



wwPDB EM Validation Summary Report ⓘ

Oct 15, 2024 – 12:41 PM JST

PDB ID : 8XL2
EMDB ID : EMD-38435
Title : Human acetyl-CoA carboxylase 1 filament in complex with acetyl-CoA (ACC1-inact)
Authors : Zhou, F.Y.; Zhang, Y.Y.; Zhou, Q.; Hu, Q.
Deposited on : 2023-12-25
Resolution : 2.73 Å(reported)

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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.dev113
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
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) : 2.39

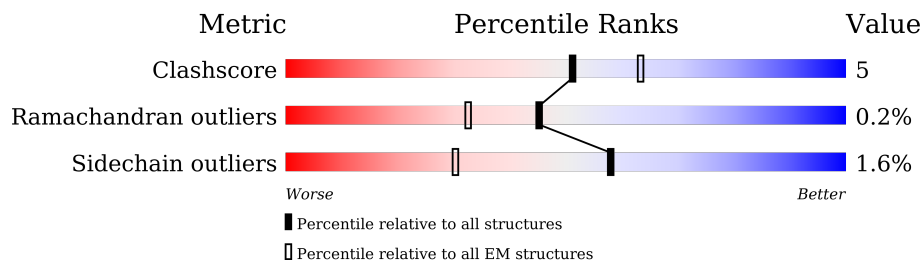
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.73 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	2346	
1	B	2346	
1	C	2346	
1	D	2346	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	ACO	A	2501	-	-	X	-

2 Entry composition [i](#)

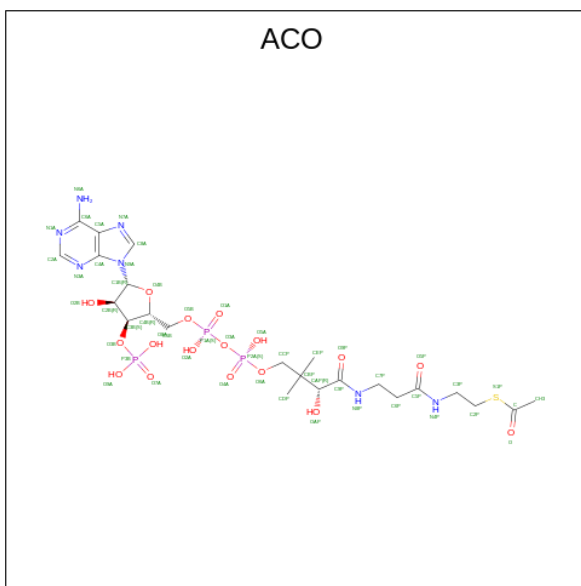
There are 2 unique types of molecules in this entry. The entry contains 39556 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Acetyl-CoA carboxylase 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	1527	Total	C	N	O	S	0	0
			12307	7828	2137	2273	69		
1	B	1527	Total	C	N	O	S	0	0
			12307	7828	2137	2273	69		
1	D	547	Total	C	N	O	S	0	0
			4365	2776	766	802	21		
1	C	1300	Total	C	N	O	S	0	0
			10424	6637	1798	1926	63		

- Molecule 2 is ACETYL COENZYME *A (three-letter code: ACO) (formula: C₂₃H₃₈N₇O₁₇P₃S) (labeled as "Ligand of Interest" by depositor).

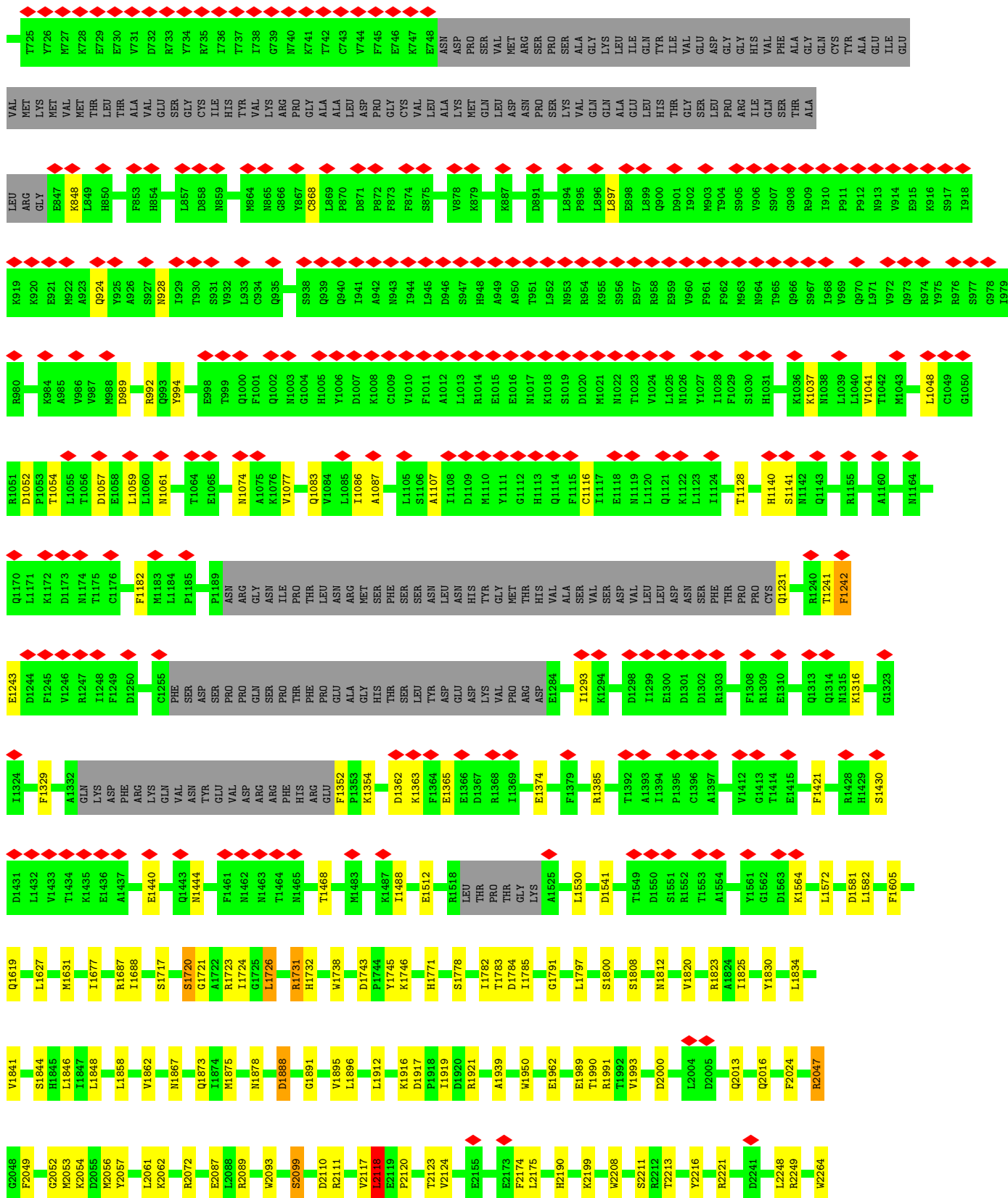


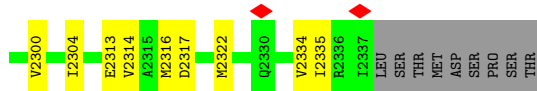
Mol	Chain	Residues	Atoms					AltConf	
			Total	C	N	O	P		S
2	A	1	Total	C	N	O	P	S	0
			51	23	7	17	3	1	
2	A	1	Total	C	N	O	P	S	0
			51	23	7	17	3	1	

