



wwPDB X-ray Structure Validation Summary Report ⓘ

Mar 14, 2026 – 03:24 PM UTC

PDB ID : 8QYI / pdb_00008qyi
Title : OleP in complex with lithocholic acid in high salt crystallization conditions
Authors : Fata, F.; Costanzo, A.; Freda, I.; Gugole, E.; Bulfaro, G.; Barbizzi, L.; Di Renzo, M.; Savino, C.; Vallone, B.; Montemiglio, L.C.
Deposited on : 2023-10-26
Resolution : 2.30 Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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

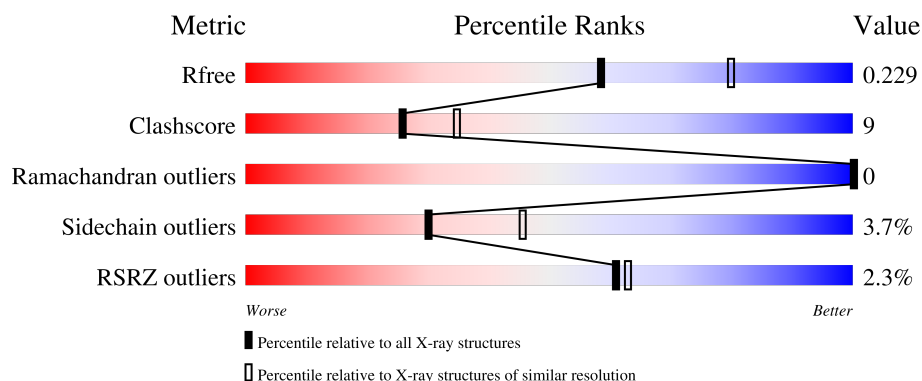
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.30 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	6319 (2.30-2.30)
Clashscore	190562	6919 (2.30-2.30)
Ramachandran outliers	187476	6854 (2.30-2.30)
Sidechain outliers	187428	6854 (2.30-2.30)
RSRZ outliers	180081	6325 (2.30-2.30)

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	398	80% 17% ..
1	B	398	2% 81% 18% ..
1	C	398	2% 84% 15% .
1	D	398	2% 77% 21% .
1	E	398	3% 74% 23% ..

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Mol	Chain	Length	Quality of chain
1	F	398	

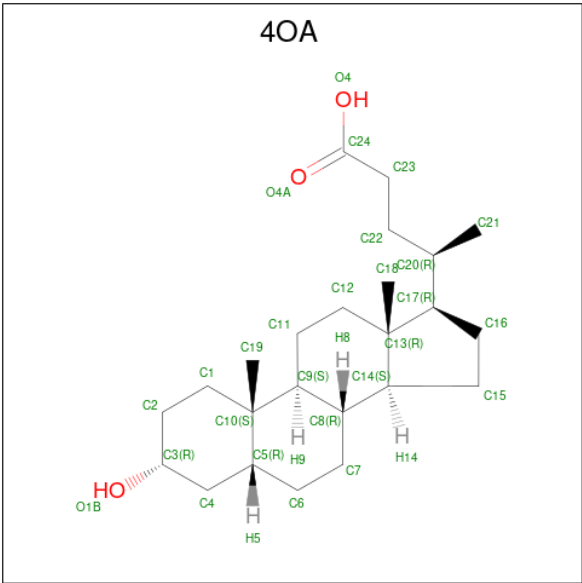
The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
4	FMT	A	505	-	-	X	-
4	FMT	B	513	-	-	X	-
4	FMT	D	505	-	-	X	-
4	FMT	D	514	-	-	X	-



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	Fe	N	O	
			43	34	1	4	4	
2	B	1	Total	C	Fe	N	O	
			43	34	1	4	4	
2	C	1	Total	C	Fe	N	O	
			43	34	1	4	4	
2	D	1	Total	C	Fe	N	O	
			43	34	1	4	4	
2	E	1	Total	C	Fe	N	O	
			43	34	1	4	4	
2	F	1	Total	C	Fe	N	O	
			43	34	1	4	4	

- Molecule 3 is (3beta,5beta,14beta,17alpha)-3-hydroxycholan-24-oic acid (CCD ID: 40A) (formula: C₂₄H₄₀O₃) (labeled as "Ligand of Interest" by depositor).



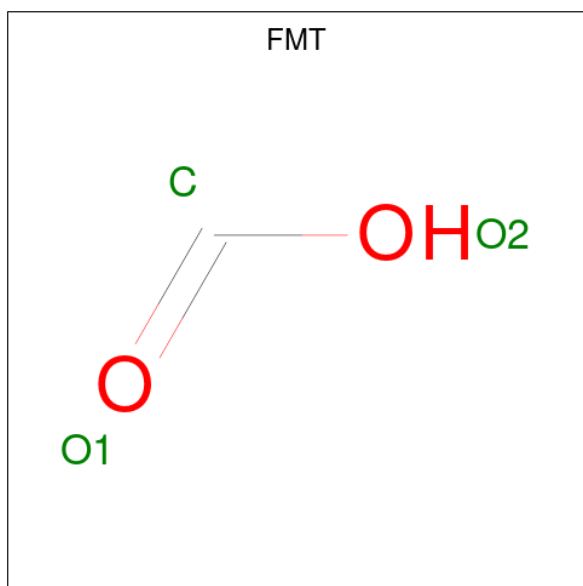
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			27	24	3		
3	B	1	Total	C	O	0	0
			27	24	3		
3	C	1	Total	C	O	0	0
			27	24	3		
3	D	1	Total	C	O	0	0
			27	24	3		
3	E	1	Total	C	O	0	0
			27	24	3		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	F	1	Total	C	O	0	0
			27	24	3		

- Molecule 4 is FORMIC ACID (CCD ID: FMT) (formula: CH_2O_2).



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

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total	C	O	0	0
			3	1	2		
4	A	1	Total	C	O	0	0
			3	1	2		
4	A	1	Total	C	O	0	0
			3	1	2		
4	A	1	Total	C	O	0	0
			3	1	2		
4	A	1	Total	C	O	0	0
			3	1	2		
4	A	1	Total	C	O	0	0
			3	1	2		
4	A	1	Total	C	O	0	0
			3	1	2		
4	A	1	Total	C	O	0	0
			3	1	2		
4	A	1	Total	C	O	0	0
			3	1	2		
4	A	1	Total	C	O	0	0
			3	1	2		
4	B	1	Total	C	O	0	0
			3	1	2		
4	B	1	Total	C	O	0	0
			3	1	2		
4	B	1	Total	C	O	0	0
			3	1	2		
4	B	1	Total	C	O	0	0
			3	1	2		
4	B	1	Total	C	O	0	0
			3	1	2		
4	B	1	Total	C	O	0	0
			3	1	2		
4	B	1	Total	C	O	0	0
			3	1	2		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	B	1	Total	C	O	0	0
			3	1	2		
4	B	1	Total	C	O	0	0
			3	1	2		
4	B	1	Total	C	O	0	0
			3	1	2		
4	B	1	Total	C	O	0	0
			3	1	2		
4	B	1	Total	C	O	0	0
			3	1	2		
4	B	1	Total	C	O	0	0
			3	1	2		
4	B	1	Total	C	O	0	0
			3	1	2		
4	B	1	Total	C	O	0	0
			3	1	2		
4	B	1	Total	C	O	0	0
			3	1	2		
4	B	1	Total	C	O	0	0
			3	1	2		
4	B	1	Total	C	O	0	0
			3	1	2		
4	C	1	Total	C	O	0	0
			3	1	2		
4	C	1	Total	C	O	0	0
			3	1	2		
4	C	1	Total	C	O	0	0
			3	1	2		
4	C	1	Total	C	O	0	0
			3	1	2		
4	C	1	Total	C	O	0	0
			3	1	2		
4	C	1	Total	C	O	0	0
			3	1	2		
4	C	1	Total	C	O	0	0
			3	1	2		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	C	1	Total	C	O	0	0
			3	1	2		
4	C	1	Total	C	O	0	0
			3	1	2		
4	C	1	Total	C	O	0	0
			3	1	2		
4	C	1	Total	C	O	0	0
			3	1	2		
4	C	1	Total	C	O	0	0
			3	1	2		
4	C	1	Total	C	O	0	0
			3	1	2		
4	C	1	Total	C	O	0	0
			3	1	2		
4	C	1	Total	C	O	0	0
			3	1	2		
4	C	1	Total	C	O	0	0
			3	1	2		
4	C	1	Total	C	O	0	0
			3	1	2		
4	C	1	Total	C	O	0	0
			3	1	2		
4	C	1	Total	C	O	0	0
			3	1	2		
4	C	1	Total	C	O	0	0
			3	1	2		
4	D	1	Total	C	O	0	0
			3	1	2		
4	D	1	Total	C	O	0	0
			3	1	2		
4	D	1	Total	C	O	0	0
			3	1	2		
4	D	1	Total	C	O	0	0
			3	1	2		

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

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

- Molecule 5 is SODIUM ION (CCD ID: NA) (formula: Na).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	1	Total Na 1 1	0	0
5	B	1	Total Na 1 1	0	0
5	C	1	Total Na 1 1	0	0
5	D	1	Total Na 1 1	0	0
5	E	1	Total Na 1 1	0	0
5	F	1	Total Na 1 1	0	0

- Molecule 6 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	139	Total O 139 139	0	0
6	B	147	Total O 147 147	0	0
6	C	199	Total O 199 199	0	0

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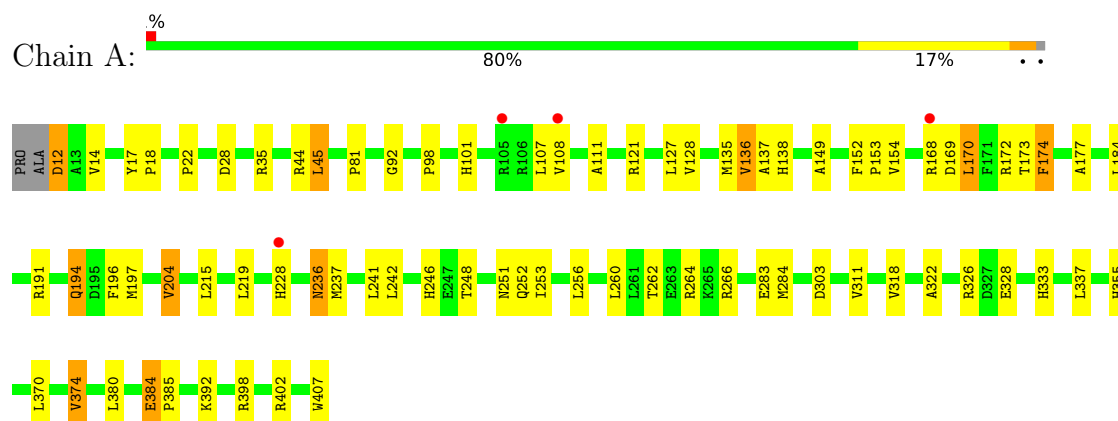
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	D	109	Total 109	O 109	0	0
6	E	77	Total 77	O 77	0	0
6	F	76	Total 76	O 76	0	0

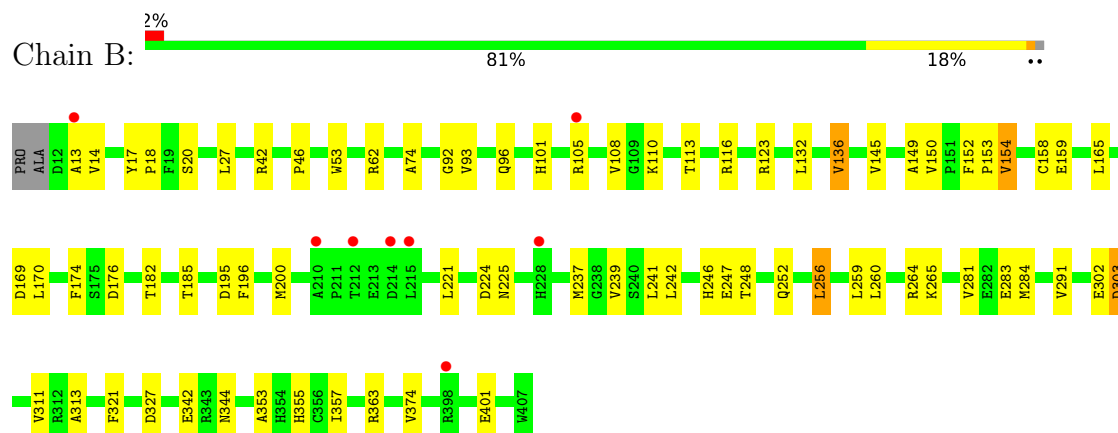
3 Residue-property plots [i](#)

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.

