



Full wwPDB X-ray Structure Validation Report ⓘ

Aug 6, 2026 – 06:22 AM EDT

PDB ID : 6NIN / pdb_00006nin
Title : Rhodobacter sphaeroides bc1 with STIGMATELLIN A
Authors : Xia, D.; Zhou, F.; Esser, L.
Deposited on : 2018-12-31
Resolution : 3.60 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	:	9.0.015 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.50

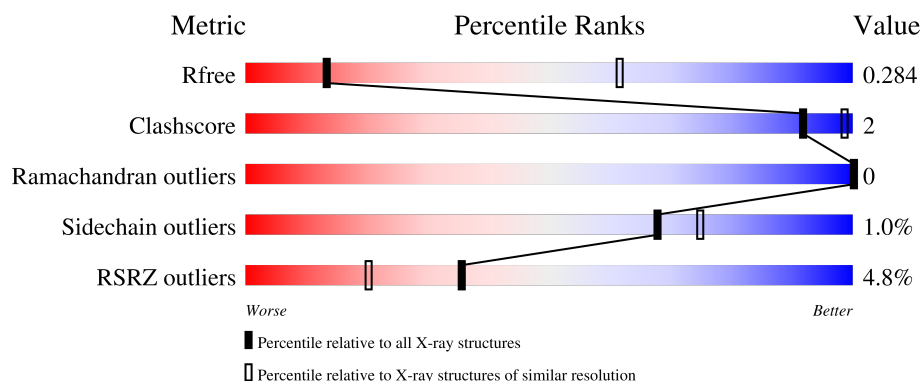
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.60 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	1747 (3.70-3.50)
Clashscore	190562	1827 (3.70-3.50)
Ramachandran outliers	187476	1773 (3.70-3.50)
Sidechain outliers	187428	1772 (3.70-3.50)
RSRZ outliers	180081	1745 (3.70-3.50)

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	445	2% 90% 6% .
1	E	445	5% 92% . .
1	K	445	2% 89% 7% .
1	O	445	11% 89% 7% .
1	S	445	10% 91% 5% .

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Mol	Chain	Length	Quality of chain
1	W	445	
2	B	272	
2	F	272	
2	L	272	
2	P	272	
2	T	272	
2	X	272	
3	C	187	
3	G	187	
3	M	187	
3	Q	187	
3	U	187	
3	Y	187	

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
7	HEC	B	1001	X	-	-	-
7	HEC	F	1001	X	-	-	-
7	HEC	L	1001	X	-	-	-
7	HEC	P	1001	X	-	-	-
7	HEC	T	1001	X	-	-	-
7	HEC	X	1001	X	-	-	-

2 Entry composition

There are 10 unique types of molecules in this entry. The entry contains 81894 atoms, of which 40305 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 Cytochrome b.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	428	Total	C	H	N	O	S	0	0	0
			6841	2319	3405	545	556	16			
1	E	428	Total	C	H	N	O	S	0	0	0
			6841	2319	3405	545	556	16			
1	K	428	Total	C	H	N	O	S	0	0	0
			6841	2319	3405	545	556	16			
1	O	428	Total	C	H	N	O	S	0	0	0
			6841	2319	3405	545	556	16			
1	S	428	Total	C	H	N	O	S	0	0	0
			6841	2319	3405	545	556	16			
1	W	428	Total	C	H	N	O	S	0	0	0
			6841	2319	3405	545	556	16			

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	185	CYS	ALA	engineered mutation	UNP A0A344Q9J3
E	185	CYS	ALA	engineered mutation	UNP A0A344Q9J3
K	185	CYS	ALA	engineered mutation	UNP A0A344Q9J3
O	185	CYS	ALA	engineered mutation	UNP A0A344Q9J3
S	185	CYS	ALA	engineered mutation	UNP A0A344Q9J3
W	185	CYS	ALA	engineered mutation	UNP A0A344Q9J3

- Molecule 2 is a protein called Cytochrome c1.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
2	B	256	Total	C	H	N	O	S	0	0	0
			3792	1240	1839	326	374	13			
2	F	256	Total	C	H	N	O	S	0	0	0
			3792	1240	1839	326	374	13			
2	L	256	Total	C	H	N	O	S	0	0	0
			3792	1240	1839	326	374	13			

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Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
2	P	256	Total	C	H	N	O	S	0	0	0
			3792	1240	1839	326	374	13			
2	T	256	Total	C	H	N	O	S	0	0	0
			3792	1240	1839	326	374	13			
2	X	256	Total	C	H	N	O	S	0	0	0
			3792	1240	1839	326	374	13			

There are 54 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	264	GLY	-	expression tag	UNP A0A344Q9J2
B	265	THR	-	expression tag	UNP A0A344Q9J2
B	266	GLY	-	expression tag	UNP A0A344Q9J2
B	267	HIS	-	expression tag	UNP A0A344Q9J2
B	268	HIS	-	expression tag	UNP A0A344Q9J2
B	269	HIS	-	expression tag	UNP A0A344Q9J2
B	270	HIS	-	expression tag	UNP A0A344Q9J2
B	271	HIS	-	expression tag	UNP A0A344Q9J2
B	272	HIS	-	expression tag	UNP A0A344Q9J2
F	264	GLY	-	expression tag	UNP A0A344Q9J2
F	265	THR	-	expression tag	UNP A0A344Q9J2
F	266	GLY	-	expression tag	UNP A0A344Q9J2
F	267	HIS	-	expression tag	UNP A0A344Q9J2
F	268	HIS	-	expression tag	UNP A0A344Q9J2
F	269	HIS	-	expression tag	UNP A0A344Q9J2
F	270	HIS	-	expression tag	UNP A0A344Q9J2
F	271	HIS	-	expression tag	UNP A0A344Q9J2
F	272	HIS	-	expression tag	UNP A0A344Q9J2
L	264	GLY	-	expression tag	UNP A0A344Q9J2
L	265	THR	-	expression tag	UNP A0A344Q9J2
L	266	GLY	-	expression tag	UNP A0A344Q9J2
L	267	HIS	-	expression tag	UNP A0A344Q9J2
L	268	HIS	-	expression tag	UNP A0A344Q9J2
L	269	HIS	-	expression tag	UNP A0A344Q9J2
L	270	HIS	-	expression tag	UNP A0A344Q9J2
L	271	HIS	-	expression tag	UNP A0A344Q9J2
L	272	HIS	-	expression tag	UNP A0A344Q9J2
P	264	GLY	-	expression tag	UNP A0A344Q9J2
P	265	THR	-	expression tag	UNP A0A344Q9J2
P	266	GLY	-	expression tag	UNP A0A344Q9J2
P	267	HIS	-	expression tag	UNP A0A344Q9J2
P	268	HIS	-	expression tag	UNP A0A344Q9J2

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Chain	Residue	Modelled	Actual	Comment	Reference
P	269	HIS	-	expression tag	UNP A0A344Q9J2
P	270	HIS	-	expression tag	UNP A0A344Q9J2
P	271	HIS	-	expression tag	UNP A0A344Q9J2
P	272	HIS	-	expression tag	UNP A0A344Q9J2
T	264	GLY	-	expression tag	UNP A0A344Q9J2
T	265	THR	-	expression tag	UNP A0A344Q9J2
T	266	GLY	-	expression tag	UNP A0A344Q9J2
T	267	HIS	-	expression tag	UNP A0A344Q9J2
T	268	HIS	-	expression tag	UNP A0A344Q9J2
T	269	HIS	-	expression tag	UNP A0A344Q9J2
T	270	HIS	-	expression tag	UNP A0A344Q9J2
T	271	HIS	-	expression tag	UNP A0A344Q9J2
T	272	HIS	-	expression tag	UNP A0A344Q9J2
X	264	GLY	-	expression tag	UNP A0A344Q9J2
X	265	THR	-	expression tag	UNP A0A344Q9J2
X	266	GLY	-	expression tag	UNP A0A344Q9J2
X	267	HIS	-	expression tag	UNP A0A344Q9J2
X	268	HIS	-	expression tag	UNP A0A344Q9J2
X	269	HIS	-	expression tag	UNP A0A344Q9J2
X	270	HIS	-	expression tag	UNP A0A344Q9J2
X	271	HIS	-	expression tag	UNP A0A344Q9J2
X	272	HIS	-	expression tag	UNP A0A344Q9J2

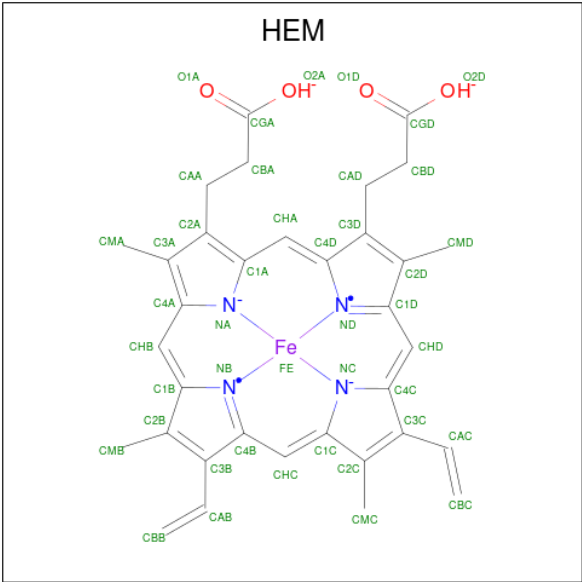
- Molecule 3 is a protein called Ubiquinol-cytochrome c reductase iron-sulfur subunit.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
3	C	179	Total	C	H	N	O	S	0	0	0
			2633	842	1295	236	253	7			
3	G	179	Total	C	H	N	O	S	0	0	0
			2633	842	1295	236	253	7			
3	M	179	Total	C	H	N	O	S	0	0	0
			2633	842	1295	236	253	7			
3	Q	179	Total	C	H	N	O	S	0	0	0
			2633	842	1295	236	253	7			
3	U	179	Total	C	H	N	O	S	0	0	0
			2633	842	1295	236	253	7			
3	Y	179	Total	C	H	N	O	S	0	0	0
			2633	842	1295	236	253	7			

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	70	CYS	LYS	engineered mutation	UNP A0A344Q9J4
G	70	CYS	LYS	engineered mutation	UNP A0A344Q9J4
M	70	CYS	LYS	engineered mutation	UNP A0A344Q9J4
Q	70	CYS	LYS	engineered mutation	UNP A0A344Q9J4
U	70	CYS	LYS	engineered mutation	UNP A0A344Q9J4
Y	70	CYS	LYS	engineered mutation	UNP A0A344Q9J4

- Molecule 4 is PROTOPORPHYRIN IX CONTAINING FE (CCD ID: HEM) (formula: C₃₄H₃₂FeN₄O₄).



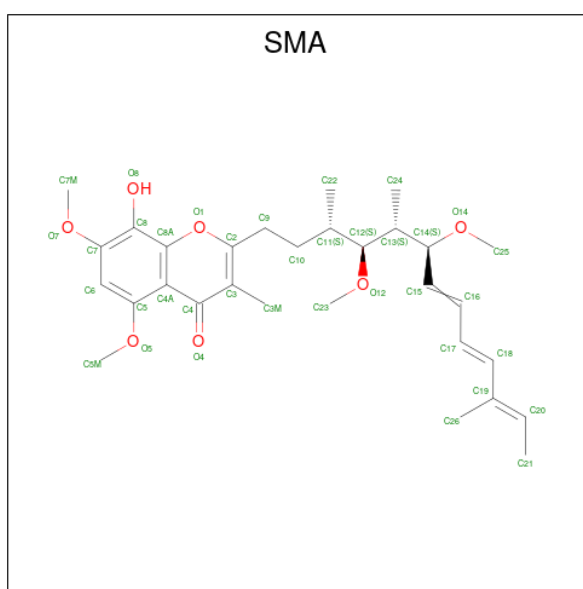
Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
4	A	1	Total	C	Fe	H	N	O	0	0
			73	34	1	30	4	4		
4	A	1	Total	C	Fe	H	N	O	0	0
			73	34	1	30	4	4		
4	E	1	Total	C	Fe	H	N	O	0	0
			73	34	1	30	4	4		
4	E	1	Total	C	Fe	H	N	O	0	0
			73	34	1	30	4	4		
4	K	1	Total	C	Fe	H	N	O	0	0
			73	34	1	30	4	4		
4	K	1	Total	C	Fe	H	N	O	0	0
			73	34	1	30	4	4		
4	O	1	Total	C	Fe	H	N	O	0	0
			73	34	1	30	4	4		
4	O	1	Total	C	Fe	H	N	O	0	0
			73	34	1	30	4	4		

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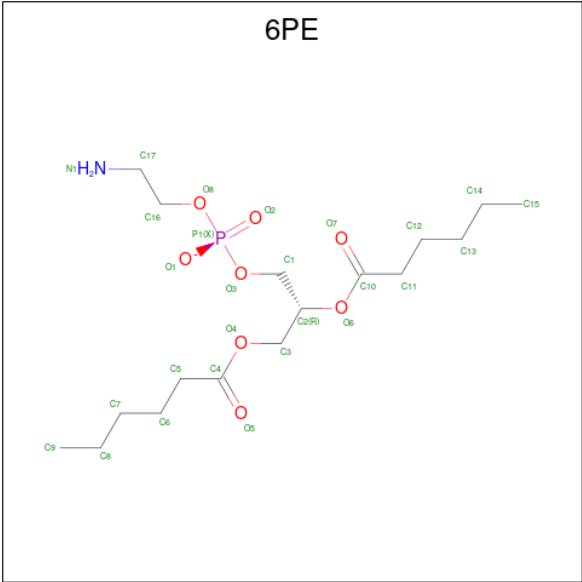
Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
4	S	1	Total	C	Fe	H	N	O	0	0
			73	34	1	30	4	4		
4	S	1	Total	C	Fe	H	N	O	0	0
			73	34	1	30	4	4		
4	W	1	Total	C	Fe	H	N	O	0	0
			73	34	1	30	4	4		
4	W	1	Total	C	Fe	H	N	O	0	0
			73	34	1	30	4	4		

- Molecule 5 is STIGMATELLIN A (CCD ID: SMA) (formula: $C_{30}H_{42}O_7$).



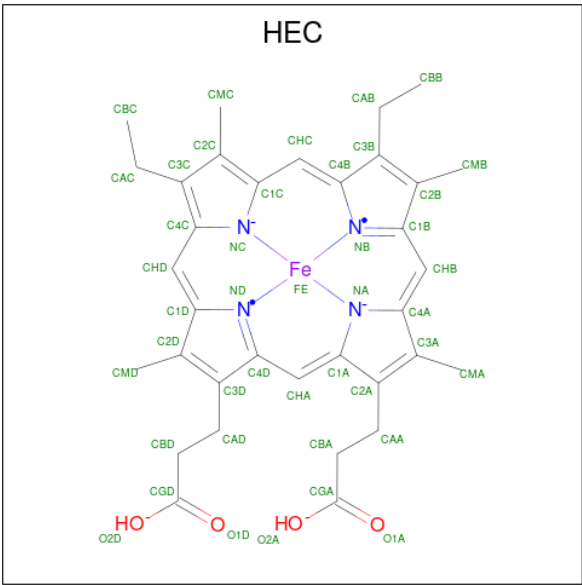
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	A	1	Total	C	H	O	0	0
			79	30	42	7		
5	E	1	Total	C	H	O	0	0
			79	30	42	7		
5	K	1	Total	C	H	O	0	0
			79	30	42	7		
5	O	1	Total	C	H	O	0	0
			79	30	42	7		
5	S	1	Total	C	H	O	0	0
			79	30	42	7		
5	W	1	Total	C	H	O	0	0
			79	30	42	7		

- Molecule 6 is 1,2-DIHEXANOYL-SN-GLYCERO-3-PHOSPHOETHANOLAMINE (CCD ID: 6PE) (formula: $C_{17}H_{33}NO_8P$).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
6	A	1	Total	C	H	N	O	P	0	0
			60	17	33	1	8	1		
6	E	1	Total	C	H	N	O	P	0	0
			60	17	33	1	8	1		
6	W	1	Total	C	H	N	O	P	0	0
			60	17	33	1	8	1		

- Molecule 7 is HEME C (CCD ID: HEC) (formula: C₃₄H₃₆FeN₄O₄).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
7	B	1	Total	C	Fe	H	N	O	0	0
			75	34	1	32	4	4		

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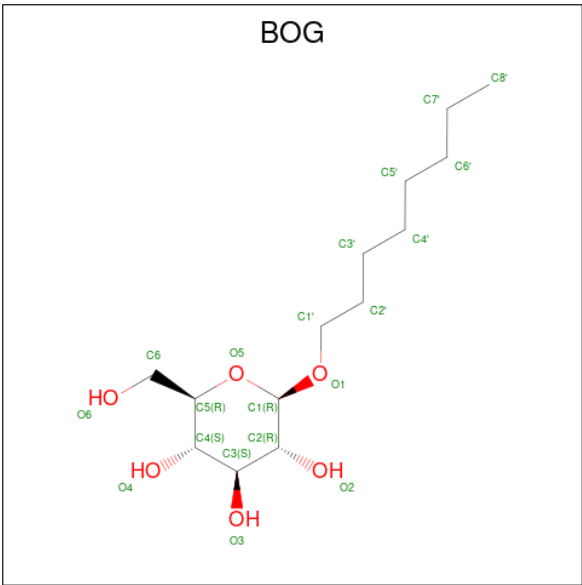
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Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
7	F	1	Total	C	Fe	H	N	O	0	0
			75	34	1	32	4	4		
7	L	1	Total	C	Fe	H	N	O	0	0
			75	34	1	32	4	4		
7	P	1	Total	C	Fe	H	N	O	0	0
			75	34	1	32	4	4		
7	T	1	Total	C	Fe	H	N	O	0	0
			75	34	1	32	4	4		
7	X	1	Total	C	Fe	H	N	O	0	0
			75	34	1	32	4	4		

- Molecule 8 is STRONTIUM ION (CCD ID: SR) (formula: Sr).

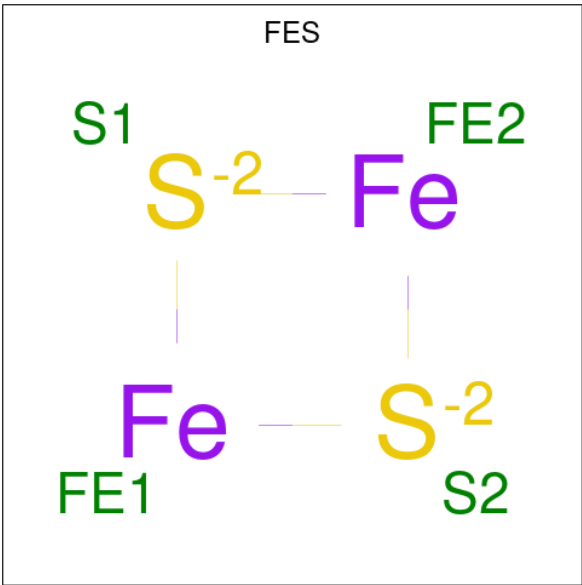
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	B	1	Total	Sr	0	0
			1	1		
8	F	1	Total	Sr	0	0
			1	1		
8	L	1	Total	Sr	0	0
			1	1		
8	P	1	Total	Sr	0	0
			1	1		
8	T	1	Total	Sr	0	0
			1	1		
8	X	1	Total	Sr	0	0
			1	1		

- Molecule 9 is octyl beta-D-glucopyranoside (CCD ID: BOG) (formula: C₁₄H₂₈O₆).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
9	B	1	Total	C	H	O	0	0
			48	14	28	6		
9	F	1	Total	C	H	O	0	0
			48	14	28	6		
9	L	1	Total	C	H	O	0	0
			48	14	28	6		
9	P	1	Total	C	H	O	0	0
			48	14	28	6		
9	T	1	Total	C	H	O	0	0
			48	14	28	6		
9	X	1	Total	C	H	O	0	0
			48	14	28	6		

- Molecule 10 is FE2/S2 (INORGANIC) CLUSTER (CCD ID: FES) (formula: Fe₂S₂).

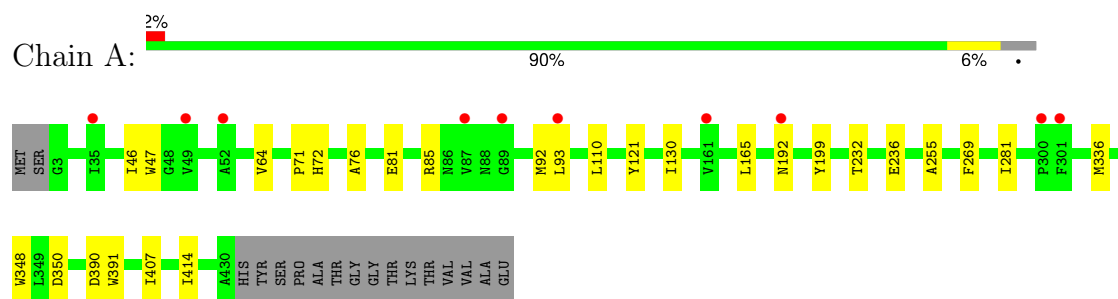


Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
10	C	1	Total	Fe	S	0	0
			4	2	2		
10	G	1	Total	Fe	S	0	0
			4	2	2		
10	M	1	Total	Fe	S	0	0
			4	2	2		
10	Q	1	Total	Fe	S	0	0
			4	2	2		
10	U	1	Total	Fe	S	0	0
			4	2	2		
10	Y	1	Total	Fe	S	0	0
			4	2	2		

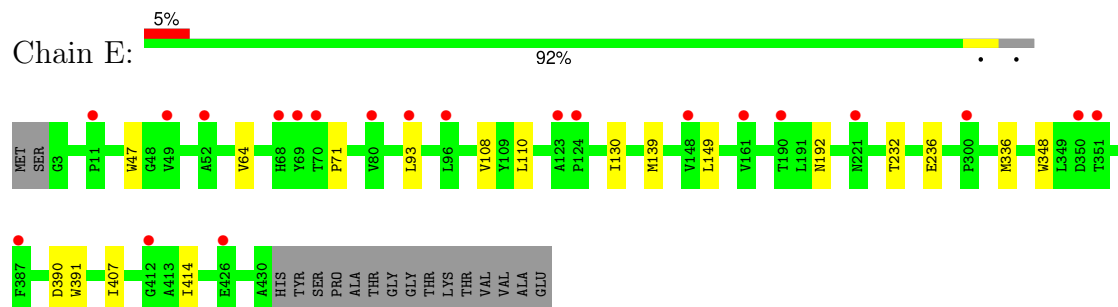
3 Residue-property plots [i](#)

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.

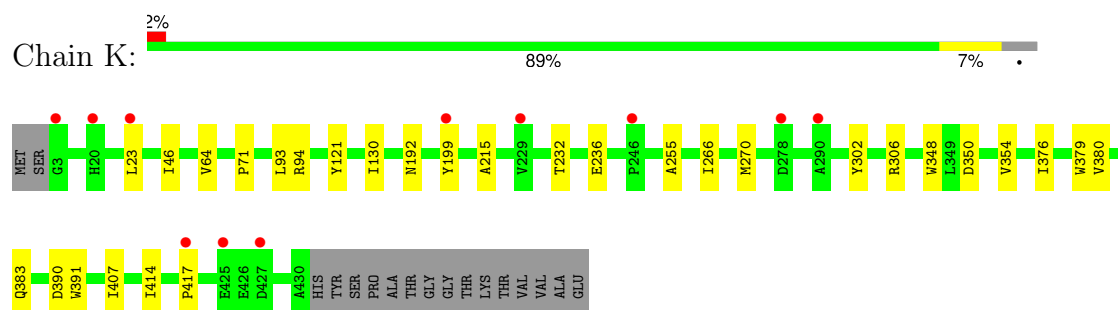
• Molecule 1: Cytochrome b



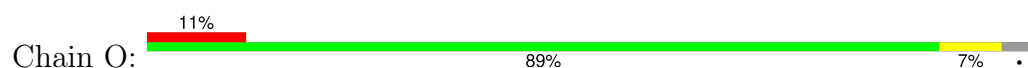
• Molecule 1: Cytochrome b

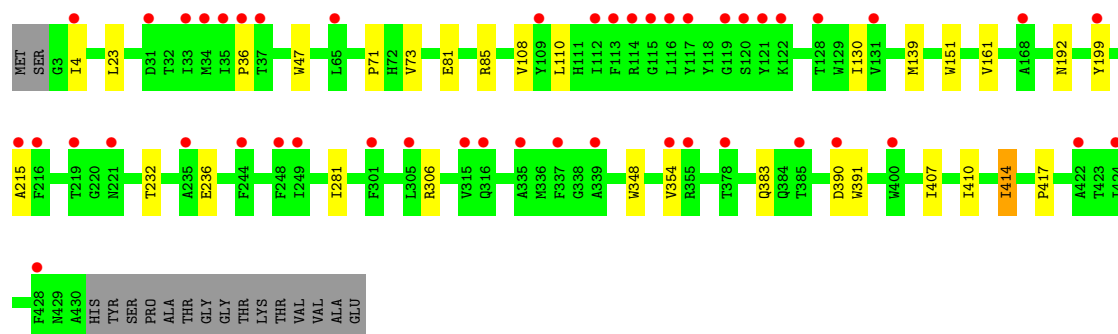


• Molecule 1: Cytochrome b

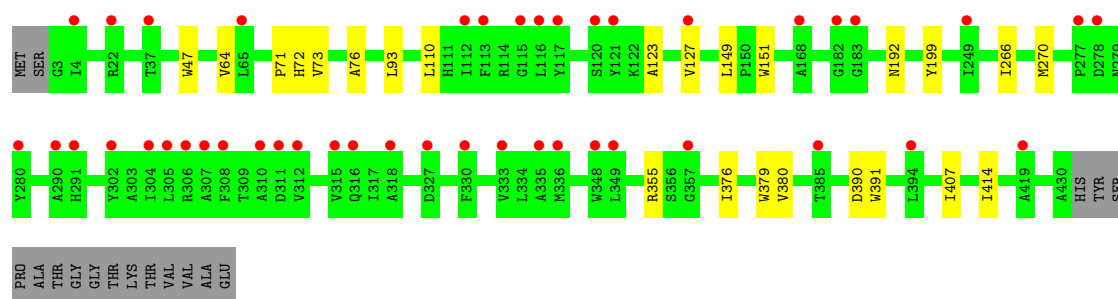


• Molecule 1: Cytochrome b

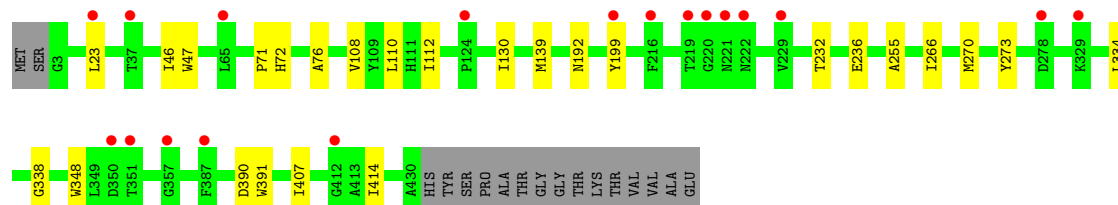
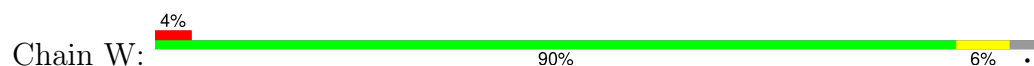




• Molecule 1: Cytochrome b



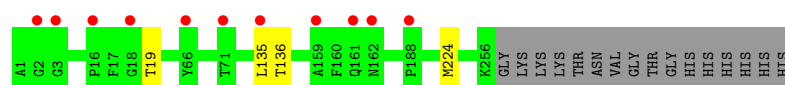
• Molecule 1: Cytochrome b



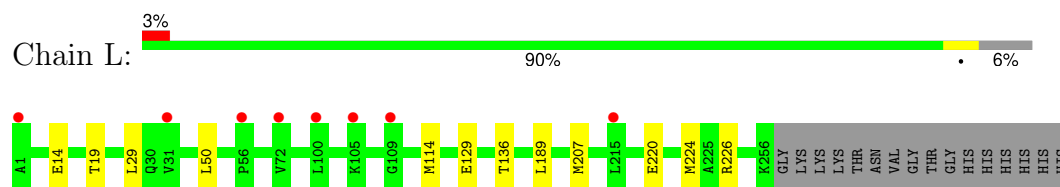
• Molecule 2: Cytochrome c1



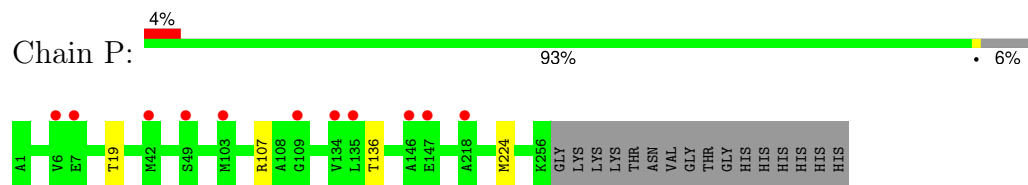
• Molecule 2: Cytochrome c1



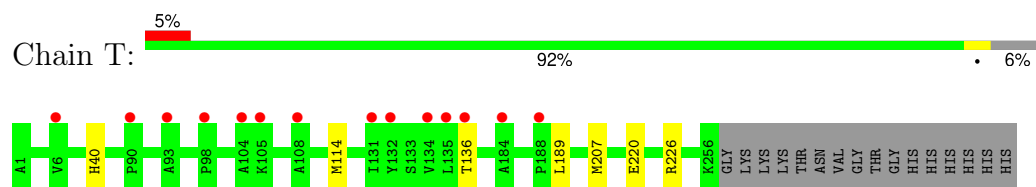
● Molecule 2: Cytochrome c1



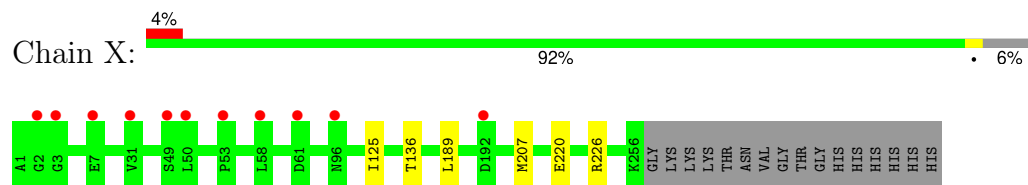
● Molecule 2: Cytochrome c1



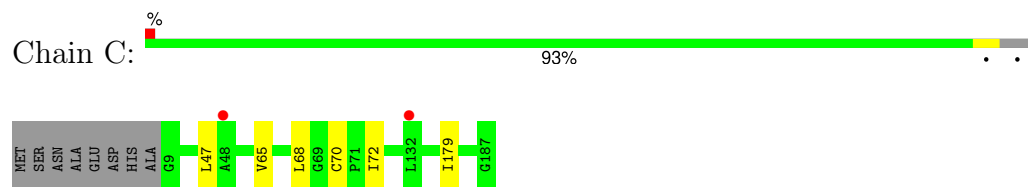
● Molecule 2: Cytochrome c1



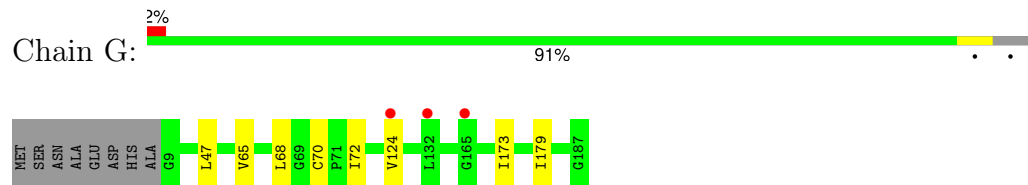
● Molecule 2: Cytochrome c1



● Molecule 3: Ubiquinol-cytochrome c reductase iron-sulfur subunit

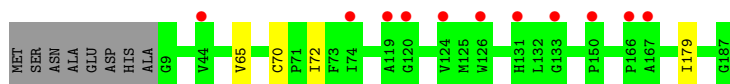


● Molecule 3: Ubiquinol-cytochrome c reductase iron-sulfur subunit

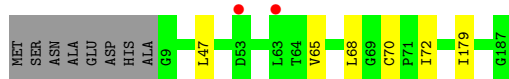
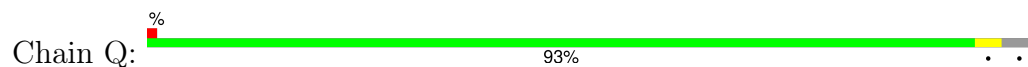


