



wwPDB EM Validation Summary Report ⓘ

Jan 10, 2026 – 02:41 PM EST

PDB ID : 9P3P / pdb_00009p3p
EMDB ID : EMD-71250
Title : Zebrafish TRPM5 with 5mM EGTA and 0.5mM CBTA
Authors : Ruan, Z.; Du, J.; Lu, W.
Deposited on : 2025-06-14
Resolution : 3.00 Å(reported)

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.dev129
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
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) : 2.47

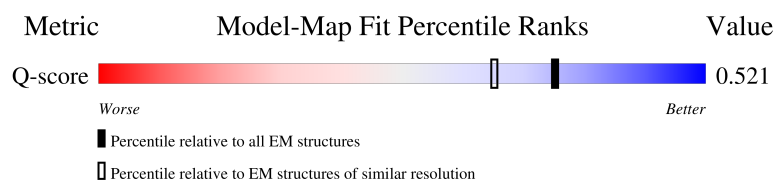
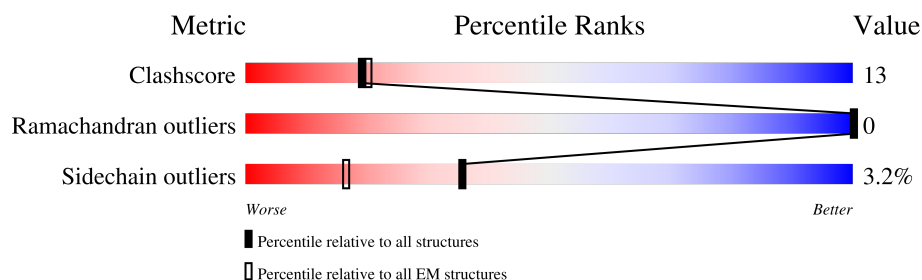
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.00 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	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	14081 (2.50 - 3.50)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1475	
1	B	1475	
1	C	1475	
1	D	1475	

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 30768 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 Green fluorescent protein, Transient receptor potential cation channel subfamily M member 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	996	Total	C	N	O	S	0	0
			7571	4960	1296	1271	44		
1	B	996	Total	C	N	O	S	0	0
			7571	4960	1296	1271	44		
1	C	996	Total	C	N	O	S	0	0
			7571	4960	1296	1271	44		
1	D	996	Total	C	N	O	S	0	0
			7571	4960	1296	1271	44		

There are 312 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-307	MET	-	initiating methionine	UNP P42212
A	-306	HIS	-	expression tag	UNP P42212
A	-305	HIS	-	expression tag	UNP P42212
A	-304	HIS	-	expression tag	UNP P42212
A	-303	HIS	-	expression tag	UNP P42212
A	-302	HIS	-	expression tag	UNP P42212
A	-301	HIS	-	expression tag	UNP P42212
A	-300	HIS	-	expression tag	UNP P42212
A	-299	HIS	-	expression tag	UNP P42212
A	-298	ALA	-	expression tag	UNP P42212
A	-297	ALA	-	expression tag	UNP P42212
A	-296	ALA	-	expression tag	UNP P42212
A	-295	SER	-	expression tag	UNP P42212
A	-294	ALA	-	expression tag	UNP P42212
A	-293	TRP	-	expression tag	UNP P42212
A	-292	SER	-	expression tag	UNP P42212
A	-291	HIS	-	expression tag	UNP P42212
A	-290	PRO	-	expression tag	UNP P42212
A	-289	GLN	-	expression tag	UNP P42212
A	-288	PHE	-	expression tag	UNP P42212
A	-287	GLU	-	expression tag	UNP P42212

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Chain	Residue	Modelled	Actual	Comment	Reference
A	-286	LYS	-	expression tag	UNP P42212
A	-285	GLY	-	expression tag	UNP P42212
A	-284	GLY	-	expression tag	UNP P42212
A	-283	GLY	-	expression tag	UNP P42212
A	-282	SER	-	expression tag	UNP P42212
A	-281	GLY	-	expression tag	UNP P42212
A	-280	GLY	-	expression tag	UNP P42212
A	-279	GLY	-	expression tag	UNP P42212
A	-278	SER	-	expression tag	UNP P42212
A	-277	GLY	-	expression tag	UNP P42212
A	-276	GLY	-	expression tag	UNP P42212
A	-275	SER	-	expression tag	UNP P42212
A	-274	ALA	-	expression tag	UNP P42212
A	-273	TRP	-	expression tag	UNP P42212
A	-272	SER	-	expression tag	UNP P42212
A	-271	HIS	-	expression tag	UNP P42212
A	-270	PRO	-	expression tag	UNP P42212
A	-269	GLN	-	expression tag	UNP P42212
A	-268	PHE	-	expression tag	UNP P42212
A	-267	GLU	-	expression tag	UNP P42212
A	-266	LYS	-	expression tag	UNP P42212
A	-265	GLY	-	expression tag	UNP P42212
A	-264	GLY	-	expression tag	UNP P42212
A	-263	GLY	-	expression tag	UNP P42212
A	-262	SER	-	expression tag	UNP P42212
A	-261	GLY	-	expression tag	UNP P42212
A	-260	GLY	-	expression tag	UNP P42212
A	-259	GLY	-	expression tag	UNP P42212
A	-258	SER	-	expression tag	UNP P42212
A	-257	GLY	-	expression tag	UNP P42212
A	-256	GLY	-	expression tag	UNP P42212
A	-255	MET	-	expression tag	UNP P42212
A	-254	VAL	-	expression tag	UNP P42212
A	-191	LEU	PHE	conflict	UNP P42212
A	-190	THR	SER	conflict	UNP P42212
A	-49	LYS	ALA	conflict	UNP P42212
A	-24	LEU	HIS	conflict	UNP P42212
A	-16	SER	-	linker	UNP P42212
A	-15	GLY	-	linker	UNP P42212
A	-14	LEU	-	linker	UNP P42212
A	-13	ARG	-	linker	UNP P42212
A	-12	SER	-	linker	UNP P42212

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Chain	Residue	Modelled	Actual	Comment	Reference
A	-11	GLY	-	linker	UNP P42212
A	-10	LEU	-	linker	UNP P42212
A	-9	VAL	-	linker	UNP P42212
A	-8	PRO	-	linker	UNP P42212
A	-7	ARG	-	linker	UNP P42212
A	-6	GLY	-	linker	UNP P42212
A	-5	SER	-	linker	UNP P42212
A	-4	GLY	-	linker	UNP P42212
A	-3	GLY	-	linker	UNP P42212
A	-2	ARG	-	linker	UNP P42212
A	-1	ALA	-	linker	UNP P42212
A	0	THR	-	linker	UNP P42212
A	1149	GLY	ALA	conflict	UNP S5UH55
A	1166	PHE	-	expression tag	UNP S5UH55
A	1167	GLU	-	expression tag	UNP S5UH55
B	-307	MET	-	initiating methionine	UNP P42212
B	-306	HIS	-	expression tag	UNP P42212
B	-305	HIS	-	expression tag	UNP P42212
B	-304	HIS	-	expression tag	UNP P42212
B	-303	HIS	-	expression tag	UNP P42212
B	-302	HIS	-	expression tag	UNP P42212
B	-301	HIS	-	expression tag	UNP P42212
B	-300	HIS	-	expression tag	UNP P42212
B	-299	HIS	-	expression tag	UNP P42212
B	-298	ALA	-	expression tag	UNP P42212
B	-297	ALA	-	expression tag	UNP P42212
B	-296	ALA	-	expression tag	UNP P42212
B	-295	SER	-	expression tag	UNP P42212
B	-294	ALA	-	expression tag	UNP P42212
B	-293	TRP	-	expression tag	UNP P42212
B	-292	SER	-	expression tag	UNP P42212
B	-291	HIS	-	expression tag	UNP P42212
B	-290	PRO	-	expression tag	UNP P42212
B	-289	GLN	-	expression tag	UNP P42212
B	-288	PHE	-	expression tag	UNP P42212
B	-287	GLU	-	expression tag	UNP P42212
B	-286	LYS	-	expression tag	UNP P42212
B	-285	GLY	-	expression tag	UNP P42212
B	-284	GLY	-	expression tag	UNP P42212
B	-283	GLY	-	expression tag	UNP P42212
B	-282	SER	-	expression tag	UNP P42212
B	-281	GLY	-	expression tag	UNP P42212

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-280	GLY	-	expression tag	UNP P42212
B	-279	GLY	-	expression tag	UNP P42212
B	-278	SER	-	expression tag	UNP P42212
B	-277	GLY	-	expression tag	UNP P42212
B	-276	GLY	-	expression tag	UNP P42212
B	-275	SER	-	expression tag	UNP P42212
B	-274	ALA	-	expression tag	UNP P42212
B	-273	TRP	-	expression tag	UNP P42212
B	-272	SER	-	expression tag	UNP P42212
B	-271	HIS	-	expression tag	UNP P42212
B	-270	PRO	-	expression tag	UNP P42212
B	-269	GLN	-	expression tag	UNP P42212
B	-268	PHE	-	expression tag	UNP P42212
B	-267	GLU	-	expression tag	UNP P42212
B	-266	LYS	-	expression tag	UNP P42212
B	-265	GLY	-	expression tag	UNP P42212
B	-264	GLY	-	expression tag	UNP P42212
B	-263	GLY	-	expression tag	UNP P42212
B	-262	SER	-	expression tag	UNP P42212
B	-261	GLY	-	expression tag	UNP P42212
B	-260	GLY	-	expression tag	UNP P42212
B	-259	GLY	-	expression tag	UNP P42212
B	-258	SER	-	expression tag	UNP P42212
B	-257	GLY	-	expression tag	UNP P42212
B	-256	GLY	-	expression tag	UNP P42212
B	-255	MET	-	expression tag	UNP P42212
B	-254	VAL	-	expression tag	UNP P42212
B	-191	LEU	PHE	conflict	UNP P42212
B	-190	THR	SER	conflict	UNP P42212
B	-49	LYS	ALA	conflict	UNP P42212
B	-24	LEU	HIS	conflict	UNP P42212
B	-16	SER	-	linker	UNP P42212
B	-15	GLY	-	linker	UNP P42212
B	-14	LEU	-	linker	UNP P42212
B	-13	ARG	-	linker	UNP P42212
B	-12	SER	-	linker	UNP P42212
B	-11	GLY	-	linker	UNP P42212
B	-10	LEU	-	linker	UNP P42212
B	-9	VAL	-	linker	UNP P42212
B	-8	PRO	-	linker	UNP P42212
B	-7	ARG	-	linker	UNP P42212
B	-6	GLY	-	linker	UNP P42212

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-5	SER	-	linker	UNP P42212
B	-4	GLY	-	linker	UNP P42212
B	-3	GLY	-	linker	UNP P42212
B	-2	ARG	-	linker	UNP P42212
B	-1	ALA	-	linker	UNP P42212
B	0	THR	-	linker	UNP P42212
B	1149	GLY	ALA	conflict	UNP S5UH55
B	1166	PHE	-	expression tag	UNP S5UH55
B	1167	GLU	-	expression tag	UNP S5UH55
C	-307	MET	-	initiating methionine	UNP P42212
C	-306	HIS	-	expression tag	UNP P42212
C	-305	HIS	-	expression tag	UNP P42212
C	-304	HIS	-	expression tag	UNP P42212
C	-303	HIS	-	expression tag	UNP P42212
C	-302	HIS	-	expression tag	UNP P42212
C	-301	HIS	-	expression tag	UNP P42212
C	-300	HIS	-	expression tag	UNP P42212
C	-299	HIS	-	expression tag	UNP P42212
C	-298	ALA	-	expression tag	UNP P42212
C	-297	ALA	-	expression tag	UNP P42212
C	-296	ALA	-	expression tag	UNP P42212
C	-295	SER	-	expression tag	UNP P42212
C	-294	ALA	-	expression tag	UNP P42212
C	-293	TRP	-	expression tag	UNP P42212
C	-292	SER	-	expression tag	UNP P42212
C	-291	HIS	-	expression tag	UNP P42212
C	-290	PRO	-	expression tag	UNP P42212
C	-289	GLN	-	expression tag	UNP P42212
C	-288	PHE	-	expression tag	UNP P42212
C	-287	GLU	-	expression tag	UNP P42212
C	-286	LYS	-	expression tag	UNP P42212
C	-285	GLY	-	expression tag	UNP P42212
C	-284	GLY	-	expression tag	UNP P42212
C	-283	GLY	-	expression tag	UNP P42212
C	-282	SER	-	expression tag	UNP P42212
C	-281	GLY	-	expression tag	UNP P42212
C	-280	GLY	-	expression tag	UNP P42212
C	-279	GLY	-	expression tag	UNP P42212
C	-278	SER	-	expression tag	UNP P42212
C	-277	GLY	-	expression tag	UNP P42212
C	-276	GLY	-	expression tag	UNP P42212
C	-275	SER	-	expression tag	UNP P42212

