



wwPDB X-ray Structure Validation Summary Report

Jun 5, 2014 – 08:21 PM EDT

PDB ID : 4L3Y
Title : Nitrite complex of TvNiR, high dose data set (NO complex)
Authors : Trofimov, A.A.; Polyakov, K.M.; Lazarenko, V.A.; Popov, A.N.; Tikhonova, T.V.; Tikhonov, A.V.; Popov, V.O.
Deposited on : 2013-06-07
Resolution : 1.95 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>

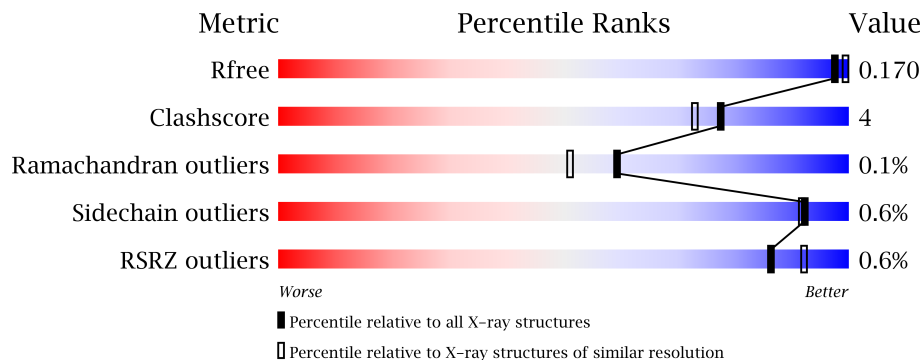
The following versions of software and data (see [references](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.16 November 2013
Xtriage (Phenix) : dev-1439
EDS : stable23161
Percentile statistics : 21963
Refmac : 5.8.0049
CCP4 : 6.3.0 (Settle)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP) : stable23161

1 Overall quality at a glance

The reported resolution of this entry is 1.95 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}	66092	1321 (1.96-1.96)
Clashscore	79885	1488 (1.96-1.96)
Ramachandran outliers	78287	1475 (1.96-1.96)
Sidechain outliers	78261	1475 (1.96-1.96)
RSRZ outliers	66119	1321 (1.96-1.96)

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.

Mol	Chain	Length	Quality of chain
1	A	520	<div><div></div><div></div></div>
1	B	520	<div><div></div><div></div></div>

The following table lists non-polymeric compounds that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Geometry	Electron density
2	HEC	A	605	-	X
2	HEC	B	604[A]	-	X
2	HEC	B	604[B]	-	X
2	HEC	B	605	-	X
3	NO2	A	609	-	X
5	MPD	A	612	-	X

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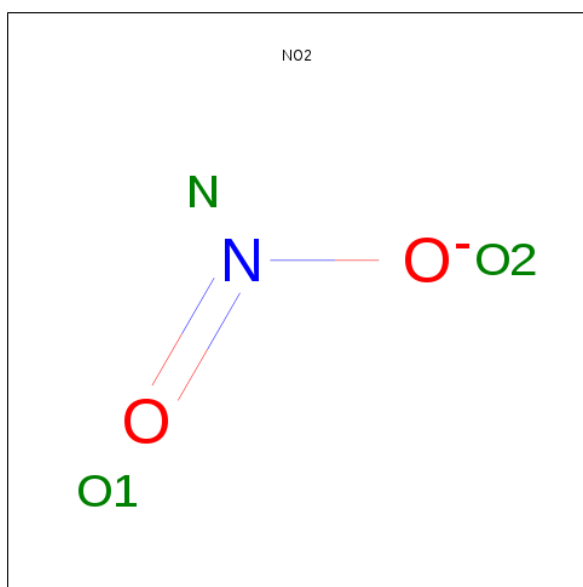
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Mol	Type	Chain	Res	Geometry	Electron density
5	MPD	B	612	-	X
6	GOL	A	613[A]	-	X
6	GOL	A	613[B]	-	X
6	GOL	A	614	-	X
6	GOL	A	615[A]	-	X
6	GOL	A	615[B]	-	X
6	GOL	B	613[A]	-	X
6	GOL	B	613[B]	-	X
6	GOL	B	614	-	X
7	SO4	A	616	-	X
7	SO4	B	615	-	X

