



Full wwPDB X-ray Structure Validation Report ⓘ

Jun 22, 2024 – 09:56 AM EDT

PDB ID : 6HSD
Title : Crystal structure of the oxidized form of the transcription regulator RsrR
Authors : Volbeda, A.; Fontecilla-Camps, J.C.
Deposited on : 2018-09-30
Resolution : 1.60 Å(reported)

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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 : 4.02b-467
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 1.20.1
EDS : 2.37.1
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.37.1

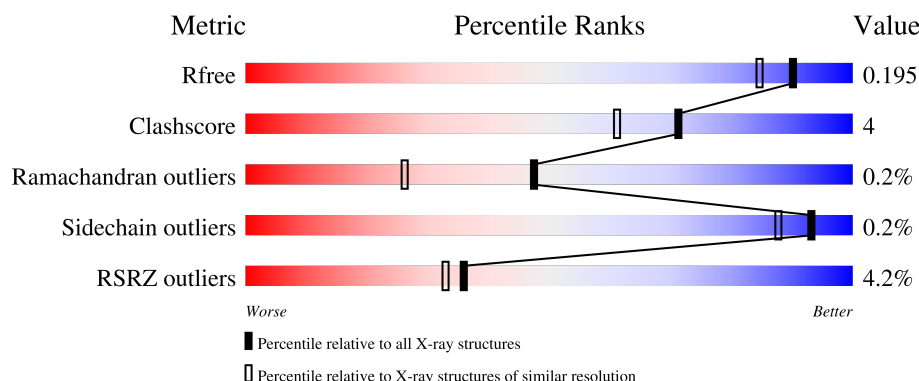
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.60 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}	130704	3398 (1.60-1.60)
Clashscore	141614	3665 (1.60-1.60)
Ramachandran outliers	138981	3564 (1.60-1.60)
Sidechain outliers	138945	3563 (1.60-1.60)
RSRZ outliers	127900	3321 (1.60-1.60)

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	166	<div> <div>0%</div> <div>94%</div> <div>5%</div> <div>.</div> </div>
1	B	166	<div> <div>3%</div> <div>90%</div> <div>5%</div> <div>5%</div> </div>
1	C	166	<div> <div>4%</div> <div>94%</div> <div>.</div> <div>.</div> </div>
1	D	166	<div> <div>8%</div> <div>88%</div> <div>8%</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
4	GOL	C	207	-	-	X	-

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 5413 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 Rrf2 family transcriptional regulator.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	166	Total	C	N	O	S	0	10	0
			1282	807	235	232	8			
1	B	158	Total	C	N	O	S	0	2	0
			1161	733	203	217	8			
1	C	160	Total	C	N	O	S	0	3	0
			1167	738	203	218	8			
1	D	160	Total	C	N	O	S	0	1	0
			1162	733	204	217	8			

There are 24 discrepancies between the modelled and reference sequences:

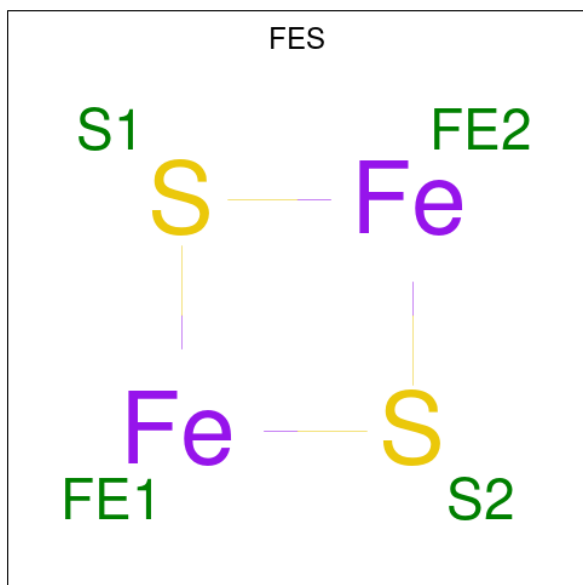
Chain	Residue	Modelled	Actual	Comment	Reference
A	161	HIS	-	expression tag	UNP F2RGC9
A	162	HIS	-	expression tag	UNP F2RGC9
A	163	HIS	-	expression tag	UNP F2RGC9
A	164	HIS	-	expression tag	UNP F2RGC9
A	165	HIS	-	expression tag	UNP F2RGC9
A	166	HIS	-	expression tag	UNP F2RGC9
B	161	HIS	-	expression tag	UNP F2RGC9
B	162	HIS	-	expression tag	UNP F2RGC9
B	163	HIS	-	expression tag	UNP F2RGC9
B	164	HIS	-	expression tag	UNP F2RGC9
B	165	HIS	-	expression tag	UNP F2RGC9
B	166	HIS	-	expression tag	UNP F2RGC9
C	161	HIS	-	expression tag	UNP F2RGC9
C	162	HIS	-	expression tag	UNP F2RGC9
C	163	HIS	-	expression tag	UNP F2RGC9
C	164	HIS	-	expression tag	UNP F2RGC9
C	165	HIS	-	expression tag	UNP F2RGC9
C	166	HIS	-	expression tag	UNP F2RGC9
D	161	HIS	-	expression tag	UNP F2RGC9
D	162	HIS	-	expression tag	UNP F2RGC9
D	163	HIS	-	expression tag	UNP F2RGC9

