



wwPDB EM Validation Summary Report ⓘ

May 26, 2025 – 05:28 AM EDT

PDB ID : 8VHZ / pdb_00008vhz
EMDB ID : EMD-43244
Title : Cryo EM structure of a soybean CesA1 homotrimer
Authors : Ho, R.; Palliniti, P.; Zimmer, J.
Deposited on : 2024-01-02
Resolution : 3.30 Å(reported)

This is a wwPDB EM Validation Summary 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.dev118
MolProbity : 4-5-2 with Phenix2.0rc1
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) : 2.43.1

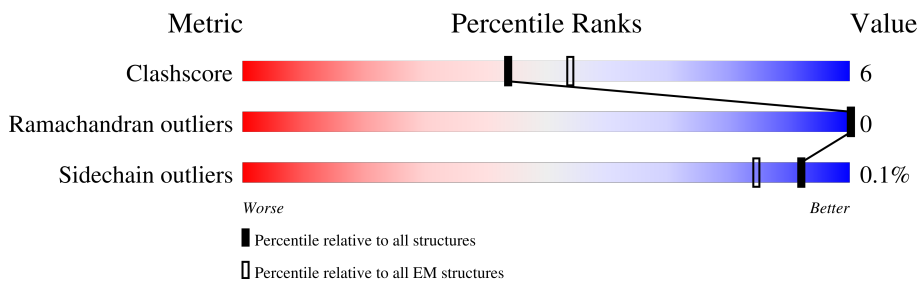
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.30 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	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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

Mol	Chain	Length	Quality of chain
1	A	1084	
1	B	1084	
1	C	1084	

2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 17208 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 Cellulose synthase.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	714	Total	C	N	O	S	0	0
			5736	3760	952	995	29		
1	B	714	Total	C	N	O	S	0	0
			5736	3760	952	995	29		
1	C	714	Total	C	N	O	S	0	0
			5736	3760	952	995	29		

Chain B:

