



# Full wwPDB EM Validation 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)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

EMDB validation analysis : 0.0.1.dev113  
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

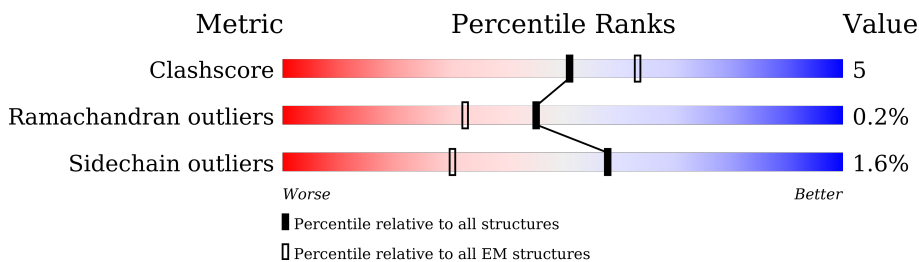
# 1 Overall quality at a glance

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  $\geq 3$ , 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	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](#)

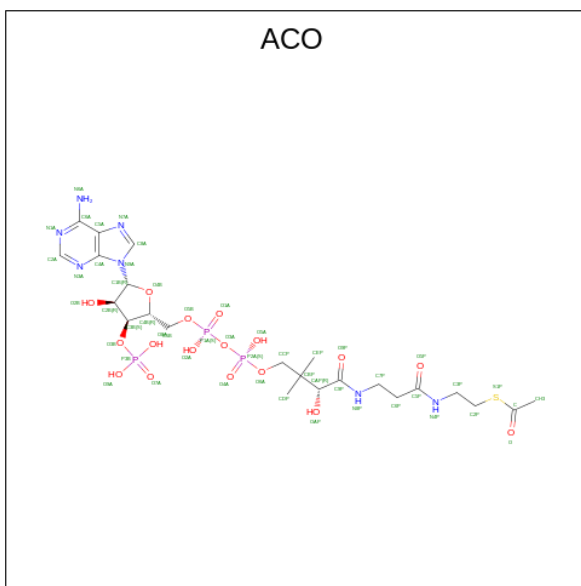
There are 2 unique types of molecules in this entry. The entry contains 39556 atoms, of which 0 are hydrogens and 0 are deuteriums.

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: C<sub>23</sub>H<sub>38</sub>N<sub>7</sub>O<sub>17</sub>P<sub>3</sub>S) (labeled as "Ligand of Interest" by depositor).



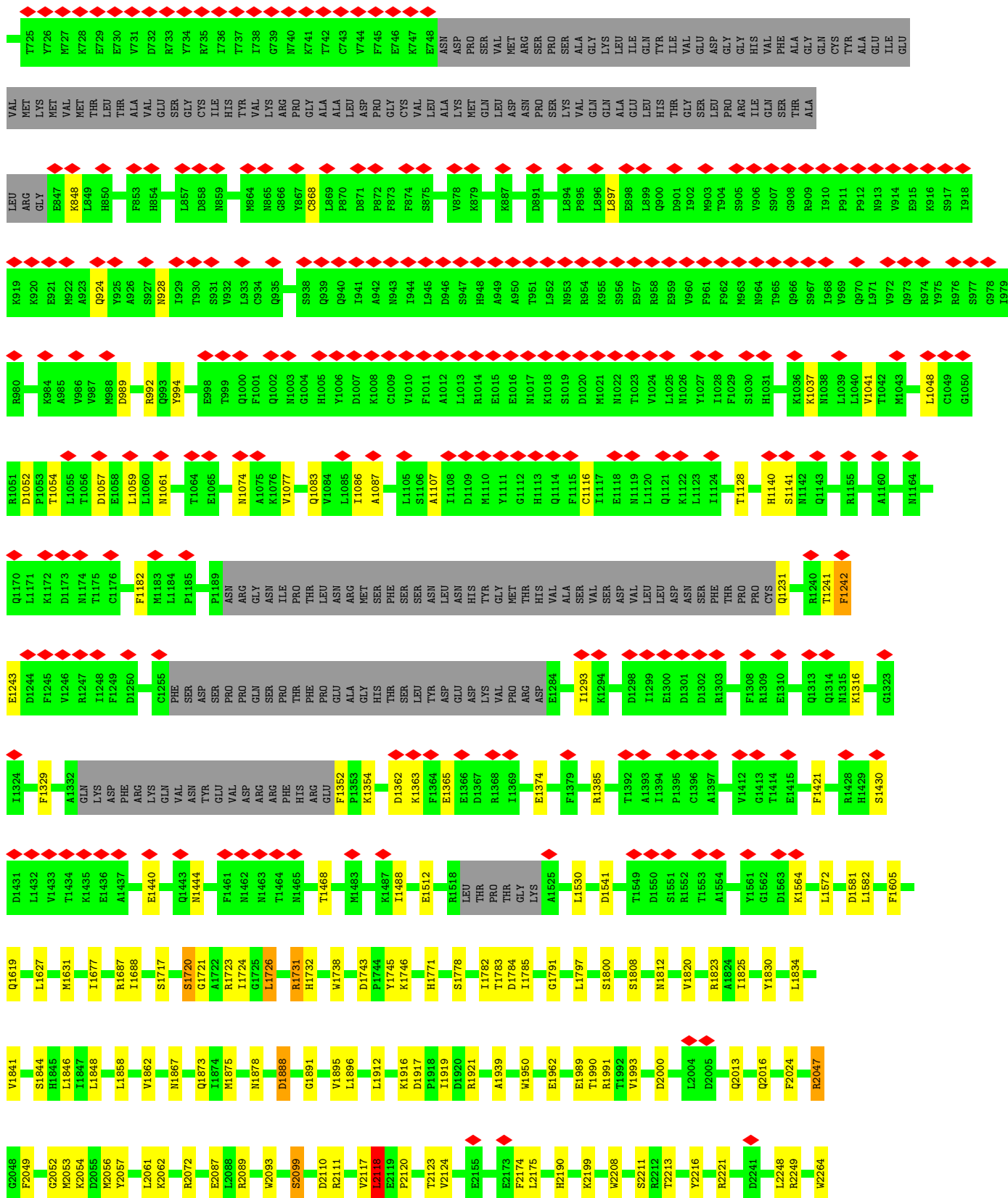
Mol	Chain	Residues	Atoms					AltConf	
			Total	C	N	O	P		S
2	A	1	Total	C	N	O	P	S	0
			51	23	7	17	3	1	
2	A	1	Total	C	N	O	P	S	0
			51	23	7	17	3	1	

