WORLDWIDE PDB
PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report ⓘ

Apr 30, 2025 – 07:09 pm BST

PDB ID	:	9G92 / pdb_00009g92
Title	:	Crystal structure of thioredoxin reductase from Cryptosporidium parvum in the "in" conformation
Authors	:	Gabriele, F.; Palerma, M.; Ardini, M.; Bogard, J.; Chen, X.M.; Williams, D.L.; Angelucci, F.
Deposited on	:	2024-07-24
Resolution	:	1.95 Å(reported)

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

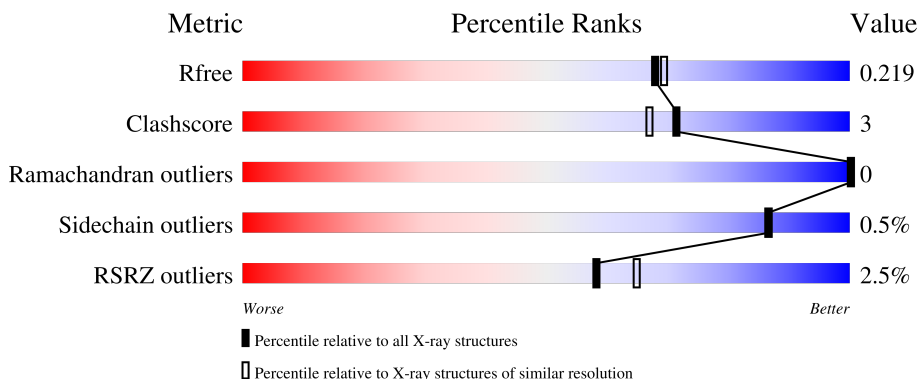|		
MolProbity	:	4-5-2 with Phenix2.0rc1
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	2.0rc1
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.003 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.43.1

1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 1.95 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		0.219
Clashscore		3
Ramachandran outliers		0
Sidechain outliers		0.5%
RSRZ outliers		2.5%

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}	164625	3187 (1.96-1.96)
Clashscore	180529	3412 (1.96-1.96)
Ramachandran outliers	177936	3390 (1.96-1.96)
Sidechain outliers	177891	3390 (1.96-1.96)
RSRZ outliers	164620	3186 (1.96-1.96)

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	AAA	521	3% · 88% · 8% ·
1	BBB	521	2% · 89% · 7% · 5%

2 Entry composition (i)

There are 5 unique types of molecules in this entry. The entry contains 8227 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 Thioredoxin reductase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	AAA	500	Total	C	N	O	S	0	8	0
			3828	2435	638	738	17			
1	BBB	497	Total	C	N	O	S	0	8	0
			3794	2418	631	728	17			

- 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).
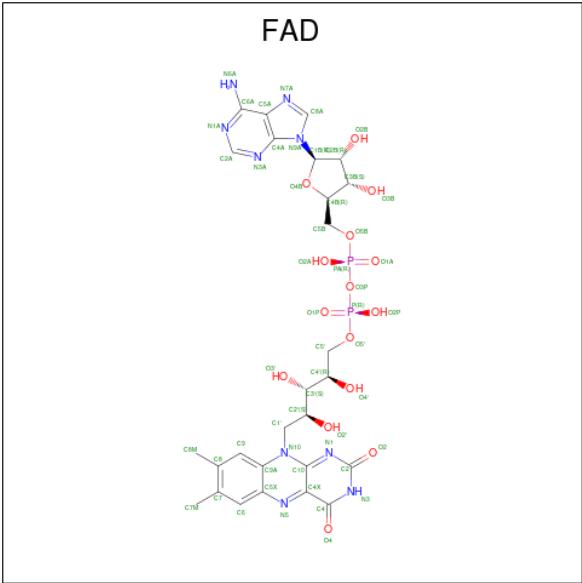
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	AAA	1	Total	C	N	O	P	0	0
			53	27	9	15	2		
2	BBB	1	Total	C	N	O	P	0	0
			53	27	9	15	2		

- Molecule 3 is DIMETHYL SULFOXIDE (CCD ID: DMS) (formula: C_2H_6OS).

DMS

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	AAA	1	Total 4	C 2	O 1	S 1	0	0
3	BBB	1	Total 4	C 2	O 1	S 1	0	0

• Molecule 4 is DI(HYDROXYETHYL)ETHER (CCD ID: PEG) (formula: $C_4H_{10}O_3$).

