WORLDWIDE wwPDB PROTEIN DATA BANK

wwPDB X-ray Structure Validation Summary Report (i)

Sep 11, 2023 – 03:36 AM EDT

PDB ID	:	4KPR
Title	:	Tetrameric form of rat selenoprotein thioredoxin reductase 1
Authors	:	Lindqvist, Y.; Sandalova, T.; Xu, J.; Arner, E.
Deposited on	:	2013-05-14
Resolution	:	2.40 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	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35.1
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)	:	2.35.1

1　Overall quality at a glance　ⓘ

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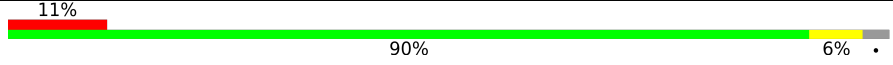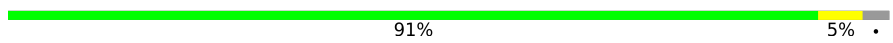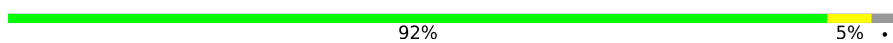*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.40 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.
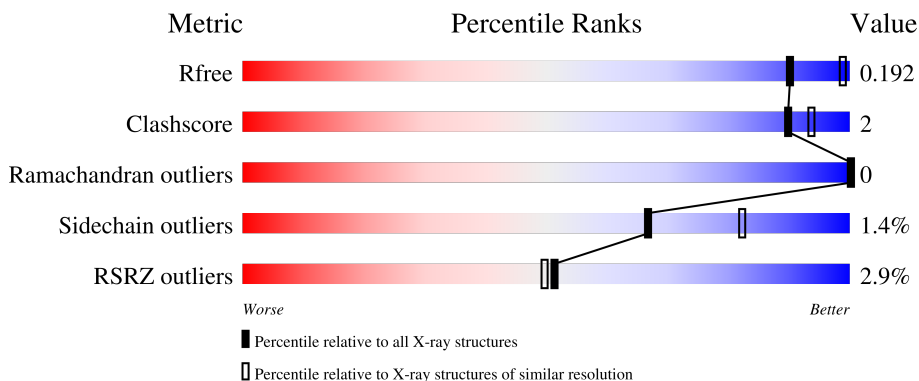
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	3907 (2.40-2.40)
Clashscore	141614	4398 (2.40-2.40)
Ramachandran outliers	138981	4318 (2.40-2.40)
Sidechain outliers	138945	4319 (2.40-2.40)
RSRZ outliers	127900	3811 (2.40-2.40)

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.

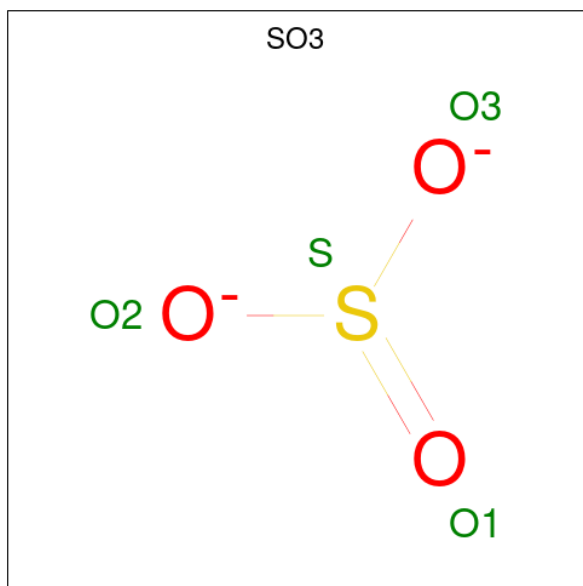| Mol	Chain	Length	Quality of chain
1	A	499	11% / 90% / 6% ·
1	B	499	91% / 5% ·
1	E	499	92% / 5% ·
1	F	499	89% / 8% ·

2   Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 15853 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 1, cytoplasmic.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	E	484	Total	C	N	O	S	0	1	0
			3737	2378	631	708	20			
1	F	485	Total	C	N	O	S	0	6	0
			3787	2413	639	715	20			
1	A	484	Total	C	N	O	S	0	1	0
			3741	2381	632	708	20			
1	B	484	Total	C	N	O	S	0	5	0
			3768	2400	636	712	20			

- Molecule 2 is SULFITE ION (three-letter code: SO3) (formula: O_3S).

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	E	1	Total	O	S	0	0
			4	3	1		
2	F	1	Total	O	S	0	0
			4	3	1		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	F	1	Total 4	O 3	S 1	0	0

- Molecule 3 is (4S)-2-METHYL-2,4-PENTANEDIOL (three-letter code: MPD) (formula: $C_6H_{14}O_2$).
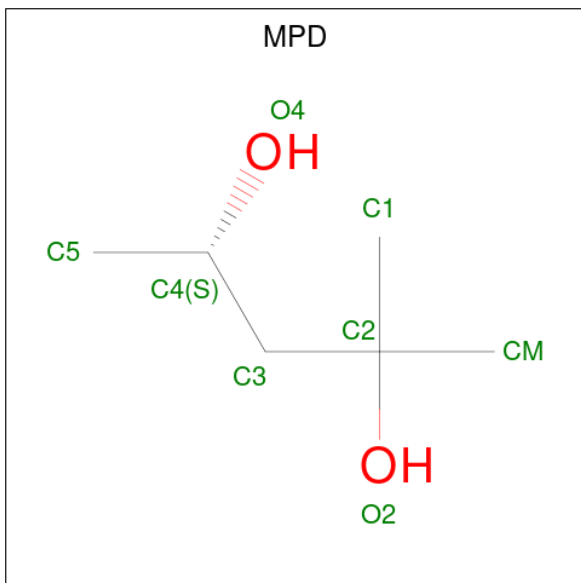
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	E	1	Total 8	C 6	O 2	0	0
3	E	1	Total 8	C 6	O 2	0	0
3	E	1	Total 8	C 6	O 2	0	0
3	F	1	Total 8	C 6	O 2	0	0
3	F	1	Total 8	C 6	O 2	0	0
3	A	1	Total 8	C 6	O 2	0	0
3	A	1	Total 8	C 6	O 2	0	0
3	A	1	Total 8	C 6	O 2	0	0
3	B	1	Total 8	C 6	O 2	0	0

- Molecule 4 is FLAVIN-ADENINE DINUCLEOTIDE (three-letter code: FAD) (formula:

$C_{27}H_{33}N_9O_{15}P_2$).

