



# Full wwPDB X-ray Structure Validation Report ⓘ

Mar 8, 2026 – 01:36 PM UTC

PDB ID : 2W09 / pdb\_00002w09  
Title : CYP51 OF M. TUBERCULOSIS BOUND TO AN INHIBITOR CIS-4-METHYL-N-[(1S)-3-(METHYLSULFANYL)-1-(PYRIDIN-4-YLCARBAMOYL)P  
ROPYL]CYCLOHEXANECARBOXAMIDE  
Authors : Podust, L.M.  
Deposited on : 2008-08-12  
Resolution : 1.57 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](mailto: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>.

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

MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

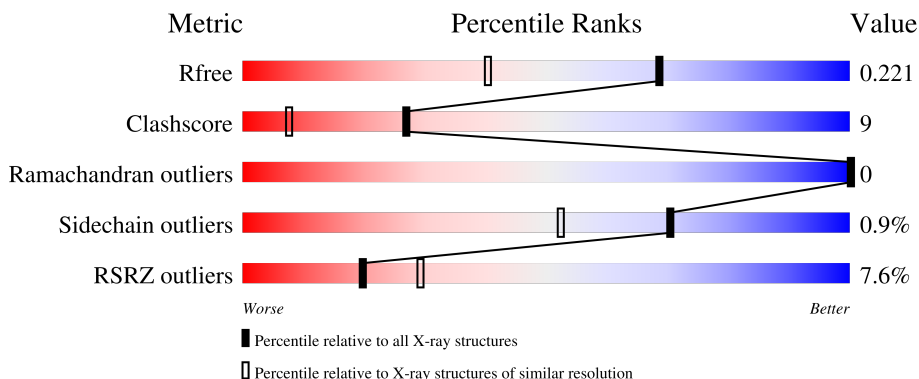
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

## *X-RAY DIFFRACTION*

The reported resolution of this entry is 1.57 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	1094 (1.58-1.58)
Clashscore	190562	1105 (1.58-1.58)
Ramachandran outliers	187476	1082 (1.58-1.58)
Sidechain outliers	187428	1081 (1.58-1.58)
RSRZ outliers	180081	1094 (1.58-1.58)

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  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	455	<div> <div>7%</div> <div>81%</div> <div>11%</div> <div>7%</div> </div>

**i**

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.

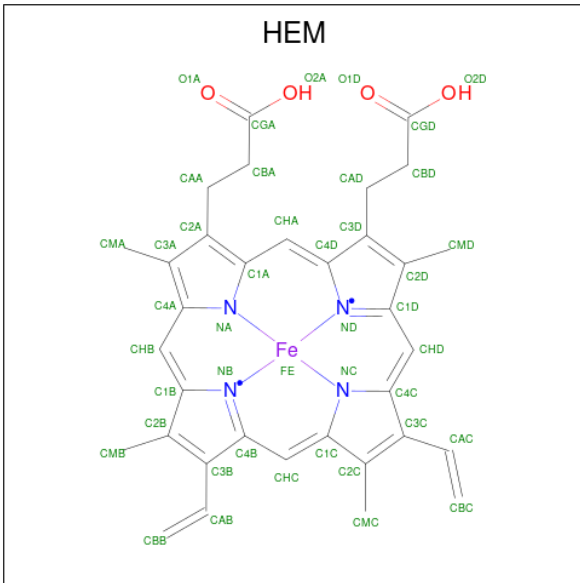
- Molecule 1 is a protein called CYTOCHROME P450 51.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	421	Total 3409	C 2158	N 615	O 618	S 18	0	8	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	37	LEU	CYS	engineered mutation	UNP P0A512
A	442	ALA	CYS	engineered mutation	UNP P0A512

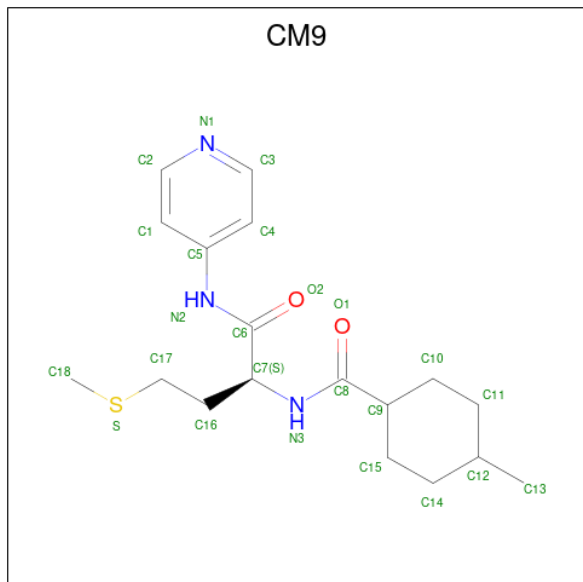
- Molecule 2 is PROTOPORPHYRIN IX CONTAINING FE (CCD ID: HEM) (formula:  $C_{34}H_{32}FeN_4O_4$ ).



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

- Molecule 3 is CIS-4-METHYL-N-[(1S)-3-(METHYLSULFANYL)-1-(PYRIDIN-4-YLC

ARBAMOYL)PROPYL]CYCLOHEXANECARBOXAMIDE (CCD ID: CM9) (formula:  $C_{18}H_{27}N_3O_2S$ ).



