



wwPDB X-ray Structure Validation Summary Report ⓘ

Aug 4, 2026 – 08:01 PM EDT

PDB ID : 1ZRT / pdb_00001zrt
Title : Rhodobacter capsulatus cytochrome bc1 complex with stigmatellin bound
Authors : Berry, E.A.; Huang, L.S.; Saechao, L.K.; Pon, N.G.; Valkova-Valchanov, M.; Daldal, F.
Deposited on : 2005-05-22
Resolution : 3.51 Å(reported)

This is a wwPDB X-ray Structure Validation Summary Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 2.0
EDS : 3.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.015 (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

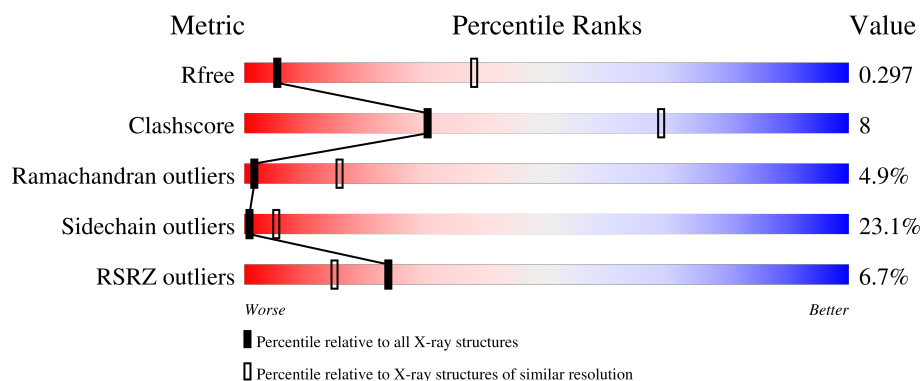
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.51 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	1025 (3.56-3.48)
Clashscore	190562	1079 (3.56-3.48)
Ramachandran outliers	187476	1052 (3.56-3.48)
Sidechain outliers	187428	1053 (3.56-3.48)
RSRZ outliers	180081	1024 (3.56-3.48)

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	C	437	3% 59% 32% 6% ..
1	P	437	8% 59% 31% 8% ..
2	D	258	7% 55% 34% 7% .
2	Q	258	5% 54% 35% 6% . .
3	E	191	13% 54% 34% 7% . .

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Mol	Chain	Length	Quality of chain
3	R	191	

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	D	501	X	-	-	-
7	HEC	Q	501	X	-	-	-

2 Entry composition

There are 9 unique types of molecules in this entry. The entry contains 13919 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Cytochrome b.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	C	431	Total	C	N	O	S	0	1	0
			3472	2345	543	570	14			
1	P	431	Total	C	N	O	S	0	1	0
			3468	2342	542	570	14			

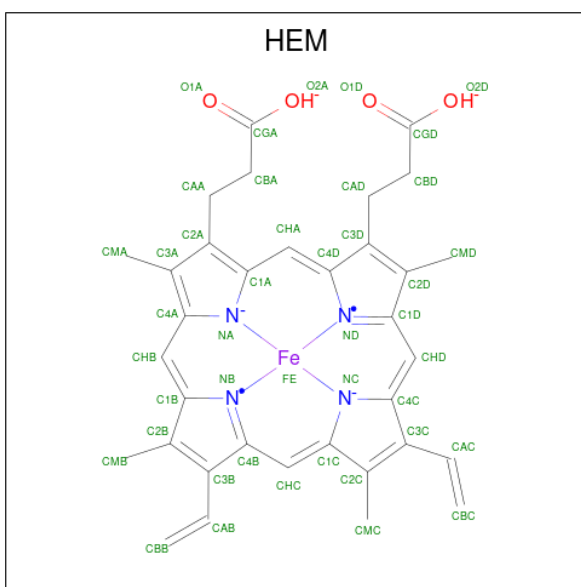
- Molecule 2 is a protein called Cytochrome c1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	D	248	Total	C	N	O	S	0	0	0
			1908	1213	319	359	17			
2	Q	248	Total	C	N	O	S	0	0	0
			1904	1210	318	359	17			

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

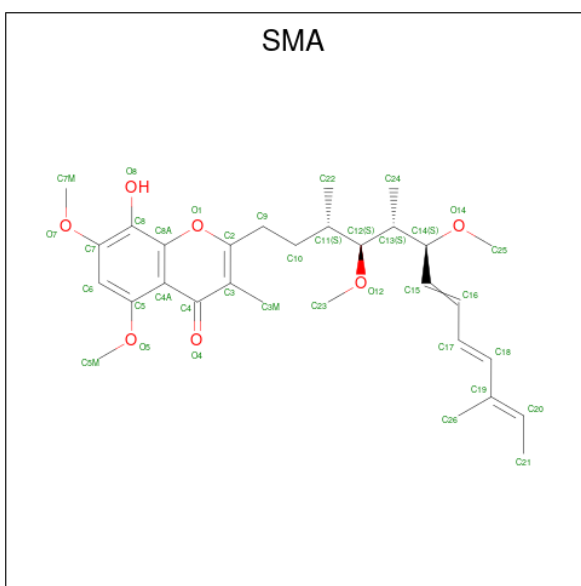
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	E	183	Total	C	N	O	S	0	0	0
			1372	859	248	257	8			
3	R	183	Total	C	N	O	S	0	0	0
			1376	861	248	259	8			

- Molecule 4 is PROTOPORPHYRIN IX CONTAINING FE (CCD ID: HEM) (formula: $C_{34}H_{32}FeN_4O_4$).



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

- Molecule 5 is STIGMATELLIN A (CCD ID: SMA) (formula: $C_{30}H_{42}O_7$) (labeled as "Ligand of Interest" by depositor).

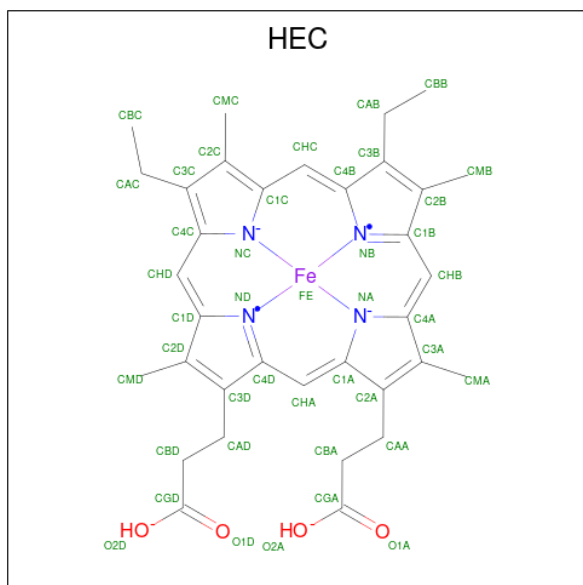


Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	C	1	Total	C	O	0	0
			37	30	7		
5	P	1	Total	C	O	0	0
			37	30	7		

- Molecule 6 is UNKNOWN LIGAND (CCD ID: UNL) (formula:).

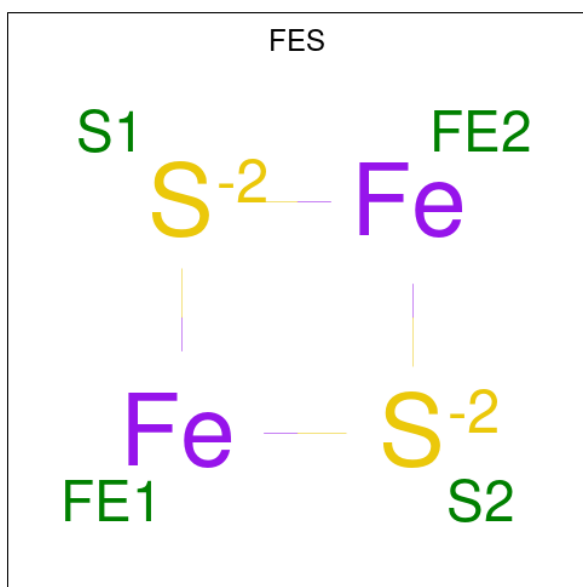
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	C	2	Total	C	O	0	0
			25	18	7		
6	P	2	Total	C	O	0	0
			36	27	9		

- Molecule 7 is HEME C (CCD ID: HEC) (formula: $C_{34}H_{36}FeN_4O_4$).



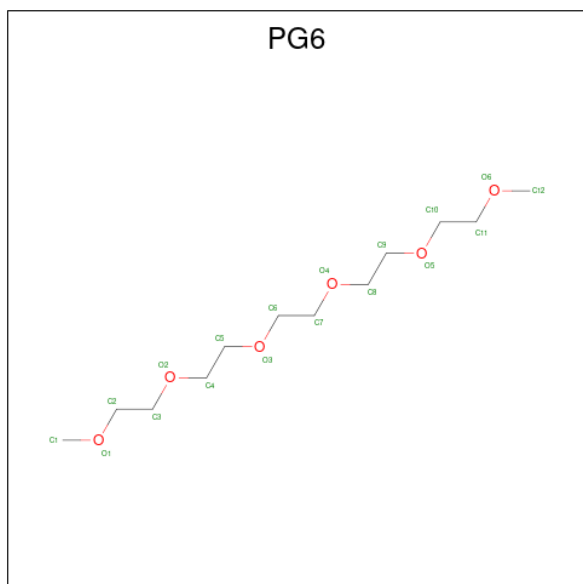
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
7	D	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		
7	Q	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		

- Molecule 8 is FE2/S2 (INORGANIC) CLUSTER (CCD ID: FES) (formula: Fe_2S_2).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
8	E	1	Total	Fe	S	0	0
			4	2	2		
8	R	1	Total	Fe	S	0	0
			4	2	2		

- Molecule 9 is 1-(2-METHOXY-ETHOXY)-2-{2-[2-(2-METHOXY-ETHOXY)-ETHOXY]-ETHOXY}-ETHANE (CCD ID: PG6) (formula: C₁₂H₂₆O₆).