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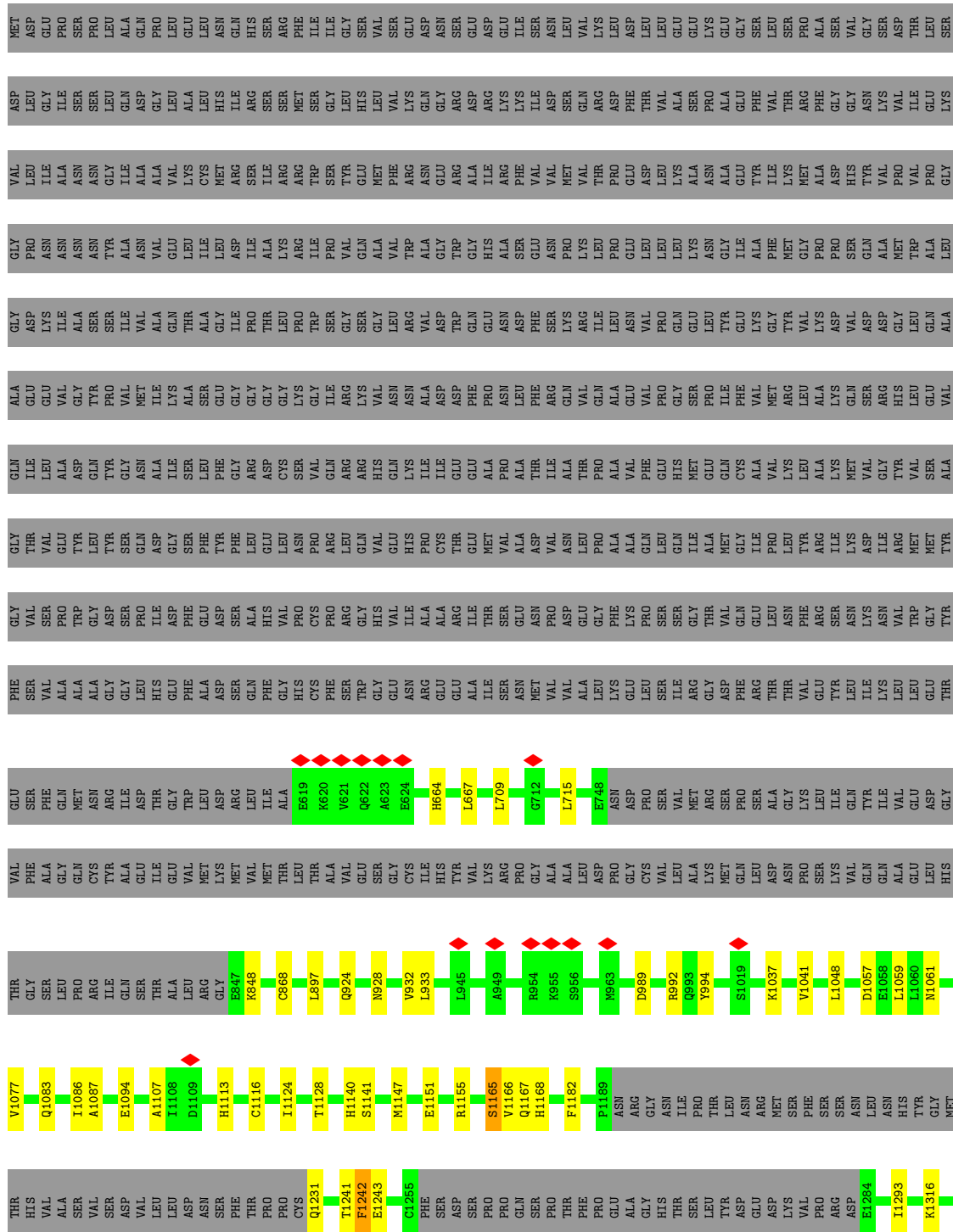
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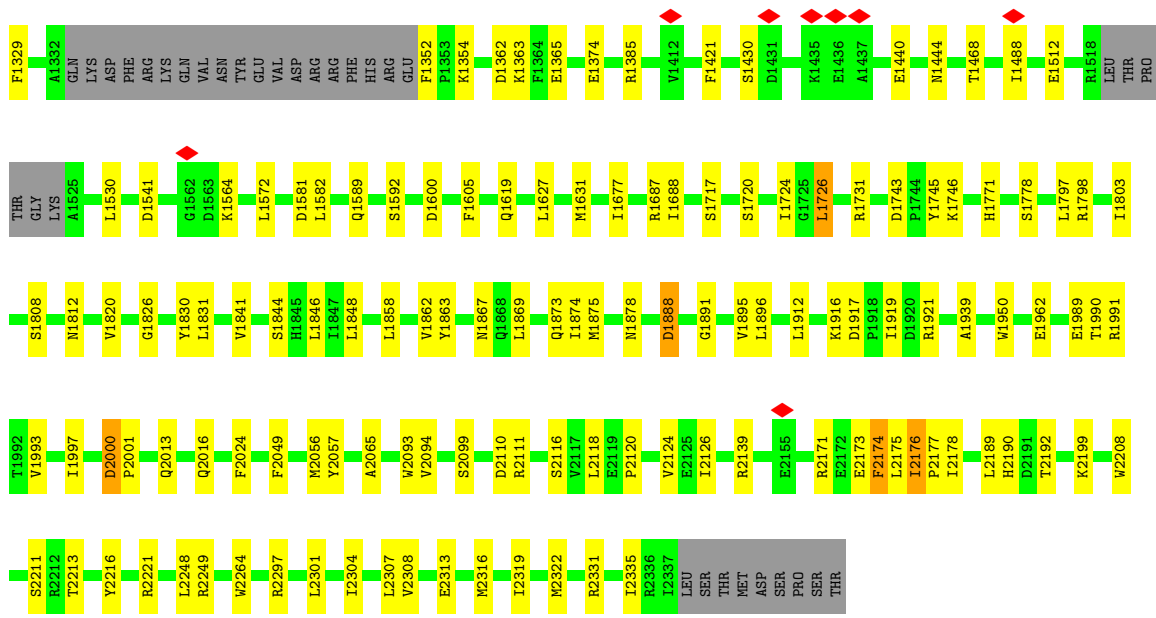
Mol	Chain	Residues	Atoms						AltConf
			Total	C	N	O	P	S	
2	C	1	51	23	7	17	3	1	0