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Chain	Residue	Modelled	Actual	Comment	Reference
C	-274	ALA	-	expression tag	UNP P42212
C	-273	TRP	-	expression tag	UNP P42212
C	-272	SER	-	expression tag	UNP P42212
C	-271	HIS	-	expression tag	UNP P42212
C	-270	PRO	-	expression tag	UNP P42212
C	-269	GLN	-	expression tag	UNP P42212
C	-268	PHE	-	expression tag	UNP P42212
C	-267	GLU	-	expression tag	UNP P42212
C	-266	LYS	-	expression tag	UNP P42212
C	-265	GLY	-	expression tag	UNP P42212
C	-264	GLY	-	expression tag	UNP P42212
C	-263	GLY	-	expression tag	UNP P42212
C	-262	SER	-	expression tag	UNP P42212
C	-261	GLY	-	expression tag	UNP P42212
C	-260	GLY	-	expression tag	UNP P42212
C	-259	GLY	-	expression tag	UNP P42212
C	-258	SER	-	expression tag	UNP P42212
C	-257	GLY	-	expression tag	UNP P42212
C	-256	GLY	-	expression tag	UNP P42212
C	-255	MET	-	expression tag	UNP P42212
C	-254	VAL	-	expression tag	UNP P42212
C	-191	LEU	PHE	conflict	UNP P42212
C	-190	THR	SER	conflict	UNP P42212
C	-49	LYS	ALA	conflict	UNP P42212
C	-24	LEU	HIS	conflict	UNP P42212
C	-16	SER	-	linker	UNP P42212
C	-15	GLY	-	linker	UNP P42212
C	-14	LEU	-	linker	UNP P42212
C	-13	ARG	-	linker	UNP P42212
C	-12	SER	-	linker	UNP P42212
C	-11	GLY	-	linker	UNP P42212
C	-10	LEU	-	linker	UNP P42212
C	-9	VAL	-	linker	UNP P42212
C	-8	PRO	-	linker	UNP P42212
C	-7	ARG	-	linker	UNP P42212
C	-6	GLY	-	linker	UNP P42212
C	-5	SER	-	linker	UNP P42212
C	-4	GLY	-	linker	UNP P42212
C	-3	GLY	-	linker	UNP P42212
C	-2	ARG	-	linker	UNP P42212
C	-1	ALA	-	linker	UNP P42212
C	0	THR	-	linker	UNP P42212

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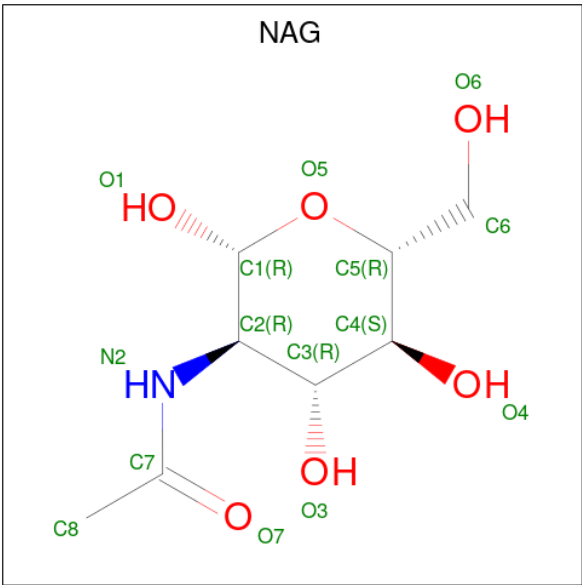
Chain	Residue	Modelled	Actual	Comment	Reference
C	1149	GLY	ALA	conflict	UNP S5UH55
C	1166	PHE	-	expression tag	UNP S5UH55
C	1167	GLU	-	expression tag	UNP S5UH55
D	-307	MET	-	initiating methionine	UNP P42212
D	-306	HIS	-	expression tag	UNP P42212
D	-305	HIS	-	expression tag	UNP P42212
D	-304	HIS	-	expression tag	UNP P42212
D	-303	HIS	-	expression tag	UNP P42212
D	-302	HIS	-	expression tag	UNP P42212
D	-301	HIS	-	expression tag	UNP P42212
D	-300	HIS	-	expression tag	UNP P42212
D	-299	HIS	-	expression tag	UNP P42212
D	-298	ALA	-	expression tag	UNP P42212
D	-297	ALA	-	expression tag	UNP P42212
D	-296	ALA	-	expression tag	UNP P42212
D	-295	SER	-	expression tag	UNP P42212
D	-294	ALA	-	expression tag	UNP P42212
D	-293	TRP	-	expression tag	UNP P42212
D	-292	SER	-	expression tag	UNP P42212
D	-291	HIS	-	expression tag	UNP P42212
D	-290	PRO	-	expression tag	UNP P42212
D	-289	GLN	-	expression tag	UNP P42212
D	-288	PHE	-	expression tag	UNP P42212
D	-287	GLU	-	expression tag	UNP P42212
D	-286	LYS	-	expression tag	UNP P42212
D	-285	GLY	-	expression tag	UNP P42212
D	-284	GLY	-	expression tag	UNP P42212
D	-283	GLY	-	expression tag	UNP P42212
D	-282	SER	-	expression tag	UNP P42212
D	-281	GLY	-	expression tag	UNP P42212
D	-280	GLY	-	expression tag	UNP P42212
D	-279	GLY	-	expression tag	UNP P42212
D	-278	SER	-	expression tag	UNP P42212
D	-277	GLY	-	expression tag	UNP P42212
D	-276	GLY	-	expression tag	UNP P42212
D	-275	SER	-	expression tag	UNP P42212
D	-274	ALA	-	expression tag	UNP P42212
D	-273	TRP	-	expression tag	UNP P42212
D	-272	SER	-	expression tag	UNP P42212
D	-271	HIS	-	expression tag	UNP P42212
D	-270	PRO	-	expression tag	UNP P42212
D	-269	GLN	-	expression tag	UNP P42212

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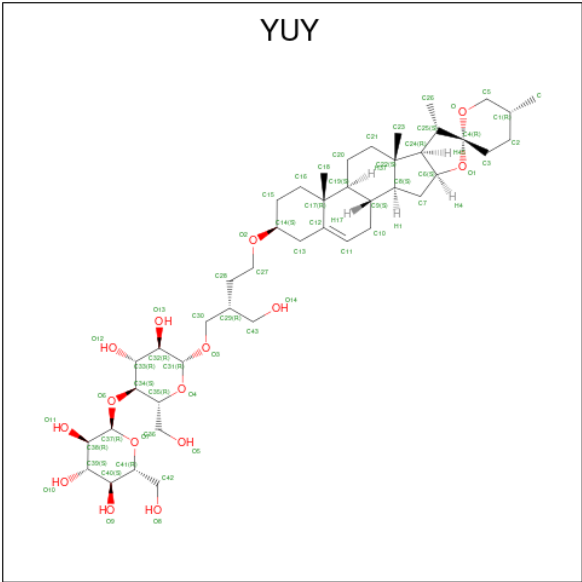
Chain	Residue	Modelled	Actual	Comment	Reference
D	-268	PHE	-	expression tag	UNP P42212
D	-267	GLU	-	expression tag	UNP P42212
D	-266	LYS	-	expression tag	UNP P42212
D	-265	GLY	-	expression tag	UNP P42212
D	-264	GLY	-	expression tag	UNP P42212
D	-263	GLY	-	expression tag	UNP P42212
D	-262	SER	-	expression tag	UNP P42212
D	-261	GLY	-	expression tag	UNP P42212
D	-260	GLY	-	expression tag	UNP P42212
D	-259	GLY	-	expression tag	UNP P42212
D	-258	SER	-	expression tag	UNP P42212
D	-257	GLY	-	expression tag	UNP P42212
D	-256	GLY	-	expression tag	UNP P42212
D	-255	MET	-	expression tag	UNP P42212
D	-254	VAL	-	expression tag	UNP P42212
D	-191	LEU	PHE	conflict	UNP P42212
D	-190	THR	SER	conflict	UNP P42212
D	-49	LYS	ALA	conflict	UNP P42212
D	-24	LEU	HIS	conflict	UNP P42212
D	-16	SER	-	linker	UNP P42212
D	-15	GLY	-	linker	UNP P42212
D	-14	LEU	-	linker	UNP P42212
D	-13	ARG	-	linker	UNP P42212
D	-12	SER	-	linker	UNP P42212
D	-11	GLY	-	linker	UNP P42212
D	-10	LEU	-	linker	UNP P42212
D	-9	VAL	-	linker	UNP P42212
D	-8	PRO	-	linker	UNP P42212
D	-7	ARG	-	linker	UNP P42212
D	-6	GLY	-	linker	UNP P42212
D	-5	SER	-	linker	UNP P42212
D	-4	GLY	-	linker	UNP P42212
D	-3	GLY	-	linker	UNP P42212
D	-2	ARG	-	linker	UNP P42212
D	-1	ALA	-	linker	UNP P42212
D	0	THR	-	linker	UNP P42212
D	1149	GLY	ALA	conflict	UNP S5UH55
D	1166	PHE	-	expression tag	UNP S5UH55
D	1167	GLU	-	expression tag	UNP S5UH55

- Molecule 2 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: C₈H₁₅NO₆).



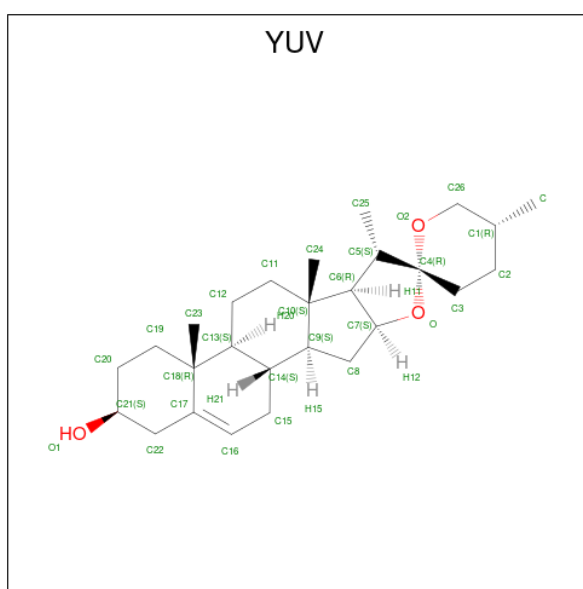
Mol	Chain	Residues	Atoms				AltConf
2	A	1	Total	C	N	O	0
			14	8	1	5	
2	B	1	Total	C	N	O	0
			14	8	1	5	
2	C	1	Total	C	N	O	0
			14	8	1	5	
2	D	1	Total	C	N	O	0
			14	8	1	5	

- Molecule 3 is (2R)-2-(hydroxymethyl)-4-{[(25R)-10alpha,14beta,17beta-spirost-5-en-3beta-y l]oxy}butyl 4-O-alpha-D-glucopyranosyl-beta-D-glucopyranoside (CCD ID: YUY) (formula: C₄₄H₇₂O₁₅).



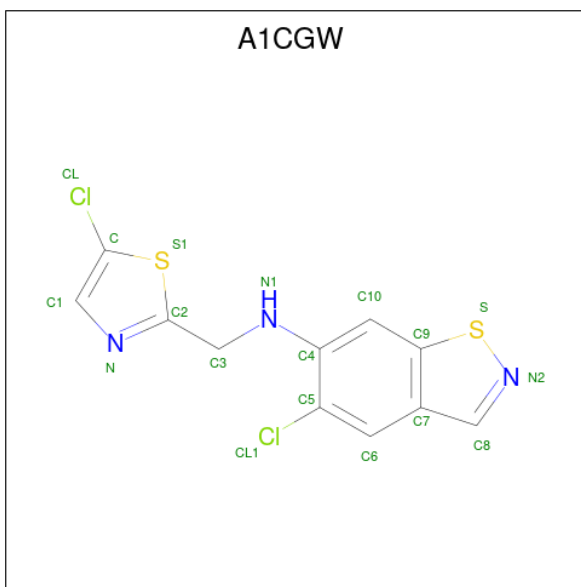
Mol	Chain	Residues	Atoms			AltConf
3	A	1	Total	C	O	0
			59	44	15	
3	B	1	Total	C	O	0
			59	44	15	
3	C	1	Total	C	O	0
			59	44	15	
3	D	1	Total	C	O	0
			59	44	15	

- Molecule 4 is (25R)-14beta,17beta-spirost-5-en-3beta-ol (CCD ID: YUV) (formula: $C_{27}H_{42}O_3$).

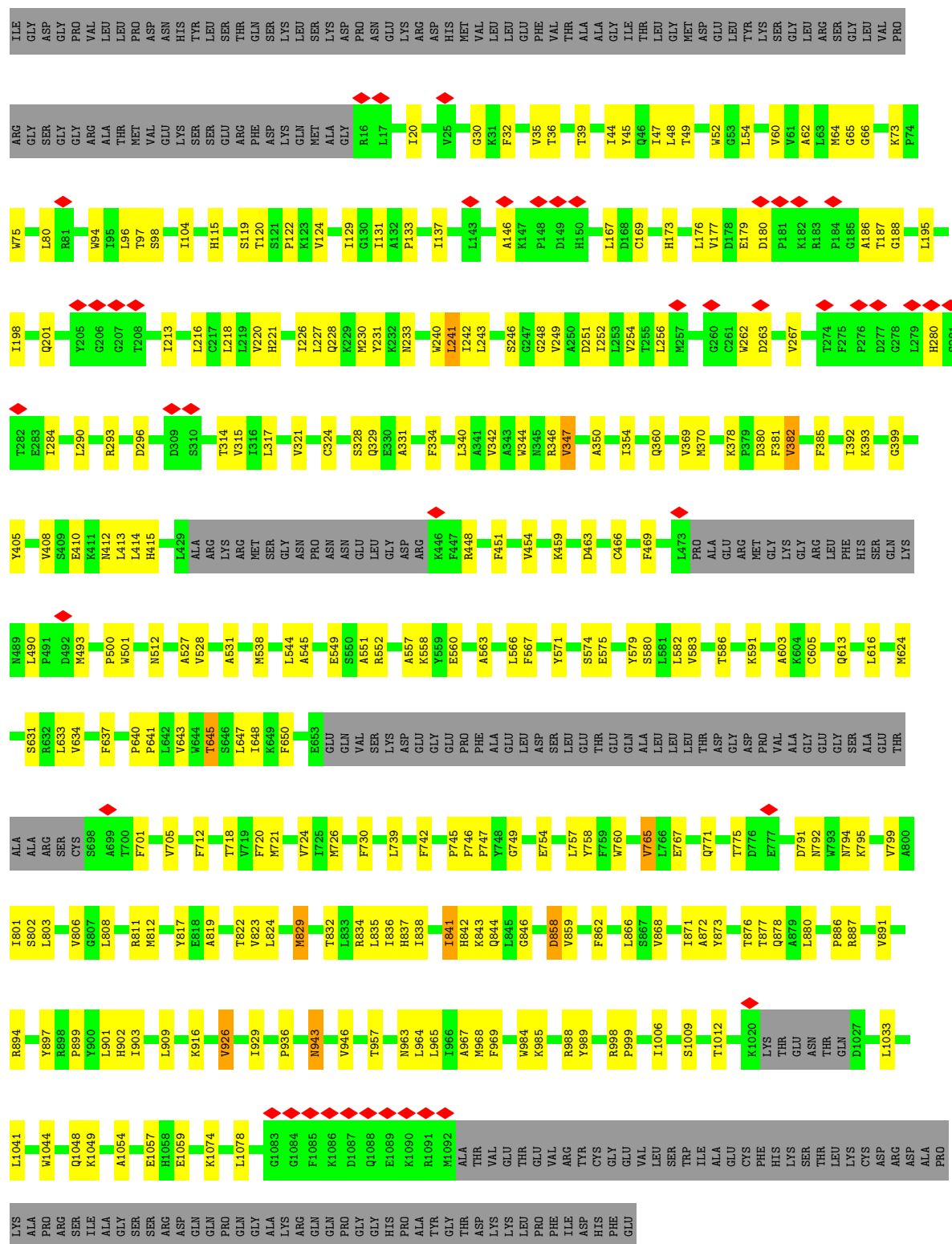


Mol	Chain	Residues	Atoms			AltConf
4	A	1	Total	C	O	0
			30	27	3	
4	B	1	Total	C	O	0
			30	27	3	
4	C	1	Total	C	O	0
			30	27	3	
4	D	1	Total	C	O	0
			30	27	3	