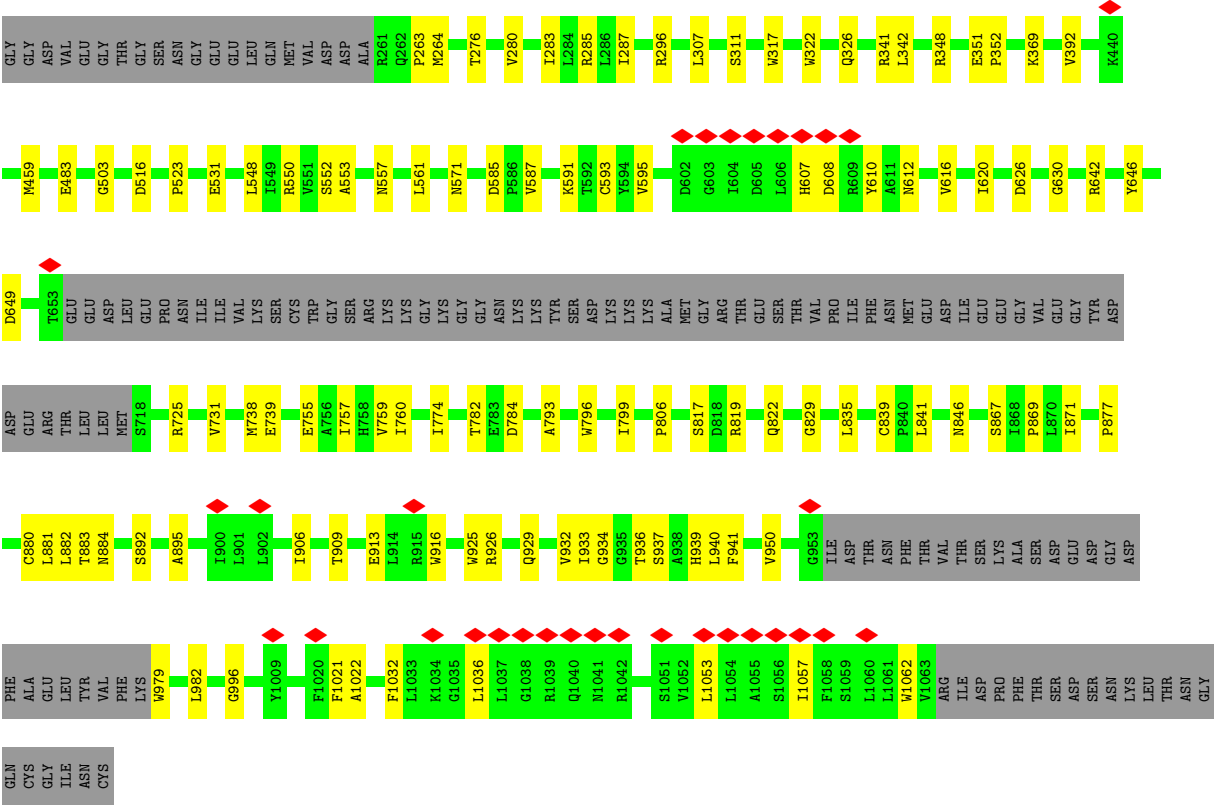


CYS	GLY	ILE	ASN	CYS	VAL	PHE	LYS	W979	L982	P986	L994	V995	G996	I997	V1001	F1016	F1020	F1021	A1022	F1032	L1033	K1034	G1035	L1036	L1037	G1038	I1039	Q1040	N1041	R1042	L1053	L1054	A1055	S1056	I1057	F1058	S1059	L1060	V1063	ARG	ILE	PRO	PHE	THR	SER	ASP	SER	ASN	LEU	THR	ASN	GLY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
T883	M884	S892	M895	S896	T897	M901	S902	M903	T904	S905	M906	T907	S908	M909	T910	S911	M912	T913	S914	M915	T916	S917	M918	T919	S920	M921	T922	S923	M924	T925	S926	M927	T928	S929	M930	T931	S932	M933	T934	S935	M936	T937	S938	M939	T940	S941	M942	T943	S944	M945	T946	S947	M948	T949	S950	M951	T952	S953	M954	T955	S956	M957	T958	S959	M960	T961	S962	M963	T964	S965	M966	T967	S968	M969	T970	S971	M972	T973	S974	M975	T976	S977	M978	T979	S980	M981	T982	S983	M984	T985	S986	M987	T988	S989	M990	T991	S992	M993	T994	S995	M996	T997	S998	M999	T1000	S1001	M1002	T1003	S1004	M1005	T1006	S1007	M1008	T1009	S1010	M1011	T1012	S1013	M1014	T1015	S1016	M1017	T1018	S1019	M1020	T1021	S1022	M1023	T1024	S1025	M1026	T1027	S1028	M1029	T1030	S1031	M1032	T1033	S1034	M1035	T1036	S1037	M1038	T1039	S1040	M1041	T1042	S1043	M1044	T1045	S1046	M1047	T1048	S1049	M1050	T1051	S1052	M1053	T1054	S1055	M1056	T1057	S1058	M1059	T1060	S1061	M1062	T1063	S1064	M1065	T1066	S1067	M1068	T1069	S1070	M1071	T1072	S1073	M1074	T1075	S1076	M1077	T1078	S1079	M1080	T1081	S1082	M1083	T1084	S1085	M1086	T1087	S1088	M1089	T1090	S1091	M1092	T1093	S1094	M1095	T1096	S1097	M1098	T1099	S1100	M1101	T1102	S1103	M1104	T1105	S1106	M1107	T1108	S1109	M1110	T1111	S1112	M1113	T1114	S1115	M1116	T1117	S1118	M1119	T1120	S1121	M1122	T1123	S1124	M1125	T1126	S1127	M1128	T1129	S1130	M1131	T1132	S1133	M1134	T1135	S1136	M1137	T1138	S1139	M1140	T1141	S1142	M1143	T1144	S1145	M1146	T1147	S1148	M1149	T1150	S1151	M1152	T1153	S1154	M1155	T1156	S1157	M1158	T1159	S1160	M1161	T1162	S1163	M1164	T1165	S1166	M1167	T1168	S1169	M1170	T1171	S1172	M1173	T1174	S1175	M1176	T1177	S1178	M1179	T1180	S1181	M1182	T1183	S1184	M1185	T1186	S1187	M1188	T1189	S1190	M1191	T1192	S1193	M1194	T1195	S1196	M1197	T1198	S1199	M1200	T1201	S1202	M1203	T1204	S1205	M1206	T1207	S1208	M1209	T1210	S1211	M1212	T1213	S1214	M1215	T1216	S1217	M1218	T1219	S1220	M1221	T1222	S1223	M1224	T1225	S1226	M1227	T1228	S1229	M1230	T1231	S1232	M1233	T1234	S1235	M1236	T1237	S1238	M1239	T1240	S1241	M1242	T1243	S1244	M1245	T1246	S1247	M1248	T1249	S1250	M1251	T1252	S1253	M1254	T1255	S1256	M1257	T1258	S1259	M1260	T1261	S1262	M1263	T1264	S1265	M1266	T1267	S1268	M1269	T1270	S1271	M1272	T1273	S1274	M1275	T1276	S1277	M1278	T1279	S1280	M1281	T1282	S1283	M1284	T1285	S1286	M1287	T1288	S1289	M1290	T1291	S1292	M1293	T1294	S1295	M1296	T1297	S1298	M1299	T1300	S1301	M1302	T1303	S1304	M1305	T1306	S1307	M1308	T1309	S1310	M1311	T1312	S1313	M1314	T1315	S1316	M1317	T1318	S1319	M1320	T1321	S1322	M1323	T1324	S1325	M1326	T1327	S1328	M1329	T1330	S1331	M1332	T1333	S1334	M1335	T1336	S1337	M1338	T1339	S1340	M1341	T1342	S1343	M1344	T1345	S1346	M1347	T1348	S1349	M1350	T1351	S1352	M1353	T1354	S1355	M1356	T1357	S1358	M1359	T1360	S1361	M1362	T1363	S1364	M1365	T1366	S1367	M1368	T1369	S1370	M1371	T1372	S1373	M1374	T1375	S1376	M1377	T1378	S1379	M1380	T1381	S1382	M1383	T1384	S1385	M1386	T1387	S1388	M1389	T1390	S1391	M1392	T1393	S1394	M1395	T1396	S1397	M1398	T1399	S1400	M1401	T1402	S1403	M1404	T1405	S1406	M1407	T1408	S1409	M1410	T1411	S1412	M1413	T1414	S1415	M1416	T1417	S1418	M1419	T1420	S1421	M1422	T1423	S1424	M1425	T1426	S1427	M1428	T1429	S1430	M1431	T1432	S1433	M1434	T1435	S1436	M1437	T1438	S1439	M1440	T1441	S1442	M1443	T1444	S1445	M1446	T1447	S1448	M1449	T1450	S1451	M1452	T1453	S1454	M1455	T1456	S1457	M1458	T1459	S1460	M1461	T1462	S1463	M1464	T1465	S1466	M1467	T1468	S1469	M1470	T1471	S1472	M1473	T1474	S1475	M1476	T1477	S1478	M1479	T1480	S1481	M1482	T1483	S1484	M1485	T1486	S1487	M1488	T1489	S1490	M1491	T1492	S1493	M1494	T1495	S1496	M1497	T1498	S1499	M1500	T1501	S1502	M1503	T1504	S1505	M1506	T1507	S1508	M1509	T1510	S1511	M1512	T1513	S1514	M1515	T1516	S1517	M1518	T1519	S1520	M1521	T1522	S1523	M1524	T1525	S1526	M1527	T1528	S1529	M1530	T1531	S1532	M1533	T1534	S1535	M1536	T1537	S1538	M1539	T1540	S1541	M1542	T1543	S1544	M1545	T1546	S1547	M1548	T1549	S1550	M1551	T1552	S1553	M1554	T1555	S1556	M1557	T1558	S1559	M1560	T1561	S1562	M1563	T1564	S1565	M1566	T1567	S1568	M1569	T1570	S1571	M1572	T1573	S1574	M1575	T1576	S1577	M1578	T1579	S1580	M1581	T1582	S1583	M1584	T1585	S1586	M1587	T1588	S1589	M1590	T1591	S1592	M1593	T1594	S1595	M1596	T1597	S1598	M1599	T1600	S1601	M1602	T1603	S1604	M1605	T1606	S1607	M1608	T1609	S1610	M1611	T1612	S1613	M1614	T1615	S1616	M1617	T1618	S1619	M1620	T1621	S1622	M1623	T1624	S1625	M1626	T1627	S1628	M1629	T1630	S1631	M1632	T1633	S1634	M1635	T1636	S1637	M1638	T1639	S1640	M1641	T1642	S1643	M1644	T1645	S1646	M1647	T1648	S1649	M1650	T1651	S1652	M1653	T1654	S1655	M1656	T1657	S1658	M1659	T1660	S1661	M1662	T1663	S1664	M1665	T1666	S1667	M1668	T1669	S1670	M1671	T1672	S1673	M1674	T1675	S1676	M1677	T1678	S1679	M1680	T1681	S1682	M1683	T1684	S1685	M1686	T1687	S1688	M1689	T1690	S1691	M1692	T1693	S1694	M1695	T1696	S1697	M1698	T1699	S1700	M1701	T1702	S1703	M1704	T1705	S1706	M1707	T1708	S1709	M1710	T1711	S1712	M1713	T1714	S1715	M1716	T1717	S1718	M1719	T1720	S1721	M1722	T1723	S1724	M1725	T1726	S1727	M1728	T1729	S1730	M1731	T1732	S1733	M1734	T1735	S1736	M1737	T1738	S1739	M1740	T1741	S1742	M1743	T1744	S1745	M1746	T1747	S1748	M1749	T1750	S1751	M1752	T1753	S1754	M1755	T1756	S1757	M1758	T1759	S1760	M1761	T1762	S1763	M1764	T1765	S1766	M1767	T1768	S1769	M1770	T1771	S1772	M1773	T1774	S1775	M1776	T1777	S1778	M1779	T1780	S1781	M1782	T1783	S1784	M1785	T1786	S1787	M1788	T1789	S1790	M1791	T1792	S1793	M1794	T1795	S1796	M1797	T1798	S1799	M1800	T1801	S1802	M1803	T1804	S1805	M1806	T1807	S1808	M1809	T1810	S1811	M1812	T1813	S1814	M1815	T1816	S1817	M1818	T1819	S1820	M1821	T1822	S1823	M1824	T1825	S1826	M1827	T1828	S1829	M1830	T1831	S1832	M1833	T1834	S1835	M1836	T1837	S1838	M1839	T1839	S1840	M1841	T1842	S1843	M1844	T1845	S1846	M1847	T1848	S1849	M1850	T1851	S1852	M1853	T1854	S1855	M1856	T1857	S1858	M1859	T1860	S1861	M1862	T1863	S1864	M1865	T1866	S1867	M1868	T1869	S1870	M1871	T1872	S1873	M1874	T1875	S1876	M1877	T1878	S1879	M1880	T1881	S1882	M1883	T1884	S1885	M1886	T1887	S1888	M1889	T1890	S1891	M1892	T1893	S1894	M1895	T1896	S1897	M1898	T1899	S1900	M1901	T1902	S1903	M1904	T1905	S1906	M1907	T1908	S1909	M1910	T1911	S1912	M1913	T1914	S1915	M1916	T1917	S1918	M1919	T1920	S1921	M1922	T1923	S1924	M1925	T1926	S1927	M1928	T1929	S1930	M1931	T1932	S1933	M1934	T1935	S1936	M1937	T1938	S1939	M1940	T1941	S1942	M1943	T1944	S1945	M1946	T1947	S1948	M1949	T1950	S1951	M1952	T1953	S1954	M1955	T1956	S1957	M1958	T1959	S1960	M1961	T1962	S1963	M1964	T1965	S1966	M1967	T1968	S1969	M1970	T1971	S1972	M1973	T1974	S1975	M1976	T1977	S1978	M1979	T1980	S1981	M1982	T1983	S1984	M1985	T1986	S1987	M1988	T1989	S1990	M1991	T1992	S1993	M1994	T1995	S1996	M1997	T1998	S1999	M2000	T2001	S2002	M2003	T2004	S2005	M2006	T2007	S2008	M2009	T2010	S2011	M2012	T2013	S2014	M2015	T2016	S2017	M2018	T2019	S2020	M2021	T2022	S2023	M2024	T2025	S2026	M2027	T2028	S2029	M2030	T2031	S2032	M2033	T2034	S2035	M2036	T2037	S2038	M2039	T2040	S2041	M2042	T2043	S2044	M2045	T2046	S2047	M2048	T2049	S2050	M2051	T2052	S2053	M2054	T2055	S2056	M2057	T2058	S2059	M2060	T2061	S2062	M2063	T2064	S2065	M2066	T2067	S2068	M2069	T2070	S2071	M2072	T2073	S2074	M2075	T2076	S2077	M2078	T2079	S2080	M2081	T2082	S2083	M2084	T2085	S2086	M2087	T2088	S2089	M2090	T2091	S2092	M2093	T2094	S2095	M2096	T2097	S2098	M2099	T2100	S2101	M2102	T2103	S2104	M2105	T2106	S2107	M2108	T2109	S2110	M2111	T2112	S2113	M2114	T2115	S2116	M2117	T2118	S2119	M2120	T2121	S2122	M2123	T2124	S2125	M2126	T2127	S2128	M2129	T2130	S2131	M2132	T2133	S2134	M2135	T2136	S2137	M2138	T2139	S2140	M2141	T2142	S2143	M2144	T2145	S2146	M2147	T2148	S2149	M2150	T2151	S2152	M2153	T2154	S2155	M2156	T2157	S2158	M2159	T2160	S2161	M2162	T2163	S2164	M2165	T2166	S2167	M2168	T2169	S2170	M2171	T2172	S2173	M2174	T2175	S2176	M2177	T2178	S2179	M2180	T2181	S2182	M2183	T2184	S2185	M2186	T2187	S2188	M2189	T2190	S2191	M2192	T2193	S2194	M2195	T2196	S2197	M2198	T2199	S2200	M2201	T2202	S2203	M2204	T2205	S2206	M2207	T2208	S2209	M2210	T2211	S2212	M2213	T2214	S2215	M2216	T2217	S2218	M2219	T2220	S2221	M2222	T2223	S2224	M2225	T2226	S2227	M2228	T2229	S2230	M2231	T2232	S2233	M2234

