



Full wwPDB X-ray Structure Validation Report ⓘ

Nov 27, 2024 – 04:08 PM EST

PDB ID : 9AY9
Title : Co-crystal structure of human PRMT9 in complex with MRK-990 inhibitor
Authors : Zeng, H.; Dong, A.; Li, Y.; Hutchinson, A.; Seitova, A.; Li, Y.; Gao, Y.D.; Schneider, S.; Siliphaivanh, P.; Sloman, D.; Nicholson, B.; Fischer, C.; Hicks, J.; Brown, P.J.; Arrowsmith, C.H.; Edwards, A.M.; Halabelian, L.; Structural Genomics Consortium (SGC)
Deposited on : 2024-03-07
Resolution : 2.22 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

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

A user guide is available at

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

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:

MolProbity : 4.02b-467
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 1.21
EDS : **FAILED**
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.40

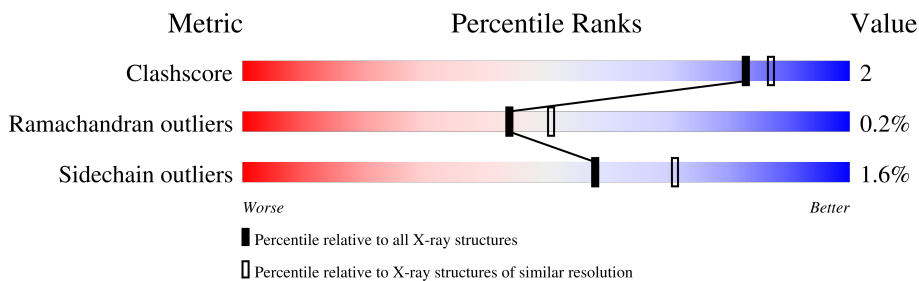
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.22 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)	Similar resolution (#Entries, resolution range(Å))
Clashscore	180529	8096 (2.24-2.20)
Ramachandran outliers	177936	8010 (2.24-2.20)
Sidechain outliers	177891	8011 (2.24-2.20)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower 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 electron density. The numeric value is given above the bar.

Note EDS failed to run properly.

Mol	Chain	Length	Quality of chain
1	A	720	 80% 6% 14%
1	B	720	 81% 5% 14%
1	C	720	 80% 6% 14%
1	D	720	 80% 6% 14%

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 19473 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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.

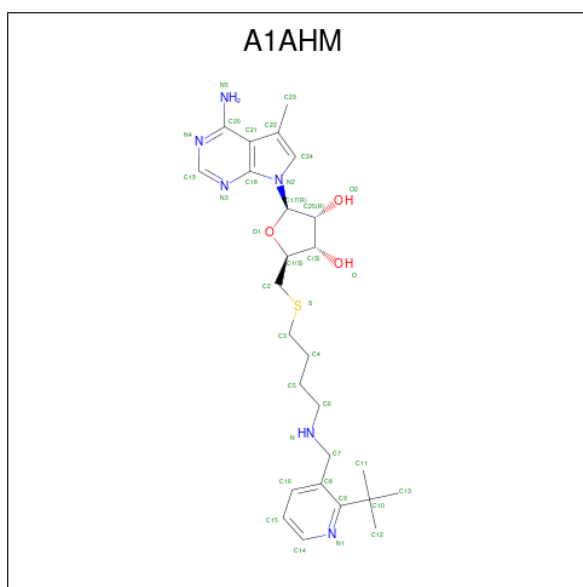
- Molecule 1 is a protein called Protein arginine N-methyltransferase 9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	616	4718	3044	775	870	29	0	4	0
1	B	621	4767	3074	782	880	31	0	3	0
1	C	617	4640	2981	755	874	30	0	3	1
1	D	618	4600	2953	761	857	29	0	3	1

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	126	GLY	-	expression tag	UNP Q6P2P2
B	126	GLY	-	expression tag	UNP Q6P2P2
C	126	GLY	-	expression tag	UNP Q6P2P2
D	126	GLY	-	expression tag	UNP Q6P2P2

- Molecule 2 is 7-[5-S-(4-{{(2-tert-butylpyridin-3-yl)methyl}amino}butyl)-5-thio-beta-D-ribofuranosyl]-5-methyl-7H-pyrrolo[2,3-d]pyrimidin-4-amine (three-letter code: A1AHM) (formula: C₂₆H₃₈N₆O₃S) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	S		
2	A	1	36	26	6	3	1	0	0
2	B	1	36	26	6	3	1	0	0
2	C	1	36	26	6	3	1	0	0
2	D	1	36	26	6	3	1	0	0

- Molecule 3 is UNKNOWN ATOM OR ION (three-letter code: UNX) (formula: X).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	C	1	Total X 1 1	0	0
3	D	1	Total X 1 1	0	0

