



## wwPDB EM Validation Summary Report ⓘ

Feb 6, 2023 – 12:56 PM EST

PDB ID : 7TUI  
EMDB ID : EMD-26132  
Title : Structure of *C. albicans* FAS in an inhibited state  
Authors : Lou, J.W.; Mazhab-Jafari, M.T.  
Deposited on : 2022-02-02  
Resolution : 2.66 Å (reported)  
Based on initial model : 6U5V

This is a wwPDB EM Validation Summary 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.dev43  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
MolProbity : 4.02b-467  
buster-report : 1.1.7 (2018)  
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) : 2.32.1

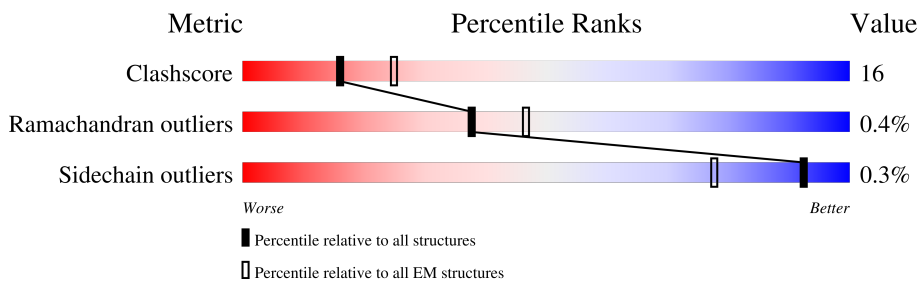
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 2.66 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	1885	
2	B	2037	

## 2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 27380 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 Fatty acid synthase subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	1433	11295	7171	1894	2185	45	0	0

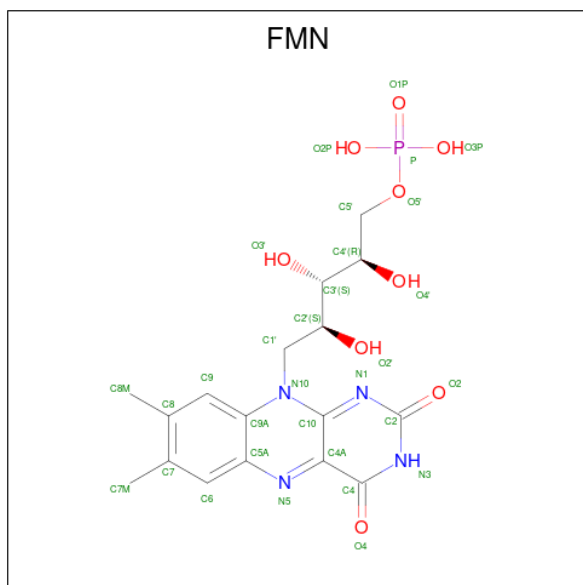
There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	350	VAL	SER	conflict	UNP P43098
A	351	ASP	ARG	conflict	UNP P43098
A	353	ASN	LYS	conflict	UNP P43098
A	354	LYS	GLN	conflict	UNP P43098
A	357	ALA	LEU	conflict	UNP P43098
A	814	THR	PRO	conflict	UNP P43098
A	1067	LYS	GLN	conflict	UNP P43098
A	1124	VAL	ILE	conflict	UNP P43098
A	1445	GLU	LYS	conflict	UNP P43098
A	1743	SER	ASN	conflict	UNP P43098

- Molecule 2 is a protein called Fatty acid synthase subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	2033	16054	10290	2665	3045	54	1	0

- Molecule 3 is FLAVIN MONONUCLEOTIDE (three-letter code: FMN) (formula: C<sub>17</sub>H<sub>21</sub>N<sub>4</sub>O<sub>9</sub>P) (labeled as "Ligand of Interest" by depositor).