- Molecule 5 is 5-chloro-N-[(5-chloro-1,3-thiazol-2-yl)methyl]-1,2-benzothiazol-6-amine (CCD ID: A1CGW) (formula: $C_{11}H_7Cl_2N_3S_2$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
5	A	1	Total	C	Cl	N	S	0
			18	11	2	3	2	
5	B	1	Total	C	Cl	N	S	0
			18	11	2	3	2	
5	C	1	Total	C	Cl	N	S	0
			18	11	2	3	2	
5	D	1	Total	C	Cl	N	S	0
			18	11	2	3	2	



- Molecule 1: Green fluorescent protein, Transient receptor potential cation channel subfamily M member 5

Chain D: 50% 17% 32%

L901	L902	I903	L909	K916	V926	N943	V946	T957	L964	L965	M968	F969	S970	W984	K985	R988	Y989	R998	P999	I1006	S1009	T1012	K1020	THR	GLU	ASN	THR	D1027	L1033	L1041	W1044	Q1048	K1049	A1054	E1057	H1058													
V806	G807	L808	R811	M812	Y817	E818	A819	T822	V823	R829	T832	L833	R834	L835	H837	I838	T841	H842	K843	Q844	L845	C846	D858	V859	F862	L866	S867	V868	I871	A872	Y873	T877	Q878	A879	P886	R887	V891	R894	Y897	R898	P899	Y900							
SER	CYS	S698	A699	T700	F701	I702	V705	F712	T718	V719	F720	M721	V724	I725	M726	F730	L738	P745	E746	P747	V748	G749	E754	L757	V758	F759	W760	V765	L766	E767	Q771	T775	D776	E777	D791	W792	W793	W794	K795	V799	A800	I801	S802	L803					
L633	V634	F637	P640	P641	L642	V643	W644	T645	S646	L647	T648	F650	E653	GLU	GLN	VAL	SER	LYS	ASP	GLU	GLY	ASP	GLY	L566	F567	Y571	S574	E575	Y579	S580	L581	L582	V583	T586	K591	A603	R604	C605	Q613	L616	M624	S631	R632						
L490	F491	D492	M493	P500	W501	A527	V528	A531	M538	L544	A545	E549	S550	A551	R552	A557	K558	E560	A563	L566	F567	Y571	S574	E575	Y579	S580	L581	L582	V583	T586	K591	A603	R604	C605	Q613	L616	M624	S631	R632										
V408	S409	E410	K411	N412	L413	L414	H415	L429	ALA	ARG	LYS	ARG	LYS	ARG	LYS	ARG	LYS	ARG	LYS	ARG	LYS	ARG	LYS	ARG	LYS	ARG	LYS	ARG	LYS	ARG	LYS	ARG	LYS	ARG	LYS	ARG	LYS	ARG	LYS	ARG	LYS	ARG	LYS	ARG					
L290	R293	D296	D309	S310	T314	V315	L316	L317	V321	C324	S328	Q329	E330	A331	F334	L340	K341	V342	A343	V344	K345	V347	A350	L354	Q360	F369	K370	K378	P379	D380	F381	V382	F385	V386	D387	L392	K393	G399	Y405										
Q201	Y205	G206	G207	T208	I213	L216	C217	L218	L219	T220	H221	T226	L227	Q228	M230	Y231	K232	N233	W240	L241	L242	L243	S246	G247	G248	V249	A250	D251	L252	V254	L255	L256	M257	G260	C261	E179	D180	P181	K182	R183	P184	G185	T187	G188	L195	I198			
L80	R81	Y84	T85	L86	T87	S88	I104	H115	S119	T120	S121	P122	K123	V124	I129	G130	I131	A132	P133	I137	L143	A146	K147	P148	D149	H150	L167	D168	C169	H173	L176	V177	D178	E179	D180	P181	K182	R183	P184	G185	T187	G188	L195	I198					
ARG	GLY	SER	GLY	ARG	ALA	THR	MET	VAL	GLU	LYS	SER	SER	GLU	ARG	PHE	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE	GLY	ASP	PRO	VAL	LEU	LEU	PRO	ILE	ASN	GLY	ASP	LEU	VAL	TYR	GLN	LYS	ASP	TYR	SER	LYS	GLN	GLY	R16	L17	I20	V25	G30	K31	F32	V35	T36	T39	I44	Y45	Q46	L48	T49	W52	G53	L54	V50	V61	A62	L63	M64	G65	G66	K73	
ILE																																																	



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	136392	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 ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1100	Depositor
Maximum defocus (nm)	1900	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.041	Depositor
Minimum map value	-0.014	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.009	Depositor
Map size (Å)	297.36, 297.36, 297.36	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.826, 0.826, 0.826	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: NAG, YUV, A1CGW, YUY

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	0.47	0/7760	0.76	0/10584
1	B	0.47	0/7760	0.76	0/10584
1	C	0.47	0/7760	0.76	0/10584
1	D	0.47	0/7760	0.77	0/10584
All	All	0.47	0/31040	0.76	0/42336

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	7571	0	7385	201	0
1	B	7571	0	7385	196	0
1	C	7571	0	7385	196	0
1	D	7571	0	7385	196	0
2	A	14	0	13	0	0
2	B	14	0	13	0	0
2	C	14	0	13	0	0
2	D	14	0	13	0	0
3	A	59	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	59	0	0	0	0
3	C	59	0	0	0	0
3	D	59	0	0	0	0
4	A	30	0	0	0	0
4	B	30	0	0	0	0
4	C	30	0	0	0	0
4	D	30	0	0	0	0
5	A	18	0	0	3	0
5	B	18	0	0	3	0
5	C	18	0	0	2	0
5	D	18	0	0	3	0
All	All	30768	0	29592	756	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 13.

The worst 5 of 756 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:263:ASP:O	1:A:267:VAL:HG13	1.93	0.69
1:D:263:ASP:O	1:D:267:VAL:HG13	1.93	0.69
1:C:263:ASP:O	1:C:267:VAL:HG13	1.93	0.68
1:B:263:ASP:O	1:B:267:VAL:HG13	1.92	0.68
1:D:746:PRO:N	1:D:747:PRO:HD2	2.16	0.61

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	986/1475 (67%)	952 (97%)	34 (3%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	986/1475 (67%)	952 (97%)	34 (3%)	0	100	100
1	C	986/1475 (67%)	952 (97%)	34 (3%)	0	100	100
1	D	986/1475 (67%)	952 (97%)	34 (3%)	0	100	100
All	All	3944/5900 (67%)	3808 (97%)	136 (3%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains ⓘ

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	742/1272 (58%)	718 (97%)	24 (3%)	34	67
1	B	742/1272 (58%)	718 (97%)	24 (3%)	34	67
1	C	742/1272 (58%)	718 (97%)	24 (3%)	34	67
1	D	742/1272 (58%)	718 (97%)	24 (3%)	34	67
All	All	2968/5088 (58%)	2872 (97%)	96 (3%)	36	67

5 of 96 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	382	VAL
1	C	1078	LEU
1	C	645	THR
1	C	858	ASP
1	D	226	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 8 such sidechains are listed below:

Mol	Chain	Res	Type
1	D	974	GLN
1	D	297	HIS
1	C	974	GLN

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Continued from previous page...

Mol	Chain	Res	Type
1	B	974	GLN
1	C	996	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

16 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
2	NAG	A	1501	1	14,14,15	0.28	0	17,19,21	0.75	1 (5%)
4	YUV	C	1503	-	35,35,35	1.64	1 (2%)	58,58,58	2.13	7 (12%)
4	YUV	D	1503	-	35,35,35	1.64	1 (2%)	58,58,58	2.13	7 (12%)
5	A1CGW	B	1504	-	14,20,20	0.83	0	10,28,28	0.76	0
5	A1CGW	C	1504	-	14,20,20	0.82	0	10,28,28	0.76	0
5	A1CGW	D	1504	-	14,20,20	0.83	0	10,28,28	0.75	0
4	YUV	A	1503	-	35,35,35	1.64	1 (2%)	58,58,58	2.13	7 (12%)
3	YUY	C	1502	-	66,66,66	1.22	1 (1%)	98,102,102	1.56	6 (6%)
2	NAG	D	1501	1	14,14,15	0.28	0	17,19,21	0.74	1 (5%)
2	NAG	B	1501	1	14,14,15	0.29	0	17,19,21	0.75	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	YUY	A	1502	-	66,66,66	1.22	1 (1%)	98,102,102	1.56	6 (6%)
2	NAG	C	1501	1	14,14,15	0.28	0	17,19,21	0.75	1 (5%)
3	YUY	B	1502	-	66,66,66	1.22	1 (1%)	98,102,102	1.56	6 (6%)
5	A1CGW	A	1504	-	14,20,20	0.82	0	10,28,28	0.76	0
4	YUV	B	1503	-	35,35,35	1.65	1 (2%)	58,58,58	2.13	7 (12%)
3	YUY	D	1502	-	66,66,66	1.22	1 (1%)	98,102,102	1.56	6 (6%)

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	A	1501	1	-	2/6/23/26	0/1/1/1
5	A1CGW	B	1504	-	-	0/3/5/5	0/3/3/3
5	A1CGW	C	1504	-	-	0/3/5/5	0/3/3/3
4	YUV	C	1503	-	-	-	0/6/6/6
4	YUV	D	1503	-	-	-	0/6/6/6
5	A1CGW	D	1504	-	-	0/3/5/5	0/3/3/3
4	YUV	A	1503	-	-	-	0/6/6/6
3	YUY	C	1502	-	-	12/21/149/149	0/8/8/8
2	NAG	D	1501	1	-	2/6/23/26	0/1/1/1
2	NAG	B	1501	1	-	2/6/23/26	0/1/1/1
3	YUY	A	1502	-	-	12/21/149/149	0/8/8/8
2	NAG	C	1501	1	-	2/6/23/26	0/1/1/1
3	YUY	B	1502	-	-	12/21/149/149	0/8/8/8
5	A1CGW	A	1504	-	-	0/3/5/5	0/3/3/3
4	YUV	B	1503	-	-	-	0/6/6/6
3	YUY	D	1502	-	-	12/21/149/149	0/8/8/8

The worst 5 of 8 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	1502	YUY	C11-C12	9.53	1.52	1.33
3	C	1502	YUY	C11-C12	9.53	1.52	1.33
3	D	1502	YUY	C11-C12	9.53	1.52	1.33
3	B	1502	YUY	C11-C12	9.52	1.52	1.33
4	B	1503	YUV	C16-C17	9.44	1.52	1.33

The worst 5 of 56 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	B	1503	YUV	C15-C16-C17	-10.10	107.97	125.02
4	A	1503	YUV	C15-C16-C17	-10.08	108.00	125.02
4	C	1503	YUV	C15-C16-C17	-10.07	108.02	125.02
4	D	1503	YUV	C15-C16-C17	-10.07	108.02	125.02
4	D	1503	YUV	C18-C17-C16	-8.87	109.98	122.93

There are no chirality outliers.

5 of 56 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	1502	YUY	C27-C28-C29-C43
3	A	1502	YUY	C30-C29-C43-O14
3	B	1502	YUY	C27-C28-C29-C43
3	B	1502	YUY	C30-C29-C43-O14
3	C	1502	YUY	C27-C28-C29-C43

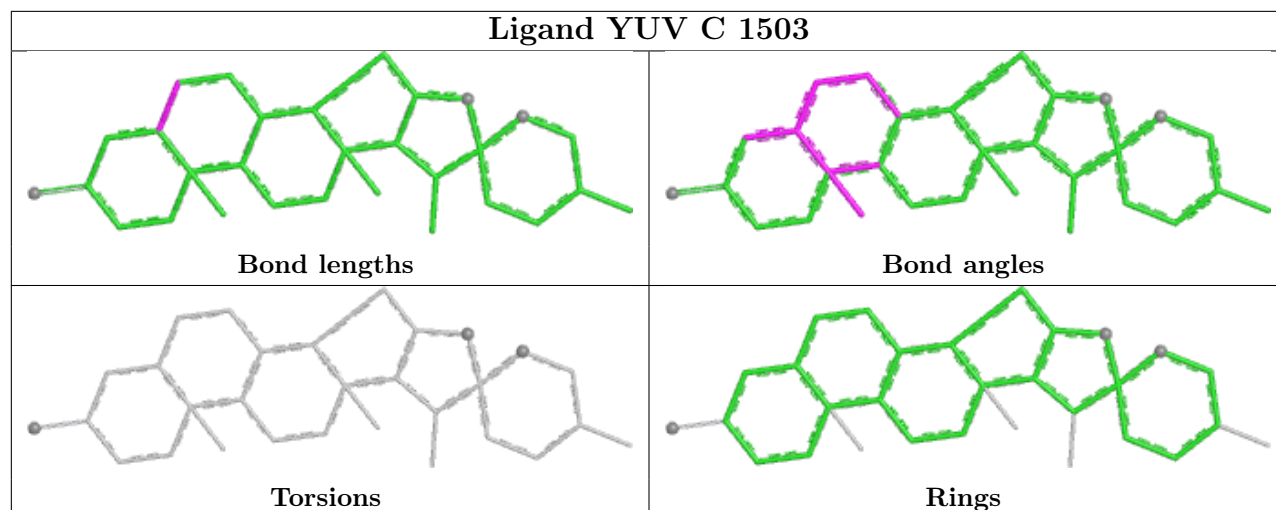
There are no ring outliers.

