



Full wwPDB X-ray Structure Validation Report ⓘ

Aug 17, 2022 – 08:51 PM EDT

PDB ID : 3WFC
Title : Reduced and carbonmonoxide-bound cytochrome c-dependent nitric oxide reductase (cNOR) from *Pseudomonas aeruginosa* in complex with antibody fragment
Authors : Sato, N.; Ishii, S.; Hino, T.; Sugimoto, H.; Fukumori, Y.; Shiro, Y.; Tosha, T.
Deposited on : 2013-07-18
Resolution : 2.50 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	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.29
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.29

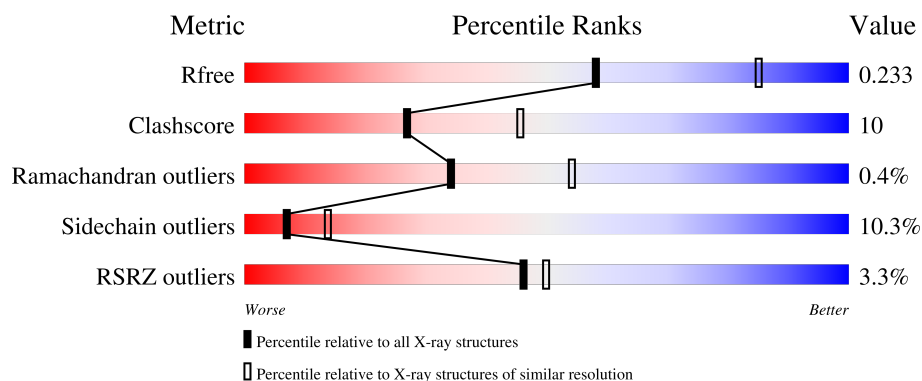
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.50 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}	130704	4661 (2.50-2.50)
Clashscore	141614	5346 (2.50-2.50)
Ramachandran outliers	138981	5231 (2.50-2.50)
Sidechain outliers	138945	5233 (2.50-2.50)
RSRZ outliers	127900	4559 (2.50-2.50)

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	L	213	
2	H	225	
3	B	465	
4	C	146	

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	CMO	B	804	-	-	X	-

2 Entry composition

There are 11 unique types of molecules in this entry. The entry contains 8541 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 antibody fab fragment light chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	L	213	Total	C	N	O	S	0	0	0
			1669	1047	277	338	7			

- Molecule 2 is a protein called antibody fab fragment heavy chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	H	225	Total	C	N	O	S	0	0	0
			1692	1065	280	338	9			

- Molecule 3 is a protein called Nitric oxide reductase subunit B.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	B	449	Total	C	N	O	S	0	0	0
			3576	2416	563	572	25			

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	?	-	ARG	deletion	UNP Q59647

- Molecule 4 is a protein called Nitric oxide reductase subunit C.

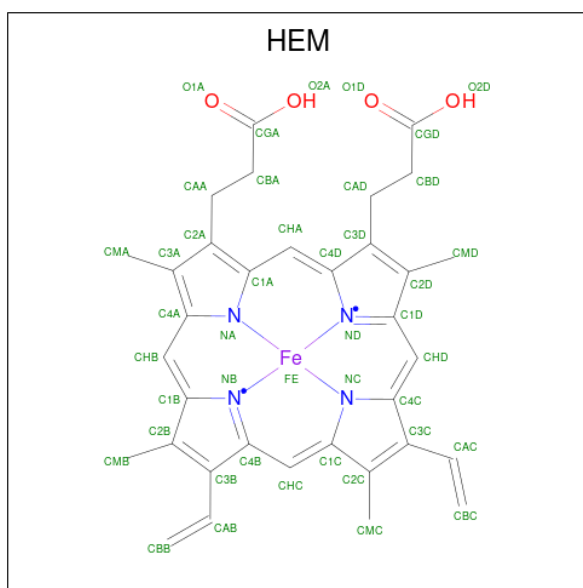
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	C	142	Total	C	N	O	S	0	0	0
			1123	720	195	202	6			

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	100	LYS	ASN	conflict	UNP Q59646

- Molecule 5 is PROTOPORPHYRIN IX CONTAINING FE (three-letter code: HEM) (for-

mula: C₃₄H₃₂FeN₄O₄).

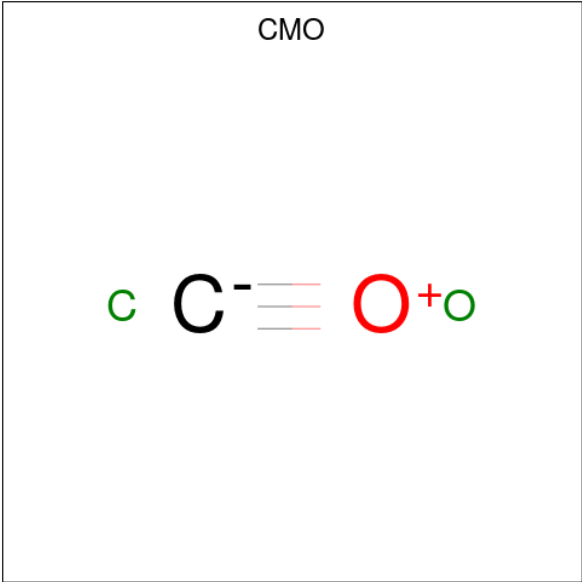


Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	B	1	Total	C	Fe	N	O	
			43	34	1	4	4	0
5	B	1	Total	C	Fe	N	O	
			43	34	1	4	4	0

- Molecule 6 is FE (III) ION (three-letter code: FE) (formula: Fe).

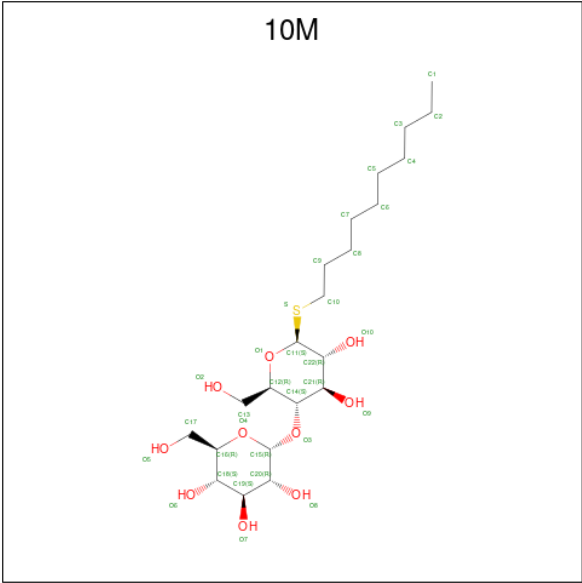
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	B	1	Total	Fe		
			1	1	0	0

- Molecule 7 is CARBON MONOXIDE (three-letter code: CMO) (formula: CO).



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

- Molecule 8 is decyl 4-O-alpha-D-glucopyranosyl-1-thio-beta-D-glucopyranoside (three-letter code: 10M) (formula: C₂₂H₄₂O₁₀S).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
8	B	1	Total	C	O	S	0	0
			33	22	10	1		

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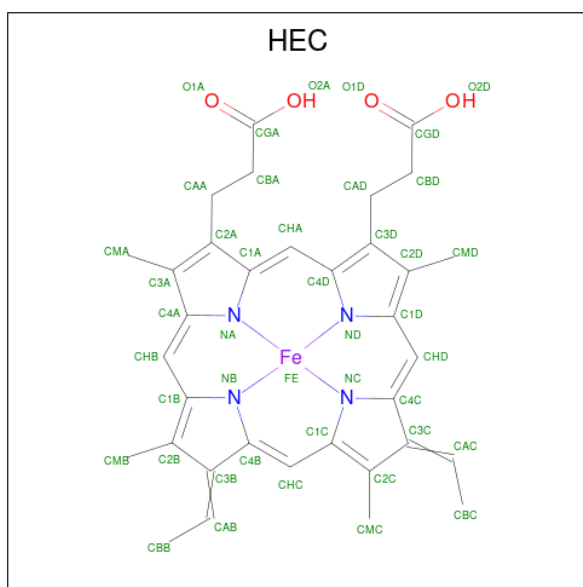
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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
8	B	1	Total	C	O	S	0	0
			33	22	10	1		

- Molecule 9 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
9	B	1	Total Ca 1 1	0	0

- Molecule 10 is HEME C (three-letter code: HEC) (formula: $\text{C}_{34}\text{H}_{34}\text{FeN}_4\text{O}_4$).



