



wwPDB X-ray Structure Validation Summary Report

Feb 27, 2014 – 02:20 AM GMT

PDB ID : 1D2V
Title : CRYSTAL STRUCTURE OF BROMIDE-BOUND HUMAN MYELOPER-
OXIDASE ISOFORM C AT PH 5.5
Authors : Fiedler, T.J.; Davey, C.A.; Fenna, R.E.
Deposited on : 1999-09-28
Resolution : 1.75 Å(reported)

This is a wwPDB validation summary 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/ValidationPDFNotes.html>

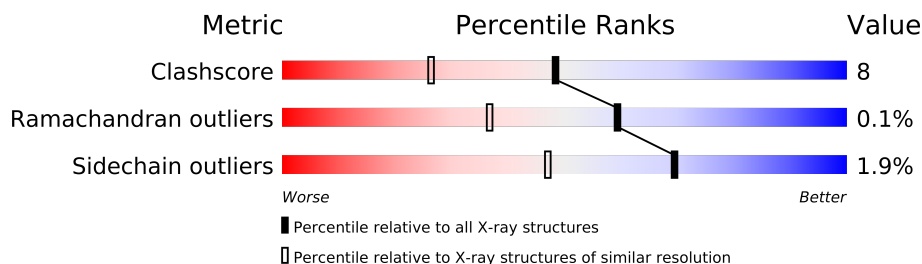
The following versions of software and data (see [references](#)) were used in the production of this report:

MolProbity	:	4.02b-467
Mogul	:	1.15 2013
Xtriage (Phenix)	:	dev-1323
EDS	:	FAILED
Percentile statistics	:	21963
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP)	:	stable22683

1 Overall quality at a glance

The reported resolution of this entry is 1.75 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))
Clashscore	79885	1304 (1.76-1.76)
Ramachandran outliers	78287	1288 (1.76-1.76)
Sidechain outliers	78261	1288 (1.76-1.76)

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. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density.

Note EDS failed to run properly.

Mol	Chain	Length	Quality of chain
1	A	104	
1	B	104	
2	C	466	
2	D	466	

2 Entry composition

There are 10 unique types of molecules in this entry. The entry contains 10306 atoms, of which 0 are hydrogen and 0 are deuterium.

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 MYELOPEROXIDASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	104	Total	C	N	O	S	0	0	0
			838	529	148	156	5			
1	B	104	Total	C	N	O	S	0	0	0
			838	529	148	156	5			

- Molecule 2 is a protein called MYELOPEROXIDASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	C	466	Total	C	N	O	S	0	0	0
			3733	2351	687	668	27			
2	D	466	Total	C	N	O	S	0	0	0
			3733	2351	687	668	27			

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	150	CSO	CYS	MODIFIED RESIDUE	UNP P05164
D	150	CSO	CYS	MODIFIED RESIDUE	UNP P05164

- Molecule 3 is a polymer of unknown type called SUGAR (6-MER).

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	C	6	Total	C	N	O	0	0
			71	40	2	29		
3	D	6	Total	C	N	O	0	0
			71	40	2	29		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	150	CSO	CYS	MODIFIED RESIDUE	UNP P05164
D	150	CSO	CYS	MODIFIED RESIDUE	UNP P05164

- Molecule 4 is SUGAR (N-ACETYL-D-GLUCOSAMINE) (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	C	1	Total	C	N	O	0	0
			14	8	1	5		
4	C	1	Total	C	N	O	0	0
			14	8	1	5		
4	D	1	Total	C	N	O	0	0
			14	8	1	5		
4	D	1	Total	C	N	O	0	0
			14	8	1	5		

- Molecule 5 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	B	1	Total	Ca	0	0
			1	1		
5	A	1	Total	Ca	0	0
			1	1		

- Molecule 6 is BROMIDE ION (three-letter code: BR) (formula: Br).

