



Full wwPDB X-ray Structure Validation Report ⓘ

Sep 8, 2026 – 08:20 PM EDT

PDB ID : 12AV / pdb_000012av
Title : Human Ornithine Aminotransferase cocrystallized with its inhibitor,(3S,4S)-3-amino-4-cyanocyclopent-1-ene-1-carboxylic acid
Authors : Corrigan, M.C.; Wang, F.; Silverman, R.B.; Liu, D.
Deposited on : 2026-03-24
Resolution : 1.51 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	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.015 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.50

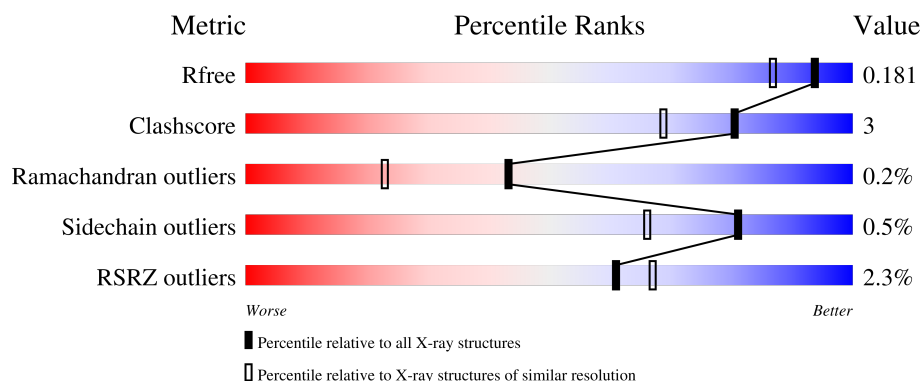
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.51 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}	180053	5890 (1.54-1.50)
Clashscore	190562	6116 (1.54-1.50)
Ramachandran outliers	187476	6002 (1.54-1.50)
Sidechain outliers	187428	5999 (1.54-1.50)
RSRZ outliers	180081	5891 (1.54-1.50)

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	439	
1	B	439	
1	C	439	
1	D	439	
1	E	439	

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Mol	Chain	Length	Quality of chain
1	F	439	2% 87% 5% 8%
1	G	439	3% 86% 6% 8%
1	H	439	3% 85% 6% 8%
1	I	439	2% 86% 5% 8%

2 Entry composition

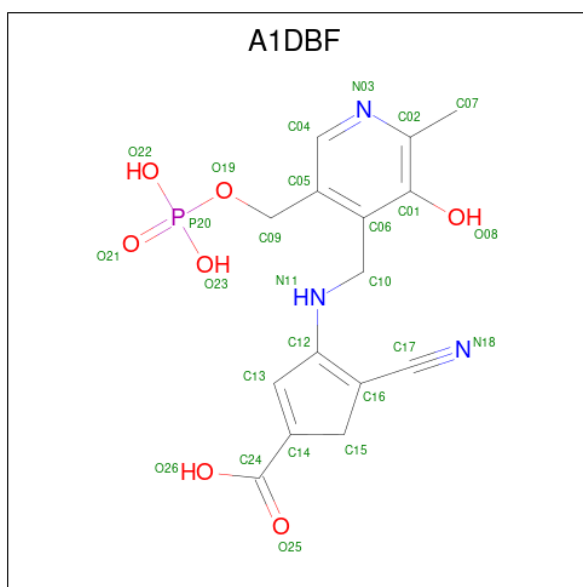
There are 3 unique types of molecules in this entry. The entry contains 33251 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Ornithine aminotransferase, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	B	403	Total	C	N	O	S	0	0	0
			3157	2028	532	585	12			
1	A	403	Total	C	N	O	S	0	0	0
			3157	2028	532	585	12			
1	C	403	Total	C	N	O	S	0	0	0
			3157	2028	532	585	12			
1	D	403	Total	C	N	O	S	0	1	0
			3165	2033	533	586	13			
1	E	403	Total	C	N	O	S	0	1	0
			3162	2032	532	585	13			
1	F	403	Total	C	N	O	S	0	1	0
			3165	2033	533	586	13			
1	G	403	Total	C	N	O	S	0	0	0
			3157	2028	532	585	12			
1	H	403	Total	C	N	O	S	0	0	0
			3157	2028	532	585	12			
1	I	403	Total	C	N	O	S	0	0	0
			3157	2028	532	585	12			

- Molecule 2 is 4-cyano-3-[(3-hydroxy-2-methyl-5-[(phosphonoxy)methyl]pyridin-4-yl)methyl]amino]cyclopenta-1,3-diene-1-carboxylic acid (CCD ID: A1DBF) (formula: C₁₅H₁₆N₃O₇P) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	B	1	Total	C	N	O	P	0	0
			26	15	3	7	1		
2	A	1	Total	C	N	O	P	0	0
			26	15	3	7	1		
2	C	1	Total	C	N	O	P	0	0
			26	15	3	7	1		
2	D	1	Total	C	N	O	P	0	0
			26	15	3	7	1		
2	E	1	Total	C	N	O	P	0	0
			26	15	3	7	1		
2	F	1	Total	C	N	O	P	0	0
			26	15	3	7	1		
2	G	1	Total	C	N	O	P	0	0
			26	15	3	7	1		
2	H	1	Total	C	N	O	P	0	0
			26	15	3	7	1		
2	I	1	Total	C	N	O	P	0	0
			26	15	3	7	1		

- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	B	517	Total	O	0	0
			517	517		
3	A	477	Total	O	0	0
			477	477		
3	C	517	Total	O	0	0
			517	517		

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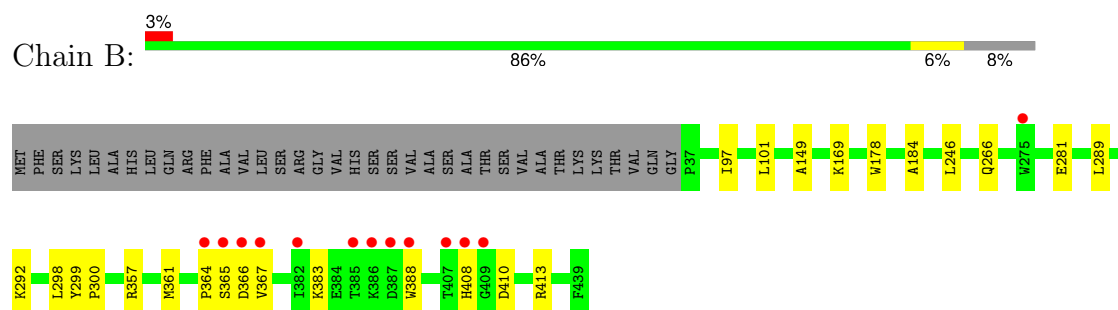
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	D	526	Total 526	O 526	0	0
3	E	513	Total 513	O 513	0	0
3	F	567	Total 567	O 567	0	0
3	G	450	Total 450	O 450	0	0
3	H	506	Total 506	O 506	0	0
3	I	510	Total 510	O 510	0	0

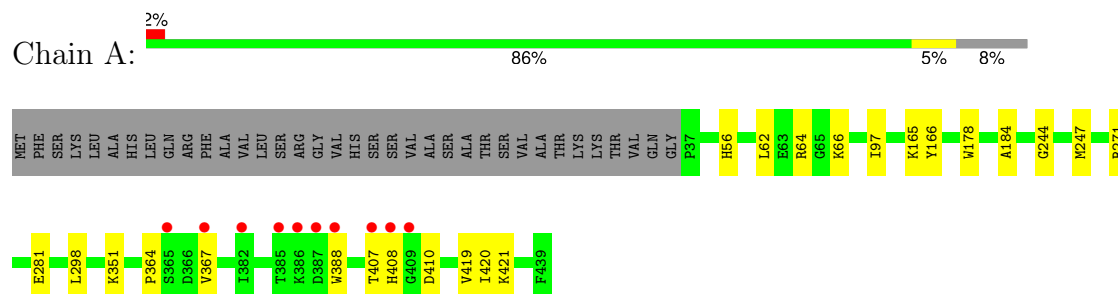
3 Residue-property plots [i](#)

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.

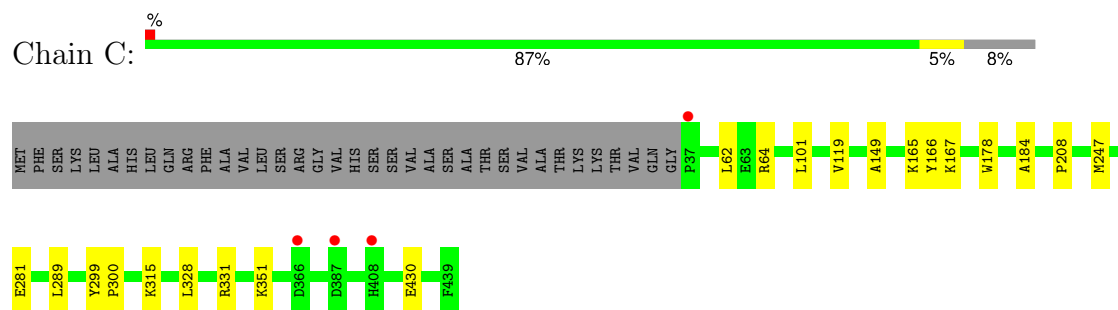
- Molecule 1: Ornithine aminotransferase, mitochondrial



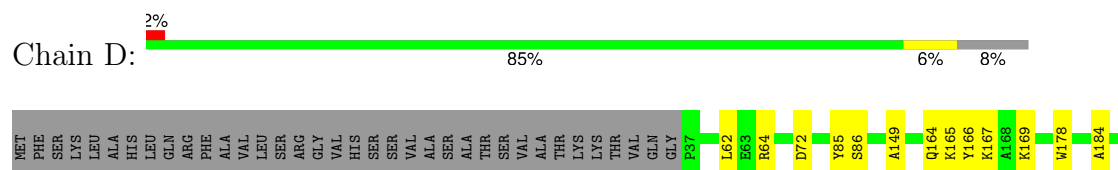
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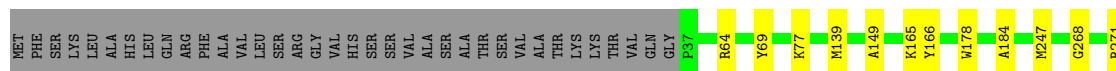
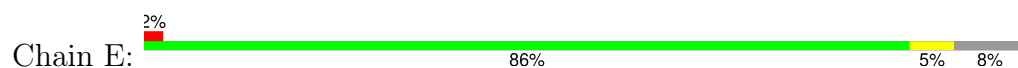


- Molecule 1: Ornithine aminotransferase, mitochondrial

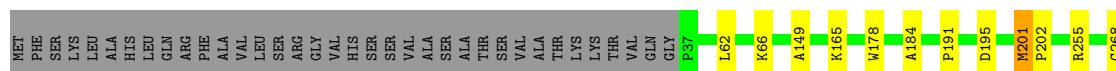
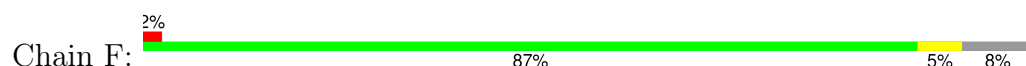




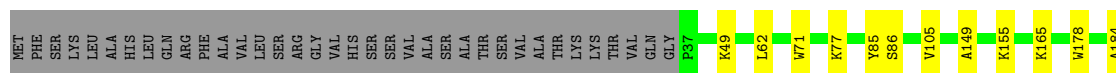
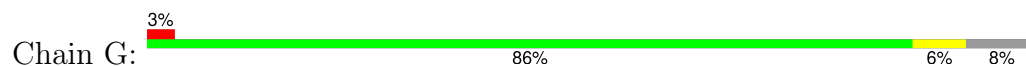
- Molecule 1: Ornithine aminotransferase, mitochondrial



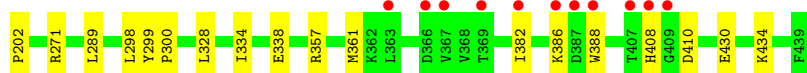
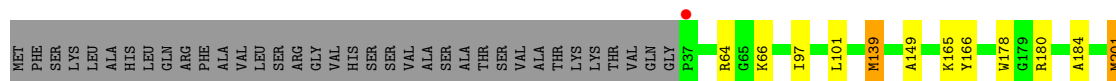
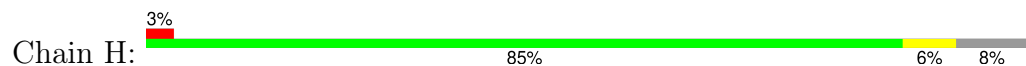
- Molecule 1: Ornithine aminotransferase, mitochondrial



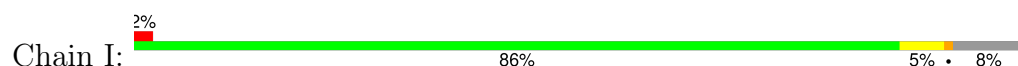
- Molecule 1: Ornithine aminotransferase, mitochondrial

