



Full wwPDB X-ray Structure Validation Report ⓘ

Apr 18, 2026 – 03:31 PM UTC

PDB ID : 3UA1 / pdb_00003ua1
Title : Crystal structure of the cytochrome P4503A4-bromoergocryptine complex
Authors : Sevrioukova, I.F.; Poulos, T.L.
Deposited on : 2011-10-20
Resolution : 2.15 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 2.0
EDS : 3.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.010 (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

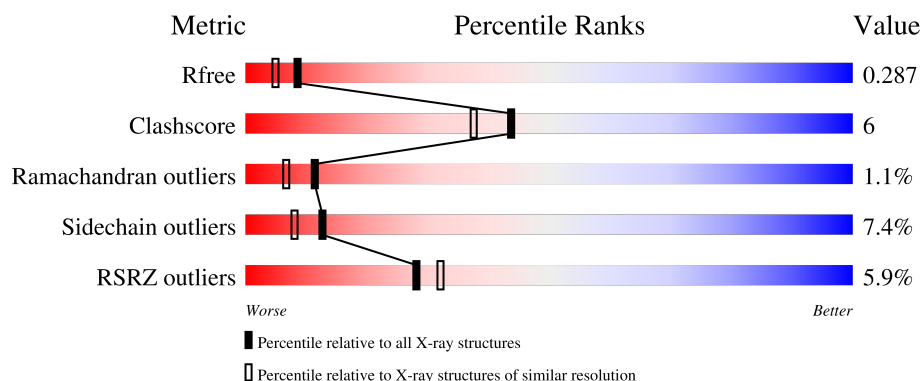
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.15 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	2057 (2.16-2.16)
Clashscore	190562	2159 (2.16-2.16)
Ramachandran outliers	187476	2134 (2.16-2.16)
Sidechain outliers	187428	2133 (2.16-2.16)
RSRZ outliers	180081	2059 (2.16-2.16)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	487	6% 74% 17% 6%

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 3823 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

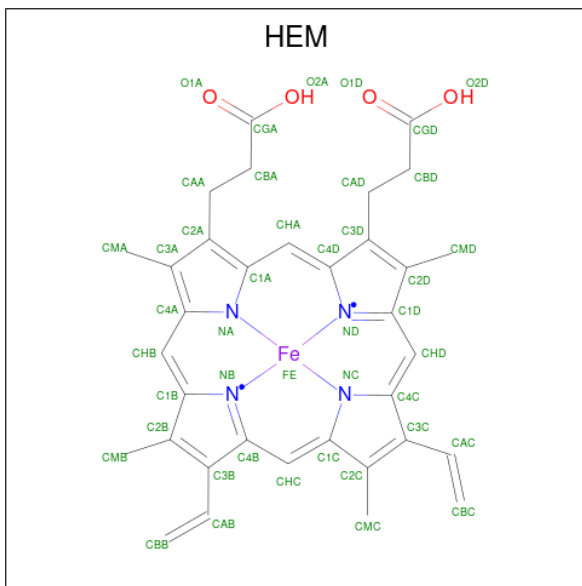
- Molecule 1 is a protein called Cytochrome P450 3A4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	456	Total	C	N	O	S	0	0	0
			3672	2392	601	655	24			

There are 6 discrepancies between the modelled and reference sequences:

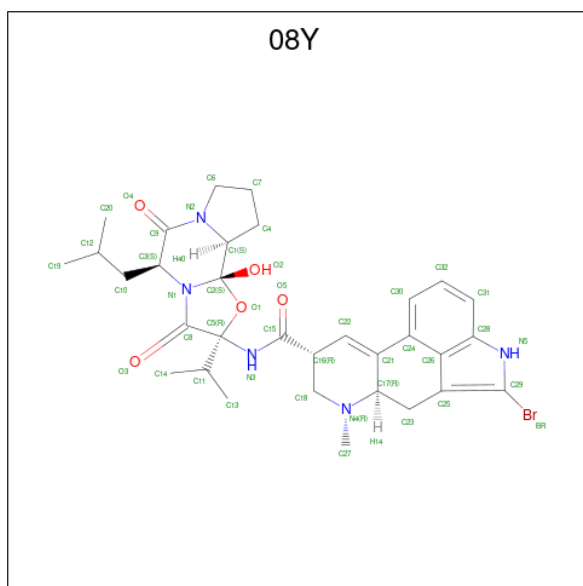
Chain	Residue	Modelled	Actual	Comment	Reference
A	21	MET	-	expression tag	UNP P08684
A	22	ALA	-	expression tag	UNP P08684
A	504	HIS	-	expression tag	UNP P08684
A	505	HIS	-	expression tag	UNP P08684
A	506	HIS	-	expression tag	UNP P08684
A	507	HIS	-	expression tag	UNP P08684

