



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 10, 2026 – 05:16 PM UTC

PDB ID : 6URB / pdb_00006urb
Title : Pseudomonas aeruginosa HasA mutant - H32A
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Deposited on : 2019-10-23
Resolution : 2.10 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)
Xtrriage (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

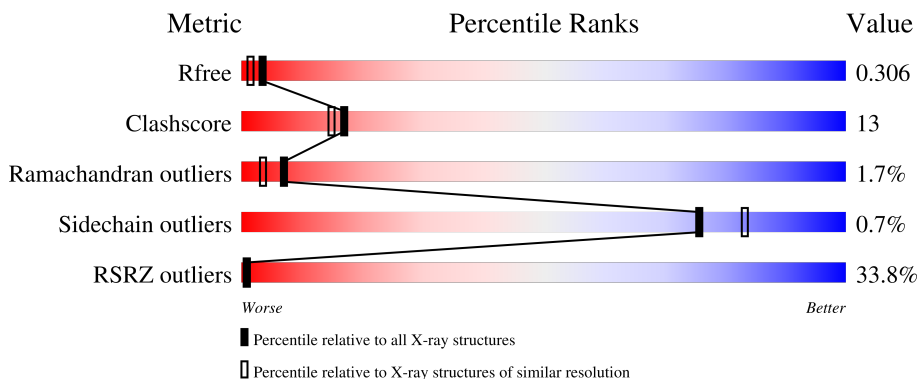
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.10 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	6658 (2.10-2.10)
Clashscore	190562	7164 (2.10-2.10)
Ramachandran outliers	187476	7099 (2.10-2.10)
Sidechain outliers	187428	7100 (2.10-2.10)
RSRZ outliers	180081	6662 (2.10-2.10)

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	200	 2% 76% 14% 10%
1	B	200	 59% 58% 30% 10%

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

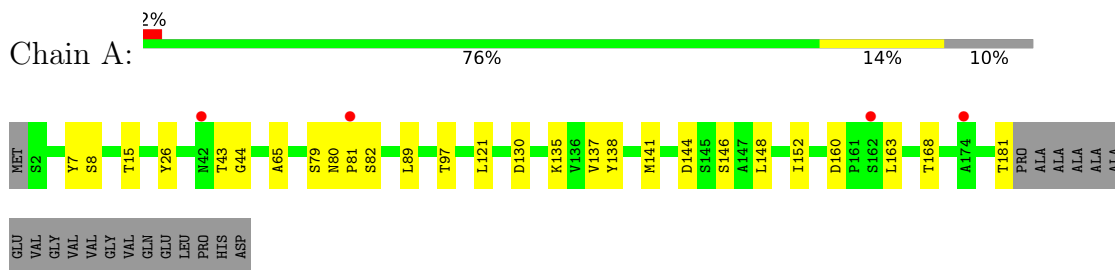
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	65	Total	O	0	0
			65	65		
3	B	25	Total	O	0	0
			25	25		

