Full wwPDB X-ray Structure Validation Report (i)

Sep 1, 2025 – 04:15 PM JST

PDB ID	:	9JG7 / pdb_00009jg7
Title	:	Artificial serine-dependent beta-lactamase, S2
Authors	:	Song, W.J.; Yu, J.
Deposited on	:	2024-09-06
Resolution	:	1.93 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 (i) 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 (i)) were used in the production of this report:

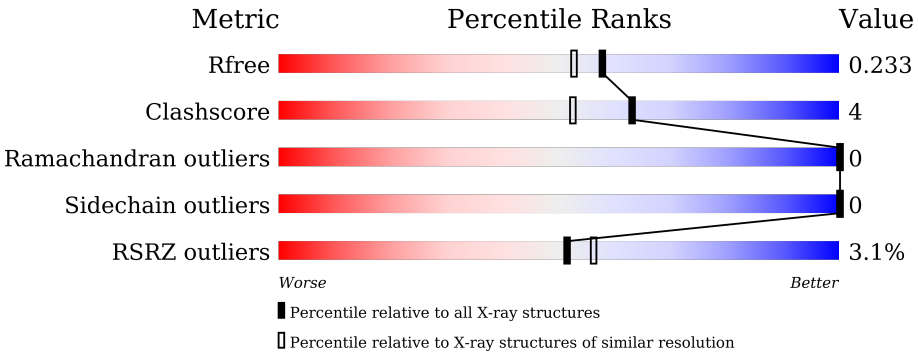
MolProbity	:	4-5-2 with Phenix2.0rc1
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	2.0rc1
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.006 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.45.1

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 1.93 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}	164625	1306 (1.94-1.94)
Clashscore	180529	1400 (1.94-1.94)
Ramachandran outliers	177936	1387 (1.94-1.94)
Sidechain outliers	177891	1387 (1.94-1.94)
RSRZ outliers	164620	1306 (1.94-1.94)

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 <=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	106	3% 94% 6%
1	C	106	3% 90% 10%
1	E	106	3% 94% 6%
1	G	106	% 92% 8%
1	I	106	3% 90% 10%
1	K	106	2% 93% 7%

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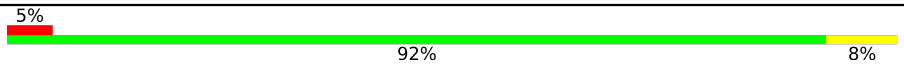
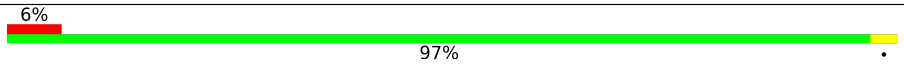
Mol	Chain	Length	Quality of chain
1	M	106	
1	O	106	

2 Entry composition (i)

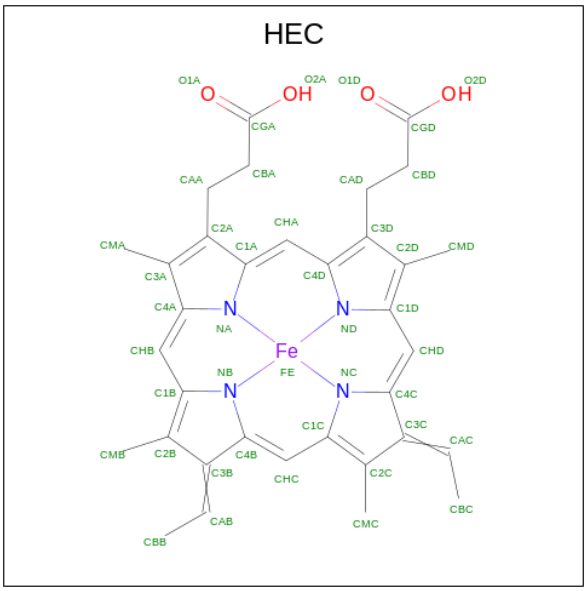
There are 6 unique types of molecules in this entry. The entry contains 7591 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 artificial serine-dependent beta-lactamase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	106	Total	C	N	O	S	0	0	0
			826	512	146	163	5			
1	C	106	Total	C	N	O	S	0	1	0
			831	515	148	163	5			
1	E	106	Total	C	N	O	S	0	0	0
			826	512	146	163	5			
1	G	106	Total	C	N	O	S	0	0	0
			826	512	146	163	5			
1	I	106	Total	C	N	O	S	0	0	0
			826	512	146	163	5			
1	K	106	Total	C	N	O	S	0	1	0
			829	513	146	165	5			
1	M	106	Total	C	N	O	S	0	0	0
			826	512	146	163	5			
1	O	106	Total	C	N	O	S	0	0	0
			826	512	146	163	5			

- Molecule 2 is HEME C (CCD ID: HEC) (formula: $C_{34}H_{34}FeN_4O_4$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		
2	C	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		
2	E	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		
2	G	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		
2	I	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		
2	K	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		
2	M	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		
2	O	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		

- Molecule 3 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	1	Total	Zn	0	0
			1	1		
3	C	1	Total	Zn	0	0
			1	1		
3	E	1	Total	Zn	0	0
			1	1		
3	G	1	Total	Zn	0	0
			1	1		

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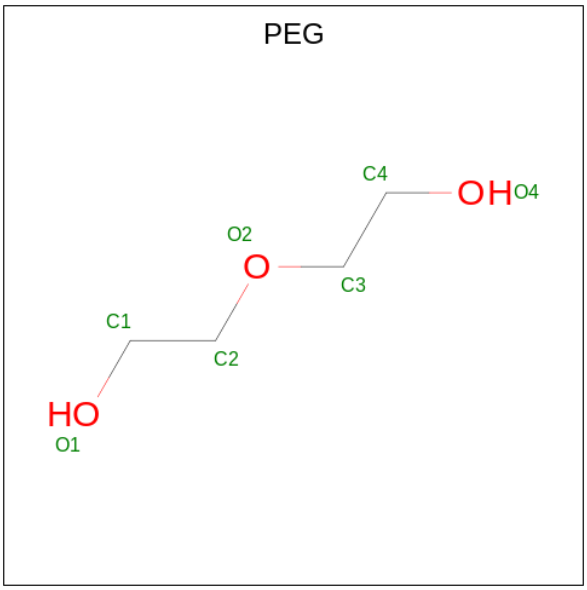
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	I	1	Total Zn 1 1	0	0
3	K	1	Total Zn 1 1	0	0
3	M	1	Total Zn 1 1	0	0
3	O	1	Total Zn 1 1	0	0

- Molecule 4 is DI(HYDROXYETHYL)ETHER (CCD ID: PEG) (formula: $C_4H_{10}O_3$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total C O 7 4 3	0	0
4	A	1	Total C O 7 4 3	0	0
4	A	1	Total C O 7 4 3	0	0
4	C	1	Total C O 7 4 3	0	0
4	E	1	Total C O 7 4 3	0	0
4	E	1	Total C O 7 4 3	0	0
4	G	1	Total C O 7 4 3	0	0

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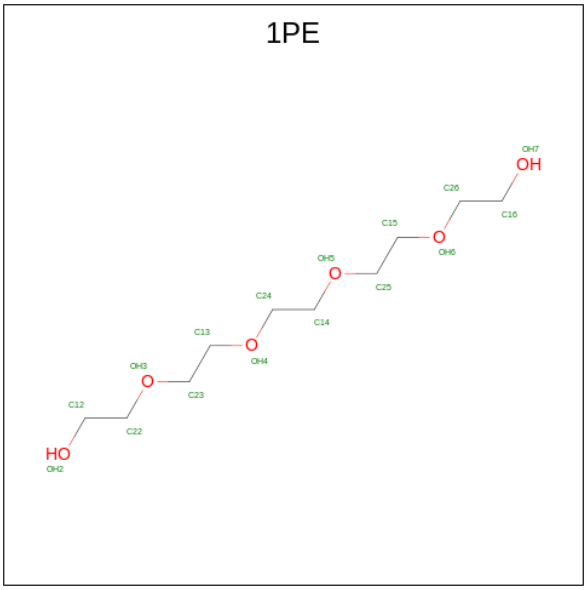
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	G	1	Total C O 7 4 3	0	0
4	G	1	Total C O 7 4 3	0	0
4	I	1	Total C O 7 4 3	0	0
4	K	1	Total C O 7 4 3	0	0
4	K	1	Total C O 7 4 3	0	0
4	M	1	Total C O 7 4 3	0	0
4	M	1	Total C O 7 4 3	0	0
4	M	1	Total C O 7 4 3	0	0
4	O	1	Total C O 7 4 3	0	0

- Molecule 5 is PENTAETHYLENE GLYCOL (CCD ID: 1PE) (formula: $C_{10}H_{22}O_6$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	1	Total C O 16 10 6	0	0
5	C	1	Total C O 16 10 6	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	I	1	Total C O 16 10 6	0	0

- Molecule 6 is water.

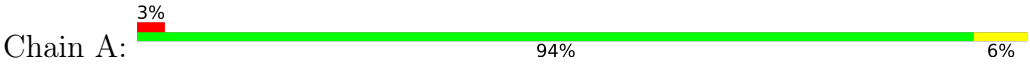
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	61	Total O 61 61	0	0
6	C	72	Total O 72 72	0	0
6	E	71	Total O 71 71	0	0
6	G	59	Total O 59 59	0	0
6	I	66	Total O 66 66	0	0
6	K	40	Total O 40 40	0	0
6	M	47	Total O 47 47	0	0
6	O	47	Total O 47 47	0	0

3 Residue-property plots (i)

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

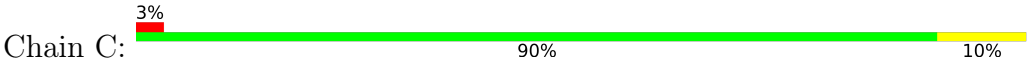
• Molecule 1: artificial serine-dependent beta-lactamase

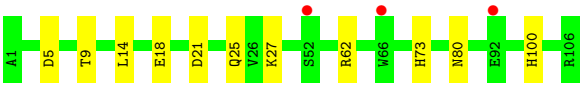
Chain A:



• Molecule 1: artificial serine-dependent beta-lactamase

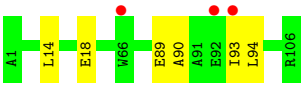
Chain C:





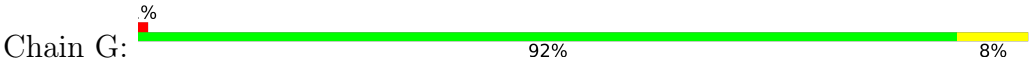
• Molecule 1: artificial serine-dependent beta-lactamase

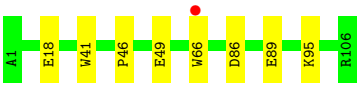
Chain E:



• Molecule 1: artificial serine-dependent beta-lactamase

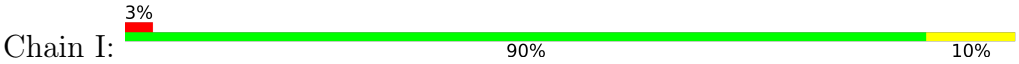
Chain G:





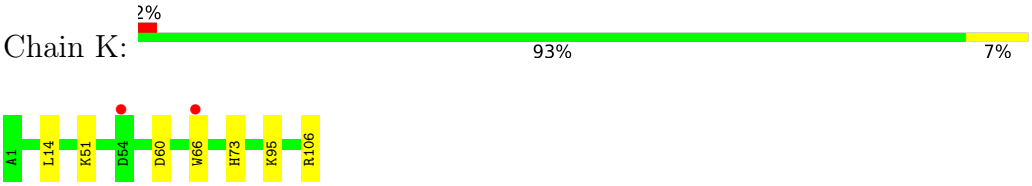
• Molecule 1: artificial serine-dependent beta-lactamase

Chain I:



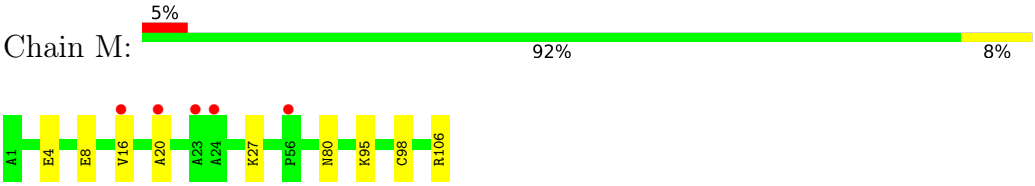
• Molecule 1: artificial serine-dependent beta-lactamase