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

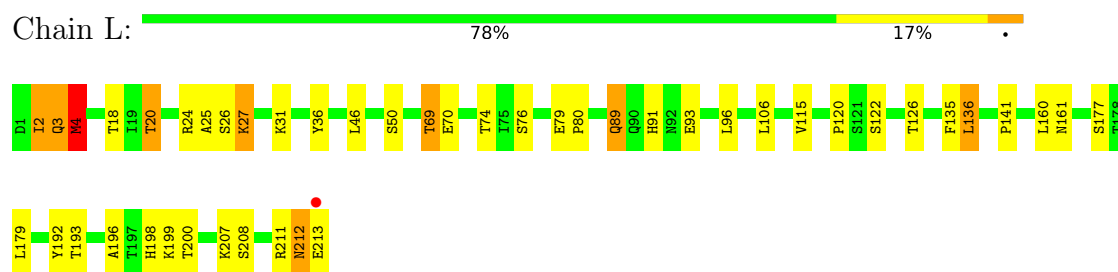
- Molecule 11 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
11	L	90	Total O 90 90	0	0
11	H	86	Total O 86 86	0	0
11	B	52	Total O 52 52	0	0
11	C	52	Total O 52 52	0	0

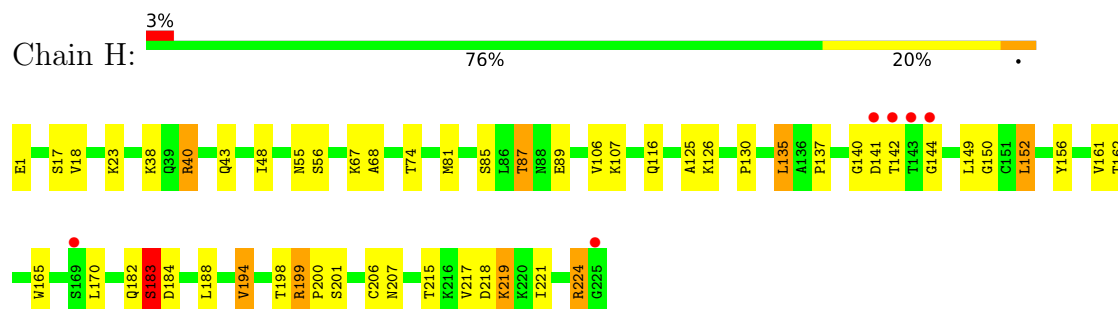
3 Residue-property plots [i](#)

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.

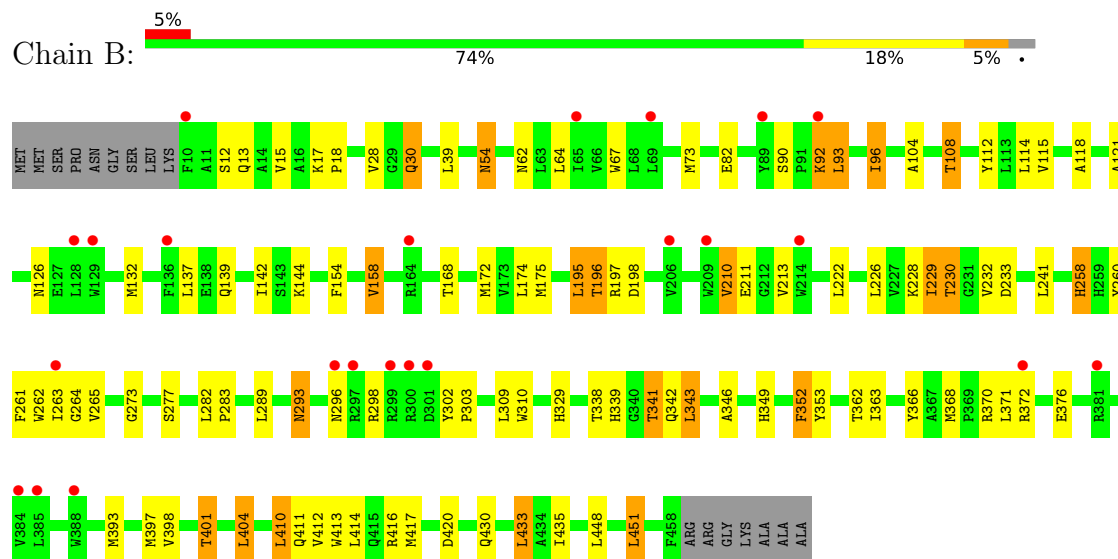
- Molecule 1: antibody fab fragment light chain



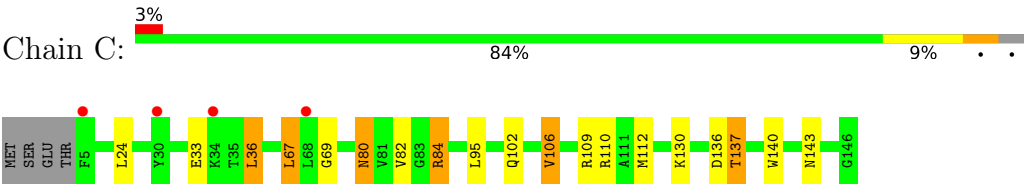
- Molecule 2: antibody fab fragment heavy chain



- Molecule 3: Nitric oxide reductase subunit B



● Molecule 4: Nitric oxide reductase subunit C



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	90.67Å 107.07Å 196.92Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	33.37 – 2.50 33.35 – 2.50	Depositor EDS
% Data completeness (in resolution range)	98.6 (33.37-2.50) 98.7 (33.35-2.50)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	0.08	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.34 (at 2.51Å)	Xtriage
Refinement program	REFMAC 5.7.0029	Depositor
R, R_{free}	0.191 , 0.232 0.191 , 0.233	Depositor DCC
R_{free} test set	3348 reflections (5.09%)	wwPDB-VP
Wilson B-factor (Å ²)	47.4	Xtriage
Anisotropy	0.392	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 43.1	EDS
L-test for twinning ²	$\langle L \rangle = 0.51$, $\langle L^2 \rangle = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	8541	wwPDB-VP
Average B, all atoms (Å ²)	54.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.23% 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 [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: HEM, CA, HEC, FE, CMO, 10M

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	L	0.76	0/1709	0.86	2/2317 (0.1%)
2	H	0.75	0/1735	0.89	4/2367 (0.2%)
3	B	0.63	0/3693	0.74	1/5039 (0.0%)
4	C	0.60	0/1153	0.77	1/1559 (0.1%)
All	All	0.68	0/8290	0.80	8/11282 (0.1%)

There are no bond length outliers.

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	224	ARG	NE-CZ-NH1	6.00	123.30	120.30
1	L	4	MET	CB-CG-SD	-5.70	95.30	112.40
2	H	224	ARG	NE-CZ-NH2	-5.70	117.45	120.30
2	H	206	CYS	CA-CB-SG	-5.56	103.99	114.00
3	B	198	ASP	CB-CG-OD1	5.40	123.16	118.30
4	C	84	ARG	NE-CZ-NH1	5.14	122.87	120.30
1	L	93	GLU	CB-CA-C	-5.08	100.23	110.40
2	H	152	LEU	CA-CB-CG	5.05	126.91	115.30

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	L	1669	0	1606	34	0
2	H	1692	0	1647	30	0
3	B	3576	0	3619	87	0
4	C	1123	0	1092	25	0
5	B	86	0	60	10	0
6	B	1	0	0	0	0
7	B	4	0	0	3	0
8	B	66	0	84	4	0
9	B	1	0	0	0	0
10	C	43	0	30	1	0
11	B	52	0	0	1	0
11	C	52	0	0	1	0
11	H	86	0	0	2	0
11	L	90	0	0	1	0
All	All	8541	0	8138	167	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 10.

