



Full wwPDB EM Validation Report ⓘ

Mar 18, 2026 – 12:53 AM UTC

PDB ID : 9XZY / pdb_00009xzy
EMDB ID : EMD-72378
Title : DEPDC5 dimer (tandem DEPDC5) focused map
Authors : Bayly-Jones, C.; Lupton, C.J.; Chang, Y.G.; Ellisdon, A.M.
Deposited on : 2025-08-28
Resolution : 3.80 Å (reported)
Based on initial model : 9O5E

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

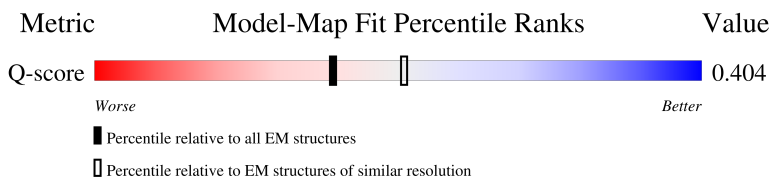
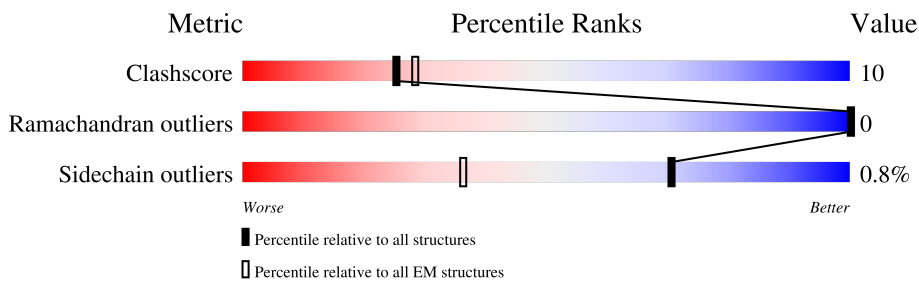
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 3.80 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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	10198 (3.30 - 4.30)

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	H	3384	

2 Entry composition i

There is only 1 type of molecule in this entry. The entry contains 31098 atoms, of which 15362 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 GATOR1 complex protein DEPDC5.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
1	H	1912	31098	10158	15362	2612	2878	88	0	0

There are 178 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
H	-17	MET	-	expression tag	UNP O75140
H	-16	GLY	-	expression tag	UNP O75140
H	-15	ASP	-	expression tag	UNP O75140
H	-14	TYR	-	expression tag	UNP O75140
H	-13	LYS	-	expression tag	UNP O75140
H	-12	ASP	-	expression tag	UNP O75140
H	-11	ASP	-	expression tag	UNP O75140
H	-10	ASP	-	expression tag	UNP O75140
H	-9	ASP	-	expression tag	UNP O75140
H	-8	LYS	-	expression tag	UNP O75140
H	-7	GLY	-	expression tag	UNP O75140
H	-6	GLY	-	expression tag	UNP O75140
H	-5	GLY	-	expression tag	UNP O75140
H	-4	GLY	-	expression tag	UNP O75140
H	-3	GLY	-	expression tag	UNP O75140
H	-2	ALA	-	expression tag	UNP O75140
H	-1	SER	-	expression tag	UNP O75140
H	0	THR	-	expression tag	UNP O75140
H	1604	GLY	-	linker	UNP O75140
H	1605	GLY	-	linker	UNP O75140
H	1606	ALA	-	linker	UNP O75140
H	1607	SER	-	linker	UNP O75140
H	1608	GLY	-	linker	UNP O75140
H	1609	SER	-	linker	UNP O75140
H	1610	TYR	-	linker	UNP O75140
H	1611	TYR	-	linker	UNP O75140
H	1612	ARG	-	linker	UNP O75140
H	1613	ALA	-	linker	UNP O75140

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Chain	Residue	Modelled	Actual	Comment	Reference
H	1614	GLU	-	linker	UNP O75140
H	1615	LYS	-	linker	UNP O75140
H	1616	GLY	-	linker	UNP O75140
H	1617	GLN	-	linker	UNP O75140
H	1618	GLY	-	linker	UNP O75140
H	1619	SER	-	linker	UNP O75140
H	1620	GLY	-	linker	UNP O75140
H	1621	ALA	-	linker	UNP O75140
H	1622	GLU	-	linker	UNP O75140
H	1623	PRO	-	linker	UNP O75140
H	1624	GLN	-	linker	UNP O75140
H	1625	SER	-	linker	UNP O75140
H	1626	GLY	-	linker	UNP O75140
H	1627	HIS	-	linker	UNP O75140
H	1628	SER	-	linker	UNP O75140
H	1629	SER	-	linker	UNP O75140
H	1630	ARG	-	linker	UNP O75140
H	1631	GLY	-	linker	UNP O75140
H	1632	SER	-	linker	UNP O75140
H	1633	GLY	-	linker	UNP O75140
H	1634	SER	-	linker	UNP O75140
H	1635	PHE	-	linker	UNP O75140
H	1636	VAL	-	linker	UNP O75140
H	1637	LYS	-	linker	UNP O75140
H	1638	PHE	-	linker	UNP O75140
H	1639	PHE	-	linker	UNP O75140
H	1640	THR	-	linker	UNP O75140
H	1641	TYR	-	linker	UNP O75140
H	1642	SER	-	linker	UNP O75140
H	1643	THR	-	linker	UNP O75140
H	1644	GLN	-	linker	UNP O75140
H	1645	PRO	-	linker	UNP O75140
H	1646	THR	-	linker	UNP O75140
H	1647	GLY	-	linker	UNP O75140
H	1648	SER	-	linker	UNP O75140
H	1649	GLY	-	linker	UNP O75140
H	1650	GLY	-	linker	UNP O75140
H	1651	GLY	-	linker	UNP O75140
H	1652	MET	-	linker	UNP O75140
H	1653	ALA	-	linker	UNP O75140
H	1654	SER	-	linker	UNP O75140
H	1655	MET	-	linker	UNP O75140

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Chain	Residue	Modelled	Actual	Comment	Reference
H	1656	GLY	-	linker	UNP O75140
H	1657	HIS	-	linker	UNP O75140
H	1658	THR	-	linker	UNP O75140
H	1659	GLY	-	linker	UNP O75140
H	1660	LEU	-	linker	UNP O75140
H	1661	LYS	-	linker	UNP O75140
H	1662	GLY	-	linker	UNP O75140
H	1663	GLY	-	linker	UNP O75140
H	1664	SER	-	linker	UNP O75140
H	1665	GLY	-	linker	UNP O75140
H	1666	GLY	-	linker	UNP O75140
H	1667	ASP	-	linker	UNP O75140
H	1668	SER	-	linker	UNP O75140
H	1669	GLN	-	linker	UNP O75140
H	1670	CYS	-	linker	UNP O75140
H	1671	GLY	-	linker	UNP O75140
H	1672	THR	-	linker	UNP O75140
H	1673	SER	-	linker	UNP O75140
H	1674	MET	-	linker	UNP O75140
H	1675	SER	-	linker	UNP O75140
H	1676	GLY	-	linker	UNP O75140
H	1677	GLN	-	linker	UNP O75140
H	1678	GLU	-	linker	UNP O75140
H	1679	SER	-	linker	UNP O75140
H	1680	GLY	-	linker	UNP O75140
H	1681	GLN	-	linker	UNP O75140
H	1682	GLY	-	linker	UNP O75140
H	1683	GLY	-	linker	UNP O75140
H	1684	GLY	-	linker	UNP O75140
H	1685	GLY	-	linker	UNP O75140
H	1686	GLY	-	linker	UNP O75140
H	1687	GLN	-	linker	UNP O75140
H	1688	GLY	-	linker	UNP O75140
H	1689	GLY	-	linker	UNP O75140
H	1690	ASP	-	linker	UNP O75140
H	1691	GLY	-	linker	UNP O75140
H	1692	GLY	-	linker	UNP O75140
H	1693	VAL	-	linker	UNP O75140
H	1694	GLY	-	linker	UNP O75140
H	1695	LEU	-	linker	UNP O75140
H	1696	SER	-	linker	UNP O75140
H	1697	GLY	-	linker	UNP O75140

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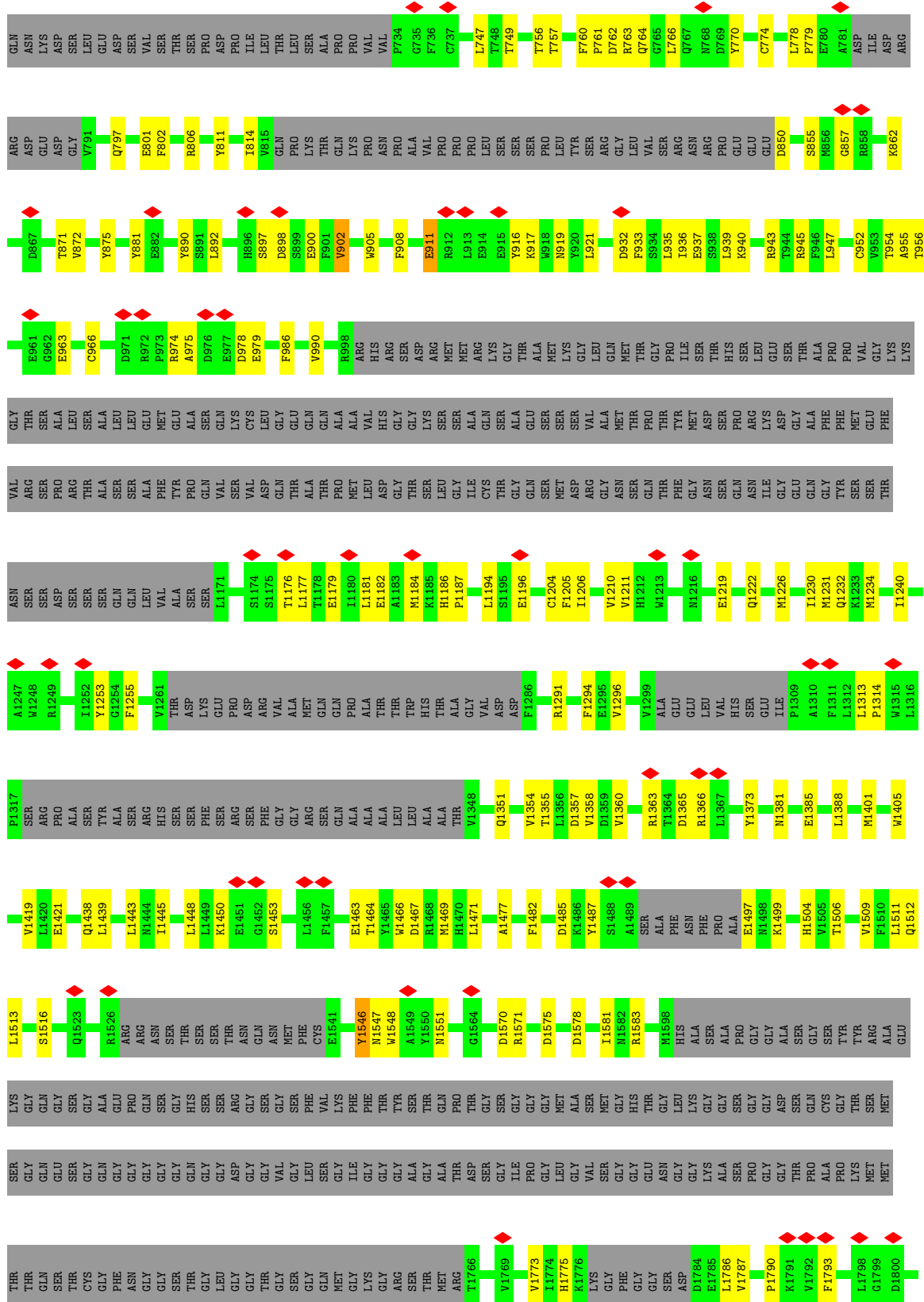
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Chain	Residue	Modelled	Actual	Comment	Reference
H	1698	ILE	-	linker	UNP O75140
H	1699	GLY	-	linker	UNP O75140
H	1700	GLY	-	linker	UNP O75140
H	1701	GLY	-	linker	UNP O75140
H	1702	ALA	-	linker	UNP O75140
H	1703	GLY	-	linker	UNP O75140
H	1704	ALA	-	linker	UNP O75140
H	1705	THR	-	linker	UNP O75140
H	1706	ASP	-	linker	UNP O75140
H	1707	SER	-	linker	UNP O75140
H	1708	GLY	-	linker	UNP O75140
H	1709	ILE	-	linker	UNP O75140
H	1710	PRO	-	linker	UNP O75140
H	1711	GLY	-	linker	UNP O75140
H	1712	LEU	-	linker	UNP O75140
H	1713	GLY	-	linker	UNP O75140
H	1714	VAL	-	linker	UNP O75140
H	1715	SER	-	linker	UNP O75140
H	1716	GLY	-	linker	UNP O75140
H	1717	GLY	-	linker	UNP O75140
H	1718	GLU	-	linker	UNP O75140
H	1719	ASN	-	linker	UNP O75140
H	1720	GLY	-	linker	UNP O75140
H	1721	GLY	-	linker	UNP O75140
H	1722	LYS	-	linker	UNP O75140
H	1723	ALA	-	linker	UNP O75140
H	1724	SER	-	linker	UNP O75140
H	1725	PRO	-	linker	UNP O75140
H	1726	GLY	-	linker	UNP O75140
H	1727	GLY	-	linker	UNP O75140
H	1728	THR	-	linker	UNP O75140
H	1729	PRO	-	linker	UNP O75140
H	1730	ALA	-	linker	UNP O75140
H	1731	PRO	-	linker	UNP O75140
H	1732	LYS	-	linker	UNP O75140
H	1733	MET	-	linker	UNP O75140
H	1734	MET	-	linker	UNP O75140
H	1735	THR	-	linker	UNP O75140
H	1736	THR	-	linker	UNP O75140
H	1737	GLN	-	linker	UNP O75140
H	1738	SER	-	linker	UNP O75140
H	1739	THR	-	linker	UNP O75140