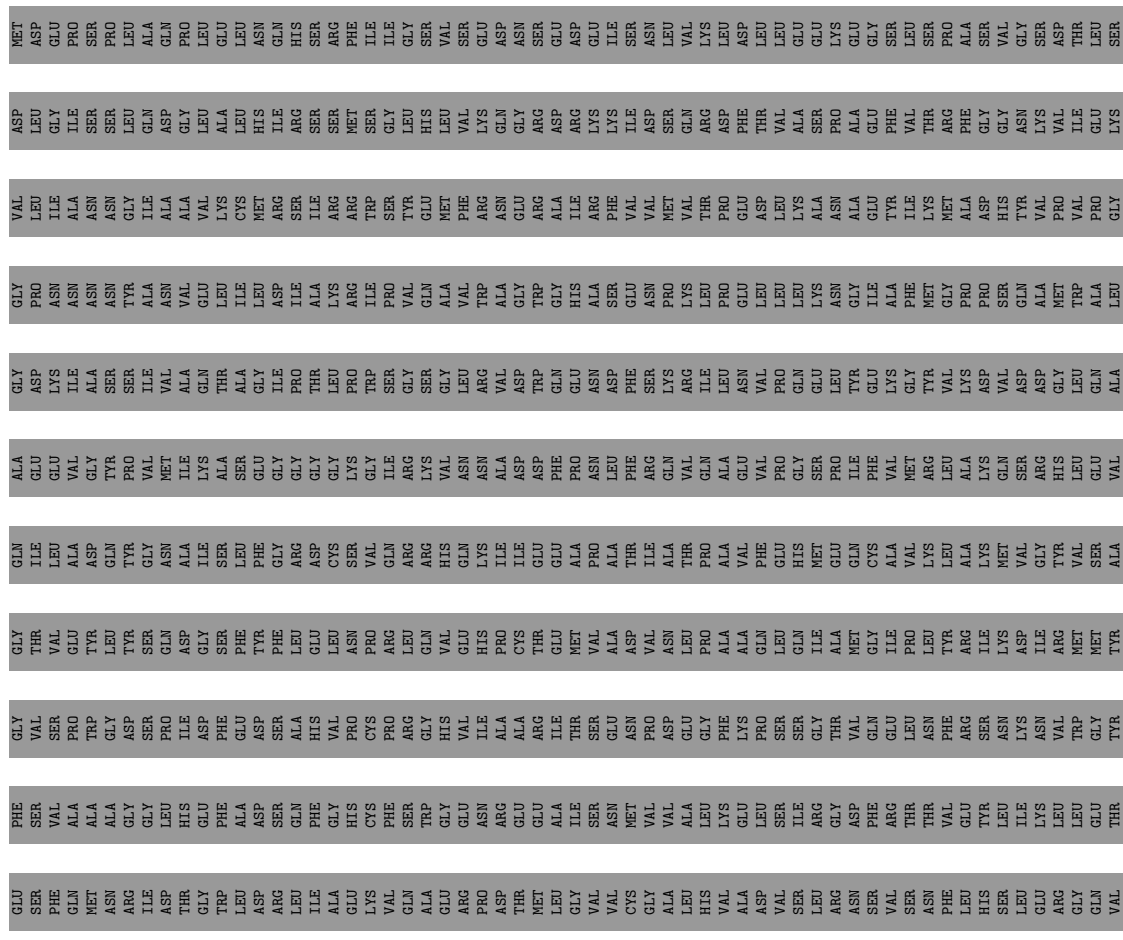


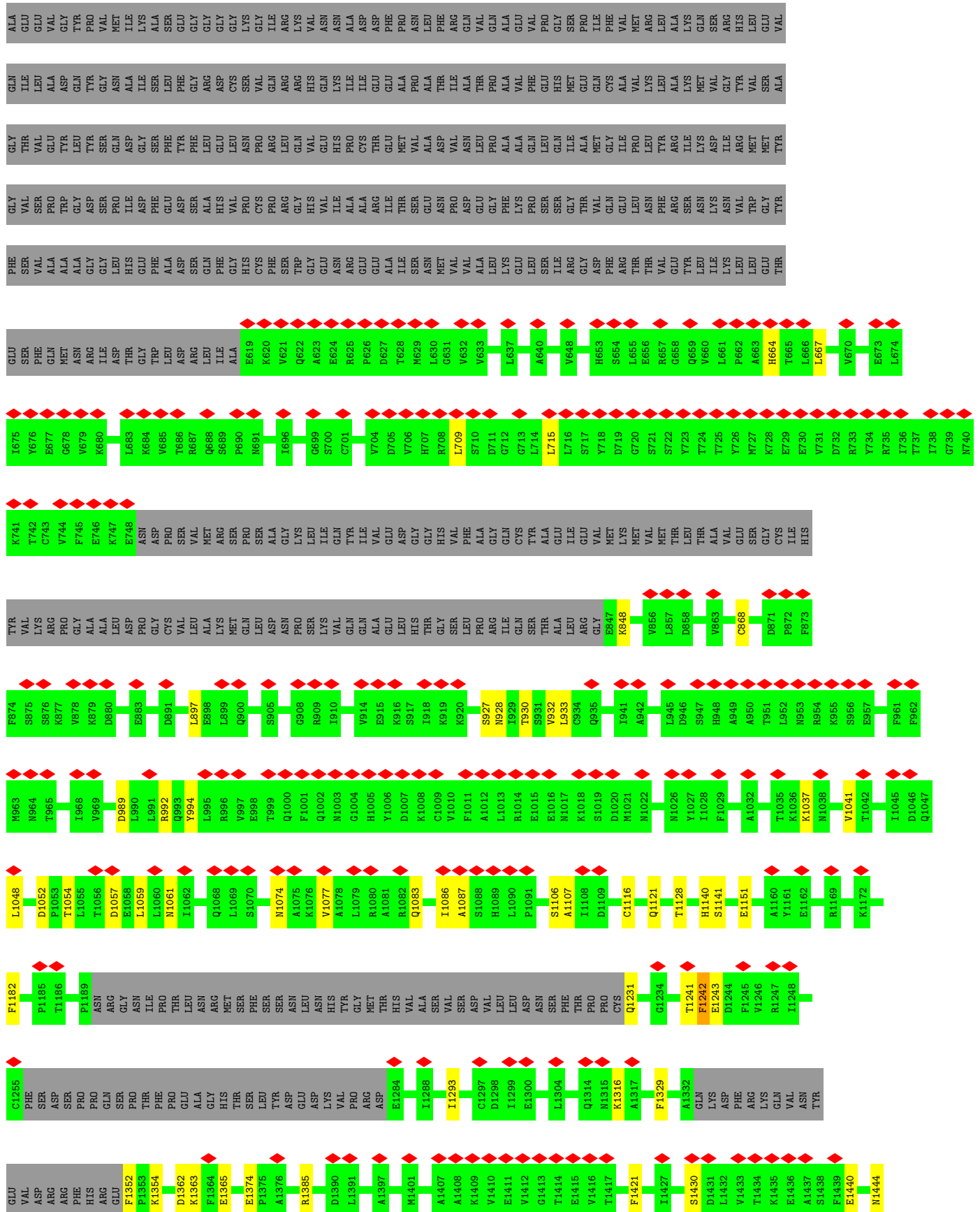
● Molecule 1: Acetyl-CoA carboxylase 1





● Molecule 1: Acetyl-CoA carboxylase 1





L1461	L1467	L1468	L1483	L1484	L1485	L1486	L1487	L1488	L1489	L1490	L1491	L1492	E1512	R1518	L1609	L1610	L1611	L1612	L1613	L1614	L1615	L1616	L1617	L1618	L1619	L1620	L1621	L1622	L1623	L1624	L1625	L1626	L1627	L1628	L1629	L1630	L1631	L1632	L1633	L1634	L1635	L1636	L1637	L1638	L1639	L1640	L1641	L1642	L1643	L1644	L1645	L1646	L1647						
M1648	M1649	M1650	L1651	L1652	G1653	G1654	M1655	E1656	I1657	G1658	M1659	K1663	M1664	T1665	F1666	K1667	S1668	P1672	E1673	G1674	R1675	D1676	I1677	I1680	G1681	M1682	D1683	I1684	R1687	I1688	G1689	S1690	F1691	Q1694	L1698	F1699	L1700	R1701	A1702	S1703	E1704	L1705	A1706	R1707	A1708	E1709	G1710	I1711	P1712	R1713	I1714	Y1715	V1716						
S1717	A1718	M1719	S1720	G1721	A1722	R1723	G1725	I1724	L1726	A1727	E1728	I1729	I1730	R1731	H1732	M1733	F1734	H1735	V1736	A1737	M1738	V1739	D1740	P1741	E1742	D1743	P1744	Y1745	K1746	G1747	Y1748	R1749	Y1750	L1751	Y1752	L1753	T1754	P1755	Q1756	D1757	Y1758	K1759	R1760	V1761	S1762	A1763	L1764	M1765	S1766	V1767	H1768	C1769	E1770	H1771	H1772	E1773	D1774	E1775	G1776
E1777	S1778	R1779	Y1780	K1781	I1782	T1783	D1784	I1785	I1786	G1787	K1788	E1789	G1791	I1792	G1793	P1794	E1795	M1796	L1797	R1798	G1799	S1800	G1801	M1802	I1803	A1804	G1805	S1808	L1809	A1810	I1811	E1813	I1814	I1817	S1818	L1819	V1820	R1823	G1826	I1827	G1828	A1829	Y1830	L1831	V1832	R1833	L1834	R1837	T1838	V1841	E1842								
M1843	S1844	H1845	L1846	I1847	L1848	T1849	G1850	A1851	G1852	A1853	M1855	K1856	Y1857	L1858	G1859	R1860	E1861	V1862	K1863	T1864	S1865	M1866	N1867	Q1868	L1869	Q1873	I1874	M1875	H1876	N1877	R1878	G1879	V1880	T1884	V1885	C1886	D1887	D1888	G1891	V1892	F1893	T1894	T1895	V1896	D1897	S1898	Y1899	L1900	Y1901	M1902	R1903	K1904	S1905	V1906	H1907	S1908	S1909		
V1910	P1911	L1912	L1913	M1914	S1915	K1916	D1917	P1918	I1919	L1920	R1921	I1922	I1923	E1924	F1925	V1926	P1927	T1928	K1929	Y1930	P1931	M1932	M1933	P1934	R1935	W1936	M1937	L1938	A1939	G1940	R1941	P1942	M2003	L2004	P1945	Q1946	K1947	G1948	Q1949	W1950	L1951	S1952	G1953	F1955	D1956	Y1957	G1958	S1959	F1960	S1961	E1962	I1963	M1964	Q1965	P1966	W1967	A1968	Q1969	
T1970	V1971	V1972	V1973	G1974	R1975	A1976	R1977	L1978	G1979	G1980	T1981	F1982	V1983	G1984	V1985	V1986	A1987	V1988	E1989	T1990	R1991	T1992	V1993	E1994	L1995	S1996	I1997	P1998	A1999	D2000	P2001	A2002	M2003	L2004	D2005	S2006	E2007	A2008	K2009	T2010	L2011	Q2012	Q2013	A2014	G2015	Q2016	V2017	W2018	D2021	S2022	A2023	F2024	K2025	T2026	Y2027	Q2028	A2029	T2030	
K2031	D2032	F2033	N2034	R2035	E2036	G2037	L2038	P2039	L2040	M2041	V2042	F2043	A2044	N2045	W2046	R2047	E2049	S2050	G2051	G2052	M2053	G2054	D2055	M2056	Y2057	D2058	Q2059	V2060	L2061	K2062	F2063	G2064	A2065	I2067	V2068	D2069	R2072	E2073	C2074	C2075	Q2076	P2077	V2078	L2079	V2080	Y2081	I2082	P2083	P2084	Q2085	A2086	E2087	L2088	R2089	G2090	G2091			
S2092	W2093	V2094	V2095	I2096	D2097	S2098	S2099	I2100	N2101	P2102	R2103	H2104	M2105	E2106	M2107	Y2108	A2109	D2110	ARG	GLU	PRO	THR	ILE	PRO	PRO	GLY	SER	LEU	THR	LEU	GLY	ASP	THR	THR	VAL	VAL	VAL	ASP	LEU	GLY	LEU	THR	ASP	ARG	ASP	ARG	ASP	ASP	ASP	VAL	THR	LEU	ALA	ALA					
GLY	THR	PRO	GLU	LEU	SER	THR	ALA	GLU	ARG	ARG	ASN	LYS	LEU	LEU	GLY	GLU	GLU	ALA	GLU	PRO	ILE	PRO	ILE	PRO	THR	SER	GLY	LEU	THR	THR	LEU	GLY	VAL	ARG	ARG	ARG	GLY	GLY	LEU	VAL	THR	ASP	ARG	ASP	ASP	VAL	THR	LEU	ALA	ALA									
ARG	THR	PHE	GLU	TRP	GLN	TRP	ARG	LEU	ARG	ARG	LEU	VAL	VAL	LYS	LYS	ARG	ASN	ILE	ILE	GLY	GLU	GLN	ILE	GLY	GLY	GLY	THR	ASP	VAL	THR	VAL	VAL	GLY	VAL	VAL	VAL	THR	THR	ASP	THR	ASP	ASP	ASP	VAL	THR	LEU	ALA	ALA											
GLU	TRP	LEU	GLY	GLN	LEU	LEU	THR	GLU	GLU	GLU	ASP	VAL	ILE	GLY	VAL	VAL	VAL	ASN	ILE	LEU	LEU	GLY	GLY	GLY	GLY	GLY	THR	VAL	THR	VAL	VAL	VAL	VAL	VAL	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR										
ALA	GLU	VAL	ILE	ARG	ILE	LEU	SER	THR	THR	ASP	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									

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	155033	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	6.869	Depositor
Minimum map value	-4.629	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.078	Depositor
Recommended contour level	0.2	Depositor
Map size (\AA)	525.72235, 525.72235, 525.72235	wwPDB
Map dimensions	488, 488, 488	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.0773, 1.0773, 1.0773	Depositor

5 Model quality

5.1 Standard geometry

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

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	0.35	0/12565	0.55	0/17010
1	B	0.34	0/12565	0.54	0/17010
1	C	0.34	0/10646	0.54	0/14418
1	D	0.41	0/4463	0.57	0/6052
All	All	0.35	0/40239	0.55	0/54490

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	5
1	B	0	5
1	C	0	5
All	All	0	15

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

5 of 15 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1140	HIS	Peptide
1	A	1141	SER	Peptide
1	A	1241	THR	Peptide
1	A	1242	PHE	Peptide
1	A	1687	ARG	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	12307	0	12287	162	0
1	B	12307	0	12287	192	0
1	C	10424	0	10378	130	0
1	D	4365	0	4365	75	0
2	A	102	0	68	34	0
2	C	51	0	34	11	0
All	All	39556	0	39419	418	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 5.

The worst 5 of 418 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:D:2190:HIS:NE2	1:C:1726:LEU:HD22	1.66	1.11
1:A:2190:HIS:NE2	1:B:1726:LEU:HD22	1.66	1.10
1:D:2190:HIS:NE2	1:C:1726:LEU:CD2	2.36	0.89
1:A:2190:HIS:NE2	1:B:1726:LEU:CD2	2.36	0.89
1:D:1830:TYR:OH	1:C:2049:PHE:CD1	2.27	0.88

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	1515/2346 (65%)	1429 (94%)	83 (6%)	3 (0%)	44 63

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	1515/2346 (65%)	1428 (94%)	84 (6%)	3 (0%)	44	63
1	C	1288/2346 (55%)	1219 (95%)	67 (5%)	2 (0%)	44	63
1	D	545/2346 (23%)	522 (96%)	23 (4%)	0	100	100
All	All	4863/9384 (52%)	4598 (95%)	257 (5%)	8 (0%)	45	63

5 of 8 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	1572	LEU
1	B	1572	LEU
1	C	1572	LEU
1	A	2118	LEU
1	A	1242	PHE

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	1361/2057 (66%)	1339 (98%)	22 (2%)	58	75
1	B	1361/2057 (66%)	1339 (98%)	22 (2%)	58	75
1	C	1153/2057 (56%)	1140 (99%)	13 (1%)	70	83
1	D	476/2057 (23%)	465 (98%)	11 (2%)	45	66
All	All	4351/8228 (53%)	4283 (98%)	68 (2%)	58	75

5 of 68 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	1582	LEU
1	C	1717	SER
1	C	1962	GLU
1	B	1581	ASP
1	B	1165	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 11 such sidechains are listed below:

Mol	Chain	Res	Type
1	D	1946	GLN
1	C	928	ASN
1	C	1946	GLN
1	C	1231	GLN
1	B	1113	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](#)

3 ligands are 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
2	ACO	A	2501	-	45,53,53	0.82	1 (2%)	56,79,79	1.14	4 (7%)
2	ACO	C	2501	-	45,53,53	0.82	1 (2%)	56,79,79	1.14	4 (7%)
2	ACO	A	2502	-	45,53,53	0.82	1 (2%)	56,79,79	1.14	4 (7%)

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
2	ACO	A	2501	-	-	23/47/67/67	0/3/3/3
2	ACO	C	2501	-	-	20/47/67/67	0/3/3/3
2	ACO	A	2502	-	-	19/47/67/67	0/3/3/3

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	2501	ACO	C5A-C4A	2.51	1.47	1.40
2	A	2502	ACO	C5A-C4A	2.51	1.47	1.40
2	C	2501	ACO	C5A-C4A	2.50	1.47	1.40

The worst 5 of 12 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	2501	ACO	P2A-O3A-P1A	-3.60	120.48	132.83
2	A	2502	ACO	P2A-O3A-P1A	-3.59	120.52	132.83
2	C	2501	ACO	P2A-O3A-P1A	-3.59	120.52	132.83
2	A	2501	ACO	N3A-C2A-N1A	-3.17	123.72	128.68
2	C	2501	ACO	N3A-C2A-N1A	-3.16	123.74	128.68

There are no chirality outliers.