PEG
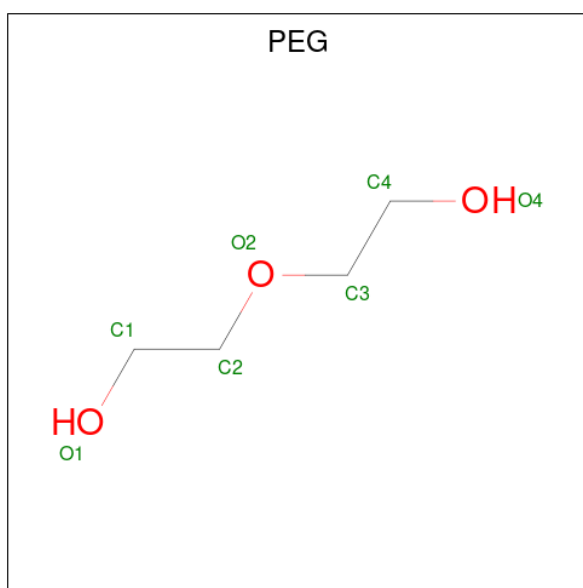
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	AAA	1	Total 7	C 4	O 3	0	0
4	BBB	1	Total 7	C 4	O 3	0	0

• Molecule 5 is water.

| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	AAA	259	Total 259	O 259	0	0
5	BBB	218	Total 218	O 218	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: Thioredoxin reductase

Chain AAA:

• Molecule 1: Thioredoxin reductase

Chain BBB:
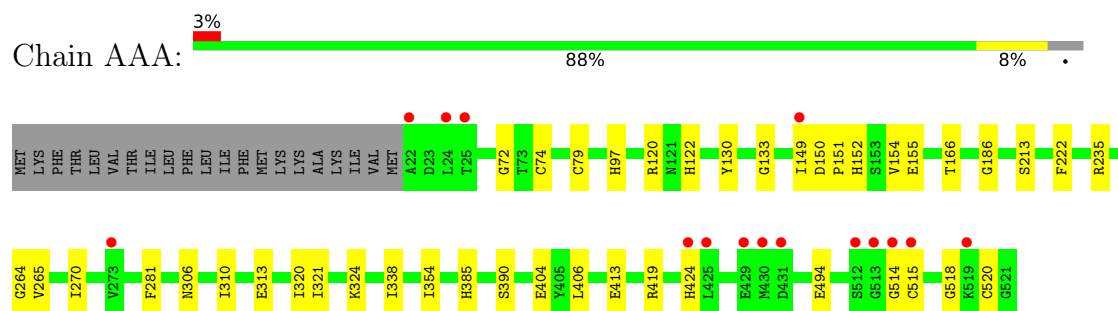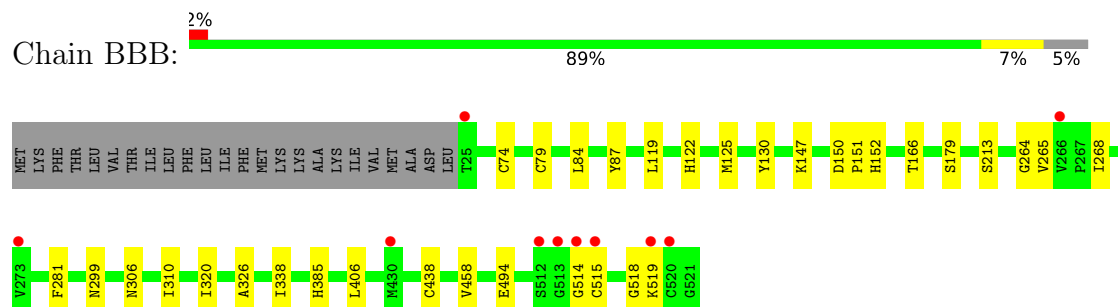
4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	72.87Å 74.32Å 188.75Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	39.87 – 1.95 39.87 – 1.95	Depositor EDS
% Data completeness (in resolution range)	99.9 (39.87-1.95) 99.9 (39.87-1.95)	Depositor EDS
R_{merge}	0.20	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.99 (at 1.95Å)	Xtriage
Refinement program	REFMAC 5.8.0267	Depositor
R, R_{free}	0.177 , 0.212 0.186 , 0.219	Depositor DCC
R_{free} test set	3919 reflections (5.19%)	wwPDB-VP
Wilson B-factor (Å^2)	22.9	Xtriage
Anisotropy	0.218	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.33 , 30.3	EDS
L-test for twinning[2]	$< \lvert L \rvert > = 0.47, < L^2 > = 0.30$	Xtriage
Estimated twinning fraction	0.044 for k,h,-l	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	8227	wwPDB-VP
Average B, all atoms (Å^2)	26.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.33% of the height of the origin peak. No significant pseudotranslation is detected.*