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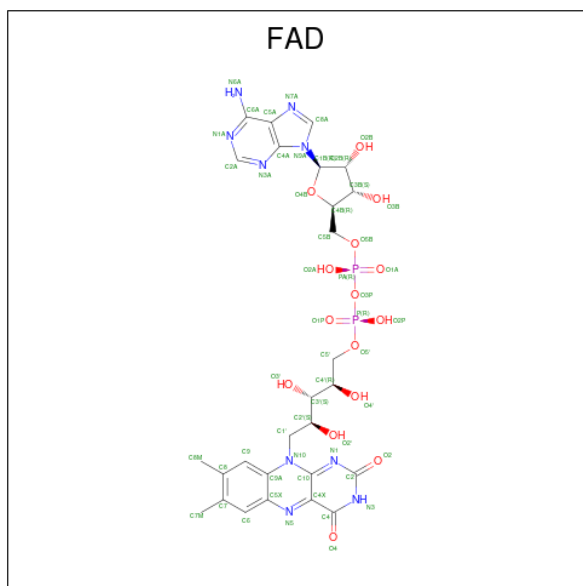
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
4	E	1	Total	C	N	O	P	0	0
			53	27	9	15	2		
4	F	1	Total	C	N	O	P	0	0
			53	27	9	15	2		
4	A	1	Total	C	N	O	P	0	0
			53	27	9	15	2		
4	B	1	Total	C	N	O	P	0	0
			53	27	9	15	2		

• Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	E	173	Total	O	0	0
			173	173		
5	F	191	Total	O	0	0
			191	191		
5	A	34	Total	O	0	0
			34	34		
5	B	126	Total	O	0	0
			126	126		

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 1, cytoplasmic

Chain E:
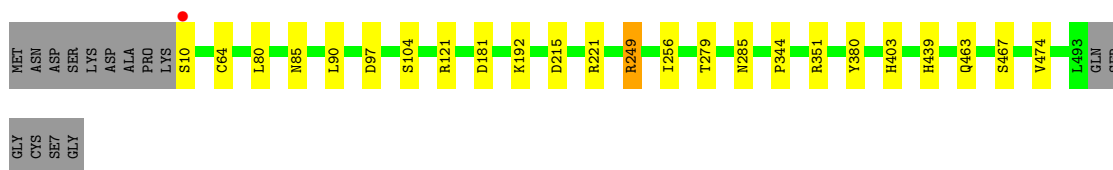
- Molecule 1: Thioredoxin reductase 1, cytoplasmic

Chain F:
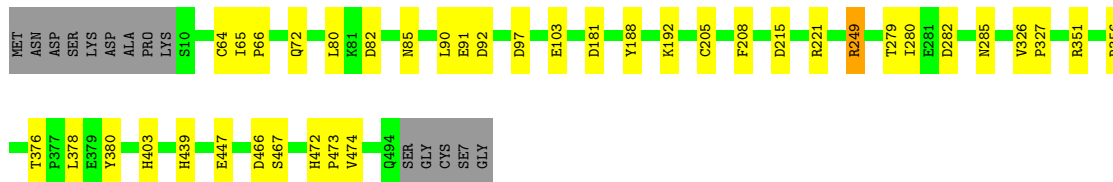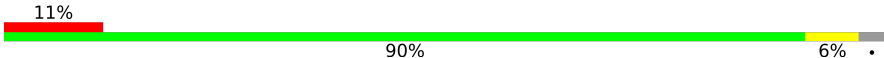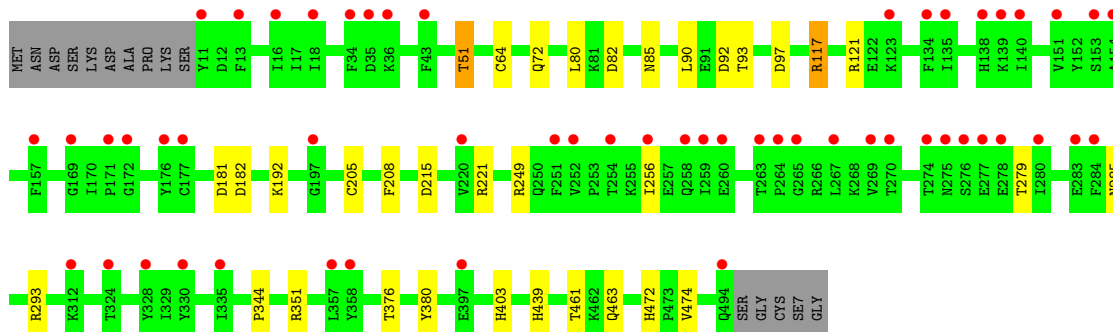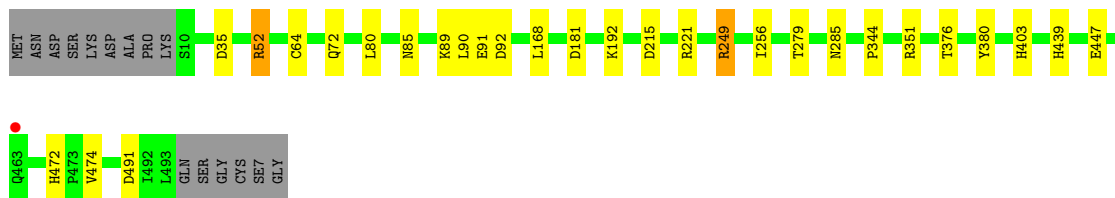
- Molecule 1: Thioredoxin reductase 1, cytoplasmic

Chain A:

- Molecule 1: Thioredoxin reductase 1, cytoplasmic

Chain B:

MET ASN ASP SER LYS ASP ALA PRO LYS **S10** D35 R52 C64 Q72 L80 N85 K89 L90 E91 D92 L168 D181 K192 D215 R221 R249 I256 T279 N285 P344 R351 T376 Y380 H403 H439 E447

Q463 H472 P473 V474 D491 I492 L493 GLN SER GLY CYS SE7 GLY

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 31 2 1	Depositor
Cell constants a, b, c, α, β, γ	162.99Å 162.99Å 236.44Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	60.67 – 2.40 60.60 – 2.40	Depositor EDS
% Data completeness (in resolution range)	99.6 (60.67-2.40) 99.6 (60.60-2.40)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.71 (at 2.40Å)	Xtriage
Refinement program	REFMAC 5.7.0032	Depositor
R, R_{free}	0.160 , 0.187 0.170 , 0.192	Depositor DCC
R_{free} test set	7095 reflections (5.02%)	wwPDB-VP
Wilson B-factor (Å^2)	48.7	Xtriage
Anisotropy	0.236	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 40.6	EDS
L-test for twinning [2]	$< |L| > = 0.49, < L^2 > = 0.33$	Xtriage
Estimated twinning fraction	0.016 for -h,-k,l	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	15853	wwPDB-VP
Average B, all atoms (Å^2)	61.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.27% 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: SO3, MPD, 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	A	0.80	0/3818	0.86	13/5166 (0.3%)
1	B	0.94	1/3850 (0.0%)	0.94	14/5211 (0.3%)
1	E	0.99	3/3814 (0.1%)	0.92	10/5161 (0.2%)
1	F	1.04	3/3879 (0.1%)	0.93	13/5250 (0.2%)
All	All	0.95	7/15361 (0.0%)	0.92	50/20788 (0.2%)

The worst 5 of 7 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	F	447	GLU	CD-OE2	10.17	1.36	1.25
1	F	467	SER	CB-OG	6.82	1.51	1.42
1	E	104	SER	CB-OG	-6.24	1.34	1.42
1	E	463	GLN	CG-CD	5.38	1.63	1.51
1	F	103	GLU	CG-CD	5.28	1.59	1.51

The worst 5 of 50 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	F	221	ARG	NE-CZ-NH1	8.67	124.64	120.30
1	B	221	ARG	NE-CZ-NH2	8.63	124.61	120.30
1	B	491	ASP	CB-CG-OD1	8.62	126.06	118.30
1	F	221	ARG	NE-CZ-NH2	-8.12	116.24	120.30
1	E	221	ARG	NE-CZ-NH2	7.82	124.21	120.30

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	3741	0	3753	18	0
1	B	3768	0	3776	16	0
1	E	3737	0	3748	13	0
1	F	3787	0	3797	22	0
2	E	4	0	0	0	0
2	F	8	0	0	0	0
3	A	24	0	42	2	0
3	B	8	0	14	1	0
3	E	24	0	42	2	0
3	F	16	0	28	2	0
4	A	53	0	31	0	0
4	B	53	0	31	0	0
4	E	53	0	31	0	0
4	F	53	0	31	0	0
5	A	34	0	0	1	0
5	B	126	0	0	4	0
5	E	173	0	0	3	0
5	F	191	0	0	1	0
All	All	15853	0	15324	55	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 2.

The worst 5 of 55 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:85:ASN:HB2	5:A:617:HOH:O	1.79	0.81
1:E:85:ASN:HB2	5:E:643:HOH:O	1.85	0.77
1:B:85:ASN:HB2	5:B:690:HOH:O	1.96	0.66
1:E:90:LEU:HD11	1:F:90:LEU:HD11	1.77	0.66
1:B:249:ARG:HG2	3:B:501:MPD:H53	1.79	0.65

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	483/499 (97%)	468 (97%)	15 (3%)	0	100	100
1	B	487/499 (98%)	472 (97%)	15 (3%)	0	100	100
1	E	483/499 (97%)	468 (97%)	15 (3%)	0	100	100
1	F	489/499 (98%)	475 (97%)	14 (3%)	0	100	100
All	All	1942/1996 (97%)	1883 (97%)	59 (3%)	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	A	403/413 (98%)	395 (98%)	8 (2%)	55	74
1	B	406/413 (98%)	400 (98%)	6 (2%)	65	80
1	E	403/413 (98%)	399 (99%)	4 (1%)	76	88
1	F	409/413 (99%)	404 (99%)	5 (1%)	71	85
All	All	1621/1652 (98%)	1598 (99%)	23 (1%)	67	82

5 of 23 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	376	THR
1	B	52	ARG
1	A	474	VAL

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Mol	Chain	Res	Type
1	B	64	CYS
1	F	376	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 12 such sidechains are listed below:

Mol	Chain	Res	Type
1	A	439	HIS
1	A	494	GLN
1	B	439	HIS
1	B	72	GLN
1	F	285	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 ⓘ

16 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	MPD	E	502	-	7,7,7	0.59	0	9,10,10	1.74	2 (22%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
2	SO3	E	501	-	1,3,3	7.91	1 (100%)	0,3,3	-	-
3	MPD	E	504	-	7,7,7	0.67	0	9,10,10	1.33	1 (11%)
3	MPD	A	502	-	7,7,7	0.85	0	9,10,10	1.13	1 (11%)
3	MPD	F	503	-	7,7,7	1.17	1 (14%)	9,10,10	1.37	0
3	MPD	F	504	-	7,7,7	0.67	0	9,10,10	2.18	2 (22%)
4	FAD	F	505	-	53,58,58	1.89	14 (26%)	68,89,89	1.41	7 (10%)
4	FAD	E	505	-	53,58,58	1.87	15 (28%)	68,89,89	1.74	9 (13%)
2	SO3	F	502	-	1,3,3	8.48	1 (100%)	0,3,3	-	-
3	MPD	A	501	-	7,7,7	0.83	0	9,10,10	1.03	0
3	MPD	B	501	-	7,7,7	0.83	0	9,10,10	1.23	1 (11%)
4	FAD	A	504	-	53,58,58	1.51	11 (20%)	68,89,89	1.79	21 (30%)
2	SO3	F	501	-	1,3,3	9.63	1 (100%)	0,3,3	-	-
3	MPD	E	503	-	7,7,7	0.67	0	9,10,10	0.88	0
3	MPD	A	503	-	7,7,7	0.48	0	9,10,10	0.80	0
4	FAD	B	502	-	53,58,58	1.62	9 (16%)	68,89,89	1.61	19 (27%)

