



Full wwPDB X-ray Structure Validation Report ⓘ

Aug 19, 2024 – 12:34 PM JST

PDB ID : 8XTE
Title : Crystal structure of methyltransferase MpaG' in complex with SAH and FDHMP
Authors : You, C.; Pan, Y.J.; Li, S.Y.; Feng, Y.G.
Deposited on : 2024-01-10
Resolution : 1.99 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 : 1.8.5 (274361), CSD as541be (2020)
Xtrriage (Phenix) : 1.13
EDS : 2.37.1
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.37.1

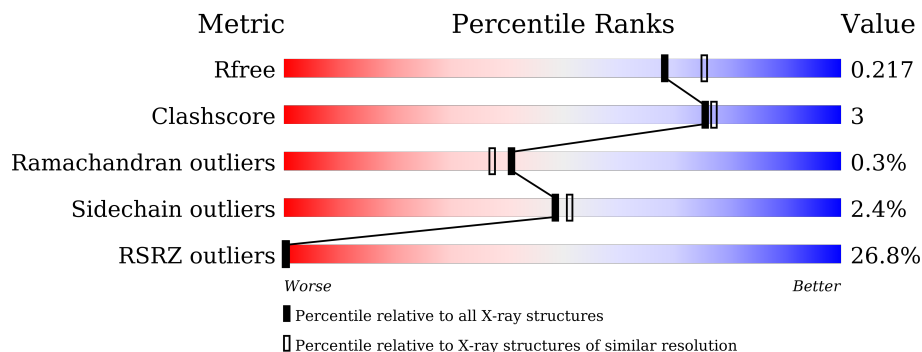
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.99 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))
R_{free}	130704	8085 (2.00-2.00)
Clashscore	141614	9178 (2.00-2.00)
Ramachandran outliers	138981	9054 (2.00-2.00)
Sidechain outliers	138945	9053 (2.00-2.00)
RSRZ outliers	127900	7900 (2.00-2.00)

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.

Mol	Chain	Length	Quality of chain
1	A	400	
1	B	400	
1	C	400	
1	D	400	
1	E	400	
1	F	400	

2 Entry composition i

There are 4 unique types of molecules in this entry. The entry contains 21056 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 O-methyltransferase mpaG'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	395	3053	1935	527	580	11	0	0	0
1	B	395	3064	1941	531	581	11	0	1	0
1	C	395	3053	1935	527	580	11	0	0	0
1	D	395	3053	1935	527	580	11	0	0	0
1	E	395	3053	1935	527	580	11	0	0	0
1	F	395	3053	1935	527	580	11	0	0	0

There are 24 discrepancies between the modelled and reference sequences:

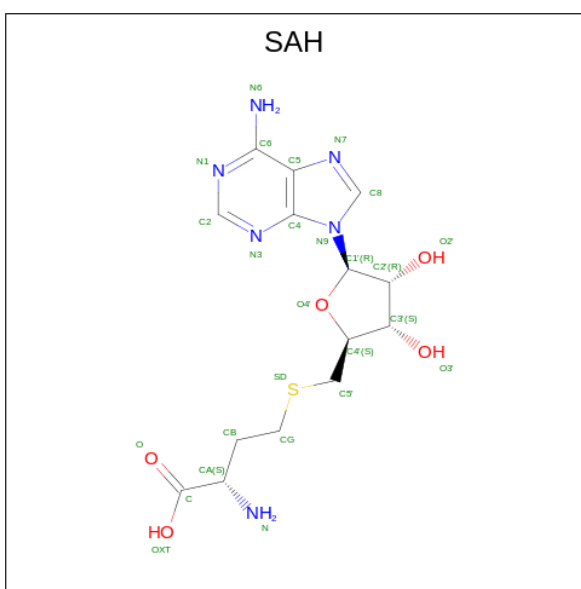
Chain	Residue	Modelled	Actual	Comment	Reference
A	-1	GLY	-	expression tag	UNP A0A0B5L781
A	0	ALA	-	expression tag	UNP A0A0B5L781
A	1	MET	-	expression tag	UNP A0A0B5L781
A	2	GLY	-	expression tag	UNP A0A0B5L781
B	-1	GLY	-	expression tag	UNP A0A0B5L781
B	0	ALA	-	expression tag	UNP A0A0B5L781
B	1	MET	-	expression tag	UNP A0A0B5L781
B	2	GLY	-	expression tag	UNP A0A0B5L781
C	-1	GLY	-	expression tag	UNP A0A0B5L781
C	0	ALA	-	expression tag	UNP A0A0B5L781
C	1	MET	-	expression tag	UNP A0A0B5L781
C	2	GLY	-	expression tag	UNP A0A0B5L781
D	-1	GLY	-	expression tag	UNP A0A0B5L781
D	0	ALA	-	expression tag	UNP A0A0B5L781
D	1	MET	-	expression tag	UNP A0A0B5L781
D	2	GLY	-	expression tag	UNP A0A0B5L781
E	-1	GLY	-	expression tag	UNP A0A0B5L781

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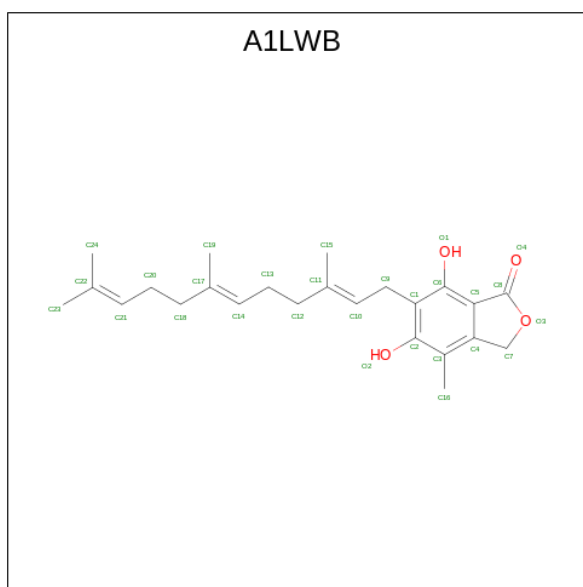
Chain	Residue	Modelled	Actual	Comment	Reference
E	0	ALA	-	expression tag	UNP A0A0B5L781
E	1	MET	-	expression tag	UNP A0A0B5L781
E	2	GLY	-	expression tag	UNP A0A0B5L781
F	-1	GLY	-	expression tag	UNP A0A0B5L781
F	0	ALA	-	expression tag	UNP A0A0B5L781
F	1	MET	-	expression tag	UNP A0A0B5L781
F	2	GLY	-	expression tag	UNP A0A0B5L781

- Molecule 2 is S-ADENOSYL-L-HOMOCYSTEINE (three-letter code: SAH) (formula: $C_{14}H_{20}N_6O_5S$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	S		
2	A	1	Total	C	N	O	S	0	0
			26	14	6	5	1		
2	B	1	Total	C	N	O	S	0	0
			26	14	6	5	1		
2	C	1	Total	C	N	O	S	0	0
			26	14	6	5	1		
2	D	1	Total	C	N	O	S	0	0
			26	14	6	5	1		
2	E	1	Total	C	N	O	S	0	0
			26	14	6	5	1		
2	F	1	Total	C	N	O	S	0	0
			26	14	6	5	1		

- Molecule 3 is 4-farnesyl-3,5-dihydroxy-6-methylphthalide (three-letter code: A1LWB) (formula: $C_{24}H_{32}O_4$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	1	Total	C O	0	0
			28	24 4		
3	B	1	Total	C O	0	0
			28	24 4		
3	C	1	Total	C O	0	0
			28	24 4		
3	D	1	Total	C O	0	0
			28	24 4		
3	E	1	Total	C O	0	0
			28	24 4		
3	F	1	Total	C O	0	0
			28	24 4		

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	470	Total	O	0	0
			470	470		
4	B	423	Total	O	0	0
			423	423		
4	C	380	Total	O	0	0
			380	380		
4	D	372	Total	O	0	0
			372	372		
4	E	408	Total	O	0	0
			408	408		
4	F	350	Total	O	0	0
			350	350		

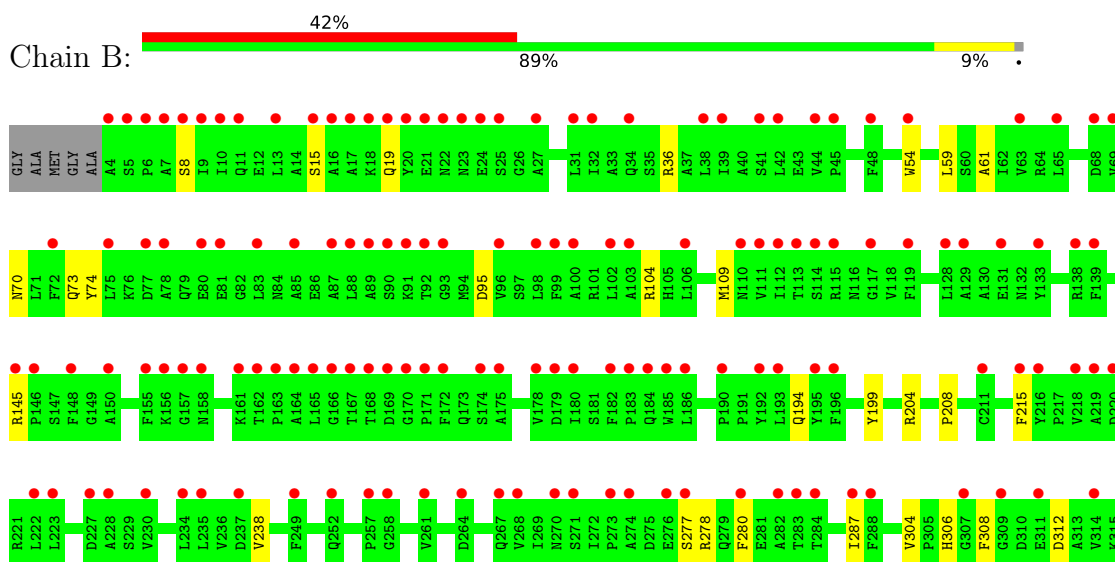
3 Residue-property plots [i](#)

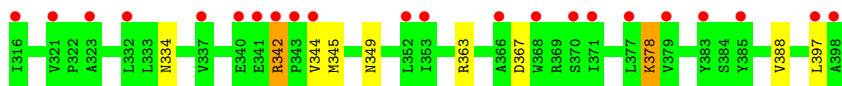
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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 dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). 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: O-methyltransferase mpaG⁷

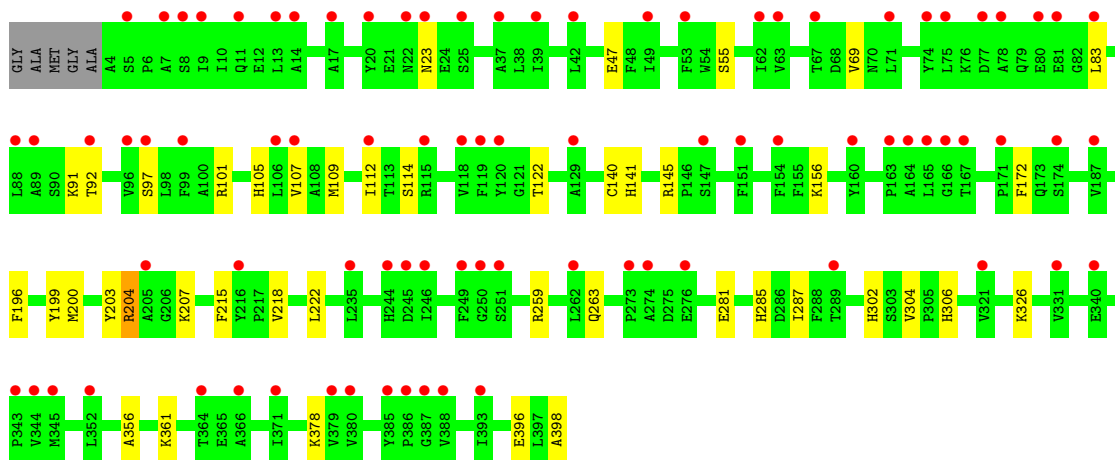
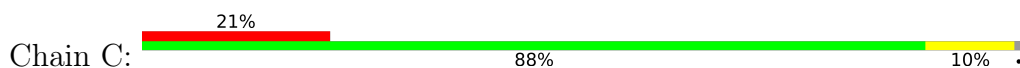


- Molecule 1: O-methyltransferase mpaG⁷

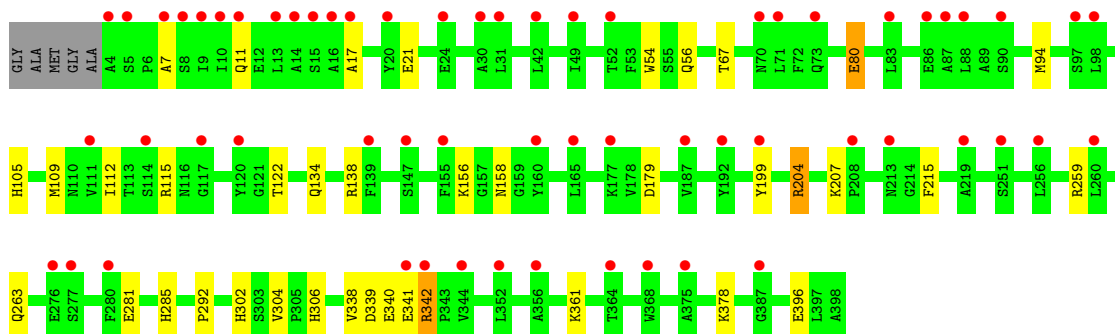
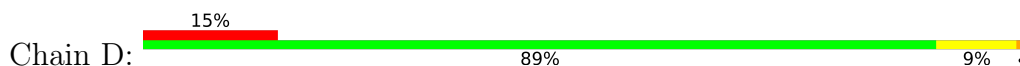




