



Full wwPDB X-ray Structure Validation Report ⓘ

Aug 28, 2017 – 04:17 PM EDT

PDB ID : 5VUQ
Title : Structure of rat neuronal nitric oxide synthase heme domain in complex with
4-(2-(((2-Aminoquinolin-7-yl)methyl)amino)ethyl)benzonitrile
Authors : Li, H.; Poulos, T.L.
Deposited on : unknown
Resolution : 2.00 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

<http://wwpdb.org/validation/2016/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467
Mogul : 1.7.2 (RC1), CSD as538be (2017)
Xtriage (Phenix) : 1.9-1692
EDS : rb-20029824
Percentile statistics : 20161228.v01 (using entries in the PDB archive December 28th 2016)
Refmac : 5.8.0135
CCP4 : 6.5.0
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : rb-20029824

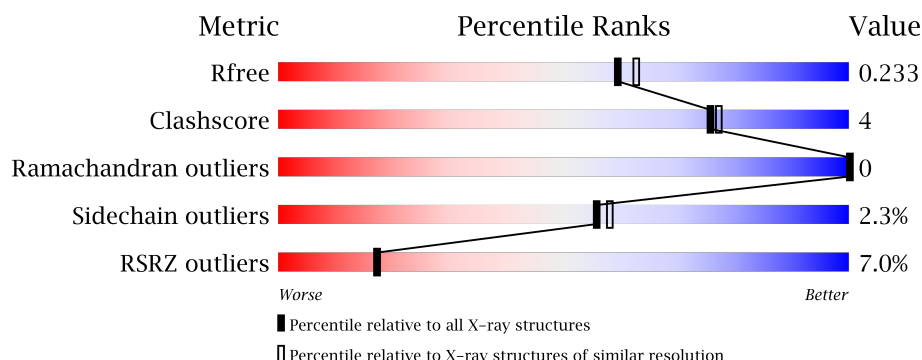
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.00 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}	100719	6609 (2.00-2.00)
Clashscore	112137	7775 (2.00-2.00)
Ramachandran outliers	110173	7679 (2.00-2.00)
Sidechain outliers	110143	7678 (2.00-2.00)
RSRZ outliers	101464	6696 (2.00-2.00)

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 on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. 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	422	<div> <div>10%</div> <div>84%</div> <div>12%</div> <div>•</div> </div>
1	B	422	<div> <div>3%</div> <div>89%</div> <div>7%</div> <div>••</div> </div>

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
5	ACT	B	804	-	-	-	X

2 Entry composition [i](#)

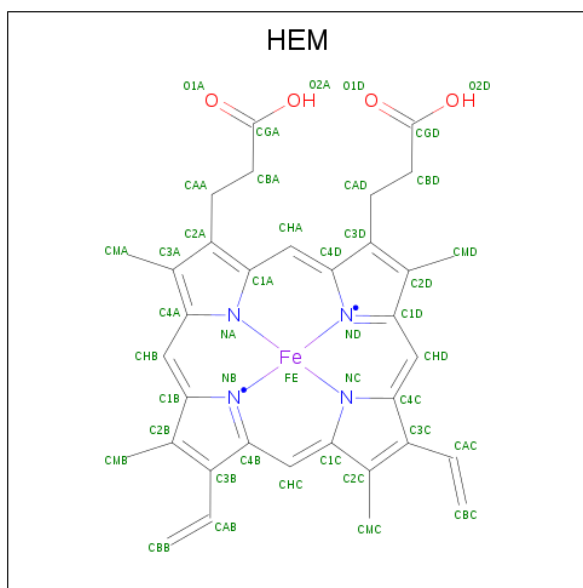
There are 7 unique types of molecules in this entry. The entry contains 7218 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Nitric oxide synthase, brain.

