



Full wwPDB X-ray Structure Validation Report ⓘ

Jun 2, 2016 – 02:24 PM EDT

PDB ID : 5FVX
Title : Structure of human nNOS R354A G357D mutant heme domain in complex with with 6-(2-(5-(3-(DIMETHYLAMINO)PROPYL) PYRIDIN-3-YL)ETHYL)-4-METHYLPYRIDIN-2-AMINE
Authors : Li, H.; Poulos, T.L.
Deposited on : 2016-02-10
Resolution : 2.30 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.

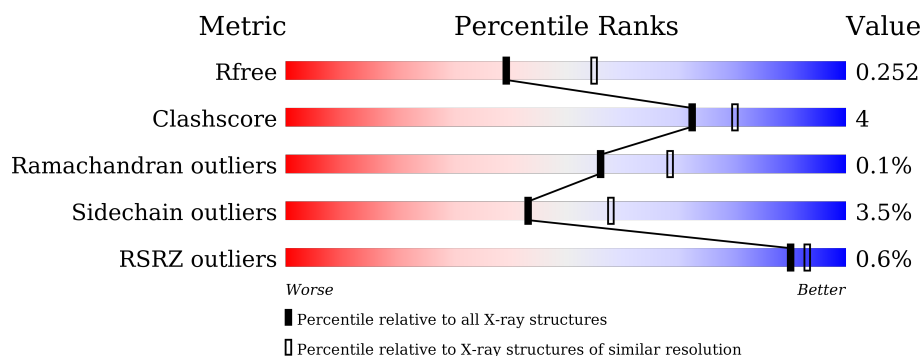
The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.7.1 (RC1), CSD as537be (2016)
Xtriage (Phenix) : 1.9-1692
EDS : rb-20027674
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)
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-20027674

i

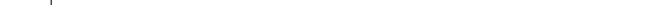
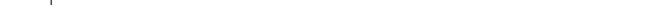
X-RAY DIFFRACTION

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}	91344	3852 (2.30-2.30)
Clashscore	102246	4452 (2.30-2.30)
Ramachandran outliers	100387	4410 (2.30-2.30)
Sidechain outliers	100360	4409 (2.30-2.30)
RSRZ outliers	91569	3857 (2.30-2.30)

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	421	 90%7% ..
1	B	421	 %81%15% ..

2 Entry composition [i](#)

There are 6 unique types of molecules in this entry. The entry contains 7159 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.

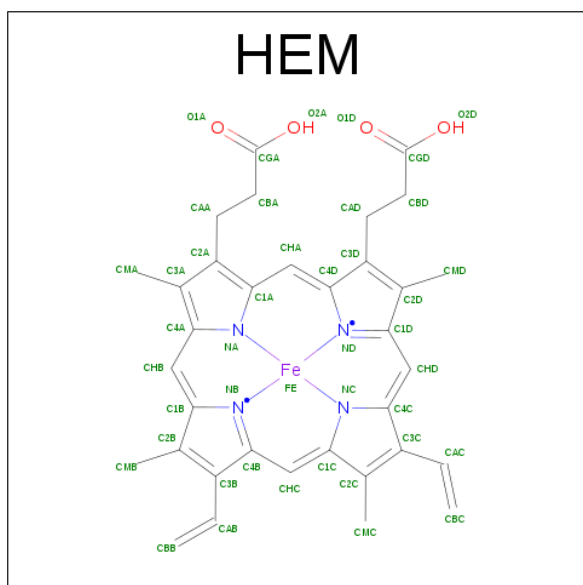
- Molecule 1 is a protein called NITRIC OXIDE SYNTHASE, BRAIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	413	Total	C	N	O	S	0	2	0
			3371	2159	574	616	22			
1	B	410	Total	C	N	O	S	0	2	1
			3340	2139	570	610	21			

There are 4 discrepancies between the modelled and reference sequences:

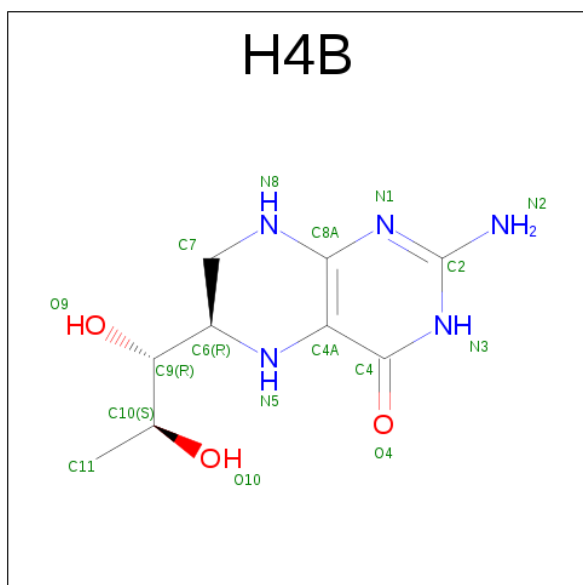
Chain	Residue	Modelled	Actual	Comment	Reference
A	354	ALA	ARG	ENGINEERED MUTATION	UNP P29475
A	357	ASP	GLY	ENGINEERED MUTATION	UNP P29475
B	354	ALA	ARG	ENGINEERED MUTATION	UNP P29475
B	357	ASP	GLY	ENGINEERED MUTATION	UNP P29475

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



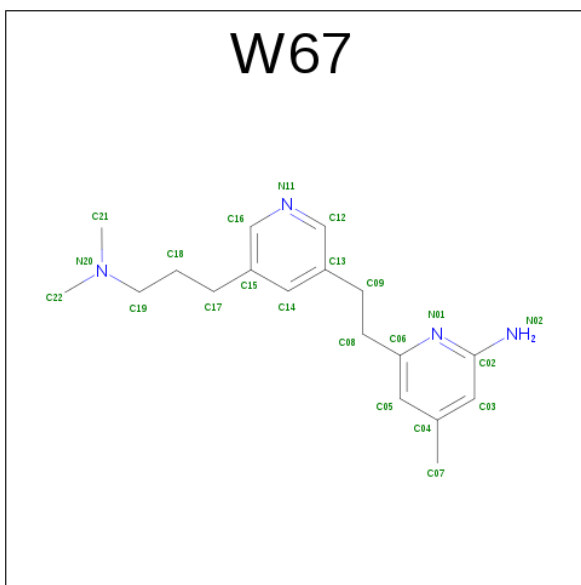
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total 43	C 34	Fe 1	N 4	O 4	0	0
2	B	1	Total 43	C 34	Fe 1	N 4	O 4	0	0

- 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	C	N	O	0	0
			17	9	5	3		
3	B	1	Total	C	N	O	0	0
			17	9	5	3		

- Molecule 4 is 6-(2-(5-(3-(DIMETHYLAMINO)PROPYL)PYRIDIN-3-YL)ETHYL)-4-METHYLPYRIDIN-2-AMINE (three-letter code: W67) (formula: $C_{18}H_{26}N_4$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total	C	N	0	0
			22	18	4		
4	B	1	Total	C	N	0	0
			22	18	4		

- Molecule 5 is ZINC ION (three-letter code: ZN) (formula: Zn).

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

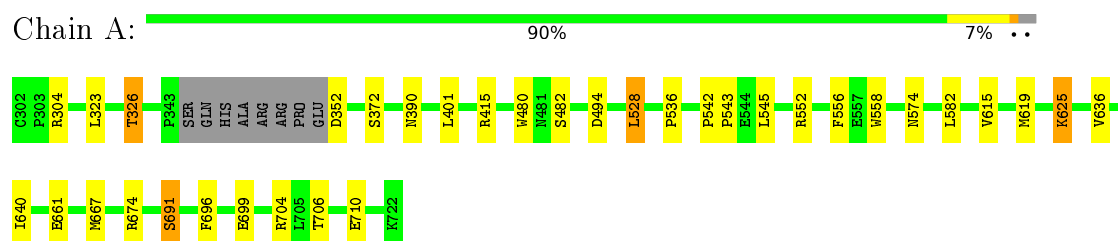
- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	176	Total	O	0	0
			176	176		
6	B	107	Total	O	0	0
			107	107		