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





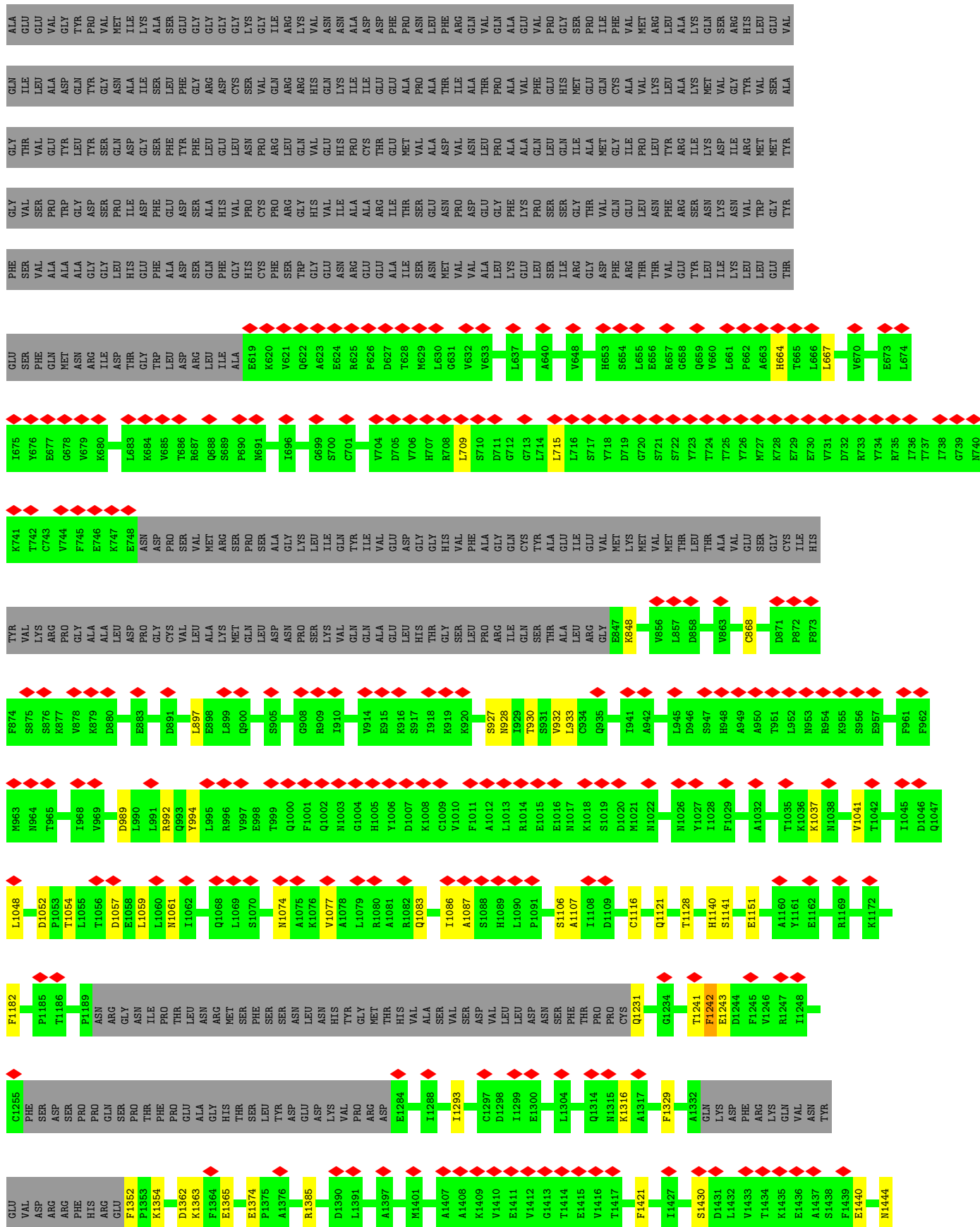












ALA	GLU	TRP	LEU	THR	ARG	GLY	S2092	K2031	V1910	M1843	E1777	S1717	M1648	R1587	L1451
GLU	TRP	LEU	THR	ARG	THR	THR	W2093	D2032	P1911	H1844	S1778	A1718	N1649	F1588	L1452
GLU	TRP	LEU	THR	ARG	PHE	PRO	V2094	F2033	P1912	L1845	R1779	A1719	R1650	Q1589	L1457
GLU	TRP	LEU	THR	ARG	TRP	GLU	V2095	N2034	L1913	L1846	Y1780	S1720	A1590	A1590	L1465
GLU	TRP	LEU	THR	ARG	TRP	SER	I2096	R2035	L1914	L1847	K1781	A1722	Q1591	Q1591	L1466
GLU	TRP	LEU	THR	ARG	ARG	ALA	D2097	E2036	S1915	L1848	I1782	I1724	S1592	S1592	L1468
GLU	TRP	LEU	THR	ARG	LEU	LEU	S2098	G2037	K1916	T1849	D1784	I1724	G1594	G1594	L1483
GLU	TRP	LEU	THR	ARG	ARG	LEU	P2099	L2038	P1917	G1850	I1785	G1725	T1596	T1596	L1484
GLU	TRP	LEU	THR	ARG	LEU	LEU	I2100	P2039	P1918	A1851	I1786	L1726	Y1597	Y1597	L1488
GLU	TRP	LEU	THR	ARG	LEU	LEU	N2101	L2040	I1919	G1852	E1787	A1727	I1598	I1598	L1489
GLU	TRP	LEU	THR	ARG	LEU	LEU	P2102	M2041	G1980	A1853	G1787	E1728	Y1597	Y1597	L1490
GLU	TRP	LEU	THR	ARG	GLU	GLU	R2103	V2042	D1920	L1854	K1788	I1729	I1598	I1598	L1491
GLU	TRP	LEU	THR	ARG	ASN	ASN	I1981	F1982	R1921	M1855	E1789	I1730	Y1599	Y1599	L1487
GLU	TRP	LEU	THR	ARG	VAL	VAL	M2105	F2043	I1922	K1856	I1790	R1731	D1600	D1600	L1487
GLU	TRP	LEU	THR	ARG	LYS	LYS	E2106	A2044	I1923	L1858	G1791	H1732	I1601	I1601	L1488
GLU	TRP	LEU	THR	ARG	LYS	LYS	L2107	M2045	E1924	L1859	I1792	M1733	P1602	P1602	L1489
GLU	TRP	LEU	THR	ARG	LYS	LYS	M2108	W2046	F1925	G1859	G1793	F1734	E1603	E1603	L1490
GLU	TRP	LEU	THR	ARG	ILE	ILE	Y2107	R2047	V1926	R1860	P1794	H1735	M1604	M1604	L1491
GLU	TRP	LEU	THR	ARG	CYS	CYS	A2108	A1987	P1927	E1861	E1795	V1736	F1605	F1605	L1492
GLU	TRP	LEU	THR	ARG	ASN	ALA	D2110	F2049	T1928	V1862	N1796	A1737	R1606	R1606	L1492
GLU	TRP	LEU	THR	ARG	ASN	ILE	S2050	S2050	K1929	Y1863	L1797	M1738	P1672	P1672	L1492
GLU	TRP	LEU	THR	ARG	PRO	PRO	G2051	G2051	T1990	T1864	R1798	M1738	I1609	I1609	L1518
GLU	TRP	LEU	THR	ARG	PRO	ILE	G2052	G2052	R1991	S1865	G1799	V1739	L1610	L1610	L1518
GLU	TRP	LEU	THR	ARG	THR	THR	M2053	M2053	P1931	S1866	G1799	D1740	K1611	K1611	L1518
GLU	TRP	LEU	THR	ARG	THR	THR	G2054	G2054	Y1932	M1866	S1800	D1740	PRO	PRO	L1518
GLU	TRP	LEU	THR	ARG	THR	THR	VAL	VAL	P1933	M1867	P1794	P1741	THR	THR	L1518
GLU	TRP	LEU	THR	ARG	THR	THR	LEU	LEU	P1934	Q1868	M1802	E1742	GLY	GLY	L1518
GLU	TRP	LEU	THR	ARG	THR	THR	GLU	GLU	R1935	L1869	M1803	D1743	LYS	LYS	L1518
GLU	TRP	LEU	THR	ARG	THR	THR	GLU	GLU	W1936	Q1873	I1803	P1744	A1525	A1525	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	PRO	PRO	M1937	I1874	A1804	P1744	R1518	R1518	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	LEU	LEU	L1938	M1875	G1805	K1746	LEU	LEU	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	VAL	VAL	A1939	H1876	G1805	K1746	L1530	L1530	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	GLU	GLU	G1940	M1877	S1808	G1747	D1541	D1541	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	LEU	LEU	R1941	L1878	L1809	Y1748	T1549	T1549	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	LEU	LEU	A2001	G1879	A1810	Y1750	D1550	D1550	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	LEU	LEU	M2003	V1880	I1811	Y1752	S1551	S1551	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	ARG	ARG	H1943	M1880	E1813	Y1752	R1552	R1552	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	ARG	ARG	P1944	T1884	I1814	L1753	A1554	A1554	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	LYS	LYS	T1945	V1885	I1814	L1754	A1554	A1554	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	ASP	ASP	Q1946	C1886	I1817	T1754	P1555	P1555	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	VAL	VAL	K1947	D1887	S1818	P1755	P1626	P1626	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	G1948	D1888	L1819	Q1756	P1626	P1626	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1949	O1889	V1820	Q1756	L1627	L1627	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	ARG	ARG	W1950	G1891	V1820	Q1756	P1628	P1628	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	ARG	ARG	L1951	V1892	R1823	Y1758	F1562	F1562	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	VAL	VAL	S1952	F1893	K1759	Y1758	D1563	D1563	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	ASP	ASP	G1953	T1894	R1701	Y1758	M1631	M1631	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	PRO	PRO	F1954	L1895	A1702	S1703	L1632	L1632	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	VAL	VAL	F1955	L1896	I1702	S1703	T1632	T1632	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	TYR	TYR	D1956	S1900	E1704	S1703	L1632	L1632	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	ILE	ILE	Y1957	Y1901	L1705	S1703	T1633	T1633	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	LEU	LEU	G1958	M1902	L1705	S1703	L1633	L1633	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	ALA	ALA	F1959	L1903	A1706	S1703	Y1634	Y1634	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	LEU	LEU	S1959	K1904	R1707	S1703	T1635	T1635	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	F1960	S1905	A1708	S1703	E1636	E1636	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	S1961	V1906	CI769	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	E1962	H1907	CI769	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	I1963	S1908	E1770	S1703	Y1634	Y1634	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	M1964	H1907	HI771	S1703	T1635	T1635	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1965	S1908	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	P1966	H1907	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	A1968	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	A1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	A1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	A1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	A1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	A1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	A1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	A1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	A1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	A1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	A1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	A1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	A1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	A1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	A1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	A1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	A1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	A1969	S1909	HI771	S1703	L1637	L1637	L1522
GLU	TRP	LEU	THR	ARG	THR	THR	THR	THR	Q1969	S1909	HI771	S1703	L1		

## 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 (Å)	525.72235, 525.72235, 525.72235	wwPDB
Map dimensions	488, 488, 488	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.0773, 1.0773, 1.0773	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: 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.

All (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
1	B	1140	HIS	Peptide

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Mol	Chain	Res	Type	Group
1	B	1141	SER	Peptide
1	B	1241	THR	Peptide
1	B	1242	PHE	Peptide
1	B	1687	ARG	Peptide
1	C	1140	HIS	Peptide
1	C	1141	SER	Peptide
1	C	1241	THR	Peptide
1	C	1242	PHE	Peptide
1	C	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.