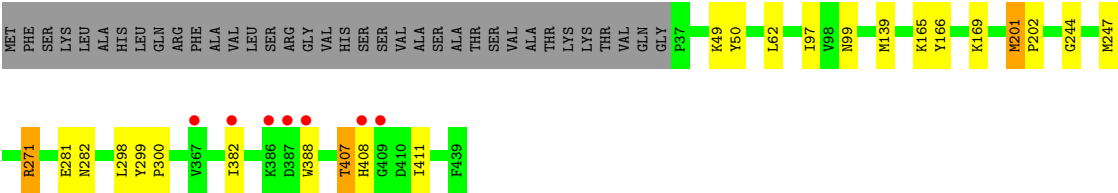


- Molecule 1: Ornithine aminotransferase, mitochondrial



- Molecule 1: Ornithine aminotransferase, mitochondrial





4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	201.25Å 114.95Å 186.84Å 90.00° 92.50° 90.00°	Depositor
Resolution (Å)	37.84 – 1.51 37.84 – 1.51	Depositor EDS
% Data completeness (in resolution range)	99.4 (37.84-1.51) 99.4 (37.84-1.51)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.33 (at 1.51Å)	Xtriage
Refinement program	PHENIX 1.21.2_5419	Depositor
R, R_{free}	0.153 , 0.182 0.152 , 0.181	Depositor DCC
R_{free} test set	33156 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	17.3	Xtriage
Anisotropy	0.125	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.37 , 52.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtriage
Estimated twinning fraction	0.018 for -1/2*h-3/2*k,-1/2*h+1/2*k,-l 0.019 for -1/2*h+3/2*k,1/2*h+1/2*k,-l 0.033 for 1/2*h-3/2*k,-1/2*h-1/2*k,-l 0.028 for 1/2*h+3/2*k,1/2*h-1/2*k,-l 0.023 for -h,-k,l	Xtriage
F_o, F_c correlation	0.97	EDS
Total number of atoms	33251	wwPDB-VP
Average B, all atoms (Å ²)	24.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.43% 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

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: A1DBF

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	0.73	0/3231	0.81	0/4387
1	B	0.79	0/3231	0.82	0/4387
1	C	0.76	0/3231	0.78	0/4387
1	D	0.84	0/3239	0.83	0/4397
1	E	0.81	0/3239	0.83	0/4397
1	F	0.80	1/3239 (0.0%)	0.80	0/4397
1	G	0.75	1/3231 (0.0%)	0.78	0/4387
1	H	0.77	1/3231 (0.0%)	0.82	1/4387 (0.0%)
1	I	0.79	2/3231 (0.1%)	0.80	1/4387 (0.0%)
All	All	0.78	5/29103 (0.0%)	0.81	2/39513 (0.0%)

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	H	201	MET	SD-CE	-10.66	1.52	1.79
1	I	201	MET	SD-CE	-10.08	1.54	1.79
1	G	201	MET	SD-CE	-9.30	1.56	1.79
1	F	201	MET	SD-CE	-9.26	1.56	1.79
1	I	139	MET	CG-SD	5.05	1.93	1.80

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	H	139	MET	CG-SD-CE	-8.12	83.04	100.90
1	I	271	ARG	CA-CB-CG	5.25	124.60	114.10

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3157	0	3163	20	0
1	B	3157	0	3163	17	0
1	C	3157	0	3163	15	0
1	D	3165	0	3171	21	0
1	E	3162	0	3172	16	0
1	F	3165	0	3171	16	0
1	G	3157	0	3163	15	0
1	H	3157	0	3163	20	0
1	I	3157	0	3163	15	0
2	A	26	0	0	0	0
2	B	26	0	0	0	0
2	C	26	0	0	1	0
2	D	26	0	0	1	0
2	E	26	0	0	0	0
2	F	26	0	0	1	0
2	G	26	0	0	1	0
2	H	26	0	0	1	0
2	I	26	0	0	1	0
3	A	477	0	0	8	0
3	B	517	0	0	1	0
3	C	517	0	0	4	0
3	D	526	0	0	6	0
3	E	513	0	0	7	0
3	F	567	0	0	8	0
3	G	450	0	0	2	0
3	H	506	0	0	6	0
3	I	510	0	0	4	0
All	All	33251	0	28492	151	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 (151) 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:E:271:ARG:HB3	3:E:601:HOH:O	1.81	0.79
1:A:271:ARG:HB3	3:A:601:HOH:O	1.83	0.78
1:D:64:ARG:HD2	3:D:627:HOH:O	1.88	0.74
1:D:367:VAL:HG13	1:D:388:TRP:CH2	2.23	0.72
1:I:271:ARG:HB3	3:I:601:HOH:O	1.94	0.67
1:I:282:ASN:HB2	3:I:920:HOH:O	1.97	0.64
1:H:386:LYS:HA	3:H:944:HOH:O	1.96	0.63
1:B:357:ARG:O	1:B:361:MET:HG3	1.99	0.62
1:F:271:ARG:HB3	3:F:601:HOH:O	1.98	0.62
1:E:433:ASN:HB2	3:E:933:HOH:O	2.01	0.61
1:G:247:MET:HG3	1:G:281:GLU:HB3	1.82	0.61
1:B:266:GLN:HE22	1:B:413:ARG:NH1	1.99	0.61
1:A:165:LYS:HE2	3:A:926:HOH:O	1.99	0.61
1:H:271:ARG:HB3	3:H:601:HOH:O	2.01	0.61
1:F:268:GLY:O	3:F:601:HOH:O	2.16	0.60
1:E:268:GLY:O	3:E:601:HOH:O	2.16	0.60
1:I:407:THR:HG23	1:I:408:HIS:ND1	2.16	0.60
1:B:266:GLN:HE22	1:B:413:ARG:HH12	1.48	0.59
1:A:407:THR:HG22	3:A:605:HOH:O	2.03	0.59
1:G:165:LYS:HE2	3:G:922:HOH:O	2.03	0.58
1:H:201:MET:SD	1:H:202:PRO:HD2	2.44	0.58
1:D:384:GLU:HB3	3:D:668:HOH:O	2.04	0.56
1:B:266:GLN:NE2	1:B:413:ARG:HH12	2.03	0.56
1:A:388:TRP:HB3	3:A:607:HOH:O	2.05	0.56
1:D:388:TRP:HB3	3:D:616:HOH:O	2.07	0.55
1:D:367:VAL:HG13	1:D:388:TRP:HH2	1.70	0.54
1:H:101:LEU:HD12	1:H:328:LEU:HD11	1.88	0.54
1:H:382:ILE:HG23	1:H:388:TRP:CZ2	2.42	0.54
1:F:413:ARG:NH2	3:F:604:HOH:O	2.41	0.54
1:I:169:LYS:HE2	3:I:611:HOH:O	2.07	0.53
1:B:410:ASP:HA	3:B:797:HOH:O	2.08	0.53
1:F:405:LYS:HE2	3:F:604:HOH:O	2.09	0.53
1:F:410:ASP:HB3	3:F:605:HOH:O	2.11	0.51
1:I:99:ASN:ND2	3:I:605:HOH:O	2.43	0.51
1:G:71:TRP:CZ2	1:G:77:LYS:HE3	2.46	0.51
1:E:388:TRP:HB3	3:E:624:HOH:O	2.09	0.51
1:B:367:VAL:HG13	1:B:388:TRP:CH2	2.46	0.50
1:A:419:VAL:O	1:A:421:LYS:HE3	2.11	0.50
1:E:149:ALA:HB2	1:E:289:LEU:HD21	1.92	0.50
1:E:178:TRP:CZ2	1:E:184:ALA:HA	2.47	0.50
3:C:931:HOH:O	1:D:383:LYS:HE3	2.10	0.50
1:D:85:TYR:O	1:D:86:SER:HB2	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:357:ARG:O	1:H:361:MET:HG3	2.11	0.50
1:A:97:ILE:HG22	1:A:298:LEU:HD22	1.94	0.50
1:D:388:TRP:H	1:D:388:TRP:HD1	1.58	0.50
1:F:201:MET:SD	1:F:202:PRO:HD2	2.52	0.50
1:I:244:GLY:HA2	1:I:247:MET:HE3	1.94	0.50
1:I:382:ILE:HG23	1:I:388:TRP:CZ2	2.47	0.50
1:C:247:MET:HG3	1:C:281:GLU:HB3	1.95	0.49
1:B:299:TYR:CZ	1:I:300:PRO:HD3	2.47	0.48
1:C:167:LYS:HE2	3:C:608:HOH:O	2.12	0.48
1:B:266:GLN:NE2	1:B:413:ARG:NH1	2.61	0.48
1:H:430:GLU:O	1:H:434:LYS:HG3	2.13	0.48
1:I:97:ILE:HG22	1:I:298:LEU:HD22	1.95	0.48
1:D:86:SER:HB3	3:D:613:HOH:O	2.14	0.48
1:F:149:ALA:HB2	1:F:289:LEU:HD21	1.94	0.48
1:E:410:ASP:HA	3:E:602:HOH:O	2.13	0.48
1:E:69:TYR:CE1	1:E:77:LYS:HE2	2.49	0.48
1:A:364:PRO:HG2	1:A:367:VAL:HB	1.95	0.48
1:C:300:PRO:HD3	1:G:299:TYR:CZ	2.49	0.48
1:E:139:MET:HE1	3:E:936:HOH:O	2.13	0.48
1:G:351:LYS:HE2	3:G:906:HOH:O	2.13	0.47
1:D:169:LYS:HD3	1:D:205:ASP:OD2	2.15	0.47
1:H:410:ASP:HA	3:H:603:HOH:O	2.15	0.47
1:D:300:PRO:HD3	1:F:299:TYR:CZ	2.50	0.47
1:D:388:TRP:H	1:D:388:TRP:CD1	2.32	0.47
1:G:427:GLU:O	1:G:430:GLU:HB3	2.15	0.47
1:H:180:ARG:NH1	3:H:605:HOH:O	2.48	0.47
1:F:271:ARG:CB	3:F:601:HOH:O	2.59	0.47
1:F:165:LYS:HE2	3:F:983:HOH:O	2.15	0.47
1:D:340:LEU:HD23	1:D:345:LEU:HD12	1.97	0.46
1:C:64:ARG:HD2	3:C:738:HOH:O	2.14	0.46
1:A:351:LYS:HB2	1:A:351:LYS:HE2	1.77	0.46
1:H:97:ILE:HG22	1:H:298:LEU:HD22	1.97	0.46
2:D:501:A1DBF:O26	3:D:601:HOH:O	2.20	0.46
1:B:246:LEU:HB2	1:B:281:GLU:HG3	1.99	0.45
1:A:410:ASP:HA	3:A:604:HOH:O	2.16	0.45
1:E:64:ARG:NH1	3:E:608:HOH:O	2.50	0.45
1:E:247:MET:HG3	1:E:281:GLU:HB3	1.97	0.45
1:C:119:VAL:HG11	1:C:331:ARG:HG2	1.99	0.45
1:D:299:TYR:CZ	1:F:300:PRO:HD3	2.51	0.45
2:F:501:A1DBF:N11	2:F:501:A1DBF:O08	2.49	0.45
1:C:101:LEU:HD12	1:C:328:LEU:HD11	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:149:ALA:HB2	1:H:289:LEU:HD21	1.98	0.45
1:E:300:PRO:HD3	1:H:299:TYR:CZ	2.52	0.45
1:I:247:MET:HG3	1:I:281:GLU:HB3	1.98	0.44
1:C:178:TRP:CZ2	1:C:184:ALA:HA	2.52	0.44
1:B:178:TRP:CZ2	1:B:184:ALA:HA	2.52	0.44
1:I:165:LYS:HA	1:I:166:TYR:HA	1.83	0.44
1:B:300:PRO:HD3	1:I:299:TYR:CZ	2.53	0.44
1:A:367:VAL:HG13	1:A:388:TRP:CH2	2.52	0.44
1:B:364:PRO:HG2	1:B:367:VAL:HB	1.99	0.44
1:G:85:TYR:O	1:G:86:SER:HB2	2.17	0.44
1:B:149:ALA:HB2	1:B:289:LEU:HD21	2.00	0.44
1:H:139:MET:HB3	1:H:139:MET:HE3	1.72	0.44
1:A:420:ILE:C	1:A:421:LYS:HE2	2.42	0.44
1:F:201:MET:HE2	1:F:201:MET:HB2	1.73	0.44
1:D:149:ALA:HB2	1:D:289:LEU:HD21	1.99	0.43
1:D:178:TRP:CZ2	1:D:184:ALA:HA	2.53	0.43
1:C:208:PRO:HG3	3:D:1054:HOH:O	2.18	0.43
1:H:64:ARG:HD2	3:H:631:HOH:O	2.18	0.43
2:I:501:A1DBF:O08	2:I:501:A1DBF:N11	2.52	0.43
1:D:165:LYS:HA	1:D:166:TYR:HA	1.85	0.43
1:G:149:ALA:HB2	1:G:289:LEU:HD21	2.00	0.43
1:G:201:MET:SD	1:G:202:PRO:HD2	2.58	0.43
1:A:56:HIS:HE1	3:A:953:HOH:O	2.00	0.43
1:C:430:GLU:HB2	3:C:914:HOH:O	2.18	0.43
1:G:49:LYS:HE2	1:G:49:LYS:HB2	1.77	0.42
1:I:201:MET:SD	1:I:202:PRO:HD2	2.59	0.42
1:C:247:MET:HG3	1:C:281:GLU:OE1	2.19	0.42
1:G:178:TRP:CZ2	1:G:184:ALA:HA	2.54	0.42
1:A:165:LYS:HA	1:A:166:TYR:HA	1.89	0.42
1:E:299:TYR:CZ	1:H:300:PRO:HD3	2.55	0.42
1:F:255:ARG:HD3	1:F:255:ARG:C	2.45	0.42
1:H:178:TRP:HA	2:H:501:A1DBF:C04	2.50	0.42
1:H:334:ILE:O	1:H:338:GLU:HG3	2.20	0.42
1:C:351:LYS:HD2	1:C:351:LYS:HA	1.75	0.42
1:E:358:ASN:HA	1:E:361[A]:MET:HE3	2.02	0.42
1:D:357:ARG:O	1:D:361:MET:HG3	2.19	0.41
1:H:66:LYS:NZ	3:H:612:HOH:O	2.54	0.41
1:A:247:MET:HG3	1:A:281:GLU:HB3	2.00	0.41
1:C:165:LYS:HA	1:C:166:TYR:HA	1.88	0.41
1:G:388:TRP:CD1	1:G:388:TRP:C	2.97	0.41
1:I:407:THR:HG22	1:I:411:ILE:HB	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:382:ILE:HG23	1:E:388:TRP:CH2	2.55	0.41
1:B:97:ILE:HG22	1:B:298:LEU:HD22	2.02	0.41
1:F:178:TRP:CZ2	1:F:184:ALA:HA	2.56	0.41
1:H:178:TRP:CZ2	1:H:184:ALA:HA	2.56	0.41
1:B:101:LEU:C	1:B:101:LEU:HD23	2.46	0.41
1:C:299:TYR:CZ	1:G:300:PRO:HD3	2.56	0.41
1:D:164:GLN:HB2	1:D:167:LYS:HD2	2.03	0.41
1:A:178:TRP:CZ2	1:A:184:ALA:HA	2.56	0.41
1:C:101:LEU:HD23	1:G:105:VAL:HG21	2.02	0.41
1:C:149:ALA:HB2	1:C:289:LEU:HD21	2.03	0.41
1:D:246:LEU:HD13	1:D:278:VAL:HA	2.03	0.41
1:F:388:TRP:HB3	3:F:641:HOH:O	2.20	0.41
1:A:56:HIS:HD2	3:A:983:HOH:O	2.04	0.41
1:D:62:LEU:HA	1:D:72:ASP:HA	2.03	0.41
1:F:191:PRO:O	1:F:195:ASP:HB2	2.20	0.41
2:G:501:A1DBF:O08	2:G:501:A1DBF:N11	2.54	0.41
1:A:64:ARG:HD2	3:A:922:HOH:O	2.20	0.40
1:A:421:LYS:HE2	1:A:421:LYS:CA	2.52	0.40
2:C:501:A1DBF:N11	2:C:501:A1DBF:O08	2.53	0.40
1:E:165:LYS:HA	1:E:166:TYR:HA	1.95	0.40
1:B:366:ASP:OD1	1:B:367:VAL:HG23	2.20	0.40
1:A:66:LYS:HA	1:A:66:LYS:HD3	1.76	0.40
1:H:165:LYS:HA	1:H:166:TYR:HA	1.85	0.40
1:I:49:LYS:HE3	1:I:50:TYR:OH	2.21	0.40
1:A:244:GLY:HA2	1:A:247:MET:HE3	2.03	0.40
1:G:363:LEU:HD23	1:G:363:LEU:HA	1.88	0.40
1:B:366:ASP:O	1:B:383:LYS:HD3	2.21	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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	401/439 (91%)	381 (95%)	19 (5%)	1 (0%)	43	23
1	B	401/439 (91%)	386 (96%)	13 (3%)	2 (0%)	24	8
1	C	401/439 (91%)	382 (95%)	19 (5%)	0	100	100
1	D	402/439 (92%)	382 (95%)	19 (5%)	1 (0%)	43	23
1	E	402/439 (92%)	385 (96%)	16 (4%)	1 (0%)	43	23
1	F	402/439 (92%)	384 (96%)	18 (4%)	0	100	100
1	G	401/439 (91%)	383 (96%)	17 (4%)	1 (0%)	43	23
1	H	401/439 (91%)	383 (96%)	17 (4%)	1 (0%)	43	23
1	I	401/439 (91%)	381 (95%)	20 (5%)	0	100	100
All	All	3612/3951 (91%)	3447 (95%)	158 (4%)	7 (0%)	43	23