- Molecule 2 is PROTOPORPHYRIN IX CONTAINING FE (CCD ID: HEM) (formula: $\text{C}_{34}\text{H}_{32}\text{FeN}_4\text{O}_4$).



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

- Molecule 3 is bromoergocryptine (CCD ID: 08Y) (formula: $C_{32}H_{40}BrN_5O_5$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total	Br	C	N	O	
			43	1	32	5	5	
							0	0

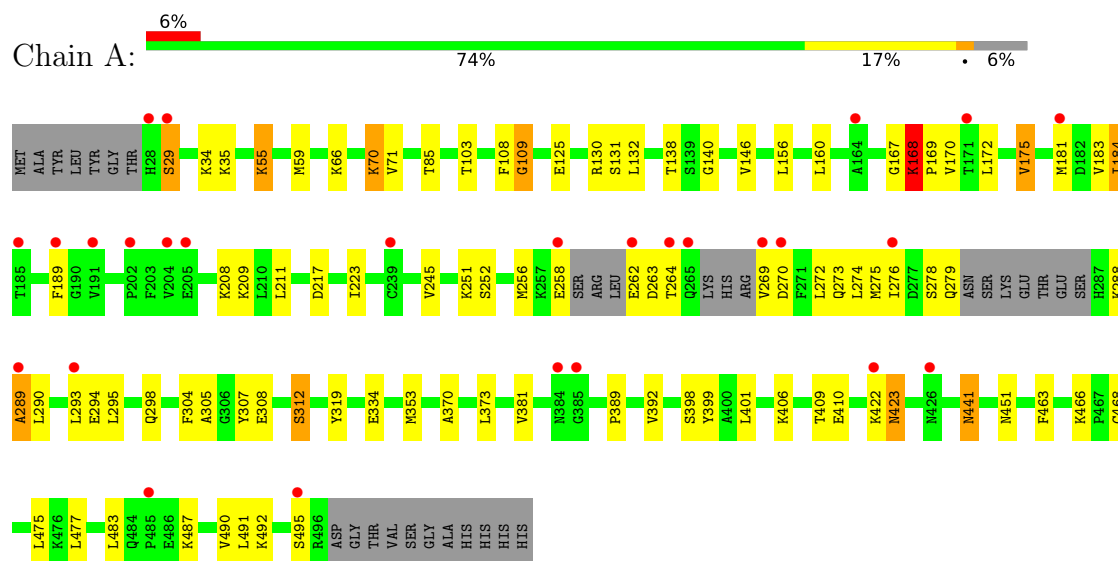
- Molecule 4 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	65	Total		
			65	O	
				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: Cytochrome P450 3A4



4 Data and refinement statistics

Property	Value	Source
Space group	I 2 2 2	Depositor
Cell constants a, b, c, α , β , γ	77.67Å 99.39Å 131.87Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	39.90 – 2.15 39.90 – 2.15	Depositor EDS
% Data completeness (in resolution range)	96.8 (39.90-2.15) 96.8 (39.90-2.15)	Depositor EDS
R_{merge}	0.06	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.02 (at 2.16Å)	Xtriage
Refinement program	REFMAC 5.5.0109	Depositor
R, R_{free}	0.221 , 0.278 0.225 , 0.287	Depositor DCC
R_{free} test set	1383 reflections (5.07%)	wwPDB-VP
Wilson B-factor (Å ²)	44.3	Xtriage
Anisotropy	0.026	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.35 , 35.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	3823	wwPDB-VP
Average B, all atoms (Å ²)	52.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.40% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 08Y, HEM

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	0.80	1/3761 (0.0%)	1.02	8/5086 (0.2%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	146	VAL	CA-CB	5.54	1.56	1.54