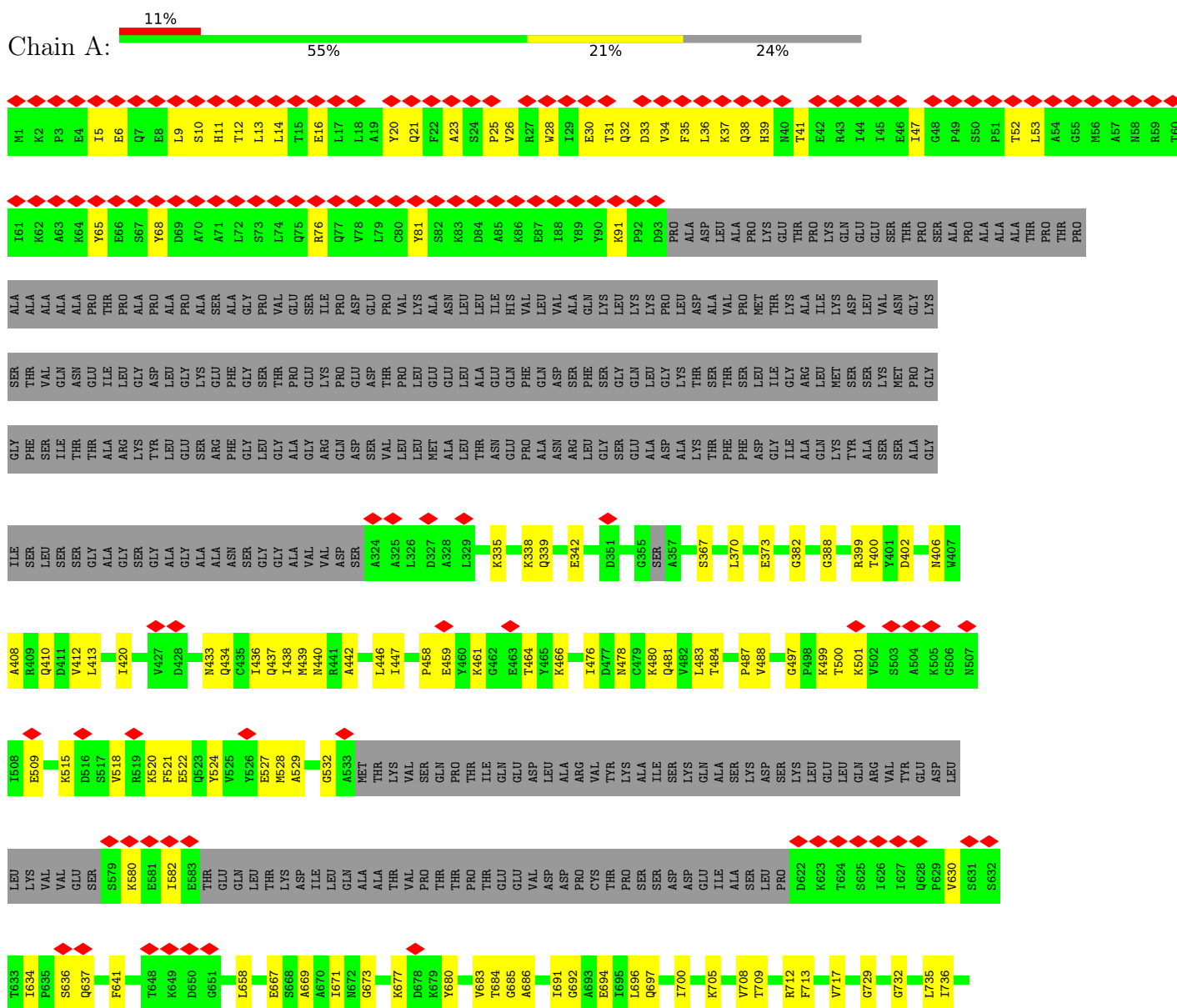


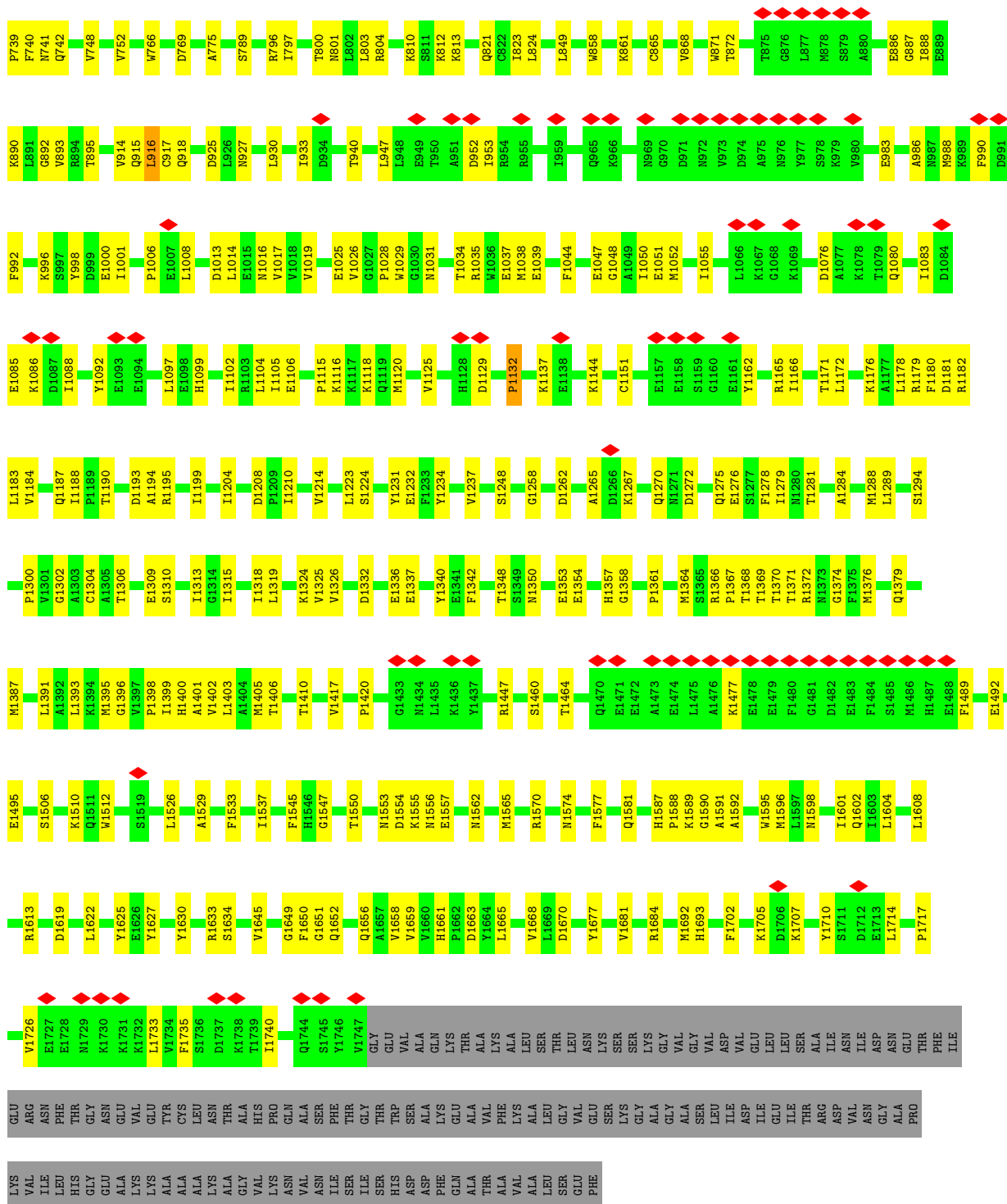
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
3	B	1	31	17	4	9	1	0

### 3 Residue-property plots

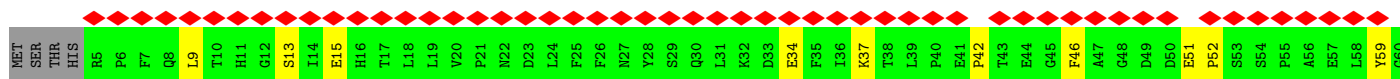
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: Fatty acid synthase subunit alpha





• Molecule 2: Fatty acid synthase subunit beta



K61	F62	I63	G64	F65	I66	S67	N68	A69	F70	F71	P72	Q73	I74	V75	E76	L77	S78	L79	K80	D81	F82	E83	S84	R85	F86	L87	D88	N89	N90	N91	D92	N93	I94	H95	S96	F97	A98	V99	K100	L101	L102	D103	D104	E105	E106	Y107	P108	T109	T110	I111	A112	K113	K115	E116	N117	I118	V119	K120	
M121	Y122	Y123	K124	A125	V126	K127	S128	I129	M130	K131	V132	E133	S134	M135	L136	L137	Y138	H139	C140	K141	H142	D143	A144	K145	L146	V147	A148	I149	F150	Q153	G154	M155	T156	D157	D158	Y159	F160	P222	V223	S224	L163	R164	E165	L166	Y167	T168	L169	Y170	Q171	G172	L173	L174	E175	D176	I237	I238	C240	K241	
A182	E183	K184	L185	N186	Q187	L188	H189	P190	S191	F192	D193	K194	I195	Y196	T197	Q198	G199	L200	N201	L202	L203	S204	W205	L206	K207	H208	P209	E210	T211	T212	P213	D214	Q215	D216	Y217	L218	S220	V221	P222	V223	S224	C225	P226	V227	I228	C229	V230	I231	Q232	L233	C234	H235	Y236	T237	I238	C240	K241		
V242	L243	G244	L245	T246	P247	G248	E249	F250	R251	N252	S253	L254	K255	W256	S257	T258	G259	H260	N261	Q262	G263	L264	W265	T266	A267	V268	T269	I270	A271	A272	S273	D274	S275	W276	D277	S278	F279	L280	K281	N282	S283	L284	T285	A286	S287	S288	L289	L290	L291	F292	I293	G294	S295	R296	C297	L298	S299	T300	Y301
P302	R303	T304	S305	L306	P307	P308	T309	M310	L311	Q312	D313	S314	L315	W316	N317	G318	E319	G320	R321	P322	S323	P324	M325	L326	S327	D330	L331	S332	I333	K334	Q335	V336	E337	K338	L340	F339	I340	E341	Q342	N343	N344	S345	H346	L347	P348	R349	E350	K351	H352	I353	I355	S356	L357	G360	A361	R362			
V365	L366	S367	G368	P369	P370	E371	S372	L373	Y374	G375	F376	N377	L378	N379	L380	R381	N382	Q383	K384	A385	P386	M387	L388	D389	Q391	S392	R393	V394	F396	S397	E398	R399	K400	L401	K402	C403	S404	N405	R406	F407	L408	P409	I410	F411	A412	F413	F414	H415	S416	H417	L418	L419	A420	D421	A422	E424			
L425	I426	L427	D428	D429	V430	K431	E432	H433	G434	L435	S436	F437	E438	N379	G439	L440	K441	I442	P443	V444	Y445	D446	T447	F448	D449	G450	S451	D452	F453	Q454	A455	L456	K457	E458	P459	I460	I461	D462	R463	V464	V465	K466	L467	T468	T469	E470	L471	H474	W475	E476	E477	A478	T479	M480	H481	K482	A483	T484	H485
L486	L487	D488	F489	G490	P491	G492	G493	V494	S495	G496	G498	V499	L500	T501	H502	R503	N504	Q505	V444	E506	G507	T508	G509	A510	R511	L512	L513	L514	A515	G516	T517	L518	D519	S520	N521	P522	L523	D524	D525	E526	Y527	F529	K530	H531	E532	L533	F534	Q535	T536	S537	A538	D539	K540	A541	L542	K543	W544	A545	
F546	D547	W548	L549	K550	E551	L552	P554	T555	L556	V557	K558	N559	S560	E561	G562	K563	Y565	V566	T568	K569	F570	S571	O572	L573	L574	G575	R576	A582	G583	H584	L585	P586	Y589	L593	V594	S595	A596	S597	L598	N599	A600	G601	Y602	E605	L606	A607	G608	G609	G610	Y611	H616								
R619	A620	I621	D622	D623	L624	R627	L628	K629	N637	L638	L639	Y640	V641	N642	P643	F644	N645	L646	Q647	N648	D655	L656	R657	E658	Y661	P662	L663	Q664	T667	L668	G669	A670	P673	E676	E680	Y681	I682	E683	P684	L685	G686	H689	L690	G691	L692	K693	P694	D698											
A699	I700	V703	K706	A709	H710	F713	V716	L717	Q718	G722	R723	G726	H727	G813	H814	S729	F730	E731	D732	F733	H734	Q735	I738	Q739	M740	Y741	S742	K743	I744	R745	G746	C747	S748	N749	I750	V751	S756	G757	D763	T764	Y765	F766	Y767	W772	S773	E774	G775	Y778											
P779	F780	M781	F782	V786	L787	F788	R791	E797	S798	H799	K805	W809	E810	C811	R812	G813	H814	P815	D816	Q817	K818	H819	E820	Q821	T822	Y823	K824	K825	P826	T827	G828	I830	I831	T832	W833	R834	S835	E836	M837	G838	E839	P840	I841	Y842	H843	K844	L844	T846	R847	G848	W849	L855							
D856	D857	T858	I859	F860	N861	L862	P863	K864	N865	K866	L867	L868	D869	K874	R875	I879	K880	K881	D885	F886	Q887	K888	F1013	W890	F891	G892	T892	Y823	K824	K825	P826	T827	G828	I830	I831	T832	W833	R834	S835	E836	M837	G838	E839	P840	I841	Y842	H843	K844	L844	T846	R847	G848	W849	L855					
L861	N962	E963	F967	T968	A969	D970	K974	F975	P976	L982	E985	Y990	Q1000	Y1006	D1010	E1011	R1012	F1013	E1014	K1019	D1020	E1026	D1027	L1028	E1029	Y1032	E1034	D1035	Q1037	R1038	T1039	C1040	L1041	L1042	G935	D936	F937	L938	P1045	V1046	A1047	S1048	Q1049	K1053	V1054	D1055													