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	408	HIS
1	E	408	HIS
1	H	408	HIS
1	B	408	HIS
1	B	292	LYS
1	G	292	LYS
1	D	367	VAL

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 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	337/366 (92%)	336 (100%)	1 (0%)	86	75
1	B	337/366 (92%)	335 (99%)	2 (1%)	78	61
1	C	337/366 (92%)	335 (99%)	2 (1%)	78	61
1	D	338/366 (92%)	336 (99%)	2 (1%)	78	61
1	E	338/366 (92%)	337 (100%)	1 (0%)	86	75
1	F	338/366 (92%)	335 (99%)	3 (1%)	70	49

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	G	337/366 (92%)	334 (99%)	3 (1%)	70	49
1	H	337/366 (92%)	337 (100%)	0	100	100
1	I	337/366 (92%)	335 (99%)	2 (1%)	78	61
All	All	3036/3294 (92%)	3020 (100%)	16 (0%)	81	66

All (16) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	169	LYS
1	B	365	SER
1	A	62	LEU
1	C	62	LEU
1	C	315	LYS
1	D	367	VAL
1	D	387	ASP
1	E	365	SER
1	F	62	LEU
1	F	66	LYS
1	F	382	ILE
1	G	62	LEU
1	G	155	LYS
1	G	321	SER
1	I	62	LEU
1	I	407	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (10) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	266	GLN
1	C	132	ASN
1	D	164	GLN
1	E	282	ASN
1	G	56	HIS
1	G	348	ASN
1	H	164	GLN
1	H	433	ASN
1	I	99	ASN
1	I	257	GLN

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 ⓘ

9 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	A1DBF	H	501	-	26,27,27	2.64	6 (23%)	32,39,39	2.47	5 (15%)
2	A1DBF	E	501	-	26,27,27	2.34	9 (34%)	32,39,39	2.18	6 (18%)
2	A1DBF	D	501	-	26,27,27	2.26	7 (26%)	32,39,39	2.26	8 (25%)
2	A1DBF	C	501	-	26,27,27	2.22	6 (23%)	32,39,39	2.55	6 (18%)
2	A1DBF	I	501	-	26,27,27	2.48	6 (23%)	32,39,39	2.16	8 (25%)
2	A1DBF	B	501	-	26,27,27	2.53	7 (26%)	32,39,39	2.67	11 (34%)
2	A1DBF	G	501	-	26,27,27	2.36	7 (26%)	32,39,39	2.61	9 (28%)
2	A1DBF	F	501	-	26,27,27	2.35	8 (30%)	32,39,39	2.63	8 (25%)
2	A1DBF	A	501	-	26,27,27	2.57	6 (23%)	32,39,39	1.74	5 (15%)

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	A1DBF	H	501	-	-	5/15/29/29	0/2/2/2
2	A1DBF	E	501	-	-	3/15/29/29	0/2/2/2
2	A1DBF	D	501	-	-	3/15/29/29	0/2/2/2
2	A1DBF	C	501	-	-	3/15/29/29	0/2/2/2
2	A1DBF	I	501	-	-	5/15/29/29	0/2/2/2
2	A1DBF	B	501	-	-	5/15/29/29	0/2/2/2
2	A1DBF	G	501	-	-	4/15/29/29	0/2/2/2
2	A1DBF	F	501	-	-	6/15/29/29	0/2/2/2
2	A1DBF	A	501	-	-	4/15/29/29	0/2/2/2

All (62) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	501	A1DBF	C17-C16	8.36	1.52	1.43
2	G	501	A1DBF	C17-C16	8.33	1.52	1.43
2	H	501	A1DBF	C17-C16	8.01	1.51	1.43
2	I	501	A1DBF	C17-C16	7.25	1.51	1.43
2	F	501	A1DBF	C17-C16	7.21	1.51	1.43
2	B	501	A1DBF	C17-C16	7.21	1.51	1.43
2	D	501	A1DBF	C17-C16	6.71	1.50	1.43
2	E	501	A1DBF	C17-C16	6.69	1.50	1.43
2	C	501	A1DBF	C17-C16	6.66	1.50	1.43
2	H	501	A1DBF	C13-C14	6.48	1.54	1.36
2	D	501	A1DBF	C13-C14	6.06	1.53	1.36
2	I	501	A1DBF	C13-C14	6.06	1.53	1.36
2	H	501	A1DBF	C13-C12	5.55	1.54	1.42
2	A	501	A1DBF	C13-C14	5.35	1.51	1.36
2	B	501	A1DBF	C13-C14	4.95	1.50	1.36
2	C	501	A1DBF	C13-C14	4.63	1.49	1.36
2	C	501	A1DBF	C13-C12	4.60	1.52	1.42
2	F	501	A1DBF	C13-C14	4.52	1.49	1.36
2	F	501	A1DBF	C24-C14	4.51	1.59	1.49
2	A	501	A1DBF	C12-N11	4.42	1.42	1.34
2	E	501	A1DBF	C12-N11	4.39	1.41	1.34
2	E	501	A1DBF	C13-C14	4.37	1.48	1.36
2	I	501	A1DBF	C13-C12	4.35	1.51	1.42
2	B	501	A1DBF	C13-C12	4.20	1.51	1.42
2	B	501	A1DBF	C12-N11	4.15	1.41	1.34
2	A	501	A1DBF	C13-C12	3.99	1.50	1.42
2	G	501	A1DBF	C13-C14	3.87	1.47	1.36
2	I	501	A1DBF	C12-N11	3.73	1.40	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	501	A1DBF	C13-C12	3.72	1.50	1.42
2	G	501	A1DBF	C13-C12	3.67	1.50	1.42
2	H	501	A1DBF	C12-N11	3.62	1.40	1.34
2	B	501	A1DBF	C10-C06	3.51	1.57	1.52
2	C	501	A1DBF	C12-N11	3.46	1.40	1.34
2	E	501	A1DBF	C01-C02	-3.45	1.37	1.41
2	E	501	A1DBF	C13-C12	3.28	1.49	1.42
2	G	501	A1DBF	C07-C02	3.24	1.55	1.50
2	F	501	A1DBF	C13-C12	3.20	1.49	1.42
2	D	501	A1DBF	C12-N11	3.16	1.39	1.34
2	G	501	A1DBF	C12-N11	3.14	1.39	1.34
2	F	501	A1DBF	C12-N11	3.03	1.39	1.34
2	B	501	A1DBF	C07-C02	2.91	1.55	1.50
2	A	501	A1DBF	O25-C24	2.89	1.29	1.22
2	A	501	A1DBF	C07-C02	2.81	1.54	1.50
2	C	501	A1DBF	C01-C02	-2.76	1.38	1.41
2	H	501	A1DBF	C10-C06	2.69	1.55	1.52
2	D	501	A1DBF	C07-C02	2.62	1.54	1.50
2	C	501	A1DBF	O26-C24	-2.60	1.23	1.30
2	D	501	A1DBF	O26-C24	-2.60	1.23	1.30
2	H	501	A1DBF	C07-C02	2.57	1.54	1.50
2	E	501	A1DBF	C07-C02	2.57	1.54	1.50
2	E	501	A1DBF	P20-O19	2.48	1.68	1.60
2	I	501	A1DBF	C07-C02	2.45	1.54	1.50
2	E	501	A1DBF	O26-C24	-2.33	1.24	1.30
2	F	501	A1DBF	C07-C02	2.33	1.54	1.50
2	B	501	A1DBF	P20-O22	-2.24	1.46	1.54
2	D	501	A1DBF	C10-C06	2.22	1.55	1.52
2	F	501	A1DBF	C10-C06	2.13	1.55	1.52
2	E	501	A1DBF	O25-C24	2.13	1.27	1.22
2	G	501	A1DBF	C09-C05	2.12	1.56	1.50
2	G	501	A1DBF	C15-C14	2.05	1.54	1.50
2	I	501	A1DBF	C02-N03	-2.01	1.30	1.33
2	F	501	A1DBF	C15-C14	2.00	1.54	1.50

All (66) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	501	A1DBF	C15-C14-C13	10.81	113.65	108.05
2	C	501	A1DBF	C15-C14-C13	10.56	113.52	108.05
2	B	501	A1DBF	C15-C14-C13	9.23	112.83	108.05
2	D	501	A1DBF	C15-C14-C13	8.96	112.69	108.05

