



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 18, 2026 – 03:43 AM UTC

PDB ID : 6J79 / pdb_00006j79
Title : Fusion protein of heme oxygenase-1 and NADPH-cytochrome P450 reductase (13aa)
Authors : Sugishima, M.; Wada, K.
Deposited on : 2019-01-17
Resolution : 3.33 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

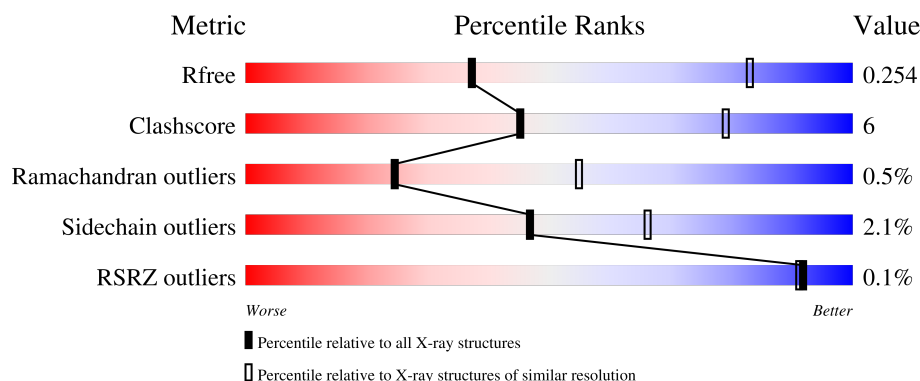
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.33 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	1434 (3.38-3.30)
Clashscore	190562	1479 (3.38-3.30)
Ramachandran outliers	187476	1456 (3.38-3.30)
Sidechain outliers	187428	1455 (3.38-3.30)
RSRZ outliers	180081	1434 (3.38-3.30)

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	871	
1	B	871	

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 13345 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 Heme oxygenase 1,NADPH–cytochrome P450 reductase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	816	Total	C	N	O	S	0	0	0
			6558	4168	1128	1233	29			
1	B	813	Total	C	N	O	S	0	0	0
			6517	4144	1121	1224	28			

There are 54 discrepancies between the modelled and reference sequences:

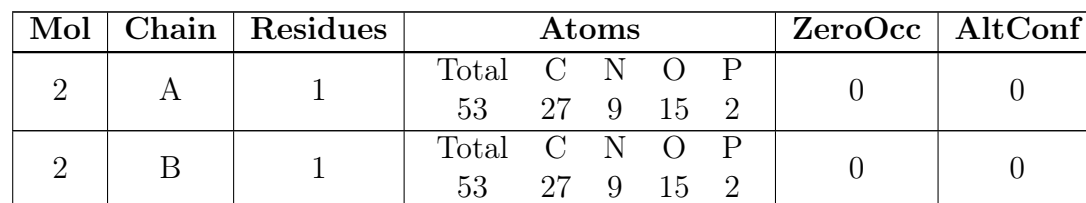
Chain	Residue	Modelled	Actual	Comment	Reference
A	-19	MET	-	initiating methionine	UNP P06762
A	-18	GLY	-	expression tag	UNP P06762
A	-17	SER	-	expression tag	UNP P06762
A	-16	SER	-	expression tag	UNP P06762
A	-15	HIS	-	expression tag	UNP P06762
A	-14	HIS	-	expression tag	UNP P06762
A	-13	HIS	-	expression tag	UNP P06762
A	-12	HIS	-	expression tag	UNP P06762
A	-11	HIS	-	expression tag	UNP P06762
A	-10	HIS	-	expression tag	UNP P06762
A	-9	SER	-	expression tag	UNP P06762
A	-8	SER	-	expression tag	UNP P06762
A	-7	GLY	-	expression tag	UNP P06762
A	-6	LEU	-	expression tag	UNP P06762
A	-5	VAL	-	expression tag	UNP P06762
A	-4	PRO	-	expression tag	UNP P06762
A	-3	ARG	-	expression tag	UNP P06762
A	-2	GLY	-	expression tag	UNP P06762
A	-1	SER	-	expression tag	UNP P06762
A	0	HIS	-	expression tag	UNP P06762
A	222	PRO	THR	engineered mutation	UNP P06762
A	230	ALA	PRO	engineered mutation	UNP P06762
A	234	MET	-	linker	UNP P06762
A	?	-	THR	deletion	UNP P00388
A	?	-	GLY	deletion	UNP P00388

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
A	?	-	GLU	deletion	UNP P00388
A	?	-	GLU	deletion	UNP P00388
B	-19	MET	-	initiating methionine	UNP P06762
B	-18	GLY	-	expression tag	UNP P06762
B	-17	SER	-	expression tag	UNP P06762
B	-16	SER	-	expression tag	UNP P06762
B	-15	HIS	-	expression tag	UNP P06762
B	-14	HIS	-	expression tag	UNP P06762
B	-13	HIS	-	expression tag	UNP P06762
B	-12	HIS	-	expression tag	UNP P06762
B	-11	HIS	-	expression tag	UNP P06762
B	-10	HIS	-	expression tag	UNP P06762
B	-9	SER	-	expression tag	UNP P06762
B	-8	SER	-	expression tag	UNP P06762
B	-7	GLY	-	expression tag	UNP P06762
B	-6	LEU	-	expression tag	UNP P06762
B	-5	VAL	-	expression tag	UNP P06762
B	-4	PRO	-	expression tag	UNP P06762
B	-3	ARG	-	expression tag	UNP P06762
B	-2	GLY	-	expression tag	UNP P06762
B	-1	SER	-	expression tag	UNP P06762
B	0	HIS	-	expression tag	UNP P06762
B	222	PRO	THR	engineered mutation	UNP P06762
B	230	ALA	PRO	engineered mutation	UNP P06762
B	234	MET	-	linker	UNP P06762
B	?	-	THR	deletion	UNP P00388
B	?	-	GLY	deletion	UNP P00388
B	?	-	GLU	deletion	UNP P00388
B	?	-	GLU	deletion	UNP P00388

- 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).



-
- The diagram illustrates the chemical structure of Flavin Mononucleotide (FMN). It features an isoalloxazine ring system (a tricyclic aromatic heterocycle) with atoms labeled N1, N3, N5, N10, C2, C4, C6, C7, C8, C9, C10, C4A, C5A, and C8M. Attached to the ring is a ribitol chain (C1', C2', C3', C4', C5') with hydroxyl groups (OH) at C2' and C4'. The chain terminates in a phosphate group (O1P, O2P, O3P, O4P) linked via an oxygen atom (O5').

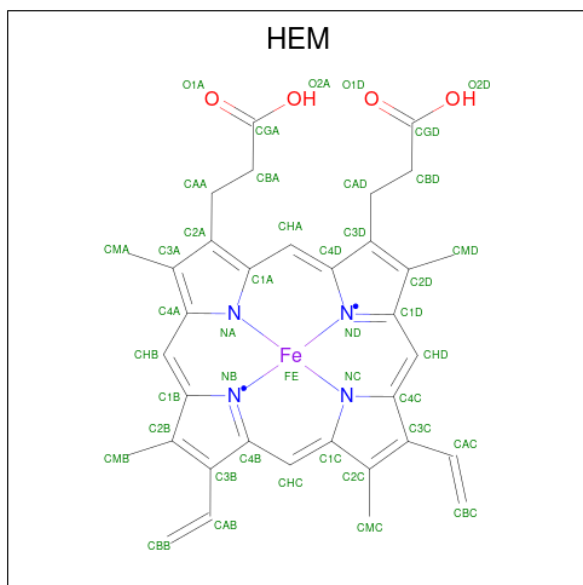
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total 31	C 17	N 4	O 9	P 1	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	B	1	Total	C	N	O	P	0	0
			31	17	4	9	1		

- Molecule 4 is PROTOPORPHYRIN IX CONTAINING FE (CCD ID: HEM) (formula: $C_{34}H_{32}FeN_4O_4$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
4	A	1	Total 43	C 34	Fe 1	N 4	O 4	0	0
4	B	1	Total 43	C 34	Fe 1	N 4	O 4	0	0

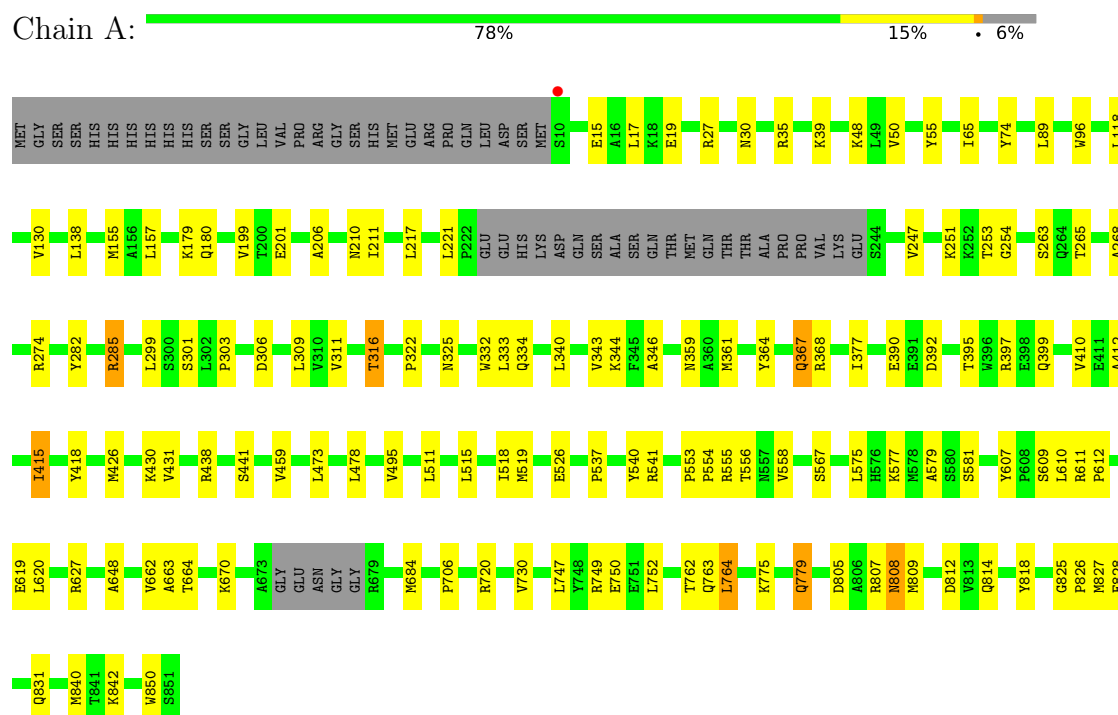
- Molecule 5 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	6	Total O 6 6	0	0
5	B	10	Total O 10 10	0	0

