wwPDB EM Validation Summary Report

Nov 13, 2022 – 08:26 AM EST

PDB ID	:	6UZ0
EMDB ID	:	EMD-20949
Title	:	Cardiac sodium channel with flecainide
Authors	:	Jiang, D.; Shi, H.; Tonggu, L.; Lenaeus, M.J.; Zheng, N.; Catterall, W.A.
Deposited on	:	2019-11-14
Resolution	:	3.24 Å(reported)
Based on initial model	:	6AGF

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

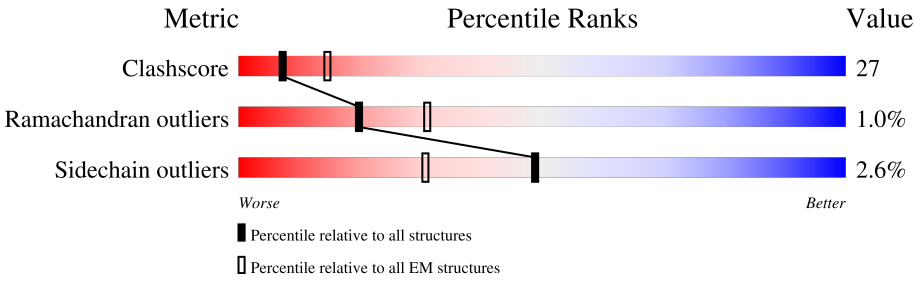
EMDB validation analysis	:	0.0.1.dev43
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.2

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.24 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=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 <=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	1838	7%, 39%, 22%, ·, 38%
2	B	2	50%, 50%
2	D	2	100%
3	C	3	100%

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
3	NAG	C	1	X	-	-	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	BMA	C	3	X	-	-	-
4	NAG	A	3009	-	-	X	-

2 Entry composition (i)

There are 7 unique types of molecules in this entry. The entry contains 9557 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 Sodium channel protein type 5 subunit alpha,Green fluorescent protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1138	Total	C	N	O	S	0	0
			8970	5942	1426	1534	68		

There are 342 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	?	-	LEU	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	MET	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	ALA	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	VAL	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	ASN	deletion	UNP P15389
A	?	-	HIS	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	LYS	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	LYS	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	LYS	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389

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Chain	Residue	Modelled	Actual	Comment	Reference
A	?	-	ASP	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	LYS	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	ALA	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	ASN	deletion	UNP P15389
A	?	-	GLN	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	HIS	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	MET	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	ILE	deletion	UNP P15389

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Chain	Residue	Modelled	Actual	Comment	Reference
A	?	-	PHE	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	PHE	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	GLN	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	ALA	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	PHE	deletion	UNP P15389
A	?	-	ALA	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	ASN	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	ALA	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	HIS	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	VAL	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	TRP	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	HIS	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389

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Chain	Residue	Modelled	Actual	Comment	Reference
A	?	-	ALA	deletion	UNP P15389
A	?	-	GLN	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	GLN	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	ALA	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	ALA	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	TYR	deletion	UNP P15389
A	?	-	VAL	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	ASN	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	LYS	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	ASN	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	VAL	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	CYS	deletion	UNP P15389
A	?	-	ASN	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	VAL	deletion	UNP P15389
A	?	-	VAL	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	ALA	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	ALA	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	ALA	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389

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Chain	Residue	Modelled	Actual	Comment	Reference
A	?	-	PRO	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	TYR	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	MET	deletion	UNP P15389
A	?	-	VAL	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	GLN	deletion	UNP P15389
A	?	-	MET	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	GLN	deletion	UNP P15389
A	?	-	ALA	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	CYS	deletion	UNP P15389
A	?	-	ALA	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	PHE	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389

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Chain	Residue	Modelled	Actual	Comment	Reference
A	?	-	PRO	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	LYS	deletion	UNP P15389
A	?	-	GLN	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	GLN	deletion	UNP P15389
A	?	-	VAL	deletion	UNP P15389
A	?	-	VAL	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	HIS	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	TYR	deletion	UNP P15389
A	?	-	GLN	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	ALA	deletion	UNP P15389
A	?	-	TRP	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	GLN	deletion	UNP P15389
A	?	-	VAL	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	ALA	deletion	UNP P15389

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Chain	Residue	Modelled	Actual	Comment	Reference
A	?	-	GLY	deletion	UNP P15389
A	?	-	ALA	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	GLN	deletion	UNP P15389
A	?	-	ALA	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	TRP	deletion	UNP P15389
A	?	-	GLN	deletion	UNP P15389
A	?	-	GLN	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	GLN	deletion	UNP P15389
A	?	-	LYS	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	GLN	deletion	UNP P15389
A	?	-	ALA	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	CYS	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	TYR	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	ALA	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	MET	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	ASN	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	ALA	deletion	UNP P15389

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Chain	Residue	Modelled	Actual	Comment	Reference
A	?	-	ASP	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	GLN	deletion	UNP P15389
A	?	-	ILE	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	LEU	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	VAL	deletion	UNP P15389
A	?	-	LYS	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	CYS	deletion	UNP P15389
A	?	-	PHE	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	GLU	deletion	UNP P15389
A	?	-	GLY	deletion	UNP P15389
A	?	-	CYS	deletion	UNP P15389
A	?	-	VAL	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	ARG	deletion	UNP P15389
A	?	-	CYS	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	?	-	CYS	deletion	UNP P15389
A	?	-	CYS	deletion	UNP P15389
A	?	-	MET	deletion	UNP P15389
A	?	-	VAL	deletion	UNP P15389
A	?	-	ASP	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	THR	deletion	UNP P15389
A	?	-	GLN	deletion	UNP P15389
A	?	-	SER	deletion	UNP P15389
A	?	-	PRO	deletion	UNP P15389
A	1899	GLU	-	linker	UNP P15389
A	1900	VAL	-	linker	UNP P15389
A	1901	LEU	-	linker	UNP P15389

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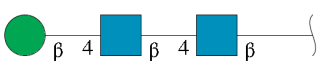
Chain	Residue	Modelled	Actual	Comment	Reference
A	1902	PHE	-	linker	UNP P15389
A	1903	GLN	-	linker	UNP P15389
A	1904	GLY	-	linker	UNP P15389
A	1905	PRO	-	linker	UNP P15389
A	1906	GLY	-	linker	UNP P15389
A	1907	SER	-	linker	UNP P15389
A	1908	MET	-	linker	UNP P15389
A	1909	VAL	-	linker	UNP P15389
A	1972	LEU	PHE	conflict	UNP P42212
A	1973	THR	SER	conflict	UNP P42212
A	2139	LEU	HIS	conflict	UNP P42212
A	2147	GLY	-	expression tag	UNP P42212
A	2148	SER	-	expression tag	UNP P42212
A	2149	ASP	-	expression tag	UNP P42212
A	2150	TYR	-	expression tag	UNP P42212
A	2151	LYS	-	expression tag	UNP P42212
A	2152	ASP	-	expression tag	UNP P42212
A	2153	ASP	-	expression tag	UNP P42212
A	2154	ASP	-	expression tag	UNP P42212
A	2155	ASP	-	expression tag	UNP P42212
A	2156	LYS	-	expression tag	UNP P42212

- Molecule 2 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.

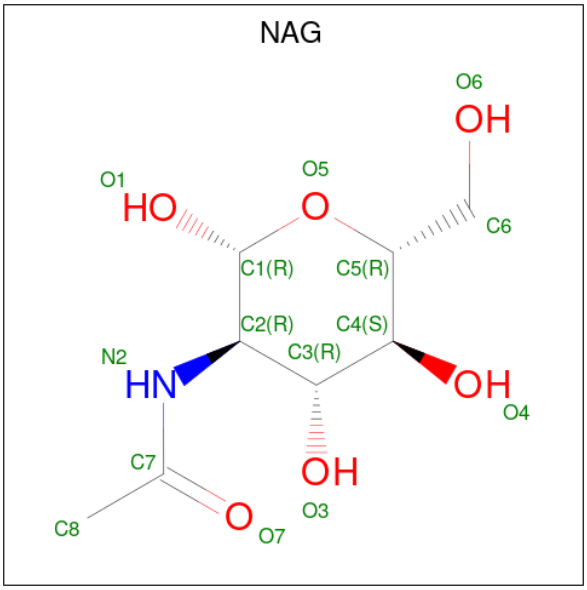
Mol	Chain	Residues	Atoms				AltConf	Trace
2	B	2	Total	C	N	O	0	0
			28	16	2	10		
2	D	2	Total	C	N	O	0	0
			28	16	2	10		

- Molecule 3 is an oligosaccharide called beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



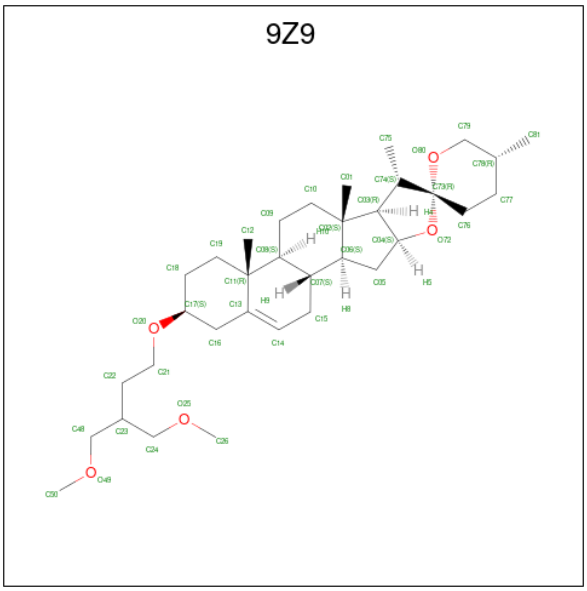
Mol	Chain	Residues	Atoms				AltConf	Trace
3	C	3	Total	C	N	O	0	0
			39	22	2	15		

- Molecule 4 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).



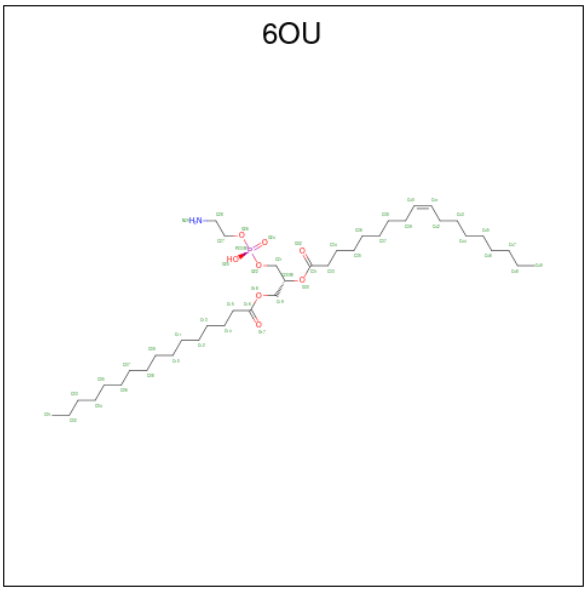
Mol	Chain	Residues	Atoms				AltConf
4	A	1	Total	C	N	O	0
			28	16	2	10	
4	A	1	Total	C	N	O	0
			28	16	2	10	

- Molecule 5 is (3beta,14beta,17beta,25R)-3-[4-methoxy-3-(methoxymethyl)butoxy]spirost-5-en (three-letter code: 9Z9) (formula: $C_{34}H_{56}O_5$).



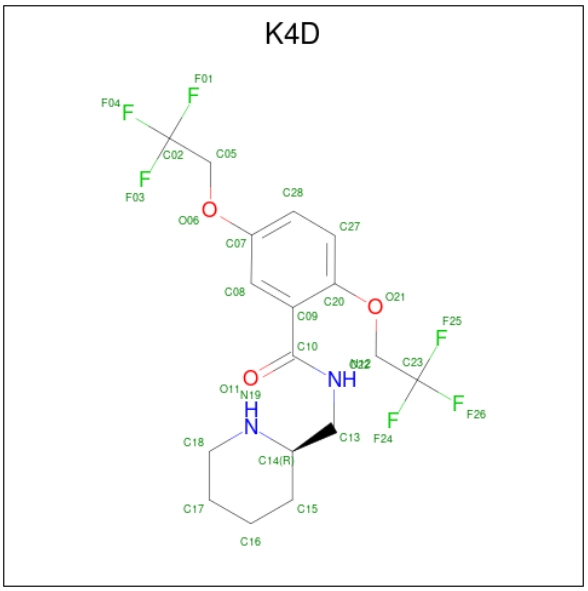
Mol	Chain	Residues	Atoms			AltConf
5	A	1	Total	C	O	0
			146	133	13	
5	A	1	Total	C	O	0
			146	133	13	
5	A	1	Total	C	O	0
			146	133	13	
5	A	1	Total	C	O	0
			146	133	13	
5	A	1	Total	C	O	0
			146	133	13	

- Molecule 6 is [(2 {R})-1-[2-azanylethoxy(oxidanyl)phosphoryl]oxy-3-hexadecanoyloxy-propan-2-yl] ({Z})-octadec-9-enoate (three-letter code: 6OU) (formula: $C_{39}H_{76}NO_8P$).



Mol	Chain	Residues	Atoms					AltConf
6	A	1	Total	C	N	O	P	0
			290	221	4	60	5	
6	A	1	Total	C	N	O	P	0
			290	221	4	60	5	
6	A	1	Total	C	N	O	P	0
			290	221	4	60	5	
6	A	1	Total	C	N	O	P	0
			290	221	4	60	5	
6	A	1	Total	C	N	O	P	0
			290	221	4	60	5	
6	A	1	Total	C	N	O	P	0
			290	221	4	60	5	
6	A	1	Total	C	N	O	P	0
			290	221	4	60	5	
6	A	1	Total	C	N	O	P	0
			290	221	4	60	5	
6	A	1	Total	C	N	O	P	0
			290	221	4	60	5	
6	A	1	Total	C	N	O	P	0
			290	221	4	60	5	
6	A	1	Total	C	N	O	P	0
			290	221	4	60	5	

- Molecule 7 is Flecainide (three-letter code: K4D) (formula: $C_{17}H_{20}F_6N_2O_3$) (labeled as "Ligand of Interest" by depositor).