Chain C:



VAL	ALA	GLU	MET
HIS	LYS	CYS	GLU
SER	ALA	ALA	ALA
LEU	ARG	PHE	SER
PRO	ARG	PRO	ALA
TYR	GLN	VAL	GLY
VAL	TRP	CYS	MET
ASP	GLU	ARG	VAL
PRO	ASP	PRO	ALA
ARG	ASP	CYS	GLY
GLN	ALA	TYR	SER
PRO	ASP	GLU	HIS
VAL	LEU	TYR	LYS
PRO	SER	GLU	ARG
VAL	SER	ARG	ASN
ARG	SER	LYS	GLU
I LE	SER	ASP	LEU
VAL	ARG	GLY	VAL
ASP	ARG	ASN	ARG
PRO	GLU	GLN	I LE
SER	SER	GLN	ASP
LYS	GLN	CYS	HIS
ASP	GLN	PRO	ASP
LEU	PRO	GLN	SER
ASN	I LE	CYS	SER
SER	PRO	LYS	ASP
TYR	LEU	THR	SER
GLY	LEU	TYR	GLY
LYS	THR	TYR	SER
ASN	ASN	LYS	LYS
ASN	GLY	ARG	PRO
VAL	GLN	HIS	LEU
ASP	THR	ARG	LYS
TRP	MET	GLY	SER
LYS	SER	SER	LEU
GLU	GLY	PRO	ASN
ARG	GLU	ARG	GLY
VAL	I LE	VAL	GLN
GLU	PRO	GLU	I LE
GLY	CYS	GLY	CYS
TPR	ALA	ASP	GLN
LYS	THR	GLU	I LE
LEU	PRO	ASP	CYS
GLN	THR	ASP	GLY
GLY	GLN	ASP	THR
LYS	SER	SER	VAL
ASN	VAL	ASP	GLY
MET	ARG	ASP	LEU
VAL	THR	I LE	THR
GLN	THR	GLU	ALA
MET	SER	ASN	THR
THR	GLY	GLU	GLY
GLY	PRO	PHE	ASP
LEU	ASN	ASN	GLY
TYR	GLY	TYR	PHE
THR	THR	ALA	ALA
GLU	PRO	GLN	ALA
GLY	SER	GLY	CYS



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	186101	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)	1200	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	4.730	Depositor
Minimum map value	-3.035	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.061	Depositor
Recommended contour level	0.35	Depositor
Map size (\AA)	432.00003, 432.00003, 432.00003	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.08, 1.08, 1.08	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	0.10	0/5908	0.28	0/8043
1	B	0.10	0/5908	0.28	0/8043
1	C	0.10	0/5908	0.28	0/8043
All	All	0.10	0/17724	0.28	0/24129

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	5736	0	5755	71	0
1	B	5736	0	5755	72	0
1	C	5736	0	5755	73	0
All	All	17208	0	17265	216	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.

The worst 5 of 216 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:B:871:ILE:HG21	1:B:940:LEU:HD21	1.74	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:871:ILE:HG21	1:A:940:LEU:HD21	1.74	0.69
1:C:871:ILE:HG21	1:C:940:LEU:HD21	1.74	0.69
1:C:877:PRO:HG3	1:C:1021:PHE:HE2	1.60	0.67
1:B:877:PRO:HG3	1:B:1021:PHE:HE2	1.61	0.66

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	708/1084 (65%)	687 (97%)	21 (3%)	0	100	100
1	B	708/1084 (65%)	688 (97%)	20 (3%)	0	100	100
1	C	708/1084 (65%)	686 (97%)	22 (3%)	0	100	100
All	All	2124/3252 (65%)	2061 (97%)	63 (3%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	623/943 (66%)	621 (100%)	2 (0%)	91	94
1	B	623/943 (66%)	623 (100%)	0	100	100
1	C	623/943 (66%)	623 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	1869/2829 (66%)	1867 (100%)	2 (0%)	92 96

All (2) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	267	VAL
1	A	802	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 9 such sidechains are listed below:

Mol	Chain	Res	Type
1	C	497	ASN
1	C	568	HIS
1	B	377	ASN
1	B	497	ASN
1	B	568	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 ⓘ

There are no chain breaks in this entry.

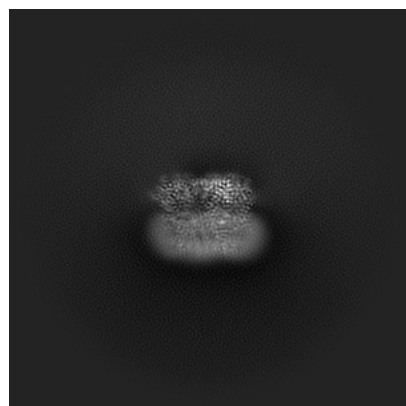
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-43244. These allow visual inspection of the internal detail of the map and identification of artifacts.

