



## wwPDB EM Validation Summary Report ⓘ

Nov 8, 2022 – 07:53 AM JST

PDB ID : 5YZ0  
EMDB ID : EMD-6862  
Title : Cryo-EM Structure of human ATR-ATRIP complex  
Authors : Rao, Q.; Liu, M.; Tian, Y.; Wu, Z.; Wang, H.; Wang, J.; Xu, Y.  
Deposited on : 2017-12-11  
Resolution : 4.70 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>.

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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.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

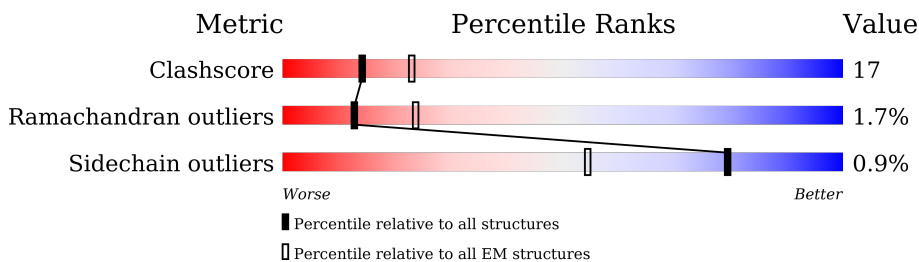
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 4.70 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	A	2644	
1	B	2644	
2	C	791	
2	D	791	

## 2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 33371 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 Serine/threonine-protein kinase ATR.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	2362	Total	C	N	O	S	0	0
			15007	9318	2785	2842	62		
1	B	2362	Total	C	N	O	S	0	0
			15007	9318	2785	2842	62		

- Molecule 2 is a protein called ATR-interacting protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
2	C	362	Total	C	N	O	0	0
			1785	1061	362	362		
2	D	318	Total	C	N	O	0	0
			1572	936	318	318		

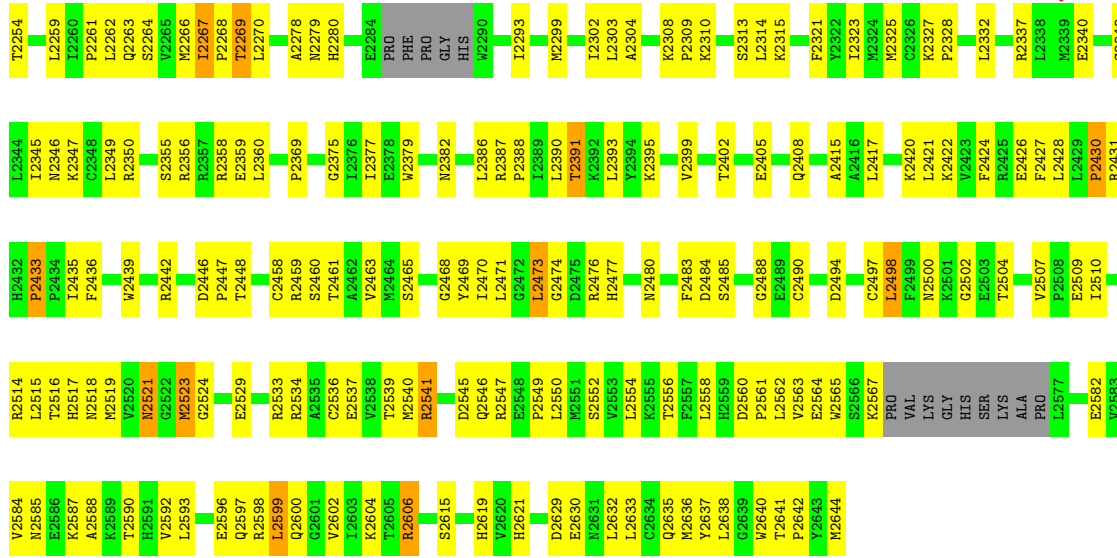
### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

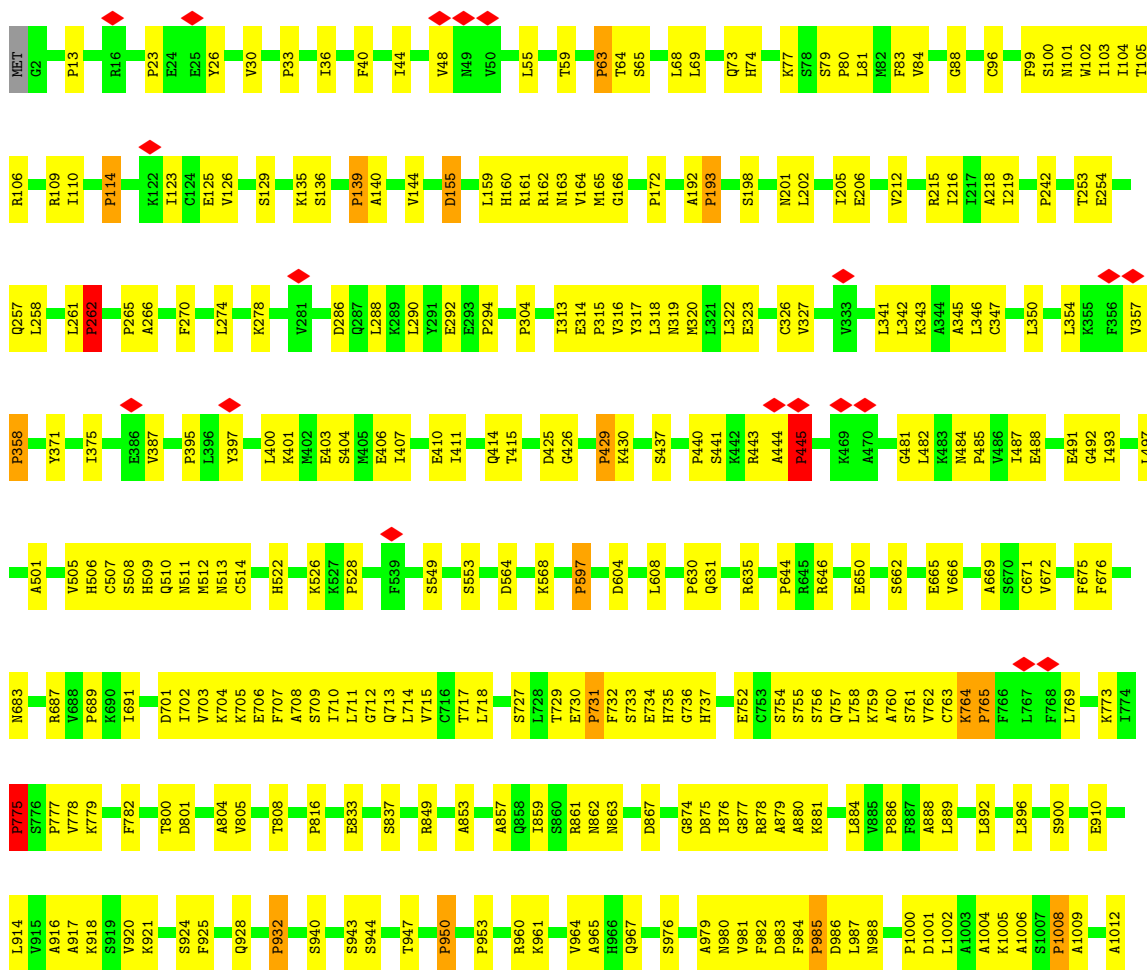
- Molecule 1: Serine/threonine-protein kinase ATR