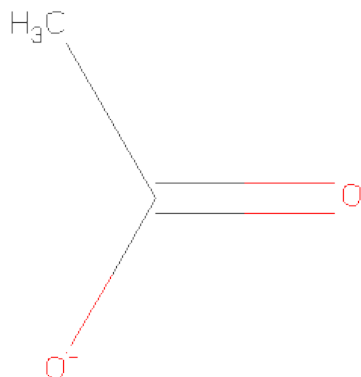
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	B	4	Total	Br	0	0
			4	4		
6	A	4	Total	Br	0	0
			4	4		

- Molecule 7 is SULFATE ION (three-letter code: SO4) (formula: O₄S).



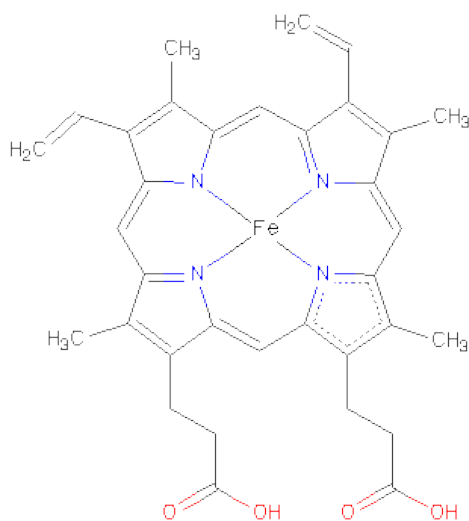
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
7	A	1	Total	O	S	0	0
			5	4	1		
7	C	1	Total	O	S	0	0
			5	4	1		
7	B	1	Total	O	S	0	0
			5	4	1		

- Molecule 8 is ACETATE ION (three-letter code: ACT) (formula: C₂H₃O₂).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	C	1	Total C O 4 2 2	0	0
8	C	1	Total C O 4 2 2	0	0
8	C	1	Total C O 4 2 2	0	0
8	D	1	Total C O 4 2 2	0	0
8	D	1	Total C O 4 2 2	0	0
8	D	1	Total C O 4 2 2	0	0

- Molecule 9 is PROTOPORPHYRIN IX CONTAINING FE (three-letter code: HEM) (formula: $C_{34}H_{32}FeN_4O_4$).



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

- Molecule 10 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
10	A	98	Total O 98 98	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
10	B	100	Total 100	O 100	0	0
10	C	319	Total 319	O 319	0	0
10	D	314	Total 314	O 314	0	0

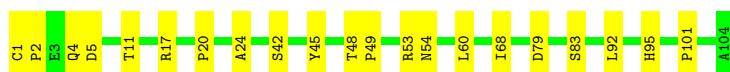
3 Residue-property plots

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.

Note EDS failed to run properly.

• Molecule 1: MYELOPEROXIDASE

Chain A: 



• Molecule 1: MYELOPEROXIDASE

Chain B: 



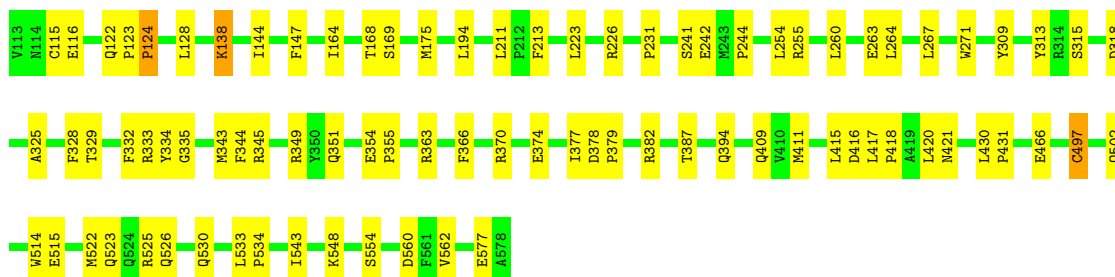
• Molecule 2: MYELOPEROXIDASE

Chain C: 



• Molecule 2: MYELOPEROXIDASE

Chain D: 



4 Data and refinement statistics

EDS failed to run properly - this section will therefore be incomplete.