E1056	E1060	M1063	H1066	E1067	I1070	A1071	L1072	I1074	K1075	E1076	E1077	Y1078	A1079	G1080	D1081	E1082	S1083	K1084	V1087	V1088	E1089	G1092	G1093	K1094	K1095	P1096	A1097	S1098	V1099	S1100	A1101	T1102	S1103	V1104	M1105	I1106	I1107	D1108	G1109	M1110	Q1111	E1115	I1116	D1117	S1118	E1119	L1120	M1122	K1123	Q1124										
E1125	L1130	G1132	T1133	E1134	L1138	Q1139	I1142	R1146	I1147	H1153	N1156	P1157	L1158	H1159	D1160	I1161	L1162	T1163	P1164	A1165	I1172	D1173	K1174	K1175	T1176	K1177	K1178	T1180	F1182	E1183	M1184	I1185	K1186	D1187	L1188	L1189	D1190	E1191	V1192	V1193	I1194	E1195	E1196	L1197	V1198	M1199	P1200	N1201												
T1202	L1203	H1210	E1211	T1212	A1213	D1214	T1215	M1216	P1217	V1218	A1219	Y1224	M1227	D1230	G1231	F1232	P1234	D1241	I1246	K1247	E1248	K1252	L1253	W1254	S1257	S1258	M1263	D1264	I1265	M1266	V1267	E1268	K1269	A1270	I1271	G1273	D1274	E1275	I1276	I1277	L1278	S1279	S1280	Q1281	S1284	E1285	F1286													
T1287	H1288	A1289	I1290	M1291	M1292	K1293	C1294	D1295	A1296	F1297	R1300	P1301	G1302	K1303	A1304	T1305	L1306	A1307	M1309	D1310	F1311	A1312	I1313	V1314	I1315	G1316	W1317	I1321	I1324	F1325	P1326	V1329	D1330	G1331	L1332	L1333	L1334	H1338	Y1343	K1344	M1345	I1346	T1347	G1348	A1349	S1350	L1351	L1352	K1353	K1354	V1357									
K1361	A1362	E1363	I1364	K1365	A1366	V1367	L1368	P1371	S1372	G1373	K1374	L1375	V1376	E1377	V1378	V1379	G1380	R1384	E1385	G1386	K1387	P1388	M1390	A1391	I1392	I1393	S1394	Q1395	Y1398	E1401	Y1402	N1403	D1404	N1407	Q1410	E1414	T1415	P1416	V1417	Q1418	V1419	A1420	I1421	K1422	S1423	A1424	K1425	D1426	L1427	A1428										
R1431	V1435	F1436	E1439	K1440	D1441	V1442	Q1443	F1444	D1445	V1446	L1447	T1448	F1449	R1450	C1451	E1452	S1453	T1454	Y1455	F1456	K1458	S1459	A1460	M1461	Y1462	V1463	S1464	K1467	L1468	T1469	G1470	Q1471	V1472	L1473	L1474	E1475	L1476	P1477	T1478	K1479	Q1480	V1481	Q1483	V1484	G1485	S1486	V1487	Y1488	V1489	V1499	T1500	D1501								
Y1502	L1503	S1504	R1505	M1506	G1507	K1508	T1509	I1510	E1511	E1512	S1513	F1516	E1517	M1518	A1519	I1520	L1522	S1523	G1525	E1526	K1531	A1532	P1533	G1534	T1535	M1536	E1537	P1538	Y1539	V1542	M1547	P1548	I1549	H1550	V1551	S1552	F1555	A1556	A1557	K1560	L1561	P1562	M1569	Y1570	S1571	R1576	A1577	L1578	V1579											
E1581	E1582	W1582	A1583	A1584	M1585	M1586	V1587	A1588	A1589	R1590	V1591	R1592	A1593	F1594	K1595	C1596	D1597	F1598	V1602	L1603	D1606	Q1609	M1612	E1613	H1614	V1615	G1616	M1617	I1618	M1619	G1620	R1621	K1622	I1623	M1624	K1625	V1626	E1627	T1628	M1629	V1630	V1631	T1632	T1633	E1634	L1635	P1636	V1637	L1638	E1641	A1642	E1643	I1644	E1645						
Q1646	P1647	T1648	T1649	V1652	F1653	Q1654	G1655	Q1656	S1658	Q1659	M1663	E1672	V1677	D1682	R1683	H1684	F1685	M1688	I1693	L1694	D1695	P1701	G1709	G1713	M1719	M1723	M1724	F1725	K1726	T1727	I1728	G1729	E1730	D1731	G1732	A1733	L1734	K1735	S1736	E1737	K1738	I1811	P1812	I1813	S1814	L1815	V1816													
T1756	G1757	L1758	L1759	S1760	A1761	T1762	Q1763	F1764	T1765	Q1766	L1769	T1770	L1771	M1772	E1773	K1774	A1775	A1776	Y1777	E1778	D1779	I1780	K1781	K1782	G1784	L1785	I1786	P1787	S1788	D1789	R1849	M1850	F1792	H1795	S1796	L1797	G1798	Y1800	S1801	A1802	L1803	S1804	L1806	A1807	M1808	M1810	P1811	I1812	E1813	S1814	L1815	V1816								
D1817	V1818	F1819	Y1820	Y1821	R1822	G1823	M1824	L1825	M1826	Q1827	V1828	V1830	P1831	D1832	D1833	E1834	L1835	G1836	R1837	S1838	N1839	Y1840	G1841	M1842	V1843	A1844	Y1845	N1846	P1847	S1848	R1849	M1850	S1851	A1852	T1853	F1854	D1855	D1856	S1857	A1858	L1859	R1860	F1861	V1862	Y1863	D1864	E1865	V1866	A1867	M1868	K1869	T1870	E1871	M1872	L1873	L1874	E1875	I1876		
V1877	M1878	L1879	M1880	V1881	E1882	M1883	Q1884	Q1885	V1886	V1887	A1888	A1889	G1890	D1891	L1892	R1893	A1894	L1895	D1896	T1897	L1898	T1899	M1900	V1901	L1902	M1903	V1904	L1905	K1906	I1907	N1908	K1909	I1910	D1911	I1912	V1913	L1914	L1915	Q1916	E1917	Q1918	M1919	S1920	I1921	E1922	K1923	V1924	K1925	E1926	S1987	S1988	L1928	Y1929	E1930	I1931	V1932	D1933	E1934	V1935	A1936
A1937	K1938	S1939	L1940	E1941	K1942	P1943	Q1944	P1945	T1946	D1947	L1948	E1949	R1950	G1951	F1952	V1954	I1955	P1956	L1957	K1958	G1959	V1962	P1963	F1964	L1965	S1966	I1967	Y1968	L1969	M1970	S1971	G1972	V1973	K1974	P1975	F1976	Q1977	L1978	F1979	L1980	C1981	K1982	K1983	I1984	P1985	K1986	S1987	S1988	V1989	K1990	P1991	Q1992	D1993	L1994	I1995	G1996	K1997			



