



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2026 – 10:30 PM UTC

PDB ID : 6MYR / pdb_00006myr
Title : Avian mitochondrial complex II with thiapronil bound
Authors : Huang, L.-S.; Luemmen, P.; Berry, E.A.
Deposited on : 2018-11-02
Resolution : 2.15 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

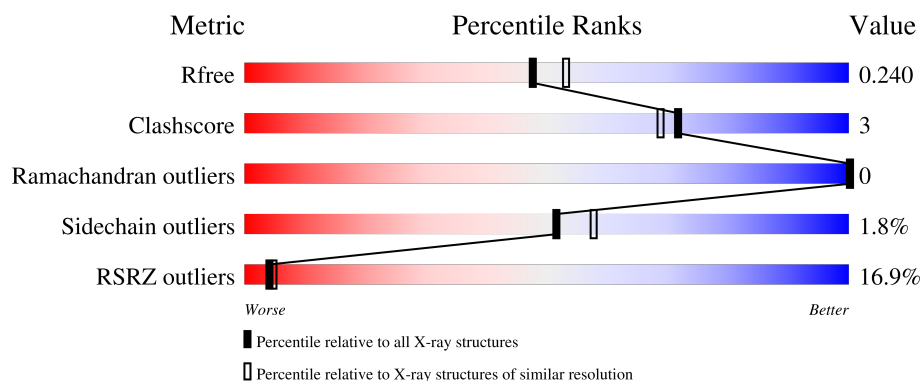
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.15 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	2057 (2.16-2.16)
Clashscore	190562	2159 (2.16-2.16)
Ramachandran outliers	187476	2134 (2.16-2.16)
Sidechain outliers	187428	2133 (2.16-2.16)
RSRZ outliers	180081	2059 (2.16-2.16)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	621	25% 89% 9% .
2	B	252	8% 89% 6% . 5%
3	C	140	4% 91% 8% .
4	D	103	6% 93% 6% .

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
6	OAA	A	1002	-	-	X	-

2 Entry composition

There are 18 unique types of molecules in this entry. The entry contains 9126 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 Succinate dehydrogenase [ubiquinone] flavoprotein subunit, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	611	Total	C	N	O	S	0	2	0
			4734	2962	847	896	29			

- Molecule 2 is a protein called Succinate dehydrogenase [ubiquinone] iron-sulfur subunit, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	240	Total	C	N	O	S	0	0	0
			1928	1219	326	361	22			

- Molecule 3 is a protein called Succinate dehydrogenase cytochrome b, large subunit.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	139	Total	C	N	O	S	0	0	0
			1075	706	178	186	5			

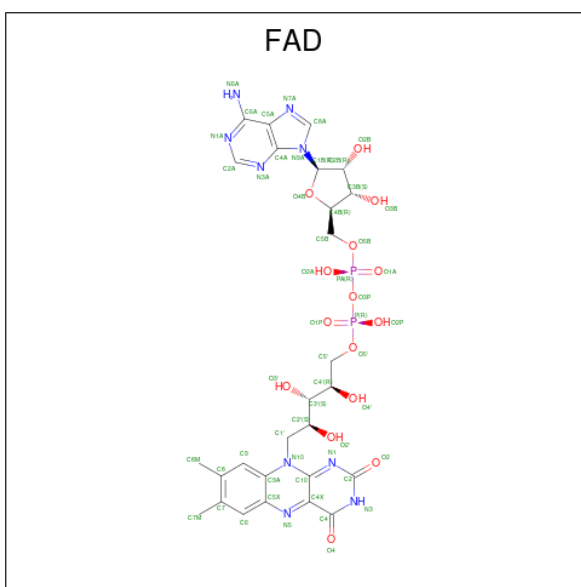
There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	139	ALA	SER	conflict	UNP D0VWW3
C	140	MET	GLU	conflict	UNP D0VWW3

- Molecule 4 is a protein called Succinate dehydrogenase [ubiquinone] cytochrome b small subunit, mitochondrial.

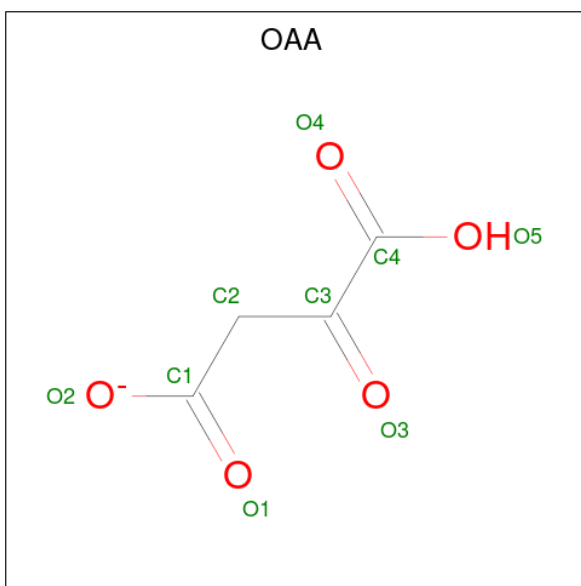
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	D	102	Total	C	N	O	S	0	0	0
			771	508	122	138	3			

- Molecule 5 is FLAVIN-ADENINE DINUCLEOTIDE (CCD ID: FAD) (formula: C₂₇H₃₃N₉O₁₅P₂).



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

- Molecule 6 is OXALOACETATE ION (CCD ID: OAA) (formula: $\text{C}_4\text{H}_3\text{O}_5$).

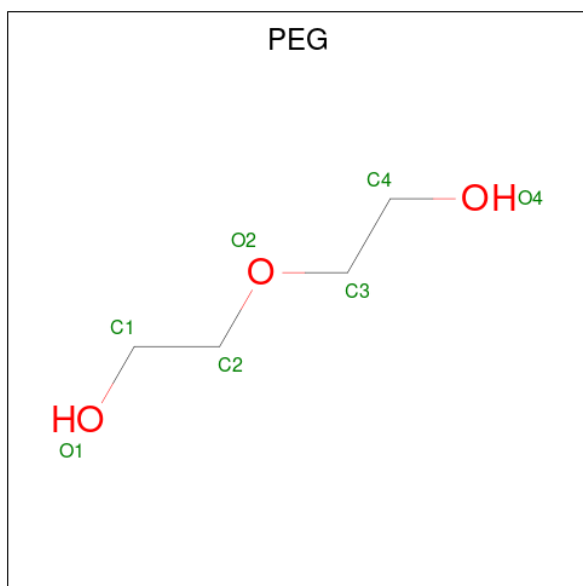


Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	A	1	Total	C	O	0	0
			9	4	5		

- Molecule 7 is POTASSIUM ION (CCD ID: K) (formula: K).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	A	1	Total K 1 1	0	0

- Molecule 8 is DI(HYDROXYETHYL)ETHER (CCD ID: PEG) (formula: $C_4H_{10}O_3$).

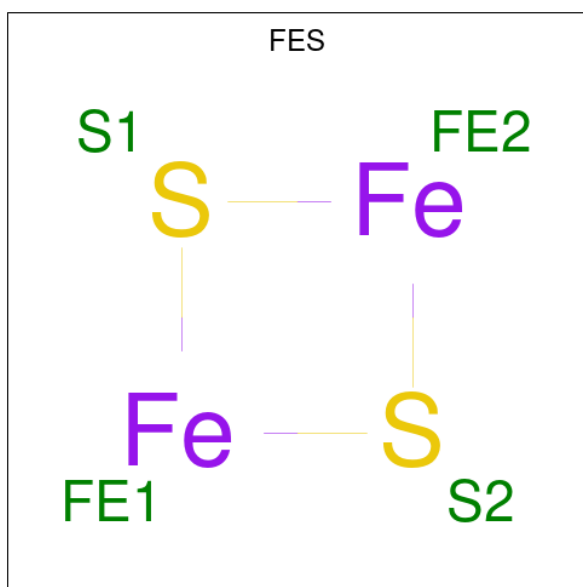


Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	A	1	Total C O 5 3 2	0	0

- Molecule 9 is UNKNOWN LIGAND (CCD ID: UNL) (formula:).

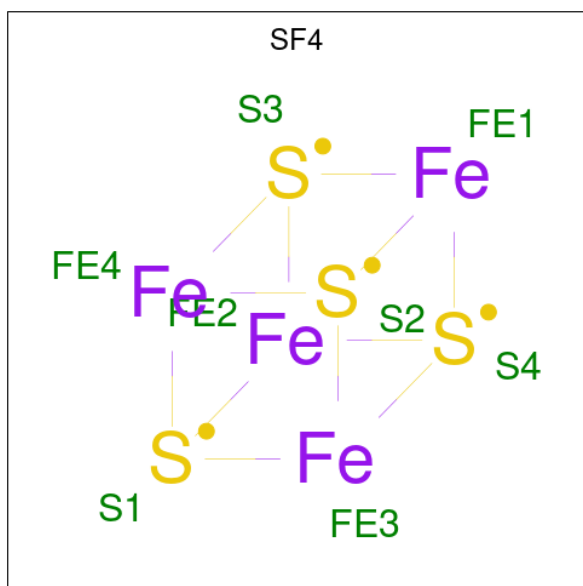
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
9	A	15	Total C N O P S 53 20 10 19 1 3	0	0
9	B	12	Total C N O S 53 21 11 19 2	0	0
9	C	5	Total C O 13 6 7	0	0
9	D	11	Total C N O 65 36 3 26	0	0

- Molecule 10 is FE2/S2 (INORGANIC) CLUSTER (CCD ID: FES) (formula: Fe_2S_2).