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	289	ALA	CB-CA-C	7.06	124.46	110.42
1	A	168	LYS	CA-C-N	6.37	126.32	119.76
1	A	168	LYS	C-N-CA	6.37	126.32	119.76
1	A	264	THR	N-CA-C	6.21	124.02	110.80
1	A	168	LYS	CB-CA-C	5.43	120.87	110.17
1	A	307	TYR	N-CA-C	5.36	116.98	111.03
1	A	410	GLU	CA-C-N	5.09	125.37	119.47
1	A	410	GLU	C-N-CA	5.09	125.37	119.47

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	3672	0	3750	44	0
2	A	43	0	30	2	0
3	A	43	0	40	3	0
4	A	65	0	0	0	0
All	All	3823	0	3820	46	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 6.

All (46) 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:181:MET:HE1	1:A:208:LYS:HG3	1.22	1.11
1:A:70:LYS:HD3	1:A:71:VAL:HG23	1.68	0.75
1:A:181:MET:HE1	1:A:208:LYS:CG	2.12	0.74
1:A:275:MET:HE2	1:A:295:LEU:HG	1.69	0.73
1:A:189:PHE:CD1	1:A:272:LEU:HD23	2.23	0.72
1:A:132:LEU:HD11	1:A:289:ALA:O	1.92	0.69
1:A:138:THR:HG22	1:A:140:GLY:H	1.57	0.68
1:A:305:ALA:HA	3:A:600:08Y:H34	1.76	0.68
2:A:508:HEM:HBC2	2:A:508:HEM:HHD	1.77	0.67
1:A:108:PHE:O	1:A:109:GLY:O	2.14	0.65
1:A:269:VAL:HG13	1:A:269:VAL:O	1.97	0.65
1:A:167:GLY:O	1:A:168:LYS:HB2	1.96	0.64
2:A:508:HEM:HHC	2:A:508:HEM:HBB2	1.80	0.63
1:A:169:PRO:HB3	1:A:468:CYS:SG	2.40	0.61
1:A:308:GLU:O	1:A:312:SER:HB2	2.02	0.59
1:A:130:ARG:HH22	1:A:441:ASN:ND2	1.99	0.59
1:A:252:SER:O	1:A:256:MET:HG2	2.05	0.57
1:A:262:GLU:OE1	1:A:262:GLU:HA	2.04	0.56
1:A:189:PHE:CG	1:A:272:LEU:HD23	2.41	0.54
1:A:370:ALA:HB1	3:A:600:08Y:C13	2.41	0.51
1:A:209:LYS:HB2	1:A:245:VAL:HG21	1.94	0.50
1:A:170:VAL:O	1:A:490:VAL:HA	2.12	0.49
1:A:270:ASP:O	1:A:274:LEU:HG	2.13	0.49
1:A:55:LYS:HB3	1:A:55:LYS:HE2	1.66	0.49
1:A:183:VAL:HG21	1:A:451:ASN:HD21	1.78	0.49
1:A:294:GLU:O	1:A:298:GLN:HG2	2.13	0.48
1:A:172:LEU:HD11	1:A:491:LEU:HD12	1.95	0.48
1:A:304:PHE:HE2	3:A:600:08Y:H25	1.79	0.48
1:A:156:LEU:O	1:A:160:LEU:HB2	2.13	0.47
1:A:184:ILE:HD13	1:A:184:ILE:HA	1.74	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:156:LEU:CD1	1:A:175:VAL:HG13	2.46	0.46
1:A:334:GLU:OE2	1:A:353:MET:HB3	2.17	0.45
1:A:85:THR:HB	1:A:401:LEU:HD21	1.99	0.44
1:A:295:LEU:C	1:A:295:LEU:HD23	2.42	0.44
1:A:276:ILE:HA	1:A:279:GLN:HE21	1.83	0.43
1:A:269:VAL:O	1:A:269:VAL:CG1	2.68	0.42
1:A:270:ASP:OD1	1:A:273:GLN:HB2	2.19	0.42
1:A:275:MET:CE	1:A:295:LEU:HA	2.49	0.42
1:A:477:LEU:HD22	1:A:483:LEU:CD1	2.50	0.42
1:A:319:TYR:CZ	1:A:475:LEU:HB2	2.55	0.42
1:A:389:PRO:HD2	1:A:392:VAL:HG21	2.01	0.41
1:A:398:SER:O	1:A:399:TYR:C	2.62	0.41
1:A:172:LEU:HD11	1:A:491:LEU:CD1	2.51	0.41
1:A:59:MET:HE2	1:A:59:MET:HA	2.03	0.40
1:A:217:ASP:OD2	1:A:217:ASP:C	2.64	0.40
1:A:160:LEU:HB3	1:A:463:PHE:CE2	2.57	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	448/487 (92%)	421 (94%)	22 (5%)	5 (1%)	11 7