All (167) 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:H:107:LYS:HB2	11:H:319:HOH:O	1.63	0.99
3:B:121:ALA:HA	3:B:132:MET:HE1	1.47	0.96
3:B:211:GLU:OE2	7:B:805:CMO:C	2.13	0.95
8:B:806:10M:H17	8:B:807:10M:O8	1.69	0.93
2:H:48:ILE:HG21	2:H:81:MET:HE1	1.51	0.90
2:H:48:ILE:HG21	2:H:81:MET:CE	2.02	0.89
1:L:79:GLU:HG3	1:L:80:PRO:HD2	1.52	0.88
3:B:230:THR:HG23	3:B:232:VAL:H	1.39	0.86
3:B:104:ALA:O	3:B:108:THR:HG23	1.76	0.84
2:H:183:SER:OG	2:H:184:ASP:N	2.10	0.83
3:B:126:ASN:HB2	3:B:132:MET:CE	2.08	0.82
1:L:79:GLU:HG3	1:L:80:PRO:CD	2.10	0.80
3:B:393:MET:HE1	3:B:451:LEU:HD23	1.62	0.80
3:B:338:THR:O	3:B:341:THR:HB	1.81	0.80
3:B:137:LEU:HA	3:B:139:GLN:HE22	1.46	0.80
3:B:126:ASN:ND2	3:B:132:MET:HE2	1.99	0.77
2:H:87:THR:HG22	2:H:89:GLU:H	1.49	0.77
3:B:126:ASN:HB2	3:B:132:MET:HE2	1.68	0.75
3:B:126:ASN:CG	3:B:132:MET:HE2	2.11	0.71
2:H:40:ARG:O	2:H:43:GLN:HB2	1.90	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:352:PHE:HB3	5:B:801:HEM:HBC1	1.73	0.70
3:B:302:TYR:OH	3:B:370:ARG:NH1	2.26	0.69
3:B:195:LEU:HD11	4:C:67:LEU:HD13	1.74	0.68
3:B:104:ALA:O	3:B:108:THR:CG2	2.41	0.68
3:B:126:ASN:CB	3:B:132:MET:HE2	2.23	0.68
3:B:197:ARG:HD3	4:C:36:LEU:HD23	1.75	0.68
3:B:229:ILE:HD11	3:B:366:TYR:HD2	1.58	0.67
3:B:430:GLN:HE21	4:C:110:ARG:HH22	1.40	0.67
2:H:55:ASN:O	2:H:56:SER:HB2	1.95	0.67
8:B:806:10M:C17	8:B:807:10M:O8	2.42	0.66
3:B:126:ASN:CB	3:B:132:MET:CE	2.73	0.66
3:B:137:LEU:HA	3:B:139:GLN:NE2	2.13	0.64
1:L:50:SER:H	1:L:91:HIS:HE1	1.46	0.63
2:H:194:VAL:HG13	2:H:198:THR:HB	1.80	0.63
1:L:136:LEU:HD23	1:L:136:LEU:N	2.14	0.62
3:B:197:ARG:CD	4:C:36:LEU:HD23	2.30	0.62
3:B:196:THR:HB	3:B:263:ILE:O	2.00	0.62
3:B:341:THR:CG2	3:B:343:LEU:H	2.14	0.61
3:B:139:GLN:HE21	3:B:144:LYS:HE3	1.65	0.60
4:C:80:ASN:HD22	4:C:80:ASN:H	1.48	0.60
3:B:121:ALA:HA	3:B:132:MET:CE	2.27	0.60
3:B:430:GLN:HE21	4:C:110:ARG:NH2	2.00	0.60
4:C:137:THR:HG21	4:C:140:TRP:O	2.02	0.59
1:L:161:ASN:HD22	1:L:177:SER:HA	1.66	0.59
1:L:198:HIS:HD2	1:L:200:THR:OG1	1.86	0.59
3:B:420:ASP:OD1	4:C:143:ASN:HB2	2.02	0.59
1:L:3:GLN:HG2	1:L:26:SER:HB3	1.83	0.59
3:B:168:THR:O	3:B:172:MET:HG2	2.03	0.59
3:B:229:ILE:HD11	3:B:366:TYR:CD2	2.37	0.59
1:L:2:ILE:CD1	1:L:25:ALA:HB1	2.33	0.58
2:H:87:THR:HG22	2:H:89:GLU:N	2.16	0.58
2:H:218:ASP:O	2:H:219:LYS:HD2	2.03	0.57
3:B:341:THR:HG22	3:B:343:LEU:H	1.69	0.57
1:L:160:LEU:HD11	2:H:182:GLN:HG3	1.85	0.57
3:B:411:GLN:HB2	3:B:433:LEU:HD21	1.86	0.56
2:H:87:THR:CG2	2:H:89:GLU:H	2.17	0.56
1:L:50:SER:H	1:L:91:HIS:CE1	2.24	0.55
3:B:352:PHE:HB3	5:B:801:HEM:CBC	2.37	0.55
1:L:136:LEU:HD13	1:L:196:ALA:HB2	1.89	0.55
1:L:24:ARG:HG3	1:L:25:ALA:N	2.22	0.55
1:L:135:PHE:C	1:L:136:LEU:HD23	2.28	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:125:ALA:HB2	2:H:184:ASP:HB3	1.90	0.53
3:B:210:VAL:CG1	5:B:802:HEM:C2B	2.91	0.53
3:B:341:THR:HG22	3:B:343:LEU:N	2.24	0.53
4:C:80:ASN:HD21	4:C:84:ARG:HH22	1.55	0.53
1:L:115:VAL:HG13	1:L:136:LEU:HD22	1.90	0.52
3:B:142:ILE:HG12	11:B:922:HOH:O	2.09	0.52
3:B:413:TRP:HA	3:B:417:MET:HG3	1.92	0.52
3:B:264:GLY:HA2	4:C:136:ASP:O	2.09	0.52
3:B:261:PHE:HB3	3:B:262:TRP:CE2	2.46	0.51
3:B:397:MET:O	3:B:401:THR:HG23	2.11	0.51
3:B:126:ASN:HB2	3:B:132:MET:HE1	1.91	0.51
1:L:141:PRO:O	1:L:198:HIS:HE1	1.94	0.51
3:B:126:ASN:CG	3:B:132:MET:CE	2.78	0.51
3:B:197:ARG:CZ	4:C:33:GLU:OE2	2.59	0.51
2:H:68:ALA:HB1	2:H:81:MET:HE3	1.93	0.51
3:B:226:LEU:O	3:B:230:THR:HG22	2.11	0.50
3:B:397:MET:O	3:B:401:THR:CG2	2.60	0.50
1:L:27:LYS:HD3	11:L:342:HOH:O	2.11	0.50
3:B:158:VAL:HG13	3:B:175:MET:SD	2.52	0.49
2:H:199:ARG:HA	2:H:201:SER:N	2.27	0.49
1:L:161:ASN:ND2	1:L:177:SER:OG	2.45	0.49
3:B:349:HIS:CD2	5:B:801:HEM:NC	2.80	0.49
1:L:193:THR:OG1	1:L:208:SER:HB3	2.12	0.49
5:B:802:HEM:C4A	7:B:804:CMO:C	2.86	0.49
4:C:80:ASN:ND2	4:C:84:ARG:HH22	2.11	0.49
2:H:137:PRO:HD3	2:H:149:LEU:CD2	2.43	0.48
3:B:341:THR:HG22	3:B:343:LEU:HB2	1.95	0.48
3:B:13:GLN:NE2	3:B:82:GLU:HB2	2.28	0.48
3:B:229:ILE:CD1	3:B:366:TYR:CD2	2.96	0.48
4:C:137:THR:CG2	4:C:140:TRP:O	2.61	0.48
2:H:38:LYS:HE2	2:H:40:ARG:HD3	1.96	0.48
1:L:2:ILE:HD11	1:L:25:ALA:HB1	1.96	0.47
1:L:160:LEU:CD1	2:H:182:GLN:HG3	2.44	0.47
2:H:165:TRP:HZ3	2:H:221:ILE:CD1	2.27	0.47
3:B:273:GLY:O	3:B:277:SER:HB2	2.14	0.47
1:L:122:SER:O	1:L:126:THR:HG23	2.15	0.47
1:L:193:THR:HA	1:L:208:SER:HB3	1.97	0.47
2:H:199:ARG:HD2	2:H:200:PRO:HA	1.96	0.47
3:B:54:ASN:H	3:B:54:ASN:HD22	1.62	0.47
3:B:260:TYR:HB3	3:B:265:VAL:HG21	1.96	0.46
3:B:310:TRP:HB3	3:B:362:THR:OG1	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:B:807:10M:H15	8:B:807:10M:O9	2.15	0.46
1:L:69:THR:HG22	1:L:70:GLU:HG2	1.96	0.46
1:L:212:ASN:HB2	1:L:213:GLU:H	1.54	0.46
2:H:48:ILE:CG2	2:H:81:MET:HE1	2.35	0.46
3:B:118:ALA:O	3:B:121:ALA:HB3	2.16	0.46
4:C:80:ASN:ND2	4:C:84:ARG:NH2	2.63	0.46
4:C:82:VAL:HG21	4:C:130:LYS:HA	1.97	0.46
3:B:82:GLU:OE1	3:B:228:LYS:HE3	2.15	0.46
4:C:106:VAL:HG22	4:C:109:ARG:HB2	1.98	0.46
3:B:430:GLN:NE2	4:C:110:ARG:HH22	2.10	0.46
3:B:258:HIS:HD1	3:B:277:SER:HG	1.64	0.46
3:B:282:LEU:N	3:B:283:PRO:HD2	2.31	0.46
3:B:289:LEU:O	3:B:293:ASN:HB2	2.16	0.46
4:C:80:ASN:HD22	4:C:80:ASN:N	2.09	0.46
3:B:353:TYR:N	5:B:801:HEM:HBC1	2.31	0.45
3:B:342:GLN:H	3:B:411:GLN:HE22	1.64	0.45
2:H:130:PRO:HB3	2:H:156:TYR:HB3	1.98	0.45
5:B:802:HEM:C1B	7:B:804:CMO:C	2.97	0.45
3:B:12:SER:O	3:B:15:VAL:HG22	2.17	0.45
3:B:62:ASN:ND2	3:B:112:TYR:OH	2.49	0.45
1:L:120:PRO:O	2:H:224:ARG:NH2	2.50	0.45
3:B:352:PHE:CB	5:B:801:HEM:HBC1	2.45	0.45
4:C:80:ASN:HD21	4:C:84:ARG:NH2	2.14	0.45
3:B:92:LYS:O	3:B:96:ILE:HG22	2.17	0.45
3:B:73:MET:HG2	3:B:154:PHE:CE1	2.52	0.44
2:H:140:GLY:O	2:H:142:THR:HG22	2.17	0.44
3:B:139:GLN:O	3:B:144:LYS:NZ	2.45	0.44
3:B:412:VAL:HG11	8:B:807:10M:H5	2.00	0.44
1:L:192:TYR:O	1:L:208:SER:CB	2.65	0.44
3:B:30:GLN:NE2	3:B:67:TRP:HE1	2.15	0.44
3:B:28:VAL:HG22	3:B:451:LEU:CD1	2.47	0.44
3:B:342:GLN:H	3:B:411:GLN:NE2	2.16	0.44
3:B:410:LEU:HD22	3:B:414:LEU:CD1	2.48	0.43
2:H:48:ILE:HD13	2:H:81:MET:CE	2.47	0.43
4:C:112:MET:CE	10:C:201:HEC:NB	2.82	0.43
1:L:4:MET:HE3	1:L:4:MET:HB2	1.66	0.43
1:L:2:ILE:HD13	1:L:25:ALA:HB1	2.00	0.43
1:L:36:TYR:HE2	1:L:89:GLN:HE21	1.65	0.43
3:B:210:VAL:HG11	5:B:802:HEM:C2B	2.54	0.43
2:H:135:LEU:HB2	2:H:150:GLY:C	2.40	0.42
1:L:136:LEU:N	1:L:136:LEU:CD2	2.82	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:230:THR:HG23	3:B:232:VAL:N	2.21	0.42
1:L:115:VAL:HA	1:L:135:PHE:O	2.20	0.42
1:L:18:THR:OG1	1:L:76:SER:O	2.26	0.42
4:C:137:THR:HG23	4:C:140:TRP:H	1.85	0.42
3:B:210:VAL:HG13	5:B:802:HEM:C2B	2.54	0.41
3:B:341:THR:CG2	3:B:343:LEU:HB2	2.49	0.41
4:C:33:GLU:HA	4:C:36:LEU:HD22	2.02	0.41
3:B:339:HIS:CD2	4:C:69:GLY:HA3	2.55	0.41
3:B:17:LYS:N	3:B:18:PRO:HD2	2.34	0.41
3:B:346:ALA:HB2	3:B:404:LEU:HB3	2.02	0.41
1:L:3:GLN:C	1:L:4:MET:HE2	2.41	0.41
3:B:13:GLN:O	3:B:371:LEU:HD21	2.20	0.41
3:B:412:VAL:O	3:B:417:MET:HG2	2.21	0.41
3:B:303:PRO:HG3	3:B:376:GLU:OE1	2.21	0.41
4:C:102:GLN:NE2	11:C:313:HOH:O	2.53	0.41
1:L:20:THR:HB	1:L:74:THR:OG1	2.21	0.41
2:H:140:GLY:O	2:H:142:THR:N	2.52	0.41
3:B:393:MET:HE3	3:B:451:LEU:HB2	2.03	0.41
2:H:194:VAL:HG13	2:H:198:THR:CB	2.49	0.40
3:B:197:ARG:NE	4:C:33:GLU:OE2	2.54	0.40
3:B:90:SER:OG	3:B:93:LEU:HB2	2.21	0.40
2:H:137:PRO:HD3	2:H:149:LEU:HD23	2.04	0.40
3:B:298:ARG:HG3	3:B:298:ARG:O	2.21	0.40
2:H:17:SER:HB3	11:H:376:HOH:O	2.20	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	L	211/213 (99%)	200 (95%)	10 (5%)	1 (0%)	29 48