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Chain	Residue	Modelled	Actual	Comment	Reference
H	1740	CYS	-	linker	UNP O75140
H	1741	GLY	-	linker	UNP O75140
H	1742	PHE	-	linker	UNP O75140
H	1743	ASN	-	linker	UNP O75140
H	1744	GLY	-	linker	UNP O75140
H	1745	GLY	-	linker	UNP O75140
H	1746	SER	-	linker	UNP O75140
H	1747	THR	-	linker	UNP O75140
H	1748	GLY	-	linker	UNP O75140
H	1749	LEU	-	linker	UNP O75140
H	1750	GLY	-	linker	UNP O75140
H	1751	GLY	-	linker	UNP O75140
H	1752	THR	-	linker	UNP O75140
H	1753	GLY	-	linker	UNP O75140
H	1754	SER	-	linker	UNP O75140
H	1755	GLY	-	linker	UNP O75140
H	1756	GLN	-	linker	UNP O75140
H	1757	MET	-	linker	UNP O75140
H	1758	GLY	-	linker	UNP O75140
H	1759	LYS	-	linker	UNP O75140
H	1760	GLY	-	linker	UNP O75140
H	1761	ARG	-	linker	UNP O75140
H	1762	SER	-	linker	UNP O75140
H	1763	THR	-	linker	UNP O75140



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C2	Depositor
Number of particles used	28288	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	1.2	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	14.676	Depositor
Minimum map value	-0.415	Depositor
Average map value	0.416	Depositor
Map value standard deviation	1.417	Depositor
Recommended contour level	4	Depositor
Map size (Å)	137.0, 137.0, 137.0	wwPDB
Map dimensions	137, 137, 137	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.0, 1.0, 1.0	Depositor

5 Model quality i

5.1 Standard geometry i

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	H	1.15	67/16138 (0.4%)	1.26	294/21854 (1.3%)

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	H	0	4

All (67) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	H	2083	HIS	ND1-CE1	-8.82	1.23	1.32
1	H	405	HIS	CE1-NE2	-8.81	1.23	1.32
1	H	401	HIS	CE1-NE2	-8.78	1.23	1.32
1	H	2168	HIS	CE1-NE2	-8.75	1.23	1.32
1	H	320	HIS	ND1-CE1	-8.74	1.23	1.32
1	H	2164	HIS	CE1-NE2	-8.70	1.23	1.32
1	H	806	ARG	CZ-NH2	-8.31	1.22	1.33
1	H	249	ARG	CZ-NH2	-8.29	1.22	1.33
1	H	2012	ARG	CZ-NH2	-8.28	1.22	1.33
1	H	2569	ARG	CZ-NH2	-8.28	1.22	1.33
1	H	356	ARG	CZ-NH2	-8.24	1.22	1.33
1	H	763	ARG	CZ-NH2	-8.23	1.22	1.33
1	H	2119	ARG	CZ-NH2	-8.22	1.22	1.33
1	H	239	ARG	CZ-NH2	-8.20	1.22	1.33
1	H	2002	ARG	CZ-NH2	-8.18	1.22	1.33
1	H	2526	ARG	CZ-NH2	-8.17	1.22	1.33
1	H	405	HIS	CD2-NE2	-8.15	1.28	1.37
1	H	401	HIS	CD2-NE2	-8.12	1.28	1.37
1	H	2168	HIS	CD2-NE2	-8.10	1.28	1.37
1	H	2164	HIS	CD2-NE2	-8.10	1.28	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	H	240	ALA	CA-CB	-6.94	1.42	1.53
1	H	2003	ALA	CA-CB	-6.94	1.42	1.53
1	H	2072	ALA	CA-CB	-6.87	1.42	1.53
1	H	309	ALA	CA-CB	-6.86	1.42	1.53
1	H	356	ARG	CZ-NH1	-6.74	1.23	1.32
1	H	2119	ARG	CZ-NH1	-6.74	1.23	1.32
1	H	239	ARG	CZ-NH1	-6.63	1.23	1.32
1	H	2569	ARG	CZ-NH1	-6.63	1.23	1.32
1	H	806	ARG	CZ-NH1	-6.63	1.23	1.32
1	H	2002	ARG	CZ-NH1	-6.62	1.23	1.32
1	H	249	ARG	CZ-NH1	-6.62	1.23	1.32
1	H	763	ARG	CZ-NH1	-6.61	1.23	1.32
1	H	2012	ARG	CZ-NH1	-6.59	1.23	1.32
1	H	2162	ILE	N-CA	-6.56	1.41	1.46
1	H	2526	ARG	CZ-NH1	-6.56	1.23	1.32
1	H	399	ILE	N-CA	-6.54	1.41	1.46
1	H	2133	GLY	N-CA	-5.91	1.37	1.45
1	H	370	GLY	N-CA	-5.91	1.37	1.45
1	H	339	GLY	N-CA	-5.88	1.37	1.45
1	H	2102	GLY	N-CA	-5.83	1.37	1.45
1	H	2620	GLY	N-CA	-5.65	1.37	1.45
1	H	305	ASN	CA-CB	-5.61	1.46	1.52
1	H	857	GLY	N-CA	-5.59	1.37	1.45
1	H	2068	ASN	CA-CB	-5.55	1.46	1.52
1	H	2012	ARG	CD-NE	-5.49	1.38	1.46
1	H	249	ARG	CD-NE	-5.49	1.38	1.46
1	H	806	ARG	CD-NE	-5.45	1.38	1.46
1	H	2569	ARG	CD-NE	-5.45	1.38	1.46
1	H	2119	ARG	CD-NE	-5.44	1.38	1.46
1	H	1991	ALA	CA-CB	-5.42	1.43	1.53
1	H	239	ARG	CD-NE	-5.37	1.38	1.46
1	H	228	ALA	CA-CB	-5.37	1.43	1.53
1	H	356	ARG	CD-NE	-5.37	1.38	1.46
1	H	2002	ARG	CD-NE	-5.27	1.38	1.46
1	H	363	GLY	N-CA	-5.23	1.37	1.45
1	H	281	TYR	CA-CB	-5.17	1.47	1.53
1	H	2126	GLY	N-CA	-5.17	1.37	1.45
1	H	763	ARG	CD-NE	-5.16	1.39	1.46
1	H	2526	ARG	CD-NE	-5.13	1.39	1.46
1	H	227	ASP	CA-CB	-5.13	1.46	1.52
1	H	296	GLY	N-CA	-5.08	1.38	1.45
1	H	1990	ASP	CA-CB	-5.07	1.46	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	H	2044	TYR	CA-CB	-5.06	1.48	1.53
1	H	2524	PRO	CA-CB	-5.05	1.46	1.53
1	H	761	PRO	CA-CB	-5.04	1.47	1.53
1	H	2059	GLY	N-CA	-5.04	1.38	1.45
1	H	176	GLN	CA-CB	-5.01	1.46	1.52

All (294) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	H	2161	ASN	CA-C-N	9.97	129.38	122.60
1	H	2161	ASN	C-N-CA	9.97	129.38	122.60
1	H	398	ASN	CA-C-N	9.95	129.37	122.60
1	H	398	ASN	C-N-CA	9.95	129.37	122.60
1	H	871	THR	CA-C-N	8.74	129.86	121.65
1	H	871	THR	C-N-CA	8.74	129.86	121.65
1	H	2634	THR	CA-C-N	8.73	129.86	121.65
1	H	2634	THR	C-N-CA	8.73	129.86	121.65
1	H	2124	GLY	CA-C-N	8.71	129.84	121.65
1	H	2124	GLY	C-N-CA	8.71	129.84	121.65
1	H	361	GLY	CA-C-N	8.68	129.81	121.65
1	H	361	GLY	C-N-CA	8.68	129.81	121.65
1	H	404	ASN	CA-CB-CG	7.91	120.50	112.60
1	H	2167	ASN	CA-CB-CG	7.88	120.48	112.60
1	H	365	ASP	CA-CB-CG	7.88	120.48	112.60
1	H	2128	ASP	CA-CB-CG	7.82	120.42	112.60
1	H	315	ASN	CA-CB-CG	7.50	120.10	112.60
1	H	401	HIS	CA-CB-CG	7.49	121.29	113.80
1	H	2078	ASN	CA-CB-CG	7.49	120.09	112.60
1	H	407	PHE	CA-CB-CG	7.45	121.25	113.80
1	H	2123	ASN	CA-CB-CG	7.45	120.05	112.60
1	H	360	ASN	CA-CB-CG	7.44	120.04	112.60
1	H	2164	HIS	CA-CB-CG	7.44	121.24	113.80
1	H	2170	PHE	CA-CB-CG	7.43	121.23	113.80
1	H	238	ASN	CA-CB-CG	7.41	120.01	112.60
1	H	2080	PHE	CA-CB-CG	7.41	121.21	113.80
1	H	760	PHE	CA-CB-CG	7.40	121.20	113.80
1	H	317	PHE	CA-CB-CG	7.39	121.19	113.80
1	H	2523	PHE	CA-CB-CG	7.36	121.16	113.80
1	H	2001	ASN	CA-CB-CG	7.36	119.96	112.60
1	H	2077	PHE	CA-CB-CG	6.94	120.74	113.80
1	H	1997	PHE	CA-CB-CG	6.93	120.73	113.80
1	H	1937	PHE	CA-CB-CG	6.92	120.72	113.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	H	314	PHE	CA-CB-CG	6.90	120.70	113.80
1	H	234	PHE	CA-CB-CG	6.89	120.69	113.80
1	H	2061	ASN	CA-CB-CG	6.86	119.46	112.60
1	H	298	ASN	CA-CB-CG	6.85	119.45	112.60
1	H	174	PHE	CA-CB-CG	6.85	120.65	113.80
1	H	2013	PHE	CA-CB-CG	6.78	120.58	113.80
1	H	225	PHE	CA-CB-CG	6.78	120.58	113.80
1	H	254	PHE	CA-CB-CG	6.74	120.54	113.80
1	H	1988	PHE	CA-CB-CG	6.74	120.53	113.80
1	H	2017	PHE	CA-CB-CG	6.74	120.53	113.80
1	H	250	PHE	CA-CB-CG	6.72	120.52	113.80
1	H	227	ASP	CA-CB-CG	6.62	119.22	112.60
1	H	2682	ASN	CA-CB-CG	6.62	119.22	112.60
1	H	919	ASN	CA-CB-CG	6.61	119.21	112.60
1	H	1990	ASP	CA-CB-CG	6.61	119.21	112.60
1	H	384	ASN	CA-CB-CG	6.56	119.16	112.60
1	H	2081	ASP	CA-CB-CG	6.55	119.15	112.60
1	H	2147	ASN	CA-CB-CG	6.51	119.11	112.60
1	H	318	ASP	CA-CB-CG	6.49	119.09	112.60
1	H	2098	VAL	CA-C-N	6.45	131.16	122.90
1	H	2098	VAL	C-N-CA	6.45	131.16	122.90
1	H	335	VAL	CA-C-N	6.45	131.15	122.90
1	H	335	VAL	C-N-CA	6.45	131.15	122.90
1	H	253	ASP	CA-CB-CG	6.38	118.98	112.60
1	H	2016	ASP	CA-CB-CG	6.30	118.90	112.60
1	H	173	ILE	CA-C-N	6.23	130.94	122.84
1	H	173	ILE	C-N-CA	6.23	130.94	122.84
1	H	1936	ILE	CA-C-N	6.21	130.91	122.84
1	H	1936	ILE	C-N-CA	6.21	130.91	122.84
1	H	2128	ASP	CA-C-N	6.09	130.76	122.84
1	H	2128	ASP	C-N-CA	6.09	130.76	122.84
1	H	366	LEU	CA-C-N	6.08	131.02	123.12
1	H	366	LEU	C-N-CA	6.08	131.02	123.12
1	H	2129	LEU	CA-C-N	6.07	131.01	123.12
1	H	2129	LEU	C-N-CA	6.07	131.01	123.12
1	H	365	ASP	CA-C-N	6.07	130.73	122.84
1	H	365	ASP	C-N-CA	6.07	130.73	122.84
1	H	239	ARG	CD-NE-CZ	6.01	132.81	124.40
1	H	2002	ARG	CD-NE-CZ	5.96	132.75	124.40
1	H	333	SER	CA-C-N	5.96	130.95	123.14
1	H	333	SER	C-N-CA	5.96	130.95	123.14
1	H	334	VAL	CA-C-N	5.94	130.85	123.12

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	H	334	VAL	C-N-CA	5.94	130.85	123.12
1	H	2096	SER	CA-C-N	5.93	130.91	123.14
1	H	2096	SER	C-N-CA	5.93	130.91	123.14
1	H	2097	VAL	CA-C-N	5.92	130.81	123.12
1	H	2097	VAL	C-N-CA	5.92	130.81	123.12
1	H	355	GLN	CA-C-N	5.88	128.15	120.28
1	H	355	GLN	C-N-CA	5.88	128.15	120.28
1	H	219	VAL	CA-C-N	5.85	130.20	122.42
1	H	219	VAL	C-N-CA	5.85	130.20	122.42
1	H	802	PHE	CA-CB-CG	5.84	119.64	113.80
1	H	1982	VAL	CA-C-N	5.82	130.16	122.42
1	H	1982	VAL	C-N-CA	5.82	130.16	122.42
1	H	364	VAL	CA-C-N	5.80	130.48	122.77
1	H	364	VAL	C-N-CA	5.80	130.48	122.77
1	H	2126	GLY	CA-C-N	5.80	129.91	121.80
1	H	2126	GLY	C-N-CA	5.80	129.91	121.80
1	H	2668	TRP	CA-C-N	5.79	131.10	123.17
1	H	2668	TRP	C-N-CA	5.79	131.10	123.17
1	H	399	ILE	N-CA-CB	5.79	117.62	111.20
1	H	905	TRP	CA-C-N	5.76	131.07	123.17
1	H	905	TRP	C-N-CA	5.76	131.07	123.17
1	H	2127	VAL	CA-C-N	5.76	130.43	122.77
1	H	2127	VAL	C-N-CA	5.76	130.43	122.77
1	H	363	GLY	CA-C-N	5.76	129.86	121.80
1	H	363	GLY	C-N-CA	5.76	129.86	121.80
1	H	1937	PHE	CA-C-N	5.76	130.47	122.93
1	H	1937	PHE	C-N-CA	5.76	130.47	122.93
1	H	811	TYR	CA-C-N	5.75	131.10	122.99
1	H	811	TYR	C-N-CA	5.75	131.10	122.99
1	H	174	PHE	CA-C-N	5.73	130.44	122.93
1	H	174	PHE	C-N-CA	5.73	130.44	122.93
1	H	2519	THR	CA-C-N	5.73	130.75	122.44
1	H	2519	THR	C-N-CA	5.73	130.75	122.44
1	H	2162	ILE	N-CA-CB	5.73	117.56	111.20
1	H	2095	MET	CA-C-N	5.73	131.07	123.00
1	H	2095	MET	C-N-CA	5.73	131.07	123.00
1	H	2574	TYR	CA-C-N	5.71	131.05	122.99
1	H	2574	TYR	C-N-CA	5.71	131.05	122.99
1	H	356	ARG	CD-NE-CZ	5.68	132.36	124.40
1	H	2527	GLN	O-C-N	-5.68	115.95	122.09
1	H	2119	ARG	CD-NE-CZ	5.68	132.35	124.40
1	H	2078	ASN	CA-C-N	5.68	127.65	120.72