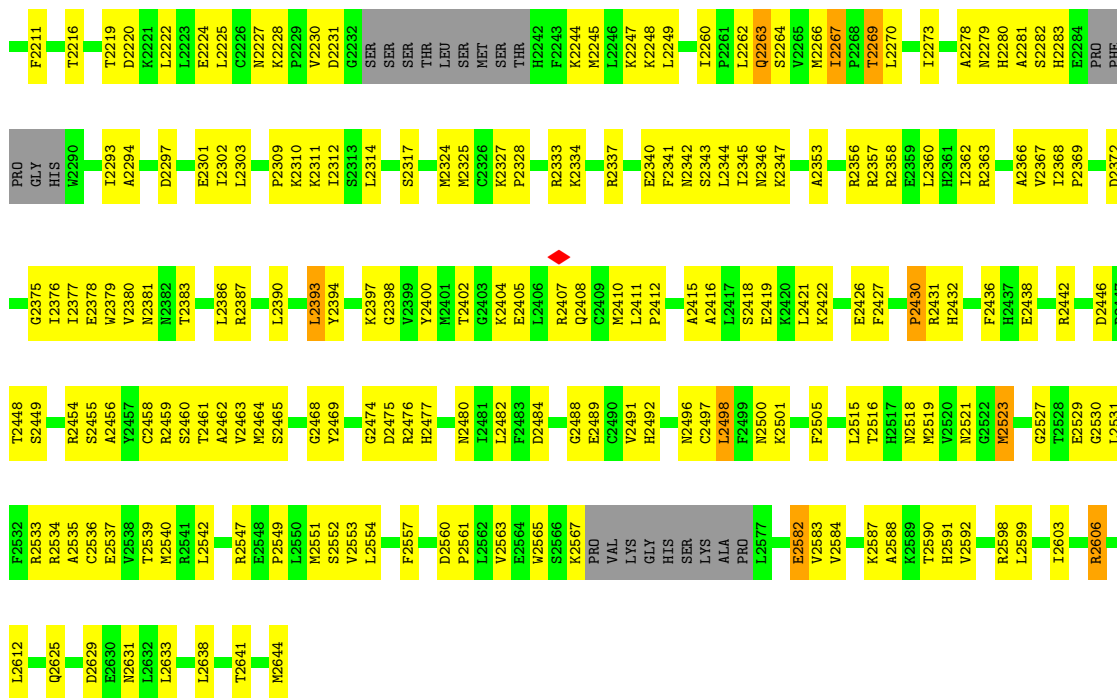
S2186	S2190	R2190	R2193	C2194	I2197	L2198	A2201	I2202	K2205	L2208	F2211	G2212	G2213	A2214	A2215	R2216	R2217	L2218	T2219	D2220	K2221	L2222	L2223	E2224	L2225	C2226	M2227	K2228	P2229	V2230	D2231	G2232	SER	SER	THR	LEU	THR	L2065	V2069	L2070	H2071	R2074	S2075	L2076	Q2077	S2086	M2087	P2088	M1996	M2090	L2091	T2092
L2093	D2096	Y2097	G2098	T2099	Y2102	E2103	M2104	K2106	A2107	G2108	R2109	V2113	Q2114	M2115	R2116	M2117	H2129	T2130	M2131	Y2132	L2133	Q2137	T2140	A2141	F2142	L2145	L2146	S2147	R2148	H2151	D2154	F2157	V2158	V2159	L2160	T2163	K2166	Q2173	Q2174	A2175	M2176	L2249	E2251									
R2001	A2002	M2003	L2004	M2010	E2011	E2012	T2013	F2016	S2017	S2018	M2019	A2020	K2023	G2024	Y2025	K2026	D2027	L2032	G2038	H2039	F2040	L2042	A2043	K2044	D2047	V2053	M2056	K2057	M2058	E2059	K2060	L2065	V2069	L2070	H2071	R2074	S2075	L2076	Q2077	S2086	M2087	P2088	M1996	M2090	L2091	T2092						
V1826	R1827	A1828	A1829	Q1830	I1831	S1835	A1836	A1837	S1838	R1841	Y1844	Q1845	R1846	K1847	Y1848	E1849	Y1850	I1851	V1852	R1853	E1861	I1864	F1868	K1869	HIS	SER	PRO	GLY	ASP	SER	SER	GLN	GLU	ASP	LEU	ASN	TRP	V1884	L1901	R1904	R1905	L1908	M1919	V1920	G1921	E1922	L1925					
I1734	M1617	V1618	S1619	T1620	V1621	D1622	Y1623	E1624	D1625	V1626	Q1627	T1630	L1633	P1637	Q1638	L1641	A1642	V1643	F1646	R1647	S1648	K1649	A1650	Y1651	Q1670	D1687	I1695	R1696	K1697	A1698	E1699	P1700	S1701	L1702	K1703	E1704	Q1705	D1717	A1718	T1719	D1723	R1724	A1725	L1728	K1813	R1814	P1730	D1732	I1733			
V1536	C1540	M1541	Q1545	D1559	D1560	HIS	THR	ILE	ASN	THR	GLN	ASP	ILE	ALA	SER	D1572	K1475	A1476	R1477	Y1478	I1479	L1480	S1481	M1486	F1487	W1490	S1491	A1495	I1499	H1504	A1507	S1508	F1511	T1512	C1513	M1517	D1521	F1522	K1523	I1526	L1529	I1532	L1533									
V1536	C1540	M1541	Q1545	D1559	D1560	HIS	THR	ILE	ASN	THR	GLN	ASP	ILE	ALA	SER	D1572	K1475	A1476	R1477	Y1478	I1479	L1480	S1481	M1486	F1487	W1490	S1491	A1495	I1499	H1504	A1507	S1508	F1511	T1512	C1513	M1517	D1521	F1522	K1523	I1526	L1529	I1532	L1533									
V1536	C1540	M1541	Q1545	D1559	D1560	HIS	THR	ILE	ASN	THR	GLN	ASP	ILE	ALA	SER	D1572	K1475	A1476	R1477	Y1478	I1479	L1480	S1481	M1486	F1487	W1490	S1491	A1495	I1499	H1504	A1507	S1508	F1511	T1512	C1513	M1517	D1521	F1522	K1523	I1526	L1529	I1532	L1533									
V1536	C1540	M1541	Q1545	D1559	D1560	HIS	THR	ILE	ASN	THR	GLN	ASP	ILE	ALA	SER	D1572	K1475	A1476	R1477	Y1478	I1479	L1480	S1481	M1486	F1487	W1490	S1491	A1495	I1499	H1504	A1507	S1508	F1511	T1512	C1513	M1517	D1521	F1522	K1523	I1526	L1529	I1532	L1533									
V1536	C1540	M1541	Q1545	D1559	D1560	HIS	THR	ILE	ASN	THR	GLN	ASP	ILE	ALA	SER	D1572	K1475	A1476	R1477	Y1478	I1479	L1480	S1481	M1486	F1487	W1490	S1491	A1495	I1499	H1504	A1507	S1508	F1511	T1512	C1513	M1517	D1521	F1522	K1523	I1526	L1529	I1532	L1533									
V1536	C1540	M1541	Q1545	D1559	D1560	HIS	THR	ILE	ASN	THR	GLN	ASP	ILE	ALA	SER	D1572	K1475	A1476	R1477	Y1478	I1479	L1480	S1481	M1486	F1487	W1490	S1491	A1495	I1499	H1504	A1507	S1508	F1511	T1512	C1513	M1517	D1521	F1522	K1523	I1526	L1529	I1532	L1533									
V1536	C1540	M1541	Q1545	D1559	D1560	HIS	THR	ILE	ASN	THR	GLN	ASP	ILE	ALA	SER	D1572	K1475	A1476	R1477	Y1478	I1479	L1480	S1481	M1486	F1487	W1490	S1491	A1495	I1499	H1504	A1507	S1508	F1511	T1512	C1513	M1517	D1521	F1522	K1523	I1526	L1529	I1532	L1533									
V1536	C1540	M1541	Q1545	D1559	D1560	HIS	THR	ILE	ASN	THR	GLN	ASP	ILE	ALA	SER	D1572	K1475	A1476	R1477	Y1478	I1479	L1480	S1481	M1486	F1487	W1490	S1491	A1495	I1499	H1504	A1507	S1508	F1511	T1512	C1513	M1517	D1521	F1522	K1523	I1526	L1529	I1532	L1533									
V1536	C1540	M1541	Q1545	D1559	D1560	HIS	THR	ILE	ASN	THR	GLN	ASP	ILE	ALA	SER	D1572	K1475	A1476	R1477	Y1478	I1479	L1480	S1481	M1486	F1487	W1490	S1491	A1495	I1499	H1504	A1507	S1508	F1511	T1512	C1513	M1517	D1521	F1522	K1523	I1526	L1529	I1532	L1533									



