



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 19, 2016 – 10:33 PM GMT

PDB ID : 5DLB
Title : Crystal structure of chaperone EspG3 of ESX-3 type VII secretion system from Mycobacterium marinum M
Authors : Chan, S.; Arbing, M.A.; Kim, J.; Kahng, S.; Sawaya, M.R.; Eisenberg, D.S.; TB Structural Genomics Consortium (TBSGC)
Deposited on : 2015-09-04
Resolution : 1.77 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-20026982
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-20026982

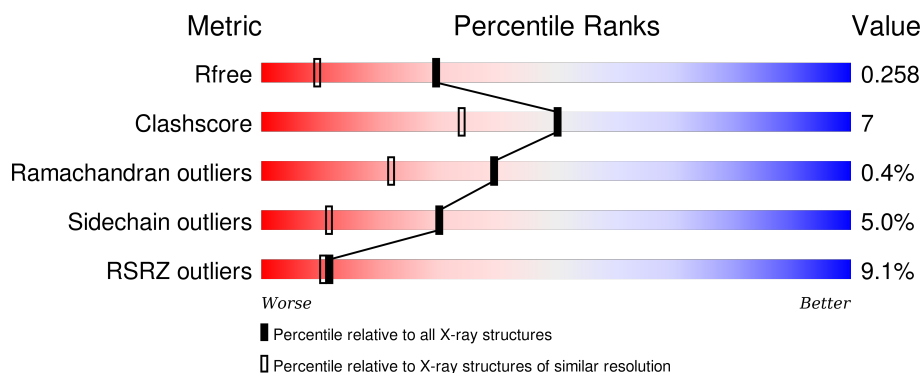
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.77 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}	91344	6655 (1.80-1.76)
Clashscore	102246	7658 (1.80-1.76)
Ramachandran outliers	100387	7570 (1.80-1.76)
Sidechain outliers	100360	7569 (1.80-1.76)
RSRZ outliers	91569	6671 (1.80-1.76)

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. 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	315	<div> <div>8%</div> <div>69%</div> <div>13%</div> <div>••</div> <div>17%</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
2	CXS	A	301	-	-	-	X

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	GOL	A	302	-	-	-	X
3	GOL	A	305	-	-	-	X
4	SO4	A	304	-	-	-	X
6	SCN	A	315	-	-	X	-
6	SCN	A	317	-	-	X	X
6	SCN	A	318	-	-	-	X
6	SCN	A	326	-	-	X	-
6	SCN	A	340	-	-	X	-

2 Entry composition

There are 7 unique types of molecules in this entry. The entry contains 2149 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.

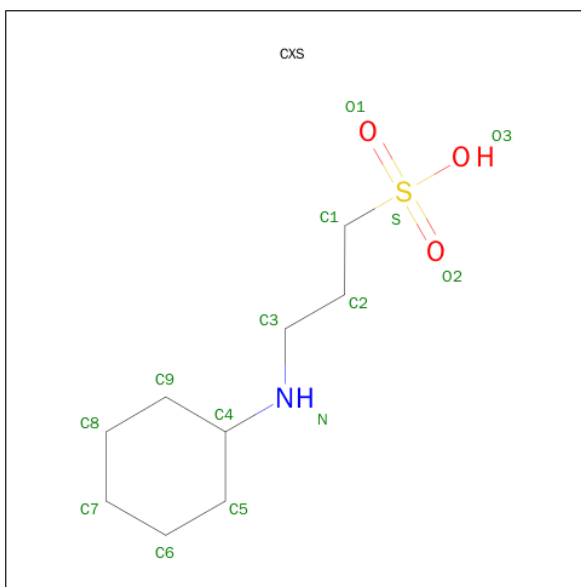
- Molecule 1 is a protein called chaperone EspG3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	263	Total	C	N	O	S	0	0	0
			1944	1247	331	359	7			

There are 17 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-16	SER	-	expression tag	UNP B2HNX0
A	-15	HIS	-	expression tag	UNP B2HNX0
A	-14	HIS	-	expression tag	UNP B2HNX0
A	-13	HIS	-	expression tag	UNP B2HNX0
A	-12	HIS	-	expression tag	UNP B2HNX0
A	-11	HIS	-	expression tag	UNP B2HNX0
A	-10	HIS	-	expression tag	UNP B2HNX0
A	-9	SER	-	expression tag	UNP B2HNX0
A	-8	SER	-	expression tag	UNP B2HNX0
A	-7	SER	-	expression tag	UNP B2HNX0
A	-6	GLU	-	expression tag	UNP B2HNX0
A	-5	ASN	-	expression tag	UNP B2HNX0
A	-4	LEU	-	expression tag	UNP B2HNX0
A	-3	TYR	-	expression tag	UNP B2HNX0
A	-2	PHE	-	expression tag	UNP B2HNX0
A	-1	GLN	-	expression tag	UNP B2HNX0
A	0	SER	-	expression tag	UNP B2HNX0

- Molecule 2 is 3-CYCLOHEXYL-1-PROPYLSULFONIC ACID (three-letter code: CXS) (formula: C₉H₁₉NO₃S).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	S	0	0
			14	9	1	3	1		

- Molecule 3 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



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

- Molecule 4 is SULFATE ION (three-letter code: SO4) (formula: O₄S).