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	H	2078	ASN	C-N-CA	5.68	127.65	120.72
1	H	315	ASN	CA-C-N	5.68	127.65	120.72
1	H	315	ASN	C-N-CA	5.68	127.65	120.72
1	H	2118	GLN	CA-C-N	5.67	127.88	120.28
1	H	2118	GLN	C-N-CA	5.67	127.88	120.28
1	H	252	GLU	CA-C-N	5.67	129.95	122.30
1	H	252	GLU	C-N-CA	5.67	129.95	122.30
1	H	332	MET	CA-C-N	5.66	130.98	123.00
1	H	332	MET	C-N-CA	5.66	130.98	123.00
1	H	756	THR	CA-C-N	5.66	130.64	122.44
1	H	756	THR	C-N-CA	5.66	130.64	122.44
1	H	2015	GLU	CA-C-N	5.65	129.93	122.30
1	H	2015	GLU	C-N-CA	5.65	129.93	122.30
1	H	2005	ILE	N-CA-CB	5.65	117.26	110.31
1	H	2169	SER	CA-C-N	5.64	130.94	122.99
1	H	2169	SER	C-N-CA	5.64	130.94	122.99
1	H	764	GLN	CA-C-N	5.64	127.19	120.14
1	H	764	GLN	C-N-CA	5.64	127.19	120.14
1	H	242	ILE	N-CA-CB	5.62	117.22	110.31
1	H	406	SER	CA-C-N	5.60	130.89	122.99
1	H	406	SER	C-N-CA	5.60	130.89	122.99
1	H	2130	VAL	CA-C-N	5.60	130.72	123.00
1	H	2130	VAL	C-N-CA	5.60	130.72	123.00
1	H	2004	SER	CA-C-N	5.59	128.59	120.98
1	H	2004	SER	C-N-CA	5.59	128.59	120.98
1	H	2527	GLN	CA-C-N	5.59	127.13	120.14
1	H	2527	GLN	C-N-CA	5.59	127.13	120.14
1	H	241	SER	CA-C-N	5.58	128.57	120.98
1	H	241	SER	C-N-CA	5.58	128.57	120.98
1	H	2525	ASP	CA-C-N	5.58	127.76	120.28
1	H	2525	ASP	C-N-CA	5.58	127.76	120.28
1	H	762	ASP	CA-C-N	5.56	127.73	120.28
1	H	762	ASP	C-N-CA	5.56	127.73	120.28
1	H	339	GLY	CA-C-N	5.54	130.14	122.28
1	H	339	GLY	C-N-CA	5.54	130.14	122.28
1	H	367	VAL	CA-C-N	5.53	130.63	123.00
1	H	367	VAL	C-N-CA	5.53	130.63	123.00
1	H	218	VAL	CA-C-N	5.52	130.82	122.98
1	H	218	VAL	C-N-CA	5.52	130.82	122.98
1	H	2665	VAL	CA-C-N	5.51	129.72	121.72
1	H	2665	VAL	C-N-CA	5.51	129.72	121.72
1	H	1981	VAL	CA-C-N	5.51	130.81	122.98

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	H	1981	VAL	C-N-CA	5.51	130.81	122.98
1	H	902	VAL	CA-C-N	5.51	129.71	121.72
1	H	902	VAL	C-N-CA	5.51	129.71	121.72
1	H	403	ILE	N-CA-CB	5.51	117.12	110.95
1	H	2166	ILE	N-CA-CB	5.50	117.11	110.95
1	H	2102	GLY	CA-C-N	5.50	130.09	122.28
1	H	2102	GLY	C-N-CA	5.50	130.09	122.28
1	H	2071	GLU	CA-C-N	5.46	127.54	120.44
1	H	2071	GLU	C-N-CA	5.46	127.54	120.44
1	H	254	PHE	CA-C-N	5.46	130.47	122.39
1	H	254	PHE	C-N-CA	5.46	130.47	122.39
1	H	224	THR	CA-C-N	5.46	128.59	120.95
1	H	224	THR	C-N-CA	5.46	128.59	120.95
1	H	225	PHE	CA-C-N	5.45	130.84	122.93
1	H	225	PHE	C-N-CA	5.45	130.84	122.93
1	H	908	PHE	CA-CB-CG	5.45	119.25	113.80
1	H	1987	THR	CA-C-N	5.44	128.57	120.95
1	H	1987	THR	C-N-CA	5.44	128.57	120.95
1	H	2083	HIS	CE1-NE2-CD2	-5.43	103.57	109.00
1	H	2017	PHE	CA-C-N	5.42	130.42	122.39
1	H	2017	PHE	C-N-CA	5.42	130.42	122.39
1	H	2061	ASN	N-CA-CB	5.42	117.98	109.69
1	H	2076	SER	CA-C-N	5.41	127.97	120.29
1	H	2076	SER	C-N-CA	5.41	127.97	120.29
1	H	248	GLY	CA-C-N	5.39	129.58	122.30
1	H	248	GLY	C-N-CA	5.39	129.58	122.30
1	H	298	ASN	N-CA-CB	5.39	117.93	109.69
1	H	320	HIS	CE1-NE2-CD2	-5.39	103.61	109.00
1	H	2011	GLY	CA-C-N	5.38	129.57	122.30
1	H	2011	GLY	C-N-CA	5.38	129.57	122.30
1	H	1988	PHE	CA-C-N	5.38	130.74	122.93
1	H	1988	PHE	C-N-CA	5.38	130.74	122.93
1	H	850	ASP	CA-CB-CG	5.37	117.97	112.60
1	H	313	SER	CA-C-N	5.36	127.91	120.29
1	H	313	SER	C-N-CA	5.36	127.91	120.29
1	H	308	GLU	CA-C-N	5.36	127.41	120.44
1	H	308	GLU	C-N-CA	5.36	127.41	120.44
1	H	253	ASP	CA-C-N	5.34	130.68	122.93
1	H	253	ASP	C-N-CA	5.34	130.68	122.93
1	H	764	GLN	O-C-N	-5.33	116.33	122.09
1	H	2679	TYR	N-CA-CB	5.33	117.88	109.83
1	H	916	TYR	N-CA-CB	5.32	117.86	109.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	H	320	HIS	ND1-CG-CD2	-5.32	100.78	106.10
1	H	2016	ASP	CA-C-N	5.32	130.64	122.93
1	H	2016	ASP	C-N-CA	5.32	130.64	122.93
1	H	2083	HIS	ND1-CG-CD2	-5.29	100.81	106.10
1	H	320	HIS	CG-CD2-NE2	5.28	112.48	107.20
1	H	2537	CYS	CA-C-N	5.28	129.42	121.40
1	H	2537	CYS	C-N-CA	5.28	129.42	121.40
1	H	2083	HIS	CG-CD2-NE2	5.27	112.47	107.20
1	H	239	ARG	CA-C-N	5.27	127.29	120.44
1	H	239	ARG	C-N-CA	5.27	127.29	120.44
1	H	400	PRO	CA-C-N	5.27	127.59	120.38
1	H	400	PRO	C-N-CA	5.27	127.59	120.38
1	H	774	CYS	CA-C-N	5.26	129.40	121.40
1	H	774	CYS	C-N-CA	5.26	129.40	121.40
1	H	2125	ILE	N-CA-CB	5.25	117.53	112.28
1	H	2012	ARG	CA-C-N	5.23	128.77	121.24
1	H	2012	ARG	C-N-CA	5.23	128.77	121.24
1	H	2002	ARG	CA-C-N	5.22	127.23	120.44
1	H	2002	ARG	C-N-CA	5.22	127.23	120.44
1	H	2163	PRO	CA-C-N	5.22	127.53	120.38
1	H	2163	PRO	C-N-CA	5.22	127.53	120.38
1	H	316	VAL	N-CA-CB	5.21	116.54	110.65
1	H	249	ARG	CA-C-N	5.21	128.74	121.24
1	H	249	ARG	C-N-CA	5.21	128.74	121.24
1	H	2682	ASN	N-CA-CB	5.21	117.77	110.12
1	H	872	VAL	N-CA-CB	5.21	117.48	112.28
1	H	919	ASN	N-CA-CB	5.20	117.77	110.12
1	H	178	SER	CA-C-N	5.20	127.76	120.28
1	H	178	SER	C-N-CA	5.20	127.76	120.28
1	H	362	ILE	N-CA-CB	5.19	117.47	112.28
1	H	2079	VAL	N-CA-CB	5.19	116.51	110.65
1	H	2061	ASN	CA-C-N	5.18	128.22	120.87
1	H	2061	ASN	C-N-CA	5.18	128.22	120.87
1	H	1941	SER	CA-C-N	5.17	127.72	120.28
1	H	1941	SER	C-N-CA	5.17	127.72	120.28
1	H	2167	ASN	CA-C-N	5.17	128.56	120.75
1	H	2167	ASN	C-N-CA	5.17	128.56	120.75
1	H	226	TYR	CA-C-N	5.16	129.85	122.21
1	H	226	TYR	C-N-CA	5.16	129.85	122.21
1	H	2653	TYR	CA-C-N	5.16	128.66	121.24
1	H	2653	TYR	C-N-CA	5.16	128.66	121.24
1	H	298	ASN	CA-C-N	5.15	128.19	120.87

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	H	298	ASN	C-N-CA	5.15	128.19	120.87
1	H	2565	PHE	CA-CB-CG	5.15	118.95	113.80
1	H	239	ARG	CB-CG-CD	5.14	123.12	111.30
1	H	2635	VAL	N-CA-CB	5.14	117.42	112.28
1	H	2524	PRO	CA-C-N	5.14	128.00	120.71
1	H	2524	PRO	C-N-CA	5.14	128.00	120.71
1	H	299	SER	N-CA-CB	5.13	117.52	109.97
1	H	1989	TYR	CA-C-N	5.13	129.80	122.21
1	H	1989	TYR	C-N-CA	5.13	129.80	122.21
1	H	763	ARG	CA-C-N	5.12	127.41	120.44
1	H	763	ARG	C-N-CA	5.12	127.41	120.44
1	H	890	TYR	CA-C-N	5.12	128.62	121.24
1	H	890	TYR	C-N-CA	5.12	128.62	121.24
1	H	404	ASN	CA-C-N	5.12	128.48	120.75
1	H	404	ASN	C-N-CA	5.12	128.48	120.75
1	H	299	SER	CA-C-N	5.12	128.48	120.75
1	H	299	SER	C-N-CA	5.12	128.48	120.75
1	H	761	PRO	CA-C-N	5.12	127.98	120.71
1	H	761	PRO	C-N-CA	5.12	127.98	120.71
1	H	2002	ARG	CB-CG-CD	5.12	123.07	111.30
1	H	2062	SER	N-CA-CB	5.11	117.49	109.97
1	H	2526	ARG	CA-C-N	5.11	127.39	120.44
1	H	2526	ARG	C-N-CA	5.11	127.39	120.44
1	H	2062	SER	CA-C-N	5.10	128.45	120.75
1	H	2062	SER	C-N-CA	5.10	128.45	120.75
1	H	2703	LYS	CA-CB-CG	5.10	124.30	114.10
1	H	2700	GLU	CA-C-N	5.10	127.62	120.28
1	H	2700	GLU	C-N-CA	5.10	127.62	120.28
1	H	2671	PHE	CA-CB-CG	5.09	118.89	113.80
1	H	311	ASN	CA-C-N	5.09	127.05	120.44
1	H	311	ASN	C-N-CA	5.09	127.05	120.44
1	H	243	ARG	CA-C-N	5.08	130.16	122.99
1	H	243	ARG	C-N-CA	5.08	130.16	122.99
1	H	940	LYS	CA-CB-CG	5.08	124.26	114.10
1	H	862	LYS	CA-C-N	5.07	129.85	123.10
1	H	862	LYS	C-N-CA	5.07	129.85	123.10
1	H	937	GLU	CA-C-N	5.07	127.58	120.28
1	H	937	GLU	C-N-CA	5.07	127.58	120.28
1	H	806	ARG	CB-CG-CD	5.06	122.93	111.30
1	H	176	GLN	N-CA-CB	5.05	117.86	109.88
1	H	2059	GLY	CA-C-N	5.05	130.91	122.73
1	H	2059	GLY	C-N-CA	5.05	130.91	122.73

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	H	1939	GLN	N-CA-CB	5.04	117.85	109.88
1	H	223	ARG	NE-CZ-NH2	5.04	123.74	119.20
1	H	2006	ARG	CA-C-N	5.04	130.09	122.99
1	H	2006	ARG	C-N-CA	5.04	130.09	122.99
1	H	296	GLY	CA-C-N	5.04	130.89	122.73
1	H	296	GLY	C-N-CA	5.04	130.89	122.73
1	H	2569	ARG	CB-CG-CD	5.03	122.88	111.30
1	H	2074	ASN	CA-C-N	5.00	126.94	120.44
1	H	2074	ASN	C-N-CA	5.00	126.94	120.44

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	H	2533	TYR	Sidechain
1	H	2644	TYR	Sidechain
1	H	770	TYR	Sidechain
1	H	881	TYR	Sidechain

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	H	15736	15362	15336	324	0
All	All	15736	15362	15336	324	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 10.