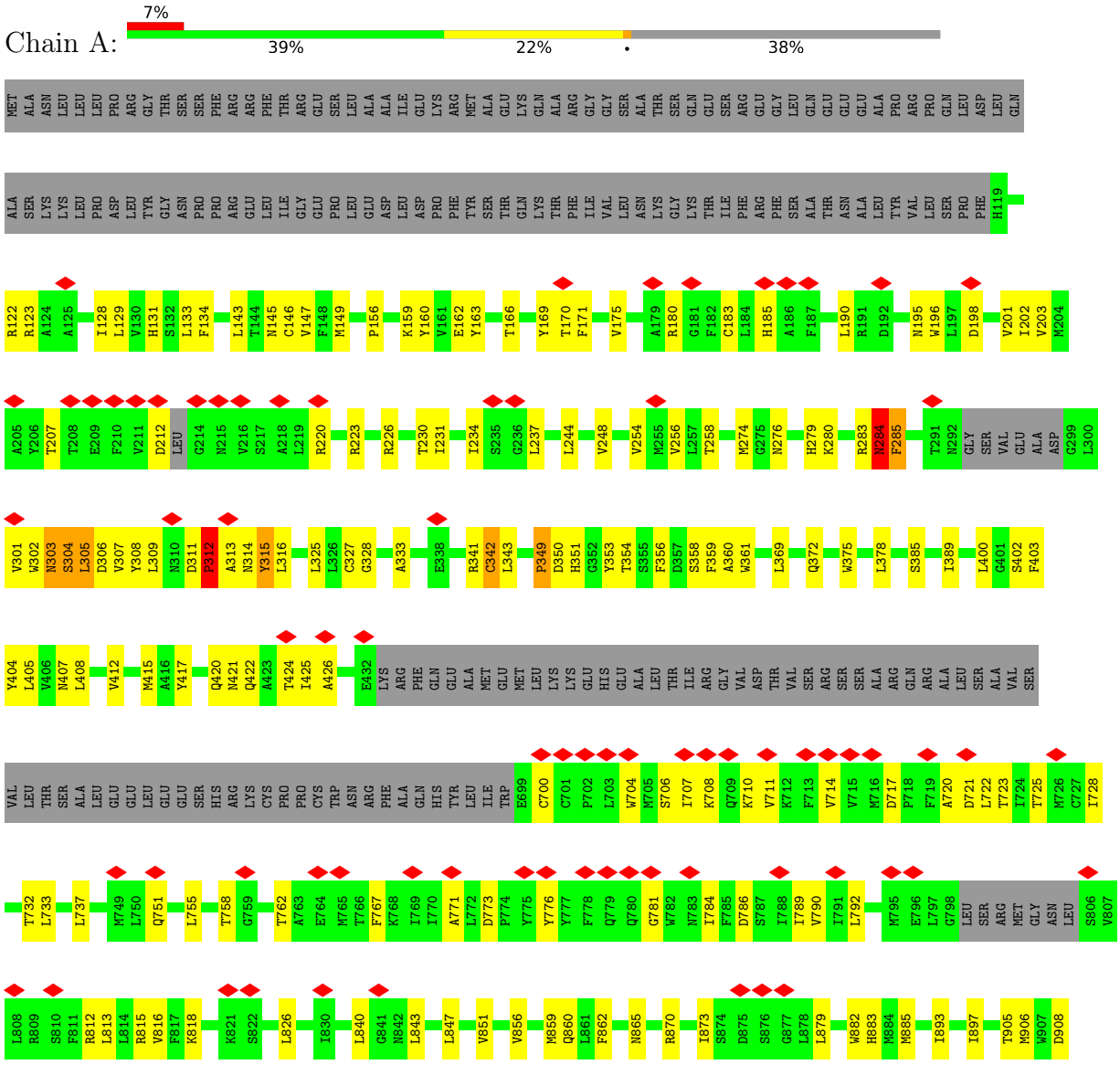
Mol	Chain	Residues	Atoms					AltConf
7	A	1	Total	C	F	N	O	0
			28	17	6	2	3	

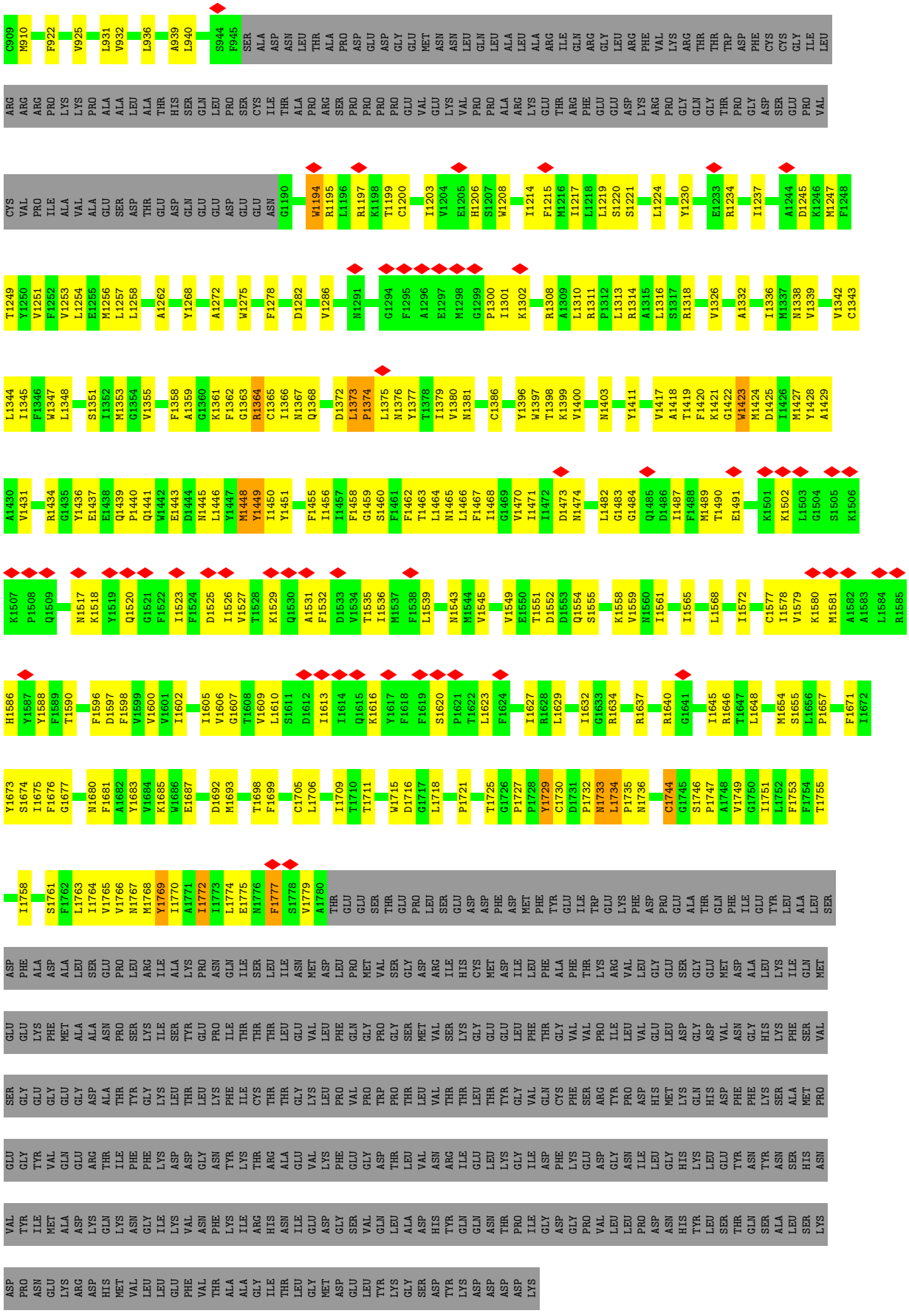
3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: Sodium channel protein type 5 subunit alpha,Green fluorescent protein

Chain A:



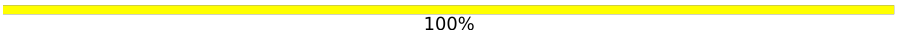

C909 M910 F922 V925 L931 V932 L936 A939 L940 S944 F945
W1194 R1195 L1196 R1197 K1198 T1199 C1200 I1203 V1204 E1205 H1206 S1207 W1208 I1214 F1215 M1216 I1217 L1218 L1219 S1220 S1221 L1224 Y1230 E1233 R1234 I1237 A1244 D1245 K1246 M1247 F1248
T1249 Y1250 V1251 F1252 V1253 L1254 E1255 M1256 L1257 L1258 A1262 Y1268 A1272 W1275 F1278 D1282 V1286 N1291 G1294 F1295 A1296 E1297 M1298 G1299 P1300 I1301 K1302 R1308 A1309 L1310 R1311 P1312 L1313 R1314 A1315 L1316 S1317 R1318 V1326 A1332 I1336 M1337 N1338 V1339 V1342 C1343
L1344 I1345 F1346 W1347 L1348 S1351 I1352 M1353 G1354 V1355 F1358 A1359 G1360 K1361 F1362 G1363 R1364 C1365 I1366 N1367 Q1368 D1372 L1373 P1374 L1375 N1376 Y1377 T1378 I1379 V1380 N1381 C1386 Y1396 W1397 T1398 K1399 V1400 N1403 Y1411 V1417 A1418 T1419 F1420 K1421 G1422 W1423 M1424 D1425 I1426 M1427 Y1428 A1429
A1430 V1431 R1434 G1435 Y1436 E1437 E1438 Q1439 P1440 Q1441 W1442 E1443 D1444 N1445 L1446 Y1447 M1448 Y1449 I1450 Y1451 F1455 I1456 I1457 F1458 G1459 S1460 F1461 F1462 T1463 L1464 N1465 L1466 F1467 I1468 G1469 V1470 I1471 I1472 D1473 N1474 L1482 G1483 G1484 Q1485 D1486 I1487 F1488 M1489 T1490 E1491 K1501 K1502 L1503 G1504 S1505 K1506
K1507 P1508 Q1509 N1517 K1518 Y1519 Q1520 G1521 F1522 I1523 F1524 D1525 I1526 V1527 T1528 K1529 Q1530 A1531 F1532 D1533 V1534 T1535 I1536 M1537 F1538 L1539 N1543 M1544 V1545 V1549 E1550 T1551 D1552 D1553 Q1554 S1555 K1558 V1559 N1560 I1561 I1565 L1568 I1572 C1577 C1578 V1579 K1580 M1581 A1582 A1583 L1584 R1585
H1586 Y1587 Y1588 F1589 T1590 F1596 D1597 F1598 V1599 V1600 V1601 I1602 I1605 V1606 G1607 T1608 V1609 L1610 S1611 D1612 I1613 I1614 Q1615 K1616 Y1617 F1618 F1619 S1620 P1621 T1622 L1623 F1624 I1627 R1628 L1629 I1632 G1633 R1634 R1637 R1640 G1641 I1645 R1646 T1647 L1648 M1654 S1655 L1656 P1657 F1671 I1672
Y1673 S1674 I1675 F1676 G1677 N1680 F1681 A1682 Y1683 V1684 K1685 W1686 E1687 D1692 M1693 T1698 F1699 C1705 L1706 I1709 T1710 T1711 W1715 D1716 G1717 L1718 P1721 T1725 G1726 P1727 P1728 Y1729 C1730 D1731 P1732 N1733 L1734 P1735 N1736 C1744 G1745 S1746 P1747 A1748 V1749 G1750 I1751 L1752 F1753 F1754 T1755
I1758 S1761 F1762 L1763 I1764 V1765 V1766 N1767 M1768 Y1769 I1770 A1771 I1772 I1773 L1774 E1775 N1776 F1777 S1778 V1779 A1780
THR GLU GLU SER THR GLU PRO LEU SER GLU ASP PHE ASP MET PHE TYR GLU ILE TRP GLU LYS PHE ASP PRO GLU ALA THR GLN PHE ILE GLU TYR LEU ALA LEU SER
ASP PHE ALA ASP ALA LEU SER GLU PRO LEU ARG ILE ALA LYS PRO ASN GLN ILE SER LEU ILE ASN MET ASP LEU PRO MET VAL SER GLY ASP ARG ILE HIS CYS MET ASP ILE LEU PHE ALA PHE THR LYS ARG VAL LEU GLY GLU SER GLY GLU MET ASP ALA LEU LYS ILE GLN MET
GLU GLU LYS PHE MET ALA ALA ASN PRO SER LYS ILE SER TYR GLU PRO ILE THR THR LEU GLU VAL LEU PHE GLN GLY PRO GLY SER MET VAL SER LYS GLY GLU LEU PHE THR GLY VAL VAL PRO ILE LEU VAL GLU LEU ASP GLY ASP VAL ASN GLY HIS LYS SER PHE SER VAL
SER GLY GLU GLY GLU GLY ASP ALA THR TYR GLY LYS LEU THR LYS PHE ILE CYS THR THR GLY LYS LEU VAL PRO VAL PRO TRP PRO THR LEU VAL LEU PHE THR LEU THR TYR GLY VAL GLN CYS PHE SER ARG TYR PRO ASP HIS MET LYS GLN HIS ASP PHE PHE LYS SER ALA MET PRO
GLU GLY TYR VAL GLN GLU ARG THR ILE PHE LYS ASP ASP GLY ASN TYR LYS THR ARG ALA GLU VAL LYS PHE GLU GLY ASP THR ARG ILE GLU LEU LYS GLY ILE ASP PHE LYS GLU ASP GLY ILE ASN ILE LEU GLY HIS LYS LEU GLU SER TYR ASN SER HIS ASN
VAL TYR ILE MET ALA ASP LYS GLN LYS ASN GLY ILE LYS VAL ASN PHE LYS ILE ARG HIS ASN ILE GLU GLY SER VAL GLN LEU ALA ASP HIS TYR GLN GLN ASN THR PRO ILE GLY ASP GLY PRO VAL LEU LEU PRO ASP ASN HIS TYR LEU SER THR GLN SER ALA LEU SER LYS
ASP PRO ASN GLU LYS ARG ASP HIS MET VAL LEU LEU GLU PHE VAL THR ALA ALA GLY ILE THR LEU GLY MET ASP GLU LEU TYR LYS GLY SER ASP TYR LYS ASP ASP ASP LYS

• Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain B:

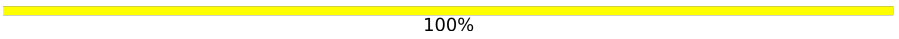
• Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain D:



• Molecule 3: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain C:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	513604	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 ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	130000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	42.962	Depositor
Minimum map value	-29.432	Depositor
Average map value	-0.010	Depositor
Map value standard deviation	1.805	Depositor
Recommended contour level	5.0	Depositor
Map size (Å)	270.336, 270.336, 270.336	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.056, 1.056, 1.056	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: K4D, 9Z9, NAG, 6OU, BMA

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	0.40	0/9188	0.55	2/12485 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1373	LEU	C-N-CD	-15.36	86.82	120.60
1	A	312	PRO	N-CA-C	5.06	125.25	112.10

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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	8970	0	8990	471	0
2	B	28	0	25	1	0
2	D	28	0	25	1	0
3	C	39	0	34	4	0
4	A	28	0	26	14	0
5	A	146	0	0	22	0
6	A	290	0	0	0	0
7	A	28	0	0	3	0
All	All	9557	0	9100	494	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 27.