4 monomers are involved in 11 short contacts:

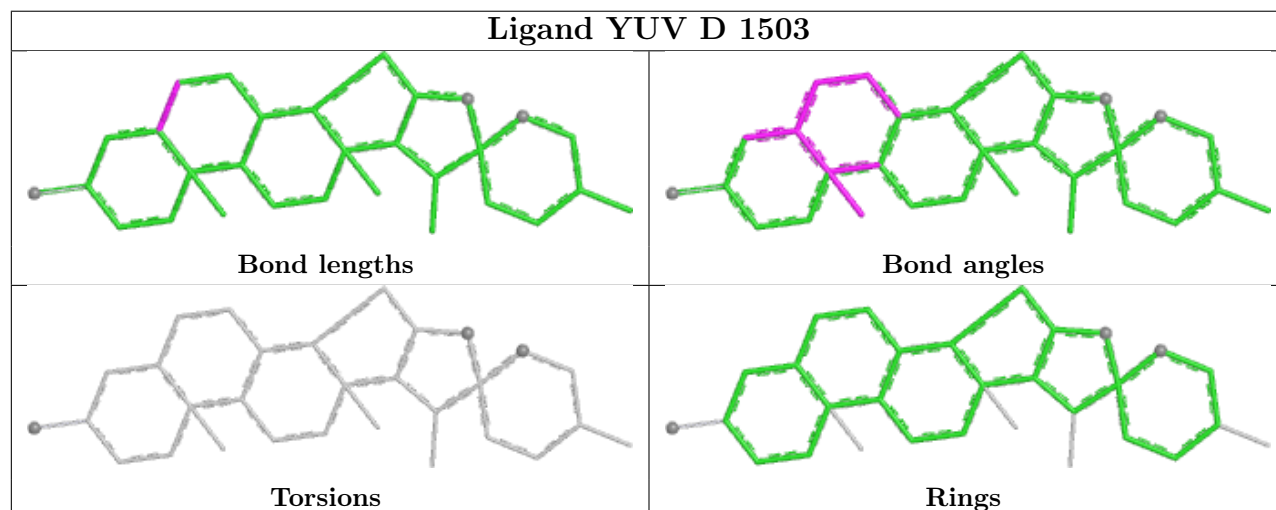
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	B	1504	A1CGW	3	0
5	C	1504	A1CGW	2	0
5	D	1504	A1CGW	3	0
5	A	1504	A1CGW	3	0

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

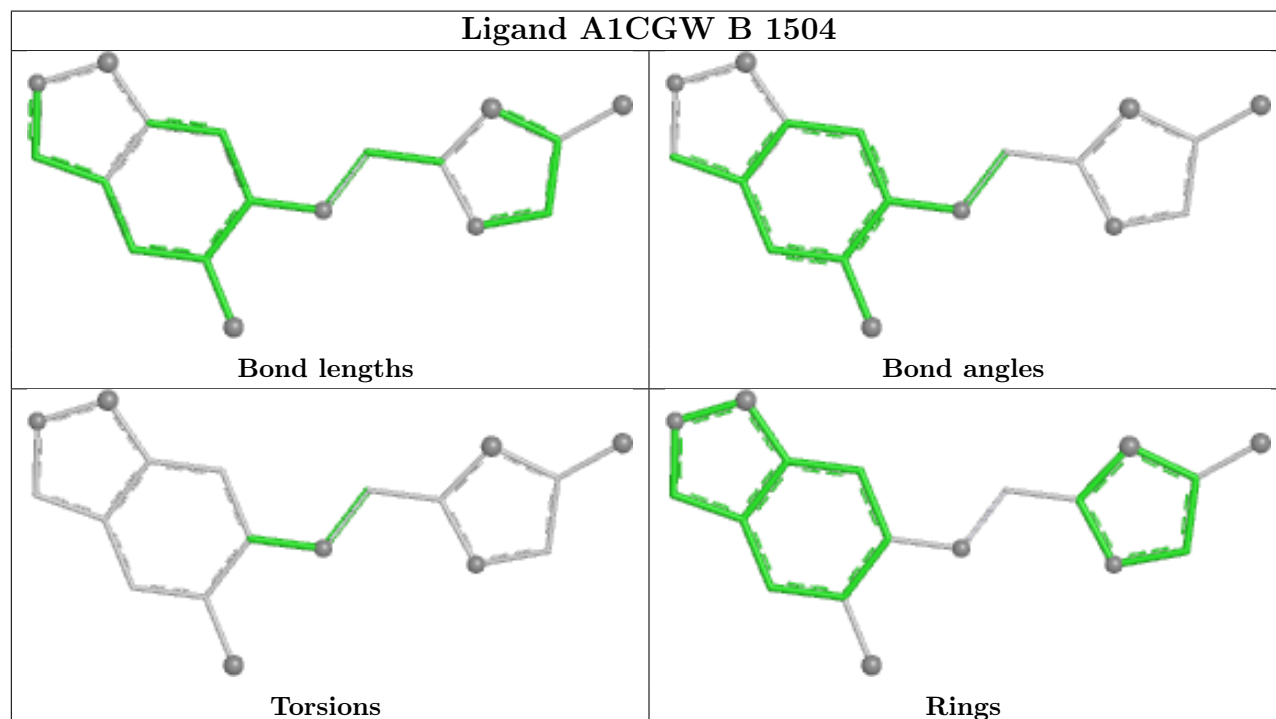
Ligand YUV C 1503

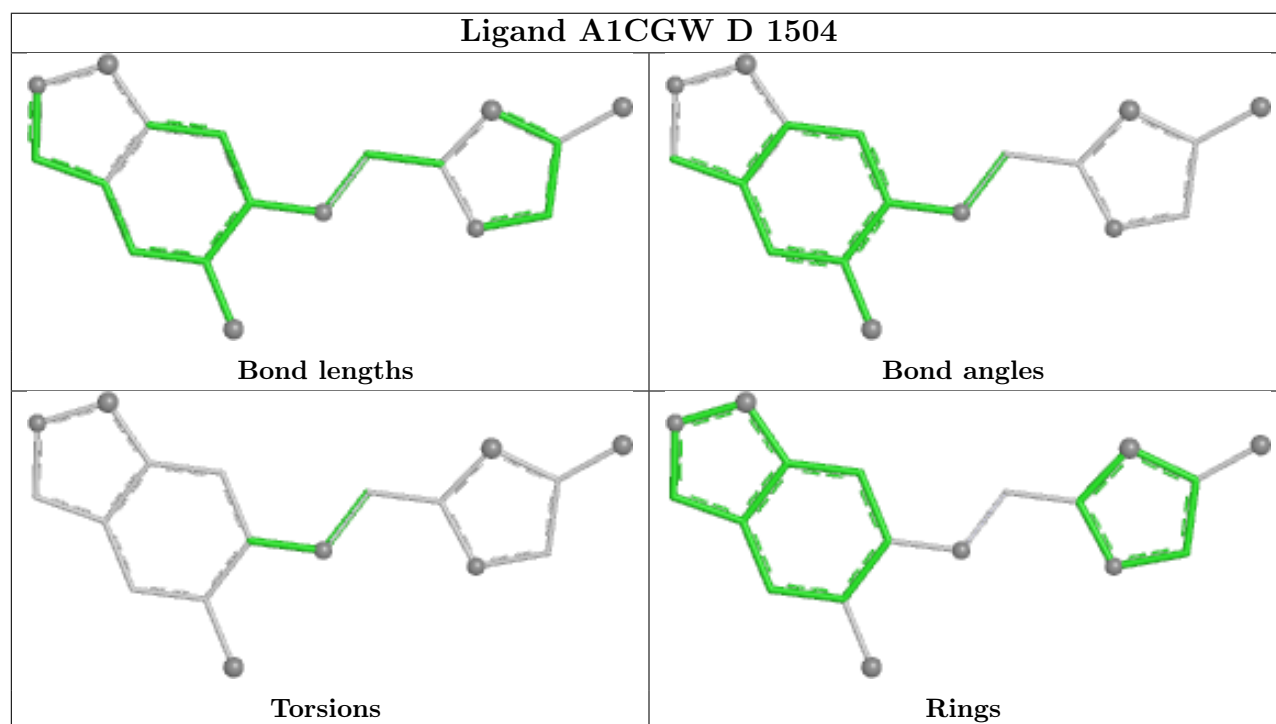
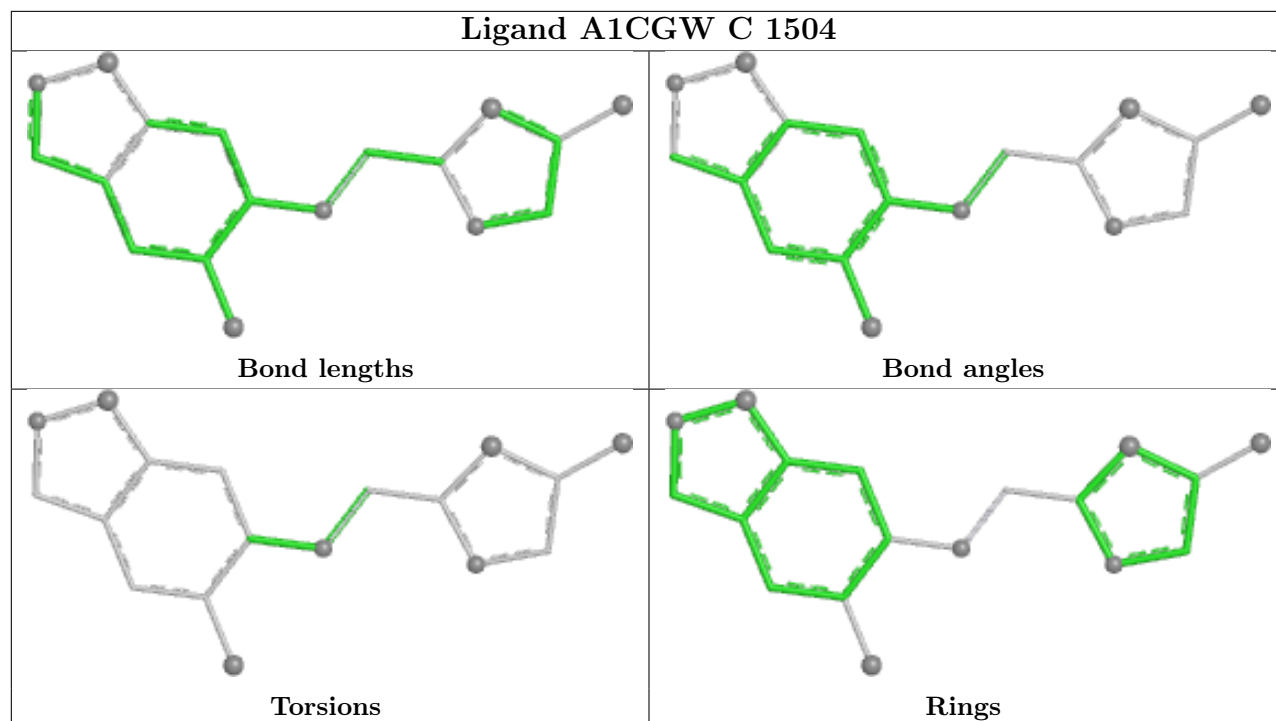