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	MPD	E	502	-	-	3/5/5/5	-
3	MPD	E	504	-	-	2/5/5/5	-
3	MPD	A	502	-	-	0/5/5/5	-
3	MPD	F	503	-	-	0/5/5/5	-
3	MPD	F	504	-	-	2/5/5/5	-
4	FAD	F	505	-	-	5/30/50/50	0/6/6/6
4	FAD	E	505	-	-	5/30/50/50	0/6/6/6
3	MPD	A	501	-	-	0/5/5/5	-
3	MPD	B	501	-	-	0/5/5/5	-
4	FAD	A	504	-	-	3/30/50/50	0/6/6/6
3	MPD	E	503	-	-	0/5/5/5	-
3	MPD	A	503	-	-	1/5/5/5	-
4	FAD	B	502	-	-	3/30/50/50	0/6/6/6

The worst 5 of 53 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	F	501	SO3	O1-S	9.63	1.85	1.44
2	F	502	SO3	O1-S	8.48	1.80	1.44
2	E	501	SO3	O1-S	7.91	1.77	1.44
4	E	505	FAD	O4B-C1B	6.43	1.50	1.41
4	F	505	FAD	C9A-C5X	5.52	1.50	1.41

The worst 5 of 63 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	E	505	FAD	N3A-C2A-N1A	-6.15	119.07	128.68
4	E	505	FAD	O4B-C1B-C2B	-5.08	99.51	106.93
4	F	505	FAD	N3A-C2A-N1A	-4.71	121.32	128.68
3	F	504	MPD	CM-C2-C1	4.67	120.30	110.57
4	A	504	FAD	N3A-C2A-N1A	-4.15	122.19	128.68

There are no chirality outliers.

5 of 24 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	E	502	MPD	C1-C2-C3-C4
3	E	502	MPD	O2-C2-C3-C4
4	E	505	FAD	PA-O3P-P-O5'
4	F	505	FAD	PA-O3P-P-O5'
4	A	504	FAD	C5B-O5B-PA-O2A

There are no ring outliers.
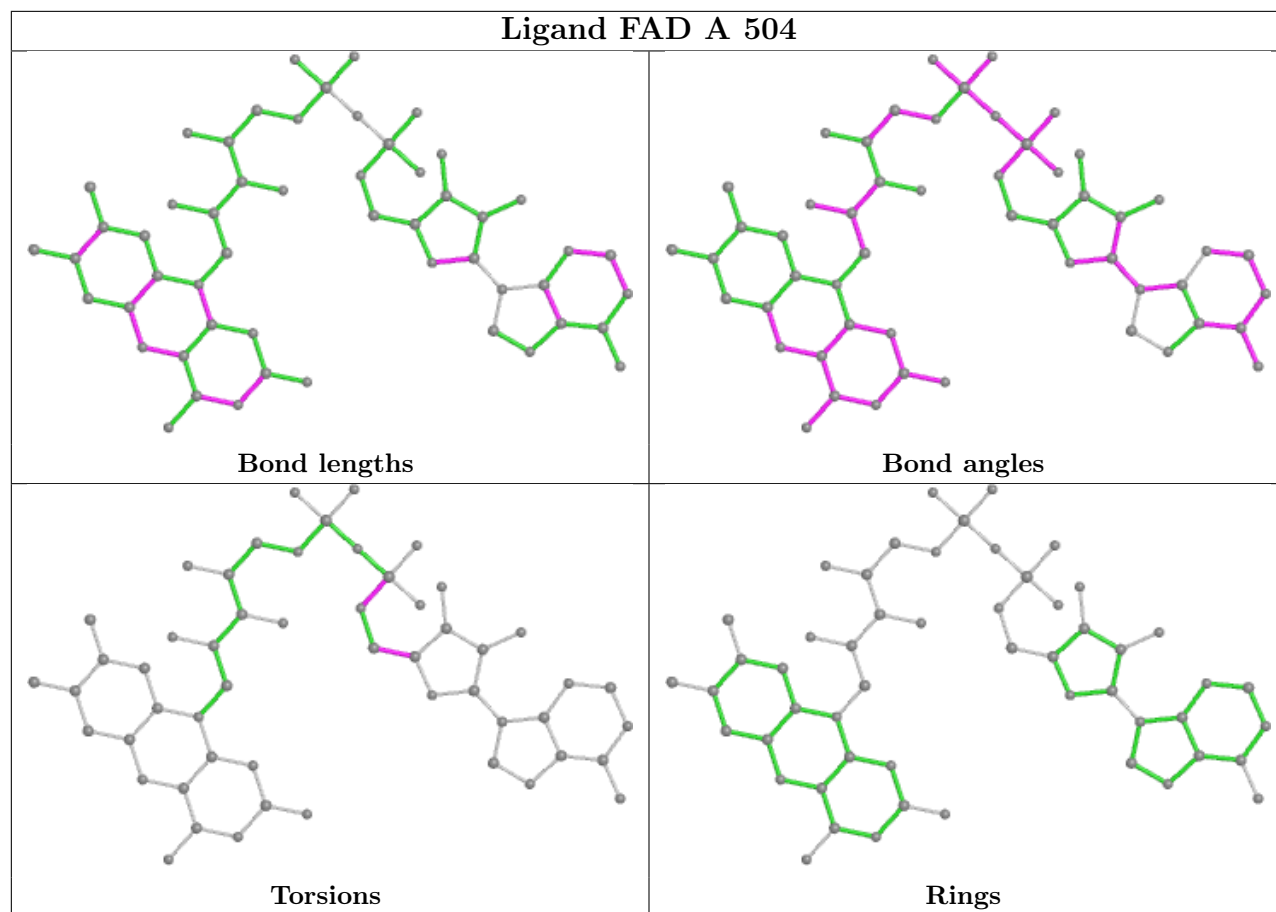
6 monomers are involved in 7 short contacts:

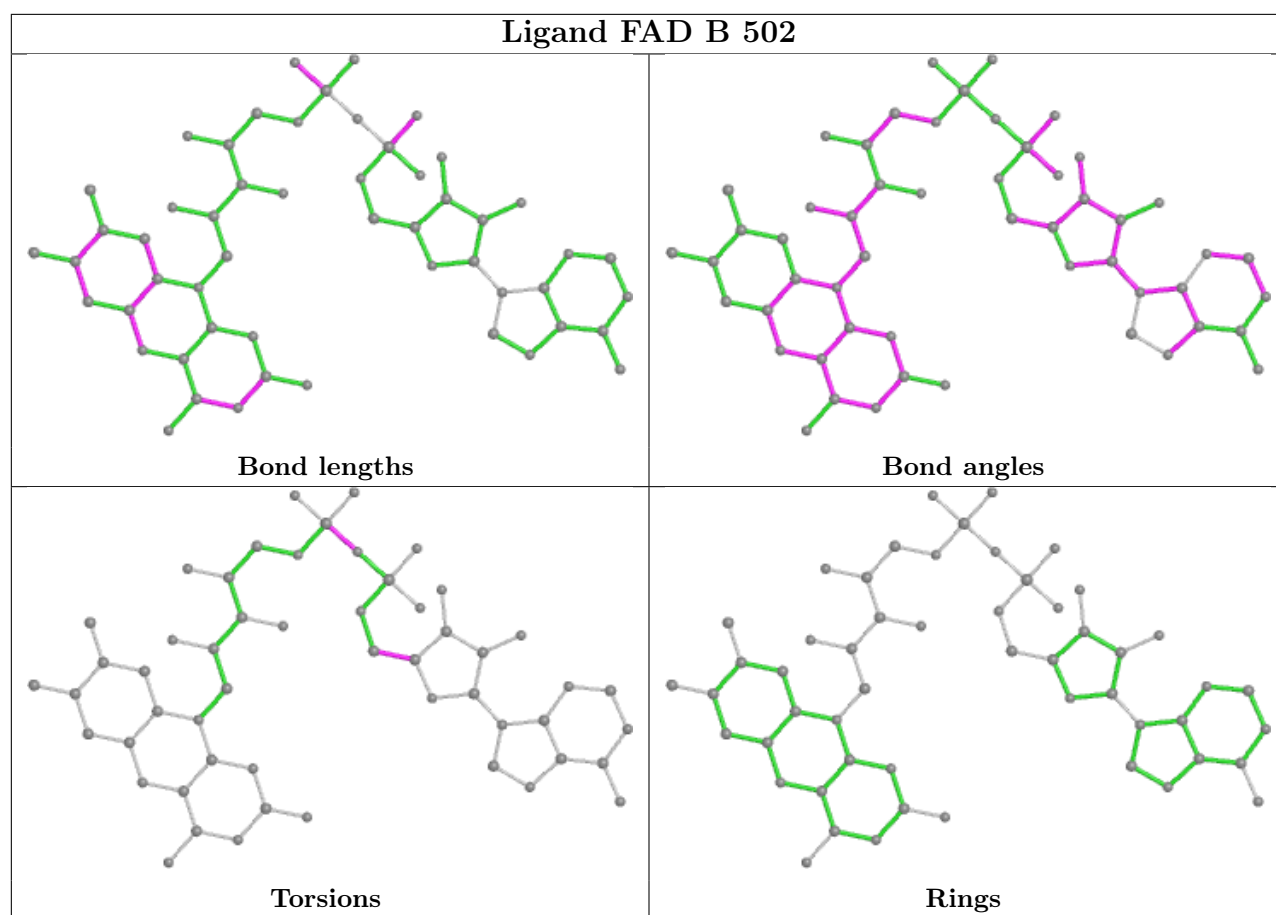| Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	502	MPD	1	0
3	F	503	MPD	1	0
3	F	504	MPD	1	0
3	B	501	MPD	1	0
3	E	503	MPD	2	0
3	A	503	MPD	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less 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 F 505