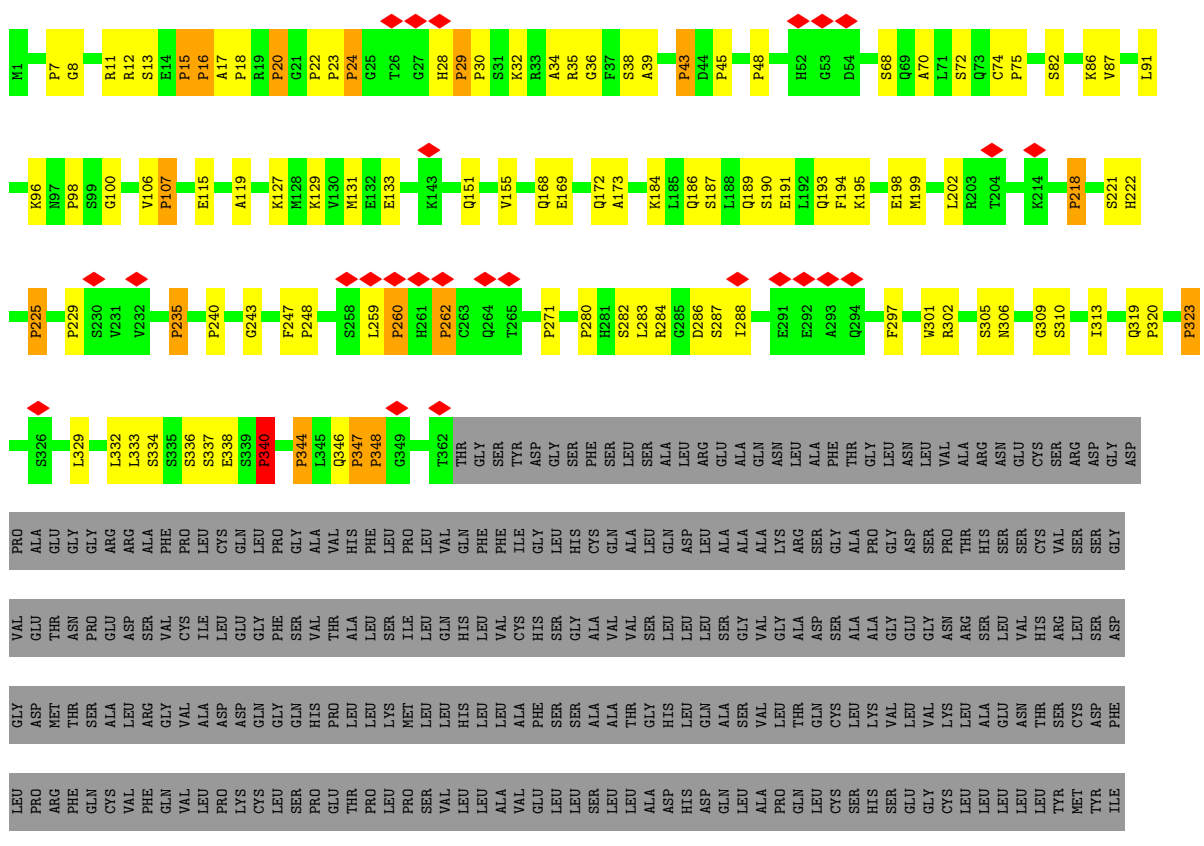
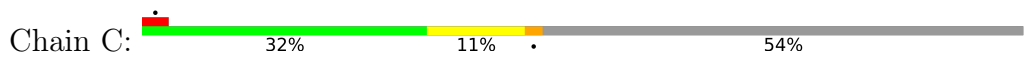
• Molecule 1: Serine/threonine-protein kinase ATR



