	M1409	E1248	
			GLU	SER	G2119	G2119	VAL	VAL	I1896	THR	L1454	M1409	E1248	
			THR	SER	L2129	L2129	TYR	TYR	A1897	THR	D1461	M1409	E1248	
			THR	SER	L2130	L2130	TYR	TYR	I1897	THR	K1462	M1409	E1248	
			LEU	SER	R2131	R2131	VAL	VAL	K1898	THR	M1467	M1409	E1248	
			SER	SER	T2132	T2132	VAL	VAL	K1899	THR	M1468	M1409	E1248	
			GLY	SER	M2153	M2153	ARG	ARG	I1900	THR	M1475	M1409	E1248	
			SER	SER	LEU	H1979	H1979	PHE	V1901	THR	E1476	M1409	E1248	
			GLU	SER	VAL	V1982	V1982	ARG	A1911	THR	V1477	M1409	E1248	
			LEU	SER	ALA	M1969	M1969	THR	H1912	THR	V1478	M1409	E1248	
			ASP	SER	Q1990	Q1990	THR	THR	A1913	THR	V1479	M1409	E1248	
			GLU	SER	R1991	R1991	ALA	ALA	M1914	THR	K1483	M1409	E1248	
			GLU	SER	F1994	F1994	SER	SER	E1915	THR	GLY	M1409	E1248	
			ALA	SER	THR	THR	THR	THR	R1917	THR	GLN	M1409	E1248	
			ALA	SER	PRO	PRO	PRO	PRO	A1918	THR	ARG	M1409	E1248	
			ALA	SER	VAL	VAL	VAL	VAL	L1838	THR	ASP	M1409	E1248	
			ALA	SER	PHE	PHE	PHE	PHE	L1839	THR	ASP	M1409	E1248	
			ALA	SER	VAL	VAL	VAL	VAL	V1840	THR	GLY	M1409	E1248	
			ALA	SER	THR	THR	THR	THR	E1841	THR	GLY	M1409	E1248	
			ALA	SER	ILE	ILE	ILE	ILE	H1842	THR	ASN	M1409	E1248	
			ALA	SER	E2001	E2001	GLN	GLN	A1923	THR	ASN	M1409	E1248	
			ALA	SER	Q2002	Q2002	GLN	GLN	M1924	THR	GLU	M1409	E1248	
			ALA	SER	R2003	R2003	LEU	LEU	A1925	THR	GLU	M1409	E1248	
			ALA	SER	L2009	L2009	LEU	LEU	I1926	THR	ILE	M1409	E1248	
			ALA	SER	GLY	GLY	GLY	GLY	L1927	THR	ILE	M1409	E1248	
			ALA	SER	VAL	VAL	VAL	VAL	T1928	THR	ALA	M1409	E1248	
			ALA	SER	V2013	V2013	ASP	ASP	P1932	THR	PRO	M1409	E1248	
			ALA	SER	R2020	R2020	LEU	LEU	A1933	THR	GLY	M1409	E1248	
			ALA	SER	ILE	ILE	ILE	ILE	R1934	THR	GLY	M1409	E1248	
			ALA	SER	LYS	LYS	LYS	LYS	M1935	THR	ARG	M1409	E1248	
			ALA	SER	ASP	ASP	ASP	ASP	E1936	THR	ARG	M1409	E1248	
			ALA	SER	GLN	GLN	GLN	GLN	D1937	THR	CYS	M1409	E1248	
			ALA	SER	VAL	VAL	VAL	VAL	G1938	THR	CYS	M1409	E1248	
			ALA	SER	GLN	GLN	GLN	GLN	H1939	THR	CYS	M1409	E1248	
			ALA	SER	ASP	ASP	ASP	ASP	Q1940	THR	CYS	M1409	E1248	
			ALA	SER	GLN	GLN	GLN	GLN	M1941	THR	CYS	M1409	E1248	
			ALA	SER	LEU	LEU	LEU	LEU		THR	CYS	M1409	E1248	











## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	181210	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	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	3200	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	42.128	Depositor
Minimum map value	-11.918	Depositor
Average map value	0.003	Depositor
Map value standard deviation	1.005	Depositor
Recommended contour level	9.5	Depositor
Map size (Å)	482.72, 482.72, 482.72	wwPDB
Map dimensions	560, 560, 560	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.862, 0.862, 0.862	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	C	0.27	0/26668	0.49	1/36065 (0.0%)
2	A	0.25	0/1096	0.49	0/1485
All	All	0.27	0/27764	0.49	1/37550 (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	C	0	2

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed( $^{\circ}$ )	Ideal( $^{\circ}$ )
1	C	1868	CYS	CA-CB-SG	5.62	124.12	114.00

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	1290	VAL	Peptide
1	C	1866	TRP	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	C	26128	26759	26729	349	0
2	A	1076	1086	1084	17	0
All	All	27204	27845	27813	360	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 7.