All (324) 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:H:3232:MET:HA	1:H:3232:MET:HE2	1.59	0.85
1:H:1469:MET:HE2	1:H:1469:MET:HA	1.59	0.84
1:H:295:GLN:OE1	1:H:295:GLN:N	2.13	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:2058:GLN:N	1:H:2058:GLN:OE1	2.13	0.80
1:H:2684:LEU:HD13	1:H:2702:LEU:HD22	1.65	0.78
1:H:921:LEU:HD13	1:H:939:LEU:HD22	1.65	0.76
1:H:1804:ILE:HD12	1:H:1850:VAL:HG22	1.69	0.75
1:H:1946:ASP:OD1	1:H:1947:PHE:N	2.20	0.75
1:H:935:LEU:HD11	1:H:2698:LEU:HD11	1.68	0.74
1:H:41:ILE:HD12	1:H:87:VAL:HG22	1.68	0.73
1:H:183:ASP:OD1	1:H:184:PHE:N	2.20	0.73
1:H:2026:ARG:NH2	1:H:2090:ASP:OD2	2.22	0.73
1:H:230:SER:OG	1:H:232:ASP:OD1	2.04	0.73
1:H:263:ARG:NH2	1:H:327:ASP:OD2	2.22	0.72
1:H:1993:SER:OG	1:H:1995:ASP:OD1	2.05	0.72
1:H:1231:MET:HE3	1:H:1231:MET:O	1.89	0.72
1:H:2994:MET:HE3	1:H:2994:MET:O	1.89	0.72
1:H:1504:HIS:ND1	1:H:1506:THR:OG1	2.22	0.71
1:H:963:GLU:O	1:H:1571:ARG:NH1	2.25	0.70
1:H:2726:GLU:O	1:H:3334:ARG:NH1	2.25	0.69
1:H:3267:HIS:ND1	1:H:3269:THR:OG1	2.21	0.68
1:H:108:TYR:N	1:H:326:PHE:O	2.26	0.67
1:H:1871:TYR:N	1:H:2089:PHE:O	2.26	0.67
1:H:1466:TRP:NE1	1:H:1516:SER:O	2.28	0.67
1:H:3120:ASP:OD1	1:H:3121:VAL:N	2.28	0.67
1:H:1357:ASP:OD1	1:H:1358:VAL:N	2.28	0.66
1:H:2090:ASP:OD1	1:H:2091:ARG:NH2	2.29	0.66
1:H:103:THR:CG2	1:H:167:THR:HG23	2.27	0.65
1:H:1509:VAL:HG21	1:H:1548:TRP:CZ2	2.32	0.65
1:H:1866:THR:CG2	1:H:1930:THR:HG23	2.27	0.65
1:H:327:ASP:OD1	1:H:328:ARG:NH2	2.29	0.64
1:H:3272:VAL:HG21	1:H:3311:TRP:CZ2	2.32	0.64
1:H:3229:TRP:NE1	1:H:3279:SER:O	2.28	0.63
1:H:1941:SER:OG	1:H:1943:GLU:OE1	2.16	0.63
1:H:932:ASP:OD1	1:H:933:PHE:N	2.32	0.62
1:H:1804:ILE:O	1:H:1814:LEU:N	2.32	0.62
1:H:2695:ASP:OD1	1:H:2696:PHE:N	2.32	0.62
1:H:10:VAL:HG21	1:H:63:GLN:OE1	2.00	0.61
1:H:41:ILE:O	1:H:51:LEU:N	2.32	0.61
1:H:2974:VAL:HG21	1:H:3016:TYR:CE1	2.35	0.61
1:H:1182:GLU:N	1:H:1182:GLU:OE1	2.33	0.61
1:H:1773:VAL:HG21	1:H:1826:GLN:OE1	2.00	0.61
1:H:2945:GLU:N	1:H:2945:GLU:OE1	2.33	0.61
1:H:2029:GLU:OE1	1:H:2031:THR:OG1	2.12	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:1211:VAL:HG21	1:H:1253:TYR:CE1	2.35	0.61
1:H:1487:TYR:OH	1:H:1499:LYS:O	2.13	0.60
1:H:266:GLU:OE1	1:H:268:THR:OG1	2.12	0.59
1:H:1866:THR:HG21	1:H:1930:THR:HG23	1.85	0.59
1:H:148:ASN:OD1	1:H:148:ASN:O	2.20	0.59
1:H:1911:ASN:O	1:H:1911:ASN:OD1	2.20	0.59
1:H:2738:ALA:O	1:H:2742:GLU:N	2.33	0.59
1:H:1882:LYS:O	1:H:1885:VAL:HG22	2.03	0.59
1:H:119:LYS:O	1:H:122:VAL:HG22	2.03	0.58
1:H:170:MET:HE1	1:H:261:ASN:OD1	2.04	0.58
1:H:178:SER:OG	1:H:180:GLU:OE1	2.16	0.58
1:H:103:THR:HG21	1:H:167:THR:HG23	1.85	0.58
1:H:3250:TYR:OH	1:H:3262:LYS:O	2.13	0.57
1:H:2142:LEU:HD23	1:H:2162:ILE:HD13	1.86	0.57
1:H:63:GLN:O	1:H:66:THR:OG1	2.23	0.57
1:H:2674:GLU:OE1	1:H:2674:GLU:N	2.37	0.57
1:H:2708:ARG:NH1	1:H:3148:GLU:OE2	2.37	0.57
1:H:2942:GLU:OE1	1:H:2942:GLU:N	2.38	0.57
1:H:379:LEU:HD23	1:H:399:ILE:HD13	1.86	0.57
1:H:1419:VAL:HG12	1:H:1551:ASN:ND2	2.20	0.57
1:H:232:ASP:O	1:H:239:ARG:NH1	2.38	0.57
1:H:1995:ASP:O	1:H:2002:ARG:NH1	2.38	0.57
1:H:911:GLU:N	1:H:911:GLU:OE1	2.37	0.57
1:H:177:MET:HE3	1:H:177:MET:HA	1.87	0.57
1:H:1179:GLU:OE1	1:H:1179:GLU:N	2.38	0.57
1:H:1933:MET:HE1	1:H:2024:ASN:OD1	2.04	0.56
1:H:1940:MET:HE3	1:H:1940:MET:HA	1.87	0.56
1:H:3182:VAL:HG12	1:H:3314:ASN:ND2	2.20	0.56
1:H:935:LEU:CD1	1:H:2698:LEU:HD11	2.36	0.56
1:H:975:ALA:O	1:H:979:GLU:N	2.33	0.56
1:H:1826:GLN:O	1:H:1829:THR:OG1	2.23	0.56
1:H:1965:ASP:OD2	1:H:2171:TYR:OH	2.23	0.56
1:H:100:VAL:HG13	1:H:144:LEU:HD22	1.88	0.56
1:H:95:VAL:HG22	1:H:95:VAL:O	2.06	0.55
1:H:1881:LYS:O	1:H:1885:VAL:HG13	2.07	0.55
1:H:118:LYS:O	1:H:122:VAL:HG13	2.07	0.55
1:H:945:ARG:NH1	1:H:1385:GLU:OE2	2.37	0.55
1:H:1775:HIS:HD1	1:H:1831:SER:HG	1.54	0.55
1:H:1231:MET:HE1	1:H:1240:ILE:HD12	1.89	0.54
1:H:1790:PRO:HG3	1:H:1821:LEU:HD13	1.89	0.54
1:H:1858:VAL:O	1:H:1858:VAL:HG22	2.06	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:232:ASP:OD1	1:H:232:ASP:N	2.40	0.54
1:H:935:LEU:HD11	1:H:2698:LEU:CD1	2.36	0.54
1:H:2710:LEU:HD23	1:H:3148:GLU:HA	1.88	0.54
1:H:1862:LEU:HD12	1:H:1863:VAL:N	2.23	0.54
1:H:947:LEU:HD23	1:H:1385:GLU:HA	1.88	0.54
1:H:1804:ILE:CD1	1:H:1850:VAL:HG22	2.38	0.54
1:H:1863:VAL:HG13	1:H:1907:LEU:HD22	1.88	0.54
1:H:2715:CYS:SG	1:H:2737:ARG:NH1	2.81	0.54
1:H:3164:MET:O	1:H:3168:TRP:CD1	2.61	0.54
1:H:202:ASP:OD2	1:H:408:TYR:OH	2.23	0.53
1:H:99:LEU:HD12	1:H:100:VAL:N	2.23	0.53
1:H:2994:MET:HE1	1:H:3003:ILE:HD12	1.89	0.53
1:H:1401:MET:O	1:H:1405:TRP:CD1	2.61	0.53
1:H:27:PRO:HG3	1:H:58:LEU:HD13	1.90	0.53
1:H:2132:MET:HE2	1:H:2132:MET:HA	1.90	0.52
1:H:369:MET:HA	1:H:369:MET:HE2	1.90	0.52
1:H:952:CYS:SG	1:H:974:ARG:NH1	2.81	0.52
1:H:2520:THR:HG23	1:H:2520:THR:O	2.10	0.52
1:H:1181:LEU:HD12	1:H:1181:LEU:H	1.75	0.52
1:H:1450:LYS:O	1:H:1453:SER:OG	2.27	0.52
1:H:1581:ILE:O	1:H:1581:ILE:HG22	2.09	0.52
1:H:1946:ASP:OD1	1:H:1946:ASP:C	2.53	0.52
1:H:2944:LEU:H	1:H:2944:LEU:HD12	1.75	0.52
1:H:1438:GLN:C	1:H:1438:GLN:OE1	2.53	0.51
1:H:3201:GLN:C	1:H:3201:GLN:OE1	2.53	0.51
1:H:183:ASP:OD1	1:H:183:ASP:C	2.53	0.51
1:H:3344:ILE:HG22	1:H:3344:ILE:O	2.09	0.51
1:H:757:THR:O	1:H:757:THR:HG23	2.10	0.51
1:H:936:ILE:HD11	1:H:939:LEU:HD12	1.93	0.51
1:H:2715:CYS:O	1:H:2719:THR:OG1	2.28	0.51
1:H:2985:GLN:N	1:H:2985:GLN:OE1	2.44	0.51
1:H:801:GLU:OE1	1:H:801:GLU:HA	2.10	0.51
1:H:1826:GLN:HB2	1:H:1829:THR:HG21	1.93	0.51
1:H:1814:LEU:HD22	1:H:1842:LEU:HD11	1.93	0.51
1:H:986:PHE:O	1:H:990:VAL:HG23	2.11	0.51
1:H:73:VAL:HG22	1:H:127:TYR:OH	2.11	0.51
1:H:1863:VAL:HG13	1:H:1907:LEU:CD2	2.41	0.51
1:H:51:LEU:HD22	1:H:79:LEU:HD11	1.93	0.50
1:H:1231:MET:HE1	1:H:1240:ILE:CD1	2.41	0.50
1:H:3226:GLU:OE1	1:H:3227:THR:N	2.44	0.50
1:H:100:VAL:HG13	1:H:144:LEU:CD2	2.41	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:192:PHE:CZ	1:H:196:VAL:HG21	2.46	0.50
1:H:1222:GLN:N	1:H:1222:GLN:OE1	2.44	0.50
1:H:1955:PHE:CZ	1:H:1959:VAL:HG21	2.46	0.50
1:H:2699:ILE:HD11	1:H:2702:LEU:HD12	1.93	0.50
1:H:2749:PHE:O	1:H:2753:VAL:HG23	2.11	0.50
1:H:12:HIS:HD1	1:H:68:SER:HG	1.57	0.50
1:H:1463:GLU:OE1	1:H:1464:THR:N	2.44	0.50
1:H:2564:GLU:HA	1:H:2564:GLU:OE1	2.10	0.50
1:H:1204:CYS:SG	1:H:1205:PHE:N	2.84	0.50
1:H:1995:ASP:OD1	1:H:1995:ASP:N	2.40	0.50
1:H:1827:LYS:O	1:H:1829:THR:HG23	2.12	0.50
1:H:2994:MET:HE1	1:H:3003:ILE:CD1	2.41	0.50
1:H:63:GLN:HB2	1:H:66:THR:HG21	1.93	0.50
1:H:41:ILE:CD1	1:H:87:VAL:HG22	2.38	0.50
1:H:2967:CYS:SG	1:H:2968:PHE:N	2.84	0.50
1:H:954:THR:OG1	1:H:955:ALA:N	2.45	0.49
1:H:2090:ASP:OD1	1:H:2090:ASP:O	2.31	0.49
1:H:64:LYS:O	1:H:66:THR:HG23	2.12	0.49
1:H:1836:VAL:HG22	1:H:1890:TYR:OH	2.11	0.49
1:H:797:GLN:C	1:H:797:GLN:OE1	2.56	0.49
1:H:975:ALA:O	1:H:978:ASP:N	2.45	0.49
1:H:2738:ALA:O	1:H:2741:ASP:N	2.45	0.49
1:H:1205:PHE:CD2	1:H:1210:VAL:HG11	2.47	0.49
1:H:327:ASP:OD1	1:H:327:ASP:O	2.31	0.49
1:H:1999:GLU:OE1	1:H:2002:ARG:NH2	2.46	0.49
1:H:2717:THR:OG1	1:H:2718:ALA:N	2.45	0.49
1:H:1512:GLN:NE2	1:H:1513:LEU:O	2.46	0.48
1:H:30:PHE:CE2	1:H:87:VAL:HG21	2.48	0.48
1:H:128:ILE:HG22	1:H:129:THR:HG23	1.95	0.48
1:H:2957:LEU:HD12	1:H:2967:CYS:SG	2.53	0.48
1:H:236:GLU:OE1	1:H:239:ARG:NH2	2.46	0.48
1:H:947:LEU:HG	1:H:1419:VAL:HG21	1.95	0.48
1:H:1294:PHE:CE1	1:H:1355:THR:HG21	2.48	0.48
1:H:1421:GLU:HA	1:H:1421:GLU:OE1	2.13	0.48
1:H:3057:PHE:CE1	1:H:3118:THR:HG21	2.48	0.48
1:H:2710:LEU:HG	1:H:3182:VAL:HG21	1.95	0.48
1:H:2560:GLN:C	1:H:2560:GLN:OE1	2.56	0.48
1:H:2968:PHE:CD2	1:H:2973:VAL:HG11	2.47	0.48
1:H:1230:ILE:O	1:H:1234:MET:HG3	2.14	0.48
1:H:1365:ASP:OD1	1:H:1366:ARG:N	2.47	0.48
1:H:3275:GLN:NE2	1:H:3276:LEU:O	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:3202:LEU:O	1:H:3311:TRP:N	2.45	0.48
1:H:952:CYS:O	1:H:956:THR:OG1	2.28	0.48
1:H:1793:PHE:CE2	1:H:1850:VAL:HG21	2.48	0.48
1:H:2974:VAL:HG21	1:H:3016:TYR:CD1	2.49	0.48
1:H:3213:LYS:O	1:H:3216:SER:OG	2.27	0.48
1:H:2989:MET:HE3	1:H:2989:MET:HA	1.96	0.47
1:H:1838:GLN:C	1:H:1838:GLN:OE1	2.57	0.47
1:H:1194:LEU:HD12	1:H:1204:CYS:SG	2.53	0.47
1:H:1363:ARG:HA	1:H:1363:ARG:NE	2.29	0.47
1:H:2993:ILE:O	1:H:2997:MET:HG3	2.14	0.47
1:H:3076:LEU:HD13	1:H:3077:PRO:HD3	1.96	0.47
1:H:3126:ARG:HA	1:H:3126:ARG:NE	2.29	0.47
1:H:1891:ILE:HG22	1:H:1892:THR:HG23	1.95	0.47
1:H:3184:GLU:HA	1:H:3184:GLU:OE1	2.13	0.47
1:H:75:GLN:C	1:H:75:GLN:OE1	2.57	0.47
1:H:332:MET:HE1	1:H:747:LEU:O	2.14	0.47
1:H:766:LEU:HD11	1:H:875:TYR:CD1	2.50	0.47
1:H:1450:LYS:O	1:H:1453:SER:N	2.46	0.47
1:H:3018:PHE:N	1:H:3059:VAL:O	2.48	0.47
1:H:3114:GLN:OE1	1:H:3114:GLN:HA	2.15	0.47
1:H:3123:VAL:O	1:H:3123:VAL:HG12	2.14	0.47
1:H:3128:ASP:OD1	1:H:3129:ARG:N	2.47	0.47
1:H:41:ILE:HB	1:H:51:LEU:HB3	1.96	0.47
1:H:1313:LEU:HD13	1:H:1314:PRO:HD3	1.96	0.47
1:H:1870:GLN:N	1:H:2090:ASP:O	2.48	0.47
1:H:107:GLN:N	1:H:327:ASP:O	2.48	0.47
1:H:1226:MET:HE3	1:H:1226:MET:HA	1.96	0.47
1:H:1351:GLN:OE1	1:H:1351:GLN:HA	2.15	0.47
1:H:1211:VAL:HG21	1:H:1253:TYR:CD1	2.49	0.46
1:H:1804:ILE:HB	1:H:1814:LEU:HB3	1.96	0.46
1:H:1856:LYS:HE2	1:H:1856:LYS:HA	1.96	0.46
1:H:2095:MET:HE1	1:H:2510:LEU:O	2.14	0.46
1:H:252:GLU:OE1	1:H:286:ARG:NH1	2.49	0.46
1:H:256:LYS:NZ	1:H:898:ASP:OD1	2.45	0.46
1:H:357:MET:HE1	1:H:362:ILE:O	2.16	0.46
1:H:1360:VAL:O	1:H:1360:VAL:HG12	2.14	0.46
1:H:3341:ASP:OD2	1:H:3346:ARG:NH1	2.49	0.46
1:H:2019:LYS:NZ	1:H:2660:SER:O	2.48	0.46
1:H:2969:ILE:HD11	1:H:3018:PHE:HA	1.98	0.46
1:H:262:GLU:HA	1:H:262:GLU:OE1	2.15	0.46
1:H:1381:ASN:O	1:H:1381:ASN:OD1	2.34	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:93:LYS:HA	1:H:93:LYS:HE2	1.97	0.46
1:H:1255:PHE:N	1:H:1296:VAL:O	2.48	0.46
1:H:2025:GLU:OE1	1:H:2025:GLU:HA	2.15	0.46
1:H:2541:LEU:HD12	1:H:2542:PRO:HD2	1.97	0.46
1:H:3213:LYS:O	1:H:3216:SER:N	2.46	0.46
1:H:165:ARG:NH2	1:H:749:THR:O	2.43	0.46
1:H:2120:MET:HE1	1:H:2125:ILE:O	2.16	0.46
1:H:1184:MET:HA	1:H:1184:MET:HE2	1.97	0.45
1:H:1578:ASP:OD2	1:H:1583:ARG:NH1	2.49	0.45
1:H:63:GLN:CD	1:H:63:GLN:H	2.23	0.45
1:H:357:MET:HE3	1:H:357:MET:HA	1.98	0.45
1:H:2947:MET:HE2	1:H:2947:MET:HA	1.97	0.45
1:H:778:LEU:HD12	1:H:779:PRO:HD2	1.97	0.45
1:H:2015:GLU:OE1	1:H:2049:ARG:NH1	2.49	0.45
1:H:1962:PHE:CD2	1:H:2099:ILE:HD11	2.52	0.45
1:H:151:VAL:HG22	1:H:152:MET:H	1.82	0.45
1:H:1512:GLN:OE1	1:H:1547:ASN:ND2	2.42	0.45
1:H:1826:GLN:H	1:H:1826:GLN:CD	2.23	0.45
1:H:2120:MET:HE3	1:H:2120:MET:HA	1.98	0.45
1:H:945:ARG:NH2	1:H:1485:ASP:OD2	2.42	0.45
1:H:3144:ASN:OD1	1:H:3144:ASN:O	2.34	0.45
1:H:1206:ILE:HD11	1:H:1255:PHE:HA	1.98	0.45
1:H:1897:PHE:O	1:H:1900:ILE:HD12	2.17	0.45
1:H:356:ARG:HA	1:H:359:ASP:OD1	2.17	0.45
1:H:3260:GLU:OE1	1:H:3260:GLU:N	2.51	0.45
1:H:1439:LEU:O	1:H:1548:TRP:N	2.45	0.44
1:H:1450:LYS:N	1:H:1453:SER:OG	2.49	0.44
1:H:1497:GLU:N	1:H:1497:GLU:OE1	2.51	0.44
1:H:2119:ARG:HA	1:H:2122:ASP:OD1	2.17	0.44
1:H:3117:VAL:HG13	1:H:3136:TYR:CE2	2.53	0.44
1:H:134:PHE:O	1:H:137:ILE:HD12	2.17	0.44
1:H:3213:LYS:N	1:H:3216:SER:OG	2.49	0.44
1:H:1914:VAL:HG22	1:H:1915:MET:H	1.82	0.44
1:H:199:PHE:CD2	1:H:336:ILE:HD11	2.52	0.43
1:H:1463:GLU:OE1	1:H:1463:GLU:C	2.61	0.43
1:H:1186:HIS:N	1:H:1187:PRO:CD	2.80	0.43
1:H:2989:MET:N	1:H:2989:MET:SD	2.91	0.43
1:H:3240:ALA:HB1	1:H:3245:PHE:HB2	2.00	0.43
1:H:108:TYR:O	1:H:109:ILE:HD13	2.19	0.43
1:H:147:LYS:O	1:H:148:ASN:HB3	2.18	0.43
1:H:1448:LEU:HD12	1:H:1448:LEU:N	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:2949:HIS:N	1:H:2950:PRO:CD	2.81	0.43
1:H:23:LEU:HD23	1:H:24:VAL:N	2.34	0.43
1:H:2529:LEU:HD11	1:H:2638:TYR:CD1	2.53	0.43
1:H:2663:GLU:C	1:H:2663:GLU:OE1	2.61	0.43
1:H:3226:GLU:OE1	1:H:3226:GLU:C	2.61	0.43
1:H:256:LYS:NZ	1:H:897:SER:O	2.48	0.43
1:H:1226:MET:N	1:H:1226:MET:SD	2.91	0.43
1:H:1354:VAL:HG13	1:H:1373:TYR:CE2	2.53	0.43
1:H:1477:ALA:HB1	1:H:1482:PHE:HB2	2.00	0.43
1:H:966:CYS:N	1:H:1575:ASP:OD2	2.51	0.43
1:H:2706:ARG:HA	1:H:3151:LEU:O	2.19	0.43
1:H:132:VAL:N	1:H:139:ALA:O	2.51	0.43
1:H:1814:LEU:CD1	1:H:1840:PHE:CD2	3.02	0.43
1:H:77:PHE:CZ	1:H:152:MET:HB3	2.54	0.42
1:H:1196:GLU:CG	1:H:1196:GLU:O	2.67	0.42
1:H:3211:LEU:N	1:H:3211:LEU:HD12	2.33	0.42
1:H:195:ALA:HA	1:H:369:MET:SD	2.59	0.42
1:H:900:GLU:OE1	1:H:900:GLU:C	2.61	0.42
1:H:1786:LEU:HD23	1:H:1787:VAL:N	2.34	0.42
1:H:1840:PHE:CZ	1:H:1915:MET:HB3	2.54	0.42
1:H:1910:LYS:O	1:H:1911:ASN:HB3	2.18	0.42
1:H:2959:GLU:O	1:H:2959:GLU:CG	2.67	0.42
1:H:1928:ARG:NH2	1:H:2512:THR:O	2.43	0.42
1:H:943:ARG:HA	1:H:1388:LEU:O	2.19	0.42
1:H:2698:LEU:HD13	1:H:2698:LEU:O	2.20	0.42
1:H:1871:TYR:O	1:H:1872:ILE:HD13	2.19	0.42
1:H:1958:ALA:HA	1:H:2132:MET:SD	2.60	0.42
1:H:935:LEU:HD13	1:H:935:LEU:O	2.20	0.42
1:H:1570:ASP:OD1	1:H:1571:ARG:N	2.53	0.42
1:H:2982:GLU:N	1:H:2982:GLU:CD	2.78	0.42
1:H:1870:GLN:O	1:H:2092:THR:OG1	2.29	0.42
1:H:51:LEU:CD1	1:H:77:PHE:CD2	3.02	0.42
1:H:172:TYR:CZ	1:H:316:VAL:HG11	2.55	0.42
1:H:1935:TYR:CZ	1:H:2079:VAL:HG11	2.55	0.42
1:H:1999:GLU:OE1	1:H:1999:GLU:HA	2.20	0.41
1:H:1467:ASP:O	1:H:1471:LEU:HD13	2.20	0.41
1:H:1832:VAL:HG12	1:H:1833:ASP:N	2.35	0.41
1:H:2577:ILE:HD11	1:H:2618:SER:HB3	2.02	0.41
1:H:1219:GLU:CD	1:H:1219:GLU:N	2.78	0.41
1:H:2019:LYS:NZ	1:H:2661:ASP:OD1	2.45	0.41
1:H:63:GLN:OE1	1:H:66:THR:OG1	2.32	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:148:ASN:OD1	1:H:148:ASN:C	2.63	0.41
1:H:945:ARG:HD3	1:H:1419:VAL:HG23	2.03	0.41
1:H:1176:THR:HG22	1:H:1177:LEU:N	2.36	0.41
1:H:3333:ASP:OD1	1:H:3334:ARG:N	2.53	0.41
1:H:1443:LEU:HD23	1:H:1445:ILE:HD11	2.03	0.41
1:H:2939:THR:HG22	1:H:2940:LEU:N	2.36	0.41
1:H:2995:GLN:OE1	1:H:2995:GLN:HA	2.21	0.41
1:H:402:TRP:H	1:H:402:TRP:CD1	2.37	0.41
1:H:1908:TRP:HA	1:H:1908:TRP:CE3	2.56	0.41
1:H:1999:GLU:OE1	1:H:2002:ARG:CZ	2.69	0.41
1:H:2655:LEU:O	1:H:2665:VAL:N	2.48	0.41
1:H:2994:MET:HE3	1:H:2994:MET:C	2.46	0.41
1:H:236:GLU:OE1	1:H:236:GLU:HA	2.20	0.41
1:H:2708:ARG:HD3	1:H:3182:VAL:HG23	2.03	0.41
1:H:2729:CYS:N	1:H:3338:ASP:OD2	2.51	0.41
1:H:145:TRP:HA	1:H:145:TRP:CE3	2.56	0.41
1:H:1870:GLN:HG3	1:H:1872:ILE:HD11	2.03	0.41
1:H:3005:HIS:O	1:H:3006:ALA:C	2.64	0.41
1:H:3206:LEU:HD23	1:H:3208:ILE:HD11	2.03	0.41
1:H:107:GLN:O	1:H:329:THR:OG1	2.29	0.41
1:H:1911:ASN:OD1	1:H:1911:ASN:C	2.63	0.41
1:H:3274:LEU:HB3	1:H:3309:TYR:CE1	2.56	0.41
1:H:236:GLU:OE1	1:H:239:ARG:CZ	2.69	0.40
1:H:936:ILE:O	1:H:936:ILE:HG13	2.21	0.40
1:H:1232:GLN:OE1	1:H:1232:GLN:HA	2.21	0.40
1:H:69:VAL:HG12	1:H:70:ASP:N	2.35	0.40
1:H:1895:VAL:N	1:H:1902:ALA:O	2.51	0.40
1:H:3230:ASP:O	1:H:3234:LEU:HD13	2.20	0.40
1:H:107:GLN:HG3	1:H:109:ILE:HD11	2.03	0.40
1:H:892:LEU:O	1:H:902:VAL:N	2.48	0.40
1:H:1291:ARG:HH21	1:H:1291:ARG:HG2	1.87	0.40
1:H:1511:LEU:HB3	1:H:1546:TYR:CE1	2.56	0.40
1:H:814:ILE:HD11	1:H:855:SER:HB3	2.03	0.40
1:H:2039:LYS:O	1:H:2042:ILE:HG22	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	H	1860/3384 (55%)	1782 (96%)	78 (4%)	0	100 100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	H	1730/2931 (59%)	1716 (99%)	14 (1%)	73 76