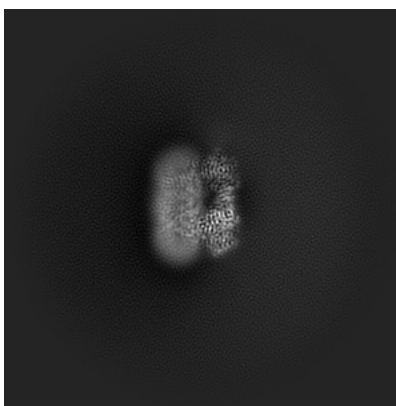
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

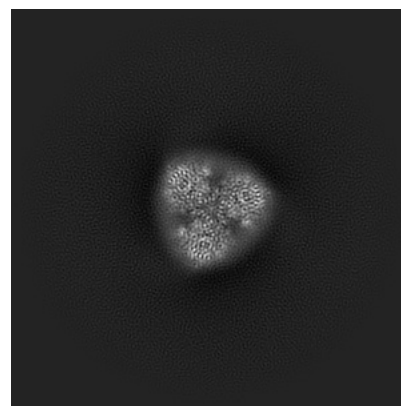
6.1.1 Primary map



X

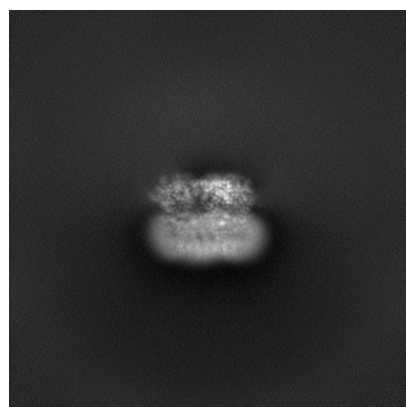


Y

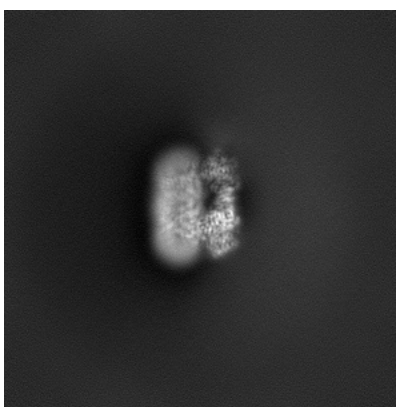


Z

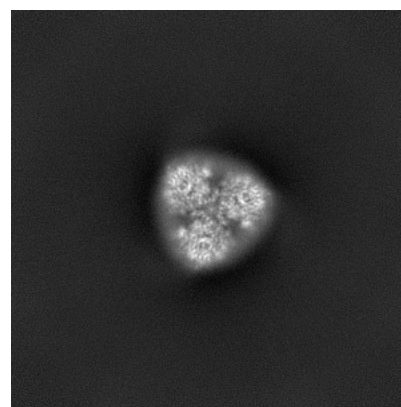
6.1.2 Raw map



X



Y



Z

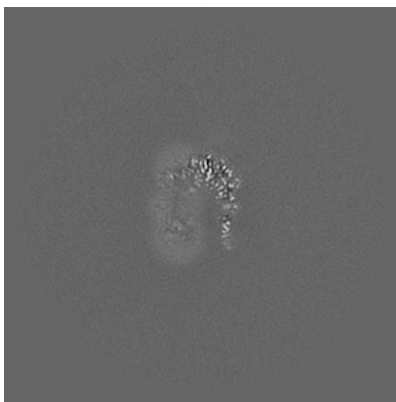
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

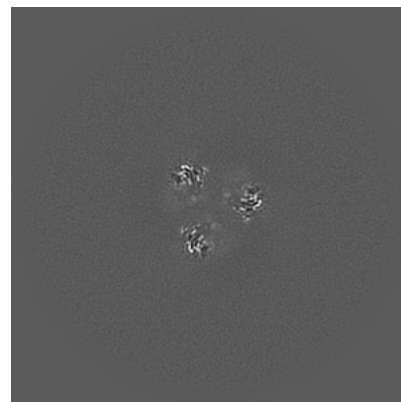
6.2.1 Primary map



X Index: 200

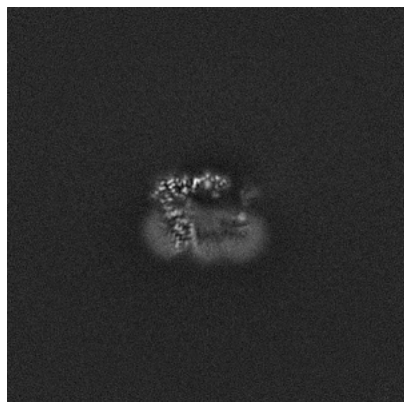


Y Index: 200

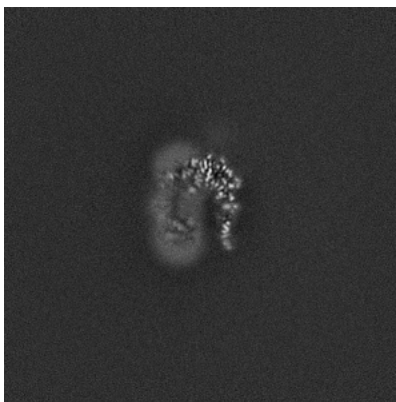


Z Index: 200

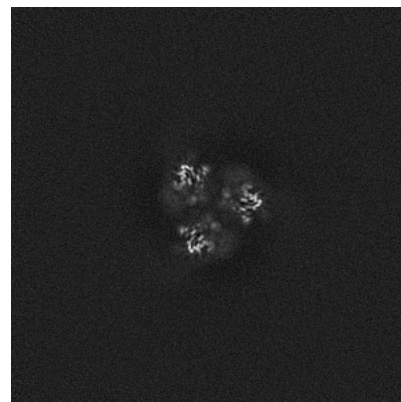
6.2.2 Raw map



X Index: 200



Y Index: 200

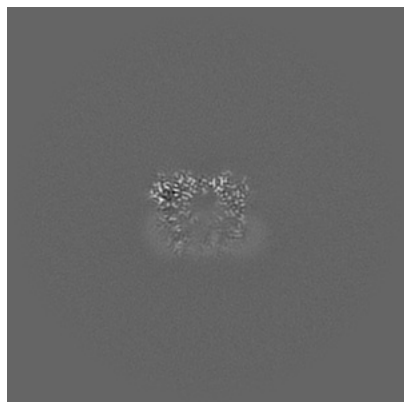


Z Index: 200

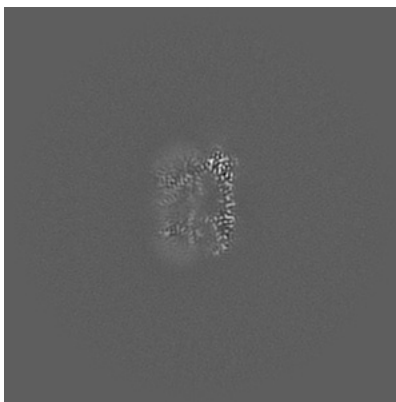
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