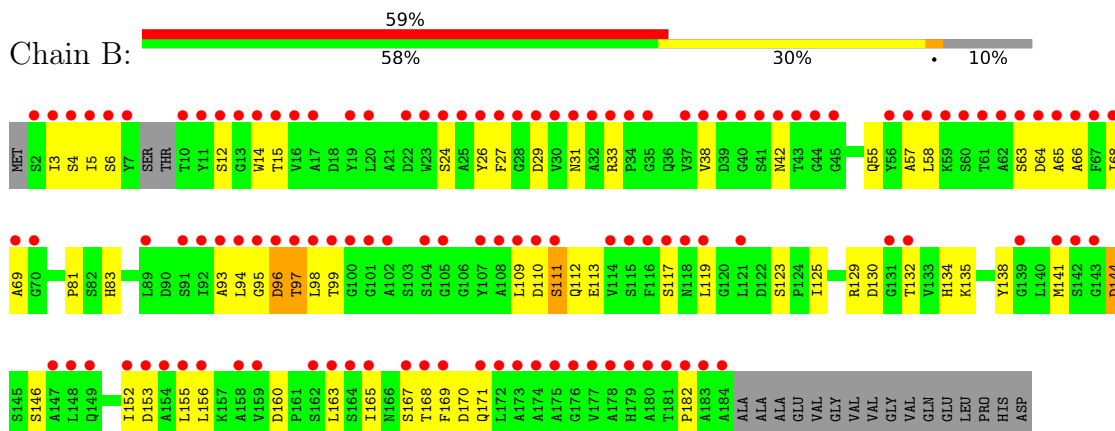
3 Residue-property plots

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

- Molecule 1: HasAp



- Molecule 1: HasAp



4 Data and refinement statistics i

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	111.34Å 51.87Å 72.81Å 90.00° 130.67° 90.00°	Depositor
Resolution (Å)	29.89 – 2.10 29.89 – 2.10	Depositor EDS
% Data completeness (in resolution range)	94.3 (29.89-2.10) 94.3 (29.89-2.10)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.48 (at 2.10Å)	Xtrriage
Refinement program	PHENIX 1.12_2829	Depositor
R, R_{free}	0.233 , 0.302 0.234 , 0.306	Depositor DCC
R_{free} test set	887 reflections (4.74%)	wwPDB-VP
Wilson B-factor (Å ²)	29.2	Xtrriage
Anisotropy	0.774	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 50.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	0.032 for -h-2*1,-k,l	Xtrriage
F_o, F_c correlation	0.93	EDS
Total number of atoms	2827	wwPDB-VP
Average B, all atoms (Å ²)	49.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 8.76% 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

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	0.39	0/1378	0.60	0/1880
1	B	0.27	0/1369	0.55	0/1867
All	All	0.34	0/2747	0.58	0/3747

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	B	0	1
All	All	0	2

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	80	ASN	Peptide
1	B	96	ASP	Peptide

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	1327	0	1251	13	1
1	B	1324	0	1248	50	1
2	A	43	0	30	1	0
2	B	43	0	30	4	0
3	A	65	0	0	0	0
3	B	25	0	0	10	0
All	All	2827	0	2559	67	1

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 13.