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	I	501	A1DBF	C15-C14-C13	7.59	111.98	108.05
2	C	501	A1DBF	C10-N11-C12	-7.54	110.14	123.44
2	E	501	A1DBF	C15-C14-C13	7.28	111.82	108.05
2	F	501	A1DBF	C10-N11-C12	-7.07	110.96	123.44
2	F	501	A1DBF	O25-C24-C14	-6.53	110.19	121.64
2	E	501	A1DBF	C10-N11-C12	-6.46	112.04	123.44
2	A	501	A1DBF	C10-N11-C12	-6.33	112.27	123.44
2	G	501	A1DBF	C10-N11-C12	-6.20	112.50	123.44
2	G	501	A1DBF	O25-C24-C14	-6.19	110.80	121.64
2	G	501	A1DBF	C10-C06-C01	6.04	128.01	119.98
2	F	501	A1DBF	C13-C14-C24	-5.33	110.89	126.31
2	F	501	A1DBF	O26-C24-C14	5.25	126.53	115.43
2	G	501	A1DBF	C01-C06-C05	-5.16	114.05	118.73
2	F	501	A1DBF	C15-C14-C24	4.86	141.00	123.41
2	B	501	A1DBF	C10-N11-C12	-4.82	114.93	123.44
2	G	501	A1DBF	O26-C24-C14	4.38	124.69	115.43
2	D	501	A1DBF	C10-N11-C12	-4.30	115.86	123.44
2	H	501	A1DBF	C10-N11-C12	-4.17	116.09	123.44
2	B	501	A1DBF	C05-C04-N03	-4.07	117.20	123.83
2	D	501	A1DBF	C10-C06-C01	4.00	125.29	119.98
2	B	501	A1DBF	O25-C24-C14	-3.92	114.76	121.64
2	A	501	A1DBF	C10-C06-C01	3.89	125.16	119.98
2	B	501	A1DBF	C04-C05-C06	3.61	120.79	118.06
2	F	501	A1DBF	C10-C06-C01	3.59	124.75	119.98
2	I	501	A1DBF	C10-N11-C12	-3.56	117.16	123.44
2	G	501	A1DBF	C07-C02-C01	3.55	124.95	120.80
2	H	501	A1DBF	C12-C13-C14	-3.48	100.18	107.92
2	B	501	A1DBF	O26-C24-C14	3.35	122.52	115.43
2	I	501	A1DBF	C05-C04-N03	-3.34	118.40	123.83
2	I	501	A1DBF	O25-C24-C14	-3.25	115.94	121.64
2	E	501	A1DBF	C04-C05-C06	3.23	120.51	118.06
2	A	501	A1DBF	C15-C14-C13	3.22	109.72	108.05
2	H	501	A1DBF	C07-C02-C01	-3.22	117.03	120.80
2	I	501	A1DBF	O26-C24-C14	3.13	122.05	115.43
2	H	501	A1DBF	O25-C24-C14	-3.06	116.28	121.64
2	B	501	A1DBF	C13-C14-C24	-2.89	117.94	126.31
2	G	501	A1DBF	C13-C14-C24	-2.75	118.35	126.31
2	C	501	A1DBF	C10-C06-C01	2.73	123.61	119.98
2	F	501	A1DBF	C15-C14-C13	-2.71	106.64	108.05
2	D	501	A1DBF	O22-P20-O19	-2.67	99.72	106.67
2	E	501	A1DBF	C10-C06-C01	2.66	123.51	119.98
2	B	501	A1DBF	C06-C01-C02	-2.60	115.98	119.91

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	I	501	A1DBF	C15-C14-C24	-2.56	114.15	123.41
2	I	501	A1DBF	C12-C13-C14	-2.55	102.26	107.92
2	G	501	A1DBF	C04-C05-C06	2.54	119.98	118.06
2	E	501	A1DBF	C05-C04-N03	-2.53	119.72	123.83
2	C	501	A1DBF	O22-P20-O19	-2.47	100.24	106.67
2	I	501	A1DBF	C04-N03-C02	2.46	123.66	119.20
2	B	501	A1DBF	C10-C06-C01	2.43	123.21	119.98
2	G	501	A1DBF	C07-C02-N03	-2.42	113.08	117.64
2	D	501	A1DBF	C04-C05-C06	2.41	119.89	118.06
2	A	501	A1DBF	C01-C06-C05	-2.34	116.61	118.73
2	A	501	A1DBF	C13-C14-C24	-2.32	119.58	126.31
2	C	501	A1DBF	C12-C13-C14	-2.31	102.79	107.92
2	B	501	A1DBF	C04-N03-C02	2.29	123.36	119.20
2	D	501	A1DBF	C12-C13-C14	-2.18	103.09	107.92
2	D	501	A1DBF	C01-C06-C05	-2.12	116.81	118.73
2	B	501	A1DBF	C09-C05-C04	-2.09	115.96	119.36
2	D	501	A1DBF	C13-C14-C24	-2.08	120.31	126.31
2	E	501	A1DBF	C01-C06-C05	-2.05	116.87	118.73
2	C	501	A1DBF	C13-C14-C24	-2.01	120.51	126.31
2	F	501	A1DBF	O22-P20-O19	-2.00	101.45	106.67

There are no chirality outliers.

All (38) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	501	A1DBF	C15-C14-C24-O25
2	B	501	A1DBF	C15-C14-C24-O26
2	A	501	A1DBF	C05-C06-C10-N11
2	C	501	A1DBF	C05-C06-C10-N11
2	D	501	A1DBF	C05-C06-C10-N11
2	F	501	A1DBF	C01-C06-C10-N11
2	F	501	A1DBF	C05-C06-C10-N11
2	F	501	A1DBF	C13-C14-C24-O25
2	F	501	A1DBF	C13-C14-C24-O26
2	F	501	A1DBF	C15-C14-C24-O25
2	F	501	A1DBF	C15-C14-C24-O26
2	G	501	A1DBF	C15-C14-C24-O25
2	G	501	A1DBF	C15-C14-C24-O26
2	H	501	A1DBF	C13-C14-C24-O25
2	H	501	A1DBF	C13-C14-C24-O26
2	I	501	A1DBF	C05-C06-C10-N11
2	I	501	A1DBF	C13-C14-C24-O25

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Mol	Chain	Res	Type	Atoms
2	I	501	A1DBF	C13-C14-C24-O26
2	I	501	A1DBF	C09-O19-P20-O21
2	B	501	A1DBF	C05-C06-C10-N11
2	E	501	A1DBF	C05-C06-C10-N11
2	G	501	A1DBF	C05-C06-C10-N11
2	H	501	A1DBF	C05-C06-C10-N11
2	B	501	A1DBF	C01-C06-C10-N11
2	A	501	A1DBF	C01-C06-C10-N11
2	C	501	A1DBF	C01-C06-C10-N11
2	D	501	A1DBF	C01-C06-C10-N11
2	E	501	A1DBF	C01-C06-C10-N11
2	G	501	A1DBF	C01-C06-C10-N11
2	I	501	A1DBF	C01-C06-C10-N11
2	B	501	A1DBF	C09-O19-P20-O21
2	H	501	A1DBF	C01-C06-C10-N11
2	A	501	A1DBF	C15-C14-C24-O25
2	C	501	A1DBF	C15-C14-C24-O25
2	E	501	A1DBF	C15-C14-C24-O25
2	D	501	A1DBF	C09-O19-P20-O21
2	H	501	A1DBF	C09-O19-P20-O21
2	A	501	A1DBF	C15-C14-C24-O26

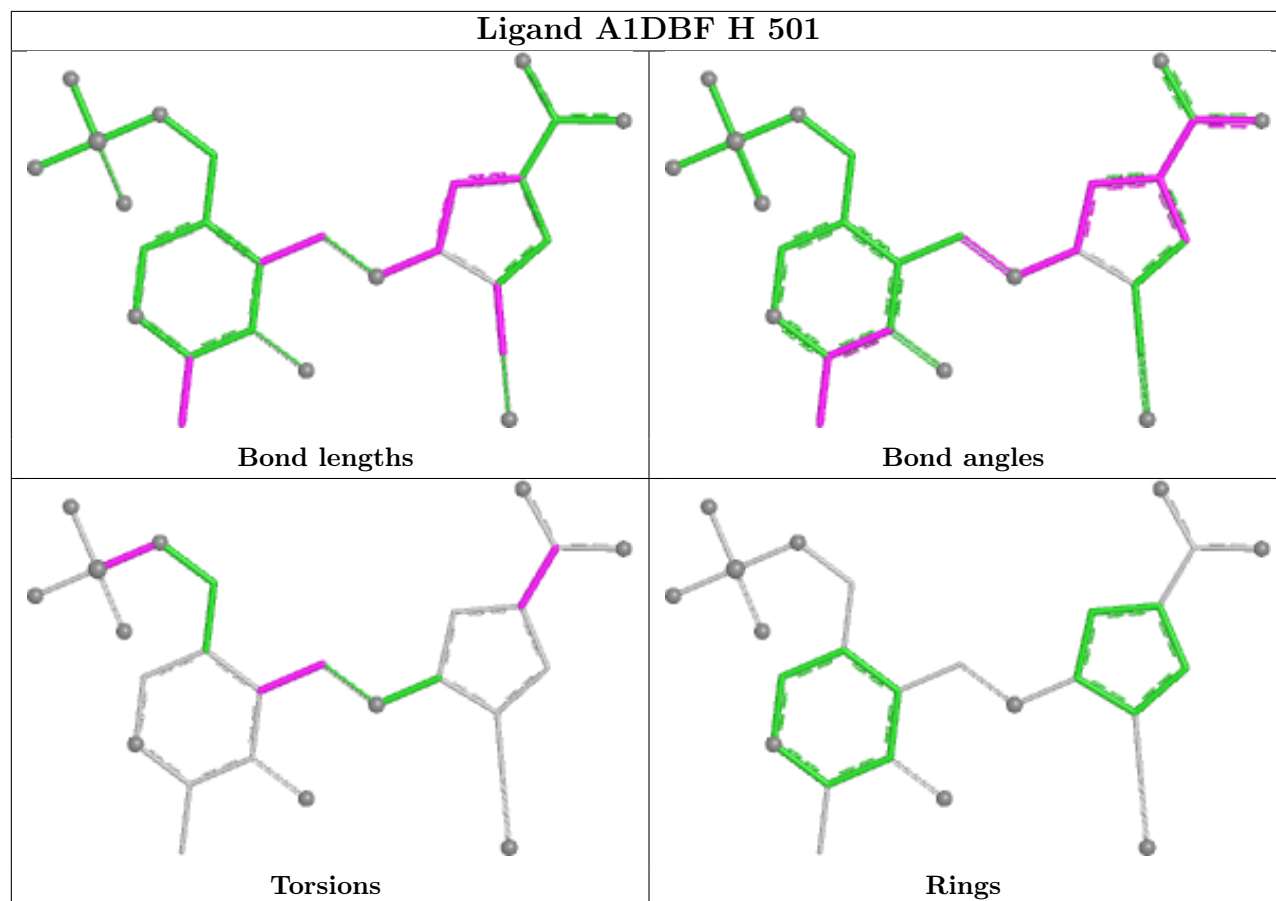
There are no ring outliers.

6 monomers are involved in 6 short contacts:

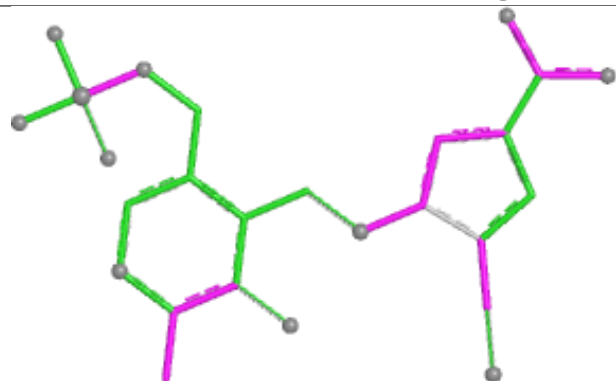
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	H	501	A1DBF	1	0
2	D	501	A1DBF	1	0
2	C	501	A1DBF	1	0
2	I	501	A1DBF	1	0
2	G	501	A1DBF	1	0
2	F	501	A1DBF	1	0

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

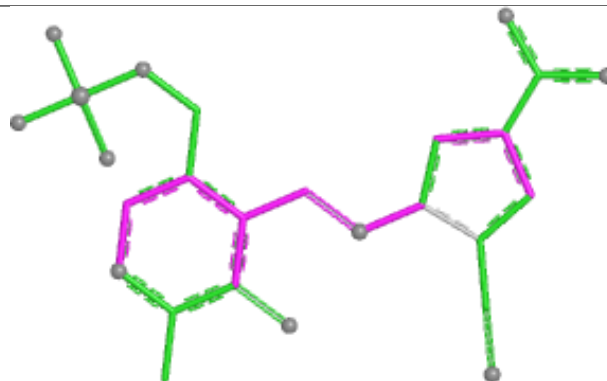
any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