● Molecule 3: Ubiquinol-cytochrome c reductase iron-sulfur subunit

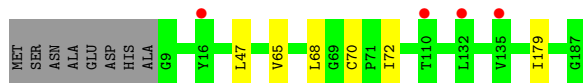




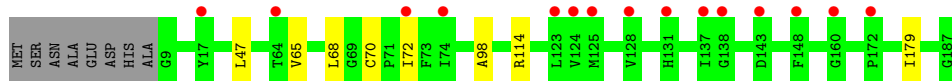
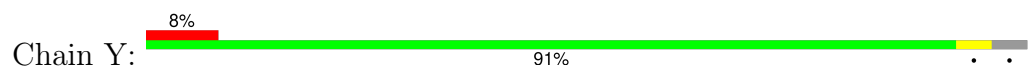
- Molecule 3: Ubiquinol-cytochrome c reductase iron-sulfur subunit



- Molecule 3: Ubiquinol-cytochrome c reductase iron-sulfur subunit



- Molecule 3: Ubiquinol-cytochrome c reductase iron-sulfur subunit



4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	356.66Å 145.75Å 162.22Å 90.00° 104.97° 90.00°	Depositor
Resolution (Å)	28.91 – 3.60 28.91 – 3.60	Depositor EDS
% Data completeness (in resolution range)	97.2 (28.91-3.60) 83.5 (28.91-3.60)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.02 (at 3.48Å)	Xtrriage
Refinement program	PHENIX dev_3339	Depositor
R, R_{free}	0.249 , 0.280 0.261 , 0.284	Depositor DCC
R_{free} test set	1200 reflections (1.20%)	wwPDB-VP
Wilson B-factor (Å ²)	85.9	Xtrriage
Anisotropy	0.369	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 58.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.45$, $\langle L^2 \rangle = 0.28$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.90	EDS
Total number of atoms	81894	wwPDB-VP
Average B, all atoms (Å ²)	147.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 30.61 % 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 1.2696e-03. 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: HEC, 6PE, SR, HEM, SMA, BOG, FES

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	0.22	0/3566	0.45	0/4892
1	E	0.22	0/3566	0.45	0/4892
1	K	0.23	0/3566	0.45	0/4892
1	O	0.23	0/3566	0.45	0/4892
1	S	0.22	0/3566	0.44	0/4892
1	W	0.22	0/3566	0.44	0/4892
2	B	0.20	0/2010	0.40	0/2733
2	F	0.20	0/2010	0.40	0/2733
2	L	0.19	0/2010	0.40	0/2733
2	P	0.20	0/2010	0.41	0/2733
2	T	0.19	0/2010	0.40	0/2733
2	X	0.19	0/2010	0.40	0/2733
3	C	0.22	0/1368	0.45	0/1865
3	G	0.22	0/1368	0.44	0/1865
3	M	0.22	0/1368	0.44	0/1865
3	Q	0.22	0/1368	0.44	0/1865
3	U	0.22	0/1368	0.44	0/1865
3	Y	0.22	0/1368	0.43	0/1865
All	All	0.21	0/41664	0.43	0/56940

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	3436	3405	3419	16	0
1	E	3436	3405	3419	10	0
1	K	3436	3405	3419	19	0
1	O	3436	3405	3419	18	0
1	S	3436	3405	3419	14	0
1	W	3436	3405	3419	14	0
2	B	1953	1839	1848	4	0
2	F	1953	1839	1848	3	0
2	L	1953	1839	1848	6	0
2	P	1953	1839	1848	3	0
2	T	1953	1839	1848	4	0
2	X	1953	1839	1848	3	0
3	C	1338	1295	1298	1	0
3	G	1338	1295	1298	2	0
3	M	1338	1295	1298	0	0
3	Q	1338	1295	1298	1	0
3	U	1338	1295	1298	1	0
3	Y	1338	1295	1298	2	0
4	A	86	60	60	3	0
4	E	86	60	60	3	0
4	K	86	60	60	5	0
4	O	86	60	60	4	0
4	S	86	60	60	4	0
4	W	86	60	60	3	0
5	A	37	42	42	0	0
5	E	37	42	42	1	0
5	K	37	42	42	1	0
5	O	37	42	42	1	0
5	S	37	42	42	0	0
5	W	37	42	42	0	0
6	A	27	33	33	0	0
6	E	27	33	33	0	0
6	W	27	33	33	0	0
7	B	43	32	30	1	0
7	F	43	32	30	4	0
7	L	43	32	30	1	0
7	P	43	32	30	0	0
7	T	43	32	30	2	0
7	X	43	32	30	1	0
8	B	1	0	0	0	0
8	F	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
8	L	1	0	0	0	0
8	P	1	0	0	0	0
8	T	1	0	0	0	0
8	X	1	0	0	0	0
9	B	20	28	28	1	0
9	F	20	28	28	0	0
9	L	20	28	28	0	0
9	P	20	28	28	0	0
9	T	20	28	28	0	0
9	X	20	28	28	0	0
10	C	4	0	0	0	0
10	G	4	0	0	0	0
10	M	4	0	0	0	0
10	Q	4	0	0	0	0
10	U	4	0	0	0	0
10	Y	4	0	0	0	0
All	All	41589	40305	40449	131	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 2.

All (131) 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:S:71:PRO:O	1:S:192:ASN:ND2	2.22	0.73
1:W:71:PRO:O	1:W:192:ASN:ND2	2.23	0.71
1:O:71:PRO:O	1:O:192:ASN:ND2	2.23	0.71
4:A:1002:HEM:HBC2	4:A:1002:HEM:HHH	1.72	0.70
1:K:71:PRO:O	1:K:192:ASN:ND2	2.24	0.70
7:L:1001:HEC:HBB3	7:L:1001:HEC:HMB3	1.74	0.70
4:K:1002:HEM:HBC2	4:K:1002:HEM:HHH	1.73	0.70
7:T:1001:HEC:HBB3	7:T:1001:HEC:HMB3	1.75	0.69
7:F:1001:HEC:HMC1	7:F:1001:HEC:HBC3	1.76	0.68
4:W:1002:HEM:HBC2	4:W:1002:HEM:HHH	1.76	0.67
7:X:1001:HEC:HBB3	7:X:1001:HEC:HMB3	1.75	0.67
7:B:1001:HEC:HMB3	7:B:1001:HEC:HBB3	1.76	0.66
1:S:123:ALA:O	1:S:355:ARG:NH1	2.29	0.66
7:F:1001:HEC:HMB3	7:F:1001:HEC:HBB3	1.77	0.66
1:S:379:TRP:NE1	2:T:114:MET:O	2.31	0.64
1:E:71:PRO:O	1:E:192:ASN:ND2	2.33	0.62
1:A:71:PRO:O	1:A:192:ASN:ND2	2.32	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:P:19:THR:HB	2:P:224:MET:HE3	1.82	0.62
1:A:130:ILE:HD11	1:A:348:TRP:HH2	1.66	0.60
1:E:130:ILE:HD11	1:E:348:TRP:HH2	1.67	0.59
1:A:64:VAL:HG11	1:A:93:LEU:HD13	1.85	0.58
2:F:19:THR:HB	2:F:224:MET:HE3	1.85	0.58
2:L:19:THR:HB	2:L:224:MET:HE3	1.85	0.57
4:O:1002:HEM:HMC1	4:O:1002:HEM:HBC2	1.86	0.57
4:E:1002:HEM:HMC1	4:E:1002:HEM:HBC2	1.86	0.57
1:K:232:THR:OG1	1:K:236:GLU:OE2	2.22	0.57
4:S:1002:HEM:HMC1	4:S:1002:HEM:HBC2	1.89	0.55
1:S:64:VAL:HG11	1:S:93:LEU:HD13	1.89	0.55
3:Q:47:LEU:HD22	3:Q:68:LEU:HD22	1.90	0.54
1:K:130:ILE:HD11	1:K:348:TRP:HH2	1.71	0.54
2:L:14:GLU:OE2	2:L:129:GLU:OE2	2.26	0.53
1:K:94:ARG:NH2	4:K:1002:HEM:O1A	2.43	0.52
1:W:130:ILE:HD11	1:W:348:TRP:HH2	1.75	0.52
1:S:47:TRP:CZ2	1:S:110:LEU:HD13	2.45	0.51
1:W:273:TYR:HA	2:X:125:ILE:HD11	1.93	0.51
1:E:232:THR:OG1	1:E:236:GLU:OE2	2.28	0.51
2:T:189:LEU:HD22	2:T:207:MET:HE2	1.91	0.51
1:O:108:VAL:HG21	1:O:139:MET:HE1	1.93	0.51
1:O:130:ILE:HD11	1:O:348:TRP:HH2	1.75	0.51
2:L:189:LEU:HD22	2:L:207:MET:HE2	1.93	0.50
1:S:266:ILE:HD12	1:S:270:MET:HE2	1.93	0.50
1:O:81:GLU:OE1	1:O:85:ARG:NE	2.45	0.50
1:E:64:VAL:HG11	1:E:93:LEU:HD13	1.92	0.50
1:O:306:ARG:NH2	1:O:383:GLN:O	2.44	0.50
1:K:46:ILE:HD12	1:K:255:ALA:HB1	1.94	0.49
4:O:1001:HEM:HBB2	4:O:1001:HEM:HMB1	1.95	0.49
1:K:64:VAL:HG11	1:K:93:LEU:HD13	1.93	0.49
3:C:47:LEU:HD22	3:C:68:LEU:HD22	1.94	0.48
1:K:266:ILE:HD12	1:K:270:MET:HE2	1.94	0.48
1:W:47:TRP:CZ2	1:W:110:LEU:HD13	2.48	0.48
3:Y:98:ALA:O	3:Y:114:ARG:NH1	2.46	0.48
4:W:1001:HEM:HBB2	4:W:1001:HEM:HMB1	1.96	0.47
1:O:354:VAL:HG21	1:O:417:PRO:CB	2.45	0.47
2:F:135:LEU:HD21	7:F:1001:HEC:CMB	2.45	0.47
3:G:47:LEU:HD22	3:G:68:LEU:HD22	1.96	0.47
4:S:1001:HEM:HBB2	4:S:1001:HEM:HMB1	1.97	0.47
4:A:1001:HEM:HMB1	4:A:1001:HEM:HBB2	1.97	0.46
2:F:135:LEU:HD21	7:F:1001:HEC:HMB1	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:T:220:GLU:OE2	2:T:226:ARG:NH1	2.47	0.46
1:K:215:ALA:HA	1:O:23:LEU:HD13	1.97	0.46
1:E:47:TRP:CZ2	1:E:110:LEU:HD13	2.51	0.46
3:Y:47:LEU:HD22	3:Y:68:LEU:HD22	1.98	0.46
1:A:121:TYR:OH	1:A:350:ASP:OD2	2.32	0.46
1:A:269:PHE:O	9:B:1003:BOG:O6	2.33	0.45
1:K:390:ASP:OD1	1:K:391:TRP:N	2.49	0.45
2:B:189:LEU:HD22	2:B:207:MET:HE2	1.97	0.45
1:S:199:TYR:CZ	4:S:1002:HEM:HBC1	2.50	0.45
1:O:281:ILE:HD11	2:P:107:ARG:HH12	1.82	0.45
2:T:40:HIS:CE1	7:T:1001:HEC:ND	2.83	0.45
4:K:1001:HEM:HBB2	4:K:1001:HEM:HMB1	1.99	0.45
1:W:46:ILE:HD12	1:W:255:ALA:HB1	1.97	0.44
1:E:390:ASP:OD1	1:E:391:TRP:N	2.50	0.44
1:A:390:ASP:OD1	1:A:391:TRP:N	2.50	0.44
1:W:266:ILE:HD12	1:W:270:MET:HE2	1.99	0.44
4:E:1001:HEM:HMB1	4:E:1001:HEM:HBB2	1.98	0.44
1:K:23:LEU:HD13	1:O:215:ALA:HA	1.99	0.44
1:O:47:TRP:CZ2	1:O:110:LEU:HD13	2.53	0.44
1:O:232:THR:OG1	1:O:236:GLU:OE2	2.36	0.43
1:E:108:VAL:HG21	1:E:139:MET:HE1	2.00	0.43
1:A:232:THR:OG1	1:A:236:GLU:OE2	2.36	0.43
3:U:47:LEU:HD22	3:U:68:LEU:HD22	1.99	0.43
4:O:1001:HEM:HMC1	4:O:1001:HEM:HBC2	1.99	0.43
1:K:376:ILE:O	1:K:380:VAL:HG22	2.18	0.43
1:O:390:ASP:OD1	1:O:391:TRP:N	2.52	0.43
1:W:232:THR:OG1	1:W:236:GLU:OE2	2.34	0.43
1:K:379:TRP:NE1	2:L:114:MET:O	2.48	0.43
1:W:72:HIS:O	1:W:76:ALA:N	2.49	0.43
1:E:64:VAL:CG1	1:E:93:LEU:HD13	2.49	0.43
1:S:149:LEU:HD12	4:S:1002:HEM:C3D	2.54	0.43
1:S:390:ASP:OD1	1:S:391:TRP:N	2.52	0.43
1:K:64:VAL:CG1	1:K:93:LEU:HD13	2.49	0.42
1:A:64:VAL:CG1	1:A:93:LEU:HD13	2.49	0.42
1:A:72:HIS:O	1:A:76:ALA:N	2.49	0.42
1:A:46:ILE:HD12	1:A:255:ALA:HB1	2.01	0.42
2:X:189:LEU:HD22	2:X:207:MET:HE2	2.00	0.42
1:A:165:LEU:HD13	1:A:336:MET:HE1	2.02	0.42
1:O:281:ILE:HD11	2:P:107:ARG:NH1	2.34	0.42
1:S:376:ILE:O	1:S:380:VAL:HG22	2.20	0.42
1:W:108:VAL:HG12	1:W:112:ILE:HD12	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:149:LEU:HD12	4:E:1002:HEM:C4D	2.54	0.42
1:K:199:TYR:CE2	4:K:1002:HEM:HBC1	2.55	0.42
1:S:72:HIS:O	1:S:76:ALA:N	2.49	0.42
1:W:390:ASP:OD1	1:W:391:TRP:N	2.52	0.42
1:S:64:VAL:CG1	1:S:93:LEU:HD13	2.50	0.41
1:K:306:ARG:NH2	1:K:383:GLN:O	2.46	0.41
1:K:354:VAL:HG21	1:K:417:PRO:CB	2.50	0.41
2:X:220:GLU:OE1	2:X:226:ARG:NH1	2.52	0.41
1:K:46:ILE:CD1	1:K:255:ALA:HB1	2.50	0.41
1:O:410:ILE:HG23	1:O:414:ILE:HD12	2.02	0.41
1:K:302:TYR:CE1	5:K:1003:SMA:H5	2.55	0.41
1:O:199:TYR:CZ	4:O:1002:HEM:HBC1	2.55	0.41
1:W:108:VAL:HG21	1:W:139:MET:HE1	2.03	0.41
2:B:19:THR:HB	2:B:224:MET:HE3	2.01	0.41
2:L:29:LEU:HD22	2:L:50:LEU:HD22	2.03	0.41
1:E:336:MET:HE3	5:E:1003:SMA:H32	2.01	0.41
1:A:81:GLU:OE1	1:A:85:ARG:NE	2.52	0.41
3:G:124:VAL:O	3:G:173:ILE:HG23	2.21	0.41
1:O:4:ILE:HG21	1:O:36:PRO:HG2	2.03	0.41
1:S:127:VAL:HG11	1:W:23:LEU:HD22	2.02	0.41
1:W:199:TYR:CE2	4:W:1002:HEM:HBC1	2.56	0.41
1:A:199:TYR:CE2	4:A:1002:HEM:HBC1	2.56	0.41
1:K:121:TYR:OH	1:K:350:ASP:OD2	2.39	0.41
1:A:92:MET:HE3	2:B:229:ALA:HB3	2.03	0.40
1:O:73:VAL:HG12	1:O:151:TRP:CE2	2.56	0.40
1:S:73:VAL:HG12	1:S:151:TRP:CE2	2.55	0.40
1:W:334:LEU:O	1:W:338:GLY:N	2.50	0.40
1:A:47:TRP:CZ2	1:A:110:LEU:HD13	2.55	0.40
1:A:281:ILE:HD11	2:B:107:ARG:HH12	1.86	0.40
4:K:1001:HEM:HMC1	4:K:1001:HEM:HBC2	2.04	0.40
2:L:220:GLU:OE2	2:L:226:ARG:NH1	2.51	0.40
1:O:161:VAL:HG11	5:O:1003:SMA:O4	2.22	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	426/445 (96%)	421 (99%)	5 (1%)	0	100	100
1	E	426/445 (96%)	421 (99%)	5 (1%)	0	100	100
1	K	426/445 (96%)	421 (99%)	5 (1%)	0	100	100
1	O	426/445 (96%)	421 (99%)	5 (1%)	0	100	100
1	S	426/445 (96%)	421 (99%)	5 (1%)	0	100	100
1	W	426/445 (96%)	421 (99%)	5 (1%)	0	100	100
2	B	254/272 (93%)	247 (97%)	7 (3%)	0	100	100
2	F	254/272 (93%)	247 (97%)	7 (3%)	0	100	100
2	L	254/272 (93%)	247 (97%)	7 (3%)	0	100	100
2	P	254/272 (93%)	247 (97%)	7 (3%)	0	100	100
2	T	254/272 (93%)	247 (97%)	7 (3%)	0	100	100
2	X	254/272 (93%)	247 (97%)	7 (3%)	0	100	100
3	C	177/187 (95%)	171 (97%)	6 (3%)	0	100	100
3	G	177/187 (95%)	171 (97%)	6 (3%)	0	100	100
3	M	177/187 (95%)	171 (97%)	6 (3%)	0	100	100
3	Q	177/187 (95%)	171 (97%)	6 (3%)	0	100	100
3	U	177/187 (95%)	171 (97%)	6 (3%)	0	100	100
3	Y	177/187 (95%)	171 (97%)	6 (3%)	0	100	100
All	All	5142/5424 (95%)	5034 (98%)	108 (2%)	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	354/367 (96%)	352 (99%)	2 (1%)	78	79
1	E	354/367 (96%)	352 (99%)	2 (1%)	78	79
1	K	354/367 (96%)	352 (99%)	2 (1%)	78	79
1	O	354/367 (96%)	352 (99%)	2 (1%)	78	79
1	S	354/367 (96%)	352 (99%)	2 (1%)	78	79
1	W	354/367 (96%)	352 (99%)	2 (1%)	78	79
2	B	203/216 (94%)	202 (100%)	1 (0%)	81	80
2	F	203/216 (94%)	202 (100%)	1 (0%)	81	80
2	L	203/216 (94%)	202 (100%)	1 (0%)	81	80
2	P	203/216 (94%)	202 (100%)	1 (0%)	81	80
2	T	203/216 (94%)	202 (100%)	1 (0%)	81	80
2	X	203/216 (94%)	202 (100%)	1 (0%)	81	80
3	C	138/144 (96%)	134 (97%)	4 (3%)	37	60
3	G	138/144 (96%)	134 (97%)	4 (3%)	37	60
3	M	138/144 (96%)	134 (97%)	4 (3%)	37	60
3	Q	138/144 (96%)	134 (97%)	4 (3%)	37	60
3	U	138/144 (96%)	134 (97%)	4 (3%)	37	60
3	Y	138/144 (96%)	134 (97%)	4 (3%)	37	60
All	All	4170/4362 (96%)	4128 (99%)	42 (1%)	68	75

All (42) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	407	ILE
1	A	414	ILE
2	B	136	THR
3	C	65	VAL
3	C	70	CYS
3	C	72	ILE
3	C	179	ILE
1	E	407	ILE
1	E	414	ILE
2	F	136	THR
3	G	65	VAL
3	G	70	CYS
3	G	72	ILE
3	G	179	ILE

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Mol	Chain	Res	Type
1	K	407	ILE
1	K	414	ILE
2	L	136	THR
3	M	65	VAL
3	M	70	CYS
3	M	72	ILE
3	M	179	ILE
1	O	407	ILE
1	O	414	ILE
2	P	136	THR
3	Q	65	VAL
3	Q	70	CYS
3	Q	72	ILE
3	Q	179	ILE
1	S	407	ILE
1	S	414	ILE
2	T	136	THR
3	U	65	VAL
3	U	70	CYS
3	U	72	ILE
3	U	179	ILE
1	W	407	ILE
1	W	414	ILE
2	X	136	THR
3	Y	65	VAL
3	Y	70	CYS
3	Y	72	ILE
3	Y	179	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (20) such sidechains are listed below:

Mol	Chain	Res	Type
2	B	248	ASN
3	C	39	ASN
3	C	92	GLN
1	E	20	HIS
2	F	205	HIS
3	G	92	GLN
2	L	24	GLN
2	L	69	GLN
2	L	88	HIS
1	O	192	ASN

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Mol	Chain	Res	Type
1	O	291	HIS
2	P	24	GLN
2	P	69	GLN
2	P	248	ASN
1	S	20	HIS
2	T	205	HIS
3	U	92	GLN
1	W	174	HIS
1	W	192	ASN
2	X	248	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 45 ligands modelled in this entry, 6 are monoatomic - leaving 39 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$
10	FES	Q	1001	3	0,4,4	-	-	-		
4	HEM	K	1001	1	50,50,50	1.45	8 (16%)	67,82,82	1.10	3 (4%)
4	HEM	K	1002	1	50,50,50	1.41	8 (16%)	67,82,82	1.15	4 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	HEM	E	1002	1	50,50,50	1.50	9 (18%)	67,82,82	1.15	3 (4%)
4	HEM	W	1001	1	50,50,50	1.44	7 (14%)	67,82,82	1.05	3 (4%)
5	SMA	S	1003	-	38,38,38	1.88	2 (5%)	47,52,52	1.62	9 (19%)
6	6PE	W	1004	-	26,26,26	0.56	0	29,31,31	0.71	1 (3%)
9	BOG	L	1003	-	20,20,20	0.87	0	25,25,25	0.98	0
5	SMA	W	1003	-	38,38,38	1.84	2 (5%)	47,52,52	1.58	9 (19%)
6	6PE	A	1004	-	26,26,26	0.56	0	29,31,31	0.68	1 (3%)
10	FES	U	1001	3	0,4,4	-	-	-		
7	HEC	B	1001	2	50,50,50	1.83	8 (16%)	68,82,82	1.27	3 (4%)
5	SMA	K	1003	-	38,38,38	1.85	2 (5%)	47,52,52	1.53	8 (17%)
10	FES	G	1001	3	0,4,4	-	-	-		
5	SMA	O	1003	-	38,38,38	1.93	3 (7%)	47,52,52	1.59	10 (21%)
10	FES	Y	1001	3	0,4,4	-	-	-		
7	HEC	L	1001	2	50,50,50	1.76	7 (14%)	68,82,82	1.21	2 (2%)
9	BOG	X	1003	-	20,20,20	0.89	0	25,25,25	0.94	0
4	HEM	A	1002	1	50,50,50	1.45	10 (20%)	67,82,82	1.22	5 (7%)
4	HEM	O	1002	1	50,50,50	1.41	8 (16%)	67,82,82	1.08	3 (4%)
6	6PE	E	1004	-	26,26,26	0.56	0	29,31,31	0.79	2 (6%)
10	FES	C	1001	3	0,4,4	-	-	-		
4	HEM	S	1002	1	50,50,50	1.36	8 (16%)	67,82,82	0.97	0
4	HEM	E	1001	1	50,50,50	1.45	9 (18%)	67,82,82	1.04	2 (2%)
4	HEM	A	1001	1	50,50,50	1.44	9 (18%)	67,82,82	1.05	3 (4%)
4	HEM	O	1001	1	50,50,50	1.47	9 (18%)	67,82,82	1.10	4 (5%)
7	HEC	F	1001	2	50,50,50	1.81	9 (18%)	68,82,82	1.25	3 (4%)
9	BOG	B	1003	-	20,20,20	0.88	0	25,25,25	0.93	0
9	BOG	P	1002	-	20,20,20	0.90	0	25,25,25	0.90	0
7	HEC	T	1001	2	50,50,50	1.89	8 (16%)	68,82,82	1.28	4 (5%)
5	SMA	E	1003	-	38,38,38	1.76	2 (5%)	47,52,52	1.65	10 (21%)
5	SMA	A	1003	-	38,38,38	1.89	2 (5%)	47,52,52	1.55	9 (19%)
9	BOG	T	1003	-	20,20,20	0.86	0	25,25,25	0.98	0
9	BOG	F	1002	-	20,20,20	0.87	0	25,25,25	0.92	0
7	HEC	X	1001	2	50,50,50	1.82	9 (18%)	68,82,82	1.26	5 (7%)
4	HEM	W	1002	1	50,50,50	1.45	10 (20%)	67,82,82	1.10	4 (5%)
7	HEC	P	1001	2	50,50,50	1.82	8 (16%)	68,82,82	1.28	4 (5%)
4	HEM	S	1001	1	50,50,50	1.53	9 (18%)	67,82,82	1.10	5 (7%)
10	FES	M	1001	3	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
10	FES	Q	1001	3	-	-	0/1/1/1
4	HEM	K	1001	1	-	2/14/54/54	-
4	HEM	K	1002	1	-	5/14/54/54	-
4	HEM	E	1002	1	-	2/14/54/54	-
4	HEM	W	1001	1	-	2/14/54/54	-
5	SMA	S	1003	-	-	5/34/34/34	0/2/2/2
6	6PE	W	1004	-	-	12/30/30/30	-
9	BOG	L	1003	-	-	2/11/31/31	0/1/1/1
5	SMA	W	1003	-	-	5/34/34/34	0/2/2/2
6	6PE	A	1004	-	-	19/30/30/30	-
10	FES	U	1001	3	-	-	0/1/1/1
7	HEC	B	1001	2	1/1/7/7	6/14/54/54	-
5	SMA	K	1003	-	-	5/34/34/34	0/2/2/2
10	FES	G	1001	3	-	-	0/1/1/1
5	SMA	O	1003	-	-	6/34/34/34	0/2/2/2
10	FES	Y	1001	3	-	-	0/1/1/1
7	HEC	L	1001	2	1/1/7/7	8/14/54/54	-
9	BOG	X	1003	-	-	4/11/31/31	0/1/1/1
4	HEM	A	1002	1	-	3/14/54/54	-
4	HEM	O	1002	1	-	2/14/54/54	-
6	6PE	E	1004	-	-	12/30/30/30	-
10	FES	C	1001	3	-	-	0/1/1/1
4	HEM	S	1002	1	-	2/14/54/54	-
4	HEM	E	1001	1	-	2/14/54/54	-
4	HEM	A	1001	1	-	2/14/54/54	-
4	HEM	O	1001	1	-	2/14/54/54	-
7	HEC	F	1001	2	1/1/7/7	8/14/54/54	-
9	BOG	B	1003	-	-	2/11/31/31	0/1/1/1
9	BOG	P	1002	-	-	3/11/31/31	0/1/1/1
7	HEC	T	1001	2	1/1/7/7	8/14/54/54	-
5	SMA	E	1003	-	-	5/34/34/34	0/2/2/2
5	SMA	A	1003	-	-	5/34/34/34	0/2/2/2
9	BOG	T	1003	-	-	0/11/31/31	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
9	BOG	F	1002	-	-	2/11/31/31	0/1/1/1
7	HEC	X	1001	2	1/1/7/7	6/14/54/54	-
4	HEM	W	1002	1	-	3/14/54/54	-
7	HEC	P	1001	2	1/1/7/7	6/14/54/54	-
4	HEM	S	1001	1	-	2/14/54/54	-
10	FES	M	1001	3	-	-	0/1/1/1

All (166) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	O	1003	SMA	C20-C19	9.76	1.40	1.33
5	S	1003	SMA	C20-C19	9.25	1.40	1.33
5	A	1003	SMA	C20-C19	9.16	1.40	1.33
5	K	1003	SMA	C20-C19	8.97	1.39	1.33
5	W	1003	SMA	C20-C19	8.92	1.39	1.33
5	E	1003	SMA	C20-C19	8.43	1.39	1.33
7	T	1001	HEC	C3D-C2D	7.97	1.54	1.36
7	X	1001	HEC	C3D-C2D	7.82	1.53	1.36
7	P	1001	HEC	C3D-C2D	7.82	1.53	1.36
7	L	1001	HEC	C3D-C2D	7.81	1.53	1.36
7	B	1001	HEC	C3D-C2D	7.81	1.53	1.36
7	F	1001	HEC	C3D-C2D	7.77	1.53	1.36
7	T	1001	HEC	FE-NB	5.19	2.10	1.94
4	E	1002	HEM	FE-ND	5.14	2.10	1.94
4	S	1001	HEM	FE-NA	4.95	2.11	1.95
7	B	1001	HEC	FE-NB	4.84	2.09	1.94
7	P	1001	HEC	FE-NB	4.82	2.09	1.94
7	L	1001	HEC	FE-ND	4.53	2.08	1.94
7	X	1001	HEC	FE-NC	4.45	2.09	1.95
7	X	1001	HEC	FE-ND	4.41	2.08	1.94
7	F	1001	HEC	FE-ND	4.41	2.08	1.94
7	T	1001	HEC	FE-NA	4.30	2.09	1.95
4	E	1001	HEM	FE-NB	4.27	2.08	1.94
4	A	1001	HEM	FE-NB	4.22	2.07	1.94
4	S	1001	HEM	FE-NB	4.14	2.07	1.94
4	K	1001	HEM	FE-NB	4.11	2.07	1.94
4	W	1001	HEM	FE-NC	4.04	2.08	1.95
4	O	1001	HEM	FE-NB	4.00	2.07	1.94
7	B	1001	HEC	FE-NA	4.00	2.08	1.95
7	T	1001	HEC	FE-ND	3.99	2.07	1.94
7	P	1001	HEC	FE-NA	3.96	2.08	1.95

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	K	1001	HEM	FE-NC	3.96	2.08	1.95
4	S	1002	HEM	FE-NB	3.94	2.07	1.94
4	W	1001	HEM	FE-NB	3.87	2.06	1.94
7	P	1001	HEC	FE-ND	3.85	2.06	1.94
7	F	1001	HEC	FE-NA	3.85	2.07	1.95
4	W	1002	HEM	FE-NB	3.85	2.06	1.94
7	F	1001	HEC	FE-NB	3.85	2.06	1.94
4	K	1002	HEM	FE-NB	3.79	2.06	1.94
5	A	1003	SMA	C3-C2	3.78	1.41	1.34
4	E	1002	HEM	FE-NA	3.72	2.07	1.95
4	W	1002	HEM	FE-NC	3.69	2.07	1.95
7	X	1001	HEC	FE-NB	3.67	2.06	1.94
4	A	1002	HEM	FE-NC	3.64	2.07	1.95
4	O	1002	HEM	FE-NC	3.63	2.07	1.95
4	O	1001	HEM	FE-NA	3.63	2.07	1.95
4	E	1001	HEM	FE-NC	3.58	2.07	1.95
7	B	1001	HEC	FE-ND	3.52	2.05	1.94
7	L	1001	HEC	FE-NC	3.51	2.06	1.95
4	A	1002	HEM	FE-NA	3.45	2.06	1.95
5	K	1003	SMA	C3-C2	3.38	1.41	1.34
4	O	1001	HEM	FE-NC	3.38	2.06	1.95
4	A	1002	HEM	FE-ND	3.38	2.05	1.94
5	O	1003	SMA	C3-C2	3.35	1.41	1.34
5	S	1003	SMA	C3-C2	3.34	1.41	1.34
4	A	1001	HEM	FE-NC	3.33	2.06	1.95
4	K	1002	HEM	CAC-C3C	3.29	1.56	1.47
5	W	1003	SMA	C3-C2	3.28	1.40	1.34
4	K	1002	HEM	FE-NA	3.27	2.05	1.95
4	S	1001	HEM	CAB-C3B	3.27	1.56	1.47
4	K	1001	HEM	CAB-C3B	3.20	1.55	1.47
4	O	1002	HEM	FE-ND	3.18	2.04	1.94
4	W	1001	HEM	CAB-C3B	3.17	1.55	1.47
4	O	1002	HEM	FE-NB	3.15	2.04	1.94
4	O	1001	HEM	CAC-C3C	3.13	1.55	1.47
4	A	1001	HEM	CAC-C3C	3.13	1.55	1.47
4	O	1001	HEM	CAB-C3B	3.11	1.55	1.47
5	E	1003	SMA	C3-C2	3.10	1.40	1.34
4	S	1001	HEM	CAC-C3C	3.09	1.55	1.47
4	W	1002	HEM	CAC-C3C	3.09	1.55	1.47
4	W	1002	HEM	CAB-C3B	3.09	1.55	1.47
4	E	1001	HEM	CAC-C3C	3.06	1.55	1.47
4	E	1001	HEM	CAB-C3B	3.02	1.55	1.47

