Full wwPDB X-ray Structure Validation Report ⓘ

Mar 4, 2026 – 11:31 PM UTC

PDB ID	:	6VZ9 / pdb_00006vz9
Title	:	Structure of proline utilization A with the FAD covalently modified by L-thia zolidine-2-carboxylate
Authors	:	Campbell, A.C.; Tanner, J.J.
Deposited on	:	2020-02-28
Resolution	:	1.52 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:

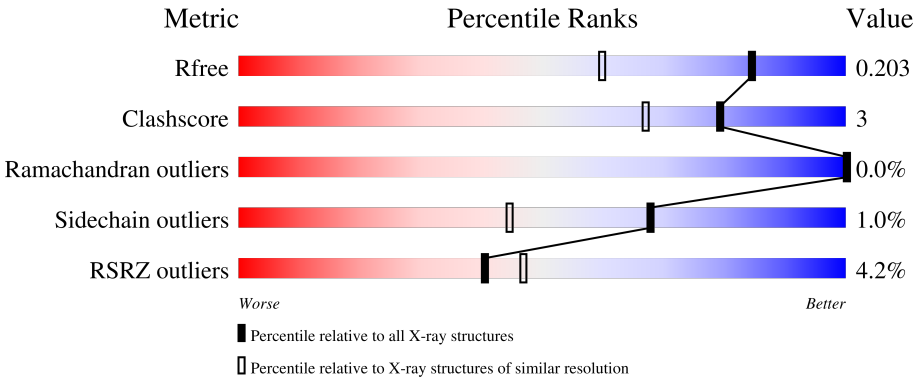
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 1.52 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 <=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	1235	4% 91% 7%
1	B	1235	4% 92% 6%

2 Entry composition (i)

There are 9 unique types of molecules in this entry. The entry contains 20839 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.

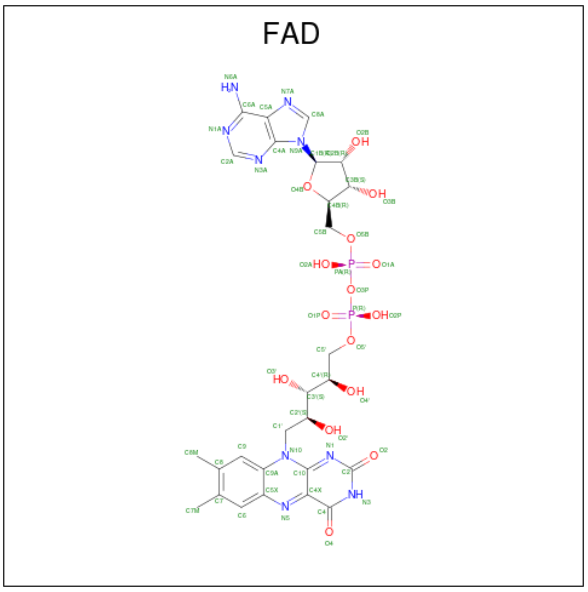
- Molecule 1 is a protein called Bifunctional protein PutA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	1217	Total	C	N	O	S	0	10	0
			9108	5727	1635	1713	33			
1	B	1217	Total	C	N	O	S	0	10	0
			9096	5721	1642	1700	33			

There are 4 discrepancies between the modelled and reference sequences:

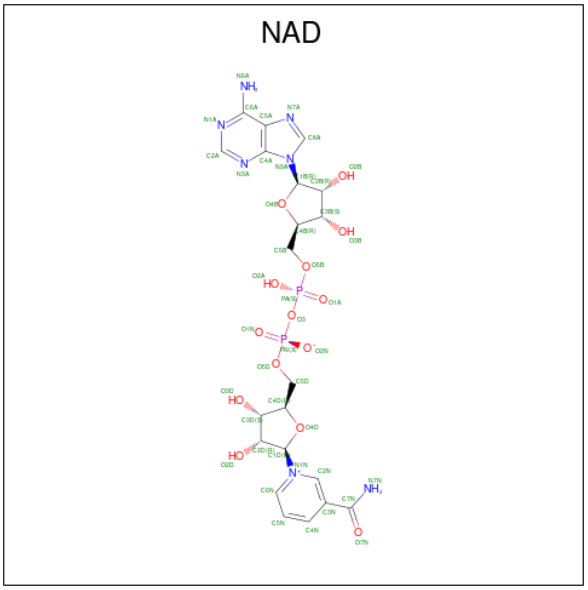
Chain	Residue	Modelled	Actual	Comment	Reference
A	-1	SER	-	expression tag	UNP F7X6I3
A	0	MET	-	expression tag	UNP F7X6I3
B	-1	SER	-	expression tag	UNP F7X6I3
B	0	MET	-	expression tag	UNP F7X6I3

- Molecule 2 is FLAVIN-ADENINE DINUCLEOTIDE (CCD ID: FAD) (formula: $C_{27}H_{33}N_9O_{15}P_2$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			53	27	9	15	2		
2	B	1	Total	C	N	O	P	0	0
			53	27	9	15	2		

- Molecule 3 is NICOTINAMIDE-ADENINE-DINUCLEOTIDE (CCD ID: NAD) (formula: $C_{21}H_{27}N_7O_{14}P_2$) (labeled as "Ligand of Interest" by depositor).

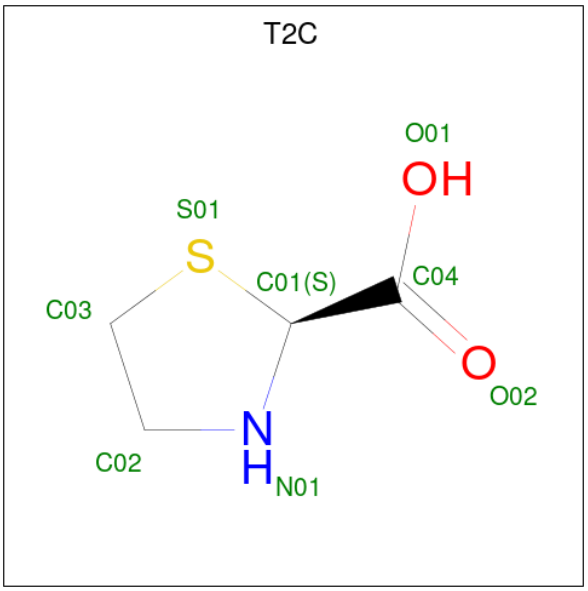


Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	P	0	0
			44	21	7	14	2		
3	B	1	Total	C	N	O	P	0	0
			44	21	7	14	2		

- Molecule 4 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

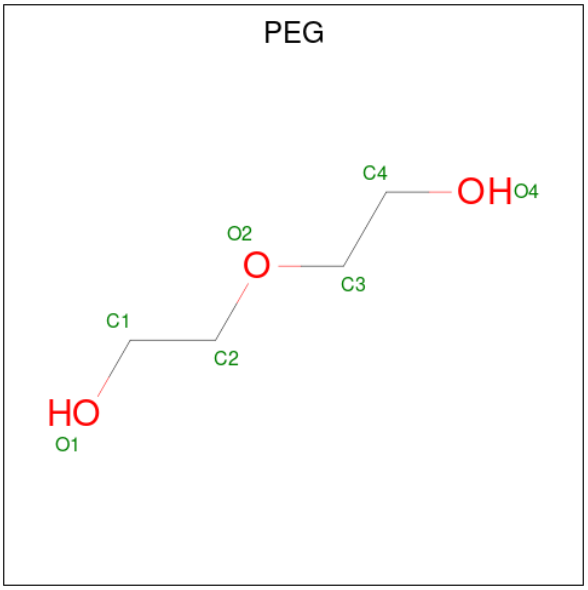
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total	Mg	0	0
			1	1		
4	B	1	Total	Mg	0	0
			1	1		

- Molecule 5 is (2S)-1,3-thiazolidine-2-carboxylic acid (CCD ID: T2C) (formula: $C_4H_7NO_2S$) (labeled as "Ligand of Interest" by depositor).



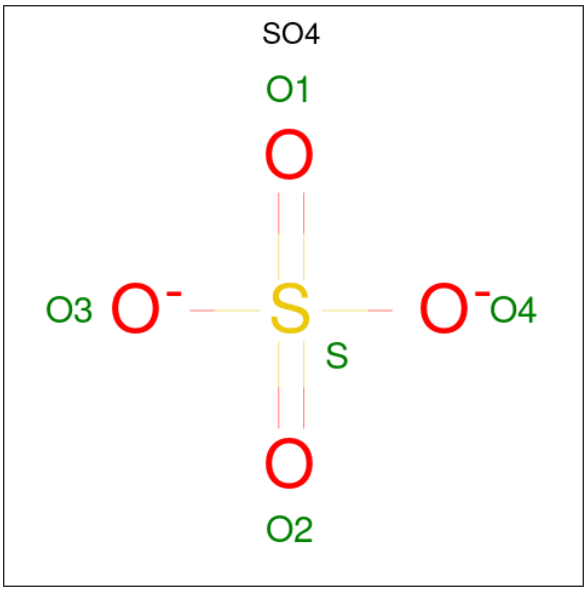
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
5	A	1	Total	C	N	O	S	0	0
			8	4	1	2	1		
5	B	1	Total	C	N	O	S	0	0
			8	4	1	2	1		

- Molecule 6 is DI(HYDROXYETHYL)ETHER (CCD ID: PEG) (formula: $C_4H_{10}O_3$).



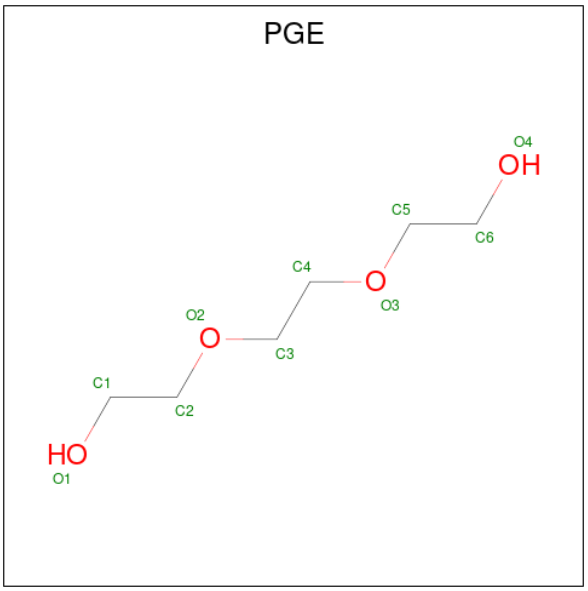
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
6	A	1	Total	C	O		0	0
			7	4	3			

- Molecule 7 is SULFATE ION (CCD ID: SO4) (formula: O_4S).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	A	1	Total O S 5 4 1	0	0
7	A	1	Total O S 5 4 1	0	0
7	A	1	Total O S 5 4 1	0	0
7	A	1	Total O S 5 4 1	0	0
7	B	1	Total O S 5 4 1	0	0
7	B	1	Total O S 5 4 1	0	0
7	B	1	Total O S 5 4 1	0	0
7	B	1	Total O S 5 4 1	0	0

- Molecule 8 is TRIETHYLENE GLYCOL (CCD ID: PGE) (formula: $C_6H_{14}O_4$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	B	1	Total C O 10 6 4	0	0

- Molecule 9 is water.