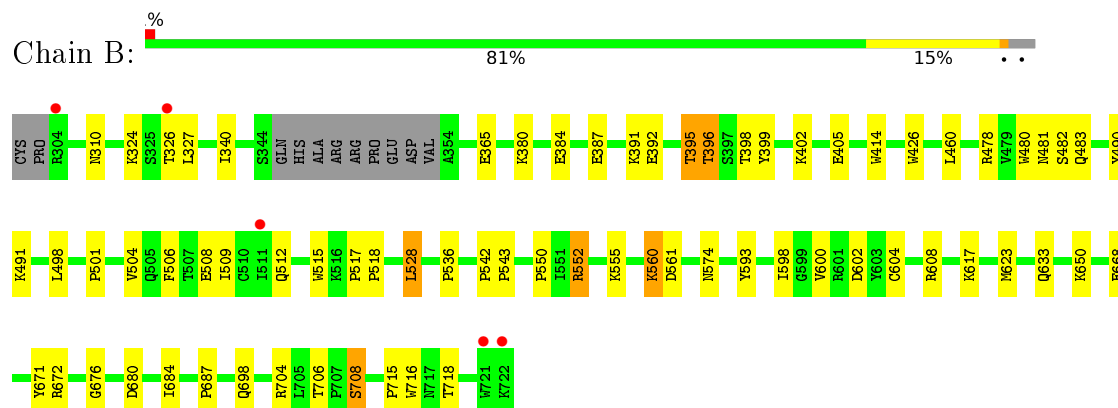
3 Residue-property plots

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors 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: NITRIC OXIDE SYNTHASE, BRAIN



• Molecule 1: NITRIC OXIDE SYNTHASE, BRAIN



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	52.49Å 122.11Å 164.07Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	82.03 – 2.30 82.03 – 2.30	Depositor EDS
% Data completeness (in resolution range)	95.4 (82.03-2.30) 95.1 (82.03-2.30)	Depositor EDS
R_{merge}	0.36	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.37 (at 2.29Å)	Xtriage
Refinement program	PHENIX (PHENIX.REFINE)	Depositor
R, R_{free}	0.199 , 0.259 0.190 , 0.252	Depositor DCC
R_{free} test set	2234 reflections (4.92%)	DCC
Wilson B-factor (Å ²)	33.9	Xtriage
Anisotropy	0.826	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 43.0	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	7159	wwPDB-VP
Average B, all atoms (Å ²)	51.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.17% 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, 0.375 respectively for untwinned datasets, and 0.333, 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, H4B, W67

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	0/3473	0.53	0/4712
1	B	0.37	0/3441	0.52	0/4670
All	All	0.38	0/6914	0.53	0/9382