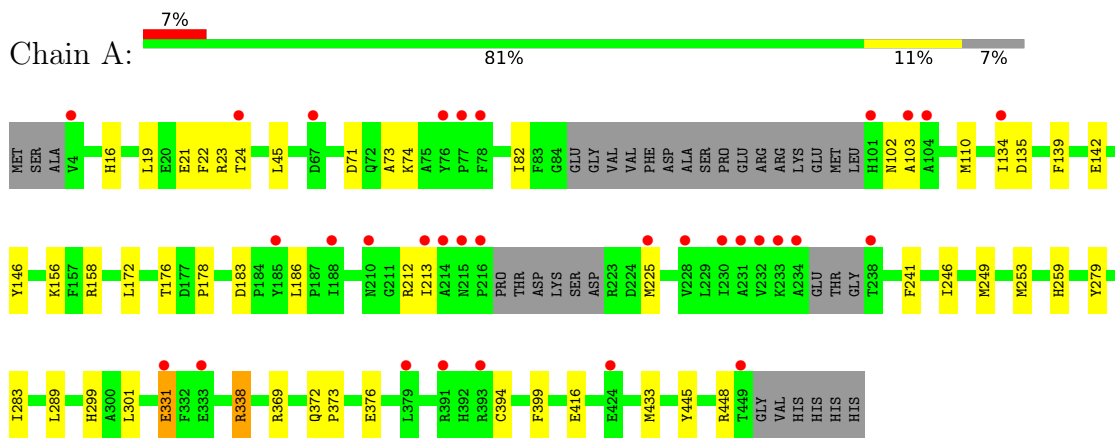
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	S	0	1
			48	36	6	4	2		

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	277	Total	O	0	0
			277	277		



● Molecule 1: CYTOCHROME P450 51



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	46.44Å 85.16Å 110.94Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	67.57 – 1.57 67.55 – 1.57	Depositor EDS
% Data completeness (in resolution range)	95.9 (67.57-1.57) 95.9 (67.55-1.57)	Depositor EDS
$R_{merge}$	0.08	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	4.27 (at 1.57Å)	Xtriage
Refinement program	REFMAC 5.4.0067	Depositor
R, $R_{free}$	0.188 , 0.222 0.186 , 0.221	Depositor DCC
$R_{free}$ test set	6010 reflections (10.06%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	20.5	Xtriage
Anisotropy	0.781	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.36 , 36.5	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.50$ , $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.96	EDS
Total number of atoms	3777	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	25.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.27% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical 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, CM9

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	0.74	0/3485	0.88	2/4707 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	241	PHE	N-CA-C	6.01	118.74	109.07
1	A	213	ILE	CB-CA-C	-5.42	105.03	111.97

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3409	0	3334	58	0
2	A	43	0	30	6	0
3	A	48	0	54	8	0
4	A	277	0	0	3	0
All	All	3777	0	3418	64	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 9.