All (67) 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:B:168:THR:HB	1:B:171:GLN:HG3	1.50	0.93
1:B:63:SER:OG	3:B:401:HOH:O	1.94	0.84
1:B:64:ASP:OD1	1:B:97:THR:HA	1.78	0.83
2:A:301:HEM:HHC	2:A:301:HEM:HBB2	1.66	0.78
1:B:97:THR:HG21	1:B:110:ASP:HB3	1.64	0.78
1:A:138:TYR:HA	1:A:141:MET:HE2	1.66	0.76
1:B:68:ILE:HG13	1:B:98:LEU:HD21	1.68	0.76
1:B:3:ILE:HB	1:B:155:LEU:HG	1.68	0.76
1:B:38:VAL:HG23	1:B:64:ASP:HB2	1.68	0.74
1:B:66:ALA:HB1	1:B:98:LEU:HD12	1.70	0.72
1:B:117:SER:OG	3:B:403:HOH:O	2.11	0.68
1:B:95:GLY:HA2	1:B:113:GLU:HG3	1.73	0.68
1:B:95:GLY:O	3:B:404:HOH:O	2.14	0.65
1:A:8:SER:HA	1:A:181:THR:C	2.25	0.62
1:B:68:ILE:HB	1:B:93:ALA:HB3	1.82	0.62
2:B:301:HEM:HMC1	2:B:301:HEM:HBC2	1.81	0.62
1:B:95:GLY:H	1:B:109:LEU:HD13	1.63	0.62
1:B:27:PHE:HA	3:B:401:HOH:O	2.00	0.61
1:B:4:SER:OG	3:B:402:HOH:O	2.07	0.60
2:B:301:HEM:HHC	2:B:301:HEM:HBB2	1.85	0.59
1:B:95:GLY:C	1:B:109:LEU:HD22	2.28	0.58
1:B:26:TYR:CE1	1:B:63:SER:HB2	2.40	0.57
1:B:160:ASP:HB3	1:B:163:LEU:HB2	1.87	0.56
1:A:137:VAL:O	1:A:141:MET:HG3	2.05	0.56
1:A:160:ASP:HB3	1:A:163:LEU:HG	1.88	0.56
1:B:97:THR:HG23	1:B:99:THR:HG23	1.90	0.55
1:B:68:ILE:CG1	1:B:98:LEU:HD21	2.35	0.54
1:A:130:ASP:O	1:A:135:LYS:NZ	2.39	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:97:THR:CG2	1:B:110:ASP:HB3	2.38	0.53
1:A:144:ASP:OD1	1:A:146[A]:SER:OG	2.25	0.51
1:B:123:SER:OG	1:B:132:THR:HG22	2.10	0.51
1:B:12:SER:HB2	1:B:170:ASP:OD1	2.12	0.50
1:A:43[A]:THR:OG1	1:A:44:GLY:N	2.46	0.49
1:B:29:ASP:HB2	3:B:410:HOH:O	2.12	0.48
1:B:81:PRO:HD2	1:B:125:ILE:HG12	1.94	0.48
1:B:58:LEU:HD13	1:B:141:MET:SD	2.55	0.47
1:B:24:SER:O	3:B:405:HOH:O	2.20	0.47
1:B:57:ALA:HB1	1:B:98:LEU:HD13	1.97	0.46
1:B:65:ALA:HB3	3:B:401:HOH:O	2.15	0.46
1:A:7:TYR:O	1:A:181:THR:N	2.35	0.46
1:B:144:ASP:OD2	1:B:146[B]:SER:OG	2.25	0.46
1:A:26:TYR:CD2	1:A:65:ALA:HB2	2.51	0.45
1:B:64:ASP:OD1	1:B:64:ASP:O	2.35	0.45
1:B:96:ASP:OD2	1:B:111[A]:SER:OG	2.35	0.45
1:B:83:HIS:CE1	2:B:301:HEM:HBA1	2.53	0.44
1:A:148:LEU:O	1:A:152:ILE:HG12	2.17	0.44
1:B:55:GLN:HA	1:B:69:ALA:O	2.17	0.44
1:B:129:ARG:HG2	1:B:134:HIS:NE2	2.33	0.44
1:B:152:ILE:O	1:B:156:LEU:HG	2.18	0.44
1:B:119:LEU:N	1:B:119:LEU:HD12	2.33	0.43
1:B:109:LEU:HB2	1:B:112:GLN:HG3	2.00	0.43
1:B:15:THR:HA	1:B:167:SER:O	2.19	0.43
1:B:33:ARG:NH2	3:B:407:HOH:O	2.30	0.43
1:B:65:ALA:HA	3:B:404:HOH:O	2.19	0.43
1:B:98:LEU:HD23	1:B:98:LEU:HA	1.64	0.43
1:A:89:LEU:HB3	1:A:121:LEU:HB2	1.99	0.43
1:B:138:TYR:O	1:B:141:MET:HB2	2.19	0.42
1:A:15:THR:HA	1:A:168:THR:HA	2.01	0.41
1:B:14:TRP:O	1:B:169:PHE:N	2.54	0.41
1:B:94:LEU:HD12	1:B:94:LEU:HA	1.87	0.41
2:B:301:HEM:HBB2	2:B:301:HEM:CHC	2.50	0.41
1:A:79:SER:O	1:A:82:SER:HA	2.21	0.41
1:B:153:ASP:HA	1:B:165:ILE:HG23	2.03	0.41
1:B:130:ASP:HA	1:B:135:LYS:HE3	2.04	0.40
1:B:3:ILE:HD12	1:B:155:LEU:HD23	2.04	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:181:THR:O	1:B:31:ASN:ND2[3_555]	2.18	0.02

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	185/200 (92%)	175 (95%)	8 (4%)	2 (1%)	11	8
1	B	181/200 (90%)	155 (86%)	22 (12%)	4 (2%)	5	2
All	All	366/400 (92%)	330 (90%)	30 (8%)	6 (2%)	7	4

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	81	PRO
1	B	97	THR
1	B	42	ASN
1	B	144	ASP
1	B	182	PRO
1	A	97	THR

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	141/149 (95%)	141 (100%)	0	100	100
1	B	139/149 (93%)	135 (97%)	4 (3%)	37	42

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
All	All	280/298 (94%)	276 (99%)	4 (1%)	76	67

All (4) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	6[A]	SER
1	B	6[B]	SER
1	B	111[A]	SER
1	B	111[B]	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	149	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
2	HEM	B	301	1	50,50,50	1.53	8 (16%)	67,82,82	1.22	9 (13%)
2	HEM	A	301	1	50,50,50	1.32	4 (8%)	67,82,82	1.08	2 (2%)