Bond lengths

Bond angles

Torsions

Rings

Ligand FAD E 505

Bond lengths

Bond angles

Torsions

Rings

Ligand FAD A 504

Bond lengths

Bond angles

Torsions

Rings

Ligand FAD B 502

Bond lengths

Bond angles

Torsions

Rings
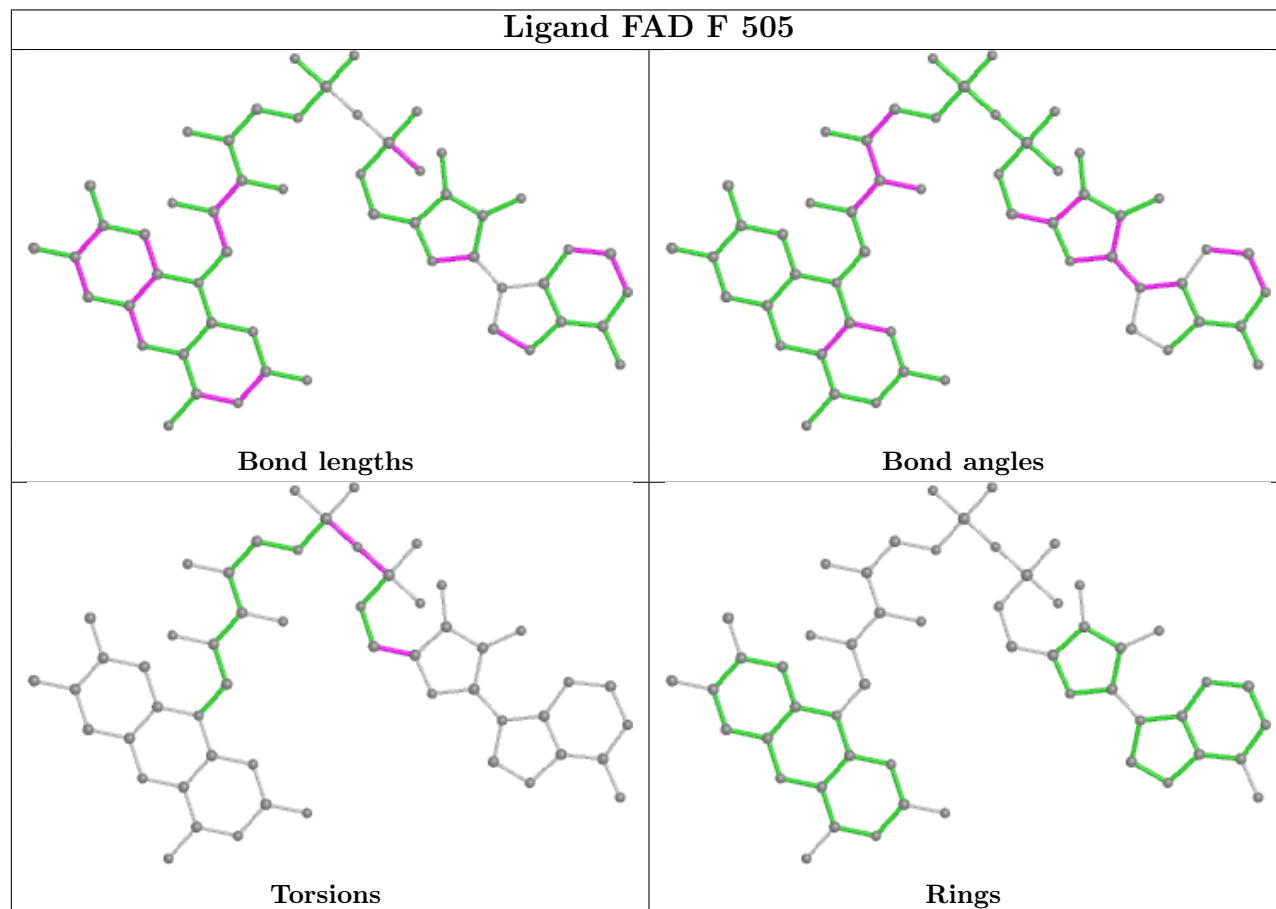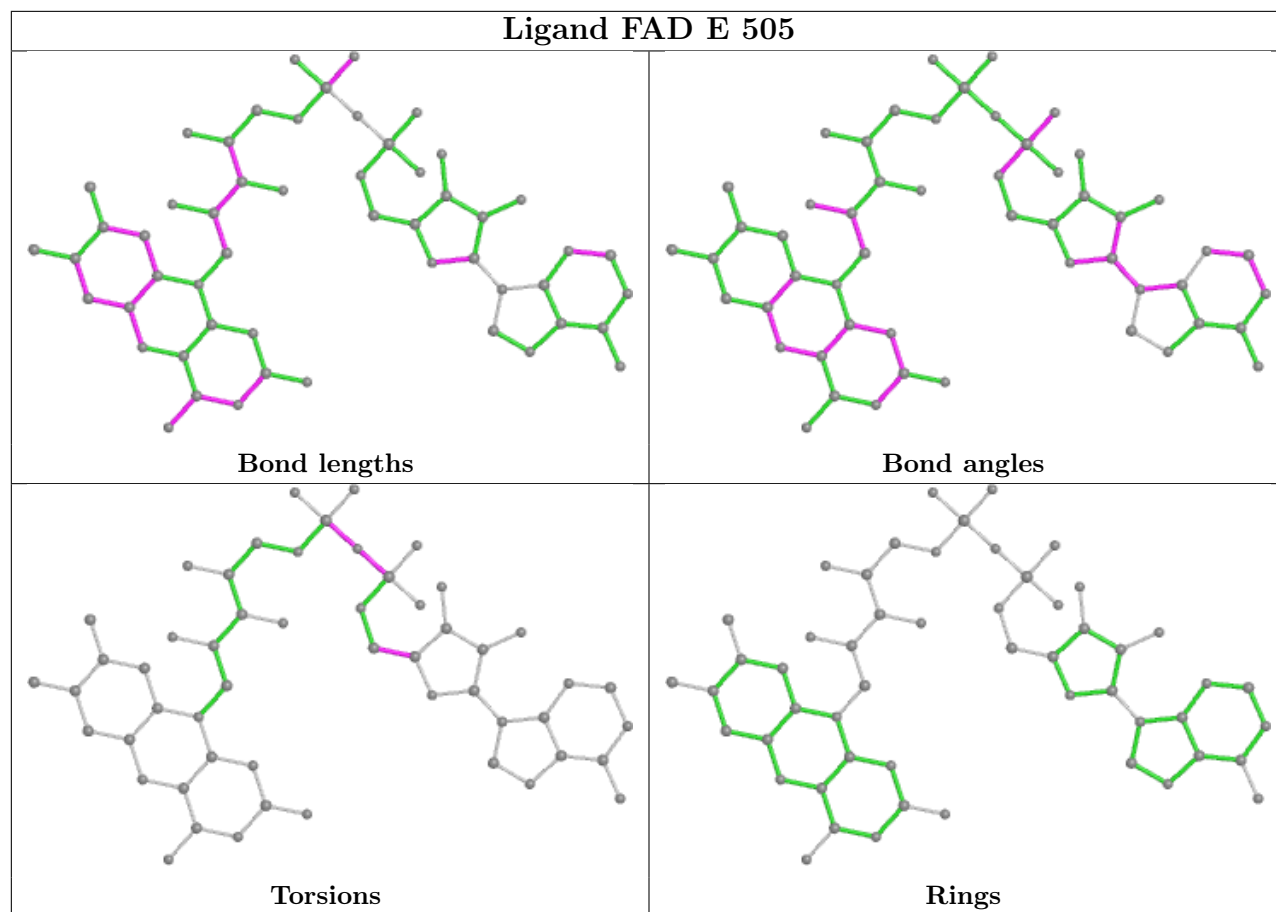
5.7 Other polymers ⓘ