All (64) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:433[A]:MET:HE3	3:A:1451[A]:CM9:H181	1.56	0.86
1:A:331:GLU:CG	1:A:338:ARG:HH12	1.90	0.85
1:A:331:GLU:HG3	1:A:338:ARG:NH1	1.94	0.83
1:A:338:ARG:CG	1:A:338:ARG:HH11	1.93	0.82
1:A:134[B]:ILE:CD1	1:A:445:TYR:CD2	2.63	0.82
1:A:134[B]:ILE:HD11	1:A:445:TYR:CE2	2.16	0.80
1:A:331:GLU:HG3	1:A:338:ARG:HH12	1.45	0.78
1:A:134[B]:ILE:HD12	1:A:445:TYR:CD2	2.19	0.78
1:A:134[B]:ILE:CD1	1:A:445:TYR:CE2	2.67	0.77
1:A:331:GLU:CG	1:A:338:ARG:NH1	2.49	0.76
1:A:134[B]:ILE:HD12	1:A:445:TYR:HD2	1.60	0.66
1:A:369:ARG:HG2	1:A:376:GLU:CD	2.20	0.66
1:A:110[B]:MET:HE1	1:A:399:PHE:HA	1.78	0.64
1:A:246:ILE:HA	1:A:249:MET:HE3	1.77	0.64
1:A:416:GLU:HG3	1:A:448:ARG:HG2	1.80	0.63
1:A:338:ARG:HH11	1:A:338:ARG:HG2	1.62	0.62
1:A:16:HIS:HD2	4:A:2013:HOH:O	1.84	0.61
1:A:176:THR:O	1:A:433[B]:MET:HG3	2.01	0.61
1:A:331:GLU:HG2	1:A:338:ARG:HH12	1.65	0.60
1:A:21:GLU:HA	1:A:24[B]:THR:HG22	1.82	0.60
2:A:470:HEM:C4D	3:A:1451[B]:CM9:HB	2.38	0.59
1:A:134[B]:ILE:CD1	1:A:445:TYR:HD2	2.15	0.59
1:A:134[B]:ILE:HD12	1:A:445:TYR:CE2	2.35	0.59
1:A:338:ARG:HH11	1:A:338:ARG:HG3	1.68	0.58
1:A:369:ARG:HG2	1:A:376:GLU:OE1	2.05	0.56
1:A:331:GLU:N	1:A:331:GLU:OE1	2.38	0.56
3:A:1451[B]:CM9:H171	4:A:2276:HOH:O	2.04	0.55
2:A:470:HEM:C4D	3:A:1451[A]:CM9:HB	2.42	0.54
1:A:338:ARG:NH1	1:A:338:ARG:HG2	2.21	0.54
1:A:289:LEU:HG	1:A:299:HIS:CE1	2.43	0.53
1:A:134[B]:ILE:HG22	1:A:135:ASP:N	2.24	0.53
1:A:19:LEU:HD11	1:A:23:ARG:HD2	1.92	0.51
1:A:19:LEU:CD1	1:A:23:ARG:HD2	2.41	0.51
1:A:338:ARG:NH1	1:A:338:ARG:CG	2.61	0.50
1:A:134[B]:ILE:CD1	1:A:445:TYR:HE2	2.25	0.49
1:A:73:ALA:HA	3:A:1451[B]:CM9:H133	1.93	0.49
2:A:470:HEM:HBC2	2:A:470:HEM:HMC2	1.95	0.49
1:A:134[B]:ILE:HG21	1:A:139:PHE:HB2	1.96	0.48
1:A:433[A]:MET:HB3	3:A:1451[A]:CM9:H181	1.96	0.48
2:A:470:HEM:HBC2	2:A:470:HEM:CMC	2.44	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:134[B]:ILE:CG2	1:A:139:PHE:HB2	2.44	0.48
1:A:158:ARG:HD3	1:A:158:ARG:C	2.40	0.47
1:A:71:ASP:CG	1:A:74:LYS:HG2	2.39	0.47
1:A:19:LEU:HD21	1:A:178:PRO:HB2	1.97	0.46
1:A:134[B]:ILE:CG2	1:A:135:ASP:N	2.79	0.46
3:A:1451[B]:CM9:H183	3:A:1451[B]:CM9:H161	1.74	0.46
1:A:225:MET:SD	1:A:253:MET:HE1	2.57	0.45
1:A:416:GLU:CG	1:A:448:ARG:HG2	2.47	0.44
1:A:82:ILE:HG23	1:A:172:LEU:HG	1.98	0.44
1:A:259:HIS:HD2	4:A:2149:HOH:O	2.00	0.44
1:A:372:GLN:HE21	1:A:372:GLN:HB3	1.64	0.43
1:A:183:ASP:HB3	1:A:186:LEU:HG	2.00	0.42
1:A:433[A]:MET:CE	3:A:1451[A]:CM9:H181	2.39	0.42
1:A:394:CYS:HA	2:A:470:HEM:CHA	2.50	0.42
1:A:22:PHE:HE2	1:A:433[B]:MET:HE3	1.84	0.42
1:A:19:LEU:C	1:A:19:LEU:HD13	2.45	0.42
1:A:134[B]:ILE:HD11	1:A:445:TYR:HE2	1.78	0.41
1:A:372:GLN:N	1:A:373:PRO:CD	2.82	0.41
1:A:394:CYS:HA	2:A:470:HEM:C4D	2.56	0.41
1:A:102:ASN:O	1:A:103:ALA:C	2.64	0.40
1:A:142:GLU:HG2	1:A:146:TYR:CE2	2.57	0.40
1:A:110[B]:MET:HB3	1:A:301[B]:LEU:HD11	2.03	0.40
1:A:156:LYS:HD2	1:A:212:ARG:NH2	2.37	0.40
1:A:279:TYR:HE1	1:A:283:ILE:HD11	1.86	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	421/455 (92%)	412 (98%)	9 (2%)	0	100	100

There are no Ramachandran outliers to report.

### 5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	352/377 (93%)	349 (99%)	3 (1%)	70 52

All (3) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	45	LEU
1	A	331	GLU
1	A	338	ARG

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

Mol	Chain	Res	Type
1	A	16	HIS
1	A	57	HIS
1	A	306	GLN
1	A	335	GLN
1	A	372	GLN
1	A	403	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 [i](#)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

3 ligands are modelled in this entry.

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$
3	CM9	A	1451[A]	2	25,25,25	0.56	0	32,32,32	1.51	3 (9%)
2	HEM	A	470	1,3	50,50,50	1.79	8 (16%)	67,82,82	1.55	11 (16%)
3	CM9	A	1451[B]	2	25,25,25	0.60	0	32,32,32	1.40	4 (12%)

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
3	CM9	A	1451[A]	2	-	2/20/30/30	0/2/2/2
2	HEM	A	470	1,3	-	0/14/54/54	-
3	CM9	A	1451[B]	2	-	4/20/30/30	1/2/2/2

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	470	HEM	C3D-C2D	7.58	1.53	1.36
2	A	470	HEM	FE-ND	5.06	2.10	1.94
2	A	470	HEM	CAC-C3C	3.14	1.55	1.47
2	A	470	HEM	FE-NB	2.94	2.04	1.94
2	A	470	HEM	FE-NA	2.38	2.03	1.95
2	A	470	HEM	CMD-C2D	2.13	1.55	1.50
2	A	470	HEM	CAB-C3B	2.09	1.53	1.47
2	A	470	HEM	FE-NC	2.03	2.01	1.95