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
2	HEM	B	301	1	-	0/14/54/54	-
2	HEM	A	301	1	-	3/14/54/54	-

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	301	HEM	FE-NC	5.61	2.13	1.95
2	A	301	HEM	FE-NC	3.91	2.08	1.95
2	B	301	HEM	FE-ND	3.43	2.05	1.94
2	B	301	HEM	CAB-C3B	3.25	1.56	1.47
2	A	301	HEM	CAB-C3B	3.10	1.55	1.47
2	B	301	HEM	CAC-C3C	3.04	1.55	1.47
2	B	301	HEM	FE-NB	2.81	2.03	1.94
2	A	301	HEM	CAC-C3C	2.59	1.54	1.47
2	B	301	HEM	CMB-C2B	2.54	1.56	1.50
2	A	301	HEM	CMC-C2C	2.35	1.55	1.50
2	B	301	HEM	CMD-C2D	2.32	1.55	1.50
2	B	301	HEM	CMC-C2C	2.18	1.55	1.50

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	301	HEM	CHD-C1D-ND	2.64	127.27	124.42
2	B	301	HEM	CHB-C1B-NB	2.63	127.61	124.37
2	B	301	HEM	CAA-CBA-CGA	-2.52	106.97	113.67
2	A	301	HEM	C3B-C2B-C1B	2.39	108.20	106.41
2	B	301	HEM	C2A-C1A-NA	-2.31	107.59	110.15
2	B	301	HEM	CAD-CBD-CGD	-2.26	107.67	113.67
2	A	301	HEM	CHD-C1D-ND	2.20	126.79	124.42
2	B	301	HEM	CHD-C4C-NC	2.13	126.77	124.45
2	B	301	HEM	C3B-C4B-NB	-2.11	107.95	109.47
2	B	301	HEM	C3D-C4D-ND	-2.08	107.89	110.17

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	301	HEM	C4D-ND-C1D	2.03	107.61	105.21

There are no chirality outliers.

All (3) torsion outliers are listed below:

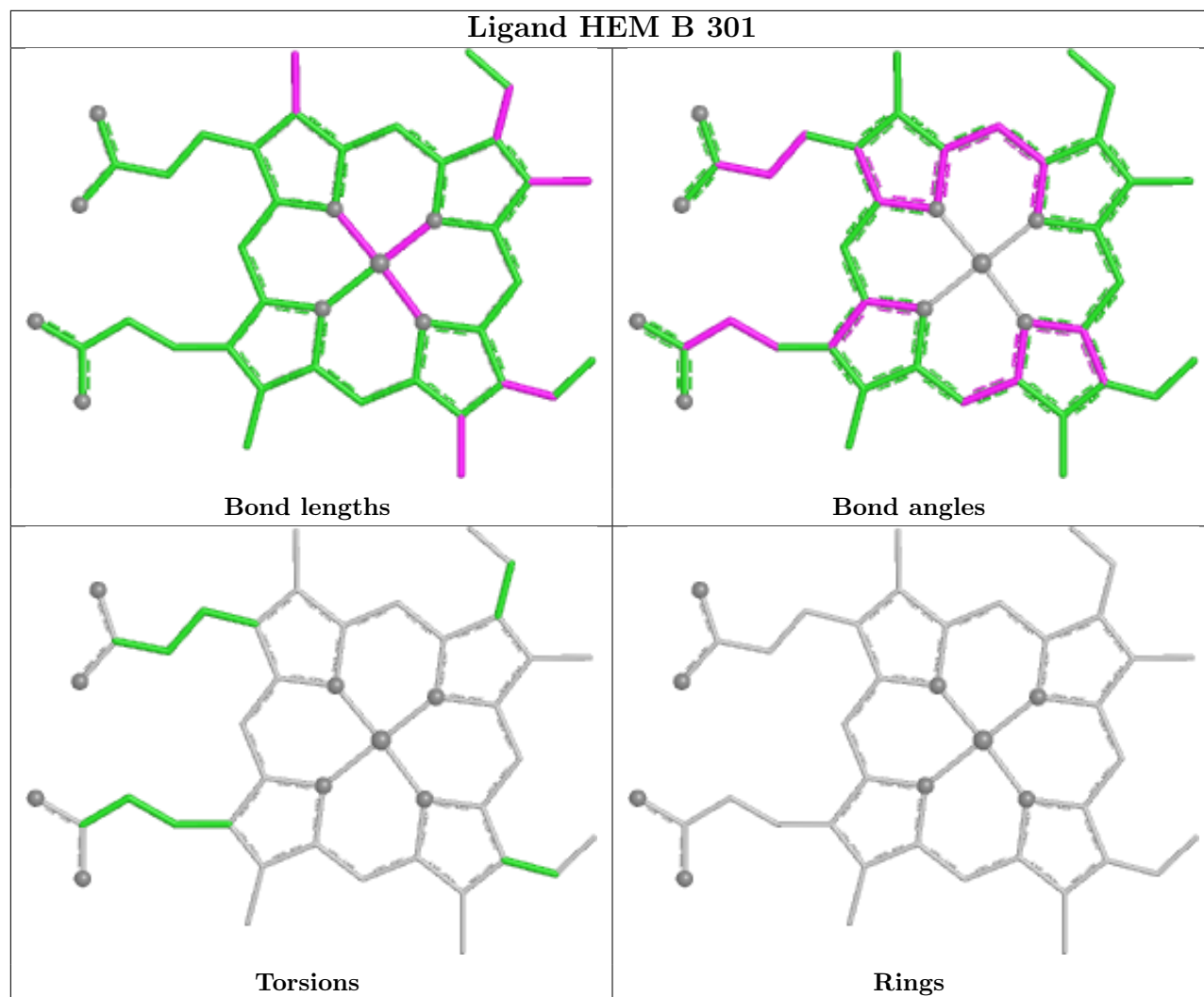
Mol	Chain	Res	Type	Atoms
2	A	301	HEM	CAA-CBA-CGA-O2A
2	A	301	HEM	C4B-C3B-CAB-CBB
2	A	301	HEM	CAA-CBA-CGA-O1A

