W O R L D W I D E
wwPDB
P R O T E I N   D A T A   B A N K

wwPDB X-ray Structure Validation Summary Report (i)

Jun 16, 2024 – 06:47 PM EDT

PDB ID	:	2WP6
Title	:	Trypanosoma brucei trypanothione reductase in complex with 3,4- dihydro-quinazoline inhibitor (DDD00071494)
Authors	:	Alphey, M.S.; Patterson, S.; Fairlamb, A.H.
Deposited on	:	2009-08-03
Resolution	:	2.50 Å(reported)

The following versions of software and data (see references (i)) were used in the production of this report:

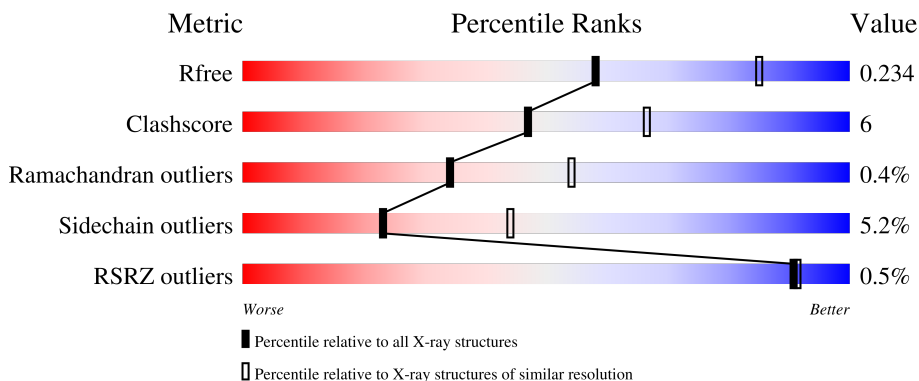|		
MolProbity	:	4.02b-467
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	1.20.1
EDS	:	2.37.1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.50 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	Percentile Ranks	Value
Rfree		0.234
Clashscore		6
Ramachandran outliers		0.4%
Sidechain outliers		5.2%
RSRZ outliers		0.5%

Worse   *Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	4661 (2.50-2.50)
Clashscore	141614	5346 (2.50-2.50)
Ramachandran outliers	138981	5231 (2.50-2.50)
Sidechain outliers	138945	5233 (2.50-2.50)
RSRZ outliers	127900	4559 (2.50-2.50)

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	495	86% 13% ••
1	B	495	83% 14% ••
1	C	495	80% 16% • •
1	D	495	84% 14% ••

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard

residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	WP6	A	1000	-	-	X	-
3	WP6	B	1000	-	-	X	-

2   Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 16217 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.
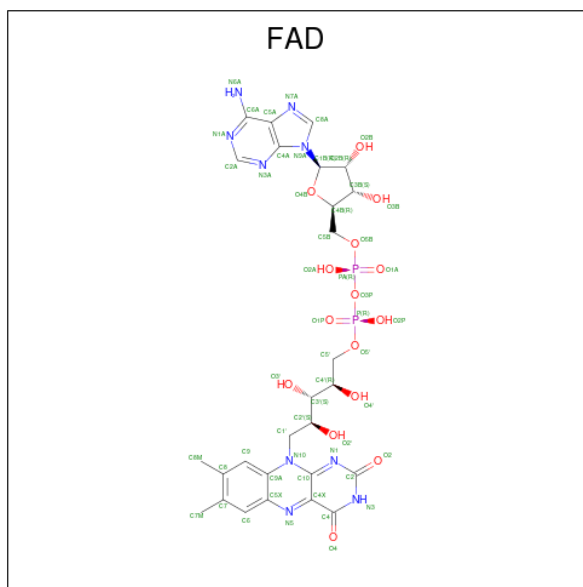
- Molecule 1 is a protein called TRYPANOTHIONE REDUCTASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	490	Total	C	N	O	S	0	3	0
			3745	2384	636	705	20			
1	B	488	Total	C	N	O	S	0	6	0
			3744	2383	636	706	19			
1	C	488	Total	C	N	O	S	0	6	0
			3744	2383	635	707	19			
1	D	489	Total	C	N	O	S	0	7	0
			3752	2387	637	708	20			

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-2	GLY	-	expression tag	UNP Q389T8
A	-1	SER	-	expression tag	UNP Q389T8
A	0	HIS	-	expression tag	UNP Q389T8
B	-2	GLY	-	expression tag	UNP Q389T8
B	-1	SER	-	expression tag	UNP Q389T8
B	0	HIS	-	expression tag	UNP Q389T8
C	-2	GLY	-	expression tag	UNP Q389T8
C	-1	SER	-	expression tag	UNP Q389T8
C	0	HIS	-	expression tag	UNP Q389T8
D	-2	GLY	-	expression tag	UNP Q389T8
D	-1	SER	-	expression tag	UNP Q389T8
D	0	HIS	-	expression tag	UNP Q389T8

- Molecule 2 is FLAVIN-ADENINE DINUCLEOTIDE (three-letter code: FAD) (formula: $C_{27}H_{33}N_9O_{15}P_2$).