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	H	223/225 (99%)	211 (95%)	9 (4%)	3 (1%)	12	21
3	B	447/465 (96%)	426 (95%)	21 (5%)	0	100	100
4	C	140/146 (96%)	136 (97%)	4 (3%)	0	100	100
All	All	1021/1049 (97%)	973 (95%)	44 (4%)	4 (0%)	34	54

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	H	141	ASP
1	L	211	ARG
2	H	183	SER
2	H	144	GLY

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	L	189/189 (100%)	173 (92%)	16 (8%)	10	21
2	H	192/192 (100%)	168 (88%)	24 (12%)	4	8
3	B	360/371 (97%)	319 (89%)	41 (11%)	5	11
4	C	116/120 (97%)	109 (94%)	7 (6%)	19	37
All	All	857/872 (98%)	769 (90%)	88 (10%)	7	14

All (88) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	L	2	ILE
1	L	3	GLN
1	L	4	MET
1	L	20	THR
1	L	27	LYS
1	L	31	LYS
1	L	46	LEU

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Mol	Chain	Res	Type
1	L	69	THR
1	L	89	GLN
1	L	96	LEU
1	L	106	LEU
1	L	136	LEU
1	L	179	LEU
1	L	199	LYS
1	L	207	LYS
1	L	212	ASN
2	H	1	GLU
2	H	18	VAL
2	H	23	LYS
2	H	40	ARG
2	H	67	LYS
2	H	74	THR
2	H	85	SER
2	H	87	THR
2	H	106	VAL
2	H	116	GLN
2	H	126	LYS
2	H	135	LEU
2	H	152	LEU
2	H	161	VAL
2	H	162	THR
2	H	170	LEU
2	H	183	SER
2	H	188	LEU
2	H	194	VAL
2	H	199	ARG
2	H	207	ASN
2	H	215	THR
2	H	217	VAL
2	H	219	LYS
3	B	30	GLN
3	B	39	LEU
3	B	54	ASN
3	B	64	LEU
3	B	92	LYS
3	B	93	LEU
3	B	96	ILE
3	B	108	THR
3	B	114	LEU

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Mol	Chain	Res	Type
3	B	115	VAL
3	B	158	VAL
3	B	174	LEU
3	B	195	LEU
3	B	196	THR
3	B	210	VAL
3	B	213	VAL
3	B	222	LEU
3	B	229	ILE
3	B	230	THR
3	B	233	ASP
3	B	241	LEU
3	B	258	HIS
3	B	293	ASN
3	B	296	ASN
3	B	309	LEU
3	B	329	HIS
3	B	341	THR
3	B	343	LEU
3	B	352	PHE
3	B	363	ILE
3	B	368	MET
3	B	372	ARG
3	B	398	VAL
3	B	401	THR
3	B	404	LEU
3	B	410	LEU
3	B	416	ARG
3	B	433	LEU
3	B	435	ILE
3	B	448	LEU
3	B	451	LEU
4	C	24	LEU
4	C	36	LEU
4	C	67	LEU
4	C	80	ASN
4	C	95	LEU
4	C	106	VAL
4	C	137	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (23) such sidechains are listed below:

Mol	Chain	Res	Type
1	L	3	GLN
1	L	89	GLN
1	L	91	HIS
1	L	137	ASN
1	L	156	GLN
1	L	161	ASN
1	L	190	ASN
1	L	198	HIS
2	H	182	GLN
3	B	30	GLN
3	B	54	ASN
3	B	62	ASN
3	B	126	ASN
3	B	139	GLN
3	B	383	GLN
3	B	411	GLN
3	B	430	GLN
4	C	31	HIS
4	C	60	ASN
4	C	80	ASN
4	C	96	GLN
4	C	102	GLN
4	C	105	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 9 ligands modelled in this entry, 2 are monoatomic - leaving 7 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
7	CMO	B	804	5	0,1,1	-	-	-		
10	HEC	C	201	4	32,50,50	2.24	5 (15%)	24,82,82	2.14	7 (29%)
7	CMO	B	805	6	0,1,1	-	-	-		
8	10M	B	806	-	34,34,34	1.18	3 (8%)	44,45,45	1.36	6 (13%)
5	HEM	B	801	9,3	41,50,50	1.94	7 (17%)	45,82,82	2.92	20 (44%)
5	HEM	B	802	7,9,3	41,50,50	1.93	6 (14%)	45,82,82	2.63	23 (51%)
8	10M	B	807	-	34,34,34	1.64	7 (20%)	44,45,45	1.20	4 (9%)

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	HEC	C	201	4	-	2/10/54/54	-
8	10M	B	806	-	-	8/19/59/59	0/2/2/2
5	HEM	B	801	9,3	-	2/12/54/54	-
5	HEM	B	802	7,9,3	-	5/12/54/54	-
8	10M	B	807	-	-	8/19/59/59	0/2/2/2

All (28) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	B	802	HEM	C3D-C2D	8.03	1.53	1.36
5	B	801	HEM	C3D-C2D	7.60	1.52	1.36
10	C	201	HEC	C3C-C2C	-7.40	1.33	1.40
10	C	201	HEC	C2B-C3B	-5.94	1.34	1.40
10	C	201	HEC	C3D-C2D	4.73	1.51	1.37
5	B	802	HEM	C3C-C2C	-4.18	1.34	1.40
8	B	807	10M	C10-S	4.16	1.86	1.81
8	B	806	10M	O1-C11	3.93	1.48	1.42
5	B	802	HEM	C3C-CAC	3.72	1.55	1.47
5	B	801	HEM	C3C-C2C	-3.62	1.35	1.40
5	B	801	HEM	C3C-CAC	3.44	1.54	1.47

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	B	806	10M	C11-S	3.21	1.85	1.80
8	B	807	10M	O3-C15	2.98	1.50	1.41
8	B	807	10M	O1-C11	2.90	1.46	1.42
8	B	807	10M	O4-C16	2.89	1.51	1.44
5	B	802	HEM	CAB-C3B	2.77	1.55	1.47
5	B	801	HEM	CAB-C3B	2.70	1.54	1.47
5	B	801	HEM	CMB-C2B	2.70	1.56	1.50
5	B	801	HEM	FE-ND	2.45	2.09	1.96
8	B	807	10M	C14-C12	2.44	1.59	1.52
10	C	201	HEC	C3C-C4C	2.32	1.47	1.43
8	B	806	10M	C10-S	2.12	1.84	1.81
5	B	802	HEM	CMC-C2C	2.11	1.56	1.51
8	B	807	10M	C18-C16	2.10	1.57	1.53
10	C	201	HEC	O2A-CGA	-2.06	1.23	1.30
8	B	807	10M	O4-C15	2.04	1.47	1.41
5	B	801	HEM	CMC-C2C	2.02	1.56	1.51
5	B	802	HEM	O1A-CGA	2.02	1.28	1.22

All (60) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	B	801	HEM	C2C-C3C-C4C	8.23	112.64	106.90
5	B	801	HEM	C4D-ND-C1D	7.66	112.99	105.07
5	B	801	HEM	CHC-C4B-NB	6.62	131.62	124.43
5	B	802	HEM	CMD-C2D-C1D	6.50	134.93	125.04
5	B	801	HEM	C4C-CHD-C1D	5.90	130.34	122.56
5	B	802	HEM	CHB-C1B-NB	-4.96	118.25	124.38
5	B	802	HEM	CBA-CAA-C2A	-4.90	104.27	112.62
5	B	801	HEM	CMA-C3A-C4A	-4.79	121.10	128.46
5	B	801	HEM	CMA-C3A-C2A	4.54	133.51	124.94
10	C	201	HEC	CMC-C2C-C1C	-4.35	121.78	128.46
8	B	806	10M	O4-C16-C18	4.31	117.51	109.69
5	B	802	HEM	CMA-C3A-C4A	-4.25	121.93	128.46
5	B	802	HEM	C4C-CHD-C1D	4.21	128.12	122.56
5	B	802	HEM	C1D-C2D-C3D	-4.21	102.53	106.96
5	B	802	HEM	O2A-CGA-O1A	4.18	133.72	123.30
10	C	201	HEC	CMB-C2B-C1B	-4.06	122.22	128.46
10	C	201	HEC	CMB-C2B-C3B	3.94	130.45	125.82
10	C	201	HEC	C1D-C2D-C3D	-3.70	104.42	107.00
5	B	802	HEM	CMC-C2C-C3C	3.70	131.59	124.68
5	B	802	HEM	CBB-CAB-C3B	-3.67	109.35	127.62
10	C	201	HEC	CBD-CAD-C3D	-3.67	106.36	112.62