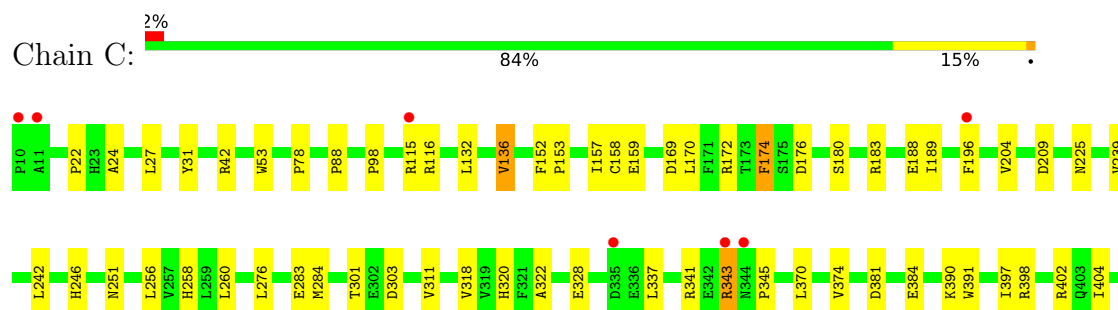
• Molecule 1: Cytochrome P-450



• Molecule 1: Cytochrome P-450

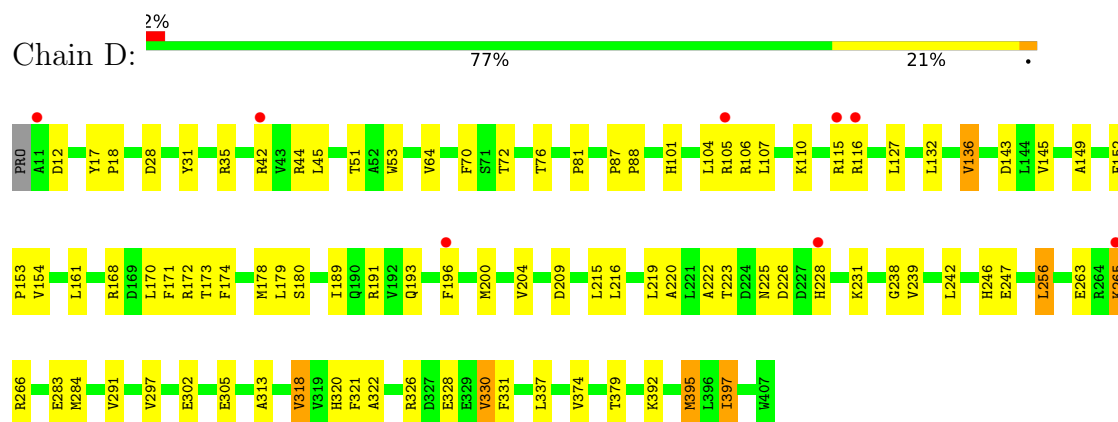


• Molecule 1: Cytochrome P-450

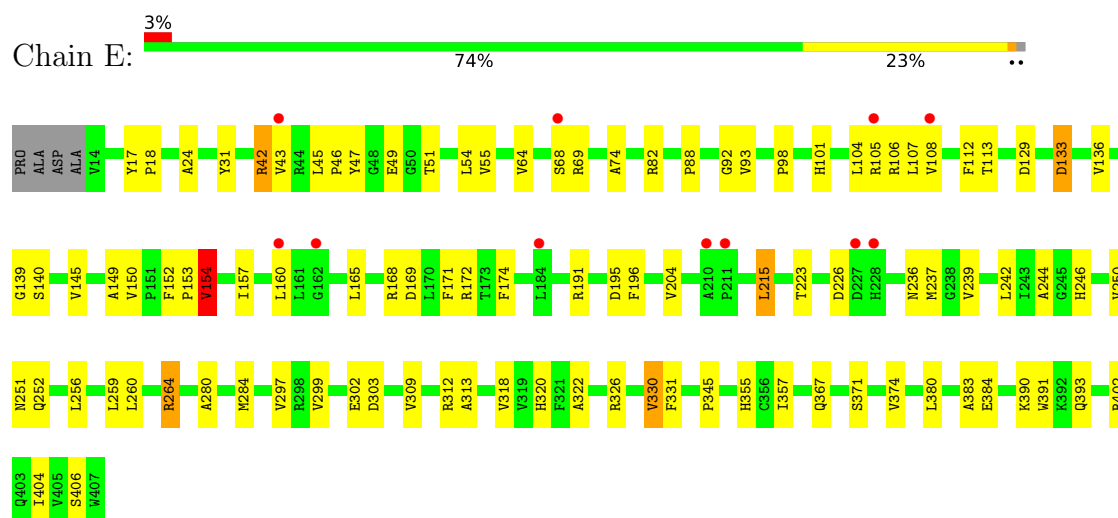


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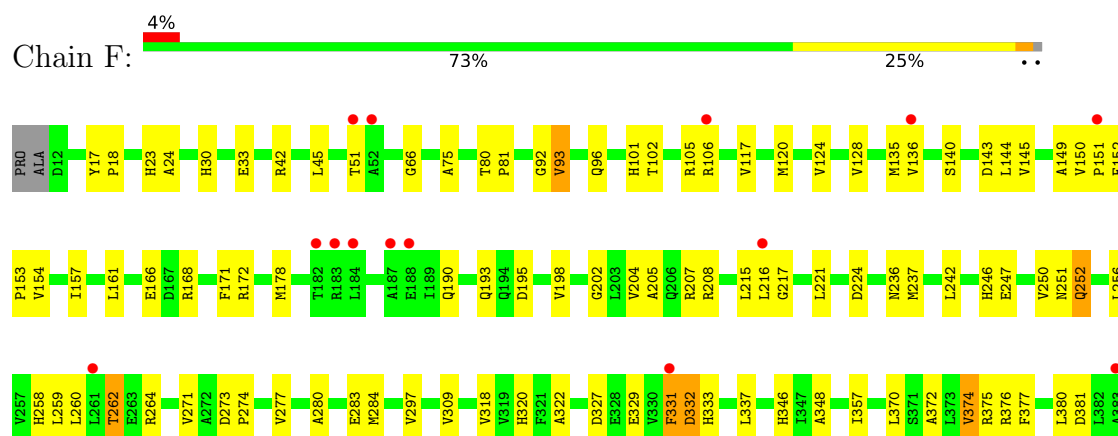
- Molecule 1: Cytochrome P-450

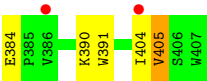


- Molecule 1: Cytochrome P-450



- Molecule 1: Cytochrome P-450





4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	249.37Å 109.27Å 160.66Å 90.00° 129.60° 90.00°	Depositor
Resolution (Å)	80.01 – 2.30 80.01 – 2.30	Depositor EDS
% Data completeness (in resolution range)	99.8 (80.01-2.30) 99.8 (80.01-2.30)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.94 (at 2.29Å)	Xtriage
Refinement program	REFMAC 5.8.0267	Depositor
R, R_{free}	0.173 , 0.222 0.188 , 0.229	Depositor DCC
R_{free} test set	7213 reflections (4.89%)	wwPDB-VP
Wilson B-factor (Å ²)	46.2	Xtriage
Anisotropy	0.252	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.35 , 39.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	0.011 for -h-2*k,l	Xtriage
F_o, F_c correlation	0.97	EDS
Total number of atoms	20173	wwPDB-VP
Average B, all atoms (Å ²)	56.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 38.42 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 3.6981e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

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: HEM, FMT, 4OA, NA

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	1.19	5/3224 (0.2%)	1.48	16/4388 (0.4%)
1	B	1.20	8/3187 (0.3%)	1.49	10/4339 (0.2%)
1	C	1.20	5/3245 (0.2%)	1.49	13/4415 (0.3%)
1	D	1.19	1/3204 (0.0%)	1.53	13/4362 (0.3%)
1	E	1.16	1/3151 (0.0%)	1.57	21/4291 (0.5%)
1	F	1.17	2/3164 (0.1%)	1.58	9/4309 (0.2%)
All	All	1.18	22/19175 (0.1%)	1.52	82/26104 (0.3%)

The worst 5 of 22 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	F	66	GLY	C-O	-7.27	1.19	1.24
1	C	88	PRO	C-O	-7.12	1.16	1.23
1	B	355	HIS	CE1-NE2	6.86	1.39	1.32
1	B	46	PRO	C-O	-6.35	1.16	1.24
1	B	303	ASP	C-O	-6.23	1.16	1.23

The worst 5 of 82 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	F	273	ASP	CA-CB-CG	8.57	121.17	112.60
1	B	169	ASP	CA-CB-CG	7.48	120.08	112.60
1	E	129	ASP	CA-C-N	7.06	129.61	120.44
1	E	129	ASP	C-N-CA	7.06	129.61	120.44
1	A	174	PHE	CA-C-N	7.05	129.61	120.44

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	3133	0	3132	60	0
1	B	3108	0	3100	52	0
1	C	3156	0	3159	41	0
1	D	3122	0	3107	79	0
1	E	3081	0	3064	57	0
1	F	3094	0	3073	58	0
2	A	43	0	30	3	0
2	B	43	0	30	4	0
2	C	43	0	30	3	0
2	D	43	0	30	4	0
2	E	43	0	30	5	0
2	F	43	0	30	3	0
3	A	27	0	39	2	0
3	B	27	0	39	1	0
3	C	27	0	39	1	0
3	D	27	0	39	0	0
3	E	27	0	39	3	0
3	F	27	0	39	1	0
4	A	66	0	22	2	0
4	B	66	0	23	8	0
4	C	72	0	24	2	0
4	D	39	0	13	5	0
4	E	30	0	10	1	0
4	F	33	0	11	0	0
5	A	1	0	0	0	0
5	B	1	0	0	0	0
5	C	1	0	0	0	0
5	D	1	0	0	0	0
5	E	1	0	0	0	0
5	F	1	0	0	0	0
6	A	139	0	0	2	0
6	B	147	0	0	0	0
6	C	199	0	0	4	0
6	D	109	0	0	4	0
6	E	77	0	0	1	0
6	F	76	0	0	3	0
All	All	20173	0	19152	365	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 9.

The worst 5 of 365 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:108:VAL:HG23	1:A:215[B]:LEU:CD1	1.60	1.31
1:A:108:VAL:CG2	1:A:215[B]:LEU:HD11	1.67	1.22
1:A:108:VAL:CG2	1:A:215[B]:LEU:HD21	1.94	0.98
1:A:108:VAL:HG21	1:A:215[B]:LEU:HD21	1.43	0.97
1:D:174:PHE:HB3	1:D:196:PHE:CD2	2.03	0.94

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	402/398 (101%)	385 (96%)	17 (4%)	0	100	100
1	B	398/398 (100%)	387 (97%)	11 (3%)	0	100	100
1	C	405/398 (102%)	395 (98%)	10 (2%)	0	100	100
1	D	400/398 (100%)	374 (94%)	26 (6%)	0	100	100
1	E	393/398 (99%)	378 (96%)	15 (4%)	0	100	100
1	F	395/398 (99%)	376 (95%)	19 (5%)	0	100	100
All	All	2393/2388 (100%)	2295 (96%)	98 (4%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar

resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	340/333 (102%)	328 (96%)	12 (4%)	32	48
1	B	336/333 (101%)	325 (97%)	11 (3%)	33	50
1	C	342/333 (103%)	336 (98%)	6 (2%)	51	70
1	D	337/333 (101%)	324 (96%)	13 (4%)	28	43
1	E	332/333 (100%)	318 (96%)	14 (4%)	26	40
1	F	333/333 (100%)	314 (94%)	19 (6%)	18	27
All	All	2020/1998 (101%)	1945 (96%)	75 (4%)	30	45

5 of 75 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	F	45	LEU
1	F	374	VAL
1	F	140	SER
1	F	277	VAL
1	C	204	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 38 such sidechains are listed below:

Mol	Chain	Res	Type
1	F	30	HIS
1	F	344	ASN
1	F	101	HIS
1	F	236	ASN
1	F	351	HIS

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 [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 120 ligands modelled in this entry, 6 are monoatomic - leaving 114 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	$\# Z > 2$
4	FMT	E	507	-	2,2,2	0.22	0	1,1,1	0.12	0
4	FMT	F	513	-	2,2,2	0.37	0	1,1,1	0.12	0
4	FMT	B	521	-	2,2,2	0.50	0	1,1,1	0.05	0
4	FMT	B	503	-	2,2,2	0.44	0	1,1,1	0.05	0
4	FMT	D	506	-	2,2,2	0.41	0	1,1,1	0.04	0
4	FMT	C	518	-	2,2,2	0.35	0	1,1,1	0.09	0
3	4OA	B	502	-	30,30,30	0.50	0	47,47,47	0.69	0
4	FMT	B	512	-	2,2,2	0.66	0	1,1,1	0.11	0
4	FMT	C	513	-	2,2,2	0.54	0	1,1,1	0.02	0
4	FMT	B	506	-	2,2,2	0.62	0	1,1,1	0.08	0
4	FMT	A	520	-	2,2,2	0.51	0	1,1,1	0.07	0
4	FMT	A	518	-	2,2,2	0.69	0	1,1,1	0.03	0
4	FMT	A	504	-	2,2,2	0.21	0	1,1,1	0.21	0
4	FMT	B	520	-	2,2,2	0.52	0	1,1,1	0.01	0
4	FMT	A	512	-	2,2,2	0.51	0	1,1,1	0.02	0
4	FMT	C	524	-	2,2,2	0.61	0	1,1,1	0.06	0
2	HEM	F	501	1	50,50,50	1.47	4 (8%)	67,82,82	1.71	12 (17%)
4	FMT	E	512	-	2,2,2	0.30	0	1,1,1	0.12	0
4	FMT	F	505	-	2,2,2	0.69	0	1,1,1	0.03	0
4	FMT	A	523	-	2,2,2	0.44	0	1,1,1	0.03	0
4	FMT	D	507	-	2,2,2	0.59	0	1,1,1	0.17	0
4	FMT	A	506	-	2,2,2	0.31	0	1,1,1	0.10	0
4	FMT	B	508	-	2,2,2	0.43	0	1,1,1	0.05	0
4	FMT	E	509	-	2,2,2	0.43	0	1,1,1	0.11	0
2	HEM	A	501	1	50,50,50	1.61	9 (18%)	67,82,82	1.55	15 (22%)
4	FMT	A	513	-	2,2,2	0.57	0	1,1,1	0.06	0
4	FMT	A	505	-	2,2,2	0.47	0	1,1,1	0.05	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	FMT	E	508	-	2,2,2	0.40	0	1,1,1	0.08	0
4	FMT	B	505	-	2,2,2	0.44	0	1,1,1	0.07	0
4	FMT	D	515	-	2,2,2	0.45	0	1,1,1	0.07	0
4	FMT	B	523	-	2,2,2	0.45	0	1,1,1	0.03	0
4	FMT	C	510	-	2,2,2	0.25	0	1,1,1	0.20	0
4	FMT	B	518	-	2,2,2	0.57	0	1,1,1	0.01	0
4	FMT	C	525	-	2,2,2	0.48	0	1,1,1	0.04	0
4	FMT	A	514	-	2,2,2	0.42	0	1,1,1	0.10	0
4	FMT	A	508	-	2,2,2	0.49	0	1,1,1	0.01	0
4	FMT	B	513	-	2,2,2	1.28	0	1,1,1	0.64	0
4	FMT	C	504	-	2,2,2	0.35	0	1,1,1	0.15	0
4	FMT	B	514	-	2,2,2	0.59	0	1,1,1	0.28	0
4	FMT	B	511	-	2,2,2	0.40	0	1,1,1	0.07	0
4	FMT	B	519	-	2,2,2	0.21	0	1,1,1	0.20	0
4	FMT	D	512	-	2,2,2	0.70	0	1,1,1	0.06	0
4	FMT	F	508	-	2,2,2	0.34	0	1,1,1	0.10	0
4	FMT	A	509	-	2,2,2	0.39	0	1,1,1	0.11	0
4	FMT	A	503	-	2,2,2	0.33	0	1,1,1	0.10	0
4	FMT	F	507	-	2,2,2	0.35	0	1,1,1	0.05	0
3	4OA	E	502	-	30,30,30	0.52	0	47,47,47	0.60	0
4	FMT	C	526	-	2,2,2	0.32	0	1,1,1	0.14	0
4	FMT	A	517	-	2,2,2	0.87	0	1,1,1	0.27	0
4	FMT	D	508	-	2,2,2	0.54	0	1,1,1	0.04	0
4	FMT	E	510	-	2,2,2	0.27	0	1,1,1	0.18	0
4	FMT	F	503	-	2,2,2	0.35	0	1,1,1	0.09	0
3	4OA	F	502	-	30,30,30	0.52	0	47,47,47	0.77	0
4	FMT	D	505	-	2,2,2	0.37	0	1,1,1	0.13	0
2	HEM	B	501	1	50,50,50	1.68	13 (26%)	67,82,82	1.64	19 (28%)
4	FMT	B	504	-	2,2,2	0.28	0	1,1,1	0.18	0
3	4OA	D	502	-	30,30,30	0.61	0	47,47,47	0.76	0
4	FMT	A	507	-	2,2,2	0.28	0	1,1,1	0.15	0
4	FMT	C	522	-	2,2,2	0.37	0	1,1,1	0.12	0
4	FMT	C	523	-	2,2,2	0.26	0	1,1,1	0.20	0
4	FMT	D	504	-	2,2,2	0.27	0	1,1,1	0.17	0
4	FMT	D	514	-	2,2,2	0.69	0	1,1,1	0.28	0
4	FMT	E	506	-	2,2,2	0.60	0	1,1,1	0.02	0
4	FMT	E	505	-	2,2,2	0.86	0	1,1,1	0.22	0
4	FMT	E	511	-	2,2,2	0.63	0	1,1,1	0.11	0
4	FMT	C	519	-	2,2,2	0.25	0	1,1,1	0.19	0
4	FMT	F	509	-	2,2,2	0.27	0	1,1,1	0.14	0
4	FMT	D	513	-	2,2,2	0.44	0	1,1,1	0.19	0
4	FMT	F	512	-	2,2,2	0.37	0	1,1,1	0.12	0
4	FMT	F	504	-	2,2,2	0.36	0	1,1,1	0.10	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	FMT	A	521	-	2,2,2	0.30	0	1,1,1	0.09	0
4	FMT	B	524	-	2,2,2	0.24	0	1,1,1	0.21	0
4	FMT	C	507	-	2,2,2	0.07	0	1,1,1	0.24	0
4	FMT	A	519	-	2,2,2	0.22	0	1,1,1	0.22	0
2	HEM	E	501	1	50,50,50	1.56	9 (18%)	67,82,82	1.43	10 (14%)
4	FMT	C	505	-	2,2,2	0.39	0	1,1,1	0.10	0
4	FMT	C	509	-	2,2,2	0.45	0	1,1,1	0.02	0
3	4OA	C	502	-	30,30,30	0.58	0	47,47,47	0.86	0
4	FMT	B	509	-	2,2,2	0.28	0	1,1,1	0.18	0
4	FMT	D	503	-	2,2,2	0.80	0	1,1,1	0.29	0
4	FMT	F	506	-	2,2,2	0.10	0	1,1,1	0.32	0
4	FMT	E	503	-	2,2,2	0.28	0	1,1,1	0.14	0
4	FMT	C	516	-	2,2,2	0.42	0	1,1,1	0.12	0
4	FMT	D	511	-	2,2,2	0.28	0	1,1,1	0.20	0
4	FMT	A	515	-	2,2,2	0.54	0	1,1,1	0.29	0
3	4OA	A	502	-	30,30,30	0.49	0	47,47,47	0.50	0
2	HEM	C	501	1	50,50,50	1.49	8 (16%)	67,82,82	1.69	12 (17%)
4	FMT	A	522	-	2,2,2	0.29	0	1,1,1	0.09	0
4	FMT	F	510	-	2,2,2	0.30	0	1,1,1	0.15	0
4	FMT	B	515	-	2,2,2	0.45	0	1,1,1	0.05	0
4	FMT	B	517	-	2,2,2	0.34	0	1,1,1	0.08	0
4	FMT	A	516	-	2,2,2	0.37	0	1,1,1	0.12	0
4	FMT	A	524	-	2,2,2	0.60	0	1,1,1	0.07	0
4	FMT	B	522	-	2,2,2	0.57	0	1,1,1	0.02	0
4	FMT	D	510	-	2,2,2	0.37	0	1,1,1	0.02	0
4	FMT	A	511	-	2,2,2	0.29	0	1,1,1	0.18	0
4	FMT	C	521	-	2,2,2	0.53	0	1,1,1	0.02	0
4	FMT	C	503	-	2,2,2	0.39	0	1,1,1	0.07	0
4	FMT	E	504	-	2,2,2	0.92	0	1,1,1	0.26	0
4	FMT	C	508	-	2,2,2	0.23	0	1,1,1	0.15	0
4	FMT	C	512	-	2,2,2	0.05	0	1,1,1	0.27	0
4	FMT	C	506	-	2,2,2	0.53	0	1,1,1	0.05	0
4	FMT	C	520	-	2,2,2	0.37	0	1,1,1	0.10	0
4	FMT	F	511	-	2,2,2	0.39	0	1,1,1	0.08	0
4	FMT	C	511	-	2,2,2	0.25	0	1,1,1	0.22	0
4	FMT	B	507	-	2,2,2	0.34	0	1,1,1	0.11	0
4	FMT	A	510	-	2,2,2	0.26	0	1,1,1	0.19	0
2	HEM	D	501	1	50,50,50	1.68	10 (20%)	67,82,82	2.04	23 (34%)
4	FMT	D	509	-	2,2,2	0.37	0	1,1,1	0.07	0
4	FMT	B	516	-	2,2,2	0.47	0	1,1,1	0.00	0
4	FMT	C	515	-	2,2,2	0.36	0	1,1,1	0.15	0
4	FMT	B	510	-	2,2,2	0.40	0	1,1,1	0.08	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	FMT	C	517	-	2,2,2	0.35	0	1,1,1	0.10	0
4	FMT	C	514	-	2,2,2	0.25	0	1,1,1	0.18	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	HEM	B	501	1	-	1/14/54/54	-
3	4OA	B	502	-	-	3/9/67/67	0/4/4/4
2	HEM	D	501	1	-	1/14/54/54	-
2	HEM	E	501	1	-	0/14/54/54	-
2	HEM	A	501	1	-	0/14/54/54	-
2	HEM	F	501	1	-	1/14/54/54	-
3	4OA	D	502	-	-	1/9/67/67	0/4/4/4
3	4OA	A	502	-	-	3/9/67/67	0/4/4/4
2	HEM	C	501	1	-	0/14/54/54	-
3	4OA	F	502	-	-	7/9/67/67	0/4/4/4
3	4OA	E	502	-	-	4/9/67/67	0/4/4/4
3	4OA	C	502	-	-	3/9/67/67	0/4/4/4

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

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	E	501	HEM	FE-NB	5.11	2.10	1.94
2	F	501	HEM	FE-NC	4.84	2.11	1.95
2	F	501	HEM	FE-NB	4.75	2.09	1.94
2	C	501	HEM	FE-NB	4.29	2.08	1.94
2	B	501	HEM	FE-NB	4.28	2.08	1.94

The worst 5 of 91 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	501	HEM	CHB-C1B-NB	5.46	131.12	124.37
2	C	501	HEM	CHC-C4B-NB	5.37	130.21	124.42
2	F	501	HEM	CHC-C4B-NB	5.26	130.08	124.42
2	D	501	HEM	CHC-C4B-NB	5.05	129.85	124.42
2	A	501	HEM	CHD-C1D-ND	5.02	129.83	124.42

There are no chirality outliers.

5 of 24 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	D	502	4OA	C21-C20-C22-C23
3	F	502	4OA	C17-C20-C22-C23
3	B	502	4OA	C17-C20-C22-C23
3	F	502	4OA	C13-C17-C20-C22
3	E	502	4OA	C17-C20-C22-C23