All (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
1:A:2049:PHE:HB2	1:B:1848:LEU:HD13	1.57	0.86
1:A:1830:TYR:OH	1:B:2049:PHE:CD1	2.27	0.86
1:D:2049:PHE:HB2	1:C:1848:LEU:HD13	1.57	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1732:HIS:O	1:B:2139:ARG:CZ	2.25	0.84
1:B:933:LEU:CD2	1:C:1121:GLN:HG2	2.08	0.84
2:A:2502:ACO:HH32	1:B:1826:GLY:HA3	1.58	0.84
1:B:933:LEU:HD21	1:C:1121:GLN:CG	2.12	0.80
1:D:2117:VAL:HG11	2:C:2501:ACO:H32	1.64	0.79
1:B:1124:ILE:HD13	1:B:1155:ARG:HD3	1.62	0.79
1:A:1784:ASP:OD2	1:B:2192:THR:HG21	1.84	0.76
2:A:2501:ACO:H4B	2:A:2501:ACO:O7A	1.85	0.76
1:A:1723:ARG:HD2	1:A:1791:GLY:O	1.86	0.75
1:C:1826:GLY:HA3	2:C:2501:ACO:HH32	1.67	0.75
1:D:2117:VAL:CG1	2:C:2501:ACO:H32	2.16	0.74
1:B:1168:HIS:CE1	1:C:932:VAL:HG22	2.23	0.74
1:A:1362:ASP:OD2	1:A:1363:LYS:NZ	2.21	0.74
1:B:1362:ASP:OD2	1:B:1363:LYS:NZ	2.21	0.73
1:B:933:LEU:HD21	1:C:1121:GLN:HG2	1.70	0.73
1:A:2056:MET:HB3	1:B:1874:ILE:HG21	1.70	0.73
1:B:933:LEU:CD2	1:C:1121:GLN:CG	2.66	0.73
1:D:1875:MET:HE3	1:C:2056:MET:CE	2.18	0.73
2:A:2501:ACO:H72	2:A:2501:ACO:H62A	1.54	0.72
1:C:1362:ASP:OD2	1:C:1363:LYS:NZ	2.21	0.72
1:C:1722:ALA:H	2:C:2501:ACO:HH33	1.54	0.72
1:B:1771:HIS:HE2	1:B:1778:SER:HG	1.36	0.72
1:C:1867:ASN:O	1:C:1873:GLN:NE2	2.23	0.72
1:B:1867:ASN:O	1:B:1873:GLN:NE2	2.23	0.72
1:D:2056:MET:HB3	1:C:1874:ILE:HG21	1.70	0.72
1:B:1166:VAL:O	1:C:928:ASN:CG	2.29	0.72
1:A:1867:ASN:O	1:A:1873:GLN:NE2	2.23	0.71
1:D:1867:ASN:O	1:D:1873:GLN:NE2	2.23	0.71
1:A:1721:GLY:HA3	2:A:2501:ACO:H22	1.72	0.71
1:A:1875:MET:HE3	1:B:2056:MET:HE2	1.72	0.71
1:D:1875:MET:HE3	1:C:2056:MET:HE2	1.73	0.71
1:B:932:VAL:HG22	1:C:1151:GLU:OE1	1.93	0.69
1:D:1800:SER:HB2	1:C:2094:VAL:HG12	1.74	0.69
1:A:1057:ASP:O	1:A:1061:ASN:ND2	2.26	0.69
1:D:1830:TYR:OH	1:C:2049:PHE:CG	2.46	0.68
1:B:933:LEU:HD23	1:C:1121:GLN:HG2	1.75	0.68
1:B:1057:ASP:O	1:B:1061:ASN:ND2	2.26	0.68
1:A:2056:MET:HG3	1:B:1869:LEU:O	1.94	0.68
1:A:1830:TYR:OH	1:B:2049:PHE:CG	2.46	0.68
1:B:1168:HIS:HB2	1:C:930:THR:O	1.93	0.68
1:C:1057:ASP:O	1:C:1061:ASN:ND2	2.26	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1800:SER:HB2	1:B:2094:VAL:HG12	1.75	0.67
1:A:1316:LYS:NZ	1:A:1365:GLU:OE2	2.28	0.67
1:D:2056:MET:HG3	1:C:1869:LEU:O	1.94	0.67
1:A:2052:GLY:CA	1:B:1863:TYR:OH	2.43	0.67
1:D:2052:GLY:CA	1:C:1863:TYR:OH	2.43	0.67
1:B:1316:LYS:NZ	1:B:1365:GLU:OE2	2.28	0.66
1:C:1316:LYS:NZ	1:C:1365:GLU:OE2	2.28	0.66
1:A:2317:ASP:CB	1:B:2301:LEU:HD11	2.25	0.66
1:A:1875:MET:HE3	1:B:2056:MET:CE	2.25	0.66
1:A:2049:PHE:HB2	1:B:1848:LEU:CD1	2.25	0.66
1:C:1990:THR:HG22	1:C:2016:GLN:CG	2.26	0.66
1:D:2049:PHE:HB2	1:C:1848:LEU:CD1	2.25	0.66
1:B:1094:GLU:OE2	1:C:1106:SER:HB3	1.95	0.65
1:A:2118:LEU:HD12	1:B:1724:ILE:HD13	1.77	0.65
1:A:2117:VAL:HG12	2:A:2502:ACO:H32	1.79	0.65
1:A:1352:PHE:O	1:A:1354:LYS:NZ	2.29	0.65
1:D:1990:THR:HG22	1:D:2016:GLN:CG	2.26	0.65
1:B:1147:MET:HB3	1:B:1168:HIS:ND1	2.11	0.65
1:A:1990:THR:HG22	1:A:2016:GLN:CG	2.26	0.65
1:A:2317:ASP:HB2	1:B:2301:LEU:CD1	2.27	0.64
1:B:1147:MET:HB3	1:B:1168:HIS:CE1	2.32	0.64
1:B:1990:THR:HG22	1:B:2016:GLN:CG	2.26	0.64
1:D:2061:LEU:HD12	1:C:1875:MET:CE	2.27	0.64
1:B:1743:ASP:OD2	1:B:1746:LYS:NZ	2.31	0.64
1:A:1743:ASP:OD2	1:A:1746:LYS:NZ	2.31	0.63
1:A:2061:LEU:HD12	1:B:1875:MET:CE	2.27	0.63
1:A:1878:ASN:ND2	1:B:2056:MET:O	2.32	0.63
1:D:1878:ASN:ND2	1:C:2056:MET:O	2.32	0.63
1:C:1743:ASP:OD2	1:C:1746:LYS:NZ	2.31	0.63
1:A:1782:ILE:CG2	1:B:2189:LEU:HD13	2.29	0.63
1:B:1113:HIS:HE1	1:C:1052:ASP:OD1	1.81	0.63
1:C:1771:HIS:HE2	1:C:1778:SER:HG	1.36	0.63
1:D:2062:LYS:NZ	1:C:1878:ASN:O	2.23	0.63
1:B:1352:PHE:O	1:B:1354:LYS:NZ	2.29	0.62
1:B:2175:LEU:O	1:B:2176:ILE:C	2.34	0.62
1:A:2056:MET:CB	1:B:1869:LEU:O	2.48	0.62
1:A:1771:HIS:HE2	1:A:1778:SER:HG	1.36	0.62
1:A:2313:GLU:N	1:A:2313:GLU:OE1	2.33	0.61
1:A:2061:LEU:HD12	1:B:1875:MET:HE1	1.82	0.61
1:B:933:LEU:HD21	1:C:1121:GLN:HG3	1.79	0.61
1:B:2313:GLU:OE1	1:B:2313:GLU:N	2.33	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:2056:MET:CB	1:C:1869:LEU:O	2.48	0.61
1:D:2052:GLY:HA2	1:C:1863:TYR:OH	2.01	0.61
1:A:1825:ILE:HG21	2:A:2501:ACO:O5P	2.00	0.61
1:D:2313:GLU:OE1	1:D:2313:GLU:N	2.33	0.61
1:A:2052:GLY:HA2	1:B:1863:TYR:OH	2.01	0.61
1:A:1782:ILE:HG21	1:B:2189:LEU:HD13	1.83	0.61
1:C:1352:PHE:O	1:C:1354:LYS:NZ	2.29	0.61
1:A:2057:TYR:OH	1:B:1997:ILE:HD13	2.01	0.60
1:D:2057:TYR:OH	1:C:1997:ILE:HD13	2.01	0.60
1:B:1166:VAL:N	1:C:928:ASN:HD21	1.99	0.60
1:A:2049:PHE:CB	1:B:1848:LEU:HD13	2.32	0.59
1:A:1785:ILE:O	1:B:2190:HIS:HB3	2.01	0.59
1:A:2117:VAL:HG12	1:A:2117:VAL:O	2.02	0.59
1:A:1182:PHE:O	1:A:1231:GLN:NE2	2.36	0.59
2:A:2502:ACO:O9P	2:A:2502:ACO:H122	2.01	0.59
1:B:1151:GLU:O	1:B:1155:ARG:HG3	2.03	0.59
2:C:2501:ACO:O9P	2:C:2501:ACO:H122	2.01	0.59
1:A:2174:PHE:O	1:B:1745:TYR:OH	2.21	0.59
1:A:2056:MET:HB3	1:B:1869:LEU:O	2.03	0.59
1:D:2056:MET:HB3	1:C:1869:LEU:O	2.03	0.59
1:C:1182:PHE:O	1:C:1231:GLN:NE2	2.36	0.59
1:A:2334:VAL:HG21	1:B:2319:ILE:HD13	1.85	0.59
1:B:1182:PHE:O	1:B:1231:GLN:NE2	2.36	0.59
1:B:2175:LEU:O	1:B:2177:PRO:N	2.35	0.59
1:A:1605:PHE:CZ	1:A:1896:LEU:HD21	2.38	0.59
1:A:2052:GLY:HA3	1:B:1863:TYR:OH	2.04	0.58
1:B:1166:VAL:O	1:C:928:ASN:HA	2.02	0.58
1:B:1605:PHE:CZ	1:B:1896:LEU:HD21	2.38	0.58
1:B:932:VAL:HG22	1:C:1151:GLU:CD	2.24	0.58
1:A:1731:ARG:O	1:B:2139:ARG:NH2	2.36	0.58
2:A:2502:ACO:H61	2:A:2502:ACO:H62A	1.67	0.58
2:C:2501:ACO:H3B	2:C:2501:ACO:P1A	2.43	0.58
1:A:1374:GLU:N	1:A:1374:GLU:OE1	2.37	0.58
1:D:2052:GLY:HA2	1:C:1863:TYR:CZ	2.39	0.58
1:D:2174:PHE:O	1:C:1745:TYR:OH	2.21	0.58
1:B:1374:GLU:N	1:B:1374:GLU:OE1	2.37	0.58
1:D:1875:MET:CE	1:C:2056:MET:CE	2.82	0.58
1:C:1605:PHE:CZ	1:C:1896:LEU:HD21	2.38	0.58
1:A:2052:GLY:HA2	1:B:1863:TYR:CZ	2.39	0.58
1:A:2057:TYR:OH	1:B:1997:ILE:CD1	2.52	0.58
1:A:1732:HIS:O	1:B:2139:ARG:NH1	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2062:LYS:NZ	1:B:1878:ASN:O	2.23	0.57
1:B:1167:GLN:HB2	1:C:927:SER:O	2.04	0.57
1:A:1875:MET:CE	1:B:2056:MET:CE	2.82	0.57
2:A:2502:ACO:P1A	2:A:2502:ACO:H3B	2.44	0.57
1:D:2052:GLY:HA3	1:C:1863:TYR:OH	2.04	0.57
1:D:1891:GLY:O	1:D:1895:VAL:HG23	2.04	0.57
1:C:1891:GLY:O	1:C:1895:VAL:HG23	2.04	0.57
1:D:2057:TYR:OH	1:C:1997:ILE:CD1	2.52	0.57
1:A:1891:GLY:O	1:A:1895:VAL:HG23	2.04	0.56
1:B:1166:VAL:H	1:C:928:ASN:ND2	2.02	0.56
1:C:1374:GLU:OE1	1:C:1374:GLU:N	2.37	0.56
1:B:1891:GLY:O	1:B:1895:VAL:HG23	2.04	0.56
1:B:2221:ARG:NH1	1:B:2264:TRP:O	2.39	0.56
1:A:2317:ASP:HB2	1:B:2301:LEU:HD11	1.86	0.56
1:B:2174:PHE:O	1:B:2175:LEU:HB2	2.05	0.56
1:A:2117:VAL:HG12	2:A:2502:ACO:C3P	2.36	0.56
1:D:1888:ASP:OD1	1:D:1888:ASP:N	2.39	0.56
1:D:2049:PHE:CB	1:C:1848:LEU:HD13	2.32	0.56
2:C:2501:ACO:O5P	2:C:2501:ACO:H21	2.05	0.56
1:A:2221:ARG:NH1	1:A:2264:TRP:O	2.39	0.56
1:C:1888:ASP:N	1:C:1888:ASP:OD1	2.39	0.56
1:D:2221:ARG:NH1	1:D:2264:TRP:O	2.39	0.55
1:A:2056:MET:CG	1:B:1869:LEU:O	2.55	0.55
1:A:1823:ARG:NH1	2:A:2501:ACO:CDP	2.70	0.55
1:A:2056:MET:CB	1:B:1874:ILE:HG21	2.36	0.55
1:D:2056:MET:CB	1:C:1874:ILE:HG21	2.36	0.55
1:A:1888:ASP:OD1	1:A:1888:ASP:N	2.39	0.55
1:C:1037:LYS:O	1:C:1041:VAL:HG23	2.07	0.54
1:B:1037:LYS:O	1:B:1041:VAL:HG23	2.07	0.54
1:A:1293:ILE:HD12	1:A:1329:PHE:CE1	2.43	0.54
1:D:2056:MET:CG	1:C:1869:LEU:O	2.55	0.54
1:C:1619:GLN:O	1:C:1916:LYS:N	2.38	0.54
1:A:1037:LYS:O	1:A:1041:VAL:HG23	2.07	0.54
1:B:1293:ILE:HD12	1:B:1329:PHE:CE1	2.43	0.54
2:A:2501:ACO:HN4	2:A:2501:ACO:H61A	1.55	0.54
2:C:2501:ACO:H61	2:C:2501:ACO:H62A	1.73	0.54
1:D:1875:MET:CE	1:C:2056:MET:HE3	2.38	0.54
1:B:1888:ASP:N	1:B:1888:ASP:OD1	2.39	0.53
1:C:1293:ILE:HD12	1:C:1329:PHE:CE1	2.43	0.53
1:B:1619:GLN:O	1:B:1916:LYS:N	2.38	0.53
1:C:1917:ASP:OD2	1:C:1921:ARG:NH2	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1745:TYR:HE1	1:B:2175:LEU:HD23	1.73	0.53
1:D:1834:LEU:HD23	1:C:2065:ALA:HB1	1.90	0.53
1:A:2087:GLU:HG3	1:A:2089:ARG:HE	1.72	0.53
1:B:1841:VAL:O	1:B:1844:SER:OG	2.20	0.53
1:D:2061:LEU:HD12	1:C:1875:MET:HE1	1.89	0.53
1:C:989:ASP:OD1	1:C:992:ARG:NH2	2.42	0.53
1:A:1875:MET:CE	1:B:2056:MET:HE3	2.39	0.52
1:B:1165:SER:CA	1:C:928:ASN:HD21	2.22	0.52
1:D:1990:THR:HG22	1:D:2016:GLN:HG3	1.91	0.52
1:A:2093:TRP:CD2	1:B:1797:LEU:HD13	2.45	0.52
1:A:989:ASP:OD1	1:A:992:ARG:NH2	2.42	0.52
1:D:2093:TRP:CD2	1:C:1797:LEU:HD13	2.45	0.52
1:A:1823:ARG:NH1	2:A:2501:ACO:H133	2.25	0.52
1:A:1834:LEU:HD23	1:B:2065:ALA:HB1	1.90	0.52
1:B:933:LEU:CD2	1:C:1121:GLN:HG3	2.39	0.52
1:B:1990:THR:HG22	1:B:2016:GLN:HG3	1.91	0.52
1:D:1917:ASP:OD2	1:D:1921:ARG:NH2	2.42	0.52
1:D:2120:PRO:O	1:D:2124:VAL:HG23	2.10	0.52
1:A:1990:THR:HG22	1:A:2016:GLN:HG3	1.91	0.51
1:A:2335:ILE:O	1:B:2331:ARG:NH2	2.43	0.51
1:B:989:ASP:OD1	1:B:992:ARG:NH2	2.42	0.51
1:A:1619:GLN:O	1:A:1916:LYS:N	2.38	0.51
1:A:1917:ASP:OD2	1:A:1921:ARG:NH2	2.42	0.51
1:C:1990:THR:HG22	1:C:2016:GLN:HG3	1.91	0.51
1:A:1732:HIS:HA	1:B:2139:ARG:NH2	2.25	0.51
1:B:1165:SER:HA	1:C:928:ASN:HD21	1.76	0.51
1:A:2120:PRO:O	1:A:2124:VAL:HG23	2.10	0.51
2:A:2501:ACO:H8A	2:A:2501:ACO:O5B	2.11	0.51
1:B:1166:VAL:N	1:C:928:ASN:ND2	2.58	0.51
1:A:1362:ASP:OD1	1:A:1362:ASP:N	2.44	0.51
1:A:1724:ILE:HG12	2:A:2501:ACO:C2A	2.41	0.51
2:A:2501:ACO:H121	2:A:2501:ACO:O9P	2.11	0.51
1:B:1917:ASP:OD2	1:B:1921:ARG:NH2	2.42	0.51
1:B:2120:PRO:O	1:B:2124:VAL:HG23	2.10	0.51
1:A:1440:GLU:O	1:A:1444:ASN:ND2	2.44	0.51
1:A:2334:VAL:CG1	1:B:2319:ILE:HG21	2.41	0.51
1:C:709:LEU:HD21	1:C:715:LEU:HB2	1.93	0.51
1:C:1362:ASP:N	1:C:1362:ASP:OD1	2.44	0.50
1:C:1440:GLU:O	1:C:1444:ASN:ND2	2.44	0.50
1:A:1784:ASP:OD2	1:B:2192:THR:CG2	2.55	0.50