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	E	1002	HEM	CAB-C3B	2.99	1.55	1.47
4	A	1001	HEM	CAB-C3B	2.98	1.55	1.47
4	O	1002	HEM	CAB-C3B	2.97	1.55	1.47
4	A	1002	HEM	CAC-C3C	2.96	1.55	1.47
4	A	1002	HEM	CAB-C3B	2.96	1.55	1.47
4	O	1002	HEM	CAC-C3C	2.95	1.55	1.47
4	A	1001	HEM	FE-NA	2.94	2.04	1.95
4	S	1002	HEM	CAB-C3B	2.93	1.55	1.47
7	L	1001	HEC	FE-NB	2.91	2.03	1.94
4	E	1002	HEM	CAC-C3C	2.84	1.55	1.47
4	S	1002	HEM	CAC-C3C	2.83	1.54	1.47
4	A	1002	HEM	FE-NB	2.82	2.03	1.94
4	K	1001	HEM	CAC-C3C	2.82	1.54	1.47
4	K	1002	HEM	CAB-C3B	2.76	1.54	1.47
4	W	1001	HEM	CAC-C3C	2.74	1.54	1.47
7	T	1001	HEC	FE-NC	2.67	2.04	1.95
7	B	1001	HEC	FE-NC	2.66	2.03	1.95
4	E	1002	HEM	FE-NB	2.64	2.03	1.94
4	K	1002	HEM	FE-ND	2.63	2.03	1.94
7	F	1001	HEC	FE-NC	2.60	2.03	1.95
4	K	1001	HEM	FE-NA	2.59	2.03	1.95
4	E	1001	HEM	FE-NA	2.59	2.03	1.95
4	S	1002	HEM	FE-NC	2.55	2.03	1.95
4	W	1001	HEM	CMB-C2B	2.54	1.56	1.50
4	K	1001	HEM	CMB-C2B	2.53	1.56	1.50
4	S	1001	HEM	FE-ND	2.51	2.02	1.94
4	E	1002	HEM	FE-NC	2.45	2.03	1.95
7	T	1001	HEC	CMC-C2C	2.43	1.55	1.50
4	K	1002	HEM	FE-NC	2.43	2.03	1.95
4	A	1001	HEM	CMB-C2B	2.41	1.55	1.50
4	O	1001	HEM	CMB-C2B	2.40	1.55	1.50
7	P	1001	HEC	CMC-C2C	2.38	1.55	1.50
7	X	1001	HEC	CMC-C2C	2.38	1.55	1.50
7	F	1001	HEC	CMC-C2C	2.36	1.55	1.50
7	P	1001	HEC	FE-NC	2.36	2.02	1.95
4	W	1002	HEM	FE-ND	2.35	2.02	1.94
7	L	1001	HEC	CMC-C2C	2.32	1.55	1.50
4	E	1001	HEM	CMB-C2B	2.31	1.55	1.50
7	B	1001	HEC	CMC-C2C	2.30	1.55	1.50
7	F	1001	HEC	CMB-C2B	2.30	1.55	1.50
7	B	1001	HEC	CMB-C2B	2.25	1.55	1.50
4	W	1001	HEM	FE-NA	2.25	2.02	1.95

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	S	1001	HEM	CMC-C2C	2.25	1.55	1.50
4	E	1002	HEM	CMC-C2C	2.25	1.55	1.50
4	E	1002	HEM	CMB-C2B	2.24	1.55	1.50
7	T	1001	HEC	CMB-C2B	2.22	1.55	1.50
4	A	1002	HEM	CMA-C3A	2.22	1.55	1.50
4	W	1002	HEM	CMB-C2B	2.22	1.55	1.50
4	K	1002	HEM	CMD-C2D	2.21	1.55	1.50
4	S	1001	HEM	CMB-C2B	2.21	1.55	1.50
4	K	1001	HEM	CMC-C2C	2.21	1.55	1.50
4	S	1002	HEM	CMD-C2D	2.20	1.55	1.50
7	B	1001	HEC	CMA-C3A	2.20	1.55	1.50
4	A	1002	HEM	CMB-C2B	2.18	1.55	1.50
4	W	1002	HEM	CMA-C3A	2.17	1.55	1.50
4	W	1002	HEM	CMD-C2D	2.17	1.55	1.50
4	S	1002	HEM	FE-NA	2.17	2.02	1.95
4	S	1002	HEM	CMB-C2B	2.16	1.55	1.50
4	A	1002	HEM	CMD-C2D	2.16	1.55	1.50
4	E	1001	HEM	CMD-C2D	2.16	1.55	1.50
4	W	1002	HEM	FE-NA	2.16	2.02	1.95
4	K	1001	HEM	CMA-C3A	2.16	1.55	1.50
4	S	1001	HEM	CMD-C2D	2.16	1.55	1.50
7	L	1001	HEC	FE-NA	2.15	2.02	1.95
4	O	1002	HEM	CMB-C2B	2.14	1.55	1.50
4	W	1001	HEM	CMA-C3A	2.14	1.55	1.50
4	O	1001	HEM	CMC-C2C	2.13	1.55	1.50
7	T	1001	HEC	CMA-C3A	2.13	1.55	1.50
4	A	1001	HEM	CMA-C3A	2.13	1.55	1.50
4	O	1002	HEM	CMD-C2D	2.12	1.55	1.50
4	W	1002	HEM	CMC-C2C	2.12	1.55	1.50
7	X	1001	HEC	CMB-C2B	2.12	1.55	1.50
4	O	1001	HEM	CMD-C2D	2.11	1.55	1.50
4	E	1001	HEM	CMA-C3A	2.10	1.55	1.50
4	S	1001	HEM	FE-NC	2.10	2.02	1.95
4	E	1002	HEM	CMA-C3A	2.10	1.55	1.50
4	S	1002	HEM	CMC-C2C	2.09	1.55	1.50
7	F	1001	HEC	CMA-C3A	2.09	1.55	1.50
4	A	1001	HEM	CMC-C2C	2.08	1.55	1.50
4	O	1002	HEM	CMC-C2C	2.08	1.55	1.50
4	O	1001	HEM	C2A-C3A	-2.08	1.33	1.38
4	A	1001	HEM	CMD-C2D	2.08	1.55	1.50
7	X	1001	HEC	FE-NA	2.07	2.02	1.95
7	P	1001	HEC	CMB-C2B	2.06	1.55	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	P	1001	HEC	CMD-C2D	2.06	1.55	1.50
7	X	1001	HEC	CMD-C2D	2.06	1.55	1.50
7	L	1001	HEC	CMD-C2D	2.05	1.55	1.50
5	O	1003	SMA	C17-C18	2.05	1.40	1.34
4	E	1001	HEM	CMC-C2C	2.04	1.55	1.50
4	A	1002	HEM	CMC-C2C	2.03	1.54	1.50
4	K	1002	HEM	CMC-C2C	2.02	1.54	1.50
7	X	1001	HEC	CMA-C3A	2.02	1.54	1.50
7	F	1001	HEC	CMD-C2D	2.01	1.54	1.50

All (119) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	T	1001	HEC	C1D-ND-C4D	5.62	111.87	105.21
7	B	1001	HEC	C1D-ND-C4D	5.58	111.82	105.21
7	P	1001	HEC	C1D-ND-C4D	5.40	111.61	105.21
7	X	1001	HEC	C1D-ND-C4D	5.27	111.44	105.21
7	F	1001	HEC	C1D-ND-C4D	5.20	111.37	105.21
7	L	1001	HEC	C1D-ND-C4D	5.17	111.33	105.21
5	E	1003	SMA	O5-C5-C4A	4.45	122.14	115.84
5	W	1003	SMA	C5M-O5-C5	-4.40	111.06	117.51
5	K	1003	SMA	C5M-O5-C5	-4.18	111.38	117.51
5	W	1003	SMA	O5-C5-C4A	4.14	121.71	115.84
5	S	1003	SMA	O5-C5-C4A	4.12	121.68	115.84
5	E	1003	SMA	C5M-O5-C5	-4.12	111.47	117.51
5	A	1003	SMA	C5M-O5-C5	-4.06	111.56	117.51
5	A	1003	SMA	O5-C5-C4A	3.99	121.50	115.84
5	S	1003	SMA	O7-C7-C8	3.96	118.67	114.53
5	O	1003	SMA	C5M-O5-C5	-3.87	111.83	117.51
5	K	1003	SMA	O5-C5-C4A	3.86	121.31	115.84
5	O	1003	SMA	O5-C5-C4A	3.85	121.30	115.84
5	O	1003	SMA	O7-C7-C8	3.83	118.54	114.53
5	S	1003	SMA	O1-C2-C3	-3.73	118.53	121.81
5	S	1003	SMA	C5M-O5-C5	-3.65	112.15	117.51
5	E	1003	SMA	O5-C5-C6	-3.59	117.89	124.08
5	A	1003	SMA	O1-C2-C3	-3.56	118.68	121.81
5	W	1003	SMA	O5-C5-C6	-3.48	118.08	124.08
5	S	1003	SMA	O5-C5-C6	-3.37	118.27	124.08
5	O	1003	SMA	O5-C5-C6	-3.37	118.28	124.08
5	E	1003	SMA	O1-C2-C3	-3.26	118.95	121.81
5	A	1003	SMA	O5-C5-C6	-3.23	118.51	124.08
5	K	1003	SMA	O7-C7-C8	3.23	117.91	114.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	K	1003	SMA	O5-C5-C6	-3.20	118.57	124.08
5	O	1003	SMA	C22-C11-C10	3.18	115.26	110.34
5	W	1003	SMA	O1-C2-C3	-3.15	119.04	121.81
5	E	1003	SMA	O7-C7-C8	3.11	117.78	114.53
5	E	1003	SMA	O1-C2-C9	3.10	116.70	110.12
5	K	1003	SMA	O1-C2-C3	-3.05	119.13	121.81
5	S	1003	SMA	O1-C2-C9	3.03	116.55	110.12
5	W	1003	SMA	O7-C7-C8	3.02	117.69	114.53
5	K	1003	SMA	O1-C2-C9	2.98	116.44	110.12
5	W	1003	SMA	O1-C2-C9	2.95	116.38	110.12
5	A	1003	SMA	O7-C7-C8	2.95	117.61	114.53
5	O	1003	SMA	O1-C2-C3	-2.94	119.23	121.81
4	O	1001	HEM	C4D-ND-C1D	2.90	108.64	105.21
4	A	1002	HEM	CHD-C1D-ND	2.87	127.51	124.42
4	A	1001	HEM	C4D-ND-C1D	2.84	108.57	105.21
4	S	1001	HEM	C4D-ND-C1D	2.79	108.51	105.21
5	A	1003	SMA	O1-C2-C9	2.73	115.92	110.12
5	E	1003	SMA	C22-C11-C10	2.67	114.47	110.34
4	K	1001	HEM	C4D-ND-C1D	2.65	108.35	105.21
4	E	1002	HEM	C1B-NB-C4B	2.63	108.32	105.21
4	W	1001	HEM	C4D-ND-C1D	2.59	108.28	105.21
5	O	1003	SMA	O1-C2-C9	2.55	115.53	110.12
5	W	1003	SMA	C22-C11-C12	-2.51	107.05	111.14
4	E	1001	HEM	C4D-ND-C1D	2.50	108.17	105.21
7	X	1001	HEC	C2A-C1A-NA	-2.48	107.93	110.32
5	W	1003	SMA	C22-C11-C10	2.40	114.06	110.34
4	A	1002	HEM	C4D-ND-C1D	2.40	108.05	105.21
4	A	1002	HEM	C1B-NB-C4B	2.38	108.03	105.21
5	E	1003	SMA	C14-C15-C16	-2.38	121.06	125.88
4	K	1001	HEM	CHA-C4D-ND	2.37	127.29	124.37
4	O	1002	HEM	C1B-NB-C4B	2.36	108.00	105.21
5	S	1003	SMA	C22-C11-C10	2.35	113.97	110.34
4	O	1002	HEM	C3B-C2B-C1B	2.33	108.16	106.41
7	P	1001	HEC	CAA-CBA-CGA	-2.32	107.51	113.67
5	W	1003	SMA	C14-C15-C16	-2.32	121.18	125.88
4	E	1002	HEM	C4D-ND-C1D	2.31	107.94	105.21
4	W	1001	HEM	C3D-C4D-ND	-2.30	107.64	110.17
5	E	1003	SMA	C16-C17-C18	-2.30	119.20	124.65
5	A	1003	SMA	C16-C17-C18	-2.30	119.22	124.65
4	K	1002	HEM	C2A-C1A-NA	-2.28	107.62	110.15
5	A	1003	SMA	C22-C11-C10	2.27	113.85	110.34
7	F	1001	HEC	C4B-NB-C1B	2.26	107.89	105.21

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	O	1003	SMA	C14-C15-C16	-2.26	121.30	125.88
5	E	1003	SMA	C22-C11-C12	-2.25	107.47	111.14
5	S	1003	SMA	C14-C15-C16	-2.25	121.33	125.88
4	O	1001	HEM	C3D-C4D-ND	-2.25	107.71	110.17
4	K	1002	HEM	C4D-ND-C1D	2.24	107.86	105.21
5	A	1003	SMA	C14-C15-C16	-2.24	121.35	125.88
7	P	1001	HEC	C2A-C1A-NA	-2.23	108.17	110.32
4	S	1001	HEM	C3D-C4D-ND	-2.23	107.72	110.17
4	E	1002	HEM	C2A-C1A-NA	-2.22	107.69	110.15
6	A	1004	6PE	O1-P1-O2	2.22	122.75	112.44
5	K	1003	SMA	C16-C17-C18	-2.22	119.41	124.65
4	W	1002	HEM	CHD-C1D-ND	2.22	126.81	124.42
7	T	1001	HEC	C2A-C1A-NA	-2.21	108.19	110.32
7	T	1001	HEC	C3C-C4C-NC	-2.21	107.70	110.15
5	S	1003	SMA	C16-C17-C18	-2.21	119.43	124.65
7	X	1001	HEC	CAA-CBA-CGA	-2.20	107.83	113.67
4	W	1001	HEM	C2A-C1A-NA	-2.20	107.71	110.15
5	O	1003	SMA	C22-C11-C12	-2.18	107.58	111.14
4	S	1001	HEM	C3B-C2B-C1B	2.18	108.05	106.41
7	P	1001	HEC	C4B-NB-C1B	2.18	107.78	105.21
7	T	1001	HEC	C4B-NB-C1B	2.17	107.77	105.21
4	A	1001	HEM	C3D-C4D-ND	-2.15	107.82	110.17
4	W	1002	HEM	CAC-C3C-C4C	2.14	129.93	124.82
7	X	1001	HEC	C4B-NB-C1B	2.13	107.73	105.21
4	A	1002	HEM	C3D-C4D-ND	-2.12	107.85	110.17
4	W	1002	HEM	C4D-ND-C1D	2.12	107.71	105.21
4	S	1001	HEM	C1B-NB-C4B	2.11	107.71	105.21
6	E	1004	6PE	C2-O6-C10	2.08	122.78	117.80
4	O	1001	HEM	C1B-NB-C4B	2.07	107.66	105.21
4	K	1002	HEM	CAC-C3C-C4C	2.07	129.76	124.82
4	K	1001	HEM	C3D-C4D-ND	-2.07	107.91	110.17
7	B	1001	HEC	C4B-NB-C1B	2.06	107.65	105.21
6	E	1004	6PE	O1-P1-O2	2.06	122.04	112.44
7	B	1001	HEC	C2A-C1A-NA	-2.06	108.33	110.32
5	K	1003	SMA	C14-C15-C16	-2.06	121.71	125.88
4	K	1002	HEM	CHD-C1D-ND	2.05	126.63	124.42
7	F	1001	HEC	C2A-C1A-NA	-2.05	108.34	110.32
7	L	1001	HEC	C2A-C1A-NA	-2.05	108.34	110.32
4	A	1002	HEM	CHD-C4C-C3C	2.03	128.64	125.21
4	A	1001	HEM	C2D-C1D-ND	-2.03	107.56	109.90
4	S	1001	HEM	C2D-C1D-ND	-2.03	107.56	109.90
4	O	1001	HEM	C2D-C1D-ND	-2.02	107.57	109.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	W	1004	6PE	O1-P1-O2	2.02	121.85	112.44
5	O	1003	SMA	C16-C17-C18	-2.01	119.90	124.65
4	E	1001	HEM	C3D-C4D-ND	-2.01	107.97	110.17
7	X	1001	HEC	CAD-C3D-C4D	2.01	128.19	124.70
4	O	1002	HEM	C4D-ND-C1D	2.01	107.58	105.21
4	W	1002	HEM	C1B-NB-C4B	2.00	107.58	105.21

All (6) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
7	B	1001	HEC	NA
7	F	1001	HEC	NA
7	L	1001	HEC	NA
7	P	1001	HEC	NA
7	T	1001	HEC	NA
7	X	1001	HEC	NA

All (158) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	A	1004	6PE	C16-O8-P1-O1
6	A	1004	6PE	C16-O8-P1-O2
6	A	1004	6PE	C16-O8-P1-O3
6	A	1004	6PE	O8-C16-C17-N1
6	E	1004	6PE	C1-O3-P1-O2
6	E	1004	6PE	O6-C2-C3-O4
6	W	1004	6PE	C1-O3-P1-O1
6	W	1004	6PE	C1-O3-P1-O2
6	W	1004	6PE	C1-O3-P1-O8
6	W	1004	6PE	O6-C2-C3-O4
7	B	1001	HEC	C4C-C3C-CAC-CBC
7	L	1001	HEC	C4C-C3C-CAC-CBC
7	P	1001	HEC	C4C-C3C-CAC-CBC
7	T	1001	HEC	C4C-C3C-CAC-CBC
7	X	1001	HEC	C4C-C3C-CAC-CBC
7	F	1001	HEC	C4C-C3C-CAC-CBC
9	L	1003	BOG	C4-C5-C6-O6
9	F	1002	BOG	C4-C5-C6-O6
7	F	1001	HEC	C2C-C3C-CAC-CBC
7	B	1001	HEC	C2C-C3C-CAC-CBC
7	L	1001	HEC	C2C-C3C-CAC-CBC
7	P	1001	HEC	C2C-C3C-CAC-CBC

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Mol	Chain	Res	Type	Atoms
7	T	1001	HEC	C2C-C3C-CAC-CBC
7	X	1001	HEC	C2C-C3C-CAC-CBC
9	L	1003	BOG	O5-C5-C6-O6
6	W	1004	6PE	C5-C4-O4-C3
9	F	1002	BOG	O5-C5-C6-O6
9	P	1002	BOG	C4-C5-C6-O6
6	W	1004	6PE	O5-C4-O4-C3
6	A	1004	6PE	C5-C4-O4-C3
6	E	1004	6PE	C5-C4-O4-C3
7	L	1001	HEC	C2B-C3B-CAB-CBB
9	P	1002	BOG	O5-C5-C6-O6
7	X	1001	HEC	C2B-C3B-CAB-CBB
7	F	1001	HEC	C2B-C3B-CAB-CBB
7	T	1001	HEC	C2B-C3B-CAB-CBB
7	B	1001	HEC	C2B-C3B-CAB-CBB
7	P	1001	HEC	C2B-C3B-CAB-CBB
5	W	1003	SMA	C6-C5-O5-C5M
5	A	1003	SMA	C6-C5-O5-C5M
5	E	1003	SMA	C6-C5-O5-C5M
5	K	1003	SMA	C6-C5-O5-C5M
5	O	1003	SMA	C6-C5-O5-C5M
5	S	1003	SMA	C6-C5-O5-C5M
6	A	1004	6PE	O5-C4-O4-C3
6	E	1004	6PE	O5-C4-O4-C3
5	E	1003	SMA	C4A-C5-O5-C5M
5	K	1003	SMA	C4A-C5-O5-C5M
5	O	1003	SMA	C4A-C5-O5-C5M
5	S	1003	SMA	C4A-C5-O5-C5M
5	W	1003	SMA	C4A-C5-O5-C5M
5	A	1003	SMA	C4A-C5-O5-C5M
7	L	1001	HEC	C4B-C3B-CAB-CBB
7	X	1001	HEC	C4B-C3B-CAB-CBB
5	K	1003	SMA	C8-C7-O7-C7M
5	W	1003	SMA	C8-C7-O7-C7M
5	A	1003	SMA	C8-C7-O7-C7M
5	S	1003	SMA	C8-C7-O7-C7M
7	F	1001	HEC	C4B-C3B-CAB-CBB
5	O	1003	SMA	C8-C7-O7-C7M
9	X	1003	BOG	C2'-C3'-C4'-C5'
5	E	1003	SMA	C8-C7-O7-C7M
9	X	1003	BOG	C4'-C5'-C6'-C7'
7	T	1001	HEC	C4B-C3B-CAB-CBB

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Mol	Chain	Res	Type	Atoms
9	X	1003	BOG	O5-C1-O1-C1'
7	B	1001	HEC	C4B-C3B-CAB-CBB
7	P	1001	HEC	C4B-C3B-CAB-CBB
5	E	1003	SMA	C9-C10-C11-C22
5	W	1003	SMA	C9-C10-C11-C22
6	E	1004	6PE	O3-C1-C2-C3
6	W	1004	6PE	C11-C10-O6-C2
5	K	1003	SMA	C6-C7-O7-C7M
5	W	1003	SMA	C6-C7-O7-C7M
6	A	1004	6PE	C1-C2-C3-O4
6	E	1004	6PE	C1-C2-C3-O4
6	W	1004	6PE	C1-C2-C3-O4
5	A	1003	SMA	C6-C7-O7-C7M
5	O	1003	SMA	C6-C7-O7-C7M
5	S	1003	SMA	C6-C7-O7-C7M
5	E	1003	SMA	C6-C7-O7-C7M
6	A	1004	6PE	O6-C2-C3-O4
5	A	1003	SMA	C9-C10-C11-C22
6	W	1004	6PE	C10-C11-C12-C13
6	A	1004	6PE	C4-C5-C6-C7
6	A	1004	6PE	C10-C11-C12-C13
6	E	1004	6PE	C10-C11-C12-C13
5	K	1003	SMA	C9-C10-C11-C22
9	P	1002	BOG	C4'-C5'-C6'-C7'
6	E	1004	6PE	O3-C1-C2-O6
5	S	1003	SMA	C9-C10-C11-C22
6	A	1004	6PE	C11-C10-O6-C2
5	O	1003	SMA	C9-C10-C11-C22
6	W	1004	6PE	O7-C10-O6-C2
4	A	1002	HEM	C4C-C3C-CAC-CBC
4	K	1002	HEM	C4C-C3C-CAC-CBC
4	W	1002	HEM	C4C-C3C-CAC-CBC
9	X	1003	BOG	C2-C1-O1-C1'
6	A	1004	6PE	O7-C10-O6-C2
6	E	1004	6PE	C1-O3-P1-O8
6	E	1004	6PE	O8-C16-C17-N1
6	E	1004	6PE	O4-C4-C5-C6
9	B	1003	BOG	O5-C5-C6-O6
4	S	1001	HEM	CAA-CBA-CGA-O1A
4	A	1001	HEM	CAA-CBA-CGA-O1A
4	O	1001	HEM	CAA-CBA-CGA-O1A
4	E	1001	HEM	CAA-CBA-CGA-O1A

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Mol	Chain	Res	Type	Atoms
4	W	1001	HEM	CAA-CBA-CGA-O1A
4	K	1001	HEM	CAA-CBA-CGA-O1A
4	K	1002	HEM	CAA-CBA-CGA-O2A
4	K	1002	HEM	CAA-CBA-CGA-O1A
7	T	1001	HEC	CAD-CBD-CGD-O2D
7	L	1001	HEC	CAD-CBD-CGD-O2D
7	F	1001	HEC	CAD-CBD-CGD-O2D
4	E	1001	HEM	CAA-CBA-CGA-O2A
4	O	1001	HEM	CAA-CBA-CGA-O2A
4	W	1001	HEM	CAA-CBA-CGA-O2A
4	A	1001	HEM	CAA-CBA-CGA-O2A
4	K	1001	HEM	CAA-CBA-CGA-O2A
4	S	1001	HEM	CAA-CBA-CGA-O2A
4	K	1002	HEM	CAD-CBD-CGD-O1D
6	A	1004	6PE	O3-C1-C2-O6
4	S	1002	HEM	CAD-CBD-CGD-O1D
4	W	1002	HEM	CAD-CBD-CGD-O1D
4	A	1002	HEM	CAD-CBD-CGD-O1D
7	T	1001	HEC	CAD-CBD-CGD-O1D
6	E	1004	6PE	C12-C13-C14-C15
7	L	1001	HEC	CAA-CBA-CGA-O2A
7	P	1001	HEC	CAA-CBA-CGA-O2A
7	F	1001	HEC	CAD-CBD-CGD-O1D
7	L	1001	HEC	CAD-CBD-CGD-O1D
7	B	1001	HEC	CAA-CBA-CGA-O2A
7	T	1001	HEC	CAA-CBA-CGA-O2A
7	X	1001	HEC	CAA-CBA-CGA-O2A
4	O	1002	HEM	CAD-CBD-CGD-O1D
7	F	1001	HEC	CAA-CBA-CGA-O2A
4	E	1002	HEM	CAD-CBD-CGD-O1D
7	B	1001	HEC	CAA-CBA-CGA-O1A
7	L	1001	HEC	CAA-CBA-CGA-O1A
7	P	1001	HEC	CAA-CBA-CGA-O1A
7	T	1001	HEC	CAA-CBA-CGA-O1A
7	F	1001	HEC	CAA-CBA-CGA-O1A
7	X	1001	HEC	CAA-CBA-CGA-O1A
4	K	1002	HEM	CAD-CBD-CGD-O2D
6	A	1004	6PE	C5-C6-C7-C8
4	E	1002	HEM	CAD-CBD-CGD-O2D
4	O	1002	HEM	CAD-CBD-CGD-O2D
4	S	1002	HEM	CAD-CBD-CGD-O2D
4	W	1002	HEM	CAD-CBD-CGD-O2D

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Mol	Chain	Res	Type	Atoms
4	A	1002	HEM	CAD-CBD-CGD-O2D
6	W	1004	6PE	O6-C10-C11-C12
6	A	1004	6PE	O6-C10-C11-C12
6	A	1004	6PE	O4-C4-C5-C6
9	B	1003	BOG	C4-C5-C6-O6
6	W	1004	6PE	O7-C10-C11-C12
6	A	1004	6PE	O5-C4-C5-C6
6	A	1004	6PE	O7-C10-C11-C12
6	A	1004	6PE	O3-C1-C2-C3
5	O	1003	SMA	C11-C10-C9-C2

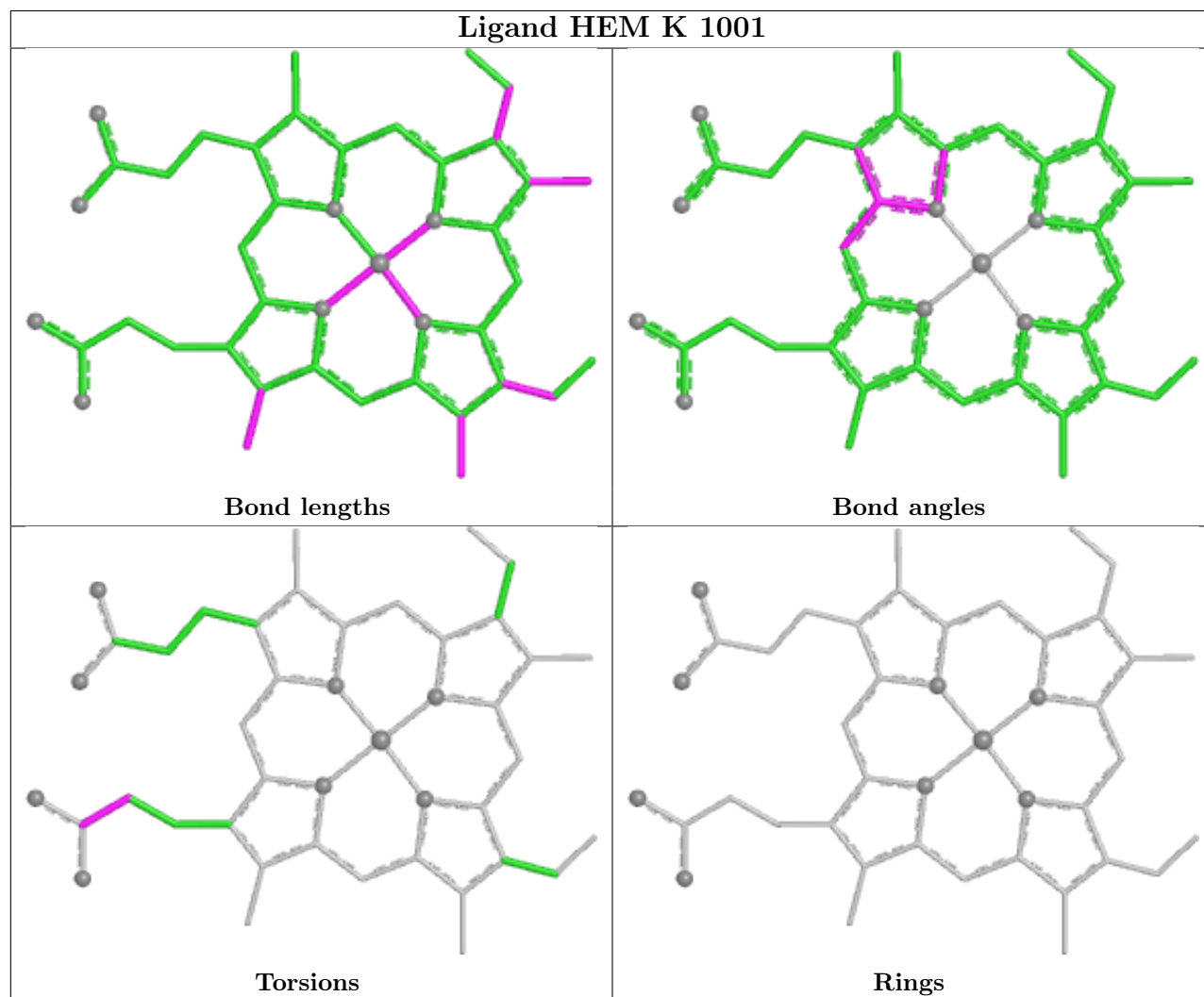
There are no ring outliers.