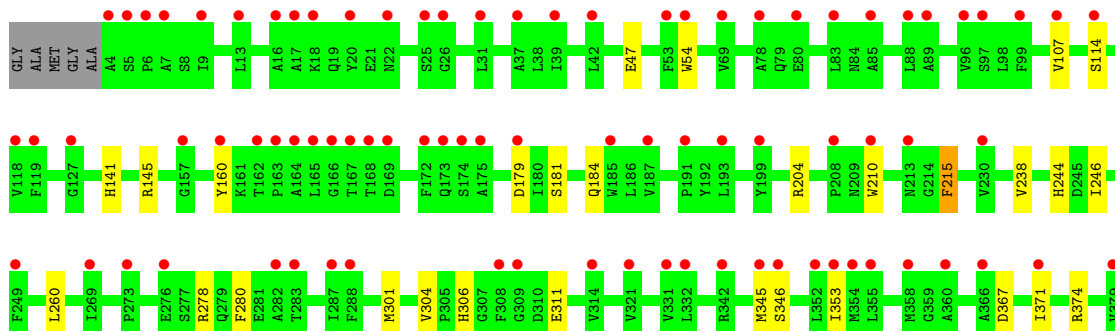
• Molecule 1: O-methyltransferase mpaG'

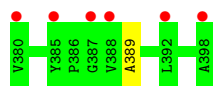


• Molecule 1: O-methyltransferase mpaG'



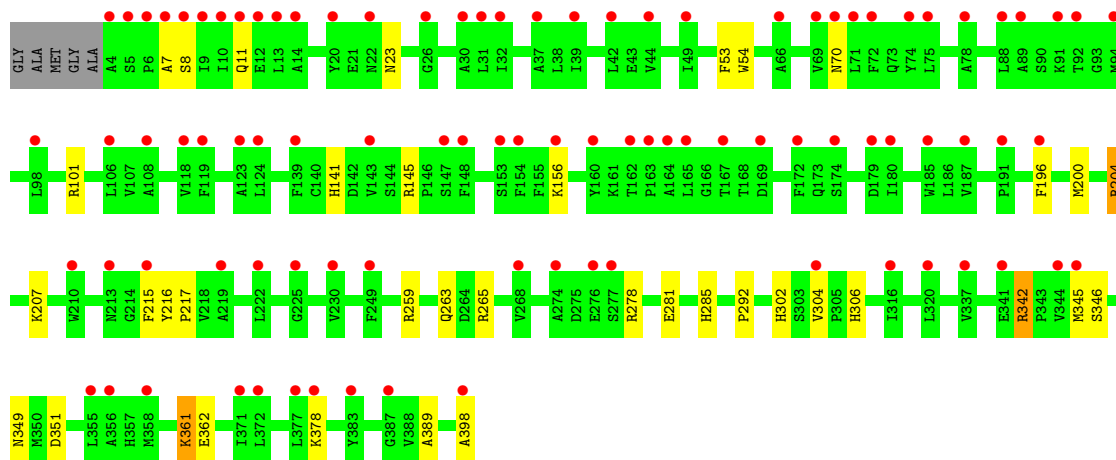
• Molecule 1: O-methyltransferase mpaG'





● Molecule 1: O-methyltransferase mpaG'

Chain F: 23% 89% 9% ..



4 Data and refinement statistics

Property	Value	Source
Space group	P 32	Depositor
Cell constants a, b, c, α , β , γ	208.77Å 208.77Å 67.22Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	47.92 – 1.99 47.92 – 1.99	Depositor EDS
% Data completeness (in resolution range)	99.8 (47.92-1.99) 99.8 (47.92-1.99)	Depositor EDS
R_{merge}	0.16	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	205.34 (at 2.00Å)	Xtrriage
Refinement program	PHENIX 1.20.1_4487	Depositor
R, R_{free}	0.170 , 0.219 0.167 , 0.217	Depositor DCC
R_{free} test set	10900 reflections (4.89%)	wwPDB-VP
Wilson B-factor (Å ²)	20.1	Xtrriage
Anisotropy	0.322	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.35 , 36.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtrriage
Estimated twinning fraction	0.000 for -h,-k,l 0.438 for h,-h-k,-l 0.000 for -k,-h,-l	Xtrriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	21056	wwPDB-VP
Average B, all atoms (Å ²)	21.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 43.86 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 1.6591e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

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

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: SAH, A1LWB

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	0.29	0/3125	0.51	0/4246
1	B	0.28	0/3136	0.53	0/4260
1	C	0.29	0/3125	0.52	0/4246
1	D	0.29	0/3125	0.53	0/4246
1	E	0.28	0/3125	0.52	0/4246
1	F	0.28	0/3125	0.51	0/4246
All	All	0.29	0/18761	0.52	0/25490

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

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	3053	0	2972	23	0
1	B	3064	0	2984	22	0
1	C	3053	0	2972	25	0
1	D	3053	0	2972	24	0
1	E	3053	0	2972	15	0
1	F	3053	0	2972	23	0
2	A	26	0	19	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	B	26	0	19	0	0
2	C	26	0	19	3	0
2	D	26	0	19	0	0
2	E	26	0	19	0	0
2	F	26	0	19	1	0
3	A	28	0	0	0	0
3	B	28	0	0	0	0
3	C	28	0	0	0	0
3	D	28	0	0	0	0
3	E	28	0	0	0	0
3	F	28	0	0	0	0
4	A	470	0	0	3	0
4	B	423	0	0	3	0
4	C	380	0	0	0	0
4	D	372	0	0	1	0
4	E	408	0	0	2	0
4	F	350	0	0	4	0
All	All	21056	0	17958	114	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 3.

All (114) 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:F:378:LYS:HE3	1:F:398:ALA:HA	1.71	0.73
1:D:204:ARG:HD3	1:D:302:HIS:HE1	1.57	0.70
1:C:141:HIS:O	1:C:145:ARG:NH1	2.28	0.67
1:D:207:LYS:NZ	1:E:47:GLU:OE2	2.31	0.64
1:C:204:ARG:NH2	1:C:207:LYS:O	2.31	0.64
1:F:141:HIS:O	1:F:145:ARG:NH1	2.31	0.63
1:C:47:GLU:OE2	1:F:207:LYS:NZ	2.34	0.60
1:D:342:ARG:HA	1:D:342:ARG:HE	1.66	0.59
1:D:67:THR:HG22	1:D:138:ARG:HE	1.67	0.59
1:A:145:ARG:NH2	4:A:508:HOH:O	2.34	0.59
1:D:204:ARG:HD3	1:D:302:HIS:CE1	2.37	0.58
1:F:265:ARG:HD3	2:F:401:SAH:C6	2.34	0.58
1:E:311:GLU:OE1	1:E:374:ARG:NH2	2.37	0.57
1:B:73:GLN:NE2	4:B:506:HOH:O	2.34	0.57
1:E:244:HIS:ND1	4:E:507:HOH:O	2.32	0.57
1:C:204:ARG:HD3	1:C:302:HIS:HE1	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:367:ASP:O	1:E:371:ILE:HD12	2.05	0.56
1:A:73:GLN:HG3	1:A:129:ALA:HB1	1.88	0.56
1:F:204:ARG:NH2	1:F:207:LYS:O	2.39	0.55
1:F:263:GLN:HB3	1:F:285:HIS:HB3	1.88	0.55
1:A:43:GLU:OE2	1:B:36:ARG:NH2	2.38	0.55
1:A:343:PRO:HG3	1:B:104[B]:ARG:NH1	2.22	0.55
1:D:204:ARG:NH2	1:D:207:LYS:O	2.41	0.54
1:F:7:ALA:O	1:F:11:GLN:HG3	2.08	0.52
1:E:141:HIS:O	1:E:145:ARG:NH1	2.43	0.52
1:D:134:GLN:O	1:D:138:ARG:HG3	2.10	0.52
1:D:80:GLU:CD	1:D:80:GLU:H	2.13	0.52
1:D:339:ASP:OD1	1:D:341:GLU:HG2	2.09	0.51
1:E:238:VAL:HB	1:E:301:MET:HG2	1.92	0.51
1:E:107:VAL:HG21	1:E:114:SER:HB2	1.92	0.51
1:A:145:ARG:HB3	1:A:146:PRO:HD3	1.93	0.50
1:E:246:ILE:HD11	1:E:260:LEU:HB3	1.93	0.50
1:F:204:ARG:HD3	1:F:302:HIS:HE1	1.77	0.50
1:D:67:THR:CG2	1:D:138:ARG:HE	2.23	0.50
1:C:199:TYR:HH	1:F:54:TRP:HZ2	1.59	0.49
1:B:59:LEU:HD22	1:B:109:MET:HE2	1.95	0.49
1:F:204:ARG:HD3	1:F:302:HIS:CE1	2.48	0.48
1:F:342:ARG:NH1	4:F:517:HOH:O	2.37	0.48
1:D:263:GLN:HB3	1:D:285:HIS:HB3	1.95	0.48
1:D:199:TYR:HH	1:E:54:TRP:HZ2	1.58	0.48
1:D:338:VAL:HG12	1:D:340:GLU:HG2	1.96	0.48
1:A:156:LYS:HA	1:A:156:LYS:HD3	1.78	0.48
1:A:285:HIS:CE1	1:A:292:PRO:HD3	2.49	0.48
1:D:285:HIS:CE1	1:D:292:PRO:HD3	2.49	0.48
1:C:204:ARG:HD3	1:C:302:HIS:CE1	2.49	0.47
1:A:340:GLU:HA	1:B:104[B]:ARG:CZ	2.44	0.47
1:D:54:TRP:CD2	1:E:353:ILE:HG13	2.50	0.47
1:C:378:LYS:HG2	1:C:398:ALA:HA	1.96	0.47
1:D:259:ARG:HD2	1:D:281:GLU:OE2	2.13	0.47
1:C:378:LYS:HE3	1:C:396:GLU:OE2	2.15	0.47
1:A:340:GLU:HA	1:B:104[B]:ARG:NH2	2.30	0.47
1:A:363:ARG:HB3	1:A:367:ASP:HB2	1.96	0.47
1:C:69:VAL:HB	1:C:92:THR:HB	1.97	0.47
1:C:172:PHE:HB2	1:C:356:ALA:O	2.15	0.47
1:B:145:ARG:NH1	4:B:507:HOH:O	2.36	0.46
1:D:115:ARG:NE	4:D:508:HOH:O	2.34	0.46
1:B:238:VAL:HG12	1:B:287:ILE:HG22	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:378:LYS:HE3	1:D:396:GLU:OE2	2.16	0.46
1:B:95:ASP:OD1	4:B:501:HOH:O	2.21	0.46
1:C:107:VAL:HG21	1:C:114:SER:HB2	1.98	0.46
1:A:234:LEU:HD22	1:A:257:PRO:HD2	1.97	0.46
1:D:94:MET:HG2	1:E:160:TYR:HB3	1.97	0.45
1:F:345:MET:HG2	4:F:742:HOH:O	2.16	0.45
1:B:308:PHE:HB3	1:B:312:ASP:HB2	1.98	0.45
1:C:287:ILE:HG12	2:C:401:SAH:C6	2.46	0.45
1:E:181:SER:OG	1:E:184:GLN:HG3	2.17	0.45
1:F:346:SER:HB2	1:F:389:ALA:HB2	1.99	0.45
1:A:54:TRP:HE3	1:B:349:ASN:HB3	1.81	0.45
1:C:259:ARG:HD2	1:C:281:GLU:OE2	2.17	0.44
1:C:101:ARG:CZ	1:F:361:LYS:HB3	2.47	0.44
1:A:69:VAL:HB	1:A:92:THR:HB	1.99	0.44
1:B:363:ARG:HB3	1:B:367:ASP:HB2	1.99	0.44
1:D:7:ALA:O	1:D:11:GLN:HG3	2.18	0.44
1:E:278:ARG:HG2	1:E:280:PHE:H	1.82	0.44
1:A:151:PHE:HB2	1:B:61:ALA:HB1	2.00	0.43
1:F:101:ARG:HD2	4:F:509:HOH:O	2.17	0.43
1:B:70:ASN:HB3	1:B:74:TYR:CE2	2.53	0.43
1:C:140:CYS:HB3	1:F:53:PHE:HB3	2.00	0.43
1:D:112:ILE:HA	1:D:122:THR:HG23	2.01	0.43
1:F:259:ARG:HD2	1:F:281:GLU:OE2	2.19	0.43
1:A:54:TRP:HZ2	1:B:199:TYR:HH	1.62	0.43
1:E:210:TRP:HA	1:E:215:PHE:CD2	2.53	0.43
1:A:196:PHE:O	1:A:200:MET:HG2	2.19	0.43
1:B:208:PRO:HD2	1:B:388:VAL:HG12	2.00	0.42
1:B:342:ARG:HD2	1:B:344:VAL:HG13	2.01	0.42
1:A:88:LEU:HD13	1:A:99:PHE:HZ	1.84	0.42
1:C:200:MET:HA	1:C:203:TYR:HD1	1.82	0.42
1:B:15:SER:O	1:B:19:GLN:HG3	2.19	0.42
1:F:285:HIS:CE1	1:F:292:PRO:HD3	2.54	0.42
1:D:56:GLN:HB3	4:E:572:HOH:O	2.18	0.42
1:C:83:LEU:HD21	1:C:91:LYS:HZ2	1.85	0.42
1:F:351:ASP:HA	1:F:362:GLU:HG2	2.02	0.42
1:A:199:TYR:HH	1:B:54:TRP:HZ2	1.64	0.41
1:C:196:PHE:O	1:C:200:MET:HG2	2.20	0.41
1:D:17:ALA:O	1:D:21:GLU:HG2	2.20	0.41
1:A:156:LYS:NZ	4:A:555:HOH:O	2.53	0.41
1:A:342:ARG:NE	4:A:528:HOH:O	2.43	0.41
1:E:346:SER:HB2	1:E:389:ALA:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:302:HIS:O	2:C:401:SAH:N	2.53	0.41
1:A:287:ILE:HG12	2:A:401:SAH:C6	2.50	0.41
1:D:105:HIS:O	1:D:109:MET:HG2	2.21	0.41
1:F:196:PHE:O	1:F:200:MET:HG2	2.21	0.41
1:A:349:ASN:HB3	1:B:54:TRP:HE3	1.85	0.41
1:B:378:LYS:NZ	1:B:397:LEU:O	2.53	0.41
1:C:105:HIS:O	1:C:109:MET:HG2	2.20	0.41
1:F:278:ARG:NH1	4:F:525:HOH:O	2.43	0.41
1:C:55:SER:HG	1:F:349:ASN:CG	2.19	0.41
1:A:221:ARG:NH2	1:A:394:GLU:OE2	2.29	0.40
1:C:112:ILE:HA	1:C:122:THR:HG23	2.02	0.40
1:C:218:VAL:HG13	1:C:222:LEU:HD12	2.03	0.40
1:C:287:ILE:HG23	2:C:401:SAH:C2	2.51	0.40
1:F:216:TYR:CD1	1:F:217:PRO:HD2	2.56	0.40
1:B:278:ARG:HG2	1:B:280:PHE:H	1.87	0.40
1:C:263:GLN:HB3	1:C:285:HIS:HB3	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	393/400 (98%)	384 (98%)	8 (2%)	1 (0%)	41 37
1	B	394/400 (98%)	385 (98%)	8 (2%)	1 (0%)	41 37
1	C	393/400 (98%)	382 (97%)	10 (2%)	1 (0%)	41 37
1	D	393/400 (98%)	382 (97%)	10 (2%)	1 (0%)	41 37
1	E	393/400 (98%)	385 (98%)	7 (2%)	1 (0%)	41 37
1	F	393/400 (98%)	383 (98%)	9 (2%)	1 (0%)	41 37
All	All	2359/2400 (98%)	2301 (98%)	52 (2%)	6 (0%)	41 37