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	470	HEM	C4D-ND-C1D	6.98	113.47	105.21
3	A	1451[A]	CM9	O1-C8-C9	-4.50	115.25	122.19
3	A	1451[A]	CM9	C9-C8-N3	4.07	123.20	116.19
3	A	1451[B]	CM9	O1-C8-C9	-3.84	116.26	122.19
3	A	1451[B]	CM9	C9-C8-N3	3.75	122.65	116.19
2	A	470	HEM	C3D-C4D-ND	-2.90	107.00	110.17
2	A	470	HEM	CAD-CBD-CGD	-2.74	106.39	113.67
3	A	1451[A]	CM9	C10-C9-C8	2.70	116.47	110.79
2	A	470	HEM	CMD-C2D-C1D	2.54	129.01	125.03
2	A	470	HEM	C1B-NB-C4B	2.52	108.19	105.21
2	A	470	HEM	CHD-C1D-ND	2.29	126.89	124.42
2	A	470	HEM	CBA-CAA-C2A	-2.21	106.42	112.53
3	A	1451[B]	CM9	C10-C9-C8	2.21	115.44	110.79
2	A	470	HEM	CHA-C1A-NA	2.20	127.85	123.86
3	A	1451[B]	CM9	C1-C2-N1	-2.17	119.89	123.60
2	A	470	HEM	C3B-C4B-NB	-2.11	107.96	109.47
2	A	470	HEM	CAD-C3D-C4D	2.09	128.34	124.70
2	A	470	HEM	C4B-C3B-C2B	2.01	109.13	107.28

There are no chirality outliers.

All (6) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	1451[B]	CM9	C17-C16-C7-N3
3	A	1451[B]	CM9	C17-C16-C7-C6
3	A	1451[B]	CM9	N3-C8-C9-C15
3	A	1451[B]	CM9	O1-C8-C9-C15
3	A	1451[A]	CM9	N3-C8-C9-C15
3	A	1451[A]	CM9	O1-C8-C9-C15

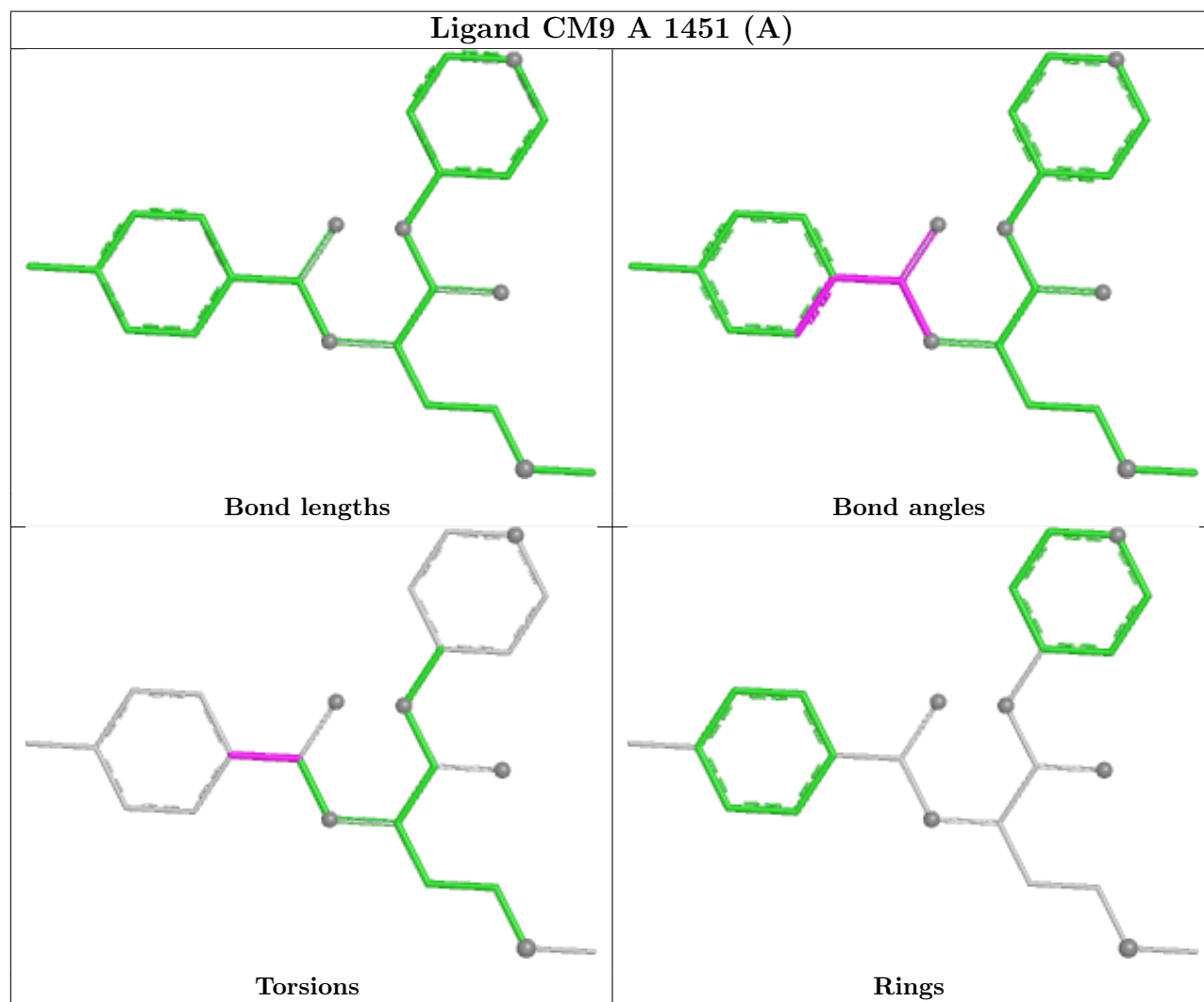
All (1) ring outliers are listed below:

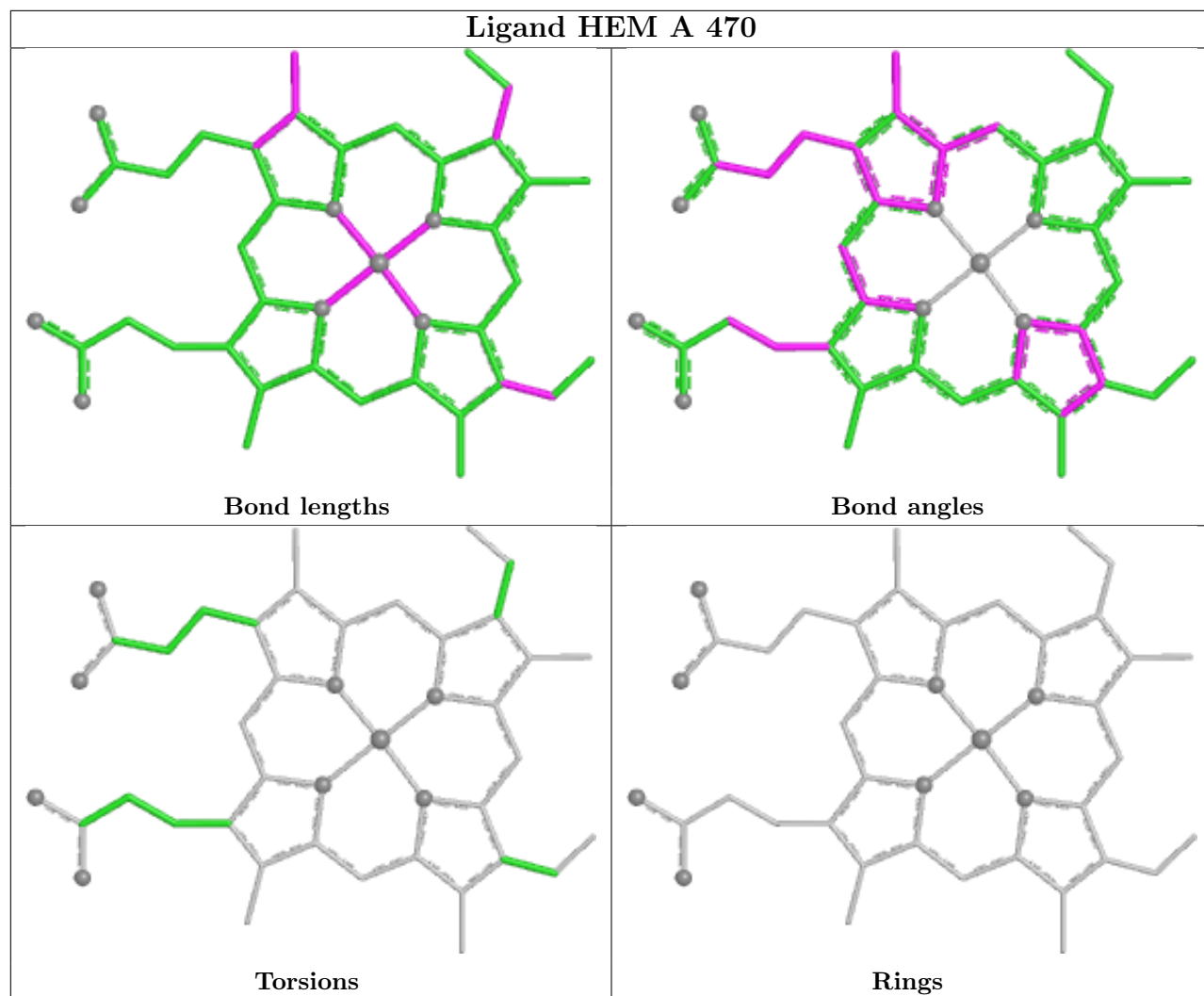
Mol	Chain	Res	Type	Atoms
3	A	1451[B]	CM9	C10-C11-C12-C14-C15-C9