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	109	GLY
1	A	423	ASN
1	A	29	SER
1	A	263	ASP
1	A	168	LYS

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	417/443 (94%)	386 (93%)	31 (7%)	13 8

All (31) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	29	SER
1	A	34	LYS
1	A	35	LYS
1	A	55	LYS
1	A	66	LYS
1	A	70	LYS
1	A	103	THR
1	A	125	GLU
1	A	131	SER
1	A	175	VAL
1	A	184	ILE
1	A	211	LEU
1	A	223	ILE
1	A	251	LYS
1	A	258	GLU
1	A	278	SER
1	A	288	LYS
1	A	290	LEU
1	A	293	LEU
1	A	312	SER
1	A	373	LEU
1	A	381	VAL
1	A	406	LYS
1	A	409	THR
1	A	422	LYS
1	A	423	ASN
1	A	441	ASN
1	A	466	LYS
1	A	487	LYS
1	A	492	LYS

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Mol	Chain	Res	Type
1	A	495	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	65	HIS
1	A	151	GLN
1	A	198	ASN
1	A	206	ASN
1	A	247	ASN
1	A	273	GLN
1	A	279	GLN
1	A	352	GLN
1	A	384	ASN
1	A	441	ASN
1	A	451	ASN
1	A	484	GLN

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 oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

2 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	08Y	A	600	-	47,49,49	1.63	4 (8%)	68,79,79	2.40	26 (38%)
2	HEM	A	508	1	50,50,50	1.86	11 (22%)	67,82,82	1.39	8 (11%)

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	08Y	A	600	-	-	12/19/93/93	0/7/7/7
2	HEM	A	508	1	-	3/14/54/54	-

All (15) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	508	HEM	C3D-C2D	6.95	1.51	1.36
3	A	600	08Y	BR-C29	6.88	2.00	1.86
3	A	600	08Y	O2-C2	4.63	1.44	1.38
3	A	600	08Y	C26-C28	4.37	1.48	1.41
2	A	508	HEM	FE-NA	4.18	2.09	1.95
2	A	508	HEM	FE-ND	4.08	2.07	1.94
2	A	508	HEM	FE-NB	3.44	2.05	1.94
3	A	600	08Y	C24-C26	3.17	1.46	1.41
2	A	508	HEM	CAC-C3C	3.04	1.55	1.47
2	A	508	HEM	CAB-C3B	2.66	1.54	1.47
2	A	508	HEM	CMB-C2B	2.54	1.56	1.50
2	A	508	HEM	FE-NC	2.53	2.03	1.95
2	A	508	HEM	CMA-C3A	2.52	1.55	1.50
2	A	508	HEM	C2A-C3A	-2.10	1.33	1.38
2	A	508	HEM	CAA-C2A	2.05	1.56	1.51

All (34) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	600	08Y	C27-N4-C17	11.02	123.29	111.64
3	A	600	08Y	C8-C5-N3	5.12	116.96	111.73
3	A	600	08Y	O2-C2-N1	-5.02	108.53	112.86
2	A	508	HEM	C4D-ND-C1D	4.19	110.17	105.21