5 of 62 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	2501	ACO	C5B-O5B-P1A-O2A
2	A	2501	ACO	O9P-C9P-CAP-CBP
2	A	2501	ACO	O9P-C9P-CAP-OAP
2	A	2501	ACO	N8P-C9P-CAP-OAP
2	A	2501	ACO	CAP-C9P-N8P-C7P

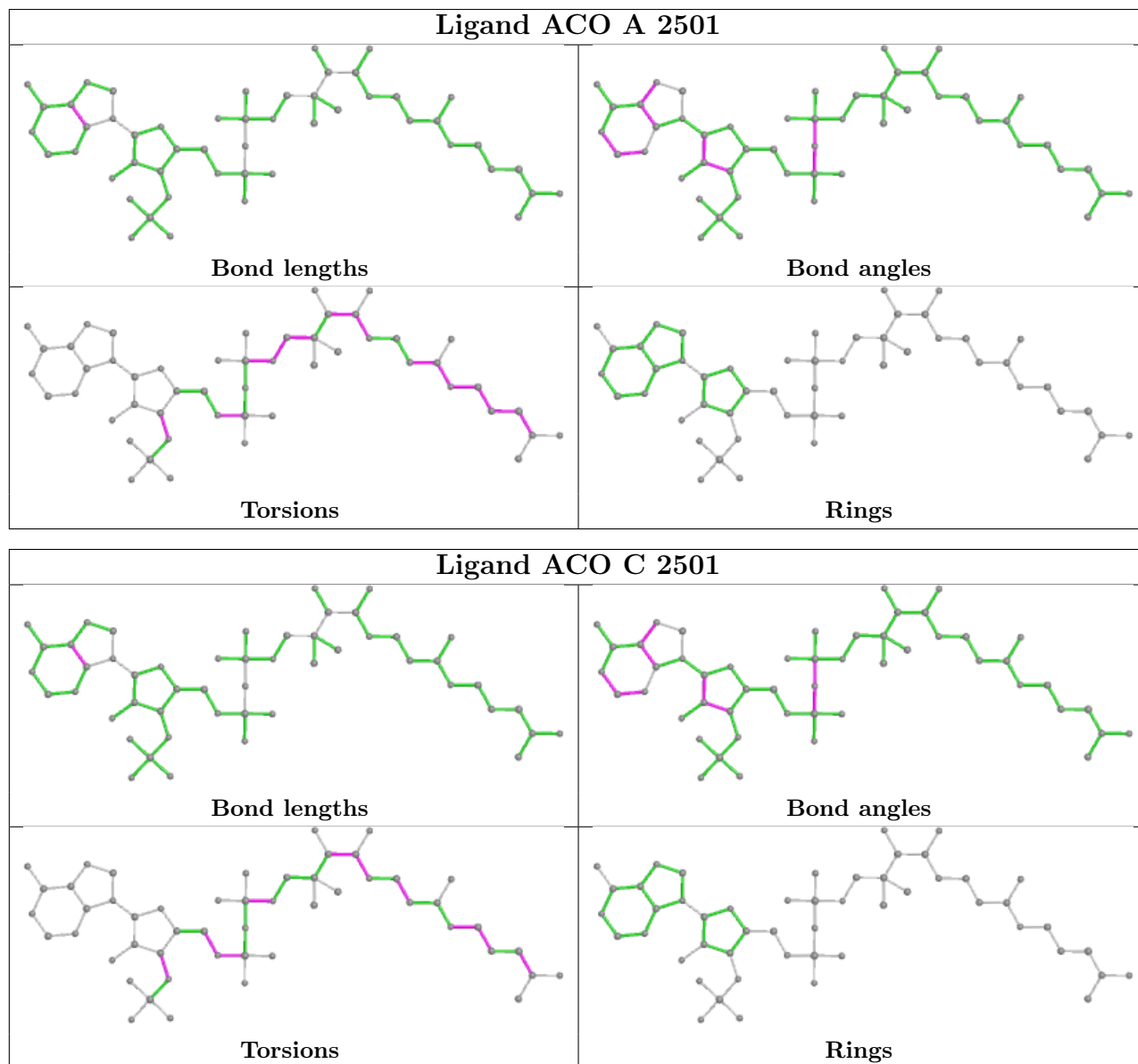
There are no ring outliers.

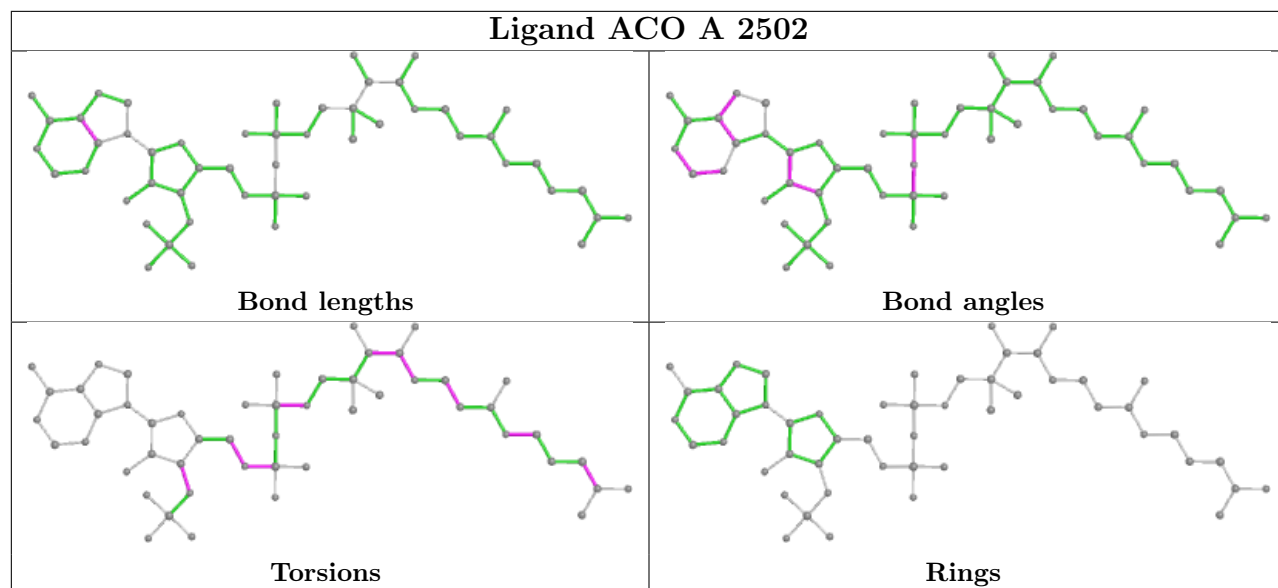
3 monomers are involved in 45 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	2501	ACO	23	0
2	C	2501	ACO	11	0
2	A	2502	ACO	11	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.

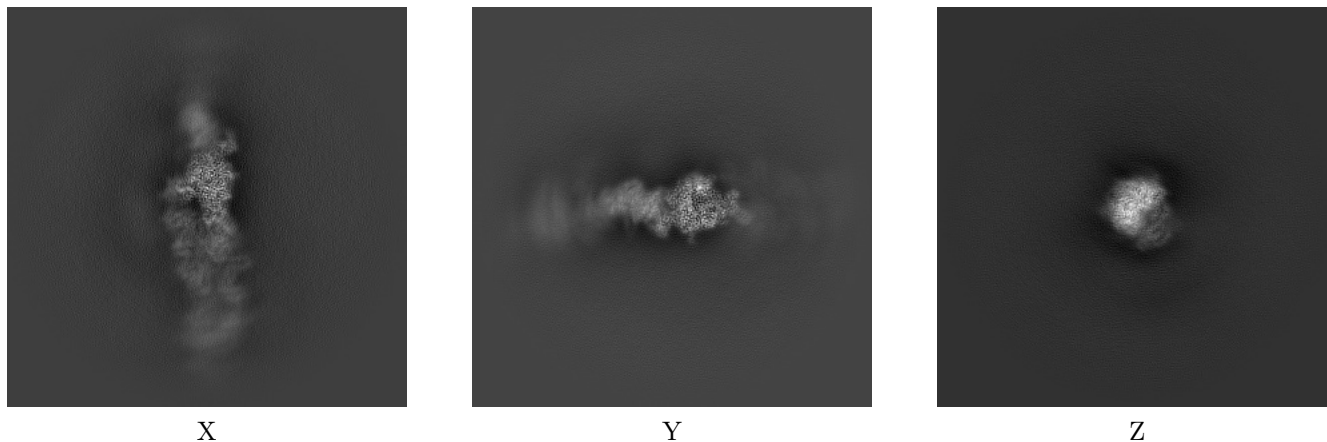
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-38435. These allow visual inspection of the internal detail of the map and identification of artifacts.