---

[1]Intensities estimated from amplitudes.
[2]Theoretical values of $< \lvert L \rvert >$, $< L^2 >$ 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: PEG, DMS, FAD

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	AAA	1.05	0/3912	1.24	1/5287 (0.0%)
1	BBB	1.07	0/3890	1.25	1/5258 (0.0%)
All	All	1.06	0/7802	1.25	2/10545 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	BBB	268	ILE	N-CA-C	-5.11	108.53	113.53
1	AAA	222	PHE	CA-CB-CG	5.04	118.84	113.80

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	AAA	3828	0	3823	30	0
1	BBB	3794	0	3806	26	0
2	AAA	53	0	31	0	0
2	BBB	53	0	31	0	0
3	AAA	4	0	6	0	0
3	BBB	4	0	6	0	0
4	AAA	7	0	10	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	BBB	7	0	10	0	0
5	AAA	259	0	0	8	0
5	BBB	218	0	0	6	0
All	All	8227	0	7723	48	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 (48) 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:AAA:424:HIS:NE2	5:AAA:702:HOH:O	2.13	0.81
1:BBB:125:MET:HG3	5:BBB:917:HOH:O	1.82	0.80
1:AAA:133:GLY:O	5:AAA:701:HOH:O	2.09	0.70
1:AAA:120[B]:ARG:NH1	5:AAA:704:HOH:O	2.31	0.63
1:AAA:515[B]:CYS:SG	1:BBB:130:TYR:OH	2.54	0.63
1:AAA:514:GLY:O	1:BBB:122:HIS:HE1	1.86	0.58
1:AAA:130:TYR:OH	1:BBB:515[B]:CYS:SG	2.60	0.58
1:AAA:122:HIS:HE1	1:BBB:514:GLY:O	1.88	0.56
1:AAA:149:ILE:HD11	1:AAA:155:GLU:OE2	2.06	0.55
1:BBB:494:GLU:CD	1:BBB:518:GLY:HA3	2.32	0.54
1:BBB:74[A]:CYS:HB3	5:BBB:812:HOH:O	2.08	0.54
1:BBB:326:ALA:HB1	5:BBB:889:HOH:O	2.08	0.53
1:AAA:72:GLY:N	5:AAA:707:HOH:O	2.42	0.53
1:BBB:385:HIS:HD2	5:BBB:801:HOH:O	1.91	0.51
1:AAA:313:GLU:HG2	1:AAA:321:ILE:HD12	1.92	0.51
1:AAA:385:HIS:HD2	5:AAA:823:HOH:O	1.93	0.51
1:AAA:265:VAL:HG13	1:AAA:281:PHE:HB3	1.93	0.51
1:AAA:354:ILE:HD11	1:BBB:519:LYS:HE2	1.95	0.49
1:BBB:320:ILE:HD12	1:BBB:338:ILE:HD12	1.95	0.49
1:AAA:235:ARG:O	1:AAA:264:GLY:HA2	2.14	0.48
1:AAA:324:LYS:HD2	5:AAA:896:HOH:O	2.12	0.48
1:AAA:494:GLU:CD	1:AAA:518:GLY:HA3	2.39	0.48
1:BBB:213:SER:HB2	5:BBB:903:HOH:O	2.14	0.47
1:AAA:152:HIS:O	1:AAA:166:THR:HA	2.15	0.47
1:BBB:152:HIS:O	1:BBB:166:THR:HA	2.14	0.47
1:AAA:413:GLU:HG2	1:BBB:87:TYR:HB2	1.98	0.46
1:AAA:390:SER:OG	1:AAA:404:GLU:OE1	2.32	0.46
1:AAA:122:HIS:CE1	1:BBB:514:GLY:O	2.69	0.45
1:AAA:406:LEU:HD23	1:AAA:406:LEU:N	2.32	0.44
1:AAA:213:SER:HB2	5:AAA:926:HOH:O	2.16	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AAA:520:CYS:HB2	1:BBB:130:TYR:OH	2.17	0.44
1:AAA:186:GLY:HA3	1:AAA:270:ILE:O	2.18	0.44
1:BBB:265:VAL:HG13	1:BBB:281:PHE:HB3	2.00	0.43
1:AAA:97:HIS:HB3	1:AAA:419:ARG:HG2	1.99	0.43
1:AAA:306:ASN:O	1:AAA:310:ILE:HG12	2.18	0.43
1:AAA:320:ILE:HD12	1:AAA:338:ILE:HD12	2.00	0.43
1:AAA:424:HIS:CD2	5:AAA:702:HOH:O	2.63	0.43
1:BBB:150:ASP:HB2	1:BBB:151:PRO:CD	2.47	0.43
1:BBB:306:ASN:O	1:BBB:310:ILE:HG12	2.18	0.43
1:AAA:150:ASP:HB2	1:AAA:151:PRO:CD	2.50	0.42
1:BBB:147:LYS:HE3	1:BBB:306:ASN:HB2	2.02	0.41
1:BBB:125:MET:HB2	5:BBB:917:HOH:O	2.20	0.41
1:BBB:179[B]:SER:HB3	1:BBB:299:ASN:OD1	2.21	0.41
1:BBB:438:CYS:HA	1:BBB:458:VAL:O	2.21	0.40
1:AAA:120[A]:ARG:HH11	1:AAA:120[A]:ARG:CB	2.34	0.40
1:BBB:84:LEU:HB2	1:BBB:119:LEU:HD22	2.03	0.40
1:BBB:406:LEU:N	1:BBB:406:LEU:HD23	2.36	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	AAA	506/521 (97%)	486 (96%)	20 (4%)	0	100	100
1	BBB	503/521 (96%)	485 (96%)	18 (4%)	0	100	100
All	All	1009/1042 (97%)	971 (96%)	38 (4%)	0	100	100