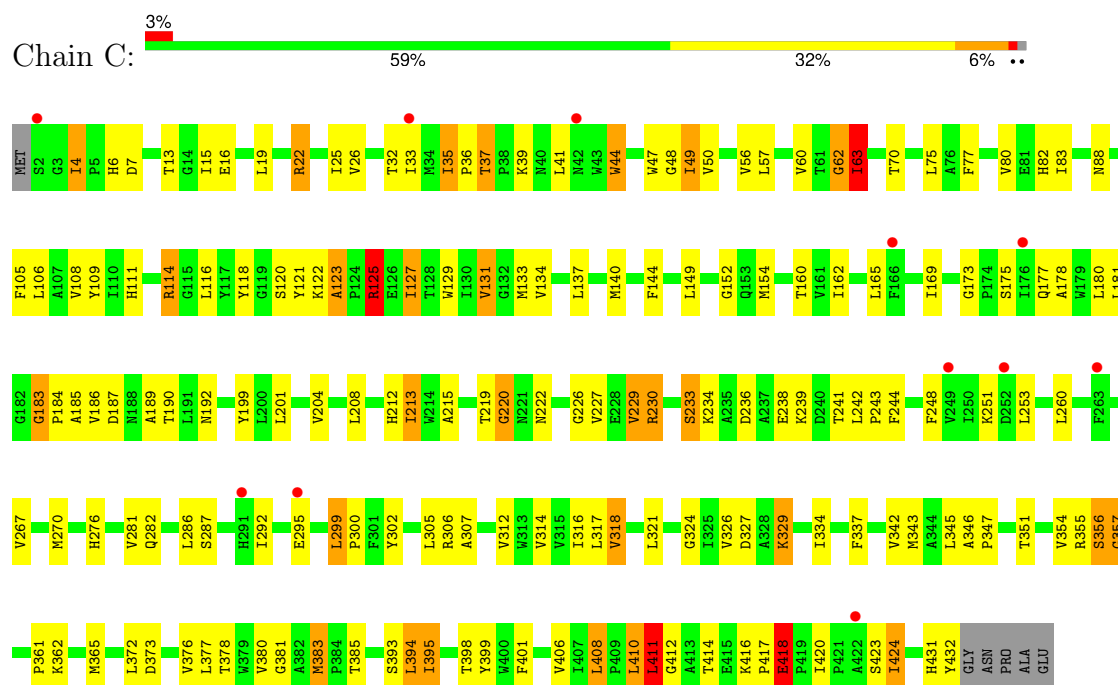


Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
9	Q	1	Total	C	O	0	0
			18	12	6		

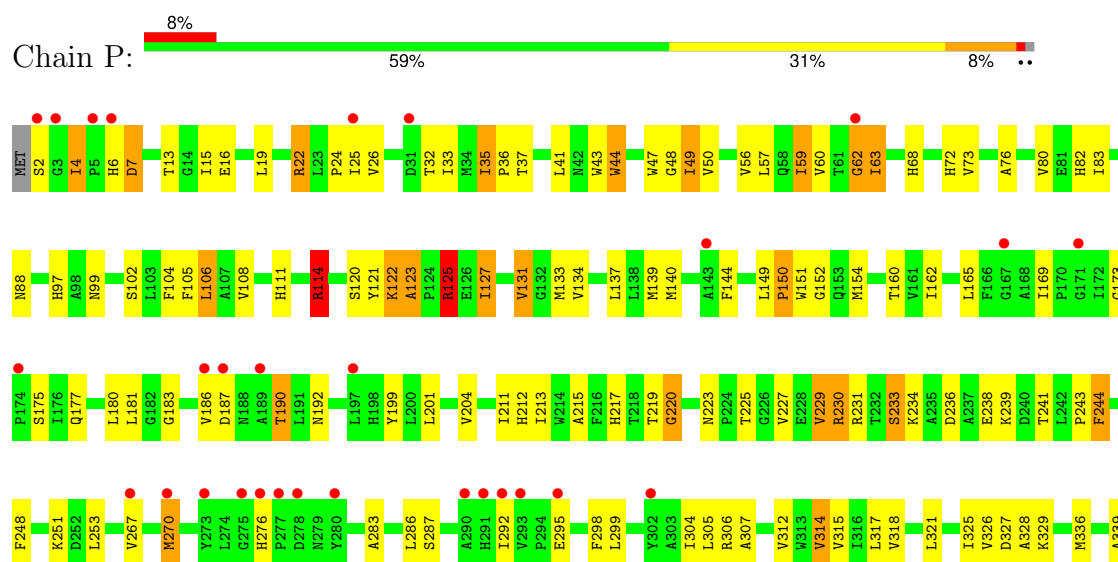
3 Residue-property plots

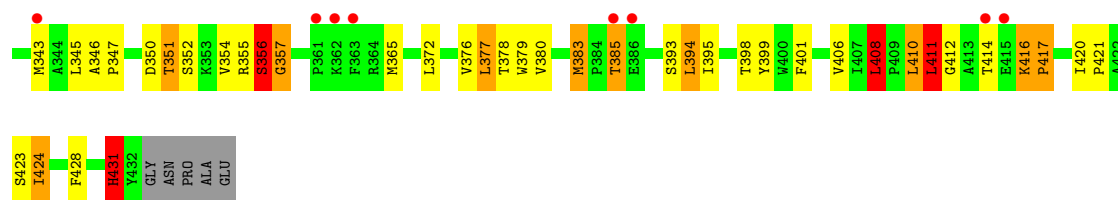
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: Cytochrome b