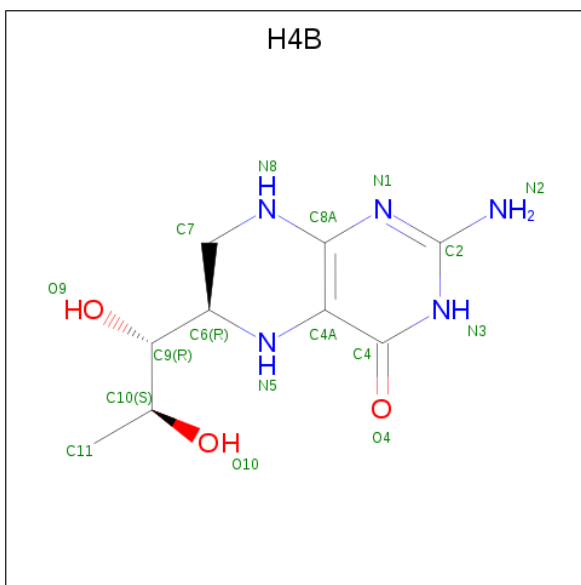
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	407	Total	C	N	O	S	0	3	0
			3322	2127	566	607	22			
1	B	411	Total	C	N	O	S	0	3	0
			3357	2148	574	614	21			

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



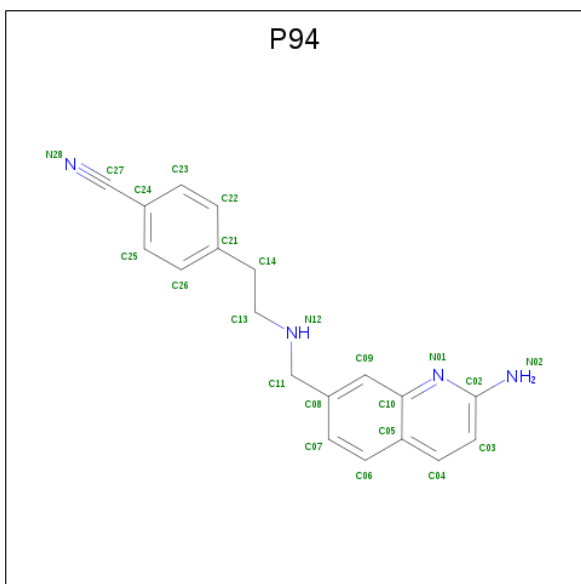
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		
2	B	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		

- Molecule 3 is 5,6,7,8-TETRAHYDROBIOPTERIN (three-letter code: H4B) (formula: $C_9H_{15}N_5O_3$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total 17	C 9	N 5	O 3	0	0
3	B	1	Total 17	C 9	N 5	O 3	0	0

- Molecule 4 is 4-(2-[(2-aminoquinolin-7-yl)methyl]amino)ethylbenzonitrile (three-letter code: P94) (formula: C₁₉H₁₈N₄).



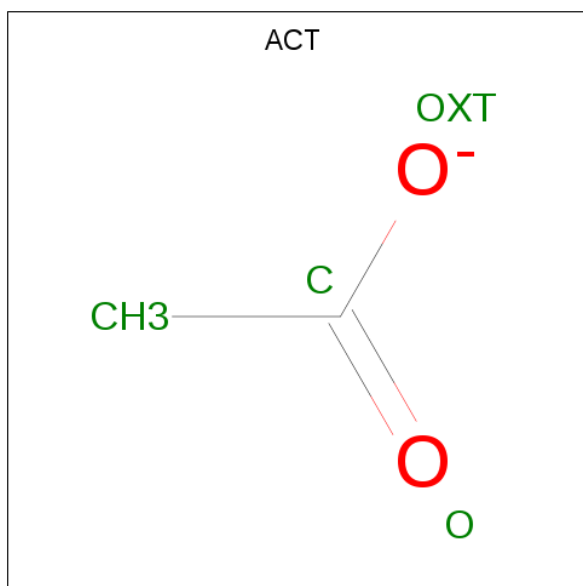
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total	C	N	0	0
			23	19	4		