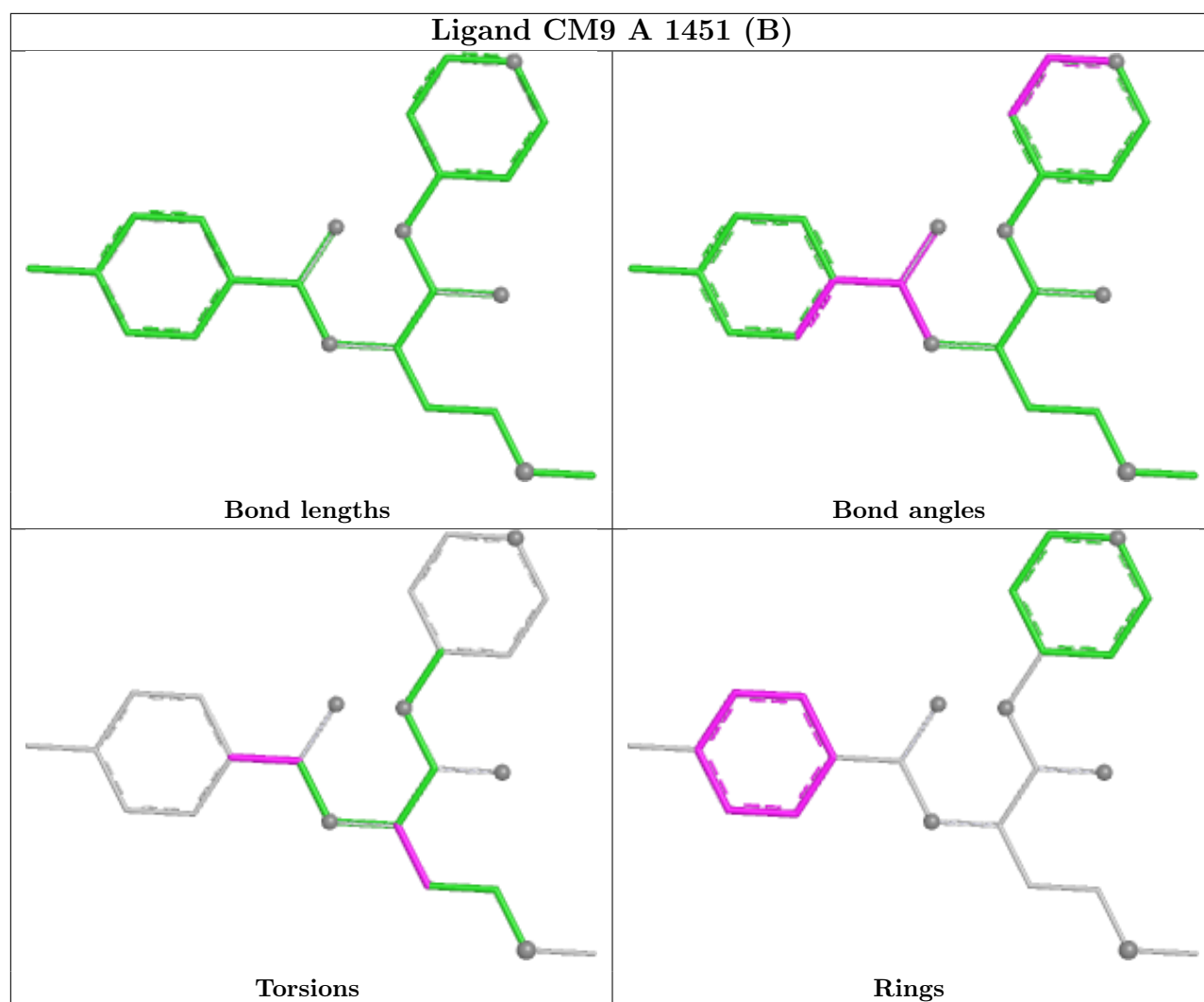
3 monomers are involved in 12 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	1451[A]	CM9	4	0
2	A	470	HEM	6	0
3	A	1451[B]	CM9	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 [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<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	421/455 (92%)	0.51	32 (7%)	20 29	9, 24, 38, 57	8 (1%)

All (32) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	4	VAL	5.8
1	A	234	ALA	5.6
1	A	104	ALA	5.1
1	A	103	ALA	5.0
1	A	449	THR	4.7
1	A	216	PRO	4.2
1	A	230	ILE	3.6
1	A	238	THR	3.6
1	A	233	LYS	3.3
1	A	78	PHE	3.2
1	A	101	HIS	3.1
1	A	228	VAL	3.1
1	A	77	PRO	3.1
1	A	225	MET	3.1
1	A	333	GLU	2.7
1	A	76	TYR	2.6
1	A	232	VAL	2.5
1	A	210	ASN	2.5
1	A	24[A]	THR	2.5
1	A	188	ILE	2.4
1	A	331	GLU	2.4
1	A	67	ASP	2.3
1	A	213	ILE	2.3
1	A	185	TYR	2.3
1	A	391	ARG	2.3
1	A	231	ALA	2.3
1	A	134[A]	ILE	2.2

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Mol	Chain	Res	Type	RSRZ
1	A	214	ALA	2.2
1	A	393	ARG	2.2
1	A	215	ASN	2.1
1	A	379	LEU	2.1
1	A	424	GLU	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](#)