<b>Q2114</b>	<b>Q2115</b>	<b>R2116</b>	<b>N2117</b>	<b>D2118</b>	<b>L2119</b>	<b>G2120</b>	<b>N2123</b>	<b>L2126</b>	<b>H2129</b>	<b>T2130</b>	<b>N2131</b>	<b>Y2132</b>	<b>P2135</b>	<b>V2136</b>	<b>Q2137</b>	<b>L2138</b>	<b>L2139</b>	<b>T2140</b>	<b>Q2144</b>	<b>S2147</b>	<b>H2151</b>	<b>S2152</b>	<b>H2153</b>	<b>D2154</b>	<b>E2155</b>	<b>F2156</b>	<b>V2157</b>	<b>V2158</b>	<b>R2161</b>	<b>E2162</b>	<b>I2163</b>	<b>K2166</b>	<b>V2167</b>	<b>Y2171</b>	<b>P2172</b>	<b>K2184</b>	<b>S2185</b>	<b>S2186</b>	<b>R2190</b>	<b>L2198</b>	<b>E2105</b>	<b>K2106</b>	<b>R2109</b>	<b>R2112</b>	<b>V2113</b>								
G2088	H2039	F2040	Y2041	L2042	A2043	K2044	Y2045	D2047	E2069	K2060	I2065	R2066	Y2067	L2068	V2069	L2070	H2071	F2072	G2073	R2074	S2075	L2076	Q2077	Y2078	G2079	M2080	Q2081	F2082	I2083	Y2084	Q2085	P2088	R2089	M2090	E2091	L2092	T2093	A2094	M2095	F2096	Y2097	G2098	T2099	K2100	Y2102	E2103	W2104	E2105	K2106	R2109	R2112	V2113	
L1944	L1945	M1946	A1947	G1948	E1949	S1950	R1951	L1952	A1953	E1954	V1957	E1958	V1962	V1975	K1978	L2070	F1984	F2072	G2073	R2074	S2075	L2076	Q2077	Y2078	G2079	M2080	Q2081	F2082	I2083	Y2084	Q2085	R2088	R2089	M2090	E2091	L2092	T2093	A2094	M2095	F2096	Y2097	G2098	T2099	K2100	Y2102	E2103	W2104	E2105	K2106	R2109	R2112	V2113	
Y1944	Q1945	R1946	G1947	Y1950	R1953	R1953	L1954	Q1969	HIS	PRO	SER	GLY	ASP	SER	SER	GLN	GLU	ASP	SER	LEU	ASN	TRP	V1984	R1895	P1939	I1900	L1901	R1905	A1906	L1907	R1913	M1917	E1918	M1919	V1920	L1925	Q1926	R1929	R1932	K1933	A1934	G1935	H1936	H1937	Q1938	Y1941	M1942	A1943					
S1750	T1751	V1752	I1753	T1754	Q1755	V1756	M1757	G1758	V1759	W1766	E1769	L1770	N1771	T1772	Y1773	R1774	V1775	E1776	A1777	A1778	W1779	K1780	D1785	L1786	V1787	E1788	M1789	Y1790	G1795	K1796	S1797	T1798	T1799	W1800	M1801	V1802	R1803	L1804	G1805	Q1806	L1807	K1813	D1821	K1825	L1826	T1831	A1837	M1842	A1843				
S1660	F1661	I1662	K1666	Q1667	M1668	I1669	Q1670	L1673	L1676	Q1677	A1681	D1687	V1692	I1695	R1696	E1699	P1700	S1701	L1702	Q1705	H1709	E1710	L1714	L1715	R1716	D1717	Y1722	D1723	R1724	A1725	L1726	Q1727	L1728	E1729	Q1732	I1733	H1737	K1741	A1650	Y1651	A1654	Q1747	L1748	L1749									
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G1386	V1387	E1388	S1390	S1391	Y1394	G1395	M1410	Q1414	A1418	Q1422	S1426	I1427	C1430	R1431	E1434	T1435	M1436	G1437	P1438	C1439	P1447	E1448	H1449	V1450	E1452	I1453	L1454	E1455	P1456	T1469	D1470	W1471	K1475	P1477	I1478	S1481	K1482	M1486	F1487	W1490	S1491	A1492											
GLU	THR	VAL	PRO	ILE	SER	GLN	VAL	VAL	VAL	LEU	CYS	GLN	ASP	ALA	ARG	LEU	LEU	LEU	CYS	GLU	CYS	LEU	GLY	GLN	ASP	GLY	GLY	ALA	ILE	ASP	THR	THR	THR	THR	GLN	GLY	GLN	LYS	ASP	PHE	THR	THR	THR	GLN	GLY	LYS	ASP	PHE	THR	F1383	V1384	T1385	
ALA	CYS	GLY	SER	LEU	ARG	LEU	SER	ILE	VAL	VAL	ALA	THR	ASP	LEU	LEU	ALA	ILE	ALA	PHE	GLU	VAL	ASP	ASP	THR	THR	VAL	VAL	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
ALA	VAL	GLN	TRP	LEU	ARG	SER	LYS	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR



● Molecule 2: ATR-interacting protein







## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	266218	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	50	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	0.143	Depositor
Minimum map value	-0.062	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.02	Depositor
Map size ( $\text{\AA}$ )	312.0, 312.0, 312.0	wwPDB
Map dimensions	240, 240, 240	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	1.3, 1.3, 1.3	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	0.42	0/15191	0.70	57/20804 (0.3%)
1	B	0.44	0/15191	0.71	51/20804 (0.2%)
2	C	0.28	0/1784	0.84	32/2481 (1.3%)
2	D	0.29	0/1571	0.84	26/2187 (1.2%)
All	All	0.42	0/33737	0.72	166/46276 (0.4%)

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	48
1	B	0	59
2	C	0	3
2	D	0	3
All	All	0	113

There are no bond length outliers.

The worst 5 of 166 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	358	PRO	N-CA-CB	7.24	111.99	103.30
1	A	1189	PRO	N-CA-CB	7.15	111.88	103.30
2	D	107	PRO	N-CA-CB	7.12	111.85	103.30
2	C	24	PRO	N-CA-CB	6.96	111.66	103.30
2	C	323	PRO	N-CA-CB	6.90	111.58	103.30

There are no chirality outliers.

5 of 113 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1032	ASN	Peptide
1	A	22	THR	Peptide
1	A	384	GLY	Peptide
1	A	866	LYS	Peptide
1	A	933	ILE	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	15007	0	11392	455	0
1	B	15007	0	11392	484	0
2	C	1785	0	791	44	0
2	D	1572	0	689	26	0
All	All	33371	0	24264	1003	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 17.

The worst 5 of 1003 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:1637:PRO:HB2	1:A:1638:GLN:HG2	1.62	0.78
1:B:2333:ARG:HH11	1:B:2337:ARG:HH21	1.36	0.74
1:A:1964:TRP:HE1	1:A:2010:MET:HG3	1.51	0.74
1:A:1559:ASP:HB3	1:A:1574:CYS:HB3	1.71	0.72
1:A:1670:GLN:HE22	1:A:1697:LYS:HE3	1.56	0.71

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	2344/2644 (89%)	1962 (84%)	350 (15%)	32 (1%)	11	47
1	B	2344/2644 (89%)	1953 (83%)	358 (15%)	33 (1%)	11	47
2	C	360/791 (46%)	284 (79%)	63 (18%)	13 (4%)	3	28
2	D	316/791 (40%)	240 (76%)	64 (20%)	12 (4%)	3	27
All	All	5364/6870 (78%)	4439 (83%)	835 (16%)	90 (2%)	13	43

5 of 90 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	144	VAL
1	A	192	ALA
1	A	193	PRO
1	A	357	VAL
1	A	444	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	A	924/2363 (39%)	914 (99%)	10 (1%)	73	85
1	B	924/2363 (39%)	918 (99%)	6 (1%)	86	92
All	All	1848/4726 (39%)	1832 (99%)	16 (1%)	79	88

5 of 16 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	2521	ASN
1	B	1951	ARG
1	A	2523	MET
1	B	1913	ARG
1	A	2521	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 32 such sidechains are listed below:

Mol	Chain	Res	Type
1	B	2153	HIS
1	B	2280	HIS
1	A	2199	ASN
1	A	2174	GLN
1	B	2480	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](#)

There are no chain breaks in this entry.

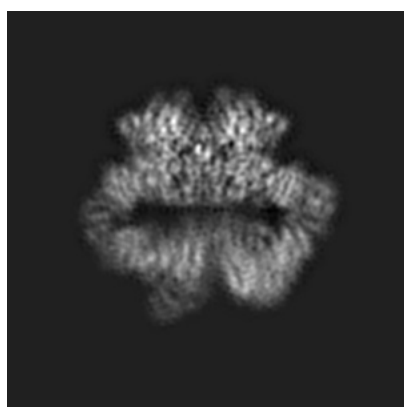
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-6862. These allow visual inspection of the internal detail of the map and identification of artifacts.