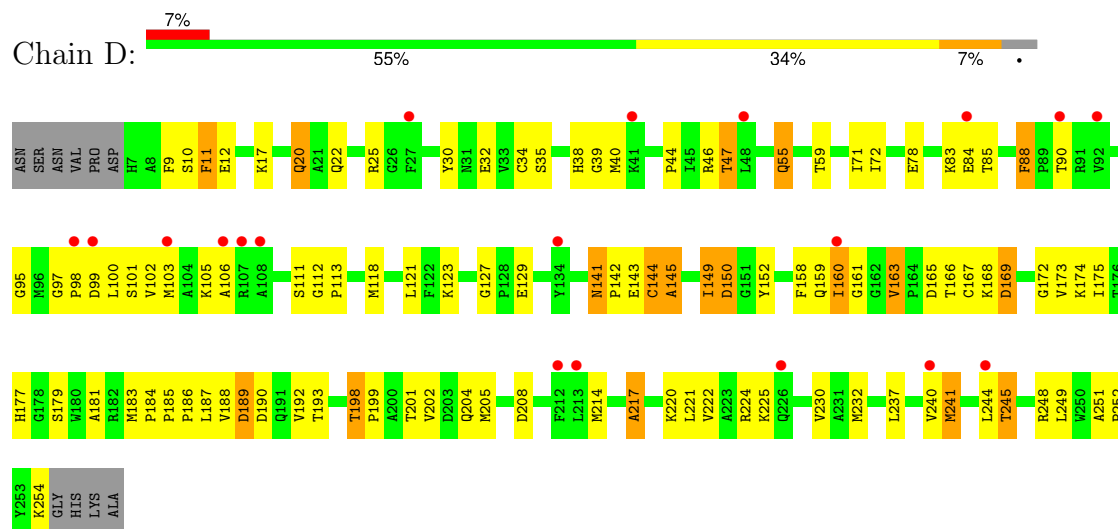


• Molecule 1: Cytochrome b

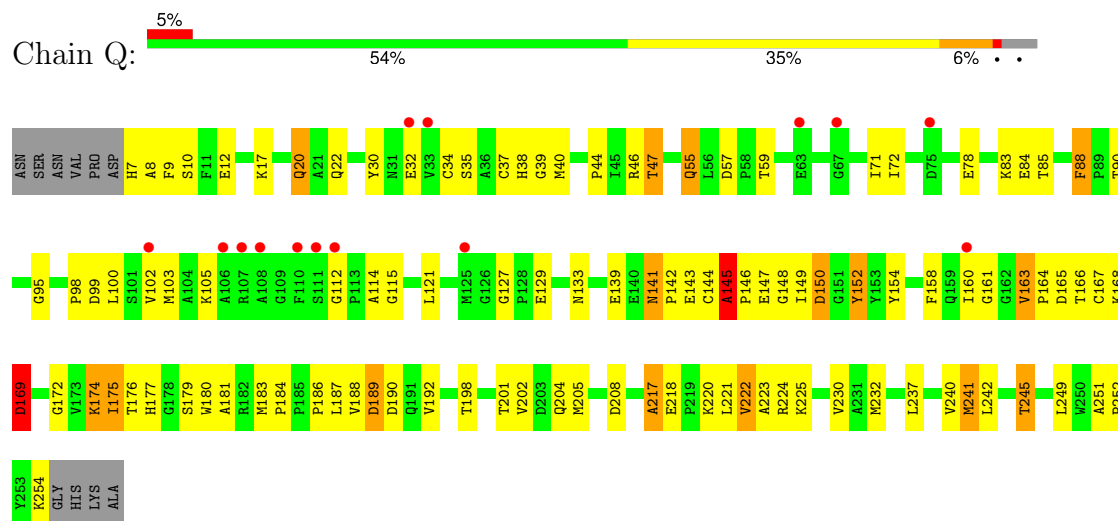




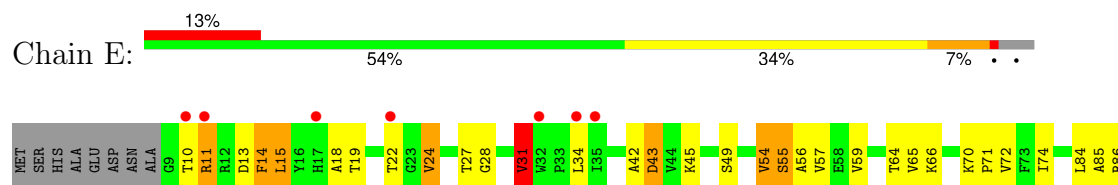
• Molecule 2: Cytochrome c1

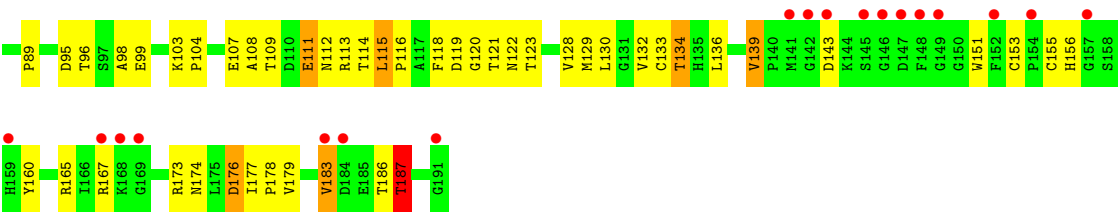


• Molecule 2: Cytochrome c1

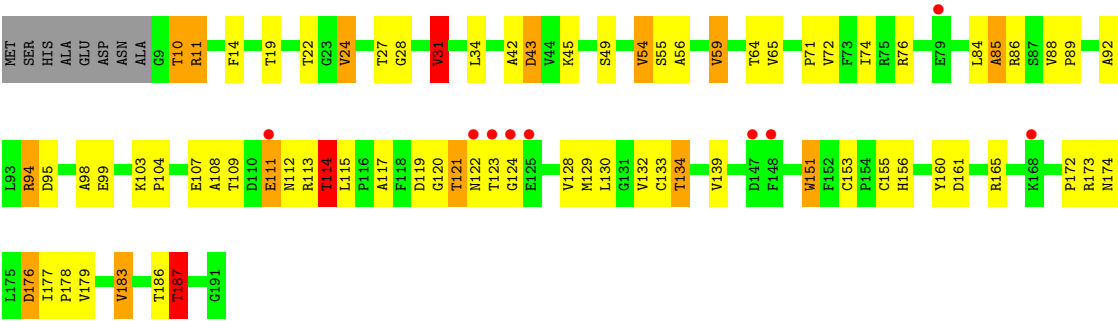


• Molecule 3: Ubiquinol-cytochrome c reductase iron-sulfur subunit





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



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	95.63Å 154.36Å 103.06Å 90.00° 113.57° 90.00°	Depositor
Resolution (Å)	59.77 – 3.51 59.77 – 3.51	Depositor EDS
% Data completeness (in resolution range)	96.5 (59.77-3.51) 96.9 (59.77-3.51)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.91 (at 3.49Å)	Xtriage
Refinement program	PHENIX dev_3885, CNS 1.1	Depositor
R, R_{free}	0.221 , 0.289 0.228 , 0.297	Depositor DCC
R_{free} test set	1661 reflections (4.99%)	wwPDB-VP
Wilson B-factor (Å ²)	99.0	Xtriage
Anisotropy	0.858	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.26 , 62.0	EDS
L-test for twinning ²	$\langle L \rangle = 0.46$, $\langle L^2 \rangle = 0.29$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.90	EDS
Total number of atoms	13919	wwPDB-VP
Average B, all atoms (Å ²)	119.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.03% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: HEM, PG6, HEC, SMA, UNL, 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	C	1.11	5/3608 (0.1%)	1.54	59/4955 (1.2%)
1	P	1.21	9/3604 (0.2%)	1.55	47/4951 (0.9%)
2	D	0.93	4/1956 (0.2%)	1.35	9/2647 (0.3%)
2	Q	0.90	1/1952 (0.1%)	1.35	11/2643 (0.4%)
3	E	1.01	2/1402 (0.1%)	1.40	12/1905 (0.6%)
3	R	1.01	1/1406 (0.1%)	1.33	6/1910 (0.3%)
All	All	1.07	22/13928 (0.2%)	1.46	144/19011 (0.8%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	P	0	1
2	D	0	1
2	Q	0	2
All	All	0	4

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

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	E	167	ARG	CA-C	6.78	1.56	1.52
2	D	145	ALA	C-O	-6.65	1.20	1.23
1	P	385	THR	CA-C	6.49	1.63	1.52
1	P	215	ALA	CA-CB	-6.32	1.43	1.53
3	R	85	ALA	CA-CB	-6.00	1.44	1.53

The worst 5 of 144 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	220	GLY	N-CA-C	-9.25	99.60	111.72
1	P	173	GLY	N-CA-C	8.95	126.01	115.09
1	C	416	LYS	CA-C-N	8.23	130.13	119.84
1	C	416	LYS	C-N-CA	8.23	130.13	119.84
1	C	201	LEU	CA-C-N	-8.15	111.40	120.45

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	D	167	CYS	Peptide
1	P	356	SER	Peptide
2	Q	148	GLY	Peptide
2	Q	167	CYS	Peptide

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	3472	0	3424	53	0
1	P	3468	0	3413	60	0
2	D	1908	0	1840	31	0
2	Q	1904	0	1829	35	0
3	E	1372	0	1346	28	0
3	R	1376	0	1350	27	0
4	C	86	0	60	2	0
4	P	86	0	60	3	0
5	C	37	0	42	4	0
5	P	37	0	42	3	0
6	C	25	0	0	0	0
6	P	36	0	0	1	0
7	D	43	0	30	5	0
7	Q	43	0	30	8	0
8	E	4	0	0	0	0
8	R	4	0	0	1	0
9	Q	18	0	26	0	0
All	All	13919	0	13492	231	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 8.

The worst 5 of 231 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)
2:Q:37:CYS:SG	7:Q:501:HEC:CAC	2.02	1.47
1:C:44:TRP:HB3	1:C:114:ARG:HG3	1.72	0.71
1:P:4:ILE:HG13	1:P:231:ARG:HE	1.56	0.69
1:C:162:ILE:HA	1:C:165:LEU:HD12	1.76	0.68
1:P:44:TRP:HB3	1:P:114:ARG:HG3	1.75	0.67

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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	C	430/437 (98%)	363 (84%)	55 (13%)	12 (3%)	4	25
1	P	430/437 (98%)	359 (84%)	58 (14%)	13 (3%)	3	25
2	D	246/258 (95%)	195 (79%)	32 (13%)	19 (8%)	1	8
2	Q	246/258 (95%)	195 (79%)	32 (13%)	19 (8%)	1	8
3	E	181/191 (95%)	146 (81%)	24 (13%)	11 (6%)	1	12
3	R	181/191 (95%)	142 (78%)	29 (16%)	10 (6%)	1	13
All	All	1714/1772 (97%)	1400 (82%)	230 (13%)	84 (5%)	1	16

5 of 84 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	123	ALA
1	C	125	ARG
1	C	411	LEU

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Mol	Chain	Res	Type
1	C	417	PRO
2	D	12	GLU

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	C	356/360 (99%)	278 (78%)	78 (22%)	1	6
1	P	355/360 (99%)	275 (78%)	80 (22%)	1	5
2	D	197/206 (96%)	150 (76%)	47 (24%)	1	4
2	Q	196/206 (95%)	149 (76%)	47 (24%)	1	4
3	E	142/149 (95%)	107 (75%)	35 (25%)	1	4
3	R	143/149 (96%)	108 (76%)	35 (24%)	1	4
All	All	1389/1430 (97%)	1067 (77%)	322 (23%)	1	5

5 of 322 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	P	401	PHE
2	Q	252	PRO
1	P	424	ILE
2	Q	150	ASP
3	R	72	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 18 such sidechains are listed below:

Mol	Chain	Res	Type
3	R	36	ASN
3	R	112	ASN
3	R	102	ASN
3	E	112	ASN
2	Q	204	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 15 ligands modelled in this entry, 4 are unknown - leaving 11 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# $ Z > 2$	Counts	RMSZ	# $ Z > 2$
9	PG6	Q	502	-	17,17,17	0.72	0	16,16,16	0.57	0
4	HEM	C	501	1	50,50,50	2.14	10 (20%)	67,82,82	1.56	11 (16%)
4	HEM	P	501	1	50,50,50	1.63	8 (16%)	67,82,82	1.59	19 (28%)
5	SMA	P	503	-	38,38,38	2.27	6 (15%)	47,52,52	2.16	17 (36%)
7	HEC	D	501	2	50,50,50	2.10	7 (14%)	68,82,82	2.10	20 (29%)
7	HEC	Q	501	2	50,50,50	2.03	8 (16%)	68,82,82	1.95	16 (23%)
8	FES	R	501	3	0,4,4	-	-	-	-	-
4	HEM	P	502	1	50,50,50	1.43	6 (12%)	67,82,82	1.72	15 (22%)
4	HEM	C	502	1	50,50,50	1.56	10 (20%)	67,82,82	1.80	17 (25%)
5	SMA	C	503	-	38,38,38	2.35	6 (15%)	47,52,52	2.38	15 (31%)
8	FES	E	501	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
9	PG6	Q	502	-	-	3/15/15/15	-
4	HEM	C	501	1	-	3/14/54/54	-
4	HEM	P	501	1	-	3/14/54/54	-
5	SMA	P	503	-	-	15/34/34/34	0/2/2/2
7	HEC	D	501	2	1/1/3/7	9/14/54/54	-
7	HEC	Q	501	2	1/1/3/7	9/14/54/54	-
8	FES	R	501	3	-	-	0/1/1/1
4	HEM	P	502	1	-	5/14/54/54	-
4	HEM	C	502	1	-	3/14/54/54	-
5	SMA	C	503	-	-	14/34/34/34	0/2/2/2
8	FES	E	501	3	-	-	0/1/1/1