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	600	08Y	C23-C25-C26	3.74	122.84	117.61
3	A	600	08Y	O1-C5-C8	-3.71	101.28	103.67
3	A	600	08Y	C5-C8-N1	3.34	110.22	106.96
3	A	600	08Y	C27-N4-C18	3.16	115.77	109.64
3	A	600	08Y	C24-C21-C17	3.16	119.91	115.00
3	A	600	08Y	O2-C2-O1	3.13	115.17	111.48
3	A	600	08Y	C31-C32-C30	3.13	124.27	120.24
3	A	600	08Y	C31-C28-N5	3.07	137.03	130.83
3	A	600	08Y	C2-O1-C5	3.04	113.34	111.22
3	A	600	08Y	C31-C28-C26	-2.94	115.47	121.75
3	A	600	08Y	C23-C17-C21	2.92	116.91	113.42
3	A	600	08Y	C24-C21-C22	-2.88	119.72	123.03
3	A	600	08Y	C4-C1-N2	2.62	105.57	102.73
3	A	600	08Y	C26-C24-C21	-2.62	112.33	116.20
2	A	508	HEM	CHA-C4D-ND	2.56	127.53	124.37
3	A	600	08Y	O3-C8-C5	-2.50	122.67	125.98
2	A	508	HEM	C3B-C4B-NB	-2.48	107.69	109.47
3	A	600	08Y	C4-C1-C2	-2.43	115.12	117.65
2	A	508	HEM	CMC-C2C-C3C	-2.38	122.68	128.43
2	A	508	HEM	CBD-CAD-C3D	-2.29	106.19	112.53
3	A	600	08Y	O1-C5-C11	2.25	112.11	108.98
3	A	600	08Y	C9-C3-N1	2.23	113.98	111.65
3	A	600	08Y	C11-C5-C8	-2.20	109.91	112.44
3	A	600	08Y	C30-C24-C21	2.20	129.87	123.49
2	A	508	HEM	C3C-C2C-C1C	2.19	109.12	107.05
2	A	508	HEM	O2A-CGA-CBA	2.19	120.91	114.00
2	A	508	HEM	CBB-CAB-C3B	-2.13	116.87	127.53
3	A	600	08Y	C28-C26-C25	2.08	110.06	107.19
3	A	600	08Y	O4-C9-N2	-2.02	120.11	123.00
3	A	600	08Y	C5-N3-C15	2.01	128.37	123.94

There are no chirality outliers.

All (15) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	600	08Y	C16-C15-N3-C5
3	A	600	08Y	O1-C5-N3-C15
3	A	600	08Y	C11-C5-N3-C15
3	A	600	08Y	C8-C5-N3-C15
3	A	600	08Y	C14-C11-C5-N3
3	A	600	08Y	C14-C11-C5-C8
3	A	600	08Y	O5-C15-N3-C5

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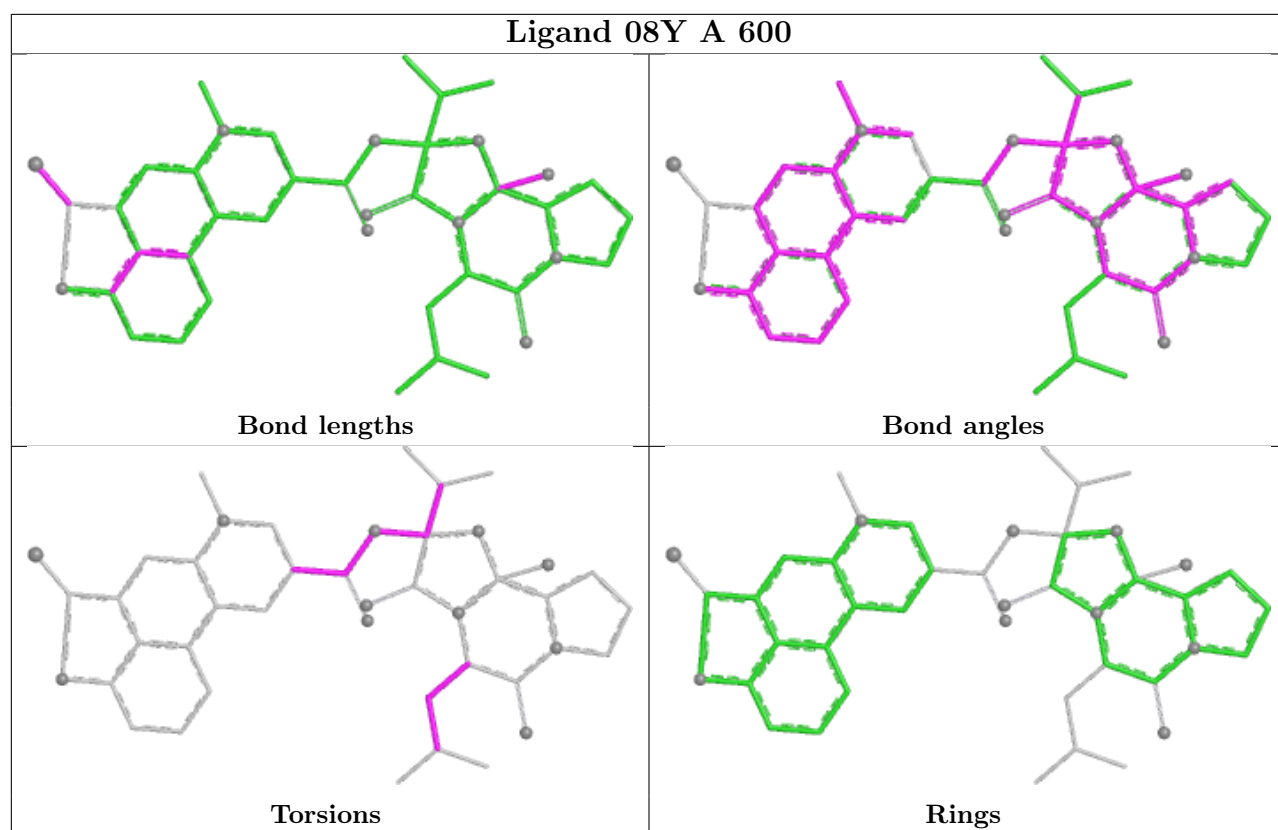
Mol	Chain	Res	Type	Atoms
3	A	600	08Y	C3-C10-C12-C20
3	A	600	08Y	C3-C10-C12-C19
2	A	508	HEM	C4C-C3C-CAC-CBC
3	A	600	08Y	C12-C10-C3-C9
3	A	600	08Y	O5-C15-C16-C22
3	A	600	08Y	C12-C10-C3-N1
2	A	508	HEM	CAA-CBA-CGA-O1A
2	A	508	HEM	CAA-CBA-CGA-O2A