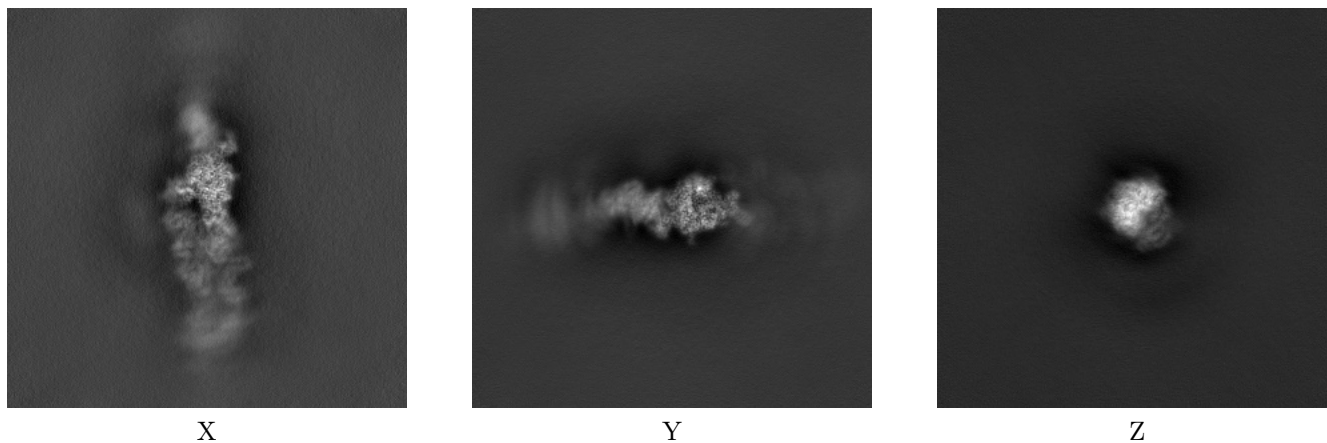
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

6.1.1 Primary map



6.1.2 Raw map



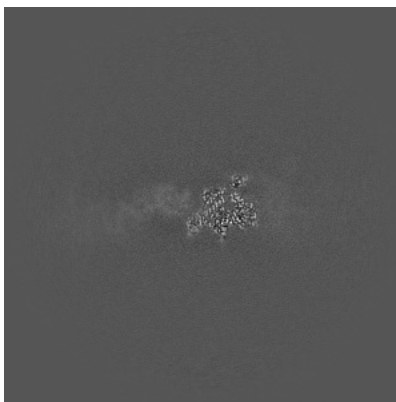
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

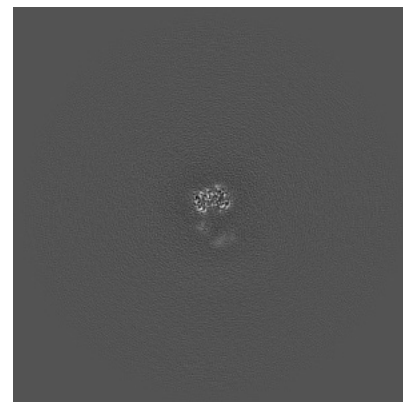
6.2.1 Primary map



X Index: 244

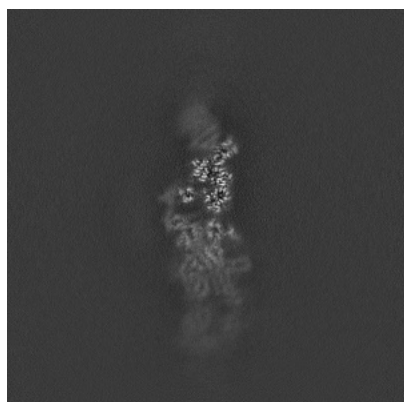


Y Index: 244

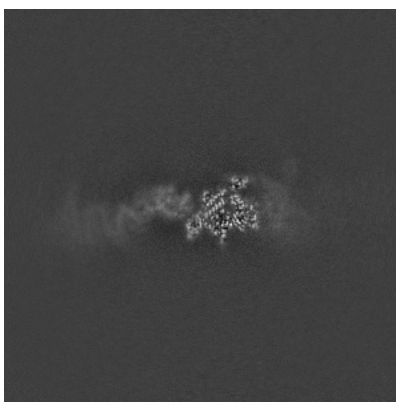


Z Index: 244

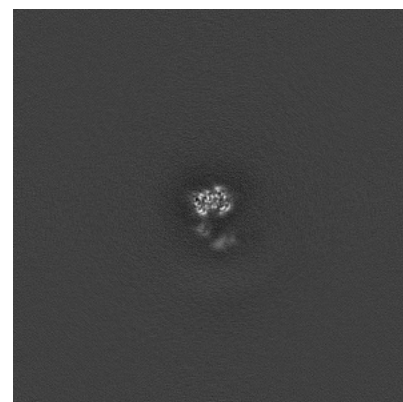
6.2.2 Raw map



X Index: 244



Y Index: 244

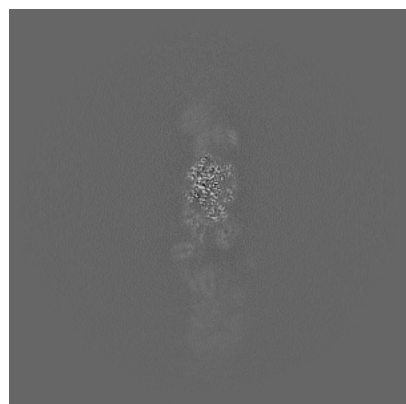


Z Index: 244

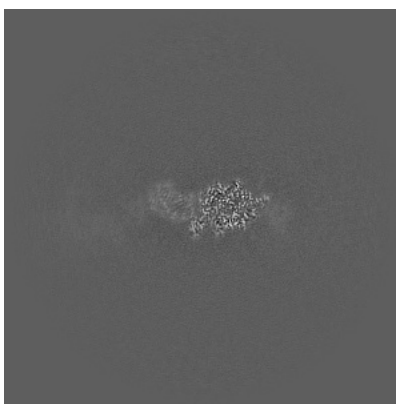
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