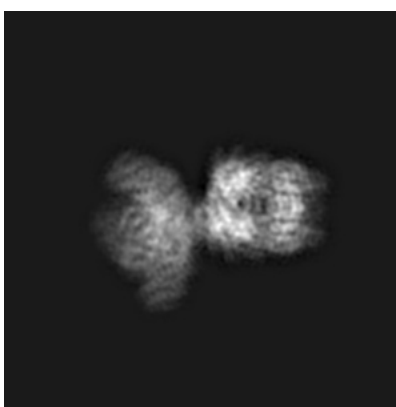
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

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

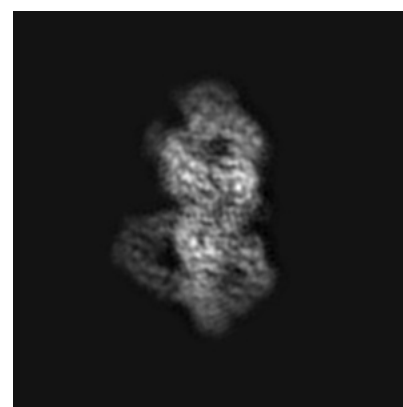
#### 6.1.1 Primary map



X



Y

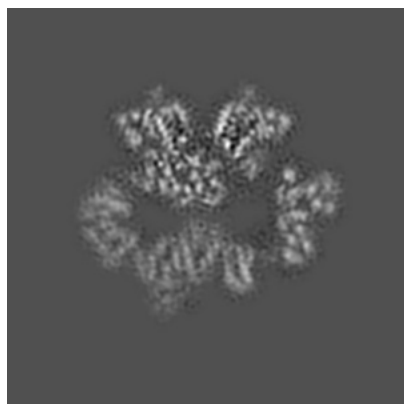


Z

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

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

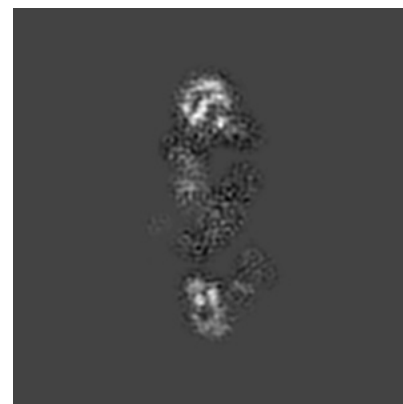
#### 6.2.1 Primary map



X Index: 120



Y Index: 120

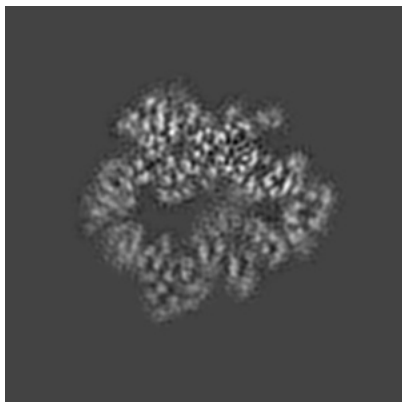


Z Index: 120

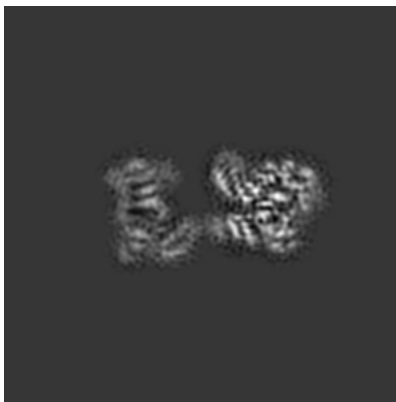
The images above show central slices of the map in three orthogonal directions.

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

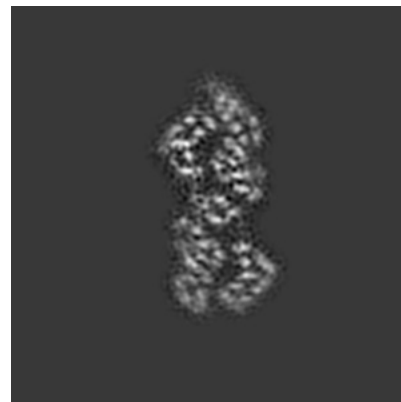
### 6.3.1 Primary map



X Index: 110



Y Index: 140

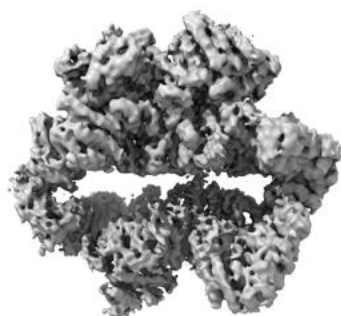


Z Index: 138

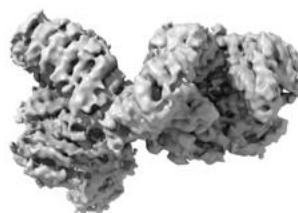
The images above show the largest variance slices of the map in three orthogonal directions.