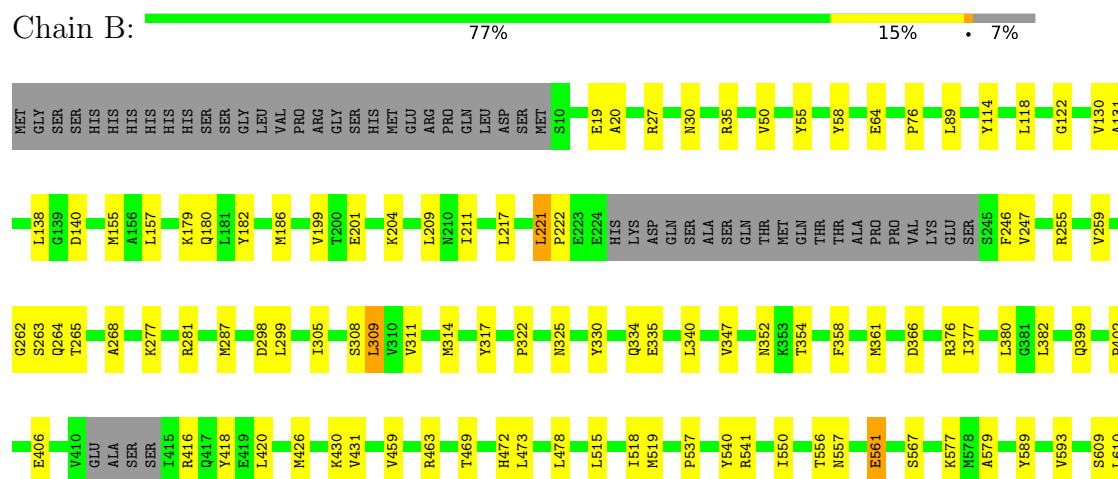
3 Residue-property plots [i](#)

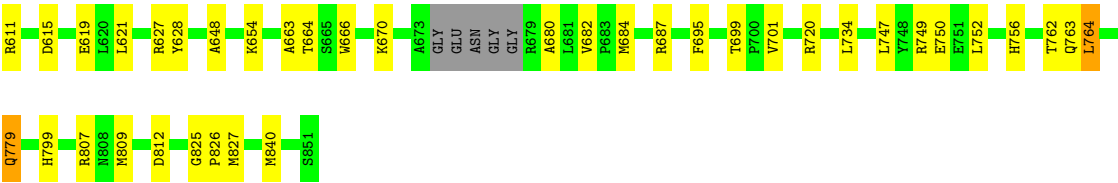
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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: Heme oxygenase 1,NADPH–cytochrome P450 reductase



- Molecule 1: Heme oxygenase 1,NADPH–cytochrome P450 reductase





4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	83.36Å 159.78Å 189.59Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	43.67 – 3.33 43.67 – 3.33	Depositor EDS
% Data completeness (in resolution range)	99.1 (43.67-3.33) 99.0 (43.67-3.33)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.10	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.94 (at 3.32Å)	Xtriage
Refinement program	PHENIX (1.13_2998: ???)	Depositor
R, R_{free}	0.202 , 0.248 0.215 , 0.254	Depositor DCC
R_{free} test set	1873 reflections (4.95%)	wwPDB-VP
Wilson B-factor (Å ²)	117.3	Xtriage
Anisotropy	0.282	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 87.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	13345	wwPDB-VP
Average B, all atoms (Å ²)	129.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.95% 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

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: HEM, FMN, 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	0.11	0/6719	0.31	0/9098
1	B	0.11	0/6676	0.31	0/9042
All	All	0.11	0/13395	0.31	0/18140

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	6558	0	6360	76	0
1	B	6517	0	6303	80	0
2	A	53	0	30	1	0
2	B	53	0	30	1	0
3	A	31	0	19	1	0
3	B	31	0	19	1	0
4	A	43	0	30	0	0
4	B	43	0	30	0	0
5	A	6	0	0	0	0
5	B	10	0	0	1	0
All	All	13345	0	12821	154	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.

All (154) 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:50:VAL:HG12	1:A:217:LEU:HD13	1.64	0.79
1:B:50:VAL:HG12	1:B:217:LEU:HD13	1.65	0.79
1:B:352:ASN:ND2	1:B:354:THR:OG1	2.14	0.78
1:A:426:MET:HE1	1:A:537:PRO:HG2	1.66	0.77
1:A:395:THR:O	1:A:399:GLN:NE2	2.23	0.71
1:A:426:MET:HE2	1:A:430:LYS:HB3	1.74	0.69
1:B:779:GLN:HG2	1:B:812:ASP:HB3	1.74	0.69
1:A:344:LYS:HB3	1:A:377:ILE:HD11	1.73	0.69
1:B:309:LEU:HD21	1:B:377:ILE:HG13	1.75	0.69
1:A:515:LEU:HB3	1:A:541:ARG:HB2	1.77	0.67
1:B:406:GLU:HG3	1:B:579:ALA:HB3	1.78	0.66
1:A:431:VAL:HG21	1:A:518:ILE:HD13	1.77	0.65
1:A:55:TYR:HA	1:A:89:LEU:HD13	1.78	0.65
1:B:426:MET:HE1	1:B:537:PRO:HG2	1.78	0.65
1:B:515:LEU:HB3	1:B:541:ARG:HB2	1.79	0.64
1:B:259:VAL:HG13	1:B:311:VAL:HG23	1.80	0.64
1:A:706:PRO:HG3	1:A:809:MET:HE3	1.80	0.63
1:B:55:TYR:HA	1:B:89:LEU:HD13	1.81	0.63
1:A:478:LEU:HD23	1:A:684:MET:HG2	1.80	0.62
1:B:699:THR:O	1:B:720:ARG:NH2	2.29	0.62
1:B:180:GLN:NE2	1:B:840:MET:O	2.33	0.61
1:B:352:ASN:HD21	1:B:354:THR:HG1	1.46	0.60
1:B:426:MET:HE2	1:B:430:LYS:HB3	1.84	0.60
1:B:749:ARG:NH1	1:B:750:GLU:OE2	2.34	0.60
1:A:775:LYS:NZ	1:B:335:GLU:O	2.29	0.59
1:A:316:THR:HG21	1:A:359:ASN:HA	1.83	0.59
1:A:265:THR:OG1	3:A:902:FMN:O2P	2.19	0.59
1:A:627:ARG:HD3	1:A:663:ALA:HB2	1.84	0.59
1:B:567:SER:H	1:B:609:SER:HB3	1.68	0.59
1:B:366:ASP:OD1	1:B:376:ARG:NH1	2.28	0.59
1:A:749:ARG:NH1	1:A:750:GLU:OE2	2.36	0.59
1:A:779:GLN:HG2	1:A:812:ASP:HB3	1.84	0.59
1:B:752:LEU:HB3	1:B:764:LEU:HD11	1.86	0.58
1:B:473:LEU:HD22	1:B:747:LEU:HD21	1.85	0.58
1:A:473:LEU:HD22	1:A:747:LEU:HD21	1.85	0.57
1:A:138:LEU:HD13	1:A:179:LYS:HG2	1.86	0.57
1:A:180:GLN:NE2	1:A:840:MET:O	2.36	0.57