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		
2	A	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		
2	A	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		
2	A	1	Total	C	Fe	N	O	0	0
			38	31	1	4	2		
2	A	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		
2	A	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		
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		
2	B	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		
2	B	1	Total	C	Fe	N	O	0	1
			47	36	1	4	6		
2	B	1	Total	C	Fe	N	O	0	0
			39	32	1	4	2		
2	B	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		
2	B	1	Total	C	Fe	N	O	0	0
			43	34	1	4	4		

- Molecule 3 is NITRITE ION (three-letter code: NO2) (formula: NO₂).

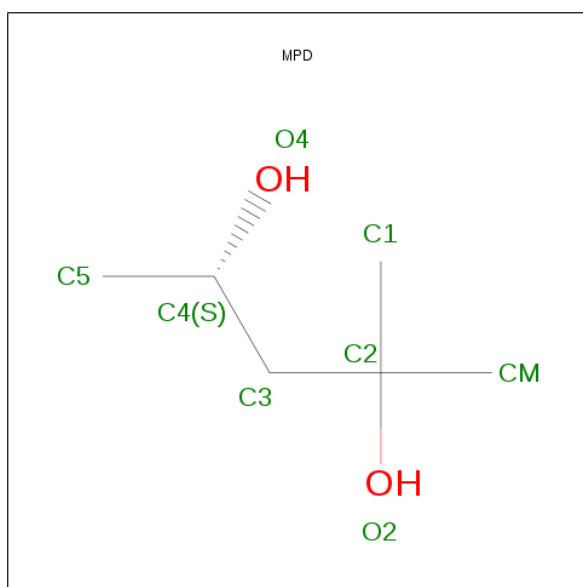


Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	N	O	0	0
			2	1	1		
3	A	1	Total	N	O	0	0
			3	1	2		
3	A	1	Total	N	O	0	0
			3	1	2		
3	B	1	Total	N	O	0	0
			2	1	1		
3	B	1	Total	N	O	0	0
			3	1	2		
3	B	1	Total	N	O	0	0
			3	1	2		

- Molecule 4 is CALCIUM ION (three-letter code: CA) (formula: Ca).

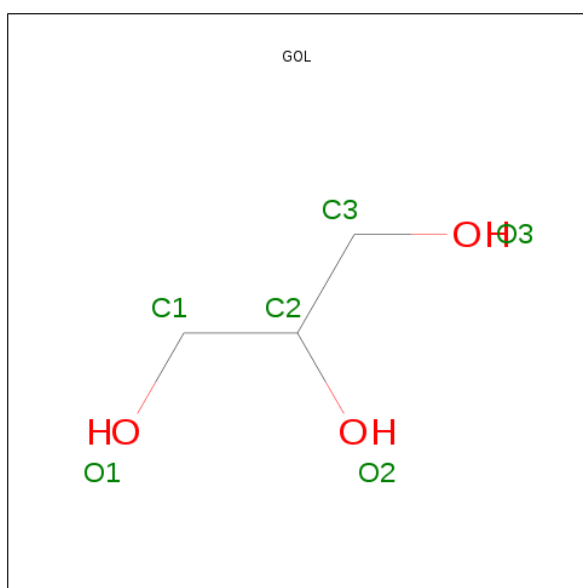
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	B	2	Total	Ca	0	0
			2	2		
4	A	2	Total	Ca	0	0
			2	2		

- Molecule 5 is (4S)-2-METHYL-2,4-PENTANEDIOL (three-letter code: MPD) (formula: C₆H₁₄O₂).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total	C	O	0	0
			8	6	2		
5	B	1	Total	C	O	0	0
			8	6	2		