Y1998	I1999	P2000	N2001	L2002	T2003	A2004	K2005	F2006	F2007	E2008	L2009	T2010	K2011	E2012	Y2013	F2014	Q2015	S2016	Y2017	Y2018	D2019	L2020	T2021	K2022	S2023	E2024	K2025	I2026	K2027	S2028	I2029	L2030	D2031	N2032	N2033	E2034	Q2035	Y2036	E2037
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## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, D3	Depositor
Number of particles used	252339	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)	5000	Depositor
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	6.743	Depositor
Minimum map value	-4.396	Depositor
Average map value	0.009	Depositor
Map value standard deviation	0.273	Depositor
Recommended contour level	0.8	Depositor
Map size (Å)	333.72, 333.72, 333.72	wwPDB
Map dimensions	324, 324, 324	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.03, 1.03, 1.03	Depositor

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

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

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	0.32	0/11522	0.53	2/15575 (0.0%)
2	B	0.28	0/16423	0.54	4/22279 (0.0%)
All	All	0.30	0/27945	0.54	6/37854 (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
2	B	0	3

There are no bond length outliers.

The worst 5 of 6 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1120	LEU	CA-CB-CG	7.00	131.41	115.30
1	A	1132	PRO	CA-N-CD	-5.94	103.18	111.50
2	B	2009	LEU	CA-CB-CG	5.71	128.44	115.30
2	B	2002	LEU	CA-CB-CG	5.60	128.18	115.30
2	B	1969	LEU	C-N-CA	5.09	134.44	121.70

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	B	1810	MET	Peptide
2	B	1929	TYR	Peptide
2	B	1982	LYS	Peptide

## 5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	11295	0	11214	296	0
2	B	16054	0	16025	604	0
3	B	31	0	19	4	0
All	All	27380	0	27258	872	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 16.

The worst 5 of 872 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)
2:B:1780:ILE:HA	2:B:1783:LYS:HB2	1.54	0.88
2:B:1571:SER:HB3	2:B:1638:LEU:HD11	1.58	0.85
2:B:1620:GLY:HA2	2:B:1786:ILE:HB	1.57	0.85
1:A:709:THR:HG23	1:A:740:PHE:HB3	1.60	0.84
2:B:573:LEU:HB2	2:B:1096:PRO:HG3	1.61	0.83

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	1425/1885 (76%)	1383 (97%)	42 (3%)	0	100	100
2	B	2032/2037 (100%)	1824 (90%)	194 (10%)	14 (1%)	22	33
All	All	3457/3922 (88%)	3207 (93%)	236 (7%)	14 (0%)	38	48

5 of 14 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	1032	VAL
2	B	1477	PRO
2	B	1580	GLU
2	B	1970	MET
2	B	1974	LYS

### 5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	1220/1579 (77%)	1216 (100%)	4 (0%)	92 96
2	B	1780/1784 (100%)	1775 (100%)	5 (0%)	92 96
All	All	3000/3363 (89%)	2991 (100%)	9 (0%)	92 96

5 of 9 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	1012	ARG
2	B	1508	LYS
1	A	1707	LYS
2	B	334	LYS
2	B	791	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 13 such sidechains are listed below:

Mol	Chain	Res	Type
2	B	637	ASN
2	B	818	GLN
2	B	1827	GLN
2	B	1338	HIS
2	B	1550	HIS

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

1 ligand is modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
3	FMN	B	2101	-	33,33,33	1.10	2 (6%)	48,50,50	1.18	7 (14%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	FMN	B	2101	-	-	3/18/18/18	0/3/3/3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	2101	FMN	C4A-N5	3.85	1.38	1.30
3	B	2101	FMN	C10-N1	2.44	1.38	1.33

The worst 5 of 7 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	2101	FMN	C4-N3-C2	-2.99	120.12	125.64
3	B	2101	FMN	C4A-C4-N3	2.72	120.10	113.19
3	B	2101	FMN	O4-C4-C4A	-2.52	119.90	126.60
3	B	2101	FMN	C4A-C10-N10	2.41	120.00	116.48
3	B	2101	FMN	C10-C4A-N5	-2.25	120.08	124.86

There are no chirality outliers.

All (3) torsion outliers are listed below:

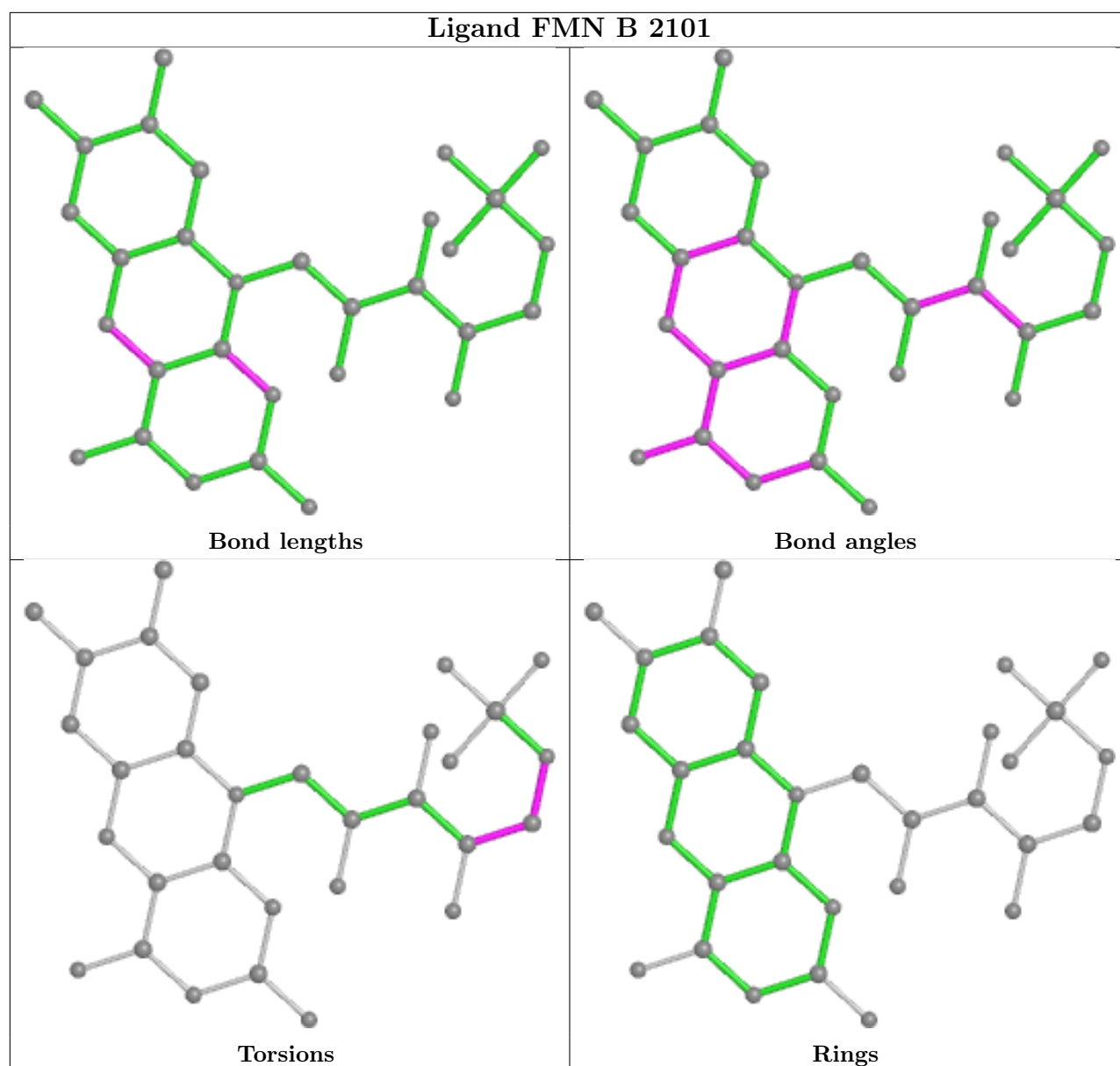
Mol	Chain	Res	Type	Atoms
3	B	2101	FMN	C3'-C4'-C5'-O5'
3	B	2101	FMN	O4'-C4'-C5'-O5'
3	B	2101	FMN	C4'-C5'-O5'-P

There are no ring outliers.

1 monomer is involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	2101	FMN	4	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



## 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.



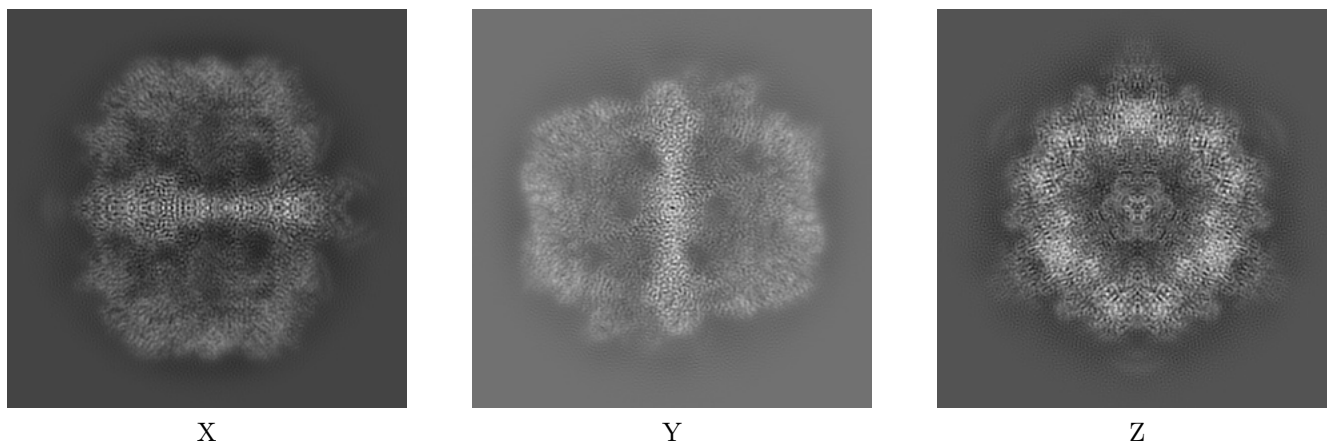
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-26132. 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](#)

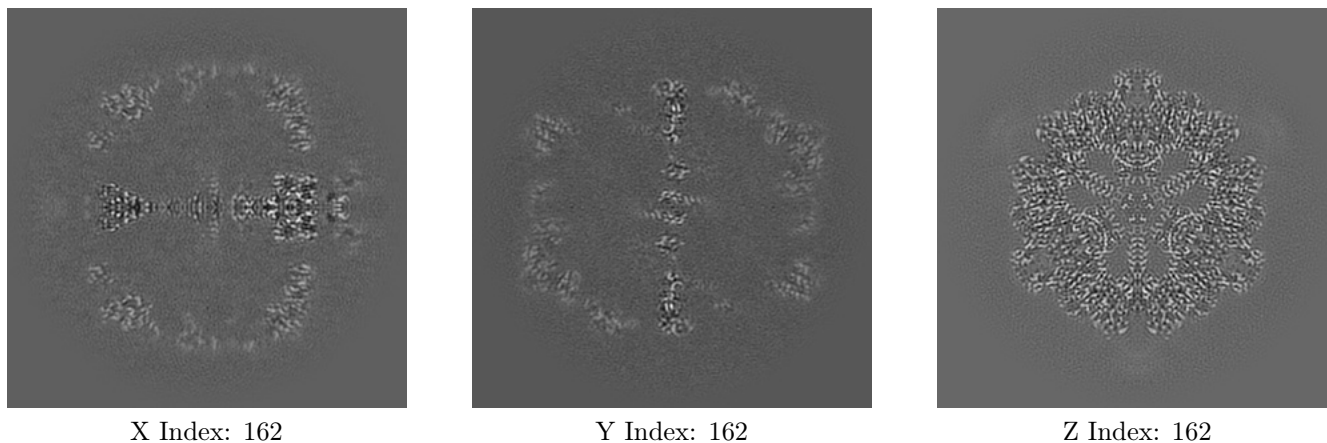
#### 6.1.1 Primary map



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

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

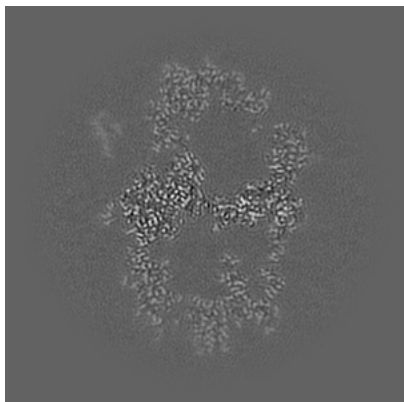
#### 6.2.1 Primary map



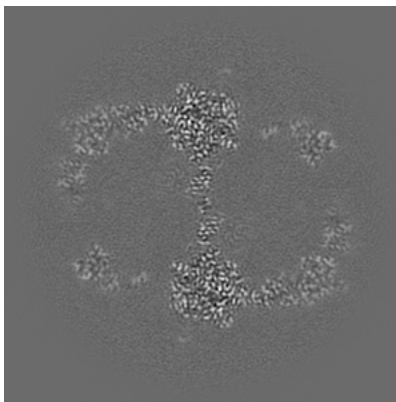
The images above show central slices of the map in three orthogonal directions.