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:438:ARG:HG3	1:A:441:SER:HB3	1.87	0.56
1:B:463:ARG:NH1	5:B:1002:HOH:O	2.37	0.56
1:A:752:LEU:HB3	1:A:764:LEU:HD11	1.88	0.56
1:A:253:THR:O	1:A:285:ARG:NH2	2.37	0.56
1:A:263:SER:HB2	1:A:268:ALA:HB3	1.88	0.55
1:B:27:ARG:HD2	1:B:211:ILE:HD13	1.89	0.55
1:A:610:LEU:O	1:A:611:ARG:NE	2.38	0.55
1:B:431:VAL:HG21	1:B:518:ILE:HD13	1.88	0.55
1:A:459:VAL:HG21	1:A:670:LYS:HB3	1.89	0.54
1:A:648:ALA:HA	1:A:664:THR:HB	1.91	0.53
1:B:628:TYR:HE2	1:B:687:ARG:HD2	1.74	0.52
1:B:519:MET:HG2	1:B:540:TYR:CZ	2.44	0.52
1:B:478:LEU:HD23	1:B:684:MET:HG2	1.91	0.52
1:B:265:THR:OG1	3:B:902:FMN:O2P	2.22	0.52
1:A:825:GLY:O	1:A:827:MET:N	2.43	0.52
1:A:254:GLY:O	1:A:285:ARG:NE	2.34	0.51
1:B:305:ILE:HB	1:B:308:SER:HB3	1.92	0.51
1:A:807:ARG:NH1	1:B:334:GLN:O	2.44	0.51
1:B:347:VAL:HG11	1:B:366:ASP:HB2	1.92	0.51
1:B:459:VAL:HG21	1:B:670:LYS:HB3	1.94	0.50
1:A:332:TRP:HE3	1:A:333:LEU:HD12	1.77	0.49
1:B:610:LEU:O	1:B:611:ARG:NE	2.42	0.49
1:B:347:VAL:HG13	1:B:380:LEU:HD13	1.93	0.49
1:B:627:ARG:NH1	2:B:901:FAD:O1P	2.45	0.49
1:A:827:MET:HB3	1:A:831:GLN:HG3	1.95	0.49
1:A:627:ARG:NH1	2:A:901:FAD:O1P	2.46	0.49
1:B:666:TRP:HH2	1:B:682:VAL:HA	1.78	0.49
1:A:30:ASN:O	1:A:35:ARG:NH1	2.44	0.48
1:A:206:ALA:O	1:A:210:ASN:ND2	2.41	0.48
1:A:607:TYR:HB3	1:A:610:LEU:HD23	1.95	0.48
1:B:418:TYR:HD2	1:B:619:GLU:HG3	1.79	0.48
1:A:282:TYR:HA	1:A:415:ILE:HG21	1.96	0.47
1:B:648:ALA:HA	1:B:664:THR:HB	1.96	0.47
1:A:263:SER:H	1:A:325:ASN:HD21	1.62	0.47
1:A:377:ILE:O	1:A:581:SER:OG	2.24	0.47
1:A:720:ARG:HH11	1:A:730:VAL:HG13	1.78	0.47
1:B:277:LYS:O	1:B:281:ARG:NH1	2.40	0.47
1:B:825:GLY:O	1:B:827:MET:N	2.48	0.47
1:A:15:GLU:OE1	1:A:842:LYS:HE2	2.15	0.46
1:A:303:PRO:HD3	1:A:343:VAL:HG22	1.97	0.46
1:A:556:THR:HG23	1:A:579:ALA:HA	1.97	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:334:GLN:NE2	1:A:364:TYR:OH	2.46	0.46
1:A:567:SER:H	1:A:609:SER:HB3	1.79	0.46
1:A:814:GLN:HG2	1:A:818:TYR:CZ	2.50	0.46
1:B:322:PRO:HG3	1:B:330:TYR:CB	2.46	0.46
1:A:805:ASP:HB3	1:A:850:TRP:CD1	2.51	0.45
1:B:589:TYR:O	1:B:593:VAL:HG12	2.16	0.45
1:A:274:ARG:NH2	1:A:390:GLU:OE2	2.49	0.45
1:B:322:PRO:HB3	1:B:361:MET:SD	2.57	0.45
1:B:358:PHE:CE2	1:B:382:LEU:HB3	2.51	0.45
1:A:309:LEU:HD13	1:A:377:ILE:HD12	1.98	0.45
1:B:627:ARG:HD3	1:B:663:ALA:HB2	1.97	0.45
1:B:628:TYR:CE2	1:B:687:ARG:HD2	2.51	0.45
1:B:255:ARG:HD3	1:B:287:MET:HB3	1.98	0.45
1:B:699:THR:HG21	1:B:799:HIS:HD2	1.82	0.45
1:A:247:VAL:HG11	1:A:301:SER:O	2.17	0.45
1:A:807:ARG:HG2	1:A:808:ASN:ND2	2.33	0.44
1:B:58:TYR:OH	1:B:140:ASP:OD2	2.23	0.44
1:B:138:LEU:HD13	1:B:179:LYS:HG2	1.98	0.44
1:A:399:GLN:HG3	1:A:556:THR:HB	1.98	0.44
1:A:627:ARG:NH1	1:A:662:VAL:HB	2.33	0.44
1:B:76:PRO:HG3	1:B:695:PHE:CE2	2.53	0.44
1:A:828:GLU:HB2	1:A:831:GLN:HG2	1.99	0.44
1:B:561:GLU:CD	1:B:561:GLU:C	2.86	0.44
1:A:410:VAL:HG22	1:A:412:ALA:H	1.83	0.43
1:B:416:ARG:NH2	1:B:418:TYR:O	2.51	0.43
1:B:262:GLY:HA2	1:B:325:ASN:HD21	1.84	0.43
1:B:131:ALA:HB2	1:B:199:VAL:HG13	1.99	0.43
1:A:17:LEU:HD21	1:A:199:VAL:HG12	2.00	0.43
1:A:322:PRO:HB3	1:A:361:MET:SD	2.58	0.43
1:A:399:GLN:OE1	1:A:555:ARG:HB3	2.18	0.43
1:B:550:ILE:HG22	1:B:621:LEU:HD23	2.01	0.43
1:B:402:PRO:HG2	1:B:557:ASN:HA	2.00	0.43
1:A:48:LYS:HG2	1:A:96:TRP:HB3	2.01	0.43
1:B:30:ASN:O	1:B:35:ARG:NH1	2.51	0.43
1:B:670:LYS:HD3	1:B:670:LYS:HA	1.75	0.43
1:B:807:ARG:HD2	1:B:807:ARG:N	2.34	0.43
1:A:311:VAL:HA	1:A:346:ALA:O	2.18	0.43
1:B:217:LEU:O	1:B:221:LEU:HD23	2.19	0.43
1:B:64:GLU:HB3	1:B:122:GLY:HA3	2.01	0.43
1:A:27:ARG:HD2	1:A:211:ILE:HD13	2.01	0.42
1:A:511:LEU:HD11	1:A:612:PRO:HD2	2.01	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:575:LEU:HD11	1:A:610:LEU:HD21	2.00	0.42
1:B:263:SER:HB2	1:B:268:ALA:HB3	2.01	0.42
1:B:299:LEU:HD11	1:B:340:LEU:HD13	2.01	0.42
1:A:762:THR:HG22	1:A:763:GLN:HG3	2.00	0.42
1:B:264:GLN:HB2	1:B:317:TYR:CZ	2.55	0.42
1:B:577:LYS:C	1:B:579:ALA:H	2.27	0.42
1:A:332:TRP:CE3	1:A:333:LEU:HD12	2.54	0.42
1:A:367:GLN:HG3	1:A:368:ARG:N	2.34	0.42
1:A:553:PRO:HA	1:A:554:PRO:HD3	1.90	0.42
1:A:577:LYS:C	1:A:579:ALA:H	2.27	0.42
1:B:567:SER:N	1:B:609:SER:HB3	2.33	0.42
1:B:20:ALA:HB1	1:B:204:LYS:HE3	2.02	0.41
1:B:420:LEU:HD22	1:B:615:ASP:CG	2.44	0.41
1:B:654:LYS:H	1:B:654:LYS:HG2	1.63	0.41
1:B:809:MET:HE2	1:B:809:MET:HB3	1.86	0.41
1:B:182:TYR:O	1:B:186:MET:HG3	2.20	0.41
1:A:418:TYR:HD2	1:A:619:GLU:HG3	1.85	0.41
1:A:519:MET:HG2	1:A:540:TYR:CZ	2.54	0.41
1:A:558:VAL:HG12	1:A:620:LEU:HB3	2.02	0.41
1:B:756:HIS:HB2	1:B:764:LEU:HD12	2.02	0.41
1:A:35:ARG:O	1:A:39:LYS:HG2	2.21	0.41
1:A:395:THR:HG23	1:A:555:ARG:HH12	1.86	0.41
1:B:246:PHE:CE1	1:B:298:ASP:HB2	2.55	0.41
1:B:701:VAL:HG13	1:B:720:ARG:HH21	1.86	0.41
1:B:762:THR:HG22	1:B:763:GLN:HG3	2.01	0.41
1:B:734:LEU:HG	1:B:763:GLN:HB2	2.03	0.41
1:A:251:LYS:HE3	1:A:251:LYS:HB2	1.92	0.41
1:B:399:GLN:HG2	1:B:556:THR:HB	2.02	0.41
1:A:274:ARG:HG2	1:A:397:ARG:NH1	2.37	0.40
1:B:322:PRO:HG3	1:B:330:TYR:HB2	2.01	0.40
1:B:322:PRO:HA	1:B:361:MET:HG3	2.01	0.40
1:A:65:ILE:HG23	1:A:74:TYR:CE2	2.56	0.40
1:A:495:VAL:HG22	1:A:684:MET:HB3	2.04	0.40
1:B:114:TYR:HA	1:B:209:LEU:HD13	2.03	0.40
1:B:472:HIS:HB3	1:B:648:ALA:HB3	2.02	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	A	810/871 (93%)	754 (93%)	52 (6%)	4 (0%)	24	55
1	B	805/871 (92%)	747 (93%)	54 (7%)	4 (0%)	24	55
All	All	1615/1742 (93%)	1501 (93%)	106 (7%)	8 (0%)	24	55

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	306	ASP
1	B	222	PRO
1	A	808	ASN
1	B	680	ALA
1	A	826	PRO
1	B	221	LEU
1	B	826	PRO
1	A	221	LEU

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	695/746 (93%)	679 (98%)	16 (2%)	44	65
1	B	687/746 (92%)	674 (98%)	13 (2%)	50	68
All	All	1382/1492 (93%)	1353 (98%)	29 (2%)	47	66

All (29) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	19	GLU
1	A	118	LEU
1	A	130	VAL
1	A	155	MET
1	A	157	LEU
1	A	201	GLU
1	A	285	ARG
1	A	299	LEU
1	A	316	THR
1	A	340	LEU
1	A	367	GLN
1	A	392	ASP
1	A	415	ILE
1	A	526	GLU
1	A	764	LEU
1	A	779	GLN
1	B	19	GLU
1	B	118	LEU
1	B	130	VAL
1	B	155	MET
1	B	157	LEU
1	B	201	GLU
1	B	247	VAL
1	B	309	LEU
1	B	314	MET
1	B	469	THR
1	B	561	GLU
1	B	764	LEU
1	B	779	GLN

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

Mol	Chain	Res	Type
1	A	38	GLN
1	A	112	GLN
1	A	125	HIS
1	A	218	GLN
1	A	273	ASN
1	A	659	ASN
1	A	718	GLN
1	A	794	HIS
1	A	814	GLN
1	B	38	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B	125	HIS
1	B	174	ASN
1	B	218	GLN
1	B	352	ASN
1	B	718	GLN

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	FMN	A	902	-	33,33,33	1.60	8 (24%)	48,50,50	1.40	11 (22%)
4	HEM	B	903	5,1	50,50,50	1.57	6 (12%)	67,82,82	1.63	12 (17%)
2	FAD	B	901	-	58,58,58	3.17	21 (36%)	85,89,89	2.12	21 (24%)
3	FMN	B	902	-	33,33,33	1.59	8 (24%)	48,50,50	1.41	12 (25%)
4	HEM	A	903	5,1	50,50,50	1.57	6 (12%)	67,82,82	1.63	13 (19%)
2	FAD	A	901	-	58,58,58	3.18	22 (37%)	85,89,89	2.12	21 (24%)

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	FMN	A	902	-	-	0/18/18/18	0/3/3/3
4	HEM	B	903	5,1	-	6/14/54/54	-
2	FAD	B	901	-	-	5/34/50/50	0/6/6/6
3	FMN	B	902	-	-	0/18/18/18	0/3/3/3
4	HEM	A	903	5,1	-	6/14/54/54	-
2	FAD	A	901	-	-	2/34/50/50	0/6/6/6