There are no Ramachandran outliers to report.

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	AAA	415/427 (97%)	411 (99%)	4 (1%)	73	72
1	BBB	413/427 (97%)	412 (100%)	1 (0%)	92	92
All	All	828/854 (97%)	823 (99%)	5 (1%)	86	83

All (5) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	AAA	74[A]	CYS
1	AAA	74[B]	CYS
1	AAA	79	CYS
1	AAA	154	VAL
1	BBB	79	CYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

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 ⓘ

6 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
3	DMS	BBB	602	-	3,3,3	0.51	0	3,3,3	0.25	0
2	FAD	BBB	601	-	53,58,58	0.63	0	68,89,89	0.82	0
4	PEG	AAA	603	-	6,6,6	0.14	0	5,5,5	0.08	0
4	PEG	BBB	603	-	6,6,6	0.28	0	5,5,5	0.20	0
2	FAD	AAA	601	-	53,58,58	0.70	0	68,89,89	0.85	1 (1%)
3	DMS	AAA	602	-	3,3,3	0.45	0	3,3,3	0.27	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	AAA	601	-	-	4/30/50/50	0/6/6/6
4	PEG	AAA	603	-	-	2/4/4/4	-
4	PEG	BBB	603	-	-	4/4/4/4	-
2	FAD	BBB	601	-	-	4/30/50/50	0/6/6/6

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	AAA	601	FAD	P-O3P-PA	2.19	140.32	132.83

There are no chirality outliers.

All (14) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	BBB	603	PEG	O1-C1-C2-O2
2	BBB	601	FAD	PA-O3P-P-O5'
4	BBB	603	PEG	C4-C3-O2-C2
4	AAA	603	PEG	O1-C1-C2-O2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
4	BBB	603	PEG	O2-C3-C4-O4
2	AAA	601	FAD	P-O3P-PA-O2A
2	BBB	601	FAD	P-O3P-PA-O2A
4	AAA	603	PEG	C1-C2-O2-C3
2	BBB	601	FAD	O4B-C4B-C5B-O5B
2	AAA	601	FAD	O4B-C4B-C5B-O5B
4	BBB	603	PEG	C1-C2-O2-C3
2	AAA	601	FAD	PA-O3P-P-O5'
2	AAA	601	FAD	PA-O3P-P-O2P
2	BBB	601	FAD	P-O3P-PA-O1A

There are no ring outliers.

No monomer is involved in short contacts.