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

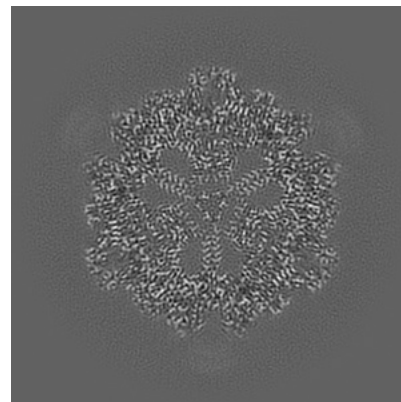
### 6.3.1 Primary map



X Index: 99



Y Index: 134



Z Index: 163

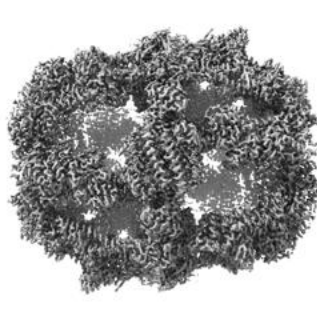
The images above show the largest variance slices of the map in three orthogonal directions.

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

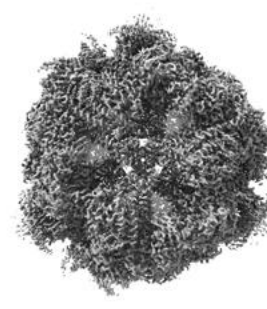
### 6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.8. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

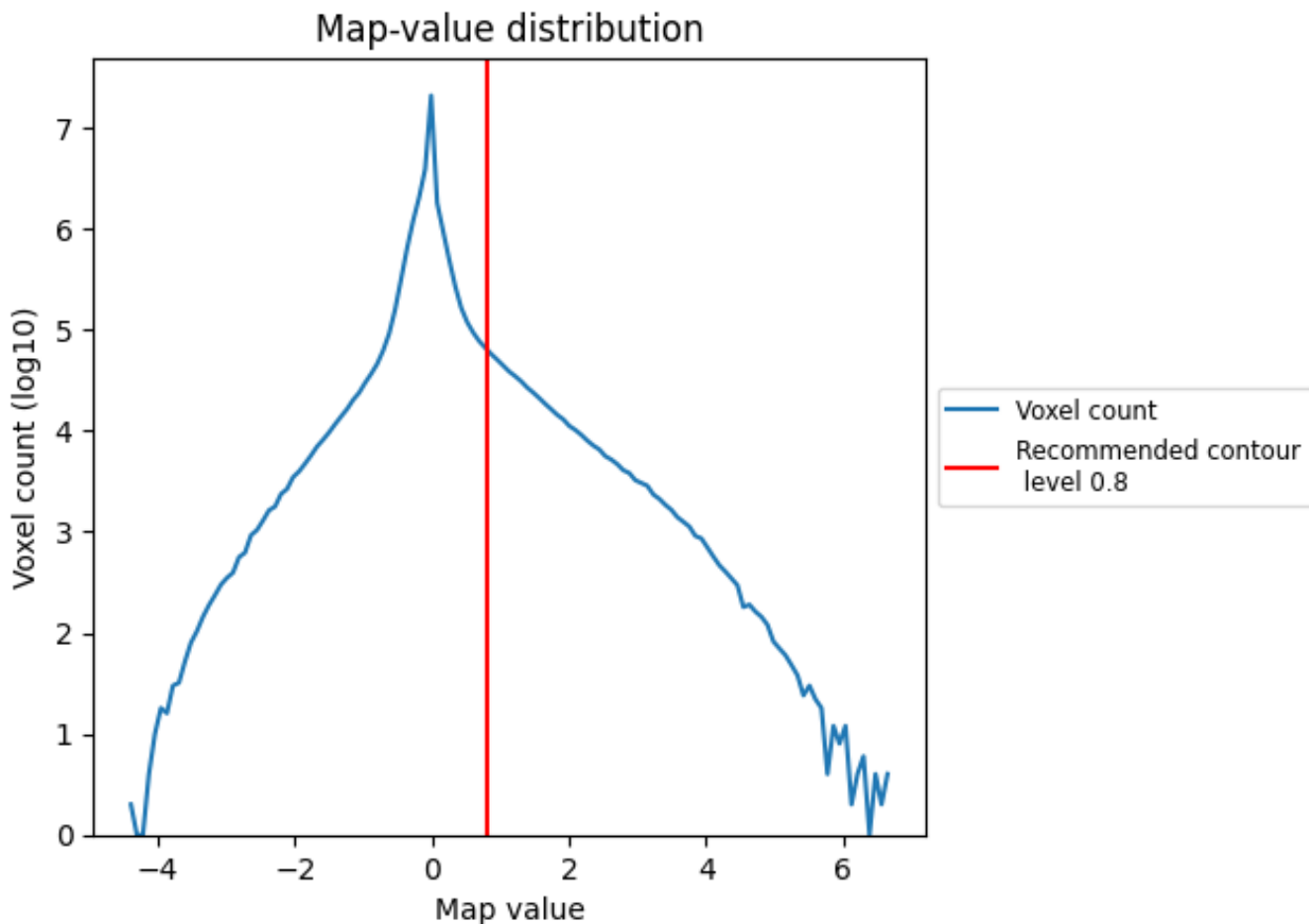
## 6.5 Mask visualisation

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

## 7 Map analysis [i](#)

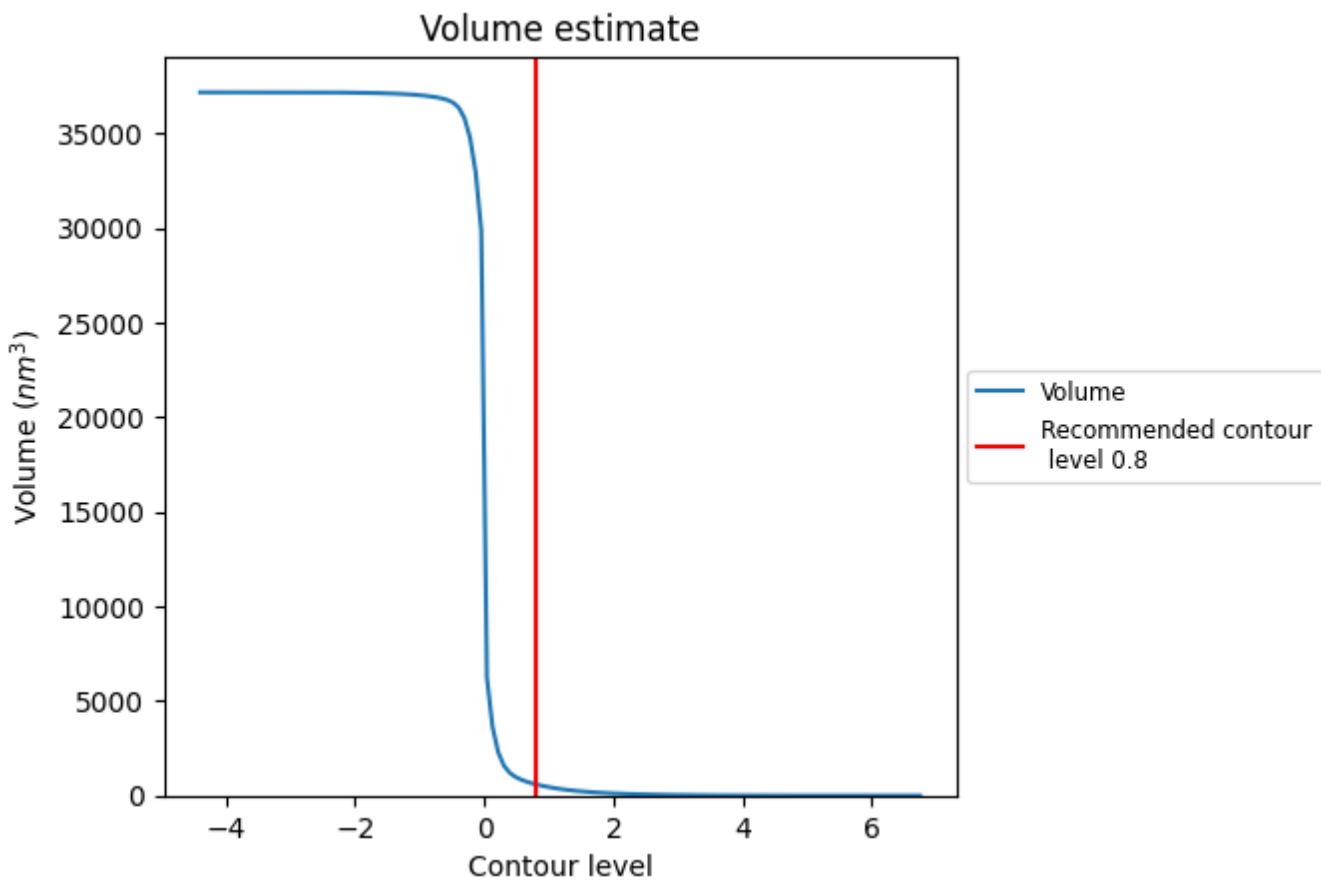
This section contains the results of statistical analysis of the map.