Chain K:



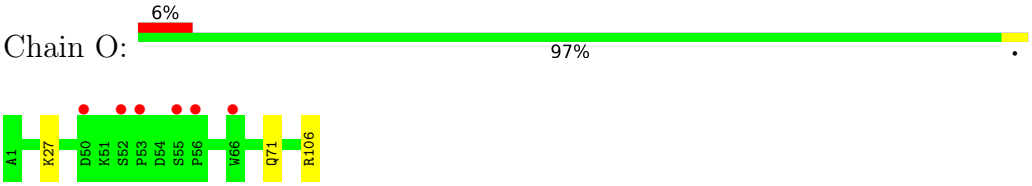
• Molecule 1: artificial serine-dependent beta-lactamase

Chain M:



• Molecule 1: artificial serine-dependent beta-lactamase

Chain O:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	67.10Å 92.03Å 142.46Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	35.72 – 1.93 35.72 – 1.93	Depositor EDS
% Data completeness (in resolution range)	99.8 (35.72-1.93) 99.8 (35.72-1.93)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	5.99 (at 1.94Å)	Xtriage
Refinement program	PHENIX (???)	Depositor
R, R_{free}	0.184 , 0.231 0.186 , 0.233	Depositor DCC
R_{free} test set	3389 reflections (5.06%)	wwPDB-VP
Wilson B-factor (Å^2)	24.8	Xtriage
Anisotropy	0.205	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.37 , 40.3	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	7591	wwPDB-VP
Average B, all atoms (Å^2)	29.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 34.55 % 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 6.7048e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ 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: PEG, HEC, ZN, 1PE

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	0.32	0/842	0.46	0/1137
1	C	0.32	0/853	0.50	0/1152
1	E	0.31	0/842	0.50	0/1137
1	G	0.32	0/842	0.49	0/1137
1	I	0.29	0/842	0.45	0/1137
1	K	0.28	0/850	0.43	0/1148
1	M	0.28	0/842	0.48	0/1137
1	O	0.29	0/842	0.44	0/1137
All	All	0.30	0/6755	0.47	0/9122

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	826	0	797	7	0
1	C	831	0	800	10	0
1	E	826	0	797	4	0
1	G	826	0	797	6	0
1	I	826	0	797	9	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	K	829	0	797	7	0
1	M	826	0	797	6	0
1	O	826	0	797	3	0
2	A	43	0	30	1	0
2	C	43	0	30	1	0
2	E	43	0	30	1	0
2	G	43	0	30	1	0
2	I	43	0	30	0	0
2	K	43	0	30	2	0
2	M	43	0	30	1	0
2	O	43	0	30	0	0
3	A	1	0	0	0	0
3	C	1	0	0	0	0
3	E	1	0	0	0	0
3	G	1	0	0	0	0
3	I	1	0	0	0	0
3	K	1	0	0	0	0
3	M	1	0	0	0	0
3	O	1	0	0	0	0
4	A	21	0	30	2	0
4	C	7	0	10	1	0
4	E	14	0	20	2	0
4	G	21	0	30	3	0
4	I	7	0	10	2	0
4	K	14	0	20	0	0
4	M	21	0	30	1	0
4	O	7	0	10	0	0
5	A	16	0	22	1	0
5	C	16	0	22	1	0
5	I	16	0	22	5	0
6	A	61	0	0	2	0
6	C	72	0	0	1	0
6	E	71	0	0	1	0
6	G	59	0	0	0	0
6	I	66	0	0	1	0
6	K	40	0	0	1	0
6	M	47	0	0	1	0
6	O	47	0	0	1	0
All	All	7591	0	6845	55	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 4.

All (55) 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:I:67:ILE:HG23	5:I:204:1PE:H151	1.68	0.72
1:C:5:ASP:OD2	6:C:301:HOH:O	2.10	0.67
1:G:41:TRP:HZ2	4:G:203:PEG:H22	1.62	0.65
1:C:100[A]:HIS:NE2	1:E:89:GLU:OE1	2.28	0.63
1:G:41:TRP:CZ2	4:G:203:PEG:H22	2.34	0.63
1:M:95:LYS:HE3	1:M:98:CYS:HB2	1.83	0.61
1:I:93:ILE:O	1:I:96:ILE:HG12	2.02	0.59
1:K:60[B]:ASP:OD1	6:K:301:HOH:O	2.17	0.59
1:M:106:ARG:HH21	2:M:201:HEC:C2A	2.17	0.58
1:C:9:THR:HG21	5:C:203:1PE:H262	1.86	0.56
2:A:201:HEC:O1D	6:A:301:HOH:O	2.18	0.56
1:E:94:LEU:HD21	2:E:201:HEC:HBB1	1.86	0.56
4:E:204:PEG:H41	6:E:353:HOH:O	2.05	0.55
1:C:21:ASP:H	1:C:25:GLN:HE22	1.52	0.54
1:M:4:GLU:HG3	6:M:334:HOH:O	2.09	0.53
1:M:4:GLU:O	1:M:8:GLU:HG2	2.09	0.53
1:I:71:GLN:HA	5:I:204:1PE:H122	1.92	0.52
1:M:27:LYS:HD3	1:M:80:ASN:OD1	2.11	0.50
1:A:73:HIS:CE1	1:K:66:TRP:CZ2	2.99	0.50
1:C:62:ARG:HE	4:C:204:PEG:H12	1.77	0.49
1:A:103:GLN:HG2	6:A:345:HOH:O	2.14	0.48
1:A:66:TRP:CZ2	1:K:73:HIS:CE1	3.02	0.47
1:A:41:TRP:HZ2	4:A:203:PEG:H22	1.80	0.47
5:I:204:1PE:H261	1:O:71:GLN:HG2	1.97	0.46
1:K:14:LEU:HD21	1:K:95:LYS:HG3	1.97	0.46
1:K:106:ARG:HG3	2:K:201:HEC:HAD2	1.97	0.46
1:E:14:LEU:O	1:E:18:GLU:HG3	2.16	0.46
1:O:27:LYS:HB3	1:O:27:LYS:HE3	1.48	0.46
1:G:18:GLU:OE1	1:G:95:LYS:HE2	2.16	0.45
1:K:106:ARG:NH2	2:K:201:HEC:O2A	2.44	0.45
2:G:201:HEC:HBC3	2:G:201:HEC:HMC1	1.98	0.45
1:K:51:LYS:HD2	1:K:51:LYS:HA	1.61	0.45
1:C:27:LYS:HE3	1:C:80:ASN:OD1	2.16	0.45
1:E:90:ALA:O	1:E:93:ILE:HG13	2.16	0.45
1:A:41:TRP:CZ2	4:A:203:PEG:H22	2.53	0.44
1:G:66:TRP:HB2	4:G:203:PEG:H41	1.98	0.44
1:A:19:LYS:HE3	5:A:206:1PE:H232	2.00	0.44
1:A:85:LYS:HA	1:A:85:LYS:HD2	1.80	0.44
1:G:46:PRO:HA	1:G:49:GLU:CD	2.43	0.44
1:C:21:ASP:H	1:C:25:GLN:NE2	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:41:TRP:HH2	4:I:203:PEG:H11	1.84	0.43
1:O:106:ARG:O	6:O:301:HOH:O	2.21	0.43
1:I:67:ILE:CG2	5:I:204:1PE:H151	2.45	0.43
1:G:86:ASP:O	1:G:89:GLU:HG2	2.19	0.43
5:I:204:1PE:H162	5:I:204:1PE:H152	1.78	0.42
1:C:73:HIS:CE1	1:I:66:TRP:CZ2	3.08	0.42
4:E:204:PEG:H41	4:E:204:PEG:H21	1.86	0.42
1:M:16:VAL:O	1:M:20:ALA:HB2	2.19	0.42
1:C:14:LEU:O	1:C:18:GLU:HG3	2.20	0.42
1:I:23:ALA:O	1:I:27:LYS:HG3	2.20	0.42
1:I:68:LEU:HD12	1:I:94:LEU:HD11	2.01	0.41
1:I:60:ASP:HB2	6:I:319:HOH:O	2.21	0.41
1:C:73:HIS:HB2	4:I:203:PEG:H12	2.02	0.41
4:M:204:PEG:H21	4:M:204:PEG:H42	1.92	0.40
2:C:201:HEC:HMC3	2:C:201:HEC:HBC3	2.04	0.40

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	A	104/106 (98%)	104 (100%)	0	0	100	100
1	C	105/106 (99%)	105 (100%)	0	0	100	100
1	E	104/106 (98%)	104 (100%)	0	0	100	100
1	G	104/106 (98%)	104 (100%)	0	0	100	100
1	I	104/106 (98%)	103 (99%)	1 (1%)	0	100	100
1	K	105/106 (99%)	104 (99%)	1 (1%)	0	100	100
1	M	104/106 (98%)	103 (99%)	1 (1%)	0	100	100
1	O	104/106 (98%)	103 (99%)	1 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
All	All	834/848 (98%)	830 (100%)	4 (0%)	0	100 100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

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	86/86 (100%)	86 (100%)	0	100 100
1	C	87/86 (101%)	87 (100%)	0	100 100
1	E	86/86 (100%)	86 (100%)	0	100 100
1	G	86/86 (100%)	86 (100%)	0	100 100
1	I	86/86 (100%)	86 (100%)	0	100 100
1	K	87/86 (101%)	87 (100%)	0	100 100
1	M	86/86 (100%)	86 (100%)	0	100 100
1	O	86/86 (100%)	86 (100%)	0	100 100
All	All	690/688 (100%)	690 (100%)	0	100 100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (6) such sidechains are listed below:

Mol	Chain	Res	Type
1	C	25	GLN
1	E	13	ASN
1	E	88	GLN
1	G	88	GLN
1	I	71	GLN
1	K	103	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 35 ligands modelled in this entry, 8 are monoatomic - leaving 27 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
4	PEG	M	205	-	6,6,6	0.27	0	5,5,5	0.40	0
4	PEG	G	204	-	6,6,6	0.26	0	5,5,5	0.33	0
2	HEC	C	201	1	32,50,50	1.88	7 (21%)	24,82,82	1.99	8 (33%)
2	HEC	M	201	1	32,50,50	2.00	5 (15%)	24,82,82	1.68	4 (16%)
5	1PE	C	203	-	15,15,15	0.31	0	14,14,14	0.34	0
2	HEC	A	201	1	32,50,50	1.94	5 (15%)	24,82,82	1.82	6 (25%)
2	HEC	I	201	1	32,50,50	1.93	6 (18%)	24,82,82	1.92	7 (29%)
5	1PE	I	204	-	15,15,15	0.29	0	14,14,14	0.39	0
4	PEG	A	203	-	6,6,6	0.19	0	5,5,5	0.41	0
4	PEG	C	204	-	6,6,6	0.24	0	5,5,5	0.93	0
4	PEG	A	205	-	6,6,6	0.26	0	5,5,5	0.18	0
4	PEG	M	204	-	6,6,6	0.27	0	5,5,5	0.30	0
2	HEC	O	201	1	32,50,50	2.00	5 (15%)	24,82,82	1.83	7 (29%)
4	PEG	K	203	-	6,6,6	0.24	0	5,5,5	0.93	0
2	HEC	G	201	1	32,50,50	2.08	7 (21%)	24,82,82	1.72	8 (33%)
4	PEG	A	204	-	6,6,6	0.26	0	5,5,5	0.25	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
4	PEG	O	203	-	6,6,6	0.20	0	5,5,5	0.55	0
5	1PE	A	206	-	15,15,15	0.28	0	14,14,14	0.32	0
4	PEG	M	203	-	6,6,6	0.23	0	5,5,5	1.11	0
4	PEG	I	203	-	6,6,6	0.26	0	5,5,5	1.31	1 (20%)
4	PEG	K	204	-	6,6,6	0.30	0	5,5,5	0.30	0
4	PEG	G	203	-	6,6,6	0.26	0	5,5,5	0.86	0
4	PEG	G	205	-	6,6,6	0.26	0	5,5,5	0.30	0
4	PEG	E	204	-	6,6,6	0.27	0	5,5,5	0.46	0
4	PEG	E	203	-	6,6,6	0.25	0	5,5,5	0.59	0
2	HEC	E	201	1	32,50,50	2.17	6 (18%)	24,82,82	1.70	6 (25%)
2	HEC	K	201	1	32,50,50	2.02	6 (18%)	24,82,82	1.76	6 (25%)