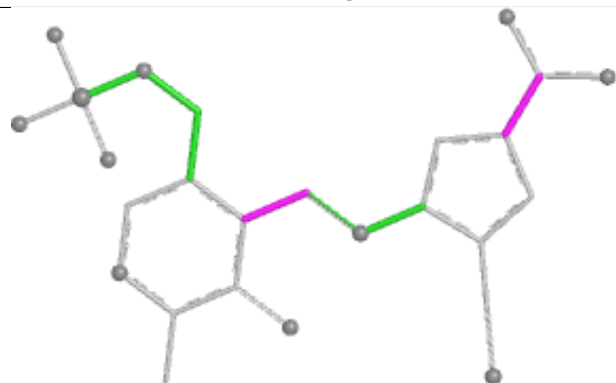
Ligand A1DBF E 501



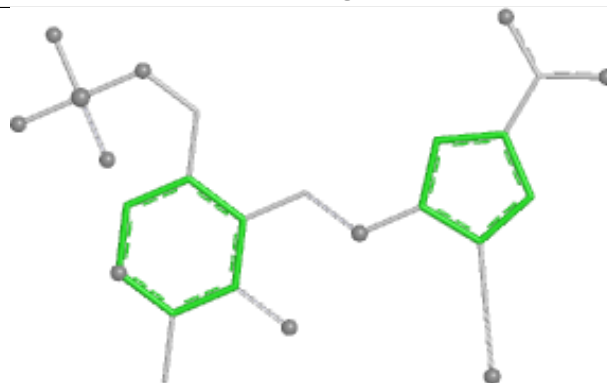
Bond lengths



Bond angles

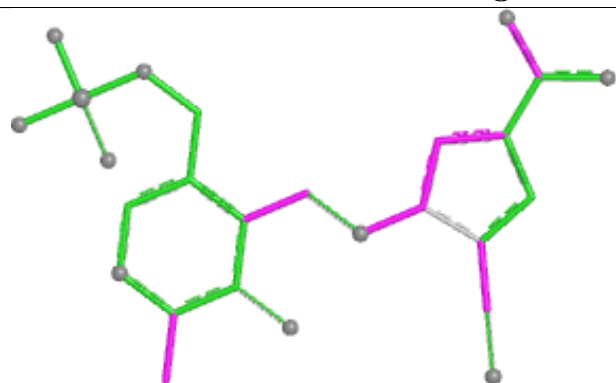


Torsions

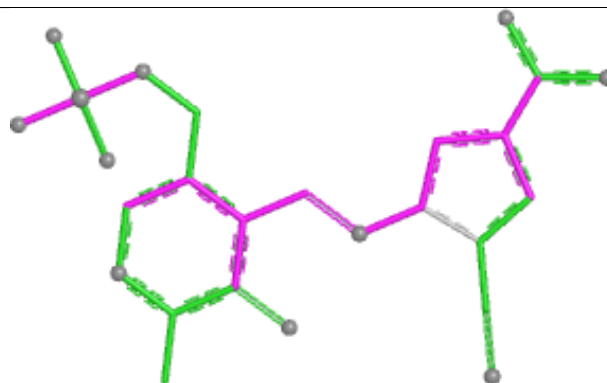


Rings

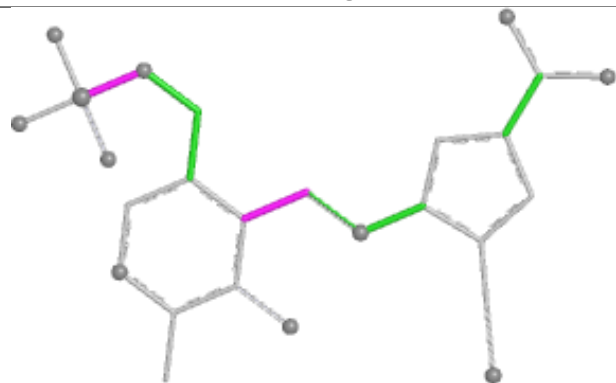
Ligand A1DBF D 501



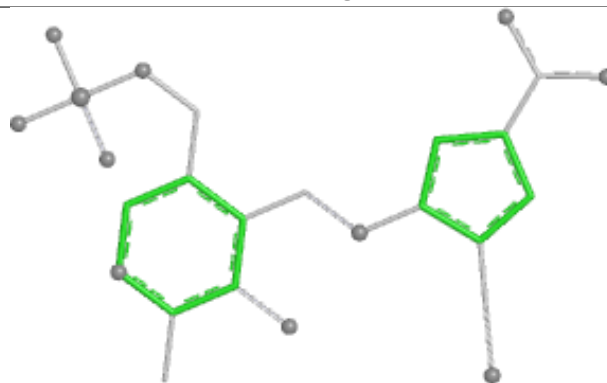
Bond lengths



Bond angles

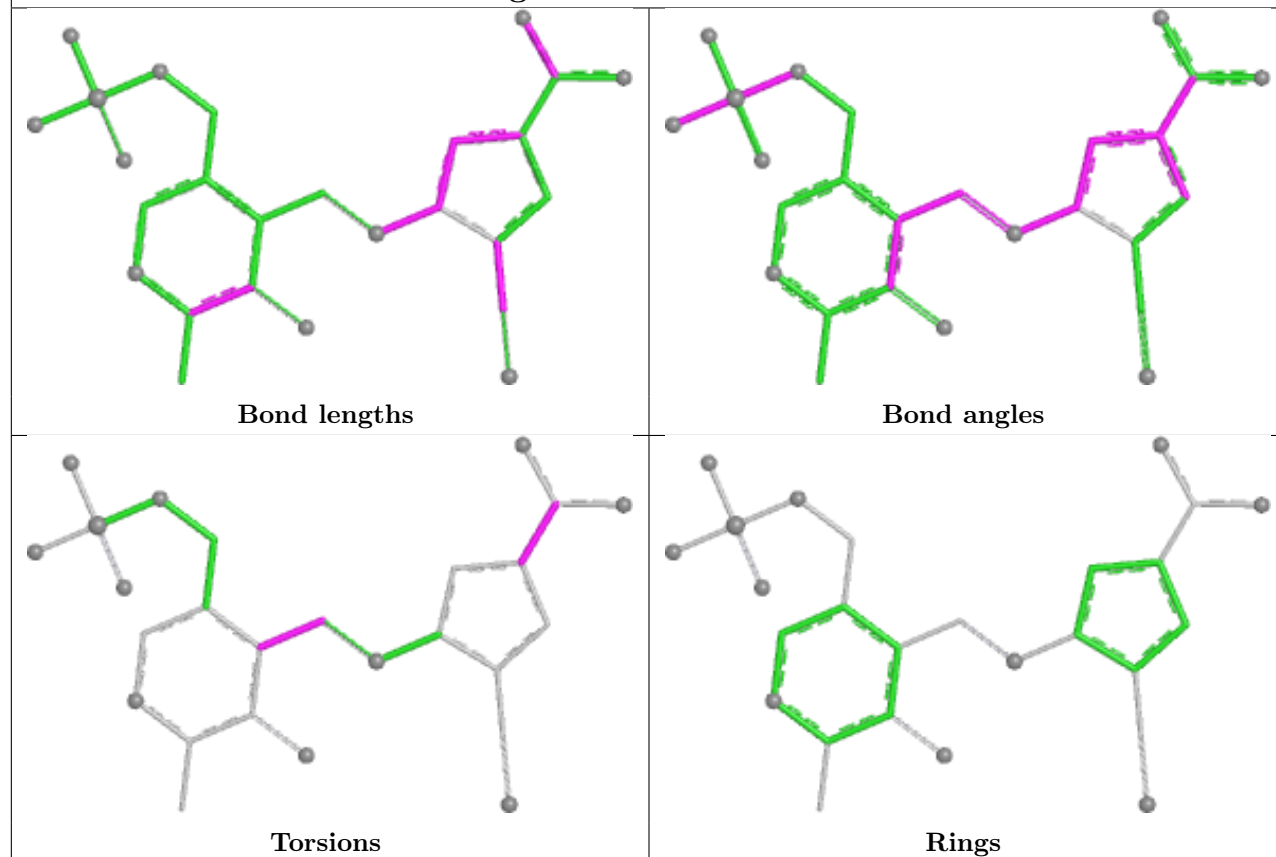


Torsions

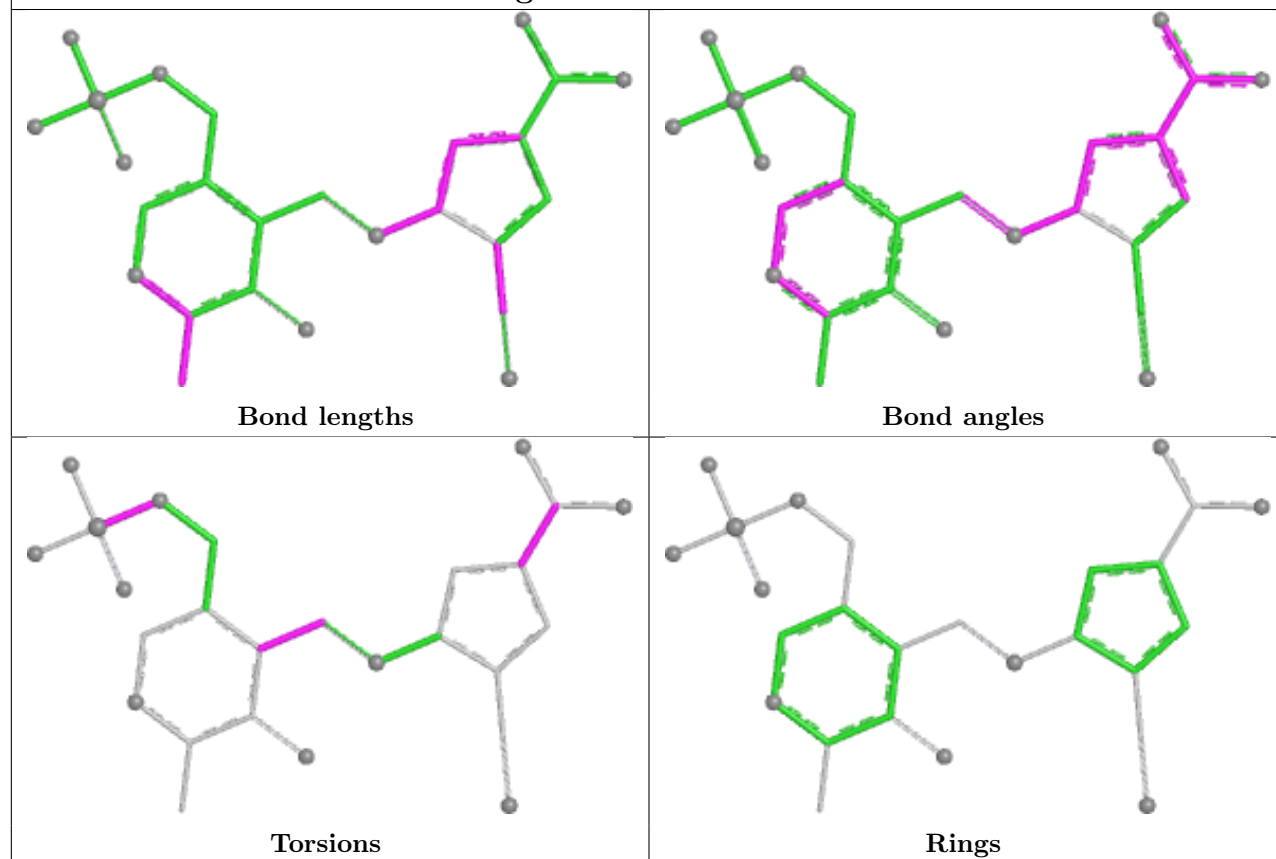


Rings

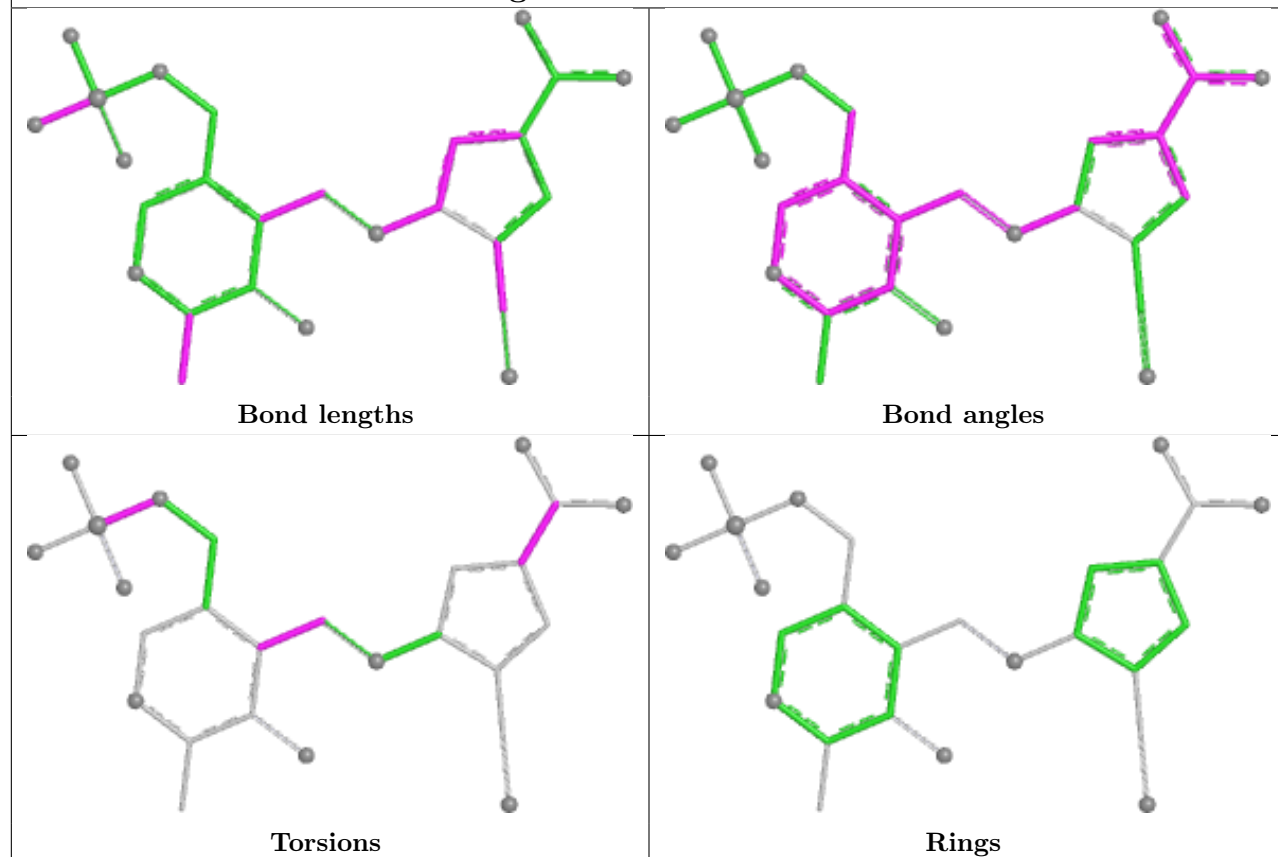
Ligand A1DBF C 501



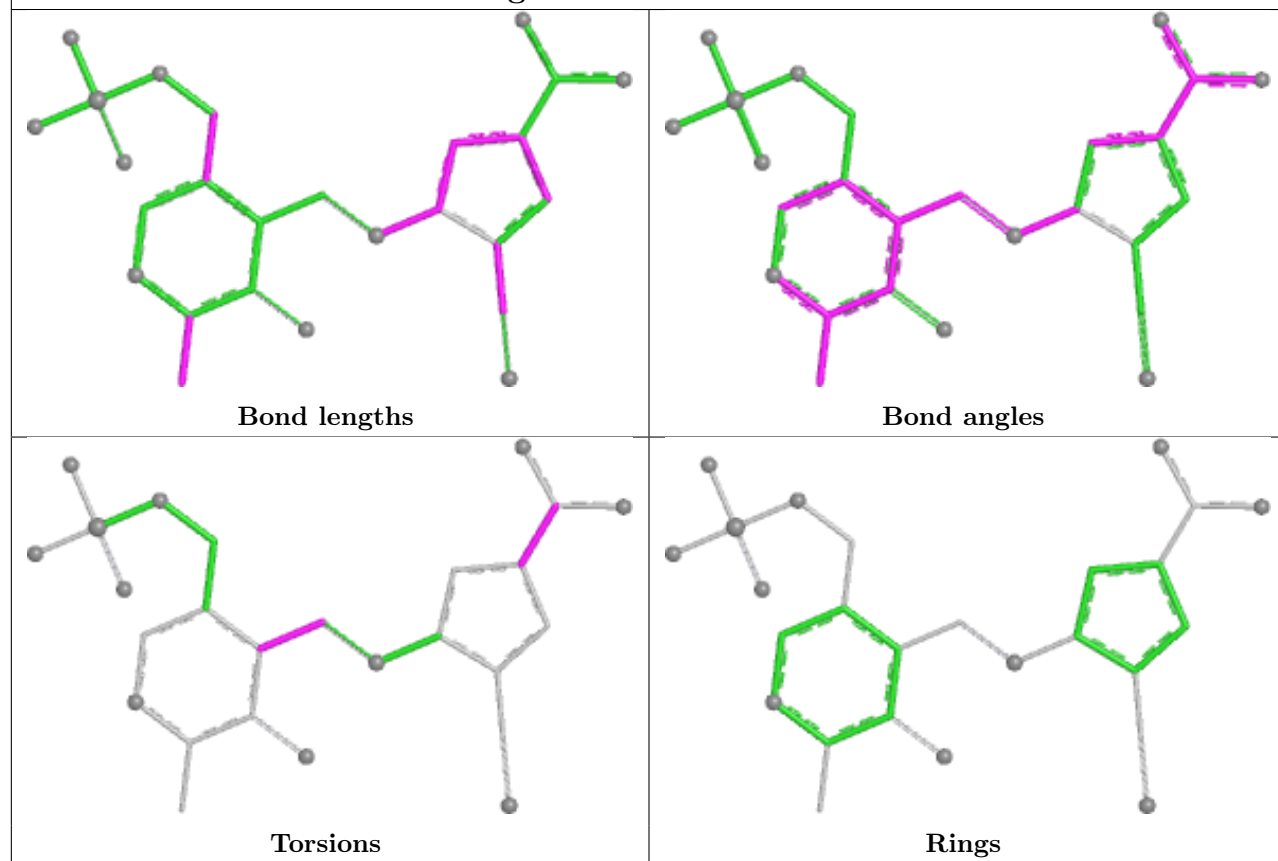
Ligand A1DBF I 501



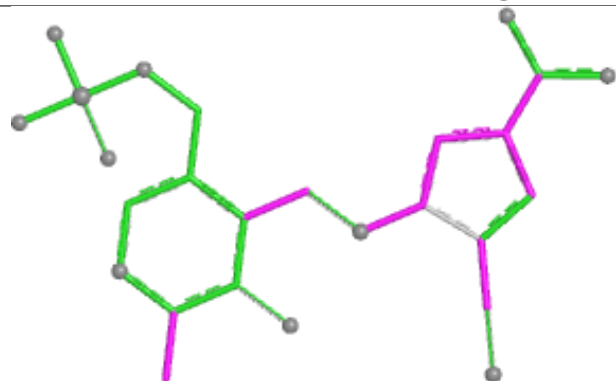
Ligand A1DBF B 501



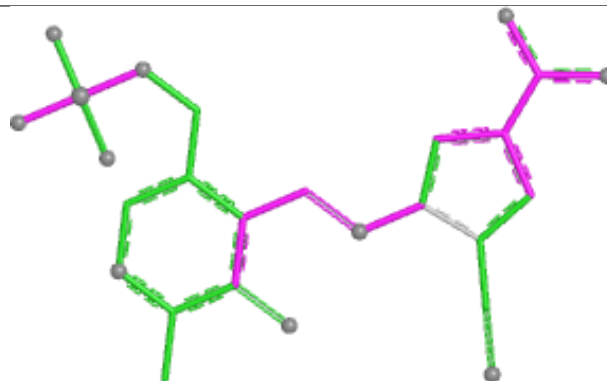
Ligand A1DBF G 501



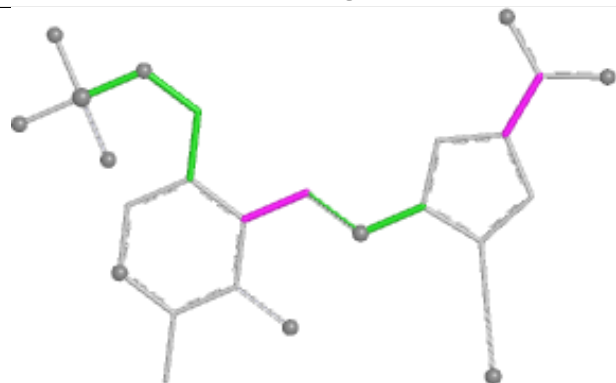
Ligand A1DBF F 501



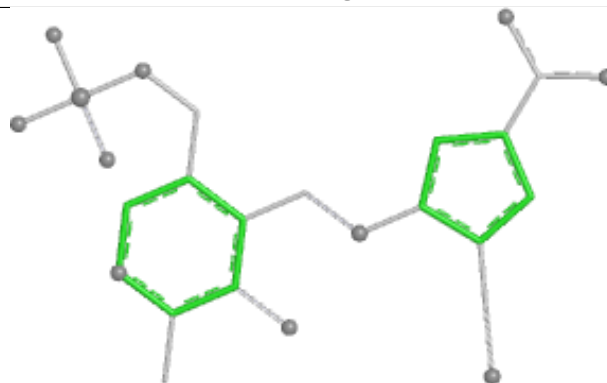
Bond lengths



Bond angles

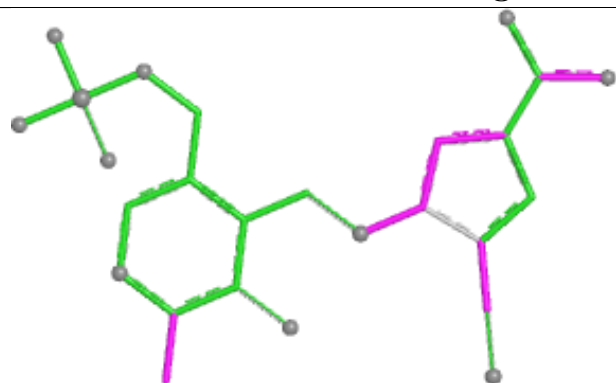


Torsions

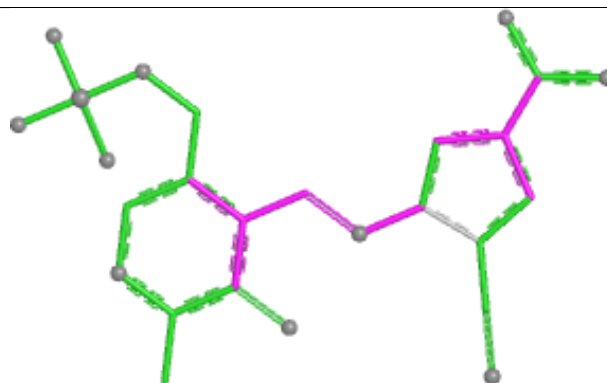


Rings

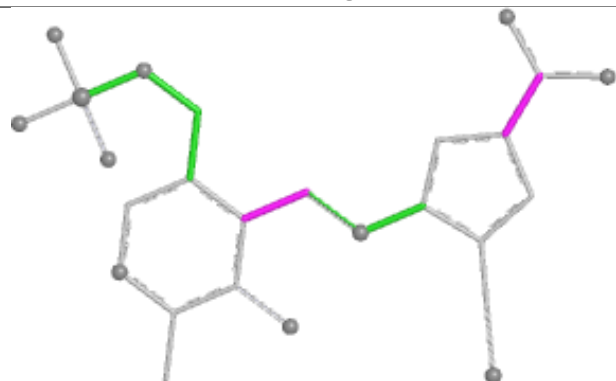
Ligand A1DBF A 501



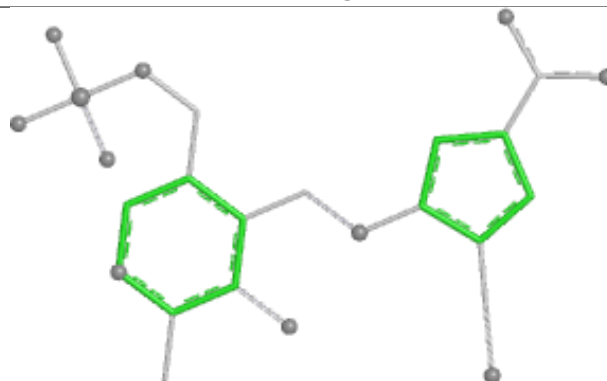
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers

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	403/439 (91%)	-0.19	10 (2%) 58 64	13, 22, 44, 87	0
1	B	403/439 (91%)	-0.31	13 (3%) 50 56	13, 19, 37, 96	0
1	C	403/439 (91%)	-0.44	4 (0%) 79 83	12, 20, 34, 65	0
1	D	403/439 (91%)	-0.44	10 (2%) 58 64	7, 17, 32, 92	1 (0%)
1	E	403/439 (91%)	-0.40	8 (1%) 65 71	12, 18, 36, 96	1 (0%)
1	F	403/439 (91%)	-0.38	7 (1%) 69 74	7, 18, 38, 96	1 (0%)
1	G	403/439 (91%)	-0.22	13 (3%) 50 56	13, 22, 44, 104	0
1	H	403/439 (91%)	-0.30	12 (2%) 52 59	12, 20, 42, 98	0
1	I	403/439 (91%)	-0.35	7 (1%) 69 74	14, 20, 37, 73	0