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	111.16Å 63.49Å 92.48Å 90.00° 97.36° 90.00°	Depositor
Resolution (Å)	30.00 – 1.75	Depositor
% Data completeness (in resolution range)	87.3 (30.00-1.75)	Depositor
R_{merge}	0.06	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	4.37 (at 1.76Å)	Xtriage
Refinement program	X-PLOR 3.851	Depositor
R, R_{free}	0.243 , 0.296	Depositor
Wilson B-factor (Å ²)	12.2	Xtriage
Anisotropy	0.122	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtriage
Outliers	0 of 115555 reflections	Xtriage
Total number of atoms	10306	wwPDB-VP
Average B, all atoms (Å ²)	10.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.13% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: CSO, BMA, NAG, CA, FUC, BR, ACT, HEM, MAN, SO4

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	0.75	0/863	0.73	0/1174
1	B	0.76	0/863	0.72	0/1174
2	C	0.73	1/3811 (0.0%)	0.65	0/5168
2	D	0.70	0/3811	0.63	0/5168
All	All	0.72	1/9348 (0.0%)	0.66	0/12684

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	114	ASN	C-N	-6.21	1.19	1.34

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 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 hydrogens added by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, and the number in parentheses is this value normalized per 1000 atoms of the molecule in the chain. The Symm-Clashes column gives symmetry related clashes, in the same way as for the Clashes column.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	838	0	798	17	0
1	B	838	0	798	8	0
2	C	3733	0	3723	65	0
2	D	3733	0	3725	65	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	C	71	0	61	0	0
3	D	71	0	61	0	0
4	C	28	0	26	1	0
4	D	28	0	26	0	0
5	A	1	0	0	0	0
5	B	1	0	0	0	0
6	A	4	0	0	3	0
6	B	4	0	0	1	0
7	A	5	0	0	0	0
7	B	5	0	0	0	0
7	C	5	0	0	0	0
8	C	12	0	9	4	0
8	D	12	0	9	3	0
9	A	43	0	30	3	0
9	B	43	0	30	2	0
10	A	98	0	0	4	0
10	B	100	0	0	1	0
10	C	319	0	0	10	0
10	D	314	0	0	4	0
All	All	10306	0	9296	147	0

Clashscore is defined as the number of clashes calculated for the entry per 1000 atoms (including hydrogens) of the entry. The overall clashscore for this entry is 8.

The worst 5 of 147 close contacts within the same asymmetric unit are listed below.

Atom-1	Atom-2	Distance(Å)	Clash(Å)
2:C:355:PRO:HG2	2:C:356:ASN:HD22	1.44	0.82
2:D:333:ARG:HH11	2:D:421:ASN:HD22	1.31	0.78
2:C:132:PRO:HG3	2:C:140:GLN:NE2	2.04	0.72
2:C:355:PRO:HG2	2:C:356:ASN:ND2	2.05	0.71
2:C:200:ASN:HD22	2:C:203:PHE:H	1.36	0.70

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	102/104 (98%)	100 (98%)	1 (1%)	1 (1%)	22	6
1	B	102/104 (98%)	100 (98%)	2 (2%)	0	100	100
2	C	463/466 (99%)	445 (96%)	18 (4%)	0	100	100
2	D	463/466 (99%)	449 (97%)	14 (3%)	0	100	100
All	All	1130/1140 (99%)	1094 (97%)	35 (3%)	1 (0%)	59	37

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	42	SER

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	90/90 (100%)	89 (99%)	1 (1%)	84	70
1	B	90/90 (100%)	88 (98%)	2 (2%)	64	38
2	C	410/410 (100%)	401 (98%)	9 (2%)	64	38
2	D	410/410 (100%)	403 (98%)	7 (2%)	73	52
All	All	1000/1000 (100%)	981 (98%)	19 (2%)	69	47

5 of 19 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	C	497	CYS
1	B	54	ASN
2	D	267	LEU
2	C	470	THR
2	D	318	ASP

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 13 such sidechains are listed below:

Mol	Chain	Res	Type
2	C	526	GLN
2	C	530	GLN
2	D	421	ASN
2	C	356	ASN
2	D	122	GLN

5.3.3 RNA ⓘ

There are no RNA chains in this entry.