1:A:1875:MET:CE	1:B:2056:MET:HE2	2.39	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2317:ASP:HB3	1:B:2301:LEU:HD21	1.93	0.50
1:B:1362:ASP:OD1	1:B:1362:ASP:N	2.44	0.50
1:A:709:LEU:HD21	1:A:715:LEU:HB2	1.93	0.50
1:A:1823:ARG:CZ	2:A:2501:ACO:CDP	2.89	0.50
2:A:2501:ACO:HN8	1:B:2126:ILE:HD11	1.77	0.50
1:A:1785:ILE:HD12	1:B:2189:LEU:CB	2.42	0.50
2:A:2501:ACO:O5P	2:A:2501:ACO:H21	2.11	0.50
1:A:1738:TRP:CZ3	1:B:2178:ILE:HG21	2.47	0.49
1:A:1771:HIS:NE2	1:A:1778:SER:OG	2.29	0.49
1:A:1823:ARG:CZ	2:A:2501:ACO:H131	2.42	0.49
1:B:1094:GLU:OE2	1:C:1106:SER:CB	2.59	0.49
1:B:709:LEU:HD21	1:B:715:LEU:HB2	1.93	0.49
1:B:1128:THR:OG1	1:B:1430:SER:N	2.46	0.49
1:D:1875:MET:HE3	1:C:2056:MET:HE3	1.93	0.49
1:C:1421:PHE:CD1	1:C:1468:THR:HG21	2.47	0.49
1:A:1738:TRP:HZ3	1:B:2178:ILE:HG21	1.77	0.49
1:A:1421:PHE:CD1	1:A:1468:THR:HG21	2.47	0.49
1:A:1627:LEU:O	1:A:1631:MET:N	2.44	0.49
1:A:2072:ARG:NE	1:B:1808:SER:OG	2.45	0.49
1:B:1421:PHE:CD1	1:B:1468:THR:HG21	2.47	0.49
1:B:1541:ASP:OD1	1:B:1564:LYS:NZ	2.41	0.49
1:D:1878:ASN:HB2	1:C:2057:TYR:O	2.13	0.49
1:A:1878:ASN:HB2	1:B:2057:TYR:O	2.13	0.49
1:A:2016:GLN:HB3	1:A:2047:ARG:HD3	1.95	0.49
1:A:1488:ILE:HG22	1:A:1530:LEU:HD21	1.95	0.49
1:A:2317:ASP:HB2	1:B:2301:LEU:HD13	1.92	0.49
1:B:1440:GLU:O	1:B:1444:ASN:ND2	2.44	0.49
1:B:1919:ILE:HD13	1:B:2216:TYR:CE2	2.48	0.49
1:C:1128:THR:OG1	1:C:1430:SER:N	2.46	0.49
1:A:1875:MET:HE1	1:B:2056:MET:HE3	1.95	0.49
1:B:1939:ALA:O	1:B:1950:TRP:NE1	2.43	0.49
1:D:1939:ALA:O	1:D:1950:TRP:NE1	2.43	0.49
1:D:2072:ARG:NE	1:C:1808:SER:OG	2.45	0.49
1:C:1541:ASP:OD1	1:C:1564:LYS:NZ	2.41	0.48
1:A:1128:THR:OG1	1:A:1430:SER:N	2.46	0.48
1:B:1488:ILE:HG22	1:B:1530:LEU:HD21	1.95	0.48
1:D:1875:MET:CE	1:C:2056:MET:HE2	2.41	0.48
1:A:1919:ILE:HD13	1:A:2216:TYR:CE2	2.48	0.48
1:D:1919:ILE:HD13	1:D:2216:TYR:CE2	2.48	0.48
1:C:1627:LEU:O	1:C:1631:MET:N	2.43	0.48
2:C:2501:ACO:O9P	2:C:2501:ACO:H143	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:2501:ACO:H4B	2:C:2501:ACO:O7A	2.13	0.48
2:A:2501:ACO:O9P	2:A:2501:ACO:H143	2.14	0.48
1:D:1841:VAL:O	1:D:1844:SER:OG	2.20	0.48
1:C:1488:ILE:HG22	1:C:1530:LEU:HD21	1.95	0.48
1:C:1939:ALA:O	1:C:1950:TRP:NE1	2.43	0.48
2:A:2501:ACO:H61	1:B:2118:LEU:HD11	1.96	0.47
1:B:1166:VAL:H	1:C:928:ASN:CG	2.17	0.47
2:A:2502:ACO:H61	2:A:2502:ACO:N6A	2.29	0.47
1:B:2171:ARG:CZ	1:B:2175:LEU:HD11	2.44	0.47
1:A:1825:ILE:CG2	2:A:2501:ACO:O5P	2.61	0.47
2:A:2502:ACO:O9P	2:A:2502:ACO:H143	2.14	0.47
2:A:2502:ACO:H4B	2:A:2502:ACO:O7A	2.14	0.47
1:B:1627:LEU:O	1:B:1631:MET:N	2.44	0.47
1:A:2304:ILE:HG23	1:B:2304:ILE:HG23	1.96	0.47
2:A:2501:ACO:H72	2:A:2501:ACO:N6A	2.25	0.47
1:A:2322:MET:HG2	1:B:2308:VAL:HG11	1.96	0.47
1:A:1726:LEU:CD2	1:B:2190:HIS:NE2	2.78	0.47
1:A:1800:SER:CB	1:B:2094:VAL:HG12	2.45	0.47
1:D:1797:LEU:HD13	1:C:2093:TRP:CD1	2.50	0.46
1:C:1293:ILE:HD12	1:C:1329:PHE:HE1	1.79	0.46
1:B:1293:ILE:HD12	1:B:1329:PHE:HE1	1.79	0.46
1:A:1243:GLU:N	1:A:1243:GLU:OE1	2.49	0.46
1:A:2117:VAL:HG22	1:B:1797:LEU:HD21	1.96	0.46
2:A:2501:ACO:H2B	1:B:2126:ILE:CG2	2.46	0.46
1:B:1083:GLN:O	1:B:1087:ALA:N	2.49	0.46
1:C:1243:GLU:N	1:C:1243:GLU:OE1	2.49	0.46
1:A:1797:LEU:HD13	1:B:2093:TRP:CD1	2.50	0.46
1:D:1808:SER:O	1:D:1812:ASN:ND2	2.49	0.46
1:A:1745:TYR:CE1	1:B:2175:LEU:HD23	2.51	0.46
1:A:2110:ASP:OD1	1:A:2111:ARG:N	2.49	0.46
1:A:1782:ILE:HG22	1:B:2189:LEU:HD13	1.98	0.46
1:B:1993:VAL:HG23	1:B:2013:GLN:HB2	1.98	0.46
1:A:2049:PHE:CD1	1:B:1830:TYR:OH	2.69	0.46
1:B:1243:GLU:OE1	1:B:1243:GLU:N	2.49	0.46
1:A:1385:ARG:NH1	1:A:1512:GLU:OE1	2.49	0.45
1:A:2335:ILE:HG23	1:B:2335:ILE:HG12	1.99	0.45
1:D:2049:PHE:CD1	1:C:1830:TYR:OH	2.69	0.45
1:A:664:HIS:O	1:A:667:LEU:HD21	2.16	0.45
1:B:1151:GLU:OE2	1:C:933:LEU:HB2	2.16	0.45
1:A:2317:ASP:CB	1:B:2301:LEU:CD1	2.91	0.45
1:D:2049:PHE:CE1	1:C:1830:TYR:OH	2.67	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1385:ARG:NH1	1:C:1512:GLU:OE1	2.49	0.45
1:A:1993:VAL:HG23	1:A:2013:GLN:HB2	1.98	0.45
1:A:2317:ASP:HB3	1:B:2301:LEU:HD11	1.99	0.45
1:D:2049:PHE:CB	1:C:1848:LEU:CD1	2.94	0.45
1:C:1841:VAL:O	1:C:1844:SER:OG	2.20	0.45
1:B:2110:ASP:OD1	1:B:2111:ARG:N	2.49	0.45
1:D:2110:ASP:OD1	1:D:2111:ARG:N	2.49	0.45
1:C:664:HIS:O	1:C:667:LEU:HD21	2.16	0.45
1:D:2053:MET:SD	1:C:2001:PRO:HD3	2.57	0.45
1:D:2190:HIS:CE1	1:C:1726:LEU:CD2	3.00	0.45
1:A:1541:ASP:OD1	1:A:1564:LYS:NZ	2.42	0.45
1:A:1720:SER:O	2:A:2501:ACO:N6A	2.50	0.45
1:A:2053:MET:SD	1:B:2001:PRO:HD3	2.57	0.45
1:B:664:HIS:O	1:B:667:LEU:HD21	2.16	0.45
1:D:1993:VAL:HG23	1:D:2013:GLN:HB2	1.98	0.45
1:A:1939:ALA:O	1:A:1950:TRP:NE1	2.43	0.44
1:A:2175:LEU:HD23	1:B:1745:TYR:HE1	1.82	0.44
1:A:1605:PHE:CZ	1:A:1677:ILE:HD11	2.53	0.44
1:B:1166:VAL:H	1:C:928:ASN:HD21	1.56	0.44
1:D:2123:THR:HG23	1:C:1724:ILE:HD12	1.99	0.44
1:C:1990:THR:HG22	1:C:2016:GLN:HG2	2.00	0.44
1:C:1993:VAL:HG23	1:C:2013:GLN:HB2	1.98	0.44
2:A:2502:ACO:O5P	2:A:2502:ACO:H21	2.18	0.44
1:B:1385:ARG:NH1	1:B:1512:GLU:OE1	2.49	0.44
1:D:2175:LEU:HD23	1:C:1745:TYR:HE1	1.82	0.44
1:A:1083:GLN:O	1:A:1087:ALA:N	2.49	0.44
1:A:1293:ILE:HD12	1:A:1329:PHE:HE1	1.79	0.44
1:B:1113:HIS:CE1	1:C:1052:ASP:OD1	2.65	0.44
1:B:1605:PHE:CZ	1:B:1677:ILE:HD11	2.52	0.44
1:A:2123:THR:HG23	1:B:1724:ILE:HD12	1.99	0.44
1:B:932:VAL:CG2	1:C:1151:GLU:CD	2.85	0.44
1:B:1168:HIS:HE1	1:C:932:VAL:HG22	1.78	0.44
1:A:1841:VAL:O	1:A:1844:SER:OG	2.20	0.44
1:C:1083:GLN:O	1:C:1087:ALA:N	2.49	0.44
1:C:848:LYS:O	1:C:897:LEU:HD13	2.18	0.43
1:C:1605:PHE:CZ	1:C:1677:ILE:HD11	2.52	0.43
1:A:924:GLN:O	1:A:928:ASN:ND2	2.52	0.43
1:B:848:LYS:O	1:B:897:LEU:HD13	2.17	0.43
1:A:848:LYS:O	1:A:897:LEU:HD13	2.18	0.43
1:A:1808:SER:O	1:A:1812:ASN:ND2	2.49	0.43
1:D:1858:LEU:HD13	1:D:1862:VAL:HG21	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1589:GLN:O	1:C:1592:SER:OG	2.35	0.43
1:B:2173:GLU:OE1	1:B:2173:GLU:HA	2.18	0.43
1:B:1990:THR:HG22	1:B:2016:GLN:HG2	2.00	0.43
1:A:2099:SER:OG	1:B:1798:ARG:HD3	2.18	0.43
1:D:2099:SER:OG	1:C:1798:ARG:HD3	2.18	0.43
1:D:2117:VAL:HG13	2:C:2501:ACO:S1P	2.59	0.43
1:A:2322:MET:CE	1:B:2322:MET:HE1	2.49	0.43
2:A:2501:ACO:H142	2:A:2501:ACO:O3A	2.19	0.43
1:B:924:GLN:O	1:B:928:ASN:ND2	2.52	0.43
1:A:1858:LEU:HD13	1:A:1862:VAL:HG21	2.01	0.43
1:A:2049:PHE:CE1	1:B:1830:TYR:OH	2.67	0.43
1:A:2322:MET:CE	1:B:2322:MET:CE	2.96	0.42
1:B:1858:LEU:HD13	1:B:1862:VAL:HG21	2.01	0.42
1:D:2054:LYS:HD2	1:C:2000:ASP:OD2	2.19	0.42
2:A:2502:ACO:H22	2:A:2502:ACO:HH33	1.68	0.42
1:A:1989:GLU:OE2	1:A:1991:ARG:NE	2.52	0.42
1:D:1830:TYR:CE2	1:D:1848:LEU:HD11	2.54	0.42
1:D:1990:THR:HG22	1:D:2016:GLN:HG2	2.00	0.42
1:A:2208:TRP:O	1:A:2211:SER:HB2	2.20	0.42
1:D:1797:LEU:HD13	1:C:2093:TRP:CG	2.55	0.42
1:A:1086:ILE:HG22	1:A:1444:ASN:OD1	2.20	0.42
1:A:2190:HIS:CE1	1:B:1726:LEU:CD2	3.00	0.42
1:C:1820:VAL:HG21	1:C:1846:LEU:HD21	2.02	0.42
1:A:1048:LEU:HD21	1:A:1059:LEU:CD2	2.50	0.42
1:B:1771:HIS:NE2	1:B:1778:SER:OG	2.29	0.42
1:C:1052:ASP:O	1:C:1054:THR:N	2.52	0.42
1:B:1820:VAL:HG21	1:B:1846:LEU:HD21	2.02	0.42
1:A:1052:ASP:O	1:A:1054:THR:N	2.52	0.42
1:B:1086:ILE:HG22	1:B:1444:ASN:OD1	2.20	0.42
1:B:2175:LEU:O	1:B:2178:ILE:N	2.50	0.42
1:D:1820:VAL:HG21	1:D:1846:LEU:HD21	2.02	0.42
1:C:1086:ILE:HG22	1:C:1444:ASN:OD1	2.20	0.42
1:C:1107:ALA:HB2	1:C:1116:CYS:HB2	2.02	0.42
1:A:2300:VAL:HG13	1:B:2307:LEU:HD22	2.01	0.41
1:D:2047:ARG:NE	1:D:2119:GLU:OE2	2.51	0.41
1:C:1048:LEU:HD21	1:C:1059:LEU:CD2	2.50	0.41
1:C:1600:ASP:N	1:C:1600:ASP:OD1	2.53	0.41
1:C:1808:SER:O	1:C:1812:ASN:ND2	2.53	0.41
1:A:1107:ALA:HB2	1:A:1116:CYS:HB2	2.02	0.41
1:B:994:TYR:CD1	1:B:1041:VAL:HG21	2.55	0.41
1:A:1726:LEU:HD23	1:B:2190:HIS:NE2	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1797:LEU:HD13	1:B:2093:TRP:CG	2.55	0.41
1:B:1048:LEU:HD21	1:B:1059:LEU:CD2	2.50	0.41
1:B:1107:ALA:HB2	1:B:1116:CYS:HB2	2.02	0.41
1:C:1858:LEU:HD13	1:C:1862:VAL:HG21	2.01	0.41
1:A:1785:ILE:HD12	1:B:2189:LEU:HB2	2.02	0.41
1:B:1589:GLN:O	1:B:1592:SER:OG	2.35	0.41
1:B:1600:ASP:OD1	1:B:1600:ASP:N	2.53	0.41
1:B:1989:GLU:OE2	1:B:1991:ARG:NE	2.52	0.41
1:D:2208:TRP:O	1:D:2211:SER:HB2	2.20	0.41
1:A:994:TYR:CD1	1:A:1041:VAL:HG21	2.55	0.41
1:B:1771:HIS:CE1	1:B:1778:SER:HG	2.37	0.41
1:B:2208:TRP:O	1:B:2211:SER:HB2	2.20	0.41
1:A:2054:LYS:HD2	1:B:2000:ASP:OD2	2.19	0.41
1:C:1771:HIS:NE2	1:C:1778:SER:OG	2.29	0.41
1:A:1785:ILE:HD12	1:B:2189:LEU:CD1	2.51	0.41
1:A:2049:PHE:CB	1:B:1848:LEU:CD1	2.94	0.41
1:B:1074:ASN:O	1:B:1077:VAL:HG22	2.21	0.41
1:D:1800:SER:CB	1:C:2094:VAL:HG12	2.45	0.41
1:D:2000:ASP:OD1	1:D:2000:ASP:N	2.54	0.41
1:A:1605:PHE:CE1	1:A:1896:LEU:HD21	2.56	0.41
1:B:1808:SER:O	1:B:1812:ASN:ND2	2.53	0.41
1:C:1074:ASN:O	1:C:1077:VAL:HG22	2.21	0.41
1:A:2087:GLU:O	1:A:2087:GLU:HG2	2.20	0.41
2:A:2501:ACO:H71	2:A:2501:ACO:H10	1.88	0.41
1:A:1724:ILE:HG12	2:A:2501:ACO:N1A	2.35	0.41
1:A:2118:LEU:CD1	1:B:1724:ILE:HD13	2.49	0.41
1:A:2314:VAL:HG12	1:B:2297:ARG:HG2	2.02	0.41
1:D:2190:HIS:NE2	1:C:1726:LEU:HD23	2.30	0.41
1:B:1919:ILE:HD13	1:B:2216:TYR:CD2	2.56	0.40
1:B:2000:ASP:OD1	1:B:2000:ASP:N	2.54	0.40
1:A:1820:VAL:HG21	1:A:1846:LEU:HD21	2.02	0.40
1:A:1785:ILE:O	1:B:2190:HIS:CB	2.67	0.40
1:A:1919:ILE:HD13	1:A:2216:TYR:CD2	2.56	0.40
1:B:1605:PHE:CE1	1:B:1896:LEU:HD21	2.56	0.40
1:D:1919:ILE:HD13	1:D:2216:TYR:CD2	2.56	0.40
1:D:2099:SER:OG	1:C:1798:ARG:CD	2.70	0.40
1:C:994:TYR:CD1	1:C:1041:VAL:HG21	2.56	0.40
1:A:1074:ASN:O	1:A:1077:VAL:HG22	2.21	0.40
1:B:1803:ILE:HD12	1:B:1831:LEU:HD11	2.04	0.40
1:A:1783:THR:O	1:B:2189:LEU:CD2	2.70	0.40
1:C:1901:TYR:O	1:C:2038:LEU:HD21	2.22	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	1515/2346 (65%)	1429 (94%)	83 (6%)	3 (0%)	44	63
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