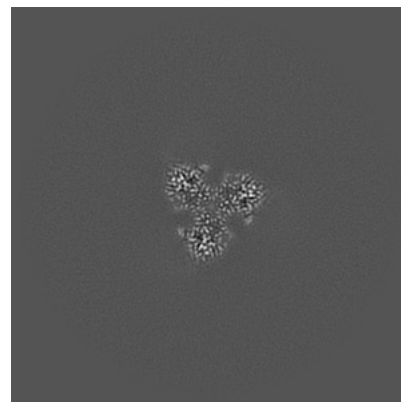
6.3.1 Primary map



X Index: 189

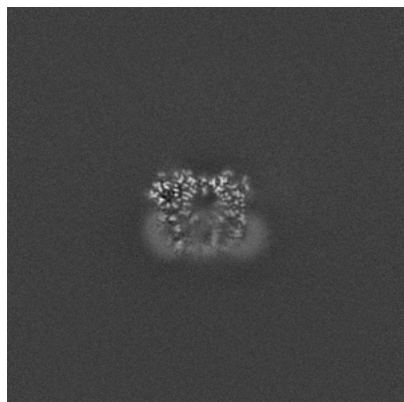


Y Index: 214

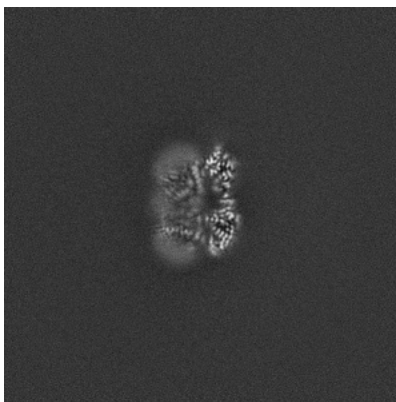


Z Index: 219

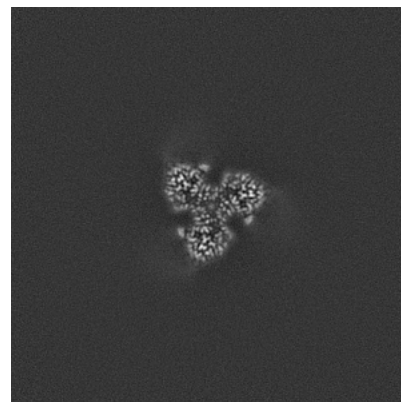
6.3.2 Raw map



X Index: 189



Y Index: 218

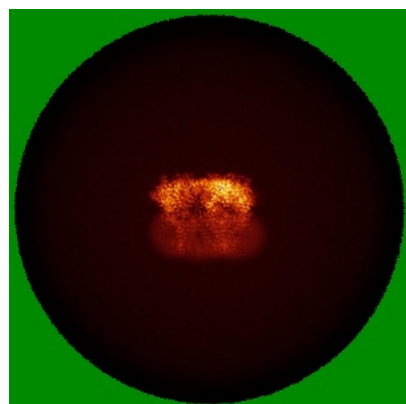


Z Index: 219

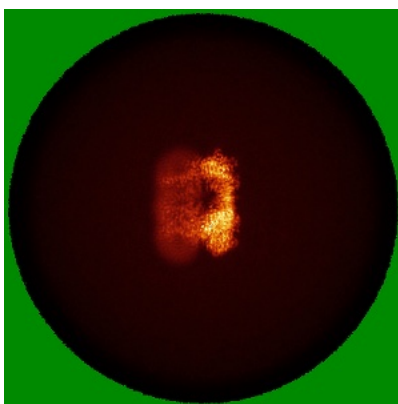
The images above show the largest variance slices of the map in three orthogonal directions.

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

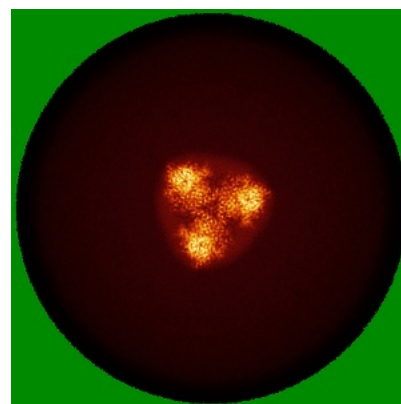
6.4.1 Primary map



X

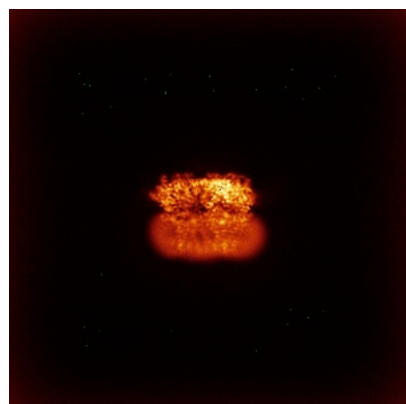


Y

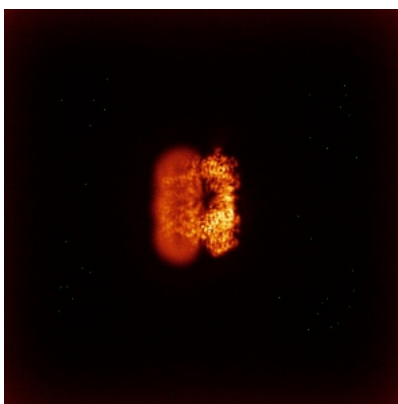


Z

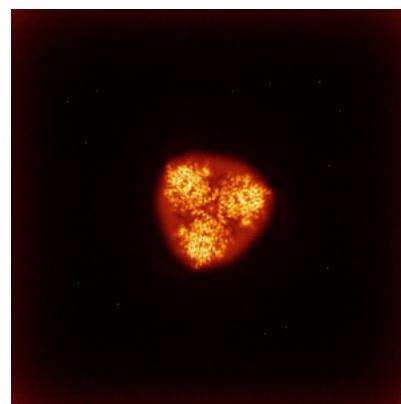
6.4.2 Raw map



X



Y

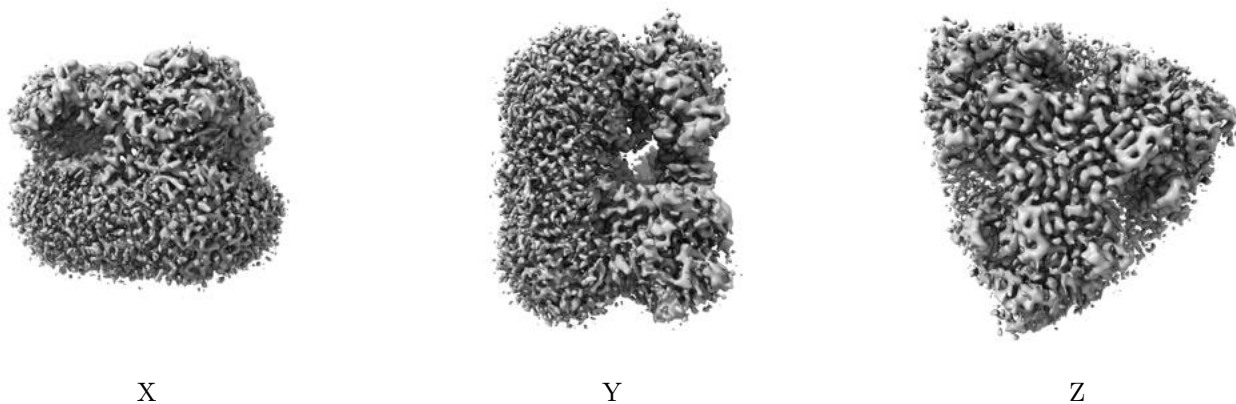


Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.35. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