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
4	PEG	M	205	-	-	3/4/4/4	-
4	PEG	G	204	-	-	2/4/4/4	-
2	HEC	C	201	1	-	2/10/54/54	-
2	HEC	M	201	1	-	2/10/54/54	-
5	1PE	C	203	-	-	4/13/13/13	-
2	HEC	A	201	1	-	2/10/54/54	-
2	HEC	I	201	1	-	1/10/54/54	-
5	1PE	I	204	-	-	7/13/13/13	-
4	PEG	A	203	-	-	1/4/4/4	-
4	PEG	C	204	-	-	2/4/4/4	-
4	PEG	A	205	-	-	3/4/4/4	-
4	PEG	M	204	-	-	3/4/4/4	-
2	HEC	O	201	1	-	4/10/54/54	-
4	PEG	K	203	-	-	1/4/4/4	-
2	HEC	G	201	1	-	2/10/54/54	-
4	PEG	A	204	-	-	0/4/4/4	-
4	PEG	O	203	-	-	2/4/4/4	-
5	1PE	A	206	-	-	6/13/13/13	-
4	PEG	M	203	-	-	2/4/4/4	-
4	PEG	I	203	-	-	2/4/4/4	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	PEG	K	204	-	-	3/4/4/4	-
4	PEG	G	203	-	-	3/4/4/4	-
4	PEG	G	205	-	-	1/4/4/4	-
4	PEG	E	204	-	-	2/4/4/4	-
4	PEG	E	203	-	-	2/4/4/4	-
2	HEC	E	201	1	-	2/10/54/54	-
2	HEC	K	201	1	-	6/10/54/54	-

All (47) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	E	201	HEC	C3C-C2C	-6.26	1.34	1.40
2	M	201	HEC	C2B-C3B	-5.62	1.34	1.40
2	G	201	HEC	C2B-C3B	-5.57	1.34	1.40
2	E	201	HEC	C2B-C3B	-5.48	1.35	1.40
2	O	201	HEC	C2B-C3B	-5.48	1.35	1.40
2	K	201	HEC	C2B-C3B	-5.39	1.35	1.40
2	A	201	HEC	C2B-C3B	-5.22	1.35	1.40
2	I	201	HEC	C2B-C3B	-5.20	1.35	1.40
2	G	201	HEC	C3C-C2C	-5.20	1.35	1.40
2	K	201	HEC	C3C-C2C	-5.05	1.35	1.40
2	O	201	HEC	C3C-C2C	-4.81	1.35	1.40
2	M	201	HEC	C3C-C2C	-4.60	1.36	1.40
2	C	201	HEC	C3C-C2C	-4.55	1.36	1.40
2	A	201	HEC	C3C-C2C	-4.27	1.36	1.40
2	C	201	HEC	C2B-C3B	-4.08	1.36	1.40
2	K	201	HEC	CBB-CAB	-4.01	1.34	1.49
2	I	201	HEC	CBC-CAC	-3.93	1.34	1.49
2	O	201	HEC	CBC-CAC	-3.88	1.34	1.49
2	O	201	HEC	CBB-CAB	-3.87	1.35	1.49
2	G	201	HEC	CBB-CAB	-3.86	1.35	1.49
2	I	201	HEC	CBB-CAB	-3.82	1.35	1.49
2	A	201	HEC	CBB-CAB	-3.82	1.35	1.49
2	E	201	HEC	CBC-CAC	-3.81	1.35	1.49
2	A	201	HEC	CBC-CAC	-3.73	1.35	1.49
2	E	201	HEC	CBB-CAB	-3.72	1.35	1.49
2	M	201	HEC	CBB-CAB	-3.69	1.35	1.49
2	I	201	HEC	C3C-C2C	-3.67	1.36	1.40
2	G	201	HEC	CBC-CAC	-3.66	1.35	1.49
2	M	201	HEC	CBC-CAC	-3.65	1.35	1.49
2	K	201	HEC	CBC-CAC	-3.64	1.35	1.49

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	201	HEC	CBC-CAC	-3.60	1.36	1.49
2	C	201	HEC	CBB-CAB	-3.56	1.36	1.49
2	E	201	HEC	CAD-C3D	3.00	1.56	1.52
2	C	201	HEC	CAD-C3D	2.73	1.56	1.52
2	M	201	HEC	CAD-C3D	2.61	1.55	1.52
2	K	201	HEC	CAD-C3D	2.56	1.55	1.52
2	G	201	HEC	CAA-C2A	2.48	1.56	1.52
2	I	201	HEC	CAD-C3D	2.29	1.55	1.52
2	A	201	HEC	CAD-C3D	2.29	1.55	1.52
2	O	201	HEC	CAD-C3D	2.22	1.55	1.52
2	G	201	HEC	CAD-C3D	2.17	1.55	1.52
2	C	201	HEC	CAA-C2A	2.15	1.56	1.52
2	C	201	HEC	C3C-C4C	2.10	1.46	1.43
2	G	201	HEC	CMC-C2C	2.06	1.56	1.51
2	K	201	HEC	C4D-ND	2.04	1.40	1.36
2	E	201	HEC	CAA-C2A	2.02	1.55	1.52
2	I	201	HEC	C4D-ND	2.01	1.40	1.36

All (53) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	201	HEC	CBA-CAA-C2A	-4.02	105.82	112.60
2	C	201	HEC	CMB-C2B-C1B	-3.81	122.61	128.46
2	I	201	HEC	CMC-C2C-C1C	-3.64	122.87	128.46
2	C	201	HEC	CBA-CAA-C2A	-3.60	106.53	112.60
2	O	201	HEC	CMB-C2B-C1B	-3.49	123.10	128.46
2	I	201	HEC	CMC-C2C-C3C	3.46	129.89	125.82
2	M	201	HEC	CMC-C2C-C1C	-3.42	123.20	128.46
2	G	201	HEC	CMC-C2C-C1C	-3.38	123.27	128.46
2	A	201	HEC	CMB-C2B-C1B	-3.35	123.31	128.46
2	E	201	HEC	CMC-C2C-C1C	-3.30	123.39	128.46
2	E	201	HEC	CBA-CAA-C2A	-3.25	107.13	112.60
2	O	201	HEC	CMB-C2B-C3B	3.25	129.64	125.82
2	C	201	HEC	CMC-C2C-C1C	-3.24	123.48	128.46
2	M	201	HEC	CMB-C2B-C1B	-3.19	123.56	128.46
2	K	201	HEC	CMA-C3A-C2A	3.18	130.94	124.94
2	A	201	HEC	CMC-C2C-C1C	-3.16	123.61	128.46
2	I	201	HEC	CBA-CAA-C2A	-3.06	107.45	112.60
2	I	201	HEC	CMD-C2D-C1D	-3.04	123.80	128.46
2	K	201	HEC	CMB-C2B-C1B	-3.01	123.83	128.46
2	G	201	HEC	CMB-C2B-C1B	-3.00	123.85	128.46
2	I	201	HEC	C1D-C2D-C3D	3.00	109.08	107.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	I	201	HEC	CBD-CAD-C3D	-2.98	107.53	112.62
2	C	201	HEC	CMD-C2D-C1D	-2.97	123.90	128.46
2	C	201	HEC	CMC-C2C-C3C	2.97	129.31	125.82
2	O	201	HEC	CMC-C2C-C1C	-2.94	123.94	128.46
2	E	201	HEC	CMB-C2B-C1B	-2.88	124.03	128.46
2	M	201	HEC	CBA-CAA-C2A	-2.87	107.77	112.60
2	G	201	HEC	CMC-C2C-C3C	2.86	129.18	125.82
2	I	201	HEC	CMB-C2B-C1B	-2.81	124.15	128.46
2	M	201	HEC	CMC-C2C-C3C	2.80	129.11	125.82
2	K	201	HEC	CMC-C2C-C1C	-2.80	124.16	128.46
2	C	201	HEC	CMB-C2B-C3B	2.80	129.11	125.82
2	K	201	HEC	CBA-CAA-C2A	-2.64	108.15	112.60
2	A	201	HEC	CMC-C2C-C3C	2.63	128.91	125.82
2	G	201	HEC	CBD-CAD-C3D	-2.59	108.20	112.62
2	G	201	HEC	CMD-C2D-C1D	-2.50	124.63	128.46
2	E	201	HEC	CMC-C2C-C3C	2.47	128.73	125.82
2	K	201	HEC	CMD-C2D-C1D	-2.45	124.71	128.46
2	K	201	HEC	C1D-C2D-C3D	2.44	108.69	107.00
2	O	201	HEC	CMD-C2D-C1D	-2.42	124.75	128.46
2	C	201	HEC	CBD-CAD-C3D	-2.33	108.64	112.62
2	O	201	HEC	C1D-C2D-C3D	2.31	108.60	107.00
2	A	201	HEC	CMB-C2B-C3B	2.23	128.44	125.82
2	O	201	HEC	CBA-CAA-C2A	-2.22	108.86	112.60
2	G	201	HEC	C1D-C2D-C3D	2.22	108.54	107.00
2	G	201	HEC	CBA-CAA-C2A	-2.16	108.97	112.60
2	E	201	HEC	C1D-C2D-C3D	2.15	108.49	107.00
2	A	201	HEC	CBD-CAD-C3D	-2.11	109.03	112.62
2	O	201	HEC	CMC-C2C-C3C	2.10	128.29	125.82
2	E	201	HEC	CMD-C2D-C1D	-2.10	125.23	128.46
2	G	201	HEC	O2A-CGA-CBA	2.10	120.78	114.03
4	I	203	PEG	O2-C2-C1	2.10	119.28	110.07
2	C	201	HEC	O2D-CGD-CBD	2.06	120.66	114.03

There are no chirality outliers.

All (70) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	K	201	HEC	C3A-C2A-CAA-CBA
2	K	201	HEC	C2A-CAA-CBA-CGA
4	I	203	PEG	C1-C2-O2-C3
5	I	204	1PE	OH6-C15-C25-OH5
4	E	204	PEG	O2-C3-C4-O4

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Mol	Chain	Res	Type	Atoms
5	C	203	1PE	OH6-C15-C25-OH5
4	K	204	PEG	O2-C3-C4-O4
5	C	203	1PE	OH7-C16-C26-OH6
4	K	203	PEG	C4-C3-O2-C2
4	A	205	PEG	O2-C3-C4-O4
4	E	203	PEG	O1-C1-C2-O2
4	E	203	PEG	O2-C3-C4-O4
4	G	204	PEG	O2-C3-C4-O4
4	M	205	PEG	O1-C1-C2-O2
4	O	203	PEG	O1-C1-C2-O2
4	M	205	PEG	C1-C2-O2-C3
5	A	206	1PE	OH6-C15-C25-OH5
4	M	203	PEG	C4-C3-O2-C2
4	A	203	PEG	O2-C3-C4-O4
4	G	203	PEG	O1-C1-C2-O2
4	A	205	PEG	O1-C1-C2-O2
5	A	206	1PE	OH2-C12-C22-OH3
4	E	204	PEG	C4-C3-O2-C2
4	M	204	PEG	O2-C3-C4-O4
4	C	204	PEG	C4-C3-O2-C2
4	M	204	PEG	C4-C3-O2-C2
5	I	204	1PE	OH5-C14-C24-OH4
5	I	204	1PE	C16-C26-OH6-C15
4	G	205	PEG	O1-C1-C2-O2
4	I	203	PEG	O2-C3-C4-O4
4	C	204	PEG	O1-C1-C2-O2
4	G	203	PEG	O2-C3-C4-O4
4	M	203	PEG	O1-C1-C2-O2
4	K	204	PEG	C4-C3-O2-C2
4	M	204	PEG	O1-C1-C2-O2
5	A	206	1PE	C14-C24-OH4-C13
5	C	203	1PE	OH5-C14-C24-OH4
5	I	204	1PE	C15-C25-OH5-C14
5	I	204	1PE	C25-C15-OH6-C26
2	K	201	HEC	C1A-C2A-CAA-CBA
4	G	203	PEG	C1-C2-O2-C3
2	O	201	HEC	CAA-CBA-CGA-O1A
4	K	204	PEG	C1-C2-O2-C3
4	G	204	PEG	C1-C2-O2-C3
2	C	201	HEC	CAA-CBA-CGA-O1A
2	M	201	HEC	CAA-CBA-CGA-O1A
2	A	201	HEC	CAA-CBA-CGA-O1A

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Mol	Chain	Res	Type	Atoms
5	A	206	1PE	C13-C23-OH3-C22
2	C	201	HEC	CAA-CBA-CGA-O2A
2	O	201	HEC	CAA-CBA-CGA-O2A
5	I	204	1PE	C12-C22-OH3-C23
5	I	204	1PE	OH4-C13-C23-OH3
2	K	201	HEC	CAA-CBA-CGA-O2A
2	A	201	HEC	CAA-CBA-CGA-O2A
5	C	203	1PE	C24-C14-OH5-C25
2	M	201	HEC	CAA-CBA-CGA-O2A
2	K	201	HEC	CAA-CBA-CGA-O1A
2	E	201	HEC	CAA-CBA-CGA-O1A
2	E	201	HEC	CAA-CBA-CGA-O2A
4	M	205	PEG	C4-C3-O2-C2
5	A	206	1PE	C16-C26-OH6-C15
4	A	205	PEG	C4-C3-O2-C2
2	G	201	HEC	CAD-CBD-CGD-O2D
4	O	203	PEG	C4-C3-O2-C2
5	A	206	1PE	C24-C14-OH5-C25
2	G	201	HEC	CAD-CBD-CGD-O1D
2	K	201	HEC	CAD-CBD-CGD-O2D
2	O	201	HEC	CAD-CBD-CGD-O2D
2	O	201	HEC	CAD-CBD-CGD-O1D
2	I	201	HEC	CAD-CBD-CGD-O1D

There are no ring outliers.