All (360) 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:C:1248:GLU:OE2	1:C:1248:GLU:N	2.01	0.94
1:C:2641:SER:OG	1:C:2644:GLN:OE1	1.97	0.82
1:C:2711:GLU:OE2	1:C:2752:TYR:OH	1.99	0.80
1:C:3543:GLU:OE2	1:C:3582:ARG:NH1	2.17	0.78
1:C:3146:VAL:O	2:A:2521:ARG:NH1	2.17	0.77
1:C:700:MET:O	1:C:756:TYR:OH	2.00	0.77
1:C:2925:VAL:HG21	1:C:3667:THR:HG21	1.65	0.76
1:C:3574:VAL:HG22	1:C:3584:VAL:HG23	1.68	0.75
1:C:3617:ASP:OD1	1:C:3618:ARG:N	2.20	0.74
1:C:2677:GLU:OE1	1:C:2705:ARG:NH1	2.22	0.72
1:C:627:GLU:N	1:C:627:GLU:OE1	2.21	0.72
1:C:2143:GLU:O	1:C:2147:GLN:NE2	2.23	0.72
1:C:2338:MET:SD	1:C:2339:SER:N	2.63	0.71
1:C:2251:TYR:OH	1:C:2292:VAL:O	2.07	0.71
2:A:2429:ILE:HG22	2:A:2433:GLU:OE2	1.92	0.70
1:C:2410:ASP:OD2	1:C:2414:ASN:N	2.24	0.70
1:C:3701:ASP:OD2	1:C:3702:THR:N	2.25	0.70
1:C:3689:ASN:OD1	1:C:3690:ARG:N	2.24	0.69
1:C:1934:ARG:NH1	1:C:1937:ASP:OD2	2.23	0.69
1:C:3730:ARG:NH2	1:C:3859:LEU:OXT	2.25	0.69
1:C:1511:MET:SD	1:C:1512:LYS:N	2.67	0.68
1:C:3083:VAL:HG22	1:C:3128:PHE:HE2	1.60	0.67
1:C:634:HIS:O	1:C:638:VAL:HG13	1.95	0.67
1:C:2338:MET:SD	1:C:2343:ARG:NH2	2.68	0.67
1:C:3739:LEU:O	1:C:3740:THR:OG1	2.10	0.66
1:C:1229:GLU:N	1:C:1229:GLU:OE1	2.28	0.66
1:C:107:ARG:NH1	1:C:150:GLU:OE1	2.27	0.65
1:C:3502:ARG:NH1	1:C:3504:GLU:OE2	2.28	0.65
1:C:1081:GLU:OE1	1:C:1082:ASN:ND2	2.30	0.65
1:C:2239:LEU:HD12	1:C:2240:GLU:N	2.12	0.64
1:C:2743:GLU:OE1	1:C:2743:GLU:N	2.30	0.64
1:C:2410:ASP:OD1	1:C:2411:LEU:N	2.32	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:2300:MET:SD	1:C:2301:VAL:HG23	2.39	0.63
1:C:2421:VAL:O	1:C:2424:VAL:HG12	1.99	0.63
1:C:2404:GLU:OE1	1:C:2404:GLU:N	2.31	0.63
1:C:2388:THR:OG1	1:C:2391:GLU:OE1	2.10	0.62
1:C:3449:GLU:OE2	1:C:3453:LYS:NZ	2.32	0.62
1:C:454:LEU:O	1:C:458:THR:HG23	1.99	0.62
1:C:625:MET:SD	1:C:626:LYS:N	2.70	0.62
1:C:2435:LEU:O	1:C:2436:THR:OG1	2.14	0.62
1:C:3698:ILE:HG22	1:C:3705:LEU:CD2	2.30	0.61
1:C:1289:MET:SD	1:C:1290:VAL:N	2.73	0.61
1:C:313:MET:HE3	1:C:316:LEU:HD11	1.82	0.61
1:C:2637:TRP:CZ3	1:C:2686:ILE:HD11	2.36	0.60
1:C:2410:ASP:OD1	1:C:2412:GLU:N	2.32	0.60
1:C:285:ILE:HG23	1:C:327:LEU:HD13	1.82	0.60
1:C:120:PHE:HD2	1:C:132:CYS:HG	1.50	0.59
1:C:2396:LEU:HD12	1:C:2399:MET:SD	2.43	0.59
1:C:2945:GLU:OE1	1:C:2974:TRP:NE1	2.35	0.59
1:C:3162:TYR:CZ	1:C:3166:ILE:HD11	2.38	0.59
1:C:2300:MET:SD	1:C:2301:VAL:N	2.75	0.58
1:C:446:MET:SD	1:C:446:MET:N	2.76	0.58
1:C:1753:PHE:CE2	1:C:1757:VAL:HG21	2.38	0.58
2:A:2367:GLU:N	2:A:2367:GLU:OE1	2.36	0.58
1:C:974:MET:HE1	1:C:2511:THR:HG21	1.85	0.58
1:C:2690:PRO:CB	1:C:2744:ILE:HG22	2.34	0.58
1:C:2865:MET:SD	1:C:2865:MET:N	2.76	0.58
1:C:635:PHE:O	1:C:638:VAL:HG22	2.04	0.58
1:C:677:ALA:O	1:C:680:THR:OG1	2.15	0.57
1:C:2403:ILE:HD11	1:C:2413:LEU:HD21	1.86	0.57
1:C:3162:TYR:CE1	1:C:3166:ILE:HD11	2.40	0.57
1:C:865:ILE:HD11	1:C:872:LEU:CD2	2.35	0.57
1:C:2988:TRP:CD2	1:C:3047:ILE:HD13	2.39	0.57
1:C:2750:GLU:HA	1:C:2750:GLU:OE1	2.03	0.57
1:C:1475:MET:SD	1:C:1542:THR:HG21	2.45	0.56
1:C:3477:GLU:N	1:C:3477:GLU:OE2	2.36	0.56
1:C:316:LEU:HD12	1:C:317:LEU:N	2.21	0.56
1:C:397:LEU:HD12	1:C:398:ALA:N	2.20	0.56
1:C:2499:LEU:O	1:C:2502:VAL:HG22	2.05	0.56
2:A:2474:LYS:O	2:A:2476:SER:N	2.39	0.56
1:C:1736:MET:SD	1:C:1736:MET:N	2.79	0.56
1:C:641:MET:SD	1:C:641:MET:N	2.76	0.55
1:C:974:MET:CE	1:C:2511:THR:HG21	2.36	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:2954:GLN:O	1:C:2958:LEU:N	2.36	0.55
1:C:2009:LEU:O	1:C:2013:VAL:HG23	2.07	0.55
1:C:3544:ARG:NH1	1:C:3777:GLU:OE1	2.40	0.55
1:C:3681:PHE:CE1	1:C:3685:VAL:HG21	2.42	0.55
1:C:1054:VAL:HG21	1:C:1125:ILE:HD11	1.89	0.55
1:C:729:GLU:OE1	1:C:775:LEU:N	2.38	0.54
1:C:1588:PHE:CZ	1:C:1592:LEU:HD11	2.42	0.54
1:C:3242:LEU:HD12	1:C:3254:ILE:HD13	1.89	0.54
1:C:2097:VAL:HG21	1:C:2130:LEU:HD22	1.89	0.54
1:C:2360:ASP:OD1	1:C:2360:ASP:N	2.37	0.54
1:C:1423:ILE:HG22	1:C:1425:THR:H	1.71	0.54
1:C:2340:MET:SD	1:C:2343:ARG:NH2	2.80	0.54
2:A:2479:ILE:H	2:A:2479:ILE:HD12	1.73	0.54
1:C:2683:VAL:HG13	1:C:2684:PRO:HD3	1.88	0.54
1:C:3448:LEU:O	1:C:3452:THR:HG23	2.08	0.54
1:C:1461:ASP:OD2	1:C:1462:LYS:N	2.40	0.54
1:C:3732:THR:HG21	1:C:3859:LEU:OXT	2.07	0.54
1:C:3529:LEU:HD23	1:C:3586:ASP:CB	2.38	0.53
1:C:924:ILE:HD13	1:C:2511:THR:HG22	1.90	0.53
1:C:2342:MET:H	1:C:2342:MET:CE	2.22	0.53
1:C:313:MET:CE	1:C:316:LEU:HD11	2.38	0.53
1:C:604:GLN:O	1:C:604:GLN:NE2	2.41	0.53
1:C:3687:HIS:CE1	1:C:3818:ILE:HD13	2.43	0.53
1:C:2683:VAL:CG1	1:C:2684:PRO:HD3	2.39	0.53
1:C:3211:ASP:OD1	1:C:3212:LYS:N	2.40	0.53
1:C:3211:ASP:O	1:C:3213:ASN:ND2	2.41	0.53
1:C:718:PHE:O	1:C:721:VAL:HG12	2.09	0.52
1:C:442:ARG:HA	1:C:445:LEU:HD12	1.91	0.52
1:C:1382:SER:OG	1:C:1386:ILE:HD12	2.09	0.52
1:C:2410:ASP:OD2	1:C:2413:LEU:HB3	2.09	0.52
1:C:2372:GLU:O	1:C:2375:VAL:HG22	2.09	0.52
1:C:2095:ASP:OD1	1:C:2096:THR:N	2.43	0.51
1:C:1915:GLU:OE1	1:C:1915:GLU:N	2.40	0.51
1:C:3491:HIS:CG	1:C:3492:TYR:N	2.78	0.51
1:C:628:GLU:HA	1:C:631:VAL:HG12	1.91	0.51
1:C:3053:LEU:HD12	1:C:3053:LEU:N	2.25	0.51
1:C:445:LEU:HA	1:C:448:MET:HG2	1.93	0.51
1:C:3597:TYR:HB2	1:C:3859:LEU:HD21	1.92	0.51
1:C:877:TRP:CE3	1:C:2926:VAL:HG21	2.46	0.50
1:C:2422:ASN:OD1	1:C:2426:ARG:NH1	2.43	0.50
1:C:3099:MET:CE	1:C:3099:MET:H	2.24	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:3587:ASN:ND2	1:C:3588:PRO:O	2.43	0.50
1:C:161:ILE:HG22	1:C:162:TYR:N	2.27	0.50
1:C:1058:CYS:SG	1:C:1059:GLY:N	2.84	0.50
1:C:2727:GLN:OE1	1:C:2770:LYS:NZ	2.34	0.50
1:C:1054:VAL:HG21	1:C:1125:ILE:CD1	2.41	0.50
1:C:3491:HIS:CG	1:C:3492:TYR:H	2.29	0.50