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



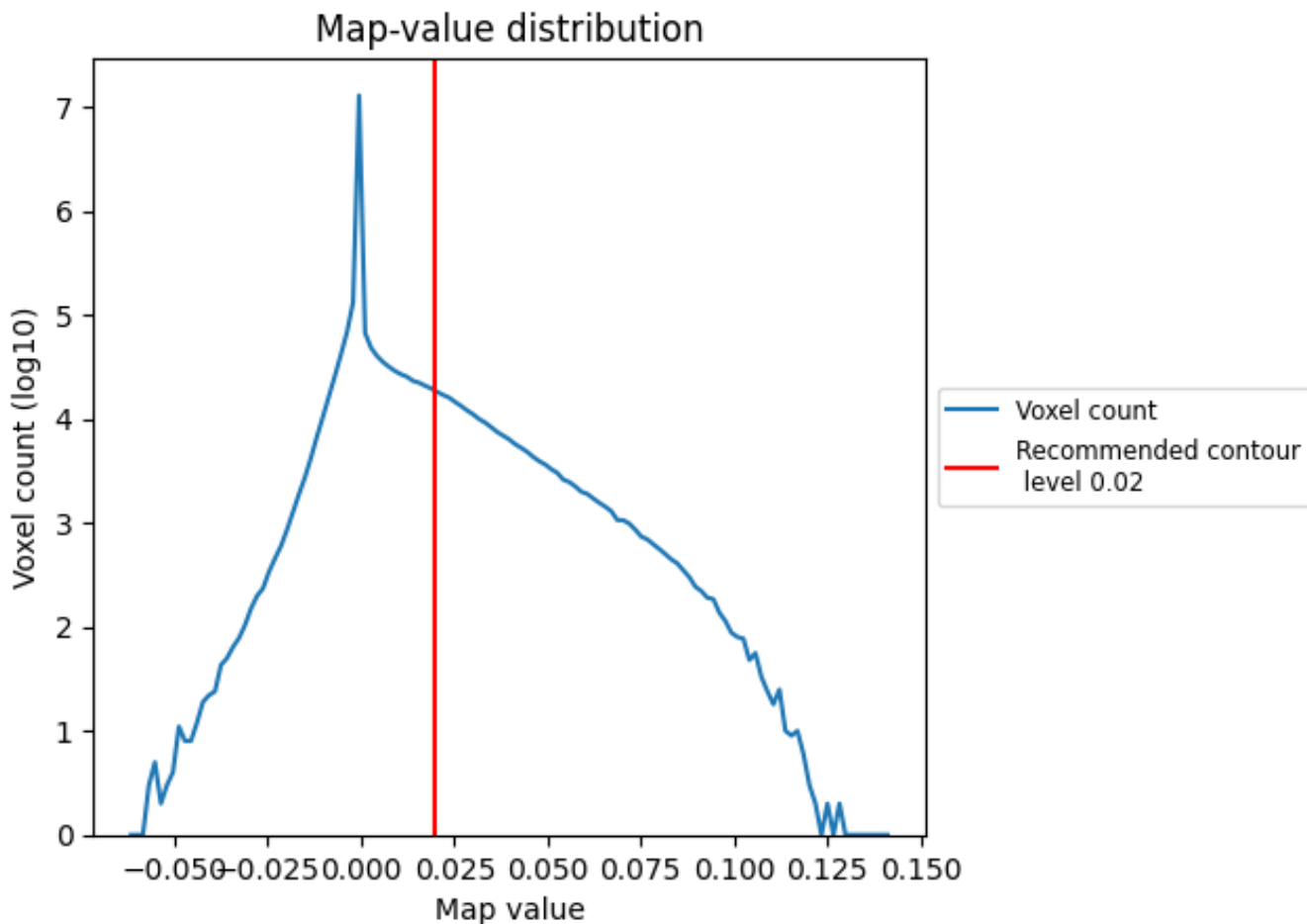
## 6.5 Mask visualisation

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

## 7 Map analysis [i](#)

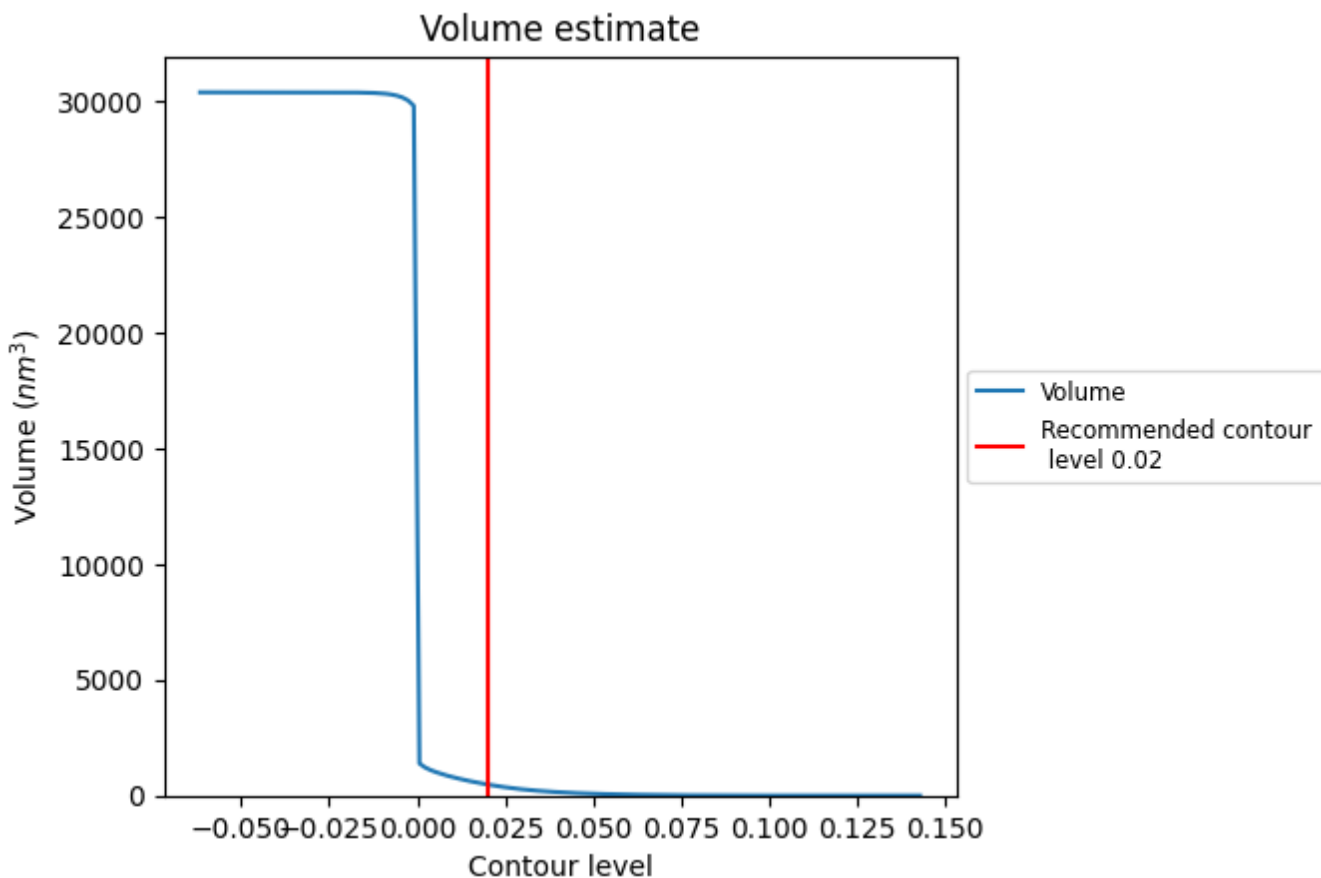
This section contains the results of statistical analysis of the map.

### 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.

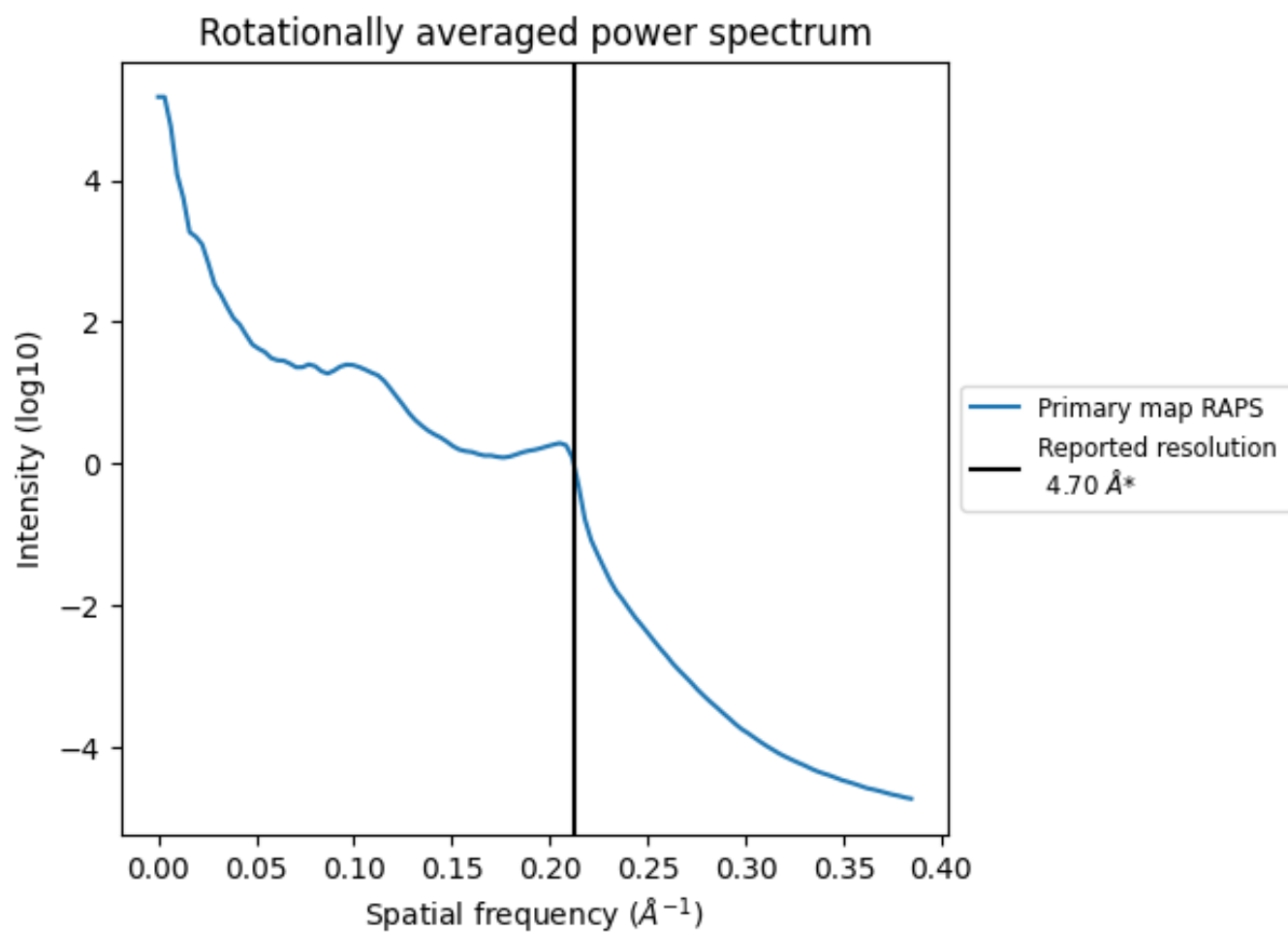
## 7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 477 nm<sup>3</sup>; this corresponds to an approximate mass of 431 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](#)