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	3371	0	3282	21	0
1	B	3340	0	3249	34	0
2	A	43	0	30	2	0
2	B	43	0	30	2	0
3	A	17	0	15	0	0
3	B	17	0	15	1	0
4	A	22	0	0	0	0
4	B	22	0	0	0	0
5	A	1	0	0	0	0
6	A	176	0	0	2	0
6	B	107	0	0	1	0
All	All	7159	0	6621	57	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 (57) 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:528:LEU:HD22	1:B:536:PRO:HB2	1.66	0.77
1:B:380:LYS:NZ	1:B:384:GLU:OE2	2.22	0.73
1:B:482:SER:HA	1:B:574:ASN:HB3	1.72	0.71
1:A:390:ASN:ND2	6:A:2018:HOH:O	2.25	0.70
1:A:528:LEU:HD22	1:A:536:PRO:HB2	1.74	0.70
1:A:482:SER:HA	1:A:574:ASN:HB3	1.77	0.66
1:B:490:TYR:HB2	1:B:498:LEU:HB3	1.79	0.65
1:A:326:THR:HG21	1:A:706:THR:HG22	1.79	0.64
2:B:750:HEM:HHC	2:B:750:HEM:HBB2	1.81	0.62
1:A:480:TRP:HB2	1:A:528:LEU:HB3	1.82	0.59
2:A:750:HEM:HMC2	2:A:750:HEM:HBC2	1.85	0.58
1:B:392:GLU:O	1:B:396:THR:OG1	2.25	0.54
1:A:691:SER:HB3	1:B:687:PRO:HB2	1.92	0.52
1:B:478:ARG:NH2	1:B:715:PRO:HD3	2.24	0.52
2:A:750:HEM:HBB2	2:A:750:HEM:HHC	1.93	0.51
1:A:636:VAL:HG11	1:B:633:GLN:HG3	1.93	0.50
1:B:501:PRO:HA	1:B:504:VAL:HG23	1.93	0.50
1:B:327:LEU:HB2	1:B:704:ARG:HG2	1.92	0.49
1:B:480:TRP:HB2	1:B:528:LEU:HB3	1.93	0.49
1:B:310:ASN:HB2	1:B:698:GLN:OE1	2.14	0.48
1:B:480:TRP:CE2	1:B:715:PRO:HB2	2.48	0.48
1:A:704:ARG:NH2	1:A:710:GLU:OE1	2.46	0.48
1:B:506:PHE:HA	1:B:509:ILE:HD12	1.96	0.47
1:B:391:LYS:O	1:B:395:THR:OG1	2.30	0.47
1:B:504:VAL:O	1:B:508:GLU:HG3	2.14	0.46
1:B:402:LYS:HB2	1:B:405:GLU:HG3	1.97	0.46
1:B:414:TRP:CE3	1:B:426:TRP:HA	2.51	0.46
1:A:625:LYS:HB2	1:A:625:LYS:HE3	1.77	0.46
1:A:699:GLU:HB3	1:B:340:ILE:HD13	1.99	0.45
1:B:680:ASP:O	1:B:684:ILE:HG12	2.17	0.45
1:B:708:SER:HB3	6:B:2024:HOH:O	2.16	0.45
1:A:542:PRO:HA	1:A:543:PRO:HD3	1.88	0.44
1:A:542:PRO:HD2	1:A:545:LEU:HD12	1.98	0.44
1:B:560:LYS:HG3	1:B:561:ASP:N	2.32	0.44
1:B:550:PRO:HG2	1:B:552:ARG:NH1	2.33	0.44
1:A:556:PHE:HB3	1:A:558:TRP:CE2	2.53	0.44
1:B:481:ASN:HB3	1:B:483:GLN:O	2.17	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:600:VAL:O	1:B:604:CYS:HB2	2.19	0.43
1:B:515:TRP:CZ3	1:B:517:PRO:HB3	2.54	0.43
1:A:415:ARG:CZ	1:A:674:ARG:HD2	2.48	0.43
1:B:398:THR:OG1	1:B:399:TYR:N	2.51	0.43
1:B:593:TYR:CD2	1:B:598:ILE:HD11	2.54	0.42
1:B:517:PRO:HA	1:B:518:PRO:HD3	1.90	0.42
1:A:615:VAL:O	1:A:619:MET:HG3	2.19	0.42
1:A:661:GLU:HB2	6:A:2152:HOH:O	2.20	0.42
1:A:401:LEU:HG	1:A:582:LEU:HD12	2.02	0.42
1:A:667:MET:HB3	1:A:667:MET:HE2	1.73	0.42
1:B:602:ASP:HA	1:B:608:ARG:NH1	2.35	0.41
1:A:636:VAL:O	1:A:640:ILE:HG13	2.20	0.41
1:B:542:PRO:HA	1:B:543:PRO:HD3	1.98	0.41
1:B:623:MET:HB3	1:B:623:MET:HE2	1.83	0.41
1:B:671:TYR:CE2	1:B:676:GLY:HA2	2.56	0.41
1:B:668:GLU:HB3	1:B:672:ARG:NH2	2.35	0.41
3:B:760:H4B:H71	3:B:760:H4B:H10	1.86	0.41
1:A:304:ARG:HG3	1:A:323:LEU:HD11	2.01	0.41
2:B:750:HEM:HMC1	2:B:750:HEM:HBC2	2.03	0.41
1:A:691:SER:HA	1:A:696:PHE:CG	2.56	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	411/421 (98%)	399 (97%)	12 (3%)	0	100	100
1	B	408/421 (97%)	391 (96%)	16 (4%)	1 (0%)	52	64
All	All	819/842 (97%)	790 (96%)	28 (3%)	1 (0%)	56	68