All	All	3627/3951 (91%)	-0.34	84 (2%) 61 67	7, 19, 40, 104	3 (0%)

All (84) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	388	TRP	7.7
1	E	388	TRP	7.3
1	D	388	TRP	6.0
1	H	409	GLY	5.0
1	B	409	GLY	4.8
1	B	386	LYS	4.8
1	A	388	TRP	4.7
1	I	388	TRP	4.6
1	G	388	TRP	4.4
1	I	382	ILE	4.4
1	F	388	TRP	4.3
1	E	409	GLY	4.3
1	H	388	TRP	4.2
1	F	382	ILE	4.0
1	F	408	HIS	4.0

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Mol	Chain	Res	Type	RSRZ
1	B	385	THR	4.0
1	E	387	ASP	3.9
1	D	409	GLY	3.9
1	A	387	ASP	3.9
1	A	382	ILE	3.9
1	B	387	ASP	3.8
1	D	386	LYS	3.8
1	G	386	LYS	3.7
1	I	408	HIS	3.7
1	E	386	LYS	3.6
1	B	365	SER	3.5
1	F	386	LYS	3.5
1	B	382	ILE	3.5
1	D	367	VAL	3.5
1	B	366	ASP	3.5
1	D	385	THR	3.5
1	A	367	VAL	3.5
1	G	387	ASP	3.4
1	F	407	THR	3.3
1	E	382	ILE	3.3
1	H	382	ILE	3.3
1	F	409	GLY	3.2
1	D	382	ILE	3.2
1	A	409	GLY	3.2
1	D	387	ASP	3.1
1	C	408	HIS	3.1
1	H	408	HIS	3.1
1	B	275	TRP	3.0
1	E	385	THR	3.0
1	G	409	GLY	3.0
1	H	37	PRO	2.9
1	H	387	ASP	2.9
1	A	386	LYS	2.9
1	G	382	ILE	2.8
1	C	366	ASP	2.8
1	E	367	VAL	2.8
1	H	386	LYS	2.8
1	A	365	SER	2.7
1	B	407	THR	2.7
1	H	369	THR	2.7
1	I	409	GLY	2.6
1	A	385	THR	2.6

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Mol	Chain	Res	Type	RSRZ
1	A	407	THR	2.6
1	B	367	VAL	2.6
1	H	407	THR	2.5
1	B	408	HIS	2.5
1	A	408	HIS	2.5
1	G	408	HIS	2.5
1	F	387	ASP	2.5
1	C	387	ASP	2.4
1	I	367	VAL	2.3
1	D	407	THR	2.3
1	G	369	THR	2.3
1	G	407	THR	2.3
1	H	366	ASP	2.3
1	I	387	ASP	2.3
1	G	367	VAL	2.2
1	E	384	GLU	2.2
1	B	364	PRO	2.2
1	I	386	LYS	2.2
1	G	366	ASP	2.2
1	G	385	THR	2.1
1	D	366	ASP	2.1
1	G	437	LEU	2.1
1	H	363	LEU	2.1
1	D	383	LYS	2.0
1	G	439	PHE	2.0
1	H	367	VAL	2.0
1	C	37	PRO	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 oligosaccharides in this entry.