The worst 5 of 494 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:A:840:LEU:CD1	1:A:940:LEU:HD12	1.24	1.66
5:A:3010:9Z9:C11	5:A:3010:9Z9:C08	1.74	1.65
5:A:3014:9Z9:C08	5:A:3014:9Z9:C11	1.75	1.58
1:A:284:ASN:HD21	4:A:3009:NAG:C1	0.95	1.55
5:A:3011:9Z9:C04	5:A:3011:9Z9:C05	1.77	1.51

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	1126/1838 (61%)	1030 (92%)	85 (8%)	11 (1%)	15 50

5 of 11 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	284	ASN
1	A	304	SER
1	A	312	PRO
1	A	1374	PRO
1	A	1449	TYR

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	954/1612 (59%)	929 (97%)	25 (3%)	46 74

5 of 25 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1425	ASP
1	A	1487	ILE
1	A	1777	PHE
1	A	1473	ASP
1	A	1729	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 18 such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1543	ASN
1	A	1701	ASN
1	A	1661	ASN
1	A	930	ASN
1	A	1493	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)

7 monosaccharides 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	NAG	B	1	1,2	14,14,15	0.17	0	17,19,21	0.44	0
2	NAG	B	2	2	14,14,15	0.23	0	17,19,21	0.39	0
3	NAG	C	1	1,3	14,14,15	0.28	0	17,19,21	0.56	0
3	NAG	C	2	3	14,14,15	0.28	0	17,19,21	0.57	0
3	BMA	C	3	3	11,11,12	0.32	0	15,15,17	1.00	1 (6%)
2	NAG	D	1	1,2	14,14,15	0.26	0	17,19,21	0.51	0
2	NAG	D	2	2	14,14,15	0.28	0	17,19,21	0.55	0

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	NAG	B	1	1,2	-	2/6/23/26	0/1/1/1
2	NAG	B	2	2	-	2/6/23/26	0/1/1/1
3	NAG	C	1	1,3	1/1/5/7	4/6/23/26	0/1/1/1
3	NAG	C	2	3	-	0/6/23/26	0/1/1/1
3	BMA	C	3	3	1/1/4/5	0/2/19/22	1/1/1/1
2	NAG	D	1	1,2	-	2/6/23/26	0/1/1/1
2	NAG	D	2	2	-	4/6/23/26	0/1/1/1

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	C	3	BMA	C1-O5-C5	2.58	115.68	112.19

All (2) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
3	C	1	NAG	C1
3	C	3	BMA	C1

5 of 14 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	D	2	NAG	C3-C2-N2-C7
2	D	2	NAG	C8-C7-N2-C2
2	D	2	NAG	O7-C7-N2-C2
3	C	1	NAG	C3-C2-N2-C7
2	B	1	NAG	O5-C5-C6-O6

All (1) ring outliers are listed below:

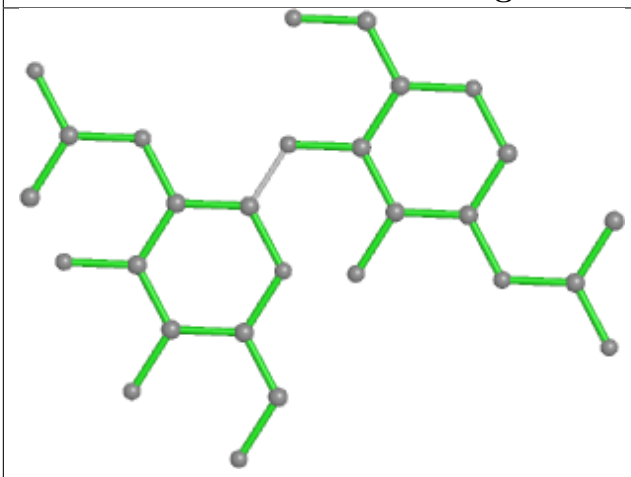
Mol	Chain	Res	Type	Atoms
3	C	3	BMA	C1-C2-C3-C4-C5-O5

5 monomers are involved in 6 short contacts:

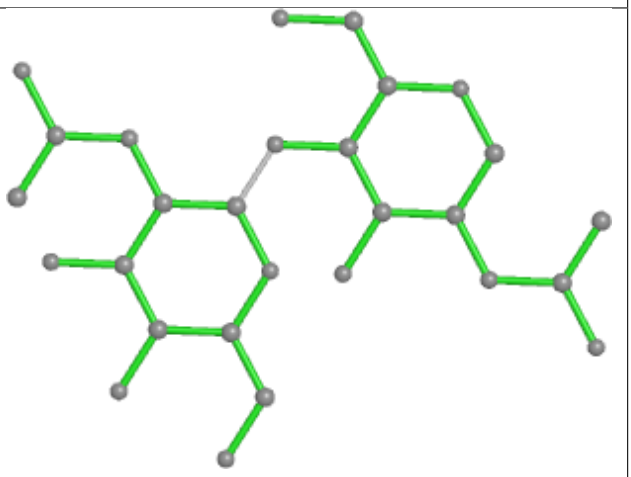
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	C	1	NAG	3	0
2	B	1	NAG	1	0
2	D	1	NAG	1	0
2	D	2	NAG	1	0
3	C	2	NAG	2	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

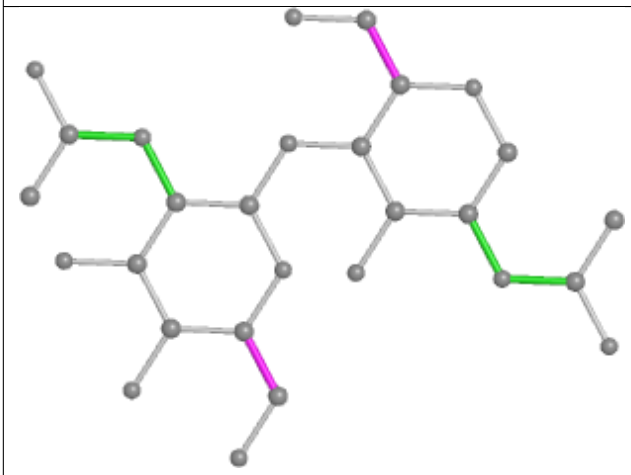
Oligosaccharide Chain B



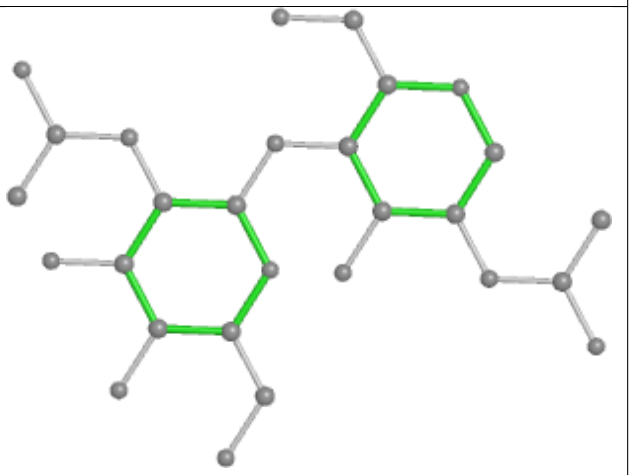
Bond lengths



Bond angles

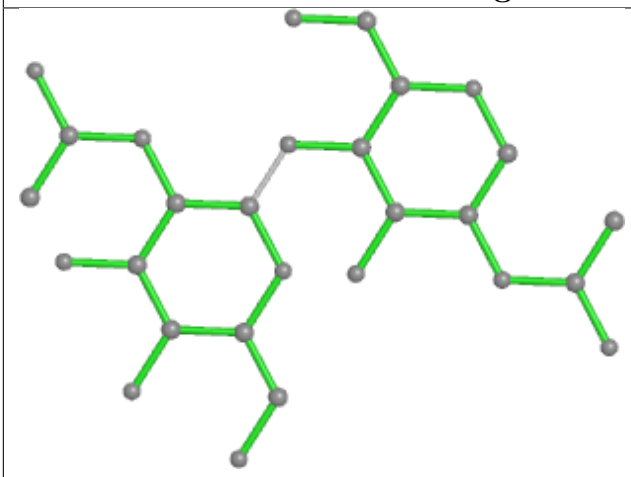


Torsions

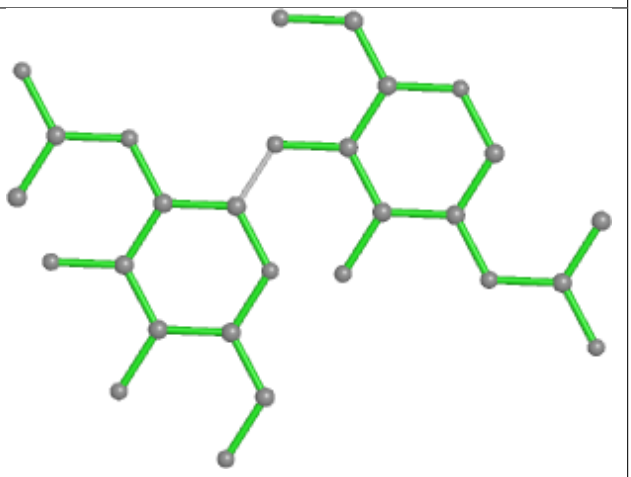


Rings

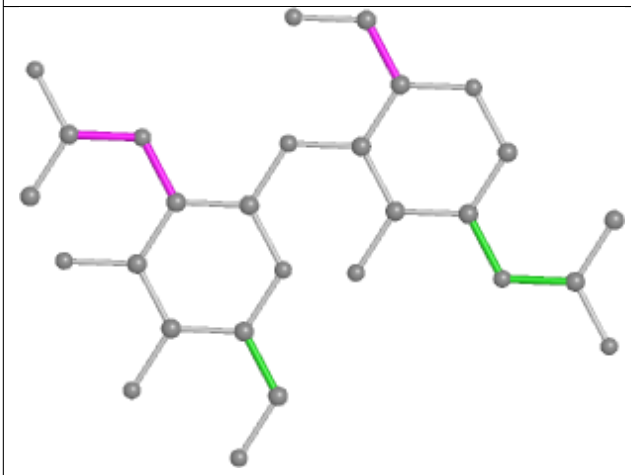
Oligosaccharide Chain D



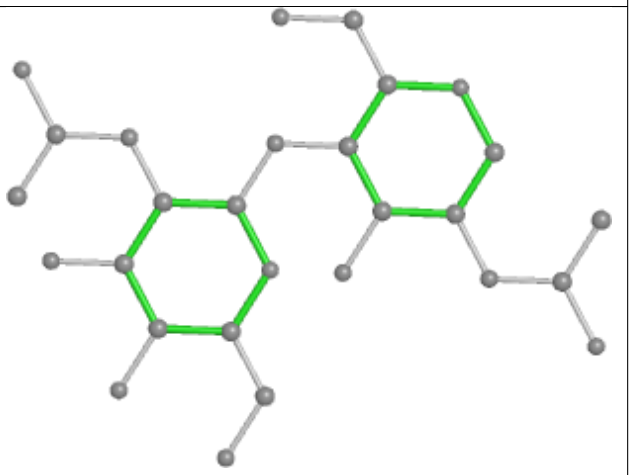
Bond lengths



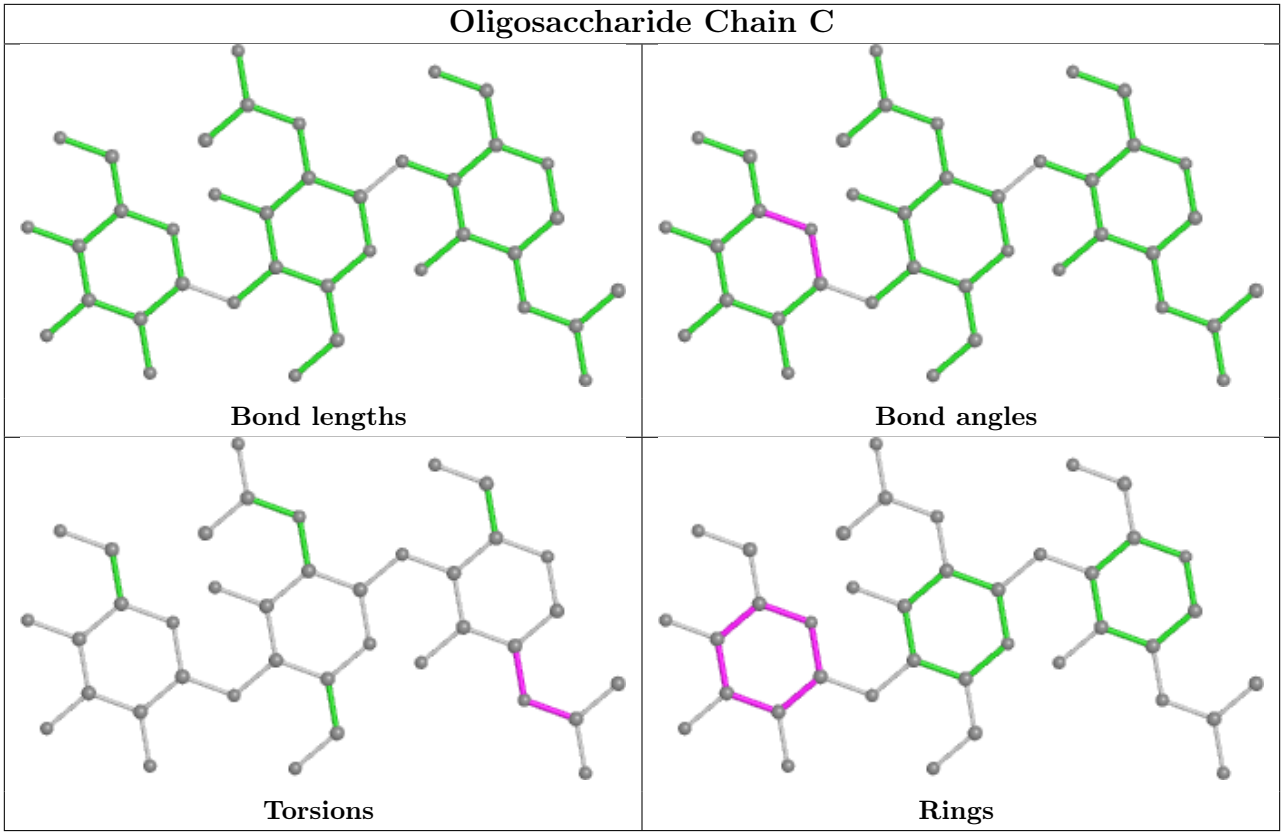
Bond angles



Torsions



Rings



5.6 Ligand geometry (i)

19 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	$\#\|Z\| > 2$
6	6OU	A	3015	-	34,34,48	1.00	2 (5%)	37,39,53	1.13	3 (8%)
6	6OU	A	3017	-	14,14,48	0.96	1 (7%)	14,14,53	1.08	1 (7%)
6	6OU	A	3019	-	28,28,48	1.15	4 (14%)	30,30,53	1.38	3 (10%)
5	9Z9	A	3010	-	36,36,44	8.08	23 (63%)	59,59,68	2.27	23 (38%)
7	K4D	A	3026	-	29,29,29	1.62	3 (10%)	37,41,41	1.67	6 (16%)
6	6OU	A	3025	-	14,14,48	1.34	3 (21%)	14,14,53	1.03	1 (7%)
6	6OU	A	3020	-	39,39,48	0.97	3 (7%)	42,44,53	1.06	2 (4%)
6	6OU	A	3023	-	24,24,48	1.27	5 (20%)	28,29,53	1.31	2 (7%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
4	NAG	A	3009	-	14,14,15	0.43	0	17,19,21	0.71	0
5	9Z9	A	3011	-	23,23,44	6.49	13 (56%)	37,37,68	2.07	14 (37%)
6	6OU	A	3021	-	25,25,48	1.21	4 (16%)	28,30,53	1.18	2 (7%)
6	6OU	A	3018	-	25,25,48	1.08	4 (16%)	27,27,53	1.25	2 (7%)
5	9Z9	A	3013	-	34,34,44	8.19	22 (64%)	56,56,68	2.13	19 (33%)
4	NAG	A	3003	1	14,14,15	0.29	0	17,19,21	0.39	0
6	6OU	A	3022	-	26,26,48	0.97	2 (7%)	27,27,53	1.15	2 (7%)
5	9Z9	A	3012	-	42,42,44	7.39	23 (54%)	64,66,68	1.95	22 (34%)
6	6OU	A	3024	-	16,16,48	1.25	3 (18%)	16,16,53	1.10	0
5	9Z9	A	3014	-	34,34,44	8.23	21 (61%)	56,56,68	2.03	18 (32%)
6	6OU	A	3016	-	34,34,48	1.04	3 (8%)	37,39,53	1.15	2 (5%)