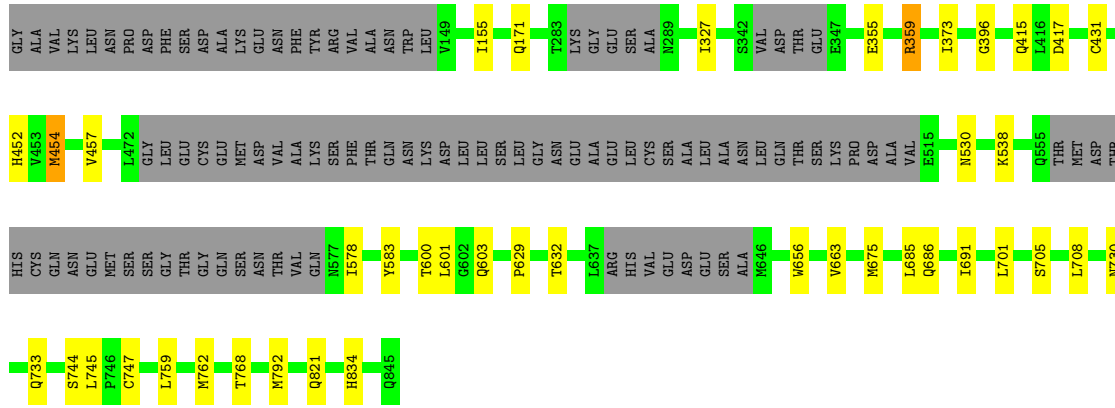
- Molecule 4 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	176	Total O 179 179	0	3
4	B	165	Total O 166 166	0	1
4	C	137	Total O 137 137	0	0

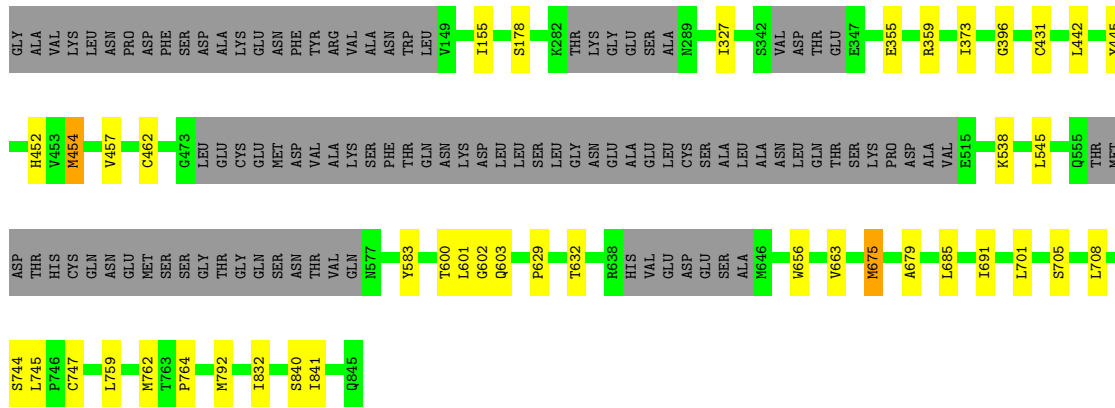
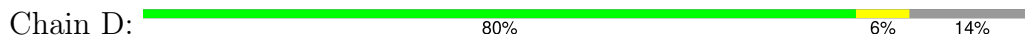
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	D	120	Total 120	O 120	0	0



• Molecule 1: Protein arginine N-methyltransferase 9



4 Data and refinement statistics

EDS failed to run properly - this section is therefore incomplete.

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	84.37Å 223.08Å 84.70Å 90.00° 90.23° 90.00°	Depositor
Resolution (Å)	46.58 – 2.22	Depositor
% Data completeness (in resolution range)	97.4 (46.58-2.22)	Depositor
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.42 (at 2.20Å)	Xtrriage
Refinement program	BUSTER 2.10.3	Depositor
R, R_{free}	0.208 , 0.235	Depositor
Wilson B-factor (Å ²)	41.1	Xtrriage
Anisotropy	0.255	Xtrriage
L-test for twinning ²	$\langle L \rangle = 0.43$, $\langle L^2 \rangle = 0.25$	Xtrriage
Estimated twinning fraction	0.418 for l,k,-h 0.239 for h,-k,-l 0.240 for l,-k,h	Xtrriage
Total number of atoms	19473	wwPDB-VP
Average B, all atoms (Å ²)	49.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.21% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

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: A1AHM, UNX

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	0.52	0/4818	0.66	0/6564
1	B	0.51	0/4867	0.66	0/6628
1	C	0.50	0/4737	0.65	0/6461
1	D	0.50	0/4695	0.66	0/6412
All	All	0.51	0/19117	0.66	0/26065

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	4718	0	4579	24	0
1	B	4767	0	4629	18	0
1	C	4640	0	4357	22	0
1	D	4600	0	4291	20	0
2	A	36	0	0	0	0
2	B	36	0	0	1	0
2	C	36	0	0	1	0
2	D	36	0	0	0	0
3	C	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	D	1	0	0	0	0
4	A	179	0	0	1	0
4	B	166	0	0	0	0
4	C	137	0	0	1	0
4	D	120	0	0	0	0
All	All	19473	0	17856	84	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 2.