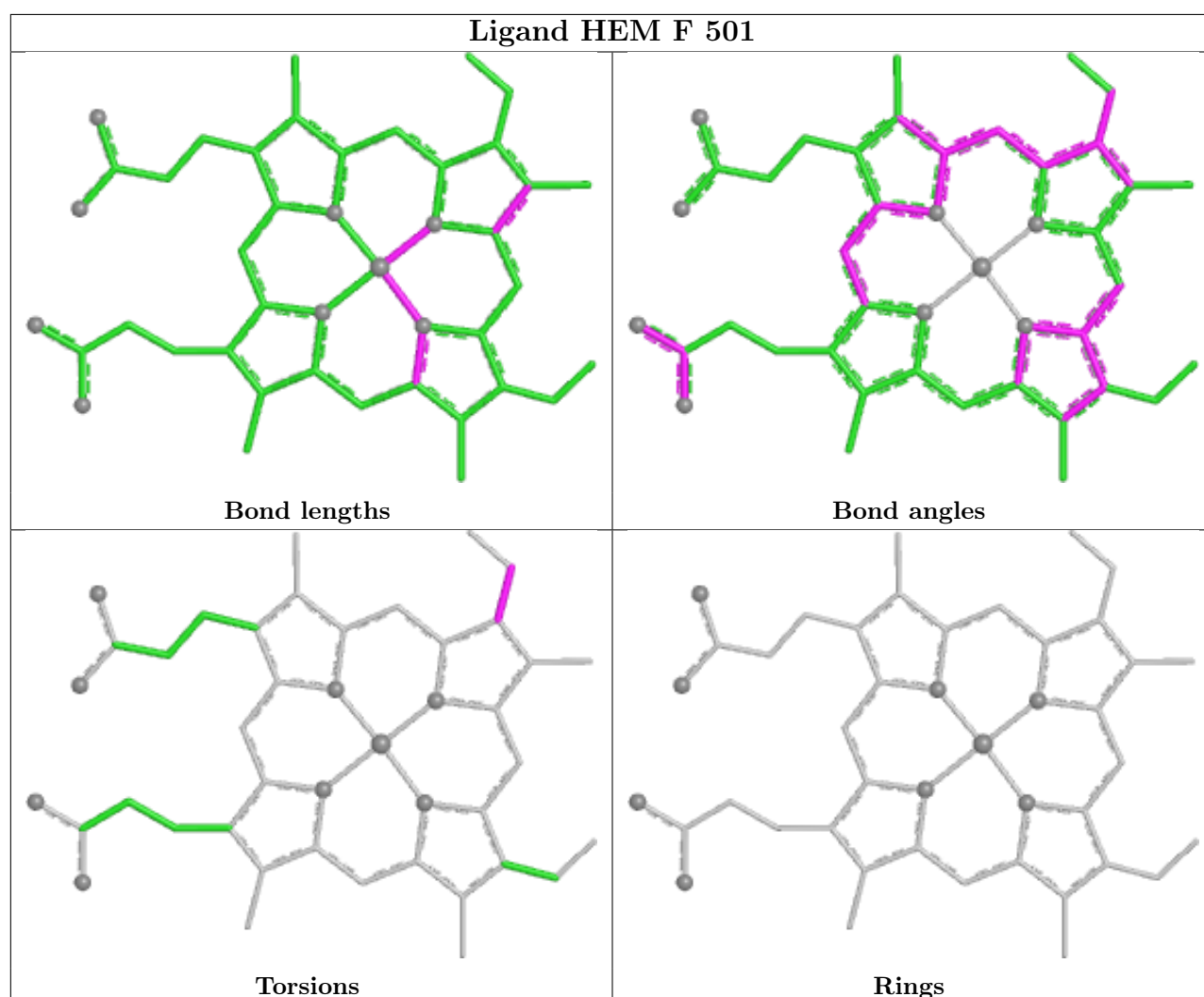
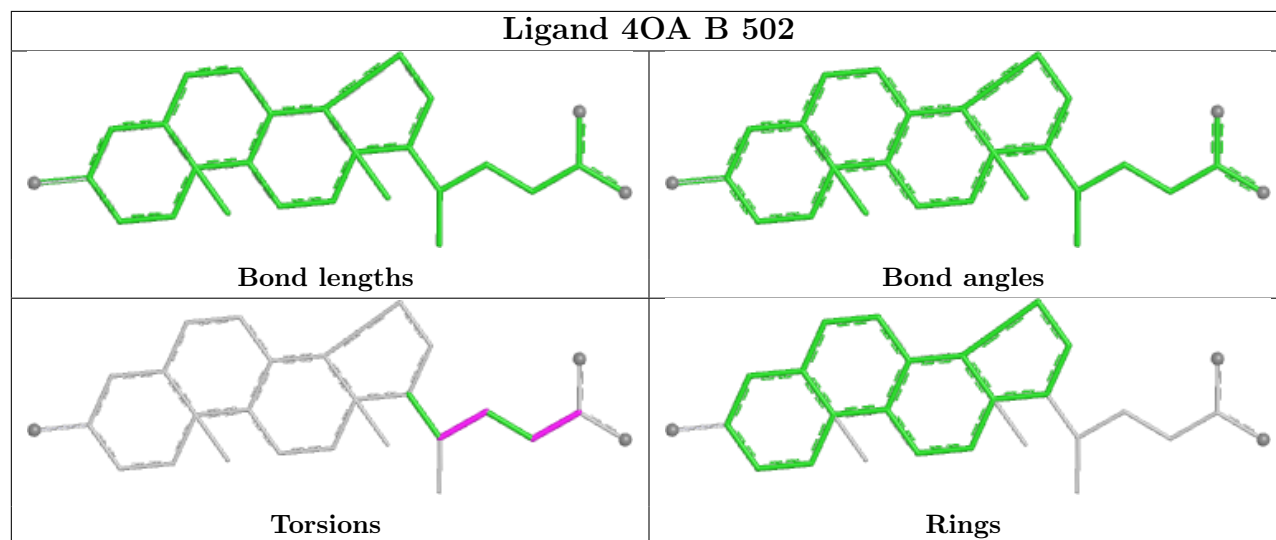
There are no ring outliers.

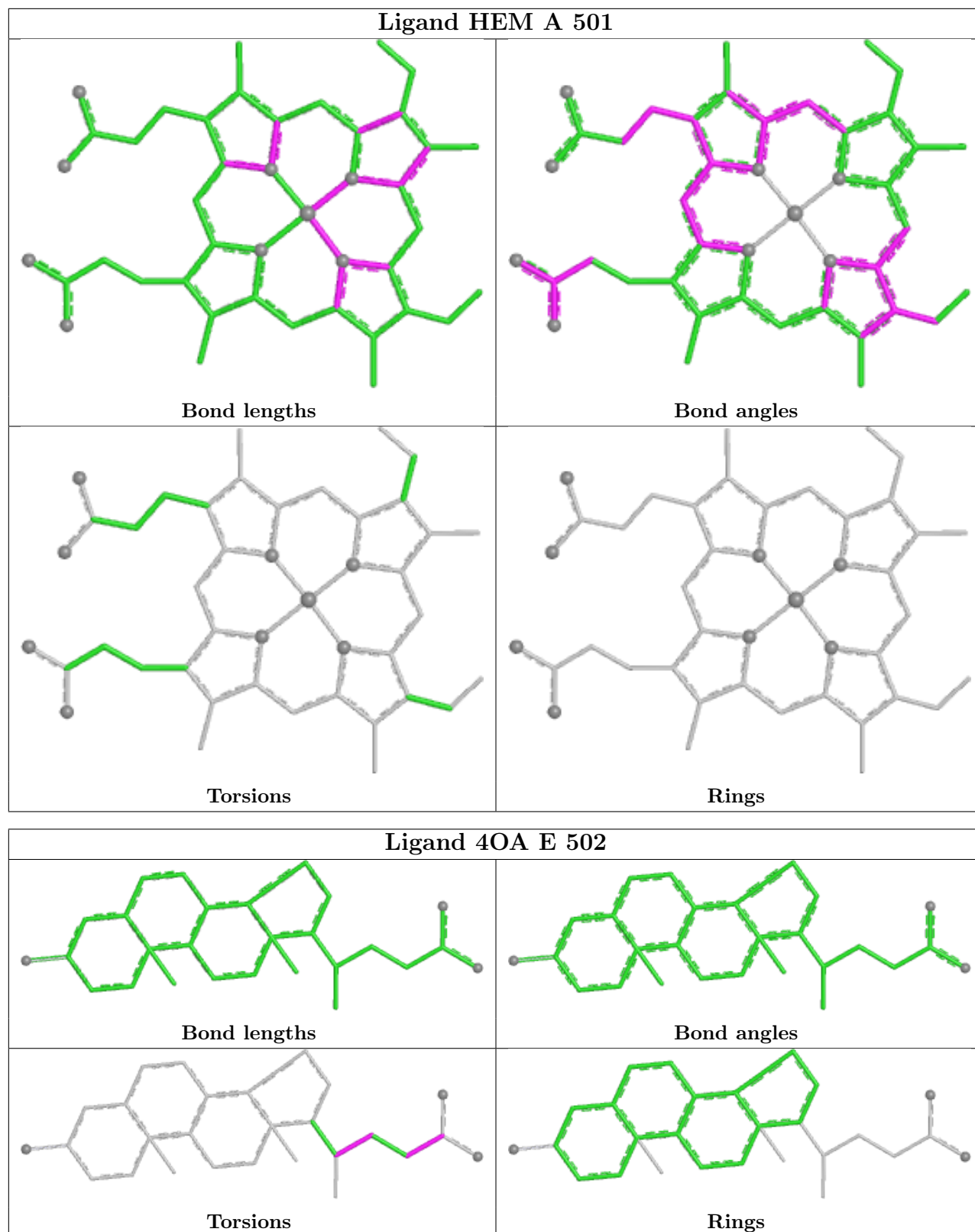
22 monomers are involved in 45 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	502	4OA	1	0
4	B	506	FMT	1	0
2	F	501	HEM	3	0
4	E	512	FMT	1	0
2	A	501	HEM	3	0
4	A	505	FMT	2	0
4	C	510	FMT	1	0
4	B	513	FMT	5	0
4	B	514	FMT	1	0
4	B	511	FMT	1	0
3	E	502	4OA	3	0
3	F	502	4OA	1	0
4	D	505	FMT	2	0
2	B	501	HEM	4	0
4	D	514	FMT	3	0
2	E	501	HEM	5	0
3	C	502	4OA	1	0
3	A	502	4OA	2	0
2	C	501	HEM	3	0
4	B	517	FMT	1	0
4	C	520	FMT	1	0
2	D	501	HEM	4	0

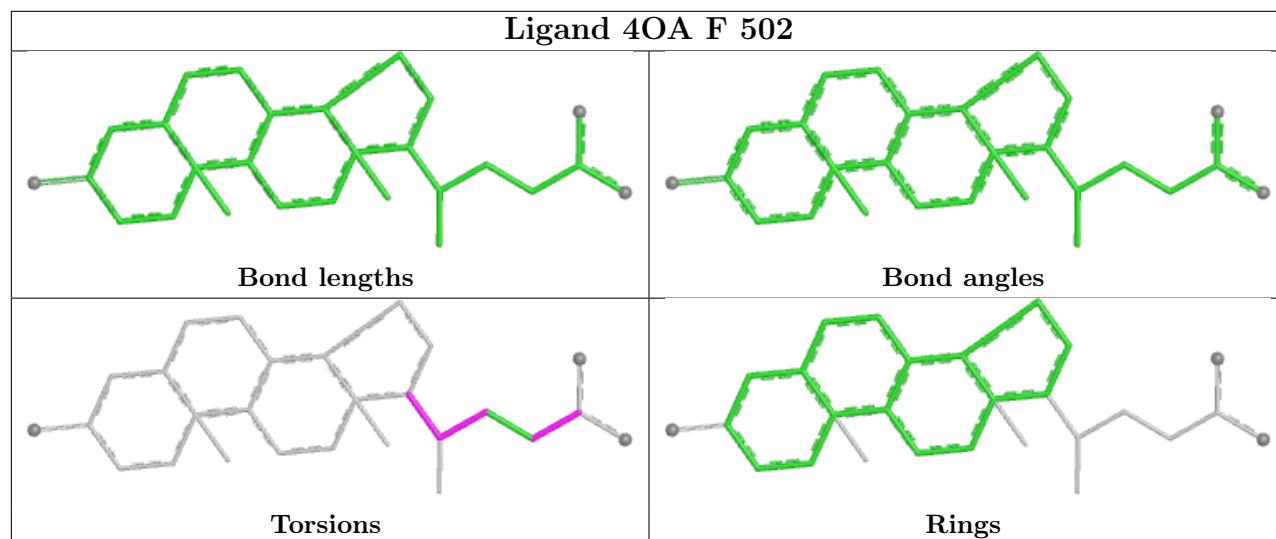
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