All (71) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	901	FAD	O4B-C1B	8.87	1.62	1.42
2	B	901	FAD	O4B-C1B	8.81	1.62	1.42
2	A	901	FAD	C2B-C1B	-7.08	1.31	1.53
2	B	901	FAD	C2B-C1B	-7.04	1.31	1.53
2	A	901	FAD	C4X-N5	6.99	1.45	1.30
2	B	901	FAD	C4X-N5	6.94	1.45	1.30
2	B	901	FAD	C10-N1	6.65	1.46	1.33
2	A	901	FAD	C10-N1	6.63	1.46	1.33
2	B	901	FAD	O4B-C4B	-6.44	1.30	1.45
2	A	901	FAD	O4B-C4B	-6.40	1.30	1.45
2	A	901	FAD	PA-O3P	6.32	1.66	1.59
2	A	901	FAD	P-O3P	6.14	1.66	1.59
2	B	901	FAD	P-O3P	6.12	1.66	1.59
2	B	901	FAD	PA-O3P	6.06	1.66	1.59
2	A	901	FAD	C5X-N5	5.58	1.49	1.39
2	B	901	FAD	C5X-N5	5.54	1.49	1.39
4	B	903	HEM	FE-NB	5.42	2.11	1.94
4	A	903	HEM	FE-NB	5.35	2.11	1.94
2	B	901	FAD	C2-N1	5.26	1.48	1.36
2	A	901	FAD	C2-N1	5.18	1.48	1.36
2	A	901	FAD	C9A-N10	5.05	1.49	1.41
2	B	901	FAD	C9A-N10	5.05	1.49	1.41
2	A	901	FAD	C2-N3	4.90	1.49	1.39
2	B	901	FAD	C2-N3	4.81	1.49	1.39
2	A	901	FAD	C6A-N6A	4.42	1.45	1.34
2	B	901	FAD	C6A-N6A	4.41	1.45	1.34
2	A	901	FAD	C4-N3	4.01	1.46	1.38
2	B	901	FAD	C4-N3	3.97	1.46	1.38

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	B	903	HEM	FE-NC	3.94	2.08	1.95
4	A	903	HEM	FE-NC	3.93	2.08	1.95
2	B	901	FAD	C10-N10	3.83	1.45	1.37
2	A	901	FAD	C10-N10	3.75	1.45	1.37
3	A	902	FMN	C9A-N10	-3.45	1.35	1.41
4	B	903	HEM	C1B-NB	-3.43	1.34	1.40
4	A	903	HEM	C1B-NB	-3.42	1.34	1.40
3	B	902	FMN	C9A-N10	-3.36	1.35	1.41
4	A	903	HEM	C4D-ND	-3.10	1.34	1.40
4	B	903	HEM	C4D-ND	-3.08	1.34	1.40
3	A	902	FMN	C4-N3	-3.08	1.33	1.38
3	B	902	FMN	C4-N3	-3.06	1.33	1.38
2	B	901	FAD	C5A-C4A	-2.85	1.34	1.39
2	A	901	FAD	C5A-C4A	-2.85	1.34	1.39
2	A	901	FAD	O2B-C2B	2.85	1.50	1.43
2	B	901	FAD	O2B-C2B	2.84	1.50	1.43
3	A	902	FMN	O2-C2	-2.82	1.18	1.24
2	A	901	FAD	O2-C2	-2.80	1.18	1.24
2	B	901	FAD	O2-C2	-2.80	1.18	1.24
2	A	901	FAD	O3B-C3B	-2.80	1.36	1.43
3	B	902	FMN	O2-C2	-2.79	1.18	1.24
2	B	901	FAD	O3B-C3B	-2.77	1.36	1.43
3	B	902	FMN	C4A-C10	-2.74	1.36	1.44
3	A	902	FMN	C4A-C10	-2.71	1.36	1.44
3	A	902	FMN	C5A-N5	-2.68	1.34	1.39
3	B	902	FMN	C5A-N5	-2.55	1.34	1.39
2	B	901	FAD	C5A-N7A	-2.45	1.34	1.39
2	A	901	FAD	C5A-N7A	-2.45	1.34	1.39
2	B	901	FAD	O4-C4	-2.45	1.18	1.23
3	B	902	FMN	C4A-N5	2.43	1.36	1.30
3	A	902	FMN	O4-C4	-2.43	1.19	1.23
3	B	902	FMN	O4-C4	-2.42	1.19	1.23
2	A	901	FAD	O4-C4	-2.37	1.19	1.23
3	A	902	FMN	C4A-N5	2.35	1.35	1.30
4	A	903	HEM	FE-ND	-2.30	1.87	1.94
4	B	903	HEM	FE-ND	-2.30	1.87	1.94
3	A	902	FMN	C9A-C5A	-2.30	1.37	1.41
4	A	903	HEM	C1C-C2C	-2.29	1.40	1.45
3	B	902	FMN	C9A-C5A	-2.29	1.37	1.41
4	B	903	HEM	C1C-C2C	-2.22	1.40	1.45
2	A	901	FAD	C8A-N9A	-2.09	1.34	1.37
2	B	901	FAD	C8A-N9A	-2.06	1.34	1.37

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	901	FAD	C4X-C4	2.02	1.52	1.44

All (90) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	901	FAD	N6A-C6A-N1A	-8.13	100.26	118.38
2	B	901	FAD	N6A-C6A-N1A	-8.12	100.29	118.38
2	B	901	FAD	C5A-C6A-N6A	6.58	139.59	123.29
2	A	901	FAD	C5A-C6A-N6A	6.55	139.51	123.29
2	B	901	FAD	C7M-C7-C6	-5.83	109.29	119.57
2	A	901	FAD	C7M-C7-C6	-5.76	109.42	119.57
2	A	901	FAD	N3A-C2A-N1A	-5.74	119.89	128.58
2	B	901	FAD	N3A-C2A-N1A	-5.63	120.07	128.58
4	B	903	HEM	CHC-C4B-NB	5.39	130.22	124.42
4	A	903	HEM	CHC-C4B-NB	5.30	130.13	124.42
2	A	901	FAD	C5A-C4A-N3A	-4.89	119.99	126.72
4	A	903	HEM	CHD-C1D-ND	4.85	129.64	124.42
2	B	901	FAD	C5A-C4A-N3A	-4.82	120.07	126.72
2	B	901	FAD	C7M-C7-C8	4.77	130.51	120.76
2	A	901	FAD	C7M-C7-C8	4.71	130.37	120.76
4	B	903	HEM	CHD-C1D-ND	4.59	129.36	124.42
2	A	901	FAD	N9A-C8A-N7A	-4.30	107.83	113.94
2	B	901	FAD	N9A-C8A-N7A	-4.26	107.90	113.94
2	A	901	FAD	C2A-N3A-C4A	3.44	120.23	111.83
2	B	901	FAD	C2A-N3A-C4A	3.36	120.03	111.83
2	A	901	FAD	C4-N3-C2	-3.27	119.83	125.64
2	B	901	FAD	C4-N3-C2	-3.27	119.83	125.64
3	A	902	FMN	C4-N3-C2	-3.23	119.91	125.64
3	B	902	FMN	C4-N3-C2	-3.20	119.96	125.64
4	B	903	HEM	CHA-C4D-ND	3.18	128.31	124.37
4	A	903	HEM	CHA-C4D-ND	3.15	128.27	124.37
4	B	903	HEM	CHB-C1B-NB	3.06	128.16	124.37
4	B	903	HEM	C1A-CHA-C4D	-3.06	119.06	126.25
4	A	903	HEM	CHB-C1B-NB	3.05	128.14	124.37
3	A	902	FMN	C1'-N10-C9A	3.04	126.55	120.63
4	A	903	HEM	C1A-CHA-C4D	-3.03	119.12	126.25
4	B	903	HEM	C1B-NB-C4B	3.01	108.77	105.21
3	B	902	FMN	C1'-N10-C9A	2.99	126.45	120.63
4	A	903	HEM	C1B-NB-C4B	2.93	108.68	105.21
2	A	901	FAD	C5A-N7A-C8A	2.93	108.05	103.45
3	A	902	FMN	C7M-C7-C6	-2.92	114.42	119.57
2	A	901	FAD	N3A-C4A-N9A	2.92	132.14	127.17

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	903	HEM	CHD-C1D-C2D	-2.92	120.42	125.03
2	B	901	FAD	C5A-N7A-C8A	2.91	108.03	103.45
2	B	901	FAD	N3A-C4A-N9A	2.89	132.08	127.17
3	B	902	FMN	C7M-C7-C6	-2.84	114.57	119.57
4	B	903	HEM	CHD-C1D-C2D	-2.73	120.72	125.03
3	B	902	FMN	C4A-C4-N3	2.70	120.13	113.25
2	B	901	FAD	C3B-C2B-C1B	2.64	106.47	101.46
3	A	902	FMN	C4A-C4-N3	2.64	119.98	113.25
2	A	901	FAD	C4X-C10-N10	2.57	120.17	116.48
2	B	901	FAD	C4X-C4-N3	2.53	119.69	113.25
2	B	901	FAD	O4-C4-C4X	-2.51	119.91	126.53
2	A	901	FAD	C3B-C2B-C1B	2.48	106.16	101.46
2	A	901	FAD	O4-C4-C4X	-2.48	120.00	126.53
2	B	901	FAD	C4X-C10-N10	2.46	120.00	116.48
3	A	902	FMN	C4A-C10-N10	2.46	120.00	116.48
2	A	901	FAD	C4X-C4-N3	2.46	119.51	113.25
2	B	901	FAD	C4'-C3'-C2'	-2.43	109.53	113.57
3	B	902	FMN	C4A-C10-N10	2.41	119.93	116.48
3	A	902	FMN	C7M-C7-C8	2.40	125.66	120.76
3	A	902	FMN	O4-C4-C4A	-2.39	120.21	126.53
2	B	901	FAD	C5X-C9A-N10	2.39	120.13	117.97
4	B	903	HEM	C3B-C4B-NB	-2.39	107.75	109.47
2	A	901	FAD	C4A-N9A-C8A	2.38	108.24	105.74
3	B	902	FMN	C7M-C7-C8	2.38	125.62	120.76
2	A	901	FAD	C10-C4X-N5	-2.38	119.96	124.81
3	B	902	FMN	O4-C4-C4A	-2.37	120.28	126.53
2	B	901	FAD	C10-C4X-N5	-2.37	119.98	124.81
3	B	902	FMN	C4'-C3'-C2'	-2.35	109.67	113.57
4	A	903	HEM	C4A-CHB-C1B	-2.35	120.73	126.25
2	A	901	FAD	C5X-C9A-N10	2.34	120.08	117.97
3	B	902	FMN	C10-C4A-N5	-2.33	120.05	124.81
2	B	901	FAD	C4A-N9A-C8A	2.33	108.18	105.74
4	A	903	HEM	C3B-C4B-NB	-2.31	107.81	109.47
3	B	902	FMN	C9A-C5A-N5	-2.30	120.01	122.45
4	B	903	HEM	C4C-NC-C1C	2.29	109.56	105.82
4	B	903	HEM	C4A-CHB-C1B	-2.28	120.88	126.25
3	A	902	FMN	C10-C4A-N5	-2.27	120.16	124.81
2	B	901	FAD	C9A-C5X-N5	-2.27	120.05	122.45
4	B	903	HEM	CHD-C4C-NC	2.26	126.91	124.45
2	A	901	FAD	C4A-C5A-N7A	-2.26	108.00	110.58
3	A	902	FMN	C5A-C9A-N10	2.23	119.99	117.97
2	B	901	FAD	C4A-C5A-N7A	-2.22	108.04	110.58

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	903	HEM	C4C-NC-C1C	2.18	109.38	105.82
4	B	903	HEM	CHA-C4D-C3D	-2.16	121.24	125.23
3	A	902	FMN	C9A-C5A-N5	-2.15	120.17	122.45
2	A	901	FAD	C9A-C5X-N5	-2.15	120.18	122.45
4	A	903	HEM	CHD-C4C-NC	2.12	126.77	124.45
2	A	901	FAD	C4'-C3'-C2'	-2.12	110.04	113.57
3	A	902	FMN	C4A-C10-N1	-2.10	119.44	124.59
3	B	902	FMN	C5A-C9A-N10	2.10	119.87	117.97
3	B	902	FMN	C4A-C10-N1	-2.08	119.50	124.59
4	A	903	HEM	CHA-C4D-C3D	-2.05	121.45	125.23
4	A	903	HEM	CHB-C1B-C2B	-2.01	121.23	126.95

There are no chirality outliers.