- Molecule 6 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



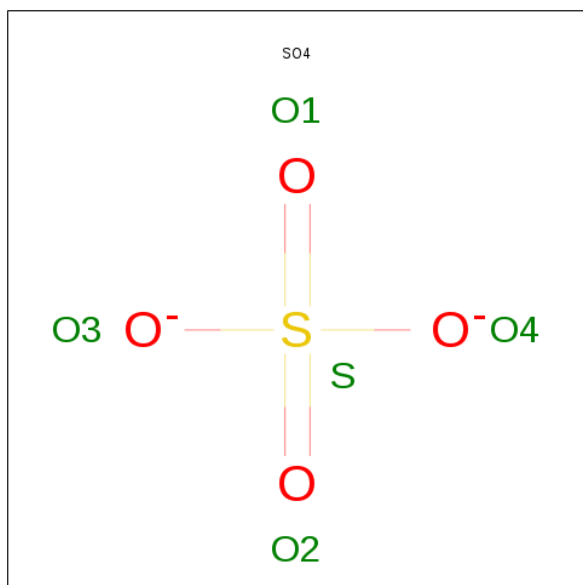
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	A	1	Total	C	O	0	1
			7	3	4		
6	A	1	Total	C	O	0	0
			6	3	3		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	A	1	Total	C	O	0	1
			7	3	4		
6	B	1	Total	C	O	0	1
			7	3	4		
6	B	1	Total	C	O	0	0
			6	3	3		

- 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	B	1	Total	O	S	0	0
			5	4	1		

- Molecule 8 is water.

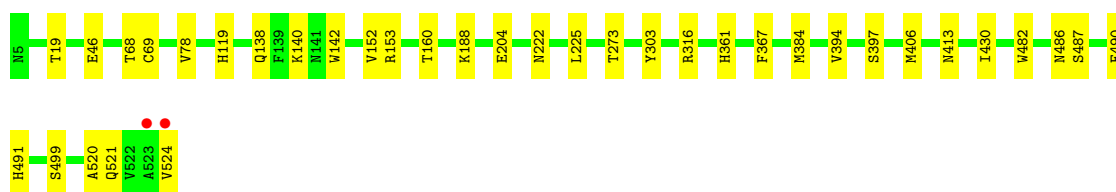
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	A	594	Total	O	0	0
			594	594		
8	B	617	Total	O	0	0
			617	617		

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: Eight-heme nitrite reductase

Chain A: 



- Molecule 1: Eight-heme nitrite reductase

Chain B: 



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 3	Depositor
Cell constants a, b, c, α , β , γ	194.98Å 194.98Å 194.98Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	29.08 – 1.95 29.07 – 1.95	Depositor EDS
% Data completeness (in resolution range)	99.5 (29.08-1.95) 99.5 (29.07-1.95)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.06 (at 1.95Å)	Xtriage
Refinement program	REFMAC 5.7.0029	Depositor
R, R_{free}	0.151 , 0.170 0.151 , 0.170	Depositor DCC
R_{free} test set	8889 reflections (5.27%)	DCC
Wilson B-factor (Å ²)	16.0	Xtriage
Anisotropy	0.000	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.39 , 39.6	EDS
Estimated twinning fraction	0.050 for l,-k,h	Xtriage
L-test for twinning	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Outliers	0 of 177422 reflections	Xtriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	10324	wwPDB-VP
Average B, all atoms (Å ²)	17.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.78% 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: GOL, MPD, CA, SO4, HEC, NO2

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	0.72	0/4370	0.76	2/5930 (0.0%)
1	B	0.72	1/4369 (0.0%)	0.76	2/5928 (0.0%)
All	All	0.72	1/8739 (0.0%)	0.76	4/11858 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	83	GLU	CD-OE1	6.16	1.32	1.25

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	188	LYS	CD-CE-NZ	5.35	124.00	111.70
1	B	411	CYS	CB-CA-C	-5.33	99.74	110.40
1	A	153	ARG	NE-CZ-NH2	-5.23	117.69	120.30
1	B	201	ASP	CB-CG-OD1	5.05	122.85	118.30

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	4172	0	3878	28	0
1	B	4179	0	3892	27	0
2	A	339	0	236	9	0
2	B	344	0	214	7	0
3	A	8	0	0	0	0
3	B	8	0	0	1	0
4	A	2	0	0	0	0
4	B	2	0	0	0	0
5	A	8	0	14	1	0
5	B	8	0	14	3	0
6	A	20	0	18	0	0
6	B	13	0	12	0	0
7	A	5	0	0	0	0
7	B	5	0	0	1	0
8	A	594	0	0	10	1
8	B	617	0	0	13	1
All	All	10324	0	8278	63	1

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 4.