FAD

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		
2	C	1	Total	C	N	O	P	0	0
			53	27	9	15	2		
2	D	1	Total	C	N	O	P	0	0
			53	27	9	15	2		

- Molecule 3 is (4S)-3-BENZYL-6-CHLORO-2-METHYL-4-PHENYL-3,4-DIHYDROQUINA ZOLINE (three-letter code: WP6) (formula: $C_{22}H_{19}ClN_2$).

WP6
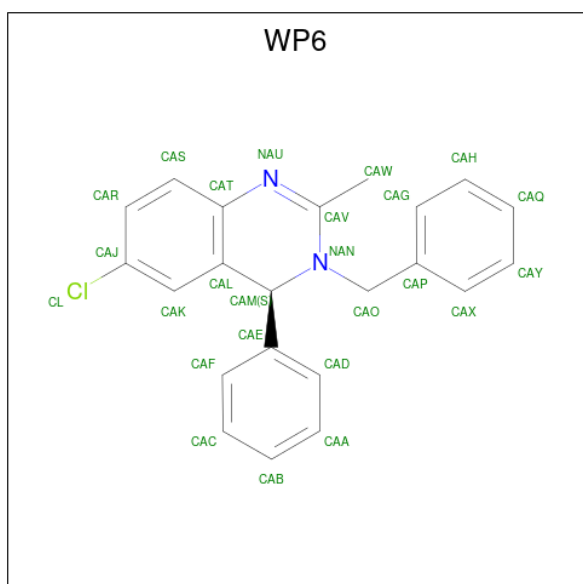
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total 25	C 22	Cl 1	N 2	0	0
3	B	1	Total 25	C 22	Cl 1	N 2	0	0
3	C	1	Total 25	C 22	Cl 1	N 2	0	0
3	D	1	Total 25	C 22	Cl 1	N 2	0	0

- Molecule 4 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total 1	Cl 1	0	0
4	B	1	Total 1	Cl 1	0	0
4	C	2	Total 2	Cl 2	0	0
4	D	1	Total 1	Cl 1	0	0

- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	272	Total 272	O 272	0	0
5	B	211	Total 211	O 211	0	0
5	C	197	Total 197	O 197	0	0
5	D	235	Total 235	O 235	0	0

3 Residue-property plots ⓘ

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.
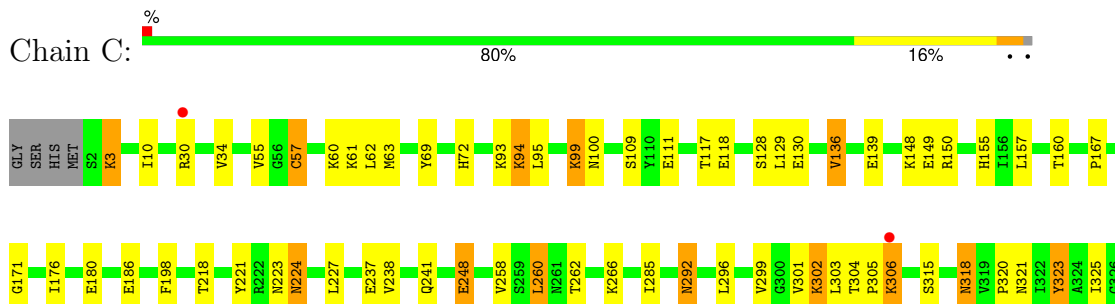
- Molecule 1: TRYPANOTHIONE REDUCTASE
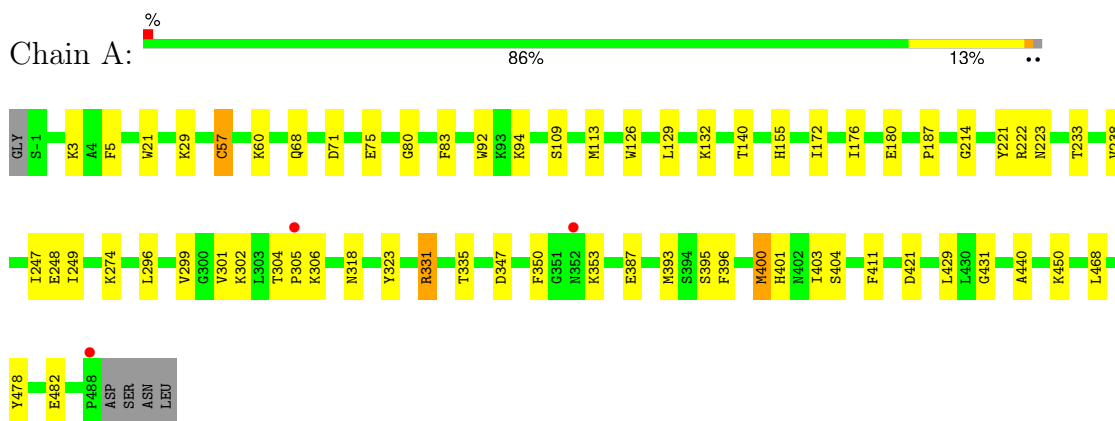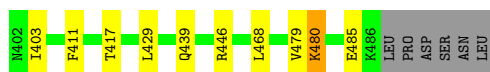