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

2 non-standard protein/DNA/RNA residues 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	CSO	C	150	2	6,6,7	8.21	3 (50%)	3,6,8	1.43	1 (33%)
2	CSO	D	150	2	6,6,7	7.67	3 (50%)	3,6,8	1.54	1 (33%)

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	CSO	C	150	2	-	0/2/5/7	0/0/0/0
2	CSO	D	150	2	-	0/2/5/7	0/0/0/0

The worst 5 of 6 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	150	CSO	O-C	19.49	1.24	1.11
2	D	150	CSO	O-C	18.24	1.24	1.11
2	C	150	CSO	OD-SG	-3.94	1.45	1.62

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	150	CSO	OD-SG	-3.17	1.49	1.62
2	C	150	CSO	CA-C	2.92	1.53	1.48

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	150	CSO	C-CA-N	-2.30	111.53	113.83
2	D	150	CSO	CA-CB-SG	2.07	116.69	113.01

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

5.5 Carbohydrates i

12 carbohydrates 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	NAG	C	1640	3,2	12,14,15	0.85	0	15,19,21	0.89	0
3	NAG	C	1641	3	12,14,15	0.85	0	15,19,21	0.73	0
3	BMA	C	1642	3	10,11,12	0.82	0	11,15,17	0.65	0
3	MAN	C	1643	3	10,11,12	0.52	0	11,15,17	0.75	0
3	MAN	C	1644	3	10,11,12	0.54	0	11,15,17	0.56	0
3	FUC	C	1645	3	9,10,11	0.45	0	10,14,16	0.55	0
3	NAG	D	2640	3,2	12,14,15	0.76	0	15,19,21	1.05	1 (6%)
3	NAG	D	2641	3	12,14,15	0.86	0	15,19,21	0.81	1 (6%)
3	BMA	D	2642	3	10,11,12	0.74	0	11,15,17	0.46	0
3	MAN	D	2643	3	10,11,12	0.54	0	11,15,17	0.57	0
3	MAN	D	2644	3	10,11,12	0.54	0	11,15,17	1.13	1 (9%)
3	FUC	D	2645	3	9,10,11	0.78	0	10,14,16	0.46	0

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	NAG	C	1640	3,2	-	0/6/23/26	0/1/1/1
3	NAG	C	1641	3	-	0/6/23/26	0/1/1/1
3	BMA	C	1642	3	-	0/2/19/22	0/1/1/1
3	MAN	C	1643	3	-	0/2/19/22	0/1/1/1
3	MAN	C	1644	3	-	0/2/19/22	0/1/1/1
3	FUC	C	1645	3	-	0/0/17/20	0/1/1/1
3	NAG	D	2640	3,2	-	0/6/23/26	0/1/1/1
3	NAG	D	2641	3	-	0/6/23/26	0/1/1/1
3	BMA	D	2642	3	-	0/2/19/22	0/1/1/1
3	MAN	D	2643	3	-	0/2/19/22	0/1/1/1
3	MAN	D	2644	3	-	0/2/19/22	0/1/1/1
3	FUC	D	2645	3	-	0/0/17/20	0/1/1/1

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	2640	NAG	C2-N2-C7	-2.75	118.48	123.09
3	D	2644	MAN	O5-C5-C6	2.47	109.57	106.98
3	D	2641	NAG	C2-N2-C7	-2.38	119.09	123.09