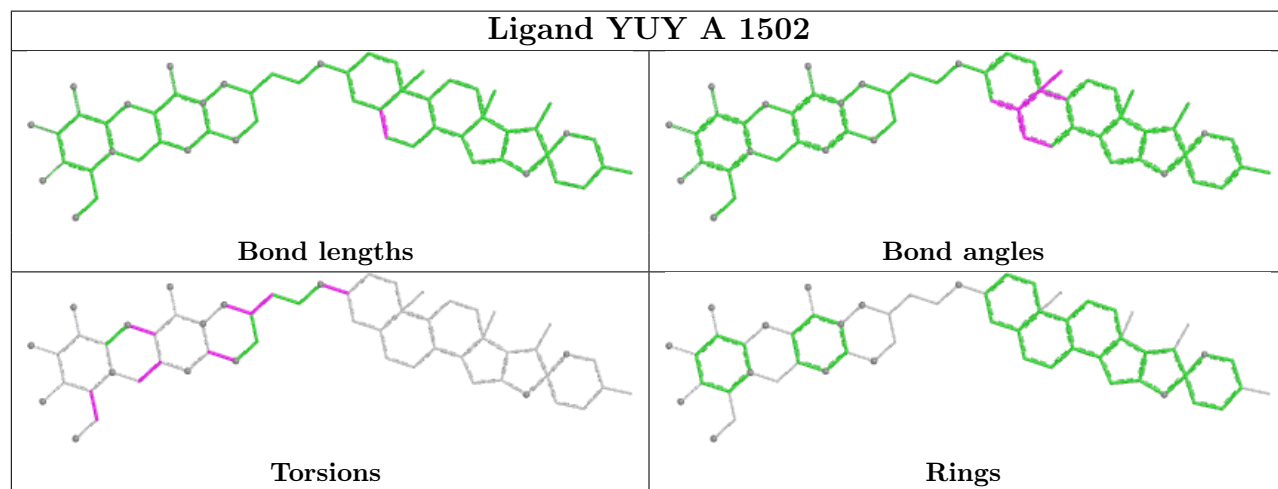
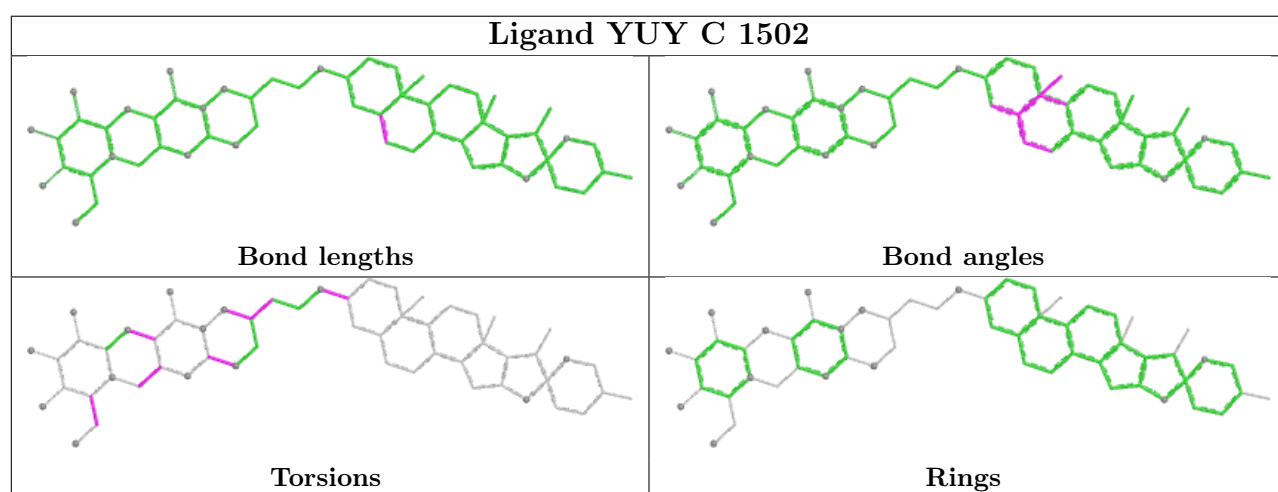
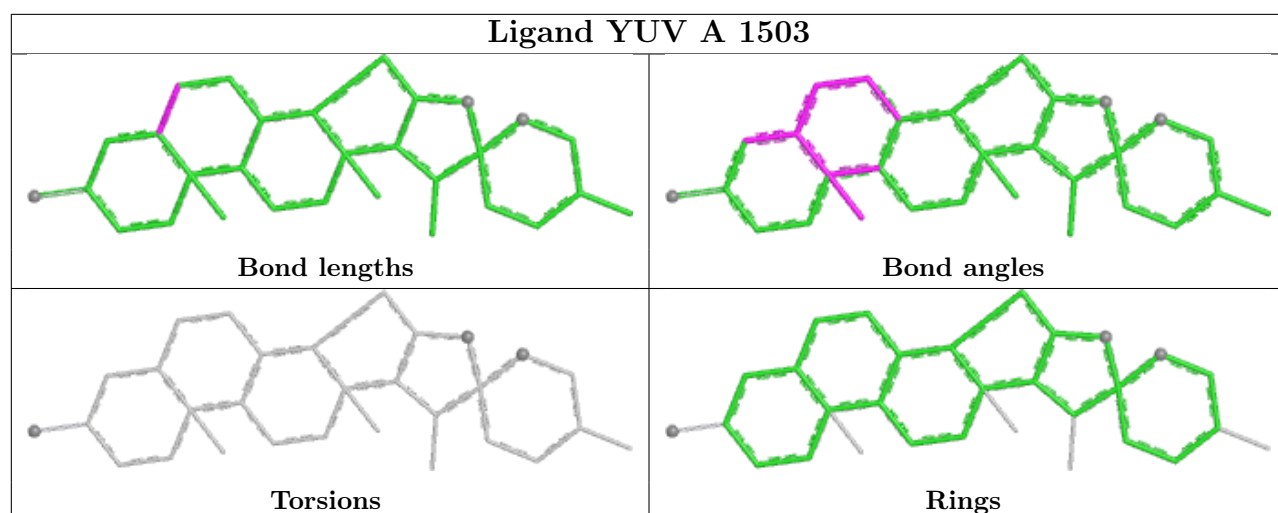
Ligand YUV D 1503

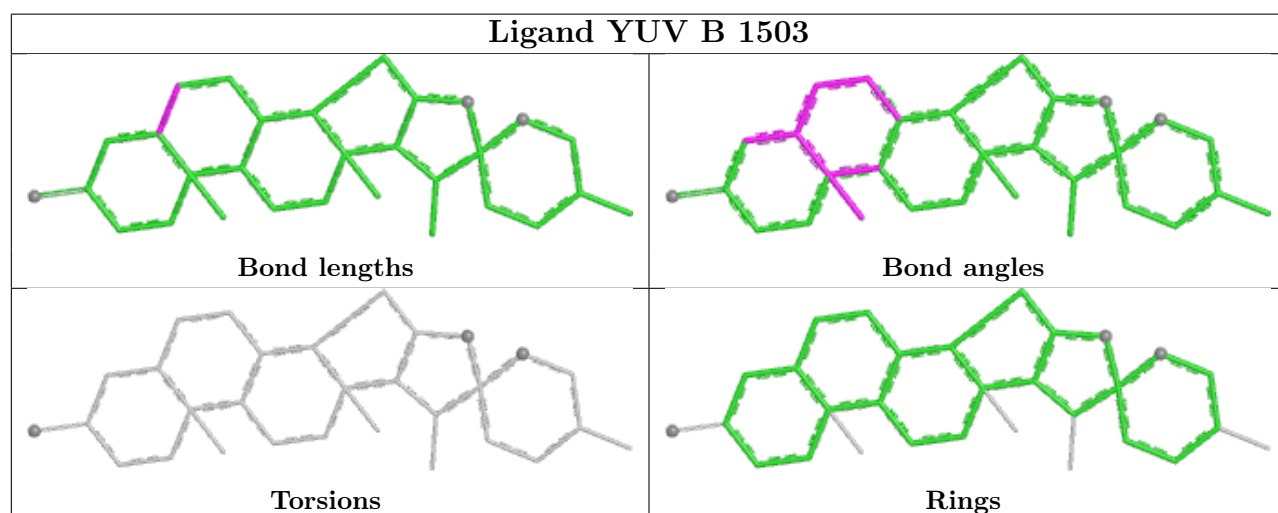
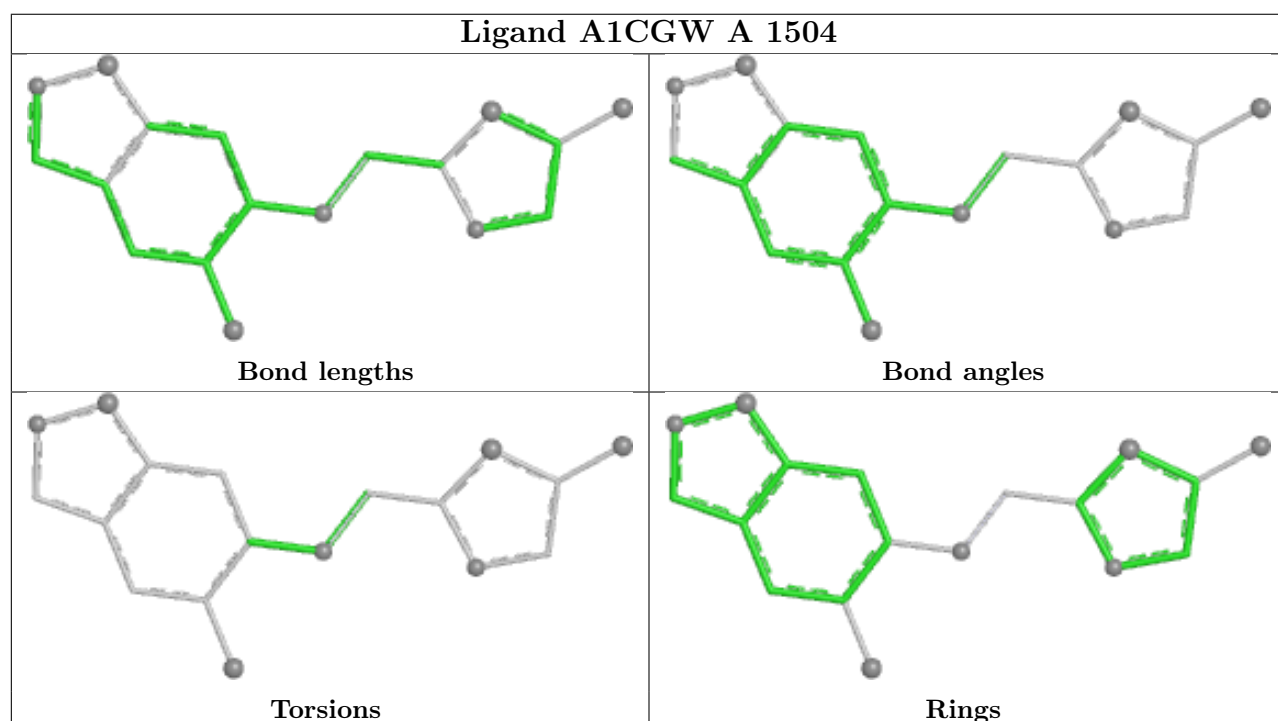
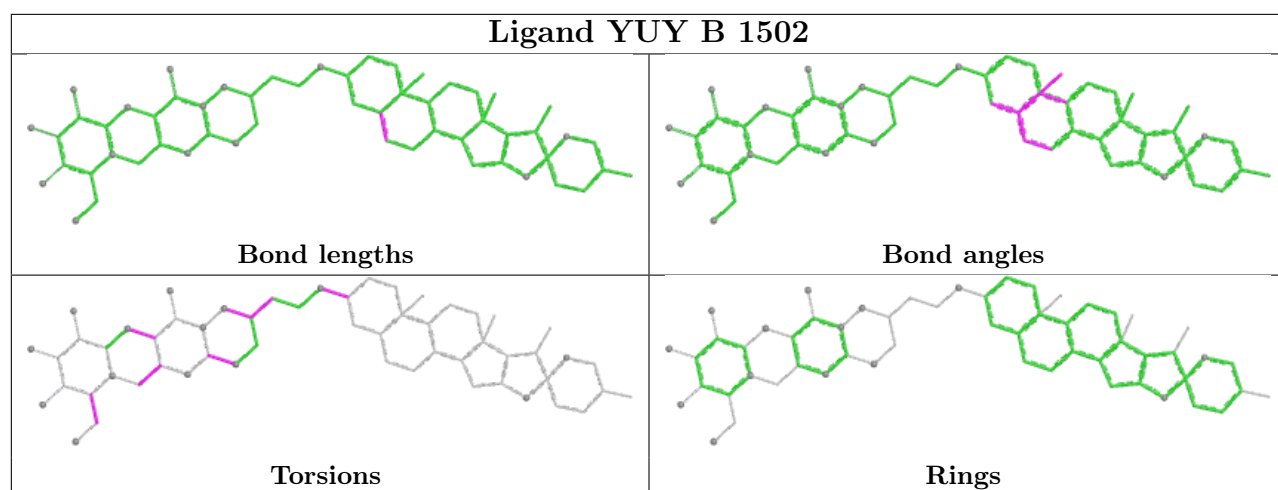


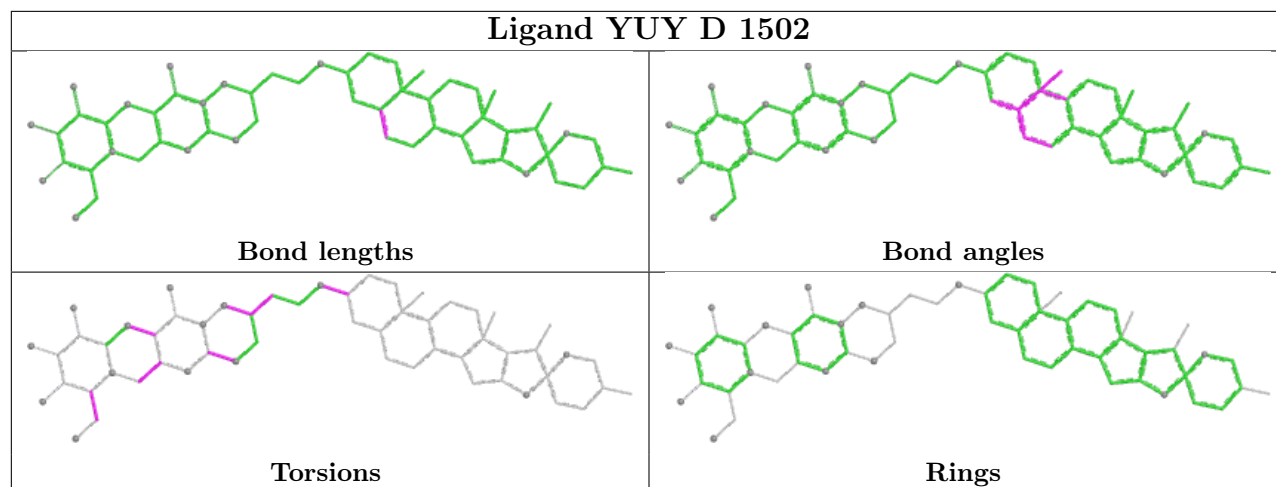
Ligand A1CGW B 1504











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.

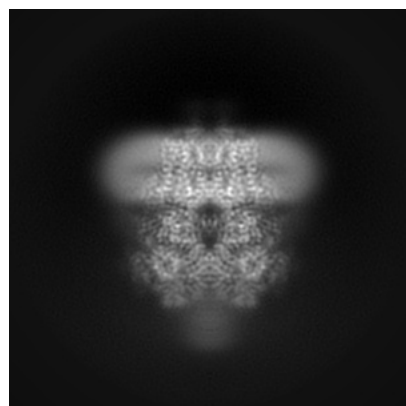
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-71250. These allow visual inspection of the internal detail of the map and identification of artifacts.