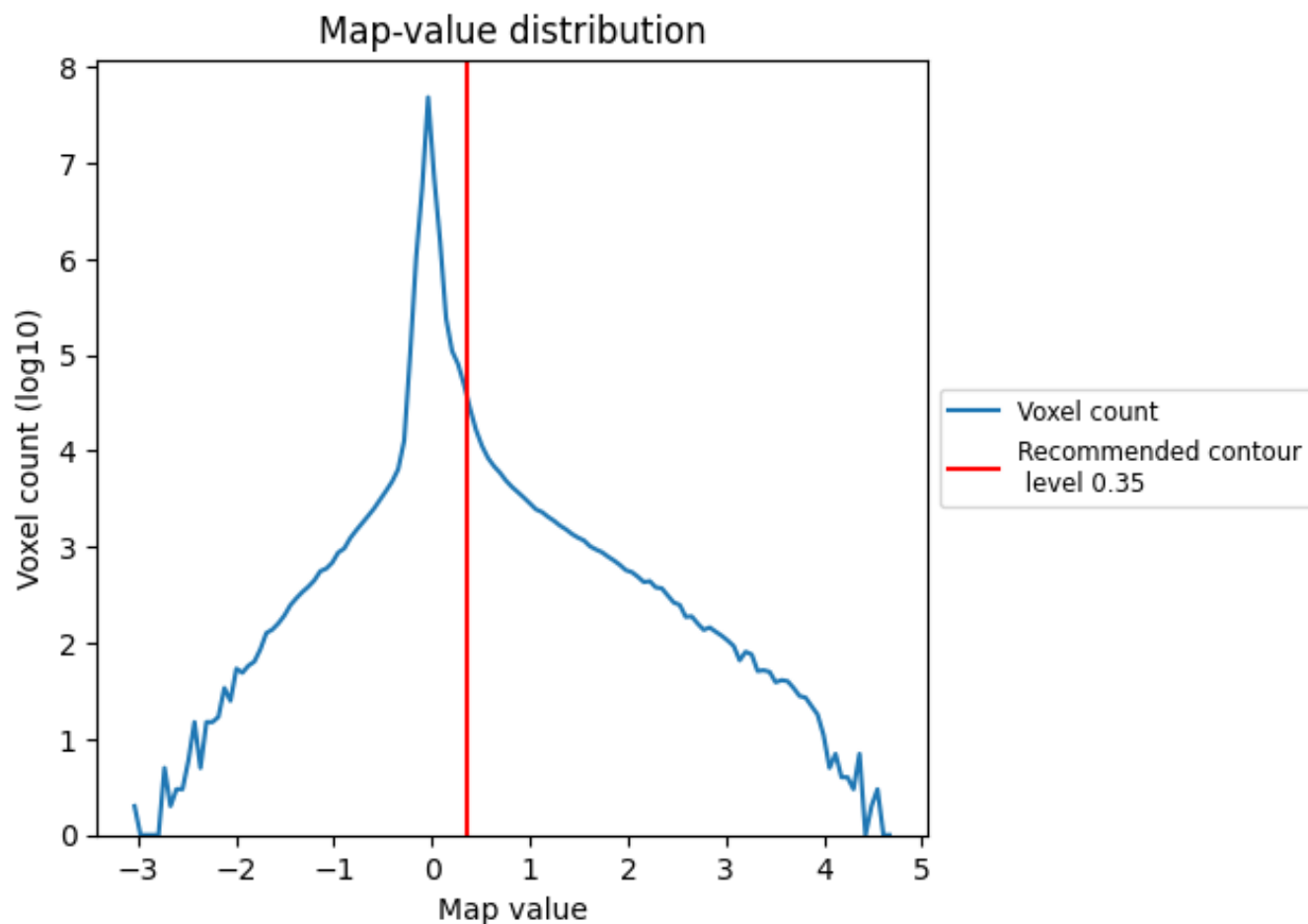
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

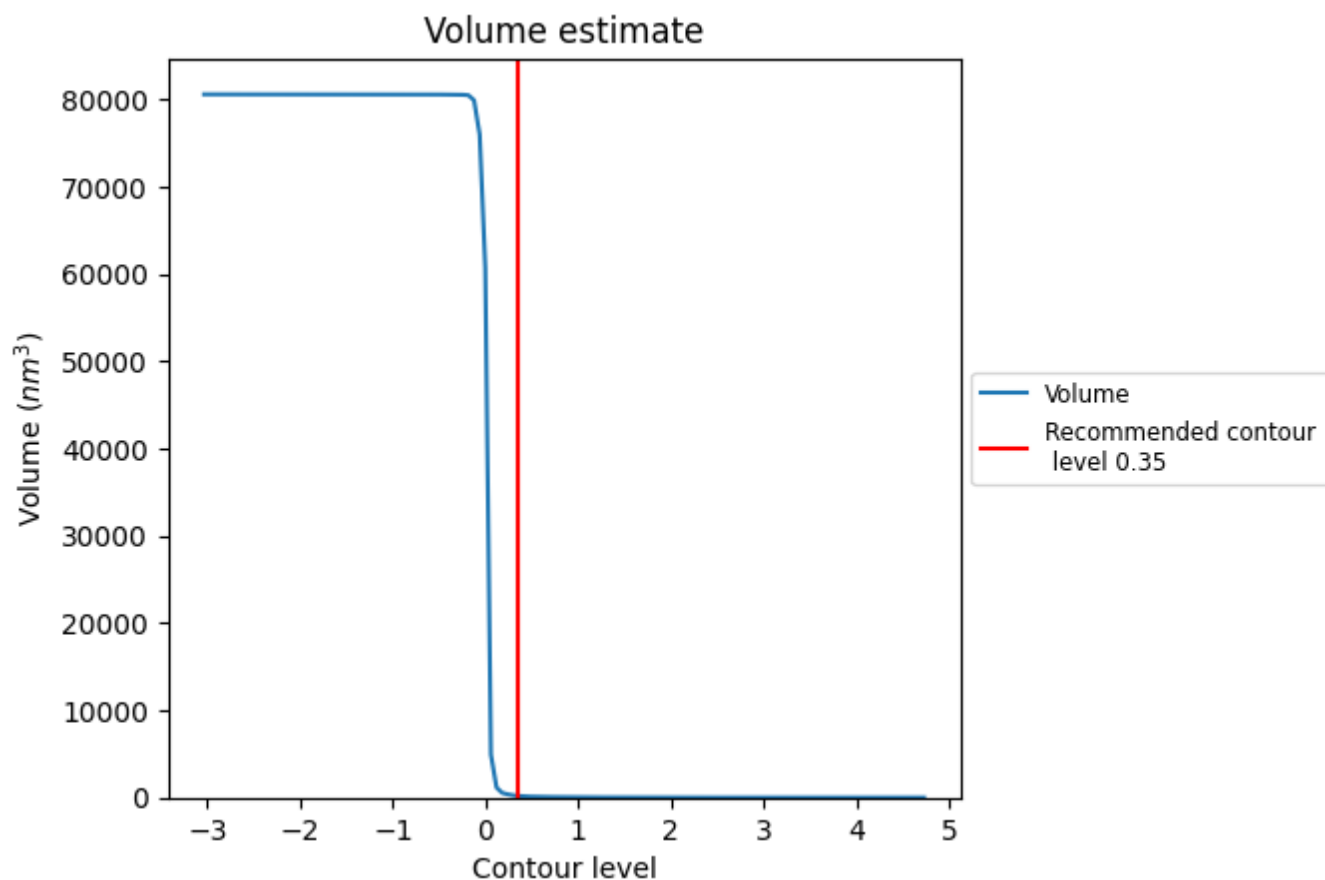
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

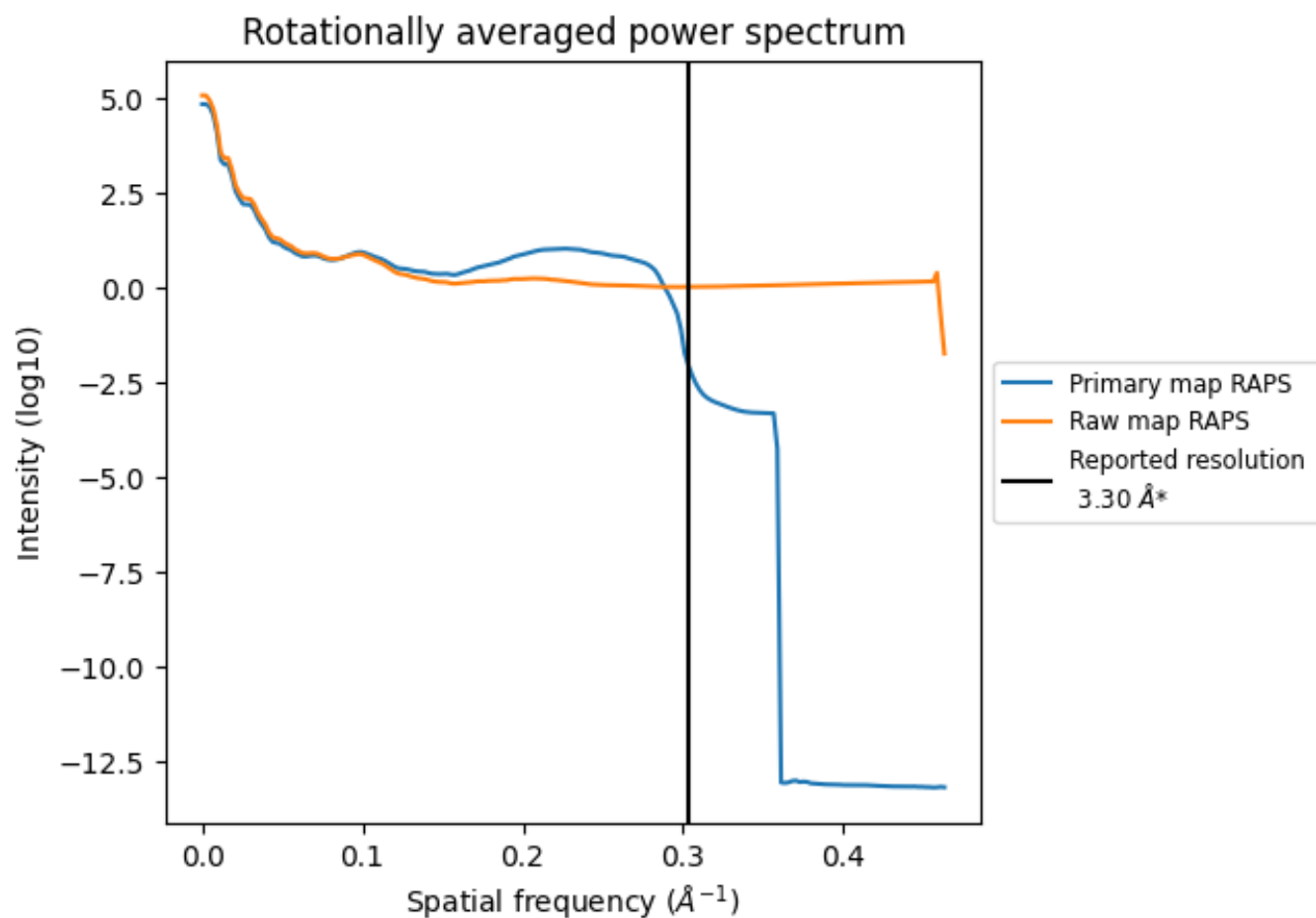
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 192 nm³; this corresponds to an approximate mass of 173 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 ⓘ