- Molecule 1: TRYPANOTHIONE REDUCTASE

- Molecule 1: TRYPANOTHIONE REDUCTASE

D327 I328 R331 L332 N352 K353 D358 V366 F367 E385 V389 Y392 S395 F396 M400 F411 K414 G431 R446 K450 Y455 E466 R472 V479 M484 E485 K486 D489 SER ASN LEU
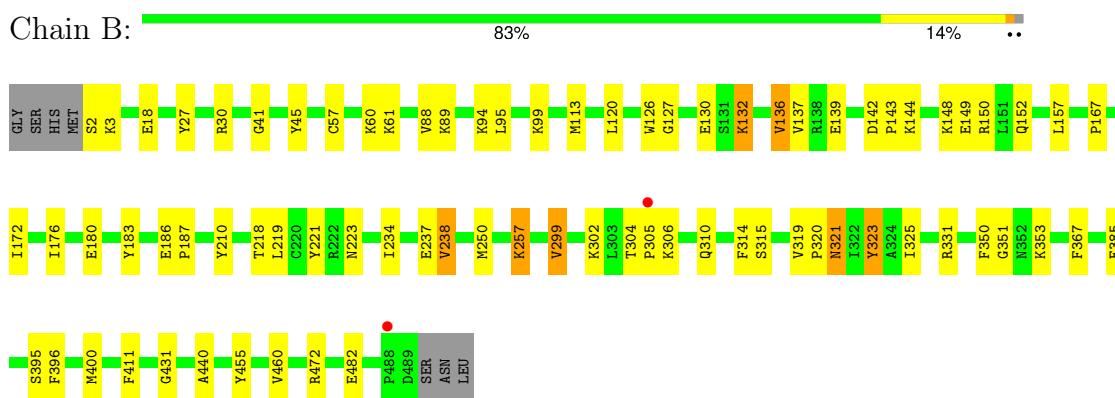
• Molecule 1: TRYPANOTHIONE REDUCTASE

Chain D:

84%   14%   ••

G-2 V8 K29 R30 Q37 P43 A47 L48 V55 G56 C57 K60 Y69 L73 E82 K89 K99 S109 M113 L129 D142 P143 K144 E149 A153 I156 L157 G171 A181 L184 P185 E186 R189 L192 P212

T218 Y221 R222 N223 N224 L225 I226 E253 A256 K257 V258 K266 H267 D277 N292 V301 T304 P305 E313 R316 T317 N318 N321 I325 R331 L332 E341 F350 K353 K356 T357 D358 H359 I378 A390 S395 M400 H401

M402 I403 F411 T417 L429 Q439 R446 L468 V479 K480 E485 K486 LEU PRO ASP SER ASN LEU

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	101.65Å 63.21Å 170.50Å 90.00° 97.82° 90.00°	Depositor
Resolution (Å)	46.77 – 2.50 46.77 – 2.50	Depositor EDS
% Data completeness (in resolution range)	100.0 (46.77-2.50) 99.9 (46.77-2.50)	Depositor EDS
R_{merge}	0.14	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	3.04 (at 2.51Å)	Xtriage
Refinement program	REFMAC 5.5.0088	Depositor
R, R_{free}	0.163 , 0.236 0.162 , 0.234	Depositor DCC
R_{free} test set	3741 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	24.8	Xtriage
Anisotropy	0.445	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.31 , 38.4	EDS
L-test for twinning[2]	$< |L| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	16217	wwPDB-VP
Average B, all atoms (Å^2)	22.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 8.60% of the height of the origin peak. No significant pseudotranslation is detected.*

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[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: WP6, FAD, CL

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	0.87	0/3834	0.81	1/5200 (0.0%)
1	B	0.80	0/3841	0.79	1/5211 (0.0%)
1	C	0.79	0/3841	0.79	2/5212 (0.0%)
1	D	0.83	0/3852	0.81	4/5223 (0.1%)
All	All	0.83	0/15368	0.80	8/20846 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	B	0	1
All	All	0	2

There are no bond length outliers.

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

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	347	ASP	CB-CG-OD1	6.32	123.99	118.30
1	C	260	LEU	CA-CB-CG	5.58	128.13	115.30
1	D	316	ARG	NE-CZ-NH1	5.32	122.96	120.30
1	D	358	ASP	CB-CG-OD1	5.14	122.93	118.30
1	C	327	ASP	CB-CG-OD1	5.07	122.86	118.30

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	214	GLY	Peptide
1	B	350	PHE	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3745	0	3760	48	0
1	B	3744	0	3756	45	0
1	C	3744	0	3758	52	0
1	D	3752	0	3765	48	0
2	A	53	0	31	1	0
2	B	53	0	31	0	0
2	C	53	0	31	2	0
2	D	53	0	31	0	0
3	A	25	0	19	9	0
3	B	25	0	19	9	0
3	C	25	0	19	0	0
3	D	25	0	19	0	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
4	C	2	0	0	0	0
4	D	1	0	0	0	0
5	A	272	0	0	3	0
5	B	211	0	0	3	0
5	C	197	0	0	2	0
5	D	235	0	0	5	0
All	All	16217	0	15239	188	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 6.