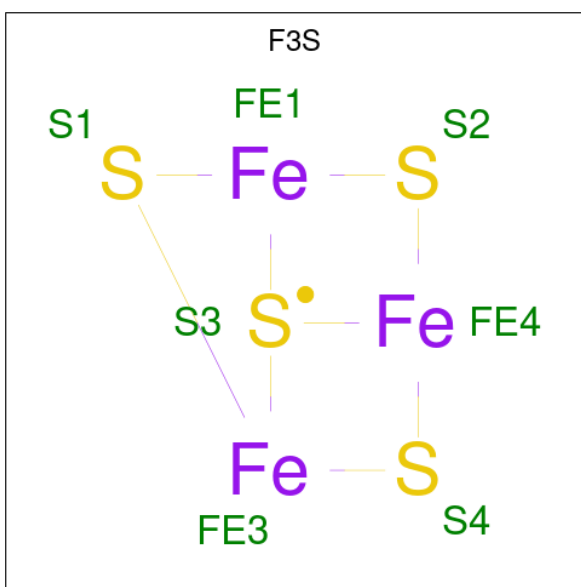
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
10	B	1	Total	Fe	S	0	0
			4	2	2		

- Molecule 11 is IRON/SULFUR CLUSTER (CCD ID: SF4) (formula: Fe_4S_4).



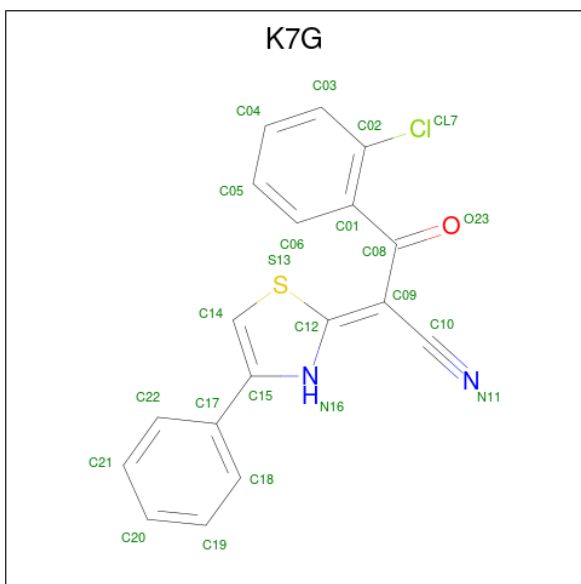
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
11	B	1	Total	Fe	S	0	0
			8	4	4		

- Molecule 12 is FE3-S4 CLUSTER (CCD ID: F3S) (formula: Fe_3S_4).



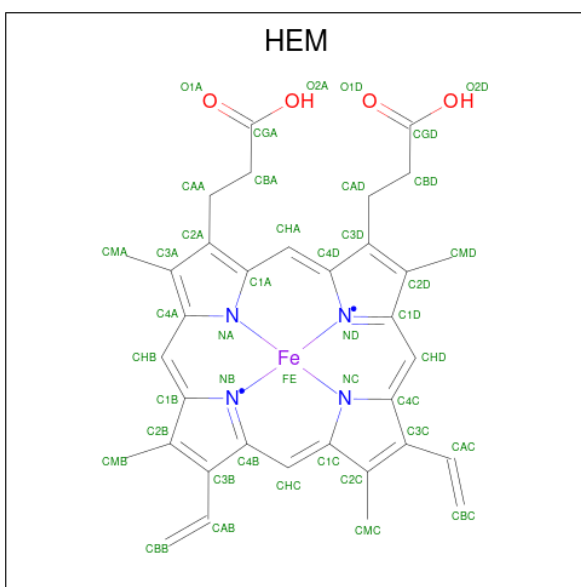
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
12	B	1	Total	Fe	S	0	0
			7	3	4		

- Molecule 13 is thiapronil (CCD ID: K7G) (formula: $C_{18}H_{11}ClN_2OS$) (labeled as "Ligand of Interest" by depositor).



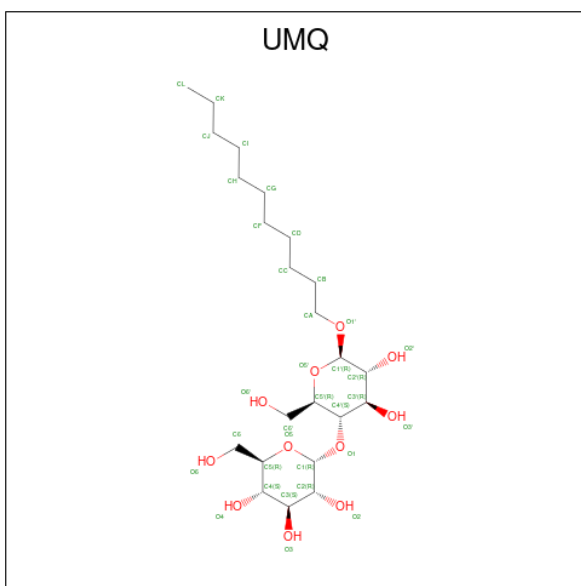
Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
13	C	1	Total	C	Cl	N	O	S	0	0
			23	18	1	2	1	1		

- Molecule 14 is PROTOPORPHYRIN IX CONTAINING FE (CCD ID: HEM) (formula: $C_{34}H_{32}FeN_4O_4$).



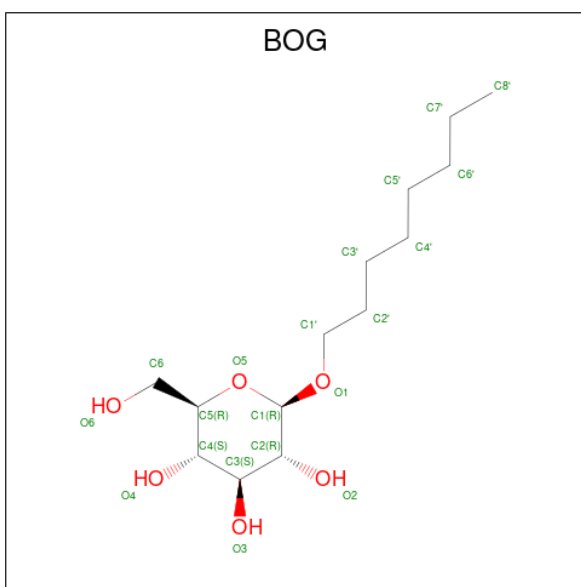
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
14	C	1	Total	C	Fe	N	O	
			41	32	1	4	4	
							0	0

- Molecule 15 is UNDECYL-MALTOSIDE (CCD ID: UMQ) (formula: $C_{23}H_{44}O_{11}$).



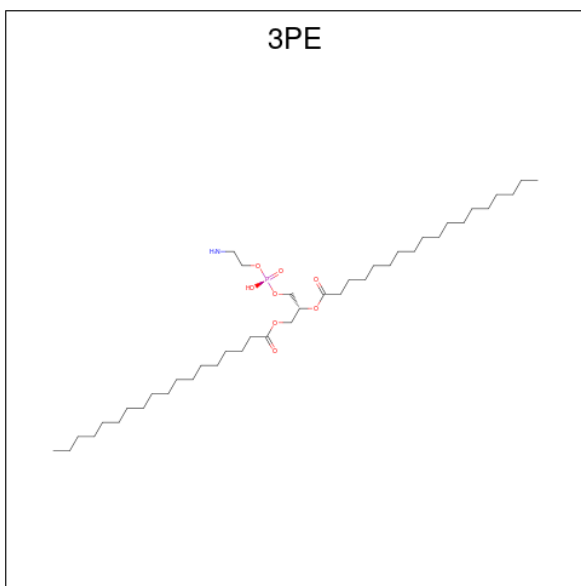
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
15	C	1	Total	C O		
			34	23 11	0	0

- Molecule 16 is octyl beta-D-glucopyranoside (CCD ID: BOG) (formula: $C_{14}H_{28}O_6$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
16	D	1	Total	C	O	0	0
			20	14	6		

- Molecule 17 is 1,2-Distearoyl-sn-glycerophosphoethanolamine (CCD ID: 3PE) (formula: $C_{41}H_{82}NO_8P$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
17	D	1	Total	C	N	O	P	0	0
			40	30	1	8	1		