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	716	TRP

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	371/376 (99%)	363 (98%)	8 (2%)	60	77
1	B	367/376 (98%)	349 (95%)	18 (5%)	31	41
All	All	738/752 (98%)	712 (96%)	26 (4%)	43	58

All (26) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	326	THR
1	A	352	ASP
1	A	372	SER
1	A	494	ASP
1	A	528	LEU
1	A	552	ARG
1	A	625	LYS
1	A	691	SER
1	B	324	LYS
1	B	326	THR
1	B	365	GLU
1	B	387	GLU
1	B	395	THR
1	B	396	THR
1	B	460	LEU
1	B	491	LYS
1	B	512	GLN
1	B	528	LEU
1	B	552	ARG
1	B	555	LYS
1	B	560	LYS
1	B	617	LYS
1	B	650	LYS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B	706	THR
1	B	708	SER
1	B	718	THR

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

Mol	Chain	Res	Type
1	B	513	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 carbohydrates in this entry.

5.6 Ligand geometry [i](#)

Of 7 ligands modelled in this entry, 1 is monoatomic - leaving 6 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	750	1	24,50,50	2.14	6 (25%)	16,82,82	2.01	3 (18%)
3	H4B	A	760	-	15,18,18	0.84	0	12,26,26	2.63	6 (50%)
4	W67	A	800	-	23,23,23	0.43	0	30,30,30	2.15	9 (30%)
2	HEM	B	750	1	24,50,50	2.28	6 (25%)	16,82,82	1.91	2 (12%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	H4B	B	760	-	15,18,18	0.75	0	12,26,26	2.49	5 (41%)
4	W67	B	800	-	23,23,23	0.38	0	30,30,30	2.10	9 (30%)

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	750	1	-	0/6/54/54	0/0/8/8
3	H4B	A	760	-	-	0/8/17/17	0/2/2/2
4	W67	A	800	-	-	0/11/11/11	0/2/2/2
2	HEM	B	750	1	-	0/6/54/54	0/0/8/8
3	H4B	B	760	-	-	0/8/17/17	0/2/2/2
4	W67	B	800	-	-	0/11/11/11	0/2/2/2

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	750	HEM	C3B-C2B	-5.29	1.33	1.40
2	A	750	HEM	C3B-C2B	-4.84	1.34	1.40
2	B	750	HEM	C3C-C2C	-4.24	1.35	1.40
2	A	750	HEM	C3C-C2C	-3.78	1.35	1.40
2	A	750	HEM	C4D-ND	2.31	1.39	1.36
2	B	750	HEM	C4D-ND	2.71	1.40	1.36
2	A	750	HEM	C3C-CAC	3.33	1.54	1.47
2	A	750	HEM	C3B-CAB	3.41	1.55	1.47
2	B	750	HEM	C3B-CAB	3.55	1.55	1.47
2	B	750	HEM	C3C-CAC	3.69	1.55	1.47
2	A	750	HEM	C3D-C2D	4.90	1.52	1.37
2	B	750	HEM	C3D-C2D	4.92	1.52	1.37