All (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
1	B	1242	PHE
1	C	1242	PHE
1	B	2176	ILE

### 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

All (68) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	868	CYS
1	A	1581	ASP
1	A	1582	LEU
1	A	1688	ILE
1	A	1717	SER
1	A	1720	SER
1	A	1726	LEU
1	A	1731	ARG
1	A	1848	LEU
1	A	1888	ASP
1	A	1912	LEU
1	A	1962	GLU
1	A	2000	ASP
1	A	2024	PHE
1	A	2047	ARG
1	A	2099	SER
1	A	2118	LEU
1	A	2199	LYS
1	A	2213	THR
1	A	2248	LEU
1	A	2249	ARG
1	A	2316	MET
1	B	868	CYS
1	B	1165	SER
1	B	1581	ASP
1	B	1582	LEU
1	B	1688	ILE
1	B	1717	SER
1	B	1720	SER
1	B	1726	LEU
1	B	1731	ARG
1	B	1888	ASP
1	B	1912	LEU

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Mol	Chain	Res	Type
1	B	1962	GLU
1	B	2000	ASP
1	B	2024	PHE
1	B	2099	SER
1	B	2116	SER
1	B	2174	PHE
1	B	2199	LYS
1	B	2213	THR
1	B	2248	LEU
1	B	2249	ARG
1	B	2316	MET
1	D	1888	ASP
1	D	1912	LEU
1	D	1962	GLU
1	D	2000	ASP
1	D	2024	PHE
1	D	2099	SER
1	D	2199	LYS
1	D	2213	THR
1	D	2248	LEU
1	D	2249	ARG
1	D	2316	MET
1	C	868	CYS
1	C	1581	ASP
1	C	1582	LEU
1	C	1688	ILE
1	C	1717	SER
1	C	1720	SER
1	C	1726	LEU
1	C	1731	ARG
1	C	1888	ASP
1	C	1912	LEU
1	C	1962	GLU
1	C	2000	ASP
1	C	2024	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (11) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	928	ASN
1	A	1231	GLN
1	A	1946	GLN

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Mol	Chain	Res	Type
1	B	928	ASN
1	B	1113	HIS
1	B	1231	GLN
1	B	1946	GLN
1	D	1946	GLN
1	C	928	ASN
1	C	1231	GLN
1	C	1946	GLN

### 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

All (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
2	A	2502	ACO	N3A-C2A-N1A	-3.14	123.77	128.68
2	A	2501	ACO	C3B-C2B-C1B	2.88	106.27	99.89
2	A	2502	ACO	C3B-C2B-C1B	2.88	106.27	99.89
2	C	2501	ACO	C3B-C2B-C1B	2.88	106.27	99.89
2	A	2501	ACO	C4A-C5A-N7A	-2.72	106.56	109.40
2	A	2502	ACO	C4A-C5A-N7A	-2.70	106.59	109.40
2	C	2501	ACO	C4A-C5A-N7A	-2.69	106.60	109.40

There are no chirality outliers.

All (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
2	A	2501	ACO	O9P-C9P-N8P-C7P
2	A	2501	ACO	C6P-C5P-N4P-C3P

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Mol	Chain	Res	Type	Atoms
2	A	2502	ACO	C5B-O5B-P1A-O1A
2	A	2502	ACO	C5B-O5B-P1A-O2A
2	A	2502	ACO	CCP-O6A-P2A-O3A
2	A	2502	ACO	CCP-O6A-P2A-O4A
2	A	2502	ACO	O9P-C9P-CAP-CBP
2	A	2502	ACO	O9P-C9P-CAP-OAP
2	A	2502	ACO	N8P-C9P-CAP-OAP
2	A	2502	ACO	CAP-C9P-N8P-C7P
2	A	2502	ACO	C5P-C6P-C7P-N8P
2	A	2502	ACO	C2P-C3P-N4P-C5P
2	A	2502	ACO	O-C-S1P-C2P
2	A	2502	ACO	CH3-C-S1P-C2P
2	C	2501	ACO	C5B-O5B-P1A-O1A
2	C	2501	ACO	C5B-O5B-P1A-O2A
2	C	2501	ACO	CCP-O6A-P2A-O3A
2	C	2501	ACO	CCP-O6A-P2A-O4A
2	C	2501	ACO	O9P-C9P-CAP-CBP
2	C	2501	ACO	O9P-C9P-CAP-OAP
2	C	2501	ACO	N8P-C9P-CAP-OAP
2	C	2501	ACO	CAP-C9P-N8P-C7P
2	C	2501	ACO	C2P-C3P-N4P-C5P
2	C	2501	ACO	S1P-C2P-C3P-N4P
2	C	2501	ACO	O-C-S1P-C2P
2	C	2501	ACO	CH3-C-S1P-C2P
2	A	2501	ACO	O5P-C5P-N4P-C3P
2	A	2502	ACO	O9P-C9P-N8P-C7P
2	C	2501	ACO	O9P-C9P-N8P-C7P
2	A	2501	ACO	C4B-C3B-O3B-P3B
2	A	2502	ACO	C4B-C3B-O3B-P3B
2	C	2501	ACO	C4B-C3B-O3B-P3B
2	A	2502	ACO	C2B-C3B-O3B-P3B
2	C	2501	ACO	C2B-C3B-O3B-P3B
2	A	2501	ACO	S1P-C2P-C3P-N4P
2	A	2501	ACO	N8P-C9P-CAP-CBP
2	A	2502	ACO	N8P-C9P-CAP-CBP
2	C	2501	ACO	N8P-C9P-CAP-CBP
2	A	2501	ACO	C3P-C2P-S1P-C
2	A	2502	ACO	C4B-C5B-O5B-P1A
2	C	2501	ACO	C4B-C5B-O5B-P1A
2	C	2501	ACO	C5P-C6P-C7P-N8P
2	A	2501	ACO	C5B-O5B-P1A-O3A
2	A	2501	ACO	CCP-O6A-P2A-O3A

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Mol	Chain	Res	Type	Atoms
2	A	2501	ACO	C5B-O5B-P1A-O1A
2	A	2502	ACO	CCP-O6A-P2A-O5A
2	A	2501	ACO	O-C-S1P-C2P
2	A	2501	ACO	C2P-C3P-N4P-C5P
2	A	2501	ACO	CDP-CBP-CCP-O6A
2	A	2501	ACO	CH3-C-S1P-C2P
2	A	2501	ACO	O5P-C5P-C6P-C7P
2	A	2502	ACO	C5B-O5B-P1A-O3A
2	C	2501	ACO	C5B-O5B-P1A-O3A
2	A	2501	ACO	CBP-CCP-O6A-P2A
2	A	2501	ACO	CCP-O6A-P2A-O4A
2	C	2501	ACO	CCP-O6A-P2A-O5A
2	A	2501	ACO	CEP-CBP-CCP-O6A

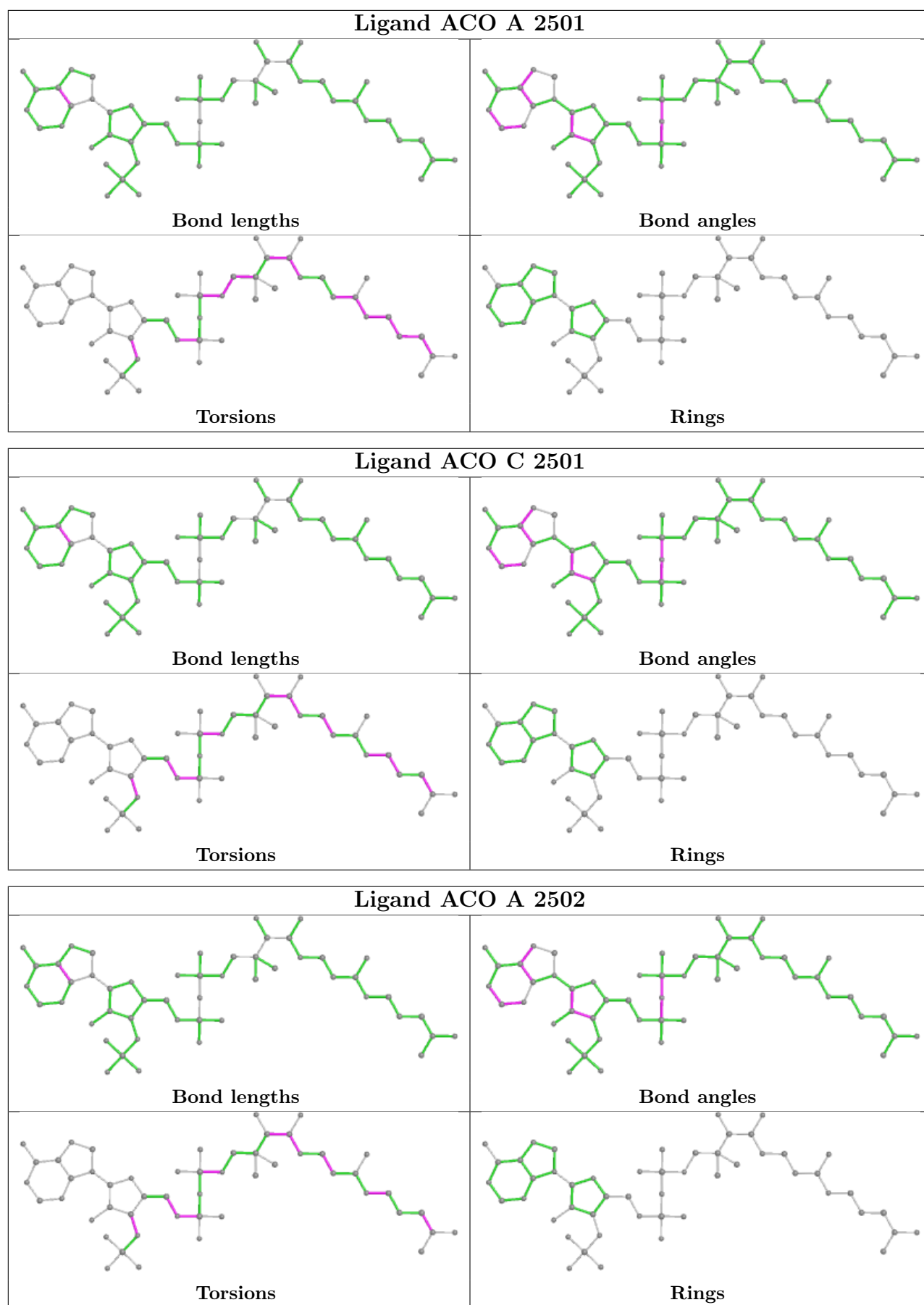
There are no ring outliers.

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

There are no such residues in this entry.

## 5.8 Polymer linkage issues

There are no chain breaks in this entry.