21 monomers are involved in 35 short contacts:

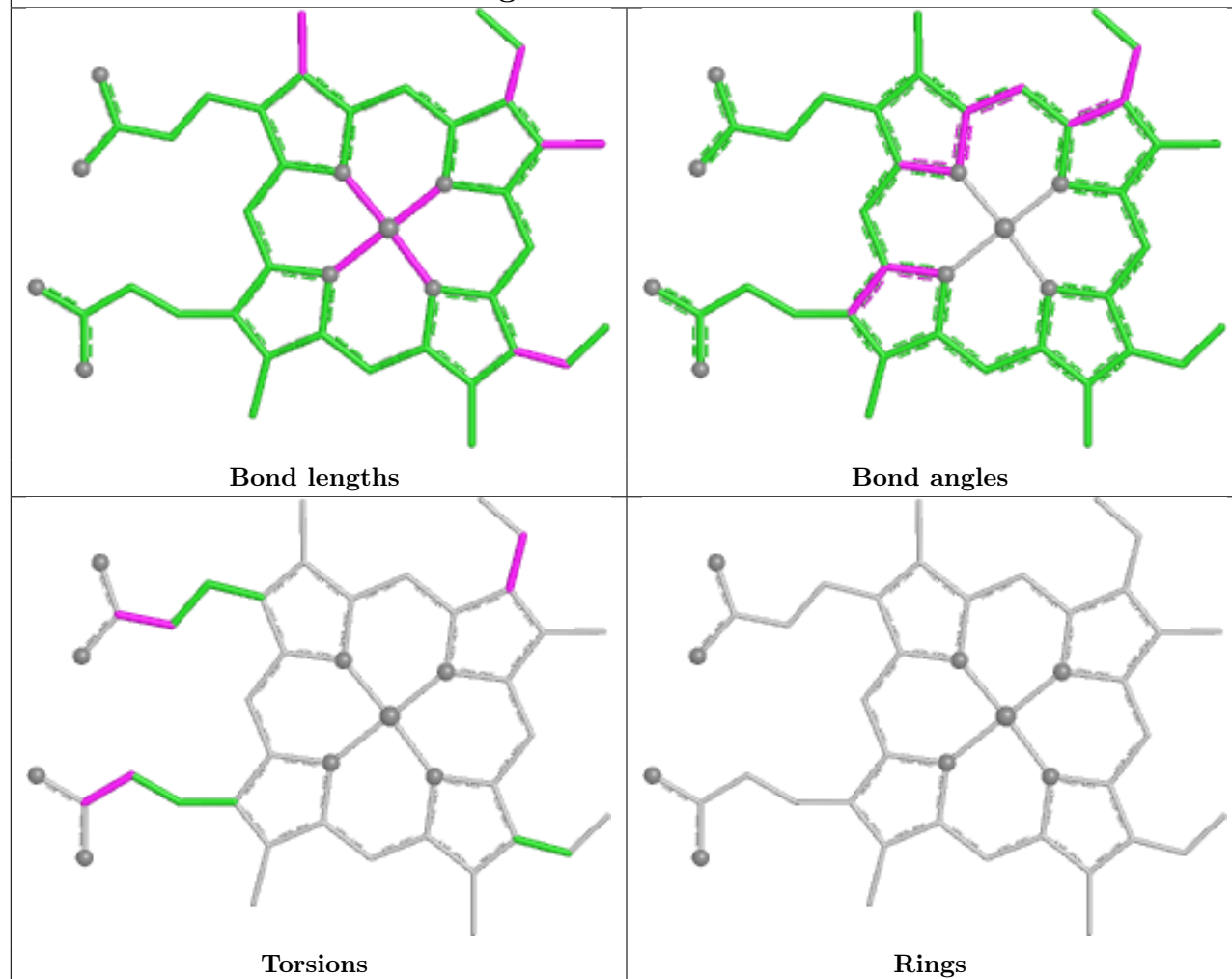
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	K	1001	HEM	2	0
4	K	1002	HEM	3	0
4	E	1002	HEM	2	0
4	W	1001	HEM	1	0
7	B	1001	HEC	1	0
5	K	1003	SMA	1	0
5	O	1003	SMA	1	0
7	L	1001	HEC	1	0
4	A	1002	HEM	2	0
4	O	1002	HEM	2	0
4	S	1002	HEM	3	0
4	E	1001	HEM	1	0
4	A	1001	HEM	1	0
4	O	1001	HEM	2	0
7	F	1001	HEC	4	0
9	B	1003	BOG	1	0
7	T	1001	HEC	2	0
5	E	1003	SMA	1	0
7	X	1001	HEC	1	0
4	W	1002	HEM	2	0
4	S	1001	HEM	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.

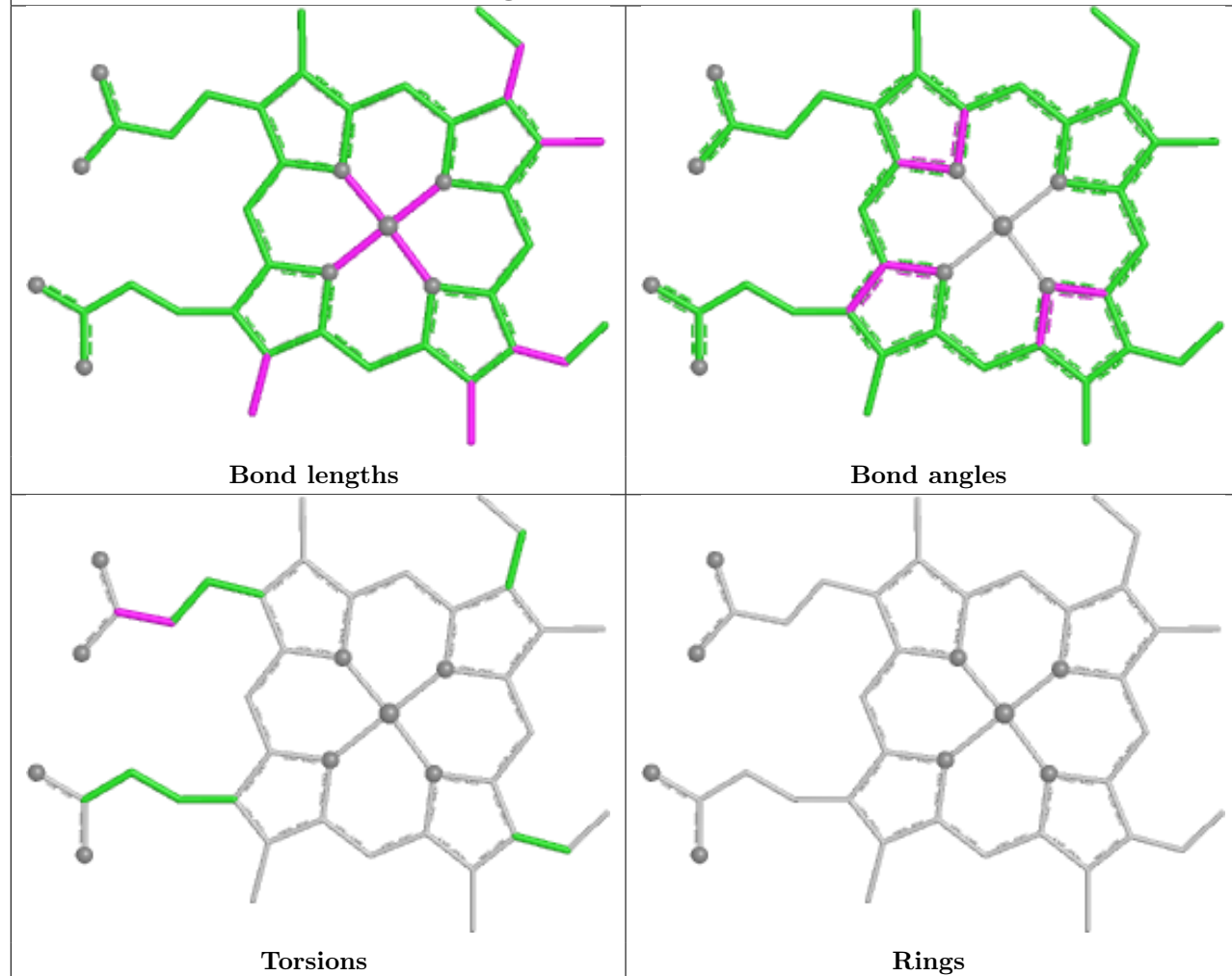
Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD 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.



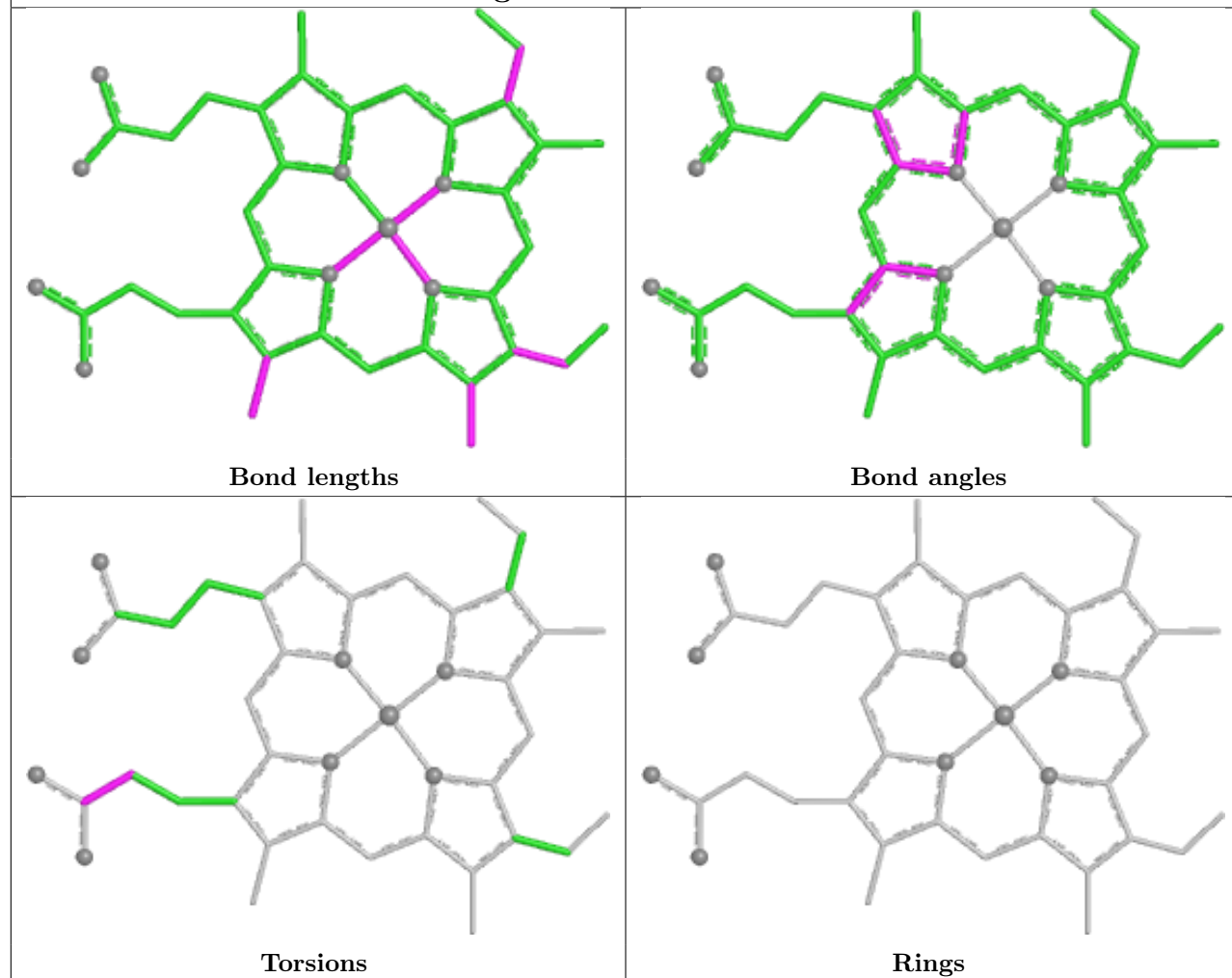
Ligand HEM K 1002



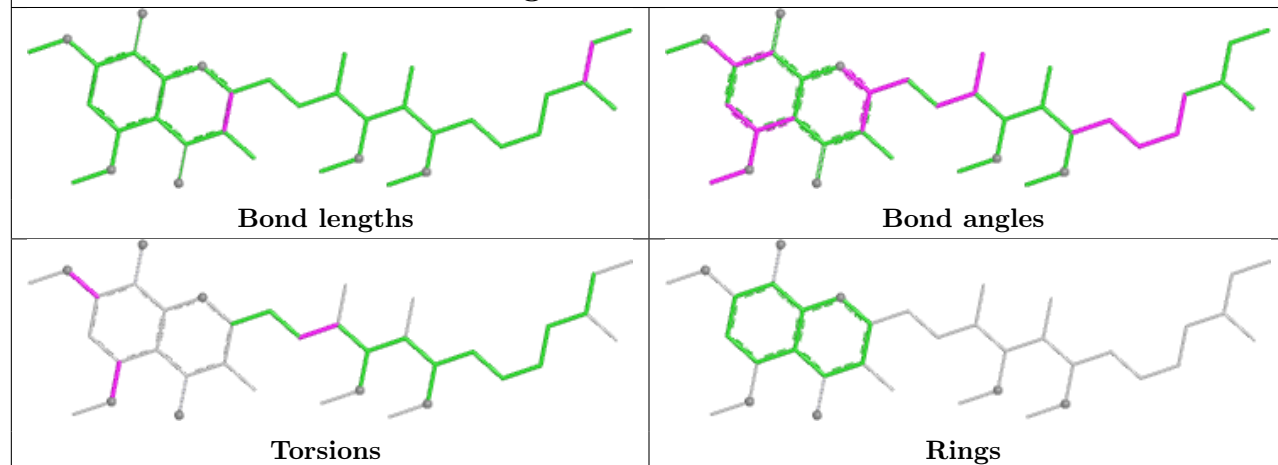
Ligand HEM E 1002

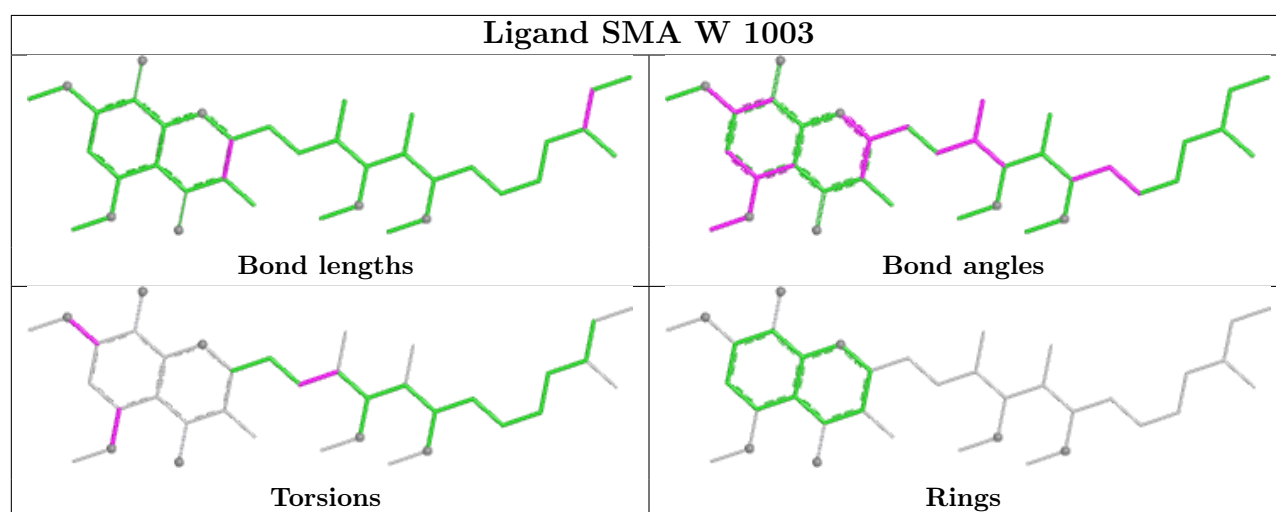
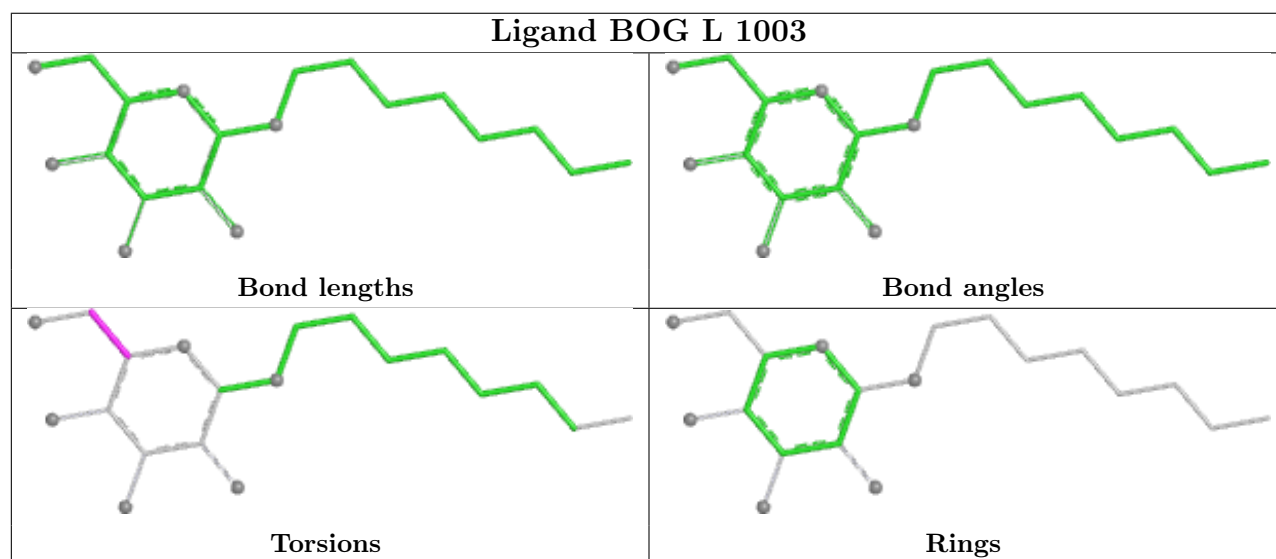
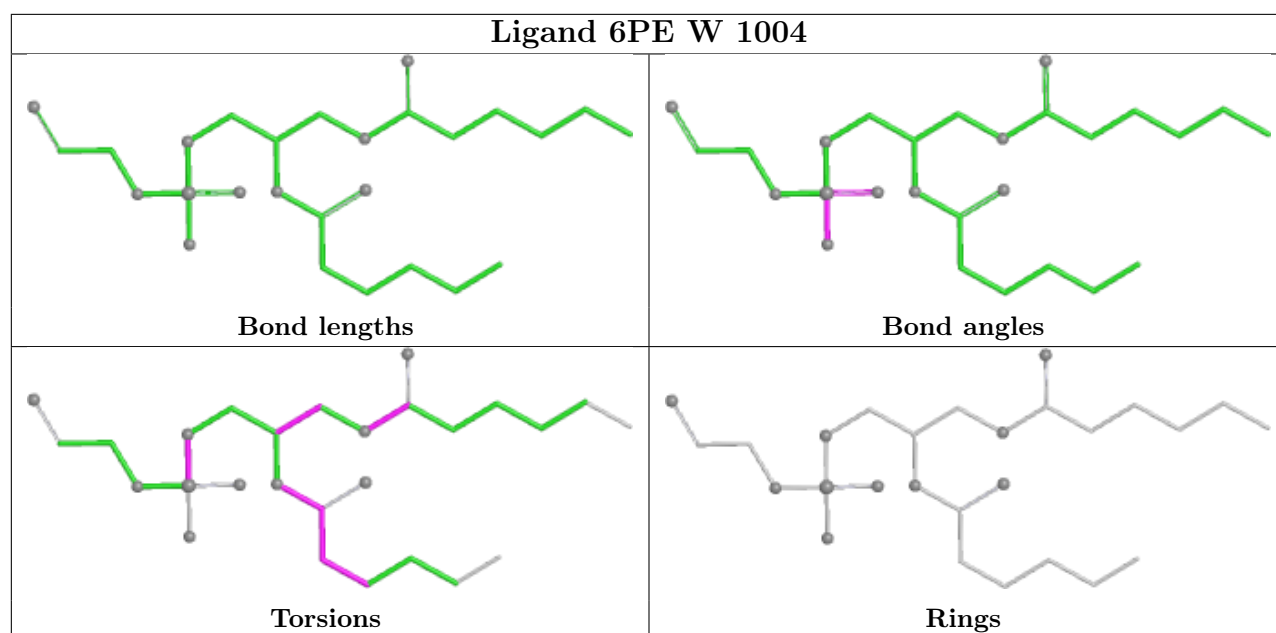


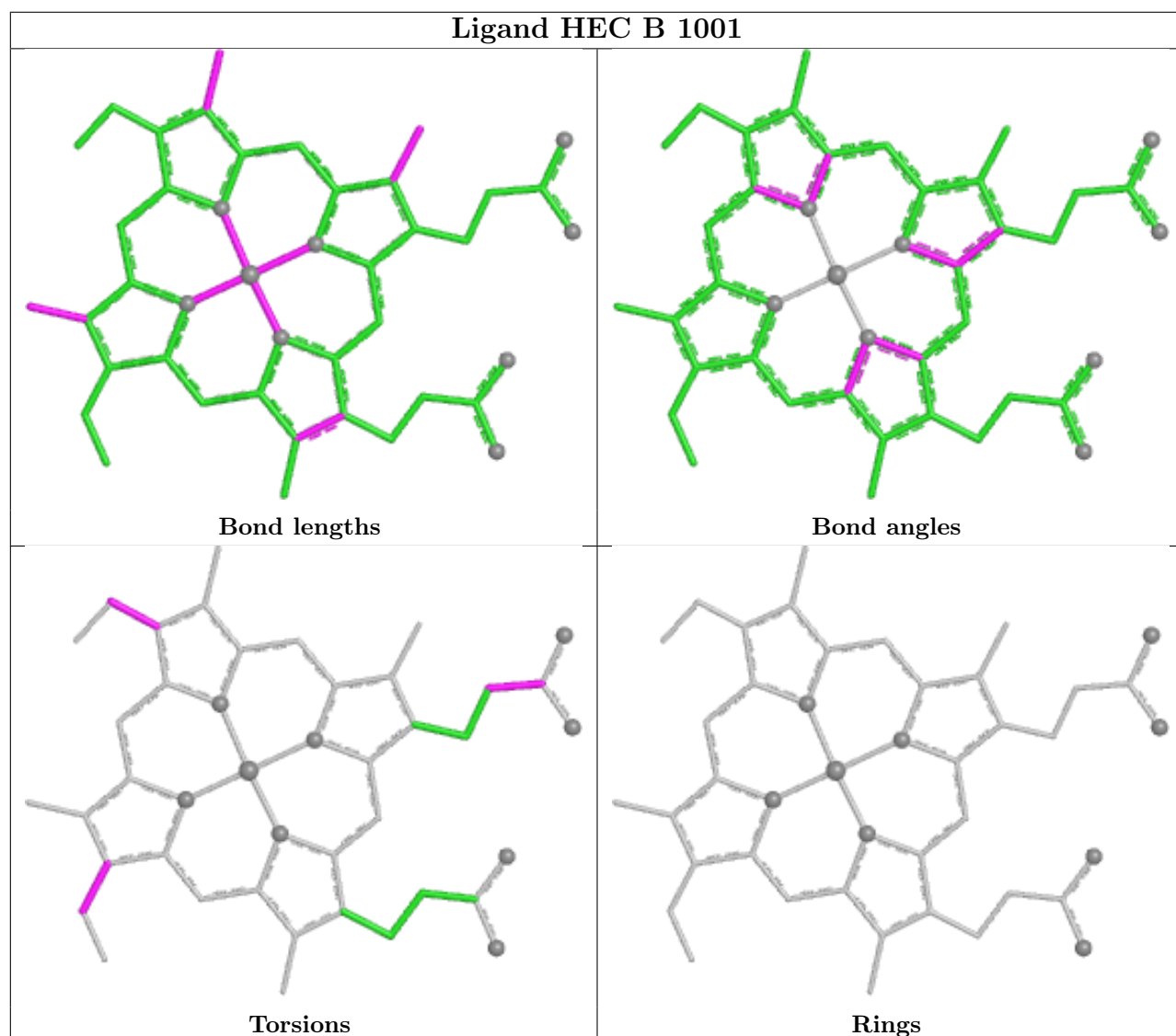
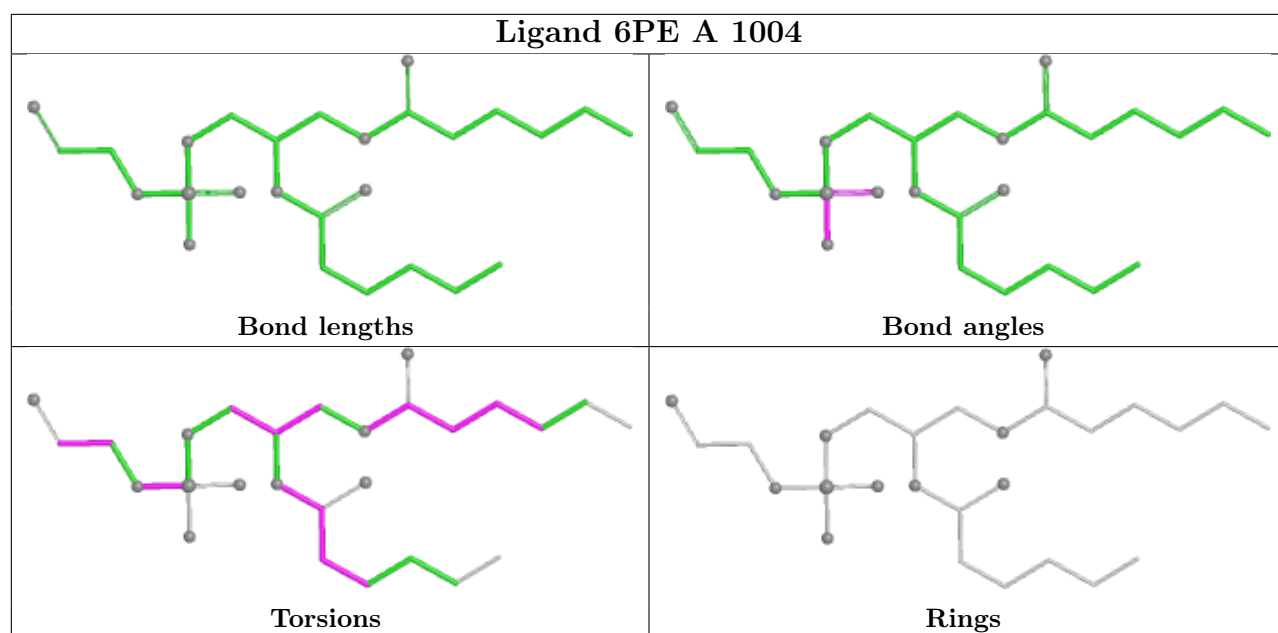
Ligand HEM W 1001

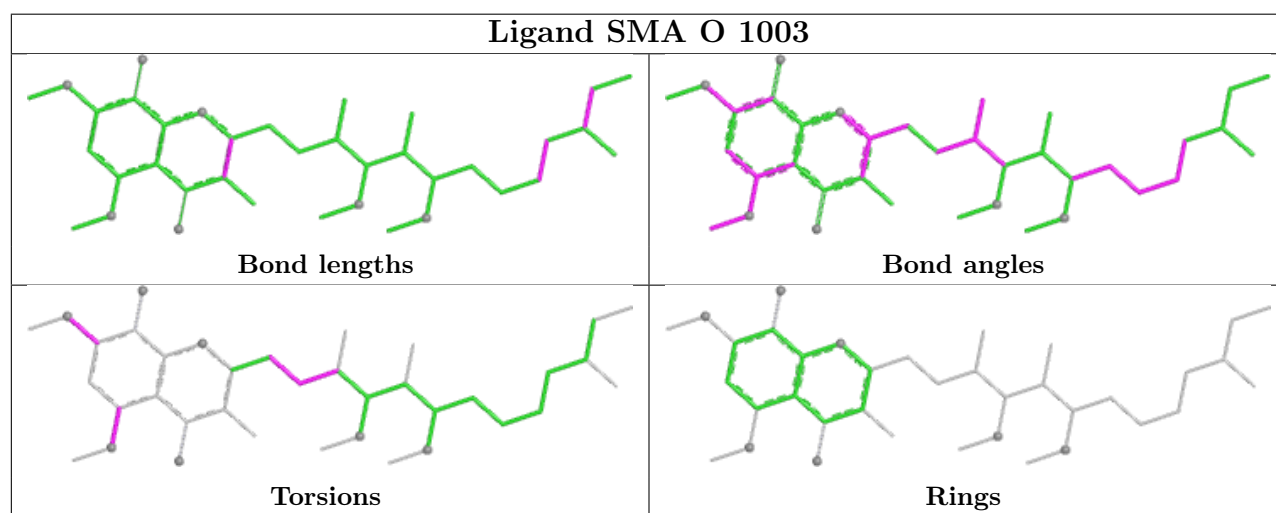
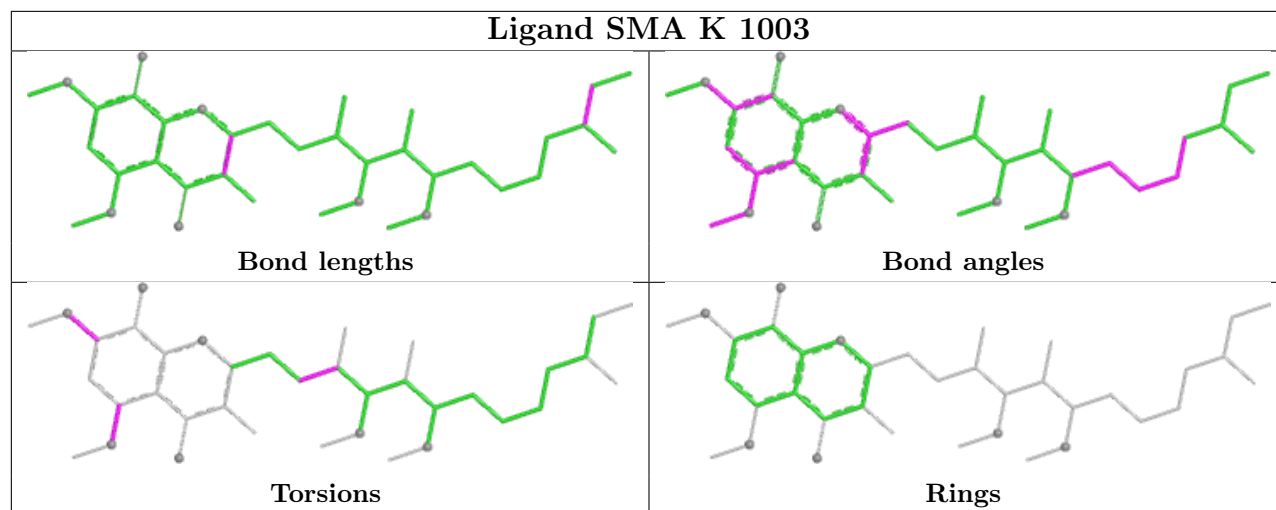