All (19) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	901	FAD	C5'-O5'-P-O2P
2	A	901	FAD	C5'-O5'-P-O3P
2	B	901	FAD	C5'-O5'-P-O2P
4	A	903	HEM	C2B-C3B-CAB-CBB
4	B	903	HEM	C2B-C3B-CAB-CBB
2	B	901	FAD	C5'-O5'-P-O1P
2	B	901	FAD	C5'-O5'-P-O3P
4	A	903	HEM	C4B-C3B-CAB-CBB
4	B	903	HEM	C4B-C3B-CAB-CBB
4	A	903	HEM	CAD-CBD-CGD-O1D
4	B	903	HEM	CAD-CBD-CGD-O2D
4	A	903	HEM	CAD-CBD-CGD-O2D
4	B	903	HEM	CAD-CBD-CGD-O1D
2	B	901	FAD	O3'-C3'-C4'-C5'
4	A	903	HEM	CAA-CBA-CGA-O2A
4	B	903	HEM	CAA-CBA-CGA-O2A
4	A	903	HEM	CAA-CBA-CGA-O1A
4	B	903	HEM	CAA-CBA-CGA-O1A
2	B	901	FAD	C2'-C3'-C4'-O4'

There are no ring outliers.

4 monomers are involved in 4 short contacts:

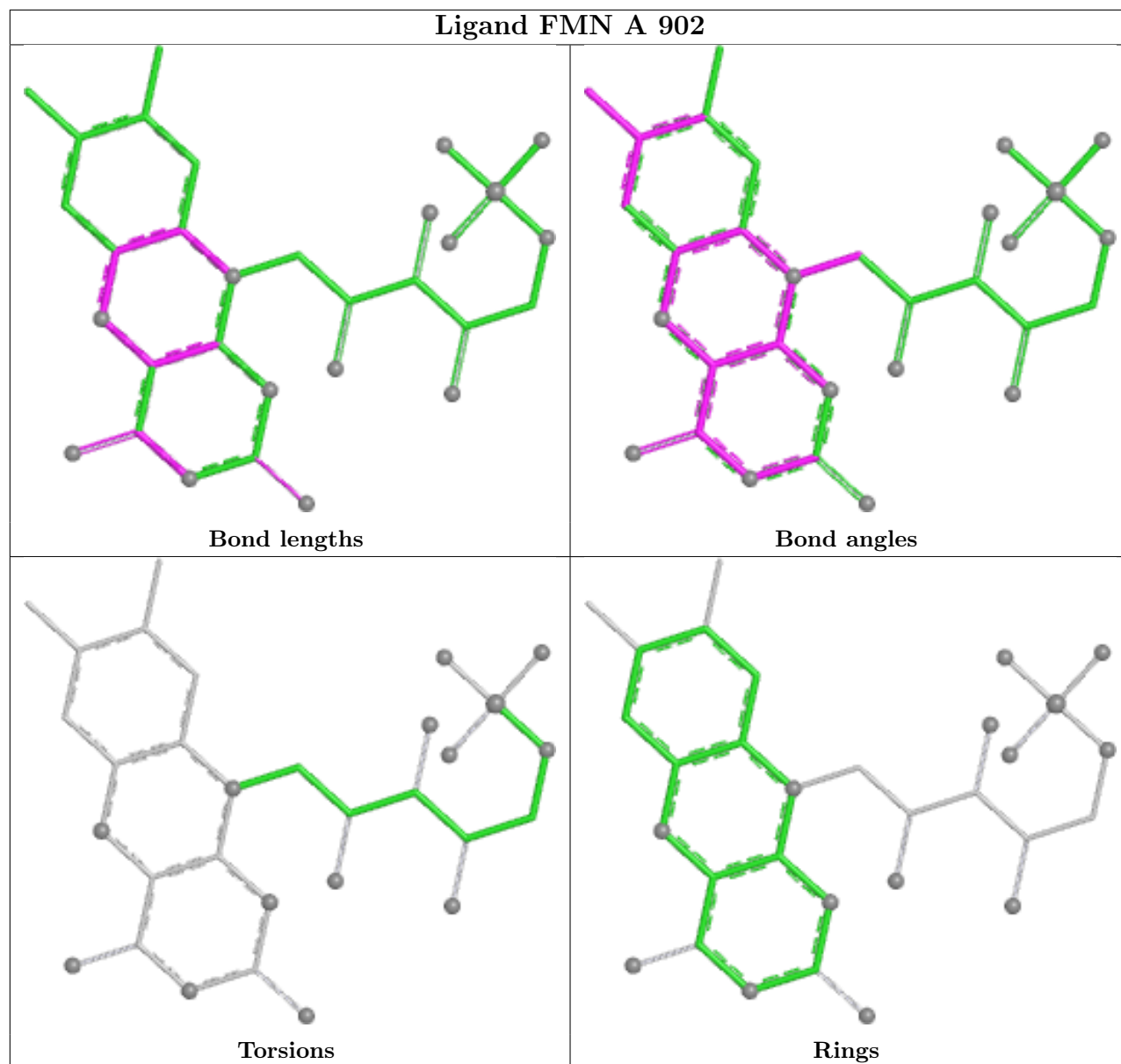
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	902	FMN	1	0

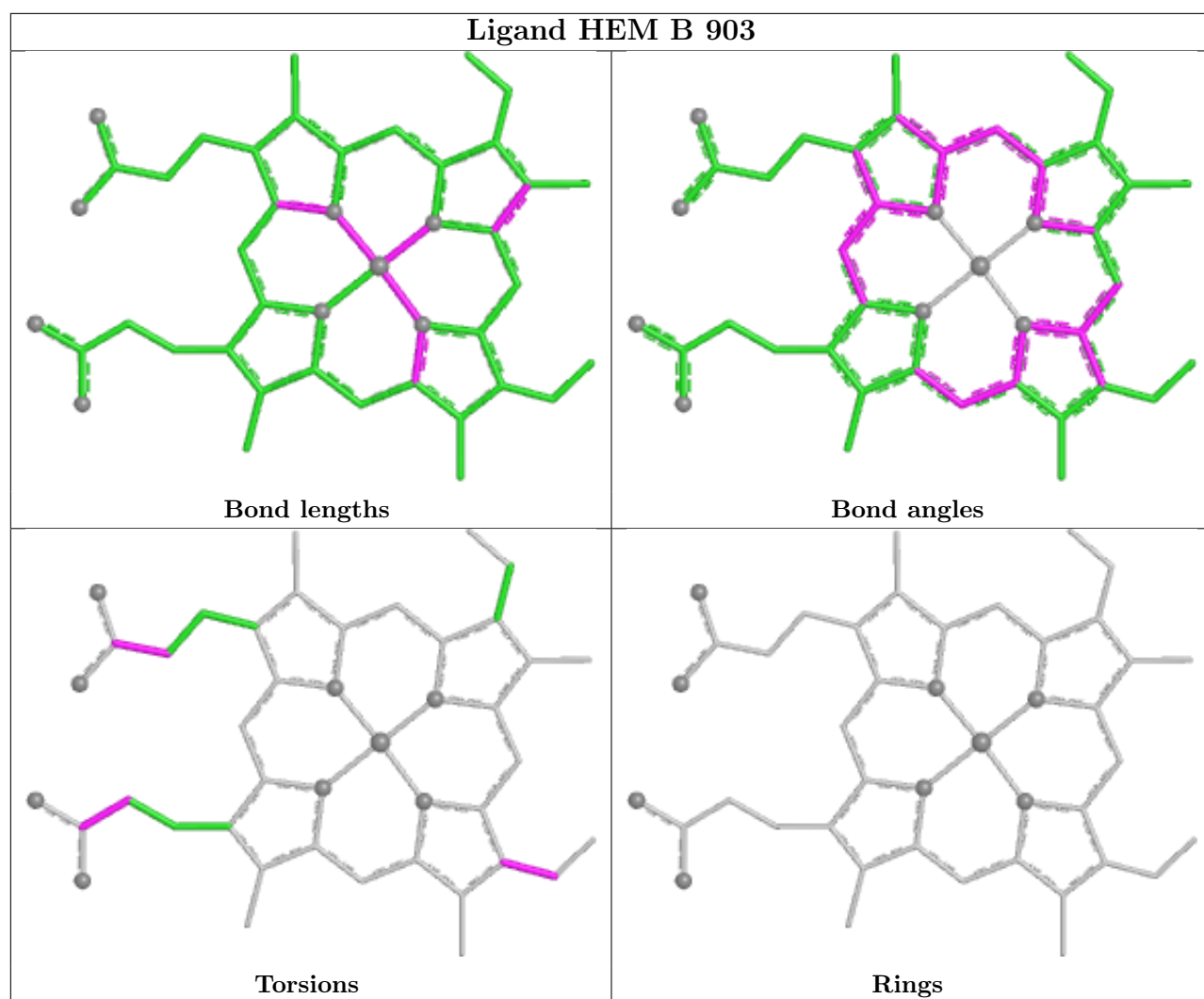
Continued on next page...