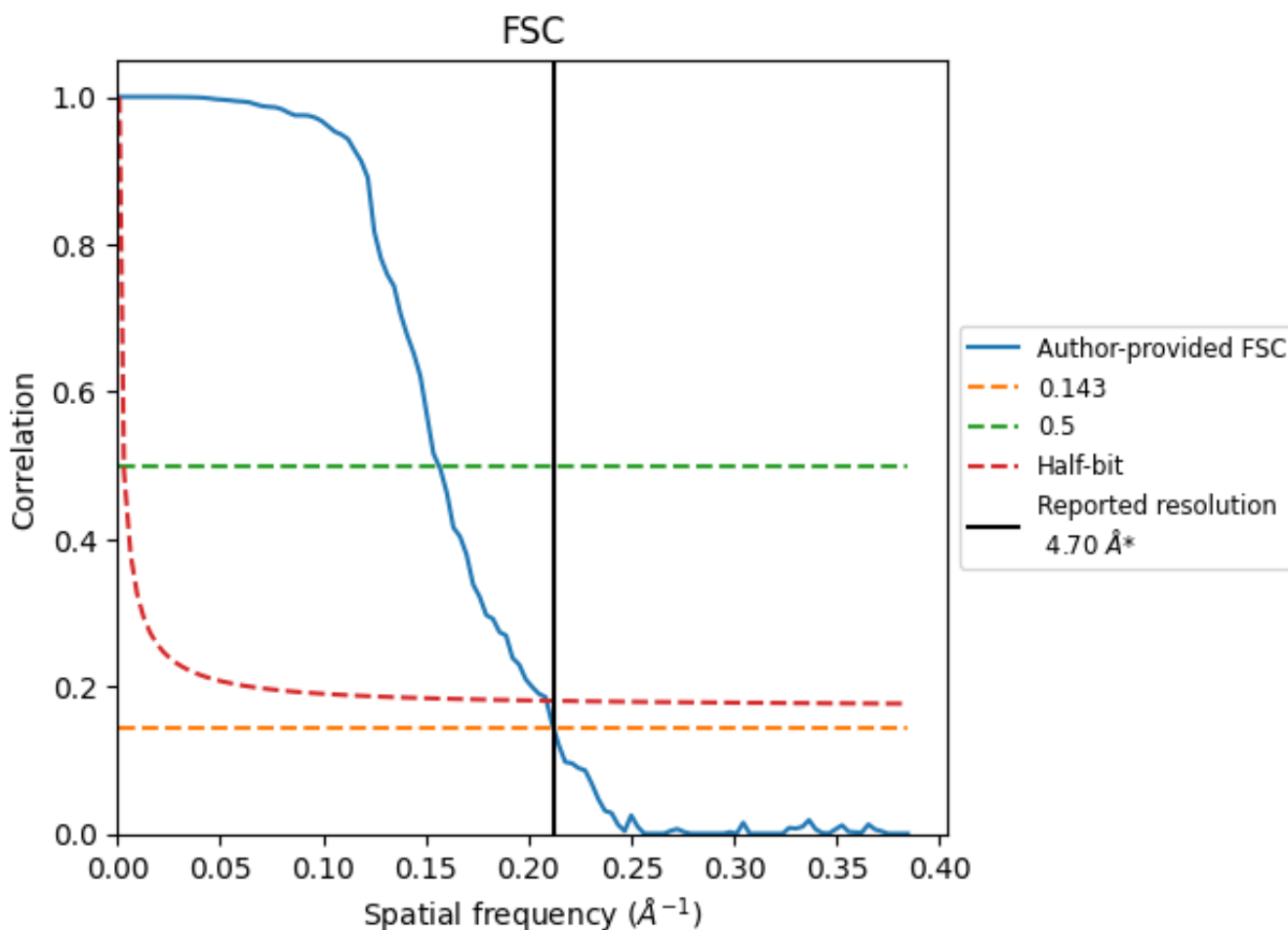


\*Reported resolution corresponds to spatial frequency of  $0.213 \text{\AA}^{-1}$

## 8 Fourier-Shell correlation [i](#)

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

### 8.1 FSC [i](#)



\*Reported resolution corresponds to spatial frequency of 0.213 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

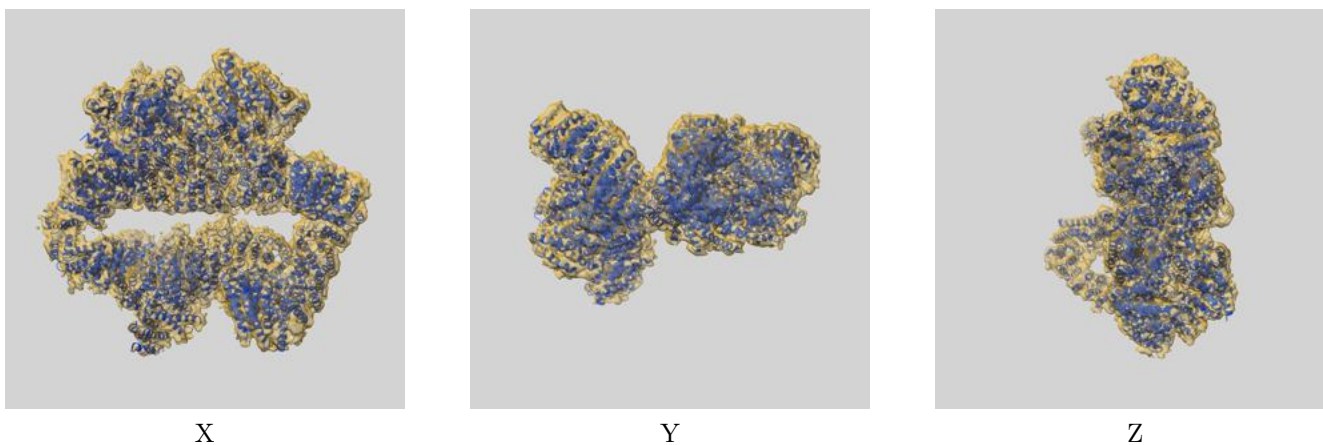
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.70	-	-
Author-provided FSC curve	4.71	6.40	4.79
Unmasked-calculated*	-	-	-