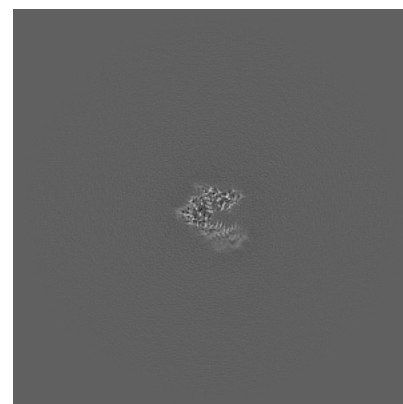
6.3.1 Primary map



X Index: 228

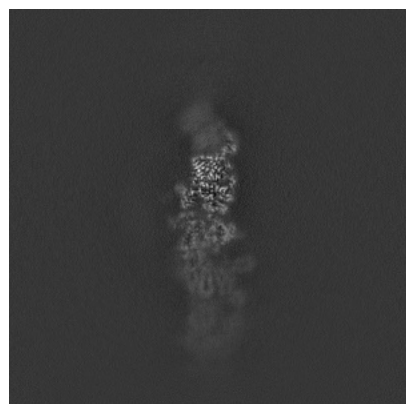


Y Index: 252

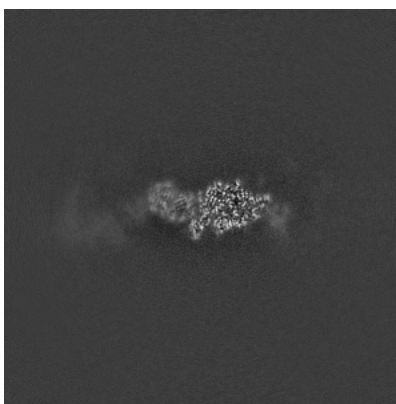


Z Index: 265

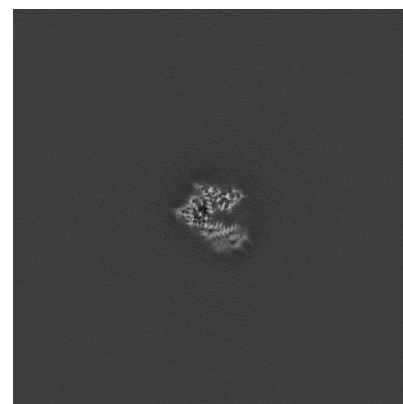
6.3.2 Raw map



X Index: 236



Y Index: 253

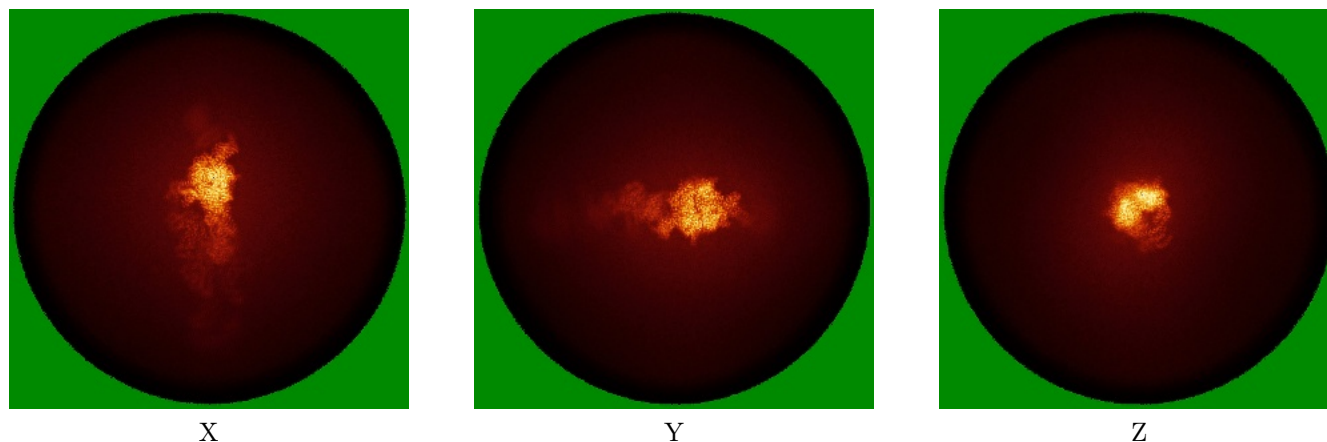


Z Index: 265

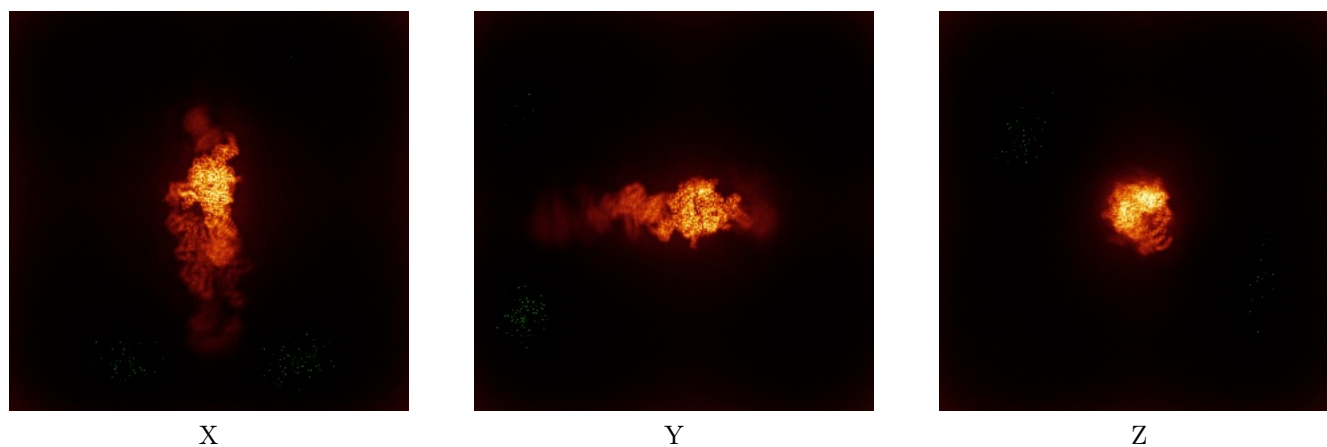
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map



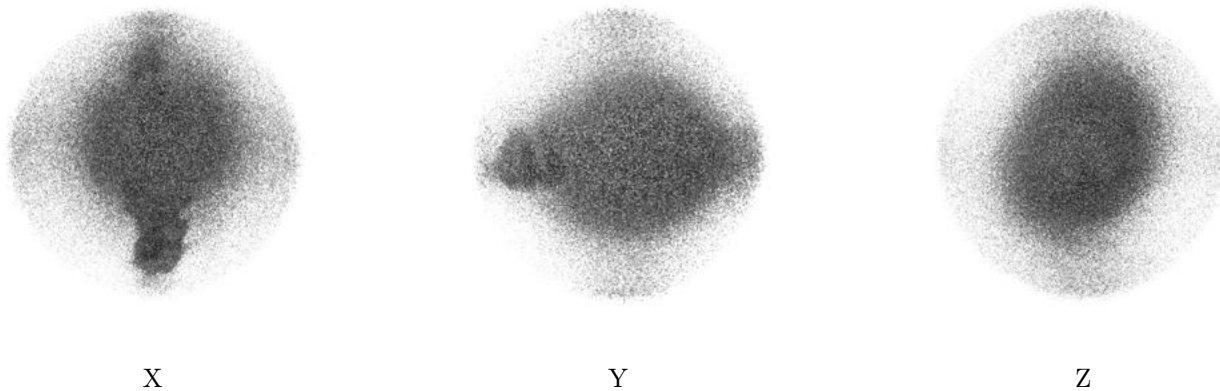
6.4.2 Raw map



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.

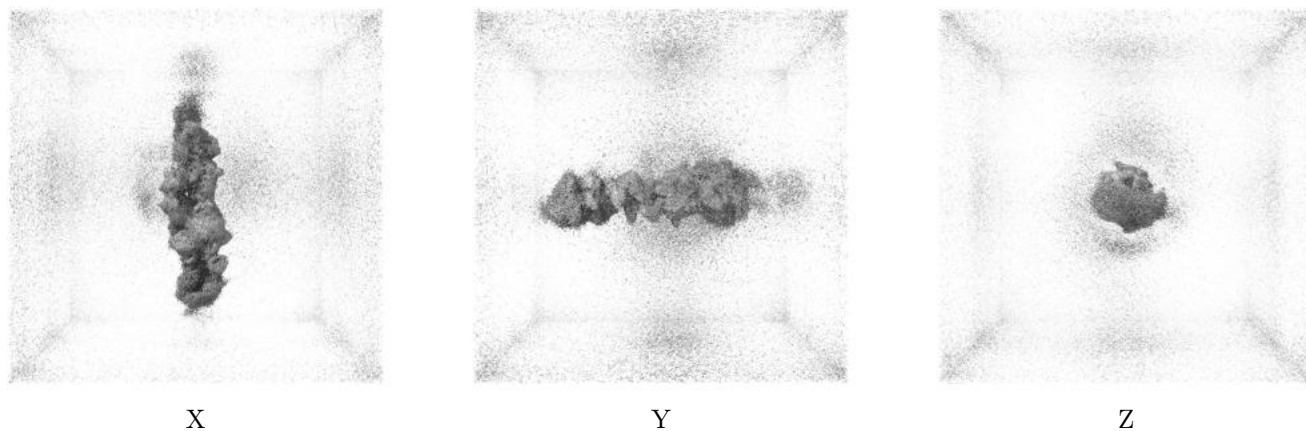
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.2. 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.

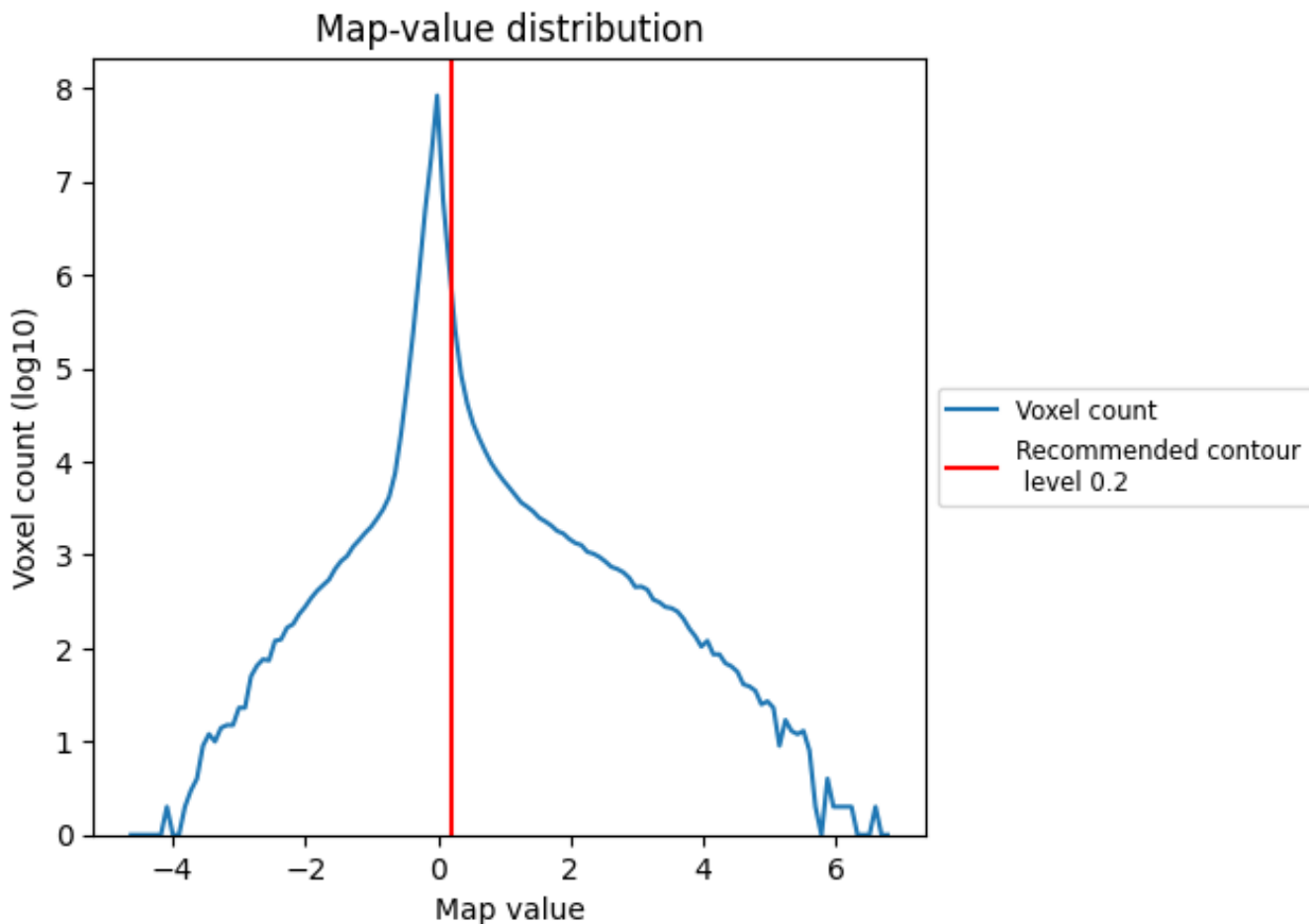
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