All (84) 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:452:HIS:HB3	1:A:454:MET:HE3	1.64	0.79
1:C:452:HIS:HB3	1:C:454:MET:HE3	1.65	0.79
1:B:221:ALA:HA	1:B:226:GLU:HG3	1.65	0.78
1:A:221:ALA:HA	1:A:226:GLU:HG3	1.64	0.77
1:B:452:HIS:HB3	1:B:454:MET:HE3	1.67	0.76
1:D:452:HIS:HB3	1:D:454:MET:HE3	1.71	0.71
1:C:359:ARG:O	1:C:744:SER:HB2	1.94	0.67
1:D:359:ARG:O	1:D:744:SER:HB2	1.95	0.67
1:D:396:GLY:HA2	1:D:454:MET:HE2	1.80	0.63
1:A:191:LEU:HD11	1:A:255:GLU:HG3	1.82	0.62
1:A:452:HIS:HB3	1:A:454:MET:CE	2.30	0.61
1:B:396:GLY:HA2	1:B:454:MET:HE2	1.82	0.61
1:C:452:HIS:HB3	1:C:454:MET:CE	2.31	0.61
1:D:452:HIS:HB3	1:D:454:MET:CE	2.31	0.61
1:B:452:HIS:HB3	1:B:454:MET:CE	2.30	0.59
1:C:396:GLY:HA2	1:C:454:MET:HE2	1.84	0.59
1:D:705:SER:HB2	1:D:747:CYS:HB3	1.83	0.59
1:A:396:GLY:HA2	1:A:454:MET:HE2	1.85	0.58
1:A:708:LEU:HD11	1:A:745:LEU:HD21	1.89	0.55
1:D:708:LEU:HG	1:D:745:LEU:HD11	1.89	0.54
1:C:730:ASN:O	1:C:733:GLN:HB2	2.08	0.54
1:B:708:LEU:HD11	1:B:745:LEU:HD21	1.89	0.53
1:A:768:THR:HG23	4:A:1043:HOH:O	2.09	0.53
1:C:708:LEU:HG	1:C:745:LEU:HD11	1.89	0.53
1:D:708:LEU:HD11	1:D:745:LEU:HD21	1.90	0.53
1:B:373:ILE:HG23	1:B:457:VAL:HG11	1.91	0.52
1:C:155:ILE:HG22	1:C:431:CYS:HB2	1.91	0.52
1:D:155:ILE:HG22	1:D:431:CYS:HB2	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:708:LEU:HD11	1:C:745:LEU:HD21	1.91	0.52
1:A:155:ILE:HG12	1:A:711:GLU:HG2	1.92	0.52
1:A:155:ILE:HG22	1:A:431:CYS:HB2	1.92	0.51
1:B:155:ILE:HG22	1:B:431:CYS:HB2	1.91	0.51
1:C:373:ILE:HG23	1:C:457:VAL:HG11	1.93	0.51
1:A:373:ILE:HG23	1:A:457:VAL:HG11	1.92	0.51
1:B:155:ILE:HG12	1:B:711:GLU:HG2	1.93	0.51
1:A:708:LEU:HG	1:A:745:LEU:HD11	1.93	0.50
1:B:142:TYR:CE1	1:B:672:GLN:HB2	2.46	0.50
1:B:708:LEU:HG	1:B:745:LEU:HD11	1.92	0.50
1:D:373:ILE:HG23	1:D:457:VAL:HG11	1.93	0.49
1:D:679:ALA:HA	1:D:764:PRO:HG3	1.94	0.49
1:C:705:SER:HB2	1:C:747:CYS:HB3	1.95	0.49
1:C:663:VAL:HB	1:C:792:MET:HE3	1.96	0.48
1:D:545:LEU:HD21	1:D:602:GLY:HA3	1.95	0.48
1:D:663:VAL:HB	1:D:792:MET:HE3	1.96	0.47
1:A:415:GLN:HG3	1:A:417:ASP:O	2.15	0.47
1:A:747:CYS:HB3	1:C:578:ILE:HD13	1.97	0.47
1:B:663:VAL:HB	1:B:792:MET:HE3	1.97	0.46
1:D:538:LYS:HG3	1:D:601:LEU:HD21	1.97	0.46
1:B:814:VAL:HG21	1:B:841:ILE:HB	1.98	0.46
1:A:663:VAL:HB	1:A:792:MET:HE3	1.98	0.46
1:C:821:GLN:HG3	4:C:1037:HOH:O	2.15	0.45
1:B:415:GLN:HG3	1:B:417:ASP:O	2.17	0.44
1:C:538:LYS:HG3	1:C:601:LEU:HD21	1.99	0.44
1:A:165:ILE:HG23	1:A:420:HIS:HB3	1.99	0.44
1:A:702:LEU:HB3	1:A:783:LEU:HD13	2.00	0.44
1:C:415:GLN:HG3	1:C:417:ASP:O	2.17	0.44
1:A:327:ILE:HG22	1:A:600:THR:HG21	2.00	0.44
1:C:675[A]:MET:CE	1:C:759:LEU:HG	2.48	0.43
1:D:327:ILE:HG22	1:D:600:THR:HG21	1.99	0.43
1:D:583:TYR:HB3	1:D:656:TRP:CE3	2.53	0.43
1:B:629:PRO:HD2	1:B:632:THR:OG1	2.18	0.43
1:B:191:LEU:HD13	1:B:253:VAL:HG12	2.01	0.43
1:D:685:LEU:HD11	1:D:691:ILE:HG13	2.01	0.43
1:A:814:VAL:HG21	1:A:841:ILE:HB	2.01	0.43
1:C:327:ILE:HG22	1:C:600:THR:HG21	2.01	0.43
1:B:327:ILE:HG22	1:B:600:THR:HG21	2.01	0.42
1:A:191:LEU:HD13	1:A:253:VAL:HG12	2.00	0.42
1:A:685:LEU:HD11	1:A:691:ILE:HG13	2.01	0.42
1:A:708:LEU:CD1	1:A:745:LEU:HD21	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:583:TYR:HB3	1:C:656:TRP:CE3	2.54	0.41
1:A:629:PRO:HD2	1:A:632:THR:OG1	2.19	0.41
1:A:749:PRO:HB3	1:C:578:ILE:HD11	2.02	0.41
1:C:768:THR:HA	1:C:834:HIS:O	2.20	0.41
1:D:832:ILE:HG12	1:D:841:ILE:HG12	2.02	0.41
2:B:901:A1AHM:C2	2:B:901:A1AHM:C24	2.99	0.41
1:B:708:LEU:CD1	1:B:745:LEU:HD21	2.50	0.41
1:C:685:LEU:HD11	1:C:691:ILE:HG13	2.02	0.41
1:D:675:MET:CE	1:D:759:LEU:HD11	2.50	0.41
1:B:394:LYS:HG2	1:B:456:GLU:HG2	2.03	0.41
2:C:901:A1AHM:C2	2:C:901:A1AHM:C24	2.99	0.41
1:D:629:PRO:HD2	1:D:632:THR:OG1	2.20	0.41
1:D:442:LEU:HB2	1:D:445:TYR:CE1	2.57	0.40
1:C:629:PRO:HD2	1:C:632:THR:OG1	2.20	0.40
1:A:165:ILE:HG22	1:A:416:LEU:HD12	2.04	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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	608/720 (84%)	592 (97%)	15 (2%)	1 (0%)	44 51
1	B	612/720 (85%)	597 (98%)	14 (2%)	1 (0%)	44 51
1	C	608/720 (84%)	590 (97%)	18 (3%)	0	100 100
1	D	609/720 (85%)	588 (97%)	19 (3%)	2 (0%)	37 41
All	All	2437/2880 (85%)	2367 (97%)	66 (3%)	4 (0%)	44 51