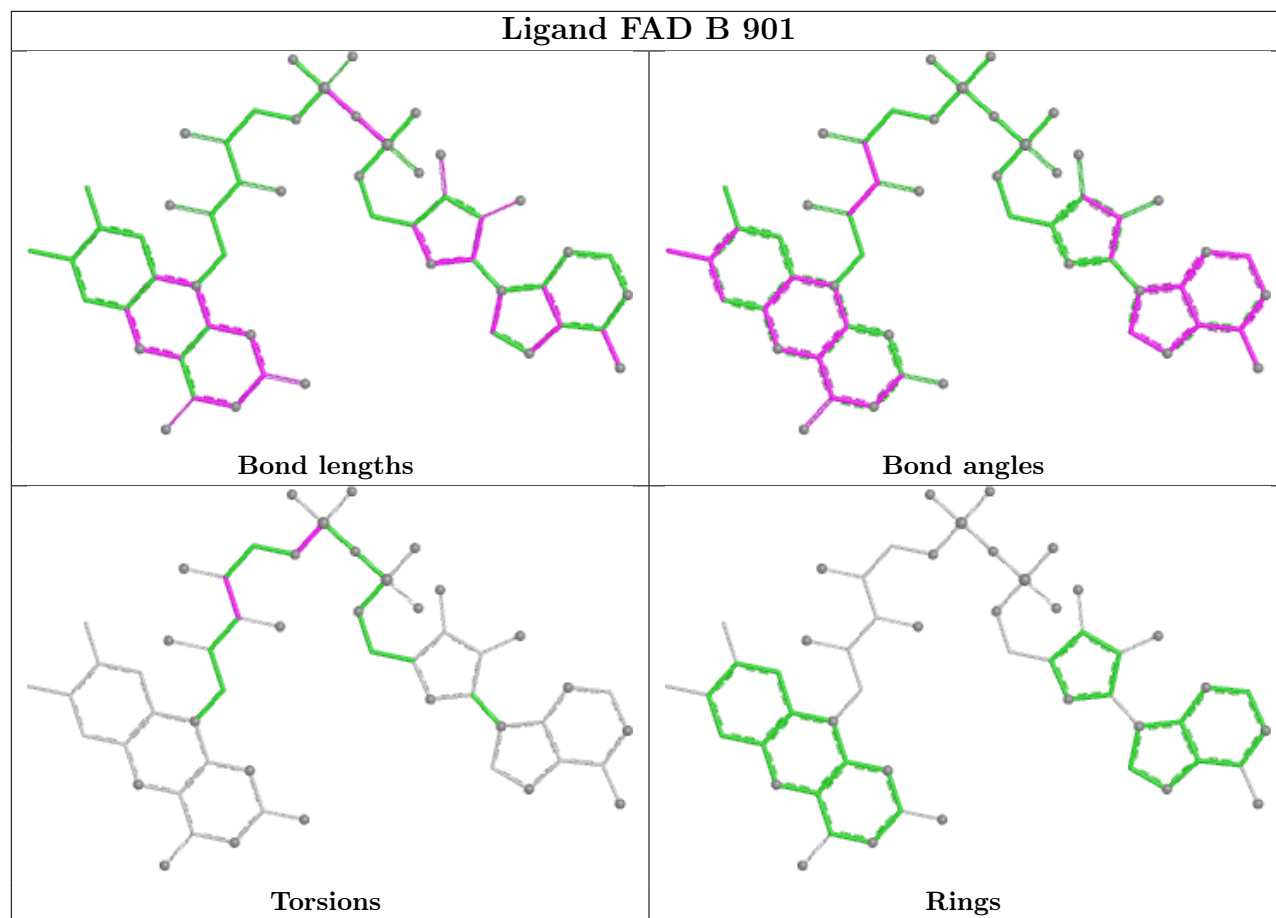
Continued from previous page...

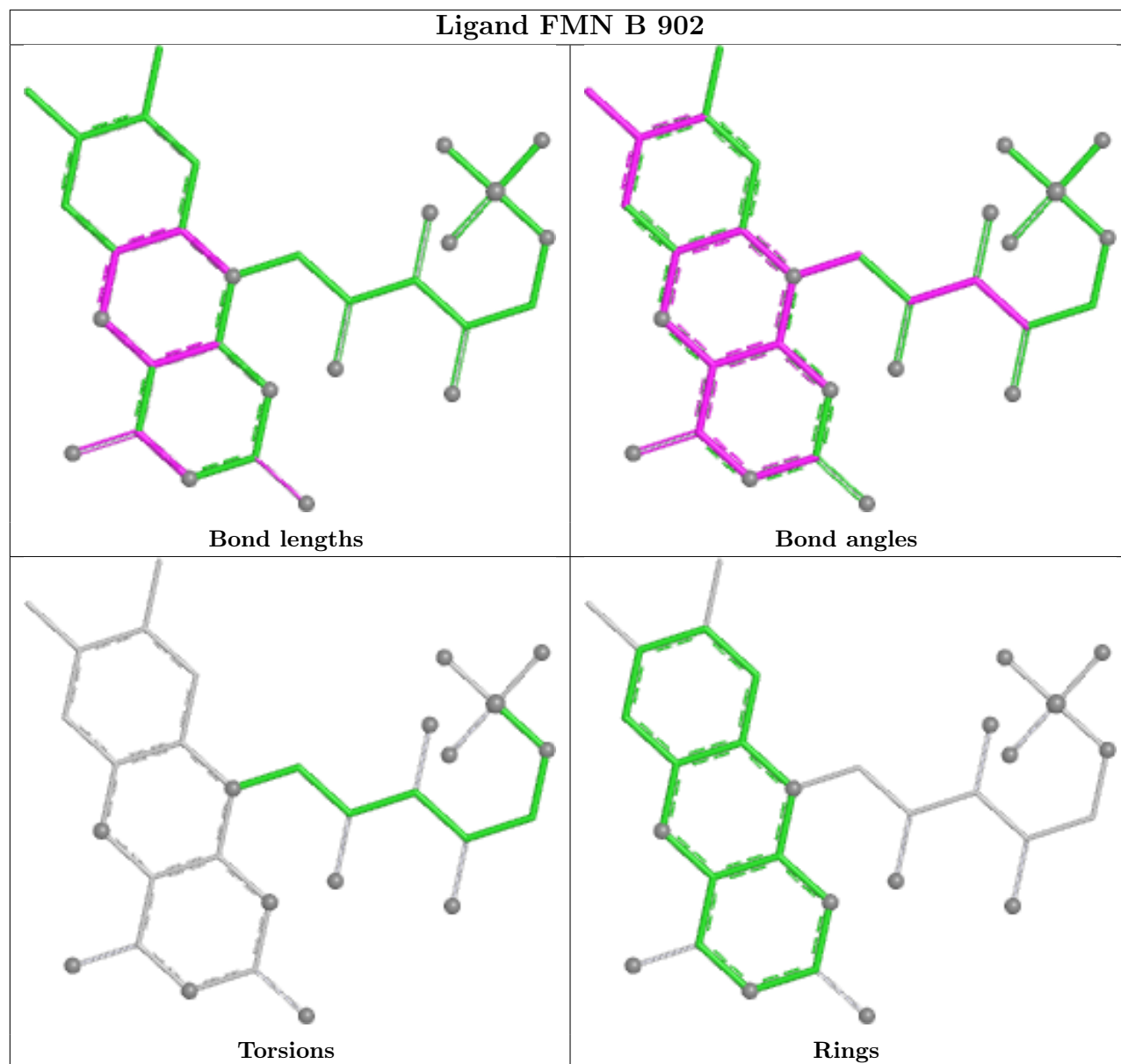
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	901	FAD	1	0
3	B	902	FMN	1	0
2	A	901	FAD	1	0

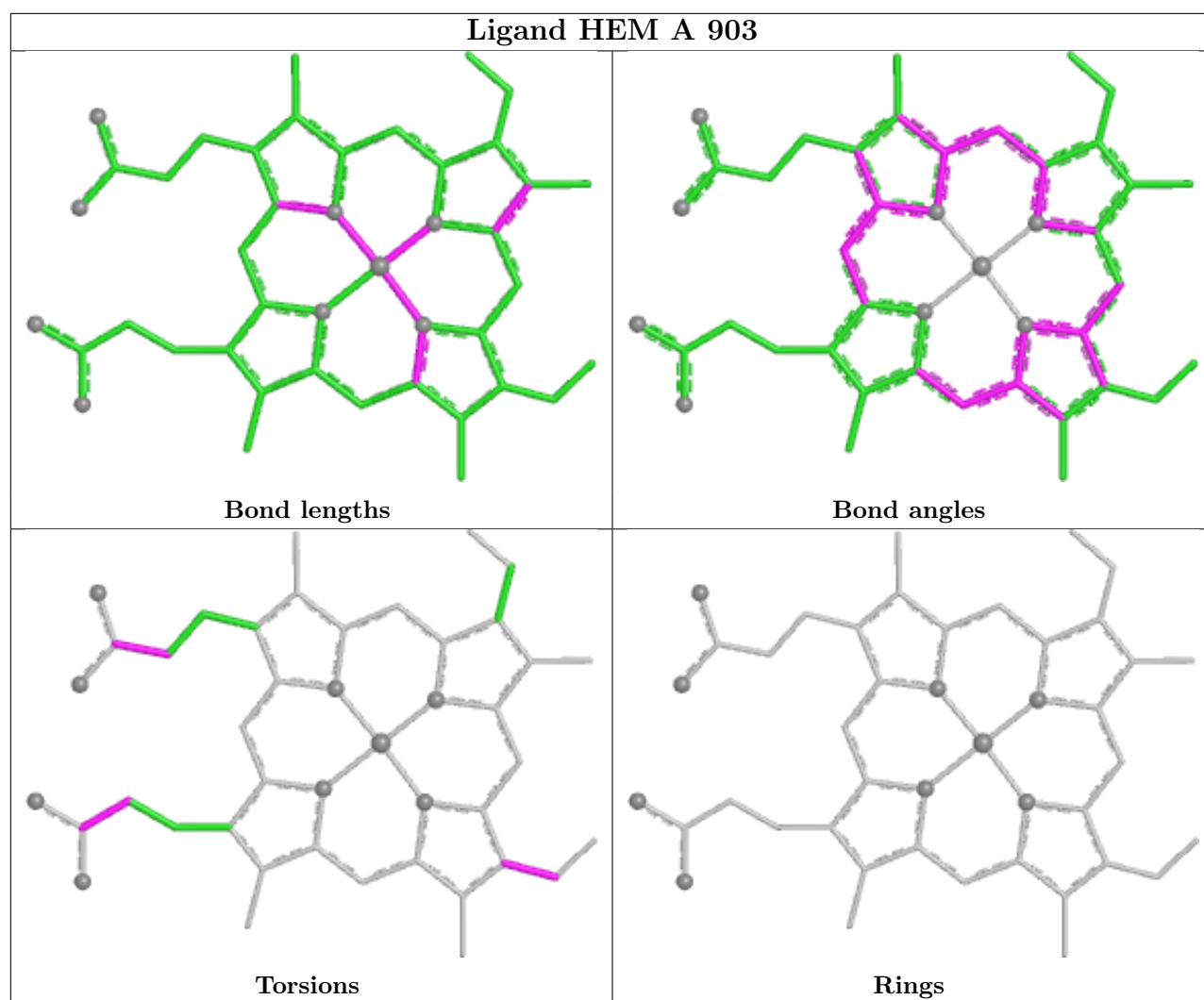
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