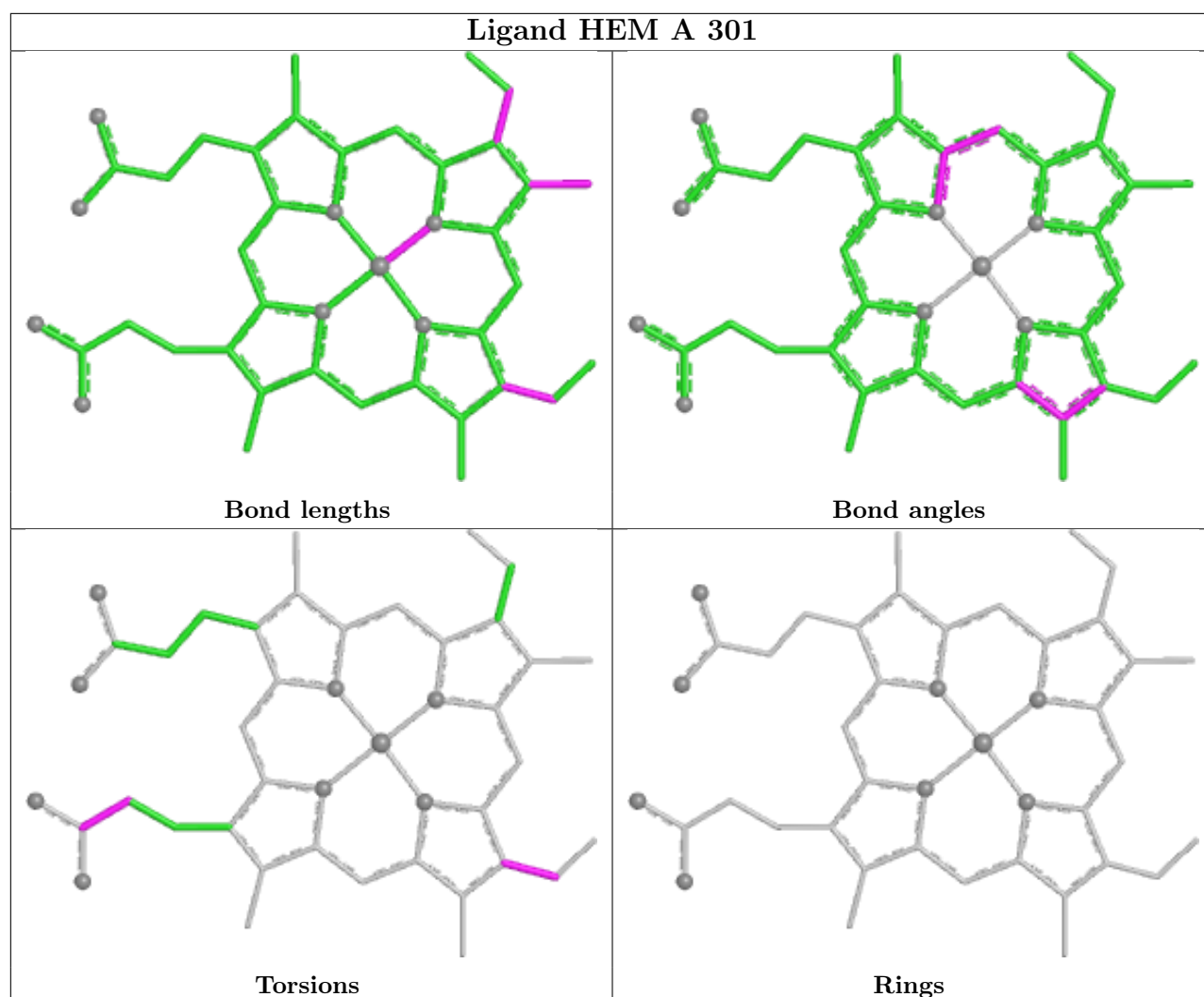
There are no ring outliers.