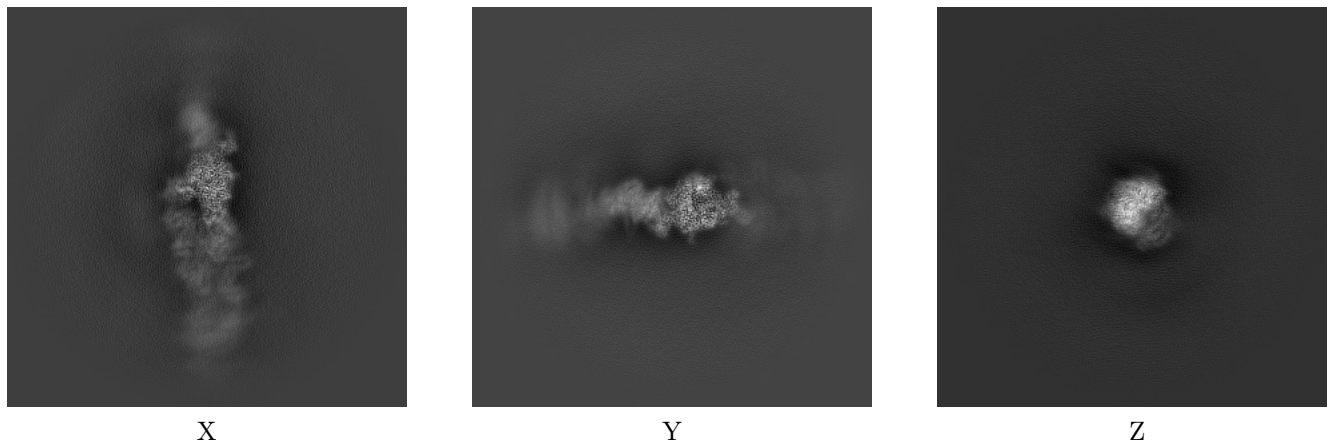
## 6 Map visualisation [i](#)

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

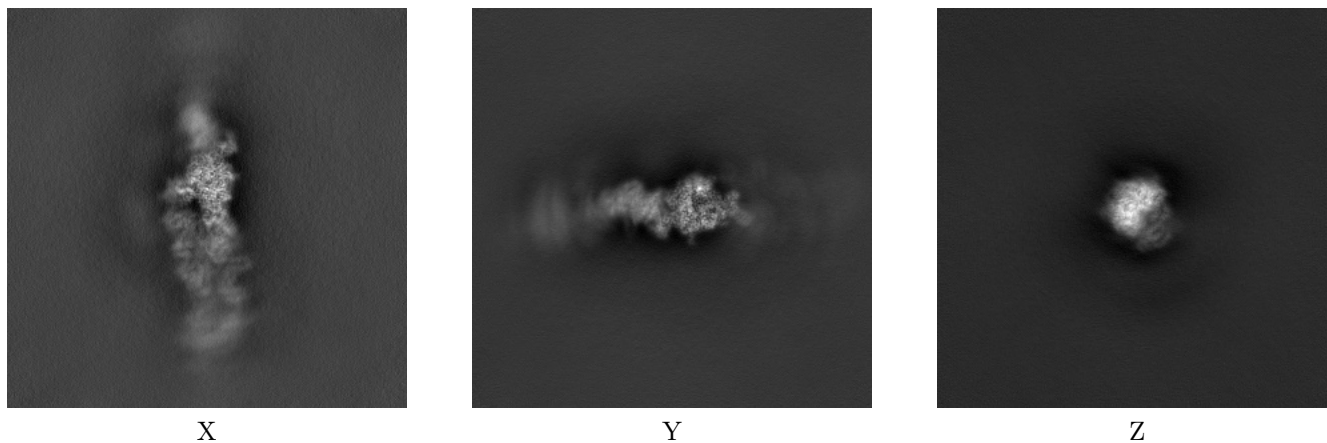
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

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

#### 6.1.1 Primary map



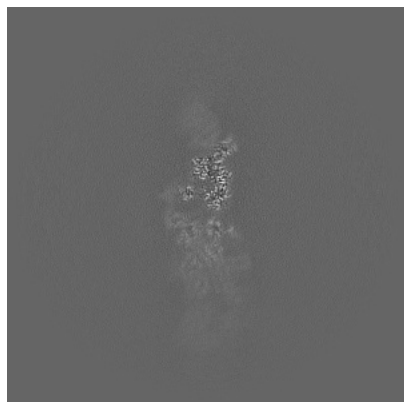
#### 6.1.2 Raw map



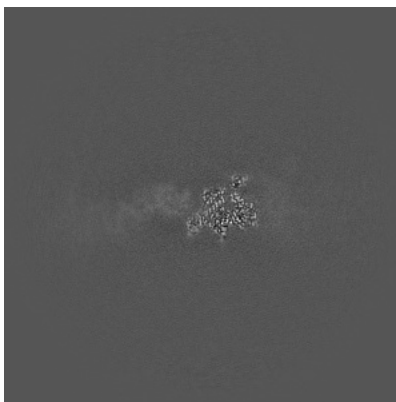
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

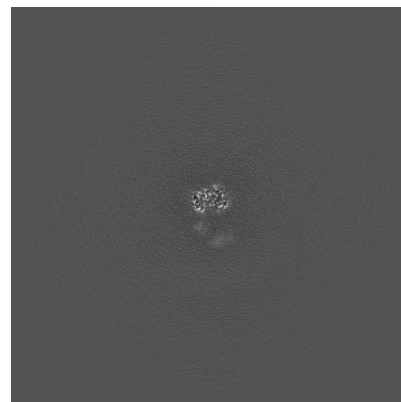
### 6.2.1 Primary map



X Index: 244

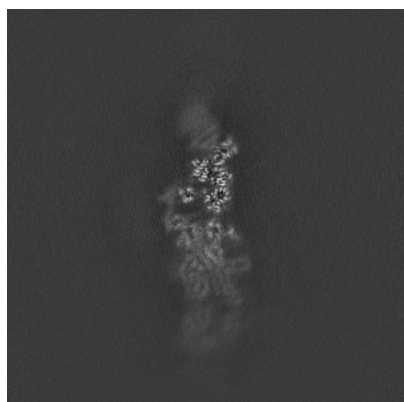


Y Index: 244

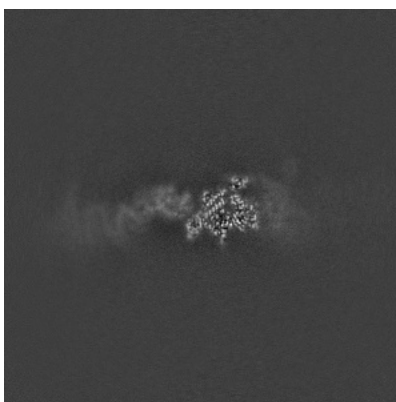


Z Index: 244

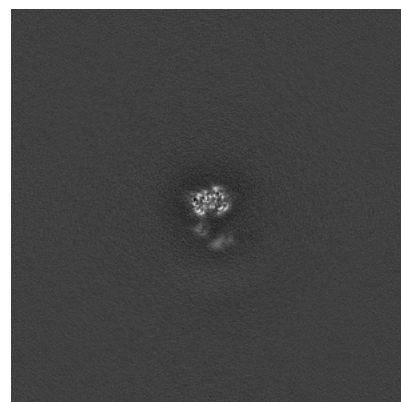
### 6.2.2 Raw map



X Index: 244



Y Index: 244

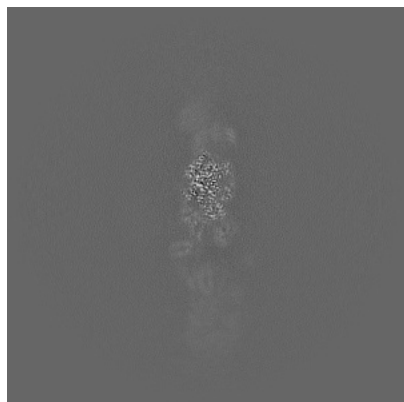


Z Index: 244

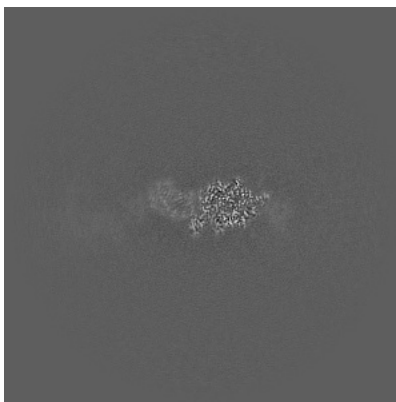
The images above show central slices of the map in three orthogonal directions.

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

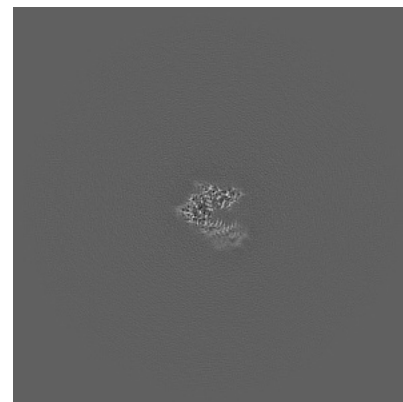
### 6.3.1 Primary map



X Index: 228



Y Index: 252

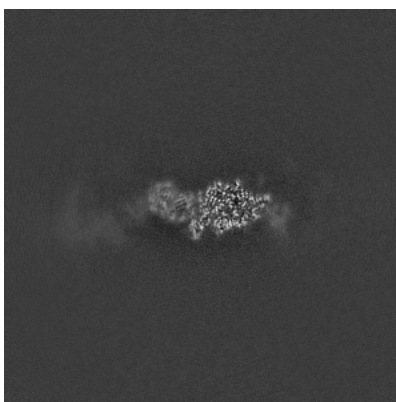


Z Index: 265

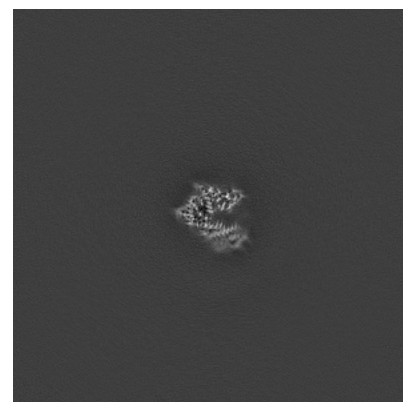
### 6.3.2 Raw map



X Index: 236



Y Index: 253

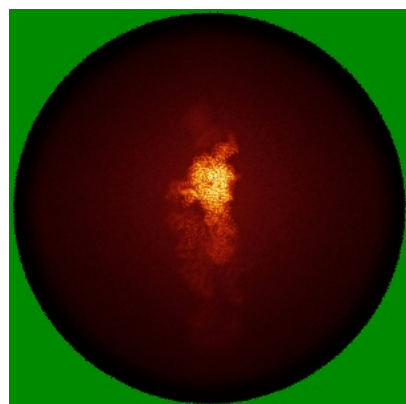


Z Index: 265

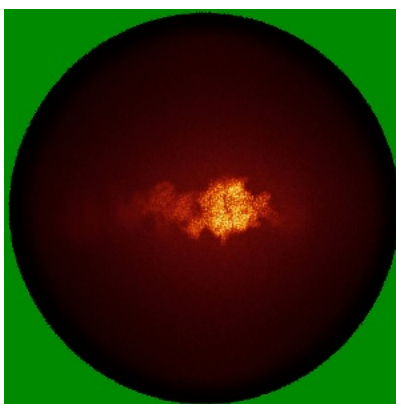
The images above show the largest variance slices of the map in three orthogonal directions.

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

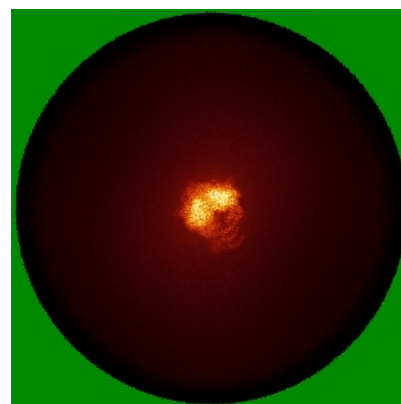
### 6.4.1 Primary map



X

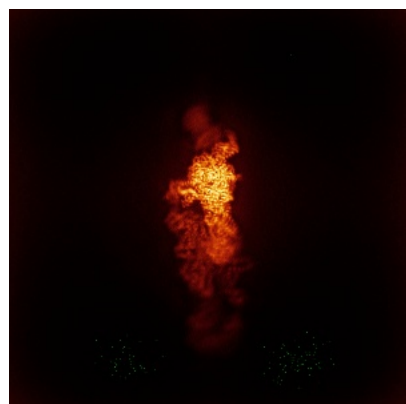


Y

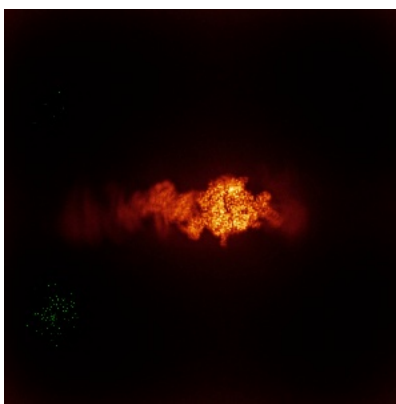


Z

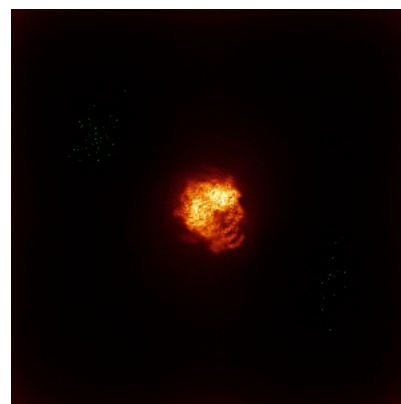
### 6.4.2 Raw map



X



Y

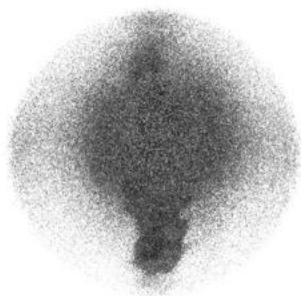


Z

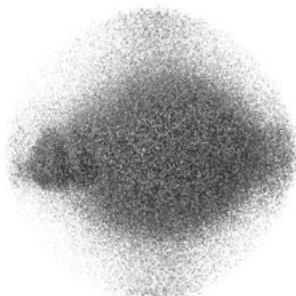
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

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

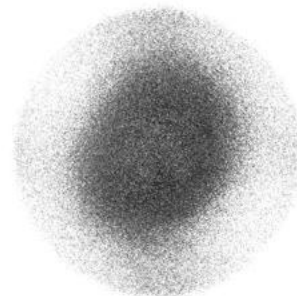
### 6.5.1 Primary map



X



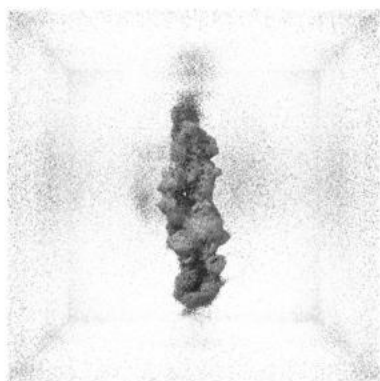
Y



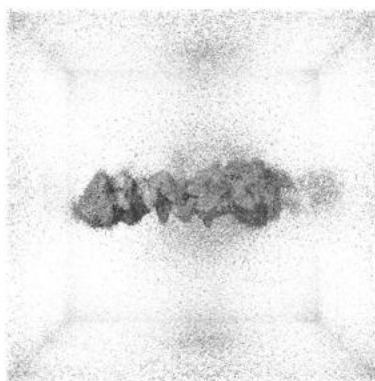
Z

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.