### 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.

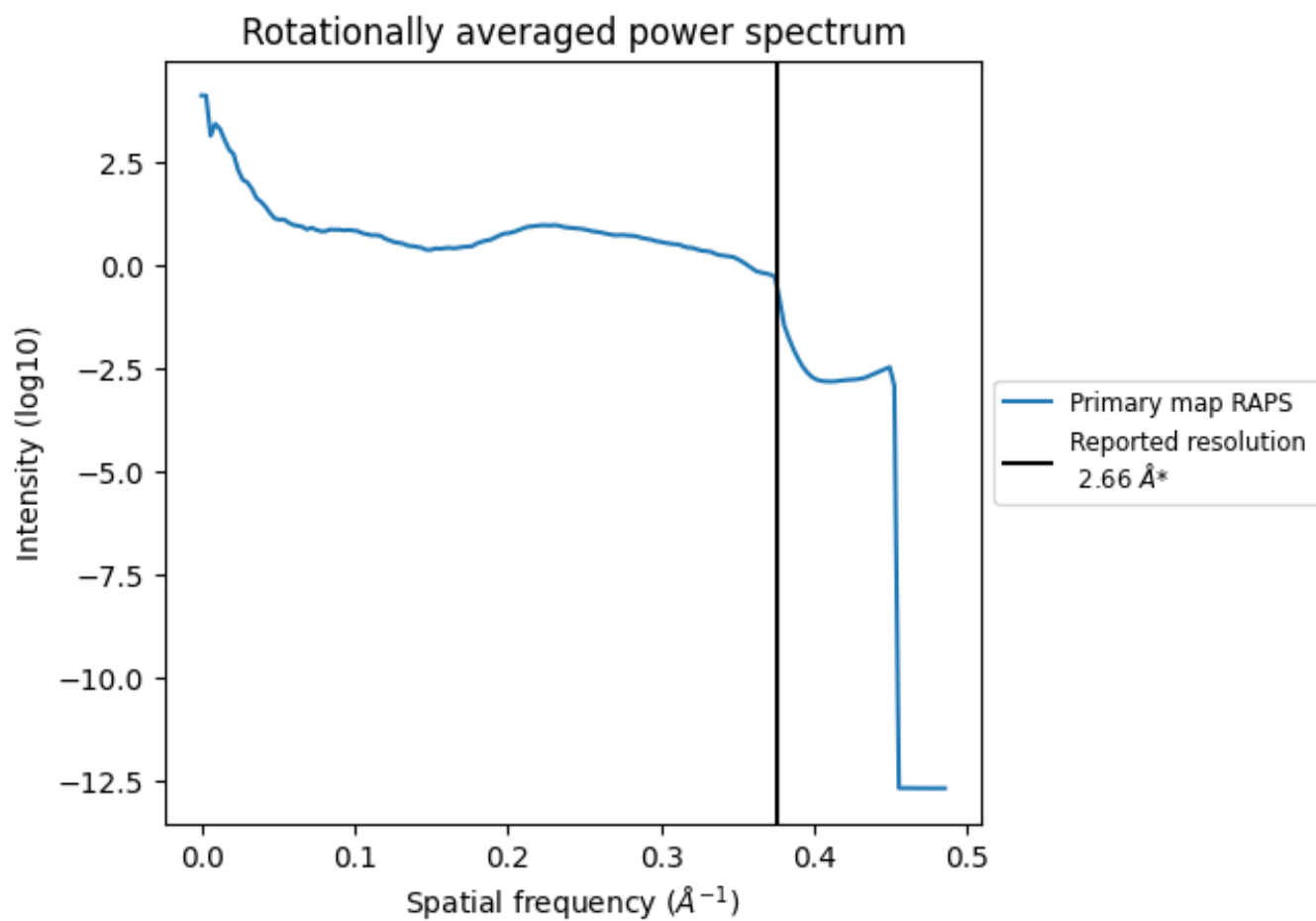
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 593 nm<sup>3</sup>; this corresponds to an approximate mass of 536 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  $0.376 \text{ \AA}^{-1}$

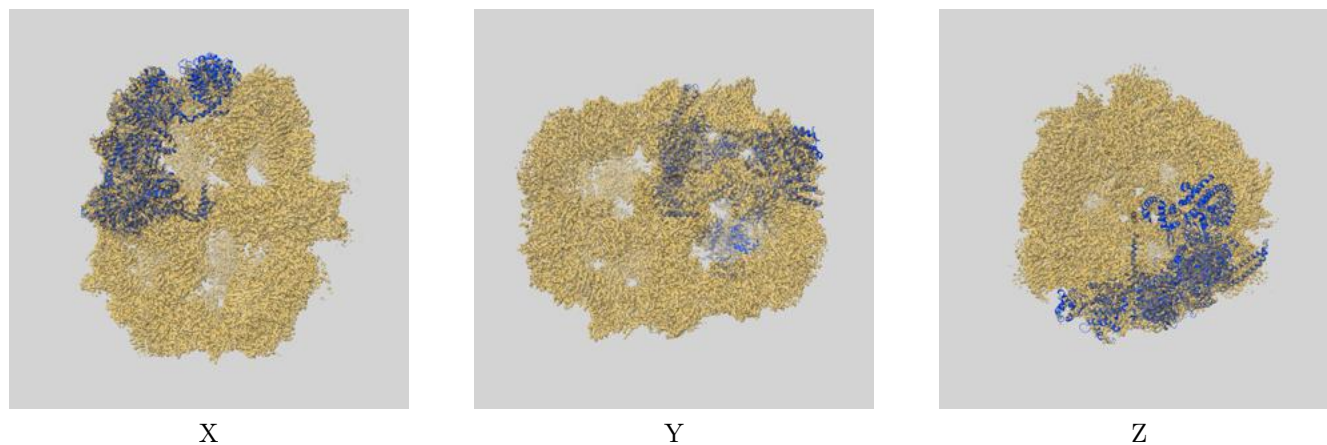
## 8 Fourier-Shell correlation

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-26132 and PDB model 7TUI. Per-residue inclusion information can be found in section 3 on page 5.