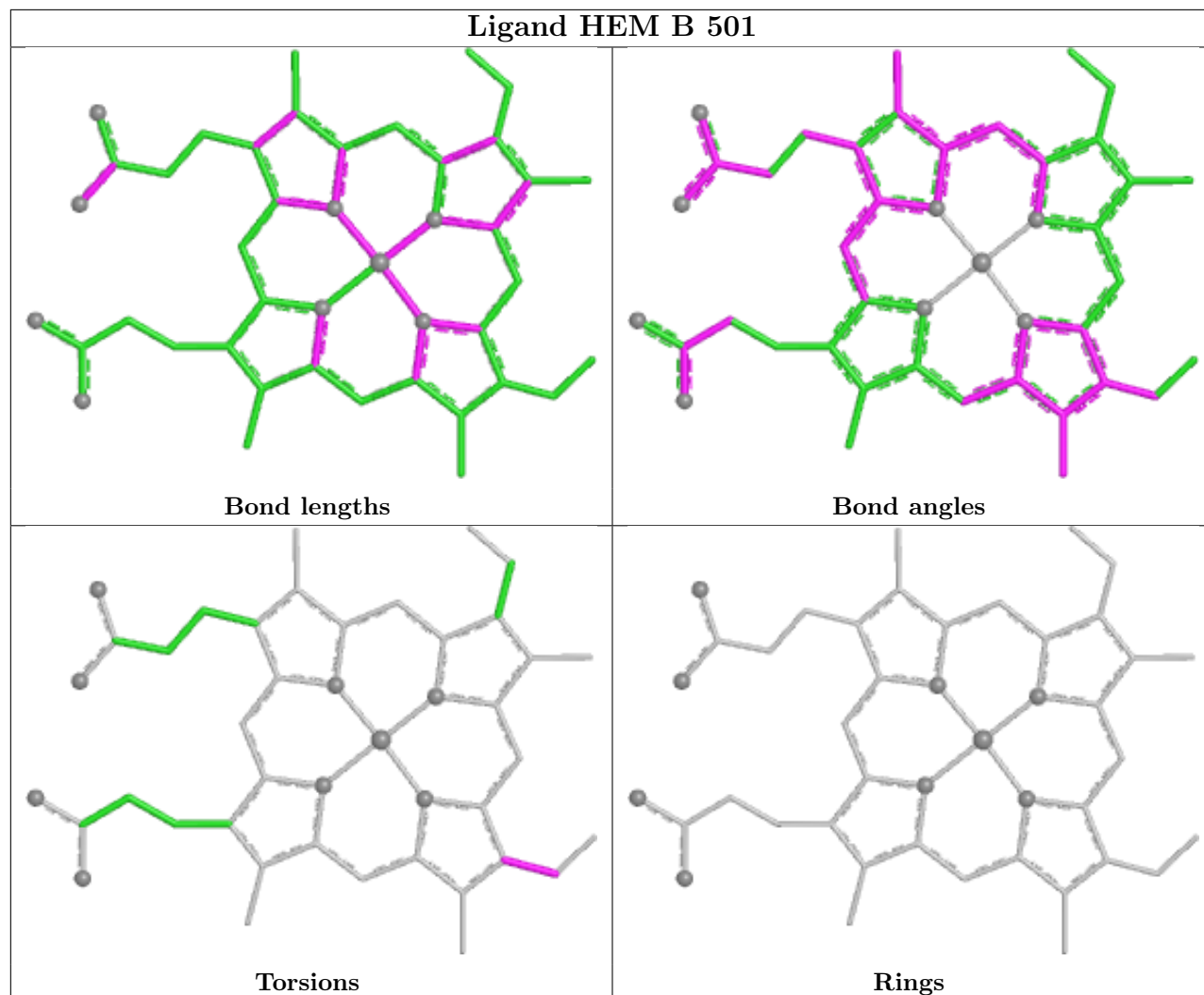




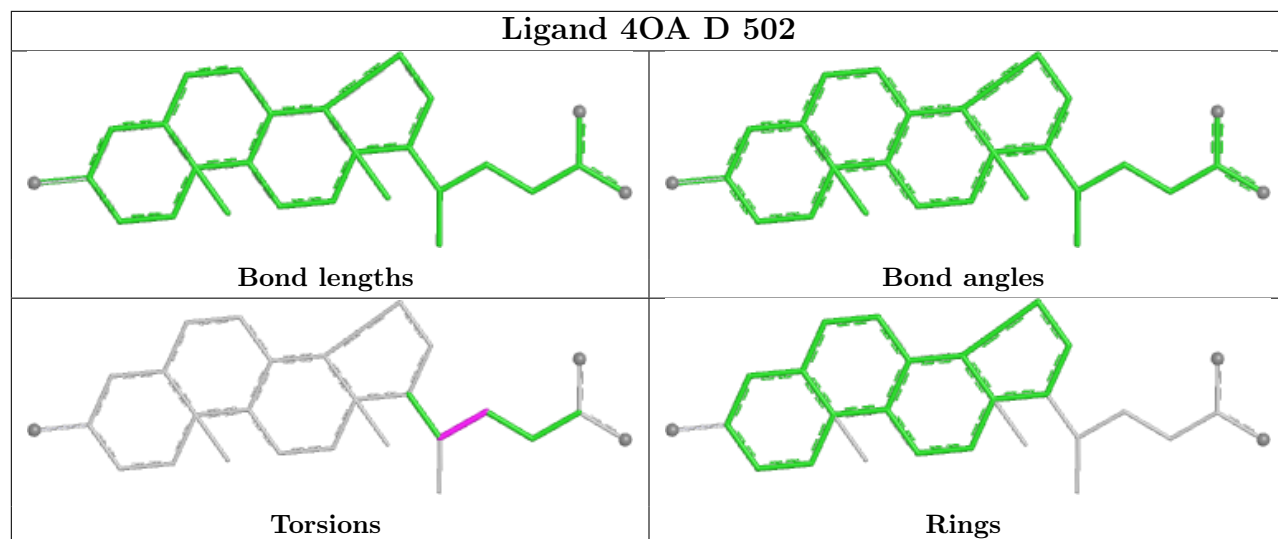
Ligand 4OA F 502



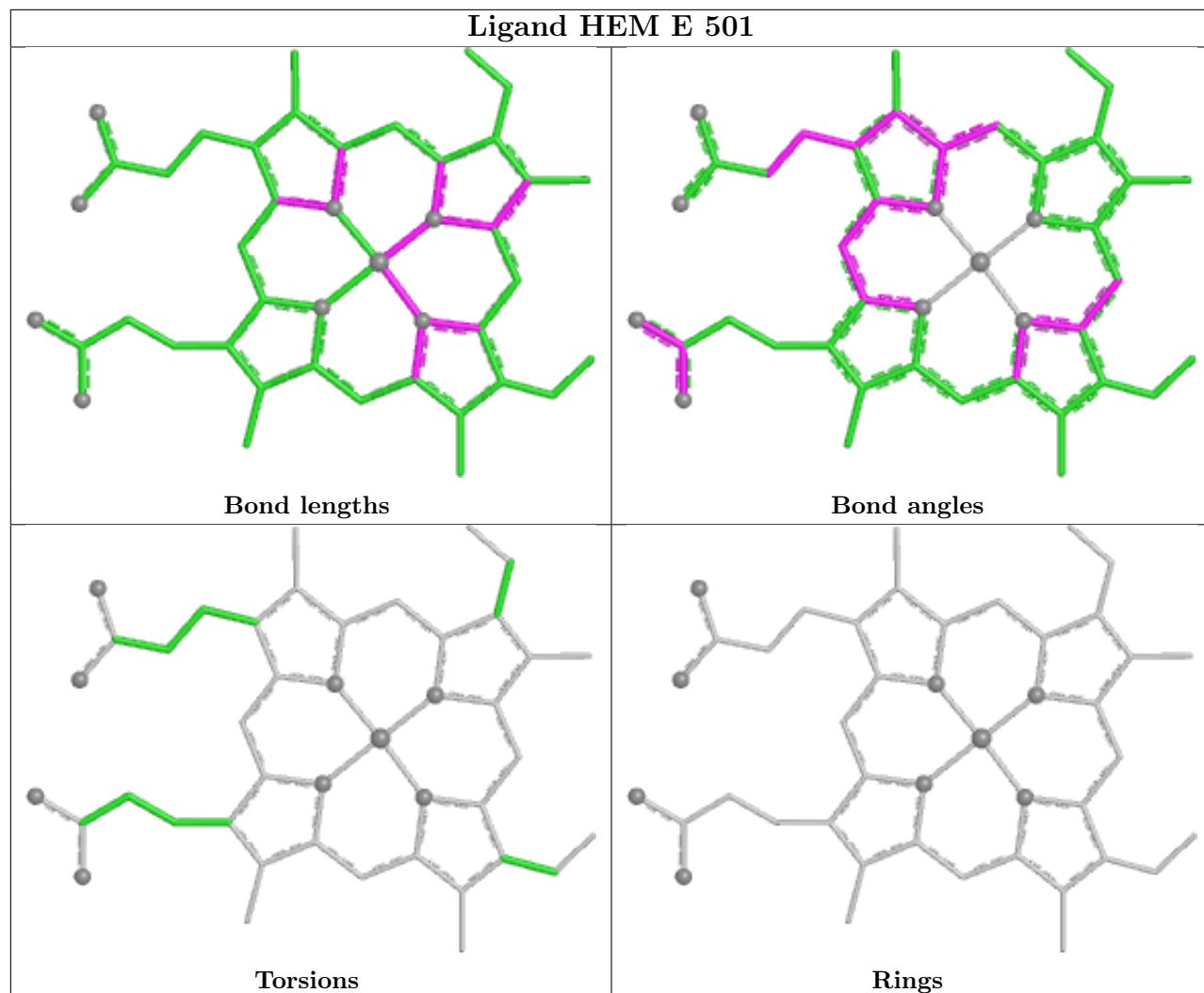
Ligand HEM B 501



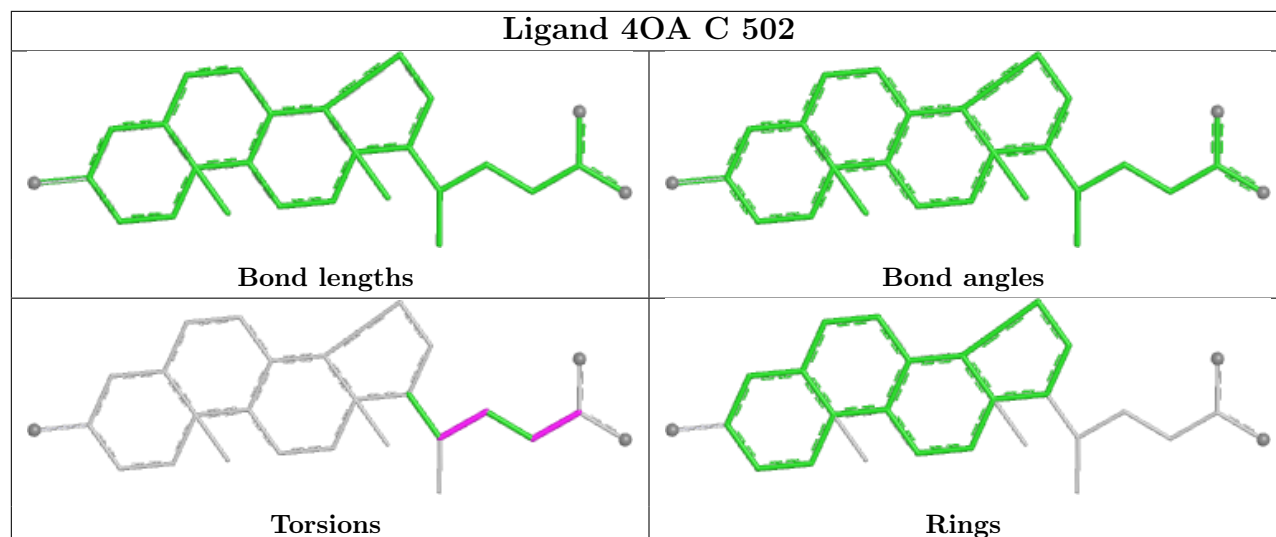
Ligand 4OA D 502



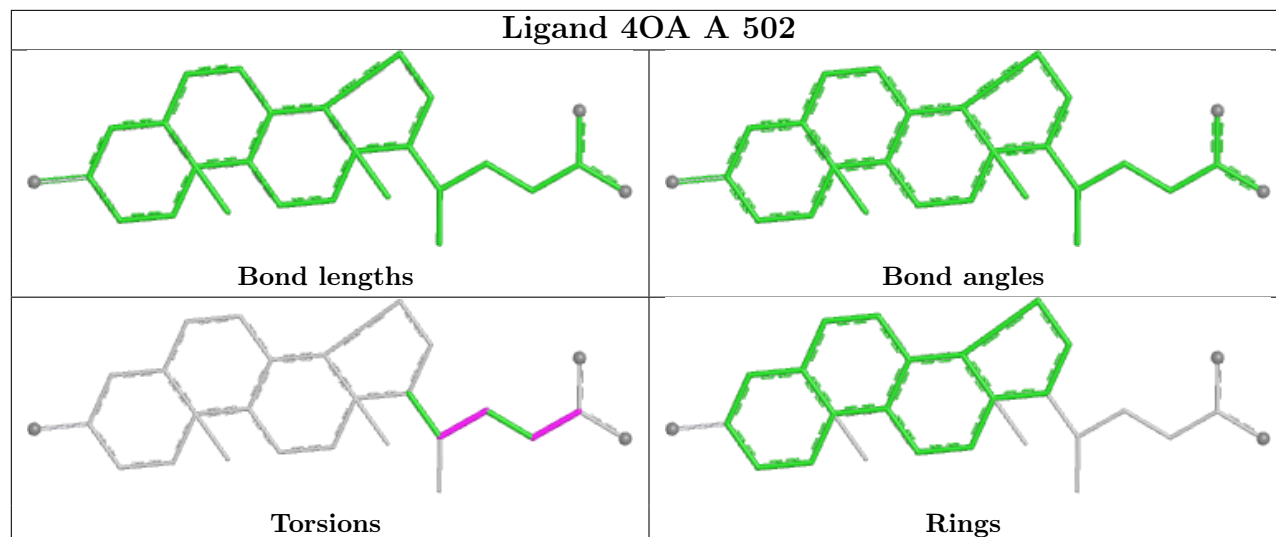
Ligand HEM E 501

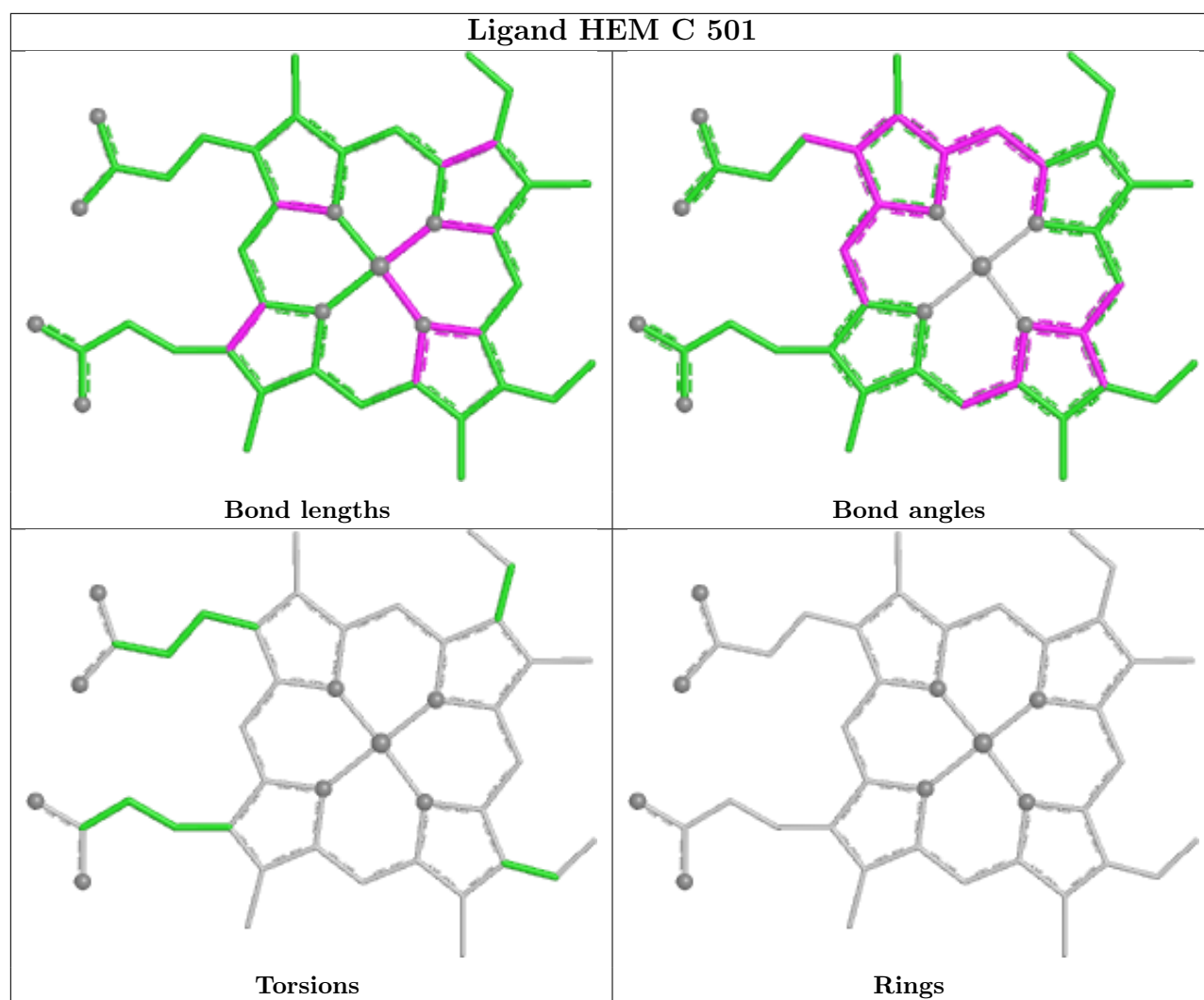


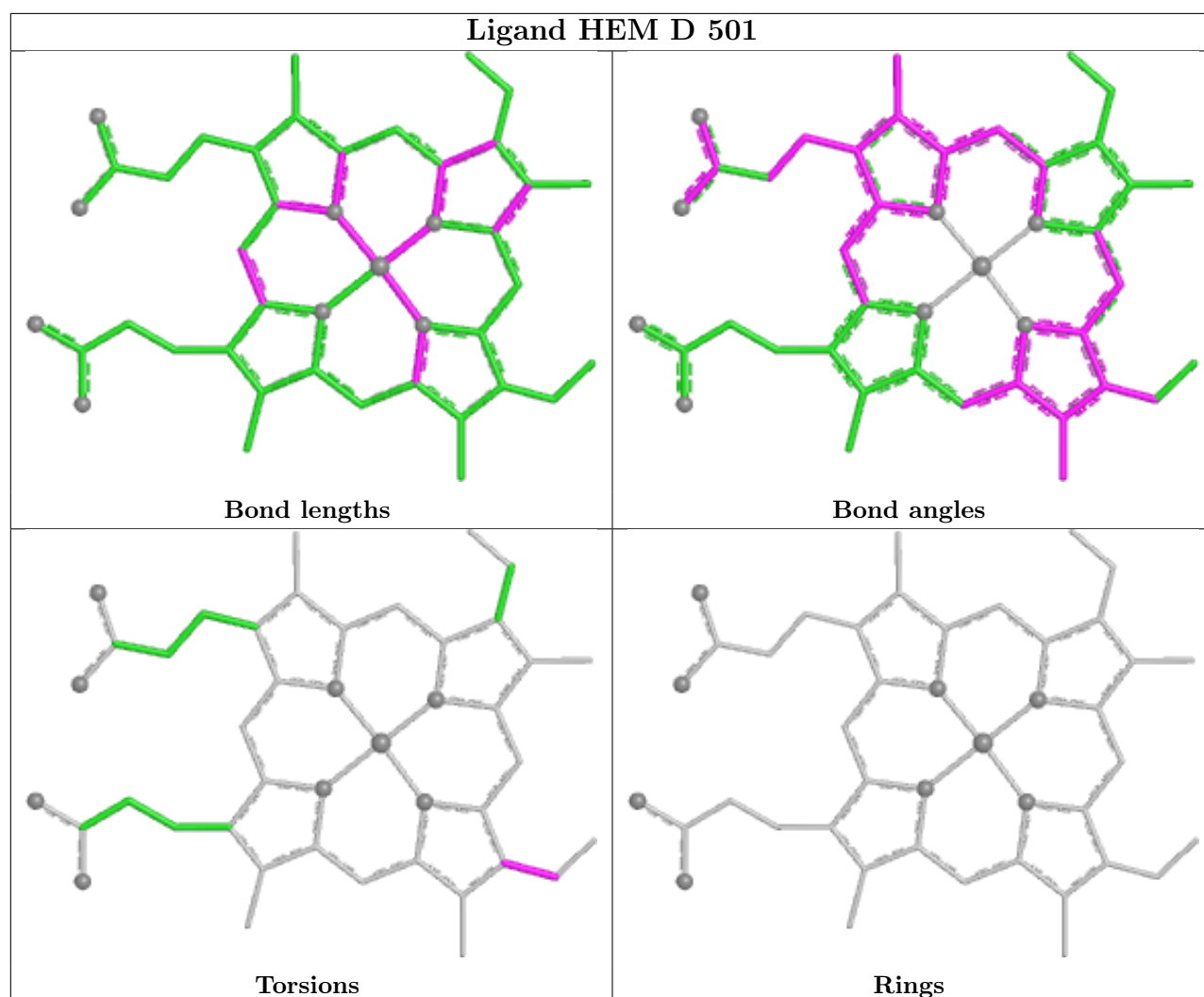
Ligand 4OA C 502



Ligand 4OA A 502







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	396/398 (99%)	-0.16	4 (1%) 79 80	27, 47, 74, 99	8 (2%)
1	B	396/398 (99%)	-0.16	8 (2%) 65 66	24, 47, 75, 131	4 (1%)
1	C	398/398 (100%)	-0.25	7 (1%) 67 69	17, 43, 63, 102	9 (2%)
1	D	397/398 (99%)	-0.01	8 (2%) 65 66	28, 54, 78, 117	5 (1%)
1	E	394/398 (98%)	0.28	11 (2%) 55 57	37, 62, 92, 125	1 (0%)
1	F	396/398 (99%)	0.32	16 (4%) 42 44	31, 63, 105, 116	1 (0%)
All	All	2377/2388 (99%)	0.00	54 (2%) 61 63	17, 53, 90, 131	28 (1%)

The worst 5 of 54 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	11	ALA	7.0
1	F	51	THR	5.2
1	E	108	VAL	4.7
1	F	52	ALA	4.5
1	E	43	VAL	4.1

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 ⓘ

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
4	FMT	A	511	3/3	0.61	0.15	83,83,83,89	0
4	FMT	F	510	3/3	0.65	0.12	88,88,91,97	0
4	FMT	E	510	3/3	0.66	0.14	86,86,95,95	0
4	FMT	F	512	3/3	0.67	0.22	74,74,88,91	0
4	FMT	C	511	3/3	0.68	0.13	77,77,81,85	0
4	FMT	A	510	3/3	0.68	0.15	85,85,91,94	0
4	FMT	C	514	3/3	0.69	0.12	84,84,86,88	0
4	FMT	C	523	3/3	0.71	0.14	89,89,90,93	0
4	FMT	A	504	3/3	0.71	0.12	81,81,83,84	0
4	FMT	A	519	3/3	0.72	0.17	78,78,86,87	0
4	FMT	F	513	3/3	0.72	0.36	96,96,96,102	0
4	FMT	F	511	3/3	0.73	0.21	72,72,78,86	0
4	FMT	B	504	3/3	0.74	0.15	89,89,91,92	0
4	FMT	D	505	3/3	0.75	0.24	73,73,84,86	0
4	FMT	C	526	3/3	0.75	0.15	76,76,82,83	0
4	FMT	E	509	3/3	0.77	0.18	80,80,84,90	0
4	FMT	C	525	3/3	0.79	0.21	67,67,71,74	0
4	FMT	B	515	3/3	0.80	0.14	65,65,76,77	0
4	FMT	C	519	3/3	0.80	0.19	91,91,96,99	0
4	FMT	D	513	3/3	0.80	0.15	46,46,46,47	3
4	FMT	F	508	3/3	0.81	0.14	67,67,76,81	0
4	FMT	D	512	3/3	0.81	0.27	56,56,63,72	0
4	FMT	A	512	3/3	0.81	0.22	62,62,78,82	0
4	FMT	B	522	3/3	0.81	0.21	74,74,76,90	0
4	FMT	A	518	3/3	0.81	0.20	54,54,70,73	0
4	FMT	B	519	3/3	0.83	0.17	79,79,83,84	0