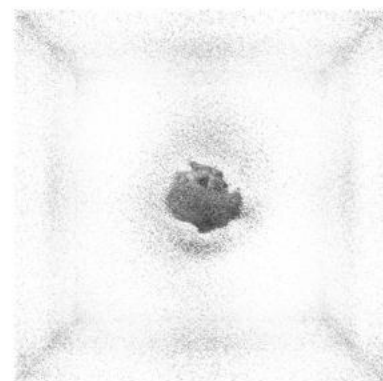
### 6.5.2 Raw map



X



Y



Z

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.

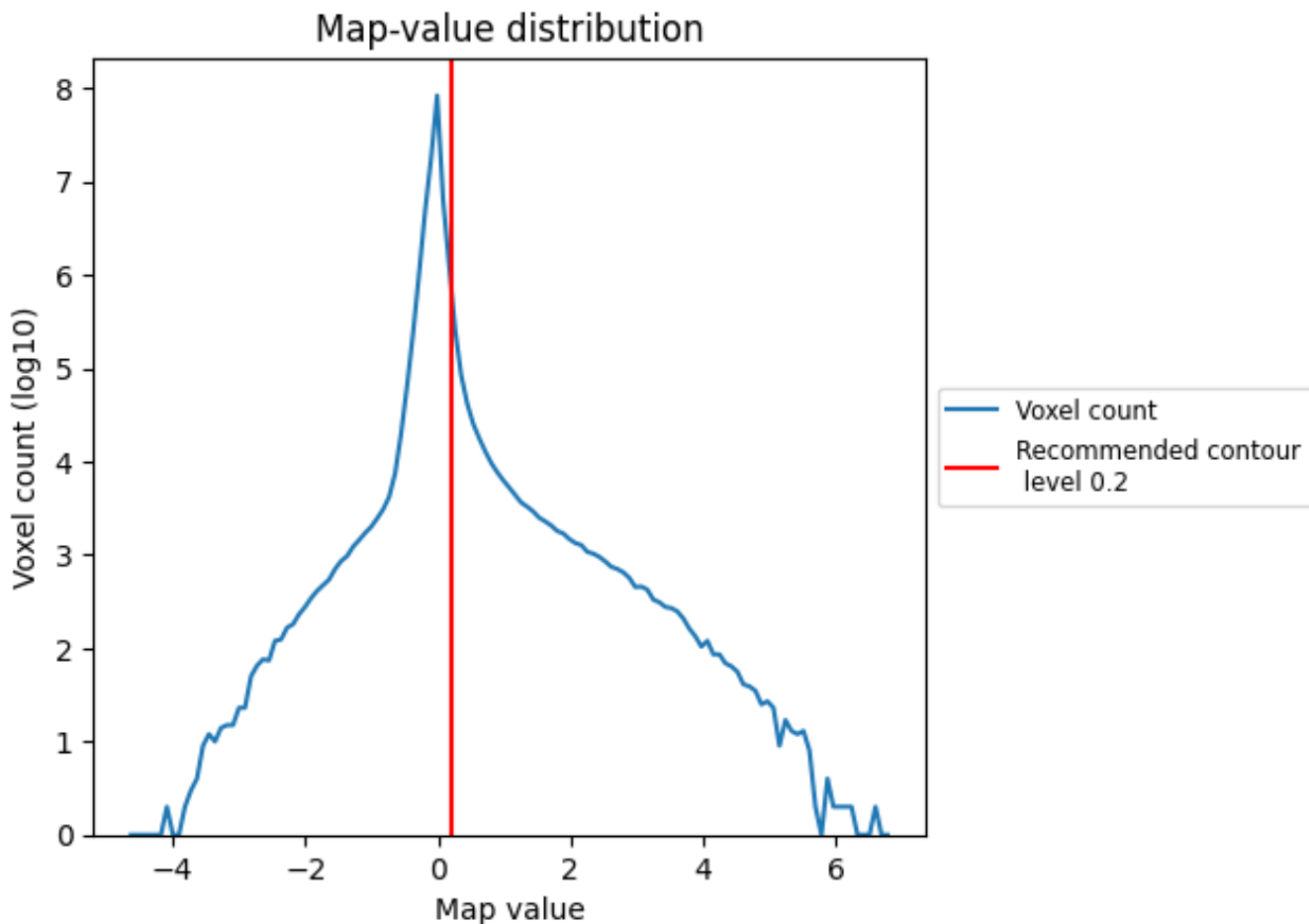
## 6.6 Mask visualisation [i](#)

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.

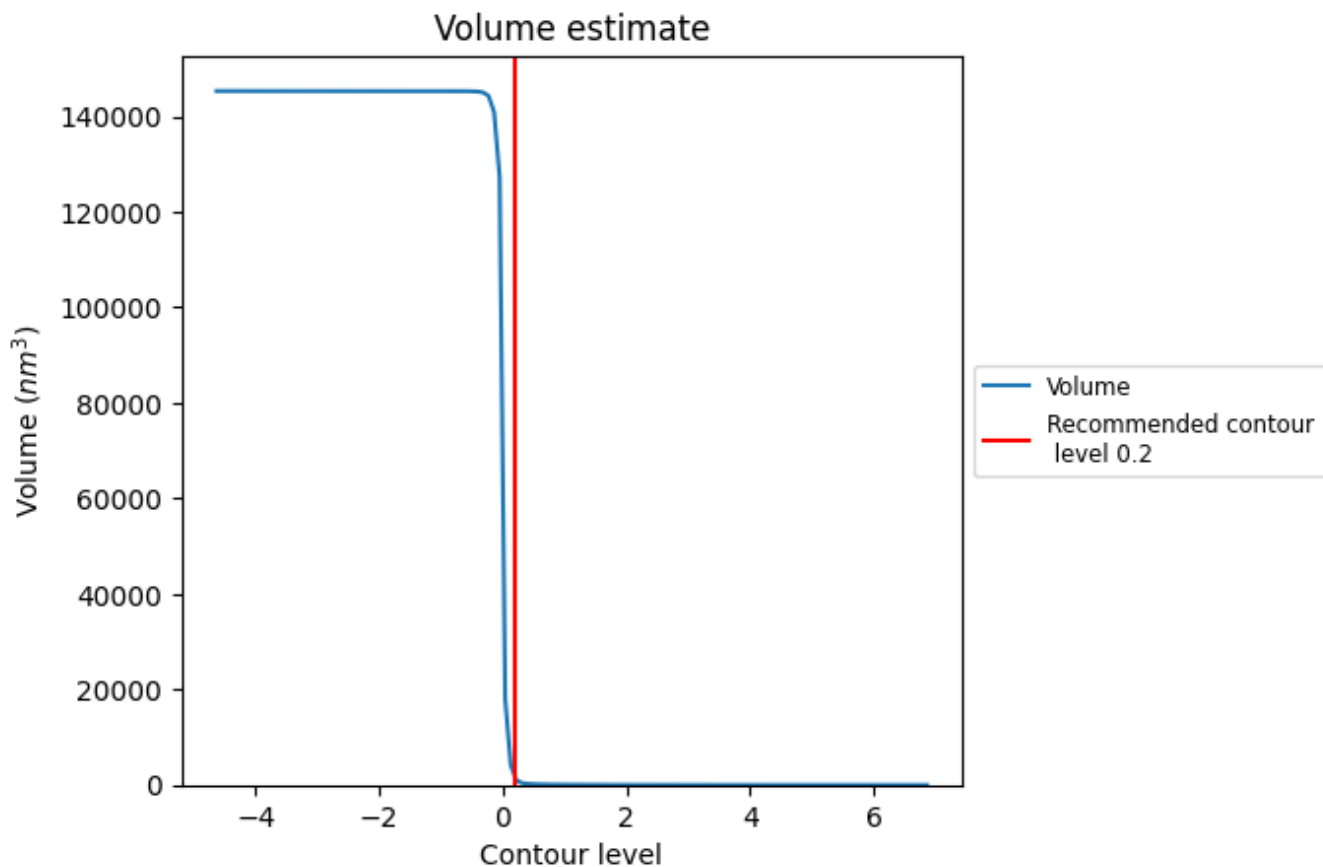
### 7.1 Map-value distribution [i](#)



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.



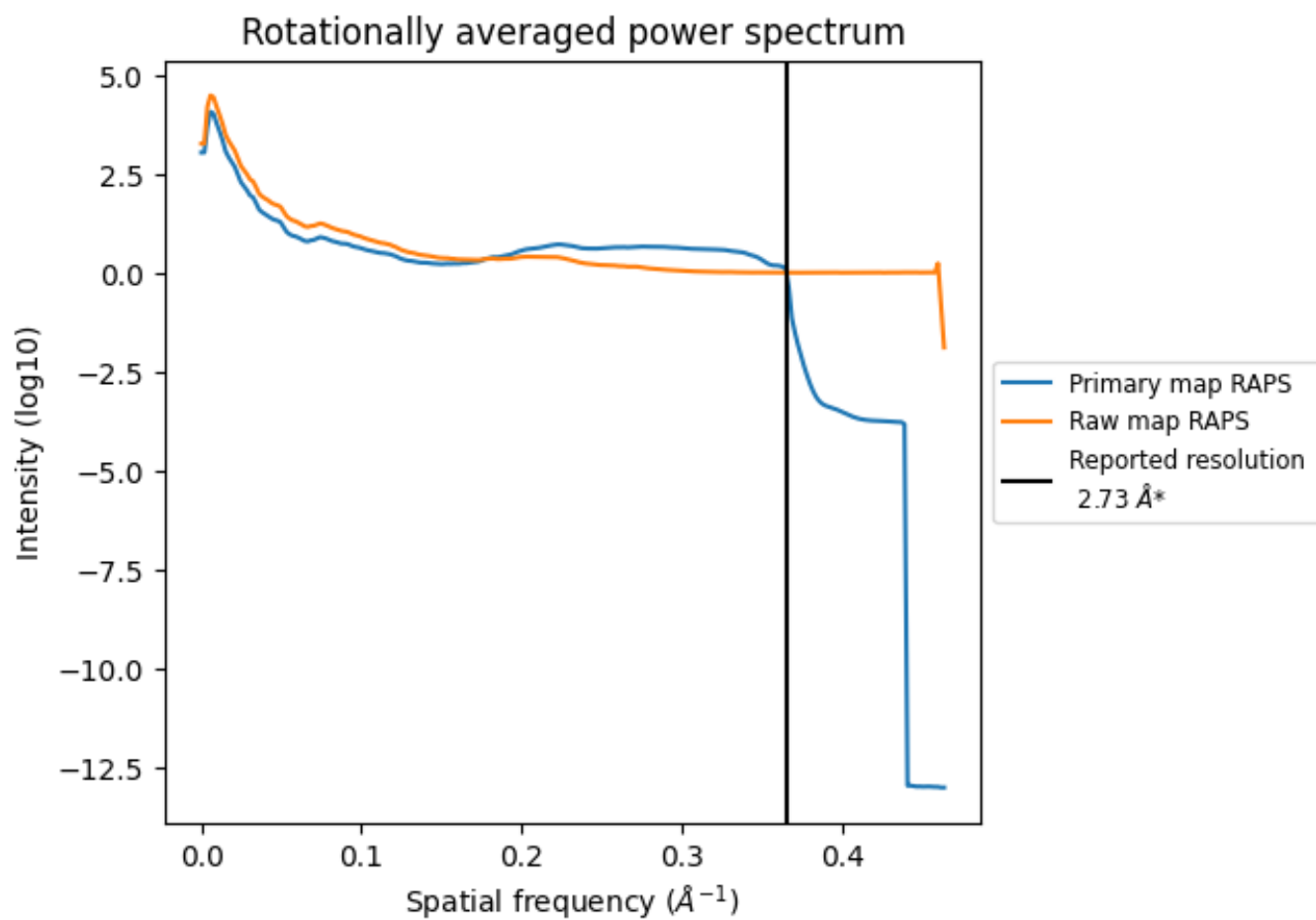
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1761  $\text{nm}^3$ ; 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](#)