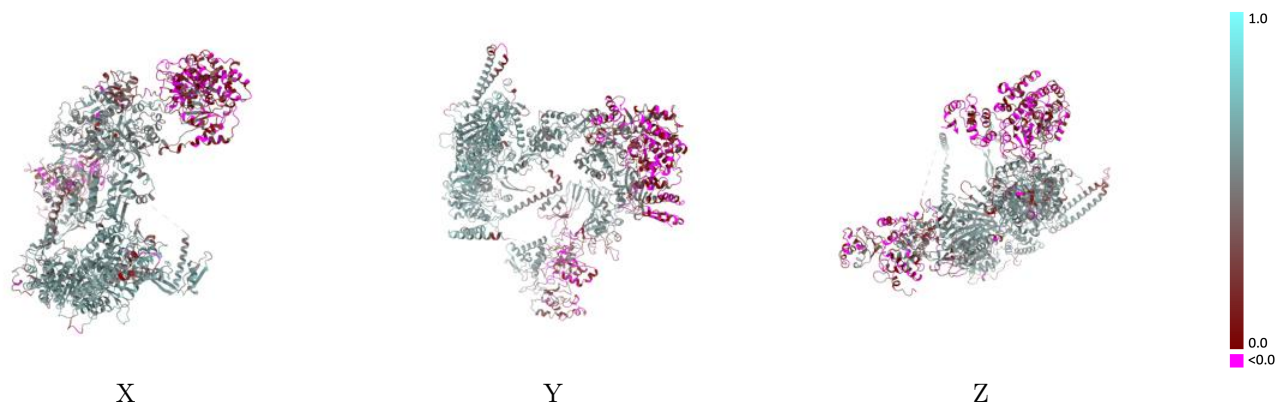
### 9.1 Map-model overlay [i](#)



The images above show the 3D surface view of the map at the recommended contour level 0.8 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.

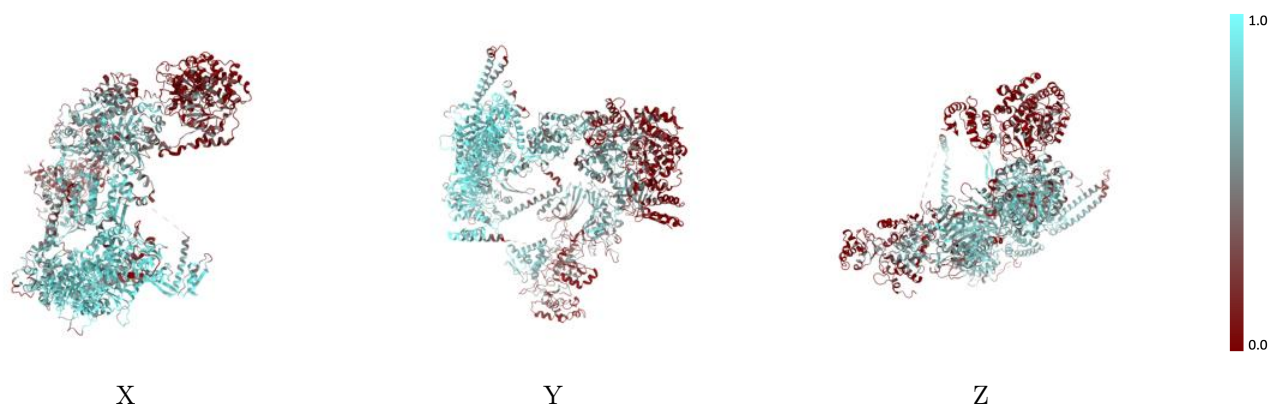


## 9.2 Q-score mapped to coordinate model [\(i\)](#)



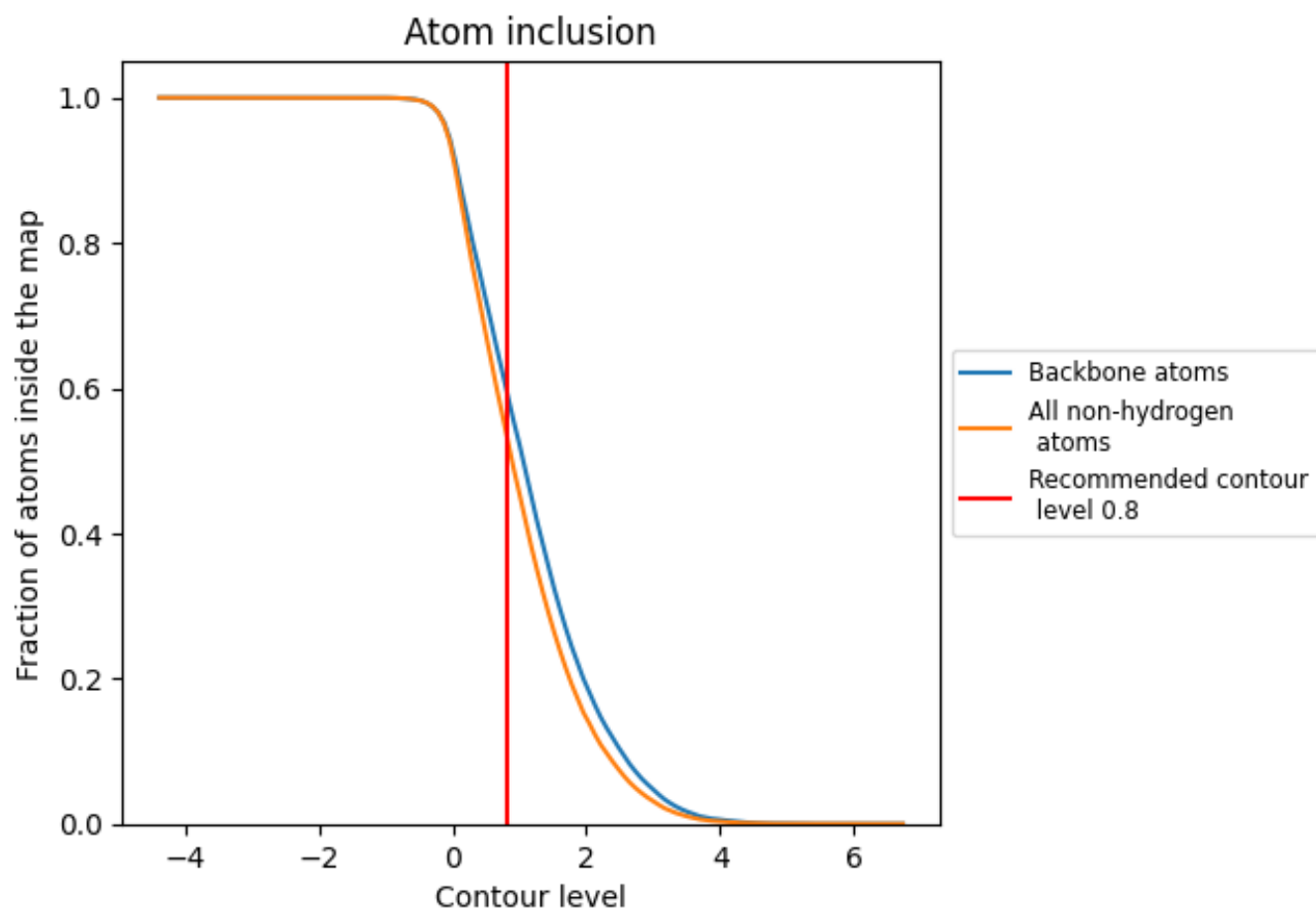
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.8).







## 9.4 Atom inclusion [i](#)



At the recommended contour level, 60% of all backbone atoms, 54% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary [i](#)

The table lists the average atom inclusion at the recommended contour level (0.8) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5371	 0.4130
A	 0.7221	 0.5220
B	 0.4075	 0.3370