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Chain	Residue	Modelled	Actual	Comment	Reference
D	164	HIS	-	expression tag	UNP F2RGC9
D	165	HIS	-	expression tag	UNP F2RGC9
D	166	HIS	-	expression tag	UNP F2RGC9

- Molecule 2 is FE2/S2 (INORGANIC) CLUSTER (three-letter code: FES) (formula: Fe_2S_2).



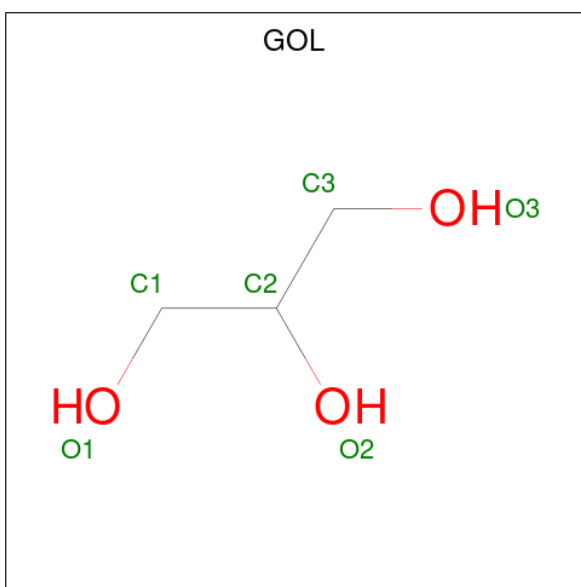
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	Fe	S	0	0
			4	2	2		
2	B	1	Total	Fe	S	0	0
			4	2	2		
2	C	1	Total	Fe	S	0	0
			4	2	2		
2	D	1	Total	Fe	S	0	0
			4	2	2		

- Molecule 3 is 2-(N-MORPHOLINO)-ETHANESULFONIC ACID (three-letter code: MES) (formula: $\text{C}_6\text{H}_{13}\text{NO}_4\text{S}$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	S	0	1
			12	6	1	4	1		
3	C	1	Total	C	N	O	S	0	1
			12	6	1	4	1		
3	D	1	Total	C	N	O	S	0	1
			12	6	1	4	1		

- Molecule 4 is GLYCEROL (three-letter code: GOL) (formula: C₃H₈O₃).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total	C	O		
			12	6	6	0	1

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total C O 6 3 3	0	0
4	A	1	Total C O 6 3 3	0	0
4	A	1	Total C O 6 3 3	0	1
4	A	1	Total C O 6 3 3	0	0
4	B	1	Total C O 12 6 6	0	1
4	B	1	Total C O 6 3 3	0	0
4	C	1	Total C O 6 3 3	0	0
4	C	1	Total C O 12 6 6	0	1
4	C	1	Total C O 6 3 3	0	0
4	C	1	Total C O 6 3 3	0	0
4	C	1	Total C O 6 3 3	0	0
4	D	1	Total C O 6 3 3	0	0
4	D	1	Total C O 6 3 3	0	0

- Molecule 5 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	C	1	Total Cl 1 1	0	0
5	D	1	Total Cl 1 1	0	0