The worst 5 of 61 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	C	501	HEM	FE-NB	11.09	2.29	1.94
7	D	501	HEC	FE-ND	9.65	2.24	1.94
5	P	503	SMA	C3-C2	9.04	1.51	1.34
5	C	503	SMA	C8-C8A	8.21	1.52	1.39
7	Q	501	HEC	FE-ND	7.82	2.19	1.94

The worst 5 of 130 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	C	503	SMA	C14-C15-C16	-8.40	108.86	125.88
5	P	503	SMA	O7-C7-C8	5.89	120.70	114.53
7	D	501	HEC	CMC-C2C-C1C	-5.76	116.64	125.42
7	Q	501	HEC	CAD-C3D-C4D	5.73	134.69	124.70
7	D	501	HEC	CAD-C3D-C4D	5.56	134.39	124.70

All (2) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
7	D	501	HEC	NA
7	Q	501	HEC	NA

5 of 64 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	C	503	SMA	C13-C14-O14-C25
5	C	503	SMA	C17-C18-C19-C20

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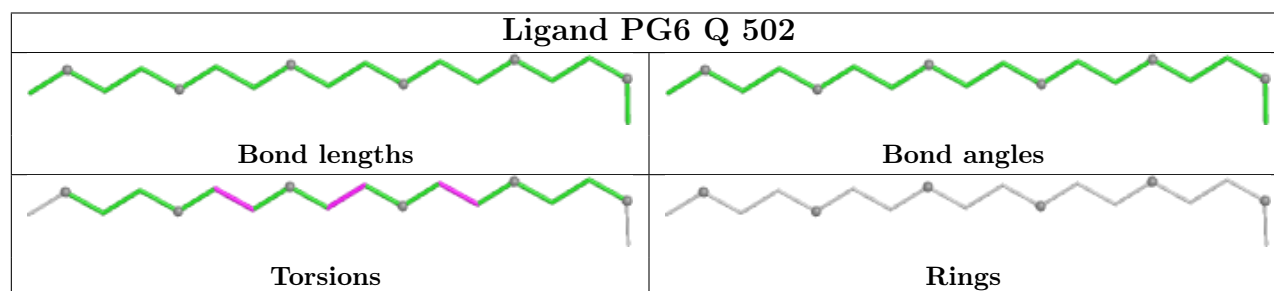
Mol	Chain	Res	Type	Atoms
5	C	503	SMA	C17-C18-C19-C26
5	P	503	SMA	C3-C2-C9-C10
5	P	503	SMA	O1-C2-C9-C10

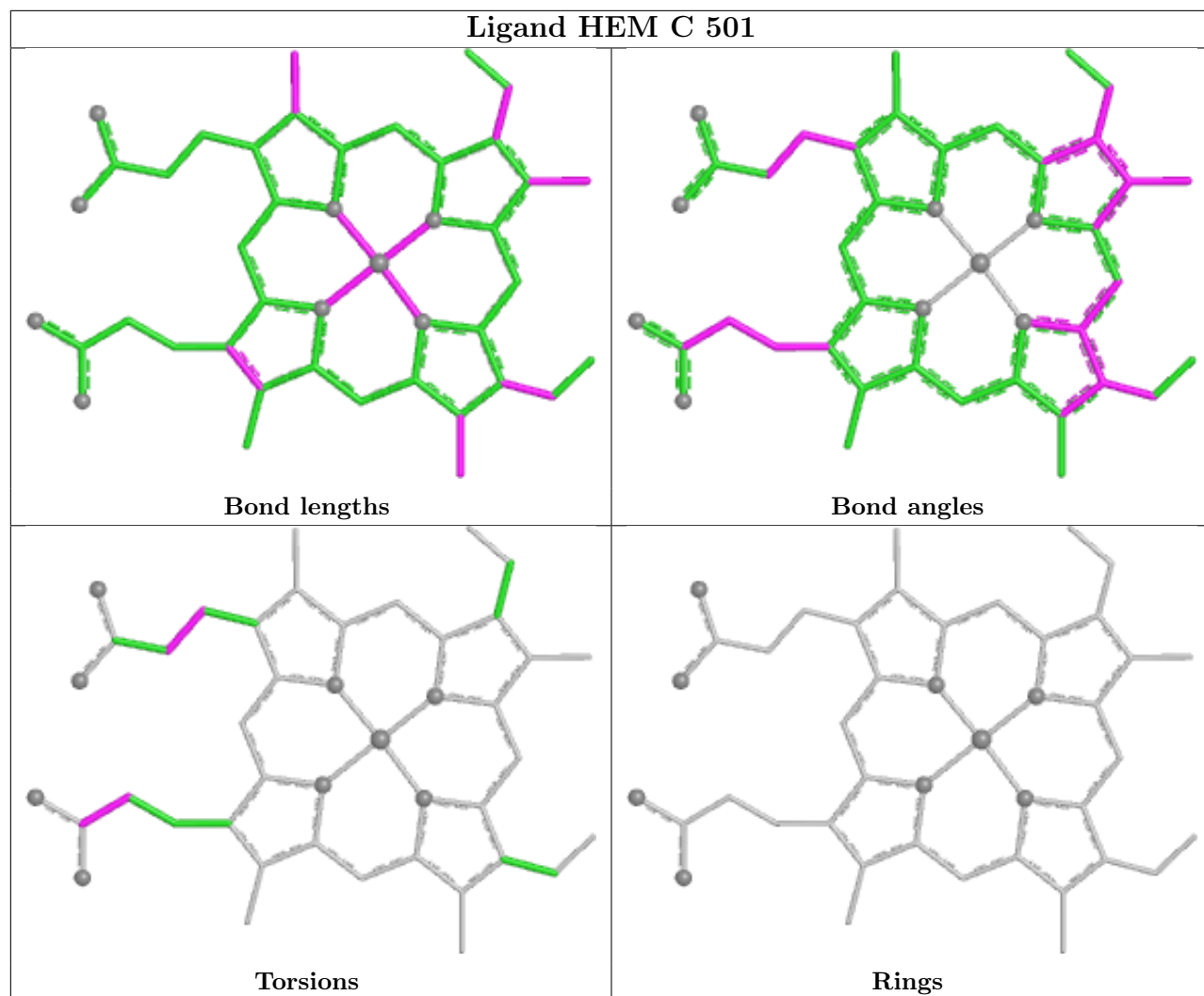
There are no ring outliers.