The worst 5 of 63 close contacts within the same asymmetric unit are listed below.

Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:B:259[B]:HIS:HD2	8:B:956:HOH:O	0.82	1.17
1:A:222[A]:ASN:ND2	8:A:1186:HOH:O	1.85	1.10
1:B:138[B]:GLN:CD	8:B:1128:HOH:O	1.90	1.09
1:B:138[B]:GLN:NE2	8:B:1128:HOH:O	1.85	1.08
1:B:138[B]:GLN:OE1	8:B:1128:HOH:O	1.72	1.07

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	Distance(Å)	Clash(Å)
8:A:1242:HOH:O	8:B:870:HOH:O[7_555]	1.49	0.71

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	535/520 (103%)	508 (95%)	26 (5%)	1 (0%)	56	46
1	B	534/520 (103%)	510 (96%)	24 (4%)	0	100	100
All	All	1069/1040 (103%)	1018 (95%)	50 (5%)	1 (0%)	59	51

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	361	HIS

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	455/439 (104%)	453 (100%)	2 (0%)	95	94
1	B	454/439 (103%)	450 (99%)	4 (1%)	87	86
All	All	909/878 (104%)	903 (99%)	6 (1%)	92	90

5 of 6 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	68[A]	THR
1	B	406	MET
1	B	68[B]	THR
1	A	406	MET
1	B	316	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	138	GLN
1	B	388	GLN
1	B	413	ASN
1	B	466	ASN

5.3.3 RNA ⓘ

There are no RNA chains in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no carbohydrates in this entry.