- Molecule 6 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	168	Total O 168 168	0	9
6	B	93	Total O 94 94	0	6

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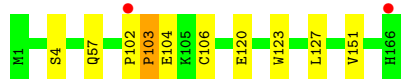
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	C	138	Total 139	O 139	0	4
6	D	84	Total 84	O 84	0	2

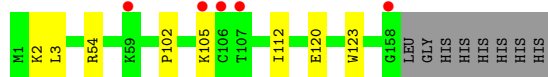
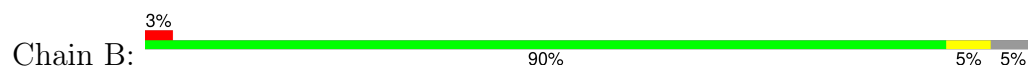
3 Residue-property plots [i](#)

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.

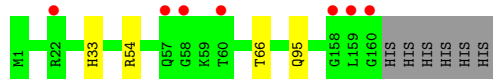
- Molecule 1: Rrf2 family transcriptional regulator



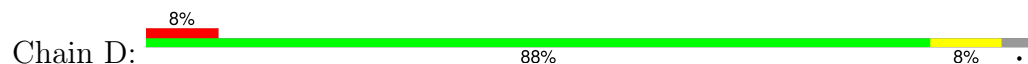
- Molecule 1: Rrf2 family transcriptional regulator



- Molecule 1: Rrf2 family transcriptional regulator



- Molecule 1: Rrf2 family transcriptional regulator



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	36.29Å 94.51Å 99.94Å 90.00° 93.24° 90.00°	Depositor
Resolution (Å)	47.26 – 1.60 47.26 – 1.60	Depositor EDS
% Data completeness (in resolution range)	98.2 (47.26-1.60) 98.2 (47.26-1.60)	Depositor EDS
R_{merge}	0.04	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.51 (at 1.60Å)	Xtriage
Refinement program	REFMAC 5.8.0232	Depositor
R, R_{free}	0.140 , 0.190 0.154 , 0.195	Depositor DCC
R_{free} test set	4156 reflections (4.77%)	wwPDB-VP
Wilson B-factor (Å ²)	28.6	Xtriage
Anisotropy	0.152	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.37 , 50.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.98	EDS
Total number of atoms	5413	wwPDB-VP
Average B, all atoms (Å ²)	42.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.32% 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: GOL, MES, FES, CL

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	0.53	0/1321	0.61	0/1806
1	B	0.54	0/1191	0.62	0/1630
1	C	0.55	0/1198	0.62	0/1640
1	D	0.56	0/1187	0.63	0/1623
All	All	0.55	0/4897	0.62	0/6699