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	B	802	HEM	CMB-C2B-C1B	-3.61	119.54	125.04
8	B	807	10M	C21-C14-C12	3.41	118.74	110.93
8	B	806	10M	C11-O1-C12	3.37	118.79	112.58
5	B	802	HEM	O2A-CGA-CBA	-3.35	103.27	114.03
5	B	802	HEM	C4D-ND-C1D	3.33	108.51	105.07
5	B	801	HEM	CHA-C4D-ND	3.30	128.46	124.38
5	B	801	HEM	CMB-C2B-C1B	3.13	129.80	125.04
5	B	802	HEM	CMA-C3A-C2A	3.08	130.75	124.94
5	B	801	HEM	CHC-C4B-C3B	-3.04	119.92	124.57
5	B	802	HEM	CAB-C3B-C2B	2.99	138.47	128.60
8	B	807	10M	C18-C19-C20	2.96	116.00	110.82
8	B	806	10M	C15-O3-C14	-2.93	110.71	117.96
5	B	801	HEM	CAD-CBD-CGD	2.87	119.79	113.60
5	B	802	HEM	O1D-CGD-CBD	-2.81	114.06	123.08
10	C	201	HEC	CMC-C2C-C3C	2.76	129.06	125.82
5	B	801	HEM	C4B-C3B-C2B	2.72	109.27	107.11
10	C	201	HEC	CBA-CAA-C2A	-2.68	108.09	112.60
5	B	802	HEM	CAA-CBA-CGA	-2.63	106.38	113.76
8	B	807	10M	O3-C15-C20	2.62	114.90	108.10
5	B	801	HEM	O2D-CGD-CBD	2.58	122.31	114.03
8	B	806	10M	O3-C14-C21	-2.53	100.56	107.28
5	B	801	HEM	C1B-NB-C4B	2.52	107.68	105.07
5	B	801	HEM	O1A-CGA-CBA	-2.51	115.03	123.08
5	B	801	HEM	C4A-C3A-C2A	-2.50	105.25	107.00
5	B	802	HEM	CHA-C4D-ND	2.38	127.32	124.38
8	B	806	10M	O1-C11-C22	2.36	113.28	110.31
5	B	801	HEM	C4D-C3D-C2D	-2.31	103.53	106.90
5	B	801	HEM	O2D-CGD-O1D	-2.28	117.61	123.30
8	B	807	10M	C15-O3-C14	-2.27	112.36	117.96
8	B	806	10M	O1-C12-C14	2.25	114.50	109.75
5	B	801	HEM	CMD-C2D-C1D	2.25	128.47	125.04
5	B	802	HEM	CHD-C1D-ND	-2.24	121.99	124.43
5	B	802	HEM	C4B-CHC-C1C	2.16	125.42	122.56
5	B	801	HEM	CAA-CBA-CGA	-2.13	107.79	113.76
5	B	801	HEM	C3C-C4C-NC	-2.10	106.97	110.94
5	B	802	HEM	CMB-C2B-C3B	2.08	133.40	128.30
5	B	802	HEM	C2D-C1D-ND	2.05	112.34	109.88
5	B	802	HEM	CAB-C3B-C4B	-2.01	115.09	124.47
5	B	802	HEM	CAD-CBD-CGD	-2.00	109.30	113.60

There are no chirality outliers.

All (25) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
8	B	806	10M	C22-C11-S-C10
8	B	806	10M	O4-C16-C17-O5
8	B	806	10M	C18-C16-C17-O5
8	B	806	10M	C7-C8-C9-C10
8	B	806	10M	C4-C5-C6-C7
8	B	807	10M	C3-C4-C5-C6
8	B	806	10M	C6-C7-C8-C9
8	B	807	10M	C4-C5-C6-C7
8	B	807	10M	C6-C7-C8-C9
8	B	807	10M	C5-C6-C7-C8
8	B	807	10M	C21-C14-O3-C15
8	B	806	10M	C1-C2-C3-C4
8	B	806	10M	C2-C3-C4-C5
8	B	807	10M	C7-C8-C9-C10
5	B	801	HEM	CAA-CBA-CGA-O2A
5	B	801	HEM	CAA-CBA-CGA-O1A
10	C	201	HEC	CAD-CBD-CGD-O1D
5	B	802	HEM	CAA-CBA-CGA-O2A
10	C	201	HEC	CAD-CBD-CGD-O2D
5	B	802	HEM	CAA-CBA-CGA-O1A
5	B	802	HEM	CAD-CBD-CGD-O1D
5	B	802	HEM	C4B-C3B-CAB-CBB
5	B	802	HEM	CAD-CBD-CGD-O2D
8	B	807	10M	C12-C14-O3-C15
8	B	807	10M	C2-C3-C4-C5

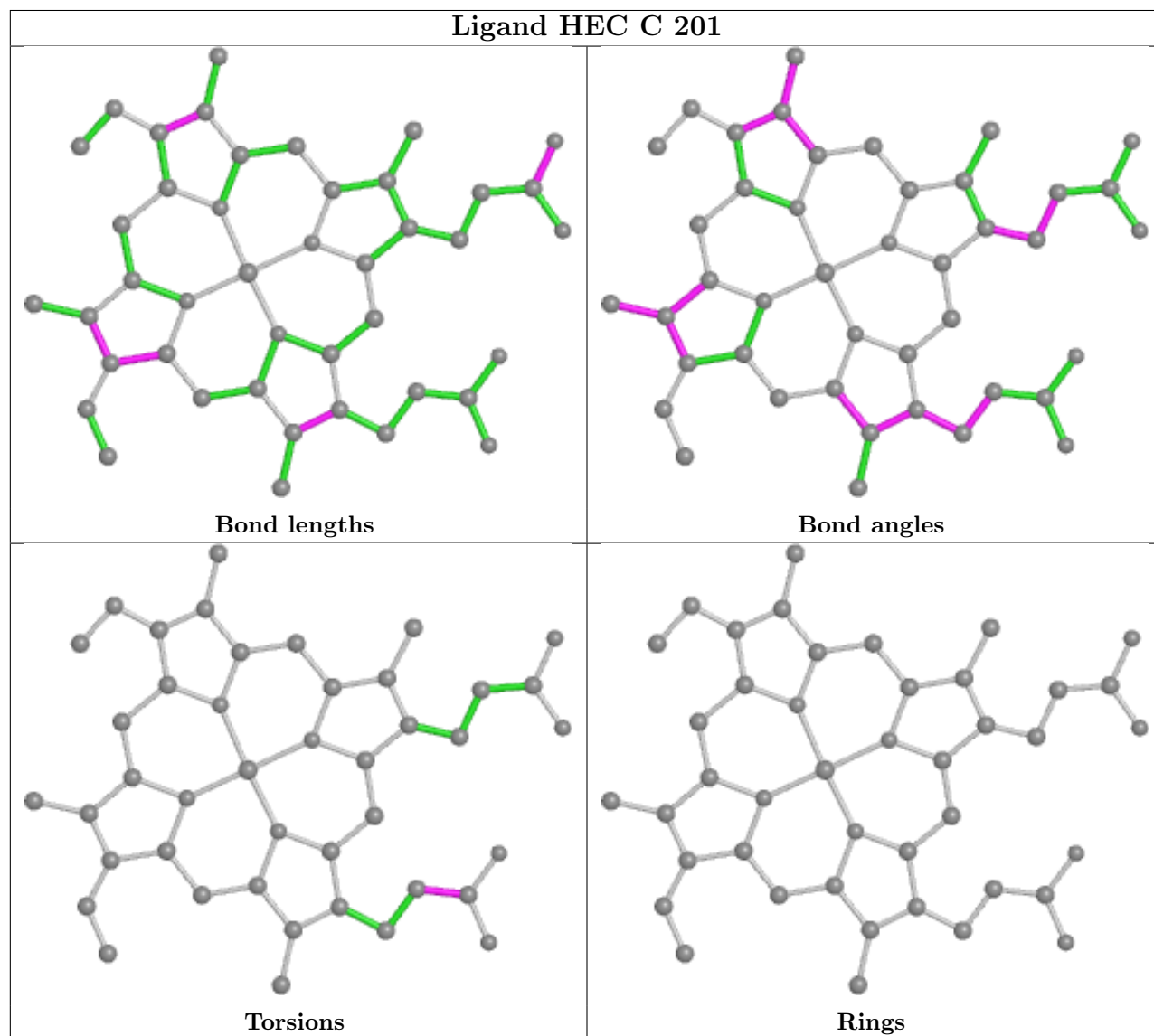
There are no ring outliers.