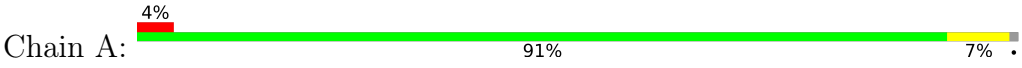
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
9	A	1129	Total O 1129 1129	0	0
9	B	1237	Total O 1237 1237	0	0

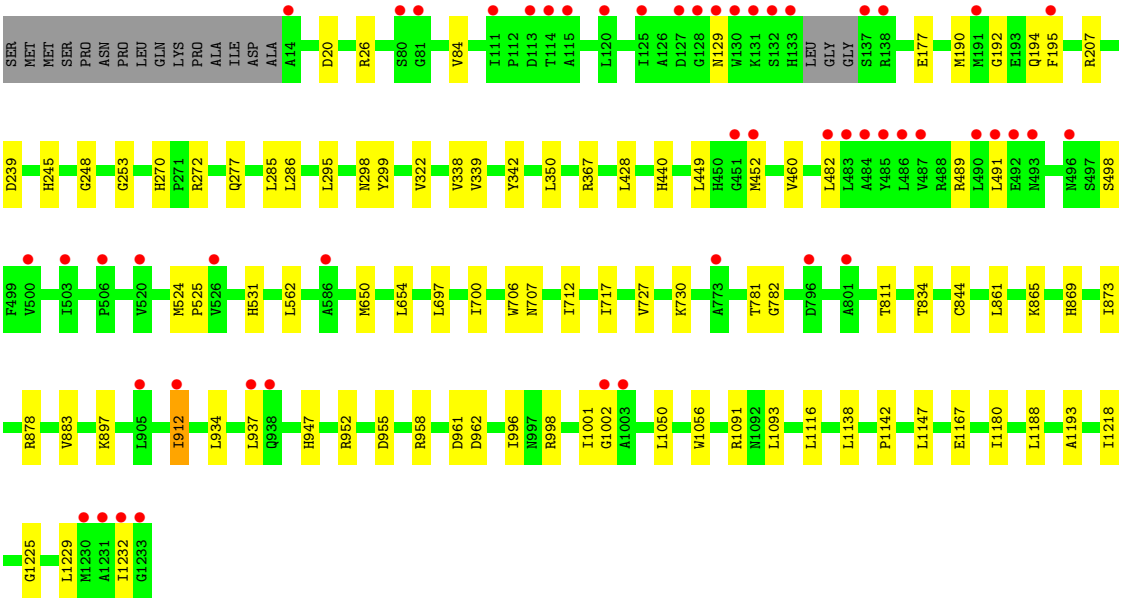
3 Residue-property plots (i)

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: Bifunctional protein PutA

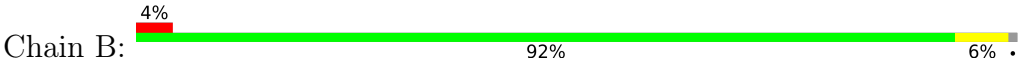
Chain A:

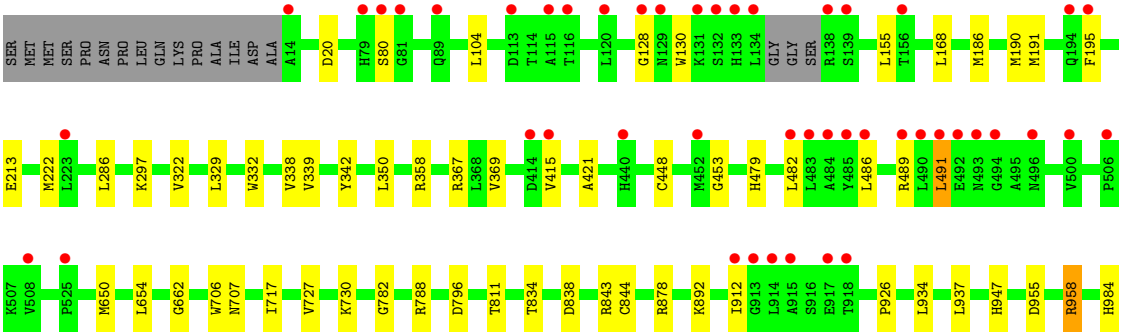




• Molecule 1: Bifunctional protein PutA

Chain B:






I996
L1026
P1038
K1055
W1056
K1060
A1069
D1081
T1095
A1117
L1141
P1142
Q1143
L1147
K1178
G1185
I1218
M1230
A1231
I1232
G1233

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	100.96Å 102.10Å 126.38Å 90.00° 106.35° 90.00°	Depositor
Resolution (Å)	48.44 – 1.52 48.44 – 1.52	Depositor EDS
% Data completeness (in resolution range)	95.0 (48.44-1.52) 98.8 (48.44-1.52)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.36 (at 1.52Å)	Xtriage
Refinement program	PHENIX 1.14	Depositor
R, R_{free}	0.180 , 0.207 0.175 , 0.203	Depositor DCC
R_{free} test set	18585 reflections (4.93%)	wwPDB-VP
Wilson B-factor (Å^2)	17.2	Xtriage
Anisotropy	0.166	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 37.4	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.97	EDS
Total number of atoms	20839	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 3.40% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ 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: T2C, PGE, PEG, FAD, NAD, MG, SO4

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	0.25	0/9297	0.47	0/12644
1	B	0.26	0/9285	0.49	0/12627
All	All	0.25	0/18582	0.48	0/25271

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	9108	0	9180	52	0
1	B	9096	0	9177	47	0
2	A	53	0	31	0	0
2	B	53	0	31	0	0
3	A	44	0	26	1	0
3	B	44	0	26	2	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
5	A	8	0	0	0	0
5	B	8	0	0	0	0
6	A	7	0	10	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
7	A	20	0	0	0	0
7	B	20	0	0	0	0
8	B	10	0	14	1	0
9	A	1129	0	0	6	0
9	B	1237	0	0	5	0
All	All	20839	0	18495	98	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 (98) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:491:LEU:HD13	1:A:1225:GLY:HA3	1.72	0.69
1:B:195:PHE:HB3	1:B:482:LEU:HD11	1.75	0.69
1:A:873:ILE:HG13	1:A:883:VAL:HB	1.75	0.68
1:B:844:CYS:SG	3:B:1302:NAD:C4N	2.81	0.68
1:A:958:ARG:NH1	1:A:962:ASP:OD2	2.30	0.65
1:B:339:VAL:HG21	1:B:350:LEU:HD21	1.79	0.64
1:B:358:ARG:HG2	1:B:415:VAL:HG11	1.81	0.62
1:A:195:PHE:HB3	1:A:482:LEU:HD11	1.80	0.62
1:A:286:LEU:HD21	1:A:322:VAL:HG11	1.81	0.62
1:A:996[B]:ILE:HD12	1:A:1218:ILE:HG12	1.84	0.60
1:A:1147:LEU:HD22	1:B:1147:LEU:HD13	1.83	0.60
1:B:955:ASP:HB3	1:B:958:ARG:HH21	1.67	0.60
1:B:650:MET:O	1:B:654:LEU:HG	2.02	0.59
1:B:297:LYS:HD2	1:B:329:LEU:HA	1.83	0.59
1:B:20:ASP:OD2	1:B:878:ARG:NH1	2.35	0.58
1:B:834:THR:O	1:B:838[B]:ASP:HB2	2.03	0.58
1:A:1116[B]:LEU:HD11	1:A:1138:LEU:HD11	1.84	0.58
1:B:297:LYS:HG3	1:B:332:TRP:HB2	1.84	0.58
1:A:298:ASN:ND2	9:A:1401:HOH:O	2.19	0.57
1:B:286:LEU:HD21	1:B:322:VAL:HG11	1.86	0.57
1:A:869:HIS:ND1	1:A:912:ILE:HG22	2.20	0.56
1:B:155:LEU:HD22	1:B:491:LEU:HD11	1.88	0.55
1:A:998:ARG:HH22	1:A:1002:GLY:HA3	1.72	0.55
1:A:861:LEU:HD22	1:A:865:LYS:HE3	1.88	0.55
1:A:844:CYS:SG	3:A:1302:NAD:C4N	2.95	0.54
1:B:1056:TRP:CD1	1:B:1142:PRO:HD3	2.41	0.54
1:A:562:LEU:HD11	1:A:654:LEU:HD12	1.90	0.53
1:A:1056:TRP:CD1	1:A:1142:PRO:HD3	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:26:ARG:HH22	1:A:322:VAL:HG23	1.74	0.52
1:A:270:HIS:HB2	1:A:285:LEU:HG	1.93	0.51
1:A:1229:LEU:HD23	1:A:1232:ILE:HD12	1.93	0.50
1:A:449:LEU:HD13	1:A:489:ARG:HD2	1.92	0.50
1:B:782:GLY:O	1:B:811:THR:HA	2.11	0.50
1:B:1026:LEU:HD23	1:B:1038:PRO:HG2	1.94	0.50
1:B:796:ASP:HA	1:B:1178:LYS:HE2	1.94	0.49
1:B:1143:GLN:O	1:B:1147:LEU:HG	2.12	0.49
1:A:190:MET:HE2	1:A:195:PHE:CZ	2.49	0.48
1:A:961:ASP:OD2	1:B:1055:LYS:NZ	2.40	0.48
1:A:192:GLY:O	1:A:207:ARG:NH1	2.46	0.48
1:A:524:MET:HE3	1:A:525:PRO:HD2	1.94	0.48
1:B:213:GLU:OE1	9:B:1401:HOH:O	2.20	0.47
1:A:190:MET:HA	1:A:194:GLN:HB3	1.97	0.46
1:B:1056:TRP:CZ2	1:B:1060:LYS:HD2	2.51	0.46
8:B:1305:PGE:H1	9:B:1602:HOH:O	2.16	0.45
1:A:865:LYS:NZ	9:A:1418:HOH:O	2.45	0.45
1:A:428:LEU:HD11	1:A:460:VAL:HG21	1.99	0.45
1:A:245:HIS:CE1	1:A:295:LEU:HD11	2.52	0.45
1:A:697:LEU:HD12	1:A:700[B]:ILE:HD11	1.98	0.45
1:B:104:LEU:HD22	1:B:168:LEU:HD11	1.99	0.45
1:A:440:HIS:HE1	9:A:2359:HOH:O	1.99	0.44
1:B:128:GLY:O	1:B:130:TRP:N	2.46	0.44
1:B:448:CYS:HB2	1:B:453:GLY:HA3	1.99	0.44
1:B:706:TRP:CE3	1:B:707:ASN:HA	2.53	0.44
1:A:650:MET:O	1:A:654:LEU:HG	2.17	0.44
1:A:782:GLY:O	1:A:811:THR:HA	2.18	0.44
1:A:937:LEU:HD21	1:A:947:HIS:CD2	2.52	0.44
1:B:844:CYS:SG	3:B:1302:NAD:C3N	3.05	0.44
1:A:272:ARG:HB3	1:A:277:GLN:HG3	2.00	0.44
1:A:195:PHE:HB2	1:A:482:LEU:HD21	1.99	0.43
1:A:338:VAL:HG22	1:A:367:ARG:HB3	2.00	0.43
1:B:937:LEU:HD21	1:B:947:HIS:CD2	2.52	0.43
1:A:717:ILE:HG12	1:A:727:VAL:HG11	2.00	0.43
1:A:1180:ILE:HG23	1:A:1188:LEU:HD12	1.99	0.43
1:A:239:ASP:OD2	9:A:1402:HOH:O	2.21	0.43
1:A:706:TRP:CE3	1:A:707:ASN:HA	2.53	0.43
1:B:955:ASP:HB3	1:B:958:ARG:NH2	2.33	0.43
1:A:20:ASP:OD2	1:A:878:ARG:NH1	2.52	0.43
1:A:253:GLY:HA2	9:A:2239:HOH:O	2.18	0.43
1:B:834:THR:O	1:B:838[A]:ASP:HB3	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:834:THR:HG22	1:A:1001:ILE:HD11	2.01	0.43
1:B:369:VAL:HG12	1:B:421:ALA:HB3	2.01	0.43
1:A:1091:ARG:HG2	1:A:1093:LEU:HD21	2.00	0.42
1:B:838[A]:ASP:OD1	1:B:843:ARG:NH2	2.46	0.42
1:B:186:MET:O	1:B:190:MET:HG3	2.19	0.42
1:B:482:LEU:HD11	1:B:486:LEU:HD13	2.00	0.42
1:B:996[A]:ILE:HD12	1:B:1218:ILE:HG12	2.01	0.42
1:B:892:LYS:NZ	9:B:1425:HOH:O	2.47	0.42
1:B:191:MET:HB3	1:B:479:HIS:CD2	2.55	0.41
1:B:662:GLY:HA2	9:B:1511:HOH:O	2.20	0.41
1:B:1069:ALA:HA	1:B:1117:ALA:HB1	2.02	0.41
1:A:955:ASP:HB3	1:A:958:ARG:HE	1.85	0.41
1:A:1050:LEU:C	1:A:1050:LEU:HD13	2.45	0.41
1:B:195:PHE:HB2	1:B:482:LEU:HD21	2.02	0.41
1:B:788:ARG:NH1	1:B:1185:GLY:O	2.54	0.41
1:A:1002:GLY:HA3	9:A:1531:HOH:O	2.20	0.41
1:B:1081:ASP:HA	1:B:1095[A]:THR:HG22	2.03	0.41
1:A:248:GLY:HA3	1:A:299:TYR:CG	2.55	0.41
1:A:339[B]:VAL:HG21	1:A:350:LEU:HD21	2.03	0.41
1:A:958:ARG:O	1:A:961:ASP:HB2	2.21	0.41
1:A:1167:GLU:HA	1:A:1193:ALA:O	2.21	0.41
1:A:531:HIS:CE1	1:A:1232:ILE:HG23	2.56	0.40
1:B:338:VAL:HG22	1:B:367:ARG:HB3	2.03	0.40
1:B:984:HIS:CD2	1:B:984:HIS:C	2.99	0.40
1:B:190:MET:HE2	1:B:195:PHE:CZ	2.56	0.40
1:A:712:ILE:HD13	1:A:781:THR:HG21	2.03	0.40
1:B:222:MET:HG2	9:B:1612:HOH:O	2.22	0.40
1:B:717:ILE:HG12	1:B:727:VAL:HG11	2.04	0.40
1:B:912:ILE:HD11	1:B:926:PRO:HD2	2.03	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	1223/1235 (99%)	1202 (98%)	20 (2%)	1 (0%)	48 25
1	B	1223/1235 (99%)	1197 (98%)	26 (2%)	0	100 100
All	All	2446/2470 (99%)	2399 (98%)	46 (2%)	1 (0%)	100 100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	129	ASN