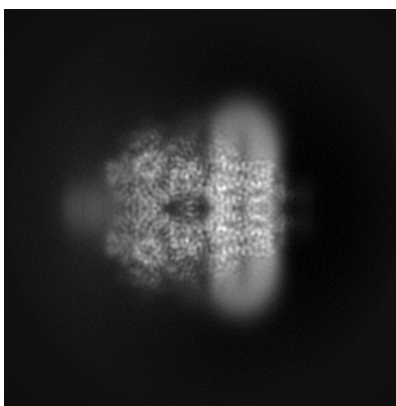
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

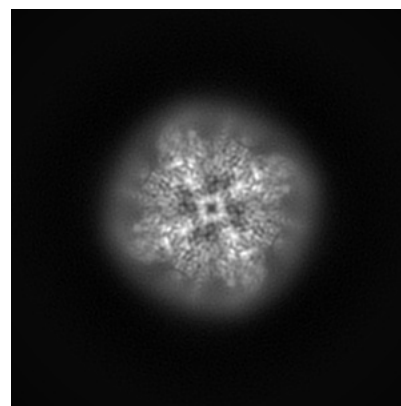
6.1.1 Primary map



X

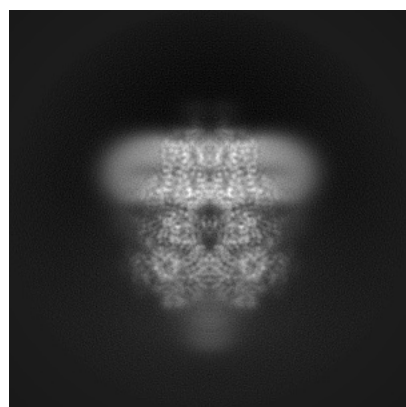


Y

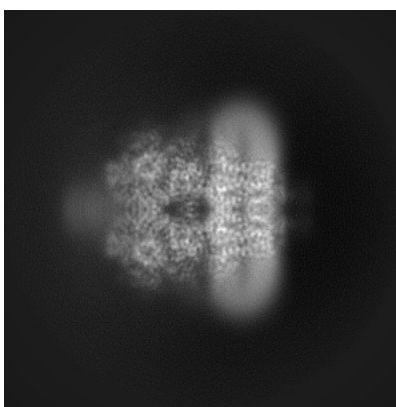


Z

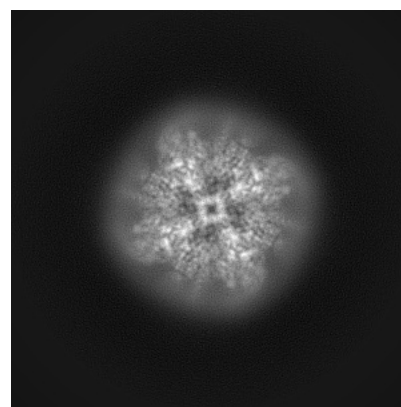
6.1.2 Raw map



X



Y

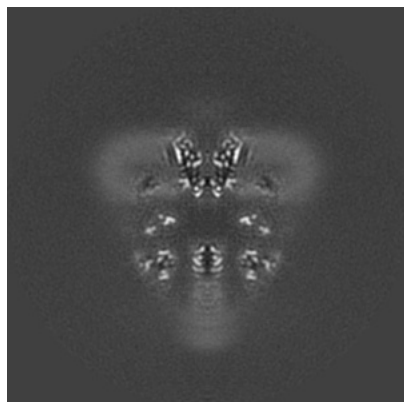


Z

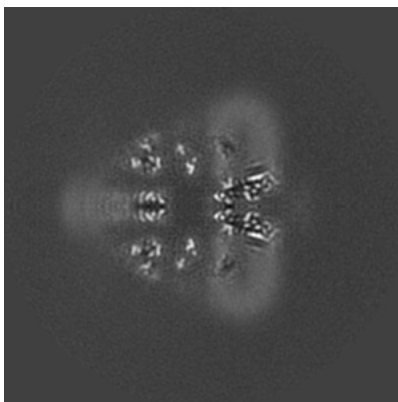
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

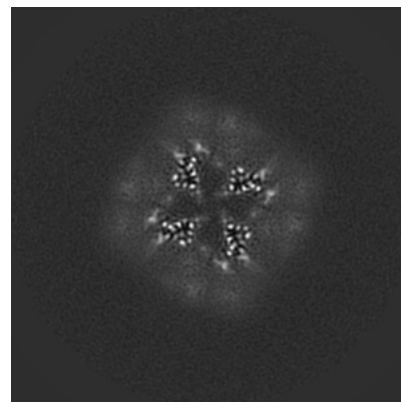
6.2.1 Primary map



X Index: 180

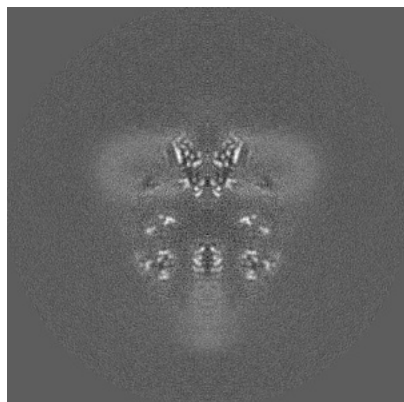


Y Index: 180

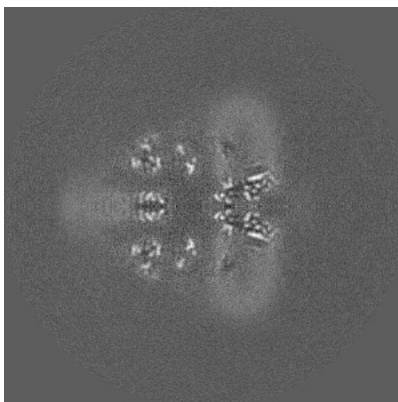


Z Index: 180

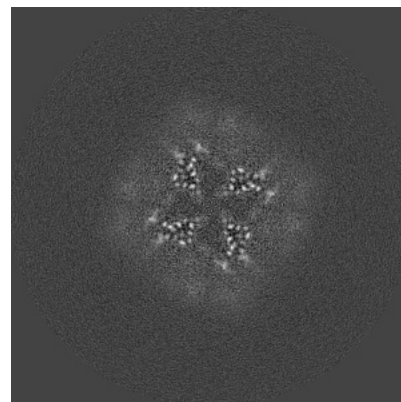
6.2.2 Raw map



X Index: 180



Y Index: 180

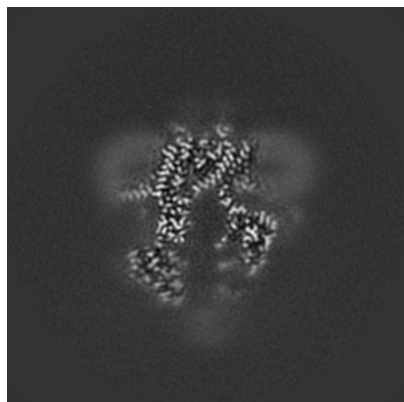


Z Index: 180

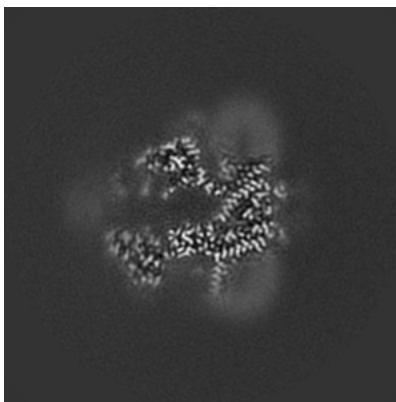
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

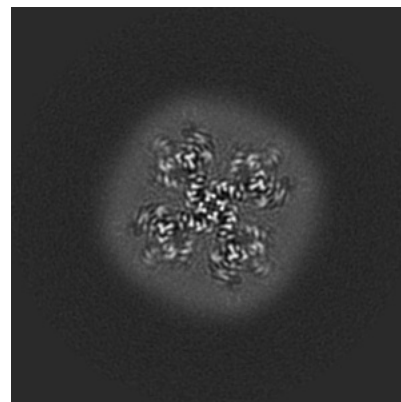
6.3.1 Primary map



X Index: 200

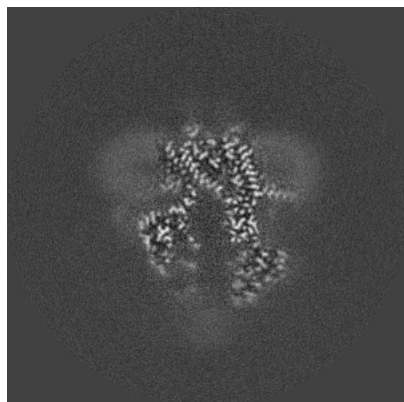


Y Index: 160

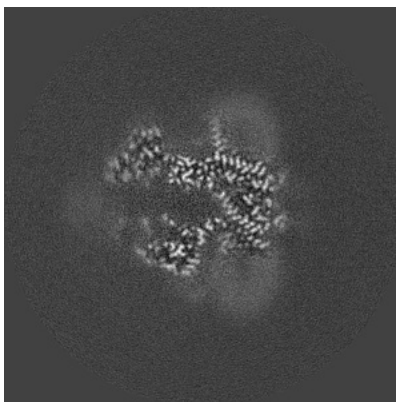


Z Index: 197

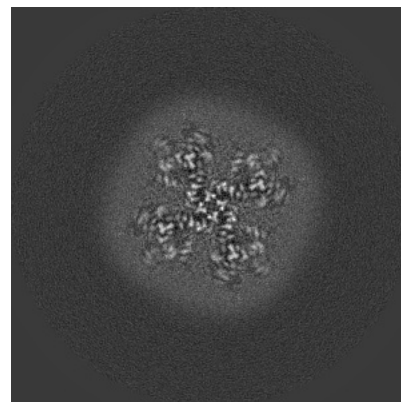
6.3.2 Raw map



X Index: 160



Y Index: 200

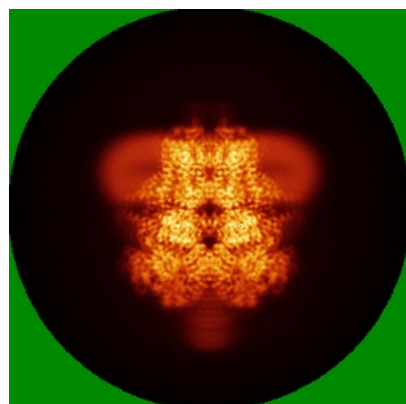


Z Index: 197

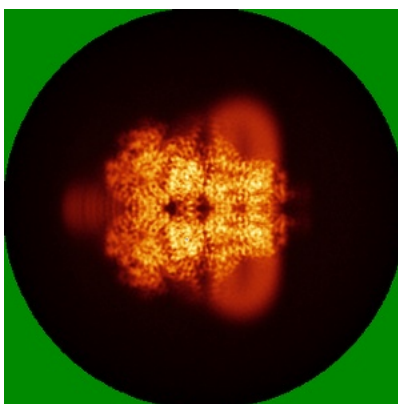
The images above show the largest variance slices of the map in three orthogonal directions.

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

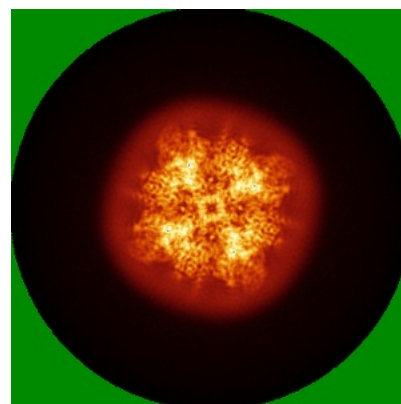
6.4.1 Primary map



X

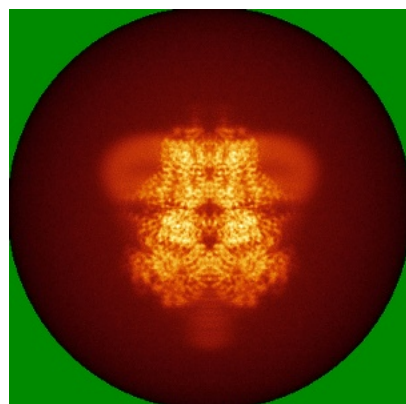


Y

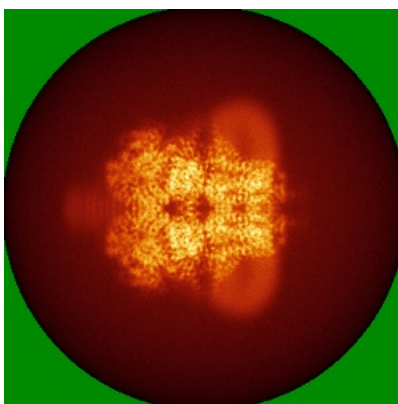


Z

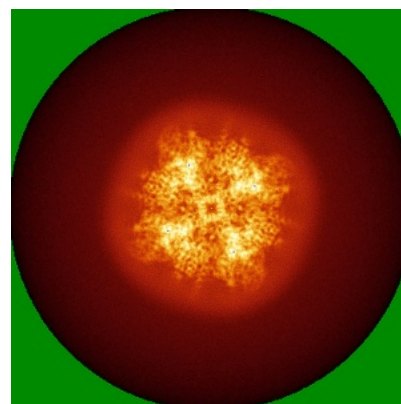
6.4.2 Raw map



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.