7 monomers are involved in 16 short contacts:

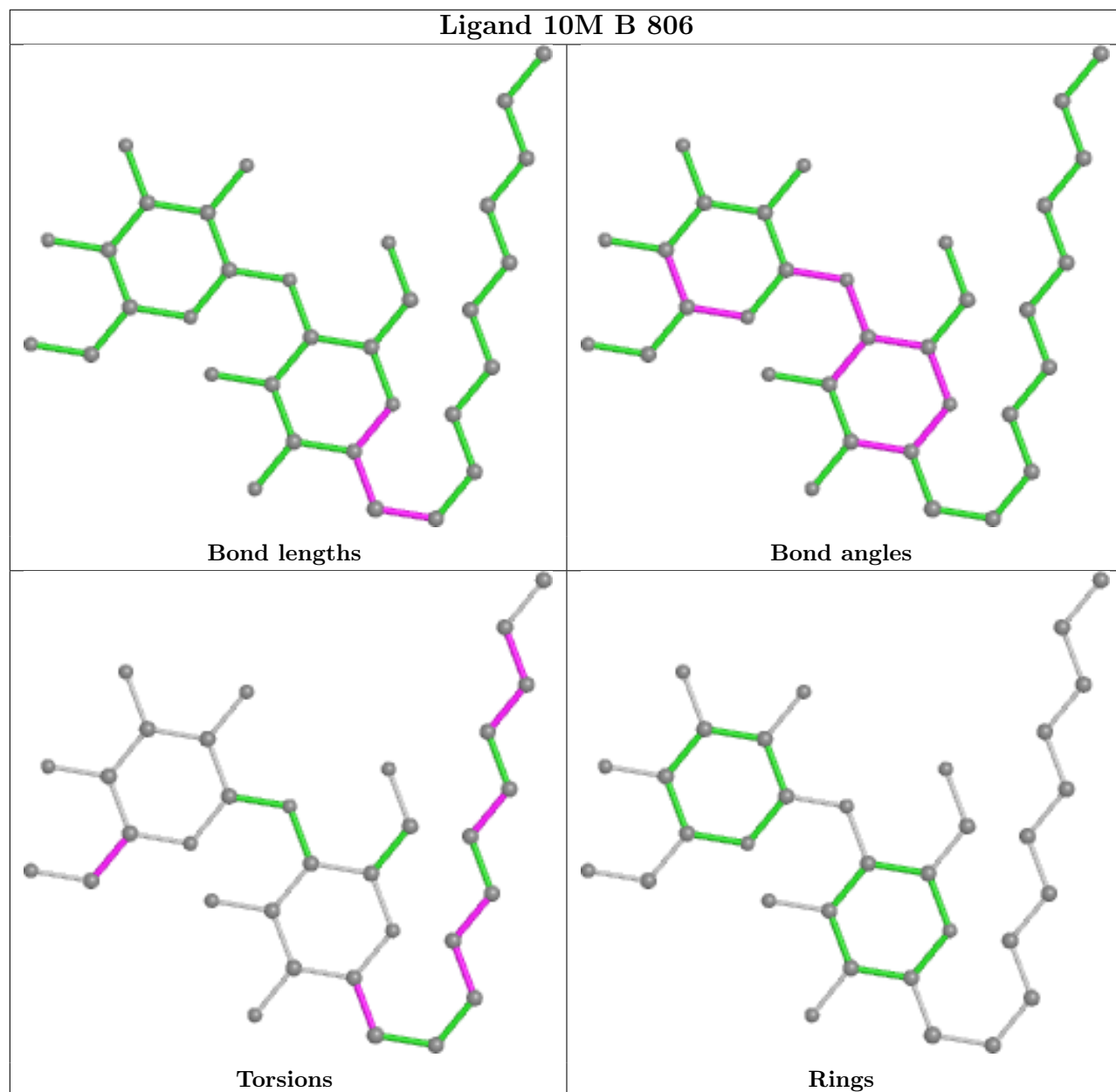
Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	B	804	CMO	2	0
10	C	201	HEC	1	0
7	B	805	CMO	1	0
8	B	806	10M	2	0
5	B	801	HEM	5	0
5	B	802	HEM	5	0
8	B	807	10M	4	0

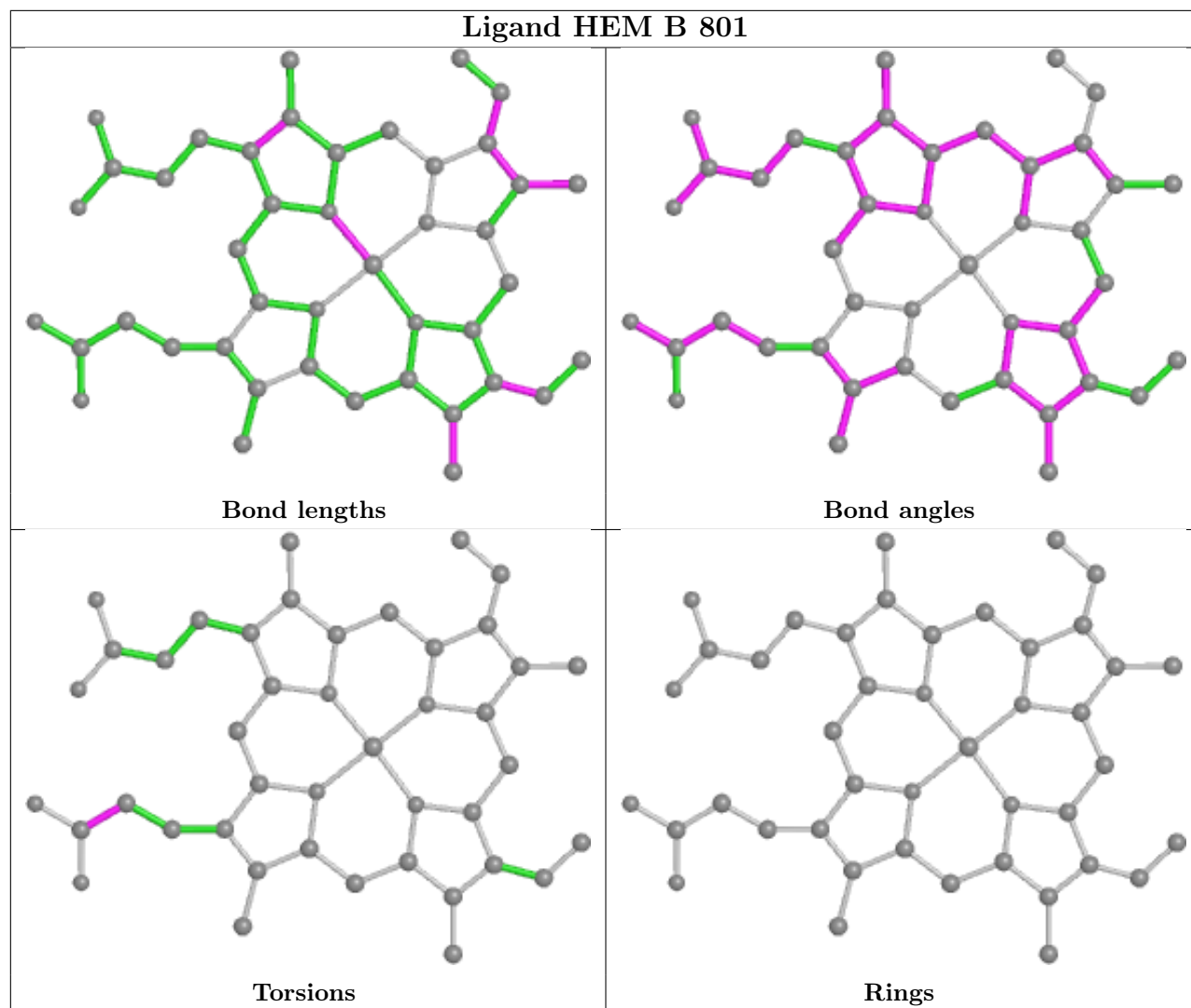
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier.

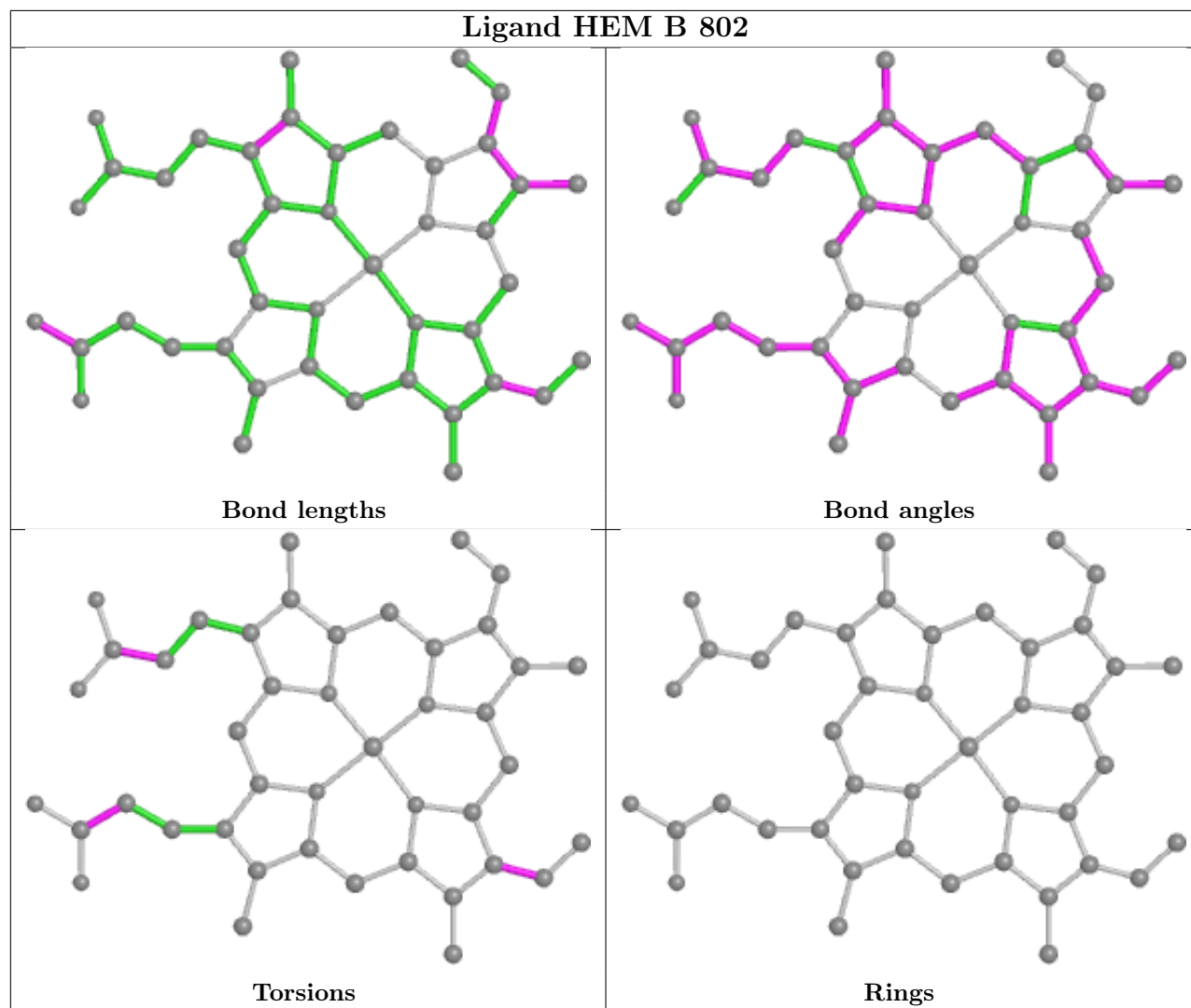
Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