4	FMT	A	515	3/3	0.83	0.14	48,48,56,56	0
4	FMT	C	524	3/3	0.83	0.22	48,48,54,57	3
4	FMT	D	509	3/3	0.83	0.17	78,78,82,84	0
4	FMT	F	503	3/3	0.83	0.23	80,80,83,90	0
4	FMT	B	506	3/3	0.84	0.20	59,59,67,73	0
4	FMT	B	510	3/3	0.84	0.18	81,81,86,86	0
4	FMT	A	514	3/3	0.84	0.13	71,71,74,83	0
4	FMT	B	524	3/3	0.85	0.17	88,88,88,89	0
4	FMT	B	514	3/3	0.85	0.18	47,47,50,55	0
4	FMT	E	506	3/3	0.86	0.28	64,64,66,79	0
4	FMT	B	518	3/3	0.86	0.15	58,58,70,79	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
4	FMT	C	516	3/3	0.86	0.17	64,64,75,77	0
4	FMT	B	503	3/3	0.86	0.20	69,69,80,89	0
4	FMT	C	522	3/3	0.86	0.14	80,80,84,87	0
4	FMT	C	510	3/3	0.86	0.14	69,69,73,76	0
4	FMT	B	521	3/3	0.86	0.16	66,66,70,75	0
4	FMT	D	515	3/3	0.86	0.13	71,71,79,85	0
4	FMT	E	503	3/3	0.86	0.17	66,66,72,76	0
4	FMT	D	504	3/3	0.87	0.11	73,73,79,80	0
4	FMT	A	503	3/3	0.87	0.20	69,69,75,76	0
4	FMT	E	505	3/3	0.87	0.25	60,60,60,79	0
4	FMT	C	506	3/3	0.87	0.19	60,60,76,81	0
4	FMT	A	523	3/3	0.87	0.24	66,66,80,86	0
4	FMT	A	507	3/3	0.87	0.17	73,73,73,75	0
4	FMT	C	513	3/3	0.88	0.21	59,59,70,80	0
4	FMT	F	505	3/3	0.88	0.23	64,64,69,81	0
4	FMT	C	509	3/3	0.88	0.14	65,65,72,78	0
4	FMT	F	509	3/3	0.88	0.12	54,54,58,60	0
4	FMT	E	508	3/3	0.88	0.15	73,73,80,81	0
4	FMT	B	507	3/3	0.88	0.15	65,65,70,72	0
4	FMT	A	516	3/3	0.88	0.19	69,69,79,83	0
4	FMT	E	511	3/3	0.88	0.23	59,59,60,69	0
4	FMT	D	507	3/3	0.89	0.15	56,56,63,65	0
4	FMT	F	506	3/3	0.89	0.11	58,58,61,65	0
4	FMT	D	508	3/3	0.89	0.16	57,57,62,70	0
4	FMT	B	505	3/3	0.89	0.14	61,61,80,82	0
4	FMT	A	508	3/3	0.89	0.19	61,61,70,75	0
4	FMT	C	520	3/3	0.89	0.18	70,70,76,77	0
4	FMT	B	520	3/3	0.89	0.15	57,57,70,75	0
4	FMT	A	505	3/3	0.89	0.14	52,52,61,62	0
4	FMT	C	508	3/3	0.90	0.17	62,62,67,70	0
4	FMT	A	513	3/3	0.90	0.19	61,61,64,77	0
4	FMT	B	511	3/3	0.90	0.28	71,71,72,82	0
4	FMT	B	513	3/3	0.90	0.14	30,30,34,48	0
4	FMT	C	512	3/3	0.90	0.17	51,51,53,53	0
4	FMT	C	503	3/3	0.90	0.16	64,64,65,76	0
4	FMT	B	508	3/3	0.90	0.12	52,52,59,67	0
4	FMT	C	515	3/3	0.90	0.15	56,56,68,68	0
4	FMT	D	514	3/3	0.91	0.21	45,45,49,57	0
4	FMT	B	509	3/3	0.91	0.12	66,66,70,71	0
4	FMT	A	509	3/3	0.91	0.11	71,71,77,79	0
4	FMT	A	506	3/3	0.91	0.14	59,59,61,63	0
4	FMT	B	523	3/3	0.91	0.17	57,57,71,73	0