The worst 5 of 188 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:113:MET:CE	3:A:1000:WP6:HAO1	1.77	1.13
1:B:320:PRO:O	1:B:321:ASN:ND2	2.01	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:113:MET:HE3	3:A:1000:WP6:HAO1	1.50	0.89
1:B:302:LYS:HD3	1:B:310:GLN:HE22	1.38	0.87
1:A:331[A]:ARG:NH2	5:A:2203:HOH:O	2.13	0.80

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	491/495 (99%)	473 (96%)	18 (4%)	0	100	100
1	B	492/495 (99%)	471 (96%)	18 (4%)	3 (1%)	25	43
1	C	492/495 (99%)	471 (96%)	19 (4%)	2 (0%)	34	54
1	D	494/495 (100%)	472 (96%)	19 (4%)	3 (1%)	25	43
All	All	1969/1980 (99%)	1887 (96%)	74 (4%)	8 (0%)	34	54

5 of 8 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	352	ASN
1	B	132	LYS
1	D	480	LYS
1	B	45	TYR
1	B	143	PRO

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	406/407 (100%)	392 (97%)	14 (3%)	37	63
1	B	406/407 (100%)	384 (95%)	22 (5%)	22	42
1	C	407/407 (100%)	373 (92%)	34 (8%)	11	21
1	D	407/407 (100%)	386 (95%)	21 (5%)	23	44
All	All	1626/1628 (100%)	1535 (94%)	91 (6%)	23	40

5 of 91 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	266	LYS
1	D	57	CYS
1	C	302	LYS
1	C	385	GLU
1	D	129	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 24 such sidechains are listed below:

Mol	Chain	Res	Type
1	C	292	ASN
1	D	107	ASN
1	D	68	GLN
1	D	152	GLN
1	B	133	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 monosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 13 ligands modelled in this entry, 5 are monoatomic - leaving 8 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	#$|Z| > 2$
3	WP6	A	1000	-	28,28,28	2.38	5 (17%)	33,39,39	1.50	3 (9%)
3	WP6	B	1000	-	28,28,28	2.34	6 (21%)	33,39,39	1.35	2 (6%)
3	WP6	D	1000	-	28,28,28	2.52	5 (17%)	33,39,39	1.15	2 (6%)
2	FAD	A	998	-	54,58,58	1.04	3 (5%)	71,89,89	1.53	12 (16%)
2	FAD	D	998	-	54,58,58	1.13	4 (7%)	71,89,89	1.39	6 (8%)
2	FAD	C	998	-	54,58,58	1.21	4 (7%)	71,89,89	1.64	16 (22%)
3	WP6	C	1000	-	28,28,28	2.17	5 (17%)	33,39,39	1.44	7 (21%)
2	FAD	B	998	-	54,58,58	1.16	4 (7%)	71,89,89	1.63	13 (18%)

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	WP6	A	1000	-	-	0/8/24/24	0/4/4/4
3	WP6	B	1000	-	-	0/8/24/24	0/4/4/4
3	WP6	D	1000	-	-	0/8/24/24	0/4/4/4
2	FAD	A	998	-	-	3/30/50/50	0/6/6/6
2	FAD	D	998	-	-	5/30/50/50	0/6/6/6
2	FAD	C	998	-	-	4/30/50/50	0/6/6/6
3	WP6	C	1000	-	-	0/8/24/24	0/4/4/4
2	FAD	B	998	-	-	3/30/50/50	0/6/6/6

The worst 5 of 36 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	1000	WP6	CAV-NAU	10.02	1.42	1.29

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	1000	WP6	CAV-NAU	8.80	1.40	1.29
3	B	1000	WP6	CAV-NAU	8.66	1.40	1.29
3	C	1000	WP6	CAV-NAU	8.56	1.40	1.29
3	B	1000	WP6	CAW-CAV	5.30	1.57	1.49

The worst 5 of 61 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	998	FAD	N3A-C2A-N1A	-6.73	119.54	128.67
2	C	998	FAD	N3A-C2A-N1A	-6.37	120.02	128.67
2	A	998	FAD	N3A-C2A-N1A	-5.93	120.63	128.67
2	D	998	FAD	N3A-C2A-N1A	-5.58	121.10	128.67
3	B	1000	WP6	CAT-NAU-CAV	4.70	122.19	118.16

There are no chirality outliers.

5 of 15 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	C	998	FAD	O4B-C4B-C5B-O5B
2	D	998	FAD	O4B-C4B-C5B-O5B
2	D	998	FAD	C3B-C4B-C5B-O5B
2	C	998	FAD	C3B-C4B-C5B-O5B
2	A	998	FAD	PA-O3P-P-O5'

There are no ring outliers.