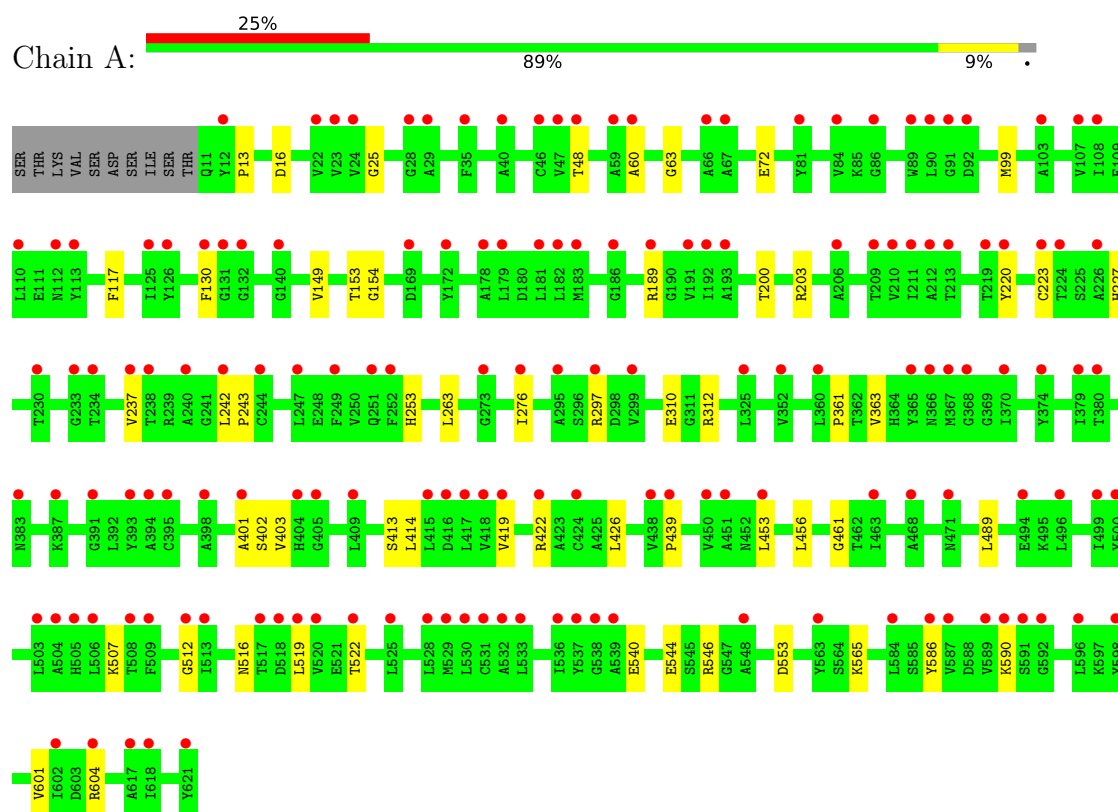
- Molecule 18 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
18	A	73	Total 73	O 73	0	0
18	B	82	Total 82	O 82	0	0
18	C	23	Total 23	O 23	0	0
18	D	11	Total 11	O 11	0	0

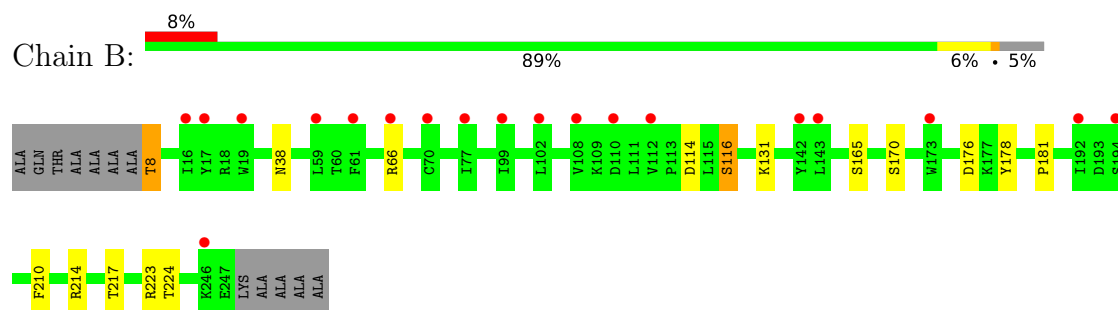
3 Residue-property plots [i](#)

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.

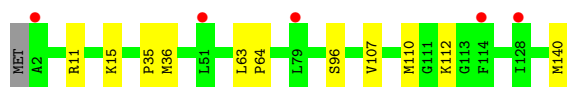
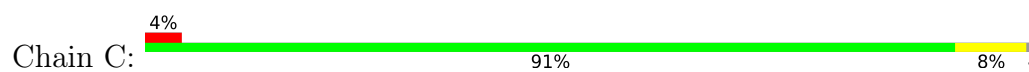
- Molecule 1: Succinate dehydrogenase [ubiquinone] flavoprotein subunit, mitochondrial



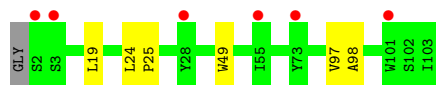
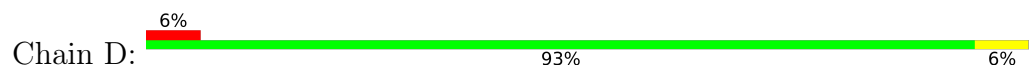
- Molecule 2: Succinate dehydrogenase [ubiquinone] iron-sulfur subunit, mitochondrial



- Molecule 3: Succinate dehydrogenase cytochrome b, large subunit



- Molecule 4: Succinate dehydrogenase [ubiquinone] cytochrome b small subunit, mitochondrial



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	72.36Å 84.62Å 293.34Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	47.93 – 2.15 47.93 – 2.15	Depositor EDS
% Data completeness (in resolution range)	89.7 (47.93-2.15) 76.3 (47.93-2.15)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.38 (at 2.14Å)	Xtriage
Refinement program	PHENIX dev_3150	Depositor
R, R_{free}	0.218 , 0.238 0.220 , 0.240	Depositor DCC
R_{free} test set	2652 reflections (2.44%)	wwPDB-VP
Wilson B-factor (Å ²)	41.5	Xtriage
Anisotropy	0.487	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 44.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.46$, $\langle L^2 \rangle = 0.29$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	9126	wwPDB-VP
Average B, all atoms (Å ²)	70.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.69% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: K7G, FES, F3S, SF4, UMQ, BOG, FAD, 3PE, OAA, HEM, PEG, K, UNL

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	0.18	0/4835	0.39	0/6545
2	B	0.22	0/1970	0.40	0/2656
3	C	0.19	0/1104	0.36	0/1500
4	D	0.18	0/794	0.33	0/1089
All	All	0.19	0/8703	0.39	0/11790

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 [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	4734	0	4620	37	0
2	B	1928	0	1921	10	0
3	C	1075	0	1115	6	0
4	D	771	0	763	4	0
5	A	53	0	29	5	0
6	A	9	0	2	6	0
7	A	1	0	0	0	0
8	A	5	0	5	1	0
9	A	53	0	0	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
9	B	53	0	0	0	0
9	C	13	0	0	0	0
9	D	65	0	0	2	0
10	B	4	0	0	0	0
11	B	8	0	0	0	0
12	B	7	0	0	0	0
13	C	23	0	0	0	0
14	C	41	0	24	0	0
15	C	34	0	44	1	0
16	D	20	0	28	0	0
17	D	40	0	54	3	0
18	A	73	0	0	1	0
18	B	82	0	0	1	0
18	C	23	0	0	1	0
18	D	11	0	0	0	0
All	All	9126	0	8605	57	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 (57) 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:297:ARG:HH22	6:A:1002:OAA:C2	1.78	0.95
1:A:297:ARG:HH22	6:A:1002:OAA:C1	1.94	0.79
1:A:297:ARG:NH2	6:A:1002:OAA:H22	2.00	0.76
1:A:297:ARG:HH22	6:A:1002:OAA:H22	1.49	0.75
1:A:189:ARG:HD3	1:A:439:PRO:HB2	1.70	0.74
1:A:60:ALA:HB3	1:A:154:GLY:HA3	1.74	0.69
1:A:297:ARG:NH2	6:A:1002:OAA:C2	2.54	0.66
1:A:401:ALA:N	1:A:402:SER:HA	2.12	0.64
1:A:117:PHE:HA	1:A:149:VAL:HG22	1.79	0.64
3:C:15:LYS:NZ	18:C:301:HOH:O	2.31	0.64
3:C:107:VAL:HA	3:C:110:MET:HE2	1.81	0.62
1:A:422[A]:ARG:NH1	18:A:1101:HOH:O	2.33	0.61
1:A:63:GLY:HA2	1:A:153:THR:HG21	1.85	0.59
1:A:604:ARG:NH1	9:A:1019:UNL:O	2.38	0.56
2:B:8:THR:O	2:B:38:ASN:ND2	2.40	0.54
1:A:13:PRO:HG2	1:A:200:THR:HG22	1.93	0.51
1:A:243:PRO:HB3	1:A:586:TYR:CZ	2.46	0.51
1:A:297:ARG:HH22	6:A:1002:OAA:C3	2.23	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:220:TYR:CG	1:A:363:VAL:HG21	2.47	0.50
1:A:512:GLY:O	1:A:516:ASN:ND2	2.41	0.50
3:C:110:MET:HE3	3:C:112:LYS:HE2	1.95	0.49
1:A:253:HIS:O	1:A:361:PRO:HA	2.13	0.49
1:A:544:GLU:OE2	1:A:546:ARG:NE	2.40	0.49
2:B:223:ARG:HH12	15:C:203:UMQ:H62	1.78	0.48
4:D:98:ALA:HB2	17:D:201:3PE:H32	1.95	0.48
1:A:237:VAL:HG13	1:A:242:LEU:HB2	1.96	0.48
1:A:489:LEU:HD13	1:A:540:GLU:HA	1.96	0.48
1:A:453:LEU:HG	1:A:519:LEU:HD21	1.96	0.47
1:A:223:CYS:O	2:B:66:ARG:NH2	2.47	0.47
2:B:114:ASP:OD1	2:B:116:SER:OG	2.33	0.47
1:A:25:GLY:HA2	5:A:1001:FAD:H1B	1.97	0.47
2:B:131:LYS:NZ	18:B:1105:HOH:O	2.47	0.47
1:A:99:MET:HA	1:A:419:VAL:HG11	1.98	0.46
2:B:165:SER:HA	2:B:181:PRO:HD2	1.97	0.46
1:A:16:ASP:OD1	1:A:203:ARG:HB2	2.16	0.45
2:B:223:ARG:HH21	3:C:35:PRO:HG2	1.80	0.45
1:A:553:ASP:OD1	1:A:553:ASP:N	2.41	0.45
1:A:414:LEU:HG	5:A:1001:FAD:C2	2.47	0.45
4:D:97:VAL:HG11	17:D:201:3PE:H332	1.99	0.44
1:A:60:ALA:HA	5:A:1001:FAD:C6	2.47	0.44
9:D:1010:UNL:O3	9:D:1013:UNL:O	2.36	0.44
1:A:310:GLU:OE1	1:A:312:ARG:NH2	2.51	0.43
1:A:227:HIS:ND1	8:A:1004:PEG:H32	2.33	0.43
1:A:253:HIS:CD2	1:A:263:LEU:HD11	2.54	0.43
1:A:456:LEU:HD13	1:A:522:THR:HG22	2.00	0.42
2:B:176:ASP:OD1	2:B:176:ASP:N	2.52	0.42
3:C:63:LEU:HA	3:C:64:PRO:HD3	1.90	0.42
3:C:140:MET:HE3	17:D:201:3PE:H112	2.01	0.42
5:A:1001:FAD:H9	5:A:1001:FAD:H1'1	1.85	0.42
1:A:413:SER:HB3	5:A:1001:FAD:N1	2.34	0.41
1:A:422[A]:ARG:HD2	1:A:426:LEU:HG	2.02	0.41
2:B:178:TYR:CD1	2:B:214:ARG:HB2	2.55	0.41
1:A:461:GLY:O	1:A:507:LYS:HD3	2.20	0.41
1:A:601:VAL:N	9:A:1010:UNL:S2	2.90	0.41
4:D:24:LEU:HB2	4:D:25:PRO:HD3	2.02	0.41
4:D:49:TRP:HE1	9:D:1003:UNL:C4	2.34	0.41
2:B:210:PHE:HA	2:B:214:ARG:HG2	2.03	0.41