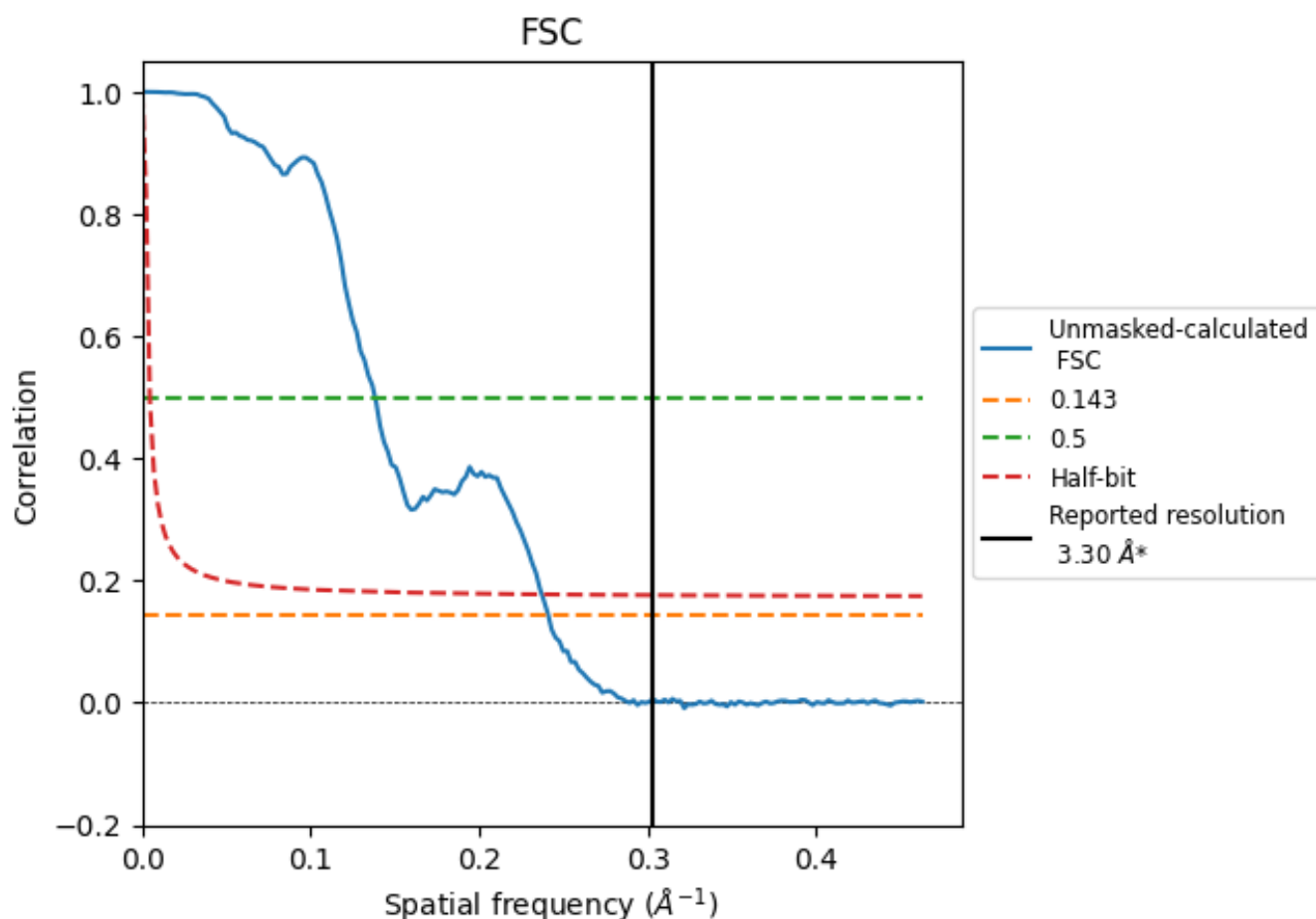


*Reported resolution corresponds to spatial frequency of 0.303 \AA^{-1}

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 0.303 Å⁻¹

8.2 Resolution estimates [i](#)

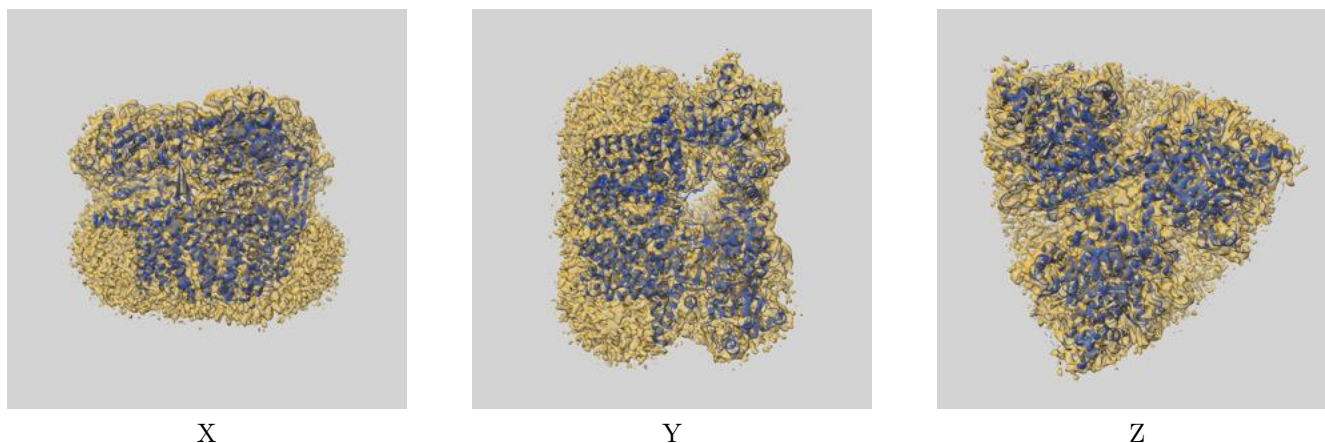
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.30	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.15	7.24	4.21

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.15 differs from the reported value 3.3 by more than 10 %