15 monomers are involved in 25 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	C	201	HEC	1	0
2	M	201	HEC	1	0
5	C	203	1PE	1	0
2	A	201	HEC	1	0
5	I	204	1PE	5	0
4	A	203	PEG	2	0
4	C	204	PEG	1	0
4	M	204	PEG	1	0
2	G	201	HEC	1	0
5	A	206	1PE	1	0
4	I	203	PEG	2	0
4	G	203	PEG	3	0
4	E	204	PEG	2	0
2	E	201	HEC	1	0

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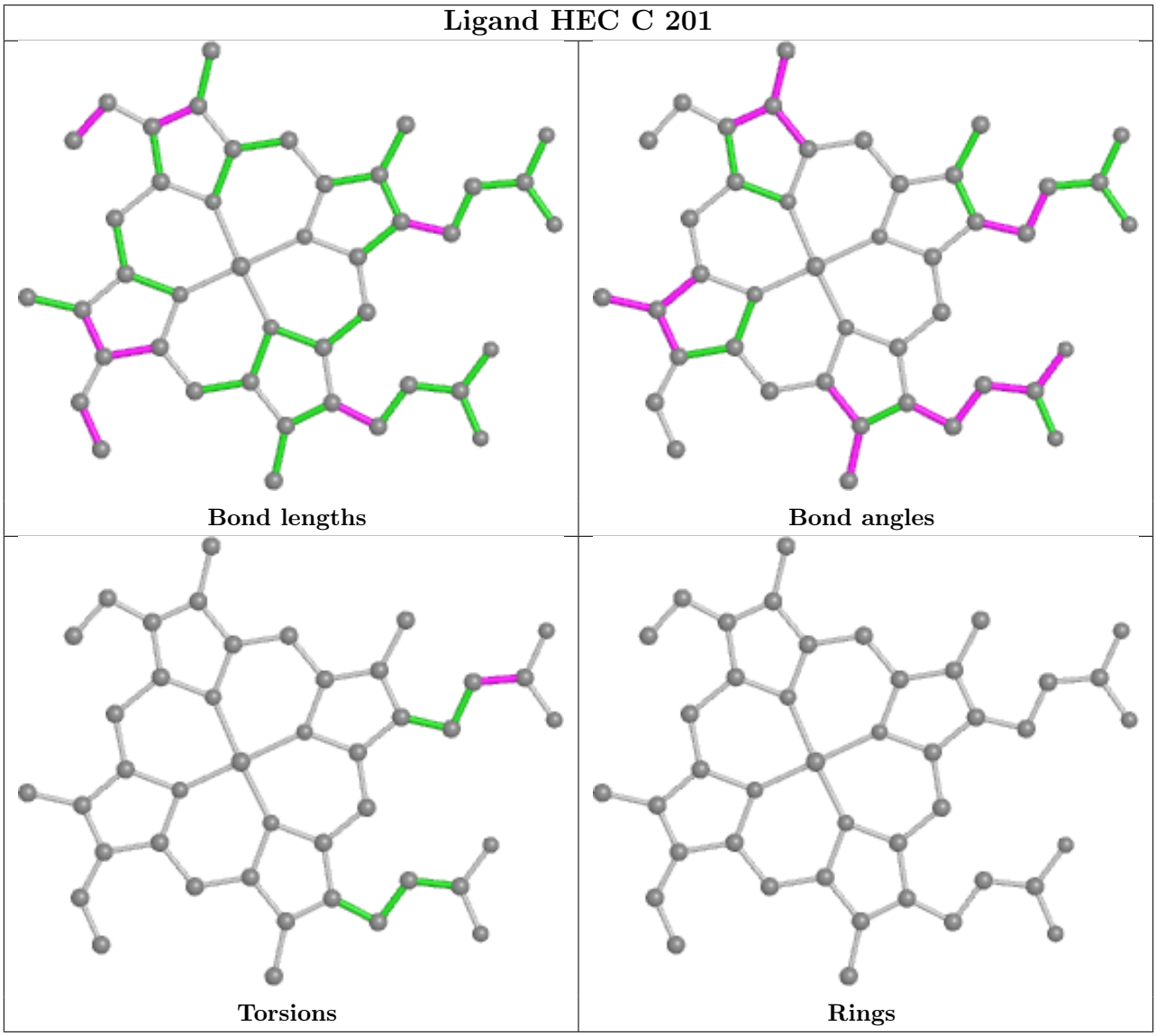
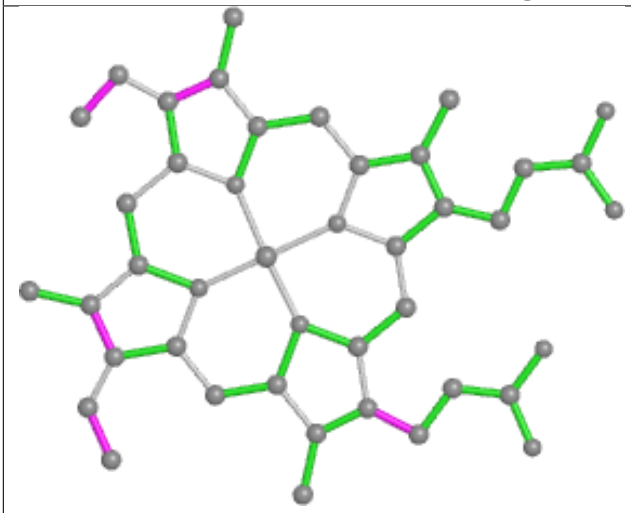
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	K	201	HEC	2	0

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 then 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.