1:C:2793:TYR:O	1:C:2797:MET:HG3	2.11	0.50
1:C:2873:GLU:OE2	1:C:2888:ARG:NE	2.43	0.50
1:C:1018:PHE:HE1	1:C:1049:TYR:HH	1.58	0.49
1:C:602:ILE:HA	1:C:605:VAL:HG23	1.93	0.49
1:C:1264:LEU:HD13	1:C:1279:MET:HE2	1.94	0.49
1:C:352:ASP:OD1	1:C:353:LYS:N	2.46	0.49
1:C:1756:PHE:CD1	1:C:1757:VAL:HG23	2.47	0.49
1:C:2148:TRP:HA	1:C:2151:LYS:HB3	1.93	0.49
1:C:2287:ASP:OD1	1:C:2288:ARG:N	2.45	0.49
1:C:2967:MET:SD	1:C:2968:LYS:N	2.85	0.49
1:C:3622:VAL:O	1:C:3627:THR:OG1	2.25	0.49
1:C:1454:LEU:H	1:C:1454:LEU:HD23	1.77	0.49
1:C:3148:MET:SD	1:C:3148:MET:N	2.80	0.49
1:C:3673:THR:HG22	1:C:3739:LEU:HD22	1.93	0.49
1:C:862:TYR:HA	1:C:865:ILE:HG22	1.95	0.48
1:C:2721:LEU:H	1:C:2721:LEU:HD22	1.77	0.48
1:C:3323:ASP:O	1:C:3326:VAL:HG22	2.13	0.48
1:C:383:VAL:HA	1:C:386:VAL:HG22	1.94	0.48
1:C:2748:LEU:HD21	1:C:2752:TYR:CE2	2.49	0.48
1:C:3686:LEU:HB2	1:C:3688:LEU:HD13	1.96	0.48
1:C:2389:LEU:HD22	1:C:2389:LEU:H	1.77	0.48
2:A:2467:LEU:O	2:A:2471:THR:HG23	2.13	0.48
2:A:2447:GLN:N	2:A:2447:GLN:OE1	2.45	0.48
1:C:75:ASP:OD1	1:C:76:GLY:N	2.42	0.48
1:C:2337:VAL:HG12	1:C:2337:VAL:O	2.14	0.48
1:C:336:LYS:O	1:C:340:THR:HG23	2.14	0.48
1:C:560:ILE:O	1:C:564:ILE:HG12	2.13	0.48
1:C:2648:LEU:HD11	1:C:2652:ILE:HD11	1.94	0.48
1:C:151:ILE:HG22	1:C:151:ILE:O	2.13	0.48
1:C:1452:THR:OG1	1:C:1524:ILE:HG22	2.14	0.48
1:C:1518:ILE:HG22	1:C:1557:PRO:HB2	1.94	0.47
1:C:1476:GLU:O	1:C:1479:VAL:HG22	2.13	0.47
1:C:1868:CYS:HB2	1:C:1874:CYS:HB2	1.67	0.47
1:C:3732:THR:HG21	1:C:3859:LEU:CA	2.44	0.47
1:C:625:MET:CE	1:C:625:MET:HA	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:690:VAL:HG13	1:C:717:VAL:HG21	1.95	0.47
1:C:1395:ASN:OD1	1:C:1447:ARG:NH2	2.42	0.47
1:C:3099:MET:SD	1:C:3100:GLN:OE1	2.72	0.47
1:C:3118:THR:HA	1:C:3121:PHE:CE2	2.50	0.47
2:A:2436:LYS:HD2	2:A:2436:LYS:N	2.29	0.47
1:C:793:LEU:HD11	1:C:1197:GLU:HB2	1.97	0.47
1:C:1274:SER:OG	1:C:1277:VAL:HG23	2.14	0.47
1:C:1518:ILE:HG21	1:C:1558:LEU:CD2	2.45	0.47
1:C:1562:LEU:HD12	1:C:1569:THR:CG2	2.45	0.47
1:C:1732:LEU:O	1:C:1736:MET:SD	2.73	0.47
1:C:3114:THR:OG1	1:C:3116:GLU:OE1	2.15	0.47
1:C:1264:LEU:HD13	1:C:1279:MET:CE	2.44	0.47
1:C:3707:VAL:HG11	1:C:3710:PHE:CE2	2.49	0.47
1:C:3615:TYR:CD2	1:C:3637:ILE:HD12	2.50	0.47
1:C:924:ILE:HA	1:C:2511:THR:HG22	1.96	0.47
1:C:1244:ASP:O	1:C:1248:GLU:OE2	2.33	0.47
1:C:2357:LYS:O	1:C:2358:SER:CB	2.62	0.47
1:C:2676:VAL:HA	1:C:2679:MET:HG2	1.97	0.47
1:C:3254:ILE:HD12	1:C:3254:ILE:H	1.80	0.47
1:C:3545:VAL:HG11	1:C:3710:PHE:O	2.15	0.47
2:A:2404:VAL:HA	2:A:2407:VAL:HG12	1.97	0.47
1:C:2325:MET:O	1:C:2325:MET:SD	2.73	0.46
1:C:3595:GLU:O	1:C:3595:GLU:OE1	2.32	0.46
1:C:924:ILE:HD13	1:C:2511:THR:CG2	2.45	0.46
1:C:885:ASP:OD2	1:C:886:SER:N	2.48	0.46
1:C:994:THR:OG1	1:C:995:GLU:OE1	2.30	0.46
1:C:1035:ARG:N	1:C:1036:PRO:CD	2.79	0.46
1:C:3491:HIS:O	1:C:3493:TYR:N	2.48	0.46
1:C:3083:VAL:HG22	1:C:3128:PHE:CE2	2.45	0.46
1:C:1290:VAL:O	1:C:1312:ASN:ND2	2.45	0.46
1:C:411:LEU:HD23	1:C:415:ILE:HB	1.98	0.46
1:C:1266:VAL:O	1:C:1270:VAL:HG23	2.16	0.46
1:C:3673:THR:CG2	1:C:3739:LEU:HD22	2.46	0.46
1:C:2412:GLU:O	1:C:2415:ALA:N	2.49	0.46
1:C:2648:LEU:O	1:C:2652:ILE:HG12	2.16	0.46
1:C:2690:PRO:HB3	1:C:2744:ILE:HG22	1.97	0.46
1:C:1774:GLN:NE2	1:C:1778:ASN:OD1	2.42	0.46
1:C:2648:LEU:CD1	1:C:2652:ILE:HD11	2.45	0.45
1:C:731:MET:SD	1:C:732:LEU:N	2.90	0.45
1:C:1562:LEU:HD12	1:C:1569:THR:HG21	1.98	0.45
1:C:3080:ARG:O	1:C:3083:VAL:HG12	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:655:VAL:N	1:C:656:PRO:HD2	2.32	0.45
1:C:408:ASP:OD2	1:C:1724:ARG:NH1	2.43	0.45
1:C:2395:LEU:O	1:C:2399:MET:HG3	2.17	0.45
1:C:3574:VAL:HG13	1:C:3583:LEU:O	2.17	0.45
1:C:449:LEU:O	1:C:453:VAL:HG23	2.16	0.45
1:C:1390:LEU:HD13	1:C:1409:MET:HE2	1.97	0.45
1:C:1897:HIS:O	1:C:1901:VAL:HG12	2.17	0.45
1:C:2880:MET:SD	1:C:2880:MET:O	2.75	0.45
1:C:1319:GLN:HB2	1:C:1320:PRO:HD3	1.98	0.45
1:C:2652:ILE:HG21	1:C:2679:MET:CE	2.47	0.45
1:C:2700:HIS:HB2	1:C:2702:LEU:HD23	1.98	0.45
1:C:3588:PRO:O	1:C:3589:SER:OG	2.22	0.45
1:C:424:LEU:O	1:C:427:VAL:HG22	2.16	0.45
1:C:969:CYS:SG	1:C:2610:LEU:HB2	2.57	0.44
1:C:1714:LEU:HD12	1:C:1757:VAL:O	2.17	0.44
1:C:3306:MET:SD	1:C:3306:MET:C	2.96	0.44
1:C:3426:PHE:O	1:C:3427:SER:OG	2.29	0.44
1:C:1511:MET:H	1:C:1511:MET:HE3	1.82	0.44
1:C:3732:THR:HG23	1:C:3857:PRO:O	2.17	0.44
1:C:1588:PHE:CE1	1:C:1592:LEU:HD11	2.53	0.44
1:C:2151:LYS:O	1:C:2154:MET:SD	2.76	0.44
1:C:2809:ALA:HB2	2:A:2454:ASN:HA	1.99	0.44
1:C:3375:VAL:O	1:C:3379:GLY:N	2.48	0.44
1:C:679:PRO:O	1:C:683:ALA:N	2.43	0.44
1:C:1756:PHE:CE1	1:C:1757:VAL:HG23	2.52	0.44
1:C:3147:GLN:O	2:A:2521:ARG:NH2	2.50	0.44
1:C:1467:MET:CE	1:C:1517:ILE:HD12	2.47	0.44
1:C:2833:GLN:O	1:C:2837:LEU:HD12	2.17	0.44
1:C:1678:GLU:OE1	1:C:1719:ARG:NH2	2.51	0.44
1:C:2367:VAL:O	1:C:2371:VAL:HG23	2.18	0.44
1:C:2881:ALA:HB3	1:C:2914:LEU:HD21	2.00	0.44
1:C:3008:MET:SD	1:C:3008:MET:N	2.84	0.44
1:C:232:VAL:HA	1:C:235:MET:SD	2.57	0.44
1:C:2509:ILE:HG22	1:C:2510:GLY:N	2.33	0.44
1:C:892:TYR:CZ	1:C:2937:ALA:HB2	2.52	0.43
1:C:3114:THR:O	1:C:3117:MET:SD	2.76	0.43
1:C:361:ILE:O	1:C:372:ARG:NH2	2.46	0.43
1:C:977:LEU:HB3	1:C:2599:LEU:HD11	2.00	0.43
1:C:2399:MET:SD	1:C:2400:MET:N	2.91	0.43
1:C:973:ALA:HB2	1:C:2509:ILE:HG21	2.01	0.43
1:C:2590:MET:SD	1:C:2590:MET:C	2.96	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:3822:LEU:O	1:C:3825:LEU:HD23	2.18	0.43
1:C:1941:MET:O	1:C:1941:MET:SD	2.76	0.43
1:C:3458:PHE:CE2	1:C:3502:ARG:HD2	2.53	0.43
1:C:853:VAL:HG22	1:C:861:LEU:HD21	2.01	0.43