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 [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	1282	0	1298	8	0
1	B	1161	0	1182	5	0
1	C	1167	0	1200	4	0
1	D	1162	0	1193	12	0
2	A	4	0	0	0	0
2	B	4	0	0	0	0
2	C	4	0	0	0	0
2	D	4	0	0	0	0
3	A	12	0	13	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	C	12	0	11	5	0
3	D	12	0	13	0	0
4	A	36	0	44	2	0
4	B	18	0	24	0	0
4	C	36	0	48	6	0
4	D	12	0	16	0	0
5	C	1	0	0	0	0
5	D	1	0	0	0	0
6	A	168	0	0	4	0
6	B	94	0	0	1	0
6	C	139	0	0	0	0
6	D	84	0	0	1	0
All	All	5413	0	5042	35	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 (35) 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)
4:A:203[A]:GOL:H31	3:C:202[A]:MES:H62	1.68	0.74
1:A:151:VAL:CG2	3:C:202[A]:MES:H72	2.19	0.72
1:A:151:VAL:HG21	3:C:202[A]:MES:H72	1.75	0.68
1:D:52:LEU:HD22	1:D:72:ILE:HD12	1.75	0.67
1:A:102[B]:PRO:O	1:A:104[B]:GLU:N	2.27	0.67
1:A:120:GLU:HG3	6:A:402:HOH:O	2.04	0.56
1:C:33:HIS:NE2	4:C:207:GOL:H31	2.20	0.55
1:C:95:GLN:HB3	4:C:204[B]:GOL:H31	1.90	0.53
1:D:86:PRO:HA	1:D:120:GLU:OE2	2.09	0.53
1:D:22:ARG:HH22	1:D:60:THR:HG21	1.74	0.53
1:A:4[A]:SER:HB3	6:A:414[A]:HOH:O	2.10	0.51
1:D:22:ARG:HB3	1:D:23:PRO:HD2	1.93	0.50
1:C:33:HIS:CD2	4:C:207:GOL:H31	2.48	0.49
1:D:108:LYS:HE2	6:D:360:HOH:O	2.12	0.48
1:D:60:THR:O	1:D:60:THR:HG22	2.13	0.48
3:A:202[A]:MES:H51	6:A:343:HOH:O	2.14	0.47
1:B:3:LEU:HD23	1:D:1:MET:HG3	1.97	0.46
1:B:102:PRO:HG2	1:B:105:LYS:HB2	1.98	0.46
1:B:112:ILE:HG12	1:D:135:LEU:HD13	1.97	0.45
1:D:22:ARG:HB3	1:D:23:PRO:CD	2.47	0.45
4:C:205:GOL:O2	4:C:207:GOL:H12	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:74:LEU:HD11	1:D:135:LEU:HD11	1.98	0.44
4:A:203[A]:GOL:H31	3:C:202[A]:MES:C6	2.44	0.44
3:A:202[A]:MES:H51	3:A:202[A]:MES:H82	1.68	0.44
1:A:123:TRP:CZ2	1:A:127:LEU:HD11	2.53	0.43
1:D:28:ARG:HG2	1:D:155:LEU:O	2.19	0.43
4:C:205:GOL:C2	4:C:207:GOL:H12	2.48	0.43
1:B:120:GLU:O	1:B:123[B]:TRP:HB3	2.19	0.42
1:D:159:LEU:HD23	1:D:159:LEU:HA	1.89	0.42
1:B:54:ARG:NH1	6:B:303:HOH:O	2.52	0.42
1:C:54:ARG:HB2	1:C:66:THR:HG22	2.03	0.41
4:C:205:GOL:H31	4:C:207:GOL:H12	2.04	0.40
1:A:57[B]:GLN:HG3	6:A:421[B]:HOH:O	2.21	0.40
1:A:103[A]:PRO:HA	1:A:106:CYS:HB2	2.02	0.40

There are no symmetry-related clashes.

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	174/166 (105%)	169 (97%)	3 (2%)	2 (1%)	14	3
1	B	158/166 (95%)	157 (99%)	1 (1%)	0	100	100
1	C	161/166 (97%)	161 (100%)	0	0	100	100
1	D	159/166 (96%)	158 (99%)	1 (1%)	0	100	100
All	All	652/664 (98%)	645 (99%)	5 (1%)	2 (0%)	47	21

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	103[A]	PRO
1	A	103[B]	PRO

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	133/125 (106%)	133 (100%)	0	100	100
1	B	120/125 (96%)	119 (99%)	1 (1%)	81	70
1	C	121/125 (97%)	121 (100%)	0	100	100
1	D	120/125 (96%)	120 (100%)	0	100	100
All	All	494/500 (99%)	493 (100%)	1 (0%)	93	88