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
6	6OU	A	3015	-	-	19/38/38/52	-
6	6OU	A	3017	-	-	5/13/13/52	-
6	6OU	A	3019	-	-	16/29/29/52	-
5	9Z9	A	3010	-	-	0/2/90/100	0/6/6/6
7	K4D	A	3026	-	-	10/21/29/29	0/2/2/2
6	6OU	A	3025	-	-	3/13/13/52	-
6	6OU	A	3020	-	-	17/43/43/52	-
6	6OU	A	3023	-	-	4/26/26/52	-
4	NAG	A	3009	-	-	3/6/23/26	0/1/1/1
5	9Z9	A	3011	-	-	-	0/4/4/6
6	6OU	A	3021	-	-	10/29/29/52	-
6	6OU	A	3018	-	-	13/27/27/52	-
5	9Z9	A	3013	-	-	-	0/6/6/6
4	NAG	A	3003	1	-	2/6/23/26	0/1/1/1
6	6OU	A	3022	-	-	8/26/26/52	-
5	9Z9	A	3012	-	-	3/9/97/100	0/6/6/6
6	6OU	A	3024	-	-	4/15/15/52	-
5	9Z9	A	3014	-	-	-	0/6/6/6
6	6OU	A	3016	-	-	19/38/38/52	-

The worst 5 of 139 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	3010	9Z9	C15-C07	-21.09	1.17	1.53
5	A	3014	9Z9	C15-C07	-20.97	1.17	1.53
5	A	3010	9Z9	C07-C06	-20.75	1.14	1.53
5	A	3014	9Z9	C07-C06	-20.61	1.14	1.53
5	A	3012	9Z9	C07-C06	-20.49	1.14	1.53

The worst 5 of 122 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	A	3026	K4D	C20-C09-C10	-6.26	114.74	126.16
5	A	3010	9Z9	C15-C07-C08	5.69	116.61	109.71
5	A	3013	9Z9	C10-C02-C06	5.65	116.03	107.27
5	A	3014	9Z9	C10-C02-C06	5.44	115.71	107.27
5	A	3010	9Z9	C10-C02-C06	5.22	115.37	107.27

There are no chirality outliers.

5 of 136 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	3009	NAG	C8-C7-N2-C2
4	A	3009	NAG	O7-C7-N2-C2
5	A	3012	9Z9	C22-C21-O20-C17
5	A	3012	9Z9	C21-C22-C23-C48
6	A	3015	6OU	C15-C16-O18-C19

There are no ring outliers.

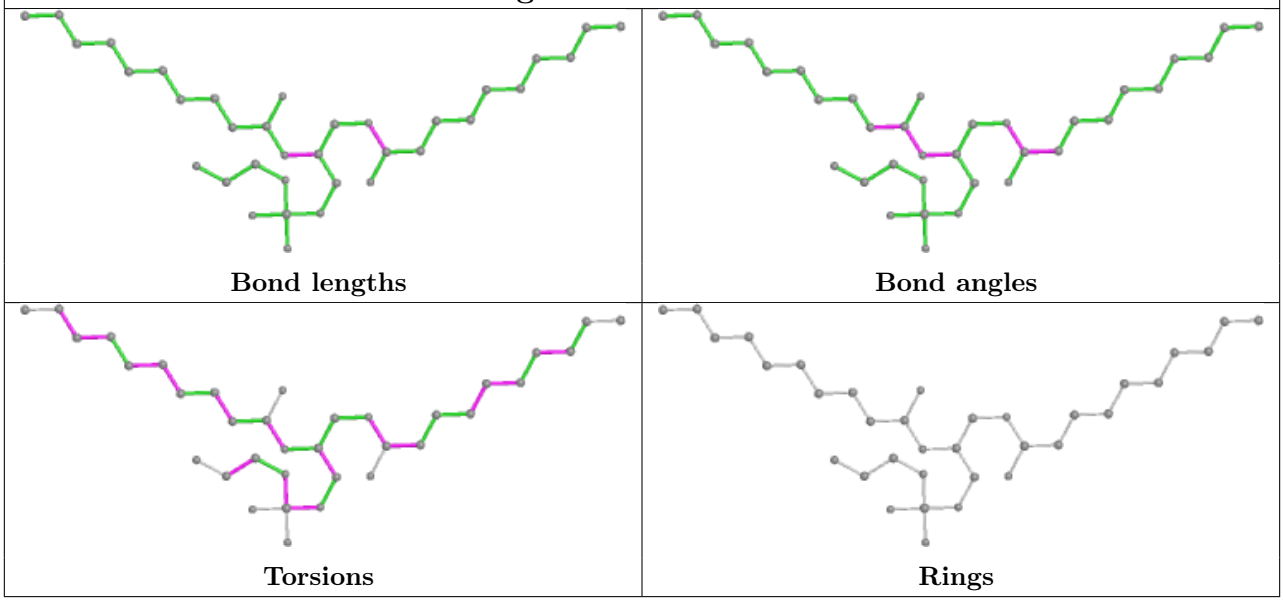
7 monomers are involved in 39 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	A	3010	9Z9	7	0
7	A	3026	K4D	3	0
4	A	3009	NAG	14	0
5	A	3011	9Z9	1	0
5	A	3013	9Z9	1	0
5	A	3012	9Z9	1	0
5	A	3014	9Z9	12	0

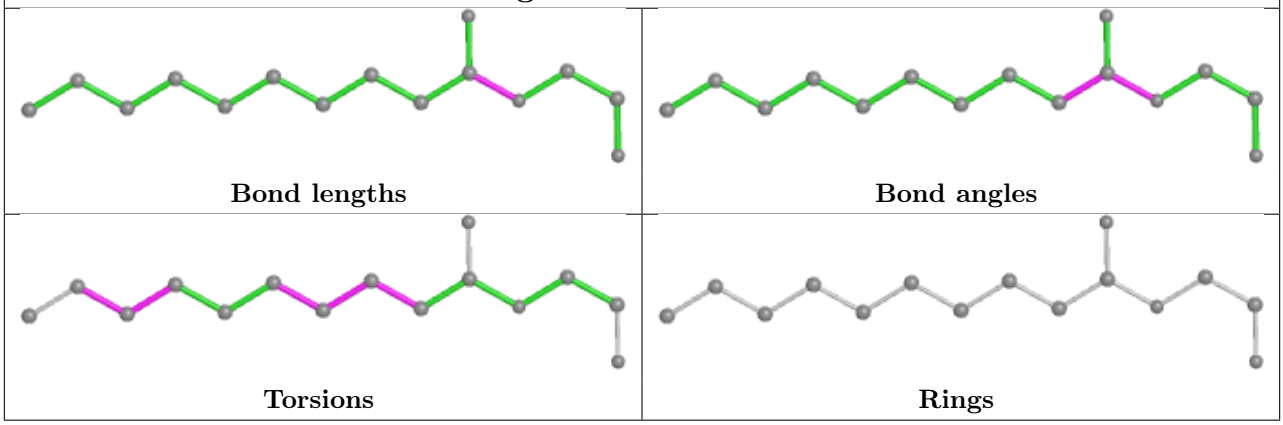
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 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.