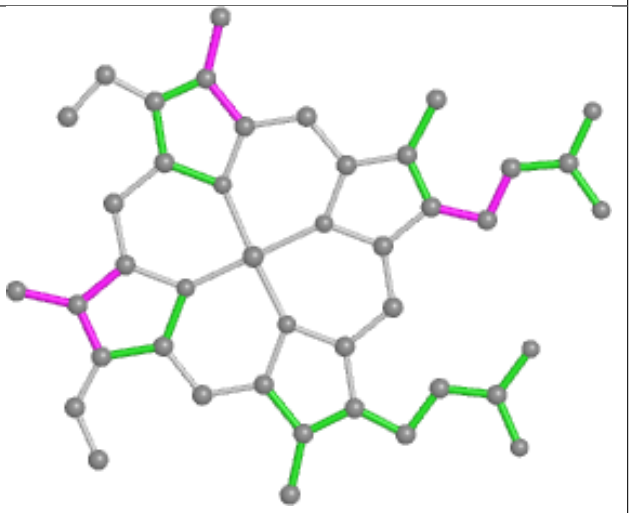
Ligand HEC C 201



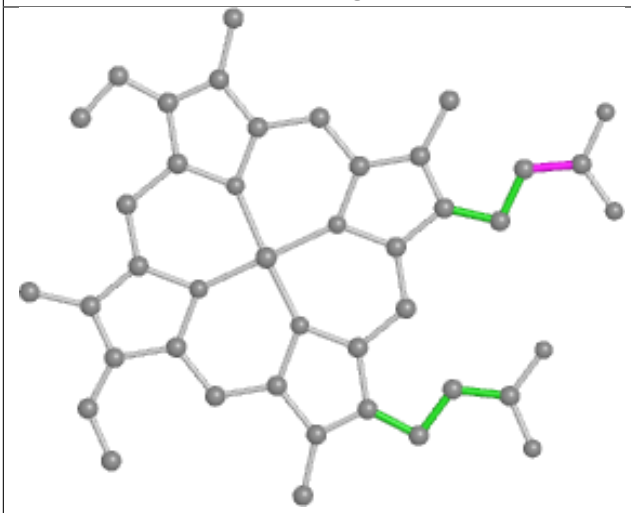
Ligand HEC M 201



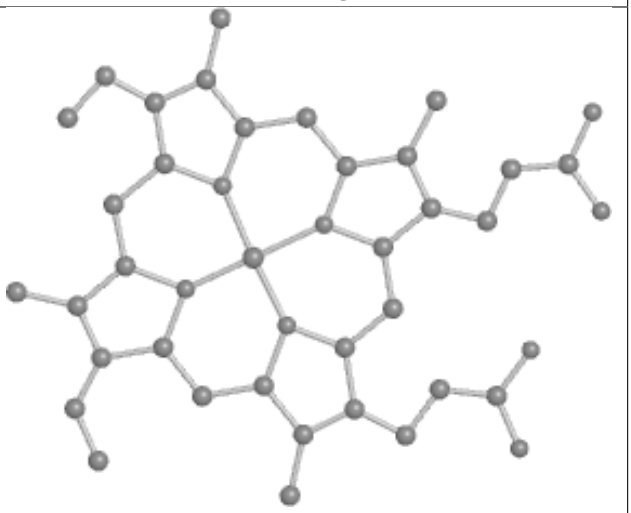
Bond lengths



Bond angles

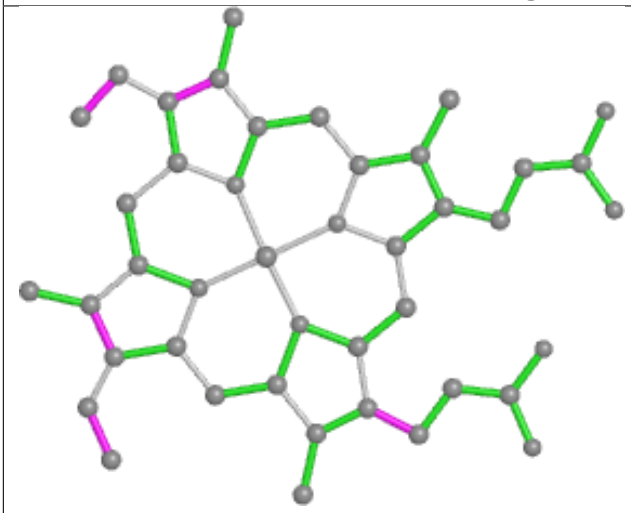


Torsions

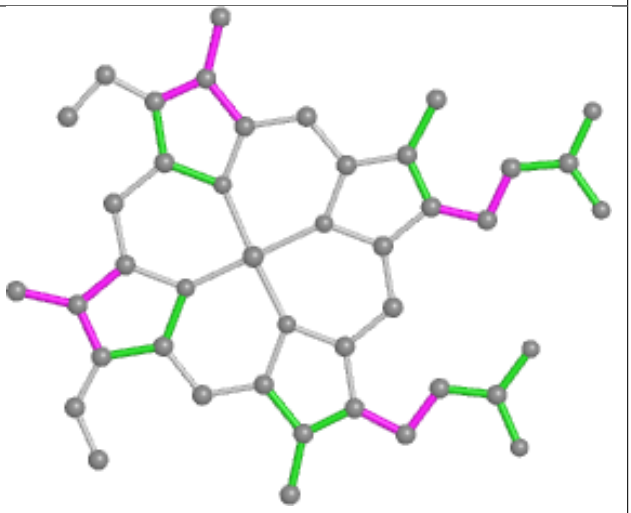


Rings

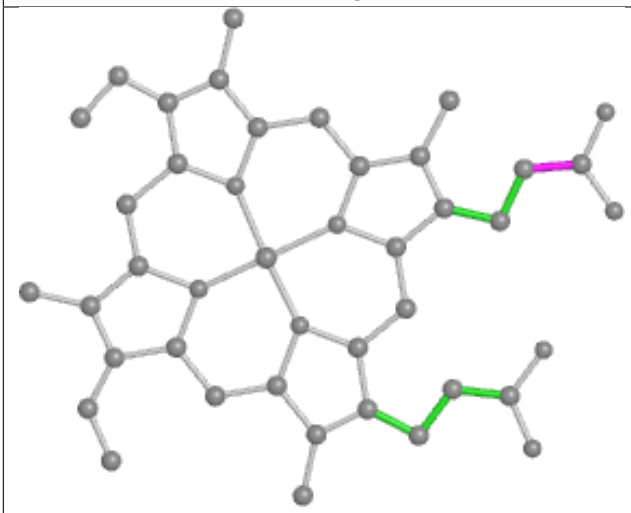
Ligand HEC A 201



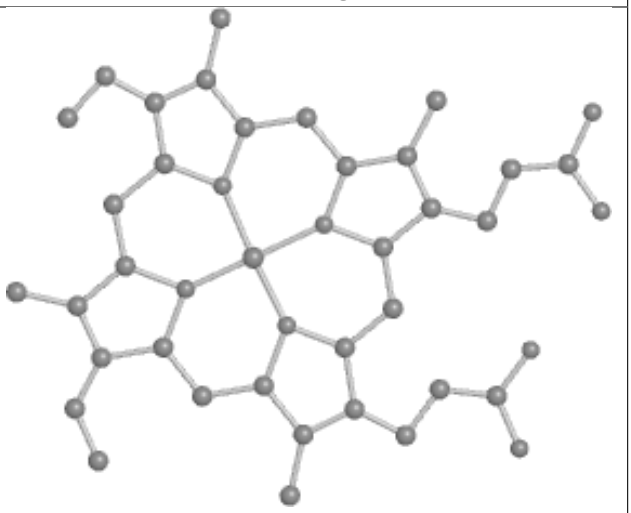
Bond lengths



Bond angles

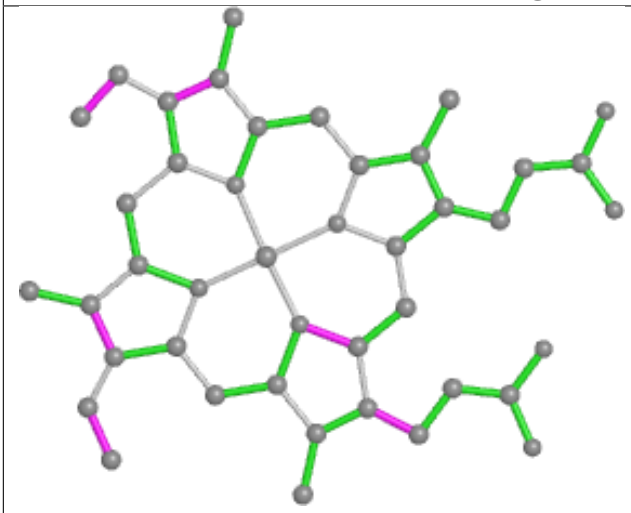


Torsions

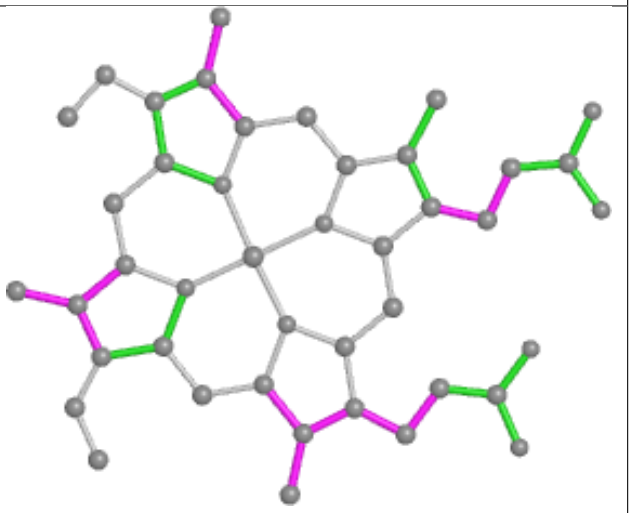


Rings

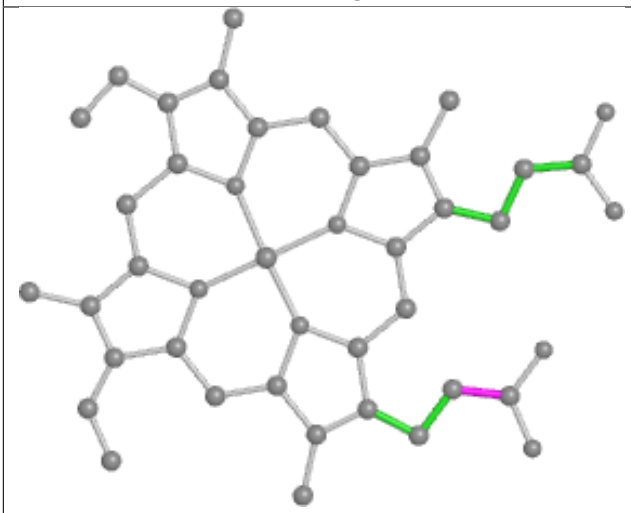
Ligand HEC I 201



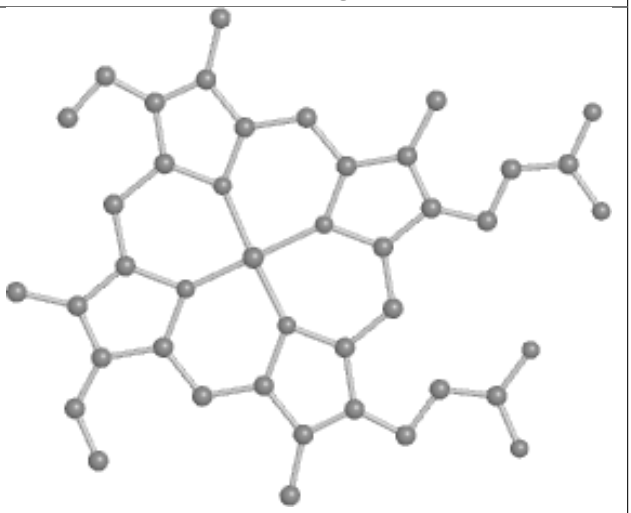
Bond lengths



Bond angles

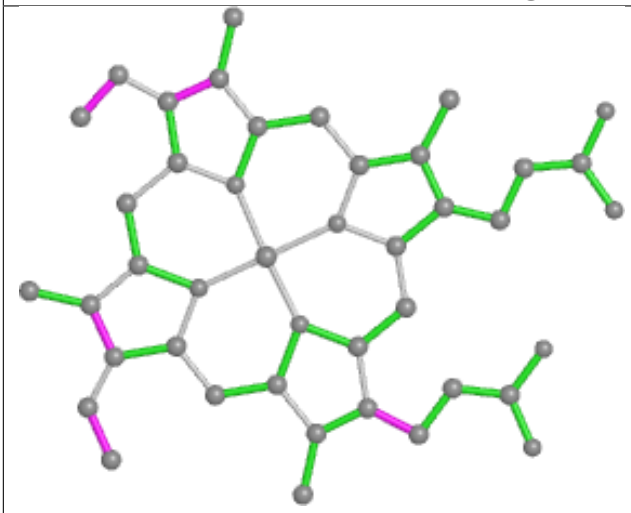


Torsions

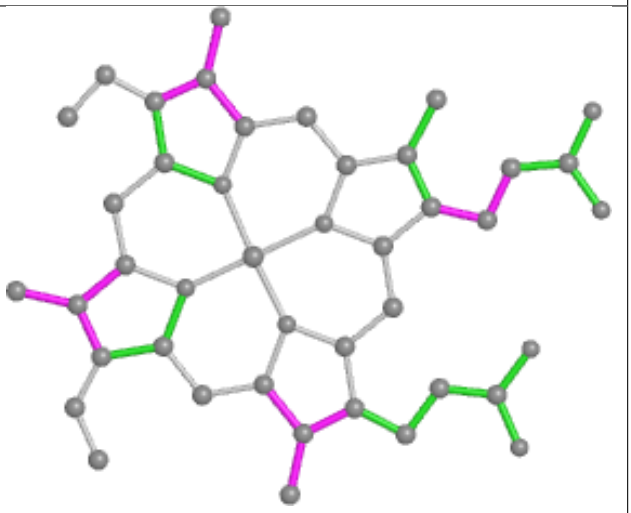


Rings

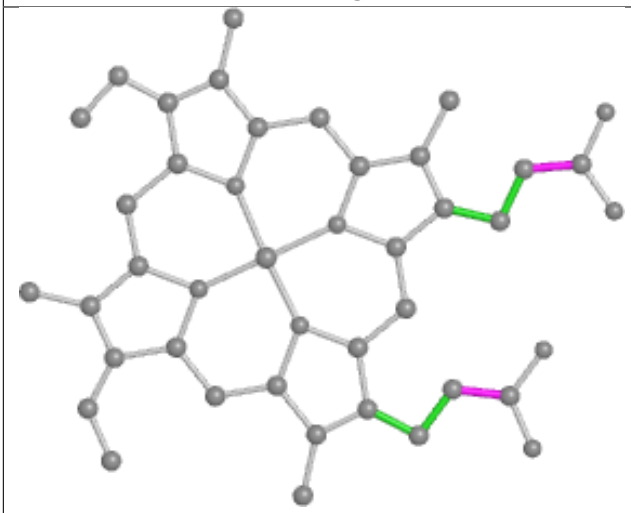
Ligand HEC O 201



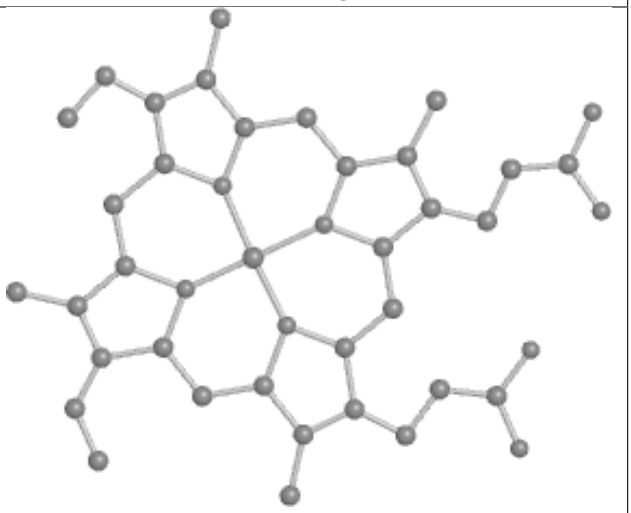
Bond lengths



Bond angles

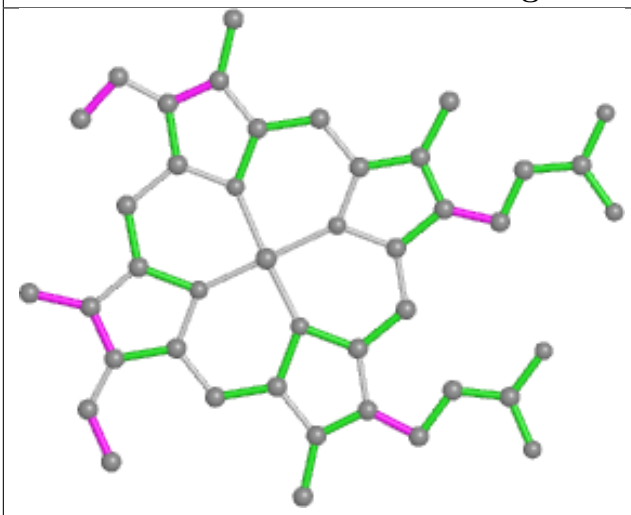


Torsions

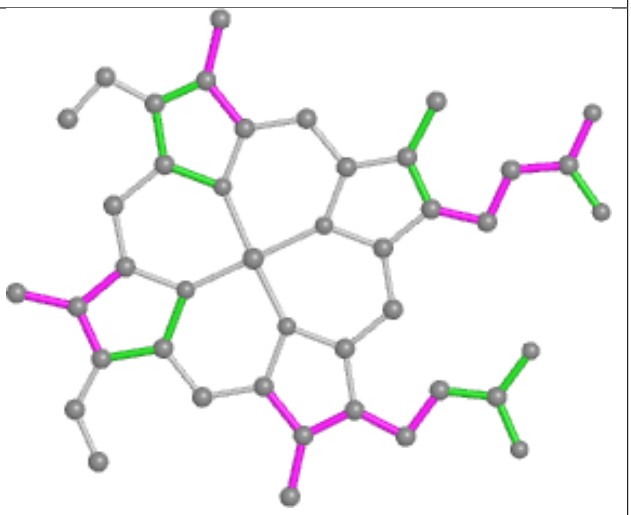


Rings

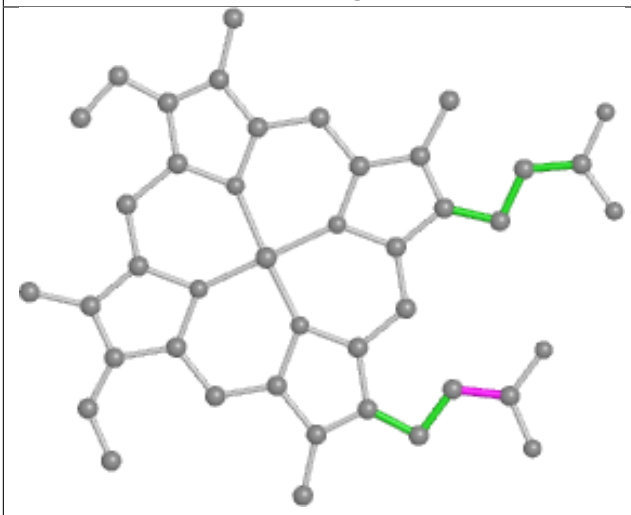
Ligand HEC G 201



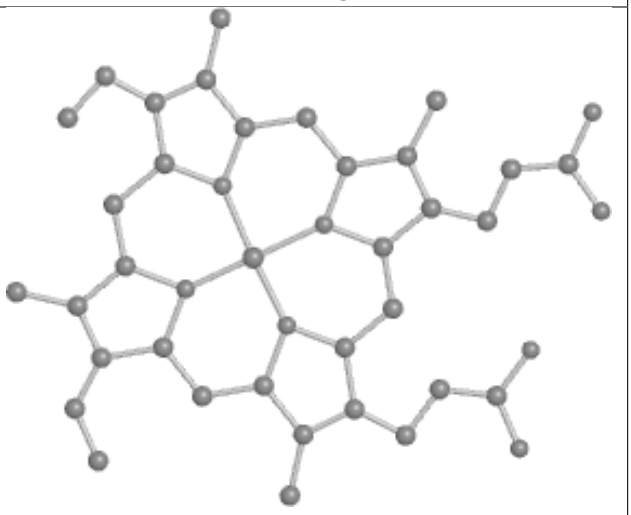
Bond lengths



Bond angles

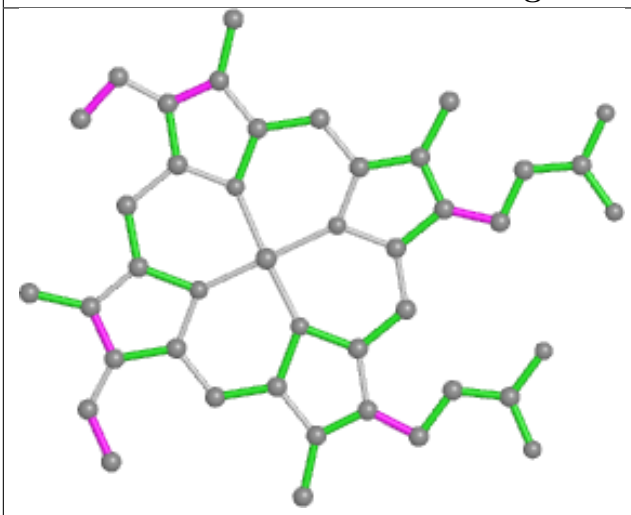


Torsions

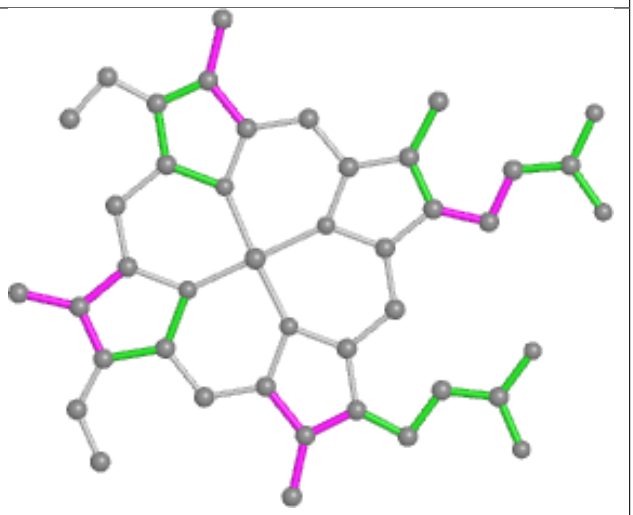


Rings

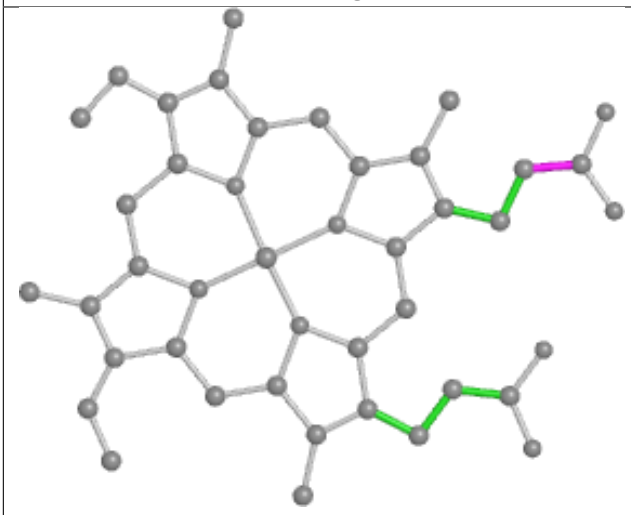
Ligand HEC E 201



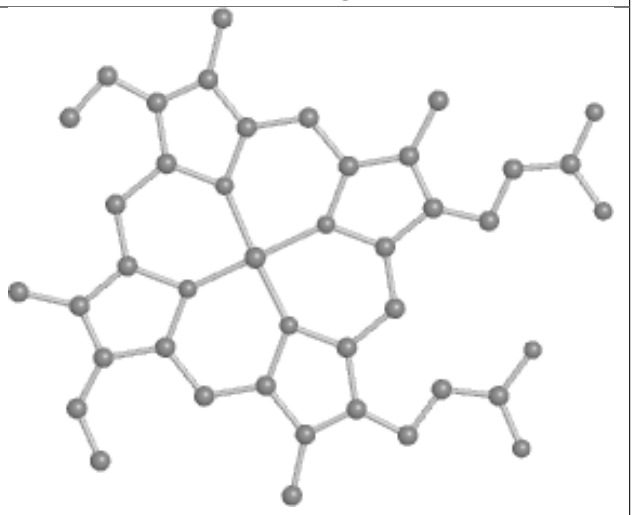
Bond lengths



Bond angles

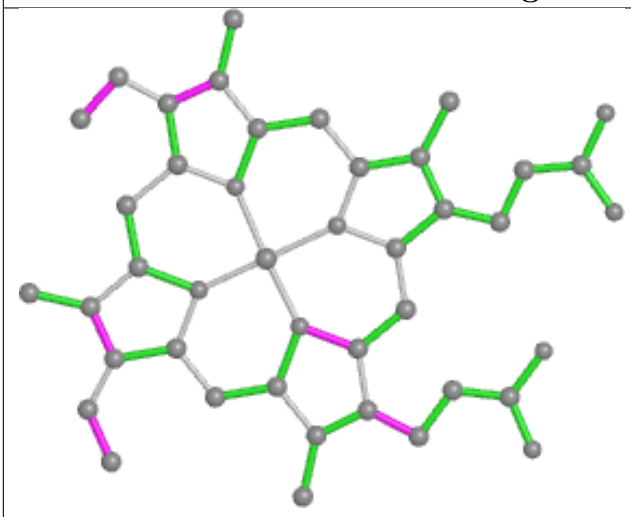


Torsions

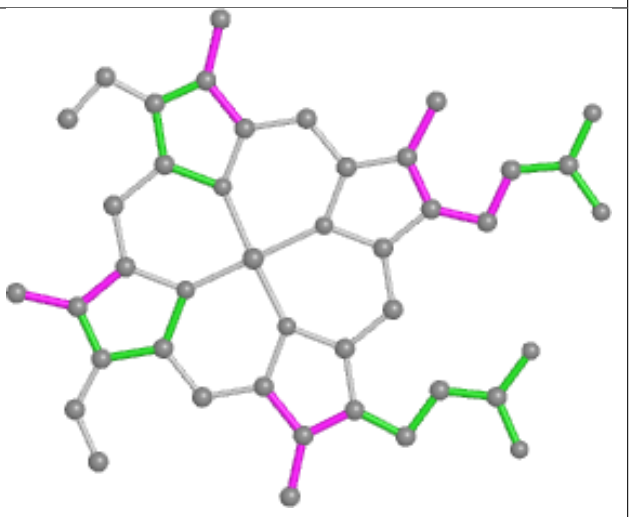