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	B	1	Total	C	N	0	0
			23	19	4		

- Molecule 5 is ACETATE ION (three-letter code: ACT) (formula: $C_2H_3O_2$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total	C	O	0	0
			4	2	2		
5	B	1	Total	C	O	0	0
			4	2	2		

- Molecule 6 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	1	Total	Zn	0	0
			1	1		

- Molecule 7 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	147	Total	O	0	0
			147	147		
7	B	217	Total	O	0	0
			217	217		

4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	51.87Å 110.70Å 165.17Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	39.03 – 2.00 39.03 – 2.00	Depositor EDS
% Data completeness (in resolution range)	96.4 (39.03-2.00) 99.0 (39.03-2.00)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	0.12	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.33 (at 2.00Å)	Xtriage
Refinement program	PHENIX 1.8.2_1309	Depositor
R, R_{free}	0.195 , 0.238 0.189 , 0.233	Depositor DCC
R_{free} test set	3175 reflections (4.94%)	DCC
Wilson B-factor (Å ²)	31.4	Xtriage
Anisotropy	0.638	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.36 , 56.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	7218	wwPDB-VP
Average B, all atoms (Å ²)	48.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.56% 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: HEM, ZN, P94, H4B, ACT

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	0.40	0/3421	0.51	0/4641
1	B	0.41	0/3459	0.51	0/4689
All	All	0.40	0/6880	0.51	0/9330

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3322	0	3232	28	0
1	B	3357	0	3275	18	0
2	A	43	0	30	2	0
2	B	43	0	30	3	0
3	A	17	0	15	0	0
3	B	17	0	15	0	0
4	A	23	0	0	1	0
4	B	23	0	0	1	0
5	A	4	0	3	0	0
5	B	4	0	3	0	0
6	A	1	0	0	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
7	A	147	0	0	0	0
7	B	217	0	0	2	0
All	All	7218	0	6603	49	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 4.