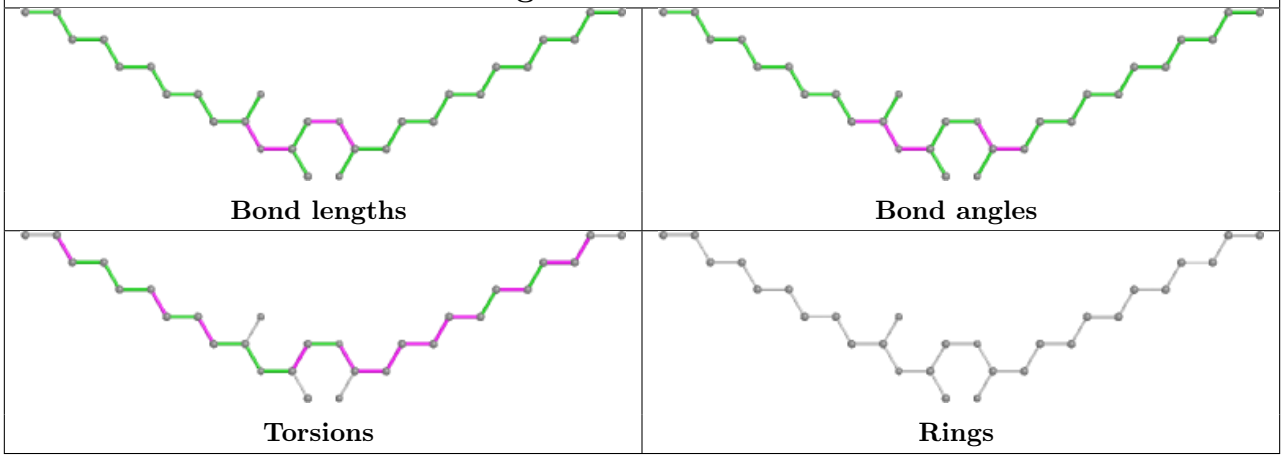
Ligand 6OU A 3015



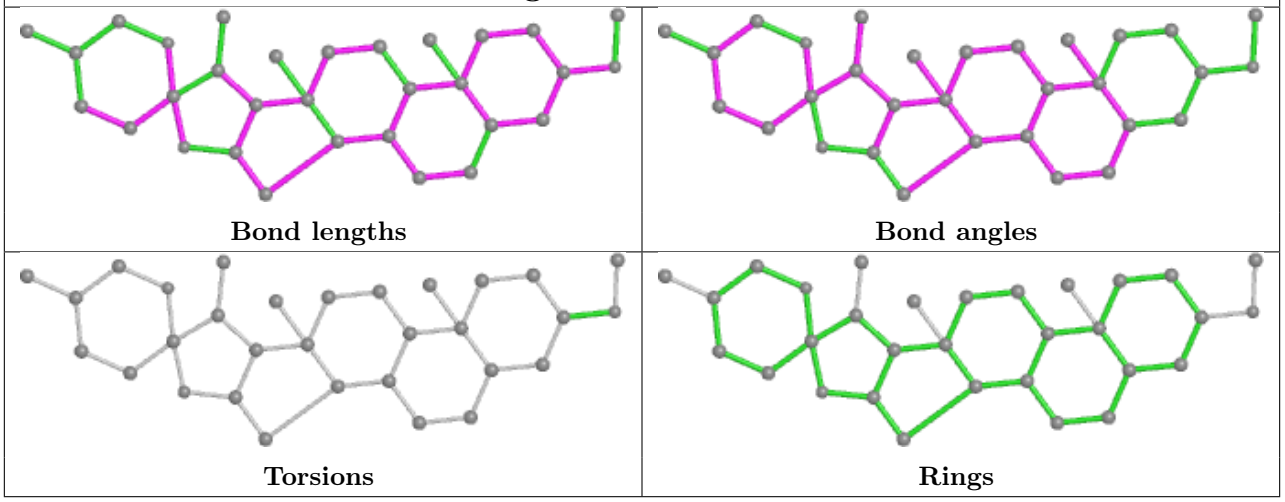
Ligand 6OU A 3017



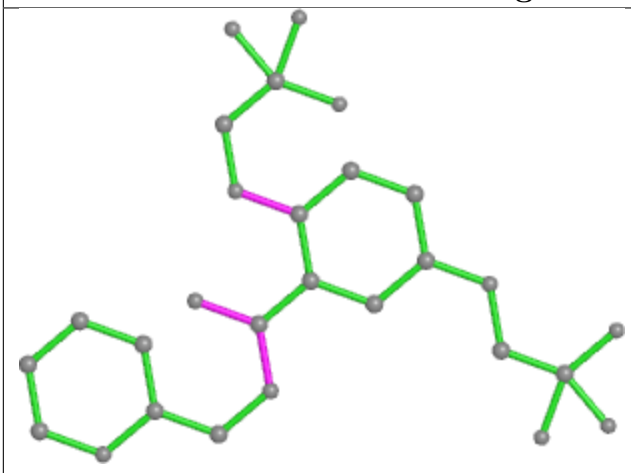
Ligand 6OU A 3019



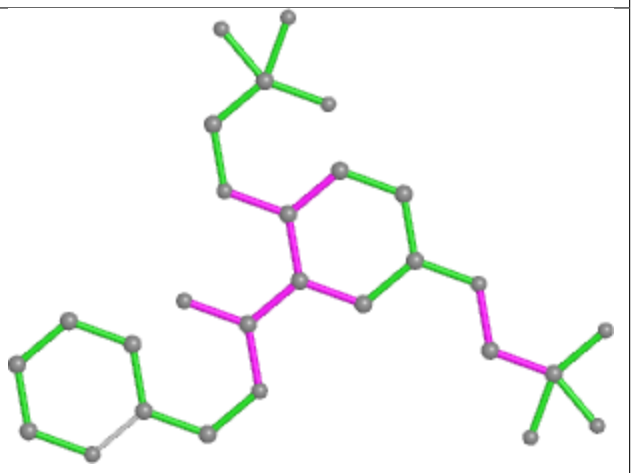
Ligand 9Z9 A 3010



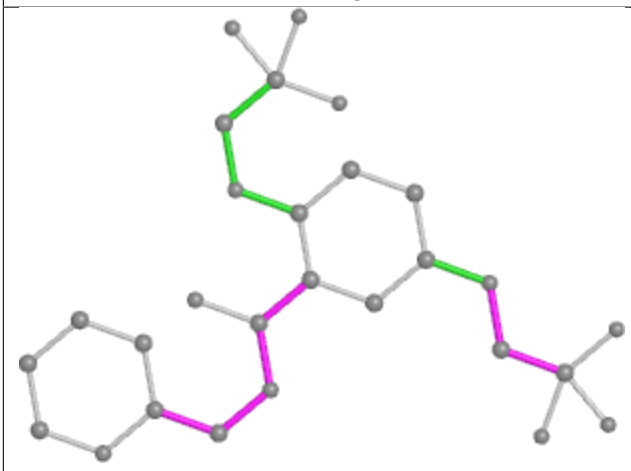
Ligand K4D A 3026



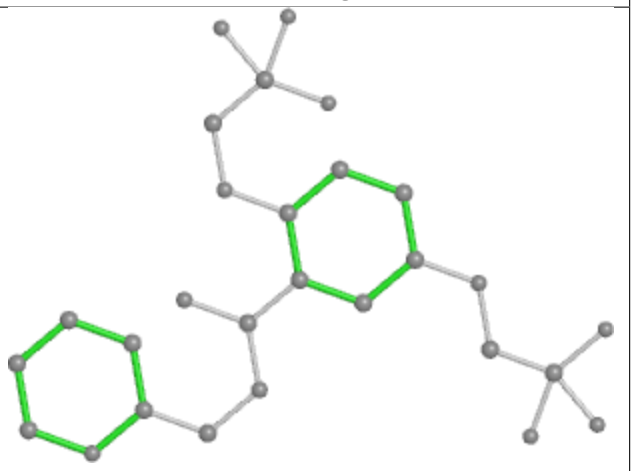
Bond lengths



Bond angles

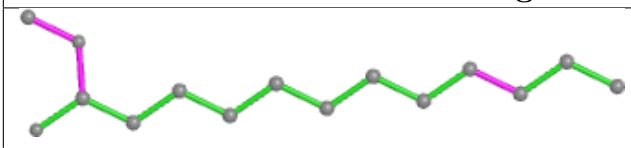


Torsions

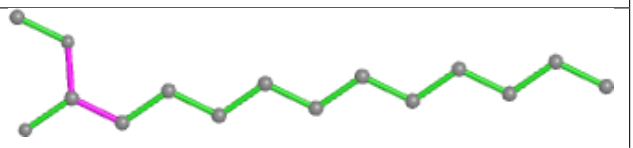


Rings

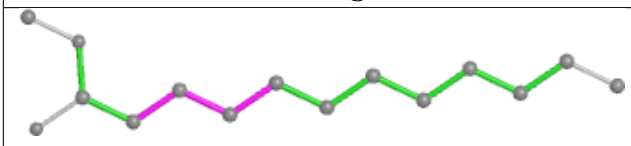
Ligand 6OU A 3025



Bond lengths



Bond angles



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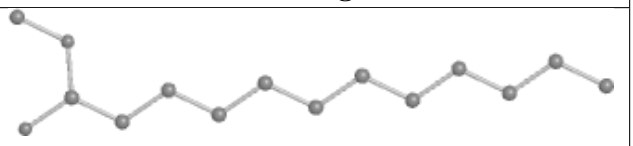
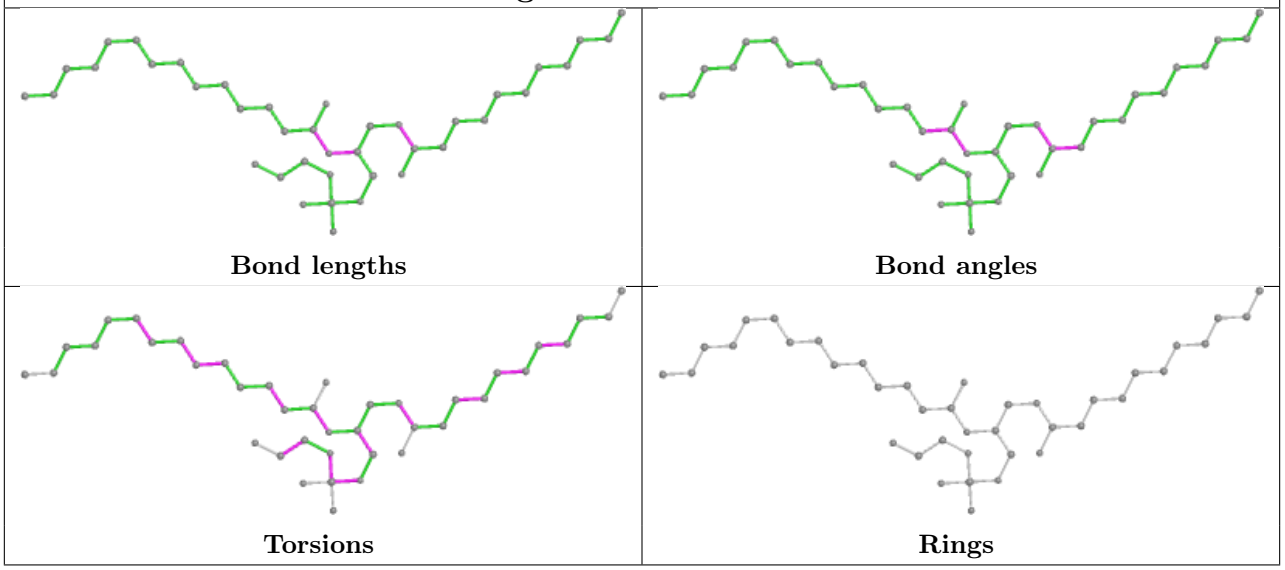


Rings

Ligand 6OU A 3020



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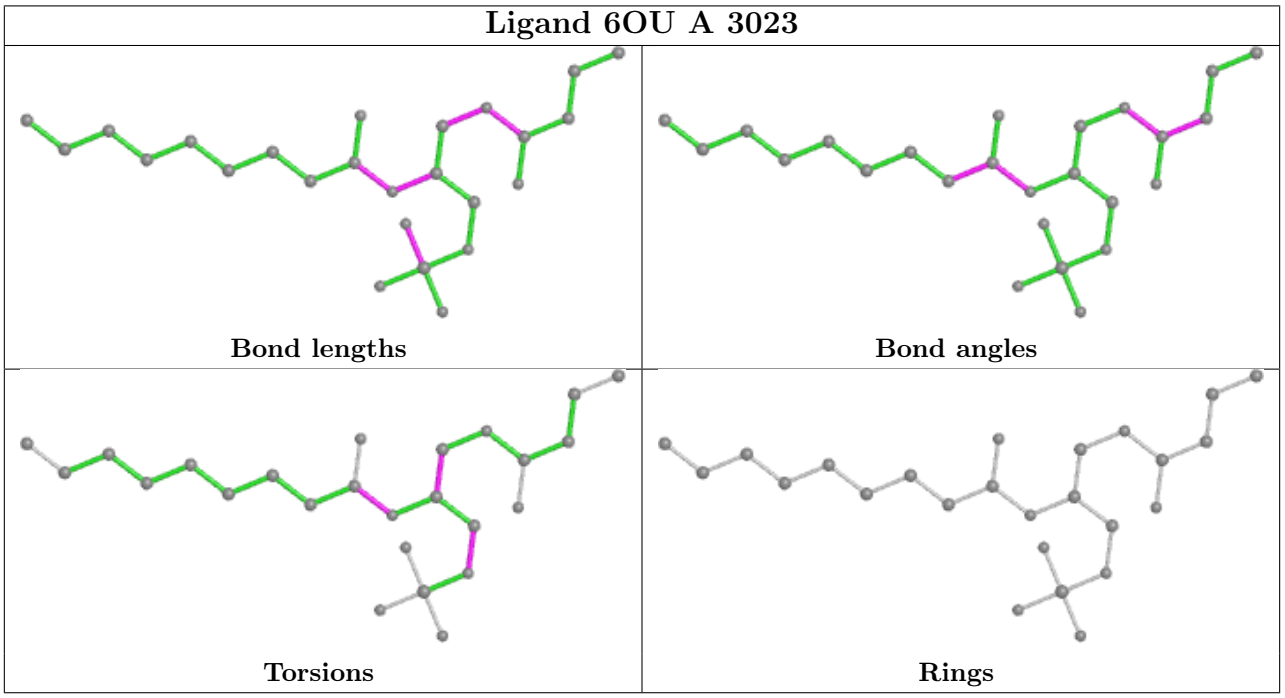
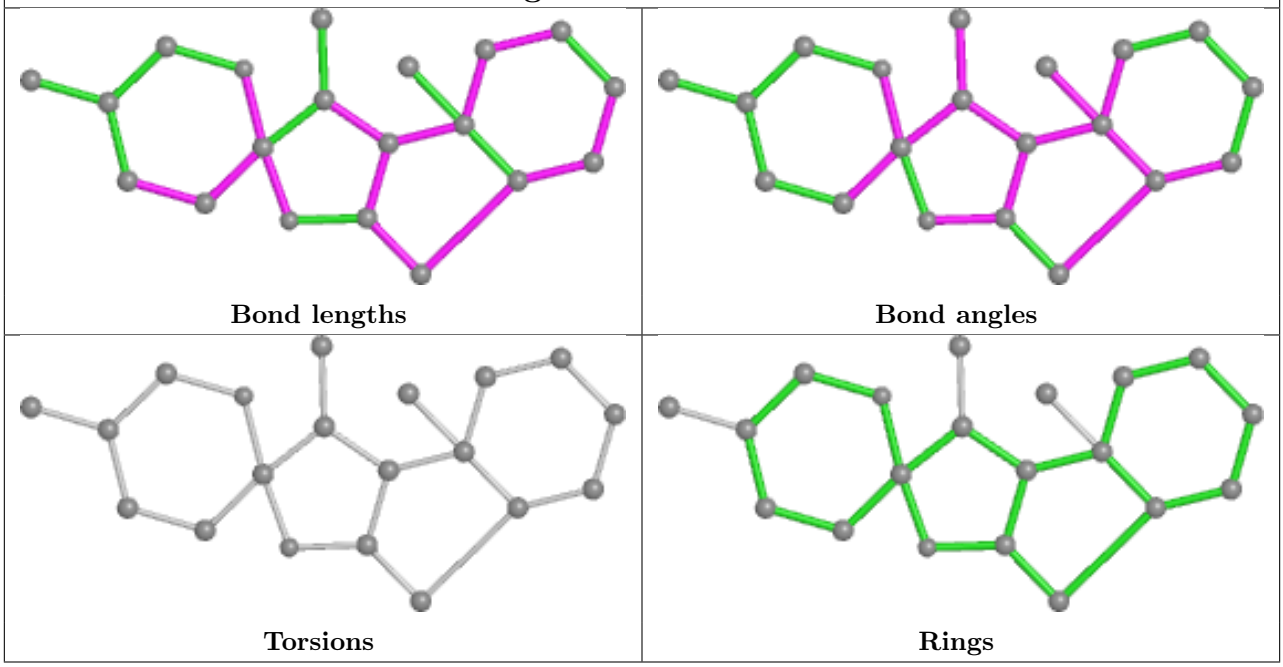


Ligand 9Z9 A 3011



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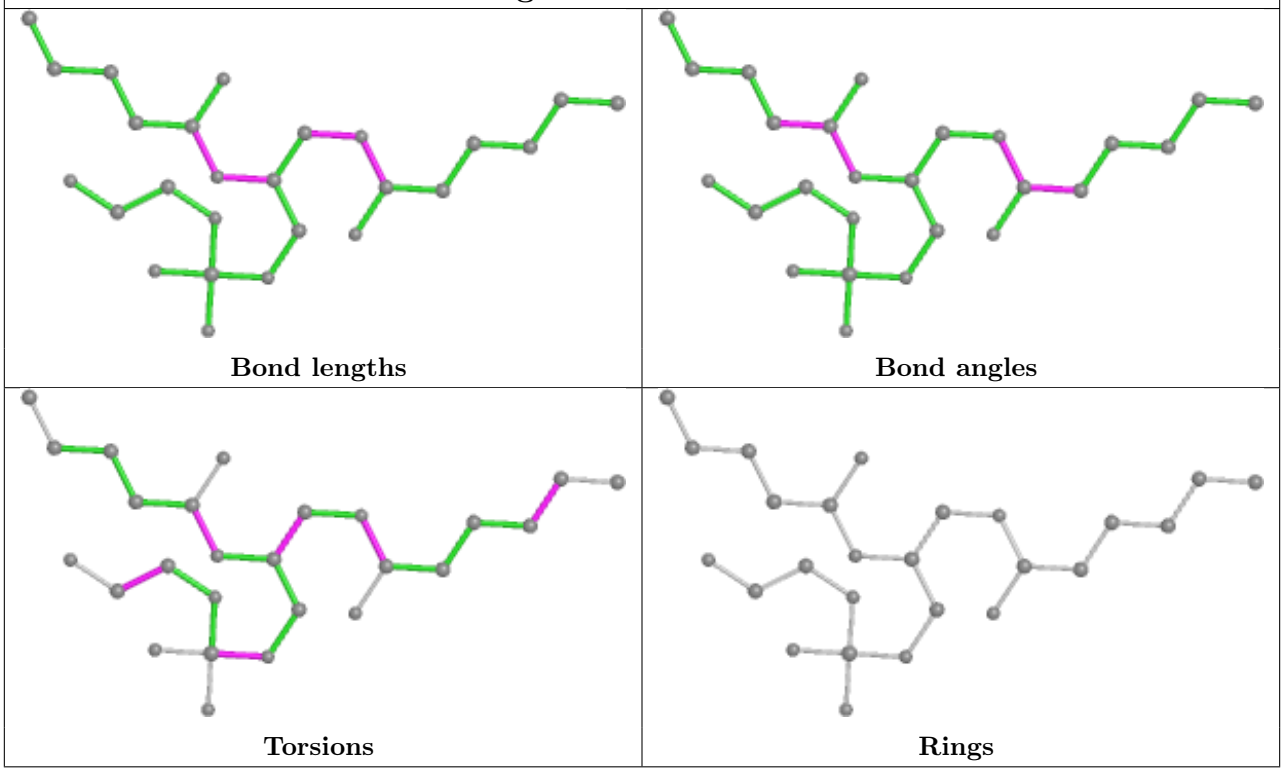
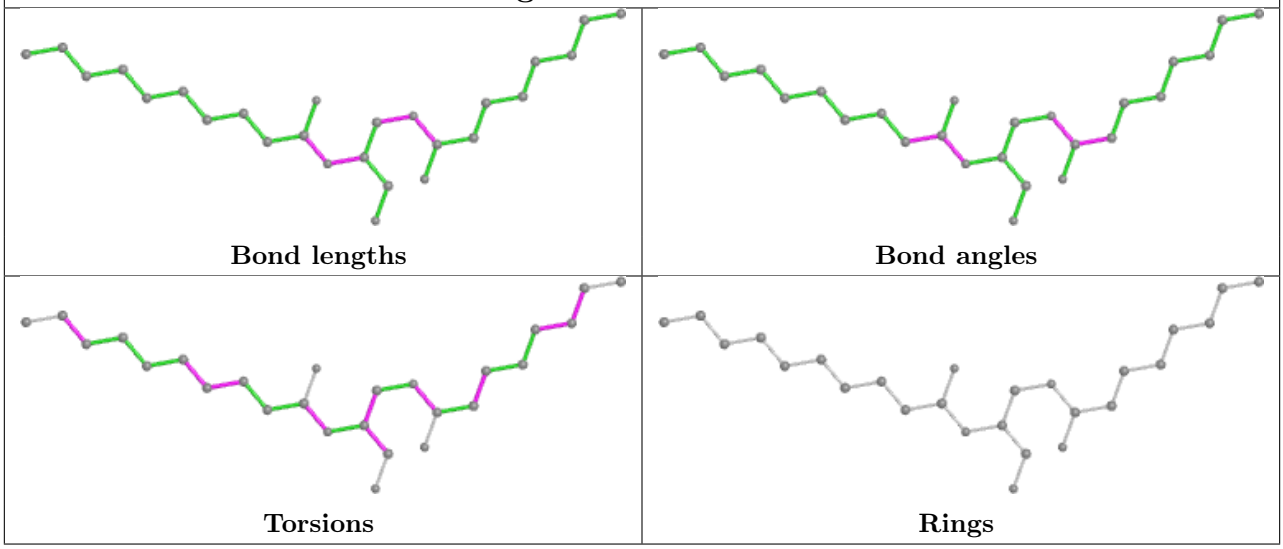
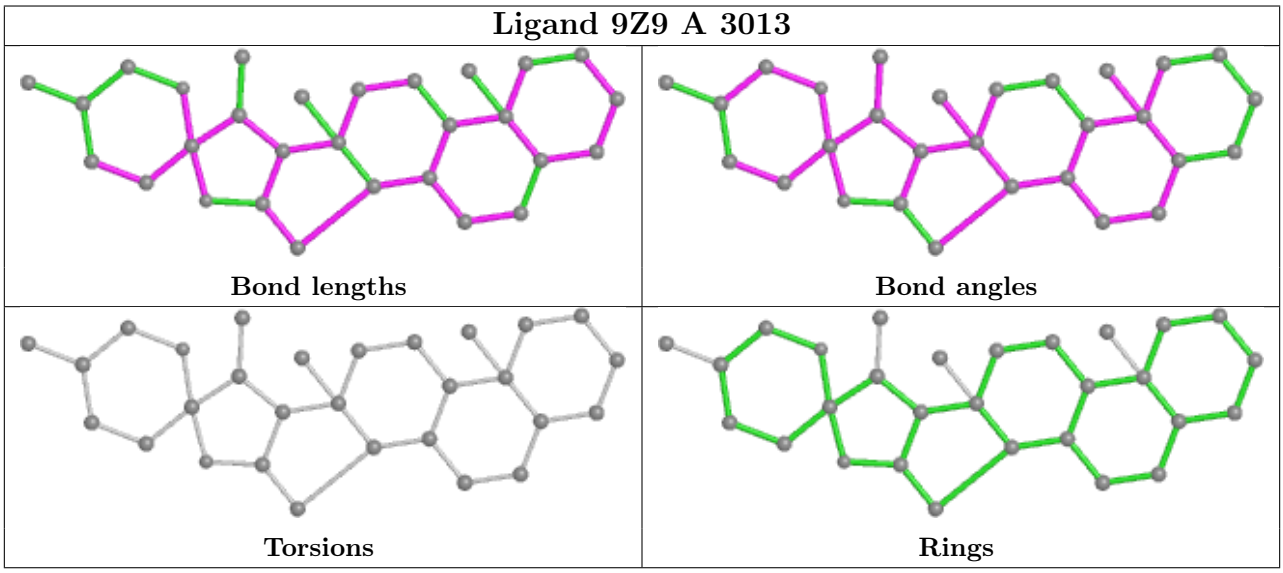