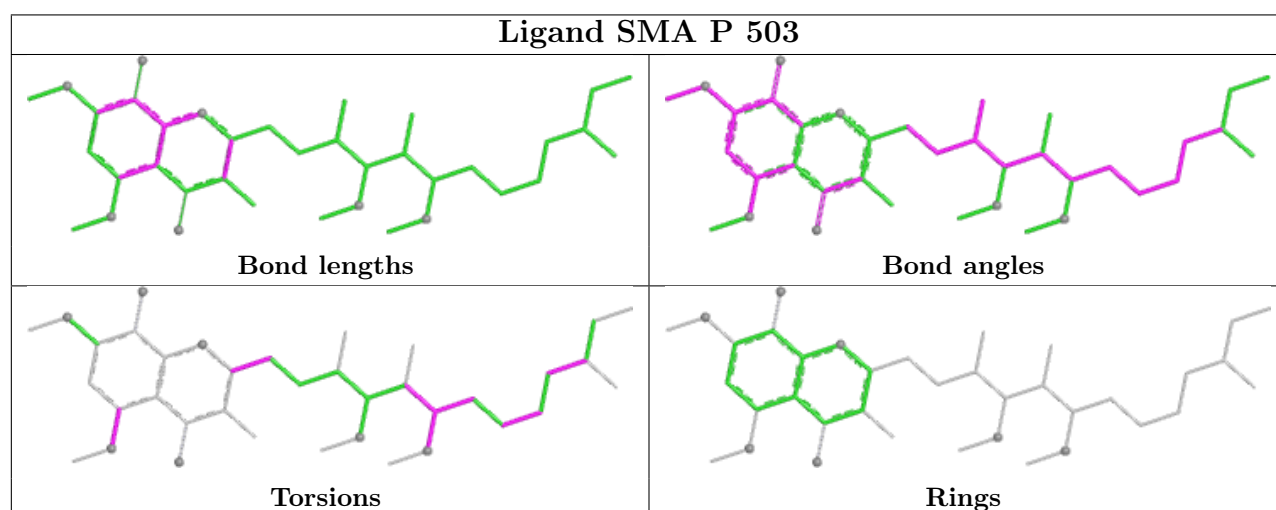
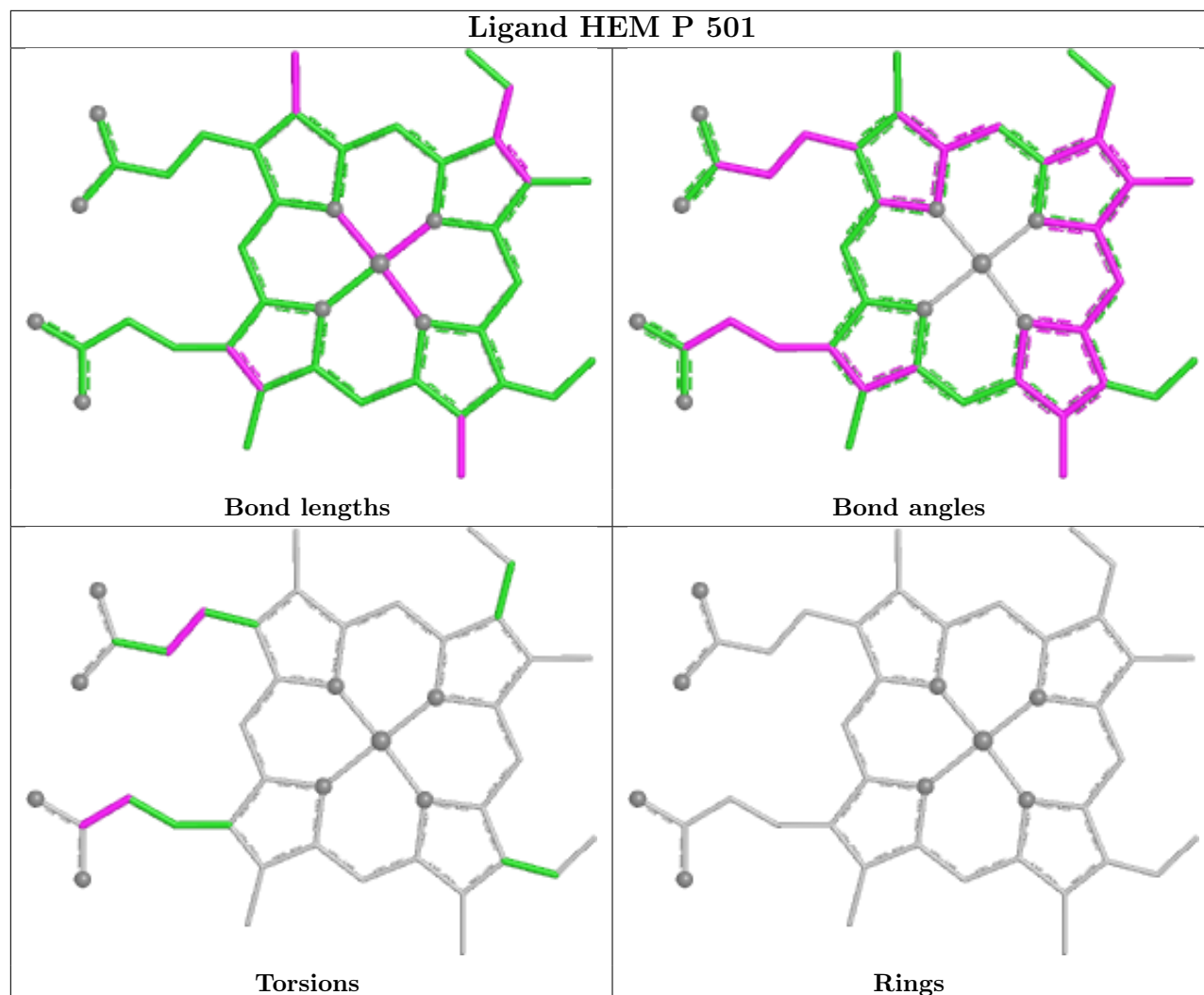
7 monomers are involved in 26 short contacts:

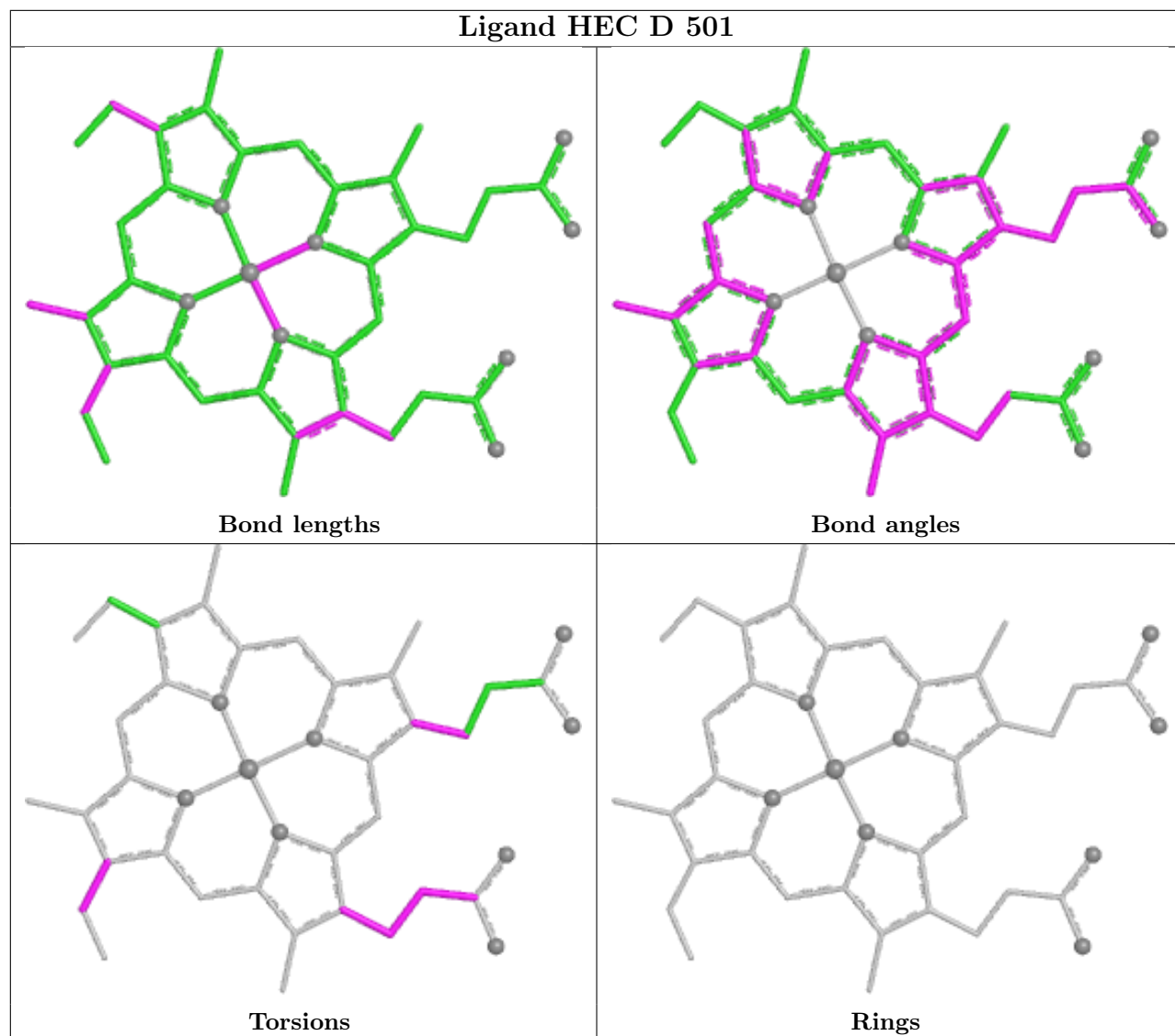
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	C	501	HEM	2	0
4	P	501	HEM	3	0
5	P	503	SMA	3	0
7	D	501	HEC	5	0
7	Q	501	HEC	8	0
8	R	501	FES	1	0
5	C	503	SMA	4	0

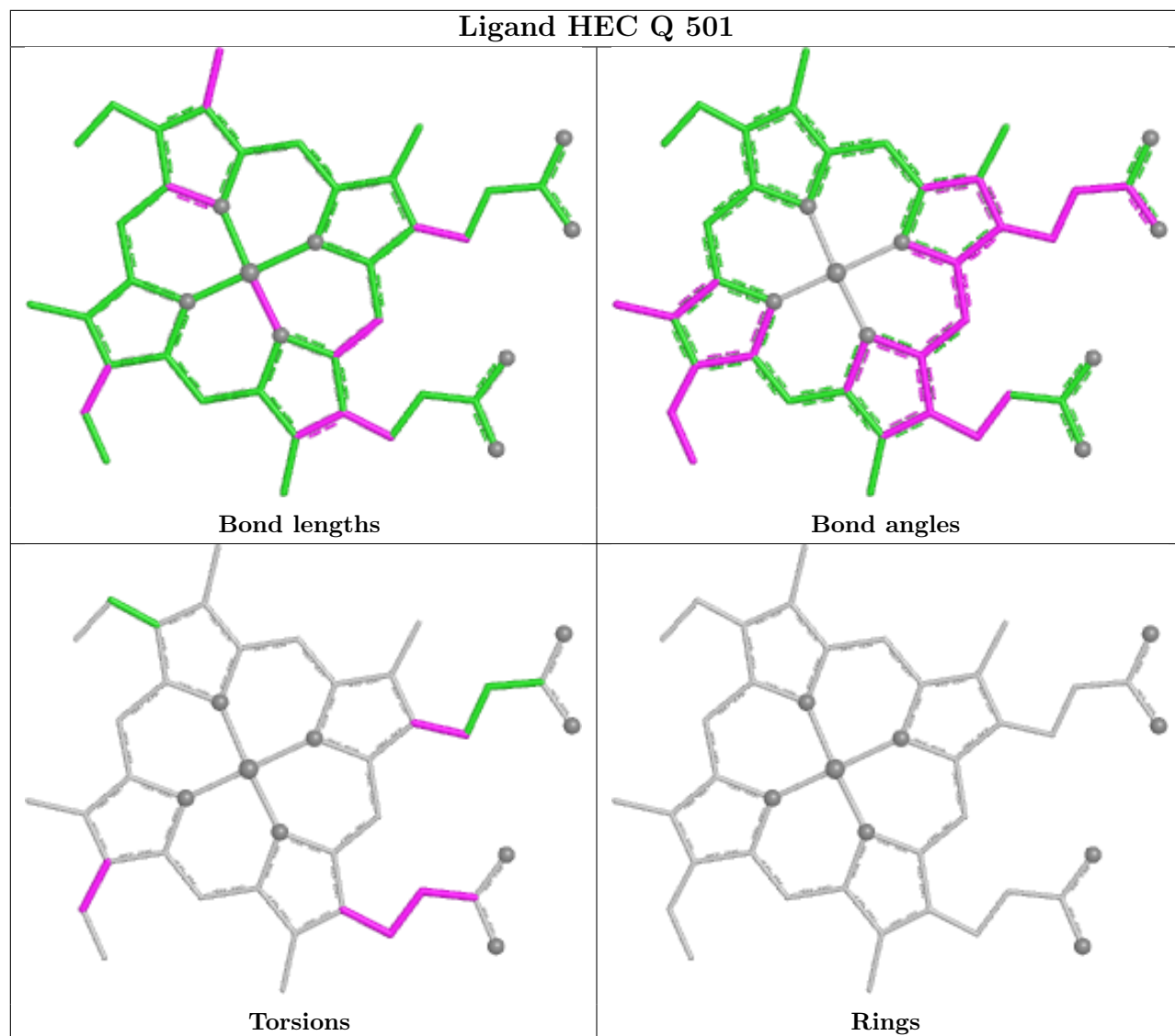
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