All (49) 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:523:LEU:HD22	1:A:531:PRO:HB2	1.59	0.81
1:B:322:LEU:HB3	1:B:699:ARG:HH11	1.50	0.76
2:A:801:HEM:HHC	2:A:801:HEM:HBB2	1.74	0.70
1:A:369:ILE:HG13	1:A:371:ARG:HG3	1.78	0.65
1:A:567:VAL:HG21	4:A:803:P94:C07	2.27	0.65
2:A:801:HEM:HMC2	2:A:801:HEM:HBC2	1.80	0.64
1:B:567:VAL:HG21	4:B:803:P94:C07	2.29	0.63
1:B:706:TYR:OH	2:B:801:HEM:O1D	2.14	0.62
1:A:632:GLU:OE2	1:B:628:GLN:NE2	2.35	0.59
2:B:801:HEM:HBB2	2:B:801:HEM:HHC	1.85	0.59
2:B:801:HEM:HBC2	2:B:801:HEM:HMC2	1.85	0.57
1:A:475:TRP:HB2	1:A:523:LEU:HB3	1.88	0.56
1:B:440:ASN:ND2	7:B:902:HOH:O	2.40	0.54
1:A:350:THR:N	1:A:353:GLN:OE1	2.41	0.53
1:B:436:HIS:HD2	7:B:1056:HOH:O	1.91	0.53
1:A:478:GLN:HB2	1:A:481:ARG:HG3	1.90	0.52
1:B:312:LEU:HB3	1:B:666:TYR:CD2	2.47	0.50
1:A:455:LEU:HD12	1:A:587:TRP:HB3	1.95	0.49
1:A:359:LYS:HG3	1:A:381:LEU:HD11	1.96	0.48
1:A:525:GLN:HG3	1:A:529:ASN:O	2.15	0.47
1:A:465:ARG:NH2	1:A:471:ASP:OD2	2.48	0.46
1:A:593:ILE:HA	1:A:597:ASP:HB2	1.98	0.46
1:A:480:ILE:HD13	1:A:541:VAL:HG13	1.98	0.46
1:A:485:TYR:CE1	1:A:514:ARG:HA	2.51	0.45
1:B:487:GLN:OE1	1:B:514:ARG:NH2	2.49	0.45
1:B:525:GLN:HG3	1:B:529:ASN:O	2.17	0.44
1:A:645:LYS:HB2	1:A:645:LYS:HE3	1.81	0.44
1:A:360:GLU:O	1:A:364:GLN:HG2	2.19	0.43
1:B:322:LEU:HB3	1:B:699:ARG:NH1	2.24	0.43
1:A:676:TRP:CE2	1:A:680:VAL:HG21	2.54	0.43
1:A:620:LYS:HB2	1:A:620:LYS:NZ	2.34	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:403:TYR:CE1	1:B:407:HIS:CE1	3.07	0.43
1:B:409:TRP:CE3	1:B:421:TRP:HA	2.54	0.43
1:A:512:ALA:HA	1:A:513:PRO:HD3	1.92	0.42
1:A:475:TRP:CZ2	1:A:531:PRO:HG3	2.55	0.42
1:A:403:TYR:CE1	1:A:407:HIS:CE1	3.07	0.42
1:A:361:PHE:O	1:A:364:GLN:HG3	2.19	0.42
1:A:537:PRO:HA	1:A:538:PRO:HD3	1.86	0.42
1:A:674:ALA:HB3	1:A:695:MET:HB3	2.02	0.42
1:B:388:ILE:O	1:B:392:SER:N	2.51	0.42
1:B:595:VAL:O	1:B:599:CYS:HB2	2.21	0.41
1:A:542:LEU:HD21	1:A:646:VAL:HG22	2.03	0.41
1:A:494:GLY:O	1:A:496:PRO:HD3	2.20	0.41
1:A:482:TYR:HA	1:A:518:ASP:O	2.21	0.41
1:B:478:GLN:HB2	1:B:481:ARG:HG3	2.03	0.41
1:A:609:GLU:O	1:A:613:LYS:HG2	2.21	0.40
1:B:414:ARG:HD3	1:B:678:TRP:CD2	2.56	0.40
1:B:510:TRP:CE2	1:B:521:PRO:HD3	2.56	0.40
1:B:607:LEU:HA	1:B:607:LEU:HD23	1.95	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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	405/422 (96%)	393 (97%)	12 (3%)	0	100	100
1	B	410/422 (97%)	401 (98%)	9 (2%)	0	100	100
All	All	815/844 (97%)	794 (97%)	21 (3%)	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	365/377 (97%)	357 (98%)	8 (2%)	57	60
1	B	369/377 (98%)	360 (98%)	9 (2%)	54	56
All	All	734/754 (97%)	717 (98%)	17 (2%)	56	58

All (17) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	523	LEU
1	A	547	ARG
1	A	552	ASP
1	A	555	LYS
1	A	612	LYS
1	A	645	LYS
1	A	713	THR
1	A	715	VAL
1	B	321	THR
1	B	353	GLN
1	B	392	SER
1	B	423	LYS
1	B	481	ARG
1	B	516	ARG
1	B	540	LEU
1	B	547	ARG
1	B	699	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

5.3.3 RNA ⓘ

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 carbohydrates in this entry.

5.6 Ligand geometry [i](#)

Of 9 ligands modelled in this entry, 1 is monoatomic - leaving 8 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	$\# Z > 2$
2	HEM	A	801	1	28,50,50	2.19	7 (25%)	17,82,82	2.24	4 (23%)
3	H4B	A	802	-	14,18,18	0.89	0	12,26,26	2.47	4 (33%)
4	P94	A	803	-	25,25,25	1.58	2 (8%)	31,33,33	1.19	5 (16%)
5	ACT	A	804	-	1,3,3	1.59	0	0,3,3	0.00	-
2	HEM	B	801	1	28,50,50	2.20	8 (28%)	17,82,82	1.83	3 (17%)
3	H4B	B	802	-	14,18,18	0.98	0	12,26,26	2.53	5 (41%)
4	P94	B	803	-	25,25,25	1.56	2 (8%)	31,33,33	1.16	2 (6%)
5	ACT	B	804	-	1,3,3	1.26	0	0,3,3	0.00	-