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

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

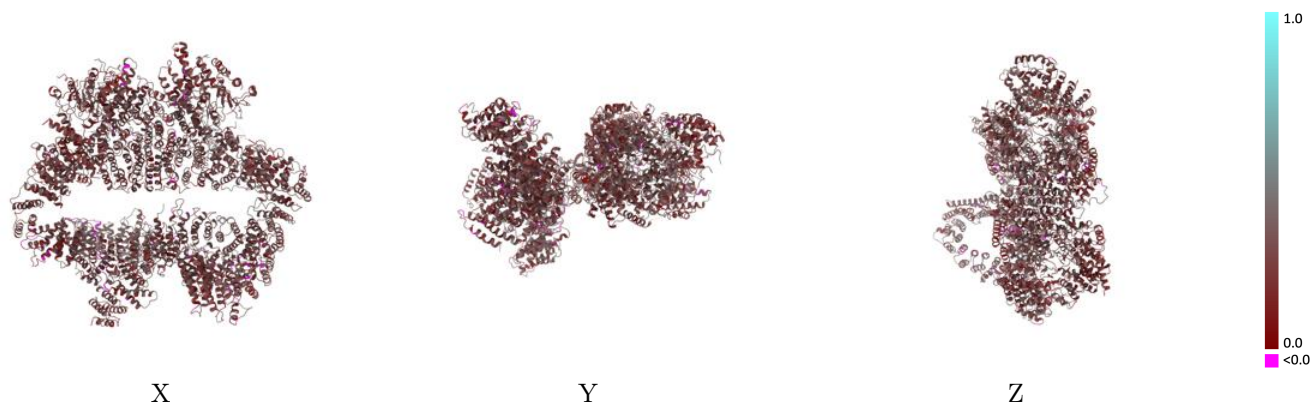
This section contains information regarding the fit between EMDB map EMD-6862 and PDB model 5YZ0. Per-residue inclusion information can be found in section 3 on page 4.

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



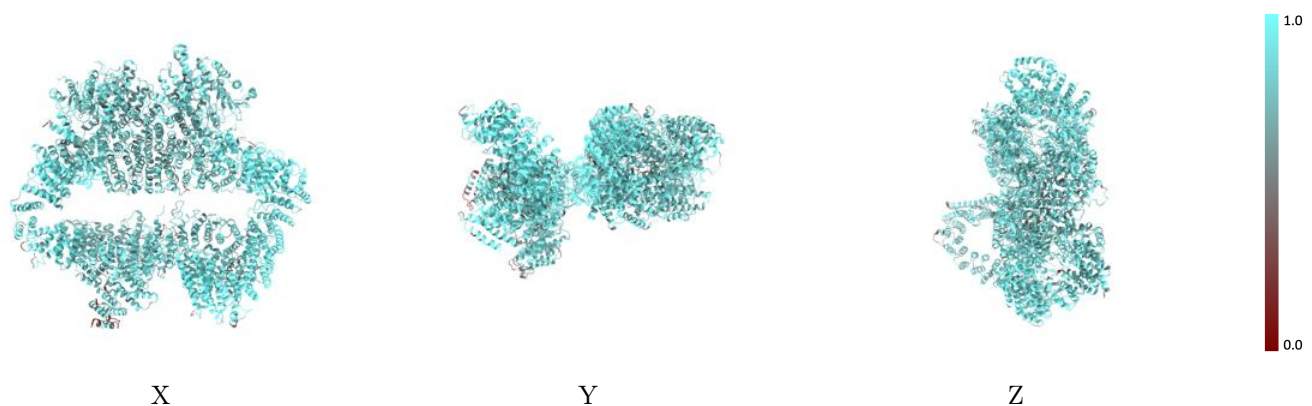
The images above show the 3D surface view of the map at the recommended contour level 0.02 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

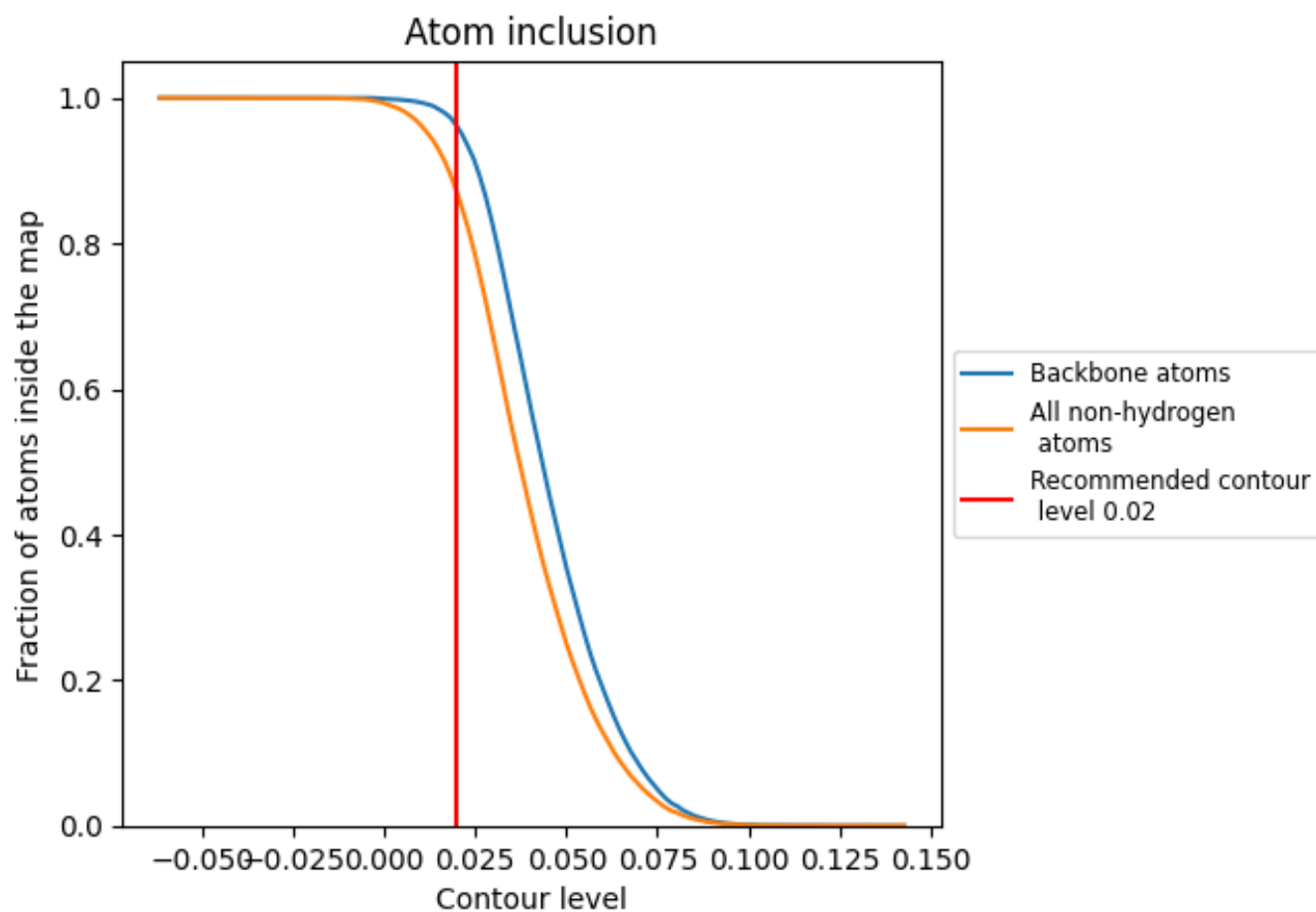
## 9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.02).













## 9.4 Atom inclusion [i](#)



At the recommended contour level, 96% of all backbone atoms, 87% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.02) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8696	 0.2810
A	 0.8565	 0.2760
B	 0.8900	 0.2880
C	 0.8504	 0.2820
D	 0.8219	 0.2630