All (14) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	H	357	MET
1	H	359	ASP
1	H	365	ASP
1	H	368	CYS
1	H	911	GLU
1	H	917	LYS
1	H	1546	TYR
1	H	2120	MET
1	H	2122	ASP
1	H	2128	ASP
1	H	2131	CYS
1	H	2674	GLU
1	H	2680	LYS

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Mol	Chain	Res	Type
1	H	3309	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (16) such sidechains are listed below:

Mol	Chain	Res	Type
1	H	238	ASN
1	H	246	HIS
1	H	767	GLN
1	H	809	GLN
1	H	919	ASN
1	H	1217	HIS
1	H	1389	HIS
1	H	1478	HIS
1	H	2001	ASN
1	H	2009	HIS
1	H	2530	GLN
1	H	2682	ASN
1	H	2980	HIS
1	H	3140	ASN
1	H	3152	HIS
1	H	3241	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

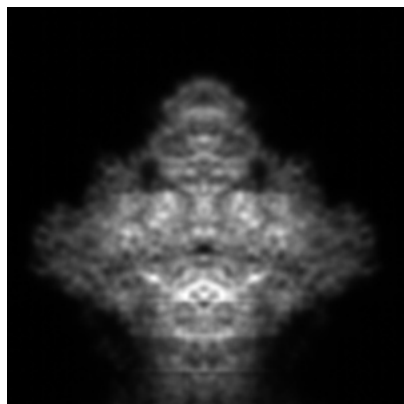
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-72378. These allow visual inspection of the internal detail of the map and identification of artifacts.