6.4 Ligands [i](#)

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,

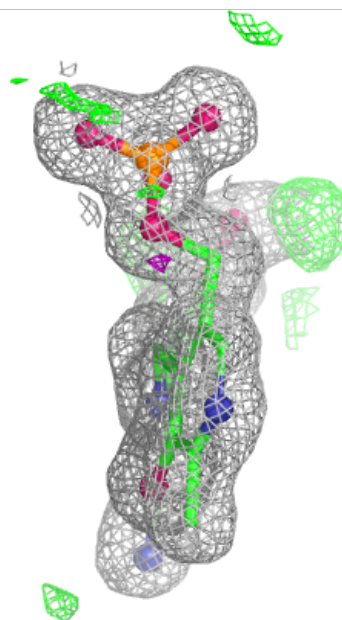
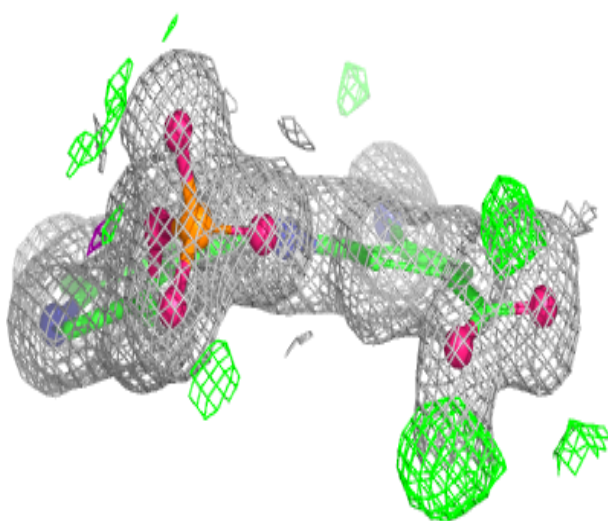
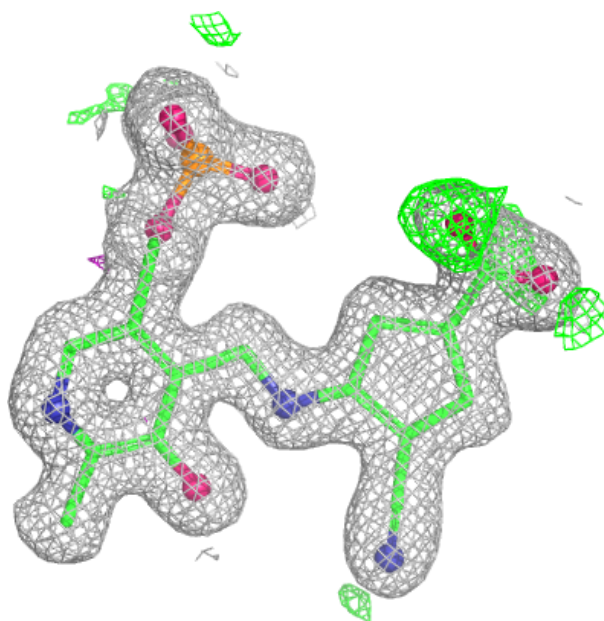
median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
2	A1DBF	B	501	26/26	0.98	0.05	13,16,30,31	0
2	A1DBF	A	501	26/26	0.98	0.05	14,16,29,35	0
2	A1DBF	D	501	26/26	0.98	0.05	12,13,28,38	0
2	A1DBF	E	501	26/26	0.98	0.05	12,14,25,29	0
2	A1DBF	F	501	26/26	0.98	0.06	11,14,25,33	0
2	A1DBF	G	501	26/26	0.98	0.05	12,16,30,35	0
2	A1DBF	H	501	26/26	0.98	0.06	12,15,27,40	0
2	A1DBF	I	501	26/26	0.98	0.05	13,16,29,36	0
2	A1DBF	C	501	26/26	0.99	0.04	13,15,26,31	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.

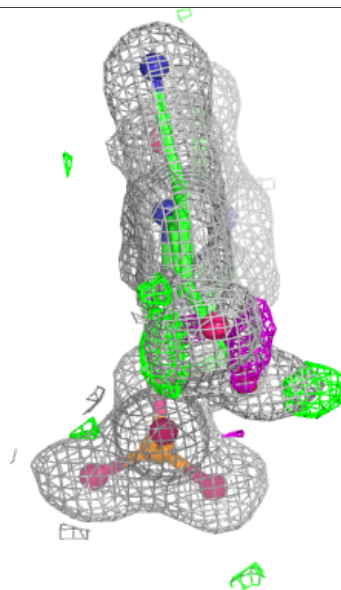
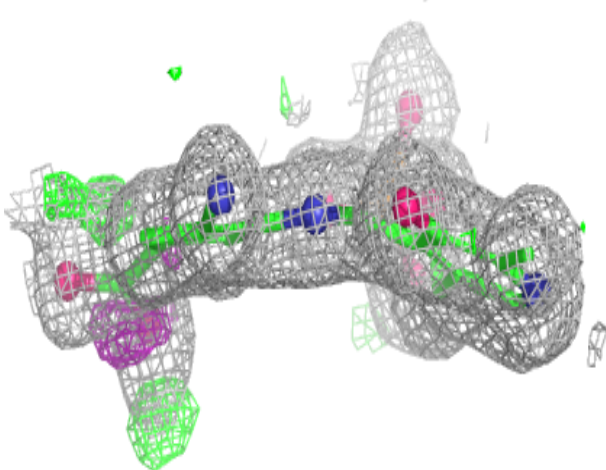
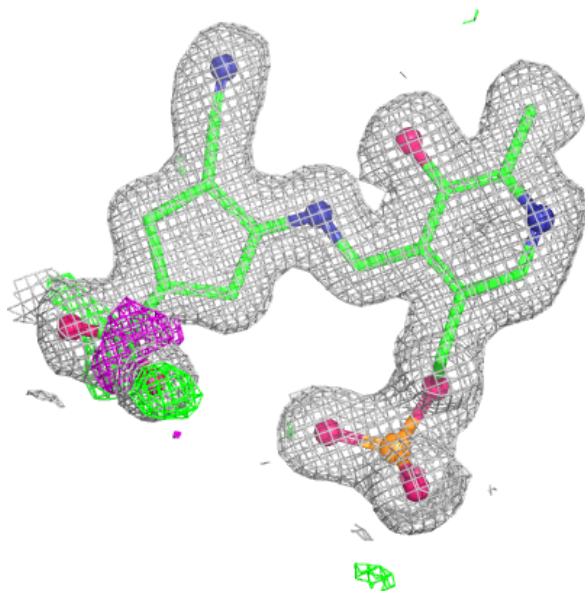
Electron density around A1DBF B 501:

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



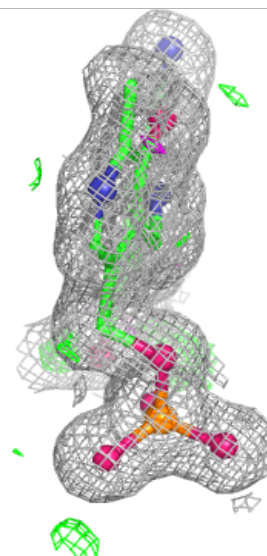
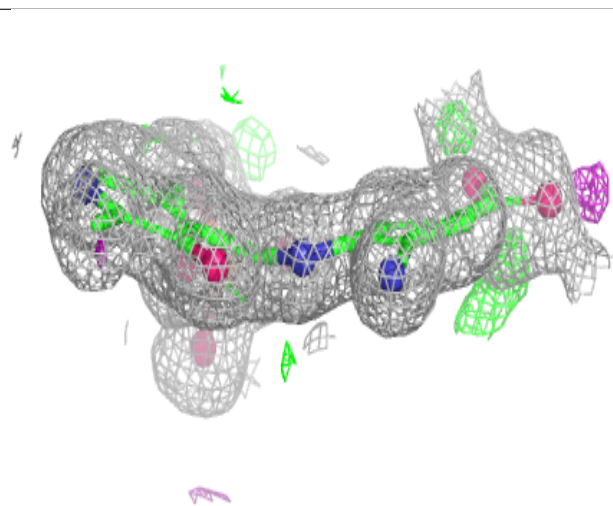
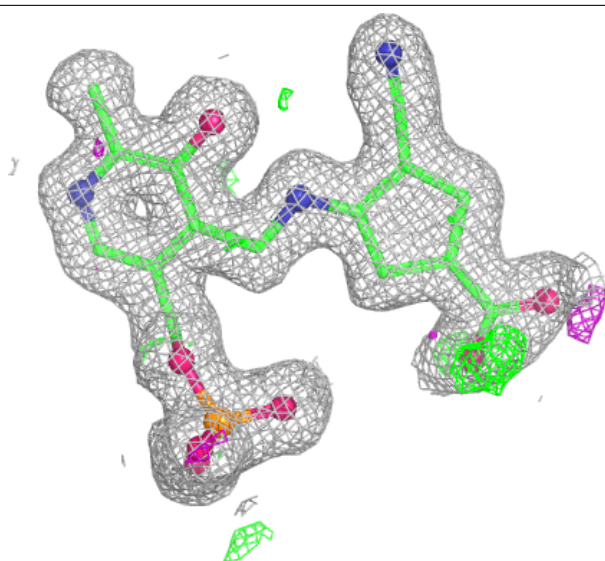
Electron density around A1DBF A 501:

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



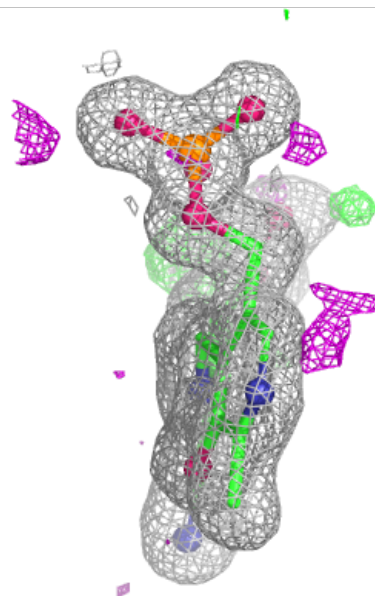
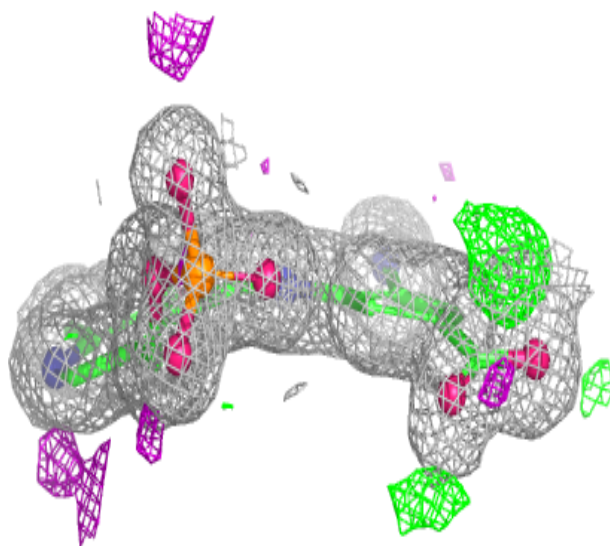
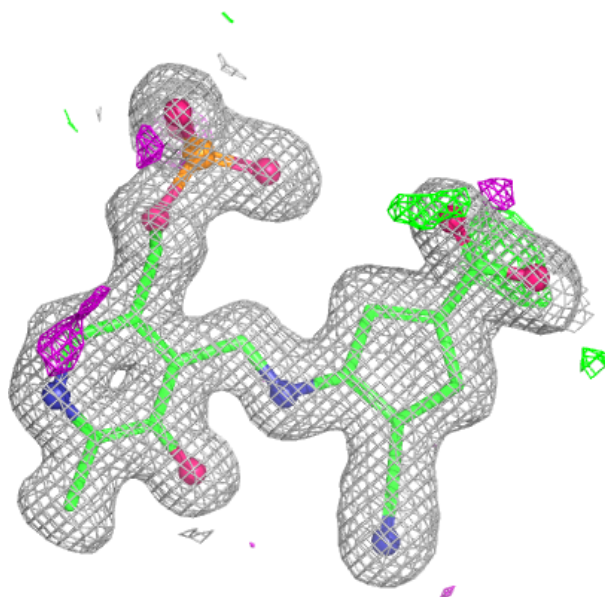
Electron density around A1DBF D 501:

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



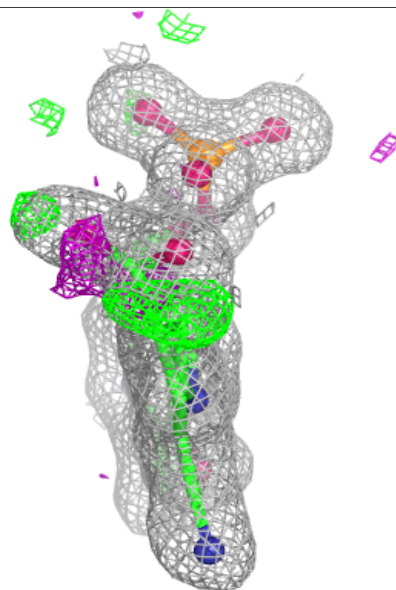
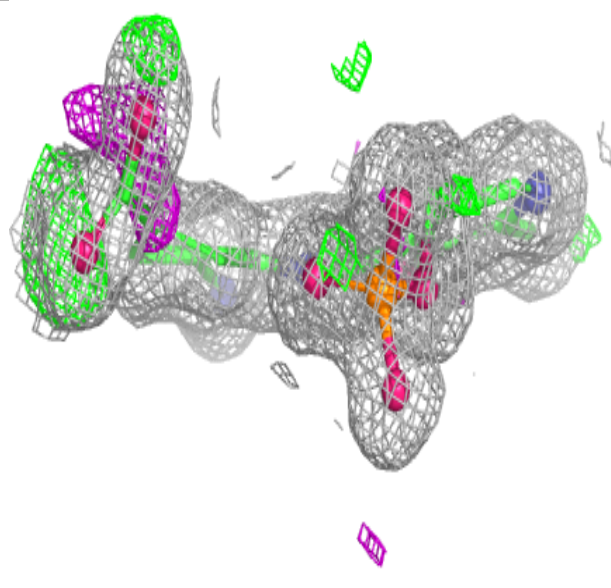
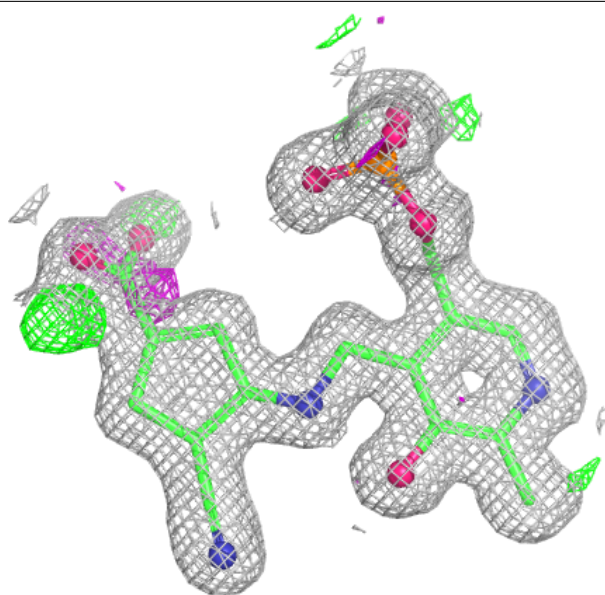
Electron density around A1DBF E 501:

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



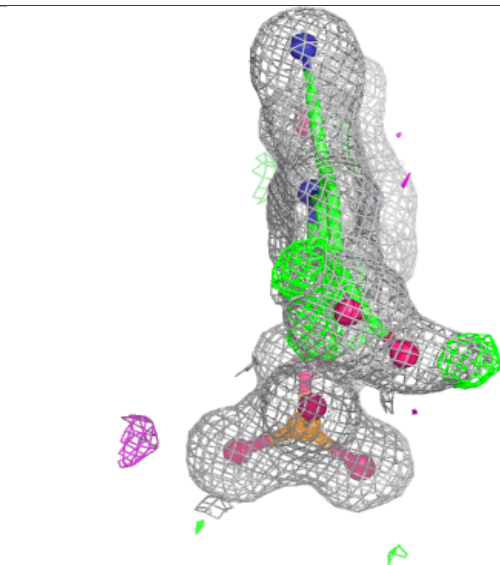
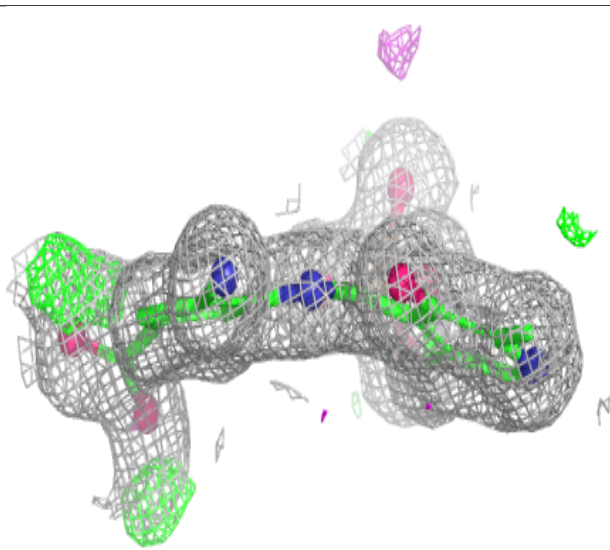
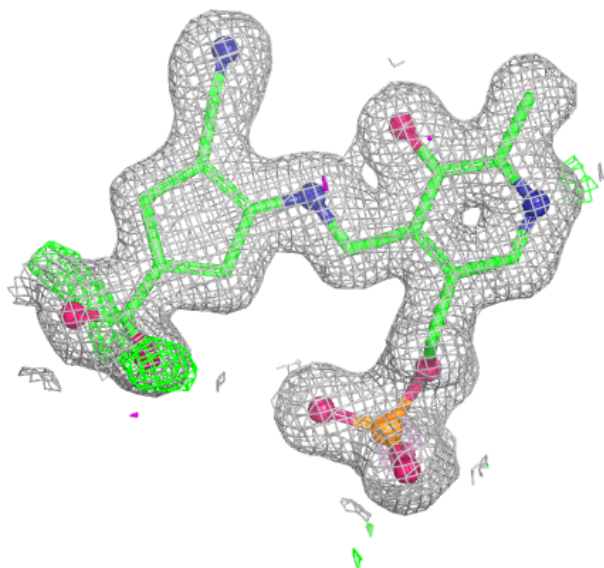
Electron density around A1DBF F 501:

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



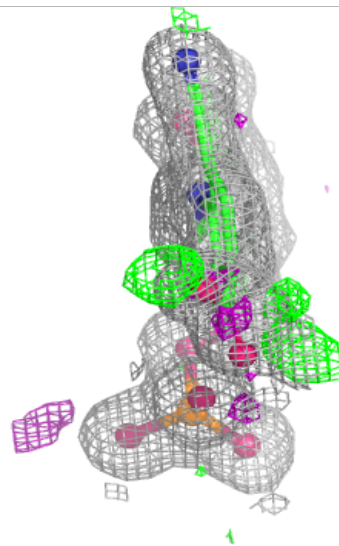
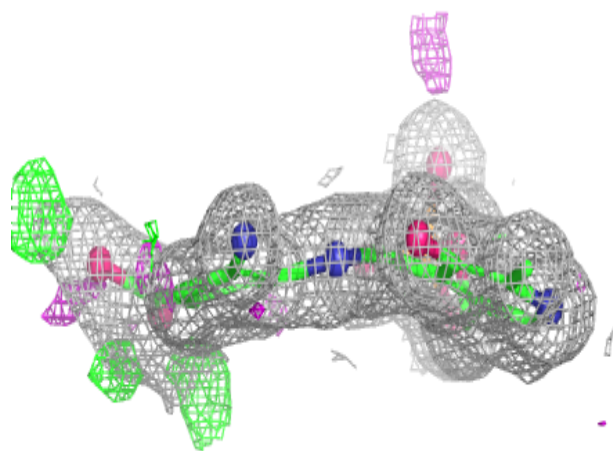
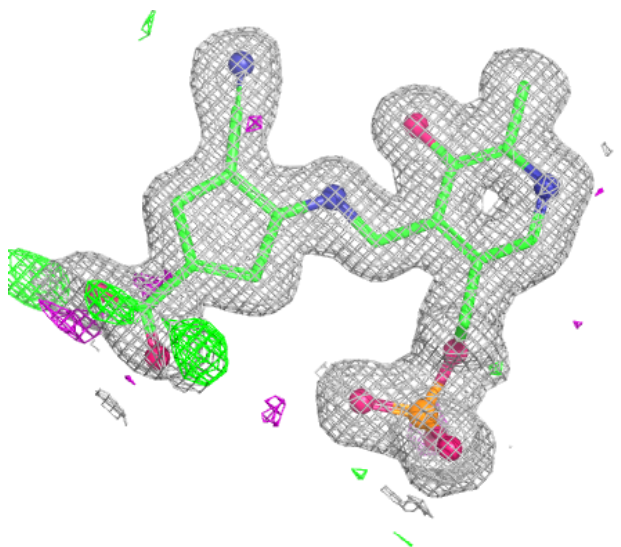
Electron density around A1DBF G 501:

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



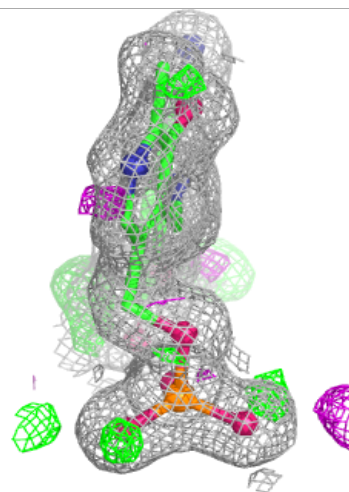
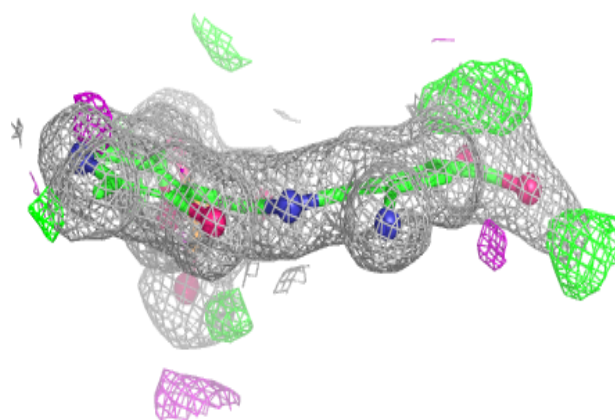
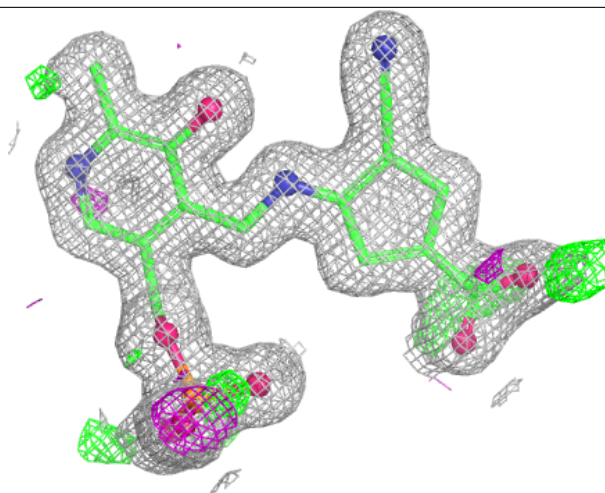
Electron density around A1DBF H 501:

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



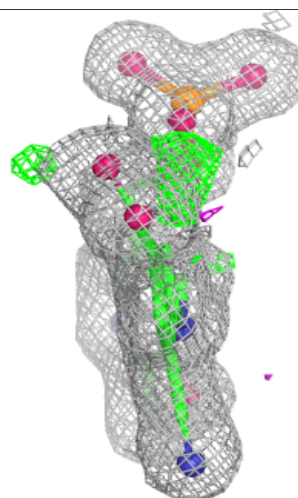
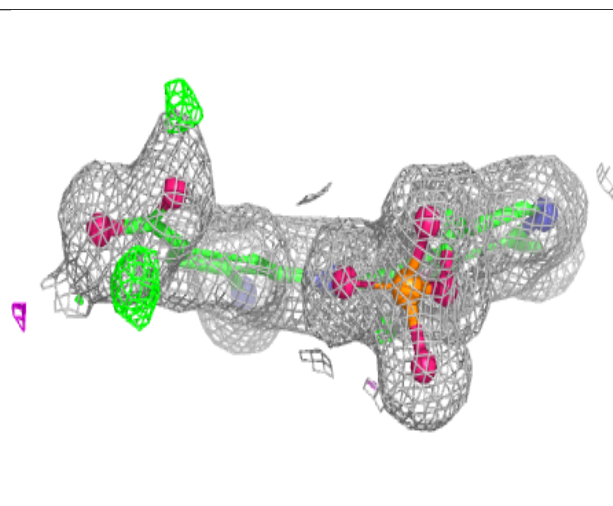
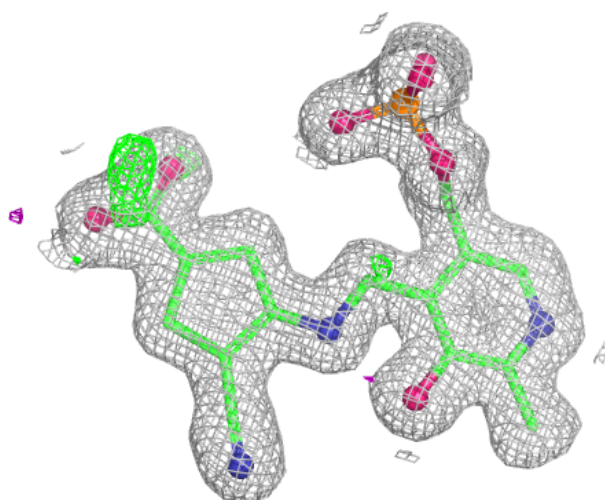
Electron density around A1DBF I 501:

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



Electron density around A1DBF C 501:

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



6.5 Other polymers ⓘ

There are no such residues in this entry.