5.6 Ligand geometry ⓘ

Of 39 ligands modelled in this entry, 4 are monoatomic and 6 are modelled with single atom - leaving 29 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	HEC	A	601	1,8,3	50,50,50	3.20	21 (42%)	56,82,82	3.44	25 (44%)
2	HEC	A	602	1	50,50,50	3.18	21 (42%)	56,82,82	3.65	30 (53%)
2	HEC	A	603	1,4	50,50,50	3.26	26 (52%)	56,82,82	3.89	30 (53%)
2	HEC	A	604	1	50,50,50	3.07	20 (40%)	56,82,82	3.60	25 (44%)
2	HEC	A	605	1	44,45,50	14.28	23 (52%)	44,75,82	3.66	17 (38%)
2	HEC	A	606	1	50,50,50	3.40	24 (48%)	56,82,82	3.70	27 (48%)
2	HEC	A	607	1	50,50,50	3.07	21 (42%)	56,82,82	3.38	27 (48%)
2	HEC	A	608	1	50,50,50	3.44	25 (50%)	56,82,82	3.56	31 (55%)
3	NO2	A	609	2	0,1,2	0.00	-	0,0,1	0.00	-
5	MPD	A	612	-	7,7,7	0.67	0	10,10,10	0.56	0
6	GOL	A	614	-	5,5,5	0.56	0	5,5,5	0.40	0
7	SO4	A	616	-	4,4,4	0.50	0	6,6,6	0.68	0
3	NO2	A	617	-	2,2,2	0.91	0	1,1,1	0.13	0
3	NO2	A	618	-	2,2,2	0.76	0	1,1,1	0.01	0
2	HEC	B	601	1,8,3	50,50,50	3.12	19 (38%)	56,82,82	3.70	27 (48%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	HEC	B	602	1	50,50,50	3.13	23 (46%)	56,82,82	3.64	30 (53%)
2	HEC	B	603	1,4	50,50,50	3.14	19 (38%)	56,82,82	3.92	27 (48%)
2	HEC	B	604[A]	-	2,3,50	1.99	1 (50%)	1,3,82	1.37	0
2	HEC	B	604[B]	4	2,3,50	1.46	0	1,3,82	1.36	0
2	HEC	B	605	1	46,46,50	3.85	25 (54%)	49,77,82	3.82	22 (44%)
2	HEC	B	606	1	50,50,50	3.43	24 (48%)	56,82,82	3.56	28 (50%)
2	HEC	B	607	1	50,50,50	3.05	19 (38%)	56,82,82	3.44	27 (48%)
2	HEC	B	608	1	50,50,50	3.47	26 (52%)	56,82,82	3.89	26 (46%)
3	NO2	B	609	2	0,1,2	0.00	-	0,0,1	0.00	-
5	MPD	B	612	-	7,7,7	0.62	0	10,10,10	0.85	0
6	GOL	B	614	-	5,5,5	0.42	0	5,5,5	0.35	0
7	SO4	B	615	-	4,4,4	0.66	0	6,6,6	0.43	0
3	NO2	B	616	-	2,2,2	0.86	0	1,1,1	0.16	0
3	NO2	B	617	-	2,2,2	0.85	0	1,1,1	0.12	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
2	HEC	A	601	1,8,3	-	0/10/54/54	0/0/8/8
2	HEC	A	602	1	-	0/10/54/54	0/0/8/8
2	HEC	A	603	1,4	-	0/10/54/54	0/0/8/8
2	HEC	A	604	1	-	0/10/54/54	0/0/8/8
2	HEC	A	605	1	-	0/5/49/54	0/0/8/8
2	HEC	A	606	1	-	0/10/54/54	0/0/8/8
2	HEC	A	607	1	-	0/10/54/54	0/0/8/8
2	HEC	A	608	1	-	0/10/54/54	0/0/8/8
3	NO2	A	609	2	-	0/0/0/0	0/0/0/0
5	MPD	A	612	-	-	0/5/5/5	0/0/0/0
6	GOL	A	614	-	-	0/4/4/4	0/0/0/0
7	SO4	A	616	-	-	0/0/0/0	0/0/0/0
3	NO2	A	617	-	-	0/0/0/0	0/0/0/0
3	NO2	A	618	-	-	0/0/0/0	0/0/0/0
2	HEC	B	601	1,8,3	-	0/10/54/54	0/0/8/8
2	HEC	B	602	1	-	0/10/54/54	0/0/8/8
2	HEC	B	603	1,4	-	0/10/54/54	0/0/8/8
2	HEC	B	604[A]	-	-	0/0/0/54	0/0/0/8
2	HEC	B	604[B]	4	-	0/0/0/54	0/0/0/8
2	HEC	B	605	1	-	0/5/49/54	0/0/8/8

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	HEC	B	606	1	-	0/10/54/54	0/0/8/8
2	HEC	B	607	1	-	0/10/54/54	0/0/8/8
2	HEC	B	608	1	-	0/10/54/54	0/0/8/8
3	NO2	B	609	2	-	0/0/0/0	0/0/0/0
5	MPD	B	612	-	-	0/5/5/5	0/0/0/0
6	GOL	B	614	-	-	0/4/4/4	0/0/0/0
7	SO4	B	615	-	-	0/0/0/0	0/0/0/0
3	NO2	B	616	-	-	0/0/0/0	0/0/0/0
3	NO2	B	617	-	-	0/0/0/0	0/0/0/0

The worst 5 of 337 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	605	HEC	C3D-C4D	91.95	1.51	1.38
2	B	606	HEC	C3B-CAB	13.52	1.53	1.34
2	B	602	HEC	C3C-CAC	13.01	1.52	1.34
2	A	602	HEC	C3C-CAC	12.76	1.52	1.34
2	A	601	HEC	C3B-CAB	12.64	1.51	1.34

The worst 5 of 399 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	605	HEC	C2C-C1C-NC	11.52	117.19	109.50
2	A	606	HEC	C2D-C1D-ND	11.30	117.05	109.50
2	A	605	HEC	C2C-C1C-NC	11.05	116.88	109.50
2	B	606	HEC	C2D-C1D-ND	10.98	116.83	109.50
2	A	603	HEC	C2B-C1B-NB	10.94	116.81	109.50