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	304	VAL
1	B	304	VAL
1	D	304	VAL
1	C	304	VAL
1	E	304	VAL
1	F	304	VAL

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	321/322 (100%)	315 (98%)	6 (2%)	57 61
1	B	322/322 (100%)	312 (97%)	10 (3%)	40 40
1	C	321/322 (100%)	313 (98%)	8 (2%)	47 49
1	D	321/322 (100%)	312 (97%)	9 (3%)	43 44
1	E	321/322 (100%)	316 (98%)	5 (2%)	62 67
1	F	321/322 (100%)	312 (97%)	9 (3%)	43 44
All	All	1927/1932 (100%)	1880 (98%)	47 (2%)	49 51

All (47) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	8	SER
1	A	95	ASP
1	A	158	ASN
1	A	204	ARG
1	A	215	PHE
1	A	306	HIS
1	B	8	SER
1	B	194	GLN
1	B	204	ARG
1	B	215	PHE
1	B	277	SER

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Mol	Chain	Res	Type
1	B	306	HIS
1	B	334	ASN
1	B	342	ARG
1	B	345	MET
1	B	378	LYS
1	C	23	ASN
1	C	97	SER
1	C	156	LYS
1	C	204	ARG
1	C	215	PHE
1	C	306	HIS
1	C	326	LYS
1	C	361	LYS
1	D	80	GLU
1	D	156	LYS
1	D	158	ASN
1	D	179	ASP
1	D	204	ARG
1	D	215	PHE
1	D	306	HIS
1	D	342	ARG
1	D	361	LYS
1	E	179	ASP
1	E	204	ARG
1	E	215	PHE
1	E	306	HIS
1	E	345	MET
1	F	8	SER
1	F	23	ASN
1	F	70	ASN
1	F	156	LYS
1	F	204	ARG
1	F	215	PHE
1	F	306	HIS
1	F	342	ARG
1	F	361	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	79	GLN
1	B	334	ASN

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Mol	Chain	Res	Type
1	C	349	ASN
1	D	213	ASN
1	E	79	GLN
1	E	213	ASN
1	F	11	GLN
1	F	56	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

12 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	$\# Z > 2$
3	A1LWB	F	402	-	29,29,29	0.45	0	40,40,40	0.77	1 (2%)
3	A1LWB	B	402	-	29,29,29	0.42	0	40,40,40	0.68	1 (2%)
3	A1LWB	C	402	-	29,29,29	0.43	0	40,40,40	0.69	2 (5%)
2	SAH	E	401	-	24,28,28	1.13	2 (8%)	25,40,40	1.64	4 (16%)
2	SAH	F	401	-	24,28,28	1.18	3 (12%)	25,40,40	1.60	4 (16%)
3	A1LWB	E	402	-	29,29,29	0.45	0	40,40,40	0.71	2 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	SAH	A	401	-	24,28,28	1.13	3 (12%)	25,40,40	1.56	4 (16%)
2	SAH	D	401	-	24,28,28	1.17	3 (12%)	25,40,40	1.63	4 (16%)
3	A1LWB	A	402	-	29,29,29	0.44	0	40,40,40	0.72	1 (2%)
3	A1LWB	D	402	-	29,29,29	0.45	0	40,40,40	0.74	1 (2%)
2	SAH	C	401	-	24,28,28	1.19	3 (12%)	25,40,40	1.64	4 (16%)
2	SAH	B	401	-	24,28,28	1.17	3 (12%)	25,40,40	1.63	4 (16%)

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
3	A1LWB	F	402	-	-	0/17/26/26	0/2/2/2
3	A1LWB	B	402	-	-	1/17/26/26	0/2/2/2
3	A1LWB	C	402	-	-	0/17/26/26	0/2/2/2
2	SAH	E	401	-	-	2/11/31/31	0/3/3/3
2	SAH	F	401	-	-	0/11/31/31	0/3/3/3
3	A1LWB	E	402	-	-	0/17/26/26	0/2/2/2
2	SAH	A	401	-	-	0/11/31/31	0/3/3/3
2	SAH	D	401	-	-	1/11/31/31	0/3/3/3
3	A1LWB	A	402	-	-	0/17/26/26	0/2/2/2
3	A1LWB	D	402	-	-	0/17/26/26	0/2/2/2
2	SAH	C	401	-	-	0/11/31/31	0/3/3/3
2	SAH	B	401	-	-	1/11/31/31	0/3/3/3

All (17) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	401	SAH	C2-N3	3.87	1.38	1.32
2	F	401	SAH	C2-N3	3.81	1.38	1.32
2	C	401	SAH	C2-N3	3.77	1.38	1.32
2	D	401	SAH	C2-N3	3.67	1.38	1.32
2	E	401	SAH	C2-N3	3.63	1.37	1.32
2	A	401	SAH	C2-N3	3.58	1.37	1.32
2	D	401	SAH	C2-N1	2.52	1.38	1.33
2	B	401	SAH	C2-N1	2.48	1.38	1.33
2	C	401	SAH	C2-N1	2.47	1.38	1.33
2	F	401	SAH	C2-N1	2.43	1.38	1.33
2	A	401	SAH	C2-N1	2.39	1.38	1.33
2	E	401	SAH	C2-N1	2.35	1.38	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	401	SAH	OXT-C	-2.21	1.23	1.30
2	A	401	SAH	OXT-C	-2.18	1.23	1.30
2	C	401	SAH	OXT-C	-2.08	1.23	1.30
2	B	401	SAH	OXT-C	-2.04	1.23	1.30
2	F	401	SAH	OXT-C	-2.02	1.23	1.30

All (32) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	401	SAH	N3-C2-N1	-5.89	119.48	128.68
2	C	401	SAH	N3-C2-N1	-5.74	119.71	128.68
2	B	401	SAH	N3-C2-N1	-5.71	119.75	128.68
2	A	401	SAH	N3-C2-N1	-5.59	119.94	128.68
2	E	401	SAH	N3-C2-N1	-5.53	120.03	128.68
2	F	401	SAH	N3-C2-N1	-5.46	120.14	128.68
2	B	401	SAH	C5'-SD-CG	-3.18	92.72	102.27
3	F	402	A1LWB	C1-C9-C10	3.11	117.08	112.17
2	D	401	SAH	C5'-SD-CG	-3.07	93.06	102.27
2	E	401	SAH	C5'-SD-CG	-3.07	93.06	102.27
2	C	401	SAH	C5'-SD-CG	-2.88	93.62	102.27
3	A	402	A1LWB	C1-C9-C10	2.85	116.67	112.17
3	D	402	A1LWB	C1-C9-C10	2.81	116.62	112.17
2	F	401	SAH	C5'-SD-CG	-2.80	93.86	102.27
2	F	401	SAH	OXT-C-O	-2.74	117.87	124.09
2	C	401	SAH	OXT-C-O	-2.73	117.89	124.09
2	A	401	SAH	C5'-SD-CG	-2.72	94.11	102.27
2	E	401	SAH	OXT-C-CA	2.64	122.38	113.38
2	E	401	SAH	OXT-C-O	-2.63	118.12	124.09
3	C	402	A1LWB	C1-C9-C10	2.61	116.29	112.17
2	A	401	SAH	OXT-C-O	-2.59	118.20	124.09
2	D	401	SAH	OXT-C-O	-2.57	118.25	124.09
3	B	402	A1LWB	C1-C9-C10	2.54	116.19	112.17
2	F	401	SAH	OXT-C-CA	2.47	121.81	113.38
3	E	402	A1LWB	C1-C9-C10	2.46	116.07	112.17
2	B	401	SAH	OXT-C-O	-2.45	118.53	124.09
2	C	401	SAH	OXT-C-CA	2.25	121.05	113.38
2	D	401	SAH	OXT-C-CA	2.11	120.57	113.38
2	B	401	SAH	OXT-C-CA	2.09	120.50	113.38
3	C	402	A1LWB	C6-C5-C4	-2.08	120.63	121.85
3	E	402	A1LWB	C6-C5-C4	-2.07	120.64	121.85
2	A	401	SAH	OXT-C-CA	2.01	120.22	113.38

There are no chirality outliers.

All (5) torsion outliers are listed below:

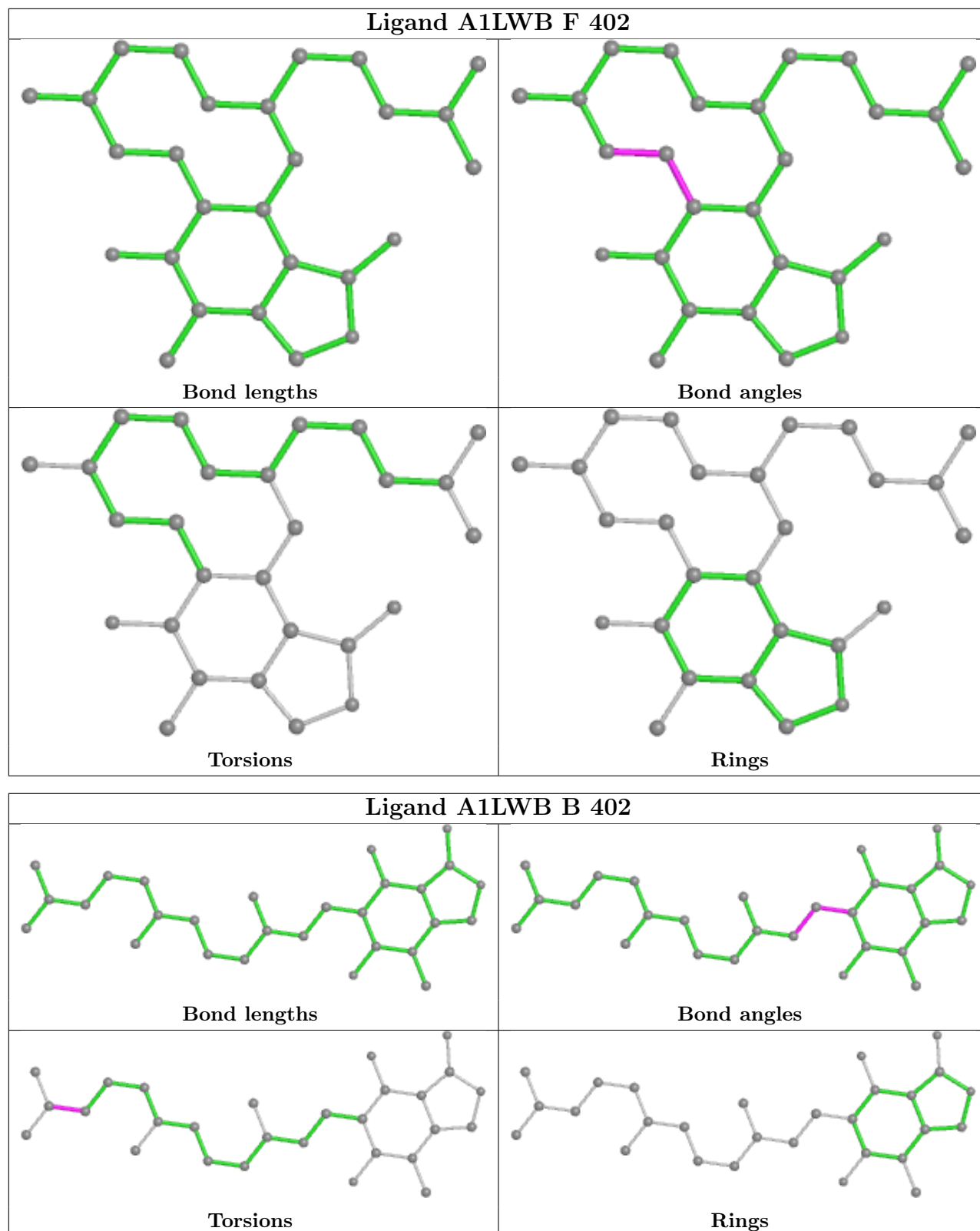
Mol	Chain	Res	Type	Atoms
2	E	401	SAH	O-C-CA-N
2	B	401	SAH	OXT-C-CA-N
2	D	401	SAH	OXT-C-CA-N
3	B	402	A1LWB	C20-C21-C22-C24
2	E	401	SAH	OXT-C-CA-N