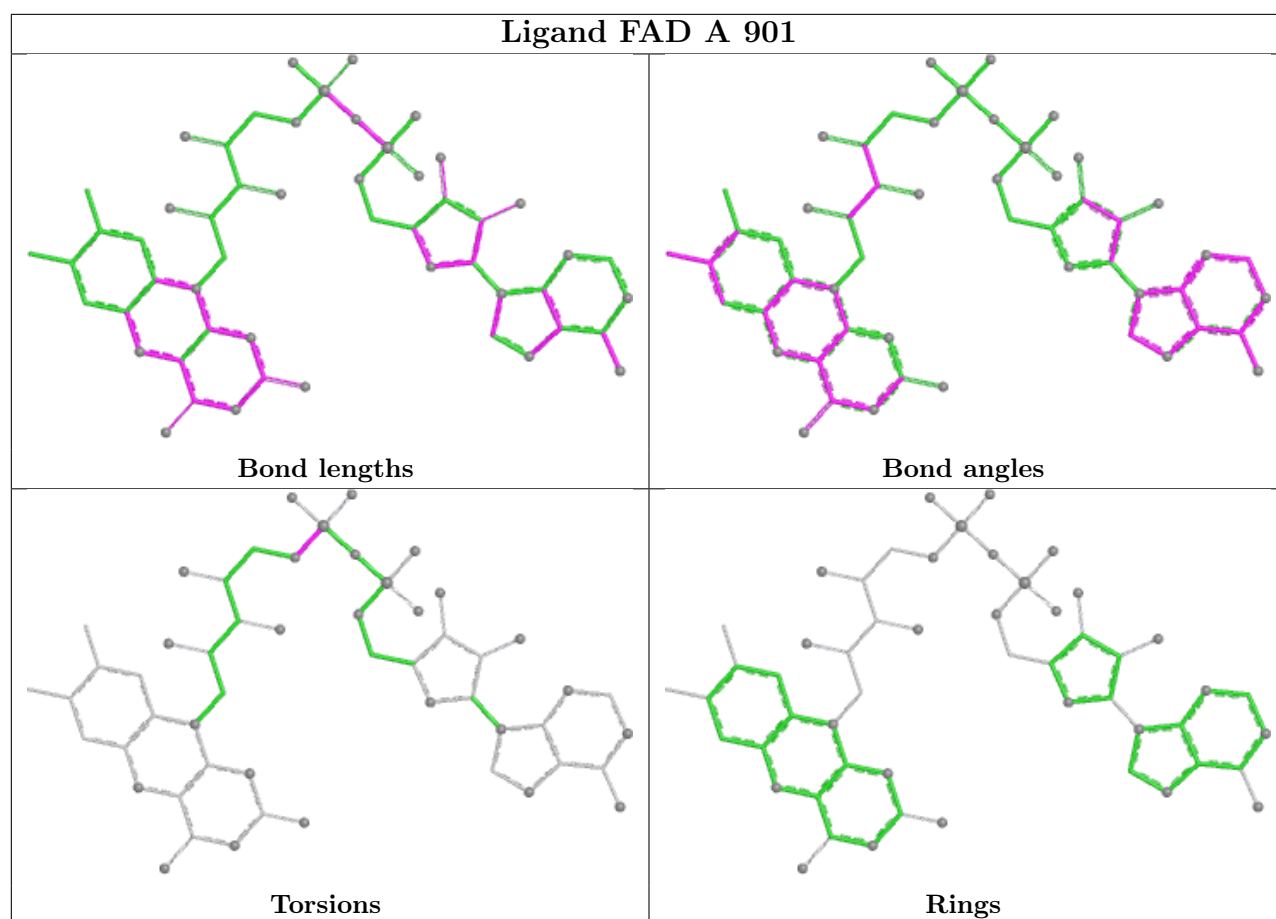












5.7 Other polymers [i](#)

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	816/871 (93%)	-0.52	1 (0%) 92 91	74, 127, 188, 271	0
1	B	813/871 (93%)	-0.51	0 100 100	75, 123, 187, 230	0
All	All	1629/1742 (93%)	-0.52	1 (0%) 92 91	74, 125, 187, 271	0

All (1) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	10	SER	2.6

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

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 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.

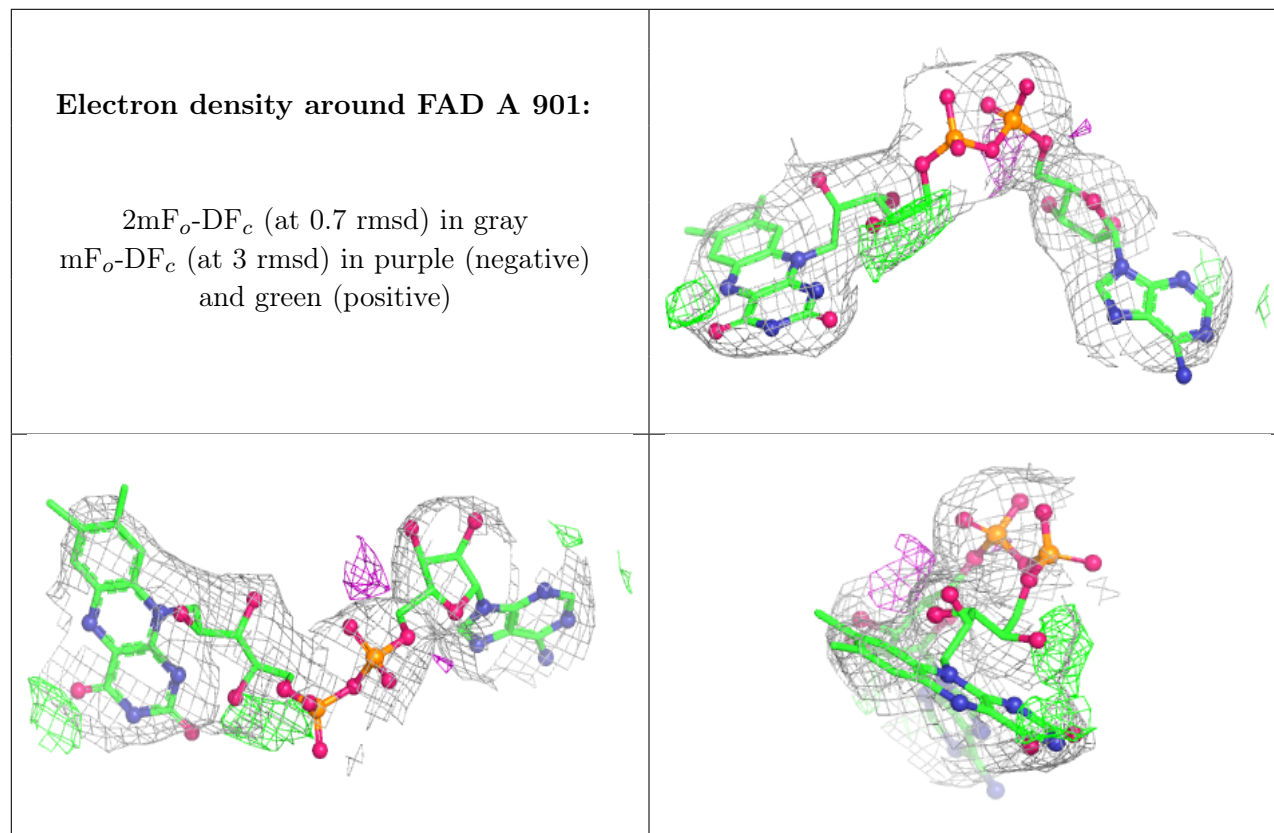
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
2	FAD	A	901	53/53	0.91	0.09	87,111,146,148	0
2	FAD	B	901	53/53	0.95	0.06	93,115,141,148	0
3	FMN	A	902	31/31	0.95	0.07	86,117,126,133	0
3	FMN	B	902	31/31	0.97	0.06	89,108,120,122	0

Continued on next page...

Continued from previous page...

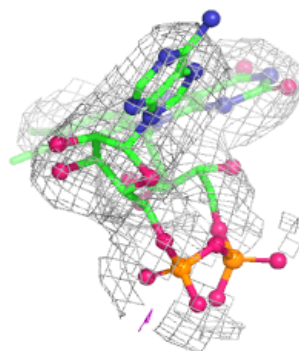
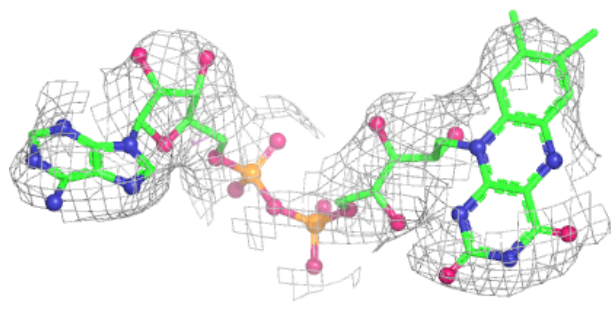
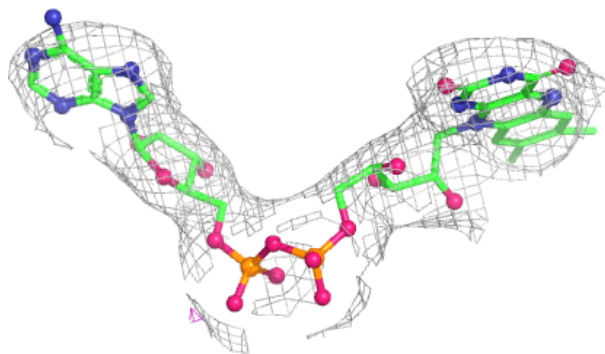
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
4	HEM	B	903	43/43	0.97	0.09	79,109,140,155	0
4	HEM	A	903	43/43	0.98	0.09	76,102,145,167	0

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.