All (34) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	B	800	W67	C09-C08-C06	-6.41	99.77	112.76
4	A	800	W67	C09-C08-C06	-6.12	100.35	112.76
2	A	750	HEM	CBA-CAA-C2A	-5.40	103.00	112.49
2	B	750	HEM	CBA-CAA-C2A	-4.96	103.77	112.49
2	B	750	HEM	CBD-CAD-C3D	-3.73	105.92	112.47
2	A	750	HEM	CBD-CAD-C3D	-3.48	106.37	112.47
4	A	800	W67	C05-C06-N01	-3.16	119.38	122.90

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	760	H4B	N3-C2-N1	-3.10	120.45	125.51
3	B	760	H4B	N3-C2-N1	-2.94	120.71	125.51
4	B	800	W67	C19-C18-C17	-2.79	107.45	113.60
4	A	800	W67	C09-C13-C12	-2.65	117.37	121.63
4	B	800	W67	C15-C14-C13	-2.63	117.95	121.25
4	B	800	W67	C09-C13-C12	-2.62	117.42	121.63
4	A	800	W67	C15-C14-C13	-2.60	118.00	121.25
4	A	800	W67	C17-C15-C16	-2.25	118.00	121.63
4	A	800	W67	C19-C18-C17	-2.20	108.75	113.60
3	A	760	H4B	C4A-C8A-N8	2.10	120.48	118.26
3	B	760	H4B	C2-N1-C8A	2.19	119.55	114.63
3	B	760	H4B	C4A-C8A-N8	2.22	120.61	118.26
3	A	760	H4B	N2-C2-N1	2.28	120.96	117.20
2	A	750	HEM	CMC-C2C-C3C	2.45	129.89	125.09
4	B	800	W67	N02-C02-N01	2.58	121.01	116.50
3	A	760	H4B	C2-N1-C8A	2.61	120.48	114.63
4	B	800	W67	C08-C06-N01	2.66	119.76	115.71
4	A	800	W67	C14-C15-C16	2.69	119.40	116.58
4	B	800	W67	C14-C15-C16	2.92	119.64	116.58
4	A	800	W67	C14-C13-C12	2.93	119.64	116.58
4	B	800	W67	C14-C13-C12	3.11	119.83	116.58
4	B	800	W67	C02-N01-C06	3.13	120.64	118.20
3	A	760	H4B	C4-N3-C2	4.43	121.07	115.88
3	B	760	H4B	C4-N3-C2	4.77	121.48	115.88
3	B	760	H4B	C4-C4A-C8A	5.27	119.25	114.61
4	A	800	W67	C02-N01-C06	5.61	122.58	118.20
3	A	760	H4B	C4-C4A-C8A	6.02	119.91	114.61

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

3 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	750	HEM	2	0
2	B	750	HEM	2	0
3	B	760	H4B	1	0

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

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	413/421 (98%)	-0.40	0	100 100	21, 43, 75, 108	0
1	B	410/421 (97%)	-0.15	5 (1%)	81 85	25, 55, 100, 138	0
All	All	823/842 (97%)	-0.27	5 (0%)	90 93	21, 47, 91, 138	0

All (5) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	721	TRP	3.7
1	B	722	LYS	3.6
1	B	326	THR	3.4
1	B	304	ARG	2.6
1	B	511	ILE	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 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(\AA^2)	Q<0.9
4	W67	B	800	22/22	0.95	0.14	1.70	25,50,73,74	0
4	W67	A	800	22/22	0.95	0.12	1.68	23,46,53,55	0
5	ZN	A	900	1/1	1.00	0.14	1.49	36,36,36,36	0
2	HEM	A	750	43/43	0.98	0.11	0.11	16,29,38,41	0
3	H4B	A	760	17/17	0.97	0.11	-0.36	24,32,39,42	0
2	HEM	B	750	43/43	0.98	0.11	-0.48	17,35,43,50	0
3	H4B	B	760	17/17	0.97	0.10	-0.80	31,38,46,47	0

6.5 Other polymers [i](#)

There are no such residues in this entry.