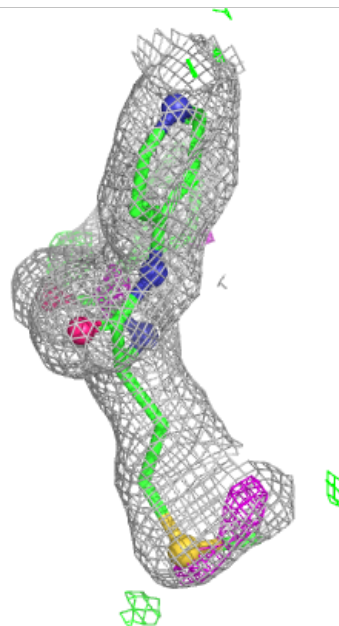
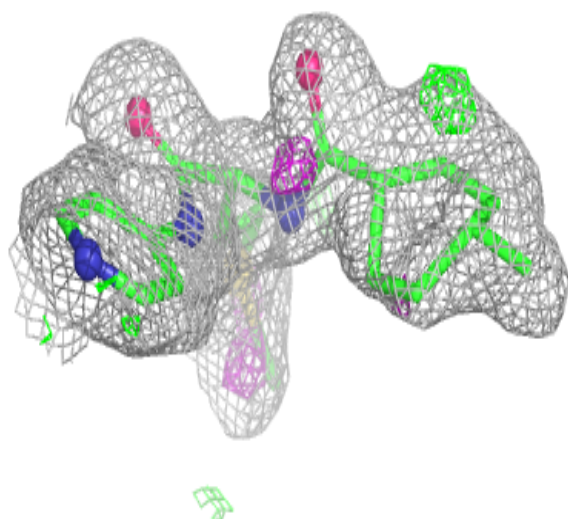
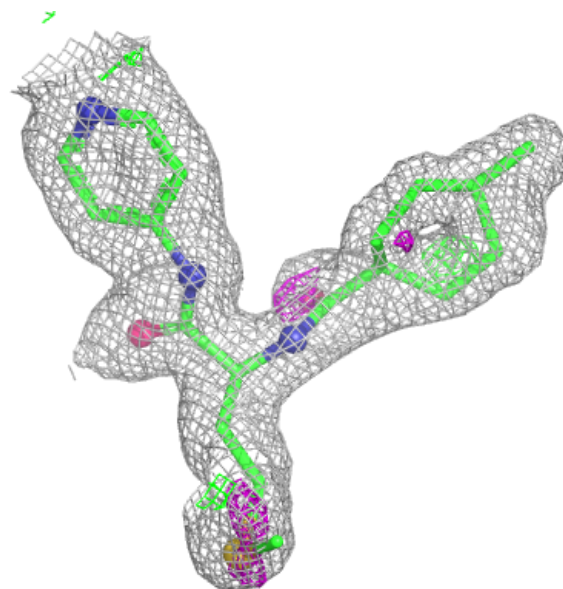
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
3	CM9	A	1451[A]	24/24	0.88	0.13	18,27,34,34	24
3	CM9	A	1451[B]	24/24	0.88	0.13	18,32,35,39	24
2	HEM	A	470	43/43	0.97	0.08	16,21,29,42	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.

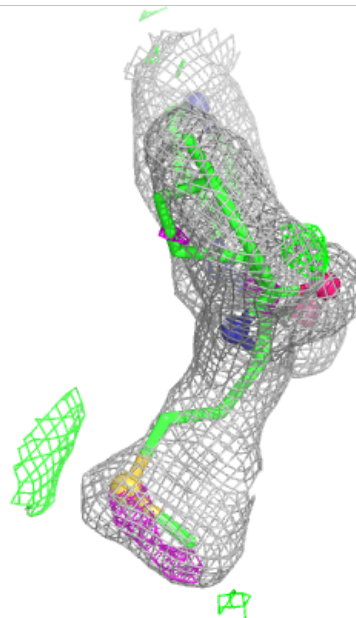
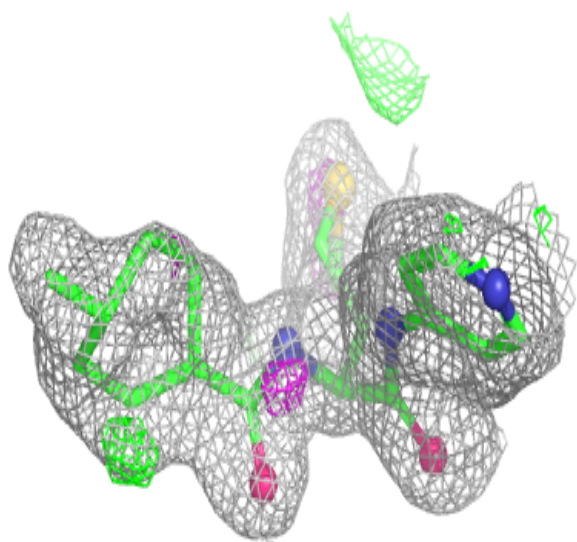
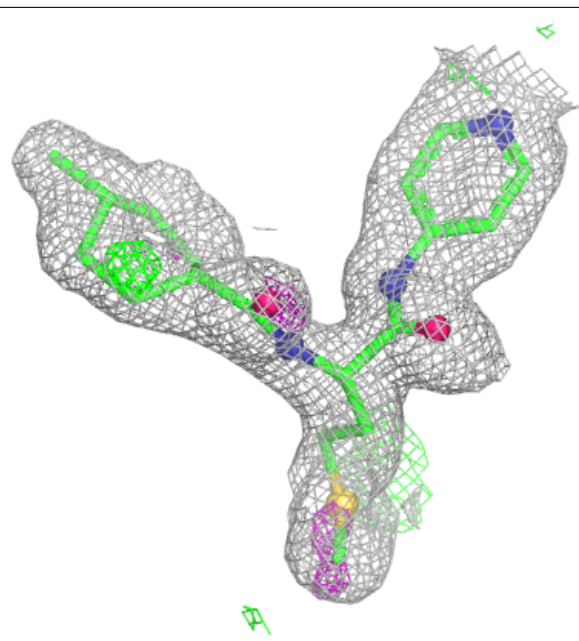
**Electron density around CM9 A 1451 (A):**