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	178	SER
1	A	462	CYS
1	B	462	CYS
1	D	462	CYS

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 X-ray entries followed by that with respect to entries of similar resolution.

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	489/636 (77%)	485 (99%)	4 (1%)	79	87
1	B	494/636 (78%)	483 (98%)	11 (2%)	47	59
1	C	462/636 (73%)	452 (98%)	10 (2%)	47	59
1	D	447/636 (70%)	439 (98%)	8 (2%)	54	67
All	All	1892/2544 (74%)	1859 (98%)	33 (2%)	58	69

All (33) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	148	LEU
1	A	171	GLN
1	A	701	LEU
1	A	757	LEU
1	B	171	GLN
1	B	321	ILE
1	B	370[A]	CYS
1	B	370[B]	CYS
1	B	421	SER
1	B	539	MET
1	B	616	ARG
1	B	686	GLN
1	B	718	GLU
1	B	757	LEU
1	B	797	GLU
1	C	171	GLN
1	C	355	GLU
1	C	359	ARG

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Mol	Chain	Res	Type
1	C	454	MET
1	C	530	ASN
1	C	603[A]	GLN
1	C	603[B]	GLN
1	C	686	GLN
1	C	701	LEU
1	C	762	MET
1	D	355	GLU
1	D	454	MET
1	D	603[A]	GLN
1	D	603[B]	GLN
1	D	675	MET
1	D	701	LEU
1	D	762	MET
1	D	840	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	C	530	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 6 ligands modelled in this entry, 2 are unknown - leaving 4 for Mogul analysis.