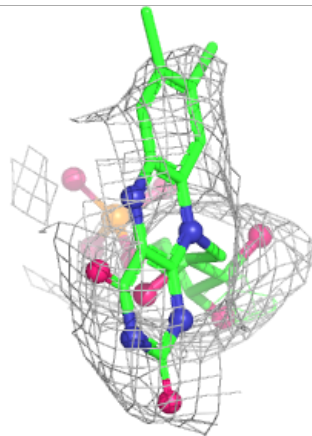
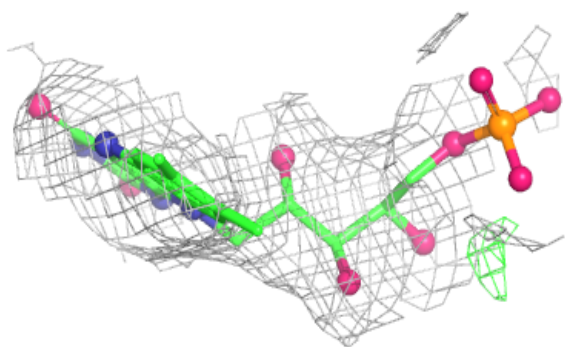
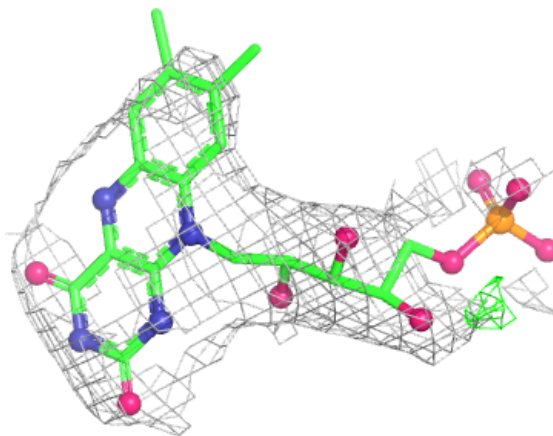
Electron density around FAD B 901:

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



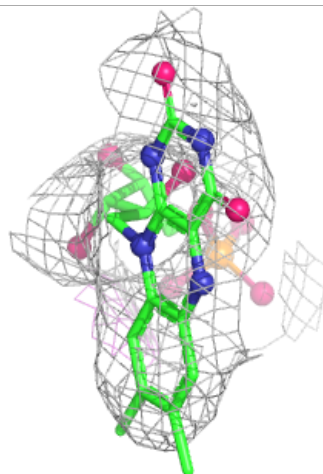
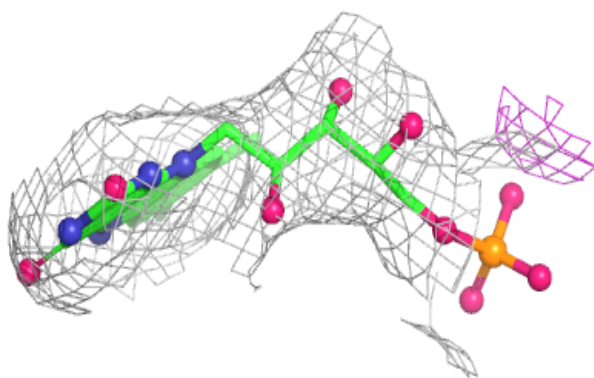
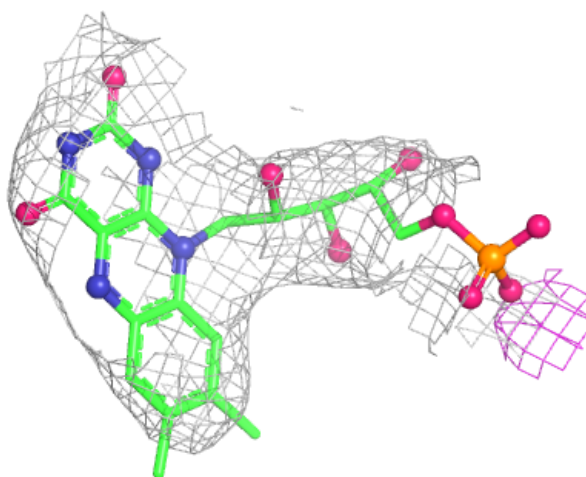
Electron density around FMN A 902:

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



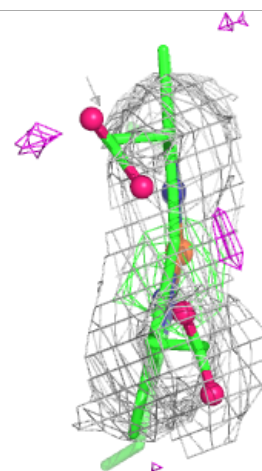
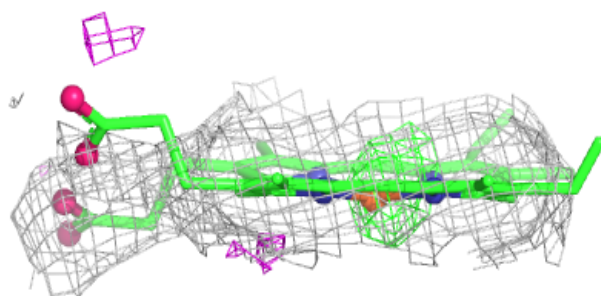
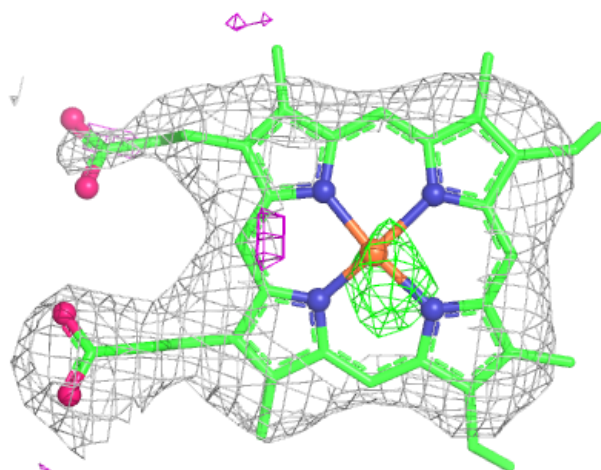
Electron density around FMN B 902:

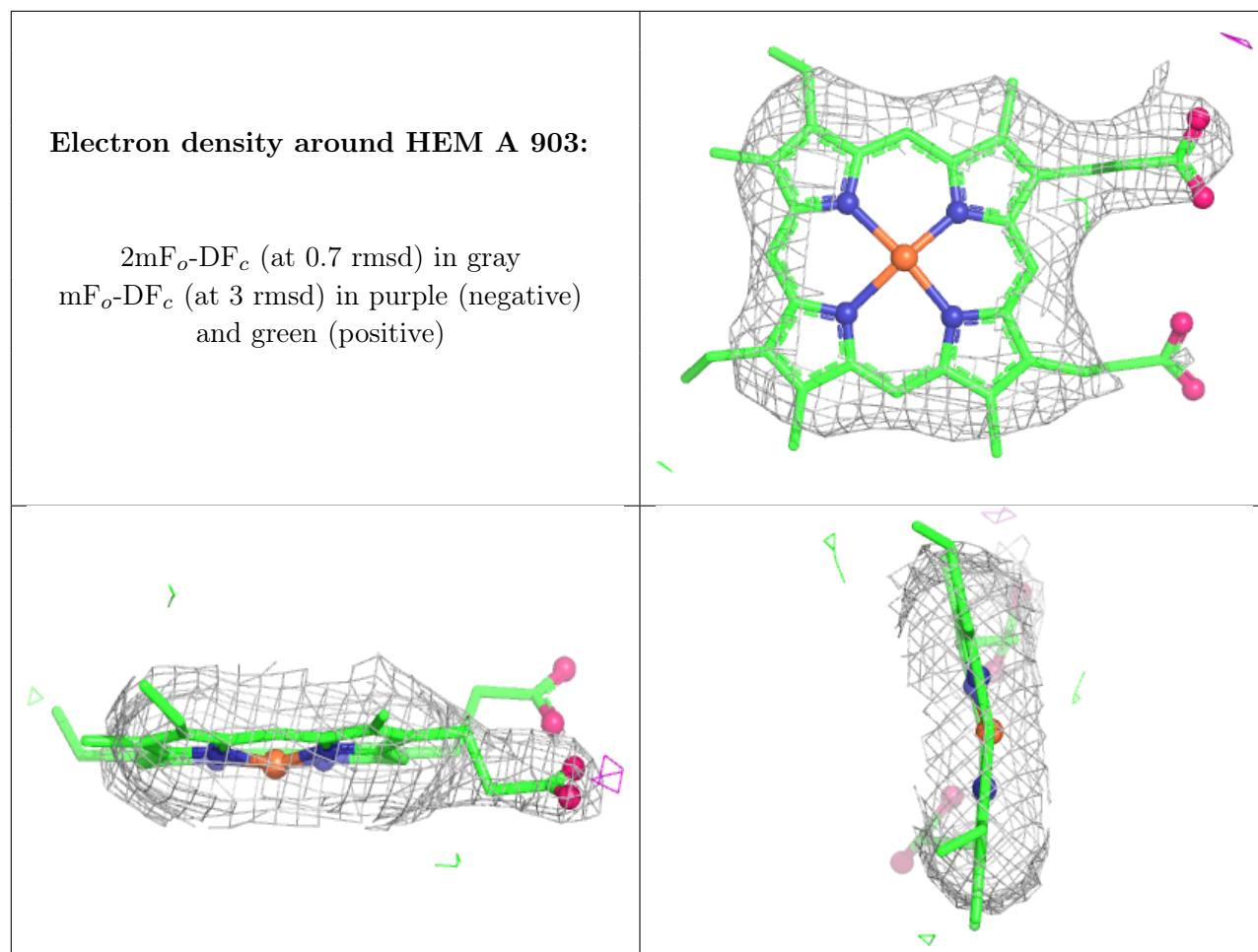
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around HEM B 903:

$2mF_o-DF_c$ (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.