1:C:1406:GLU:OE2	1:C:1410:ARG:NE	2.49	0.43
1:C:677:ALA:O	1:C:680:THR:HG23	2.19	0.43
1:C:1290:VAL:CG1	1:C:1291:PRO:HD3	2.49	0.43
1:C:1429:PRO:O	1:C:1433:MET:CE	2.67	0.43
1:C:3212:LYS:O	1:C:3214:THR:N	2.47	0.43
1:C:857:GLN:O	1:C:859:ASP:N	2.52	0.43
1:C:1074:THR:O	1:C:1074:THR:HG22	2.19	0.43
1:C:2925:VAL:CG2	1:C:3667:THR:HG21	2.44	0.43
1:C:3529:LEU:HD13	1:C:3529:LEU:HA	1.92	0.43
1:C:257:THR:O	1:C:258:ILE:HG22	2.19	0.43
1:C:1390:LEU:HD13	1:C:1409:MET:CE	2.48	0.43
1:C:2444:LEU:HD13	1:C:2485:ALA:HB3	2.01	0.43
1:C:1409:MET:HG2	1:C:1454:LEU:HD11	2.00	0.42
1:C:2243:TYR:N	1:C:2243:TYR:CD1	2.87	0.42
1:C:2305:LEU:HD12	1:C:2357:LYS:HD3	2.01	0.42
1:C:2870:VAL:HG23	1:C:2871:GLN:N	2.34	0.42
1:C:2358:SER:N	1:C:2359:PRO:CD	2.82	0.42
1:C:2637:TRP:CH2	1:C:2686:ILE:HD11	2.53	0.42
1:C:1346:GLU:OE1	1:C:1366:ARG:NH2	2.51	0.42
1:C:1347:ASP:OD1	1:C:1347:ASP:N	2.49	0.42
1:C:1574:MET:SD	1:C:1588:PHE:CD1	3.12	0.42
1:C:41:MET:HE3	1:C:42:MET:SD	2.59	0.42
1:C:308:GLN:HG2	1:C:309:MET:H	1.85	0.42
1:C:761:ARG:HB2	1:C:809:LEU:HD21	2.02	0.42
1:C:1257:ARG:NE	1:C:1310:GLU:OE1	2.51	0.42
1:C:1305:GLN:O	1:C:1309:MET:HG3	2.19	0.42
1:C:1774:GLN:OE1	1:C:1778:ASN:ND2	2.52	0.42
1:C:1032:LYS:O	1:C:1033:ASP:CG	2.58	0.42
1:C:1215:MET:SD	1:C:1215:MET:C	2.98	0.42
1:C:2365:ARG:O	1:C:2368:VAL:HG22	2.19	0.42
1:C:3634:LEU:O	1:C:3637:ILE:HG12	2.19	0.42
1:C:232:VAL:O	1:C:235:MET:SD	2.77	0.42
1:C:1379:LEU:O	1:C:1383:ARG:NH2	2.52	0.42
1:C:3031:MET:HE3	1:C:3031:MET:HA	2.00	0.42
1:C:158:VAL:HA	1:C:161:ILE:HD12	2.00	0.42
1:C:943:ILE:HD11	1:C:970:PHE:CG	2.53	0.42
1:C:1533:LYS:HB3	1:C:1534:PRO:HD3	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:2364:LEU:O	1:C:2367:VAL:HG22	2.19	0.42
1:C:3187:CYS:SG	1:C:3198:TYR:HB2	2.60	0.42
1:C:308:GLN:HG2	1:C:309:MET:N	2.34	0.42
1:C:827:LEU:HD12	1:C:827:LEU:C	2.40	0.42
1:C:1513:ILE:O	1:C:1517:ILE:HG12	2.19	0.42
1:C:2013:VAL:HG11	1:C:2093:HIS:CD2	2.54	0.42
1:C:2880:MET:SD	1:C:2883:LYS:HB2	2.60	0.42
1:C:161:ILE:HG22	1:C:162:TYR:H	1.82	0.42
1:C:445:LEU:O	1:C:448:MET:HG3	2.20	0.42
1:C:734:PRO:O	1:C:735:HIS:CG	2.73	0.42
1:C:1989:MET:SD	1:C:1990:GLN:N	2.93	0.42
1:C:2797:MET:SD	2:A:2468:MET:SD	3.18	0.42
1:C:2873:GLU:OE2	1:C:2888:ARG:NH2	2.51	0.42
1:C:3687:HIS:ND1	1:C:3818:ILE:HD13	2.35	0.42
1:C:437:GLU:O	1:C:439:GLY:N	2.53	0.41
1:C:2487:GLY:O	1:C:2664:GLN:NE2	2.52	0.41
1:C:2809:ALA:HB2	2:A:2458:THR:HG23	2.02	0.41
1:C:446:MET:O	1:C:449:LEU:HG	2.20	0.41
1:C:772:HIS:HB2	1:C:775:LEU:HB2	2.02	0.41
1:C:1113:VAL:O	1:C:1117:VAL:HG23	2.20	0.41
1:C:418:MET:SD	1:C:418:MET:C	2.98	0.41
1:C:442:ARG:O	1:C:446:MET:SD	2.78	0.41
1:C:788:GLN:C	1:C:788:GLN:OE1	2.59	0.41
1:C:2321:SER:O	1:C:2324:VAL:HG22	2.20	0.41
1:C:2864:ALA:O	1:C:2868:ALA:N	2.48	0.41
1:C:3542:GLU:O	1:C:3545:VAL:HG12	2.21	0.41
1:C:150:GLU:O	1:C:150:GLU:HG3	2.21	0.41
1:C:1478:VAL:HG13	1:C:1479:VAL:N	2.35	0.41
1:C:2412:GLU:O	1:C:2415:ALA:HB3	2.19	0.41
1:C:2637:TRP:NE1	1:C:2645:GLN:OE1	2.53	0.41
1:C:2893:ILE:HD11	1:C:2904:ILE:CD1	2.51	0.41
1:C:3424:PHE:CD1	1:C:3424:PHE:C	2.93	0.41
1:C:3460:LEU:N	1:C:3460:LEU:HD22	2.36	0.41
1:C:1248:GLU:HB2	1:C:1251:SER:HB3	2.02	0.41
1:C:1276:THR:HG21	1:C:1320:PRO:HD2	2.03	0.41
1:C:149:GLN:O	1:C:150:GLU:HG2	2.20	0.41
1:C:1511:MET:H	1:C:1511:MET:CE	2.34	0.41
1:C:1225:GLU:OE1	1:C:1225:GLU:N	2.54	0.41
1:C:1657:LEU:HD22	1:C:1706:ARG:HG3	2.02	0.41
1:C:1824:MET:N	1:C:1824:MET:SD	2.94	0.41
1:C:1866:TRP:O	1:C:1869:LEU:HD23	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:3539:SER:O	1:C:3543:GLU:OE1	2.39	0.41
1:C:161:ILE:CG2	1:C:162:TYR:H	2.34	0.41
1:C:2868:ALA:O	1:C:2872:VAL:HG23	2.20	0.41
1:C:3119:ALA:HB2	1:C:3148:MET:SD	2.60	0.41
1:C:3336:VAL:HG11	1:C:3448:LEU:CD1	2.51	0.41
1:C:3367:THR:O	1:C:3371:VAL:HG23	2.20	0.41
1:C:316:LEU:HD12	1:C:316:LEU:C	2.41	0.41
1:C:1257:ARG:NH2	1:C:1310:GLU:OE1	2.52	0.41
1:C:1386:ILE:HG21	1:C:1412:PHE:CE1	2.55	0.41
1:C:1511:MET:SD	1:C:1512:LYS:HG3	2.60	0.41
1:C:1614:LEU:HD23	1:C:1614:LEU:O	2.20	0.41
1:C:2900:GLN:O	1:C:2901:LEU:HG	2.21	0.41
1:C:2968:LYS:O	1:C:2971:VAL:HG12	2.21	0.41
1:C:3198:TYR:O	1:C:3202:VAL:HG23	2.21	0.41
1:C:3442:LYS:NZ	1:C:3609:ASP:OD2	2.53	0.41
1:C:3463:GLU:O	1:C:3464:LYS:HG2	2.21	0.41
1:C:3658:THR:HG23	1:C:3659:PHE:CD2	2.55	0.41
1:C:3741:THR:O	1:C:3744:VAL:HG22	2.20	0.41
1:C:144:ARG:HB3	1:C:145:PRO:HD3	2.03	0.41
1:C:644:PRO:HA	1:C:647:PHE:HB3	2.02	0.41
1:C:2338:MET:H	1:C:2338:MET:CE	2.34	0.41
1:C:3147:GLN:HB3	1:C:3148:MET:HE3	2.03	0.41
1:C:2676:VAL:O	1:C:2679:MET:HG3	2.21	0.40
1:C:2935:GLN:HG2	1:C:2987:HIS:CD2	2.56	0.40
1:C:2497:GLU:OE2	1:C:2619:HIS:NE2	2.46	0.40
2:A:2479:ILE:HD12	2:A:2479:ILE:N	2.34	0.40
1:C:708:ASN:O	1:C:712:LYS:HG2	2.22	0.40
1:C:1136:PRO:O	1:C:1139:SER:N	2.53	0.40
1:C:1252:PRO:CB	1:C:1303:ASN:OD1	2.70	0.40
1:C:2473:ARG:NH1	1:C:2498:LEU:HD12	2.37	0.40
1:C:2886:MET:HG2	1:C:2890:TYR:HE1	1.86	0.40
1:C:1823:ASP:N	1:C:1824:MET:SD	2.95	0.40
1:C:2099:ASN:O	1:C:2102:ILE:HG22	2.22	0.40
1:C:2400:MET:CG	1:C:2442:ALA:HB2	2.51	0.40
1:C:2936:ALA:O	1:C:2937:ALA:C	2.60	0.40
2:A:2517:LEU:HD21	2:A:2521:ARG:HH12	1.86	0.40
2:A:2517:LEU:HD21	2:A:2521:ARG:NH1	2.36	0.40
1:C:1637:ASP:N	1:C:1637:ASP:OD1	2.54	0.40
1:C:1734:GLU:N	1:C:1734:GLU:OE1	2.55	0.40
1:C:2350:ILE:O	1:C:2353:SER:OG	2.26	0.40
1:C:2850:TYR:CZ	2:A:2415:TYR:CE1	3.10	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	C	3180/3859 (82%)	2966 (93%)	211 (7%)	3 (0%)	48 79
2	A	128/3159 (4%)	114 (89%)	14 (11%)	0	100 100
All	All	3308/7018 (47%)	3080 (93%)	225 (7%)	3 (0%)	50 79