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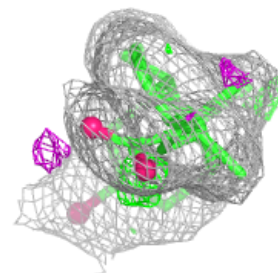
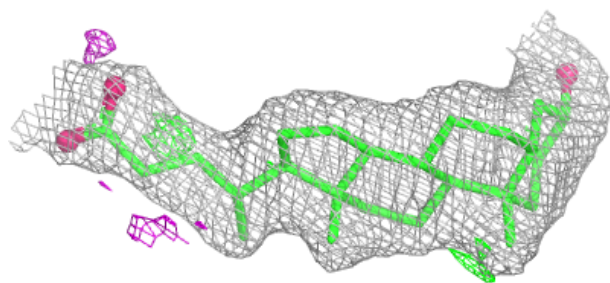
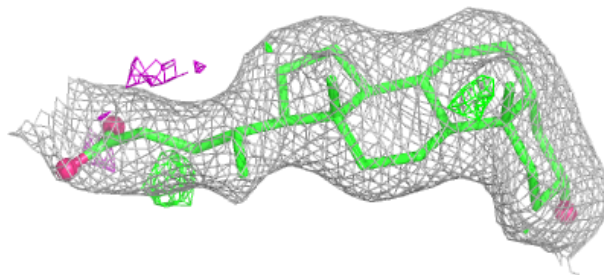
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
4	FMT	A	517	3/3	0.91	0.20	32,32,38,47	3
4	FMT	B	512	3/3	0.92	0.17	59,59,63,77	0
4	FMT	C	507	3/3	0.92	0.15	56,56,56,60	0
4	FMT	D	503	3/3	0.92	0.20	50,50,50,63	0
4	FMT	E	504	3/3	0.92	0.20	48,48,50,66	0
4	FMT	E	512	3/3	0.92	0.17	84,84,91,95	0
4	FMT	A	524	3/3	0.92	0.25	61,61,67,80	0
4	FMT	A	520	3/3	0.92	0.19	60,60,62,67	0
5	NA	E	513	1/1	0.92	0.14	61,61,61,61	0
4	FMT	C	504	3/3	0.93	0.11	59,59,61,64	0
4	FMT	A	521	3/3	0.93	0.24	71,71,72,75	0
4	FMT	C	518	3/3	0.93	0.20	65,65,71,74	0
4	FMT	E	507	3/3	0.94	0.11	69,69,71,72	0
4	FMT	D	506	3/3	0.94	0.15	63,63,66,72	0
3	4OA	A	502	27/27	0.94	0.10	35,38,54,59	0
4	FMT	C	505	3/3	0.94	0.15	58,58,61,64	0
4	FMT	F	507	3/3	0.94	0.14	67,67,73,81	0
4	FMT	B	516	3/3	0.94	0.16	64,64,73,83	0
3	4OA	D	502	27/27	0.95	0.10	41,45,70,78	0
3	4OA	E	502	27/27	0.95	0.10	42,46,64,65	0
4	FMT	C	517	3/3	0.95	0.26	67,67,67,69	0
4	FMT	F	504	3/3	0.95	0.14	65,65,69,74	0
4	FMT	C	521	3/3	0.95	0.13	55,55,61,66	0
4	FMT	D	510	3/3	0.95	0.28	57,57,67,72	0
5	NA	C	527	1/1	0.95	0.16	44,44,44,44	0
5	NA	D	516	1/1	0.95	0.11	50,50,50,50	0
4	FMT	D	511	3/3	0.95	0.17	70,70,72,75	0
5	NA	F	514	1/1	0.95	0.09	55,55,55,55	0
3	4OA	B	502	27/27	0.96	0.08	33,36,54,58	0
3	4OA	C	502	27/27	0.96	0.10	35,40,69,77	0
4	FMT	B	517	3/3	0.96	0.10	51,51,53,58	0
3	4OA	F	502	27/27	0.96	0.09	45,49,64,72	0
2	HEM	F	501	43/43	0.97	0.09	44,50,58,77	0
5	NA	B	525	1/1	0.98	0.10	43,43,43,43	0
2	HEM	E	501	43/43	0.98	0.07	37,42,50,52	0
4	FMT	A	522	3/3	0.98	0.07	45,45,46,50	0
2	HEM	D	501	43/43	0.98	0.06	27,33,46,48	0
5	NA	A	525	1/1	0.98	0.12	50,50,50,50	0
2	HEM	A	501	43/43	0.99	0.05	30,33,36,46	0
2	HEM	B	501	43/43	0.99	0.06	28,32,38,50	0
2	HEM	C	501	43/43	0.99	0.06	32,34,38,49	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.

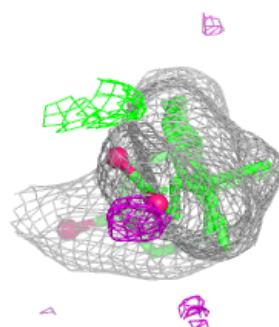
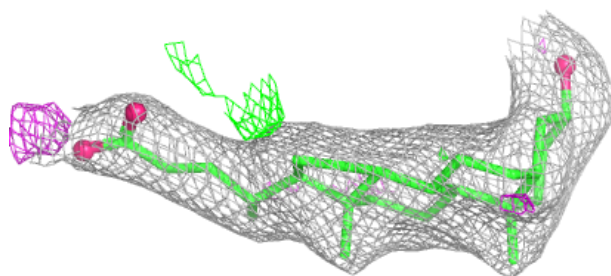
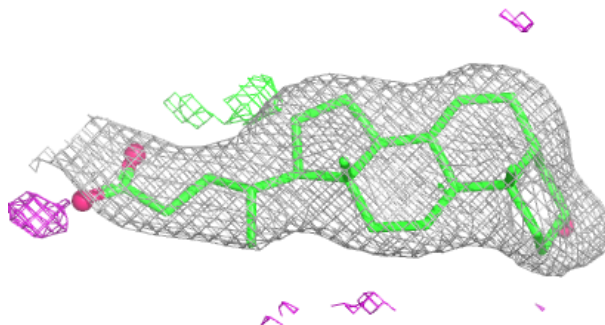
Electron density around 4OA A 502:

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

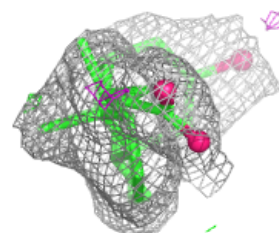
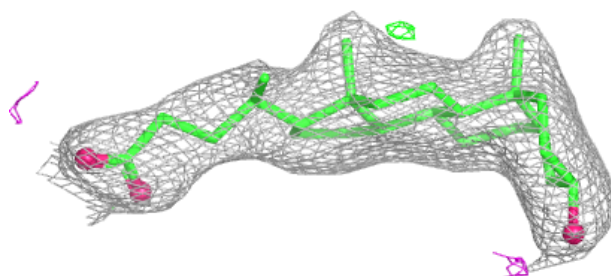
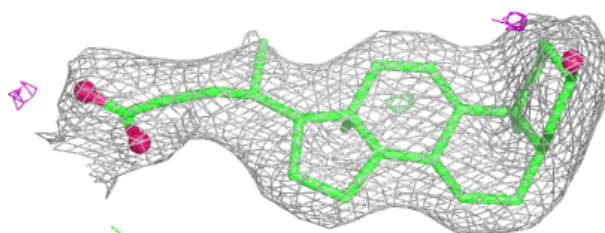


Electron density around 4OA D 502:

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

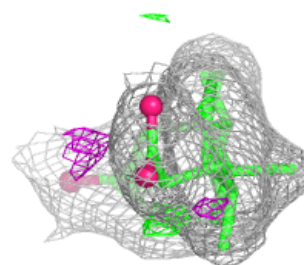
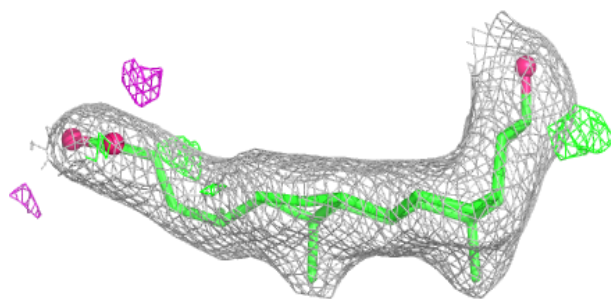
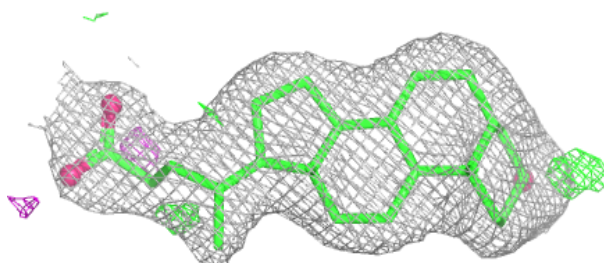
**Electron density around 4OA E 502:**

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 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

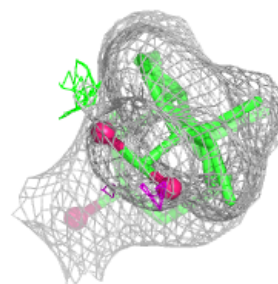
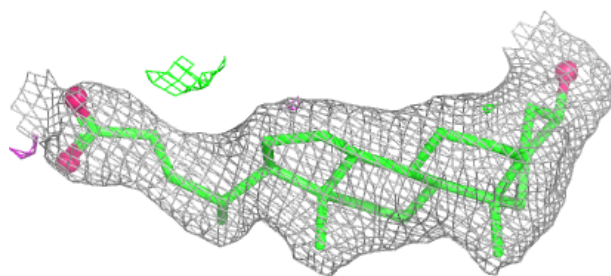
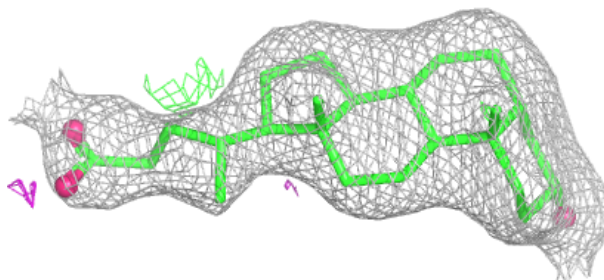


Electron density around 4OA B 502:

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

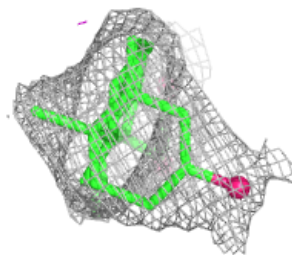
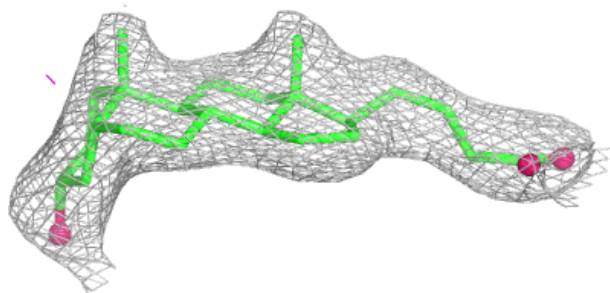
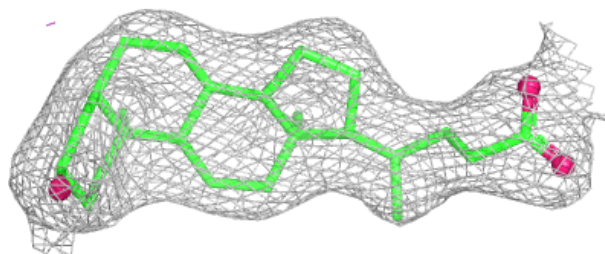
**Electron density around 4OA C 502:**

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 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



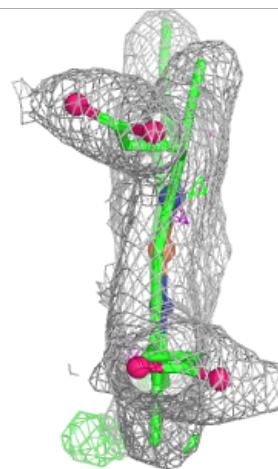
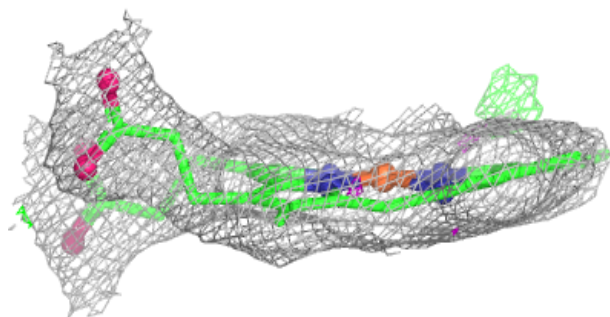
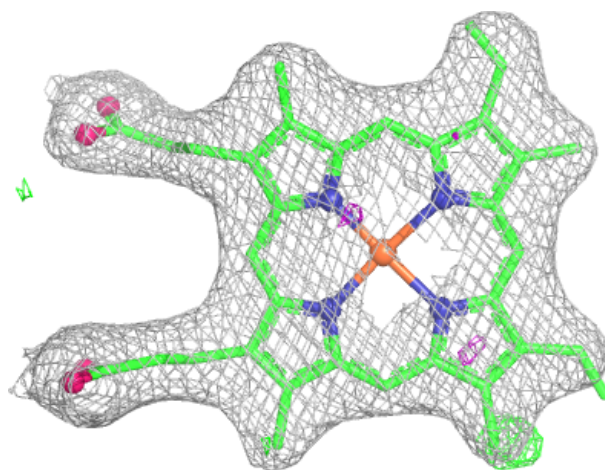
Electron density around 4OA F 502:

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



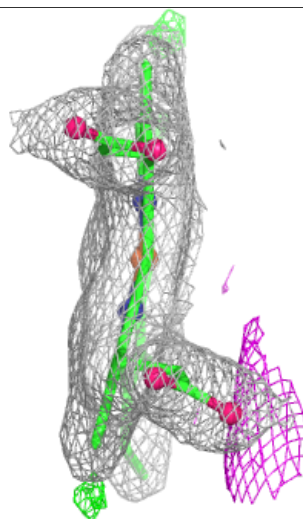
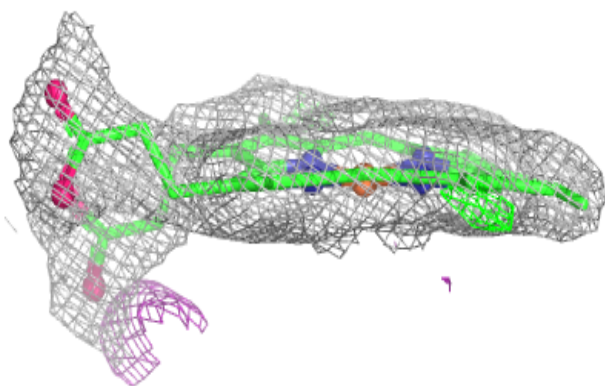
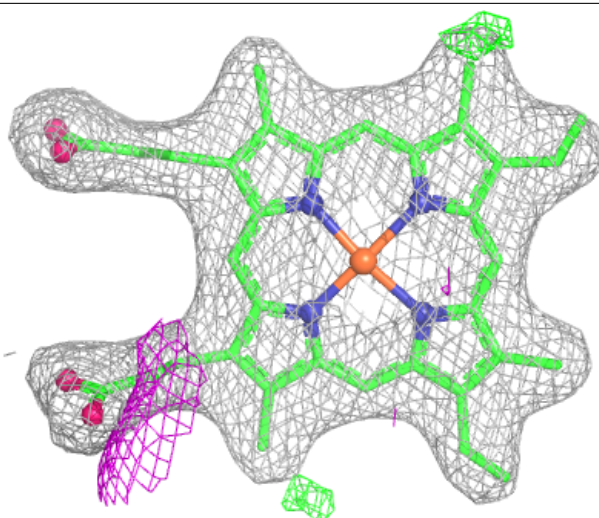
Electron density around HEM F 501:

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



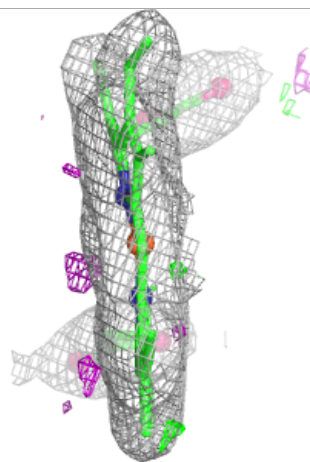
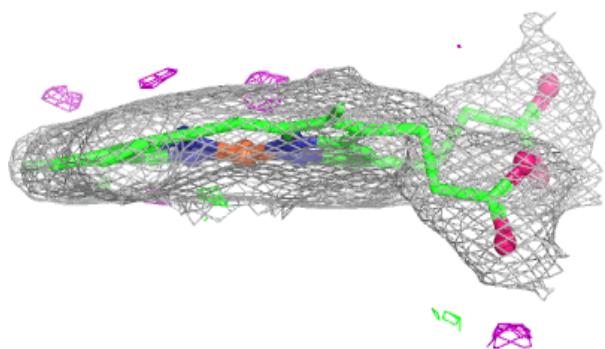
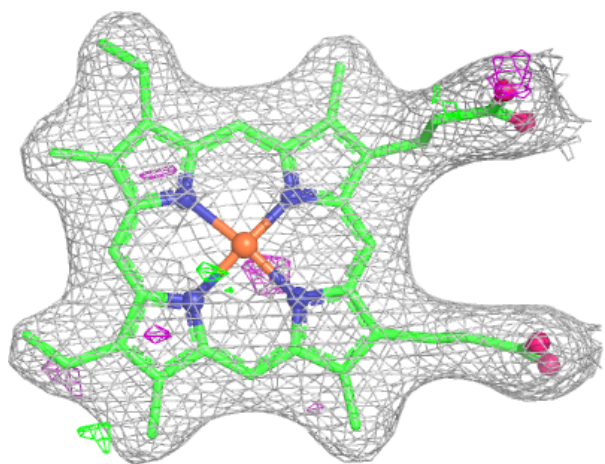
Electron density around HEM E 501:

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 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



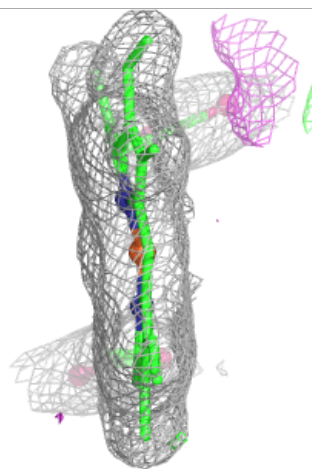
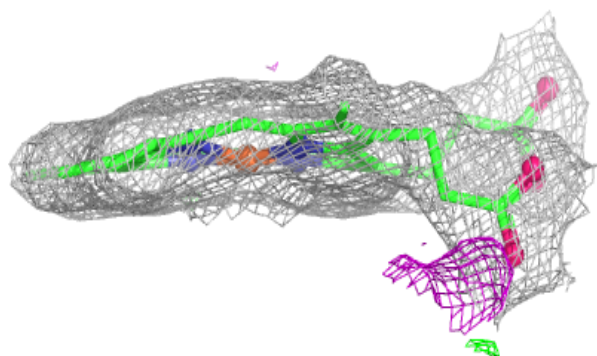
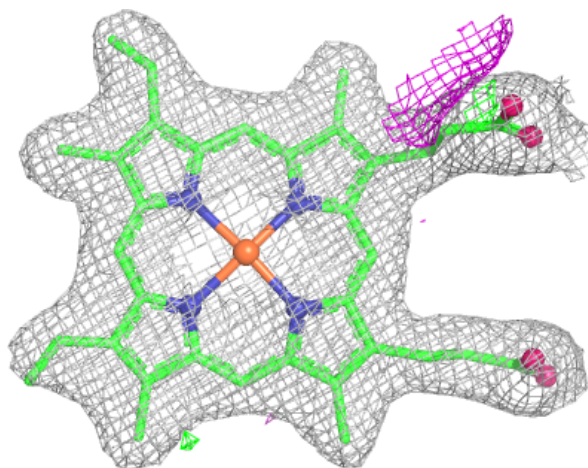
Electron density around HEM D 501:

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 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



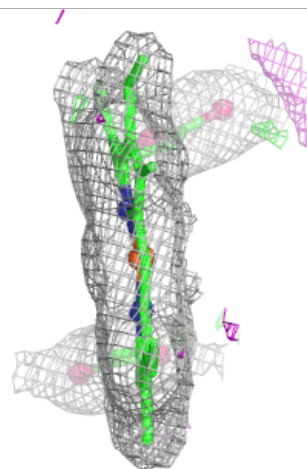
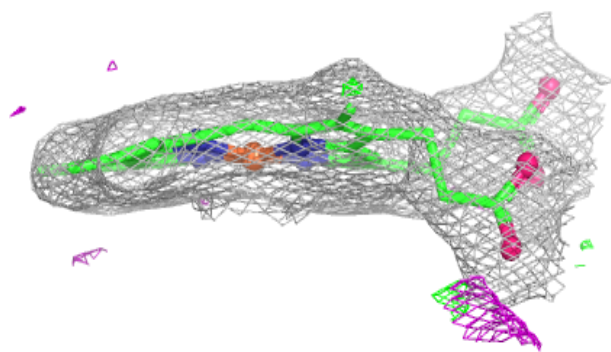
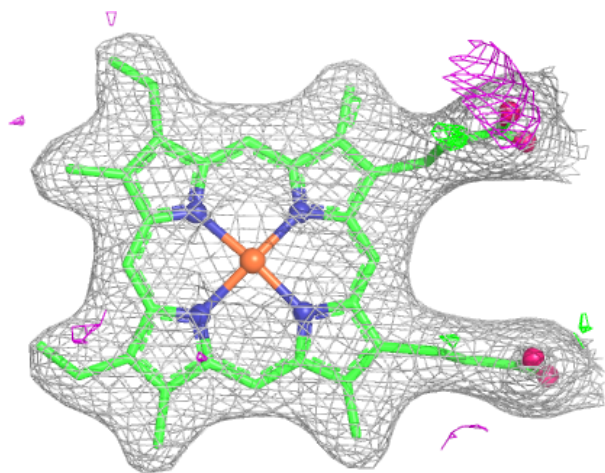
Electron density around HEM A 501:

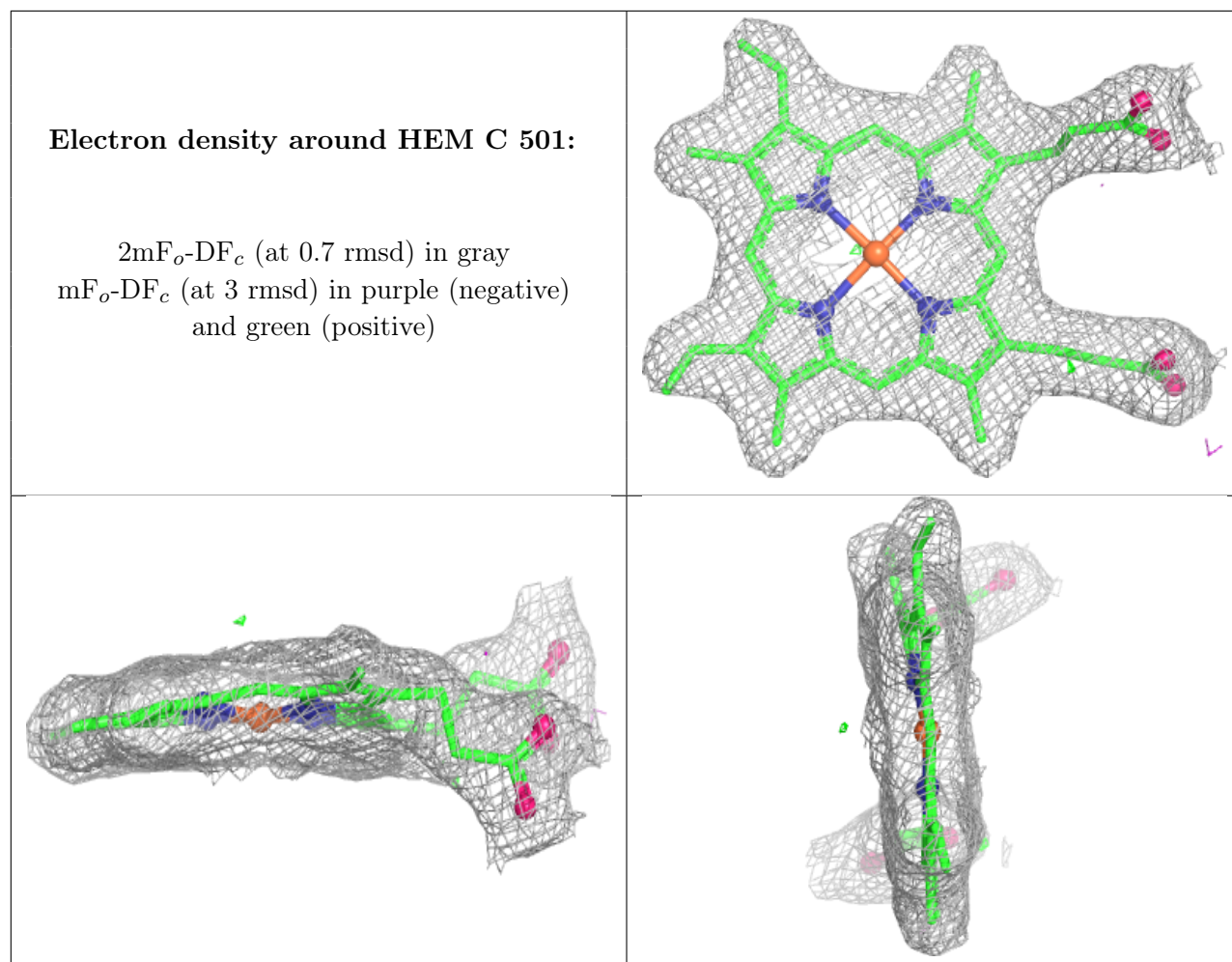
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around HEM B 501:

$2mF_o-DF_c$ (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.