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	926/951 (97%)	916 (99%)	10 (1%)	65 40
1	B	921/951 (97%)	913 (99%)	8 (1%)	70 49
All	All	1847/1902 (97%)	1829 (99%)	18 (1%)	68 44

All (18) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	84	VAL
1	A	177	GLU
1	A	342	TYR
1	A	452	MET
1	A	498	SER
1	A	730	LYS
1	A	897	LYS
1	A	912	ILE
1	A	934	LEU
1	A	952	ARG
1	B	80	SER
1	B	342	TYR
1	B	489	ARG
1	B	491	LEU
1	B	730	LYS

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Mol	Chain	Res	Type
1	B	934	LEU
1	B	958	ARG
1	B	1141	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (15) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	426	GLN
1	A	440	HIS
1	A	667	ASN
1	A	685	GLN
1	A	872	HIS
1	A	1140	ASN
1	A	1143	GLN
1	B	79	HIS
1	B	194	GLN
1	B	304	ASN
1	B	440	HIS
1	B	501	HIS
1	B	667	ASN
1	B	1040	GLN
1	B	1140	ASN

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

Of 18 ligands modelled in this entry, 2 are monoatomic - leaving 16 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
7	SO4	A	1306	-	4,4,4	0.17	0	6,6,6	0.18	0
7	SO4	B	1308	-	4,4,4	0.23	0	6,6,6	0.09	0
2	FAD	A	1301	5	58,58,58	2.80	19 (32%)	85,89,89	1.85	23 (27%)
7	SO4	A	1309	-	4,4,4	0.28	0	6,6,6	0.23	0
5	T2C	A	1304	2	7,8,8	0.94	0	6,10,10	1.88	2 (33%)
7	SO4	B	1306	-	4,4,4	0.34	0	6,6,6	0.34	0
6	PEG	A	1305	-	6,6,6	0.52	0	5,5,5	0.24	0
7	SO4	B	1309	-	4,4,4	0.23	0	6,6,6	0.08	0
7	SO4	A	1307	-	4,4,4	0.27	0	6,6,6	0.13	0
8	PGE	B	1305	-	9,9,9	0.53	0	8,8,8	0.30	0
3	NAD	A	1302	4	46,48,48	3.79	19 (41%)	64,73,73	2.05	11 (17%)
2	FAD	B	1301	5	58,58,58	2.83	19 (32%)	85,89,89	1.80	21 (24%)
3	NAD	B	1302	4	46,48,48	3.56	18 (39%)	64,73,73	2.03	13 (20%)
5	T2C	B	1304	2	7,8,8	0.87	0	6,10,10	1.84	2 (33%)
7	SO4	B	1307	-	4,4,4	0.23	0	6,6,6	0.14	0
7	SO4	A	1308	-	4,4,4	0.24	0	6,6,6	0.22	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	FAD	A	1301	5	-	3/34/50/50	0/6/6/6
5	T2C	A	1304	2	-	0/3/11/11	0/1/1/1
6	PEG	A	1305	-	-	2/4/4/4	-
8	PGE	B	1305	-	-	3/7/7/7	-
3	NAD	A	1302	4	-	5/30/62/62	0/5/5/5
2	FAD	B	1301	5	-	3/34/50/50	0/6/6/6
3	NAD	B	1302	4	-	5/30/62/62	0/5/5/5
5	T2C	B	1304	2	-	0/3/11/11	0/1/1/1

All (75) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	1301	FAD	PA-O3P	-10.52	1.48	1.59
2	A	1301	FAD	PA-O3P	-10.45	1.48	1.59
3	A	1302	NAD	O4D-C1D	-9.45	1.28	1.40
3	B	1302	NAD	O4D-C1D	-9.32	1.28	1.40
3	A	1302	NAD	PN-O3	9.03	1.69	1.59
3	A	1302	NAD	C7N-N7N	8.54	1.48	1.33
3	B	1302	NAD	C3B-C4B	-8.39	1.31	1.53
3	A	1302	NAD	C3B-C4B	-8.36	1.31	1.53
3	B	1302	NAD	C7N-N7N	8.32	1.48	1.33
3	A	1302	NAD	C3D-C4D	-7.71	1.33	1.53
3	B	1302	NAD	C3D-C4D	-7.30	1.34	1.53
3	A	1302	NAD	O4B-C4B	7.20	1.61	1.45
3	A	1302	NAD	O4D-C4D	7.19	1.61	1.45
3	B	1302	NAD	O4B-C4B	7.03	1.60	1.45
2	B	1301	FAD	O4-C4	6.97	1.36	1.23
3	B	1302	NAD	O4D-C4D	6.92	1.60	1.45
3	B	1302	NAD	PN-O3	6.89	1.66	1.59
2	B	1301	FAD	C4X-N5	6.61	1.45	1.30
2	A	1301	FAD	C4X-N5	6.56	1.44	1.30
2	A	1301	FAD	O4-C4	6.35	1.35	1.23
3	B	1302	NAD	C6A-N6A	6.15	1.49	1.34
2	B	1301	FAD	C6-C5X	5.91	1.49	1.40
2	A	1301	FAD	C6-C5X	5.83	1.48	1.40
3	A	1302	NAD	C6A-N6A	5.69	1.48	1.34
2	B	1301	FAD	C10-N1	5.52	1.44	1.33
2	B	1301	FAD	O2-C2	5.49	1.35	1.24
2	A	1301	FAD	C9-C9A	5.18	1.48	1.39
2	A	1301	FAD	O2-C2	5.15	1.34	1.24
2	A	1301	FAD	C10-N1	5.11	1.43	1.33
2	B	1301	FAD	C9-C9A	4.88	1.47	1.39
3	A	1302	NAD	PA-O3	4.49	1.64	1.59
3	B	1302	NAD	C3N-C7N	4.41	1.57	1.50
3	A	1302	NAD	C3N-C7N	4.21	1.56	1.50
2	A	1301	FAD	P-O3P	3.99	1.63	1.59
2	B	1301	FAD	C6A-N6A	3.94	1.44	1.34
3	A	1302	NAD	O3D-C3D	3.92	1.52	1.43
2	A	1301	FAD	C6A-N6A	3.84	1.44	1.34
3	B	1302	NAD	O3D-C3D	3.74	1.52	1.43
2	A	1301	FAD	C5X-N5	3.73	1.46	1.39
3	A	1302	NAD	O4B-C1B	-3.62	1.33	1.42
3	B	1302	NAD	C2N-N1N	3.57	1.38	1.35
3	A	1302	NAD	C2N-N1N	3.46	1.38	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	1301	FAD	C9A-C5X	-3.42	1.35	1.41
2	B	1301	FAD	C5X-N5	3.33	1.45	1.39
2	B	1301	FAD	P-O3P	3.18	1.62	1.59
2	B	1301	FAD	C2-N1	3.16	1.43	1.36
3	B	1302	NAD	O4B-C1B	-3.13	1.34	1.42
3	A	1302	NAD	O3B-C3B	3.13	1.50	1.43
2	A	1301	FAD	C9A-C5X	-2.98	1.36	1.41
3	B	1302	NAD	C2A-N1A	2.95	1.39	1.33
2	A	1301	FAD	C2-N1	2.88	1.43	1.36
3	A	1302	NAD	C2A-N1A	2.80	1.38	1.33
3	A	1302	NAD	C5A-C4A	-2.80	1.34	1.39
2	A	1301	FAD	PA-O5B	-2.78	1.48	1.59
3	B	1302	NAD	O3B-C3B	2.77	1.49	1.43
2	A	1301	FAD	O2'-C2'	-2.61	1.37	1.43
3	A	1302	NAD	C8A-N9A	-2.51	1.33	1.37
2	B	1301	FAD	PA-O2A	-2.46	1.43	1.55
2	A	1301	FAD	C5A-C4A	2.43	1.43	1.39
2	B	1301	FAD	C10-N10	2.41	1.42	1.37
3	A	1302	NAD	O7N-C7N	-2.40	1.19	1.24
2	B	1301	FAD	O2'-C2'	-2.39	1.38	1.43
2	A	1301	FAD	C4X-C10	-2.31	1.37	1.44
3	B	1302	NAD	C5A-N7A	-2.28	1.34	1.39
3	B	1302	NAD	O7N-C7N	-2.21	1.20	1.24
2	B	1301	FAD	C4X-C10	-2.20	1.37	1.44
3	B	1302	NAD	C5A-C4A	-2.20	1.35	1.39
2	B	1301	FAD	C9A-N10	2.19	1.44	1.41
3	A	1302	NAD	O2B-C2B	-2.17	1.37	1.43
2	A	1301	FAD	C2B-C3B	-2.09	1.47	1.53
2	A	1301	FAD	O3B-C3B	-2.09	1.37	1.43
3	B	1302	NAD	C8A-N7A	2.07	1.35	1.31
2	B	1301	FAD	P-O1P	2.07	1.58	1.50
2	B	1301	FAD	O3B-C3B	-2.06	1.37	1.43
2	A	1301	FAD	C10-N10	2.04	1.41	1.37