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	611/621 (98%)	588 (96%)	23 (4%)	0	100	100
2	B	238/252 (94%)	233 (98%)	5 (2%)	0	100	100
3	C	137/140 (98%)	136 (99%)	1 (1%)	0	100	100
4	D	100/103 (97%)	99 (99%)	1 (1%)	0	100	100
All	All	1086/1116 (97%)	1056 (97%)	30 (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	497/506 (98%)	490 (99%)	7 (1%)	59	66
2	B	216/219 (99%)	211 (98%)	5 (2%)	44	49
3	C	117/118 (99%)	114 (97%)	3 (3%)	40	43
4	D	78/79 (99%)	77 (99%)	1 (1%)	61	68
All	All	908/922 (98%)	892 (98%)	16 (2%)	51	58

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

Mol	Chain	Res	Type
1	A	48	THR
1	A	72	GLU

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Mol	Chain	Res	Type
1	A	130	PHE
1	A	276	ILE
1	A	403	VAL
1	A	565	LYS
1	A	590	LYS
2	B	8	THR
2	B	116	SER
2	B	170	SER
2	B	217	THR
2	B	224	THR
3	C	11	ARG
3	C	36	MET
3	C	96	SER
4	D	19	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	65	ASN
1	A	133	GLN
1	A	159	HIS
1	A	452	ASN
1	A	526	GLN
1	A	607	ASN
2	B	144	GLN
4	D	69	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry

Of 55 ligands modelled in this entry, 1 is monoatomic and 43 are unknown - leaving 11 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
6	OAA	A	1002	-	8,8,8	2.62	4 (50%)	8,10,10	1.65	2 (25%)
13	K7G	C	202	-	22,25,25	1.90	6 (27%)	27,34,34	2.88	6 (22%)
15	UMQ	C	203	-	35,35,35	0.49	0	46,46,46	0.82	0
16	BOG	D	1001	-	20,20,20	0.59	1 (5%)	25,25,25	0.82	1 (4%)
11	SF4	B	1002	2	0,12,12	-	-	-	-	-
5	FAD	A	1001	1	58,58,58	1.14	7 (12%)	85,89,89	1.48	16 (18%)
12	F3S	B	1003	2	0,9,9	-	-	-	-	-
8	PEG	A	1004	-	4,4,6	0.46	0	3,3,5	0.25	0
17	3PE	D	201	-	39,39,50	1.08	2 (5%)	42,44,55	1.08	3 (7%)
14	HEM	C	201	3,4	48,48,50	1.43	8 (16%)	66,80,82	1.16	6 (9%)
10	FES	B	1001	2	0,4,4	-	-	-	-	-

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
13	K7G	C	202	-	-	3/17/18/18	0/3/3/3
6	OAA	A	1002	-	-	3/8/8/8	-
15	UMQ	C	203	-	-	4/20/60/60	0/2/2/2
16	BOG	D	1001	-	-	3/11/31/31	0/1/1/1
5	FAD	A	1001	1	-	5/34/50/50	0/6/6/6
11	SF4	B	1002	2	-	-	0/6/5/5
12	F3S	B	1003	2	-	-	0/3/3/3
8	PEG	A	1004	-	-	2/2/2/4	-
17	3PE	D	201	-	-	17/43/43/54	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
14	HEM	C	201	3,4	-	4/10/50/54	-
10	FES	B	1001	2	-	-	0/1/1/1

All (28) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	A	1002	OAA	O3-C3	5.28	1.33	1.23
13	C	202	K7G	C10-C09	4.51	1.53	1.43
13	C	202	K7G	C14-C15	4.46	1.42	1.35
17	D	201	3PE	O31-C31	4.43	1.46	1.33
14	C	201	HEM	FE-ND	4.37	2.08	1.94
17	D	201	3PE	O21-C21	4.11	1.45	1.34
13	C	202	K7G	C17-C15	4.06	1.53	1.47
6	A	1002	OAA	C2-C3	-3.52	1.37	1.51
14	C	201	HEM	FE-NC	3.51	2.06	1.95
14	C	201	HEM	FE-NB	3.43	2.05	1.94
5	A	1001	FAD	C5A-C6A	3.00	1.49	1.41
5	A	1001	FAD	PA-O3P	2.88	1.62	1.59
5	A	1001	FAD	C8A-N7A	2.69	1.36	1.31
13	C	202	K7G	C02-CL7	2.58	1.79	1.73
5	A	1001	FAD	P-O3P	2.55	1.62	1.59
5	A	1001	FAD	C4-N3	-2.44	1.34	1.38
14	C	201	HEM	CMC-C2C	2.37	1.55	1.50
14	C	201	HEM	CMA-C3A	2.34	1.55	1.50
13	C	202	K7G	O23-C08	-2.27	1.18	1.23
16	D	1001	BOG	O1-C1	2.24	1.43	1.40
14	C	201	HEM	CAB-C3B	2.24	1.55	1.50
6	A	1002	OAA	O5-C4	-2.24	1.24	1.30
13	C	202	K7G	C12-N16	-2.19	1.33	1.38
14	C	201	HEM	CAC-C3C	2.14	1.55	1.50
14	C	201	HEM	CMB-C2B	2.08	1.55	1.50
6	A	1002	OAA	C2-C1	2.07	1.54	1.51
5	A	1001	FAD	C5A-N7A	-2.05	1.35	1.39
5	A	1001	FAD	C8A-N9A	-2.04	1.34	1.37

All (34) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
13	C	202	K7G	C14-S13-C12	11.68	98.67	90.33
13	C	202	K7G	C15-C14-S13	-5.73	103.53	111.48
5	A	1001	FAD	C5A-C4A-N3A	-5.15	119.62	126.72
13	C	202	K7G	C15-N16-C12	4.97	116.96	109.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	A	1001	FAD	C4-N3-C2	-4.34	117.94	125.64
17	D	201	3PE	O21-C21-C22	3.65	119.37	111.48
5	A	1001	FAD	C4X-C4-N3	3.49	122.13	113.25
5	A	1001	FAD	C4'-C3'-C2'	-3.08	108.44	113.57
5	A	1001	FAD	N3A-C4A-N9A	3.04	132.33	127.17
5	A	1001	FAD	N9A-C8A-N7A	-3.00	109.69	113.94
5	A	1001	FAD	C4A-C5A-N7A	-2.96	107.20	110.58
6	A	1002	OAA	O3-C3-C2	2.90	124.87	120.41
17	D	201	3PE	C2-O21-C21	-2.86	110.96	117.80
5	A	1001	FAD	C2A-N3A-C4A	2.84	118.78	111.83
5	A	1001	FAD	O4-C4-C4X	-2.82	119.09	126.53
17	D	201	3PE	O31-C31-C32	2.67	119.98	111.83
13	C	202	K7G	C09-C12-S13	2.61	127.89	122.92
14	C	201	HEM	C4D-ND-C1D	2.56	108.24	105.21
13	C	202	K7G	C02-C01-C08	-2.46	119.77	123.06
14	C	201	HEM	CAD-CBD-CGD	-2.46	107.15	113.67
14	C	201	HEM	C3D-C4D-ND	-2.45	107.48	110.17
14	C	201	HEM	C1B-NB-C4B	2.41	108.06	105.21
5	A	1001	FAD	C10-N1-C2	2.29	121.81	116.85
5	A	1001	FAD	C4X-C10-N1	-2.28	118.99	124.59
16	D	1001	BOG	O1-C1-C2	2.26	111.70	108.27
5	A	1001	FAD	C5A-N7A-C8A	2.24	106.98	103.45
5	A	1001	FAD	C4A-N9A-C8A	2.24	108.09	105.74
5	A	1001	FAD	C4-C4X-N5	2.18	121.21	118.21
6	A	1002	OAA	O2-C1-C2	2.15	121.16	114.51
14	C	201	HEM	C2A-C1A-NA	-2.12	107.80	110.15
5	A	1001	FAD	O2-C2-N1	-2.11	118.29	121.80
14	C	201	HEM	CAD-C3D-C2D	-2.07	124.00	127.87
5	A	1001	FAD	C5A-C4A-N9A	2.05	108.05	105.81
13	C	202	K7G	C14-C15-N16	2.01	114.31	111.67

There are no chirality outliers.