Ligand SMA S 1003

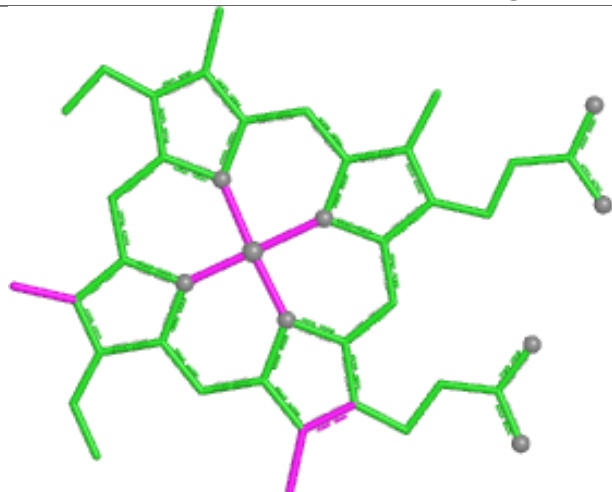




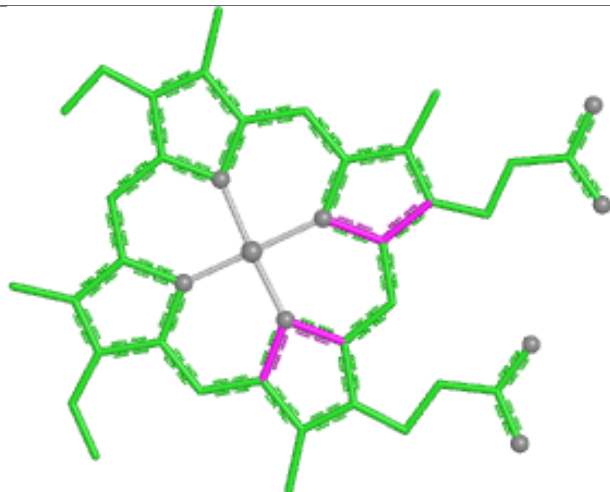




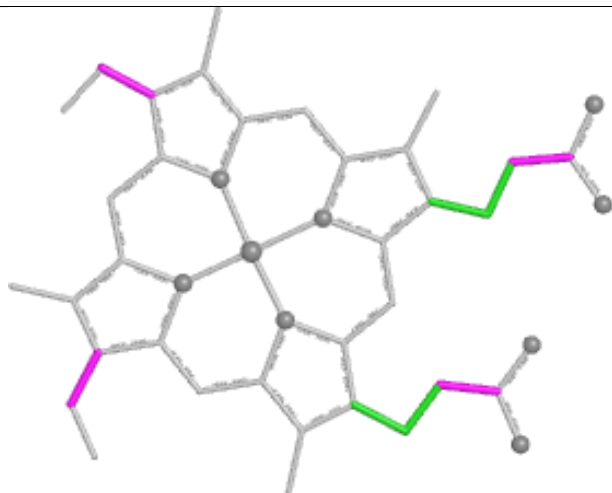
Ligand HEC L 1001



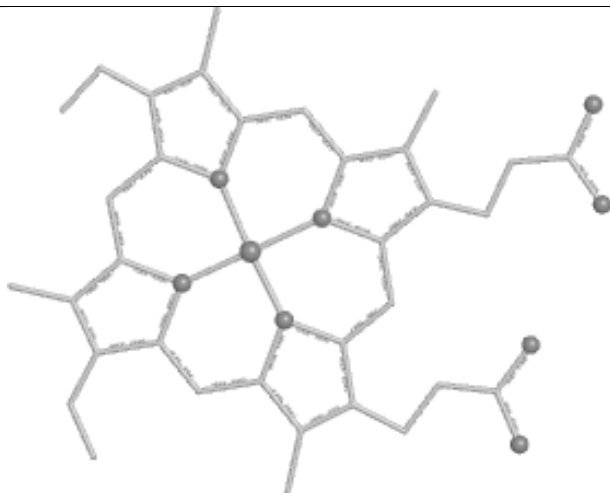
Bond lengths



Bond angles

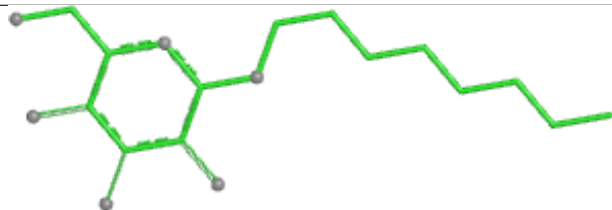


Torsions

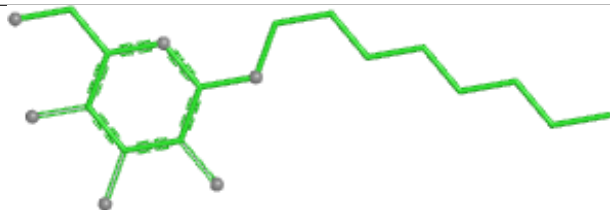


Rings

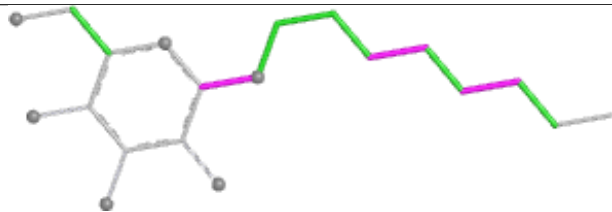
Ligand BOG X 1003



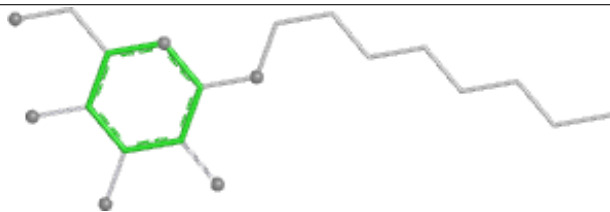
Bond lengths



Bond angles

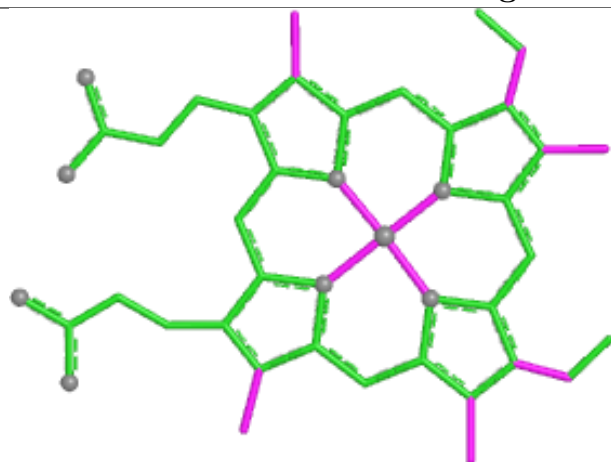


Torsions

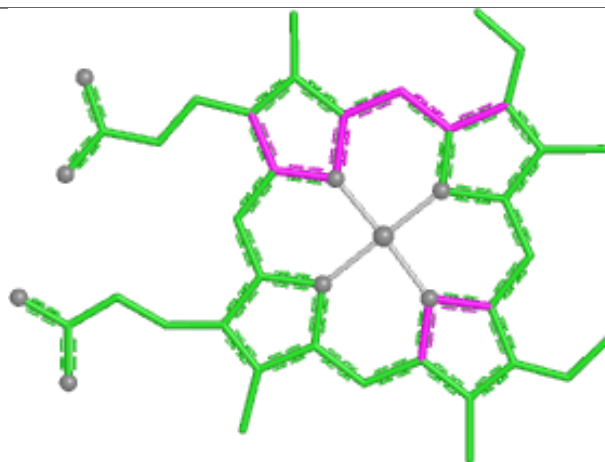


Rings

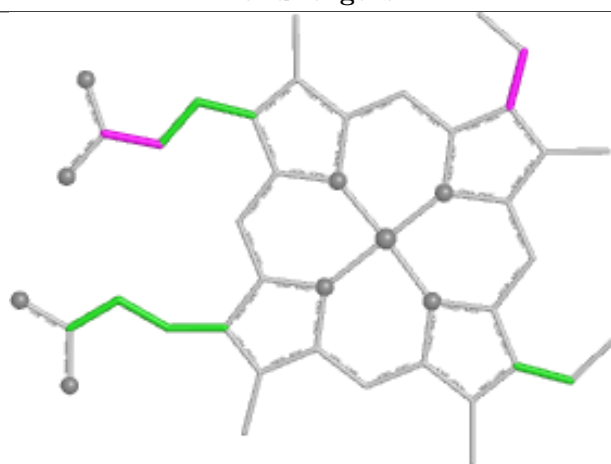
Ligand HEM A 1002



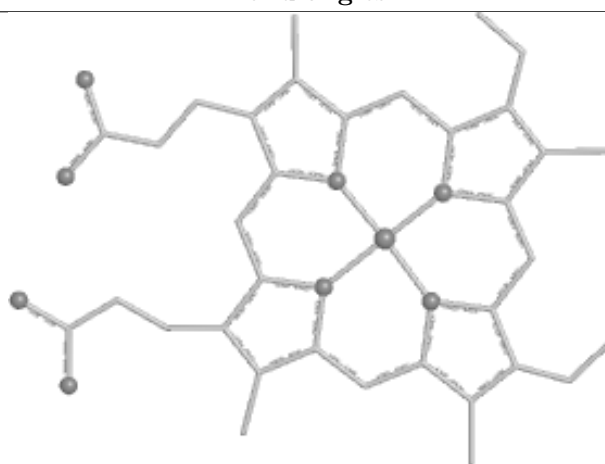
Bond lengths



Bond angles

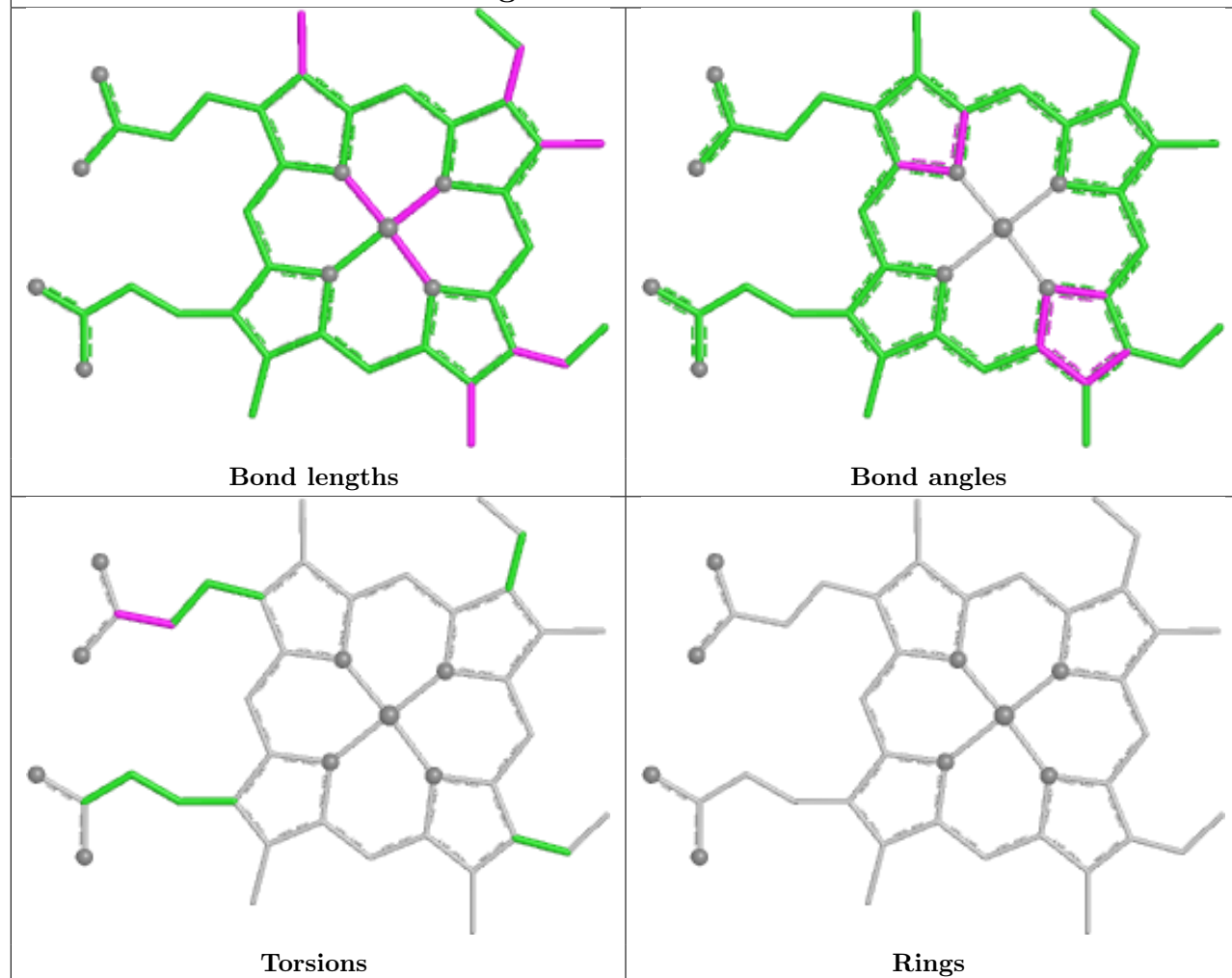


Torsions

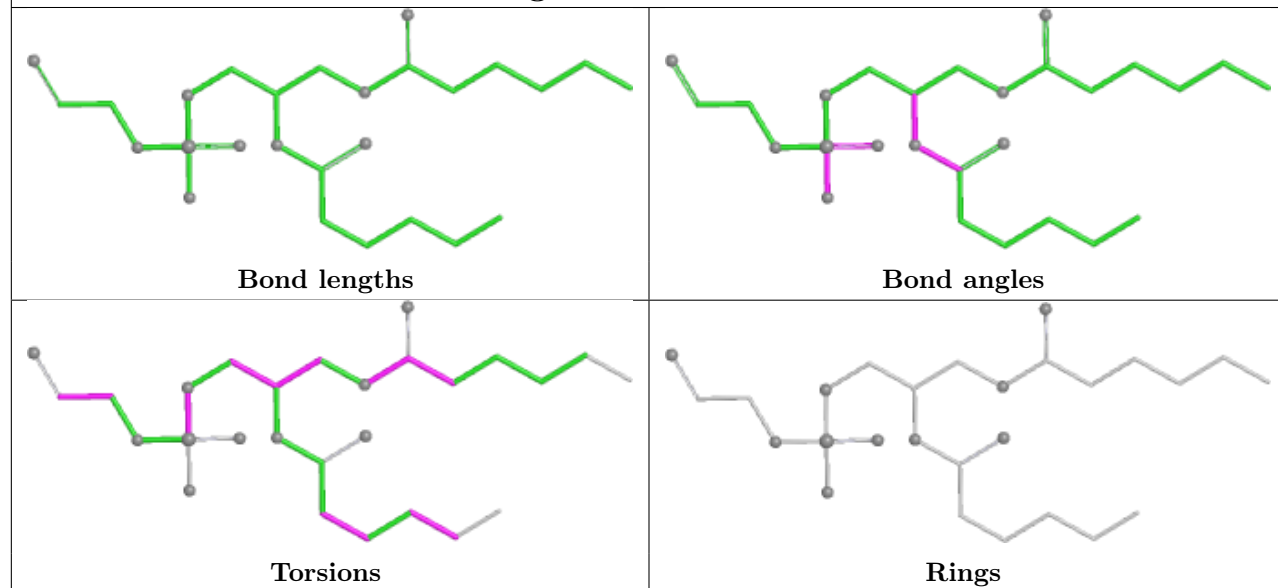


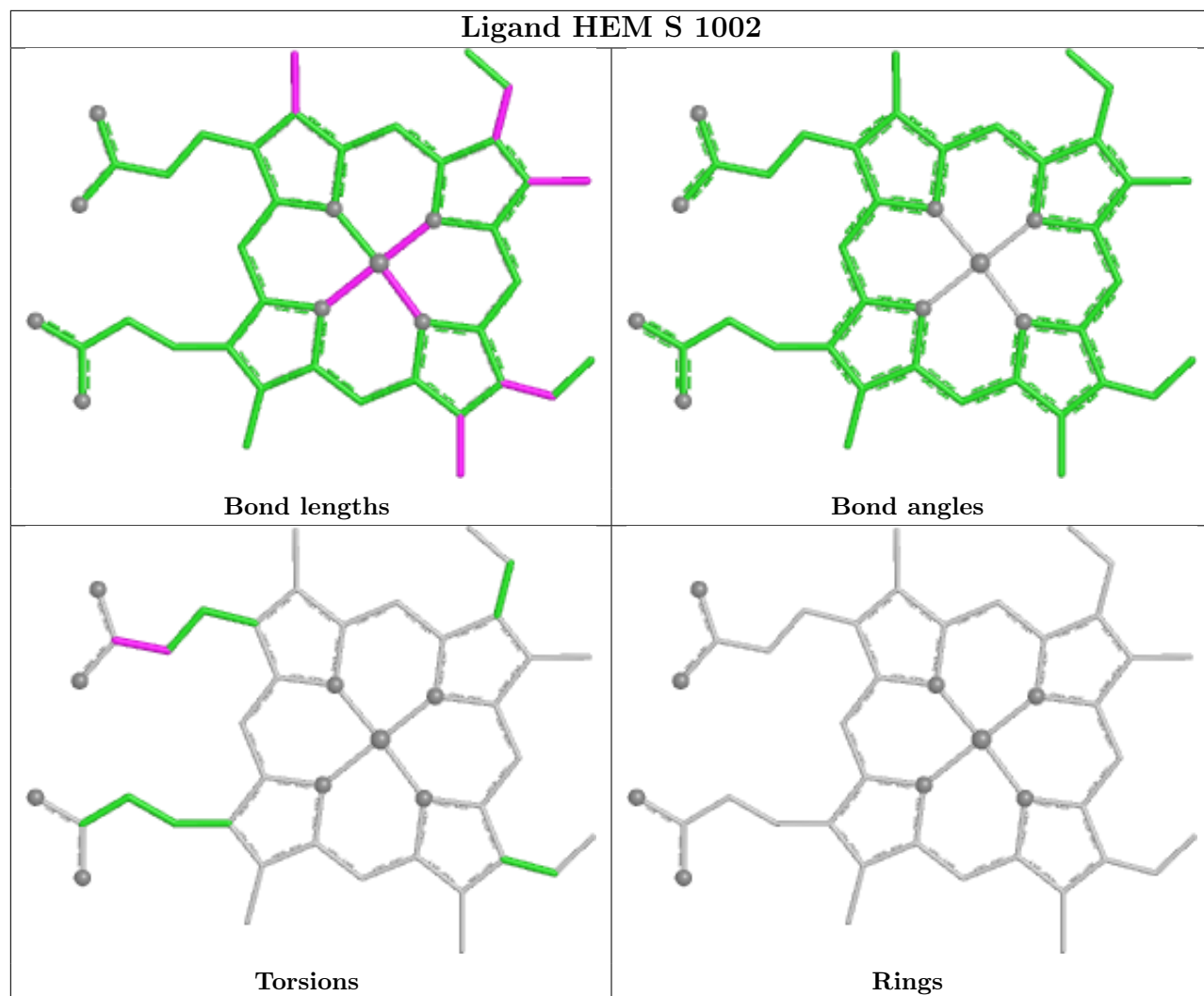
Rings

Ligand HEM O 1002

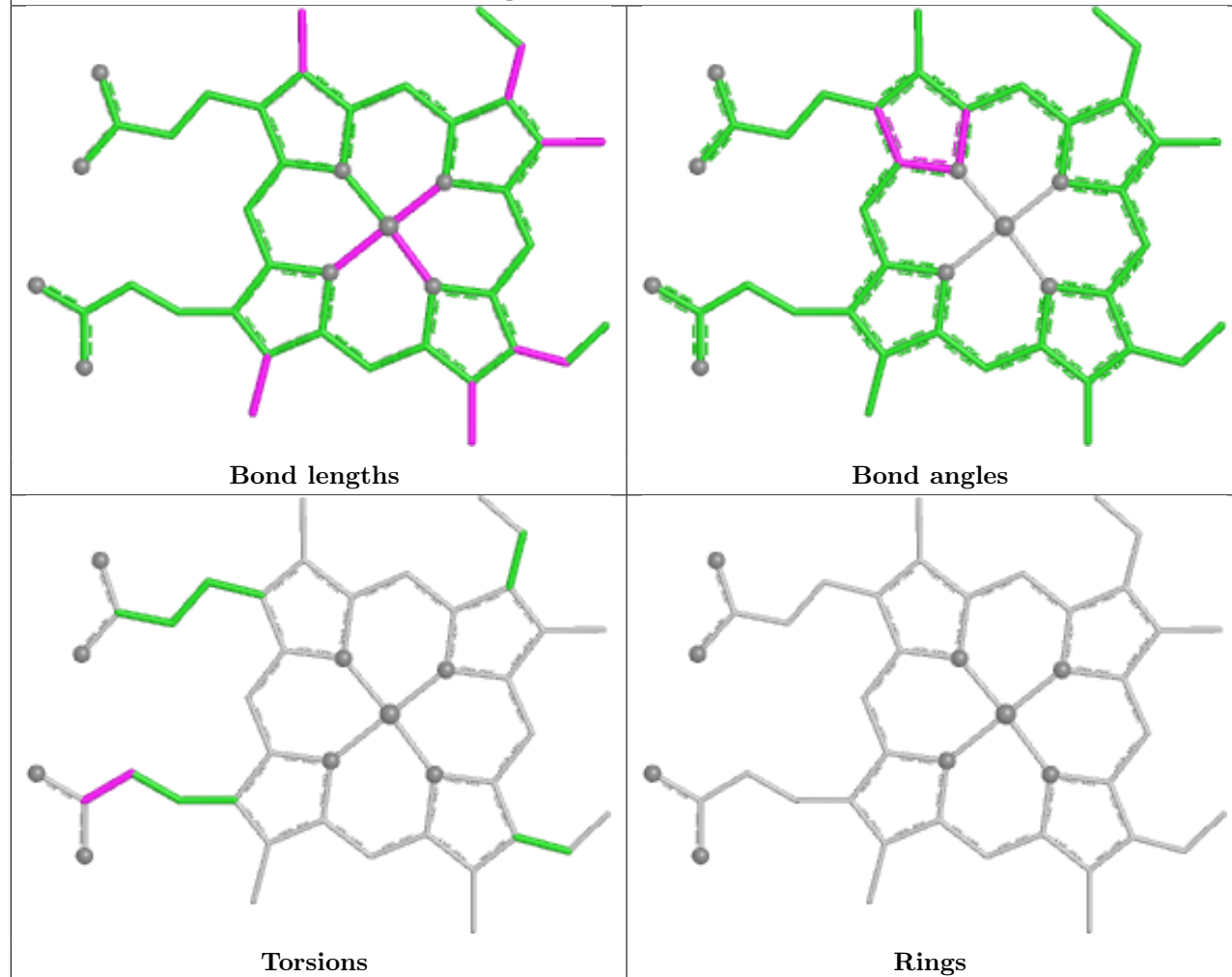


Ligand 6PE E 1004

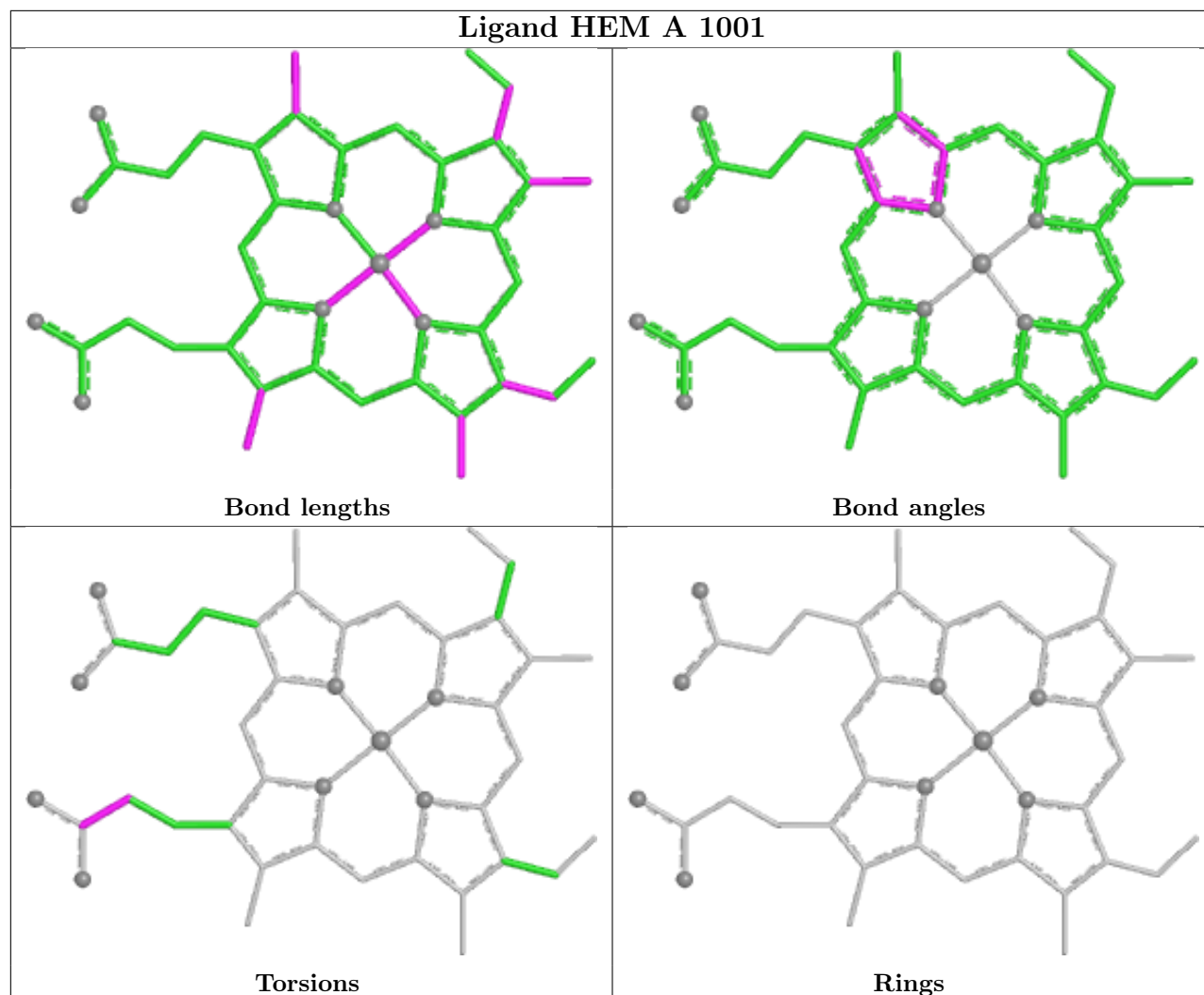




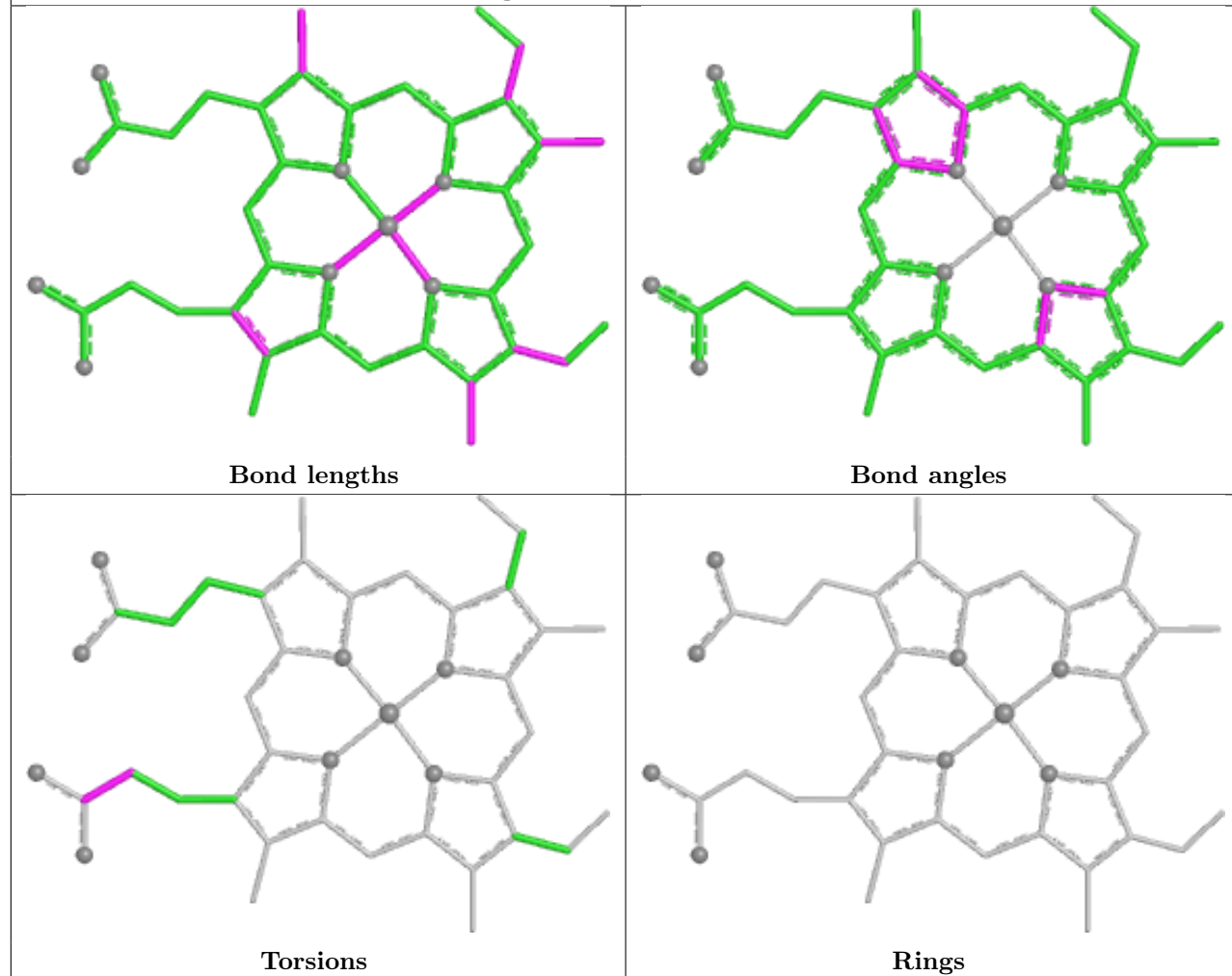
Ligand HEM E 1001



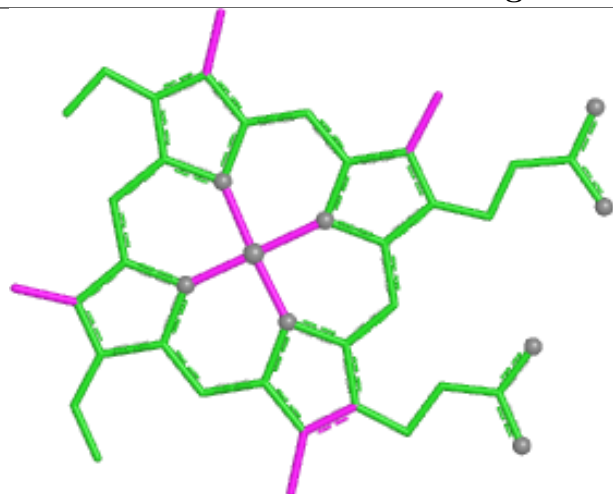
Ligand HEM A 1001



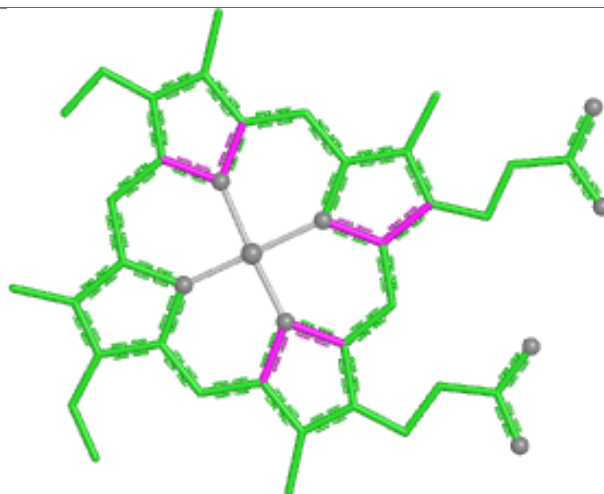
Ligand HEM O 1001



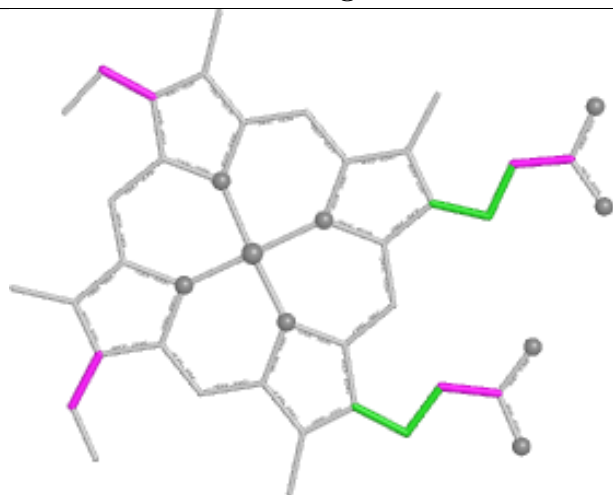
Ligand HEC F 1001



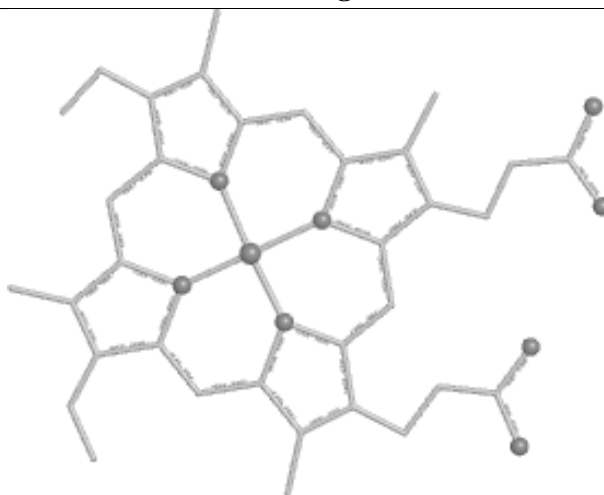
Bond lengths



Bond angles

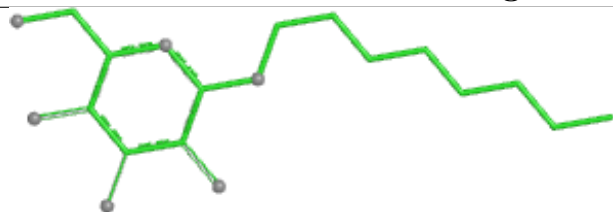


Torsions

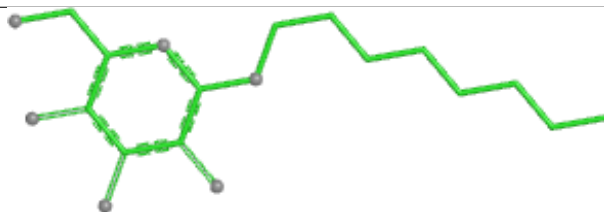


Rings

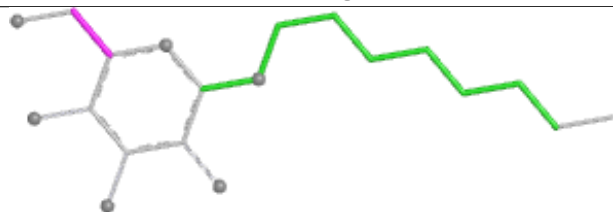
Ligand BOG B 1003



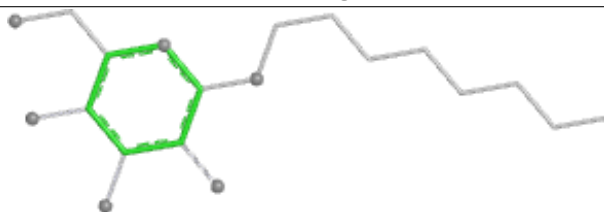
Bond lengths



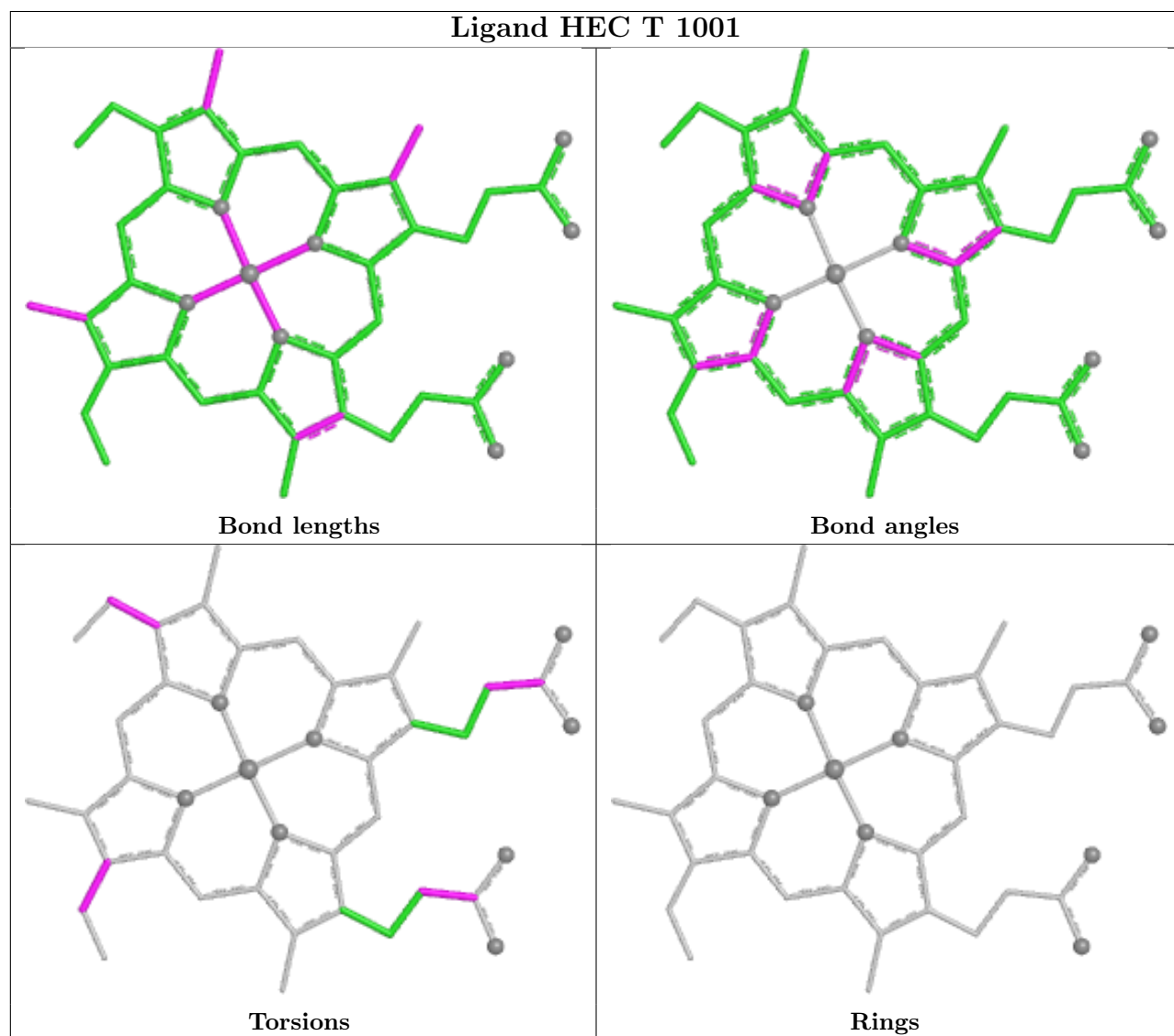
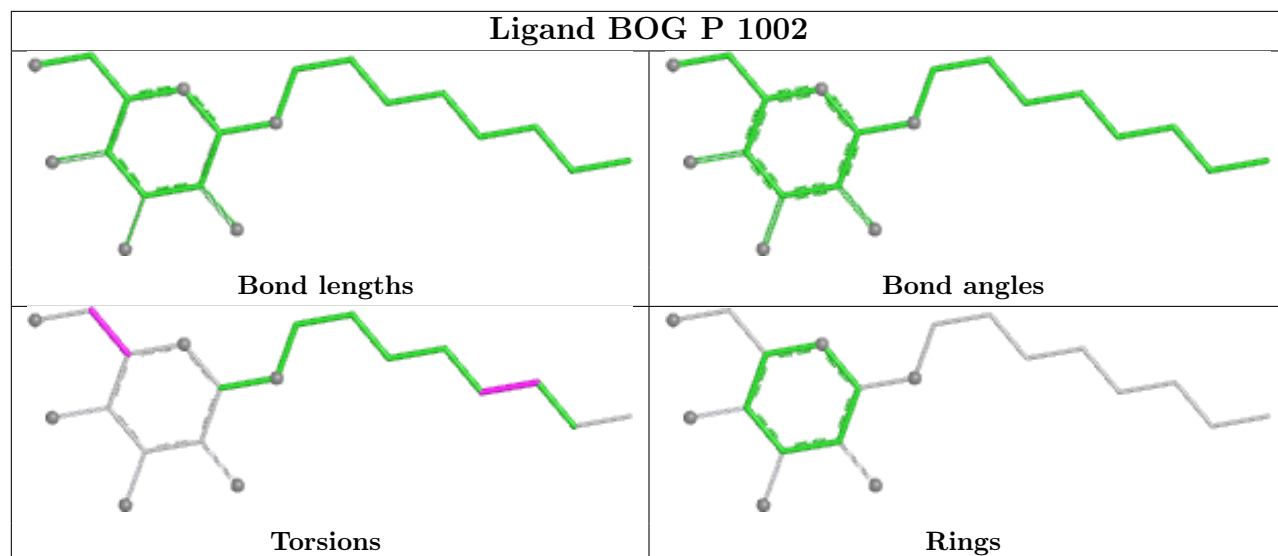
Bond angles

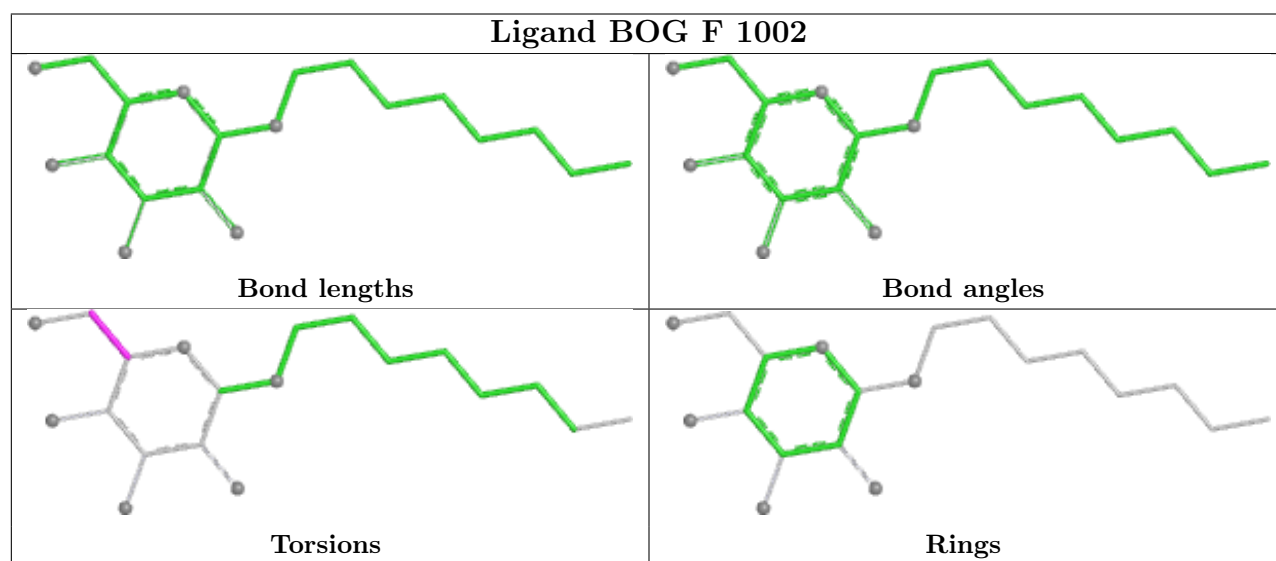
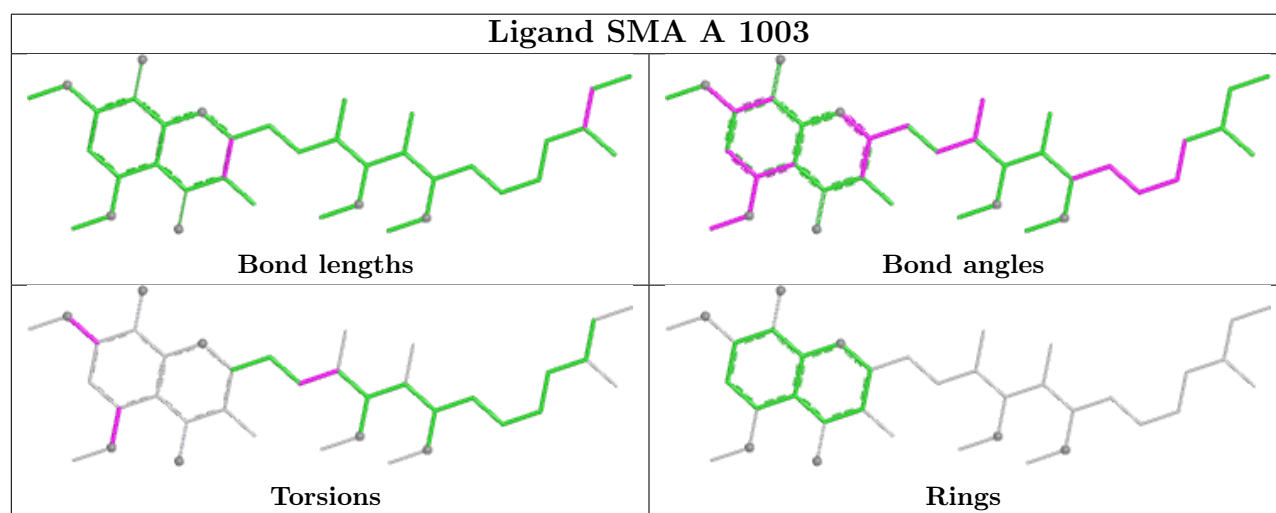
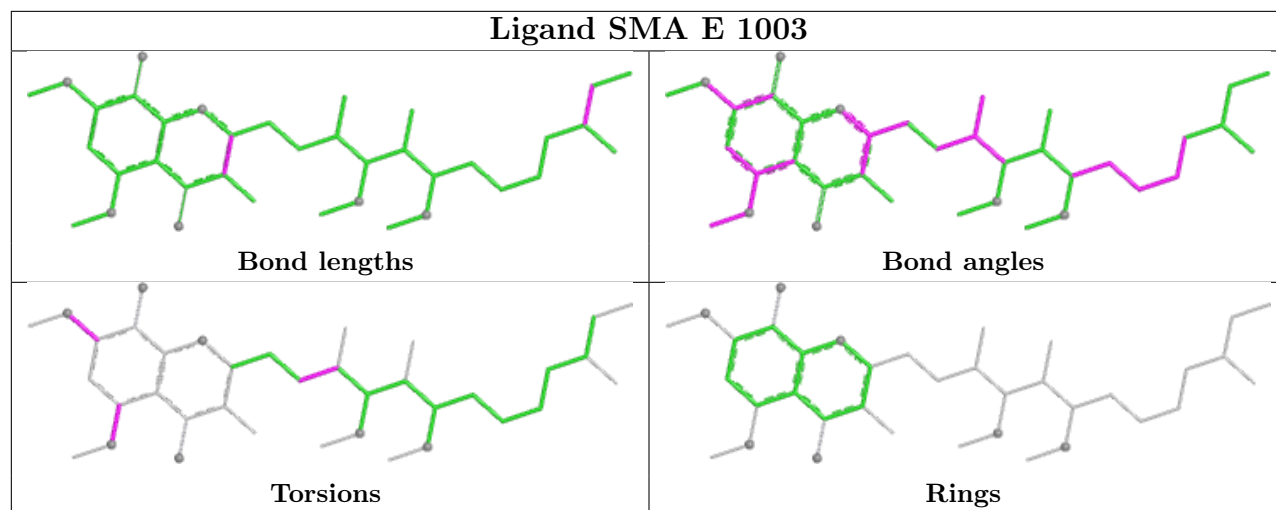


Torsions