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	2358	SER
1	C	55	SER
1	C	1720	ALA

### 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	C	2903/3423 (85%)	2835 (98%)	68 (2%)	45 69
2	A	121/2663 (4%)	119 (98%)	2 (2%)	56 75
All	All	3024/6086 (50%)	2954 (98%)	70 (2%)	46 69

All (70) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	143	PHE
1	C	157	PHE
1	C	235	MET
1	C	236	TYR
1	C	239	TYR
1	C	355	PHE
1	C	431	ARG
1	C	442	ARG
1	C	448	MET
1	C	664	LYS
1	C	700	MET
1	C	714	PHE
1	C	754	TYR
1	C	909	SER
1	C	930	ASP
1	C	1051	MET
1	C	1135	LEU
1	C	1289	MET
1	C	1430	LEU
1	C	1433	MET
1	C	1462	LYS
1	C	1468	MET
1	C	1475	MET
1	C	1511	MET
1	C	1565	HIS
1	C	1573	PHE
1	C	1575	MET
1	C	1715	PHE
1	C	1769	LYS
1	C	1838	LEU
1	C	1862	MET
1	C	1872	LYS
1	C	1874	CYS
1	C	1884	HIS
1	C	1898	LYS
1	C	1942	LEU
1	C	2003	ARG
1	C	2148	TRP
1	C	2154	MET
1	C	2191	LYS
1	C	2195	ARG
1	C	2338	MET
1	C	2342	MET

*Continued on next page...*

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	C	2406	ARG
1	C	2464	ASN
1	C	2468	ARG
1	C	2675	PHE
1	C	2741	GLN
1	C	2804	HIS
1	C	2806	ARG
1	C	2878	LYS
1	C	2887	TYR
1	C	3008	MET
1	C	3099	MET
1	C	3117	MET
1	C	3121	PHE
1	C	3148	MET
1	C	3149	HIS
1	C	3169	LYS
1	C	3173	LEU
1	C	3256	GLN
1	C	3329	ARG
1	C	3348	TYR
1	C	3424	PHE
1	C	3442	LYS
1	C	3486	MET
1	C	3492	TYR
1	C	3568	PHE
2	A	2368	TRP
2	A	2457	HIS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (17) such sidechains are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	C	160	GLN
1	C	992	ASN
1	C	1082	ASN
1	C	1470	HIS
1	C	1897	HIS
1	C	2414	ASN
1	C	2464	ASN
1	C	2589	HIS
1	C	2593	ASN
1	C	2700	HIS
1	C	2804	HIS

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Mol	Chain	Res	Type
1	C	2846	HIS
1	C	2935	GLN
1	C	2976	ASN
1	C	2987	HIS
1	C	3149	HIS
2	A	2457	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 oligosaccharides 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.



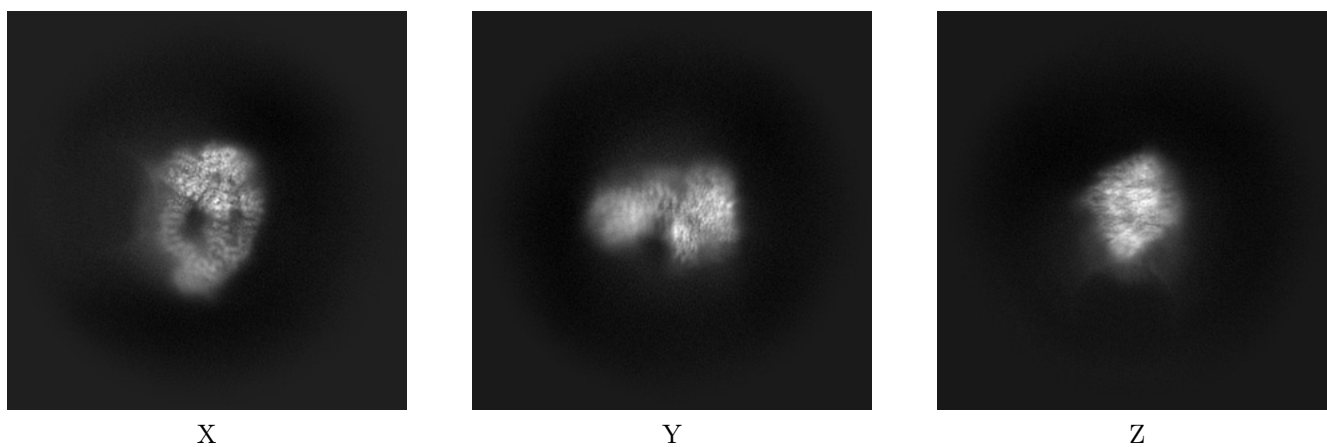
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-18619. 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](#)