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 BBB 601

Bond lengths

Bond angles

Torsions

Rings

Ligand FAD AAA 601

Bond lengths

Bond angles

Torsions

Rings
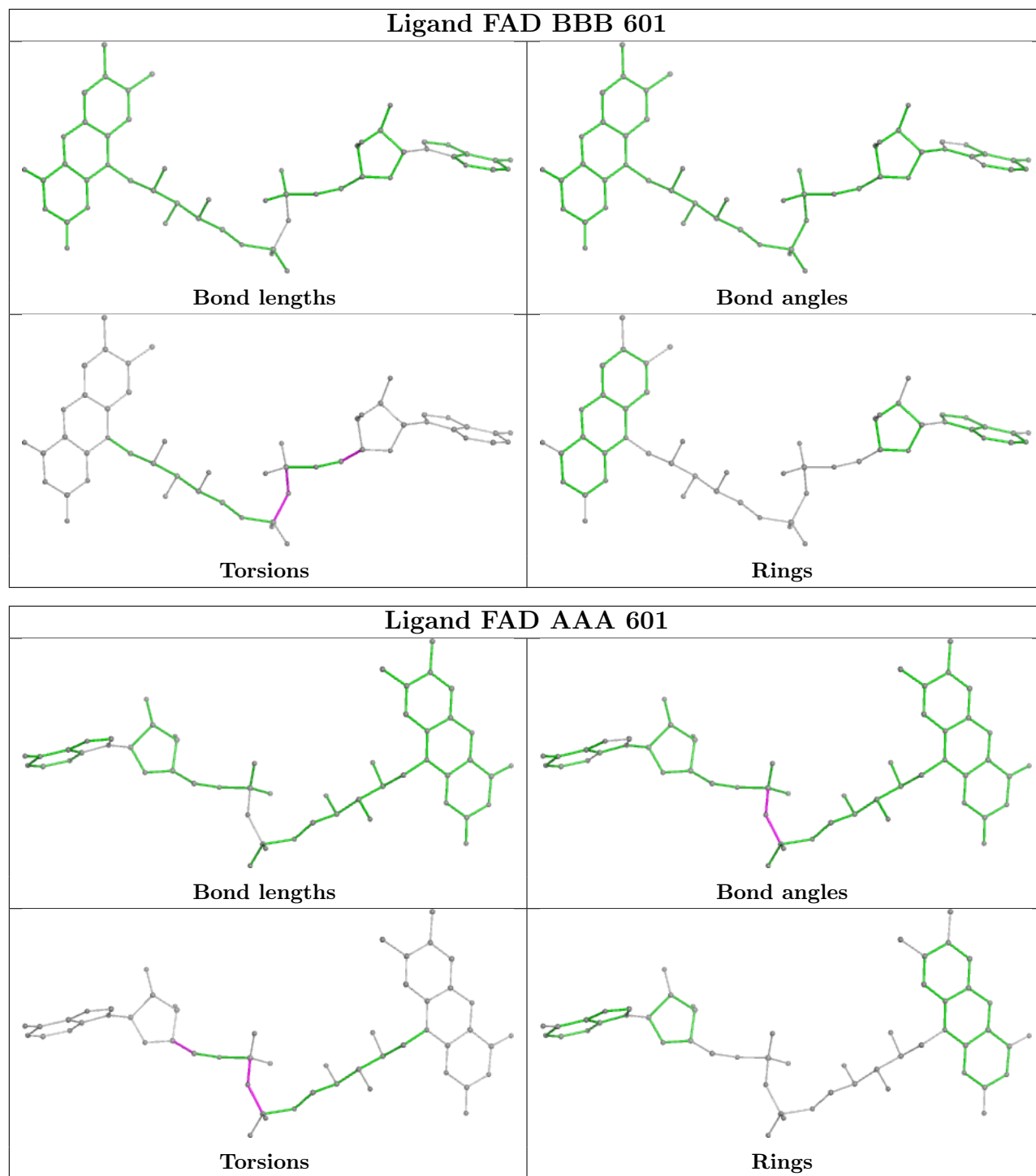
5.7 Other polymers ⓘ

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	AAA	500/521 (95%)	-0.00	15 (3%)	52	59	9, 24, 50, 77	8 (1%)
1	BBB	497/521 (95%)	-0.09	10 (2%)	64	71	9, 23, 42, 79	9 (1%)
All	All	997/1042 (95%)	-0.05	25 (2%)	58	65	9, 23, 46, 79	17 (1%)