4 monomers are involved in 21 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	1000	WP6	9	0
3	B	1000	WP6	9	0
2	A	998	FAD	1	0
2	C	998	FAD	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 WP6 A 1000

Bond lengths

Bond angles

Torsions

Rings

Ligand WP6 B 1000

Bond lengths

Bond angles

Torsions

Rings

Ligand WP6 D 1000

Bond lengths

Bond angles

Torsions

Rings

Ligand FAD A 998

Bond lengths

Bond angles

Torsions

Rings

Ligand FAD D 998

Bond lengths

Bond angles

Torsions

Rings

Ligand FAD C 998

Bond lengths

Bond angles

Torsions

Rings

Ligand WP6 C 1000

Bond lengths

Bond angles

Torsions

Rings

Ligand FAD B 998

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	490/495 (98%)	-0.58	3 (0%)	89	90	6, 17, 33, 47	0
1	B	488/495 (98%)	-0.40	2 (0%)	92	93	9, 22, 44, 59	0
1	C	488/495 (98%)	-0.42	4 (0%)	86	87	10, 22, 47, 60	0
1	D	489/495 (98%)	-0.54	0	100	100	10, 20, 34, 54	0
All	All	1955/1980 (98%)	-0.48	9 (0%)	91	91	6, 20, 42, 60	0

The worst 5 of 9 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	352	ASN	2.5
1	B	488	PRO	2.4
1	A	352	ASN	2.3
1	C	486	LYS	2.3
1	A	488	PRO	2.1