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	2	LYS

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

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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 26 ligands modelled in this entry, 2 are monoatomic - leaving 24 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	$\# Z > 2$
4	GOL	C	206	-	5,5,5	0.22	0	5,5,5	0.28	0
4	GOL	B	203	-	5,5,5	0.14	0	5,5,5	0.21	0
2	FES	D	201	1	0,4,4	-	-	-		
3	MES	A	202[A]	-	12,12,12	0.61	0	15,16,16	0.70	0
3	MES	C	202[A]	-	12,12,12	0.76	0	15,16,16	0.91	0
4	GOL	B	202[B]	-	5,5,5	0.10	0	5,5,5	0.26	0
2	FES	C	201	1	0,4,4	-	-	-		
4	GOL	A	203[B]	-	5,5,5	0.17	0	5,5,5	0.24	0
4	GOL	B	202[A]	-	5,5,5	0.18	0	5,5,5	0.33	0
4	GOL	C	204[B]	-	5,5,5	0.11	0	5,5,5	0.33	0
4	GOL	A	203[A]	-	5,5,5	0.19	0	5,5,5	0.62	0
4	GOL	C	207	-	5,5,5	0.18	0	5,5,5	0.58	0
4	GOL	C	203	-	5,5,5	0.14	0	5,5,5	0.33	0
4	GOL	C	204[A]	-	5,5,5	0.12	0	5,5,5	0.34	0
2	FES	A	201	1	0,4,4	-	-	-		
4	GOL	C	205	-	5,5,5	0.15	0	5,5,5	0.35	0
4	GOL	A	205	-	5,5,5	0.12	0	5,5,5	0.19	0
4	GOL	D	204	-	5,5,5	0.26	0	5,5,5	0.39	0
4	GOL	A	206[B]	-	5,5,5	0.14	0	5,5,5	0.33	0
2	FES	B	201	1	0,4,4	-	-	-		
4	GOL	A	207	-	5,5,5	0.20	0	5,5,5	0.40	0
4	GOL	D	203	-	5,5,5	0.09	0	5,5,5	0.15	0
4	GOL	A	204	-	5,5,5	0.13	0	5,5,5	0.41	0
3	MES	D	202[A]	-	12,12,12	0.73	0	15,16,16	0.63	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
4	GOL	C	206	-	-	2/4/4/4	-
4	GOL	B	203	-	-	2/4/4/4	-
2	FES	D	201	1	-	-	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	MES	A	202[A]	-	-	2/6/14/14	0/1/1/1
3	MES	C	202[A]	-	-	0/6/14/14	0/1/1/1
4	GOL	B	202[B]	-	-	0/4/4/4	-
2	FES	C	201	1	-	-	0/1/1/1
4	GOL	A	203[B]	-	-	2/4/4/4	-
4	GOL	B	202[A]	-	-	1/4/4/4	-
4	GOL	C	204[B]	-	-	2/4/4/4	-
4	GOL	A	203[A]	-	-	2/4/4/4	-
4	GOL	C	207	-	-	2/4/4/4	-
4	GOL	C	203	-	-	0/4/4/4	-
4	GOL	C	204[A]	-	-	4/4/4/4	-
2	FES	A	201	1	-	-	0/1/1/1
4	GOL	C	205	-	-	0/4/4/4	-
4	GOL	A	205	-	-	4/4/4/4	-
4	GOL	D	204	-	-	4/4/4/4	-
4	GOL	A	206[B]	-	-	0/4/4/4	-
2	FES	B	201	1	-	-	0/1/1/1
4	GOL	A	207	-	-	0/4/4/4	-
4	GOL	D	203	-	-	0/4/4/4	-
4	GOL	A	204	-	-	4/4/4/4	-
3	MES	D	202[A]	-	-	2/6/14/14	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (33) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	202[A]	MES	C8-C7-N4-C5
3	D	202[A]	MES	C8-C7-N4-C5
4	A	203[A]	GOL	O1-C1-C2-C3
4	A	203[B]	GOL	O1-C1-C2-C3
4	A	204	GOL	C1-C2-C3-O3
4	A	204	GOL	O2-C2-C3-O3
4	A	205	GOL	O1-C1-C2-C3
4	A	205	GOL	C1-C2-C3-O3
4	C	204[A]	GOL	C1-C2-C3-O3
4	C	204[B]	GOL	C1-C2-C3-O3
4	D	204	GOL	C1-C2-C3-O3

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Mol	Chain	Res	Type	Atoms
4	A	205	GOL	O1-C1-C2-O2
4	C	204[B]	GOL	O2-C2-C3-O3
4	A	204	GOL	O1-C1-C2-C3
4	B	203	GOL	O1-C1-C2-C3
4	C	204[A]	GOL	O1-C1-C2-C3
4	C	206	GOL	C1-C2-C3-O3
4	C	207	GOL	C1-C2-C3-O3
4	D	204	GOL	O1-C1-C2-C3
4	A	203[A]	GOL	O1-C1-C2-O2
4	A	203[B]	GOL	O1-C1-C2-O2
4	A	204	GOL	O1-C1-C2-O2
4	C	204[A]	GOL	O2-C2-C3-O3
4	D	204	GOL	O1-C1-C2-O2
4	D	204	GOL	O2-C2-C3-O3
3	A	202[A]	MES	N4-C7-C8-S
4	C	206	GOL	O2-C2-C3-O3
4	A	205	GOL	O2-C2-C3-O3
4	B	202[A]	GOL	O2-C2-C3-O3
4	B	203	GOL	O1-C1-C2-O2
4	C	204[A]	GOL	O1-C1-C2-O2
3	D	202[A]	MES	C8-C7-N4-C3
4	C	207	GOL	O2-C2-C3-O3

There are no ring outliers.