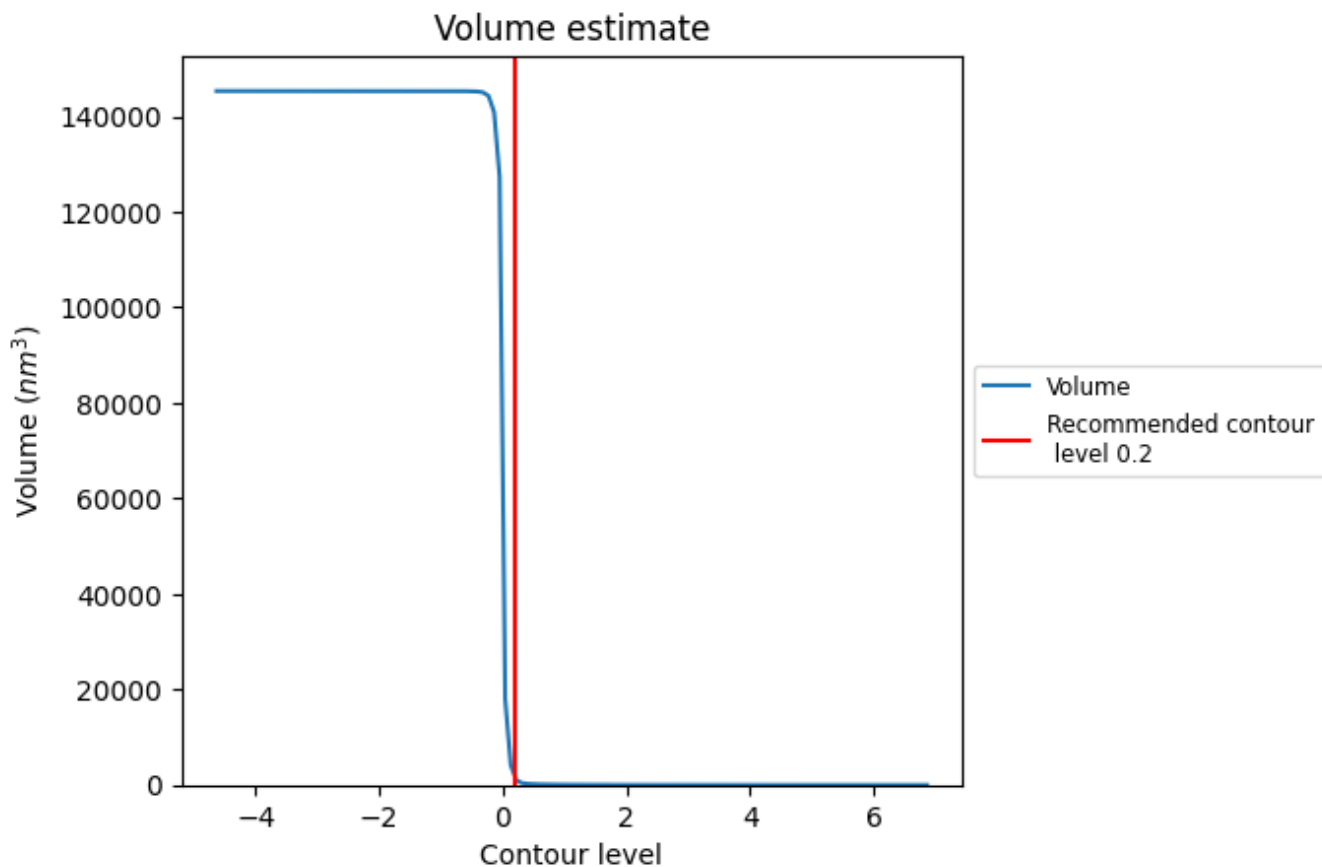
This section contains the results of statistical analysis of the map.

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.

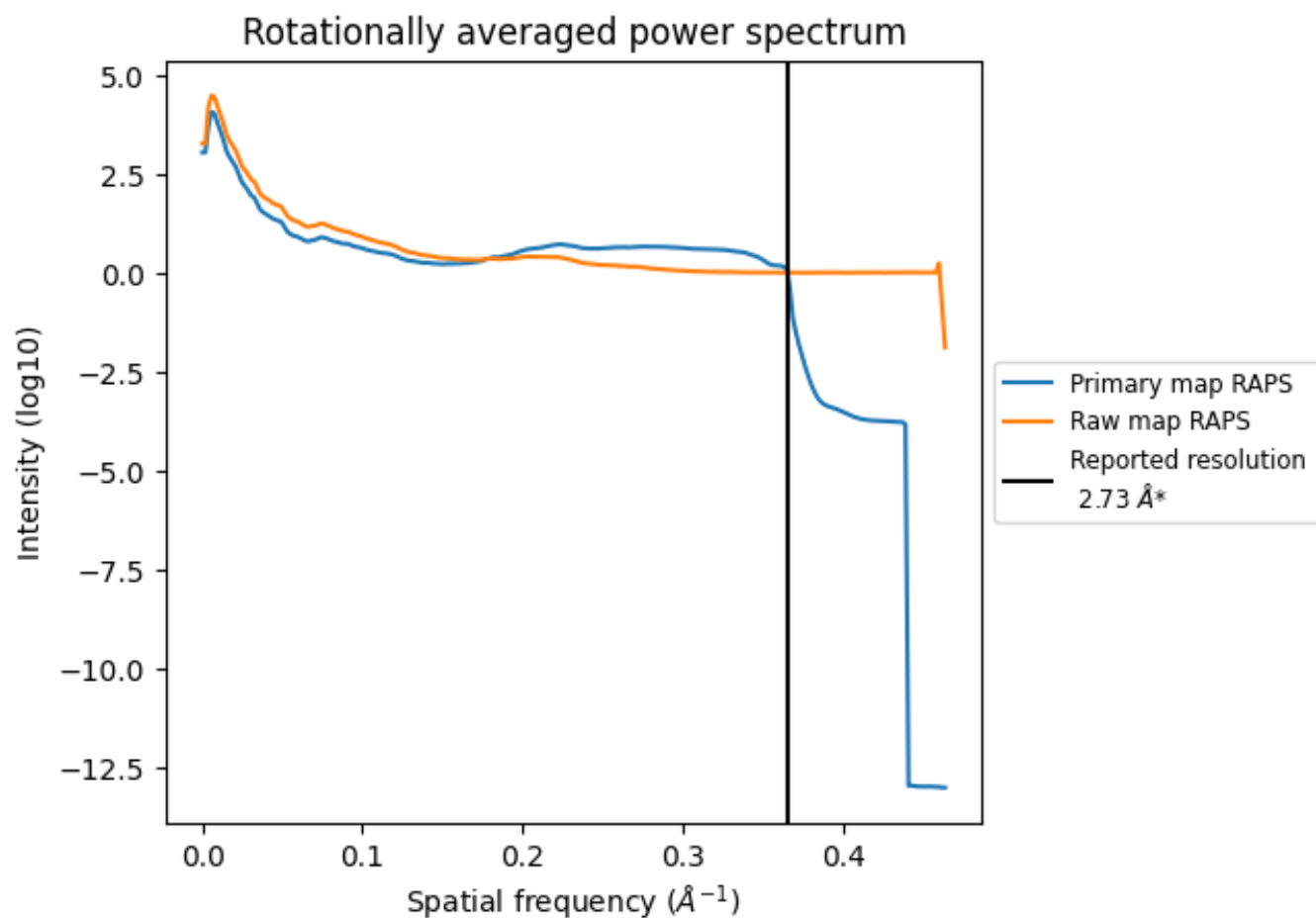
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1761 nm^3 ; this corresponds to an approximate mass of 1590 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](#)