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

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

6.3 Carbohydrates ⓘ

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(Å²)	Q<0.9
3	WP6	C	1000	25/25	0.95	0.13	25,30,51,52	0
4	CL	D	1487	1/1	0.95	0.08	35,35,35,35	0
3	WP6	A	1000	25/25	0.97	0.12	10,18,30,33	0
3	WP6	B	1000	25/25	0.97	0.12	19,25,31,32	0
2	FAD	B	998	53/53	0.97	0.12	9,19,30,31	0
4	CL	C	1491	1/1	0.97	0.24	35,35,35,35	0
2	FAD	C	998	53/53	0.97	0.11	14,18,25,27	0
3	WP6	D	1000	25/25	0.98	0.09	13,16,30,31	0
4	CL	A	1489	1/1	0.98	0.06	27,27,27,27	0
4	CL	C	1490	1/1	0.98	0.06	37,37,37,37	0
2	FAD	D	998	53/53	0.98	0.10	7,12,17,17	0
2	FAD	A	998	53/53	0.98	0.11	4,10,14,18	0
4	CL	B	1490	1/1	0.99	0.04	27,27,27,27	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 WP6 C 1000:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)
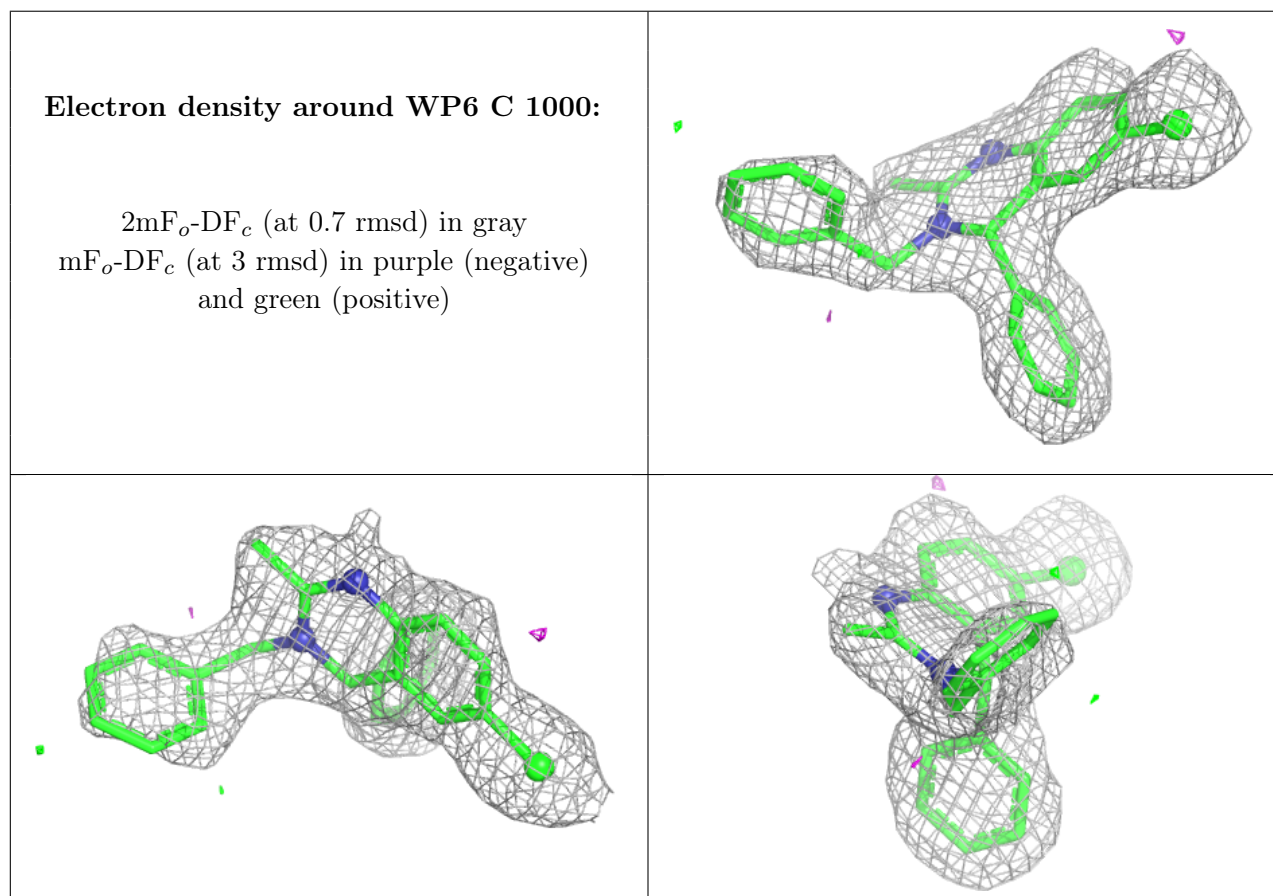
Electron density around WP6 A 1000:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
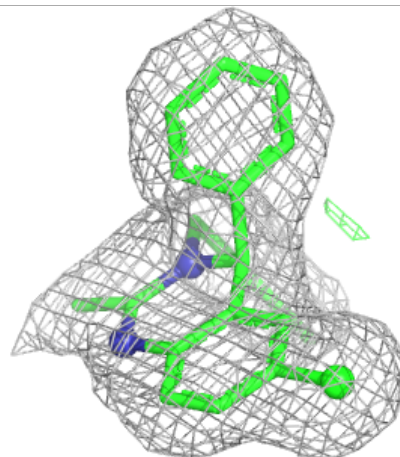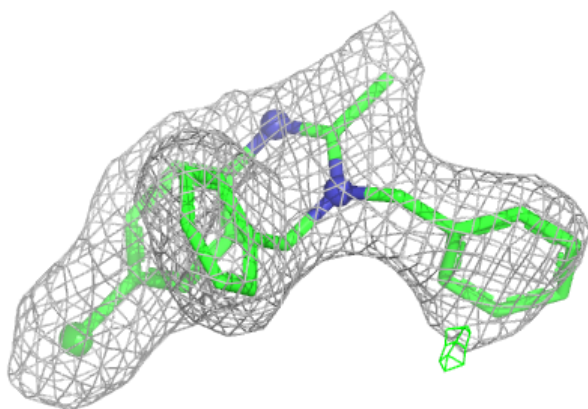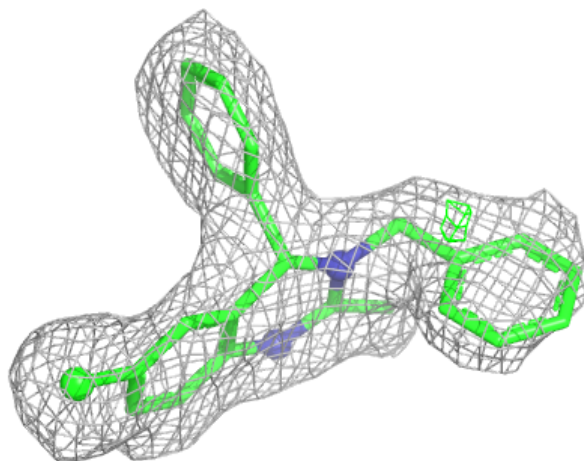
Electron density around WP6 B 1000:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
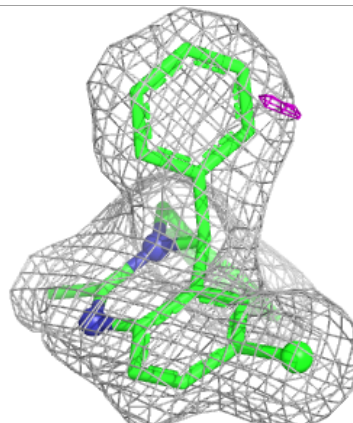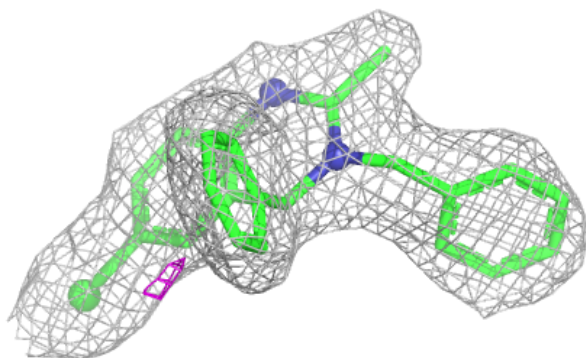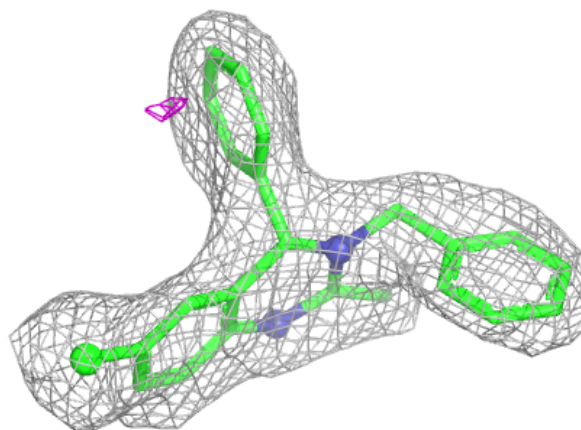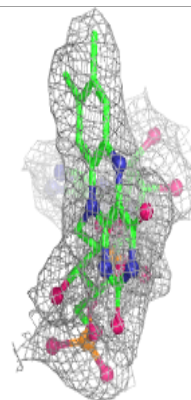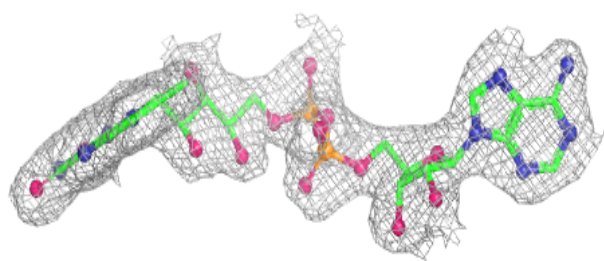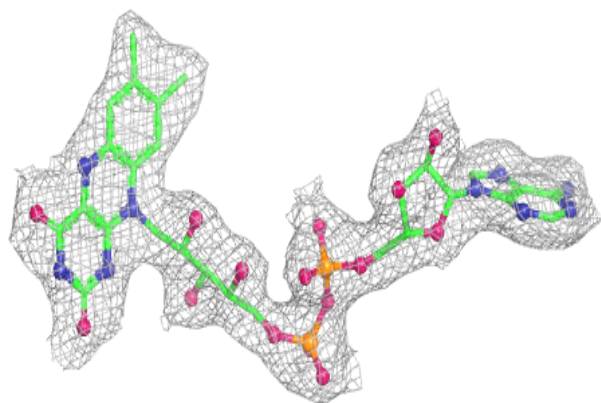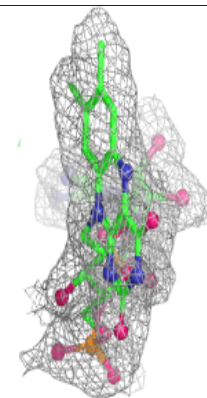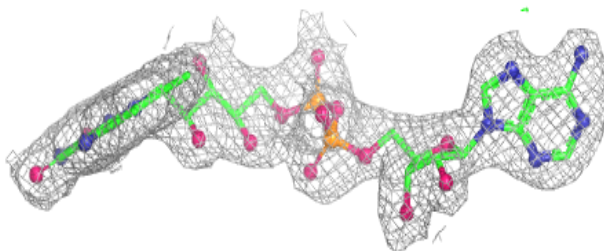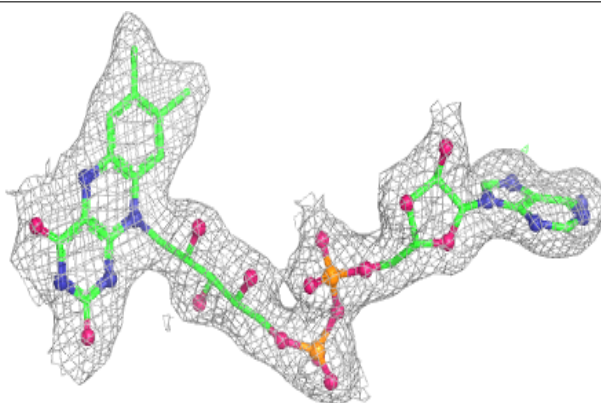and green (positive)