Rings

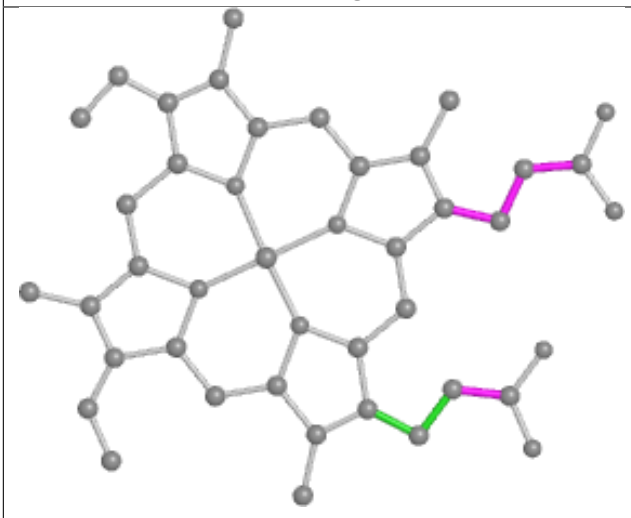
Ligand HEC K 201



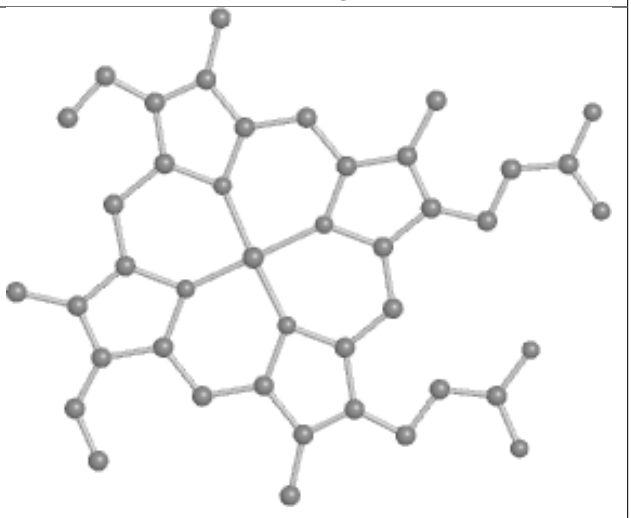
Bond lengths



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, 95^{th} 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	106/106 (100%)	0.02	3 (2%)	55	60	16, 25, 41, 50	0
1	C	106/106 (100%)	-0.09	3 (2%)	55	60	14, 22, 41, 53	1 (0%)
1	E	106/106 (100%)	-0.05	3 (2%)	55	60	16, 24, 41, 53	0
1	G	106/106 (100%)	0.11	1 (0%)	81	85	15, 27, 42, 50	0
1	I	106/106 (100%)	0.14	3 (2%)	55	60	17, 28, 52, 63	0
1	K	106/106 (100%)	0.32	2 (1%)	66	71	17, 33, 53, 62	1 (0%)
1	M	106/106 (100%)	0.37	5 (4%)	37	41	16, 29, 54, 68	0
1	O	106/106 (100%)	0.30	6 (5%)	30	34	15, 30, 58, 72	0
All	All	848/848 (100%)	0.14	26 (3%)	51	56	14, 27, 47, 72	2 (0%)

All (26) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	O	53	PRO	5.3
1	O	55	SER	3.3
1	I	56	PRO	3.0
1	E	93	ILE	3.0
1	M	20	ALA	2.9
1	I	55	SER	2.9
1	M	23	ALA	2.9
1	O	52	SER	2.8
1	A	66	TRP	2.8
1	E	92	GLU	2.7
1	I	53	PRO	2.6
1	G	66	TRP	2.6
1	M	24	ALA	2.5
1	K	54	ASP	2.4
1	O	66	TRP	2.4
1	A	52	SER	2.4

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Mol	Chain	Res	Type	RSRZ
1	A	82	GLY	2.3
1	C	92	GLU	2.3
1	K	66	TRP	2.2
1	M	56	PRO	2.2
1	O	56	PRO	2.2
1	E	66	TRP	2.2
1	M	16	VAL	2.1
1	O	50	ASP	2.1
1	C	66	TRP	2.1
1	C	52	SER	2.0

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

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

6.3 Carbohydrates (i)

There are no oligosaccharides in this entry.