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	A1AHM	B	901	-	35,39,39	0.50	0	40,56,56	0.81	1 (2%)
2	A1AHM	C	901	-	35,39,39	0.48	0	40,56,56	0.83	1 (2%)
2	A1AHM	D	901	-	35,39,39	0.48	0	40,56,56	0.83	1 (2%)
2	A1AHM	A	901	-	35,39,39	0.49	0	40,56,56	0.81	1 (2%)

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	A1AHM	B	901	-	-	6/17/37/37	0/4/4/4
2	A1AHM	C	901	-	-	6/17/37/37	0/4/4/4
2	A1AHM	D	901	-	-	6/17/37/37	0/4/4/4
2	A1AHM	A	901	-	-	6/17/37/37	0/4/4/4

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	901	A1AHM	C22-C24-N2	2.85	111.00	107.49
2	C	901	A1AHM	C22-C24-N2	2.78	110.92	107.49
2	B	901	A1AHM	C22-C24-N2	2.77	110.90	107.49
2	A	901	A1AHM	C22-C24-N2	2.75	110.88	107.49

There are no chirality outliers.

All (24) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	901	A1AHM	N-C7-C8-C9
2	A	901	A1AHM	C-C1-C2-S
2	A	901	A1AHM	O1-C1-C2-S
2	B	901	A1AHM	N-C7-C8-C9

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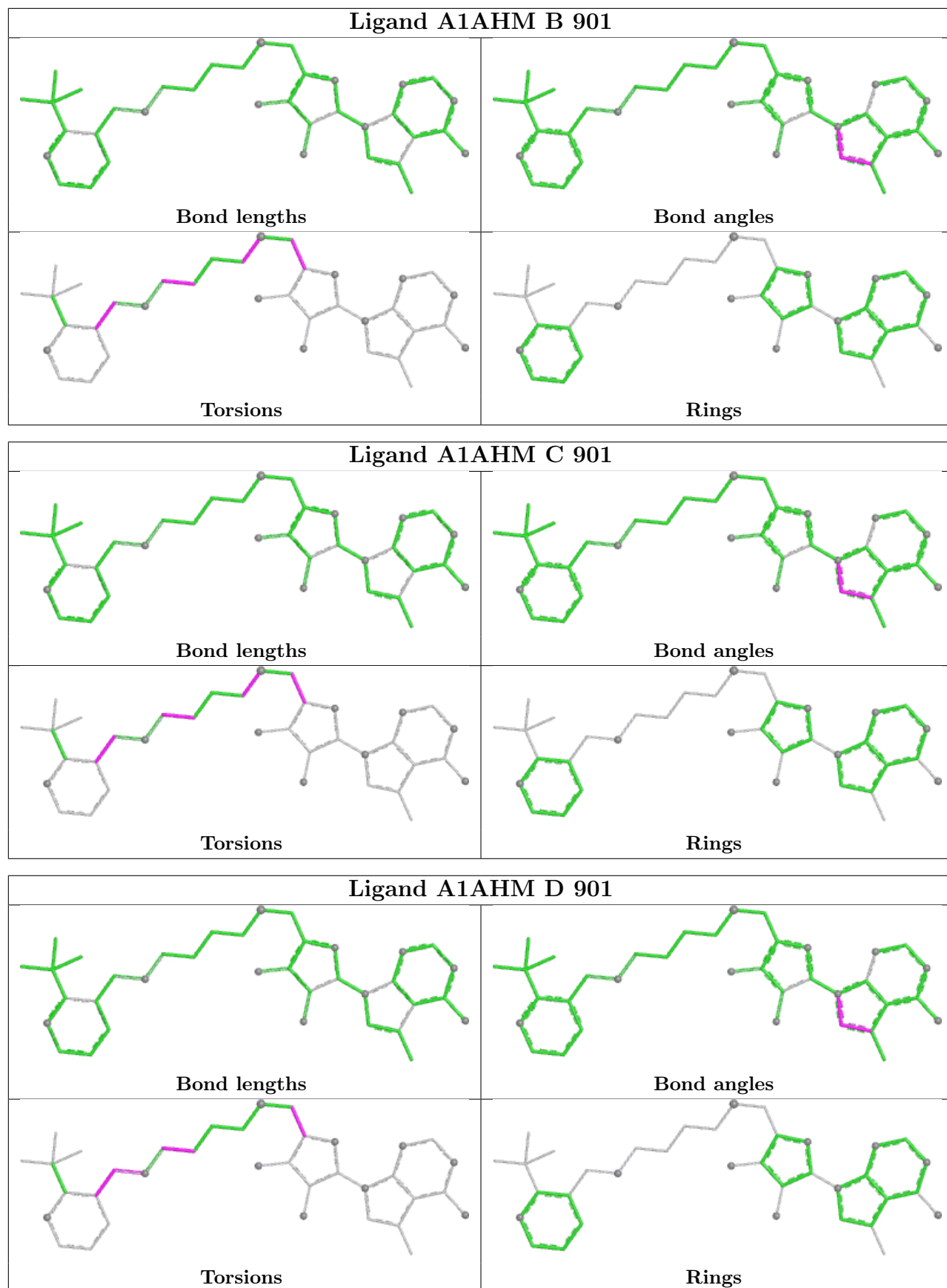
Mol	Chain	Res	Type	Atoms
2	B	901	A1AHM	C-C1-C2-S
2	B	901	A1AHM	O1-C1-C2-S
2	C	901	A1AHM	N-C7-C8-C9
2	C	901	A1AHM	C-C1-C2-S
2	C	901	A1AHM	O1-C1-C2-S
2	D	901	A1AHM	N-C7-C8-C9
2	D	901	A1AHM	C-C1-C2-S
2	D	901	A1AHM	O1-C1-C2-S
2	A	901	A1AHM	N-C7-C8-C16
2	B	901	A1AHM	N-C7-C8-C16
2	C	901	A1AHM	N-C7-C8-C16
2	D	901	A1AHM	N-C7-C8-C16
2	C	901	A1AHM	C4-C5-C6-N
2	A	901	A1AHM	C4-C5-C6-N
2	D	901	A1AHM	C4-C5-C6-N
2	B	901	A1AHM	C4-C5-C6-N
2	A	901	A1AHM	S-C3-C4-C5
2	C	901	A1AHM	C4-C3-S-C2
2	B	901	A1AHM	C4-C3-S-C2
2	D	901	A1AHM	C8-C7-N-C6