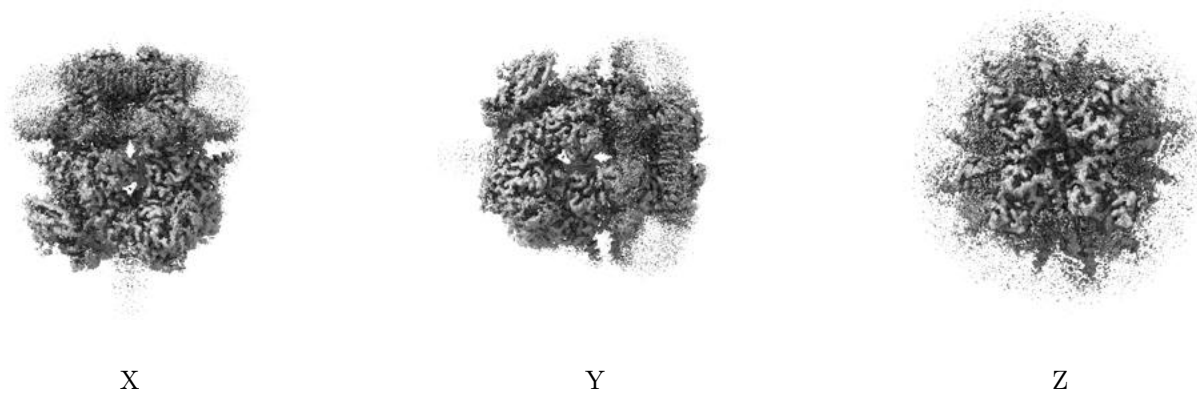
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.009. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

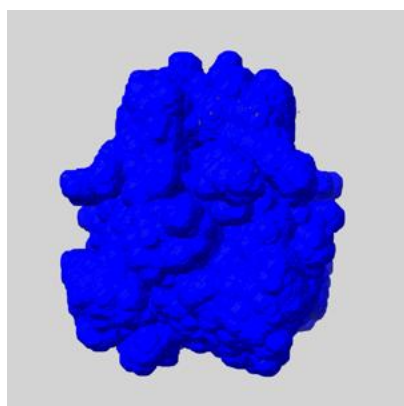
6.6 Mask visualisation [i](#)

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

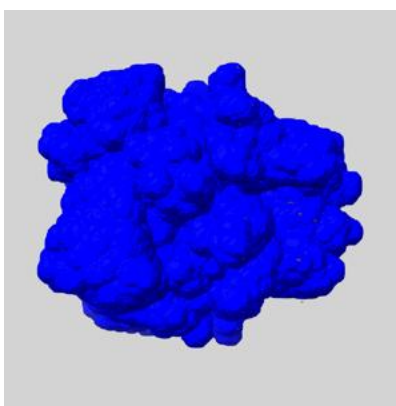
A mask typically either:

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

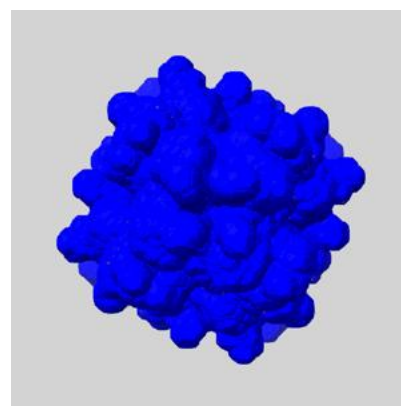
6.6.1 emd_71250_msk_1.map [i](#)



X



Y

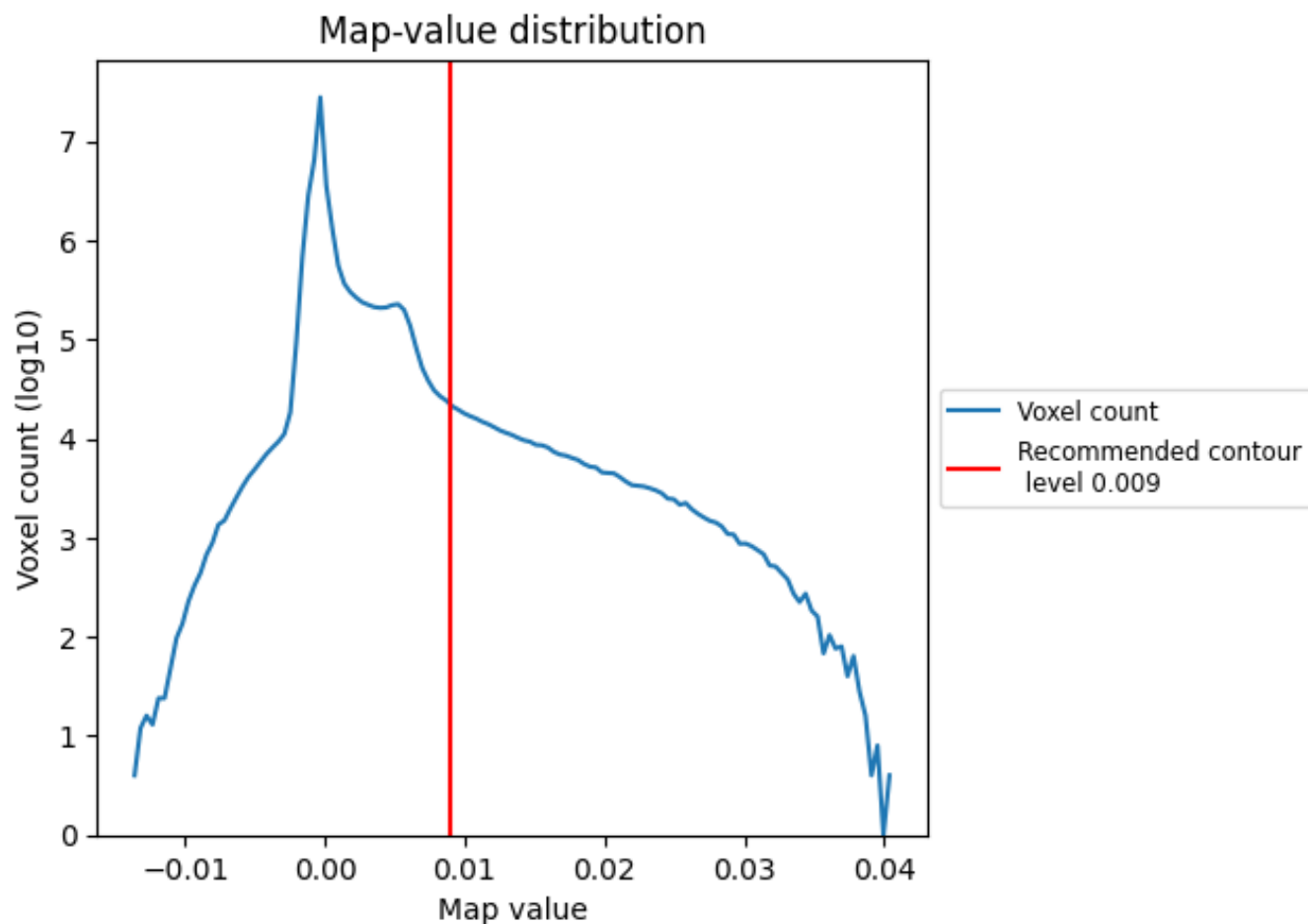


Z

7 Map analysis [i](#)

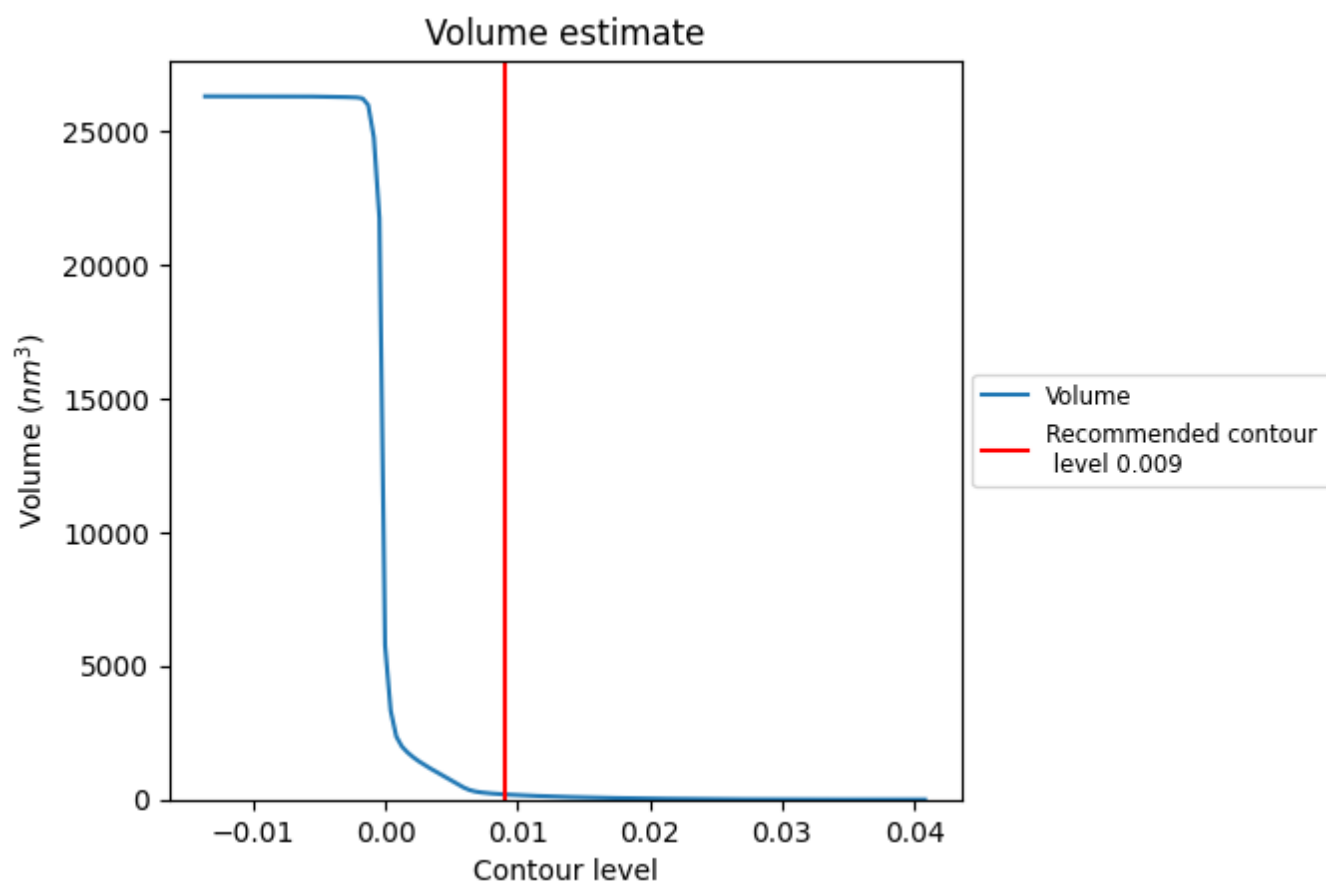
This section contains the results of statistical analysis of the map.

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.

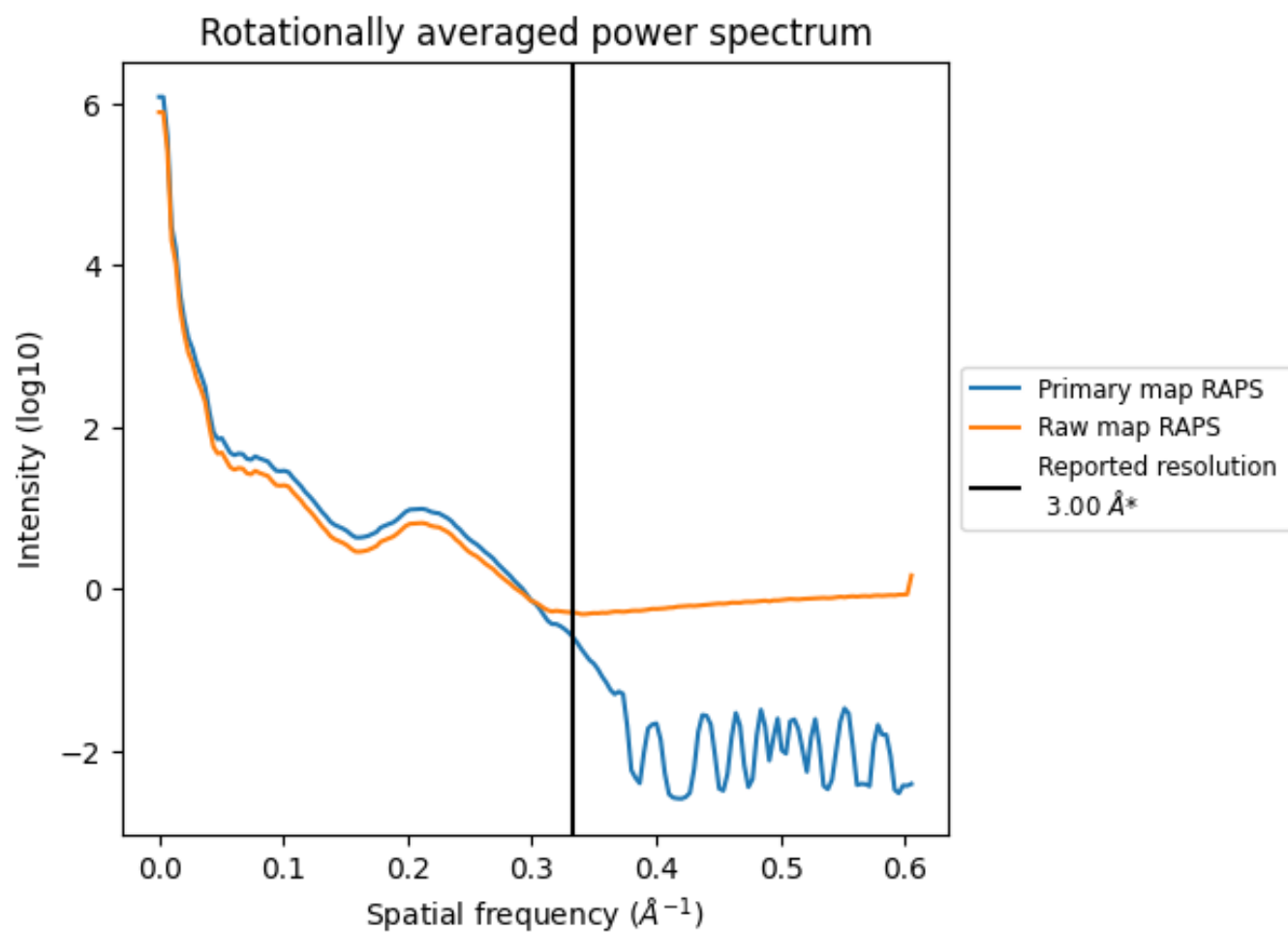
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 194 nm³; this corresponds to an approximate mass of 175 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 ⓘ