All (41) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	1001	FAD	N10-C1'-C2'-O2'
5	A	1001	FAD	N10-C1'-C2'-C3'
5	A	1001	FAD	PA-O3P-P-O5'
6	A	1002	OAA	O3-C3-C4-O4
6	A	1002	OAA	C2-C3-C4-O4
6	A	1002	OAA	C2-C3-C4-O5
13	C	202	K7G	C08-C09-C10-N11

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Mol	Chain	Res	Type	Atoms
17	D	201	3PE	C1-O11-P-O13
17	D	201	3PE	C1-O11-P-O14
17	D	201	3PE	C11-O13-P-O12
17	D	201	3PE	O11-C1-C2-O21
17	D	201	3PE	C22-C21-O21-C2
17	D	201	3PE	O22-C21-O21-C2
15	C	203	UMQ	O5'-C1'-O1'-CA
16	D	1001	BOG	O5-C1-O1-C1'
17	D	201	3PE	O11-C1-C2-C3
16	D	1001	BOG	O1-C1'-C2'-C3'
15	C	203	UMQ	CG-CH-CI-CJ
16	D	1001	BOG	C2'-C1'-O1-C1
14	C	201	HEM	C4D-C3D-CAD-CBD
14	C	201	HEM	C2D-C3D-CAD-CBD
14	C	201	HEM	C2A-CAA-CBA-CGA
8	A	1004	PEG	O2-C3-C4-O4
17	D	201	3PE	C25-C26-C27-C28
17	D	201	3PE	C1-O11-P-O12
13	C	202	K7G	N16-C15-C17-C18
13	C	202	K7G	N16-C15-C17-C22
5	A	1001	FAD	P-O3P-PA-O2A
8	A	1004	PEG	C4-C3-O2-C2
17	D	201	3PE	C33-C34-C35-C36
15	C	203	UMQ	CC-CD-CF-CG
17	D	201	3PE	C23-C24-C25-C26
17	D	201	3PE	O32-C31-O31-C3
17	D	201	3PE	C32-C31-O31-C3
5	A	1001	FAD	P-O3P-PA-O1A
17	D	201	3PE	O31-C31-C32-C33
17	D	201	3PE	C38-C39-C3A-C3B
15	C	203	UMQ	C5'-C4'-O1-C1
14	C	201	HEM	CAA-CBA-CGA-O2A
17	D	201	3PE	C39-C3A-C3B-C3C
17	D	201	3PE	O32-C31-C32-C33

There are no ring outliers.

5 monomers are involved in 16 short contacts:

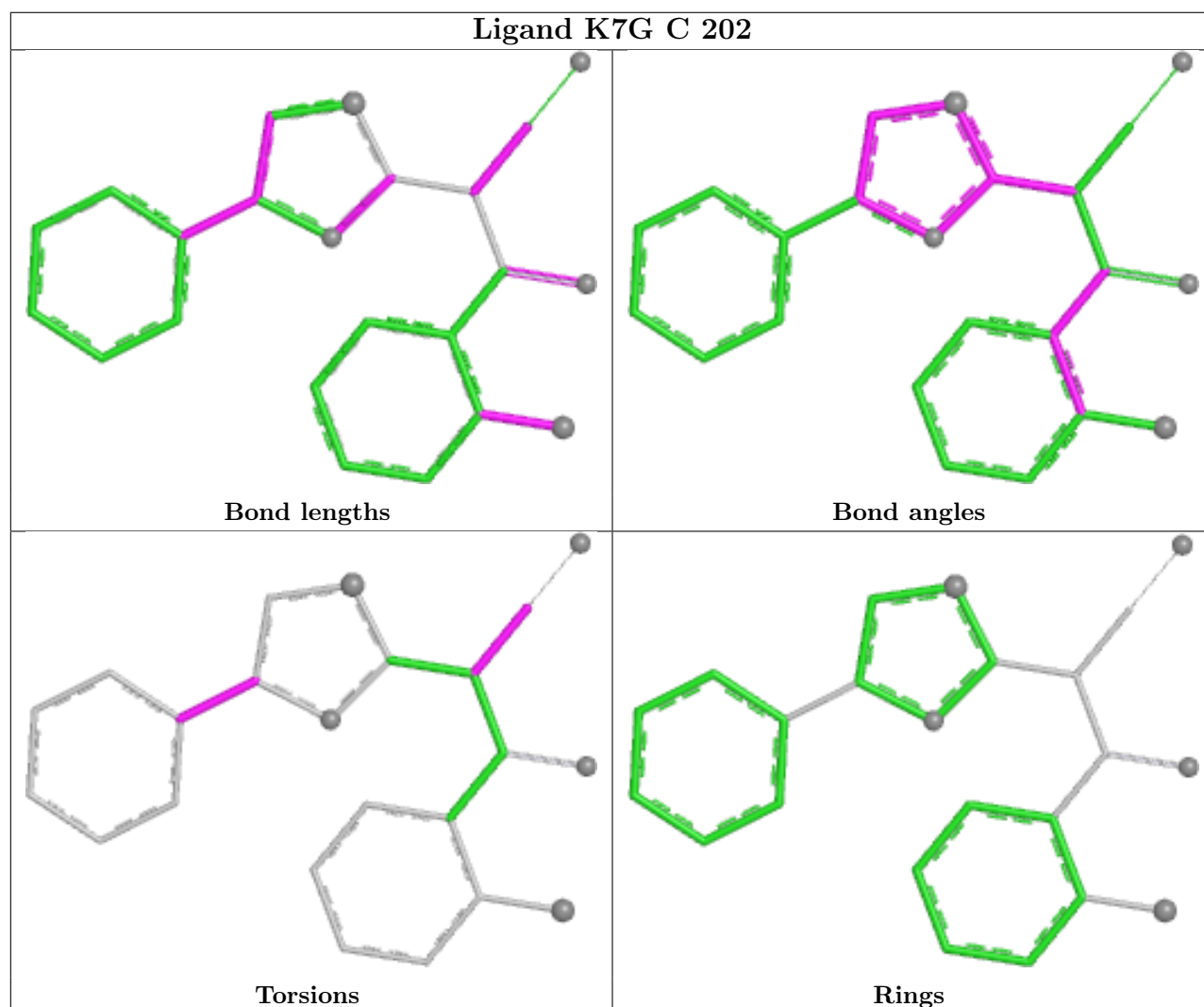
Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	A	1002	OAA	6	0
15	C	203	UMQ	1	0
5	A	1001	FAD	5	0