6 monomers are involved in 13 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	202[A]	MES	2	0
3	C	202[A]	MES	5	0
4	C	204[B]	GOL	1	0
4	A	203[A]	GOL	2	0
4	C	207	GOL	5	0
4	C	205	GOL	3	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	166/166 (100%)	-0.31	2 (1%) 79 78	20, 29, 53, 77	0
1	B	158/166 (95%)	-0.03	5 (3%) 47 44	27, 39, 67, 86	0
1	C	160/166 (96%)	-0.24	7 (4%) 34 31	21, 35, 69, 95	0
1	D	160/166 (96%)	0.34	13 (8%) 12 10	26, 50, 80, 102	0
All	All	644/664 (96%)	-0.06	27 (4%) 36 33	20, 37, 74, 102	0

All (27) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	21	SER	6.8
1	C	159	LEU	5.9
1	C	158	GLY	5.5
1	D	70	VAL	5.2
1	C	160	GLY	4.5
1	B	107	THR	4.0
1	D	54	ARG	3.9
1	D	58	GLY	3.9
1	D	61	GLY	3.7
1	D	59	LYS	3.5
1	B	105	LYS	3.1
1	C	60	THR	3.1
1	A	102[A]	PRO	3.0
1	D	60	THR	2.9
1	D	156	ILE	2.9
1	D	159	LEU	2.8
1	D	57	GLN	2.6
1	B	59	LYS	2.6
1	C	57	GLN	2.5
1	B	106	CYS	2.5
1	D	141	ASP	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	166	HIS	2.2
1	D	22	ARG	2.1
1	D	71	GLU	2.1
1	C	22	ARG	2.1
1	C	58	GLY	2.1
1	B	158	GLY	2.1

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 monosaccharides 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
4	GOL	D	204	6/6	0.68	0.19	56,61,64,65	0
4	GOL	D	203	6/6	0.75	0.18	56,60,60,65	0
4	GOL	A	206[B]	6/6	0.77	0.20	48,51,53,55	6
4	GOL	A	207	6/6	0.77	0.16	47,58,62,64	0
4	GOL	A	205	6/6	0.79	0.13	55,57,59,59	0
4	GOL	B	203	6/6	0.80	0.17	57,64,65,72	0
4	GOL	B	202[B]	6/6	0.82	0.15	42,43,45,49	6
4	GOL	B	202[A]	6/6	0.82	0.15	33,41,46,49	6
3	MES	D	202[A]	12/12	0.83	0.18	44,52,55,62	12
4	GOL	C	207	6/6	0.84	0.10	38,51,57,59	0
4	GOL	A	204	6/6	0.85	0.11	40,41,46,50	0
3	MES	C	202[A]	12/12	0.88	0.23	44,48,50,51	12
4	GOL	A	203[A]	6/6	0.89	0.11	25,43,43,47	6
4	GOL	A	203[B]	6/6	0.89	0.11	42,44,45,46	6
4	GOL	C	206	6/6	0.90	0.14	40,52,56,63	0
5	CL	C	208	1/1	0.90	0.05	63,63,63,63	0
5	CL	D	205	1/1	0.91	0.05	59,59,59,59	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
4	GOL	C	204[B]	6/6	0.94	0.14	32,38,42,45	6
4	GOL	C	205	6/6	0.94	0.17	47,55,57,62	0
3	MES	A	202[A]	12/12	0.94	0.12	40,46,48,50	12
4	GOL	C	204[A]	6/6	0.94	0.14	31,35,38,39	6
4	GOL	C	203	6/6	0.96	0.06	38,41,44,44	0
2	FES	D	201	4/4	0.99	0.07	34,34,35,36	0
2	FES	C	201	4/4	1.00	0.09	28,28,28,29	0
2	FES	A	201	4/4	1.00	0.12	21,21,22,22	0
2	FES	B	201	4/4	1.00	0.10	26,27,27,27	0

6.5 Other polymers [i](#)

There are no such residues in this entry.