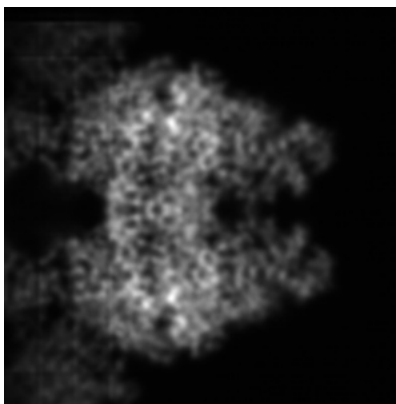
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

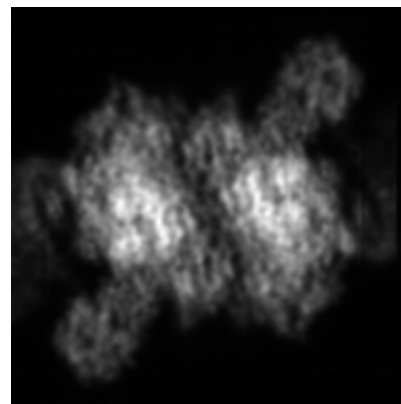
6.1.1 Primary map



X

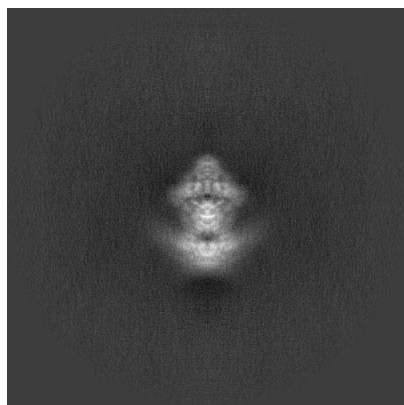


Y

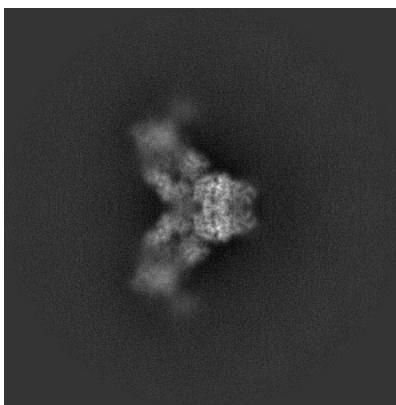


Z

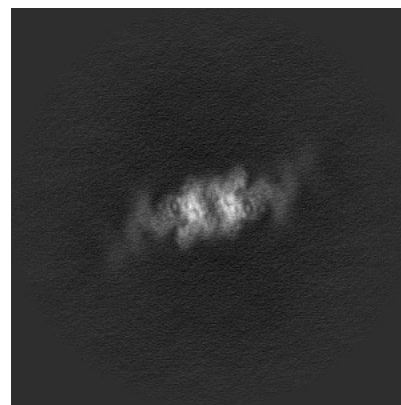
6.1.2 Raw map



X



Y



Z

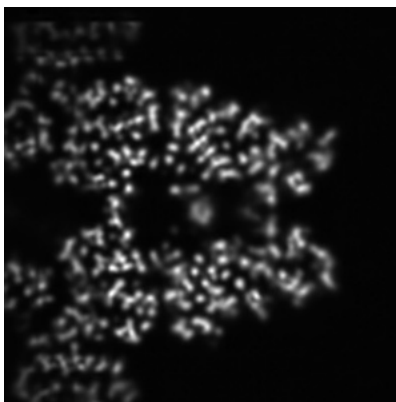
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

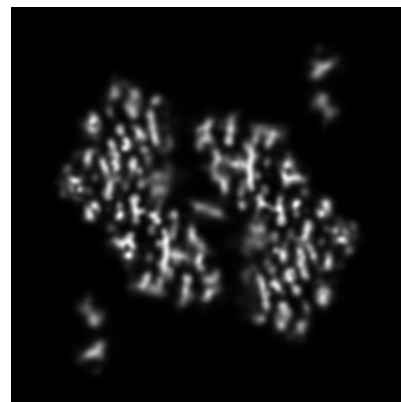
6.2.1 Primary map



X Index: 68

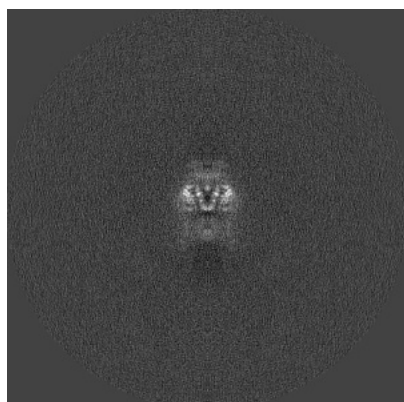


Y Index: 68

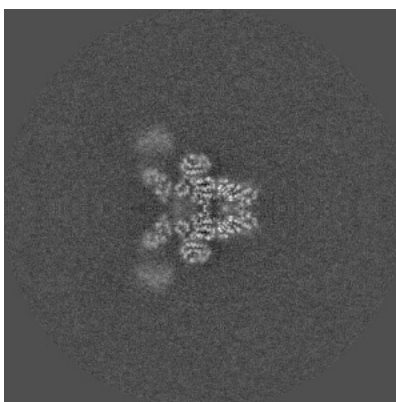


Z Index: 68

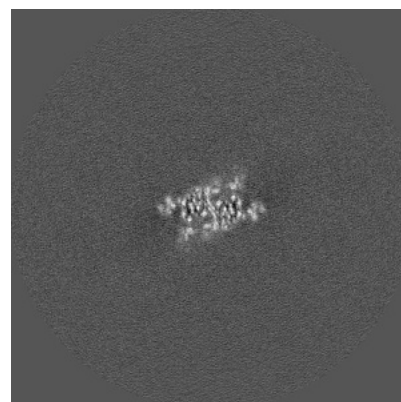
6.2.2 Raw map



X Index: 200



Y Index: 200

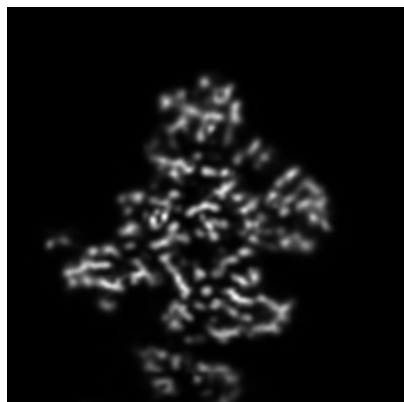


Z Index: 200

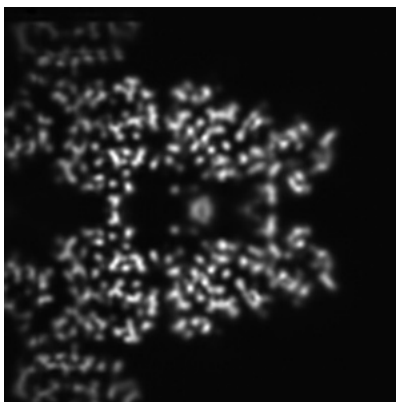
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

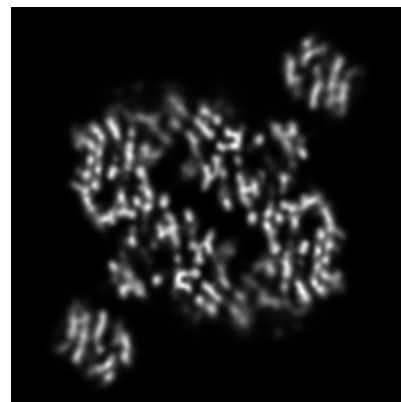
6.3.1 Primary map



X Index: 42

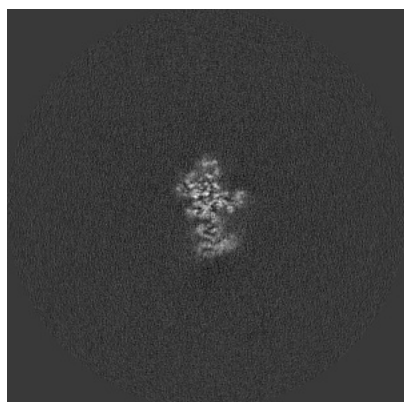


Y Index: 67

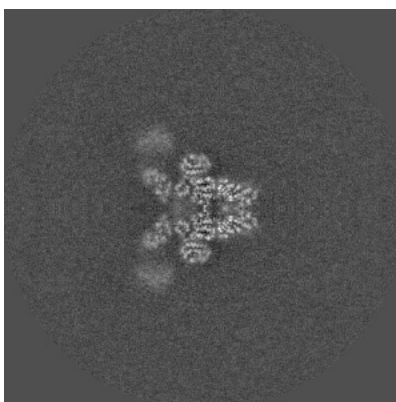


Z Index: 59

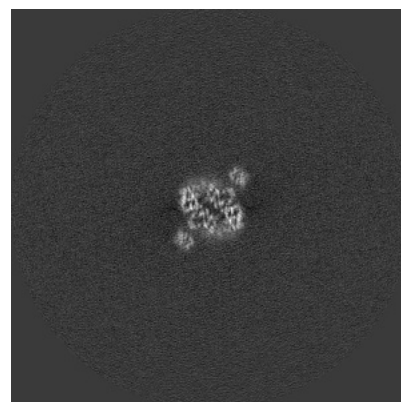
6.3.2 Raw map



X Index: 220



Y Index: 200



Z Index: 215

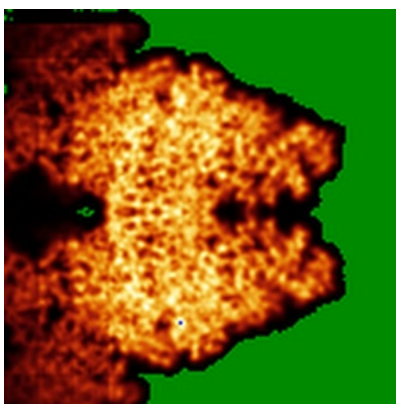
The images above show the largest variance slices of the map in three orthogonal directions.

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

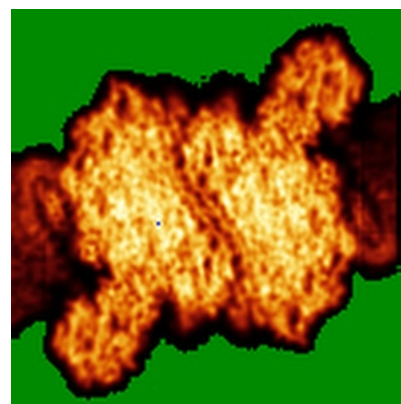
6.4.1 Primary map



X

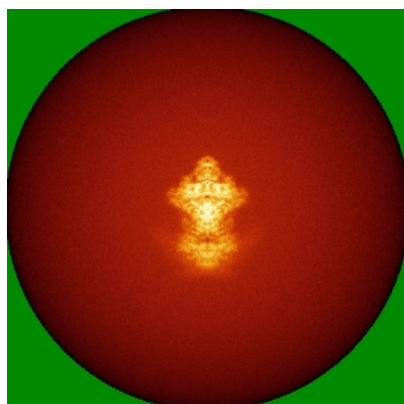


Y

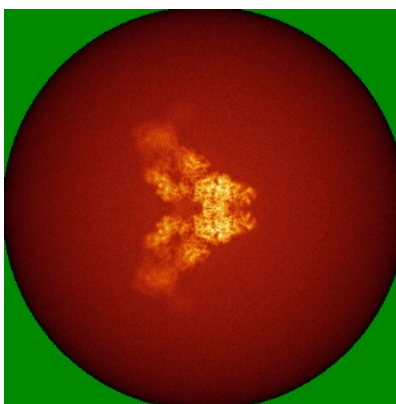


Z

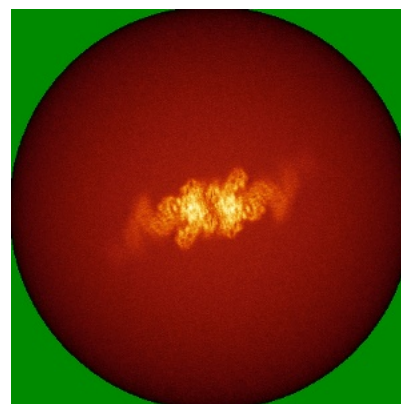
6.4.2 Raw map



X



Y



Z

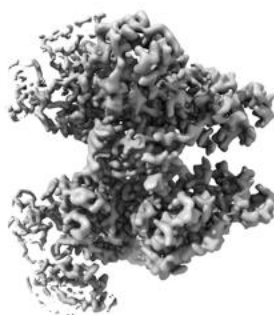
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

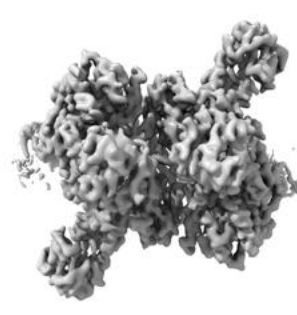
6.5.1 Primary map



X



Y



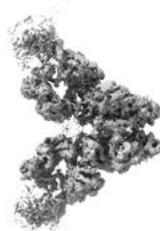
Z

The images above show the 3D surface view of the map at the recommended contour level 4.0. 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.