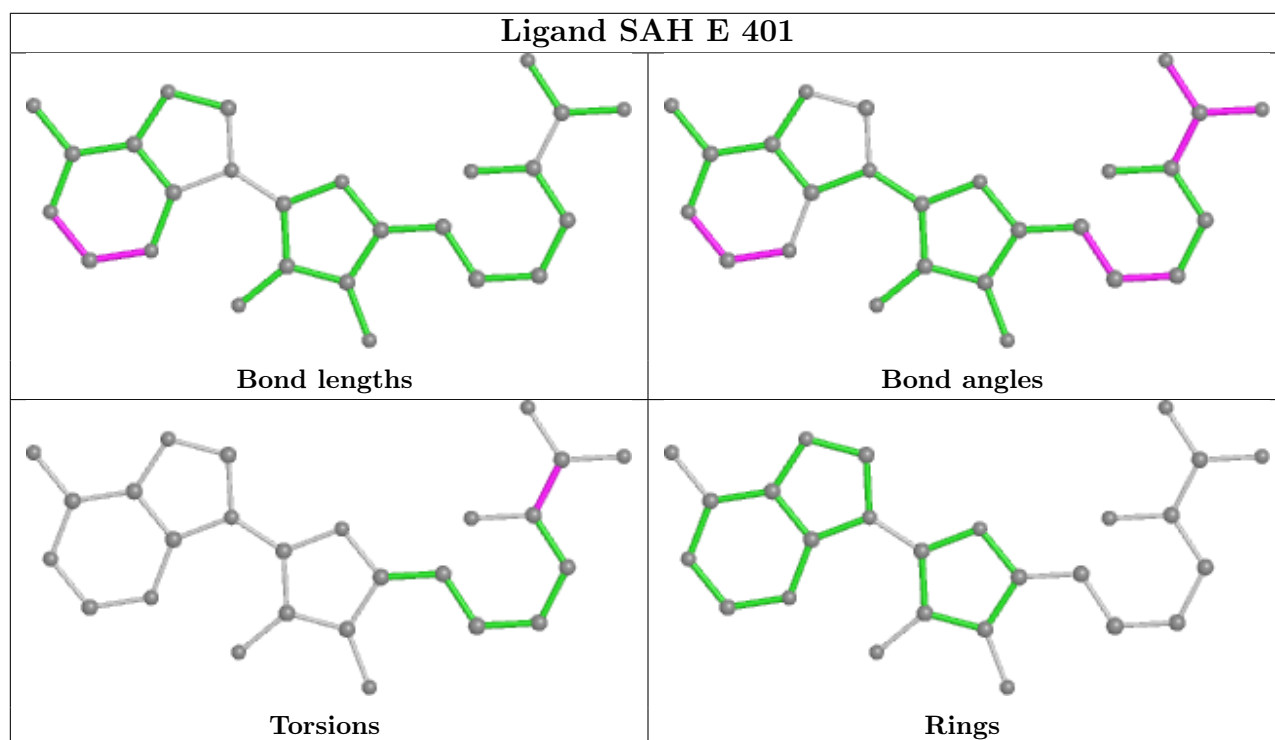
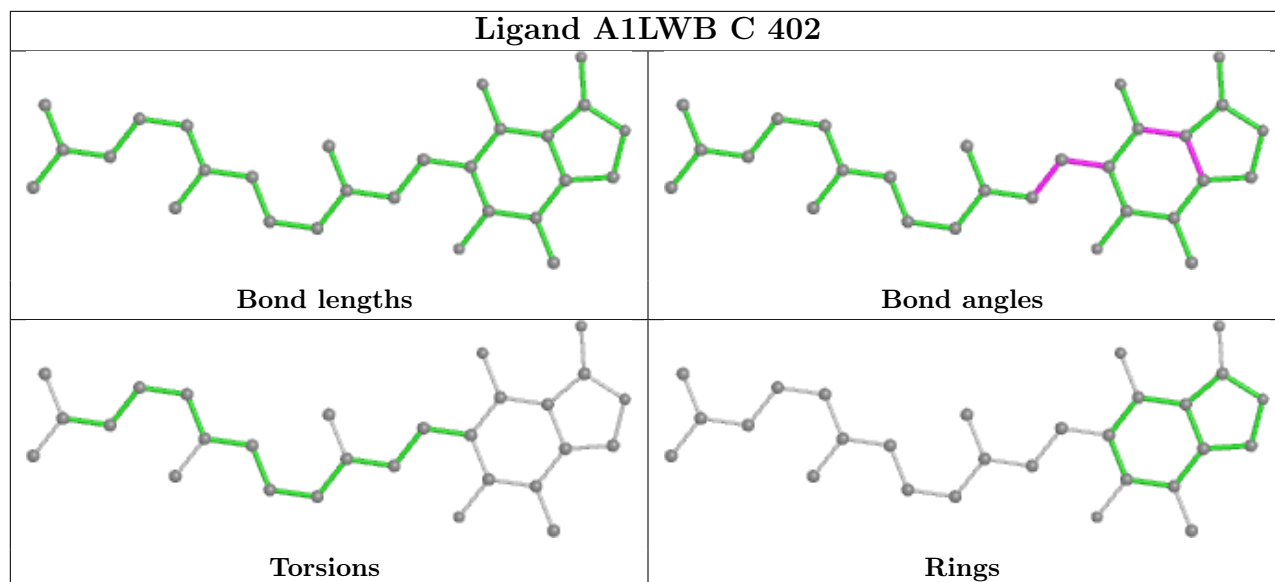
There are no ring outliers.

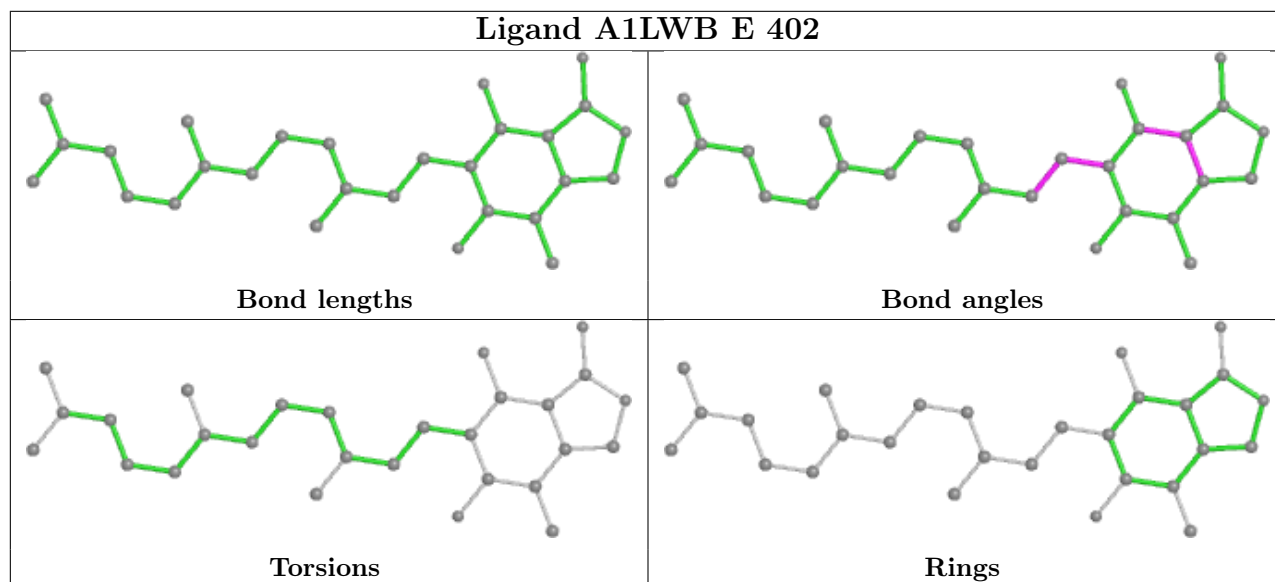
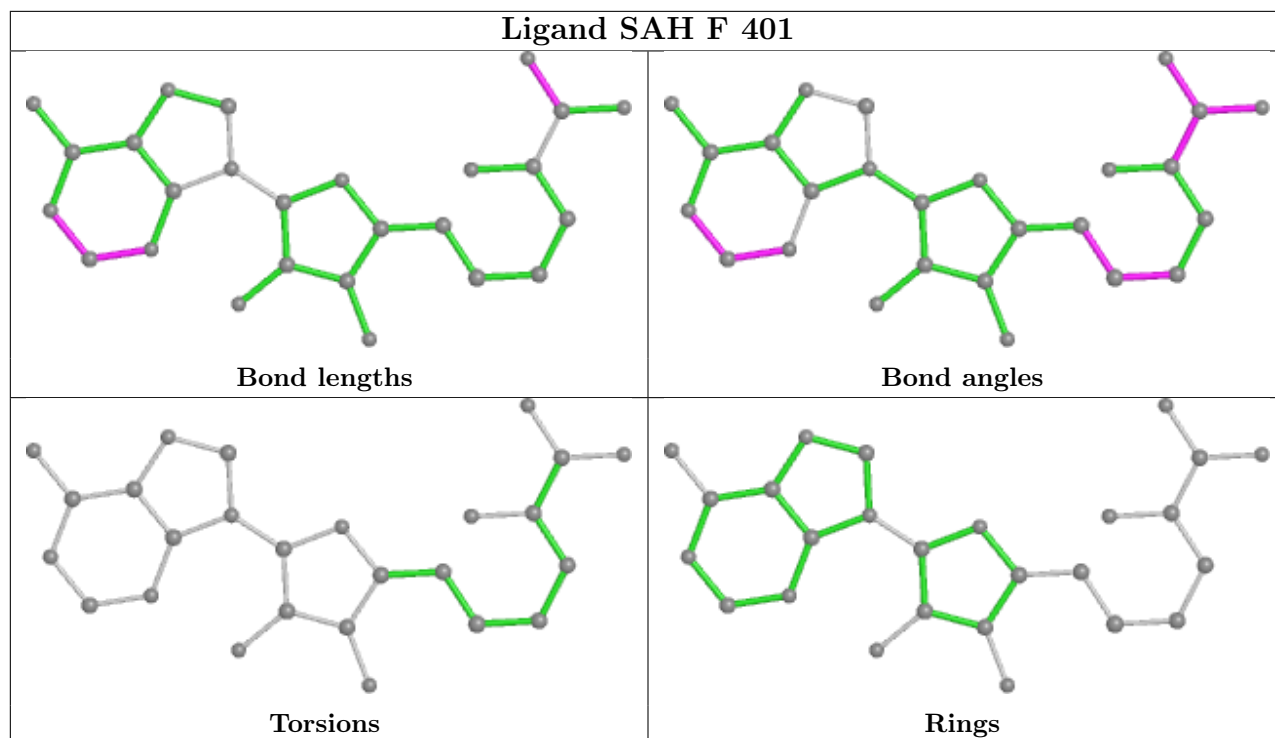
3 monomers are involved in 5 short contacts:

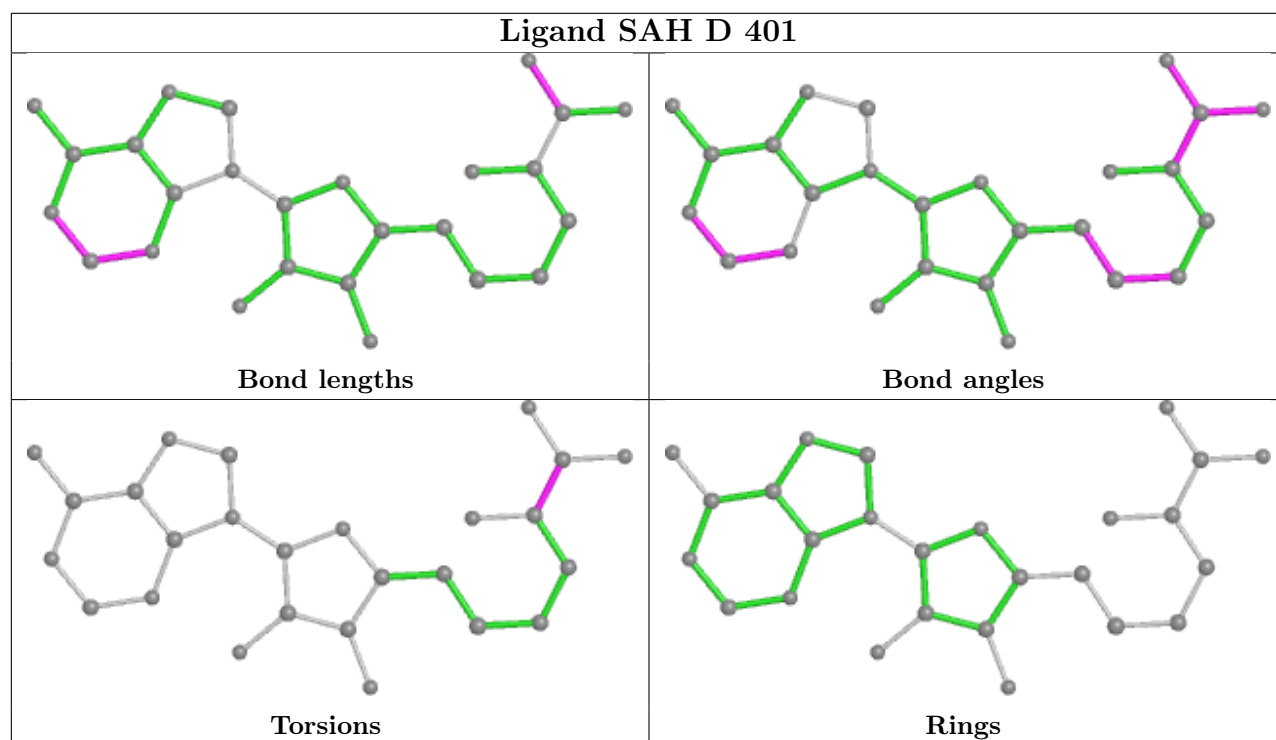
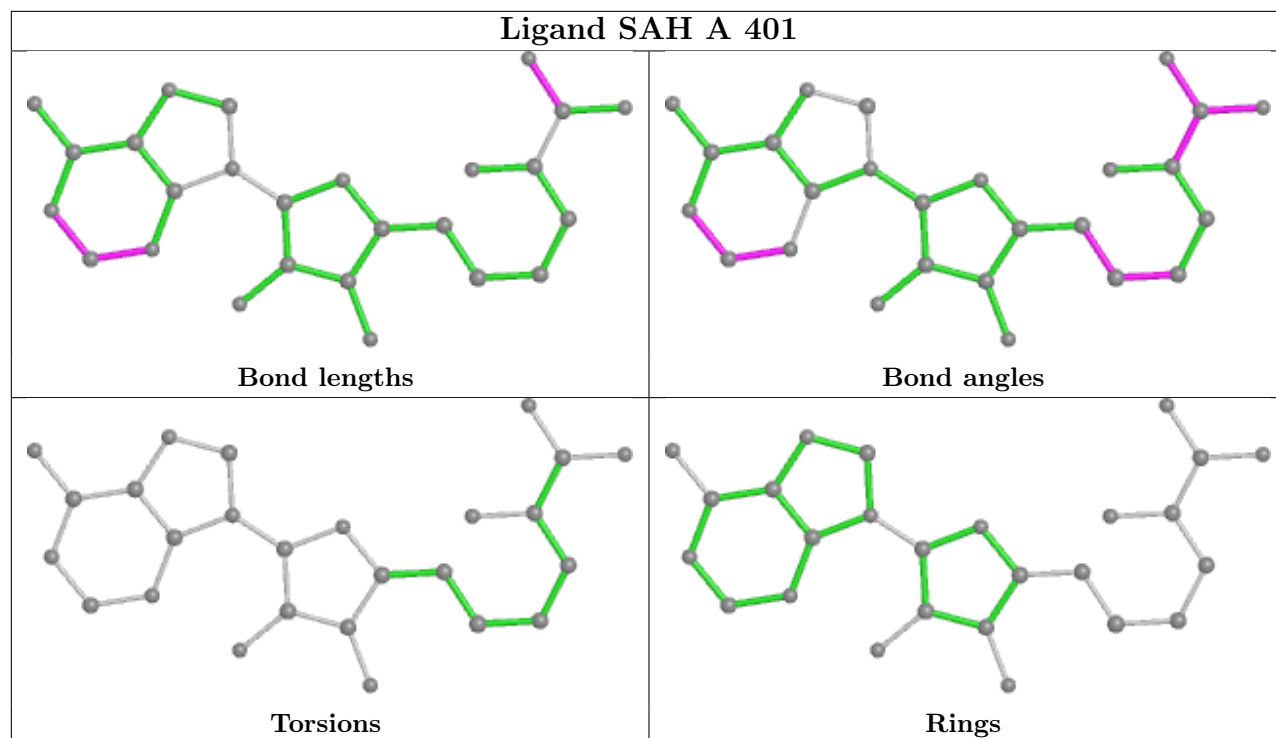
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	F	401	SAH	1	0
2	A	401	SAH	1	0
2	C	401	SAH	3	0

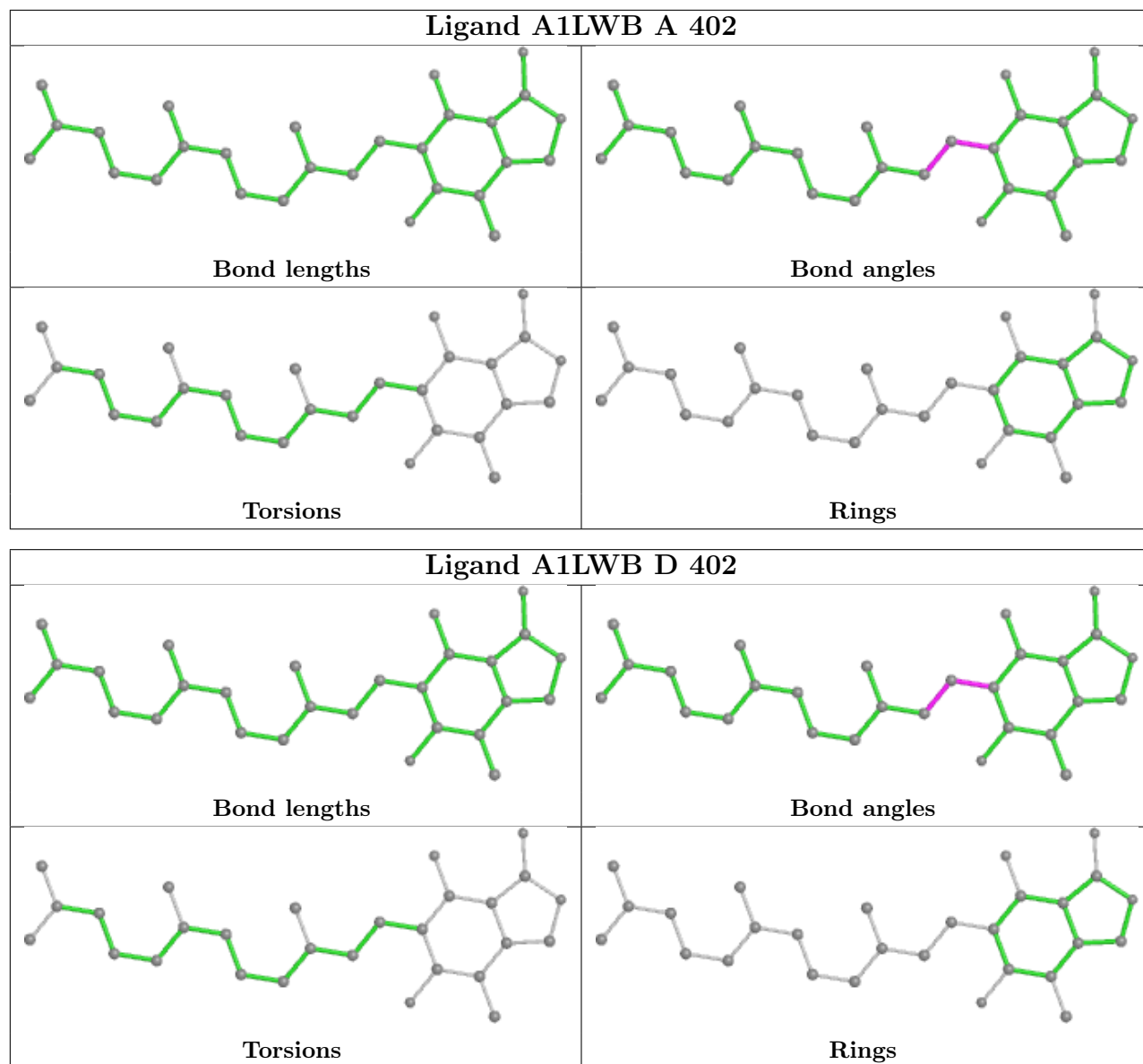
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

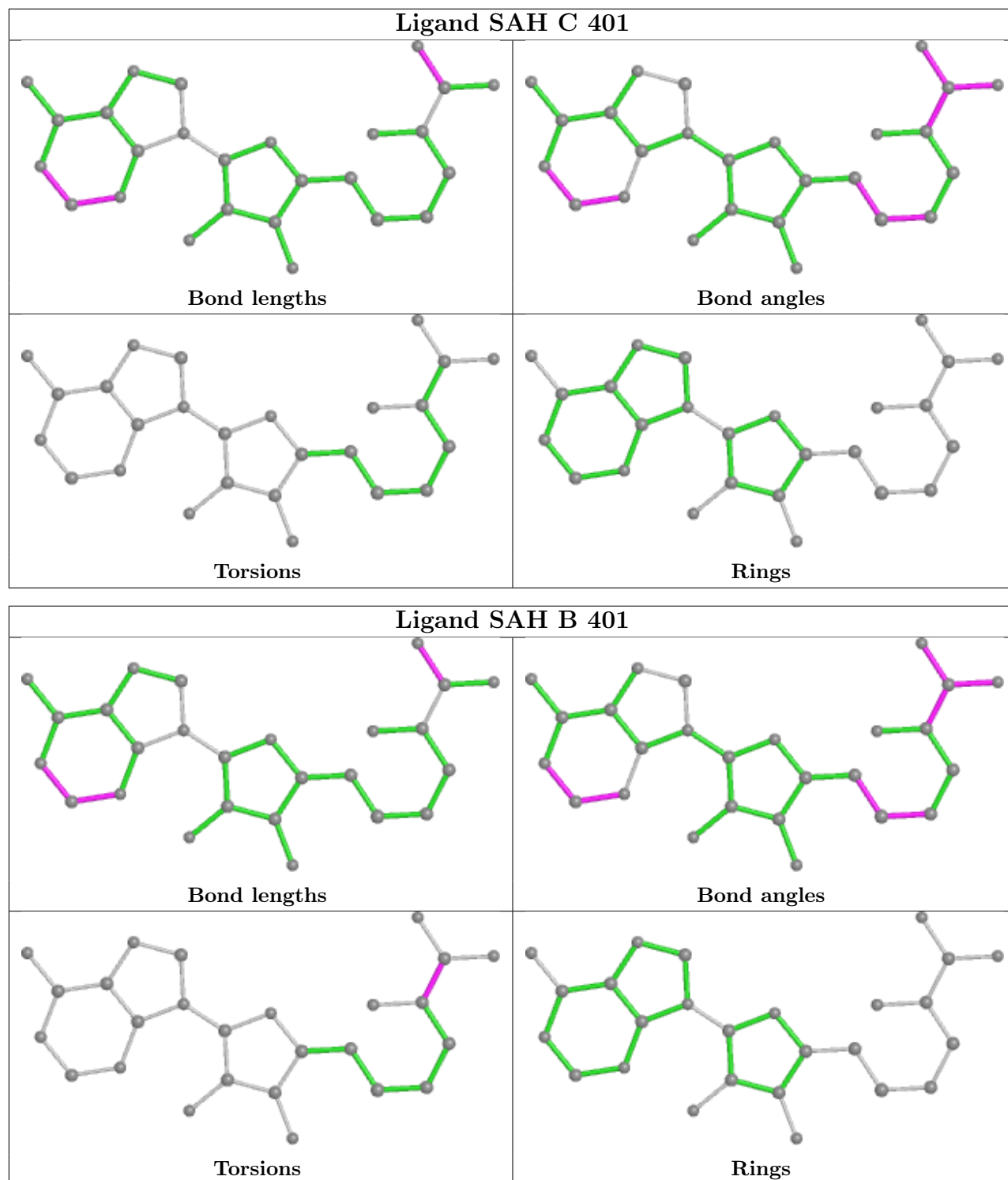












5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	395/400 (98%)	1.99	141 (35%) 0 0	11, 19, 46, 75	0
1	B	395/400 (98%)	2.03	167 (42%) 0 0	13, 20, 47, 78	0
1	C	395/400 (98%)	1.46	85 (21%) 0 0	11, 18, 37, 48	0
1	D	395/400 (98%)	1.35	60 (15%) 2 1	10, 17, 34, 57	0
1	E	395/400 (98%)	1.53	90 (22%) 0 0	12, 19, 37, 67	0
1	F	395/400 (98%)	1.49	93 (23%) 0 0	13, 19, 37, 56	0
All	All	2370/2400 (98%)	1.64	636 (26%) 0 0	10, 19, 39, 78	0

All (636) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	167	THR	8.7
1	A	164	ALA	8.5
1	E	167	THR	8.3
1	B	166	GLY	7.4
1	A	187	VAL	7.3
1	B	178	VAL	7.2
1	A	166	GLY	7.1
1	B	165	LEU	6.9
1	A	4	ALA	6.9
1	B	398	ALA	6.7
1	A	23	ASN	6.6
1	A	167	THR	6.5
1	B	20	TYR	6.5
1	A	20	TYR	5.9
1	B	4	ALA	5.8
1	A	274	ALA	5.7
1	A	338	VAL	5.6
1	B	169	ASP	5.5
1	A	21	GLU	5.5

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Mol	Chain	Res	Type	RSRZ
1	E	166	GLY	5.3
1	B	276	GLU	5.2
1	A	10	ILE	5.2
1	A	79	GLN	5.1
1	A	15	SER	5.1
1	B	273	PRO	5.0
1	A	19	GLN	5.0
1	A	341	GLU	5.0
1	D	11	GLN	4.9
1	A	30	ALA	4.8
1	A	137	ILE	4.7
1	A	5	SER	4.7
1	F	26	GLY	4.7
1	B	13	LEU	4.6
1	A	223	LEU	4.6
1	F	14	ALA	4.6
1	A	26	GLY	4.6
1	C	22	ASN	4.5
1	A	13	LEU	4.4
1	F	8	SER	4.4
1	B	83	LEU	4.4
1	B	366	ALA	4.4
1	E	13	LEU	4.4
1	A	14	ALA	4.3
1	D	7	ALA	4.3
1	A	213	ASN	4.3
1	A	273	PRO	4.3
1	A	139	PHE	4.3
1	F	6	PRO	4.3
1	D	8	SER	4.2
1	B	182	PHE	4.2
1	C	9	ILE	4.2
1	B	332	LEU	4.1
1	B	9	ILE	4.1
1	B	42	LEU	4.1
1	D	341	GLU	4.0
1	B	31	LEU	4.0
1	A	170	GLY	4.0
1	B	23	ASN	4.0
1	E	165	LEU	4.0
1	A	17	ALA	4.0
1	C	115	ARG	4.0