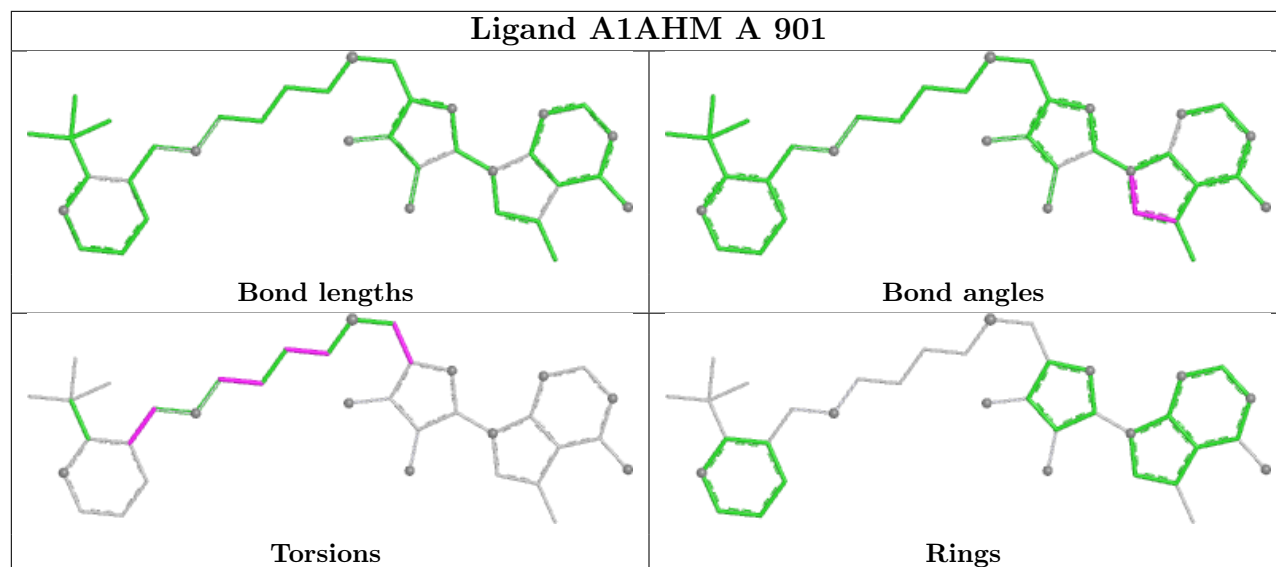
There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	901	A1AHM	1	0
2	C	901	A1AHM	1	0

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





5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

EDS failed to run properly - this section is therefore empty.