6.4 Ligands (i)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	PEG	M	205	7/7	0.76	0.14	40,45,52,52	0
4	PEG	K	203	7/7	0.77	0.11	17,21,23,30	0
4	PEG	G	203	7/7	0.77	0.13	18,27,36,39	0
4	PEG	O	203	7/7	0.79	0.14	29,32,42,46	0
4	PEG	M	203	7/7	0.80	0.11	20,21,26,29	0
4	PEG	E	203	7/7	0.82	0.13	22,25,36,36	0
5	1PE	I	204	16/16	0.82	0.12	30,37,42,43	0
4	PEG	G	204	7/7	0.83	0.13	37,39,47,49	0
4	PEG	A	204	7/7	0.83	0.13	32,37,41,41	0
4	PEG	C	204	7/7	0.83	0.10	20,21,27,29	0
4	PEG	I	203	7/7	0.84	0.10	18,23,26,31	0
5	1PE	A	206	16/16	0.84	0.12	45,51,55,55	0
4	PEG	A	205	7/7	0.84	0.13	35,39,47,51	0

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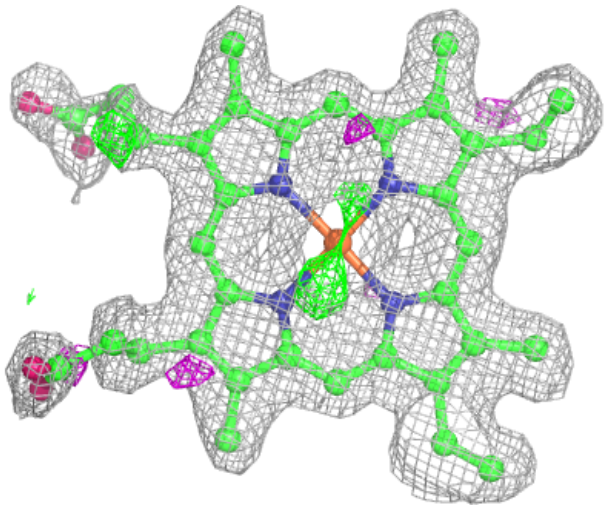
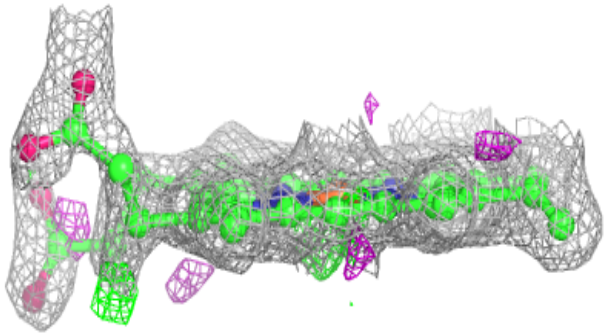
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	PEG	A	203	7/7	0.87	0.10	19,22,29,32	0
4	PEG	K	204	7/7	0.88	0.13	24,32,35,39	0
4	PEG	E	204	7/7	0.88	0.10	31,34,37,40	0
5	1PE	C	203	16/16	0.89	0.10	26,36,41,48	0
4	PEG	M	204	7/7	0.90	0.12	25,30,36,38	0
4	PEG	G	205	7/7	0.90	0.10	25,30,34,37	0
2	HEC	K	201	43/43	0.95	0.10	21,28,48,56	0
2	HEC	O	201	43/43	0.96	0.09	23,27,41,54	0
2	HEC	M	201	43/43	0.96	0.09	16,25,38,51	0
2	HEC	G	201	43/43	0.97	0.08	11,17,32,35	0
2	HEC	I	201	43/43	0.97	0.08	17,24,43,53	0
2	HEC	A	201	43/43	0.98	0.06	13,16,30,45	0
2	HEC	C	201	43/43	0.98	0.05	11,15,30,41	0
2	HEC	E	201	43/43	0.98	0.06	11,17,29,41	0
3	ZN	E	202	1/1	0.99	0.03	19,19,19,19	0
3	ZN	M	202	1/1	1.00	0.01	16,16,16,16	0
3	ZN	O	202	1/1	1.00	0.03	15,15,15,15	0
3	ZN	C	202	1/1	1.00	0.03	16,16,16,16	0
3	ZN	A	202	1/1	1.00	0.03	17,17,17,17	0
3	ZN	G	202	1/1	1.00	0.02	16,16,16,16	0
3	ZN	I	202	1/1	1.00	0.02	16,16,16,16	0
3	ZN	K	202	1/1	1.00	0.02	16,16,16,16	0

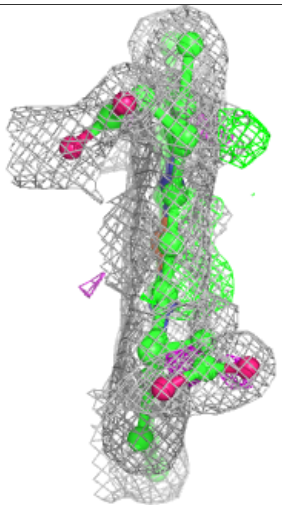
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around HEC K 201:

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

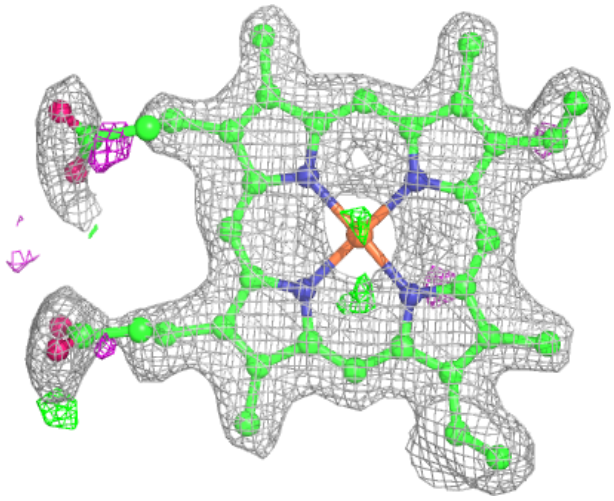


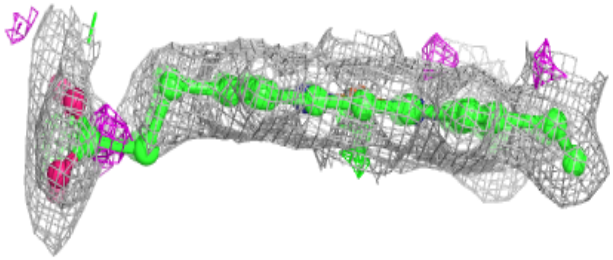


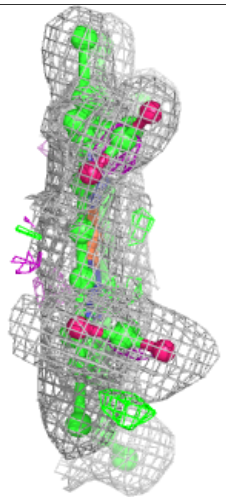


Electron density around HEC O 201:

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

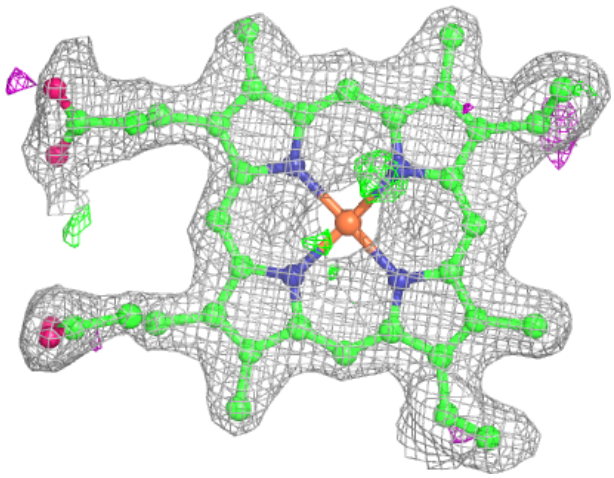


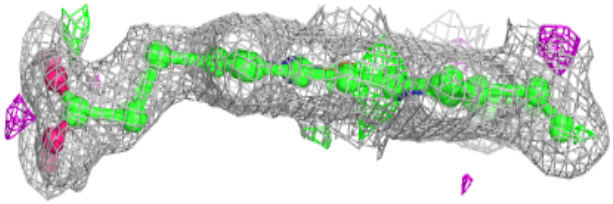


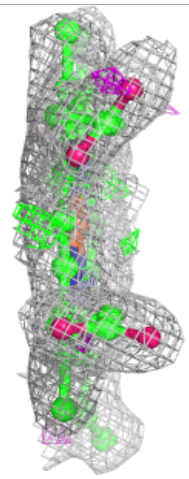


Electron density around HEC M 201:

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

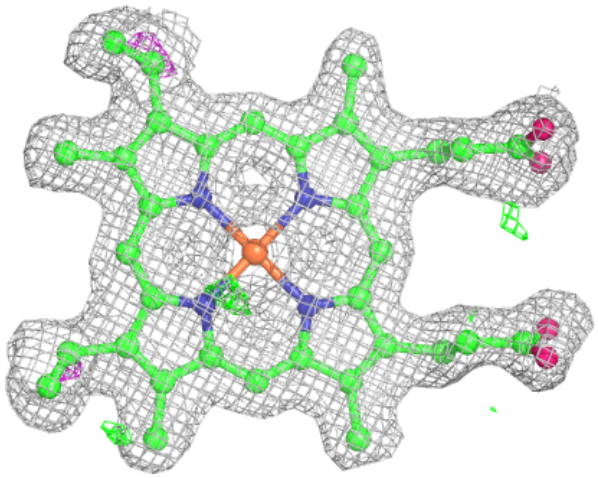


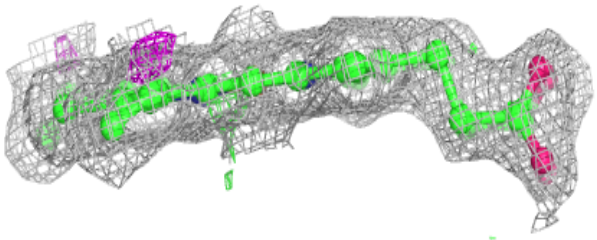


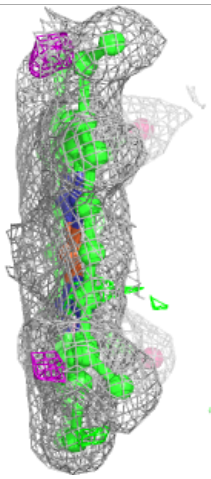


Electron density around HEC G 201:

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

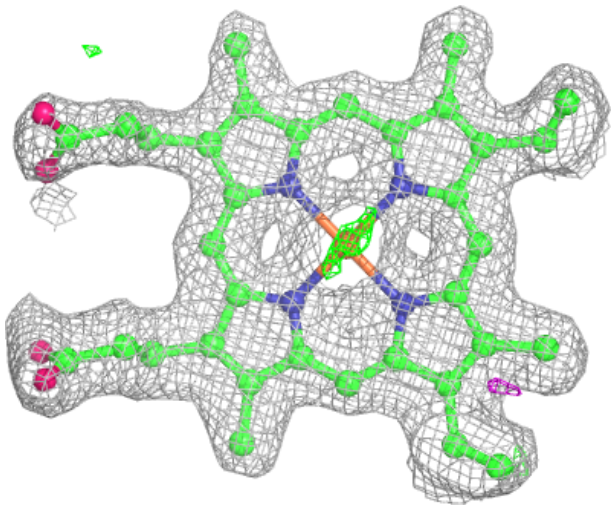


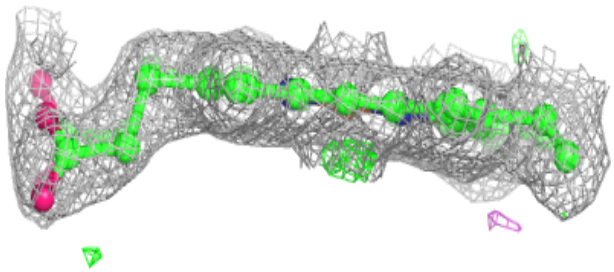


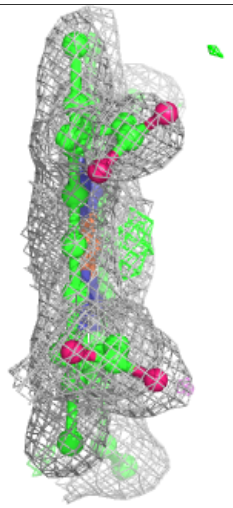


Electron density around HEC I 201:

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

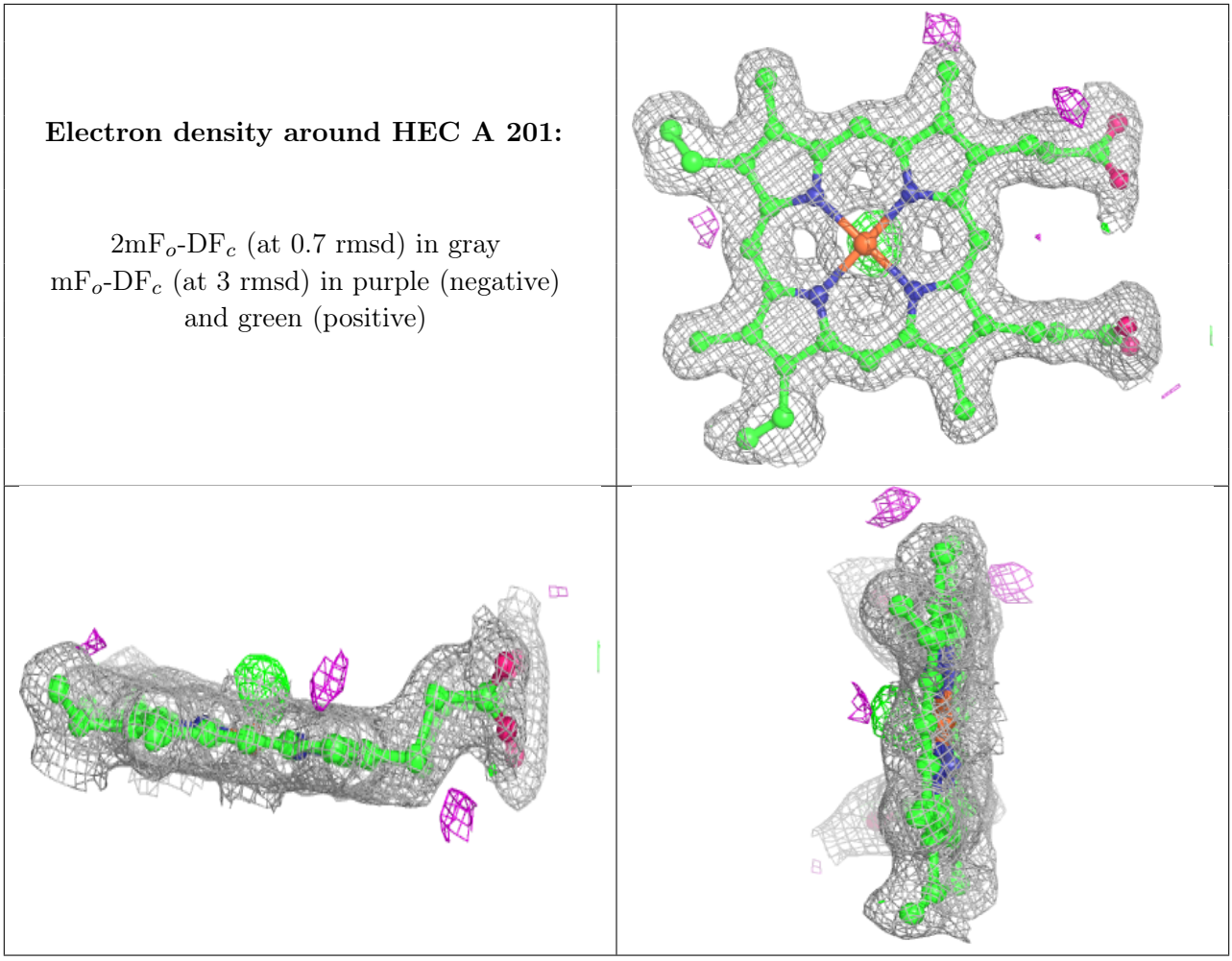






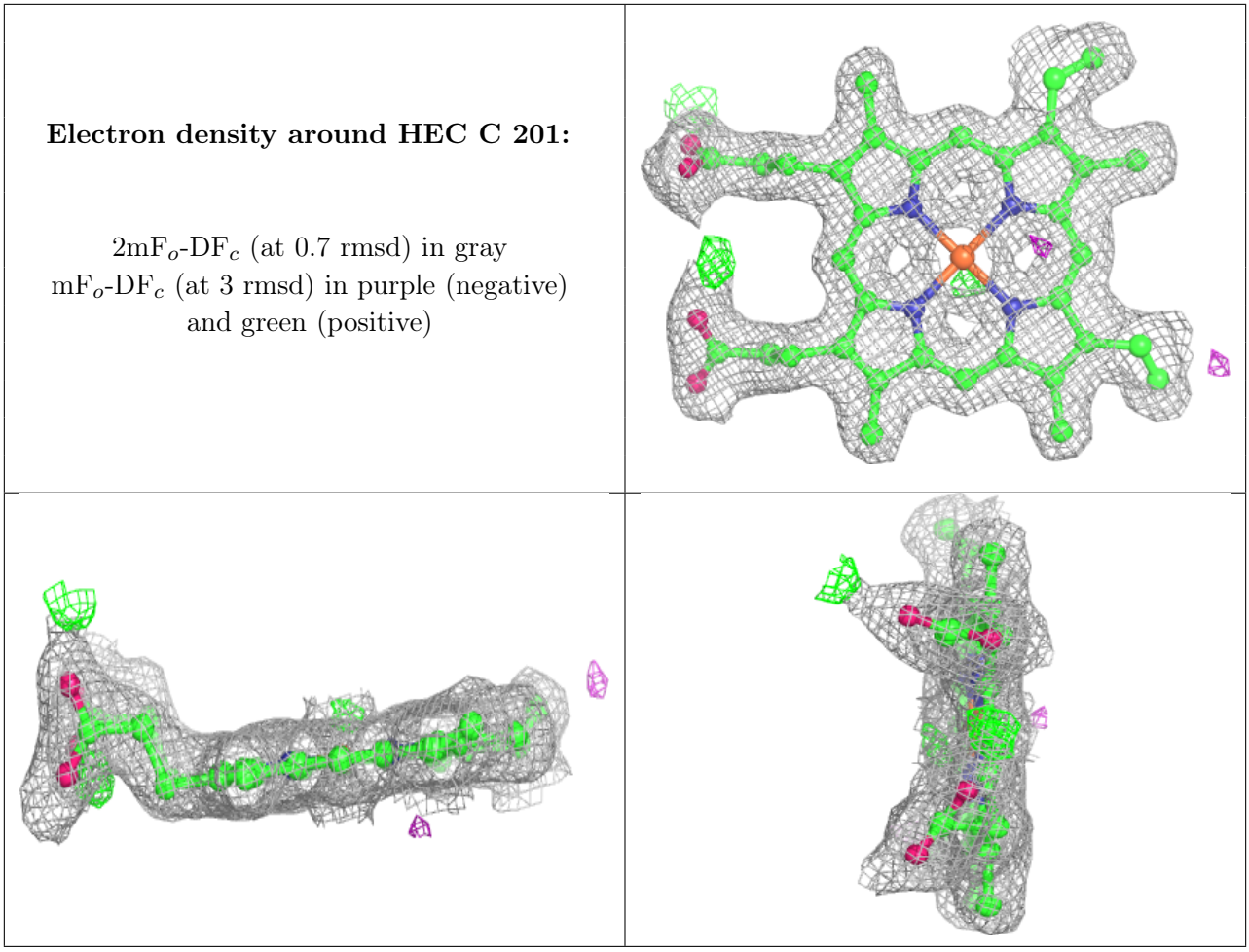
Electron density around HEC A 201:

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



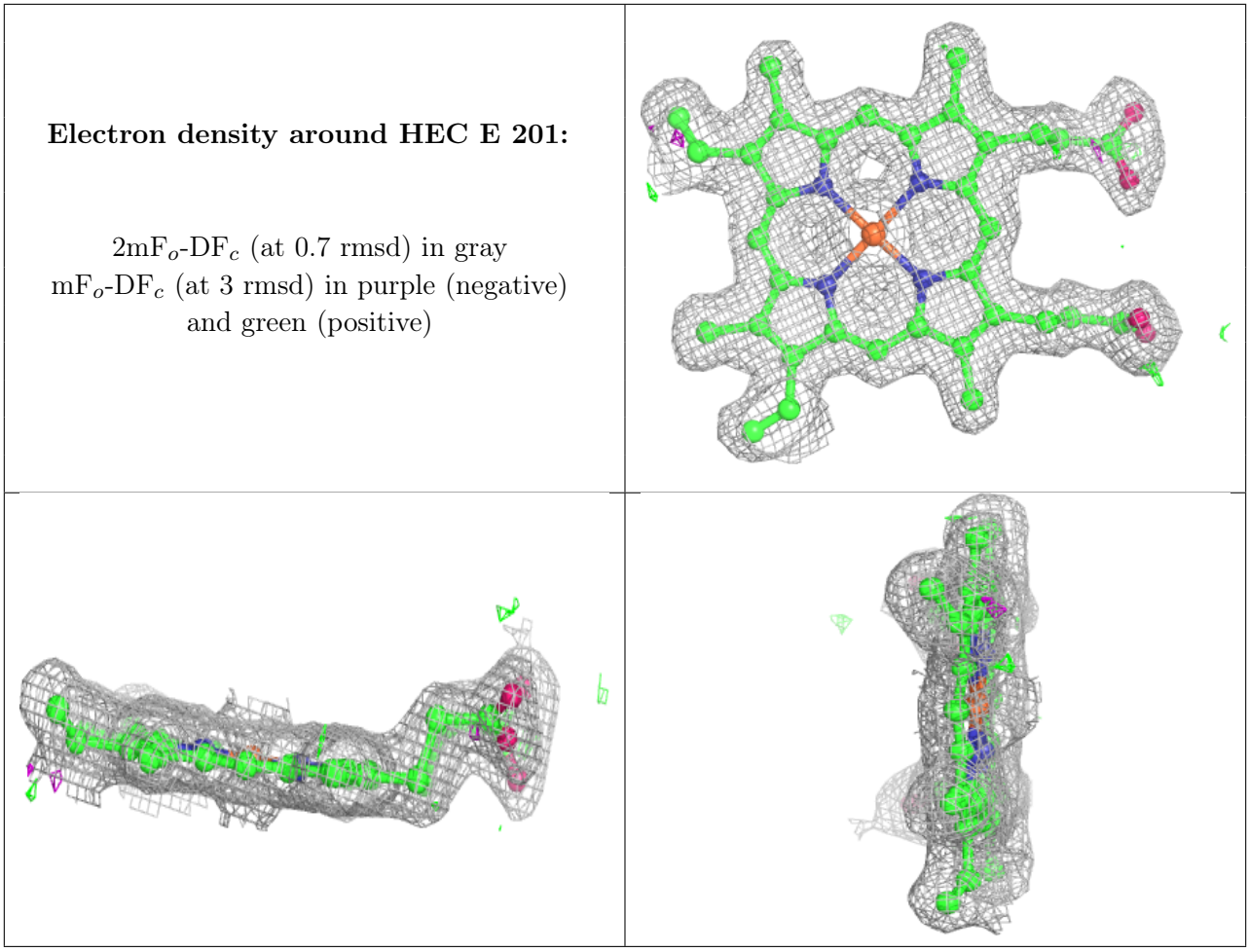
Electron density around HEC C 201:

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



Electron density around HEC E 201:

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



6.5 Other polymers (i)

There are no such residues in this entry.