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	A	801	1	-	0/6/54/54	0/0/8/8
3	H4B	A	802	-	-	0/8/17/17	0/2/2/2
4	P94	A	803	-	-	0/9/9/9	0/3/3/3
5	ACT	A	804	-	-	0/0/0/0	0/0/0/0
2	HEM	B	801	1	-	0/6/54/54	0/0/8/8
3	H4B	B	802	-	-	0/8/17/17	0/2/2/2

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	P94	B	803	-	-	0/9/9/9	0/3/3/3
5	ACT	B	804	-	-	0/0/0/0	0/0/0/0

All (19) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	A	803	P94	C24-C27	-6.45	1.29	1.44
4	B	803	P94	C24-C27	-6.28	1.29	1.44
2	A	801	HEM	C3B-C2B	-4.67	1.34	1.40
2	B	801	HEM	C3B-C2B	-4.29	1.34	1.40
2	A	801	HEM	C3C-C2C	-3.81	1.35	1.40
2	B	801	HEM	C3C-C2C	-3.66	1.35	1.40
2	A	801	HEM	C1D-ND	2.03	1.40	1.36
4	B	803	P94	C06-C07	2.08	1.41	1.36
2	B	801	HEM	CMD-C2D	2.13	1.56	1.51
2	B	801	HEM	C1B-NB	2.33	1.39	1.36
4	A	803	P94	C02-N01	2.52	1.36	1.33
2	B	801	HEM	C4D-ND	2.87	1.40	1.36
2	A	801	HEM	C4D-ND	3.42	1.40	1.36
2	A	801	HEM	C3C-CAC	3.59	1.54	1.47
2	A	801	HEM	C3B-CAB	3.64	1.55	1.47
2	B	801	HEM	C3B-CAB	3.74	1.55	1.47
2	B	801	HEM	C3C-CAC	3.98	1.55	1.47
2	B	801	HEM	C3D-C2D	5.20	1.53	1.37
2	A	801	HEM	C3D-C2D	5.27	1.53	1.37

All (23) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	801	HEM	CBD-CAD-C3D	-5.27	102.41	112.47
2	A	801	HEM	CBA-CAA-C2A	-5.02	102.89	112.48
2	B	801	HEM	CBA-CAA-C2A	-3.91	105.00	112.48
2	B	801	HEM	CBD-CAD-C3D	-3.50	105.79	112.47
3	A	802	H4B	N3-C2-N1	-3.27	120.15	125.45
4	B	803	P94	C03-C02-N01	-3.18	119.01	122.25
2	A	801	HEM	C1D-C2D-C3D	-3.01	104.90	107.00
2	B	801	HEM	C1D-C2D-C3D	-2.97	104.93	107.00
3	B	802	H4B	N3-C2-N1	-2.60	121.23	125.45
4	A	803	P94	C11-C08-C09	-2.45	117.90	121.69
2	A	801	HEM	CAD-CBD-CGD	-2.41	108.55	112.66
4	A	803	P94	C13-C14-C21	-2.31	107.96	112.81
4	B	803	P94	C11-C08-C09	-2.29	118.15	121.69

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	803	P94	C11-N12-C13	-2.12	105.84	113.41
3	B	802	H4B	C6-C7-N8	-2.09	107.69	111.01
4	A	803	P94	C03-C02-N01	-2.06	120.15	122.25
3	B	802	H4B	C2-N1-C8A	2.28	119.65	114.51
4	A	803	P94	N02-C02-N01	2.29	119.48	118.06
3	A	802	H4B	C2-N1-C8A	2.93	121.11	114.51
3	B	802	H4B	C4-N3-C2	3.26	120.75	116.06
3	A	802	H4B	C4-N3-C2	3.40	120.95	116.06
3	A	802	H4B	C4-C4A-C8A	5.49	119.54	114.56
3	B	802	H4B	C4-C4A-C8A	6.31	120.28	114.56