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

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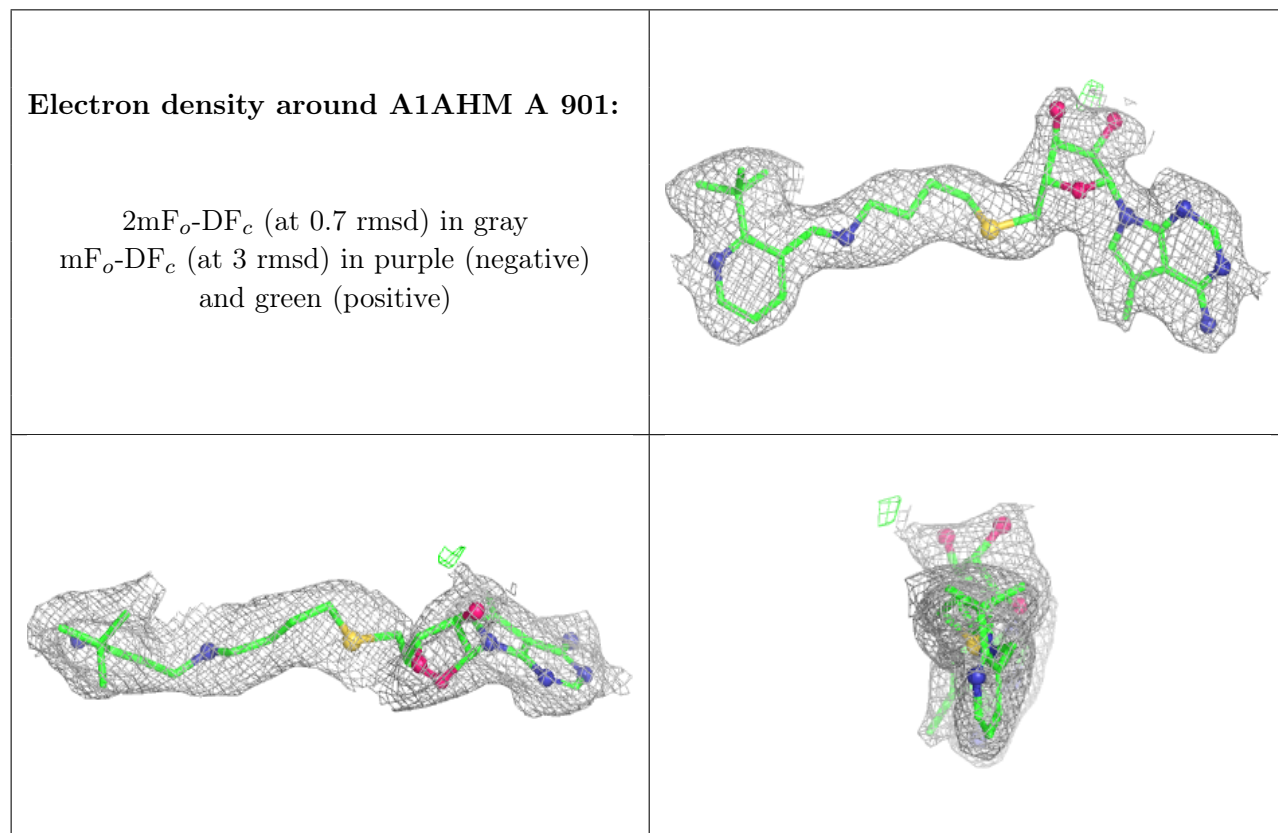
6.3 Carbohydrates [i](#)

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6.4 Ligands [i](#)

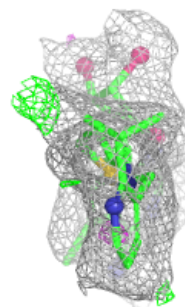
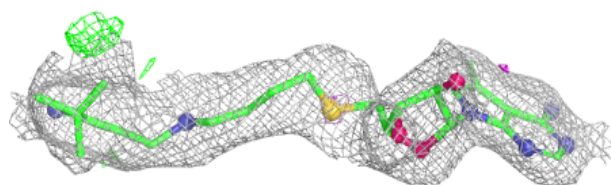
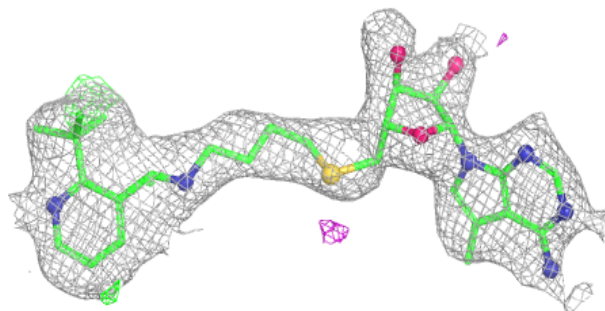
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The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