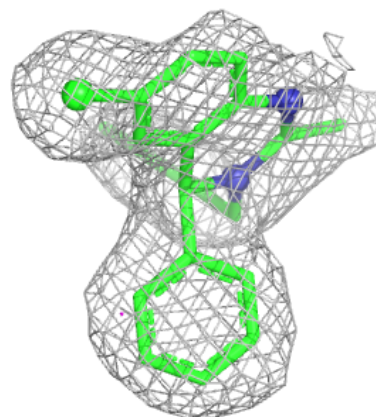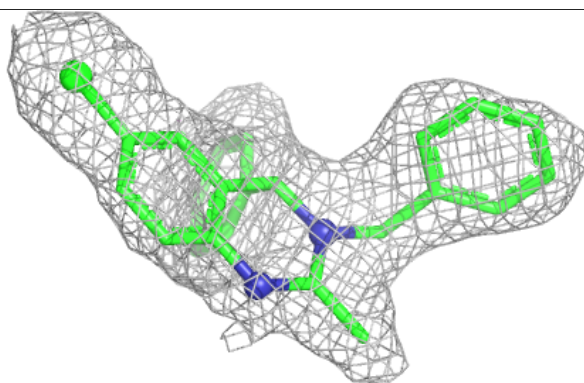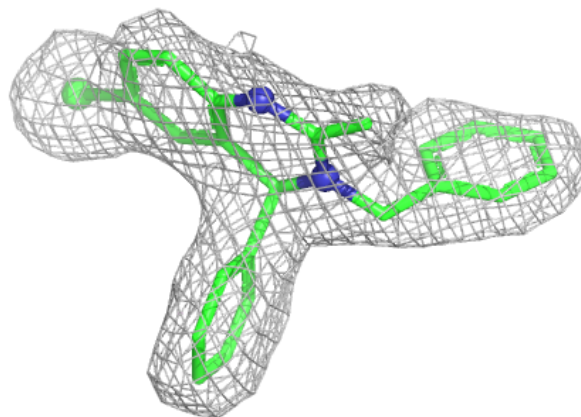
Electron density around FAD B 998:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
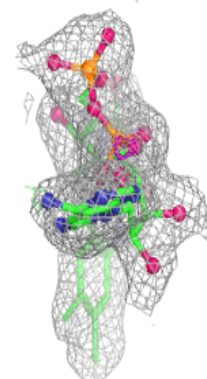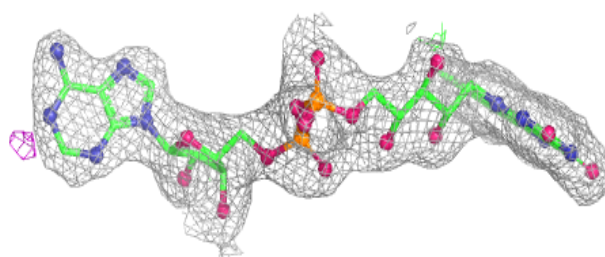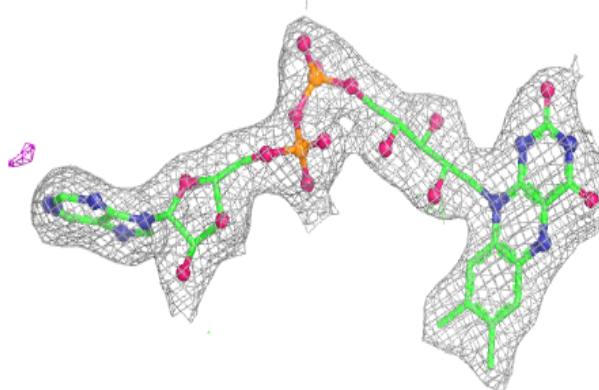
Electron density around FAD C 998:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
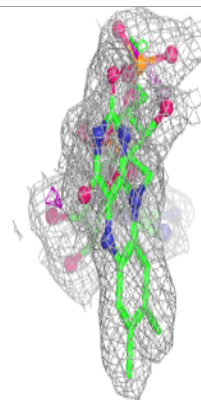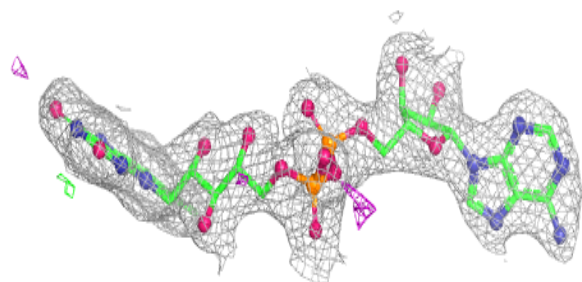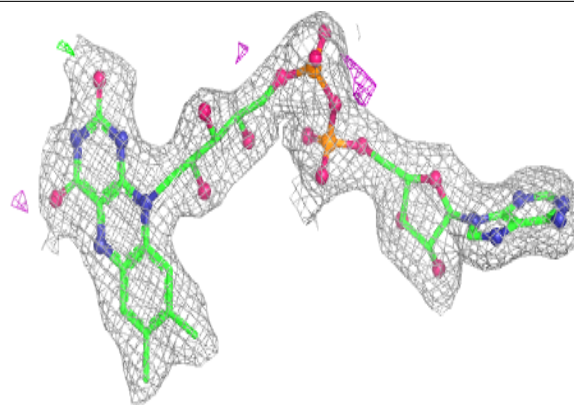
Electron density around WP6 D 1000:

$2mF_o$-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 D 998:

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

Electron density around FAD A 998:

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

6.5 Other polymers ⓘ

There are no such residues in this entry.