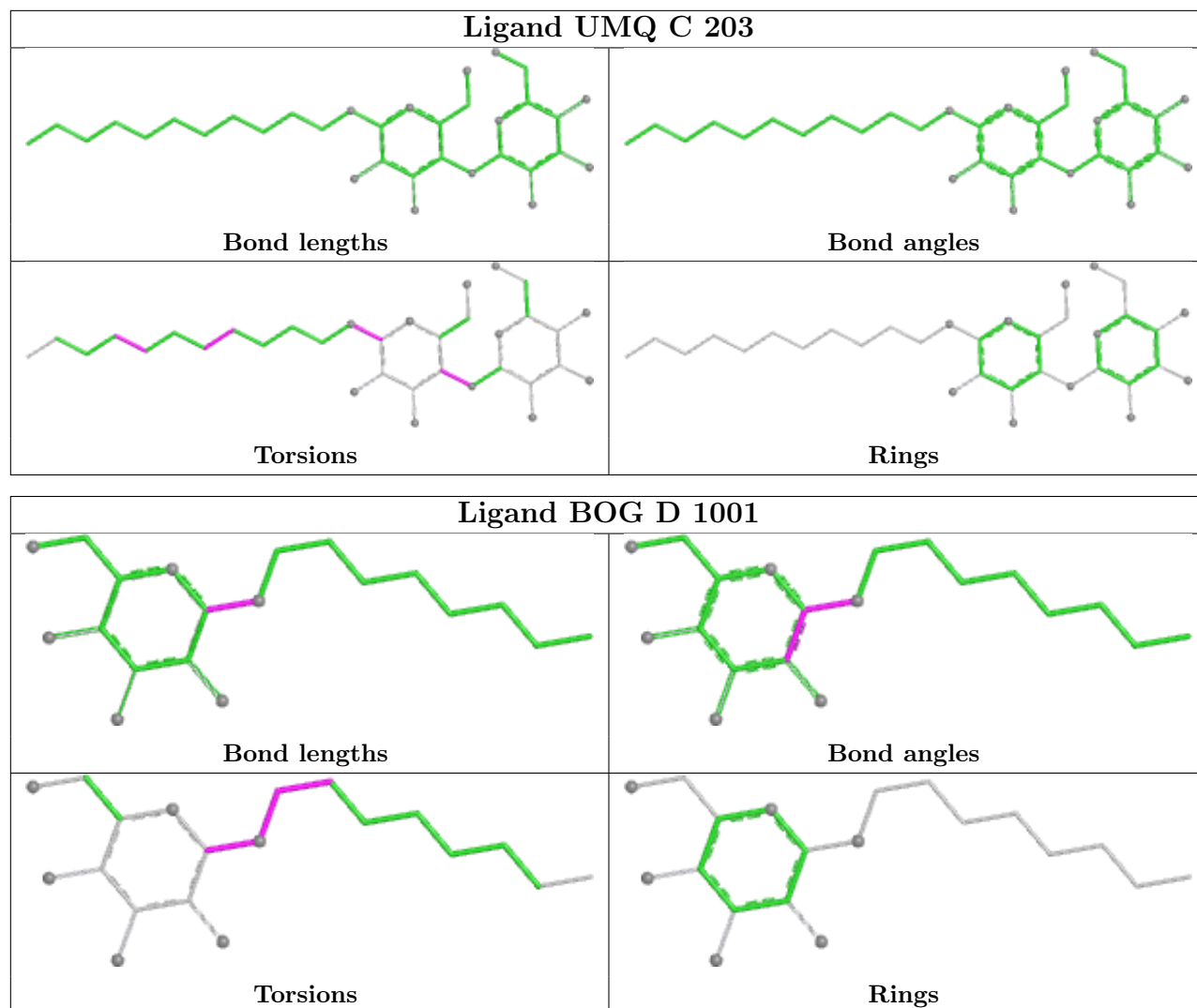
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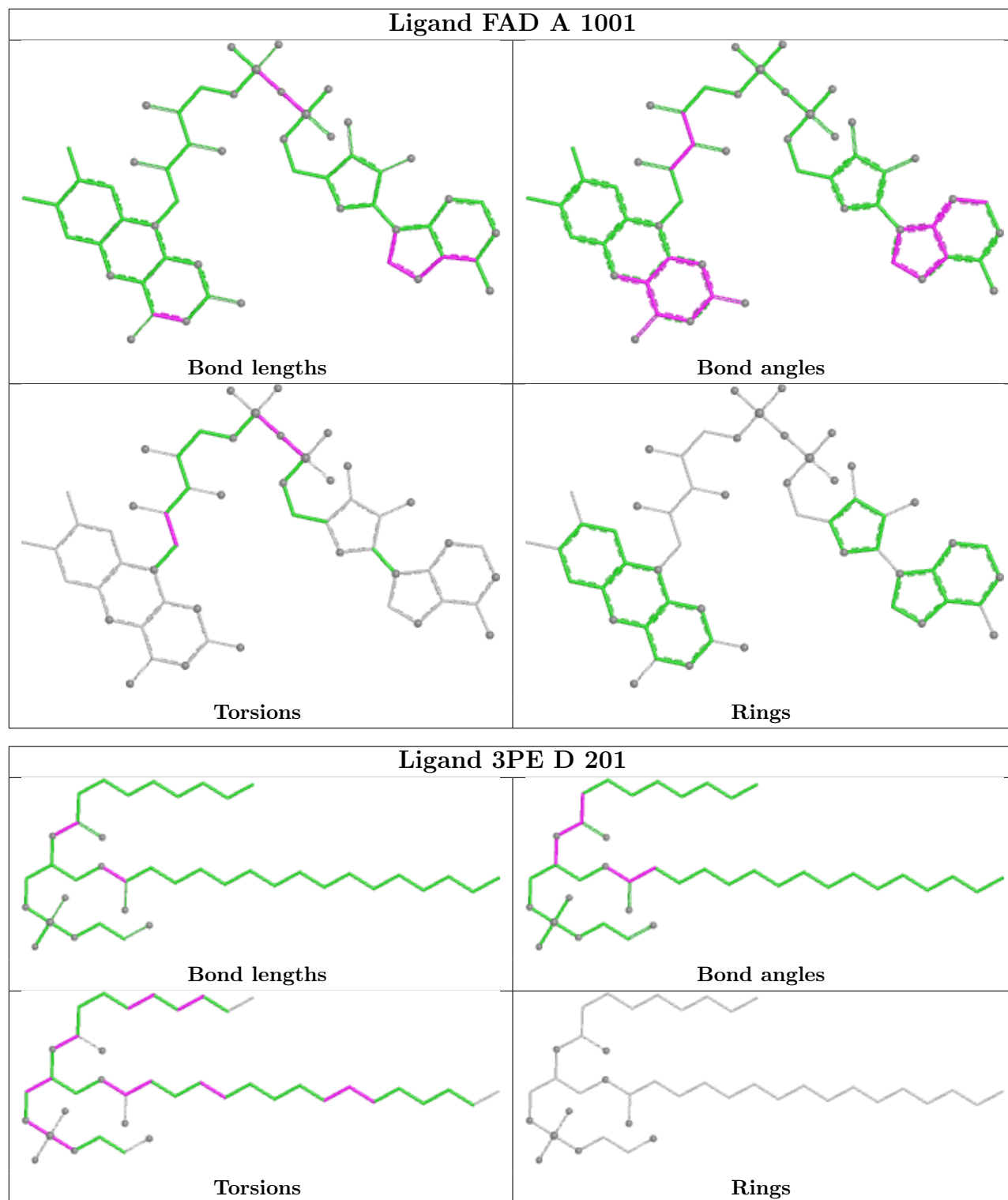
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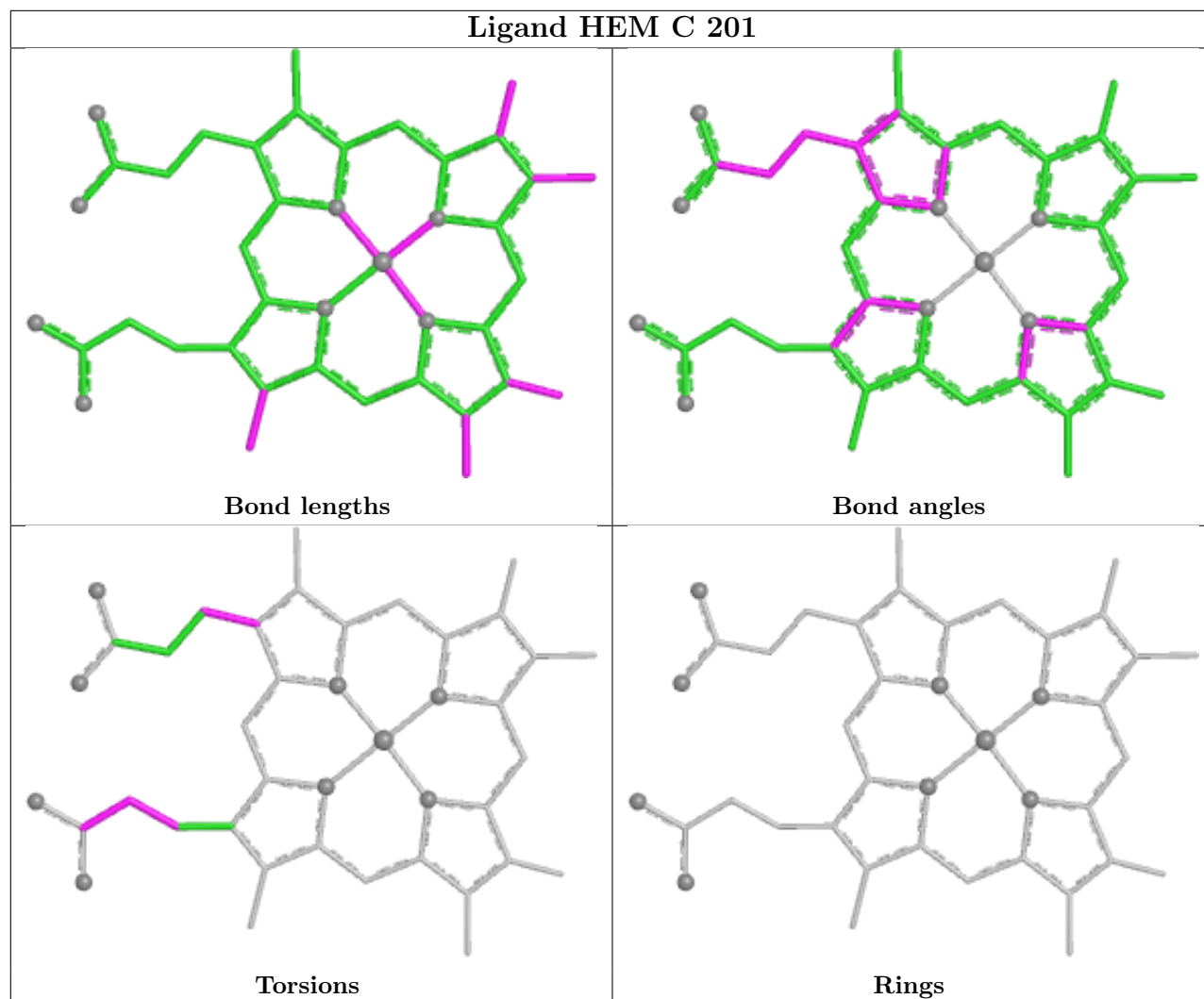
Mol	Chain	Res	Type	Clashes	Symm-Clashes
8	A	1004	PEG	1	0
17	D	201	3PE	3	0

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









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 [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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	611/621 (98%)	1.48	155 (25%) 1 2	26, 71, 104, 121	2 (0%)
2	B	240/252 (95%)	1.02	19 (7%) 18 20	43, 57, 100, 129	0
3	C	139/140 (99%)	0.81	5 (3%) 46 50	51, 65, 99, 106	0
4	D	102/103 (99%)	0.74	6 (5%) 28 32	49, 65, 83, 103	0
All	All	1092/1116 (97%)	1.23	185 (16%) 4 5	26, 67, 102, 129	2 (0%)

All (185) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	211	ILE	5.6
1	A	244	CYS	4.3
1	A	450	VAL	4.3
1	A	89	TRP	4.2
1	A	24	VAL	4.1
4	D	2	SER	4.1
1	A	210	VAL	4.0
1	A	192	ILE	3.9
1	A	193	ALA	3.8
1	A	28	GLY	3.8
4	D	73	TYR	3.7
1	A	237	VAL	3.7
1	A	468	ALA	3.7
1	A	418	VAL	3.5
1	A	394	ALA	3.5
1	A	548	ALA	3.5
1	A	380	THR	3.4
1	A	530	LEU	3.4
1	A	422[A]	ARG	3.3
1	A	251	GLN	3.3
1	A	496	LEU	3.3