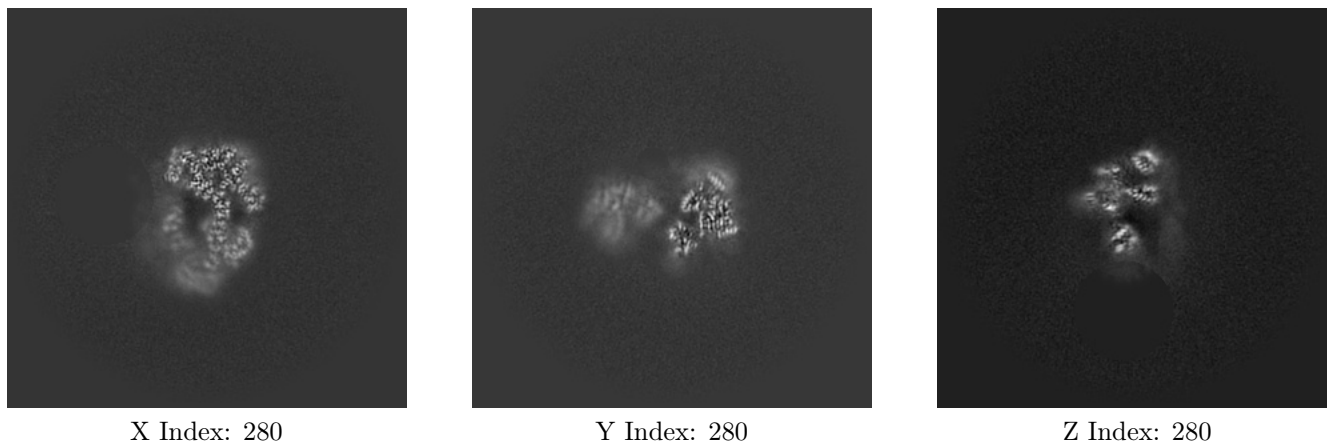
#### 6.1.1 Primary map



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

### 6.2 Central slices [i](#)

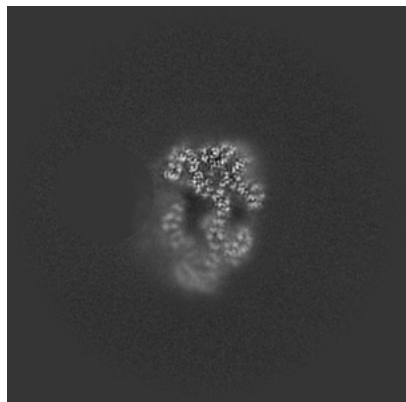
#### 6.2.1 Primary map



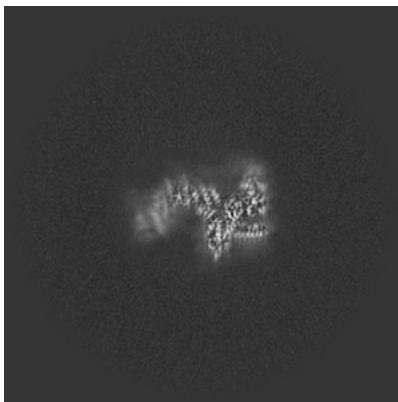
The images above show central slices of the map in three orthogonal directions.

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

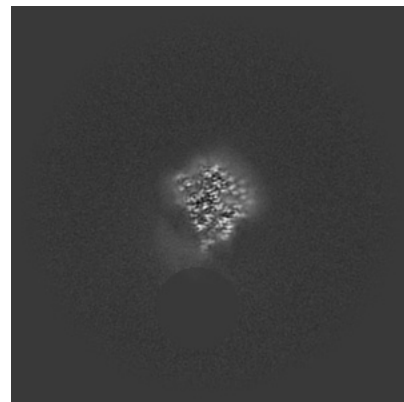
### 6.3.1 Primary map



X Index: 278



Y Index: 305

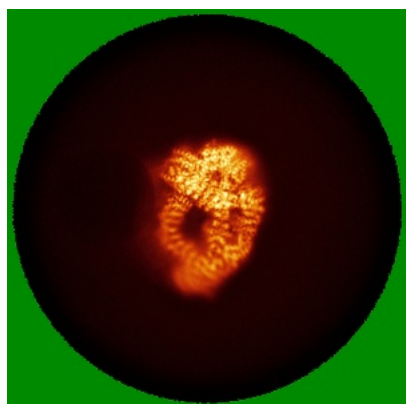


Z Index: 339

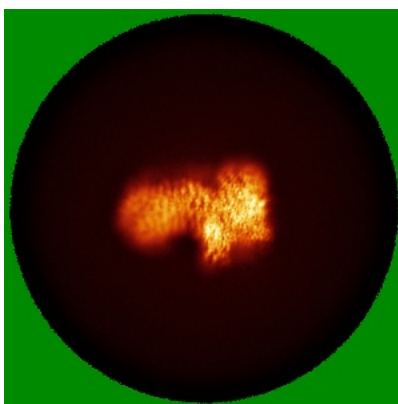
The images above show the largest variance slices of the map in three orthogonal directions.

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

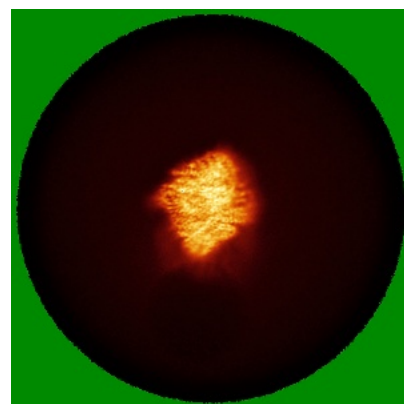
### 6.4.1 Primary map



X



Y



Z

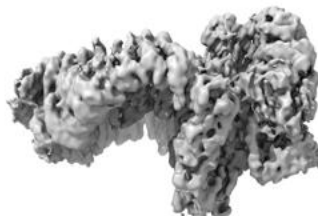
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

## 6.5 Orthogonal surface views [i](#)

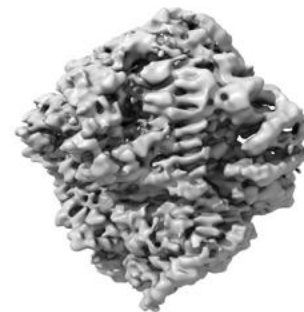
### 6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 9.5. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

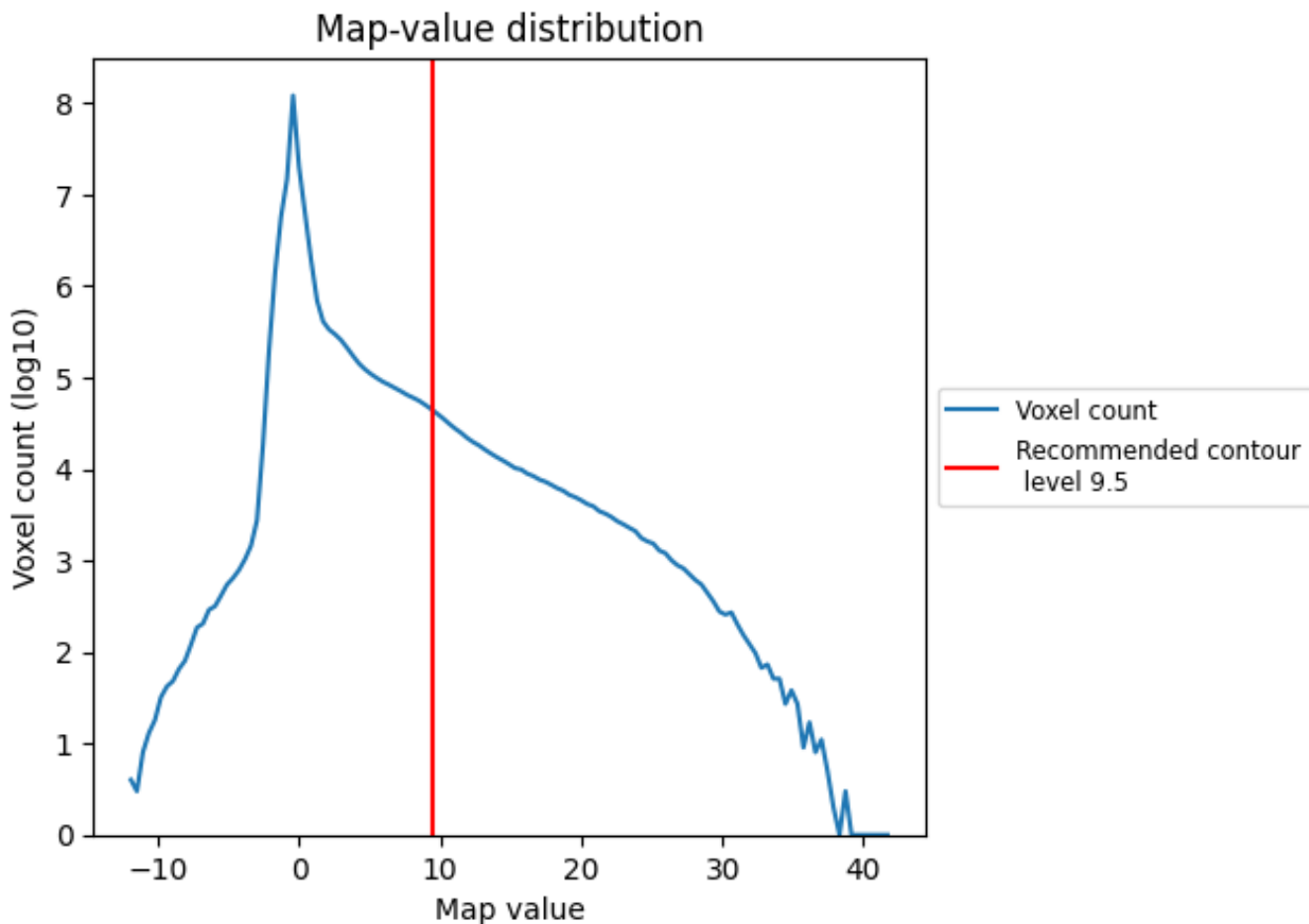
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