All (25) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	BBB	515[A]	CYS	4.3
1	AAA	22	ALA	4.1
1	BBB	520	CYS	3.9
1	AAA	430	MET	3.7
1	AAA	25	THR	3.6
1	BBB	25	THR	3.5
1	BBB	512	SER	3.4
1	AAA	24	LEU	3.4
1	AAA	513	GLY	3.3
1	BBB	513	GLY	3.3
1	BBB	430	MET	3.3
1	AAA	425	LEU	3.1
1	AAA	515[A]	CYS	3.0
1	BBB	273	VAL	2.5
1	AAA	514	GLY	2.5
1	BBB	514	GLY	2.4
1	AAA	149	ILE	2.4
1	AAA	273	VAL	2.3
1	BBB	266	VAL	2.3
1	BBB	519	LYS	2.3
1	AAA	424	HIS	2.3
1	AAA	519	LYS	2.2
1	AAA	512	SER	2.1
1	AAA	429	GLU	2.1

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	AAA	431	ASP	2.0

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.

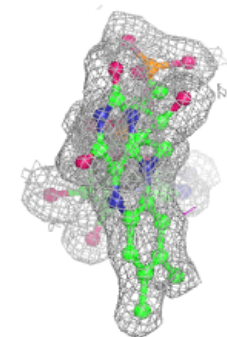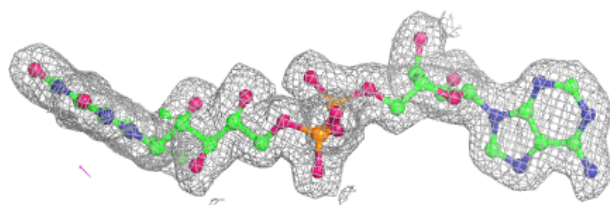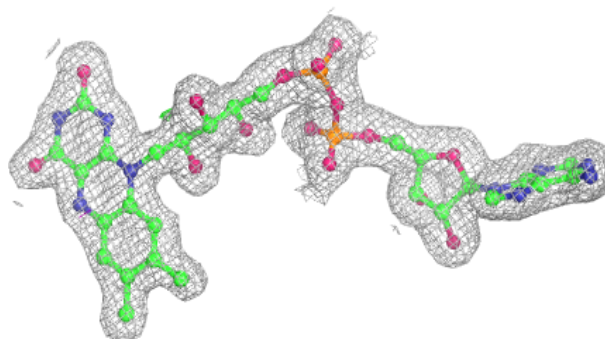| Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	PEG	AAA	603	7/7	0.82	0.14	55,57,59,60	0
4	PEG	BBB	603	7/7	0.82	0.15	50,54,61,62	0
3	DMS	AAA	602	4/4	0.93	0.16	31,39,41,43	0
2	FAD	AAA	601	53/53	0.96	0.06	16,18,26,27	0
3	DMS	BBB	602	4/4	0.96	0.14	27,31,32,32	0
2	FAD	BBB	601	53/53	0.98	0.05	15,17,19,20	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 FAD AAA 601:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
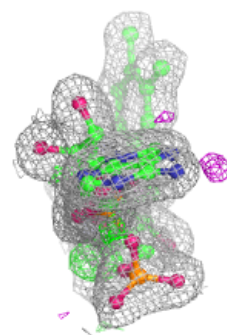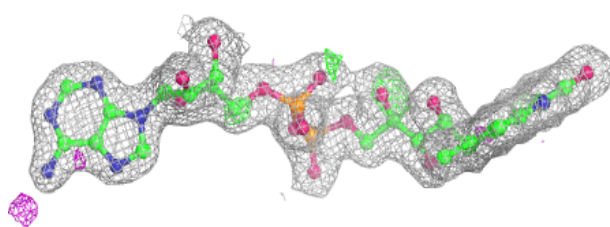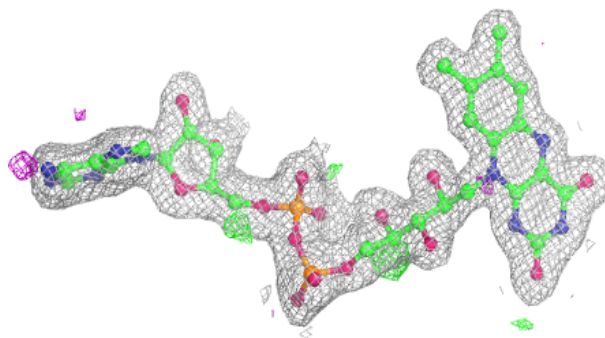
Electron density around FAD BBB 601:

$2mF_o\text{-}DF_c$ (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.