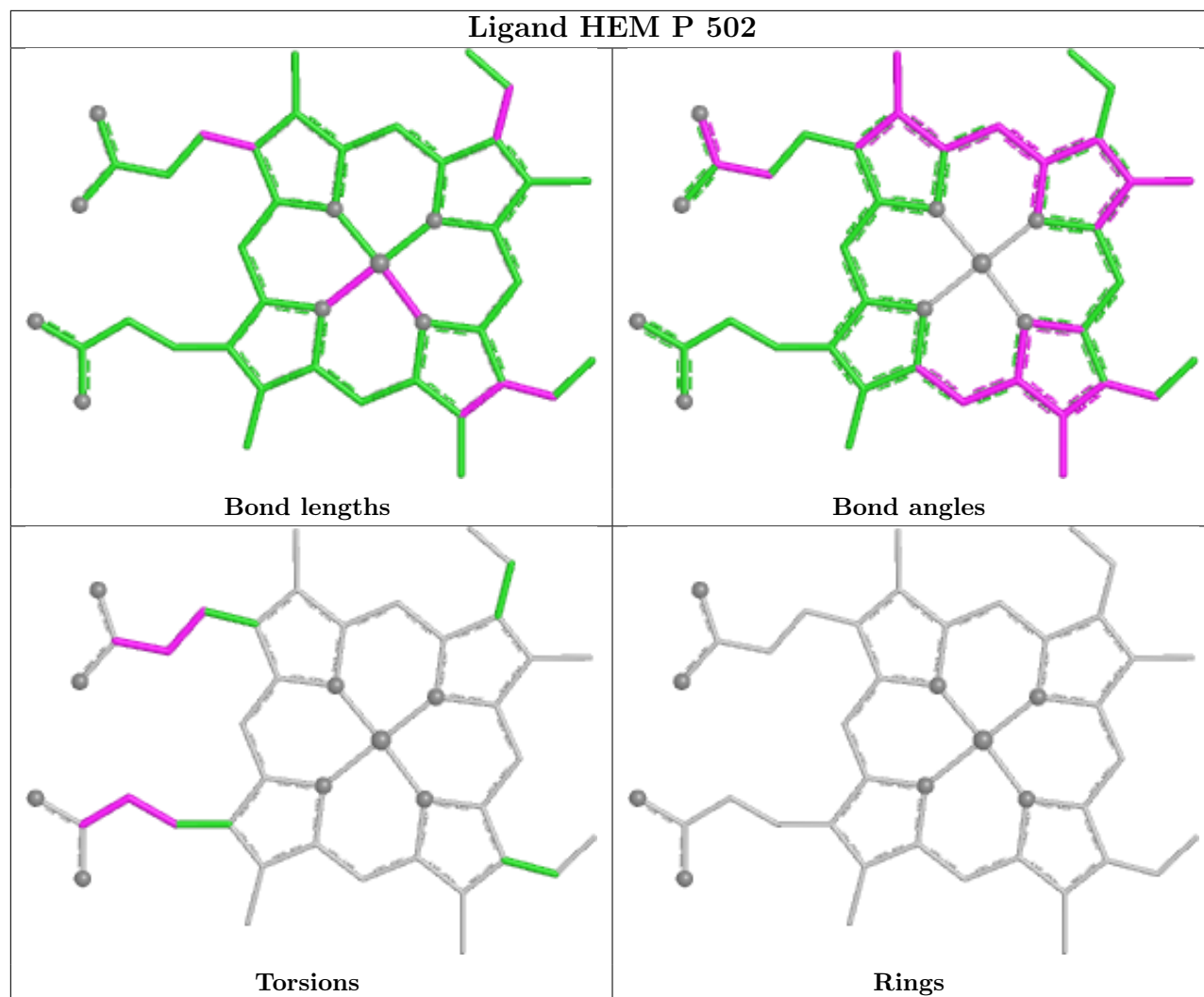


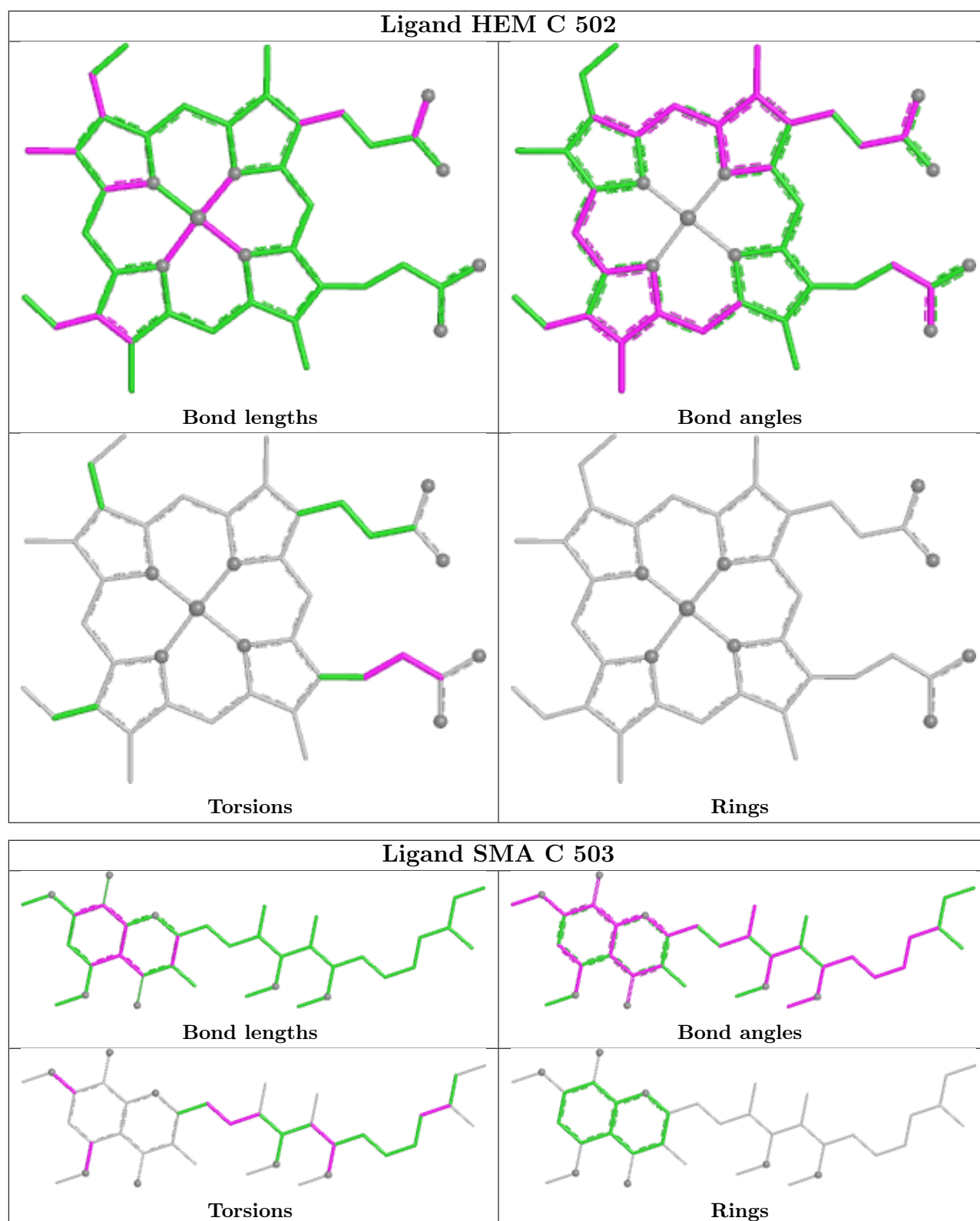












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

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

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	C	431/437 (98%)	0.07	11 (2%) 57 32	48, 101, 141, 197	1 (0%)
1	P	431/437 (98%)	0.39	37 (8%) 16 11	48, 101, 141, 170	1 (0%)
2	D	248/258 (96%)	0.22	19 (7%) 19 13	97, 140, 179, 228	0
2	Q	248/258 (96%)	0.25	14 (5%) 30 17	95, 139, 181, 230	0
3	E	183/191 (95%)	0.72	25 (13%) 6 5	84, 126, 167, 185	0
3	R	183/191 (95%)	0.19	9 (4%) 35 19	88, 129, 170, 190	0
All	All	1724/1772 (97%)	0.28	115 (6%) 24 15	48, 118, 167, 230	2 (0%)