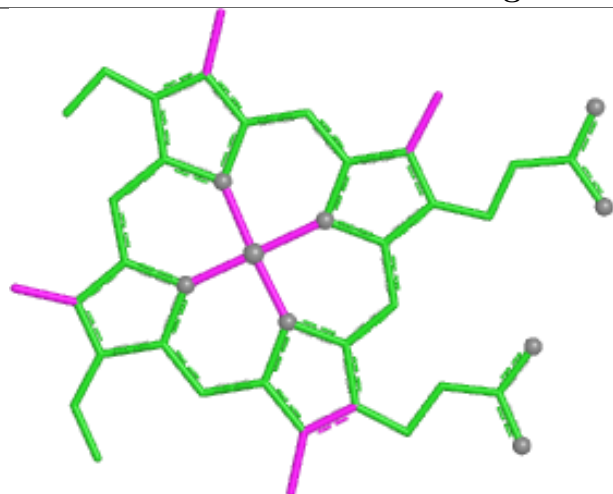


Rings

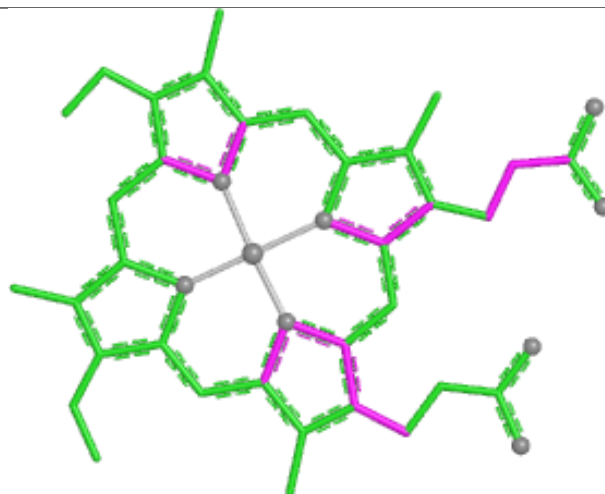




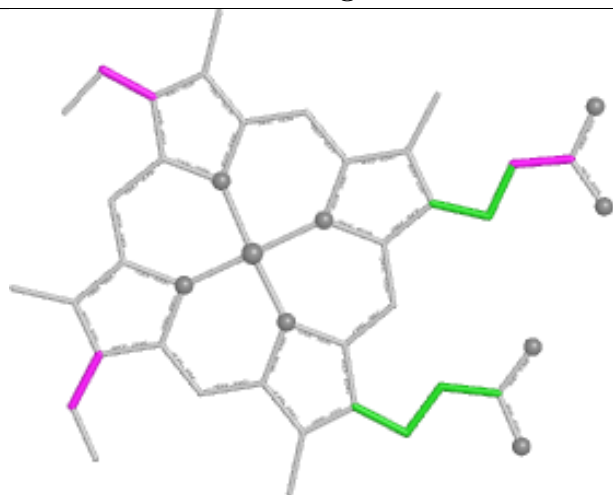
Ligand HEC X 1001



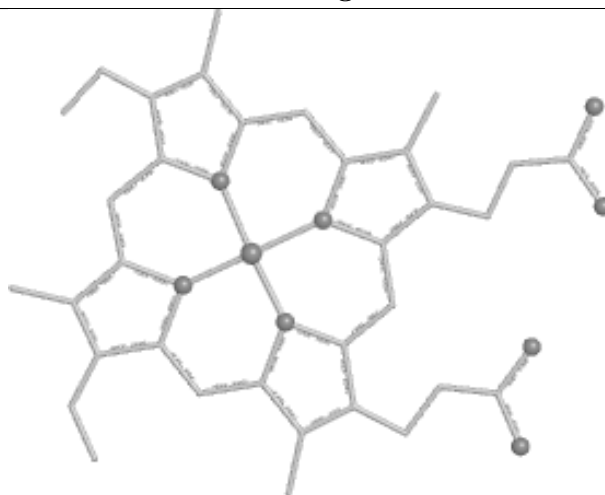
Bond lengths



Bond angles

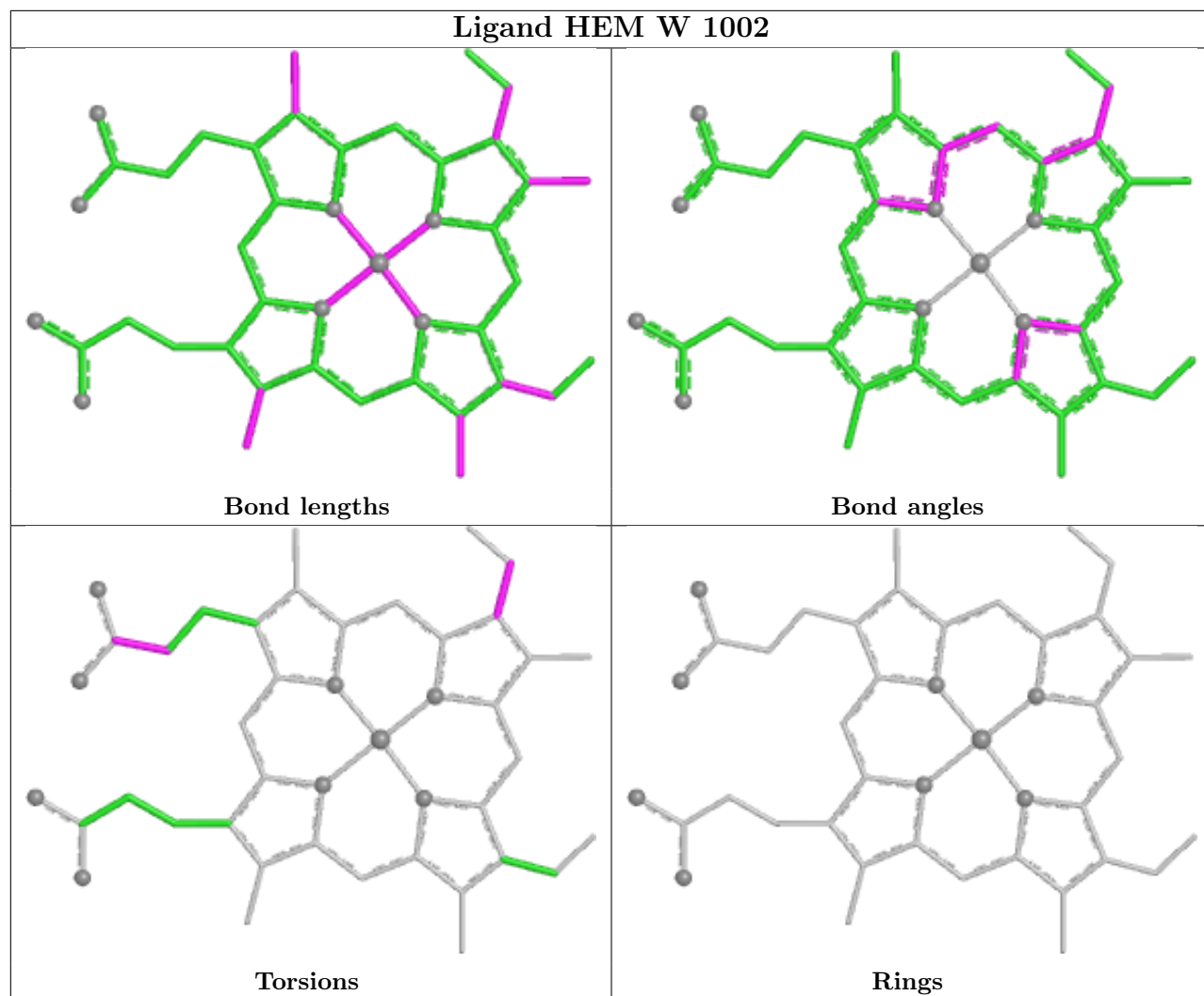


Torsions

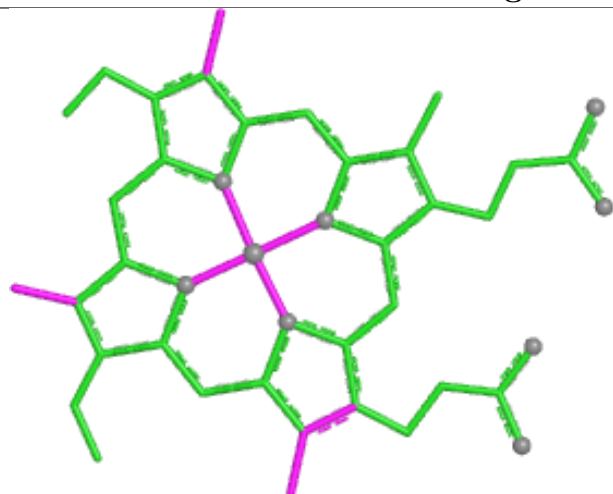


Rings

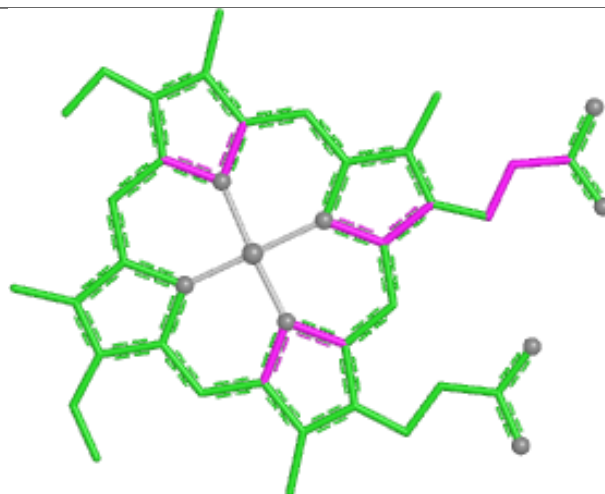
Ligand HEM W 1002



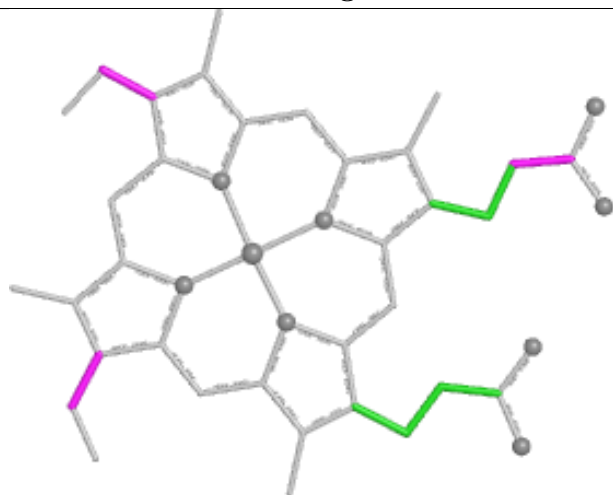
Ligand HEC P 1001



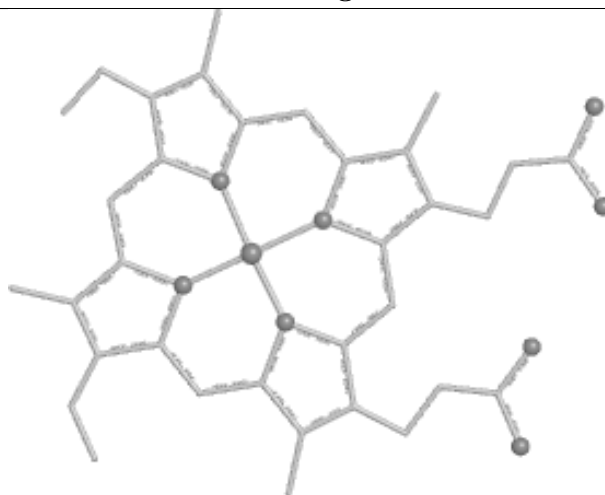
Bond lengths



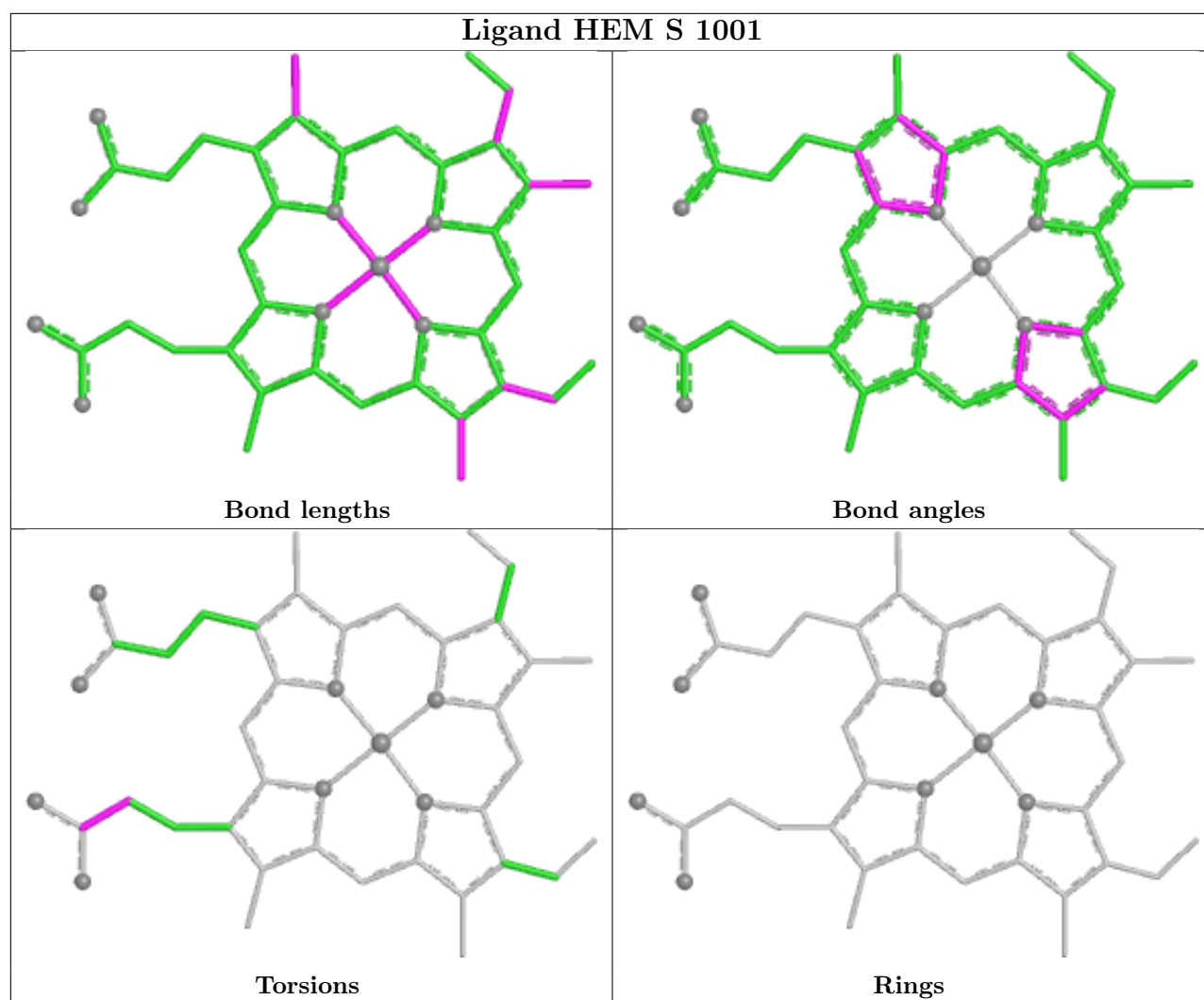
Bond angles



Torsions



Rings



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 ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	428/445 (96%)	0.18	10 (2%) 61 35	82, 113, 162, 191	0
1	E	428/445 (96%)	0.37	21 (4%) 35 20	80, 110, 158, 196	0
1	K	428/445 (96%)	0.20	11 (2%) 57 33	86, 111, 205, 266	0
1	O	428/445 (96%)	0.77	47 (10%) 10 9	91, 145, 196, 225	0
1	S	428/445 (96%)	0.75	44 (10%) 12 10	101, 175, 223, 254	0
1	W	428/445 (96%)	0.23	18 (4%) 40 22	94, 121, 197, 223	0
2	B	256/272 (94%)	0.27	5 (1%) 65 38	113, 150, 173, 197	0
2	F	256/272 (94%)	0.27	11 (4%) 40 22	111, 148, 171, 189	0
2	L	256/272 (94%)	0.20	8 (3%) 51 29	115, 141, 174, 189	0
2	P	256/272 (94%)	0.42	11 (4%) 40 22	128, 168, 201, 214	0
2	T	256/272 (94%)	0.50	14 (5%) 30 18	147, 202, 256, 281	0
2	X	256/272 (94%)	0.35	11 (4%) 40 22	128, 175, 214, 253	0
3	C	179/187 (95%)	0.11	2 (1%) 78 52	94, 125, 177, 237	0
3	G	179/187 (95%)	0.15	3 (1%) 69 41	99, 136, 187, 226	0
3	M	179/187 (95%)	0.65	11 (6%) 27 16	136, 159, 192, 222	0
3	Q	179/187 (95%)	0.03	2 (1%) 78 52	83, 122, 168, 216	0
3	U	179/187 (95%)	0.15	4 (2%) 62 36	105, 146, 197, 222	0
3	Y	179/187 (95%)	0.71	15 (8%) 17 12	147, 213, 247, 275	0
All	All	5178/5424 (95%)	0.37	248 (4%) 35 20	80, 145, 216, 281	0