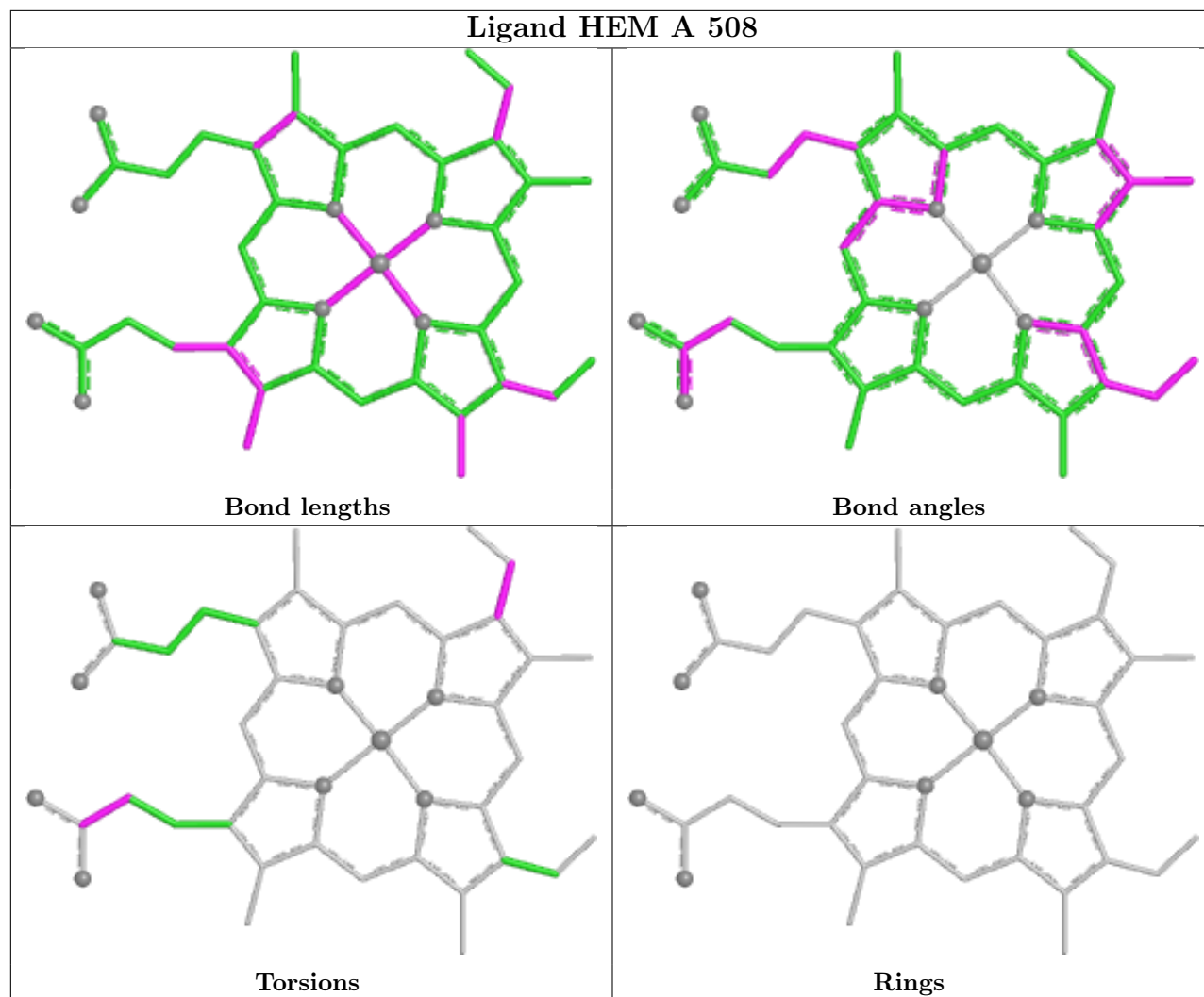
There are no ring outliers.