The worst 5 of 115 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	P	290	ALA	10.3
1	P	291	HIS	7.2
3	E	152	PHE	6.7
1	P	276	HIS	6.6
3	E	147	ASP	6.3

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

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands

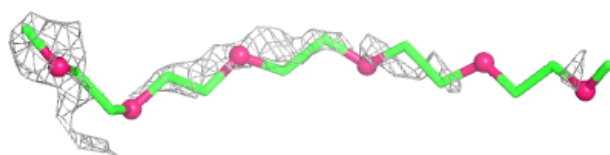
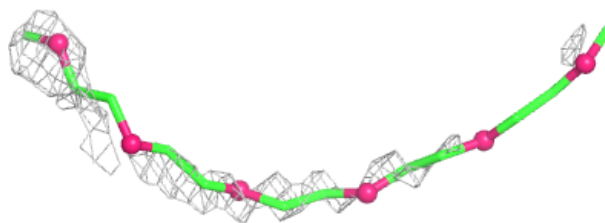
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q<0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
6	UNL	C	505	8/-	0.69	0.14	99,113,116,122	0
6	UNL	C	504	17/-	0.74	0.21	97,127,136,148	17
9	PG6	Q	502	18/18	0.76	0.17	71,114,137,139	0
6	UNL	P	505	8/-	0.81	0.11	82,94,101,110	0
6	UNL	P	504	28/-	0.87	0.19	72,136,156,165	0
5	SMA	P	503	37/37	0.91	0.20	85,102,111,117	0
7	HEC	D	501	43/43	0.92	0.13	100,114,130,135	0
5	SMA	C	503	37/37	0.95	0.14	78,98,110,112	0
4	HEM	C	502	43/43	0.95	0.11	80,107,117,126	0
7	HEC	Q	501	43/43	0.96	0.10	100,113,129,136	0
4	HEM	P	502	43/43	0.96	0.10	79,106,117,128	0
4	HEM	C	501	43/43	0.97	0.11	80,92,112,124	0
8	FES	E	501	4/4	0.97	0.04	88,99,112,114	0
4	HEM	P	501	43/43	0.97	0.14	73,91,105,129	0
8	FES	R	501	4/4	0.99	0.03	102,103,110,120	0

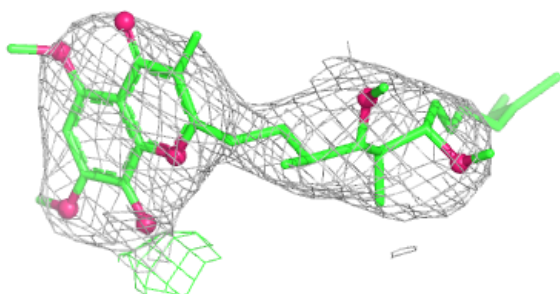
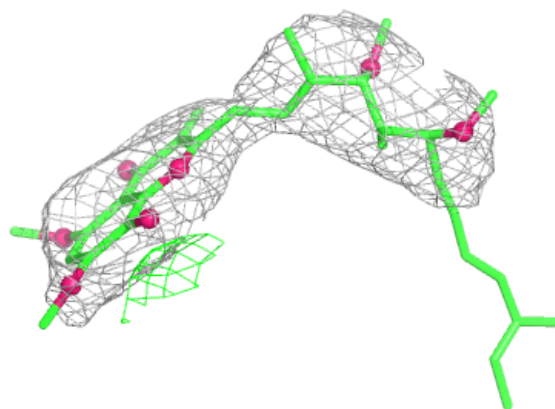
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around PG6 Q 502:

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

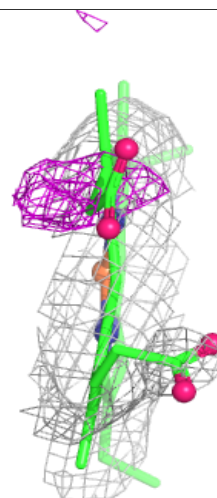
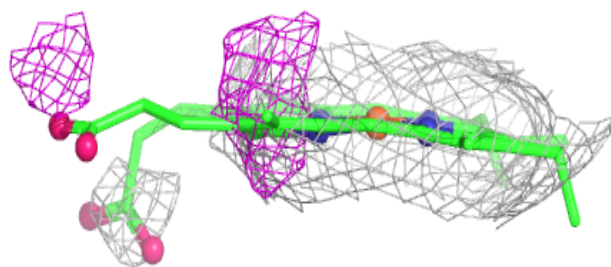
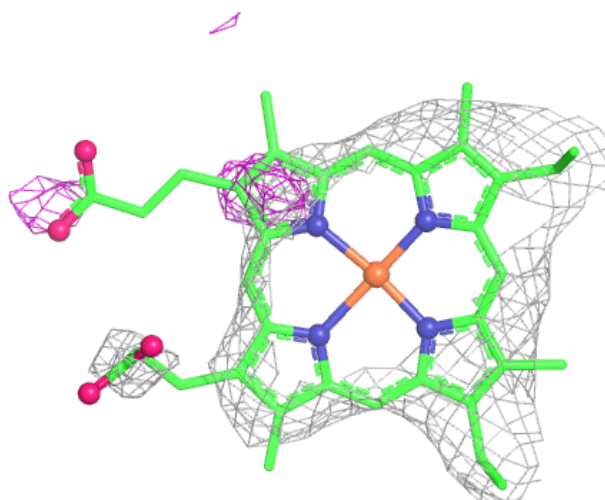
**Electron density around SMA P 503:**

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



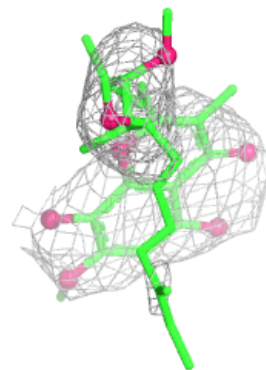
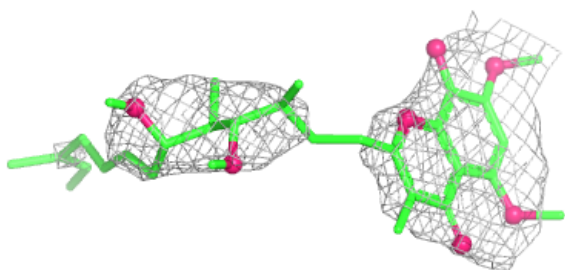
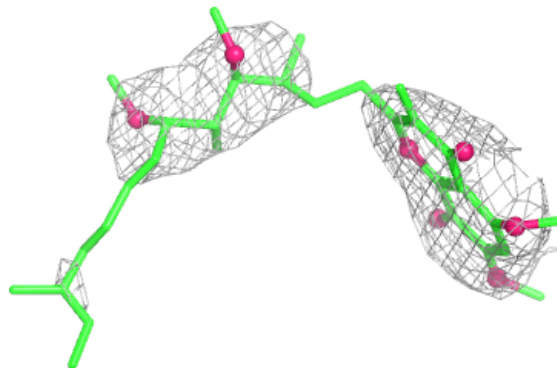
Electron density around HEC D 501:

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



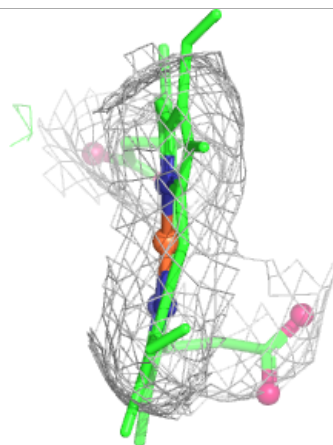
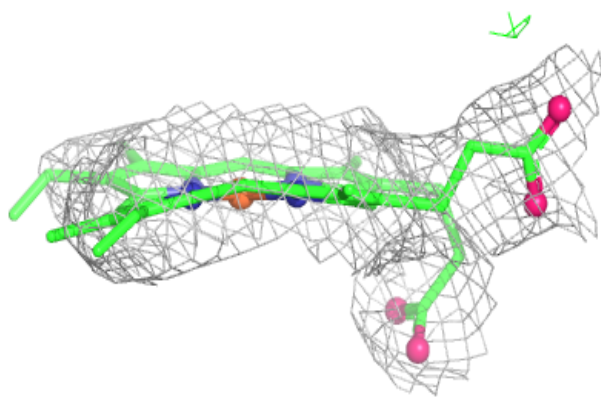
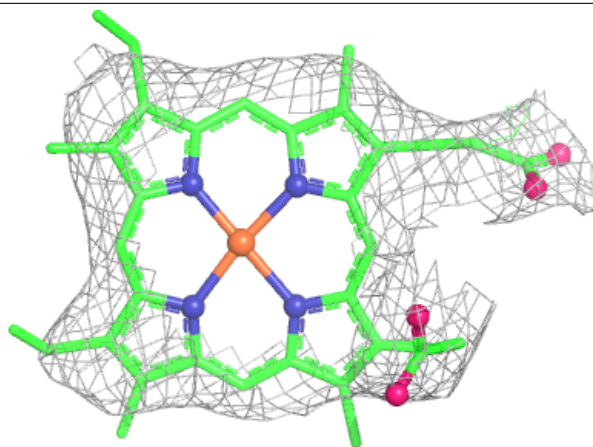
Electron density around SMA C 503:

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



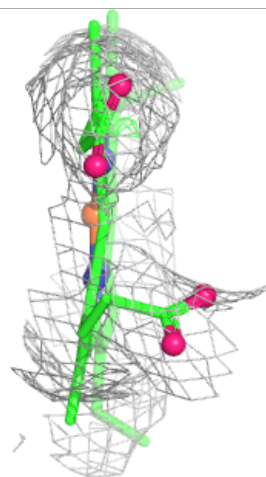
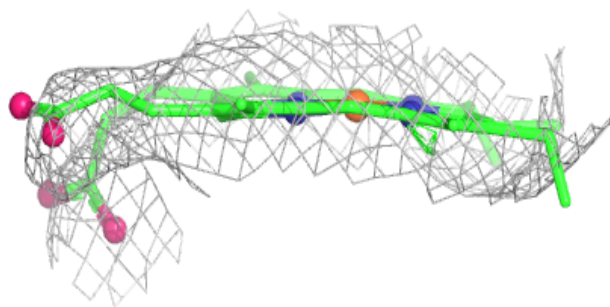
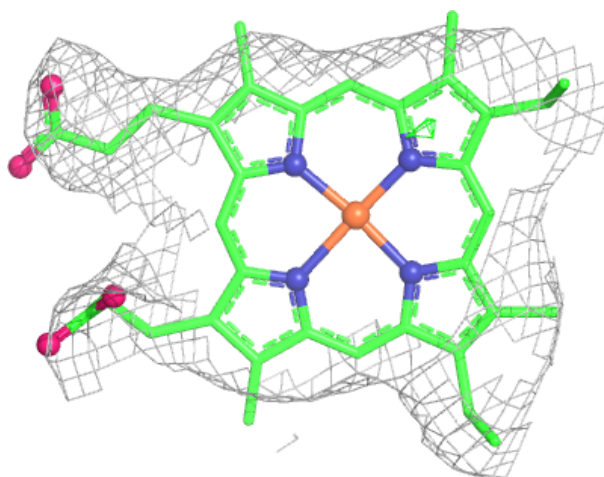
Electron density around HEM C 502:

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



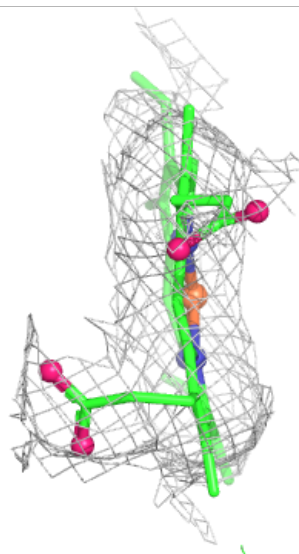
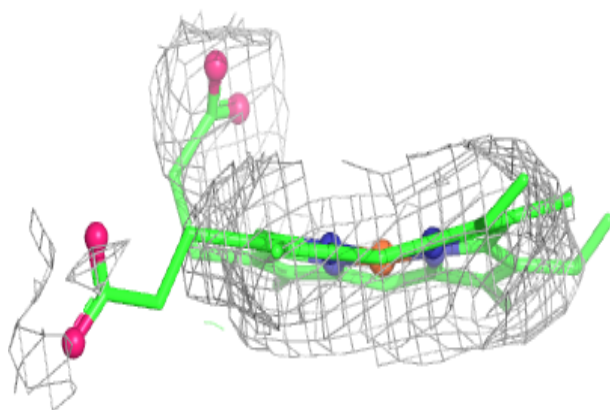
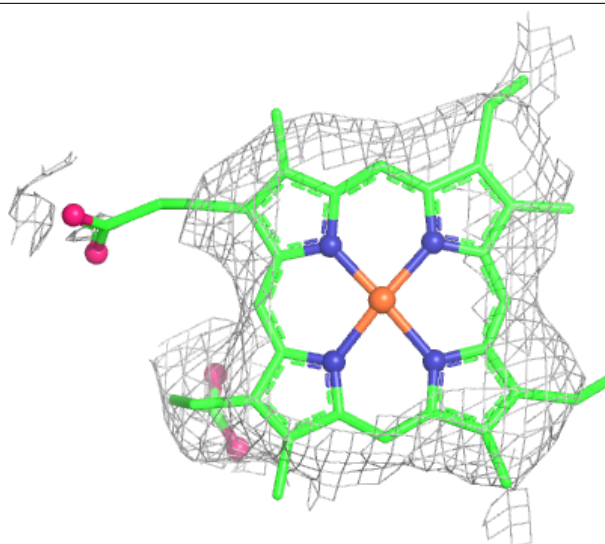
Electron density around HEC Q 501:

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



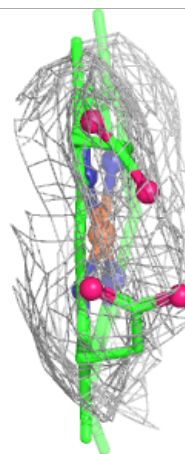
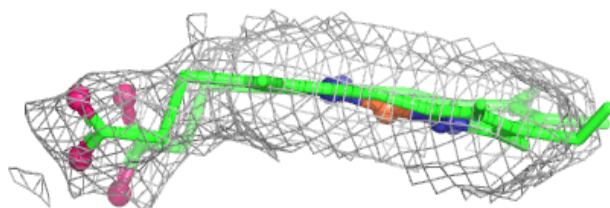
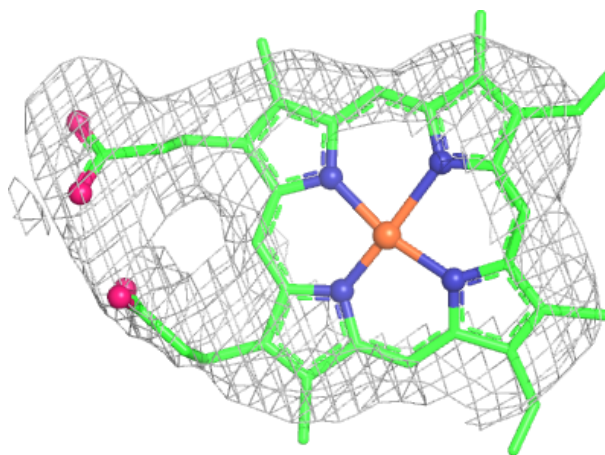
Electron density around HEM P 502:

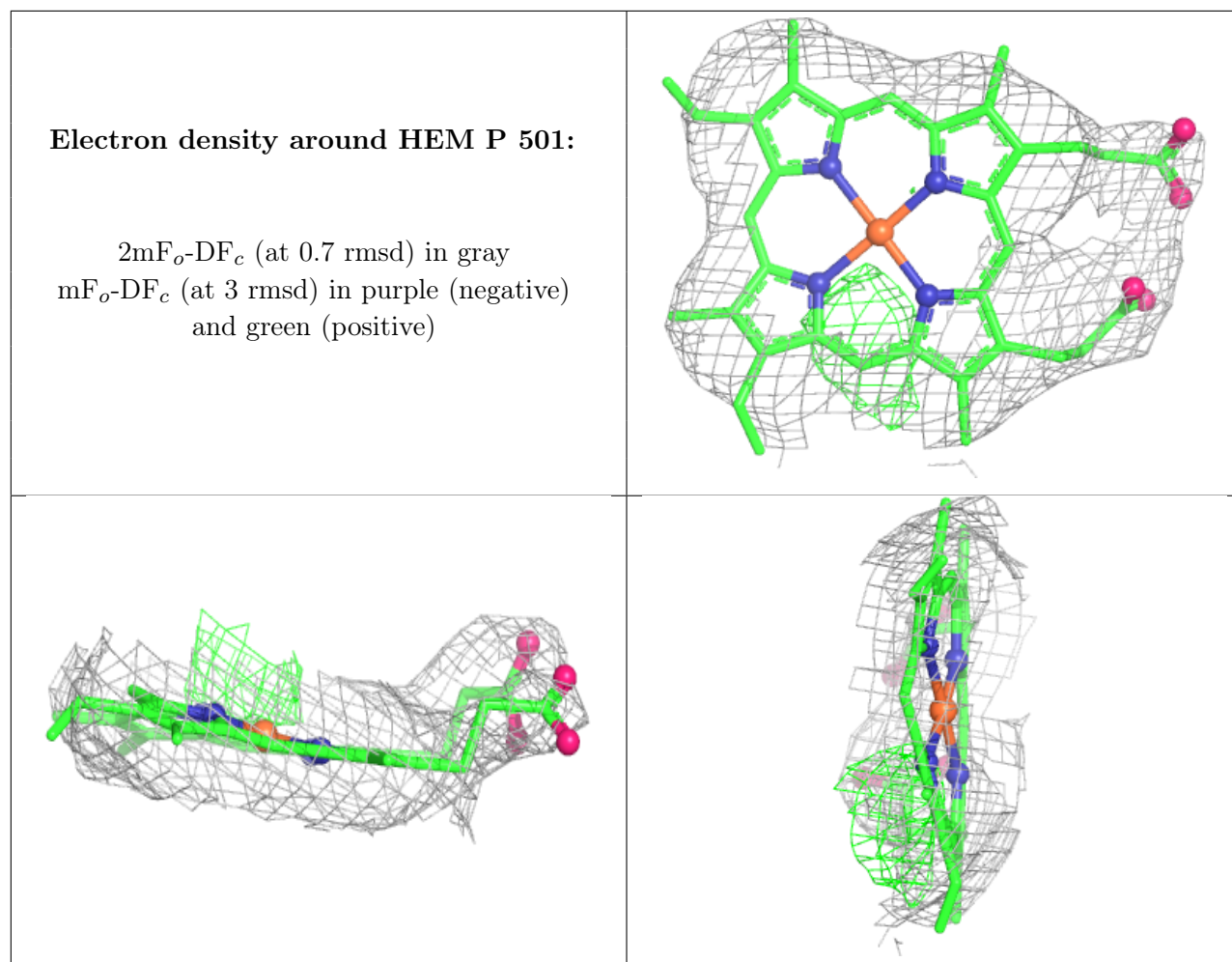
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around HEM C 501:

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





6.5 Other polymers [i](#)

There are no such residues in this entry.