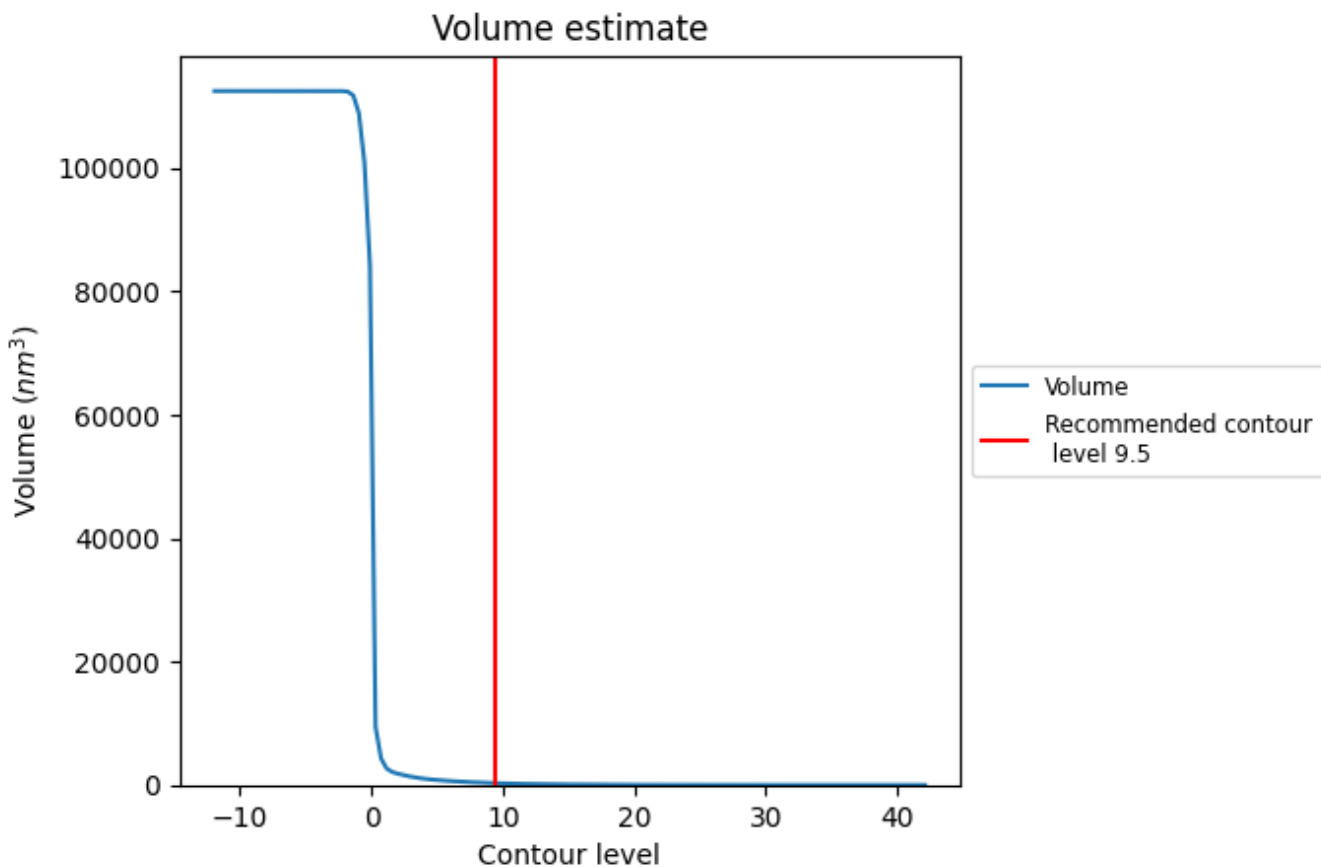
This section contains the results of statistical analysis of the map.

### 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.

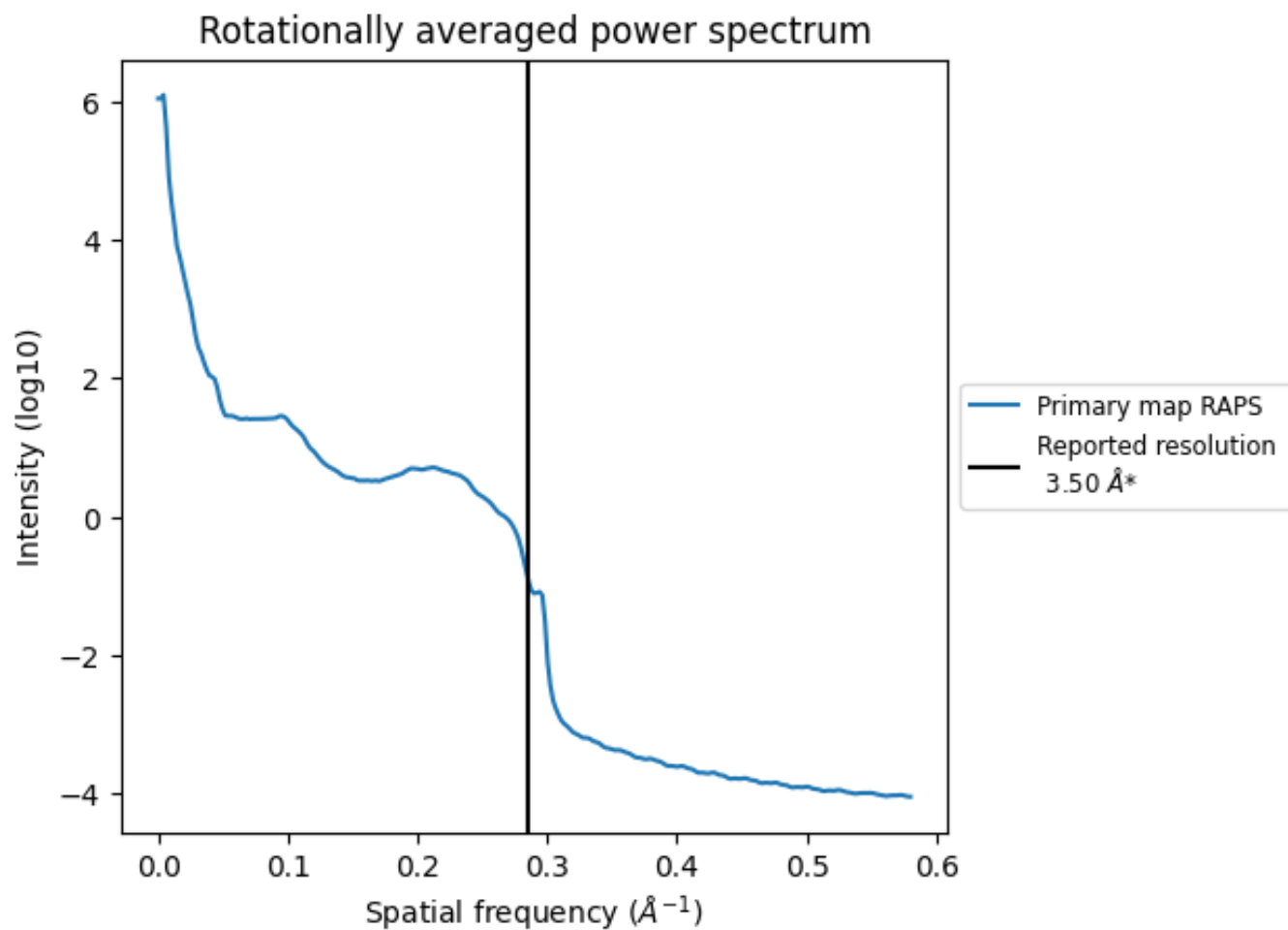
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is  $285 \text{ nm}^3$ ; this corresponds to an approximate mass of 258 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  $0.286 \text{\AA}^{-1}$

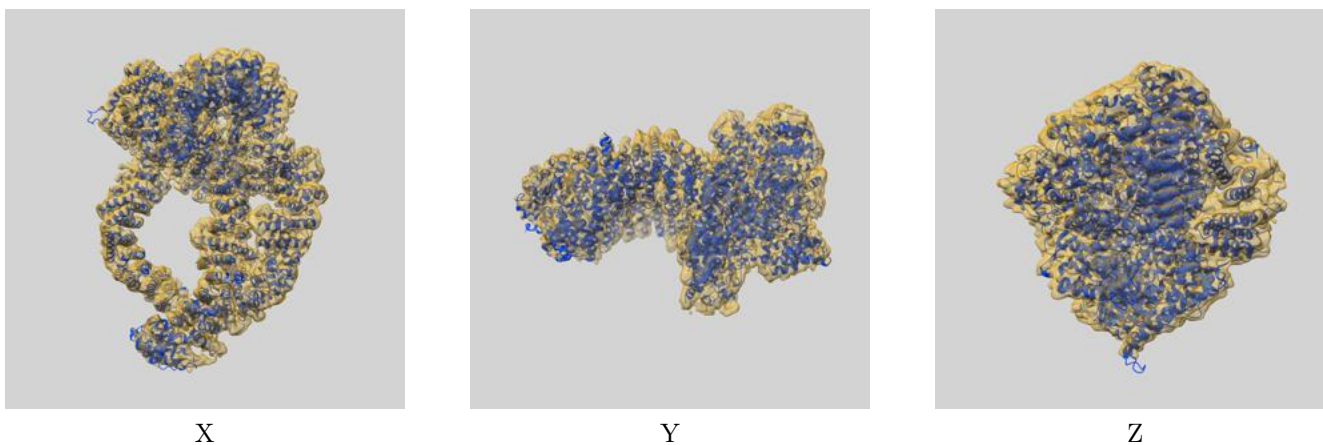
## 8 Fourier-Shell correlation

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

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

This section contains information regarding the fit between EMDB map EMD-18619 and PDB model 8QRI. Per-residue inclusion information can be found in section 3 on page 4.