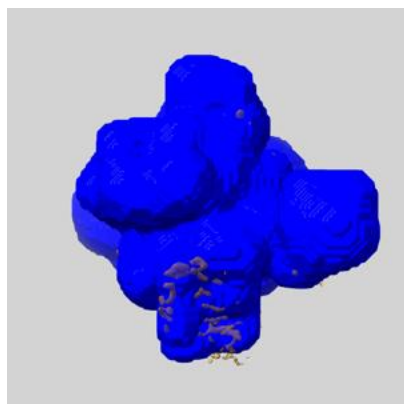
6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

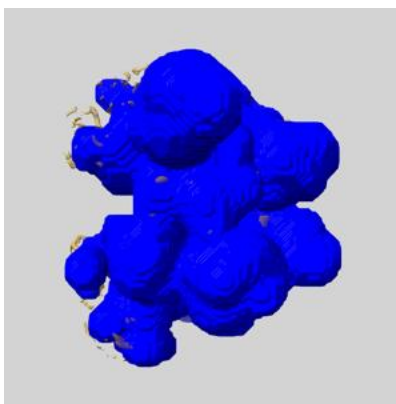
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

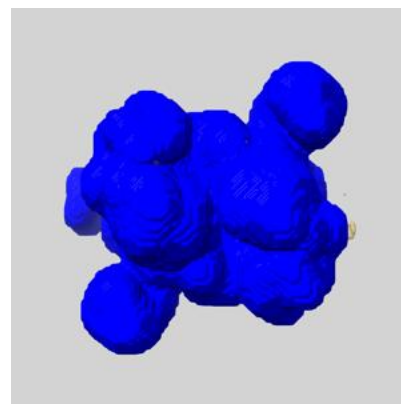
6.6.1 emd_72378_msk_1.map [i](#)



X



Y

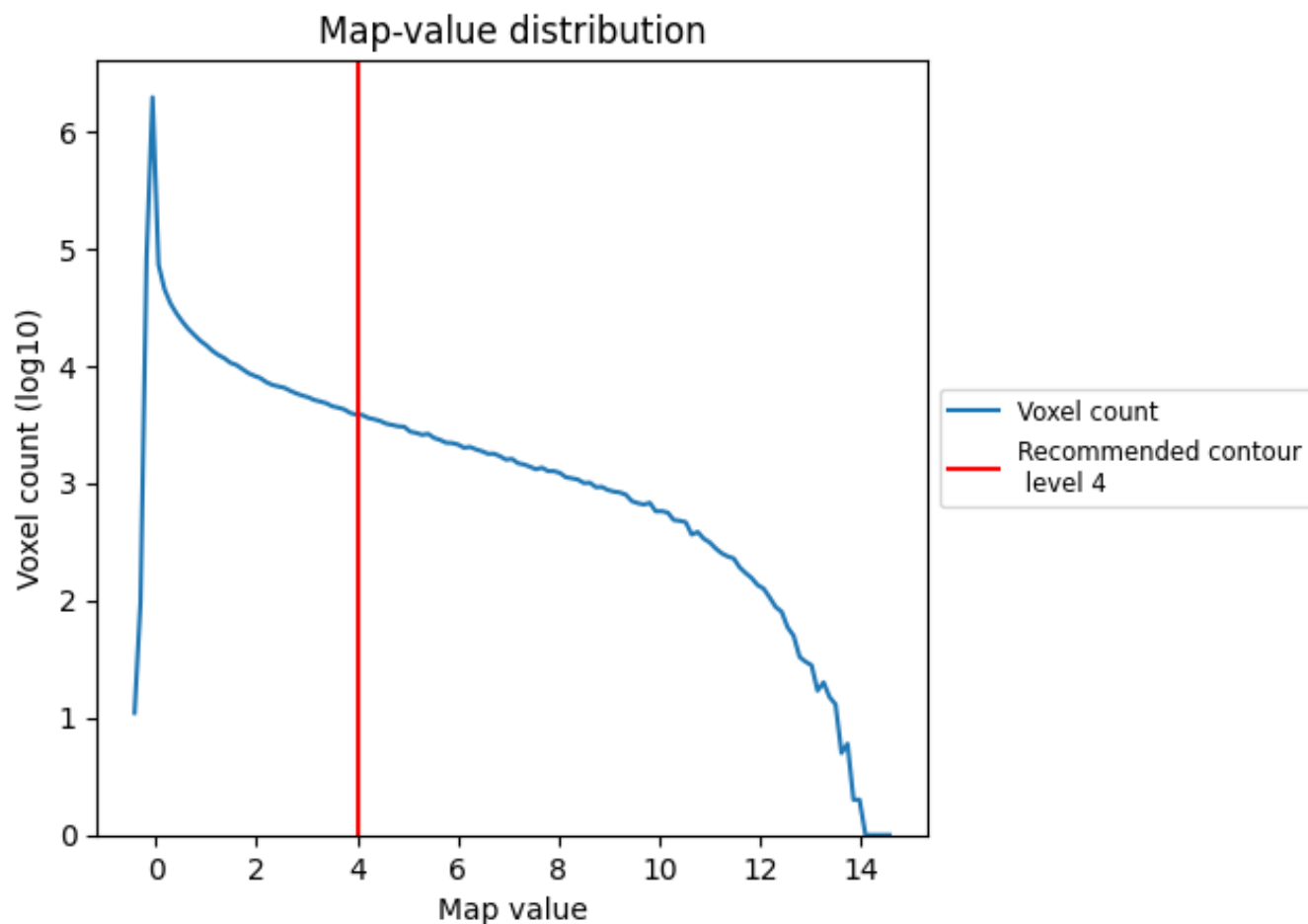


Z

7 Map analysis [i](#)

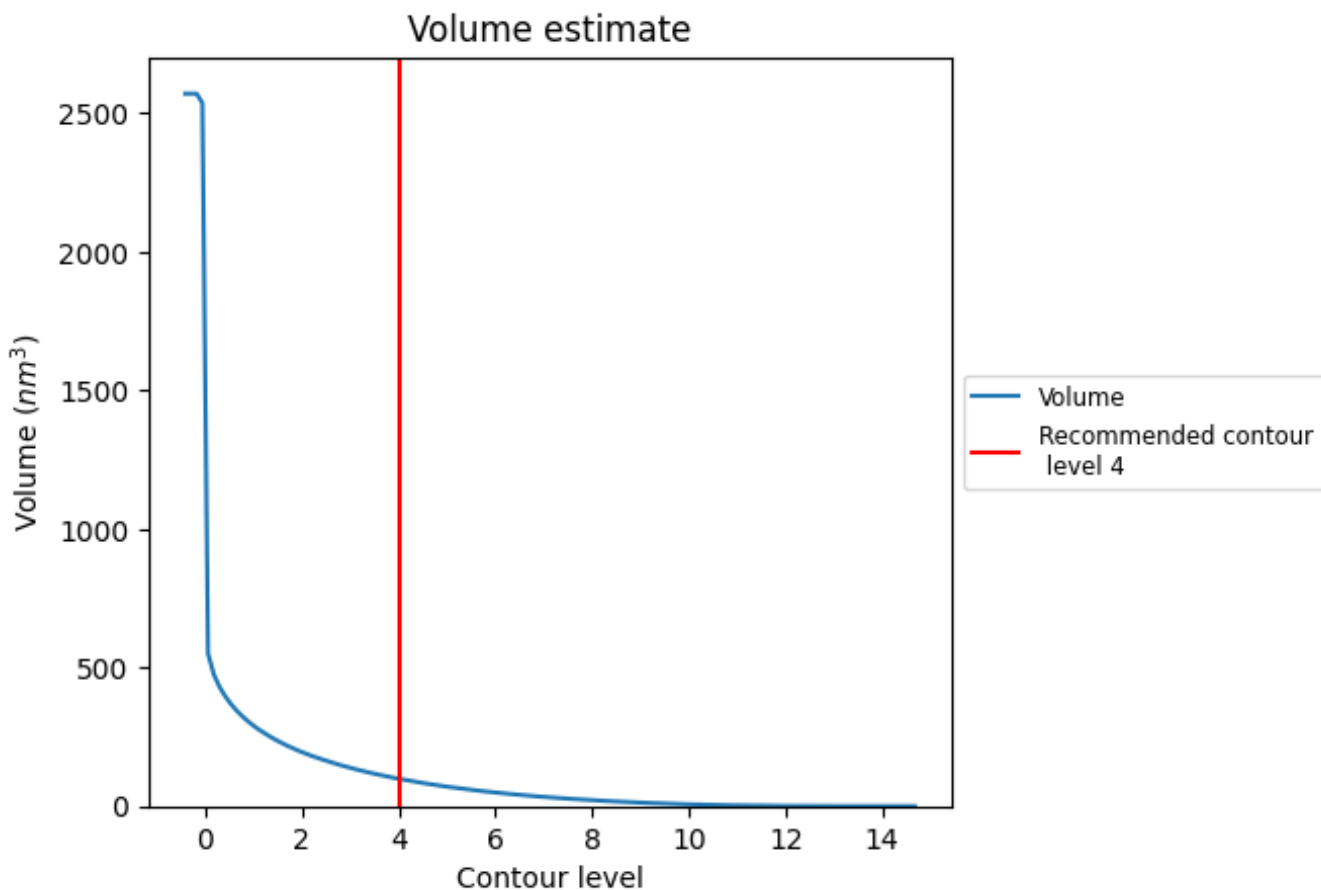
This section contains the results of statistical analysis of the map.

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.

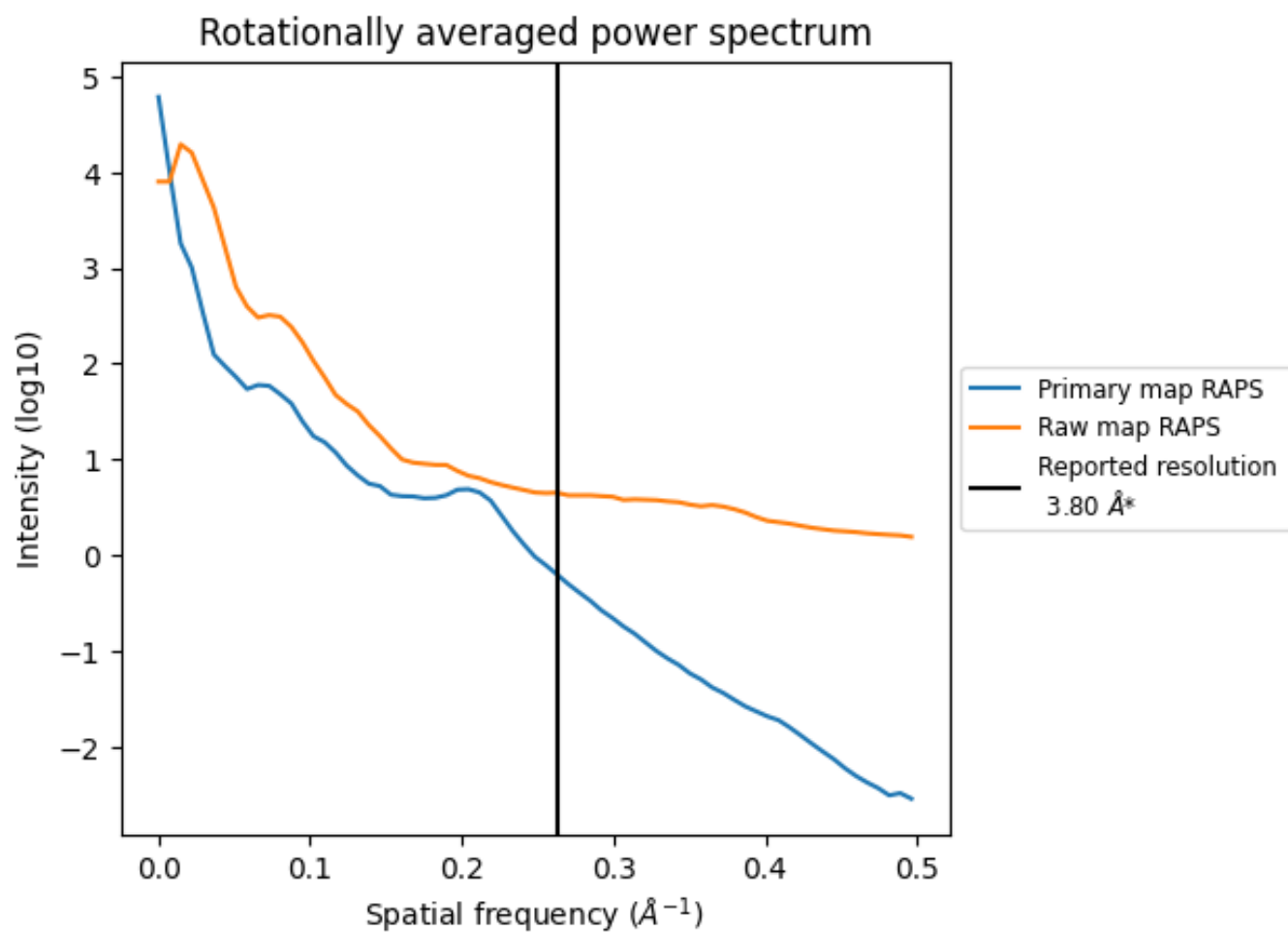
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 99 nm³; this corresponds to an approximate mass of 89 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](#)