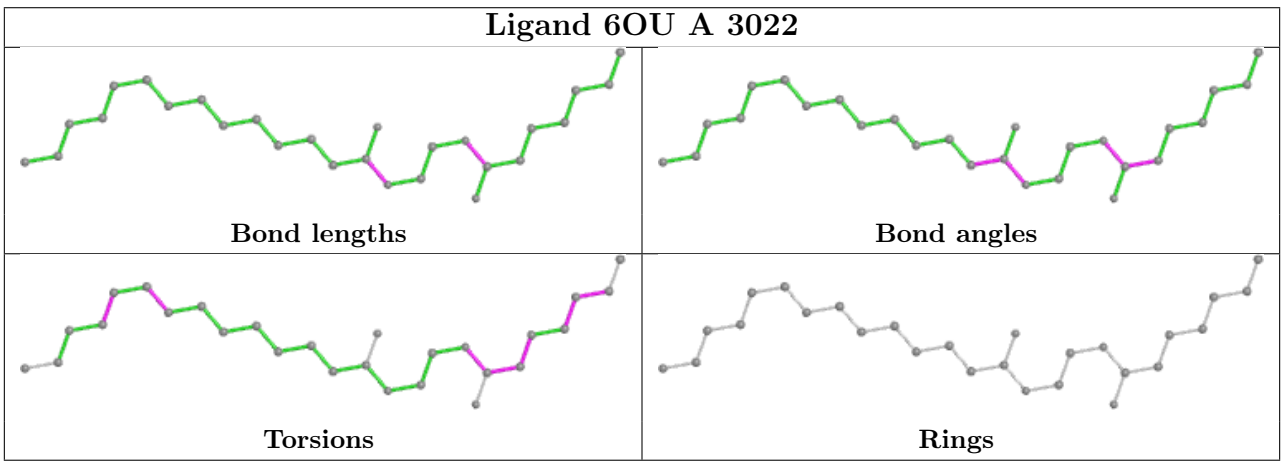
Ligand 6OU A 3018



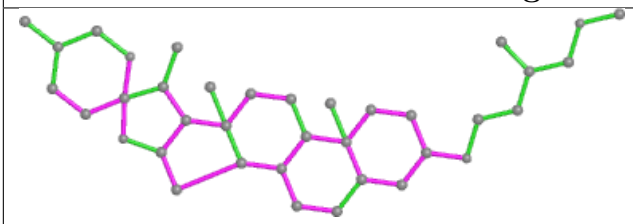
Ligand 9Z9 A 3013



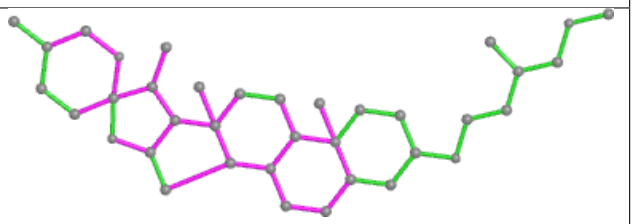
Ligand 6OU A 3022



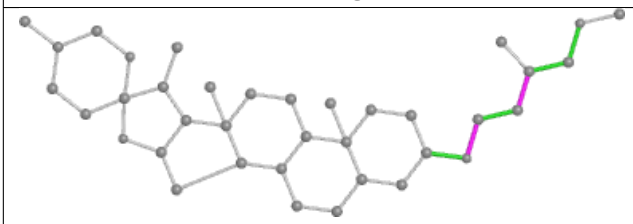
Ligand 9Z9 A 3012



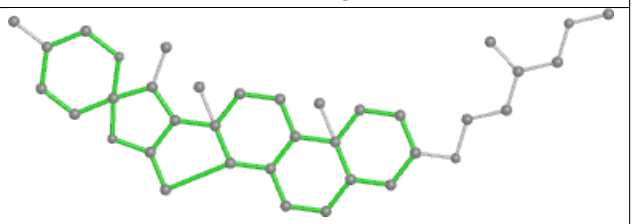
Bond lengths



Bond angles

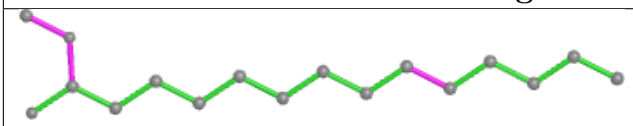


Torsions

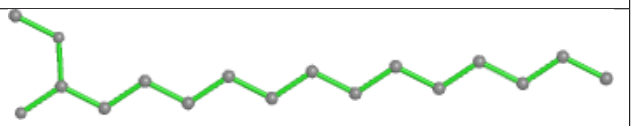


Rings

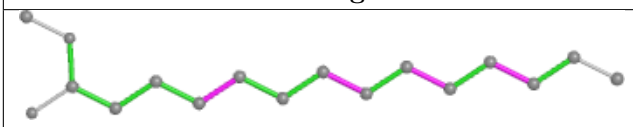
Ligand 6OU A 3024



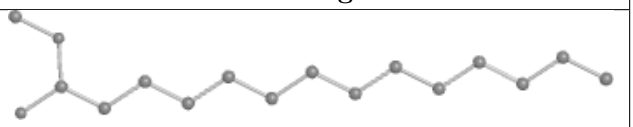
Bond lengths



Bond angles

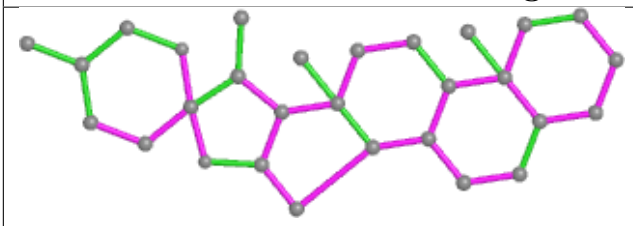


Torsions

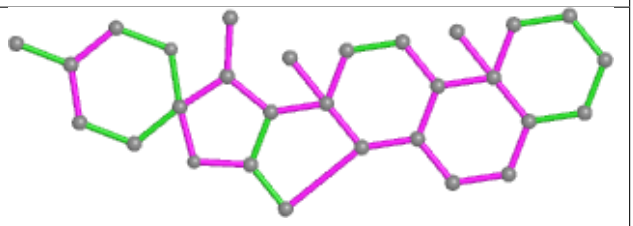


Rings

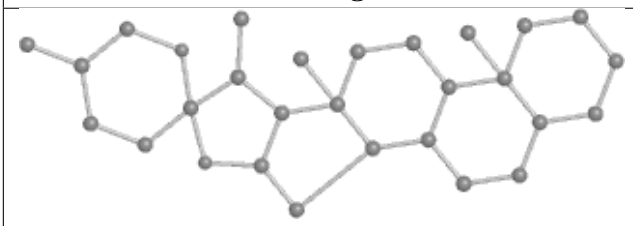
Ligand 9Z9 A 3014



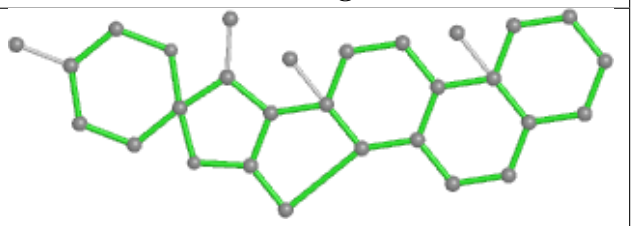
Bond lengths



Bond angles

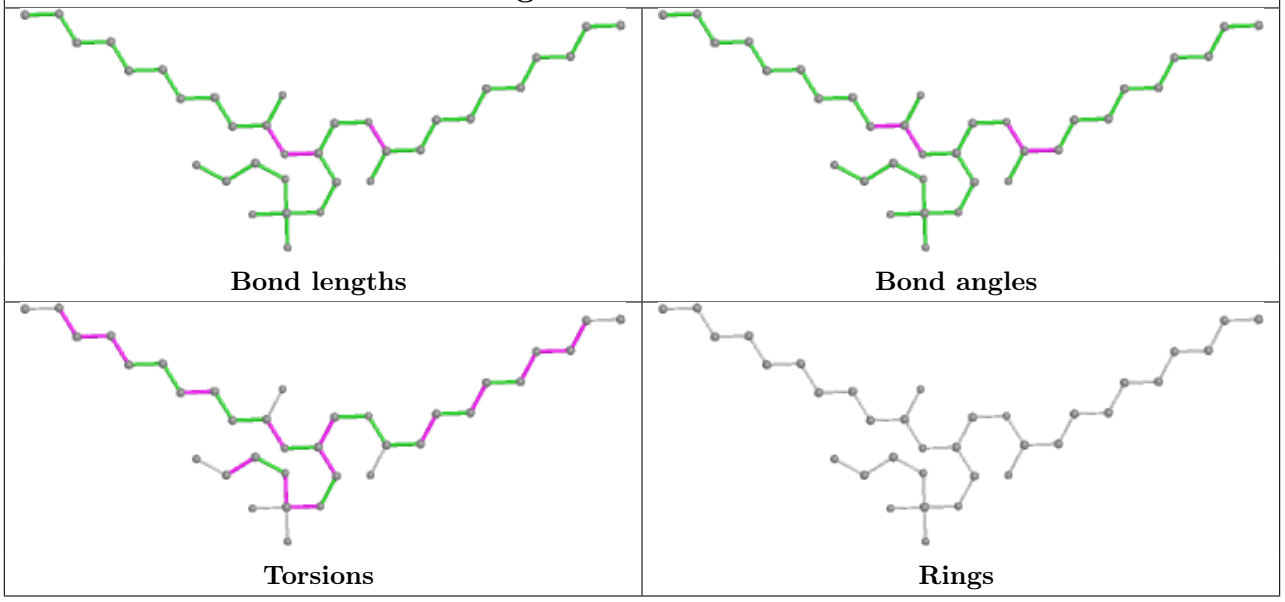


Torsions



Rings

Ligand 6OU A 3016



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.

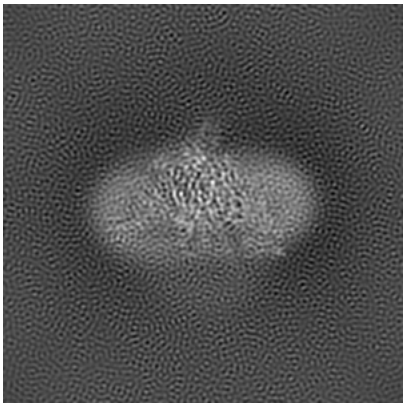
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-20949. These allow visual inspection of the internal detail of the map and identification of artifacts.