9 Map-model fit [i](#)

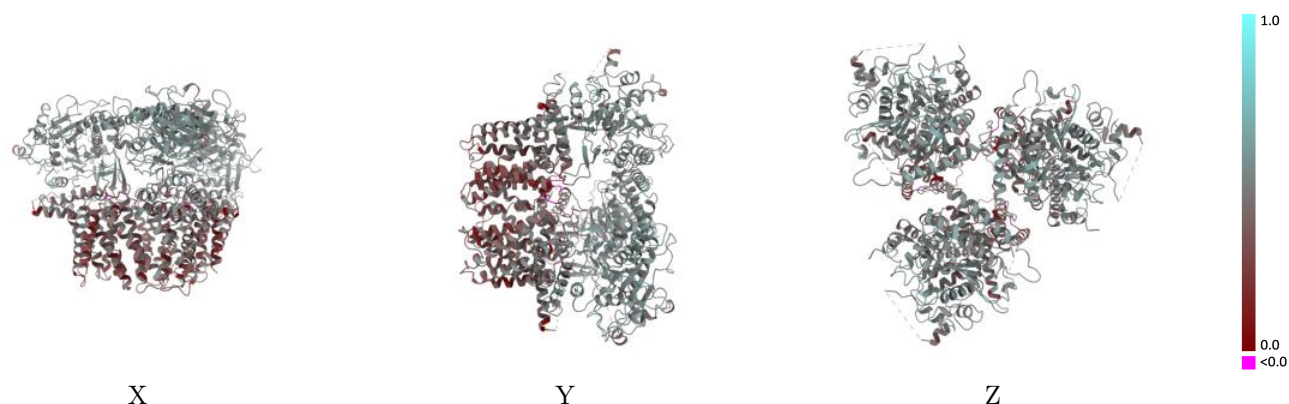
This section contains information regarding the fit between EMDB map EMD-43244 and PDB model 8VHZ. Per-residue inclusion information can be found in [section 3](#) on [page 4](#).

9.1 Map-model overlay [i](#)



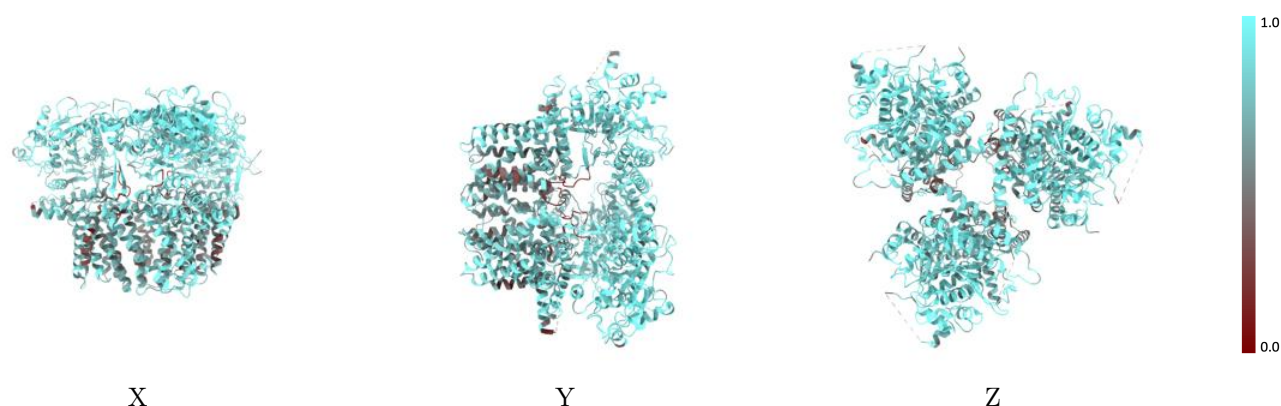
The images above show the 3D surface view of the map at the recommended contour level 0.35 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



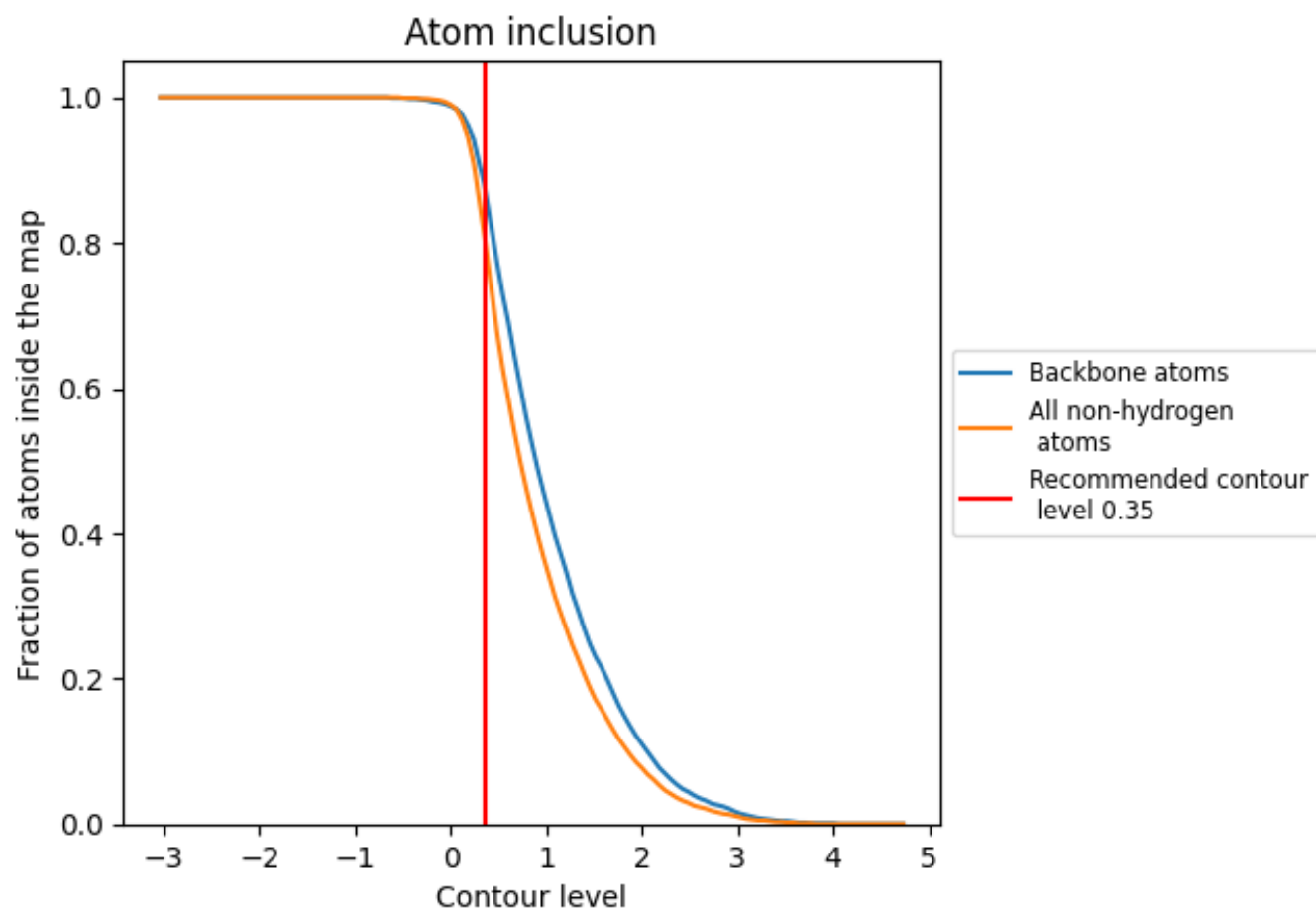
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.35).

9.4 Atom inclusion [i](#)



At the recommended contour level, 88% of all backbone atoms, 81% 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 (0.35) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	<div><div></div></div> 0.8130	<div><div></div></div> 0.4480
A	<div><div></div></div> 0.8160	<div><div></div></div> 0.4520
B	<div><div></div></div> 0.8140	<div><div></div></div> 0.4510
C	<div><div></div></div> 0.8070	<div><div></div></div> 0.4420