2 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	301	HEM	4	0
2	A	301	HEM	1	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 [i](#)

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

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	180/200 (90%)	0.22	4 (2%) 62 65	15, 28, 43, 51	7 (3%)
1	B	181/200 (90%)	2.61	118 (65%) 0 0	16, 78, 98, 118	5 (2%)
All	All	361/400 (90%)	1.42	122 (33%) 1 1	15, 39, 95, 118	12 (3%)

All (122) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	177	VAL	7.6
1	B	98	LEU	7.0
1	B	5	ILE	5.8
1	B	32	ALA	5.5
1	B	65	ALA	5.3
1	B	7	TYR	5.3
1	B	175	ALA	5.1
1	B	163	LEU	5.1
1	B	3	ILE	5.0
1	B	38	VAL	5.0
1	B	42	ASN	5.0
1	B	69	ALA	5.0
1	B	66	ALA	5.0
1	B	114	VAL	4.9
1	B	172	LEU	4.9
1	B	23	TRP	4.8
1	B	117	SER	4.8
1	B	30	VAL	4.7
1	B	27	PHE	4.6
1	B	20	LEU	4.6
1	B	40	GLY	4.5
1	B	62	ALA	4.5
1	B	57	ALA	4.5
1	B	6[A]	SER	4.4

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Mol	Chain	Res	Type	RSRZ
1	B	174	ALA	4.3
1	B	93	ALA	4.2
1	B	176	GLY	4.1
1	B	109	LEU	4.1
1	B	43	THR	4.0
1	B	116	PHE	4.0
1	B	165	ILE	4.0
1	B	154	ALA	3.9
1	B	14	TRP	3.9
1	B	94	LEU	3.9
1	B	107	TYR	3.9
1	B	59	LYS	3.8
1	B	19	TYR	3.7
1	B	58	LEU	3.7
1	B	34	PRO	3.7
1	B	67	PHE	3.7
1	B	115	SER	3.6
1	B	10	THR	3.6
1	B	99	THR	3.6
1	B	156	LEU	3.6
1	B	158	ALA	3.6
1	B	148	LEU	3.6
1	A	42	ASN	3.6
1	B	169	PHE	3.5
1	B	68	ILE	3.5
1	B	173	ALA	3.5
1	B	13	GLY	3.5
1	B	100	GLY	3.5
1	B	180	ALA	3.4
1	B	97	THR	3.4
1	B	15	THR	3.4
1	B	183	ALA	3.4
1	B	164	SER	3.3
1	B	11	TYR	3.3
1	B	28	GLY	3.3
1	B	95	GLY	3.2
1	B	29	ASP	3.2
1	B	44	GLY	3.2
1	B	108	ALA	3.2
1	B	12	SER	3.2
1	B	91	SER	3.2
1	B	178	ALA	3.2