2 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	600	08Y	3	0
2	A	508	HEM	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 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, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2		OWAB(Å ²)	Q<0.9
1	A	456/487 (93%)	0.58	27 (5%)	28 32	30, 50, 82, 118	0

All (27) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	189	PHE	5.0
1	A	171	THR	4.3
1	A	28	HIS	3.5
1	A	202	PRO	3.5
1	A	164	ALA	3.4
1	A	426	ASN	3.2
1	A	264	THR	3.1
1	A	265	GLN	3.0
1	A	29	SER	2.9
1	A	181	MET	2.9
1	A	270	ASP	2.8
1	A	485	PRO	2.8
1	A	191	VAL	2.7
1	A	205	GLU	2.7
1	A	385	GLY	2.6
1	A	239	CYS	2.6
1	A	269	VAL	2.5
1	A	185	THR	2.5
1	A	276	ILE	2.4
1	A	422	LYS	2.4
1	A	289	ALA	2.4
1	A	384	ASN	2.3
1	A	204	VAL	2.3
1	A	258	GLU	2.3
1	A	262	GLU	2.3
1	A	495	SER	2.2
1	A	293	LEU	2.1

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](#)

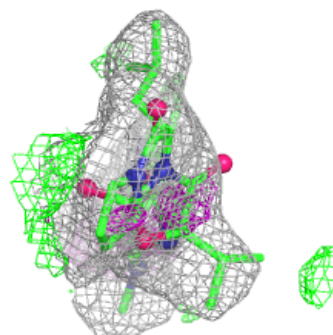
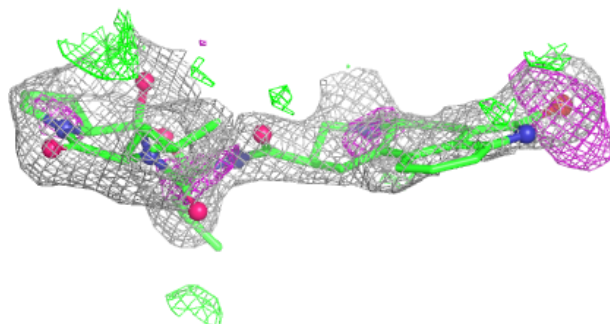
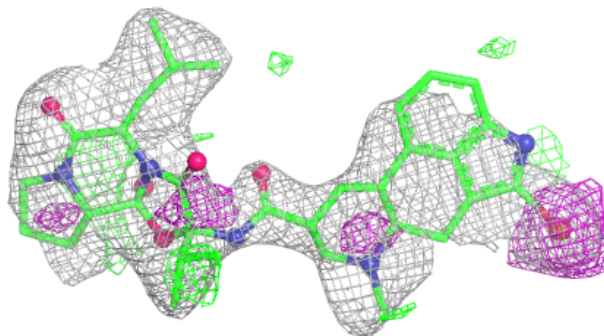
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