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Mol	Chain	Res	Type	RSRZ
1	B	168	THR	3.9
1	D	277	SER	3.9
1	B	17	ALA	3.9
1	F	9	ILE	3.9
1	D	15	SER	3.9
1	F	276	GLU	3.9
1	B	195	TYR	3.9
1	B	274	ALA	3.9
1	B	163	PRO	3.9
1	D	16	ALA	3.9
1	A	120	TYR	3.9
1	C	14	ALA	3.8
1	B	81	GLU	3.8
1	A	163	PRO	3.8
1	F	167	THR	3.8
1	A	356	ALA	3.8
1	A	366	ALA	3.8
1	B	223	LEU	3.8
1	B	54	TRP	3.8
1	B	342	ARG	3.8
1	D	4	ALA	3.8
1	B	309	GLY	3.8
1	A	154	PHE	3.8
1	A	24	GLU	3.8
1	C	387	GLY	3.7
1	A	33	ALA	3.7
1	F	13	LEU	3.7
1	A	251	SER	3.7
1	B	280	PHE	3.7
1	C	106	LEU	3.7
1	F	88	LEU	3.7
1	C	167	THR	3.7
1	A	272	ILE	3.7
1	F	371	ILE	3.7
1	A	165	LEU	3.6
1	E	157	GLY	3.6
1	C	20	TYR	3.6
1	B	186	LEU	3.6
1	A	178	VAL	3.6
1	B	215	PHE	3.6
1	A	9	ILE	3.6
1	D	49	ILE	3.6

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Mol	Chain	Res	Type	RSRZ
1	B	22	ASN	3.6
1	C	166	GLY	3.6
1	B	25	SER	3.6
1	B	277	SER	3.6
1	F	30	ALA	3.6
1	B	283	THR	3.6
1	A	215	PHE	3.5
1	B	164	ALA	3.5
1	B	112	ILE	3.5
1	C	216	TYR	3.5
1	A	22	ASN	3.5
1	B	343	PRO	3.5
1	B	18	LYS	3.5
1	B	131	GLU	3.5
1	A	98	LEU	3.5
1	E	83	LEU	3.5
1	B	87	ALA	3.5
1	D	213	ASN	3.5
1	E	85	ALA	3.5
1	C	165	LEU	3.5
1	C	62	ILE	3.4
1	B	103	ALA	3.4
1	F	108	ALA	3.4
1	B	252	GLN	3.4
1	B	7	ALA	3.4
1	B	10	ILE	3.4
1	B	162	THR	3.4
1	A	241	GLY	3.4
1	D	5	SER	3.4
1	B	158	ASN	3.3
1	A	32	ILE	3.3
1	A	31	LEU	3.3
1	F	337	VAL	3.3
1	B	34	GLN	3.3
1	B	99	PHE	3.3
1	B	340	GLU	3.3
1	F	147	SER	3.3
1	B	192	TYR	3.3
1	F	148	PHE	3.3
1	A	340	GLU	3.3
1	D	356	ALA	3.3
1	E	17	ALA	3.3

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Mol	Chain	Res	Type	RSRZ
1	E	162	THR	3.3
1	E	164	ALA	3.3
1	F	7	ALA	3.3
1	A	99	PHE	3.2
1	F	341	GLU	3.2
1	B	6	PRO	3.2
1	B	148	PHE	3.2
1	A	12	GLU	3.2
1	B	106	LEU	3.2
1	C	96	VAL	3.2
1	C	379	VAL	3.2
1	A	95	ASP	3.2
1	E	398	ALA	3.2
1	A	253	PHE	3.2
1	B	156	LYS	3.1
1	D	344	VAL	3.1
1	D	20	TYR	3.1
1	F	274	ALA	3.1
1	B	218	VAL	3.1
1	D	276	GLU	3.1
1	A	381	ASN	3.1
1	A	179	ASP	3.1
1	B	307	GLY	3.1
1	B	69	VAL	3.1
1	B	171	PRO	3.1
1	B	196	PHE	3.1
1	D	139	PHE	3.1
1	E	69	VAL	3.1
1	F	187	VAL	3.1
1	E	39	ILE	3.1
1	F	49	ILE	3.1
1	B	15	SER	3.1
1	B	77	ASP	3.1
1	F	398	ALA	3.1
1	A	185	TRP	3.1
1	B	230	VAL	3.1
1	B	370	SER	3.1
1	E	107	VAL	3.1
1	A	371	ILE	3.1
1	A	18	LYS	3.1
1	A	78	ALA	3.1
1	A	313	ALA	3.1

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Mol	Chain	Res	Type	RSRZ
1	D	342	ARG	3.1
1	A	88	LEU	3.0
1	C	71	LEU	3.0
1	D	13	LEU	3.0
1	D	165	LEU	3.0
1	F	372	LEU	3.0
1	C	11	GLN	3.0
1	A	82	GLY	3.0
1	E	20	TYR	3.0
1	F	268	VAL	3.0
1	A	65	LEU	3.0
1	B	258	GLY	3.0
1	B	92	THR	3.0
1	E	276	GLU	3.0
1	C	107	VAL	3.0
1	F	165	LEU	3.0
1	B	190	PRO	3.0
1	F	119	PHE	3.0
1	A	115	ARG	3.0
1	A	25	SER	3.0
1	C	147	SER	3.0
1	A	16	ALA	3.0
1	A	85	ALA	3.0
1	E	4	ALA	3.0
1	E	89	ALA	3.0
1	C	331	VAL	3.0
1	B	234	LEU	2.9
1	C	8	SER	2.9
1	A	320	LEU	2.9
1	C	75	LEU	2.9
1	F	91	LYS	2.9
1	B	119	PHE	2.9
1	A	357	HIS	2.9
1	A	54	TRP	2.9
1	B	157	GLY	2.9
1	C	13	LEU	2.9
1	D	83	LEU	2.9
1	B	5	SER	2.9
1	F	39	ILE	2.9
1	C	343	PRO	2.9
1	A	378	LYS	2.9
1	A	379	VAL	2.9

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Mol	Chain	Res	Type	RSRZ
1	A	80	GLU	2.9
1	B	48	PHE	2.9
1	B	85	ALA	2.9
1	C	89	ALA	2.9
1	A	385	TYR	2.9
1	B	216	TYR	2.9
1	F	383	TYR	2.9
1	E	118	VAL	2.9
1	F	163	PRO	2.9
1	E	342	ARG	2.9
1	F	10	ILE	2.9
1	B	155	PHE	2.9
1	A	160	TYR	2.8
1	B	268	VAL	2.8
1	A	332	LEU	2.8
1	D	30	ALA	2.8
1	A	299	TYR	2.8
1	C	344	VAL	2.8
1	D	147	SER	2.8
1	C	17	ALA	2.8
1	E	80	GLU	2.8
1	F	249	PHE	2.8
1	A	119	PHE	2.8
1	B	72	PHE	2.8
1	B	397	LEU	2.8
1	C	352	LEU	2.8
1	B	45	PRO	2.8
1	B	161	LYS	2.8
1	B	145	ARG	2.8
1	A	192	TYR	2.8
1	C	74	TYR	2.8
1	F	213	ASN	2.8
1	B	379	VAL	2.8
1	E	321	VAL	2.8
1	A	168	THR	2.7
1	C	393	ILE	2.7
1	B	139	PHE	2.7
1	C	245	ASP	2.7
1	E	78	ALA	2.7
1	F	37	ALA	2.7
1	B	385	TYR	2.7
1	F	4	ALA	2.7

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Mol	Chain	Res	Type	RSRZ
1	A	344	VAL	2.7
1	B	261	VAL	2.7
1	D	70	ASN	2.7
1	A	214	GLY	2.7
1	B	371	ILE	2.7
1	E	371	ILE	2.7
1	C	163	PRO	2.7
1	C	249	PHE	2.7
1	F	154	PHE	2.7
1	B	271	SER	2.7
1	C	25	SER	2.7
1	A	218	VAL	2.7
1	C	235	LEU	2.7
1	E	18	LYS	2.7
1	C	37	ALA	2.7
1	C	251	SER	2.7
1	A	172	PHE	2.7
1	F	72	PHE	2.7
1	A	96	VAL	2.7
1	D	387	GLY	2.7
1	C	42	LEU	2.7
1	C	171	PRO	2.7
1	E	163	PRO	2.7
1	E	213	ASN	2.7
1	B	16	ALA	2.6
1	C	164	ALA	2.6
1	D	9	ILE	2.6
1	A	53	PHE	2.6
1	B	111	VAL	2.6
1	F	12	GLU	2.6
1	A	186	LEU	2.6
1	B	179	ASP	2.6
1	F	277	SER	2.6
1	E	9	ILE	2.6
1	E	308	PHE	2.6
1	A	169	ASP	2.6
1	A	314	VAL	2.6
1	C	276	GLU	2.6
1	C	340	GLU	2.6
1	F	180	ILE	2.6
1	E	6	PRO	2.6
1	E	22	ASN	2.6

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Mol	Chain	Res	Type	RSRZ
1	B	267	GLN	2.6
1	D	117	GLY	2.6
1	F	11	GLN	2.6
1	A	256	LEU	2.6
1	A	49	ILE	2.6
1	C	160	TYR	2.5
1	F	5	SER	2.5
1	B	11	GLN	2.5
1	A	348	THR	2.5
1	B	113	THR	2.5
1	B	353	ILE	2.5
1	F	162	THR	2.5
1	F	378	LYS	2.5
1	A	8	SER	2.5
1	A	55	SER	2.5
1	A	74	TYR	2.5
1	C	129	ALA	2.5
1	F	210	TRP	2.5
1	A	46	SER	2.5
1	B	8	SER	2.5
1	C	97	SER	2.5
1	B	150	ALA	2.5
1	B	211	CYS	2.5
1	B	228	ALA	2.5
1	D	160	TYR	2.5
1	D	24	GLU	2.5
1	B	32	ILE	2.5
1	C	112	ILE	2.5
1	F	356	ALA	2.5
1	B	80	GLU	2.5
1	B	170	GLY	2.5
1	F	75	LEU	2.5
1	F	106	LEU	2.5
1	A	161	LYS	2.5
1	A	321	VAL	2.5
1	C	118	VAL	2.5
1	B	133	TYR	2.5
1	F	20	TYR	2.5
1	C	77	ASP	2.4
1	F	94	MET	2.4
1	F	345	MET	2.4
1	B	96	VAL	2.4

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Mol	Chain	Res	Type	RSRZ
1	F	143	VAL	2.4
1	B	138	ARG	2.4
1	D	199	TYR	2.4
1	F	172	PHE	2.4
1	C	273	PRO	2.4
1	A	7	ALA	2.4
1	B	27	ALA	2.4
1	A	342	ARG	2.4
1	B	337	VAL	2.4
1	C	289	THR	2.4
1	E	97	SER	2.4
1	B	75	LEU	2.4
1	E	355	LEU	2.4
1	D	120	TYR	2.4
1	A	327	GLY	2.4
1	F	169	ASP	2.4
1	B	89	ALA	2.4
1	F	123	ALA	2.4
1	E	25	SER	2.4
1	B	316	ILE	2.4
1	C	39	ILE	2.4
1	F	92	THR	2.4
1	A	183	PRO	2.4
1	C	244	HIS	2.4
1	A	128	LEU	2.4
1	E	31	LEU	2.4
1	C	53	PHE	2.4
1	C	274	ALA	2.4
1	D	14	ALA	2.4
1	D	86	GLU	2.4
1	F	164	ALA	2.4
1	B	114	SER	2.4
1	B	180	ILE	2.4
1	A	255	PRO	2.4
1	C	83	LEU	2.4
1	D	192	TYR	2.4
1	E	199	TYR	2.4
1	F	196	PHE	2.4
1	B	323	ALA	2.4
1	C	364	THR	2.4
1	B	110	ASN	2.4
1	F	156	LYS	2.4

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Mol	Chain	Res	Type	RSRZ
1	D	10	ILE	2.4
1	E	187	VAL	2.4
1	F	118	VAL	2.4
1	F	316	ILE	2.4
1	A	181	SER	2.3
1	B	235	LEU	2.3
1	D	71	LEU	2.3
1	F	31	LEU	2.3
1	A	282	ALA	2.3
1	B	100	ALA	2.3
1	B	175	ALA	2.3
1	E	282	ALA	2.3
1	A	249	PHE	2.3
1	B	249	PHE	2.3
1	B	288	PHE	2.3
1	C	119	PHE	2.3
1	B	185	TRP	2.3
1	B	44	VAL	2.3
1	C	246	ILE	2.3
1	E	96	VAL	2.3
1	E	331	VAL	2.3
1	B	91	LYS	2.3
1	A	61	ALA	2.3
1	A	324	LEU	2.3
1	A	392	LEU	2.3
1	D	98	LEU	2.3
1	D	260	LEU	2.3
1	E	16	ALA	2.3
1	E	175	ALA	2.3
1	F	71	LEU	2.3
1	D	364	THR	2.3
1	E	99	PHE	2.3
1	A	118	VAL	2.3
1	B	321	VAL	2.3
1	B	344	VAL	2.3
1	D	111	VAL	2.3
1	F	78	ALA	2.3
1	F	387	GLY	2.3
1	B	88	LEU	2.3
1	B	222	LEU	2.3
1	B	284	THR	2.3
1	E	193	LEU	2.3

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Mol	Chain	Res	Type	RSRZ
1	B	183	PRO	2.3
1	D	208	PRO	2.3
1	E	160	TYR	2.3
1	F	160	TYR	2.3
1	D	155	PHE	2.3
1	E	185	TRP	2.3
1	E	210	TRP	2.3
1	A	337	VAL	2.3
1	B	21	GLU	2.3
1	E	388	VAL	2.3
1	E	169	ASP	2.3
1	E	353	ILE	2.3
1	D	219	ALA	2.3
1	A	190	PRO	2.3
1	A	397	LEU	2.3
1	B	98	LEU	2.3
1	D	352	LEU	2.3
1	E	392	LEU	2.3
1	E	173	GLN	2.3
1	A	396	GLU	2.3
1	D	187	VAL	2.3
1	E	380	VAL	2.3
1	A	130	ALA	2.3
1	B	129	ALA	2.3
1	B	257	PRO	2.3
1	C	366	ALA	2.3
1	E	269	ILE	2.3
1	E	273	PRO	2.3
1	A	333	LEU	2.3
1	F	377	LEU	2.3
1	A	383	TYR	2.2
1	E	119	PHE	2.2
1	F	215	PHE	2.2
1	C	345	MET	2.2
1	F	358	MET	2.2
1	C	80	GLU	2.2
1	A	331	VAL	2.2
1	C	187	VAL	2.2
1	E	314	VAL	2.2
1	F	44	VAL	2.2
1	F	344	VAL	2.2
1	B	39	ILE	2.2