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Mol	Chain	Res	Type	RSRZ
1	B	45	GLY	3.2
1	B	139	GLY	3.1
1	B	184	ALA	3.1
1	A	174	ALA	3.0
1	B	37	VAL	3.0
1	B	33	ARG	3.0
1	B	152	ILE	3.0
1	B	22	ASP	3.0
1	B	182	PRO	3.0
1	B	101	GLY	2.9
1	B	181	THR	2.9
1	B	149	GLN	2.9
1	B	143	GLY	2.9
1	B	16	VAL	2.8
1	B	64	ASP	2.8
1	B	159	VAL	2.8
1	B	118	ASN	2.8
1	B	167	SER	2.8
1	B	96	ASP	2.8
1	B	31	ASN	2.7
1	B	2[A]	SER	2.7
1	B	4	SER	2.7
1	B	155	LEU	2.7
1	B	92	ILE	2.7
1	B	147	ALA	2.7
1	B	110	ASP	2.7
1	B	70	GLY	2.6
1	B	168	THR	2.6
1	B	26	TYR	2.6
1	B	131	GLY	2.6
1	B	121	LEU	2.6
1	B	153	ASP	2.5
1	B	25	ALA	2.5
1	B	24	SER	2.5
1	B	41	SER	2.5
1	B	61	THR	2.5
1	B	63	SER	2.5
1	B	171	GLN	2.4
1	B	89	LEU	2.4
1	B	60	SER	2.4
1	B	17	ALA	2.4
1	B	119	LEU	2.3

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Mol	Chain	Res	Type	RSRZ
1	B	105	GLY	2.3
1	B	111[A]	SER	2.3
1	B	162	SER	2.3
1	B	179	HIS	2.3
1	B	102	ALA	2.2
1	B	132	THR	2.2
1	B	104	SER	2.1
1	A	81	PRO	2.1
1	B	141	MET	2.1
1	B	35	GLY	2.1
1	B	39	ASP	2.0
1	B	56	TYR	2.0
1	A	162	SER	2.0
1	B	142	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](#)

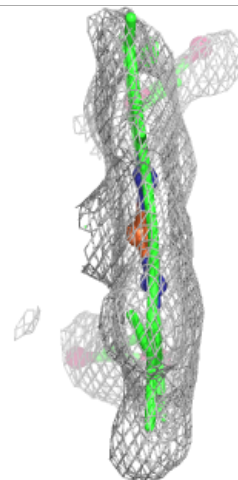
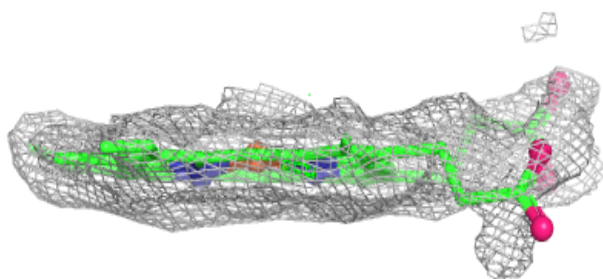
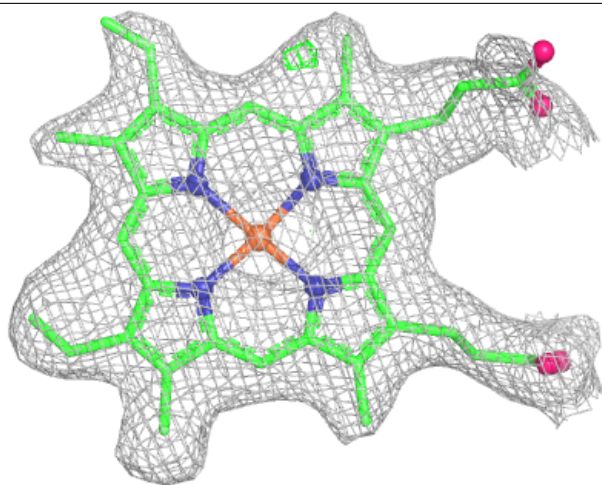
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