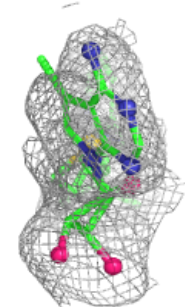
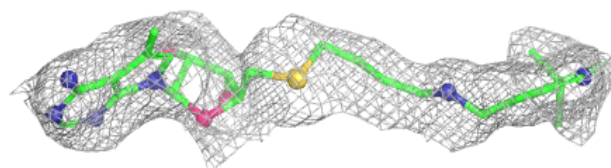
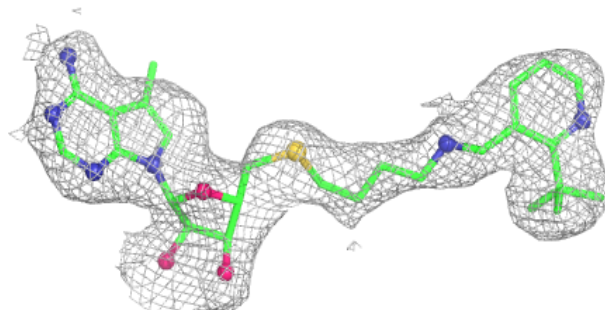


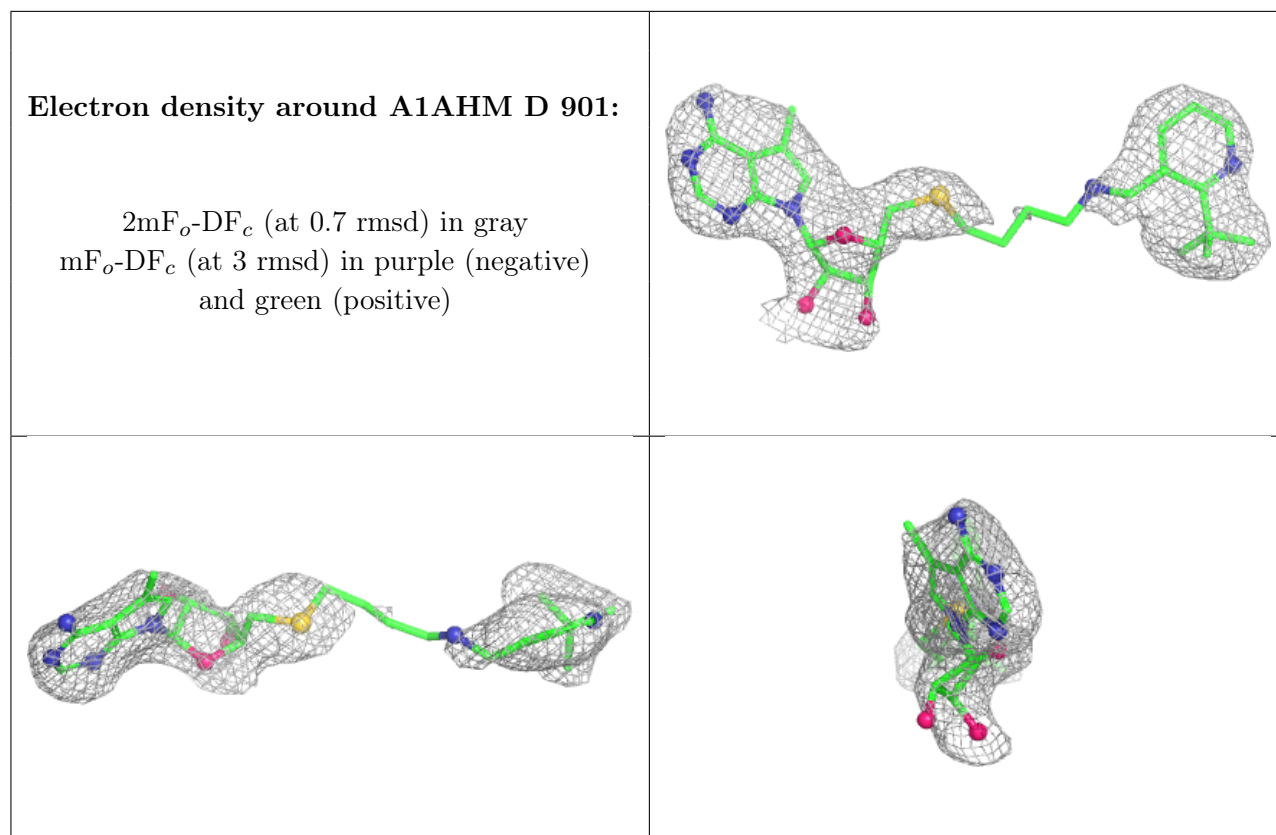
Electron density around A1AHM B 901:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

**Electron density around A1AHM C 901:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





6.5 Other polymers [i](#)

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