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Mol	Chain	Res	Type	RSRZ
1	B	41	SER	2.2
1	C	371	ILE	2.2
1	D	90	SER	2.2
1	F	153	SER	2.2
1	A	83	LEU	2.2
1	C	88	LEU	2.2
1	F	124	LEU	2.2
1	A	225	GLY	2.2
1	B	341	GLU	2.2
1	B	270	ASN	2.2
1	E	358	MET	2.2
1	A	284	THR	2.2
1	A	202	ALA	2.2
1	D	87	ALA	2.2
1	A	44	VAL	2.2
1	E	379	VAL	2.2
1	B	184	GLN	2.2
1	C	262	LEU	2.2
1	E	332	LEU	2.2
1	F	42	LEU	2.2
1	C	23	ASN	2.2
1	B	115	ARG	2.2
1	B	383	TYR	2.2
1	E	208	PRO	2.2
1	E	385	TYR	2.2
1	A	97	SER	2.2
1	C	5	SER	2.2
1	E	283	THR	2.2
1	A	108	ALA	2.2
1	E	360	ALA	2.2
1	E	366	ALA	2.2
1	F	225	GLY	2.2
1	B	287	ILE	2.2
1	F	22	ASN	2.2
1	E	88	LEU	2.2
1	A	217	PRO	2.2
1	E	114	SER	2.2
1	C	92	THR	2.2
1	C	385	TYR	2.2
1	B	219	ALA	2.2
1	D	375	ALA	2.2
1	F	219	ALA	2.2

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Mol	Chain	Res	Type	RSRZ
1	A	149	GLY	2.2
1	F	304	VAL	2.2
1	E	179	ASP	2.2
1	D	177	LYS	2.2
1	B	19	GLN	2.2
1	B	65	LEU	2.2
1	B	377	LEU	2.2
1	F	98	LEU	2.2
1	F	355	LEU	2.2
1	A	323	ALA	2.2
1	B	282	ALA	2.2
1	E	37	ALA	2.2
1	F	66	ALA	2.2
1	F	74	TYR	2.2
1	C	151	PHE	2.2
1	C	154	PHE	2.2
1	A	76	LYS	2.2
1	E	230	VAL	2.2
1	B	90	SER	2.1
1	E	5	SER	2.1
1	A	138	ARG	2.1
1	C	67	THR	2.1
1	D	88	LEU	2.1
1	C	78	ALA	2.1
1	F	89	ALA	2.1
1	F	179	ASP	2.1
1	A	203	TYR	2.1
1	D	73	GLN	2.1
1	E	288	PHE	2.1
1	E	174	SER	2.1
1	C	321	VAL	2.1
1	C	388	VAL	2.1
1	E	345	MET	2.1
1	E	287	ILE	2.1
1	A	355	LEU	2.1
1	E	42	LEU	2.1
1	E	352	LEU	2.1
1	C	7	ALA	2.1
1	D	17	ALA	2.1
1	B	368	TRP	2.1
1	D	97	SER	2.1
1	F	174	SER	2.1

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Mol	Chain	Res	Type	RSRZ
1	F	191	PRO	2.1
1	A	151	PHE	2.1
1	C	99	PHE	2.1
1	E	249	PHE	2.1
1	B	63	VAL	2.1
1	B	264	ASP	2.1
1	C	380	VAL	2.1
1	C	250	GLY	2.1
1	E	26	GLY	2.1
1	E	127	GLY	2.1
1	A	382	ILE	2.1
1	B	311	GLU	2.1
1	B	38	LEU	2.1
1	B	78	ALA	2.1
1	B	352	LEU	2.1
1	B	220	ASP	2.1
1	A	210	TRP	2.1
1	B	117	GLY	2.1
1	E	53	PHE	2.1
1	F	139	PHE	2.1
1	A	238	VAL	2.1
1	C	63	VAL	2.1
1	D	114	SER	2.1
1	E	7	ALA	2.1
1	F	32	ILE	2.1
1	A	222	LEU	2.1
1	D	256	LEU	2.1
1	A	73	GLN	2.1
1	B	146	PRO	2.1
1	C	386	PRO	2.1
1	A	94	MET	2.1
1	D	52	THR	2.1
1	D	280	PHE	2.1
1	E	54	TRP	2.1
1	F	230	VAL	2.1
1	C	81	GLU	2.1
1	F	70	ASN	2.1
1	D	31	LEU	2.1
1	E	191	PRO	2.1
1	E	387	GLY	2.1
1	E	168	THR	2.0
1	C	120	TYR	2.0

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Mol	Chain	Res	Type	RSRZ
1	A	244	HIS	2.0
1	B	172	PHE	2.0
1	E	172	PHE	2.0
1	F	69	VAL	2.0
1	D	368	TRP	2.0
1	E	309	GLY	2.0
1	B	102	LEU	2.0
1	B	128	LEU	2.0
1	B	193	LEU	2.0
1	F	320	LEU	2.0
1	B	68	ASP	2.0
1	B	227	ASP	2.0
1	E	354	MET	2.0
1	A	254	SER	2.0
1	B	174	SER	2.0
1	D	251	SER	2.0
1	A	293	VAL	2.0
1	B	314	VAL	2.0
1	B	93	GLY	2.0
1	C	205	ALA	2.0
1	F	185	TRP	2.0
1	B	237	ASP	2.0
1	C	49	ILE	2.0
1	D	42	LEU	2.0
1	F	222	LEU	2.0
1	C	174	SER	2.0
1	E	346	SER	2.0
1	A	104	ARG	2.0
1	B	24	GLU	2.0

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

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

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands

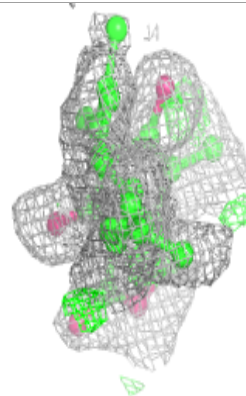
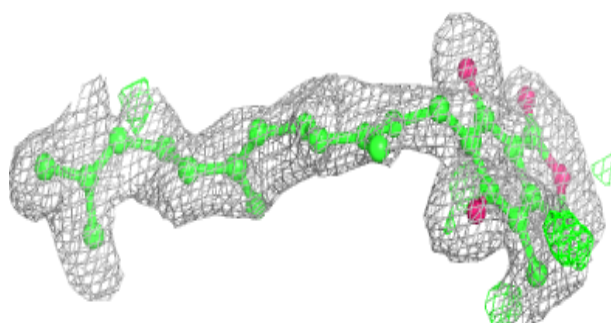
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q<0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
3	A1LWB	B	402	28/28	0.71	0.25	14,17,26,31	0
3	A1LWB	A	402	28/28	0.77	0.27	12,17,24,25	0
2	SAH	A	401	26/26	0.83	0.19	11,14,16,18	0
2	SAH	F	401	26/26	0.83	0.16	11,17,20,24	0
3	A1LWB	E	402	28/28	0.84	0.17	10,15,20,25	0
3	A1LWB	F	402	28/28	0.84	0.20	13,17,21,26	0
2	SAH	D	401	26/26	0.85	0.15	8,11,14,15	0
3	A1LWB	C	402	28/28	0.85	0.18	11,14,18,22	0
2	SAH	E	401	26/26	0.86	0.17	10,15,18,19	0
2	SAH	B	401	26/26	0.87	0.18	13,17,22,23	0
3	A1LWB	D	402	28/28	0.87	0.18	10,13,15,19	0
2	SAH	C	401	26/26	0.89	0.14	7,12,15,17	0

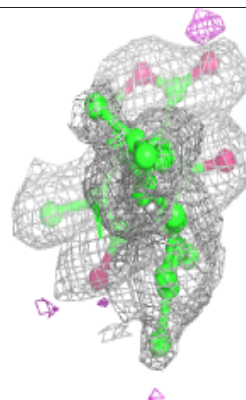
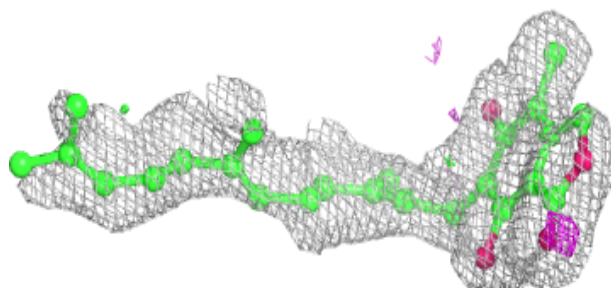
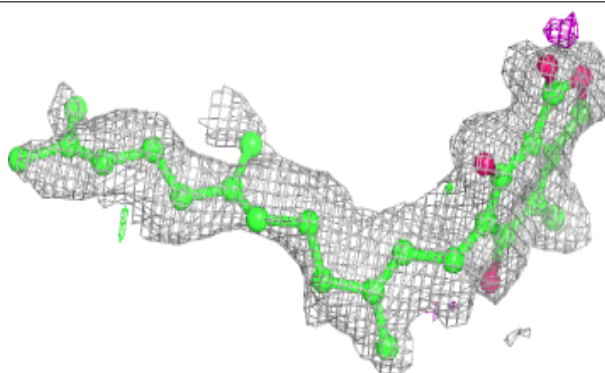
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around A1LWB B 402:

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

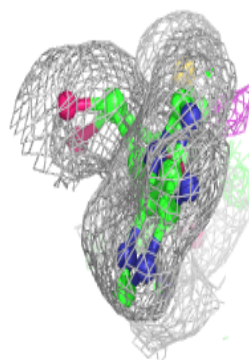
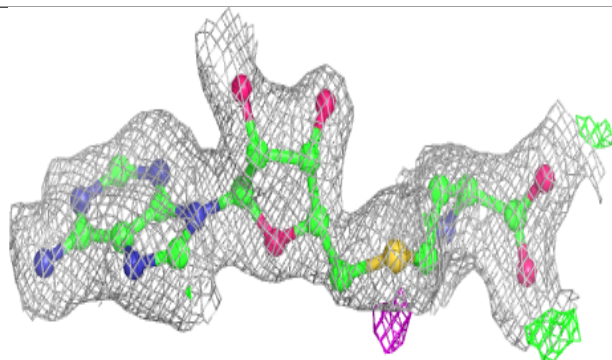
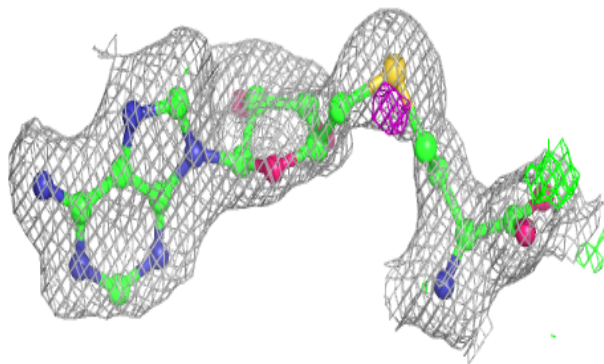
**Electron density around A1LWB A 402:**

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

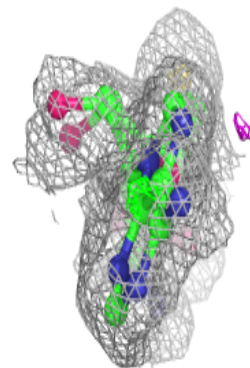
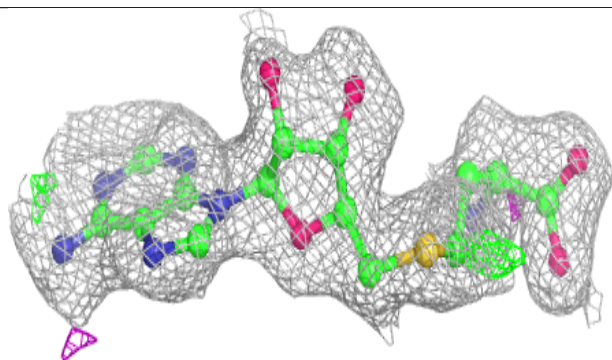
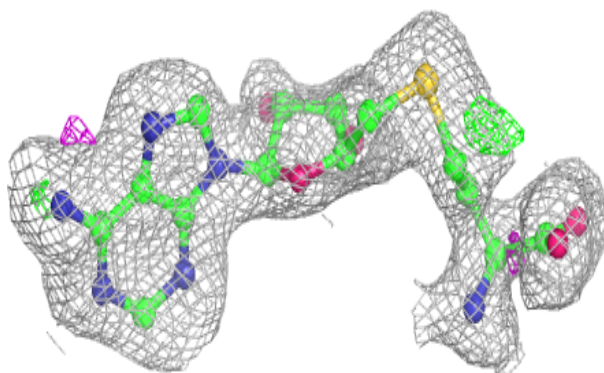


Electron density around SAH A 401:

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

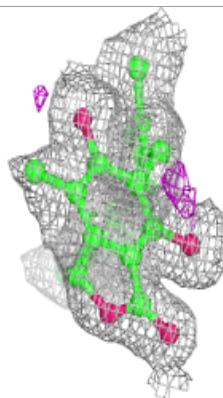
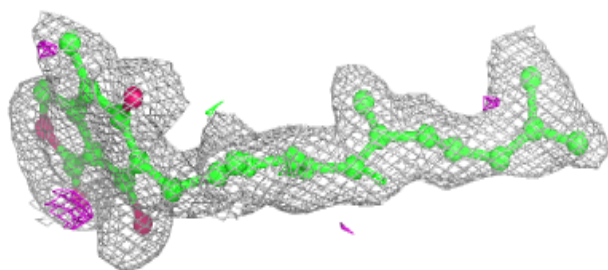
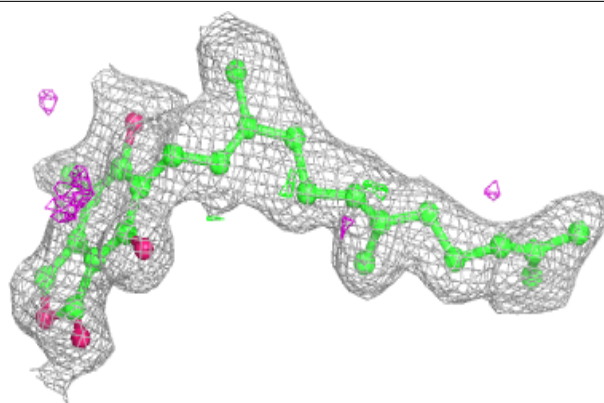
**Electron density around SAH F 401:**

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 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

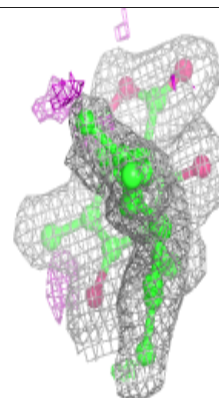
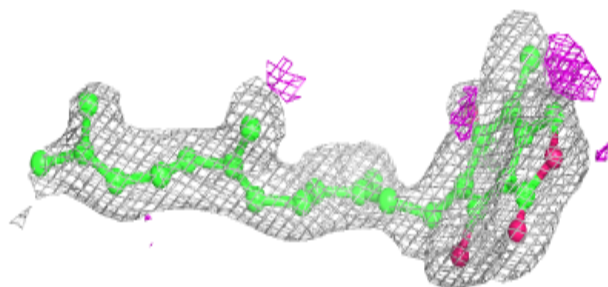
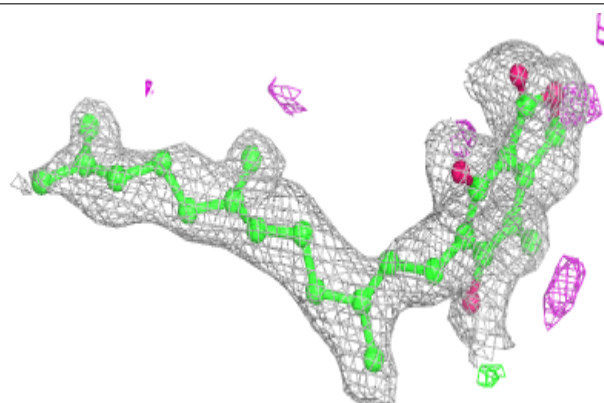


Electron density around A1LWB E 402:

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

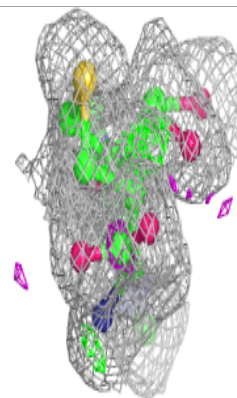
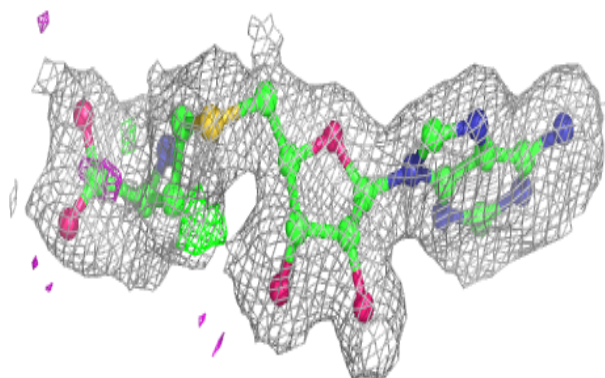
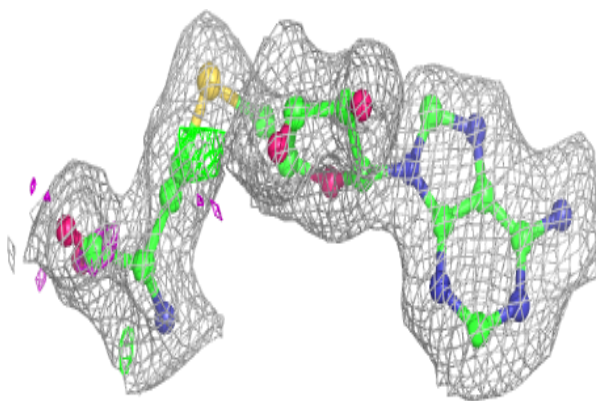
**Electron density around A1LWB F 402:**

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

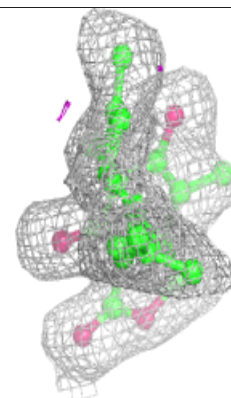
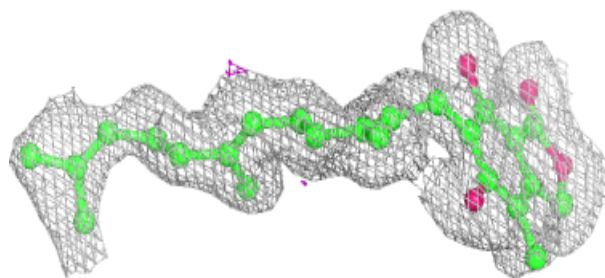
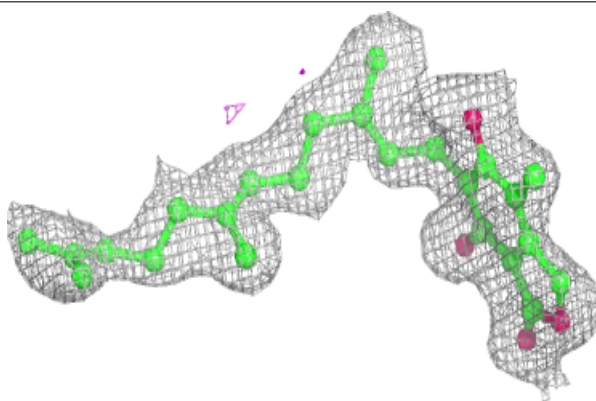


Electron density around SAH D 401:

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

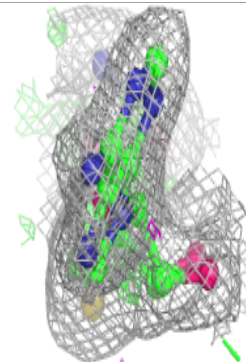
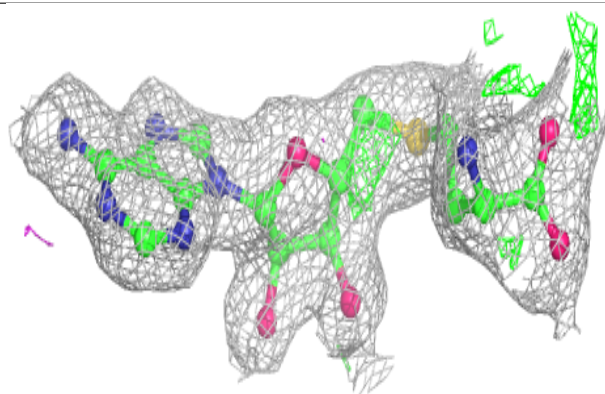
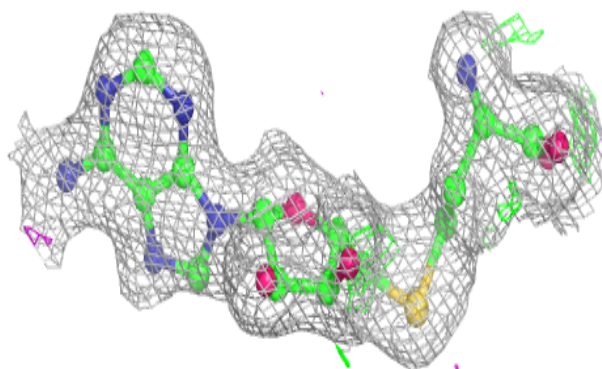
**Electron density around A1LWB C 402:**

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

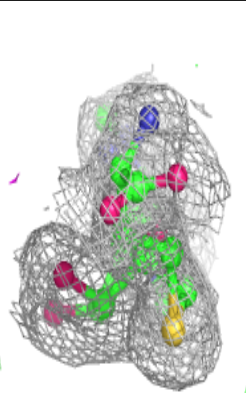
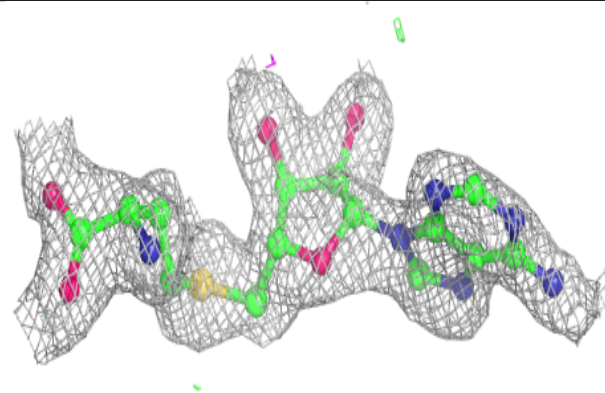
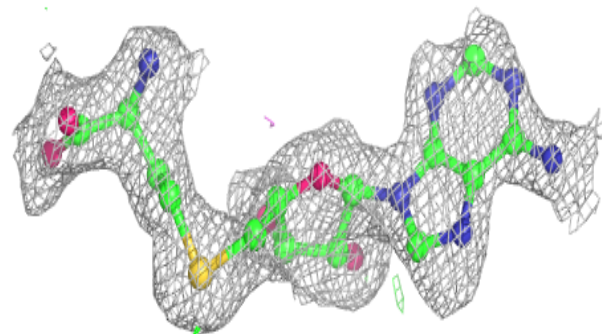


Electron density around SAH E 401:

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

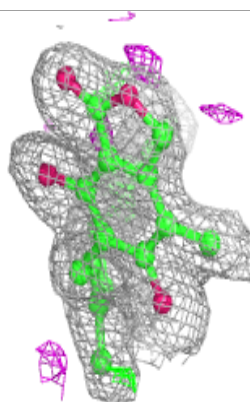
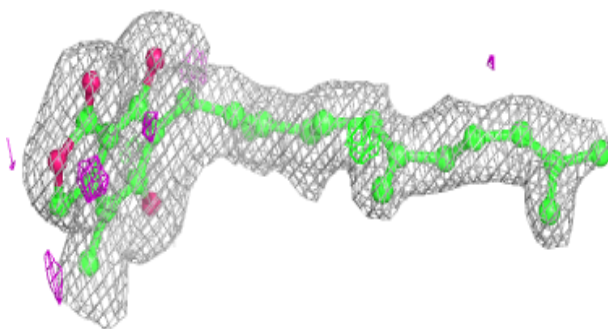
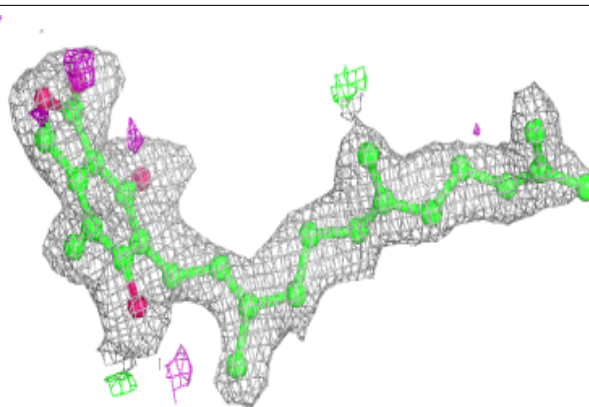
**Electron density around SAH B 401:**

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

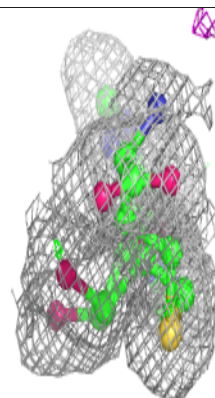
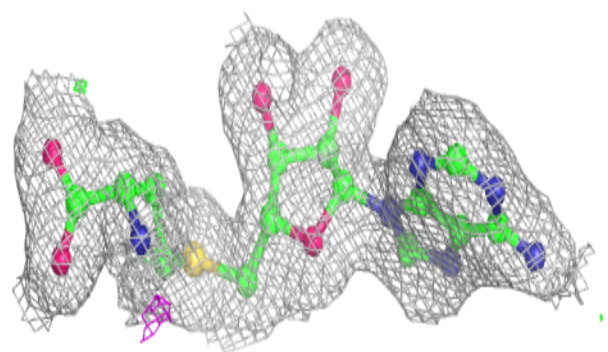
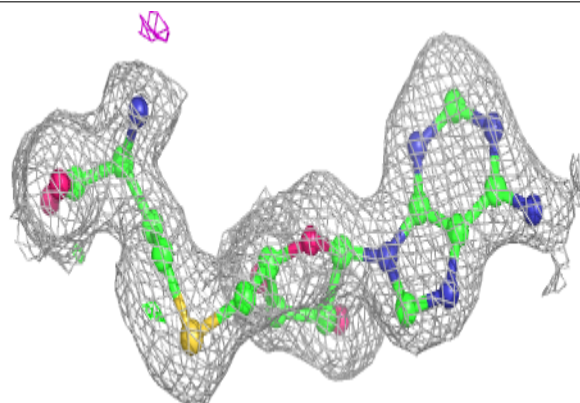


Electron density around A1LWB D 402:

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

**Electron density around SAH C 401:**

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



6.5 Other polymers [i](#)

There are no such residues in this entry.