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Mol	Chain	Res	Type	RSRZ
1	A	172	TYR	3.3
1	A	592	GLY	3.3
2	B	17	TYR	3.3
1	A	209	THR	3.2
1	A	401	ALA	3.2
1	A	531	CYS	3.2
1	A	525	LEU	3.2
1	A	520	VAL	3.1
1	A	494	GLU	3.1
1	A	22[A]	VAL	3.1
1	A	212	ALA	3.1
1	A	12	TYR	3.1
1	A	405	GLY	3.1
2	B	59	LEU	3.1
1	A	513	ILE	3.1
1	A	66	ALA	3.0
1	A	463	ILE	3.0
1	A	499	ILE	3.0
1	A	512	GLY	3.0
1	A	238	THR	3.0
1	A	518	ASP	3.0
1	A	529	MET	3.0
1	A	252	PHE	3.0
1	A	240	ALA	2.9
2	B	70	CYS	2.9
1	A	370	ILE	2.9
1	A	213	THR	2.9
1	A	453	LEU	2.9
1	A	103	ALA	2.9
1	A	415	LEU	2.9
3	C	79	LEU	2.9
1	A	46	CYS	2.9
1	A	234	THR	2.9
1	A	206	ALA	2.9
1	A	532	ALA	2.9
1	A	47	VAL	2.8
1	A	84	VAL	2.8
1	A	40	ALA	2.8
1	A	110	LEU	2.8
1	A	182	LEU	2.8
1	A	417	LEU	2.8
1	A	539	ALA	2.8

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Mol	Chain	Res	Type	RSRZ
1	A	506	LEU	2.8
1	A	23	VAL	2.8
1	A	86	GLY	2.7
1	A	374	TYR	2.7
1	A	519	LEU	2.7
1	A	586	TYR	2.7
1	A	589	VAL	2.7
1	A	131	GLY	2.7
1	A	130	PHE	2.7
1	A	451	ALA	2.7
1	A	81	TYR	2.7
1	A	500	TYR	2.7
1	A	383	ASN	2.7
2	B	110	ASP	2.7
1	A	91	GLY	2.7
1	A	602	ILE	2.7
1	A	368	GLY	2.7
1	A	249	PHE	2.6
1	A	242	LEU	2.6
1	A	297	ARG	2.6
1	A	107	VAL	2.6
1	A	379	ILE	2.6
1	A	438	VAL	2.6
1	A	391	GLY	2.6
1	A	67	ALA	2.6
2	B	173	TRP	2.6
1	A	179	LEU	2.6
1	A	409	LEU	2.6
1	A	398	ALA	2.6
1	A	247	LEU	2.6
1	A	505	HIS	2.5
1	A	189	ARG	2.5
1	A	108	ILE	2.5
1	A	528	LEU	2.5
1	A	538	GLY	2.5
1	A	533	LEU	2.5
1	A	471	ASN	2.5
1	A	416	ASP	2.4
1	A	220	TYR	2.4
1	A	365	TYR	2.4
1	A	621	TYR	2.4
1	A	508	THR	2.4

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Mol	Chain	Res	Type	RSRZ
1	A	617	ALA	2.4
1	A	90	LEU	2.4
1	A	536	ILE	2.4
4	D	28	TYR	2.4
1	A	439	PRO	2.4
1	A	181	LEU	2.4
2	B	108	VAL	2.4
1	A	509	PHE	2.4
2	B	61	PHE	2.4
1	A	352	VAL	2.4
1	A	367	MET	2.4
1	A	223	CYS	2.4
1	A	424	CYS	2.4
1	A	522	THR	2.4
1	A	60	ALA	2.3
2	B	102	LEU	2.3
1	A	276	ILE	2.3
2	B	77	ILE	2.3
1	A	366	ASN	2.3
2	B	194	SER	2.3
2	B	16	ILE	2.3
1	A	596	LEU	2.3
1	A	604	ARG	2.3
4	D	3	SER	2.3
1	A	230	THR	2.3
1	A	92	ASP	2.3
1	A	504	ALA	2.3
3	C	2	ALA	2.3
1	A	140	GLY	2.3
4	D	101	TRP	2.3
3	C	114	PHE	2.2
1	A	517	THR	2.2
1	A	590	LYS	2.2
1	A	325	LEU	2.2
2	B	143	LEU	2.2
1	A	393	TYR	2.2
1	A	224	THR	2.2
2	B	99	ILE	2.2
1	A	419	VAL	2.2
1	A	48	THR	2.2
1	A	183	MET	2.2
1	A	618	ILE	2.2

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Mol	Chain	Res	Type	RSRZ
3	C	128	ILE	2.2
1	A	191	VAL	2.2
2	B	112	VAL	2.2
1	A	226	ALA	2.2
1	A	584	LEU	2.2
1	A	126	TYR	2.2
1	A	169	ASP	2.2
1	A	132	GLY	2.1
1	A	295	ALA	2.1
1	A	503	LEU	2.1
2	B	66	ARG	2.1
3	C	51	LEU	2.1
1	A	112	ASN	2.1
1	A	537	TYR	2.1
2	B	142	TYR	2.1
1	A	219	THR	2.1
2	B	19	TRP	2.1
1	A	125	ILE	2.1
4	D	55	ILE	2.1
2	B	246	LYS	2.1
1	A	598	TYR	2.1
1	A	186	GLY	2.1
1	A	587	VAL	2.1
1	A	59	ALA	2.1
1	A	591	SER	2.1
1	A	395	CYS	2.1
1	A	563	TYR	2.1
1	A	273	GLY	2.1
1	A	35	PHE	2.1
1	A	299	VAL	2.1
1	A	29	ALA	2.1
1	A	178	ALA	2.1
1	A	113	TYR	2.0
1	A	387	LYS	2.0
2	B	192	ILE	2.0
1	A	360	LEU	2.0
1	A	404	HIS	2.0
1	A	233	GLY	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 oligosaccharides 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
9	UNL	D	1013	1/-	0.62	0.32	99,99,99,99	0
9	UNL	A	1007	1/-	0.68	0.20	85,85,85,85	0
9	UNL	A	1013	3/-	0.72	0.20	62,62,64,64	3
9	UNL	A	1006	15/-	0.72	0.31	112,113,137,138	0
9	UNL	A	1018	1/-	0.73	0.27	75,75,75,75	1
9	UNL	B	1005	15/-	0.73	0.23	82,100,125,127	0
9	UNL	D	1006	3/-	0.73	0.35	49,49,51,53	3
9	UNL	A	1011	5/-	0.73	0.20	119,120,121,122	0
9	UNL	B	1004	4/-	0.74	0.13	97,98,99,99	0
9	UNL	A	1012	3/-	0.75	0.34	54,54,61,65	3
9	UNL	B	1008	3/-	0.75	0.30	67,67,68,70	0
9	UNL	B	1013	6/-	0.76	0.16	81,84,85,86	0
9	UNL	C	206	2/-	0.76	0.34	77,77,77,78	0
9	UNL	A	1017	1/-	0.76	0.16	66,66,66,66	1
9	UNL	B	1010	7/-	0.76	0.23	75,78,80,81	0
9	UNL	A	1016	1/-	0.78	0.22	67,67,67,67	0
9	UNL	D	1003	10/-	0.78	0.20	83,90,97,97	0
9	UNL	A	1014	1/-	0.79	0.24	55,55,55,55	0
9	UNL	A	1015	1/-	0.79	0.31	60,60,60,60	0
9	UNL	C	207	4/-	0.80	0.13	81,83,85,86	0
9	UNL	B	1006	4/-	0.81	0.21	57,63,68,77	0
9	UNL	B	1011	3/-	0.81	0.23	80,80,81,81	0
8	PEG	A	1004	5/7	0.82	0.36	63,66,68,69	5
9	UNL	D	1007	5/-	0.82	0.15	84,89,93,95	0
9	UNL	D	1010	11/-	0.82	0.23	86,93,98,98	0
9	UNL	A	1019	1/-	0.82	0.32	67,67,67,67	0
9	UNL	D	1008	7/-	0.83	0.16	93,97,104,107	0
9	UNL	A	1010	4/-	0.83	0.20	88,89,90,92	0
9	UNL	D	1012	1/-	0.83	0.17	88,88,88,88	0
9	UNL	D	1005	9/-	0.83	0.18	102,106,108,109	0
17	3PE	D	201	40/51	0.84	0.20	75,87,130,131	0
15	UMQ	C	203	34/34	0.85	0.17	67,85,105,109	0