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 ⓘ

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	520/520 (100%)	-0.52	2 (0%) 90 94	10, 15, 29, 55	1 (0%)
1	B	520/520 (100%)	-0.57	3 (0%) 86 92	8, 13, 27, 50	0
All	All	1040/1040 (100%)	-0.55	5 (0%) 86 94	8, 14, 28, 55	1 (0%)

All (5) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	524	VAL	4.3
1	A	524	VAL	3.7
1	A	523	ALA	2.8
1	B	523	ALA	2.5
1	B	463[A]	ASP	2.2

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 ⓘ

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	RSR	LLDF	B-factors(\AA^2)	Q<0.9
6	GOL	A	615[A]	1/6	0.30	23.60	36,36,36,36	1
6	GOL	A	615[B]	1/6	0.30	18.53	37,37,37,37	1
6	GOL	B	613[A]	1/6	0.10	12.87	12,12,12,12	1
6	GOL	A	614	6/6	0.13	8.14	20,25,26,28	0
6	GOL	A	613[B]	1/6	0.10	7.11	17,17,17,17	1
6	GOL	A	613[A]	1/6	0.10	7.11	14,14,14,14	1
7	SO4	A	616	5/5	0.19	7.02	26,27,29,30	5
7	SO4	B	615	5/5	0.16	6.54	21,21,22,23	5
5	MPD	A	612	8/8	0.16	6.19	21,26,27,28	0
6	GOL	B	614	6/6	0.11	4.91	19,23,24,28	0
6	GOL	B	613[B]	1/6	0.10	4.78	17,17,17,17	1
3	NO2	A	609	2/3	0.17	3.91	13,13,13,14	2
2	HEC	B	605	39/43	0.13	2.31	19,26,44,50	0
2	HEC	B	604[A]	4/43	0.08	2.22	8,9,9,9	4
5	MPD	B	612	8/8	0.10	2.13	18,21,22,22	0
2	HEC	A	605	38/43	0.14	2.13	21,29,44,47	0
2	HEC	B	604[B]	4/43	0.08	1.32	10,12,12,13	4
2	HEC	A	604	43/43	0.08	1.31	9,10,13,19	0
2	HEC	B	602	43/43	0.09	1.00	8,9,16,21	0
2	HEC	B	607	43/43	0.10	0.85	9,10,22,29	0
2	HEC	A	607	43/43	0.09	0.80	9,11,23,34	0
2	HEC	A	601	43/43	0.10	0.77	9,11,12,13	0
2	HEC	B	601	43/43	0.09	0.62	7,9,10,11	0
3	NO2	B	609	2/3	0.10	0.54	10,10,10,10	2
2	HEC	A	603	43/43	0.09	0.50	8,9,10,12	0
2	HEC	B	603	43/43	0.09	0.43	7,7,9,11	0
2	HEC	A	602	43/43	0.08	0.38	9,11,17,21	0
2	HEC	B	606	43/43	0.08	0.37	9,11,13,14	0
2	HEC	A	606	43/43	0.07	0.08	11,12,14,14	0
3	NO2	B	616	3/3	0.07	-0.27	21,21,22,23	3
2	HEC	A	608	43/43	0.06	-0.38	11,13,17,22	0
2	HEC	B	608	43/43	0.07	-0.49	12,16,18,22	0
3	NO2	A	618	3/3	0.06	-0.76	17,17,17,18	3
3	NO2	A	617	3/3	0.05	-0.82	23,23,24,25	3
3	NO2	B	617	3/3	0.04	-0.91	13,13,13,14	3
4	CA	B	611	1/1	0.05	-1.57	12,12,12,12	1
4	CA	A	611	1/1	0.04	-2.18	14,14,14,14	1
4	CA	A	610	1/1	0.03	-2.33	17,17,17,17	0
4	CA	B	610	1/1	0.02	-3.26	16,16,16,16	0

6.5 Other polymers ⓘ

There are no such residues in this entry.