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(Å²)	Q<0.9
1	A	484/499 (96%)	0.23	55 (11%)	5	4	39, 86, 133, 151	0
1	B	484/499 (96%)	-0.61	1 (0%)	95	94	34, 50, 83, 129	0
1	E	484/499 (96%)	-0.56	1 (0%)	95	94	32, 48, 78, 106	0
1	F	485/499 (97%)	-0.63	0	100	100	30, 44, 74, 131	0
All	All	1937/1996 (97%)	-0.39	57 (2%)	51	50	30, 52, 114, 151	0

The worst 5 of 57 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	157	PHE	4.9
1	A	259	ILE	3.7
1	A	135	ILE	3.7
1	A	256	ILE	3.6
1	A	36	LYS	3.6

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 ⓘ

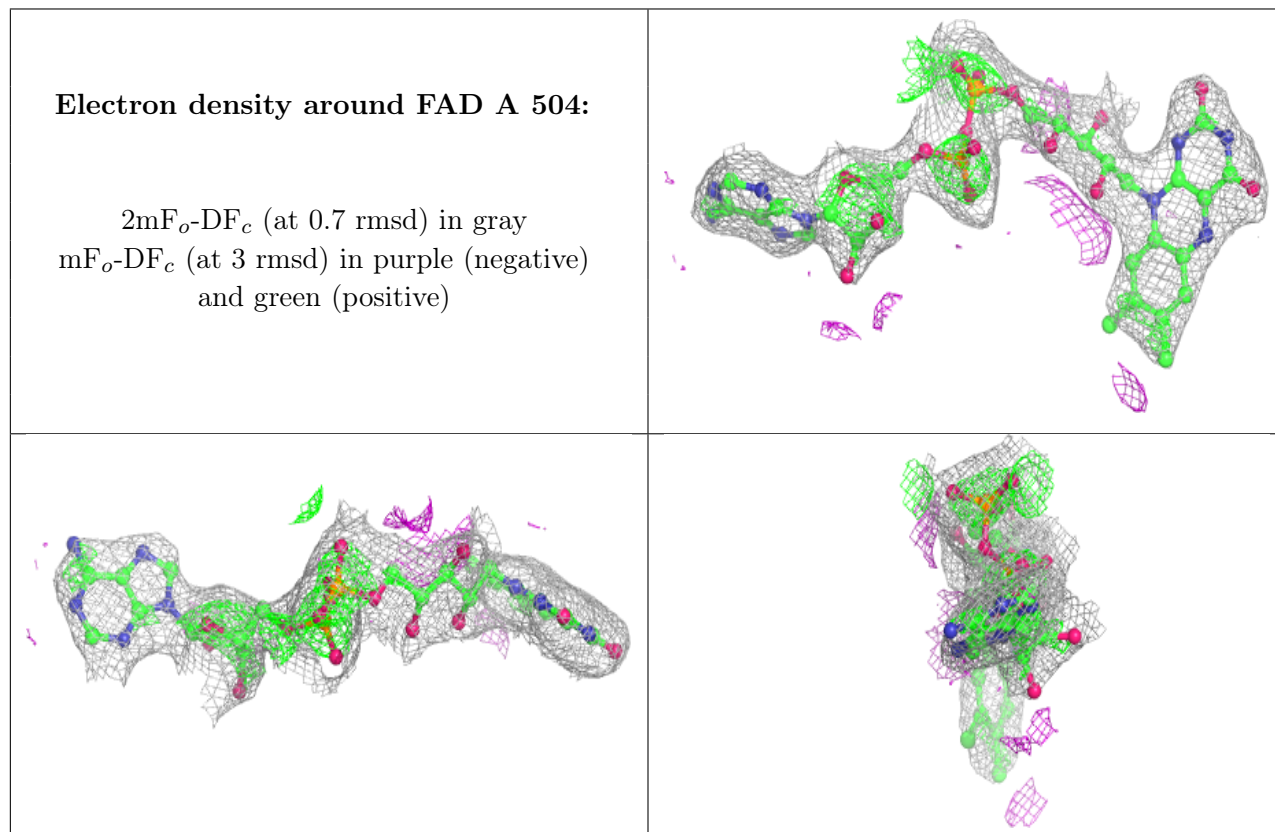There are no monosaccharides in this entry.