All (72) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	A	1302	NAD	C4A-N9A-C1B	-6.29	111.93	126.63
3	A	1302	NAD	N3A-C2A-N1A	-5.87	119.69	128.58
2	A	1301	FAD	N3A-C2A-N1A	-5.85	119.72	128.58
3	B	1302	NAD	N3A-C2A-N1A	-5.82	119.78	128.58
3	B	1302	NAD	C5A-C4A-N3A	-5.60	119.01	126.72

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	A	1302	NAD	N9A-C8A-N7A	-5.44	106.22	113.94
2	B	1301	FAD	N3A-C2A-N1A	-5.31	120.54	128.58
3	B	1302	NAD	N9A-C8A-N7A	-5.09	106.72	113.94
2	B	1301	FAD	O2A-PA-O3P	-4.76	94.41	107.27
3	B	1302	NAD	C4A-N9A-C1B	-4.71	115.61	126.63
3	A	1302	NAD	C4A-N9A-C8A	4.68	110.65	105.74
3	A	1302	NAD	C1B-N9A-C8A	4.64	137.38	127.09
3	A	1302	NAD	C4D-O4D-C1D	-4.63	105.68	109.92
2	B	1301	FAD	C5A-C4A-N3A	-4.47	120.57	126.72
2	A	1301	FAD	O2A-PA-O3P	-4.40	95.39	107.27
3	A	1302	NAD	C5A-C4A-N3A	-4.39	120.67	126.72
2	A	1301	FAD	C5A-C4A-N3A	-4.33	120.76	126.72
3	B	1302	NAD	C4D-O4D-C1D	-4.32	105.97	109.92
3	B	1302	NAD	N3A-C4A-N9A	4.20	134.31	127.17
2	A	1301	FAD	N3A-C4A-N9A	4.10	134.14	127.17
2	B	1301	FAD	N3A-C4A-N9A	3.97	133.91	127.17
2	B	1301	FAD	C4X-C10-N10	3.83	121.96	116.48
3	B	1302	NAD	C2A-N3A-C4A	3.78	121.07	111.83
2	A	1301	FAD	C4X-C10-N10	3.75	121.85	116.48
3	A	1302	NAD	N3A-C4A-N9A	3.72	133.49	127.17
3	B	1302	NAD	C1B-N9A-C8A	3.56	135.00	127.09
2	A	1301	FAD	N9A-C8A-N7A	-3.53	108.92	113.94
2	A	1301	FAD	C5A-N7A-C8A	3.53	109.00	103.45
3	B	1302	NAD	C5A-N7A-C8A	3.52	108.98	103.45
3	B	1302	NAD	C4A-N9A-C8A	3.47	109.38	105.74
2	B	1301	FAD	C5A-N7A-C8A	3.46	108.88	103.45
2	A	1301	FAD	C4-N3-C2	-3.39	119.62	125.64
3	A	1302	NAD	C5A-N7A-C8A	3.29	108.62	103.45
2	B	1301	FAD	O3P-PA-O1A	3.26	120.51	110.70
2	A	1301	FAD	C4A-N9A-C8A	3.23	109.13	105.74
2	B	1301	FAD	C2A-N3A-C4A	3.21	119.66	111.83
2	A	1301	FAD	C2A-N3A-C4A	3.20	119.66	111.83
2	B	1301	FAD	C9A-N10-C10	-3.20	115.88	120.75
2	B	1301	FAD	N9A-C8A-N7A	-3.20	109.40	113.94
3	A	1302	NAD	C2A-N3A-C4A	3.09	119.39	111.83
2	B	1301	FAD	C4-N3-C2	-3.05	120.22	125.64
5	A	1304	T2C	C02-N01-C01	2.93	112.21	106.24
2	B	1301	FAD	C10-C4X-N5	-2.92	118.84	124.81
5	B	1304	T2C	C02-N01-C01	2.87	112.10	106.24
5	B	1304	T2C	C03-C02-N01	2.86	111.73	107.27
2	A	1301	FAD	C4X-C4-N3	2.80	120.37	113.25
2	A	1301	FAD	C4-C4X-N5	2.77	122.03	118.21

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	1301	FAD	O5'-P-O1P	2.74	119.80	108.94
2	A	1301	FAD	C9-C9A-N10	-2.72	118.20	121.85
2	A	1301	FAD	C9A-N10-C10	-2.69	116.65	120.75
2	A	1301	FAD	O3P-PA-O1A	2.67	118.74	110.70
2	A	1301	FAD	C10-C4X-N5	-2.63	119.43	124.81
2	B	1301	FAD	C4A-N9A-C8A	2.58	108.45	105.74
3	B	1302	NAD	C3N-C7N-N7N	2.57	120.91	117.74
2	A	1301	FAD	C2A-N1A-C6A	2.56	122.94	118.73
5	A	1304	T2C	C03-C02-N01	2.49	111.16	107.27
2	B	1301	FAD	C4A-C5A-N7A	-2.48	107.75	110.58
2	B	1301	FAD	C9-C9A-N10	-2.44	118.58	121.85
2	B	1301	FAD	C5X-N5-C4X	-2.39	114.22	118.09
2	A	1301	FAD	C5X-C9A-N10	2.39	120.13	117.97
2	A	1301	FAD	C4A-C5A-N7A	-2.39	107.85	110.58
2	B	1301	FAD	C4-C4X-N5	2.34	121.44	118.21
2	B	1301	FAD	C4X-C4-N3	2.31	119.12	113.25
2	B	1301	FAD	C5X-C9A-N10	2.28	120.03	117.97
2	A	1301	FAD	C5X-N5-C4X	-2.13	114.64	118.09
3	B	1302	NAD	C6A-C5A-C4A	2.11	120.06	117.18
2	B	1301	FAD	O5'-P-O1P	2.10	117.26	108.94
3	A	1302	NAD	C2N-C3N-C4N	2.07	120.66	118.26
3	B	1302	NAD	C4A-C5A-N7A	-2.05	108.24	110.58
2	B	1301	FAD	C4A-N9A-C1B	-2.03	121.88	126.63
2	A	1301	FAD	O4-C4-C4X	-2.01	121.22	126.53
2	A	1301	FAD	C4A-N9A-C1B	-2.01	121.93	126.63

There are no chirality outliers.

All (21) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	1302	NAD	C5B-O5B-PA-O1A
8	B	1305	PGE	O3-C5-C6-O4
2	B	1301	FAD	PA-O3P-P-O1P
8	B	1305	PGE	C3-C4-O3-C5
2	A	1301	FAD	C2'-C3'-C4'-O4'
3	A	1302	NAD	C2B-C1B-N9A-C8A
3	B	1302	NAD	C2B-C1B-N9A-C8A
2	A	1301	FAD	PA-O3P-P-O1P
3	B	1302	NAD	C5B-O5B-PA-O1A
3	A	1302	NAD	C4D-C5D-O5D-PN
3	B	1302	NAD	C4D-C5D-O5D-PN
2	A	1301	FAD	PA-O3P-P-O2P

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Mol	Chain	Res	Type	Atoms
6	A	1305	PEG	O1-C1-C2-O2
8	B	1305	PGE	O1-C1-C2-O2
6	A	1305	PEG	C4-C3-O2-C2
3	A	1302	NAD	C3D-C4D-C5D-O5D
2	B	1301	FAD	C2'-C3'-C4'-O4'
2	B	1301	FAD	PA-O3P-P-O2P
3	A	1302	NAD	C2B-C1B-N9A-C4A
3	B	1302	NAD	C2B-C1B-N9A-C4A
3	B	1302	NAD	O4B-C1B-N9A-C8A

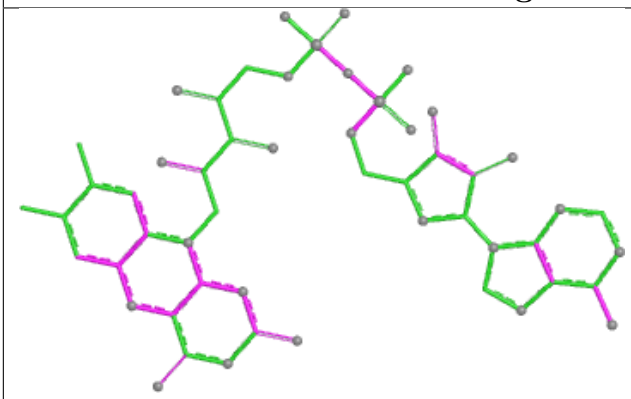
There are no ring outliers.