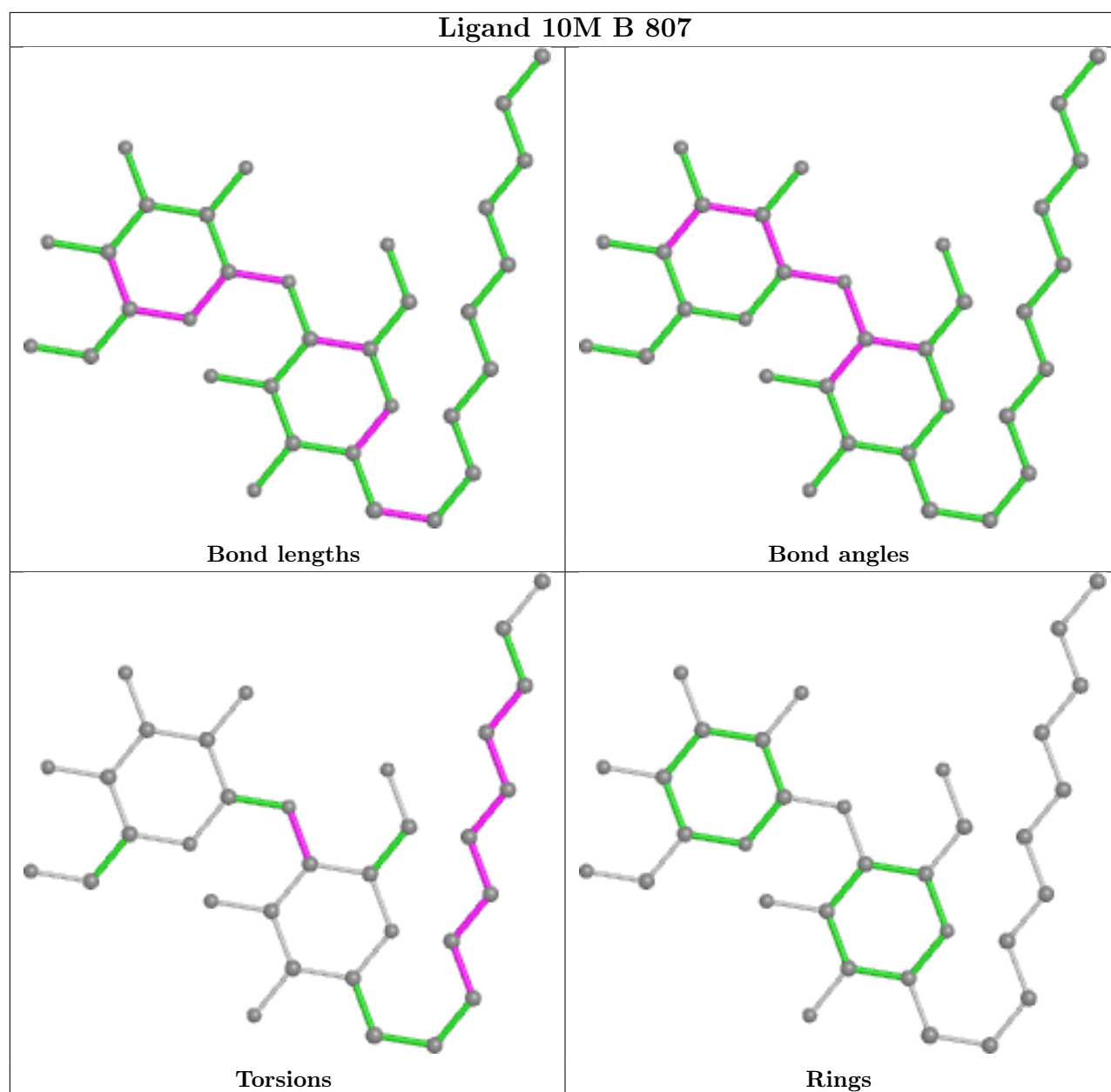


Ligand 10M B 806









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	L	213/213 (100%)	-0.45	1 (0%) 91 91	33, 44, 62, 108	0
2	H	225/225 (100%)	-0.33	6 (2%) 54 58	33, 43, 72, 134	0
3	B	449/465 (96%)	-0.04	23 (5%) 28 29	37, 58, 96, 124	0
4	C	142/146 (97%)	-0.05	4 (2%) 53 56	35, 56, 80, 99	0
All	All	1029/1049 (98%)	-0.19	34 (3%) 46 50	33, 52, 87, 134	0

All (34) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
3	B	381	ARG	5.6
3	B	299	ARG	5.3
2	H	143	THR	5.0
2	H	225	GLY	3.8
1	L	213	GLU	3.8
4	C	30	TYR	3.2
3	B	128	LEU	3.1
3	B	297	ARG	3.0
3	B	89	TYR	3.0
3	B	301	ASP	3.0
3	B	206	VAL	3.0
3	B	296	ASN	2.9
3	B	384	VAL	2.9
3	B	263	ILE	2.7
3	B	385	LEU	2.7
2	H	142	THR	2.5
3	B	129	TRP	2.5
3	B	388	TRP	2.5
2	H	144	GLY	2.5
3	B	164	ARG	2.4
4	C	5	PHE	2.3

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Mol	Chain	Res	Type	RSRZ
2	H	141	ASP	2.3
3	B	214	TRP	2.3
3	B	300	ARG	2.3
2	H	169	SER	2.2
3	B	136	PHE	2.2
3	B	65	ILE	2.2
3	B	10	PHE	2.2
4	C	68	LEU	2.2
4	C	34	LYS	2.1
3	B	209	TRP	2.1
3	B	92	LYS	2.1
3	B	372	ARG	2.1
3	B	69	LEU	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 monosaccharides in this entry.

6.4 Ligands [i](#)

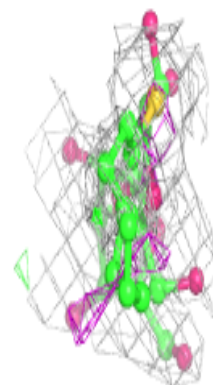
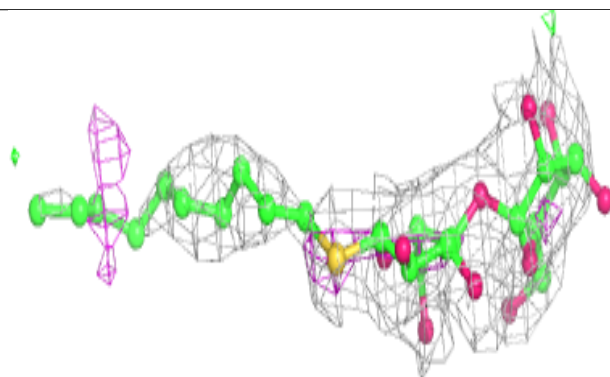
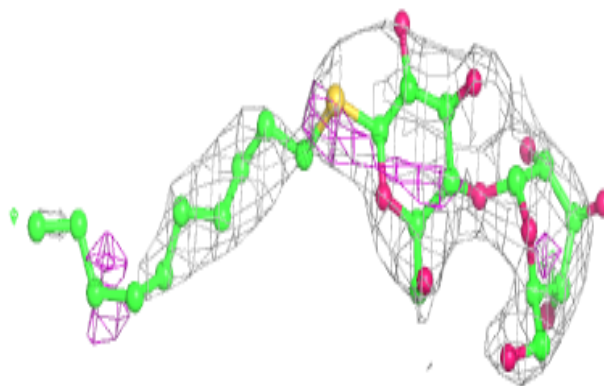
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
8	10M	B	807	33/33	0.81	0.41	73,91,107,108	0
8	10M	B	806	33/33	0.93	0.25	65,74,87,89	0
5	HEM	B	801	43/43	0.97	0.18	37,40,45,49	0
5	HEM	B	802	43/43	0.98	0.21	36,40,43,44	0
6	FE	B	803	1/1	0.98	0.13	42,42,42,42	0
7	CMO	B	804	2/2	0.99	0.19	40,40,40,41	0
7	CMO	B	805	2/2	0.99	0.21	39,39,39,40	0
10	HEC	C	201	43/43	0.99	0.16	35,37,39,41	0
9	CA	B	808	1/1	1.00	0.20	46,46,46,46	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.