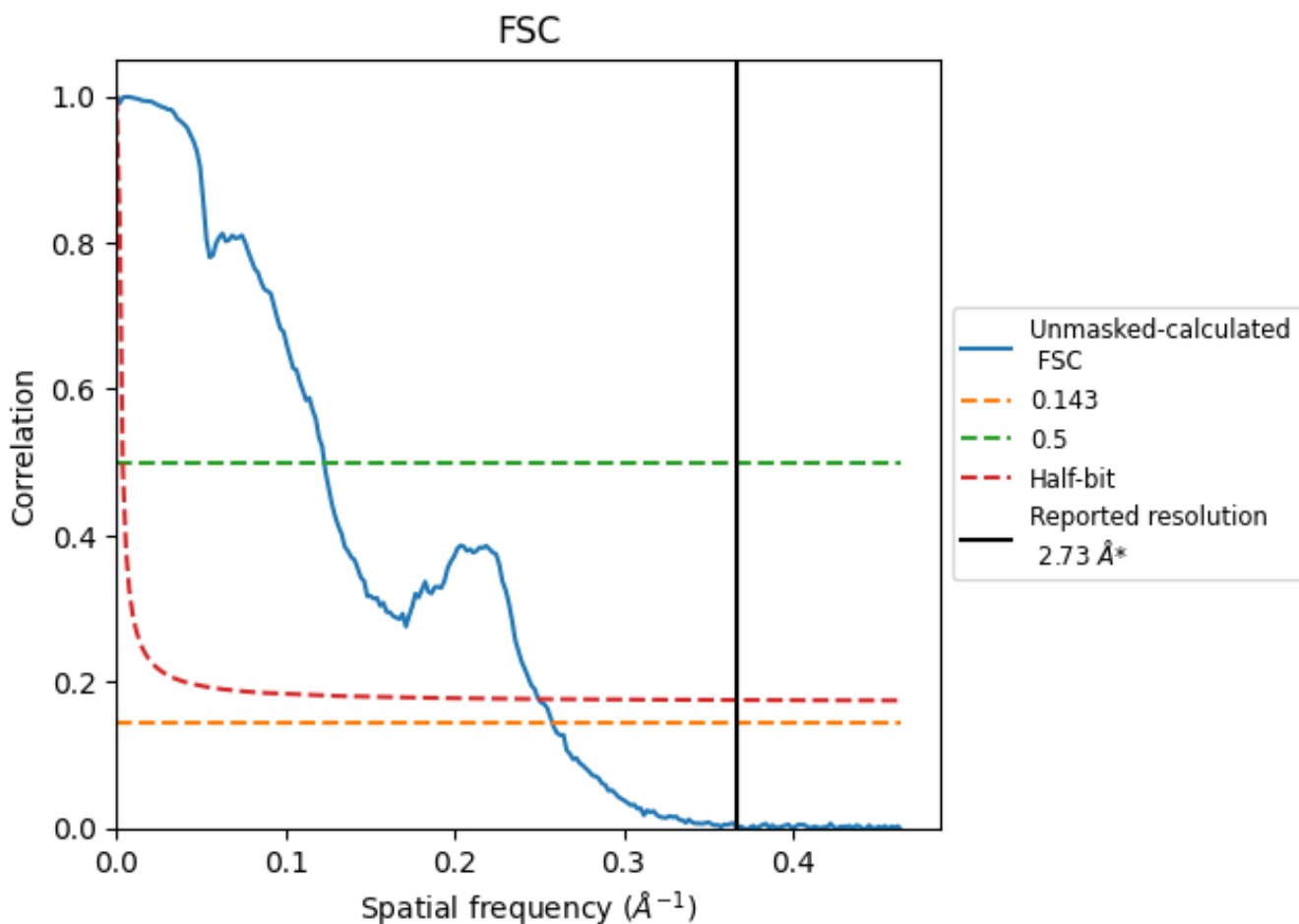


*Reported resolution corresponds to spatial frequency of 0.366 Å⁻¹

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 0.366\AA^{-1}

8.2 Resolution estimates [i](#)

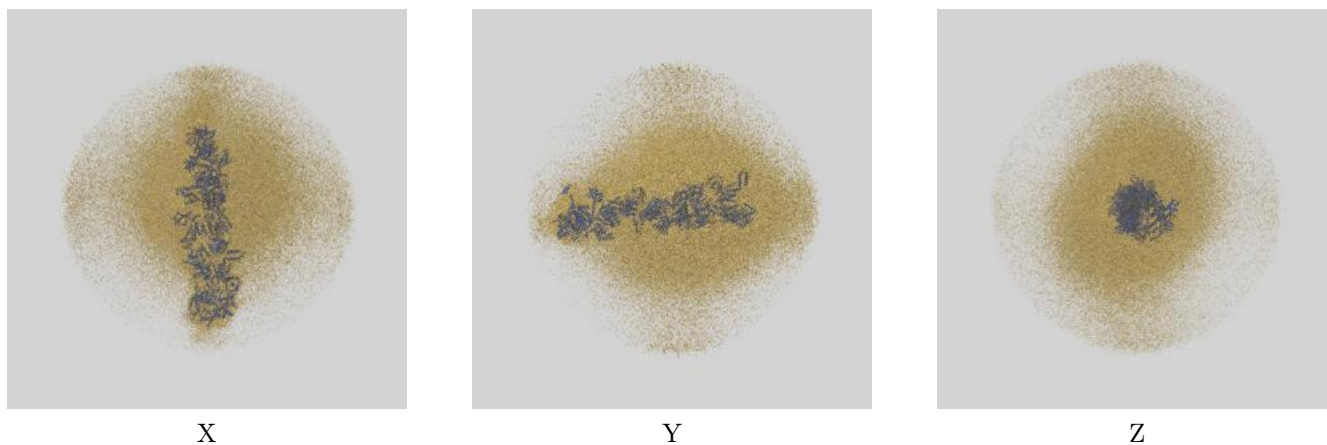
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.73	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.88	8.14	4.01

*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 3.88 differs from the reported value 2.73 by more than 10 %

9 Map-model fit [i](#)

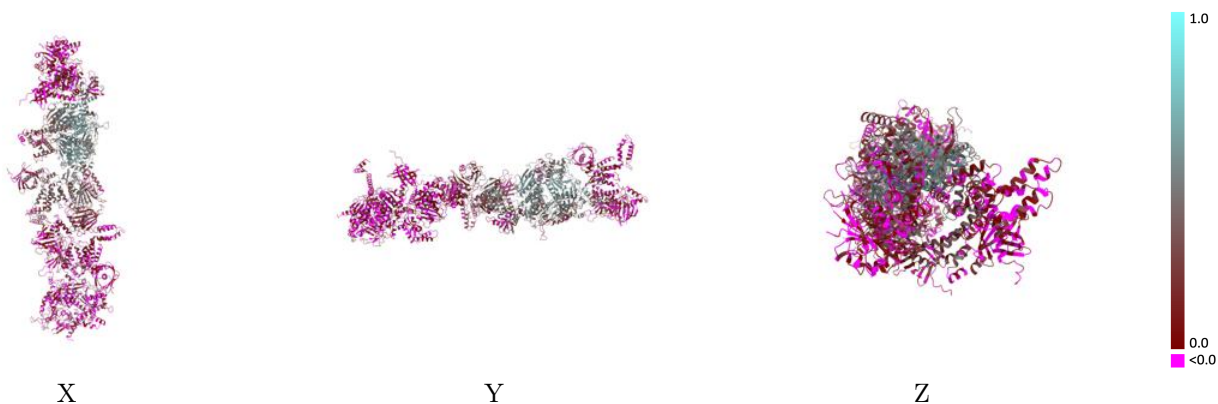
This section contains information regarding the fit between EMDB map EMD-38435 and PDB model 8XL2. Per-residue inclusion information can be found in section [3](#) on page [5](#).

9.1 Map-model overlay [i](#)



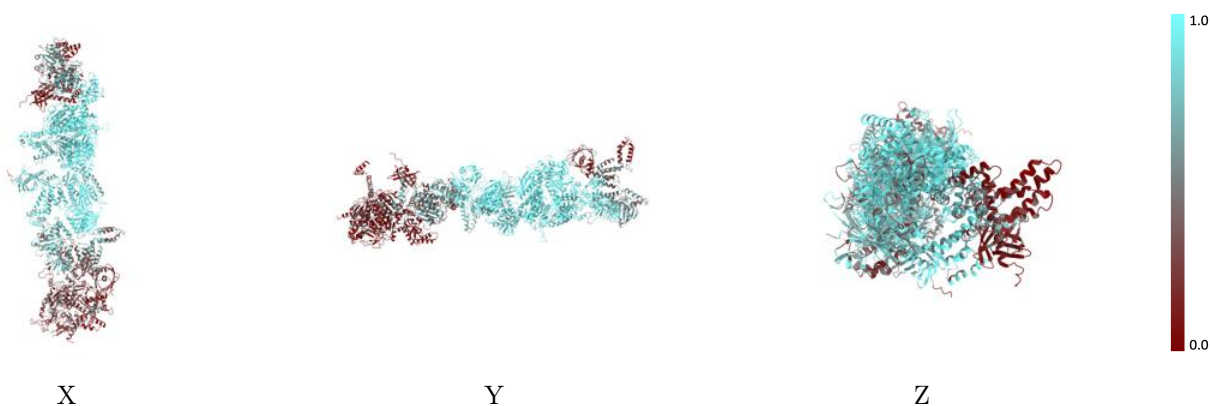
The images above show the 3D surface view of the map at the recommended contour level 0.2 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



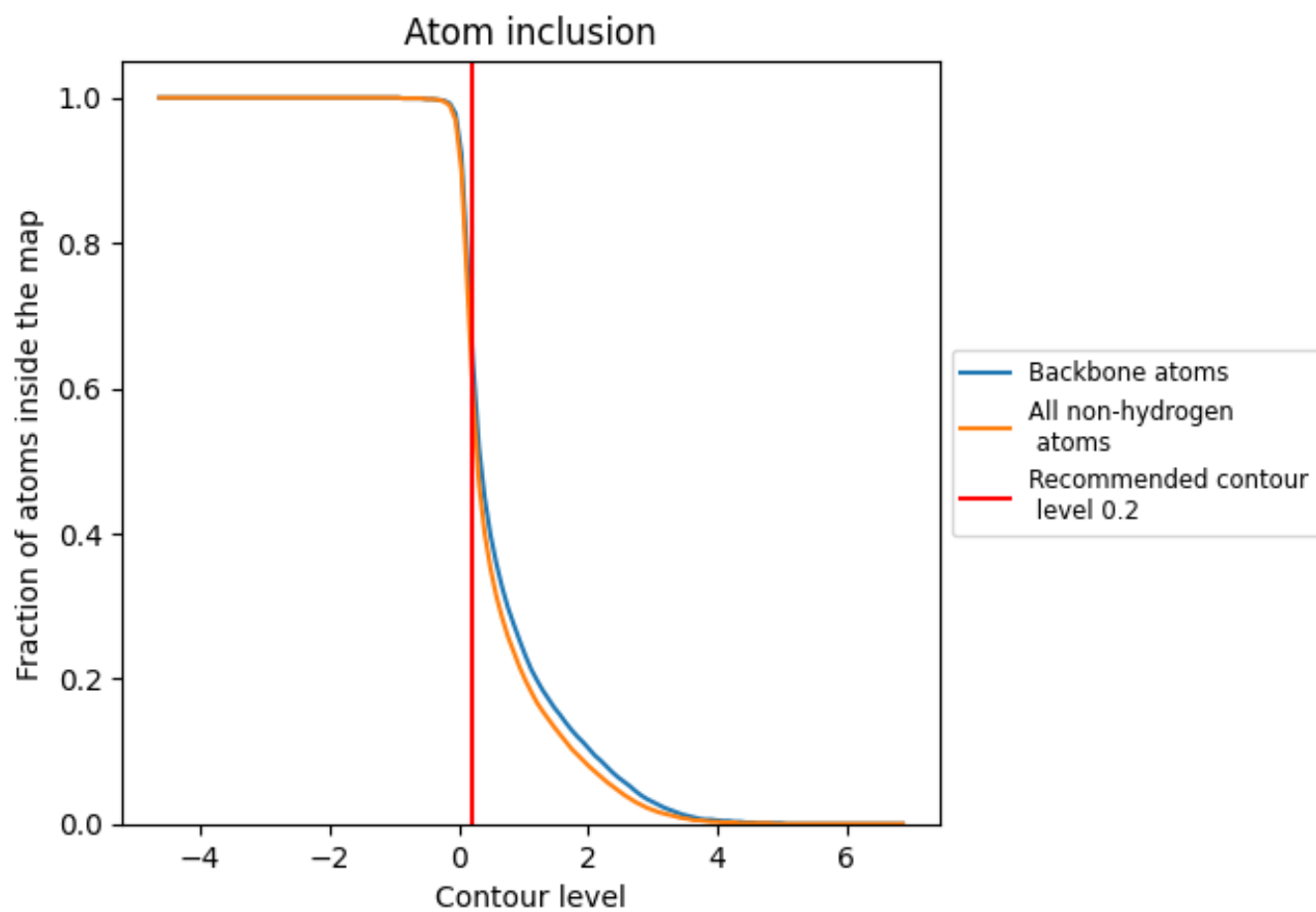
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.2).











9.4 Atom inclusion [i](#)



At the recommended contour level, 67% of all backbone atoms, 62% of all non-hydrogen atoms, are inside the map.

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

The table lists the average atom inclusion at the recommended contour level (0.2) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6220	 0.1850
A	 0.6680	 0.1890
B	 0.9200	 0.3640
C	 0.4140	 0.0400
D	 0.1510	 0.0170