3 monomers are involved in 4 short contacts:

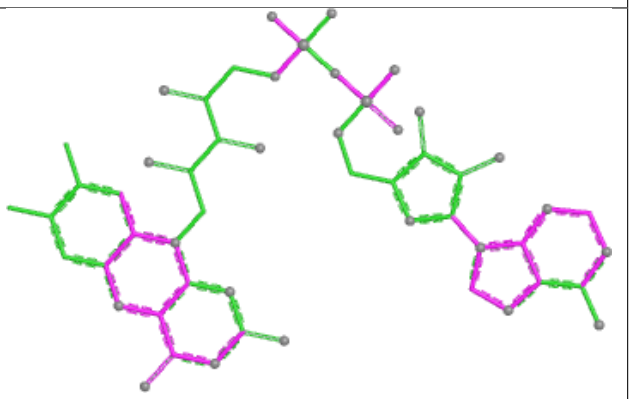
Mol	Chain	Res	Type	Clashes	Symm-Clashes
8	B	1305	PGE	1	0
3	A	1302	NAD	1	0
3	B	1302	NAD	2	0

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

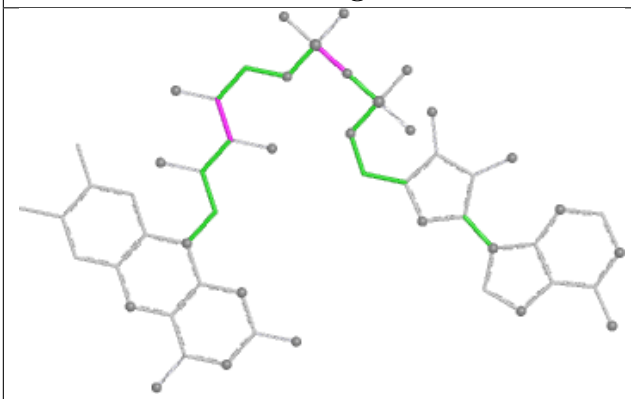
Ligand FAD A 1301



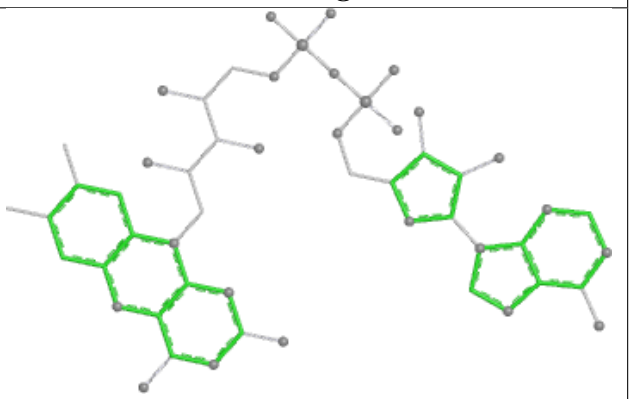
Bond lengths



Bond angles

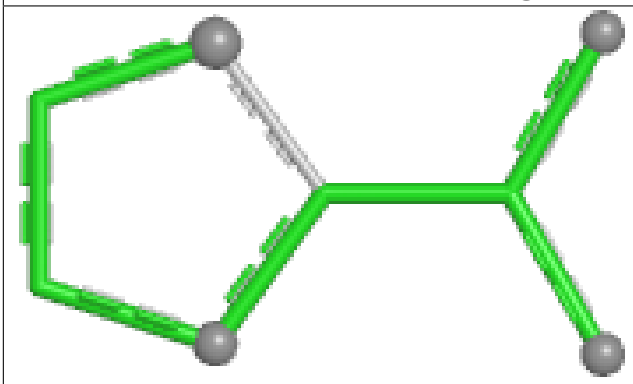


Torsions

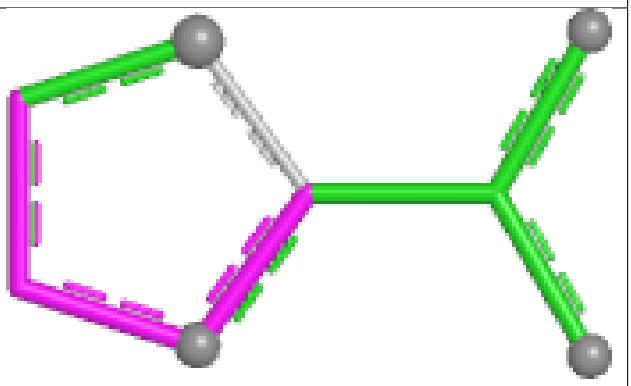


Rings

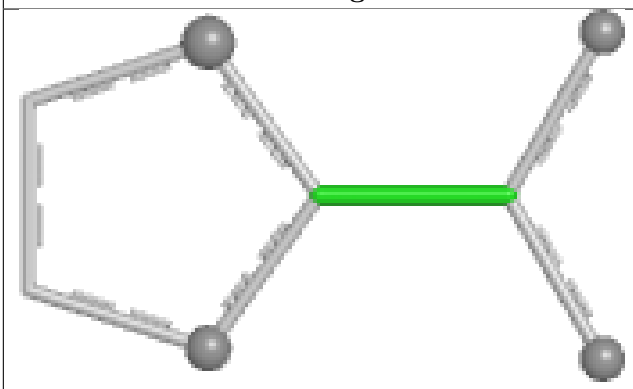
Ligand T2C A 1304



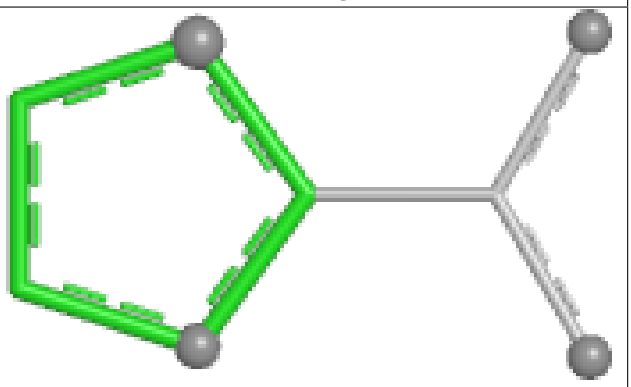
Bond lengths



Bond angles

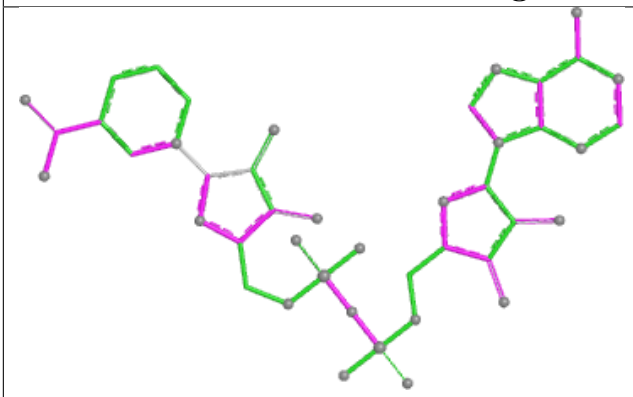


Torsions

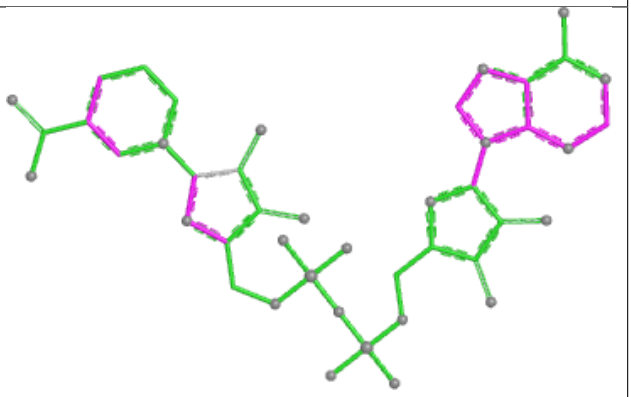


Rings

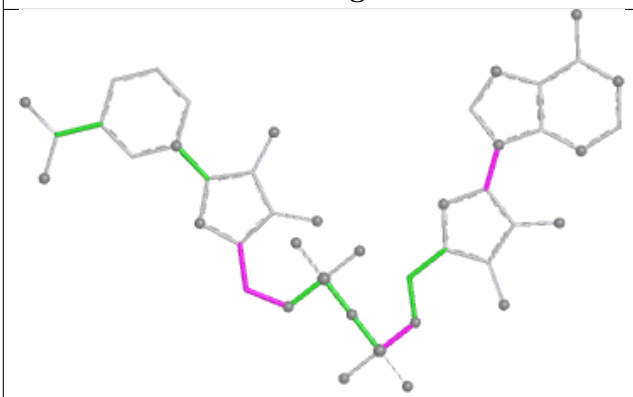
Ligand NAD A 1302



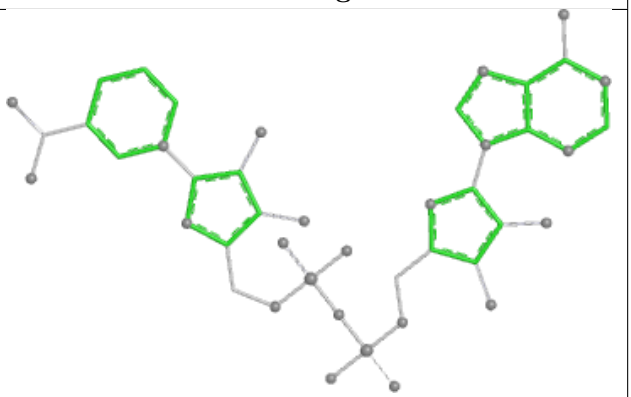
Bond lengths



Bond angles

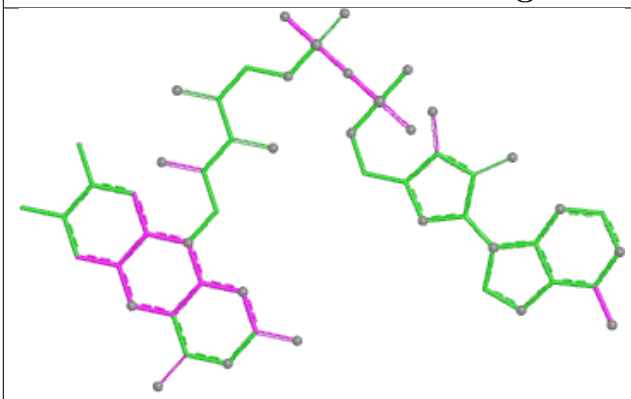


Torsions

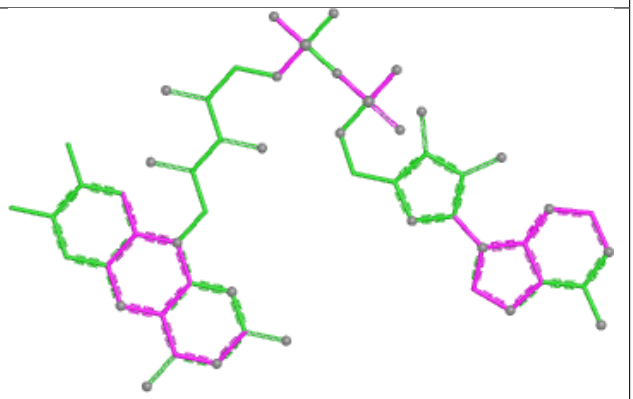


Rings

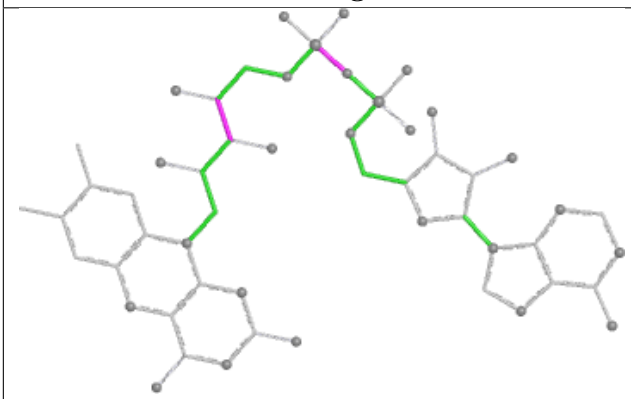
Ligand FAD B 1301



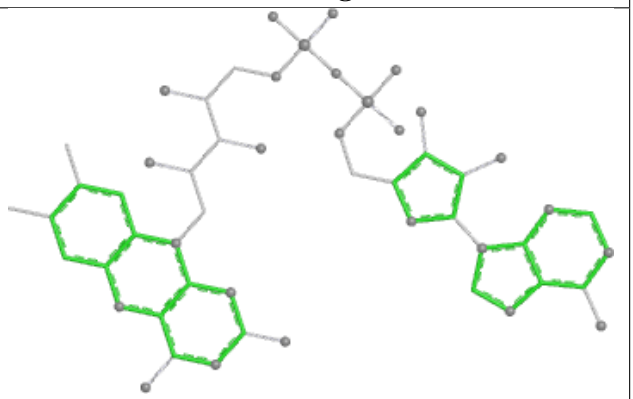
Bond lengths



Bond angles

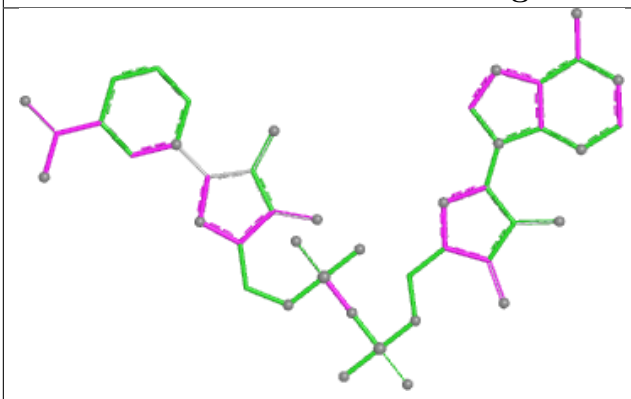


Torsions

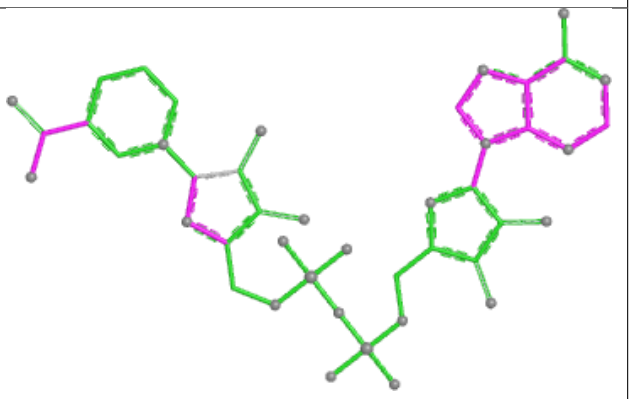