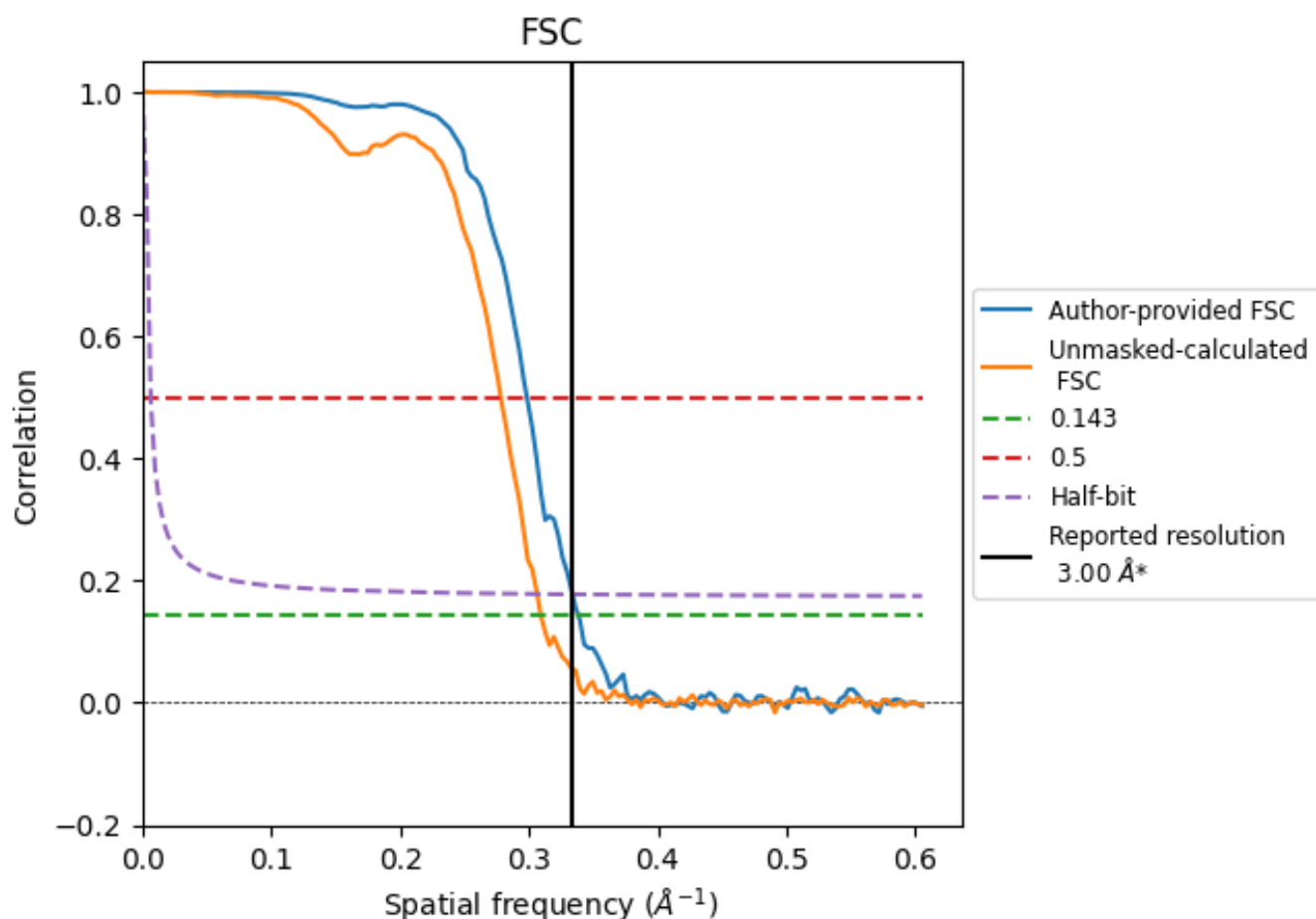


*Reported resolution corresponds to spatial frequency of 0.333 $\text{\AA}^{-1}$

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 0.333 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

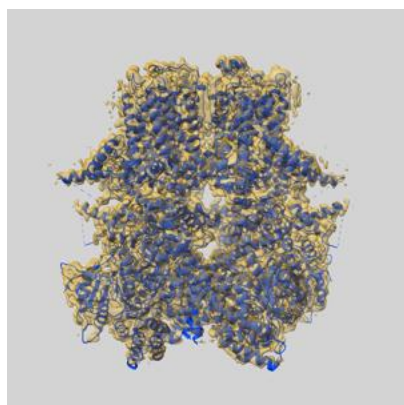
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.00	-	-
Author-provided FSC curve	2.96	3.35	2.99
Unmasked-calculated*	3.23	3.59	3.26

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

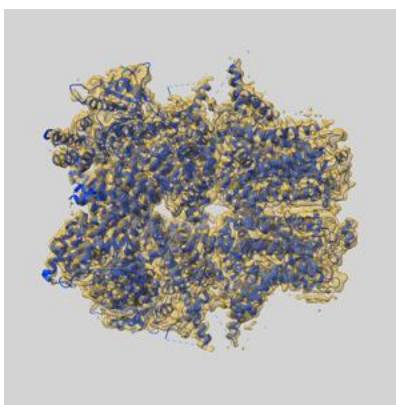
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-71250 and PDB model 9P3P. Per-residue inclusion information can be found in section [3](#) on page [14](#).

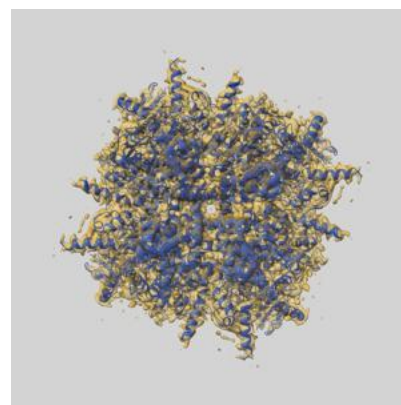
9.1 Map-model overlay [i](#)



X



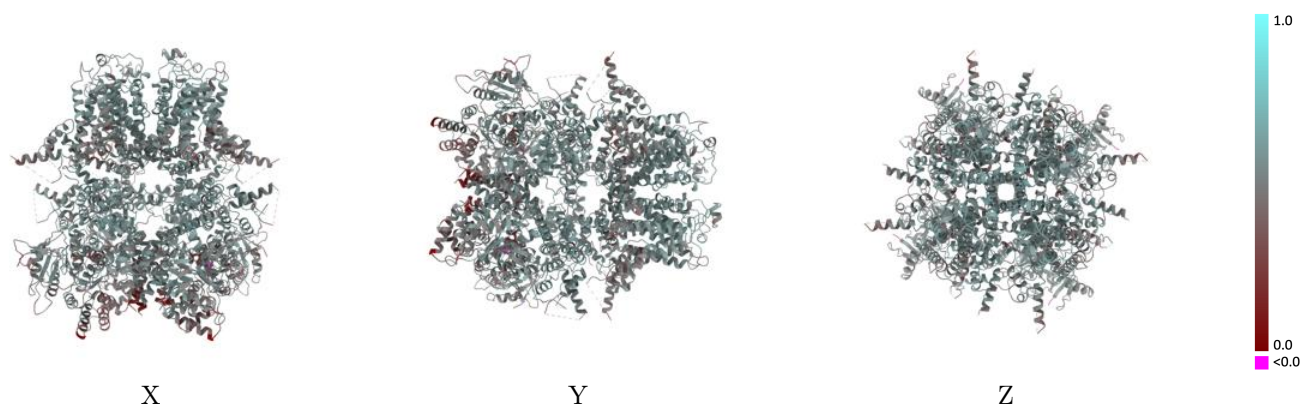
Y



Z

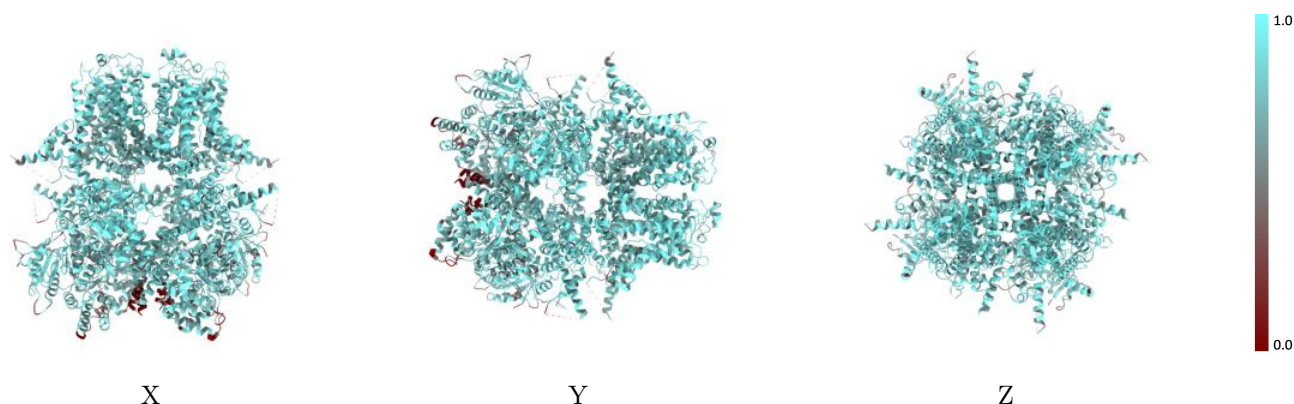
The images above show the 3D surface view of the map at the recommended contour level 0.009 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



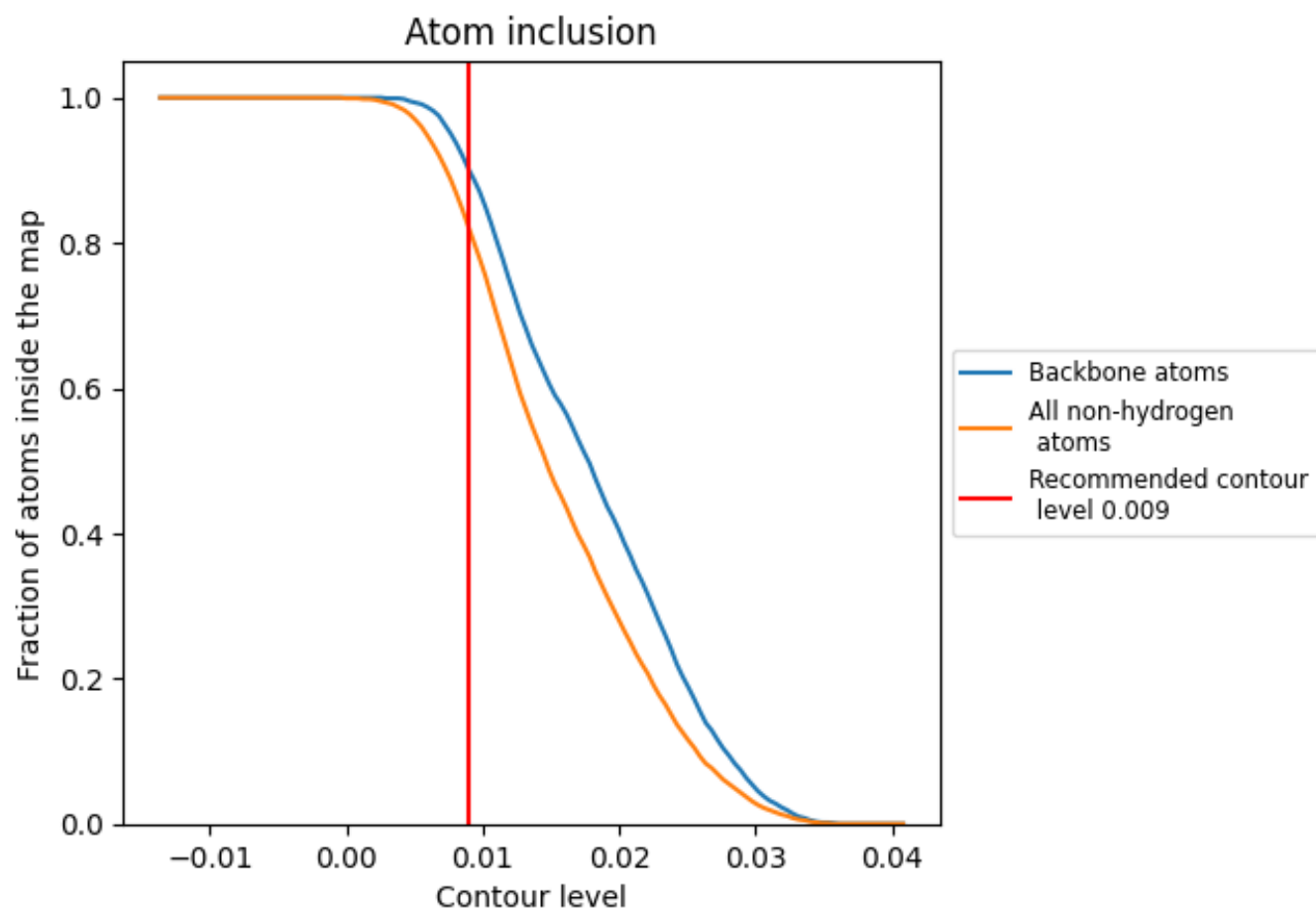
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.009).

9.4 Atom inclusion [i](#)



At the recommended contour level, 90% of all backbone atoms, 82% 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 (0.009) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8200	0.5210
A	0.8200	0.5220
B	0.8200	0.5200
C	0.8200	0.5220
D	0.8200	0.5210