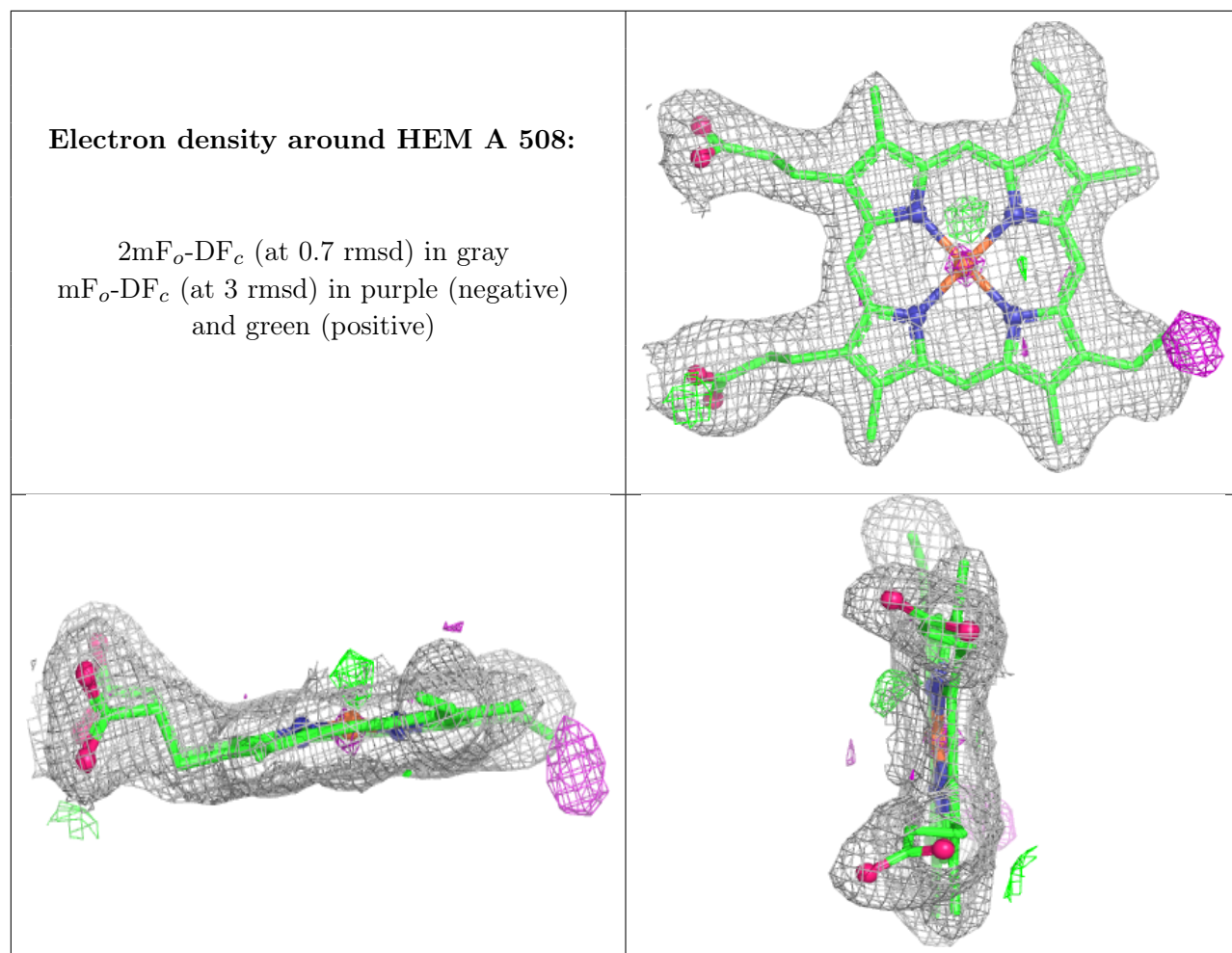
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
3	08Y	A	600	43/43	0.83	0.15	52,58,71,73	0
2	HEM	A	508	43/43	0.97	0.07	19,25,27,33	0

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 08Y A 600:

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





6.5 Other polymers ⓘ

There are no such residues in this entry.