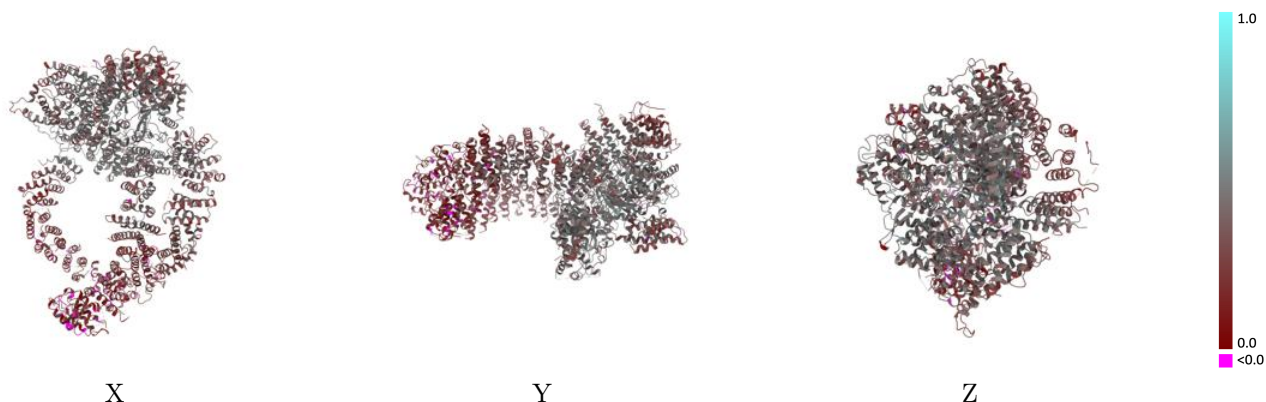
### 9.1 Map-model overlay [i](#)



The images above show the 3D surface view of the map at the recommended contour level 9.5 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.

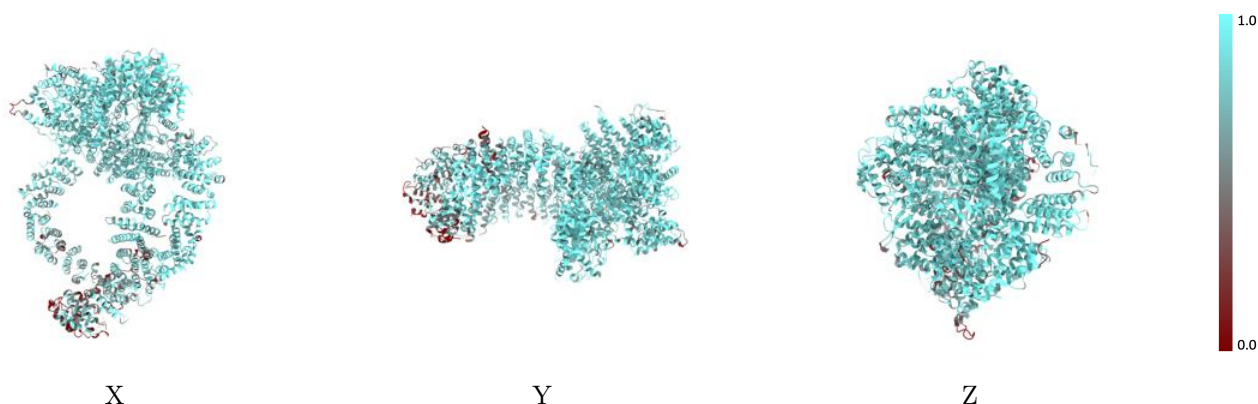


## 9.2 Q-score mapped to coordinate model [i](#)



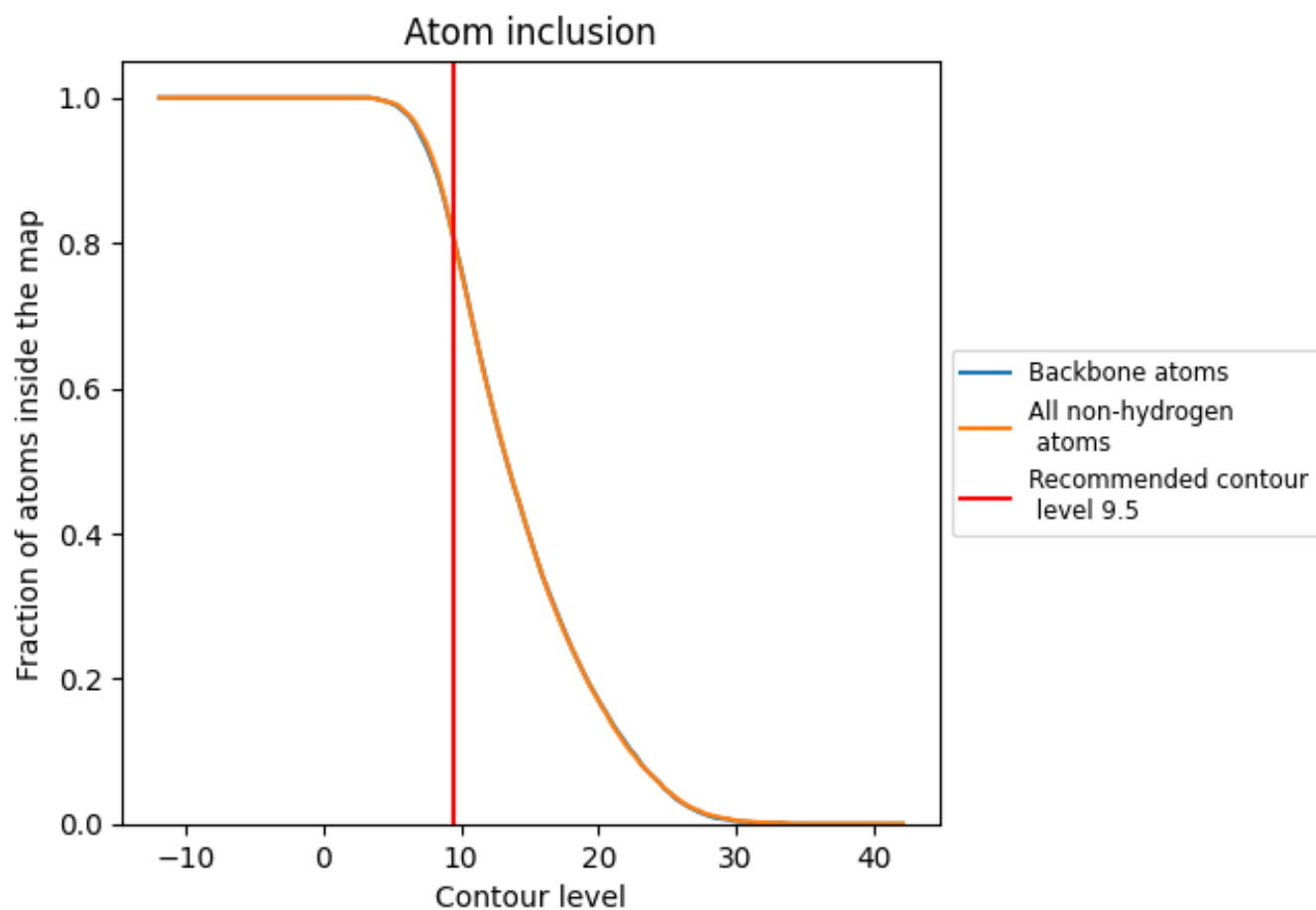
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (9.5).







## 9.4 Atom inclusion [i](#)



At the recommended contour level, 80% of all backbone atoms, 80% 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 (9.5) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8040	 0.3490
A	 0.7320	 0.3490
C	 0.8140	 0.3490