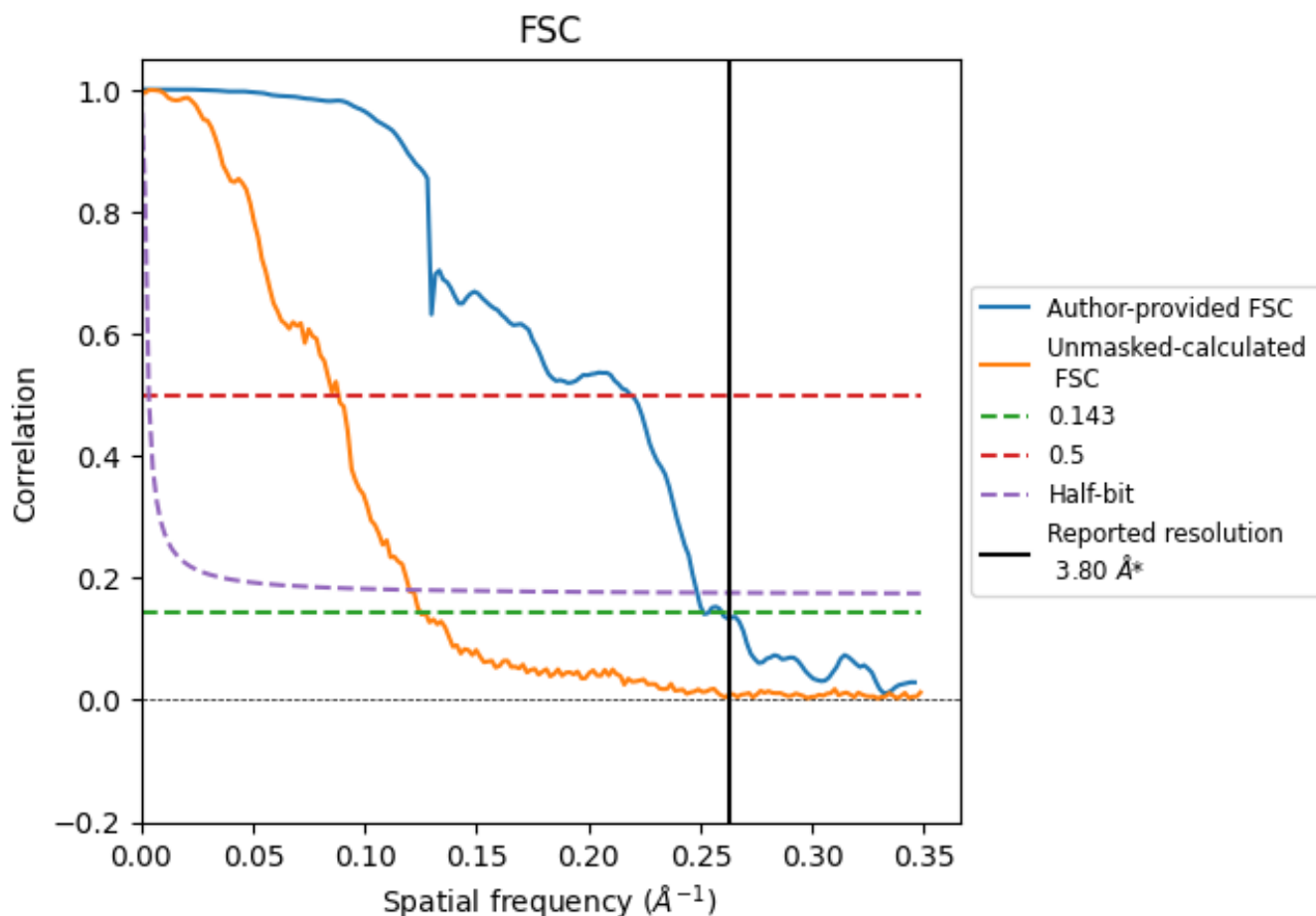


*Reported resolution corresponds to spatial frequency of 0.263 Å⁻¹

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 0.263 Å⁻¹

8.2 Resolution estimates [i](#)

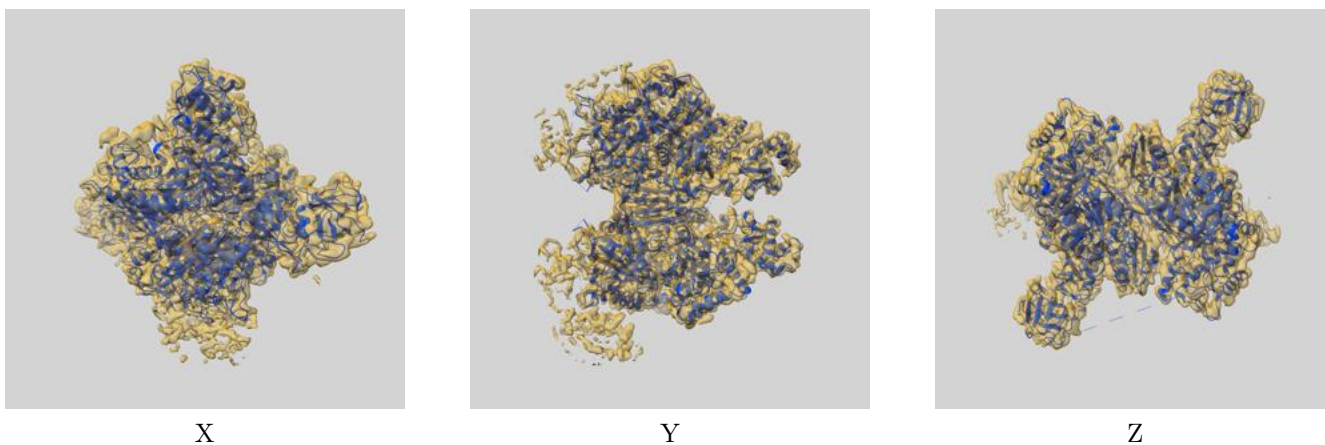
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.80	-	-
Author-provided FSC curve	3.98	4.57	4.02
Unmasked-calculated*	8.01	11.34	8.33

*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 8.01 differs from the reported value 3.8 by more than 10 %

9 Map-model fit [i](#)

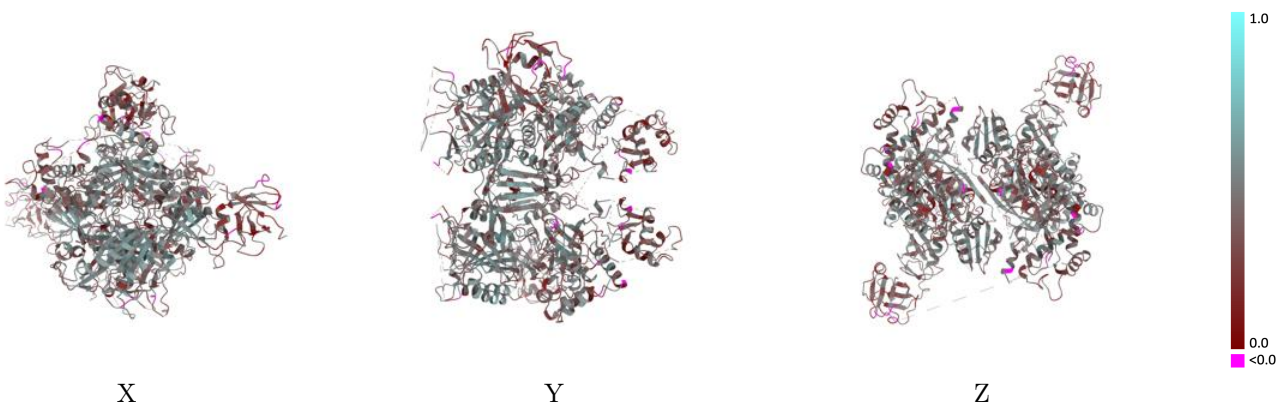
This section contains information regarding the fit between EMDB map EMD-72378 and PDB model 9XZY. Per-residue inclusion information can be found in section 3 on page 8.

9.1 Map-model overlay [i](#)



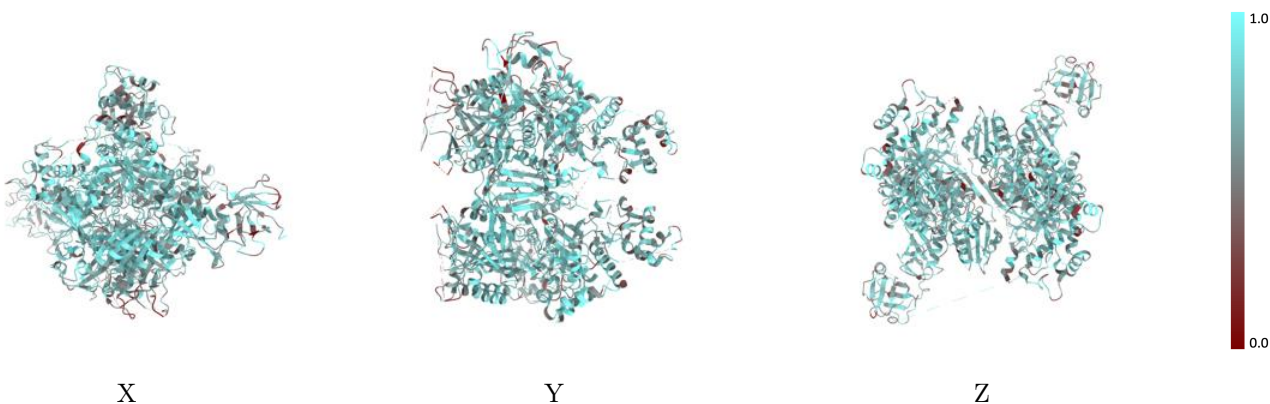
The images above show the 3D surface view of the map at the recommended contour level 4.0 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



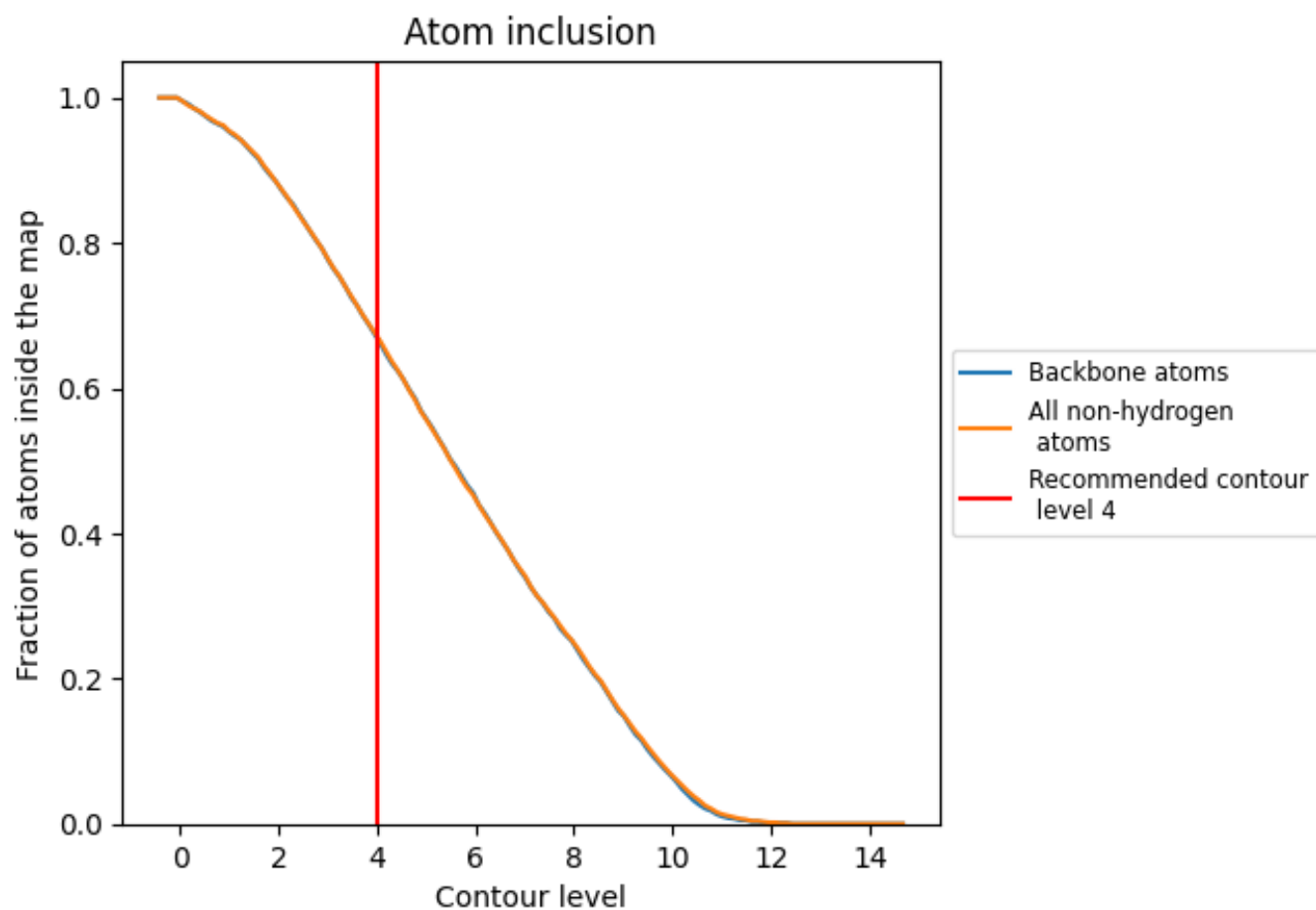
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (4).





9.4 Atom inclusion [i](#)



At the recommended contour level, 67% of all backbone atoms, 67% 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 (4) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6720	 0.4040
H	 0.6910	 0.4040