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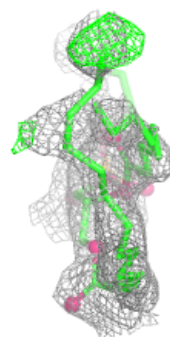
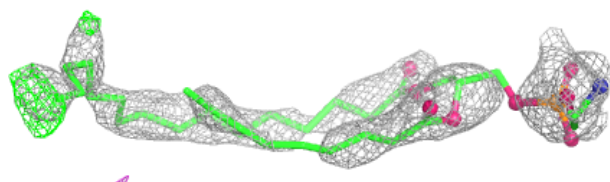
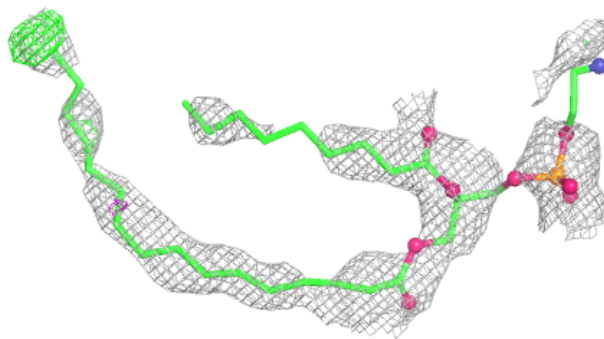
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
9	UNL	B	1009	3/-	0.85	0.16	74,74,76,77	0
9	UNL	D	1004	4/-	0.86	0.17	85,87,88,89	0
16	BOG	D	1001	20/20	0.86	0.16	72,83,95,98	0
9	UNL	A	1009	4/-	0.86	0.17	73,76,79,84	0
9	UNL	D	1011	5/-	0.87	0.16	65,70,72,73	0
9	UNL	B	1012	3/-	0.87	0.23	62,62,62,65	3
9	UNL	D	1009	9/-	0.88	0.17	73,84,99,101	0
6	OAA	A	1002	9/9	0.89	0.11	59,64,65,66	0
9	UNL	A	1008	5/-	0.89	0.15	72,81,82,83	0
7	K	A	1003	1/1	0.90	0.15	70,70,70,70	0
9	UNL	C	208	1/-	0.90	0.25	53,53,53,53	1
9	UNL	B	1007	3/-	0.91	0.30	73,73,75,79	0
9	UNL	B	1014	1/-	0.91	0.20	59,59,59,59	0
9	UNL	B	1015	1/-	0.91	0.13	44,44,44,44	0
9	UNL	A	1005	7/-	0.91	0.20	74,79,81,83	0
5	FAD	A	1001	53/53	0.92	0.11	46,53,59,61	0
9	UNL	C	204	3/-	0.93	0.14	61,61,64,64	0
9	UNL	C	205	3/-	0.94	0.17	74,74,77,80	0
13	K7G	C	202	23/23	0.96	0.09	50,54,60,63	0
10	FES	B	1001	4/4	0.96	0.06	55,55,55,56	0
12	F3S	B	1003	7/7	0.97	0.06	44,49,52,56	0
11	SF4	B	1002	8/8	0.97	0.06	44,47,52,54	0
14	HEM	C	201	41/43	0.97	0.10	50,55,66,69	0

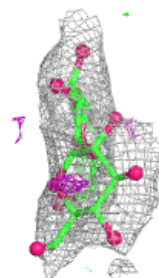
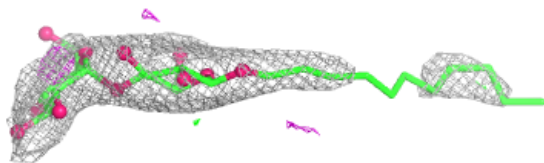
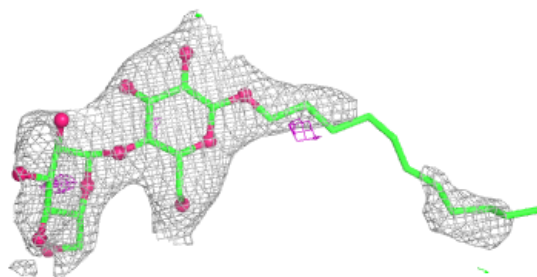
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around 3PE D 201:

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

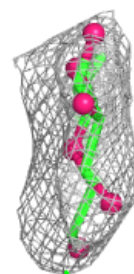
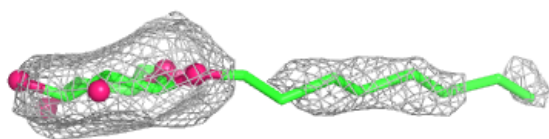
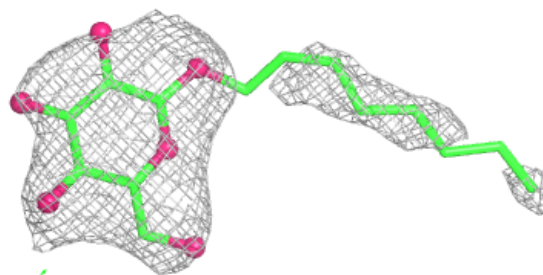
**Electron density around UMQ C 203:**

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

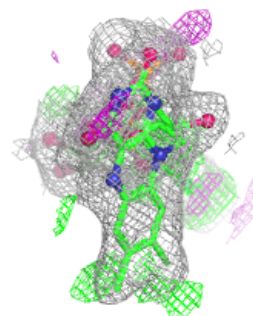
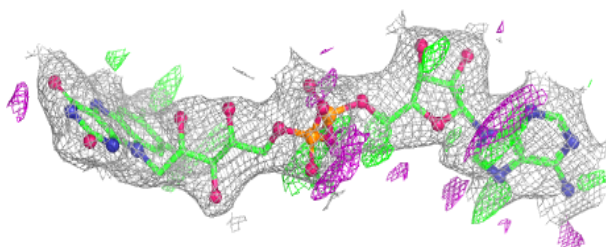
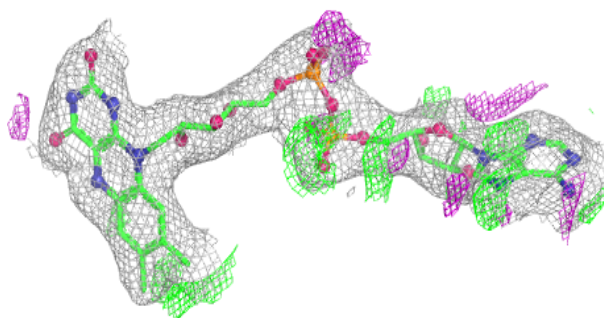


Electron density around BOG D 1001:

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

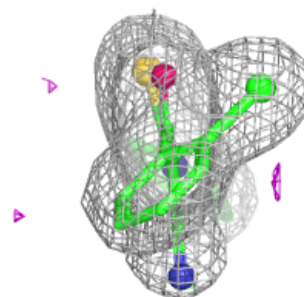
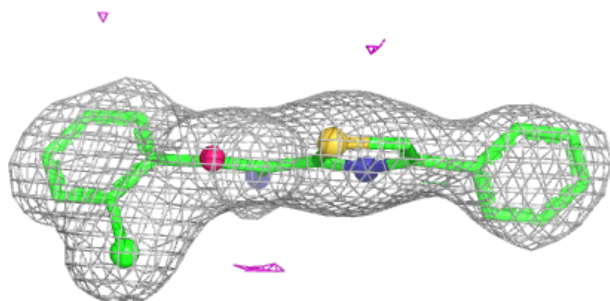
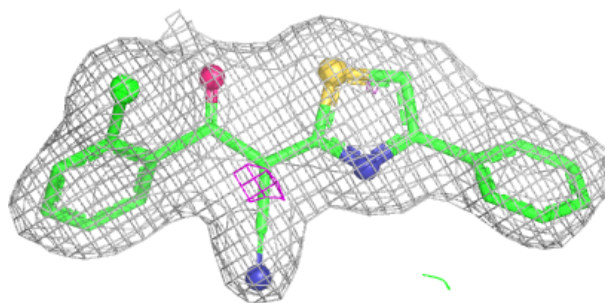
**Electron density around FAD A 1001:**

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



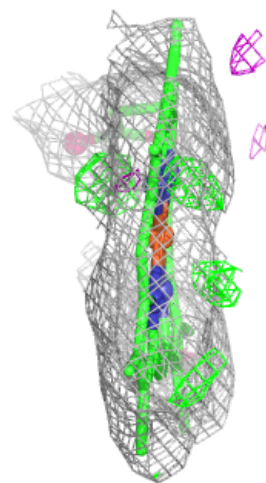
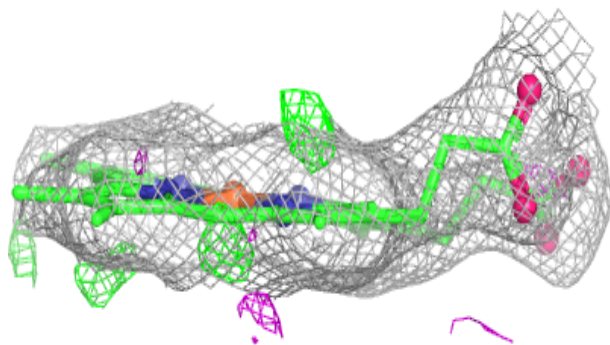
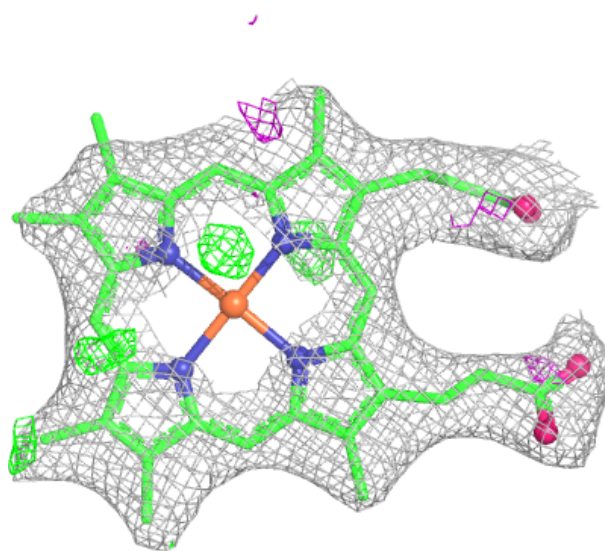
Electron density around K7G C 202:

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



Electron density around HEM C 201:

$2mF_o-DF_c$ (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.