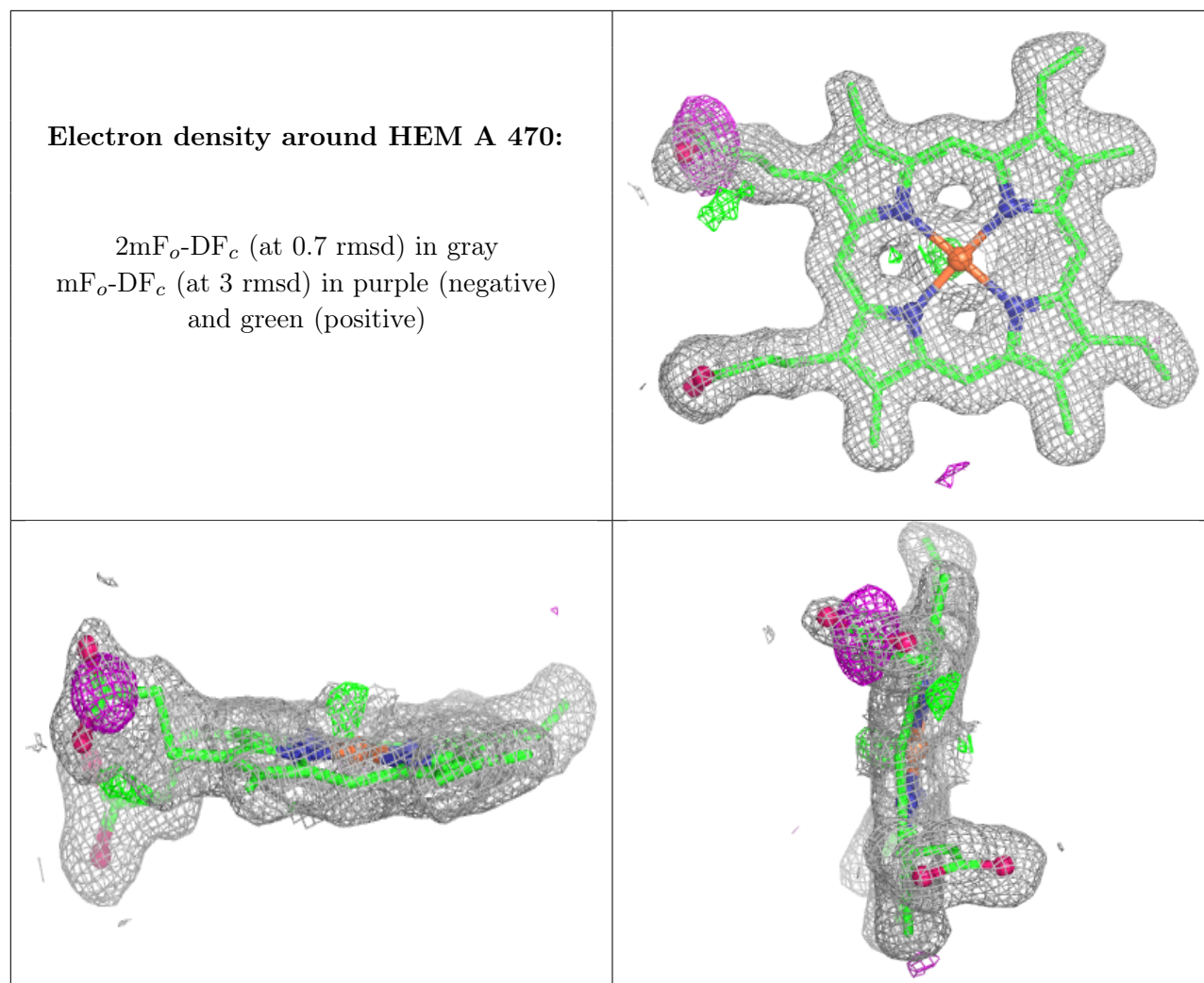
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



**Electron density around CM9 A 1451 (B):**

$2mF_o-DF_c$  (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.