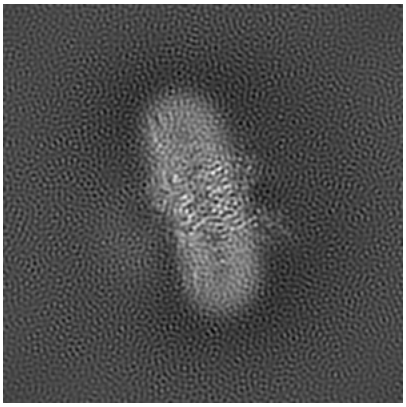
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

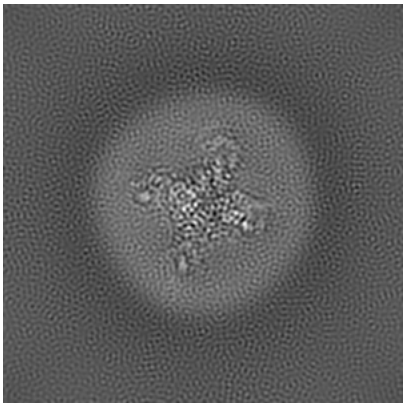
6.1.1 Primary map



X



Y

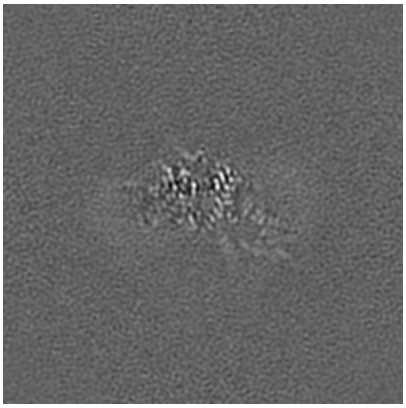


Z

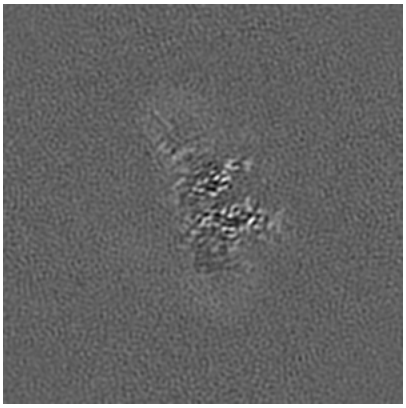
The images above show the map projected in three orthogonal directions.

6.2 Central slices

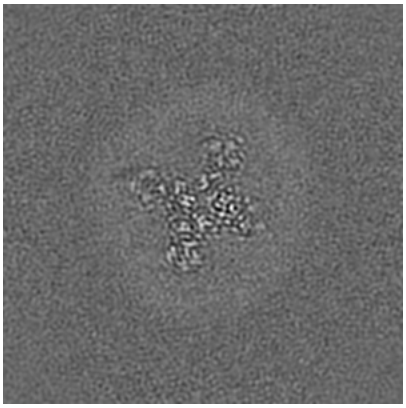
6.2.1 Primary map



X Index: 128



Y Index: 128

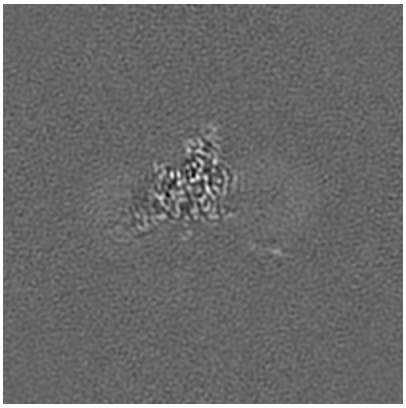


Z Index: 128

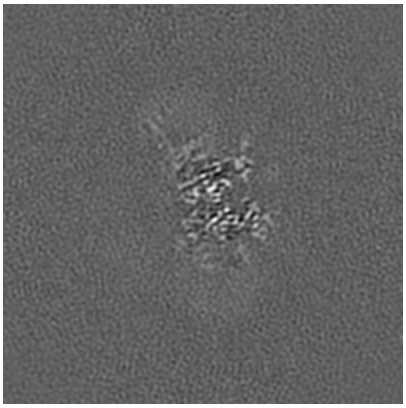
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

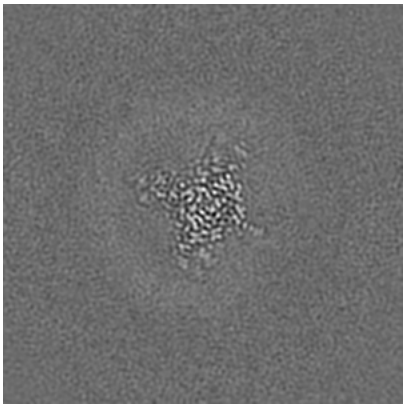
6.3.1 Primary map



X Index: 119



Y Index: 125

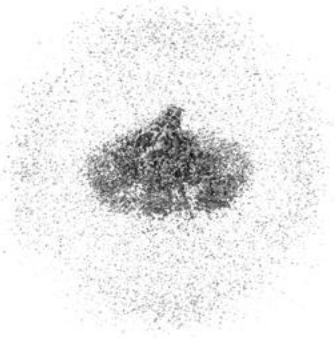


Z Index: 138

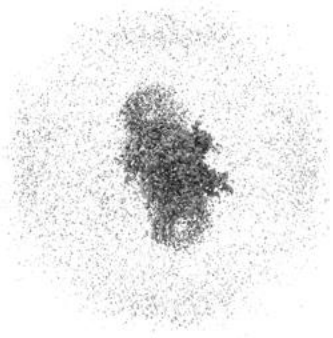
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views (i)

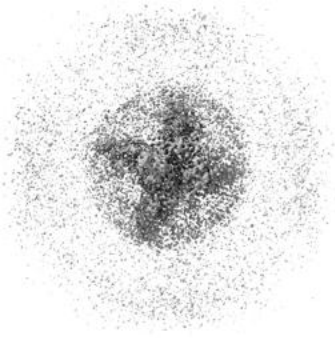
6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 5.0. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

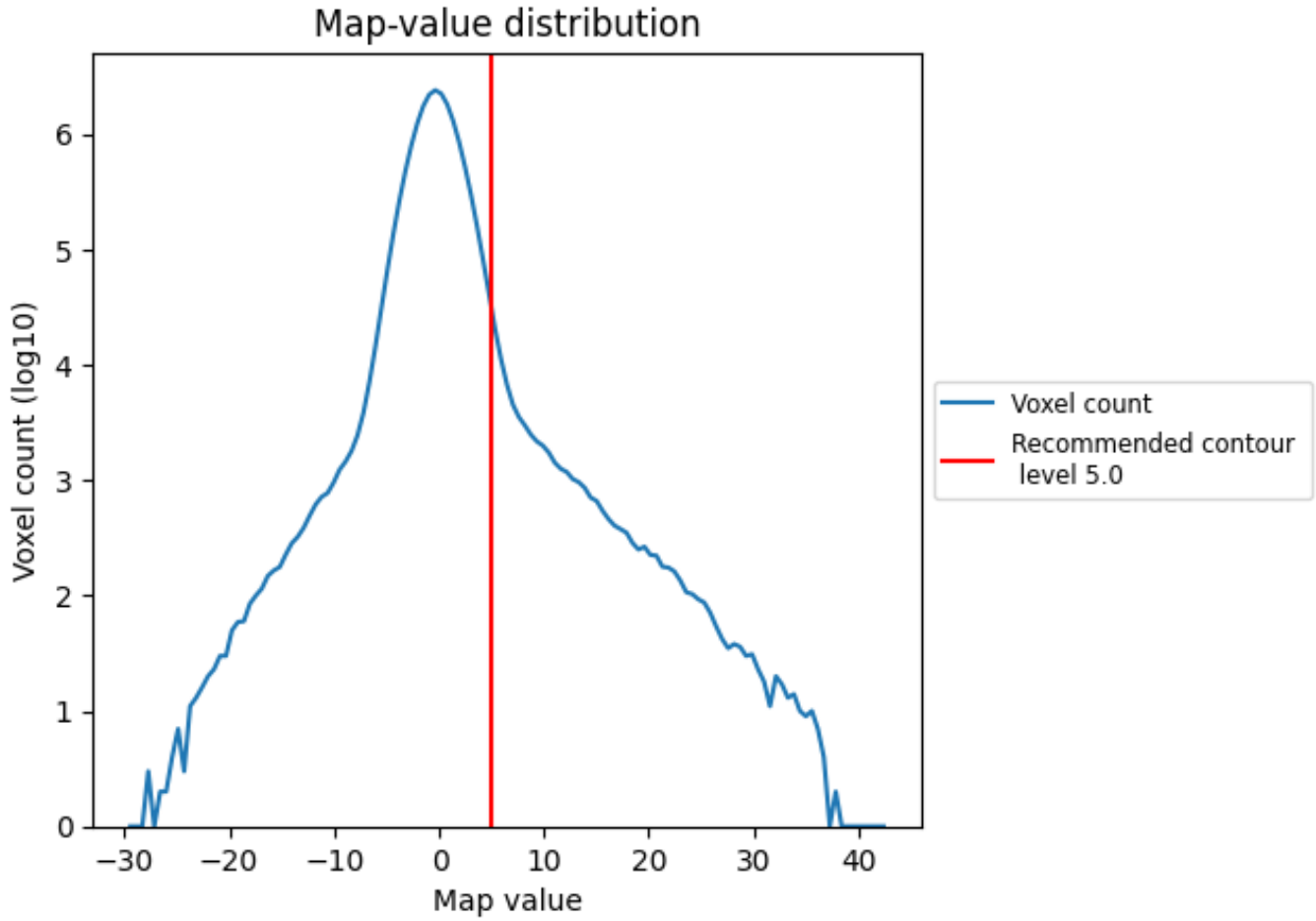
6.5 Mask visualisation (i)

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

7 Map analysis

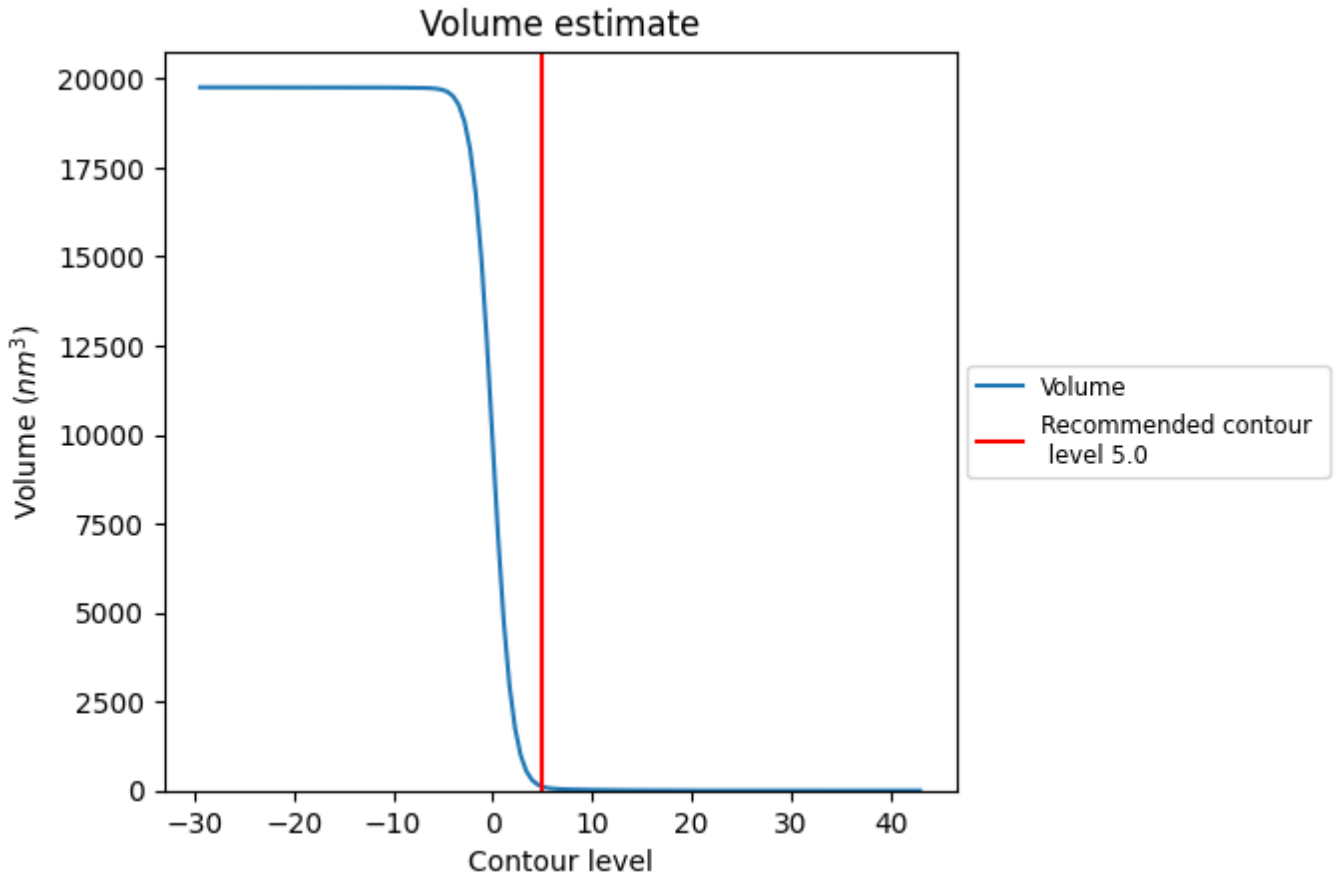
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

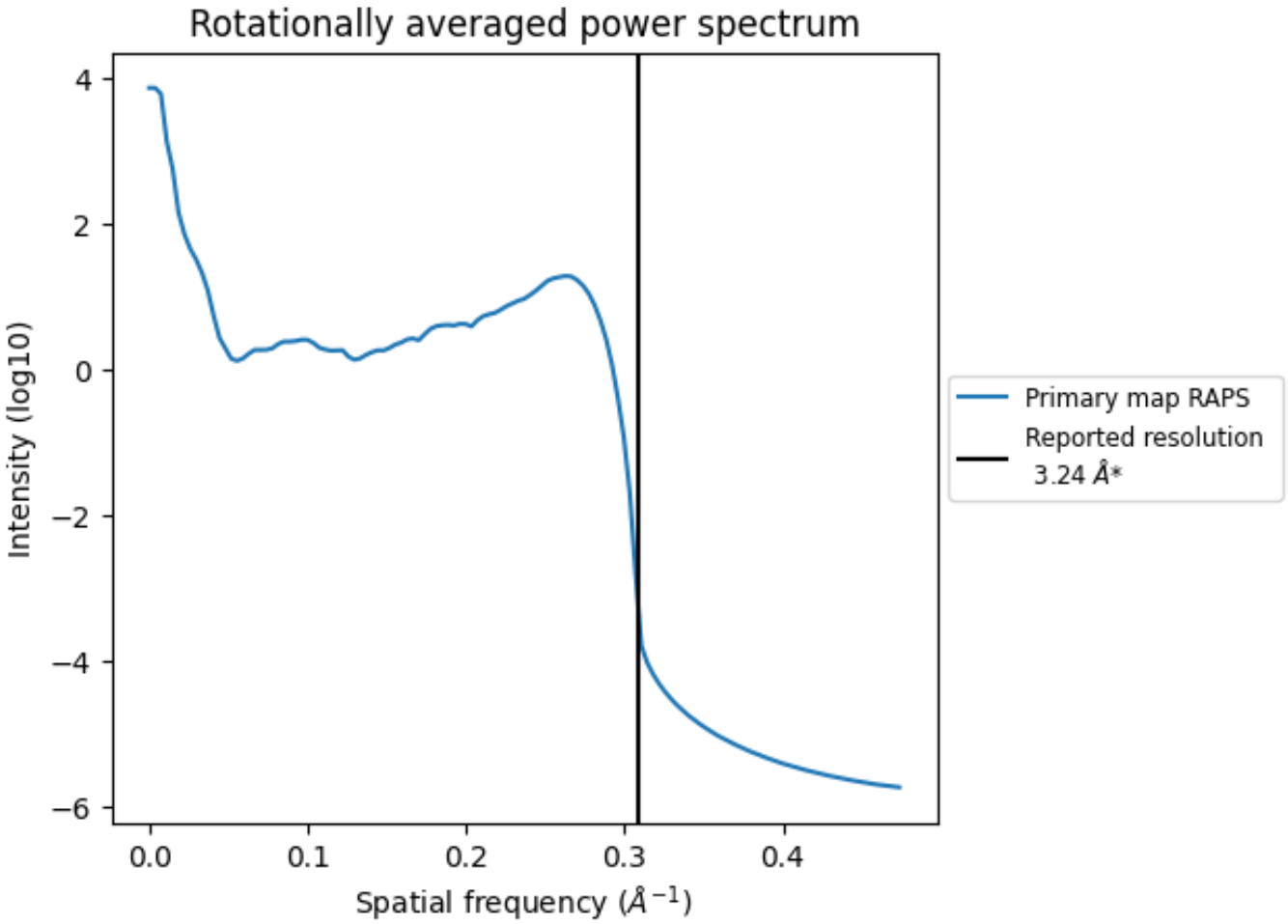
7.2 Volume estimate (i)