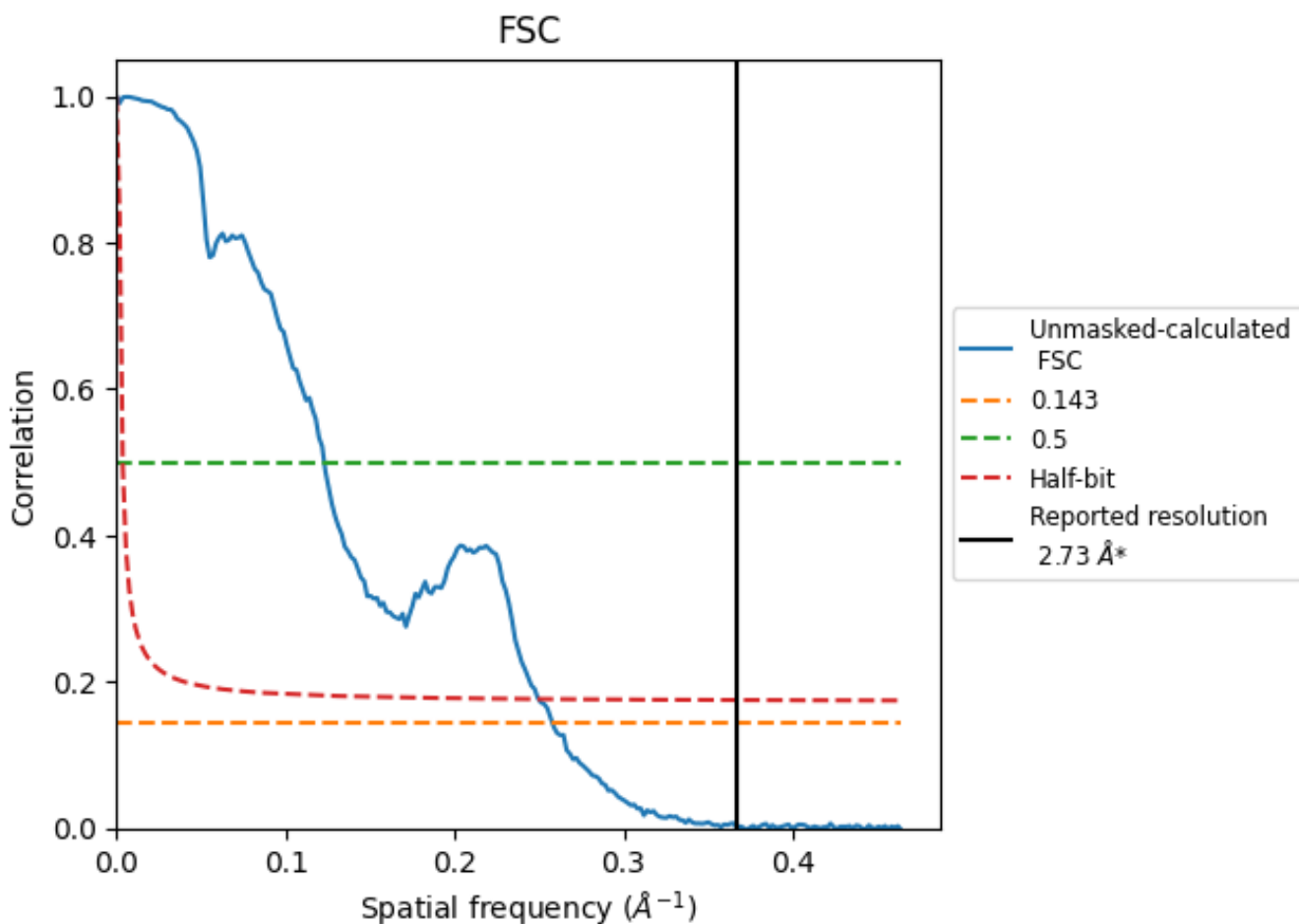


\*Reported resolution corresponds to spatial frequency of 0.366 Å<sup>-1</sup>

## 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 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

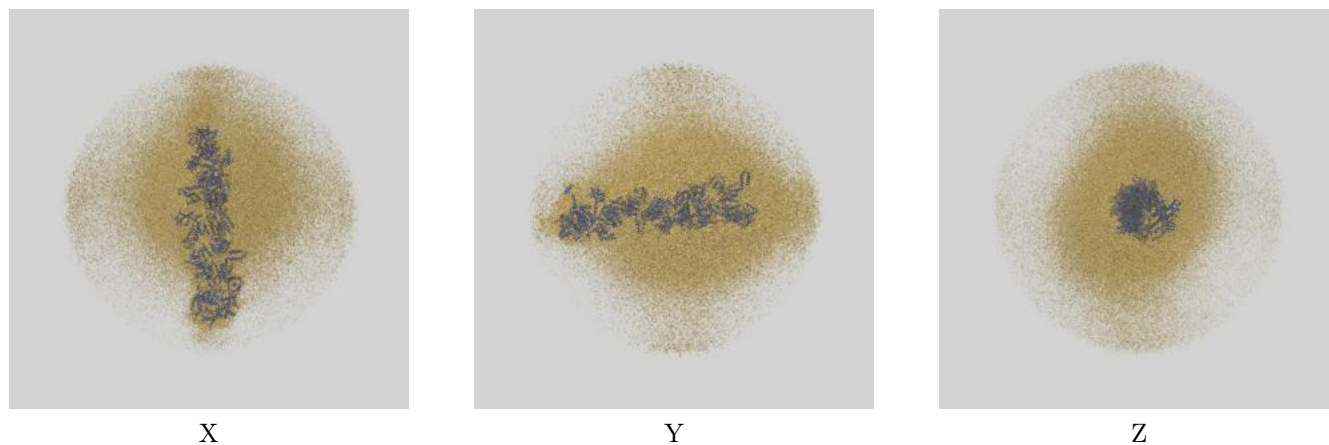
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.73	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.88	8.14	4.01

\*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](#)

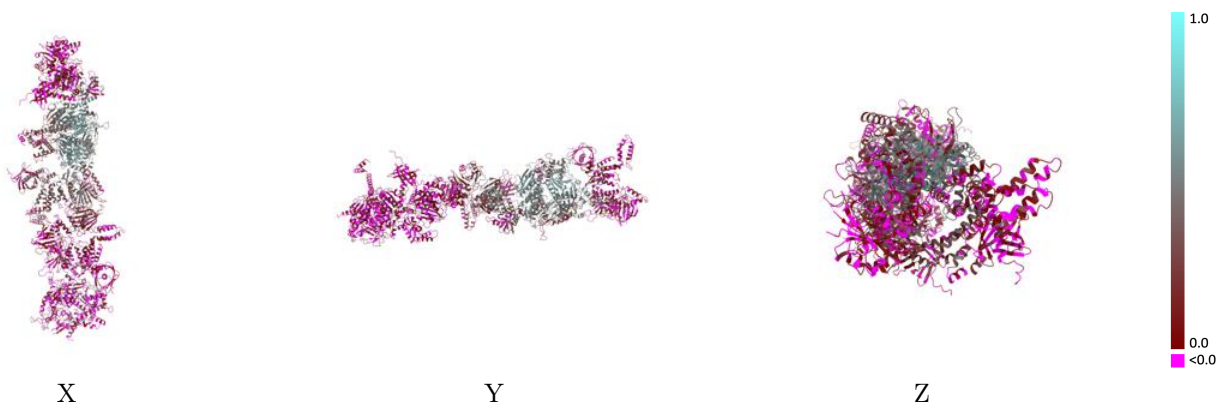
This section contains information regarding the fit between EMDB map EMD-38435 and PDB model 8XL2. Per-residue inclusion information can be found in section [3](#) on page [5](#).

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



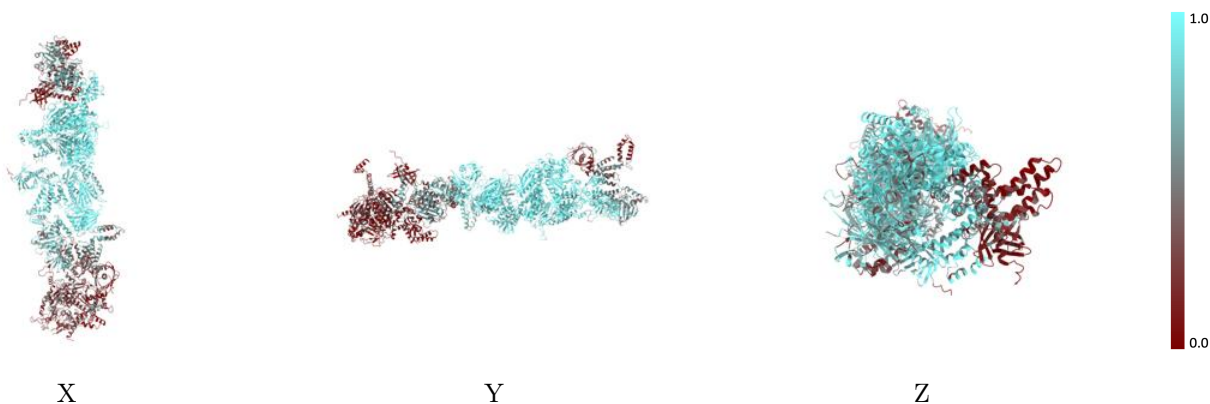
The images above show the 3D surface view of the map at the recommended contour level 0.2 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



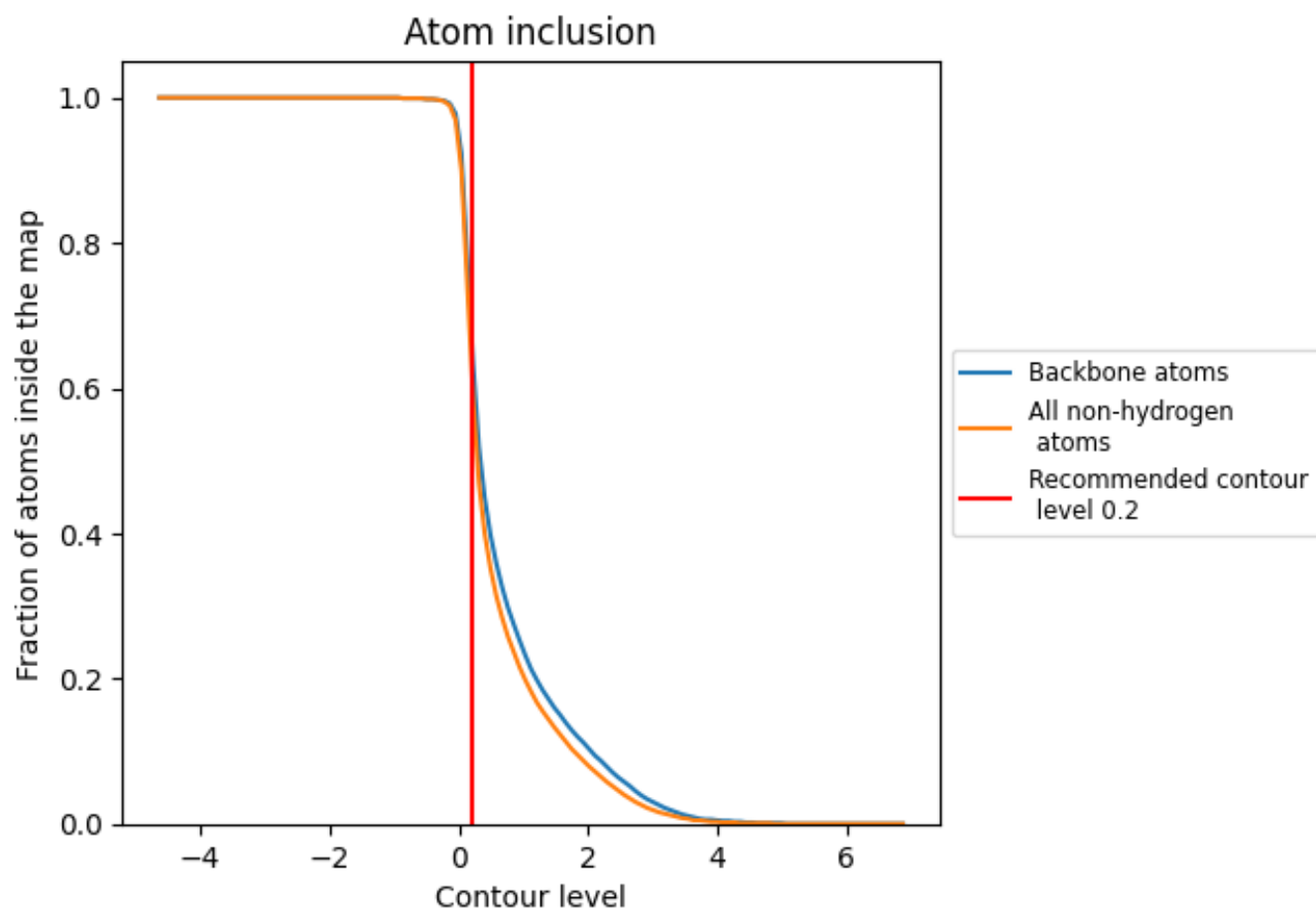
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