All (248) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	O	244	PHE	8.4
1	S	315	VAL	7.4
1	S	183	GLY	6.7

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Mol	Chain	Res	Type	RSRZ
1	W	221	ASN	6.5
1	O	33	ILE	6.2
1	O	35	ILE	6.1
1	E	300	PRO	5.9
3	C	132	LEU	5.3
1	O	37	THR	5.2
1	S	112	ILE	4.8
1	S	305	LEU	4.6
1	O	335	ALA	4.6
3	Y	124	VAL	4.6
1	E	190	THR	4.6
2	P	218	ALA	4.4
2	P	6	VAL	4.4
2	T	104	ALA	4.3
1	E	69	TYR	4.3
1	O	112	ILE	4.1
2	X	96	ASN	4.1
2	X	2	GLY	4.0
1	O	36	PRO	4.0
2	X	58	LEU	4.0
1	O	305	LEU	4.0
1	O	121	TYR	4.0
2	F	188	PRO	4.0
1	O	34	MET	3.9
3	G	132	LEU	3.9
1	W	124	PRO	3.8
1	E	351	THR	3.8
1	W	220	GLY	3.7
1	S	182	GLY	3.6
1	S	304	ILE	3.6
1	E	350	ASP	3.6
1	K	246	PRO	3.5
1	S	117	TYR	3.5
2	P	134	VAL	3.5
1	O	119	GLY	3.5
1	A	93	LEU	3.5
1	K	278	ASP	3.4
1	O	168	ALA	3.4
1	S	385	THR	3.4
1	E	221	ASN	3.4
1	S	318	ALA	3.4
1	S	333	VAL	3.4

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Mol	Chain	Res	Type	RSRZ
1	E	412	GLY	3.4
3	Y	123	LEU	3.4
1	S	335	ALA	3.4
1	E	49	VAL	3.4
2	P	146	ALA	3.3
2	L	72	VAL	3.3
1	O	199	TYR	3.3
3	M	126	TRP	3.3
3	M	150	PRO	3.3
1	O	221	ASN	3.3
2	T	105	LYS	3.3
2	P	103	MET	3.3
1	O	120	SER	3.2
3	G	165	GLY	3.2
1	S	311	ASP	3.2
2	P	135	LEU	3.2
3	Y	143	ASP	3.2
2	F	66	TYR	3.2
1	W	222	ASN	3.2
1	W	219	THR	3.1
1	S	280	TYR	3.1
1	O	31	ASP	3.1
2	B	99	ASP	3.1
1	K	199	TYR	3.1
2	X	49	SER	3.0
1	S	310	ALA	3.0
1	O	248	PHE	3.0
1	O	116	LEU	3.0
2	T	188	PRO	3.0
1	E	70	THR	3.0
2	T	136	THR	3.0
1	E	93	LEU	3.0
1	E	123	ALA	3.0
3	M	167	ALA	3.0
1	O	400	TRP	3.0
3	M	166	PRO	3.0
2	X	192	ASP	3.0
2	T	131	ILE	2.9
1	S	116	LEU	2.9
1	O	355	ARG	2.9
1	S	127	VAL	2.9
1	W	387	PHE	2.9

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Mol	Chain	Res	Type	RSRZ
3	Y	160	GLY	2.9
2	L	56	PRO	2.9
2	F	3	GLY	2.9
2	X	61	ASP	2.9
1	W	65	LEU	2.8
1	S	316	GLN	2.8
1	O	4	ILE	2.8
1	W	412	GLY	2.8
2	L	109	GLY	2.8
1	W	23	LEU	2.8
3	Y	172	PRO	2.8
1	S	277	PRO	2.7
1	A	301	PHE	2.7
1	S	419	ALA	2.7
1	W	351	THR	2.7
1	S	249	ILE	2.7
3	Y	137	ILE	2.7
2	F	162	ASN	2.7
1	A	49	VAL	2.7
1	S	290	ALA	2.7
2	F	2	GLY	2.7
2	P	42	MET	2.7
1	E	80	VAL	2.6
3	Y	74	ILE	2.6
1	K	3	GLY	2.6
1	O	385	THR	2.6
1	A	161	VAL	2.6
3	M	44	VAL	2.6
1	W	199	TYR	2.6
1	O	249	ILE	2.6
2	B	53	PRO	2.6
3	M	119	ALA	2.6
1	W	229	VAL	2.6
3	Y	125	MET	2.6
1	W	216	PHE	2.6
1	O	117	TYR	2.5
3	U	110	THR	2.5
1	K	229	VAL	2.5
2	T	134	VAL	2.5
1	O	65	LEU	2.5
1	S	278	ASP	2.5
1	O	339	ALA	2.5

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Mol	Chain	Res	Type	RSRZ
1	S	307	ALA	2.5
1	S	115	GLY	2.5
2	T	132	TYR	2.5
1	K	23	LEU	2.5
1	K	290	ALA	2.5
1	E	161	VAL	2.5
1	S	312	VAL	2.5
3	U	135	VAL	2.5
1	O	216	PHE	2.5
1	S	113	PHE	2.5
2	F	18	GLY	2.5
1	S	121	TYR	2.5
1	A	192	ASN	2.4
1	S	168	ALA	2.4
1	O	354	VAL	2.4
2	L	31	VAL	2.4
3	M	131	HIS	2.4
2	X	53	PRO	2.4
1	O	422	ALA	2.4
1	E	11	PRO	2.4
3	M	120	GLY	2.4
1	O	113	PHE	2.4
1	O	301	PHE	2.4
2	T	184	ALA	2.4
1	O	428	PHE	2.3
3	Y	138	GLY	2.3
3	Y	72	ILE	2.3
2	T	135	LEU	2.3
2	X	50	LEU	2.3
3	Y	128	VAL	2.3
2	F	161	GLN	2.3
1	S	327	ASP	2.3
1	E	68	HIS	2.3
2	X	31	VAL	2.3
1	S	348	TRP	2.3
2	T	108	ALA	2.3
1	K	425	GLU	2.3
2	X	7	GLU	2.3
2	B	101	SER	2.3
2	F	16	PRO	2.3
3	G	124	VAL	2.3
3	M	124	VAL	2.3

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Mol	Chain	Res	Type	RSRZ
1	O	235	ALA	2.3
1	O	115	GLY	2.3
1	O	131	VAL	2.3
2	T	90	PRO	2.3
3	Y	64	THR	2.2
1	S	330	PHE	2.2
3	M	74	ILE	2.2
1	K	417	PRO	2.2
1	S	336	MET	2.2
2	X	3	GLY	2.2
3	M	133	GLY	2.2
3	Y	148	PHE	2.2
1	E	52	ALA	2.2
1	O	215	ALA	2.2
1	O	315	VAL	2.2
1	E	124	PRO	2.2
2	B	16	PRO	2.2
1	S	308	PHE	2.2
1	A	52	ALA	2.2
1	O	109	TYR	2.2
2	B	66	TYR	2.2
3	U	132	LEU	2.2
1	A	300	PRO	2.2
1	W	278	ASP	2.2
1	W	350	ASP	2.2
1	K	20	HIS	2.2
3	Y	131	HIS	2.2
1	S	65	LEU	2.2
2	P	49	SER	2.2
1	E	426	GLU	2.2
2	P	147	GLU	2.2
1	S	4	ILE	2.2
1	S	306	ARG	2.2
1	O	337	PHE	2.2
1	W	37	THR	2.2
2	F	135	LEU	2.2
1	A	87	VAL	2.1
1	E	387	PHE	2.1
2	P	7	GLU	2.1
1	S	37	THR	2.1
1	O	316	GLN	2.1
1	A	35	ILE	2.1

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Mol	Chain	Res	Type	RSRZ
1	W	329	LYS	2.1
1	A	89	GLY	2.1
2	L	100	LEU	2.1
1	O	424	ILE	2.1
1	O	390	ASP	2.1
2	L	105	LYS	2.1
2	T	98	PRO	2.1
1	S	349	LEU	2.1
3	Q	63	LEU	2.1
1	O	378	THR	2.1
2	F	71	THR	2.1
1	S	22	ARG	2.1
1	O	122	LYS	2.1
1	K	427	ASP	2.1
2	P	109	GLY	2.1
1	O	114	ARG	2.1
2	L	1	ALA	2.1
1	S	291	HIS	2.1
1	S	357	GLY	2.1
3	Q	53	ASP	2.1
1	O	128	THR	2.1
1	E	96	LEU	2.1
1	S	394	LEU	2.1
1	S	302	TYR	2.0
2	T	93	ALA	2.0
2	L	215	LEU	2.0
3	Y	17	TYR	2.0
1	O	219	THR	2.0
2	F	159	ALA	2.0
3	C	48	ALA	2.0
1	W	357	GLY	2.0
3	U	16	TYR	2.0
1	S	120	SER	2.0
1	E	148	VAL	2.0
2	T	6	VAL	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($\text{\AA}^2$)	Q<0.9
6	6PE	W	1004	27/27	0.74	0.15	105,134,161,162	0
9	BOG	B	1003	20/20	0.76	0.14	120,145,158,167	0
9	BOG	F	1002	20/20	0.80	0.15	120,147,163,164	0
6	6PE	A	1004	27/27	0.81	0.14	97,130,156,160	0
9	BOG	P	1002	20/20	0.81	0.13	126,154,177,178	0
6	6PE	E	1004	27/27	0.82	0.14	93,121,171,173	0
9	BOG	T	1003	20/20	0.82	0.15	152,185,198,205	0
5	SMA	S	1003	37/37	0.83	0.24	131,165,195,201	0
8	SR	T	1002	1/1	0.83	0.07	205,205,205,205	0
9	BOG	L	1003	20/20	0.84	0.17	117,142,165,166	0
5	SMA	O	1003	37/37	0.86	0.22	89,121,154,155	0
9	BOG	X	1003	20/20	0.86	0.14	122,153,182,186	0
8	SR	P	1003	1/1	0.88	0.07	184,184,184,184	0
4	HEM	O	1001	43/43	0.89	0.18	114,139,189,190	0
7	HEC	F	1001	43/43	0.89	0.14	132,134,159,161	0
4	HEM	K	1001	43/43	0.90	0.19	95,118,147,151	0
4	HEM	E	1002	43/43	0.90	0.19	74,99,132,136	0
4	HEM	S	1001	43/43	0.92	0.14	129,164,207,210	0
7	HEC	B	1001	43/43	0.92	0.15	114,124,150,155	0
5	SMA	A	1003	37/37	0.92	0.17	82,103,130,131	0
7	HEC	P	1001	43/43	0.92	0.15	138,143,169,171	0
7	HEC	T	1001	43/43	0.92	0.14	167,189,231,232	0
7	HEC	X	1001	43/43	0.92	0.13	124,166,212,215	0
4	HEM	A	1001	43/43	0.92	0.16	75,104,130,142	0
4	HEM	E	1001	43/43	0.93	0.16	76,96,120,127	0
5	SMA	W	1003	37/37	0.94	0.15	84,107,129,130	0
4	HEM	O	1002	43/43	0.94	0.17	76,93,120,125	0
5	SMA	E	1003	37/37	0.94	0.13	72,94,117,122	0
4	HEM	A	1002	43/43	0.94	0.18	72,93,116,118	0
8	SR	B	1002	1/1	0.94	0.08	165,165,165,165	0
8	SR	F	1003	1/1	0.94	0.05	164,164,164,164	0
4	HEM	W	1001	43/43	0.94	0.16	78,112,142,152	0

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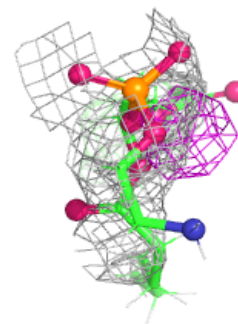
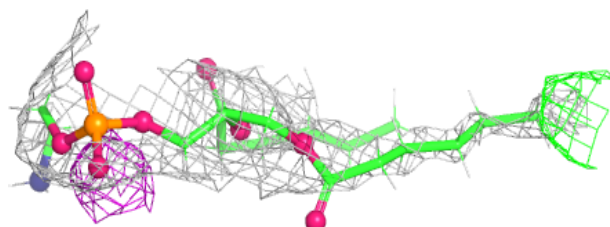
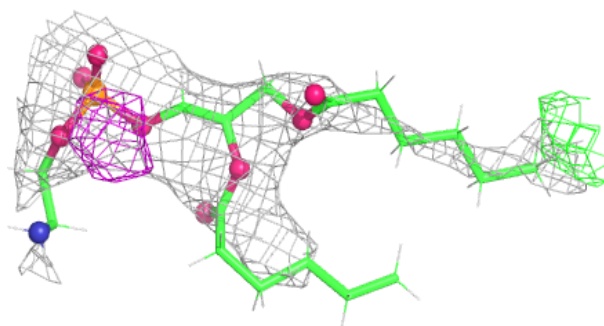
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
7	HEC	L	1001	43/43	0.95	0.15	90,109,137,153	0
5	SMA	K	1003	37/37	0.95	0.15	79,98,114,127	0
4	HEM	K	1002	43/43	0.96	0.17	84,104,130,132	0
4	HEM	S	1002	43/43	0.96	0.17	94,114,137,151	0
4	HEM	W	1002	43/43	0.97	0.15	81,99,133,144	0
8	SR	L	1002	1/1	0.97	0.05	162,162,162,162	0
8	SR	X	1002	1/1	0.97	0.04	184,184,184,184	0
10	FES	Y	1001	4/4	0.97	0.07	154,156,162,163	0
10	FES	G	1001	4/4	0.99	0.04	85,87,88,88	0
10	FES	M	1001	4/4	0.99	0.04	127,127,129,129	0
10	FES	Q	1001	4/4	0.99	0.05	68,71,71,81	0
10	FES	U	1001	4/4	0.99	0.04	95,95,97,100	0
10	FES	C	1001	4/4	0.99	0.04	91,93,96,96	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.

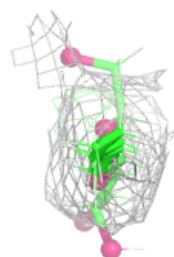
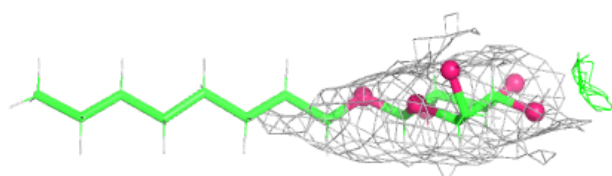
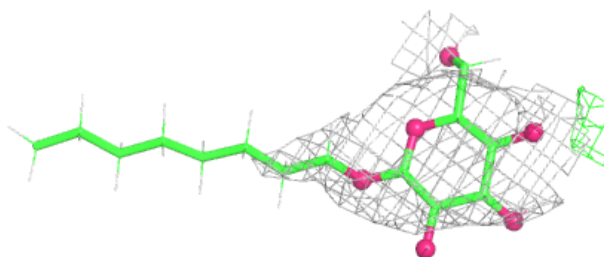
Electron density around 6PE W 1004:

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

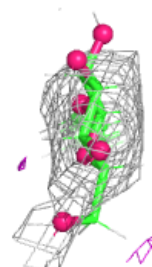
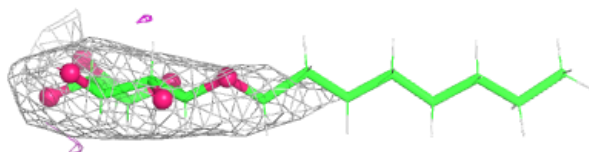
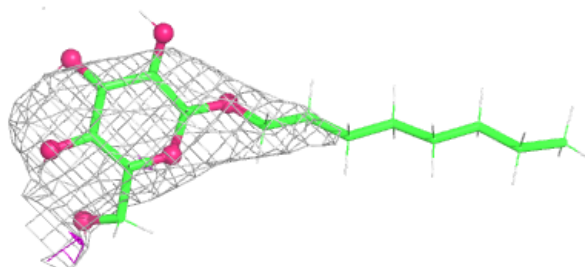


Electron density around BOG B 1003:

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

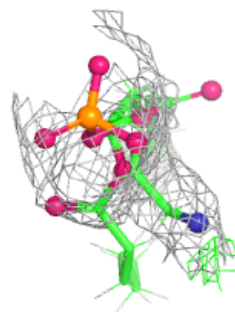
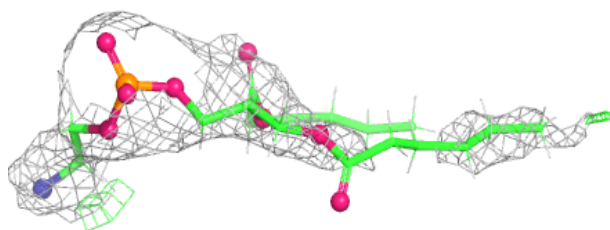
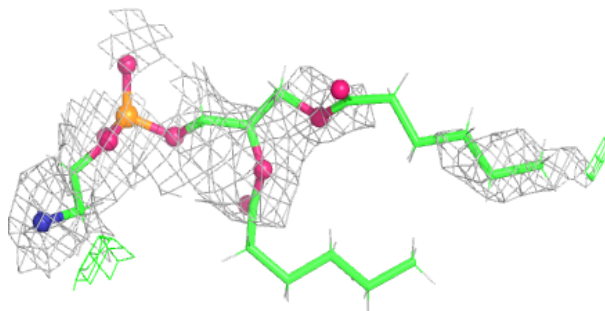
**Electron density around BOG F 1002:**

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

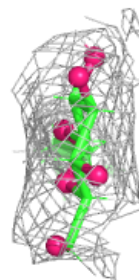
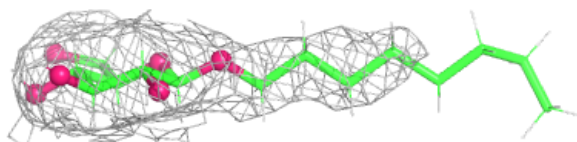
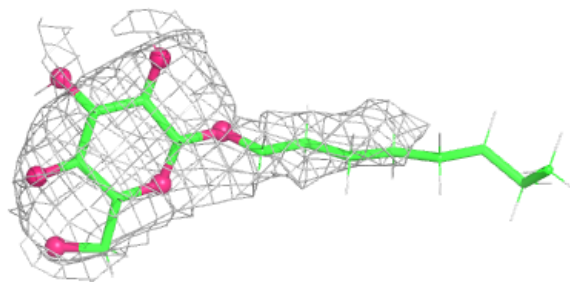


Electron density around 6PE A 1004:

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

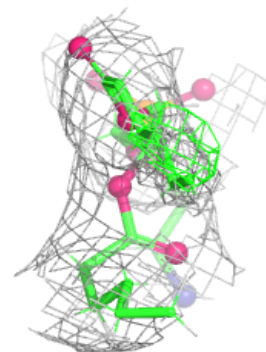
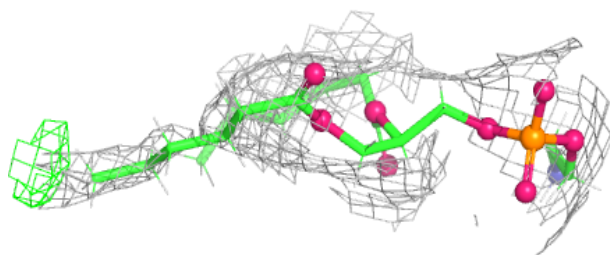
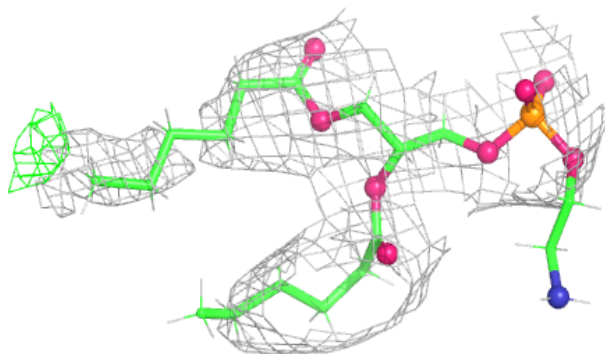
**Electron density around BOG P 1002:**

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

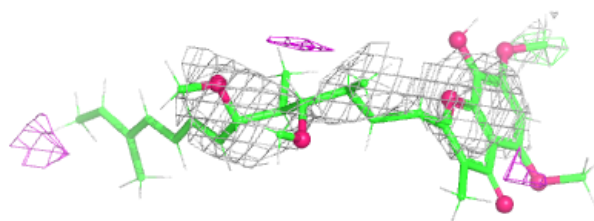
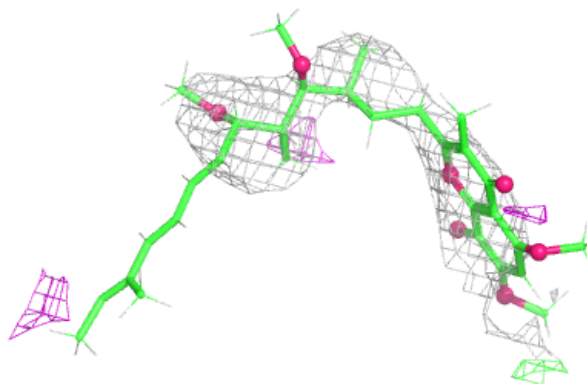


Electron density around 6PE E 1004:

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

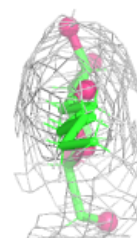
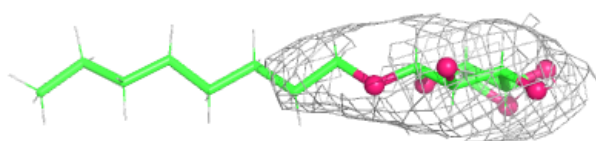
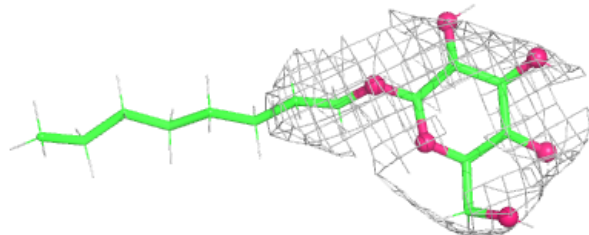
**Electron density around SMA S 1003:**

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

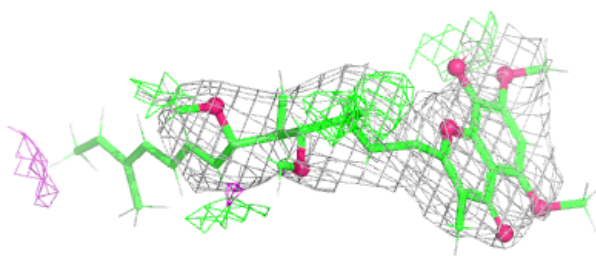


Electron density around BOG L 1003:

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

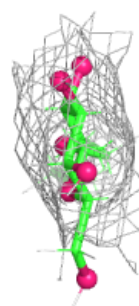
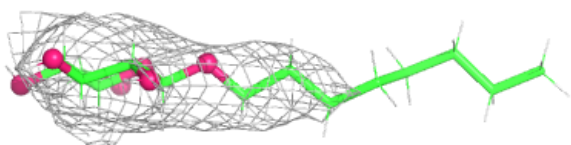
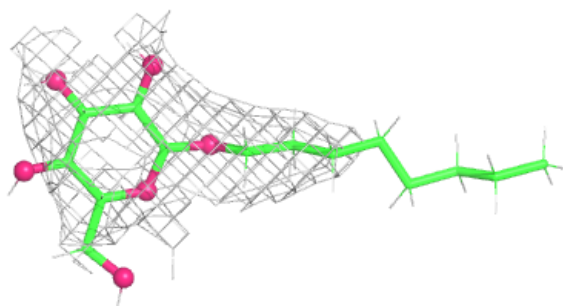
**Electron density around SMA O 1003:**

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



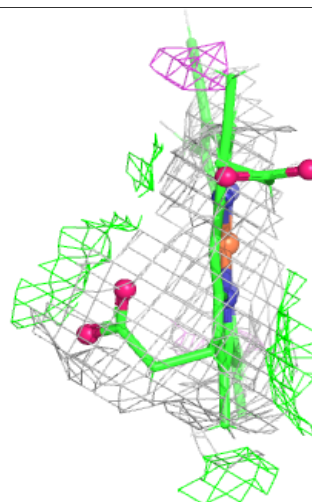
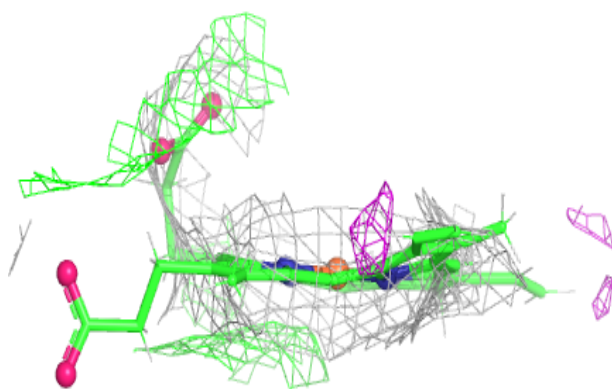
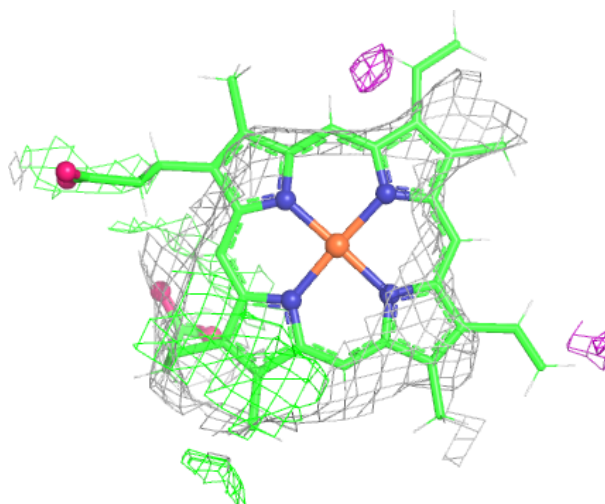
Electron density around BOG X 1003:

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and green (positive)



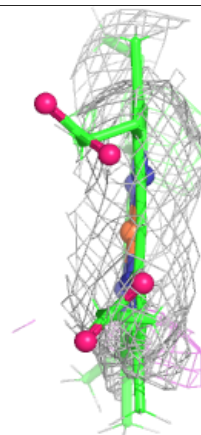
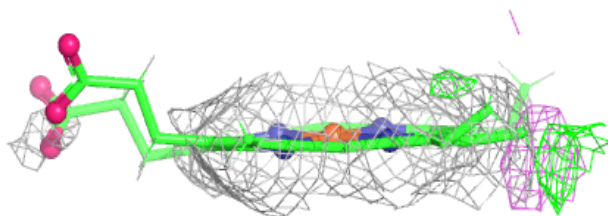
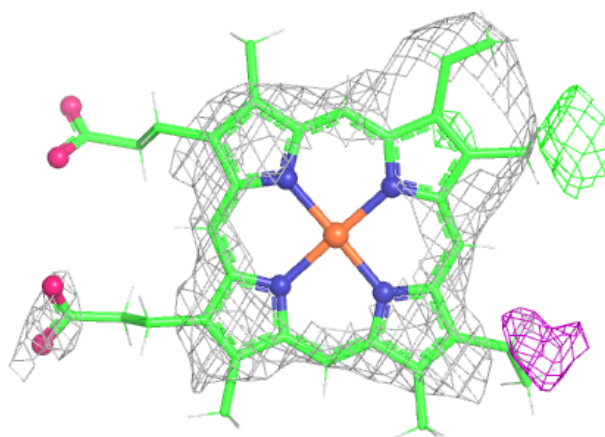
Electron density around HEM O 1001:

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



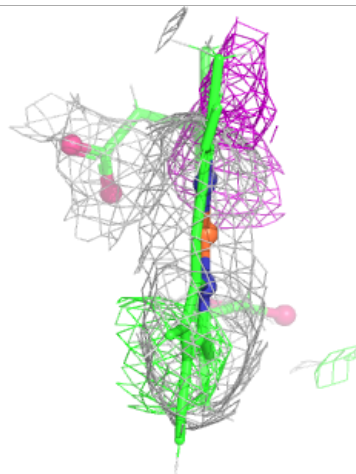
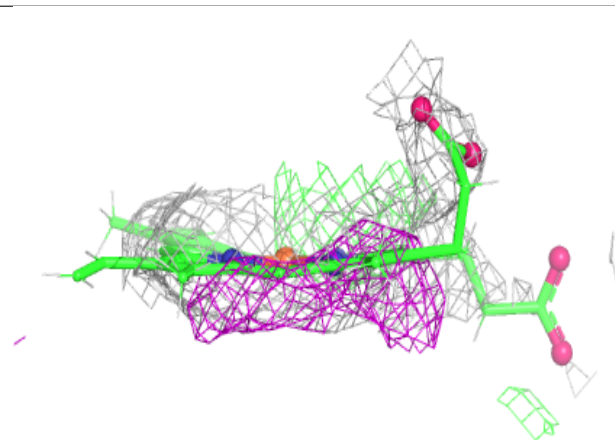
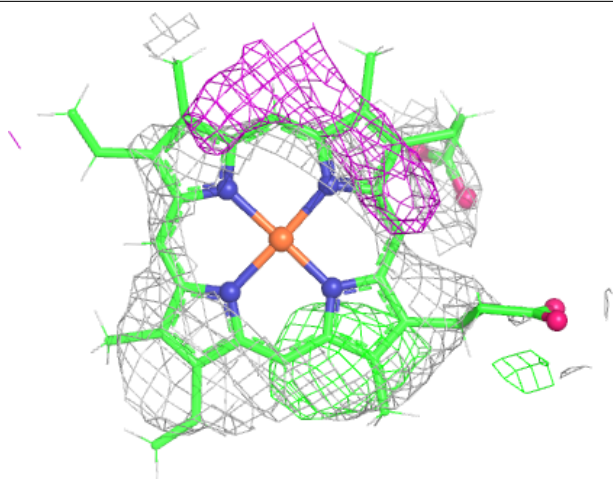
Electron density around HEC F 1001:

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



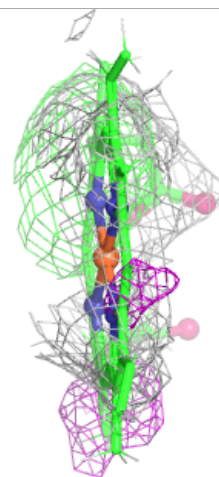
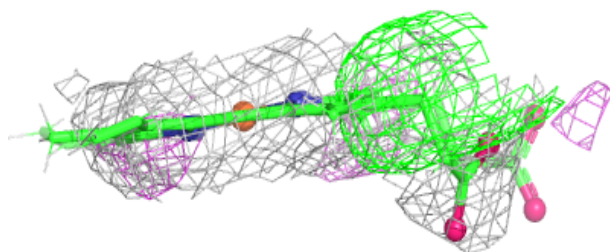
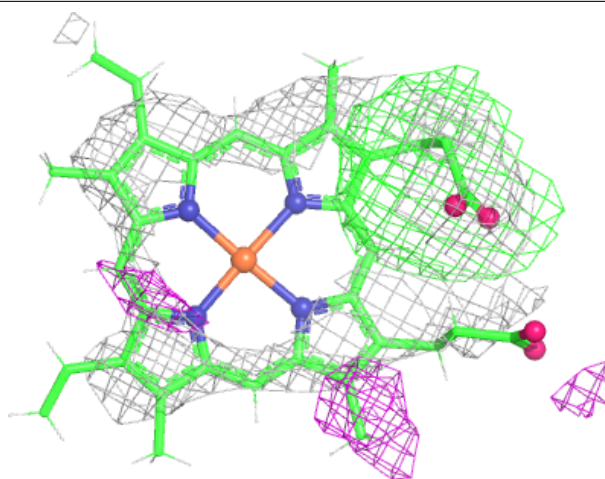
Electron density around HEM K 1001:

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



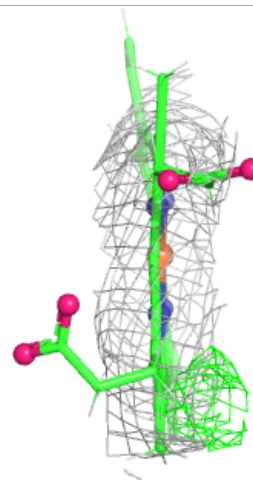
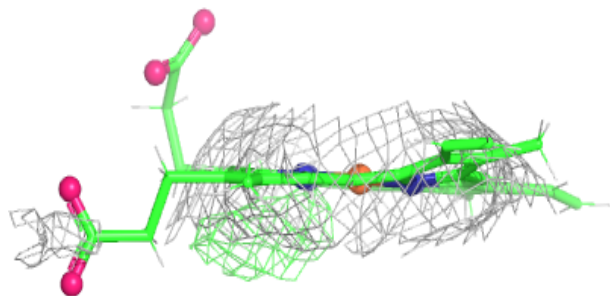
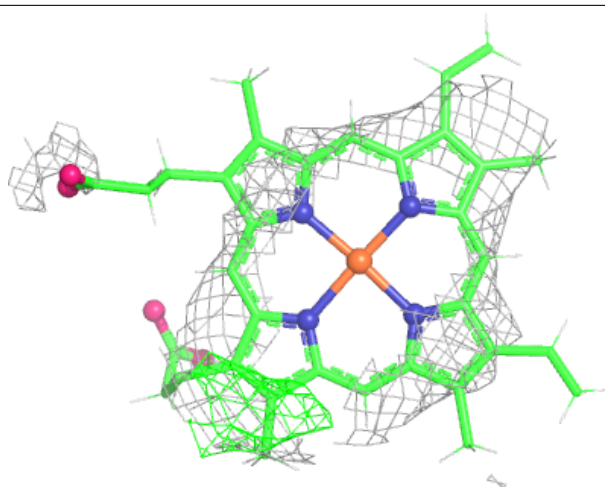
Electron density around HEM E 1002:

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



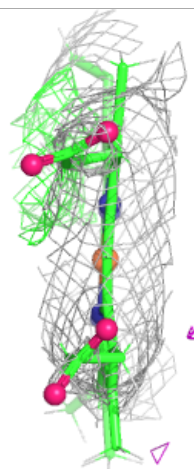
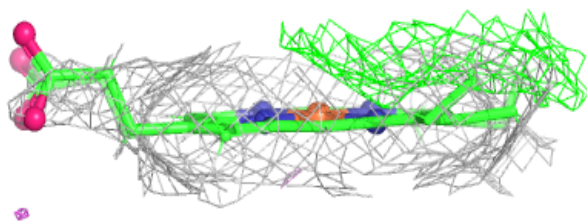
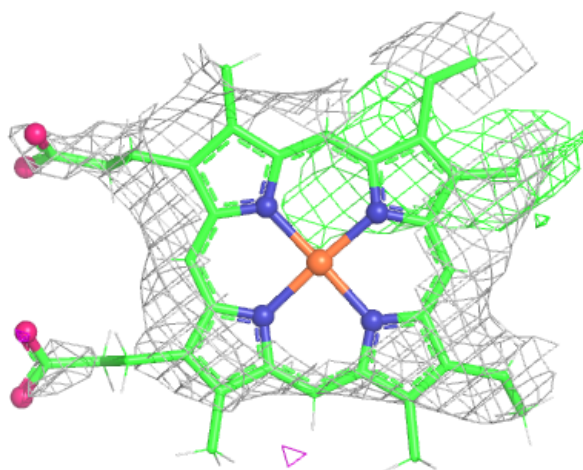
Electron density around HEM S 1001:

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



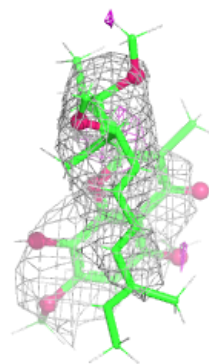
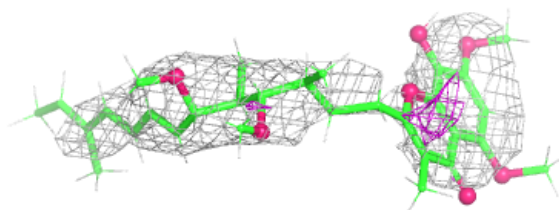
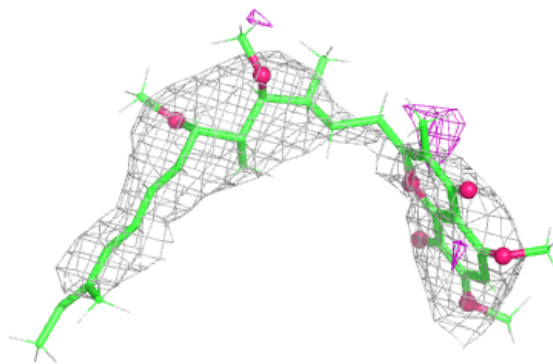
Electron density around HEC B 1001:

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



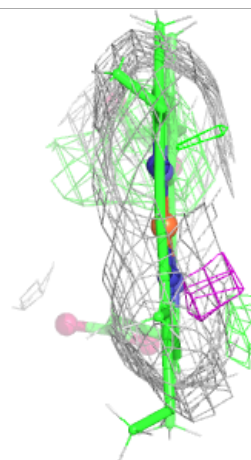
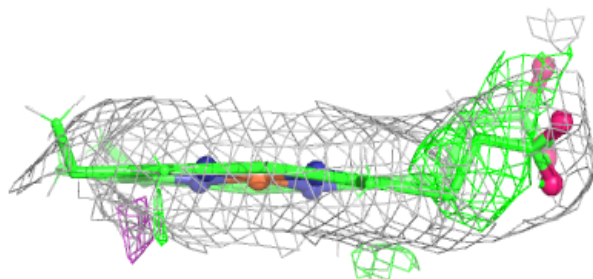
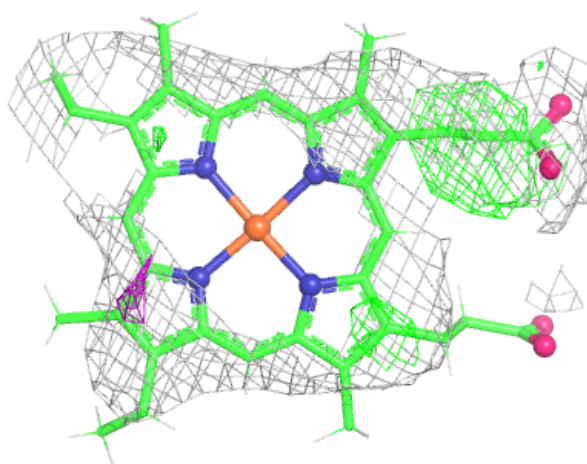
Electron density around SMA A 1003:

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



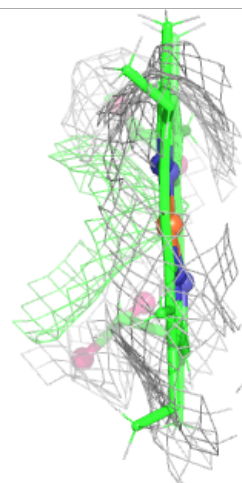
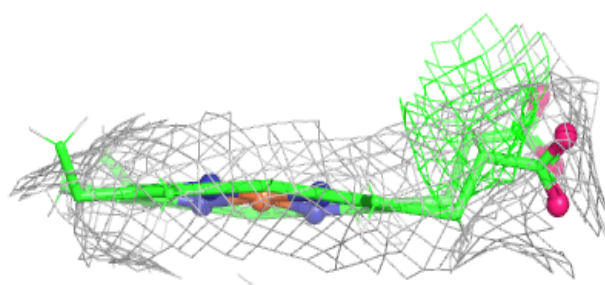
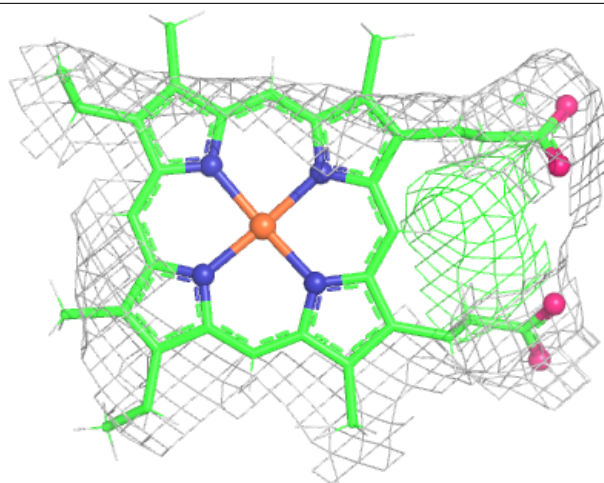
Electron density around HEC P 1001:

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



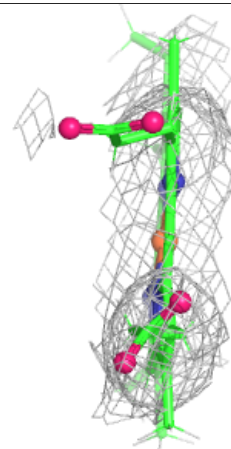
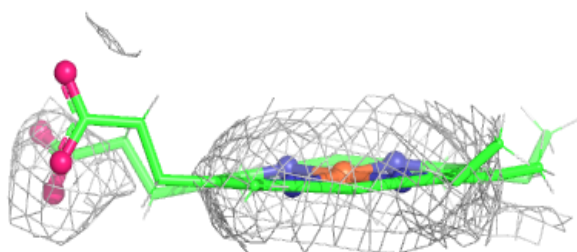
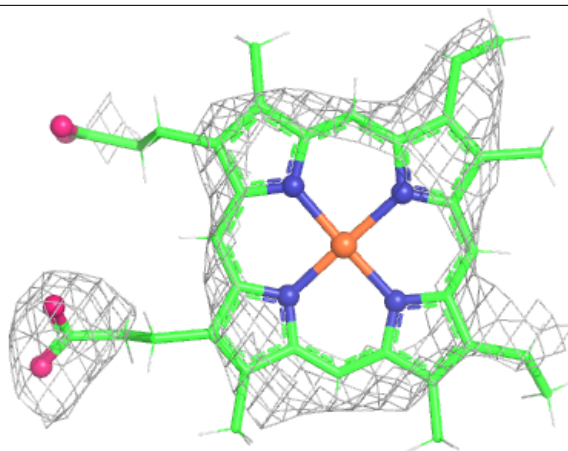
Electron density around HEC T 1001:

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



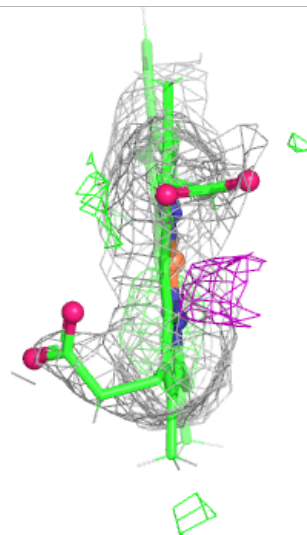
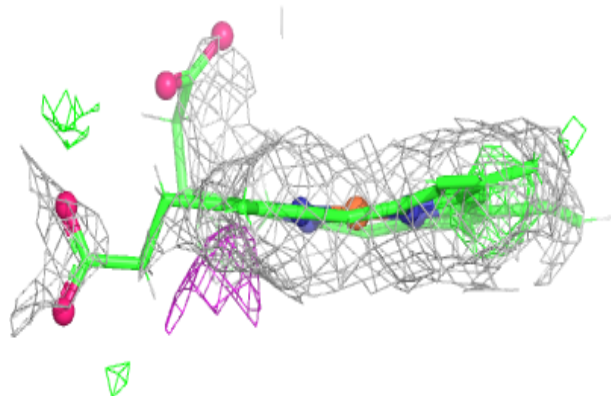
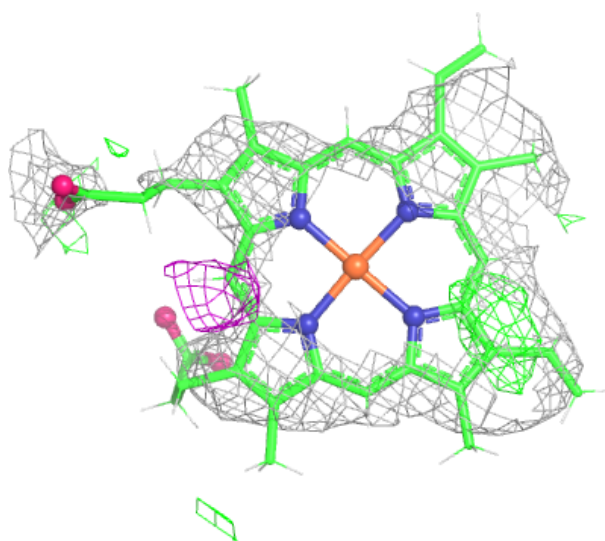
Electron density around HEC X 1001:

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



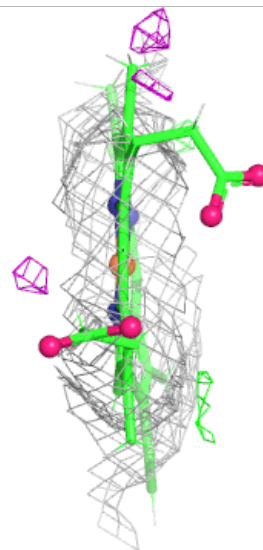
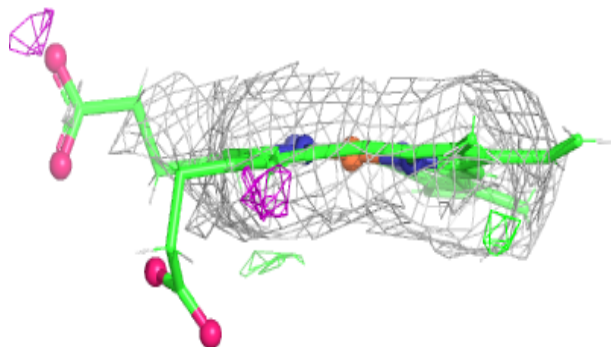
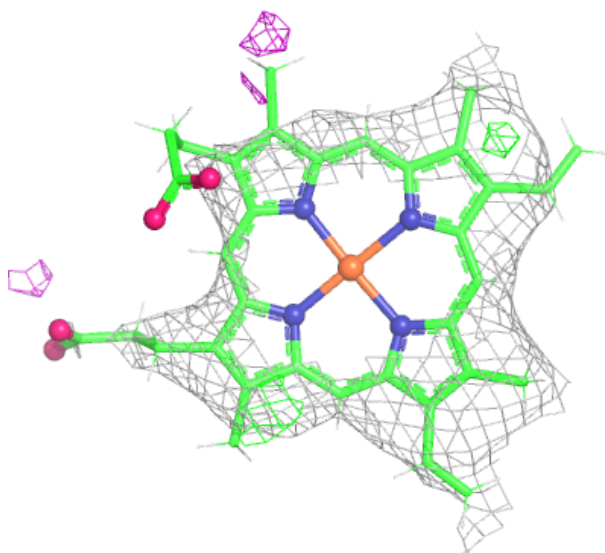
Electron density around HEM A 1001:

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



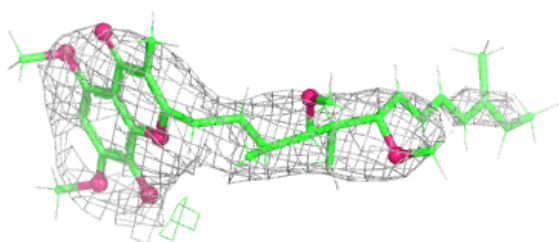
Electron density around HEM E 1001:

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



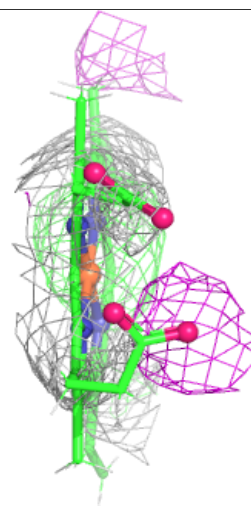
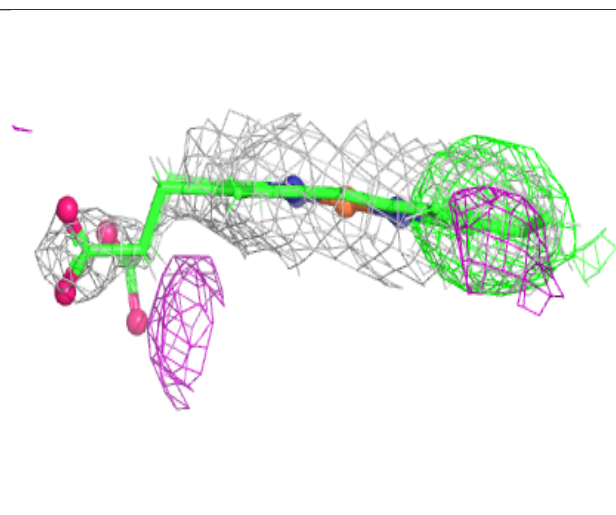
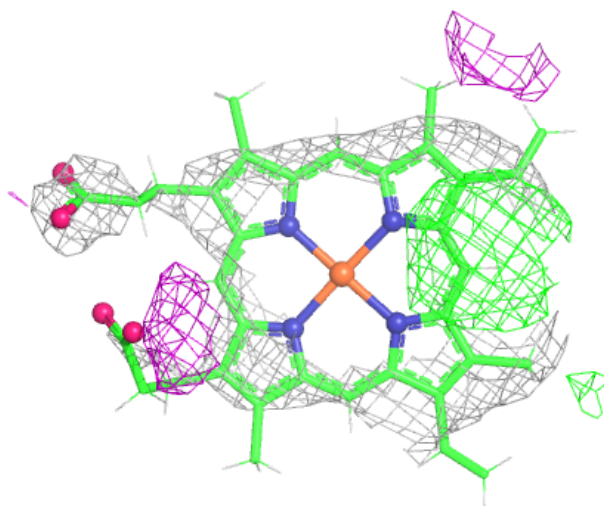
Electron density around SMA W 1003:

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



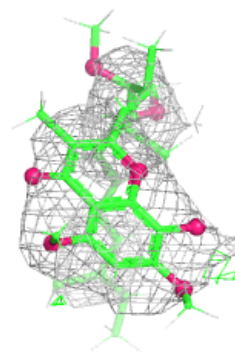
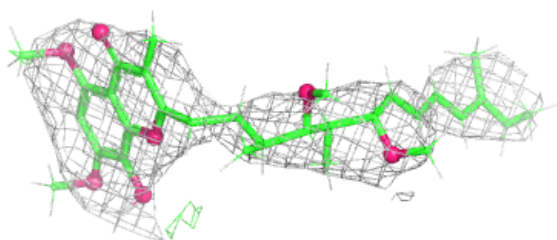
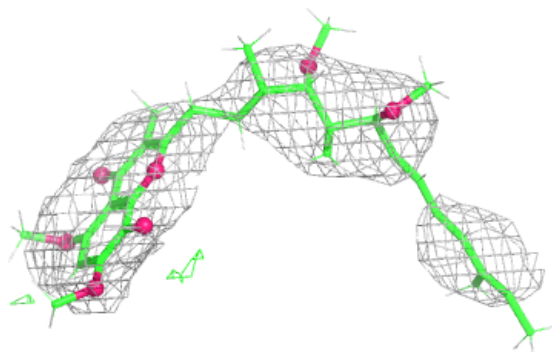
Electron density around HEM O 1002:

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



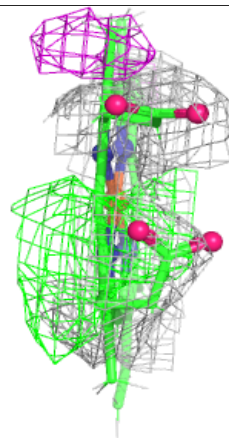
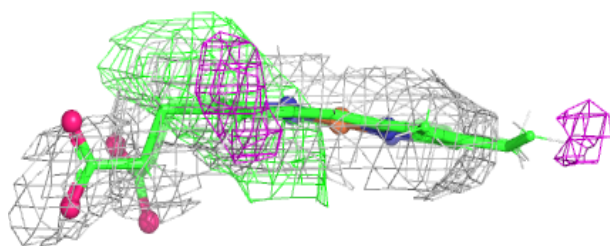
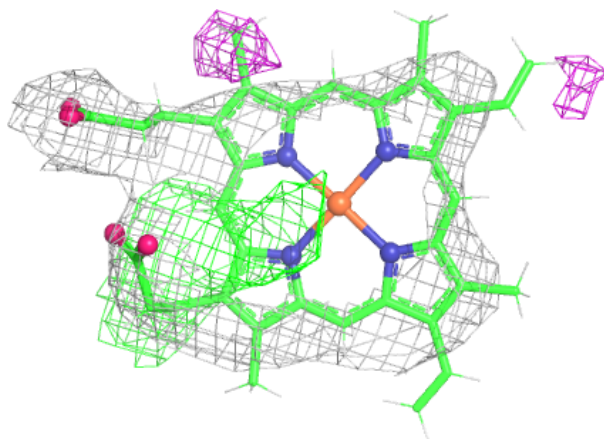
Electron density around SMA E 1003:

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



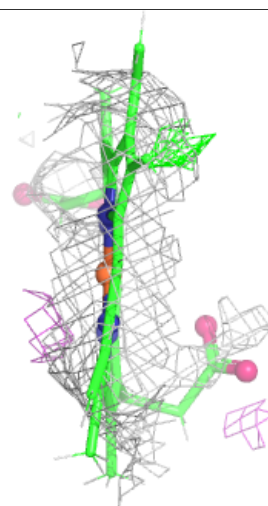
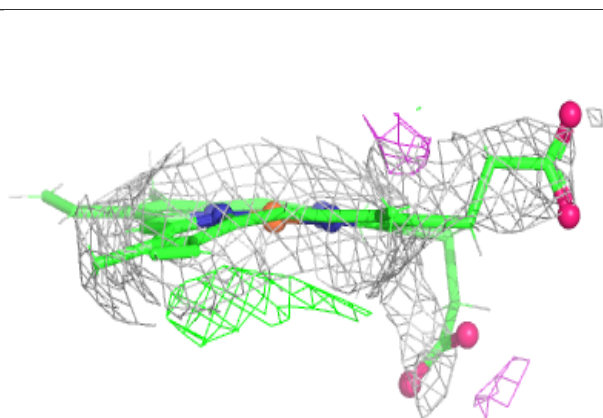
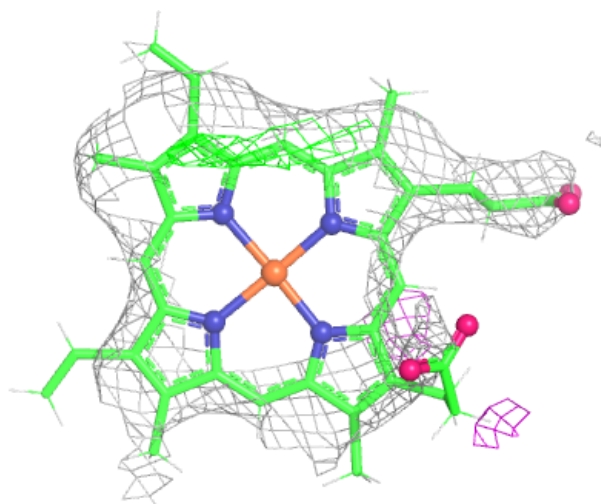
Electron density around HEM A 1002:

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



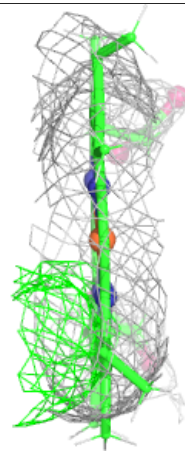
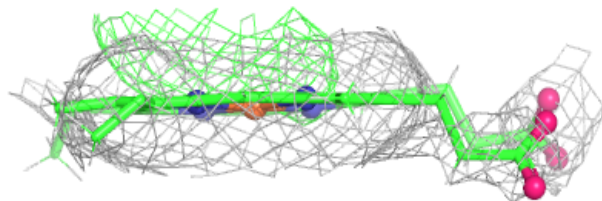
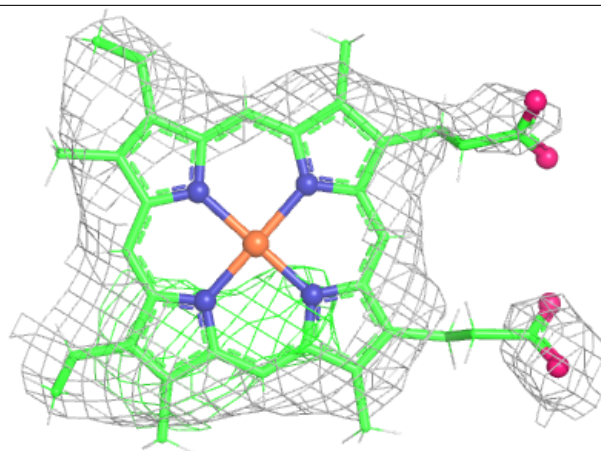
Electron density around HEM W 1001:

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



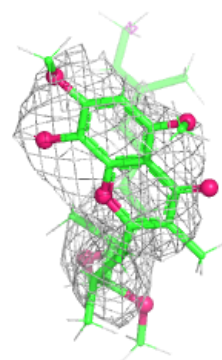
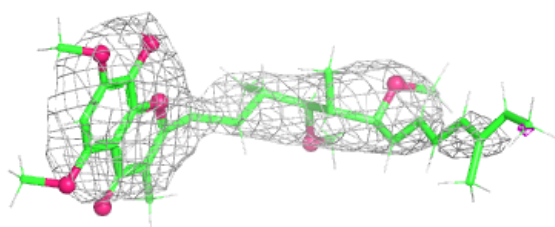
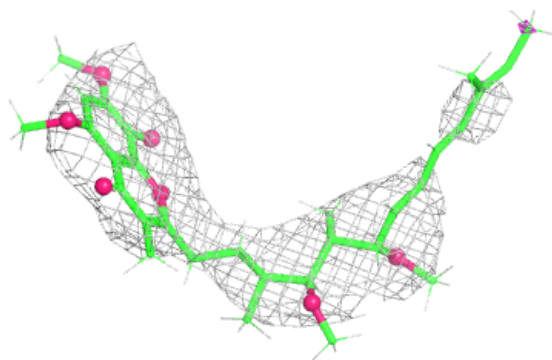
Electron density around HEC L 1001:

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



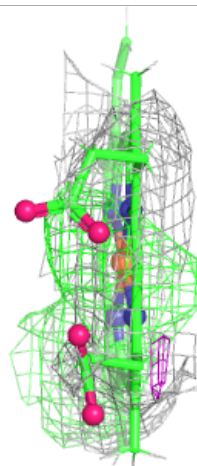
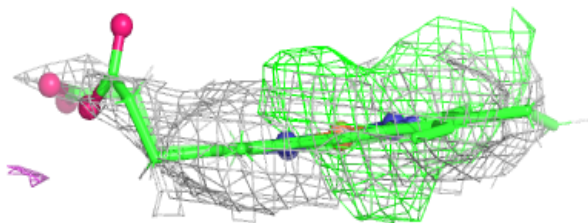
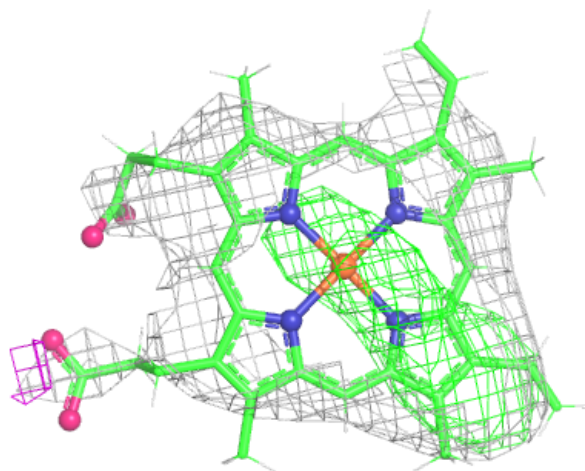
Electron density around SMA K 1003:

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



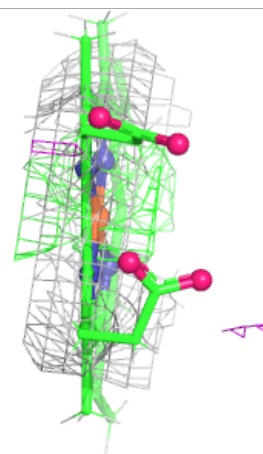
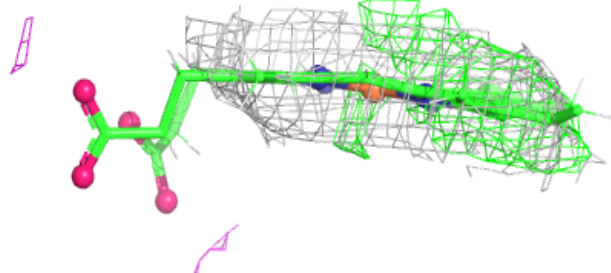
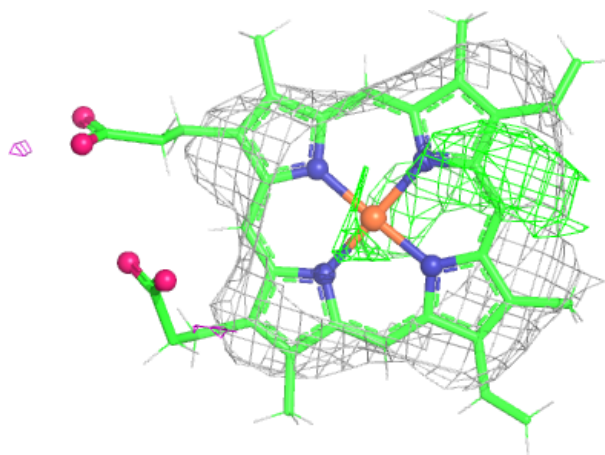
Electron density around HEM K 1002:

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



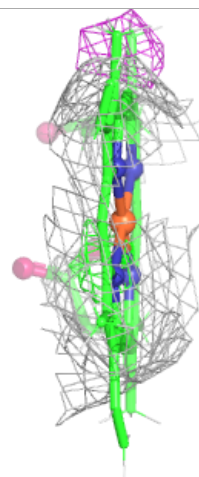
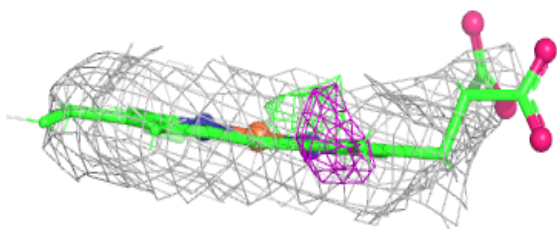
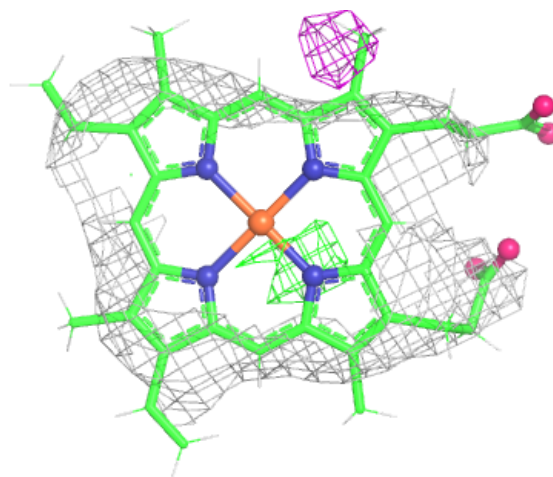
Electron density around HEM S 1002:

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



Electron density around HEM W 1002:

$2mF_o-DF_c$ (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.