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
3	MPD	A	503	8/8	0.87	0.26	122,133,143,150	8
2	SO3	E	501	4/4	0.89	0.55	75,82,84,91	4
3	MPD	F	504	8/8	0.90	0.22	83,102,121,121	0
3	MPD	A	502	8/8	0.91	0.19	128,133,149,150	0
3	MPD	F	503	8/8	0.92	0.16	76,81,87,97	0
3	MPD	E	503	8/8	0.92	0.17	86,93,96,108	0
2	SO3	F	502	4/4	0.94	0.58	83,86,88,91	4
3	MPD	E	504	8/8	0.94	0.27	68,73,102,104	0
3	MPD	E	502	8/8	0.94	0.26	61,66,70,70	0
3	MPD	B	501	8/8	0.94	0.20	80,90,98,102	0
2	SO3	F	501	4/4	0.95	0.19	62,68,79,92	4
4	FAD	A	504	53/53	0.95	0.18	100,118,157,161	0
3	MPD	A	501	8/8	0.97	0.23	75,79,83,85	0
4	FAD	F	505	53/53	0.98	0.17	41,48,60,63	0
4	FAD	E	505	53/53	0.98	0.16	41,54,64,69	0
4	FAD	B	502	53/53	0.98	0.14	38,46,54,57	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.
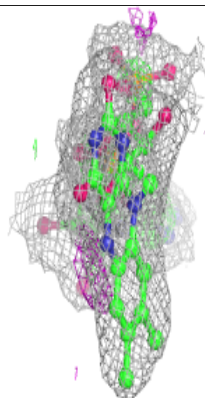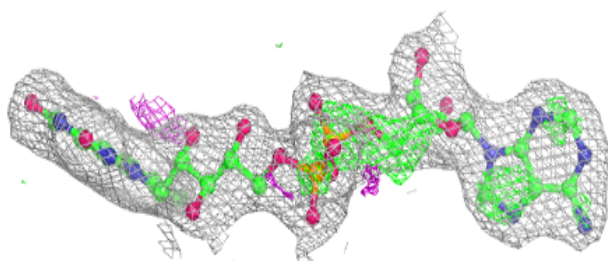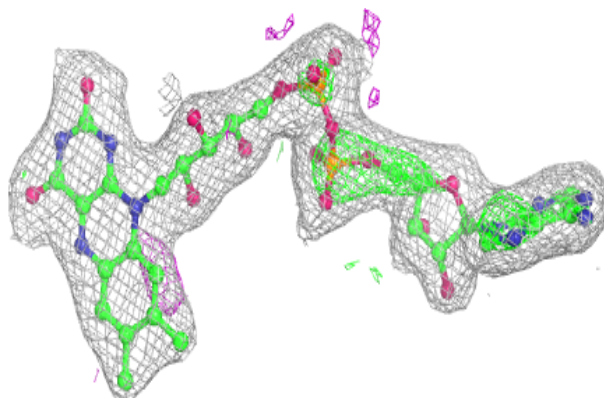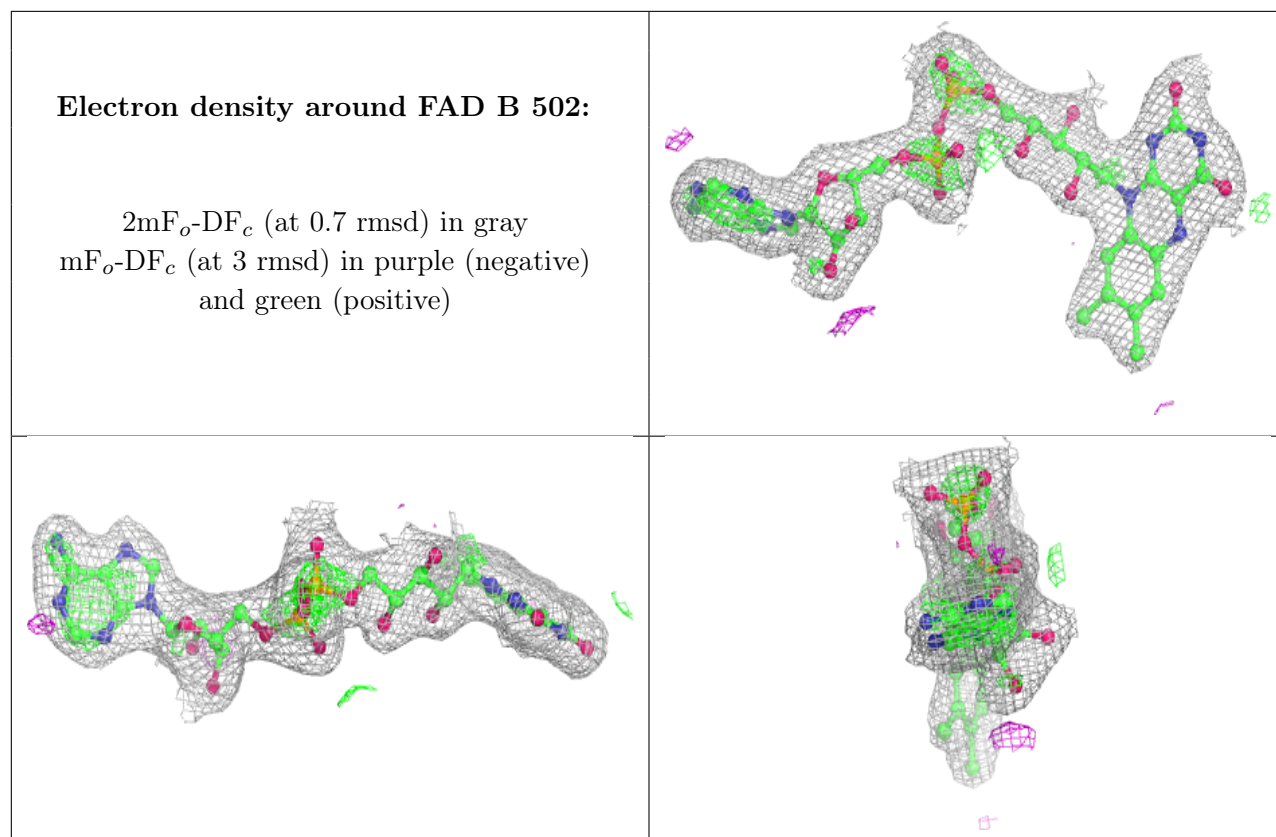
Electron density around FAD A 504:

$2mF_o$-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 F 505:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
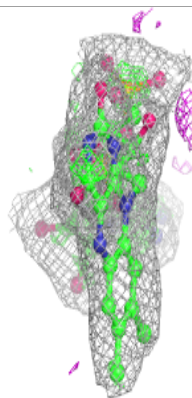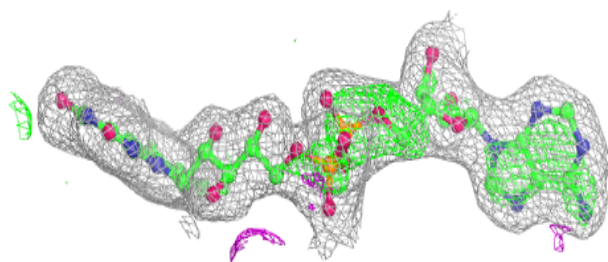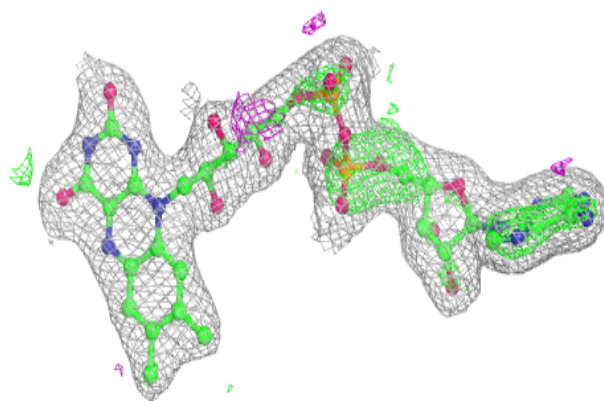
Electron density around FAD E 505:

$2mF_o$-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 502:

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

6.5 Other polymers ⓘ

There are no such residues in this entry.