Rings

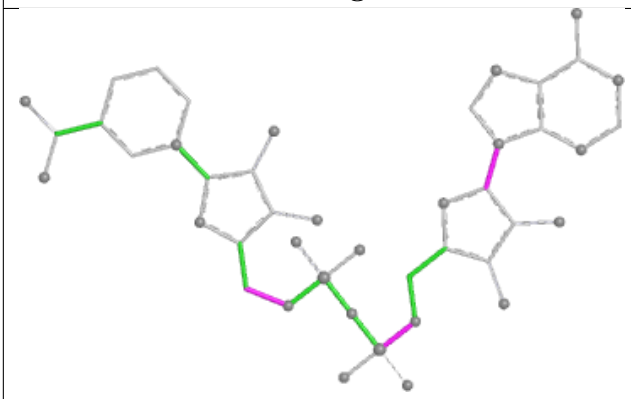
Ligand NAD B 1302



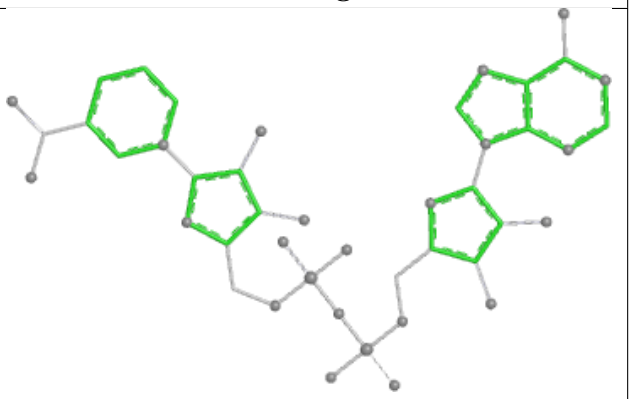
Bond lengths



Bond angles

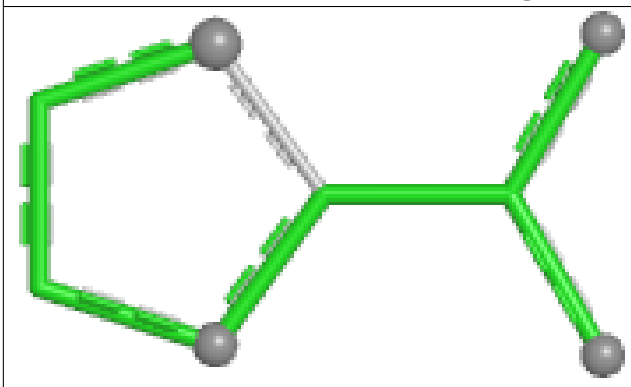


Torsions

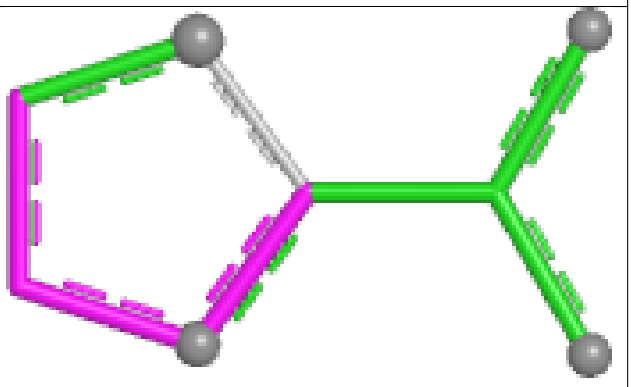


Rings

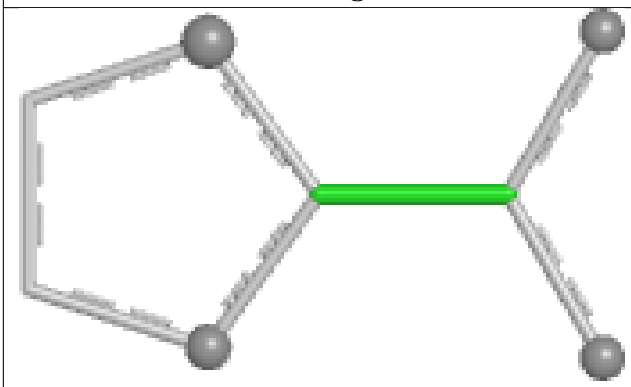
Ligand T2C B 1304



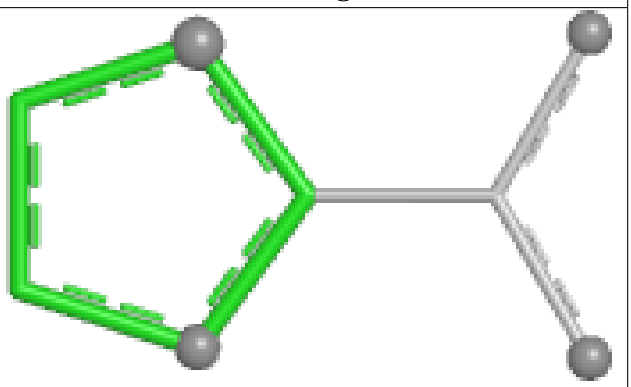
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

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, 95^{th} 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	1217/1235 (98%)	0.09	52 (4%) 40 46	8, 21, 44, 71	10 (0%)
1	B	1217/1235 (98%)	-0.01	51 (4%) 40 47	8, 19, 42, 84	11 (0%)
All	All	2434/2470 (98%)	0.04	103 (4%) 40 47	8, 20, 43, 84	21 (0%)

All (103) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	483	LEU	6.9
1	A	1002	GLY	6.4
1	B	912	ILE	6.2
1	A	1003	ALA	5.6
1	A	491	LEU	5.2
1	B	491	LEU	4.6
1	A	14	ALA	4.4
1	B	134	LEU	4.4
1	A	485	TYR	4.3
1	A	482	LEU	4.2
1	B	914	LEU	4.1
1	B	195	PHE	4.0
1	B	14	ALA	4.0
1	B	913	GLY	3.9
1	B	918	THR	3.9
1	A	195	PHE	3.9
1	A	1232	ILE	3.9
1	B	79	HIS	3.7
1	A	484	ALA	3.7
1	B	1232	ILE	3.7
1	B	915	ALA	3.6
1	A	133	HIS	3.6
1	A	127	ASP	3.6
1	A	452	MET	3.6