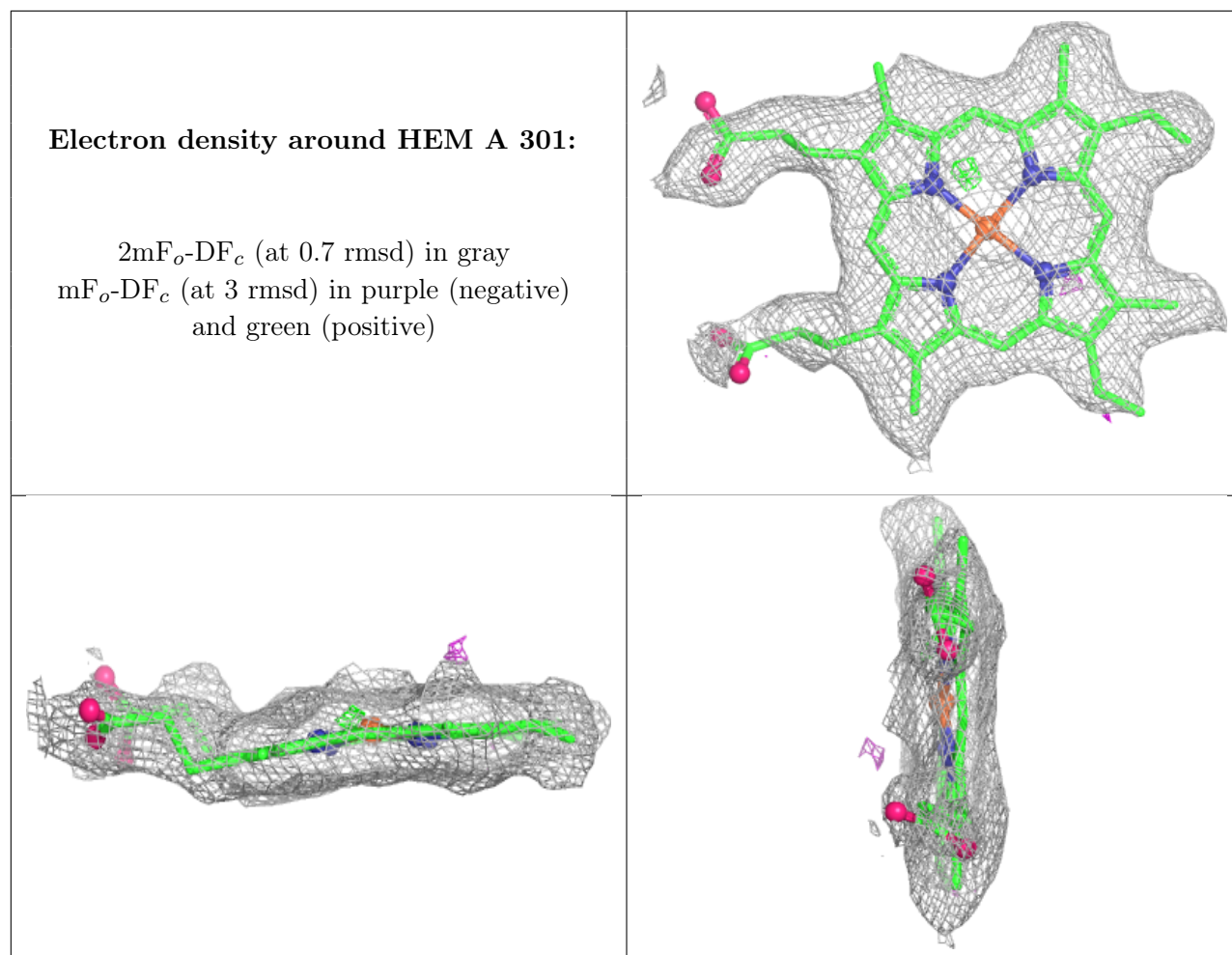
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
2	HEM	B	301	43/43	0.94	0.10	25,36,61,79	0
2	HEM	A	301	43/43	0.95	0.10	22,33,69,77	0

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 HEM B 301:

$2mF_o-DF_c$ (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.