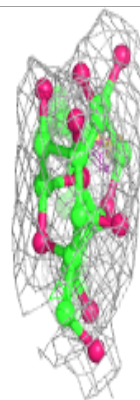
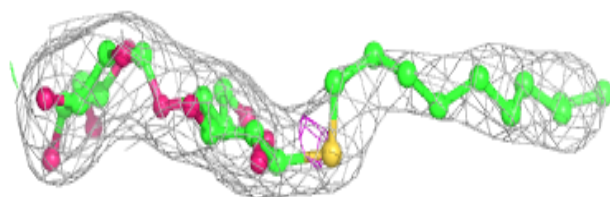
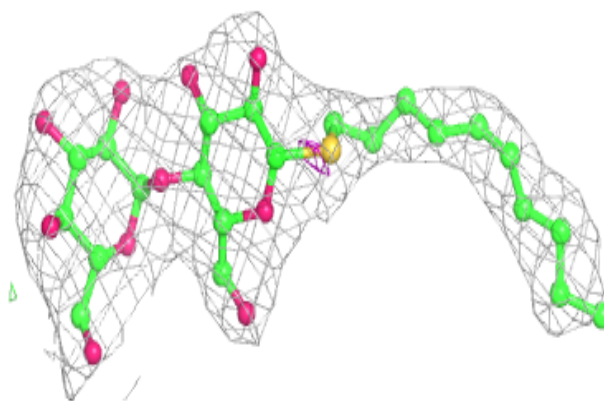
Electron density around 10M B 807:

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



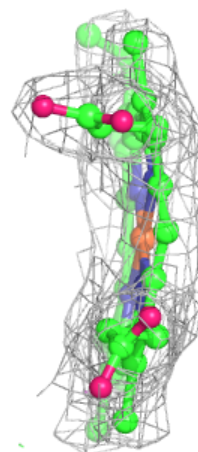
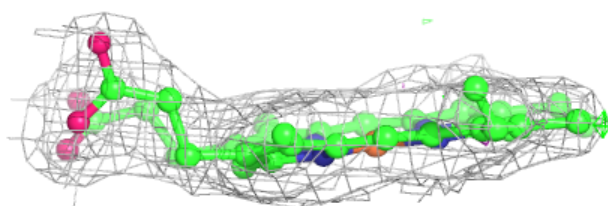
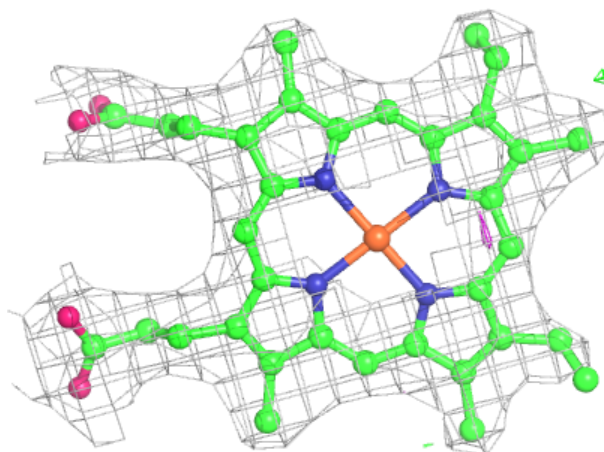
Electron density around 10M B 806:

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



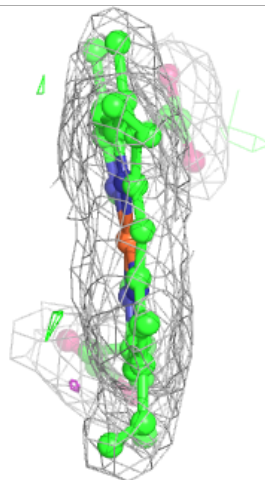
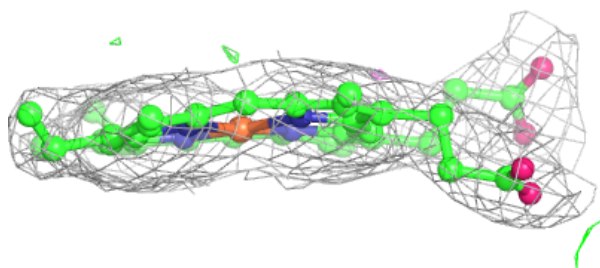
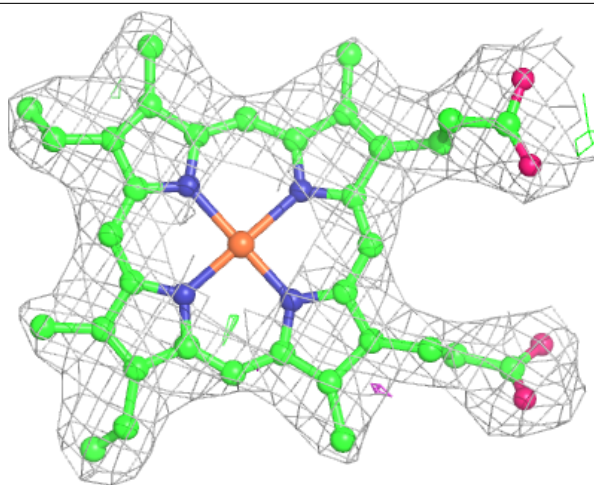
Electron density around HEM B 801:

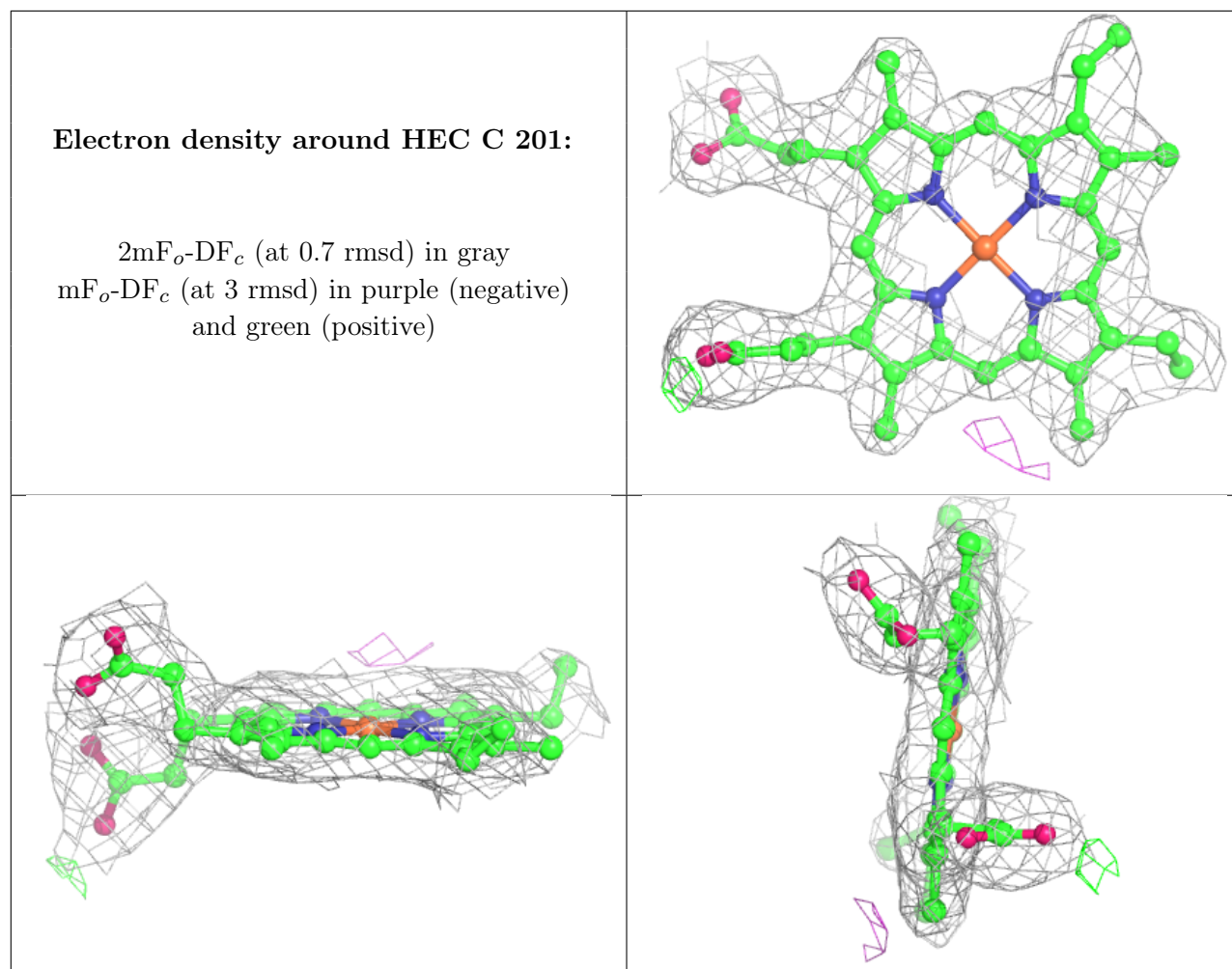
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around HEM B 802:

$2mF_o-DF_c$ (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.