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Mol	Chain	Res	Type	RSRZ
1	B	1231	ALA	3.5
1	B	493	ASN	3.5
1	A	128	GLY	3.5
1	B	129	ASN	3.5
1	B	492	GLU	3.5
1	A	1231	ALA	3.5
1	B	128	GLY	3.4
1	A	137	SER	3.4
1	B	484	ALA	3.4
1	A	81	GLY	3.4
1	A	129	ASN	3.3
1	A	486	LEU	3.3
1	B	485	TYR	3.3
1	B	116	THR	3.2
1	A	905	LEU	3.1
1	B	490	LEU	3.1
1	B	80	SER	3.1
1	B	138	ARG	3.1
1	B	133	HIS	3.1
1	B	483	LEU	3.1
1	A	115	ALA	3.0
1	B	500	VAL	3.0
1	B	132	SER	3.0
1	B	113	ASP	3.0
1	A	493	ASN	2.9
1	B	115	ALA	2.9
1	A	1230	MET	2.9
1	B	1233	GLY	2.8
1	B	486	LEU	2.8
1	A	191	MET	2.7
1	A	132	SER	2.7
1	A	130	TRP	2.7
1	A	113	ASP	2.7
1	B	81	GLY	2.7
1	A	451	GLY	2.6
1	B	414	ASP	2.6
1	B	494	GLY	2.6
1	B	415	VAL	2.6
1	A	912	ILE	2.6
1	B	489	ARG	2.6
1	A	496	ASN	2.5
1	A	125	ILE	2.5

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Mol	Chain	Res	Type	RSRZ
1	A	131	LYS	2.5
1	A	526	VAL	2.5
1	B	156	THR	2.5
1	B	194	GLN	2.4
1	B	506	PRO	2.4
1	B	496	ASN	2.4
1	A	506	PRO	2.4
1	B	120	LEU	2.4
1	B	1230	MET	2.4
1	A	937	LEU	2.4
1	B	482	LEU	2.3
1	A	500	VAL	2.3
1	A	114	THR	2.3
1	A	120	LEU	2.3
1	A	111	ILE	2.3
1	A	490	LEU	2.3
1	A	80	SER	2.3
1	A	796	ASP	2.2
1	A	138	ARG	2.2
1	B	440	HIS	2.2
1	B	917	GLU	2.2
1	A	586	ALA	2.2
1	B	131	LYS	2.2
1	A	938	GLN	2.2
1	B	508	VAL	2.2
1	B	223	LEU	2.1
1	A	773	ALA	2.1
1	B	525	PRO	2.1
1	A	1233	GLY	2.1
1	B	89	GLN	2.1
1	A	487	VAL	2.1
1	A	492	GLU	2.1
1	B	452	MET	2.1
1	A	520	VAL	2.0
1	A	503	ILE	2.0
1	B	139	SER	2.0
1	A	801	ALA	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)

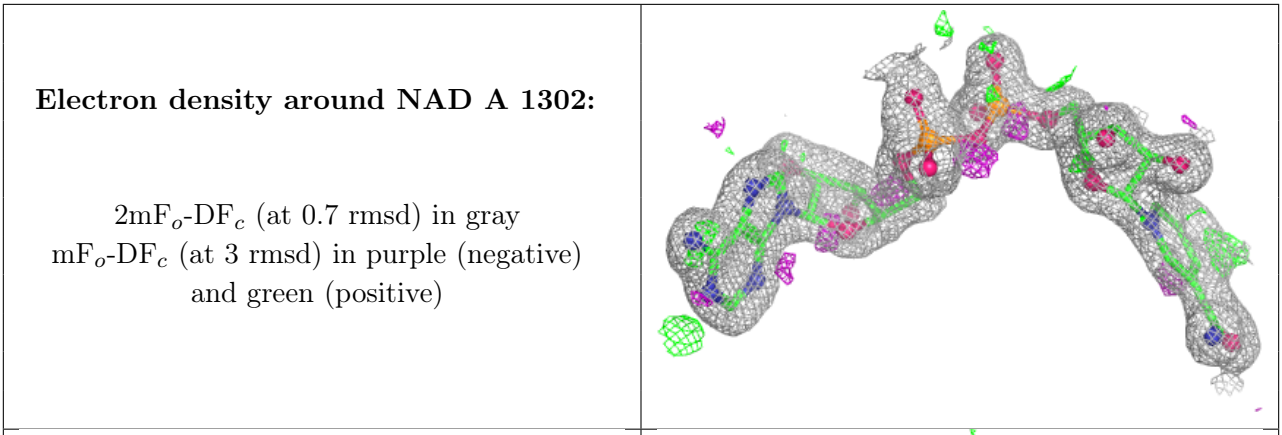
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9'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

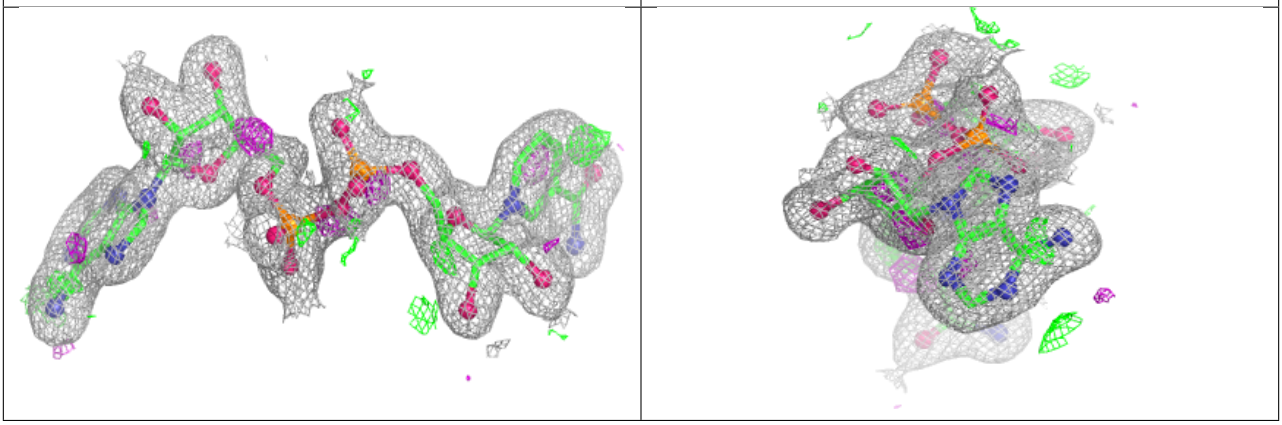
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
7	SO4	B	1308	5/5	0.72	0.15	87,87,88,90	0
7	SO4	B	1307	5/5	0.77	0.14	86,86,88,92	0
7	SO4	A	1309	5/5	0.79	0.14	42,49,54,59	0
7	SO4	B	1309	5/5	0.79	0.12	84,85,86,87	0
8	PGE	B	1305	10/10	0.82	0.16	40,47,53,53	0
6	PEG	A	1305	7/7	0.84	0.16	27,36,50,51	0
7	SO4	A	1307	5/5	0.86	0.13	39,40,45,56	5
7	SO4	A	1308	5/5	0.95	0.09	35,38,53,53	0
3	NAD	A	1302	44/44	0.95	0.09	16,24,29,31	0
4	MG	A	1303	1/1	0.97	0.09	29,29,29,29	0
4	MG	B	1303	1/1	0.97	0.09	25,25,25,25	0
2	FAD	B	1301	53/53	0.97	0.06	13,18,25,27	0
2	FAD	A	1301	53/53	0.97	0.06	13,18,24,34	0
3	NAD	B	1302	44/44	0.97	0.06	12,15,17,29	0
5	T2C	B	1304	8/8	0.99	0.05	18,19,20,22	0
5	T2C	A	1304	8/8	0.99	0.05	17,21,22,22	0
7	SO4	A	1306	5/5	0.99	0.04	18,18,20,20	0
7	SO4	B	1306	5/5	0.99	0.03	14,15,19,20	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 NAD A 1302:

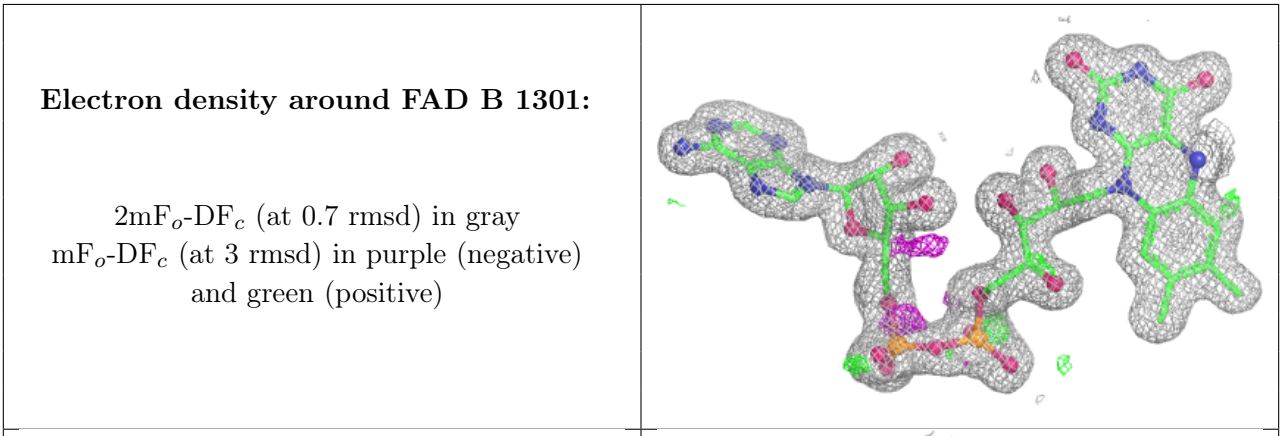
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

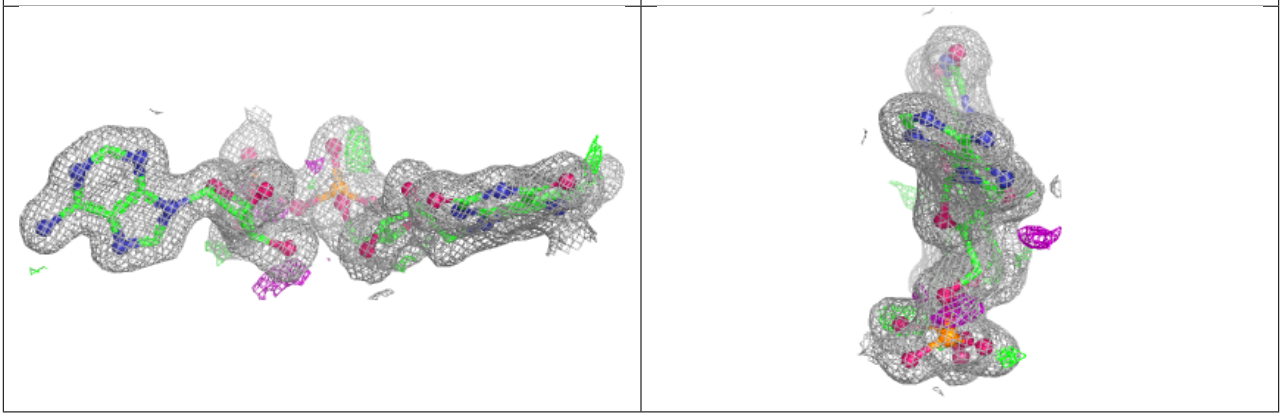




Electron density around FAD B 1301:

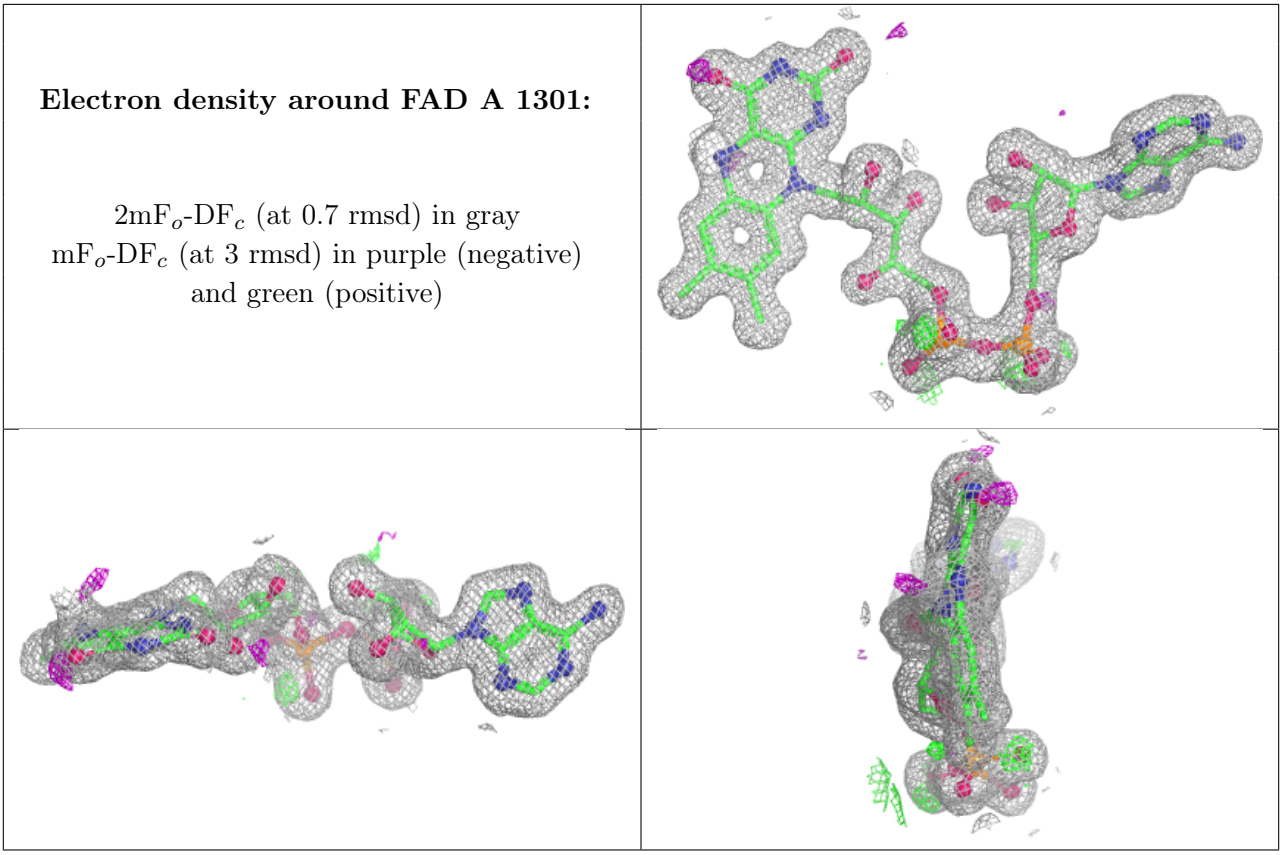
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)





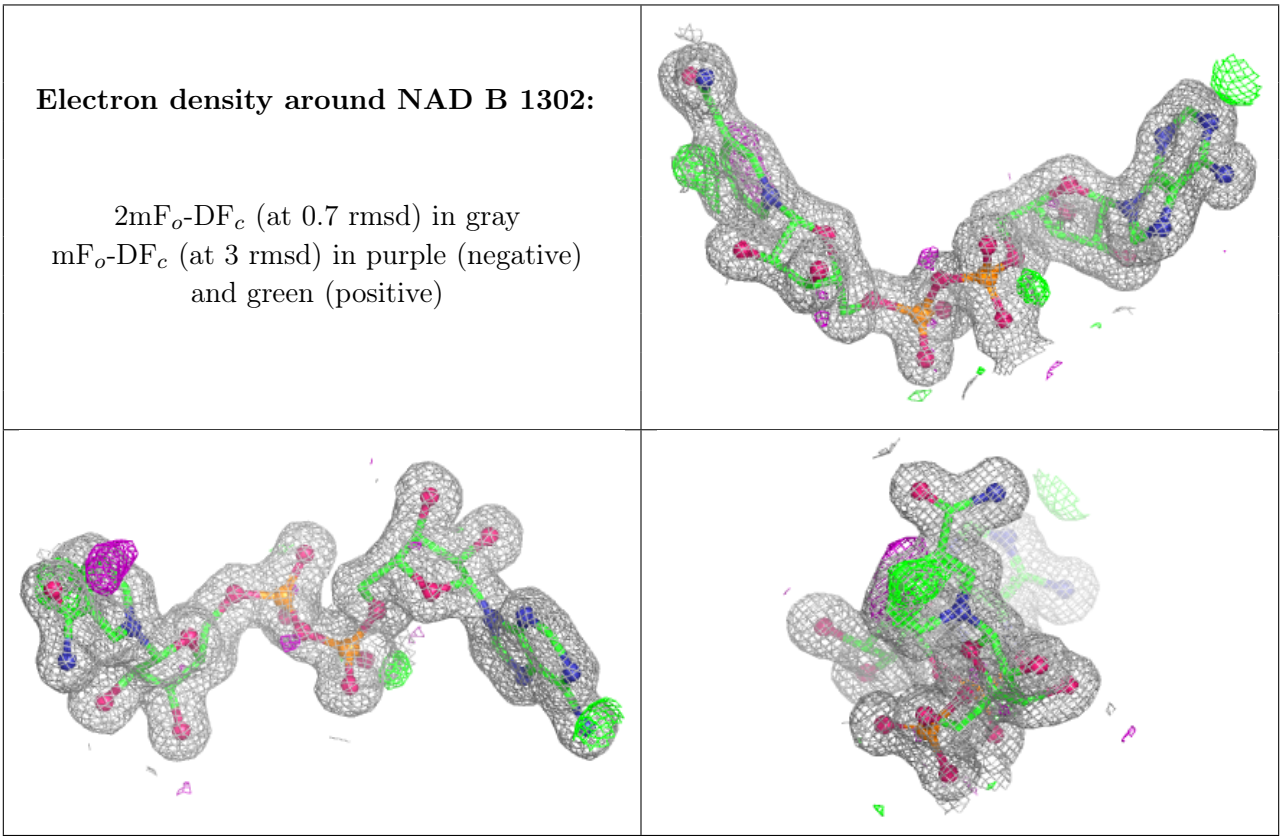
Electron density around FAD A 1301:

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



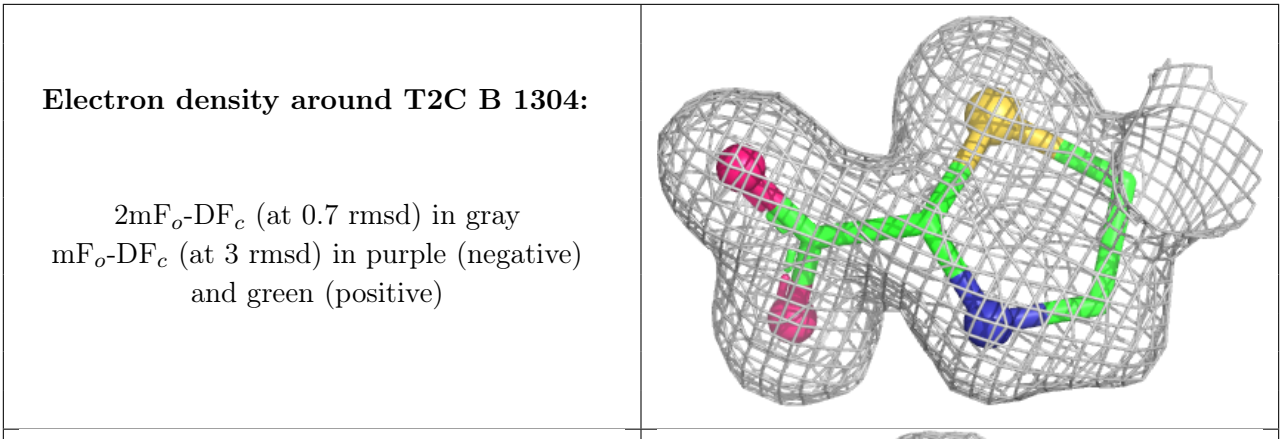
Electron density around NAD B 1302:

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



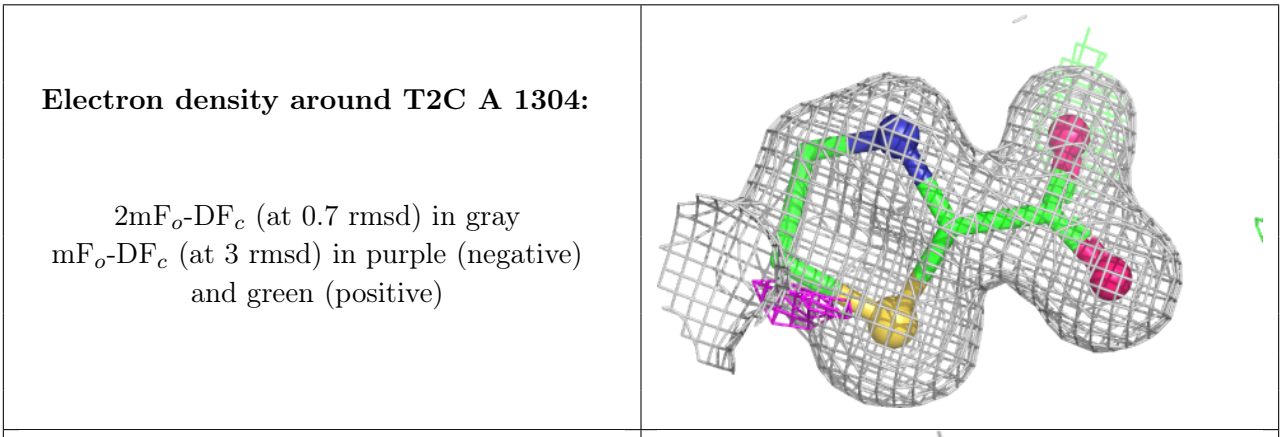
Electron density around T2C B 1304:

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



Electron density around T2C A 1304:

$2mF_o$-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.