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

5.6 Ligand geometry

Of 25 ligands modelled in this entry, 10 are monoatomic - leaving 15 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
7	SO4	A	1602	-	4,4,4	0.09	0	6,6,6	0.22	0
9	HEM	A	605	1,10,2	49,50,50	1.95	11 (22%)	46,82,82	1.15	4 (8%)
7	SO4	B	2602	-	4,4,4	0.30	0	6,6,6	0.08	0
9	HEM	B	605	1,10,2	49,50,50	3.24	12 (24%)	46,82,82	1.18	4 (8%)
7	SO4	C	1603	-	4,4,4	0.26	0	6,6,6	0.09	0
8	ACT	C	1604	-	1,3,3	3.06	1 (100%)	0,3,3	0.00	-
8	ACT	C	1606	-	1,3,3	2.38	1 (100%)	0,3,3	0.00	-
8	ACT	C	1607	-	1,3,3	3.45	1 (100%)	0,3,3	0.00	-
4	NAG	C	1620	2	12,14,15	0.83	1 (8%)	15,19,21	1.30	3 (20%)
4	NAG	C	1630	2	12,14,15	0.62	0	15,19,21	0.91	0
8	ACT	D	2604	-	1,3,3	3.01	1 (100%)	0,3,3	0.00	-
8	ACT	D	2606	-	1,3,3	1.99	0	0,3,3	0.00	-
8	ACT	D	2607	-	1,3,3	3.05	1 (100%)	0,3,3	0.00	-
4	NAG	D	2620	2	12,14,15	0.43	0	15,19,21	0.87	0
4	NAG	D	2630	2	12,14,15	0.91	0	15,19,21	0.85	0

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
7	SO4	A	1602	-	-	0/0/0/0	0/0/0/0
9	HEM	A	605	1,10,2	-	0/14/114/114	0/0/8/8
7	SO4	B	2602	-	-	0/0/0/0	0/0/0/0
9	HEM	B	605	1,10,2	-	0/14/114/114	0/0/8/8
7	SO4	C	1603	-	-	0/0/0/0	0/0/0/0
8	ACT	C	1604	-	-	0/0/0/0	0/0/0/0
8	ACT	C	1606	-	-	0/0/0/0	0/0/0/0
8	ACT	C	1607	-	-	0/0/0/0	0/0/0/0
4	NAG	C	1620	2	-	0/6/23/26	0/1/1/1
4	NAG	C	1630	2	-	0/6/23/26	0/1/1/1
8	ACT	D	2604	-	-	0/0/0/0	0/0/0/0
8	ACT	D	2606	-	-	0/0/0/0	0/0/0/0
8	ACT	D	2607	-	-	0/0/0/0	0/0/0/0
4	NAG	D	2620	2	-	0/6/23/26	0/1/1/1
4	NAG	D	2630	2	-	0/6/23/26	0/1/1/1

The worst 5 of 29 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
9	B	605	HEM	C2D-C1D	13.16	1.47	1.44
9	B	605	HEM	C2B-C1B	11.24	1.47	1.44
9	B	605	HEM	C3D-C4D	7.63	1.46	1.44
9	A	605	HEM	C2D-C1D	6.58	1.46	1.44
9	B	605	HEM	C4A-C3A	5.74	1.47	1.40

The worst 5 of 11 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	B	605	HEM	C3A-C4A-NA	2.94	111.63	109.41
9	B	605	HEM	C4A-NA-C1A	-2.93	102.90	106.76
4	C	1620	NAG	O5-C5-C6	-2.90	103.94	106.98
9	B	605	HEM	C3B-C4B-NB	-2.74	112.03	114.00
9	A	605	HEM	C3A-C4A-NA	2.62	111.39	109.41

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

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 ⓘ

6.1 Protein, DNA and RNA chains ⓘ

EDS failed to run properly - this section will therefore be empty.

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

EDS failed to run properly - this section will therefore be empty.

6.3 Carbohydrates ⓘ

EDS failed to run properly - this section will therefore be empty.

6.4 Ligands ⓘ

EDS failed to run properly - this section will therefore be empty.

6.5 Other polymers ⓘ

EDS failed to run properly - this section will therefore be empty.