The volume at the recommended contour level is 111 nm^3; this corresponds to an approximate mass of 100 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)

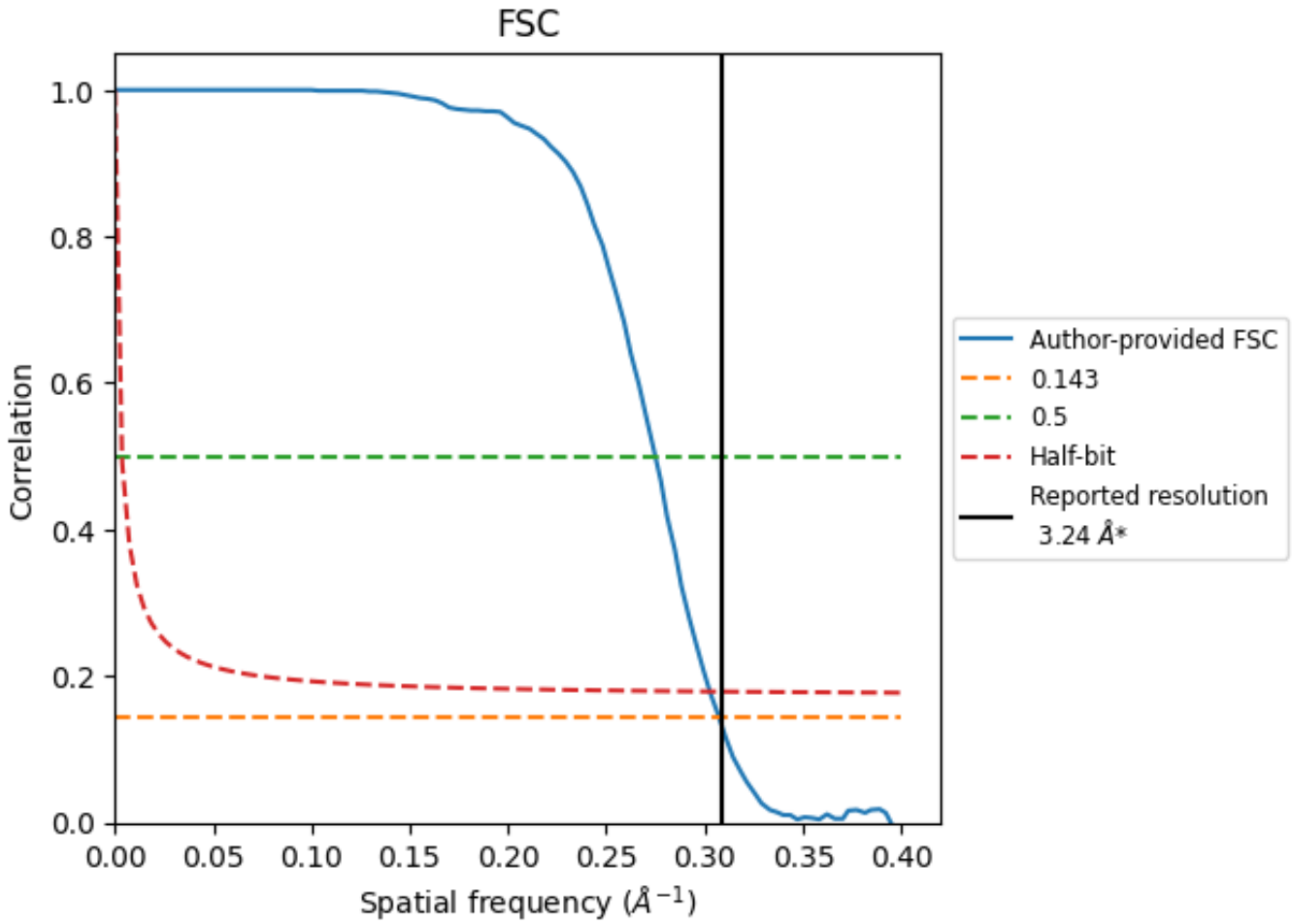


*Reported resolution corresponds to spatial frequency of 0.309 Å^{-1}

8 Fourier-Shell correlation

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



*Reported resolution corresponds to spatial frequency of 0.309 Å^{-1}

8.2 Resolution estimates (i)

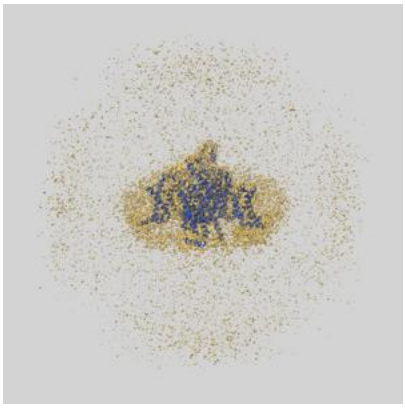
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.24	-	-
Author-provided FSC curve	3.25	3.64	3.30
Unmasked-calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

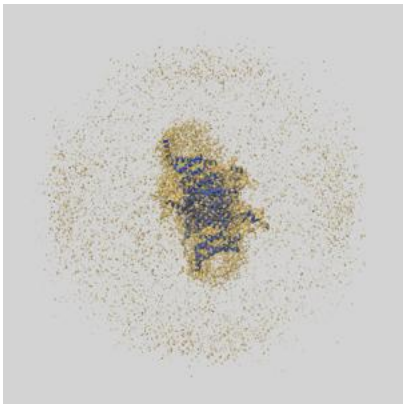
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-20949 and PDB model 6UZ0. Per-residue inclusion information can be found in section 3 on page 17.

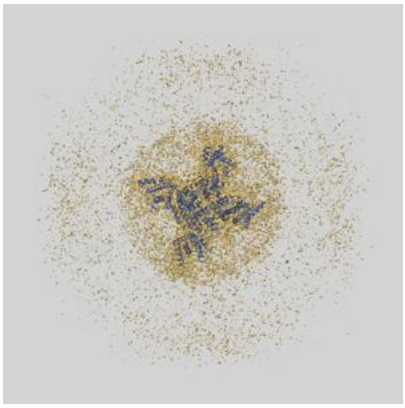
9.1 Map-model overlay



X



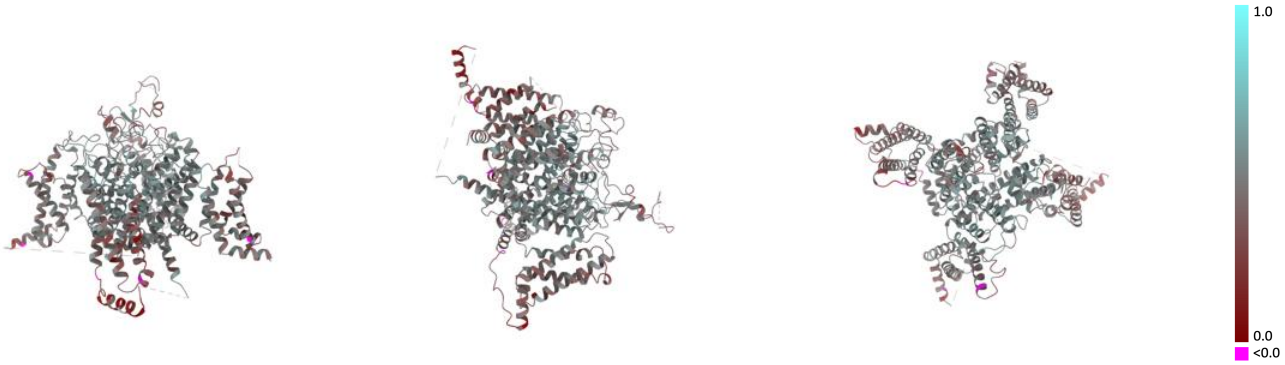
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 5.0 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.

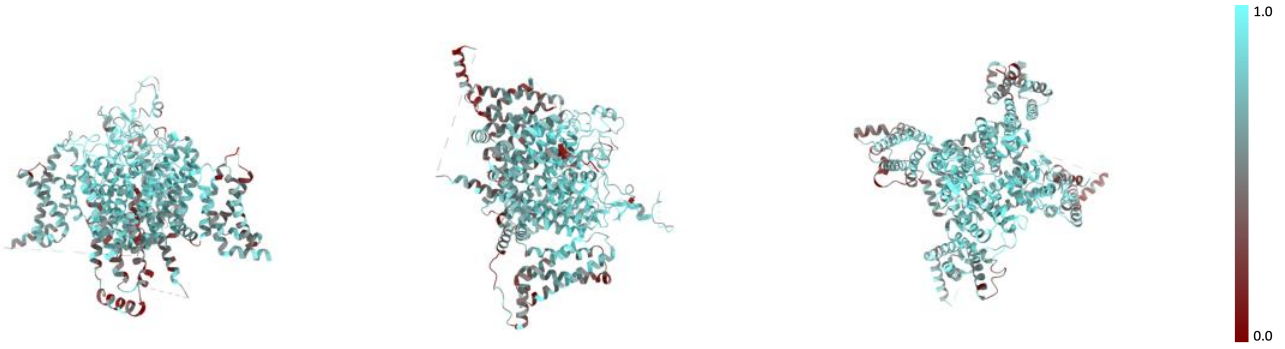
9.2 Q-score mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according 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.

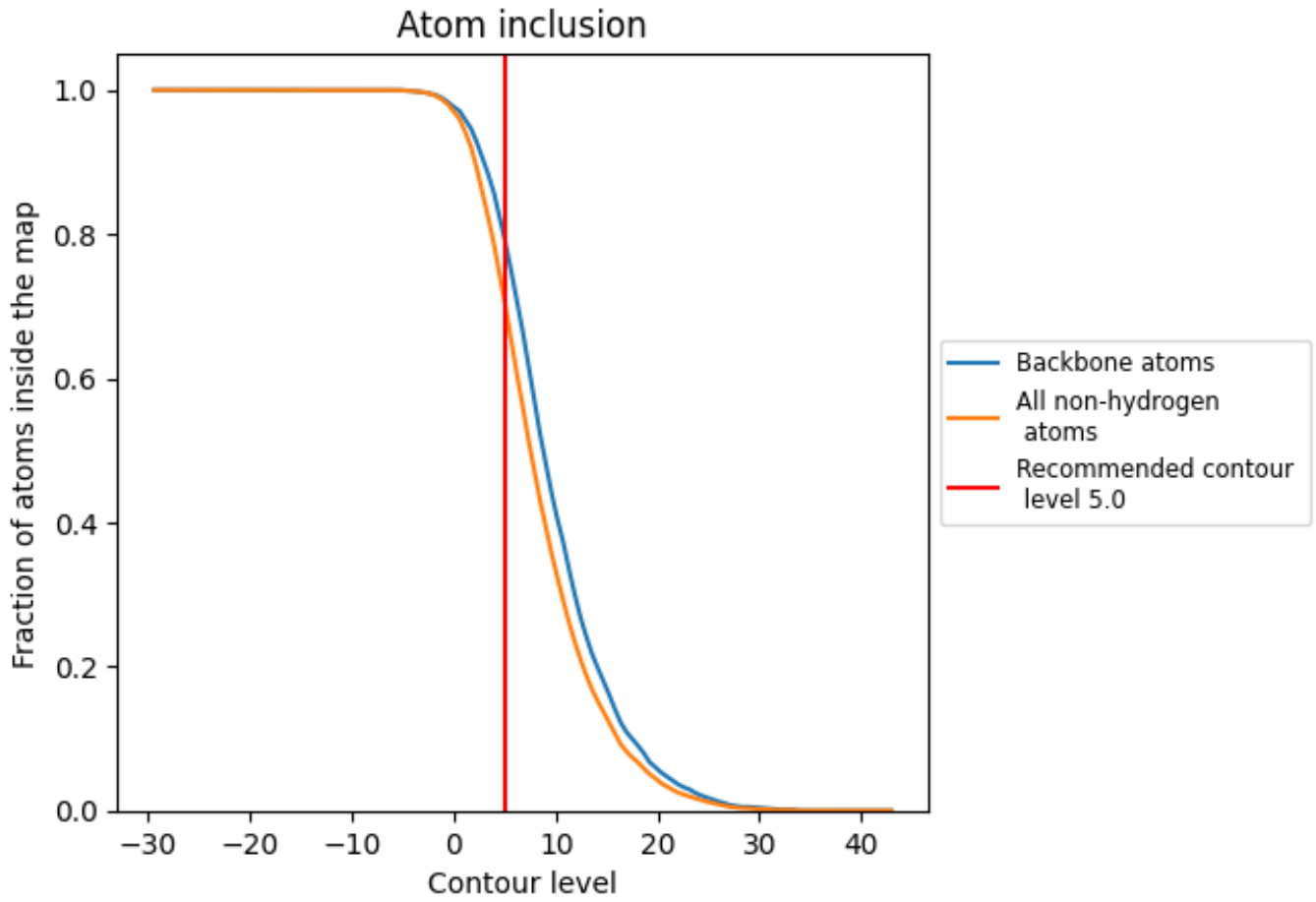
9.3 Atom inclusion mapped to coordinate model



X Y Z

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 (5.0).

9.4 Atom inclusion (i)



At the recommended contour level, 79% of all backbone atoms, 71% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (5.0) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7060	0.4590
A	0.7062	0.4590
B	0.6429	0.4370
C	0.7436	0.4520
D	0.6429	0.3460