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

4 monomers are involved in 7 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	801	HEM	2	0
4	A	803	P94	1	0
2	B	801	HEM	3	0
4	B	803	P94	1	0

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	407/422 (96%)	0.45	44 (10%) 6 7	22, 50, 92, 133	1 (0%)
1	B	411/422 (97%)	-0.02	13 (3%) 48 48	25, 40, 72, 106	0
All	All	818/844 (96%)	0.21	57 (6%) 17 17	22, 44, 87, 133	1 (0%)

All (57) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	715	VAL	6.3
1	A	716	TRP	5.7
1	B	300	PHE	5.3
1	A	713	THR	4.6
1	B	620	LYS	4.5
1	B	348	VAL	4.4
1	A	488	PRO	4.2
1	A	351	LYS	4.1
1	A	352	ASP	4.1
1	A	489	ASP	4.0
1	B	619	ARG	4.0
1	A	507	GLN	3.8
1	A	551	PHE	3.8
1	A	712	ASN	3.7
1	A	355	PHE	3.7
1	A	619	ARG	3.5
1	A	300	PHE	3.5
1	B	616	LEU	3.4
1	B	352	ASP	3.3
1	B	321	THR	3.2
1	A	392	SER	3.1
1	A	388	ILE	3.1
1	A	490	GLY	3.0
1	A	391	THR	3.0

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	A	470	HIS	2.9
1	B	718	GLY	2.9
1	A	678	TRP	2.9
1	A	506	ILE	2.9
1	A	677	VAL	2.8
1	A	486	LYS	2.8
1	A	322	LEU	2.8
1	A	389	GLU	2.7
1	A	390	SER	2.7
1	A	487	GLN	2.7
1	B	350	THR	2.7
1	B	677	VAL	2.7
1	A	679	ILE	2.6
1	A	299	ARG	2.6
1	A	469	LYS	2.6
1	A	714	HIS	2.6
1	A	385	ASN	2.5
1	A	711	TRP	2.4
1	A	393	THR	2.4
1	A	593	ILE	2.3
1	A	321	THR	2.3
1	A	350	THR	2.3
1	A	503	GLU	2.3
1	A	552	ASP	2.2
1	A	415	CYS	2.2
1	B	302	LYS	2.2
1	A	508	GLN	2.1
1	A	681	PRO	2.1
1	B	667	ARG	2.1
1	B	678	TRP	2.1
1	A	682	PRO	2.0
1	A	467	ASP	2.0
1	A	491	SER	2.0

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

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

6.3 Carbohydrates ⓘ

There are no carbohydrates 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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. 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	LLDF	B-factors(Å ²)	Q<0.9
5	ACT	B	804	4/4	0.96	0.15	2.56	51,53,55,57	0
5	ACT	A	804	4/4	0.89	0.17	1.68	49,52,52,54	0
4	P94	A	803	23/23	0.91	0.24	1.47	21,33,81,86	0
2	HEM	B	801	43/43	0.97	0.17	1.43	16,30,39,45	0
4	P94	B	803	23/23	0.94	0.19	1.43	21,31,80,81	0
2	HEM	A	801	43/43	0.97	0.18	0.81	23,31,48,53	0
3	H4B	B	802	17/17	0.95	0.18	0.52	26,29,38,39	0
3	H4B	A	802	17/17	0.96	0.17	0.33	20,32,39,39	0
6	ZN	A	805	1/1	0.99	0.08	-1.02	39,39,39,39	0

6.5 Other polymers [i](#)

There are no such residues in this entry.