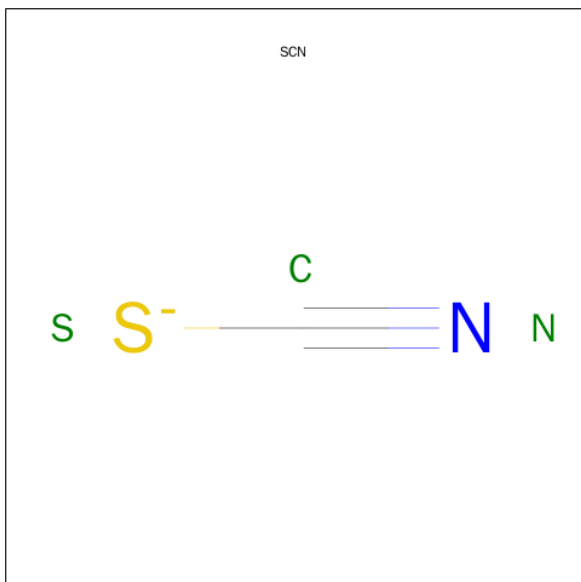


Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total	O	S	0	0
			5	4	1		

- Molecule 5 is PLATINUM (II) ION (three-letter code: PT) (formula: Pt).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	7	Total	Pt	0	0
			7	7		

- Molecule 6 is THIOCYANATE ION (three-letter code: SCN) (formula: CNS).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
6	A	1	Total	C	N	S	0	0
			3	1	1	1		
6	A	1	Total	C	N	S	0	0
			3	1	1	1		
6	A	1	Total	C	N	S	0	0
			3	1	1	1		
6	A	1	Total	C	N	S	0	0
			3	1	1	1		
6	A	1	Total	C	N	S	0	0
			3	1	1	1		
6	A	1	Total	C	N	S	0	0
			3	1	1	1		
6	A	1	Total	C	N	S	0	0
			3	1	1	1		
6	A	1	Total	C	N	S	0	0
			3	1	1	1		
6	A	1	Total	C	N	S	0	0
			3	1	1	1		
6	A	1	Total	C	N	S	0	0
			3	1	1	1		
6	A	1	Total	C	N	S	0	0
			3	1	1	1		
6	A	1	Total	C	N	S	0	0
			3	1	1	1		
6	A	1	Total	C	N	S	0	0
			3	1	1	1		
6	A	1	Total	C	N	S	0	0
			3	1	1	1		
6	A	1	Total	C	N	S	0	0
			3	1	1	1		
6	A	1	Total	C	N	S	0	0
			3	1	1	1		
6	A	1	Total	C	N	S	0	0
			3	1	1	1		
6	A	1	Total	C	N	S	0	0
			3	1	1	1		
6	A	1	Total	C	N	S	0	0
			3	1	1	1		
6	A	1	Total	C	N	S	0	0
			3	1	1	1		

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
6	A	1	Total 3	C 1	N 1	S 1	0	0
6	A	1	Total 3	C 1	N 1	S 1	0	0
6	A	1	Total 3	C 1	N 1	S 1	0	0
6	A	1	Total 3	C 1	N 1	S 1	0	0
6	A	1	Total 3	C 1	N 1	S 1	0	0
6	A	1	Total 3	C 1	N 1	S 1	0	0
6	A	1	Total 3	C 1	N 1	S 1	0	0
6	A	1	Total 3	C 1	N 1	S 1	0	0
6	A	1	Total 3	C 1	N 1	S 1	0	0
6	A	1	Total 3	C 1	N 1	S 1	0	0

- Molecule 7 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	65	Total 65	O 65	0	0

4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	112.21Å 46.02Å 58.01Å 90.00° 92.24° 90.00°	Depositor
Resolution (Å)	57.96 – 1.77 57.96 – 1.77	Depositor EDS
% Data completeness (in resolution range)	88.5 (57.96-1.77) 88.5 (57.96-1.77)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.62 (at 1.77Å)	Xtriage
Refinement program	REFMAC 5.8.0049	Depositor
R, R_{free}	0.209 , 0.245 0.222 , 0.258	Depositor DCC
R_{free} test set	1310 reflections (5.36%)	DCC
Wilson B-factor (Å ²)	29.8	Xtriage
Anisotropy	0.894	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.41 , 51.2	EDS
Estimated twinning fraction	0.038 for -h,-k,l	Xtriage
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Outliers	1 of 25736 reflections (0.004%)	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	2149	wwPDB-VP
Average B, all atoms (Å ²)	40.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 8.22% 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: GOL, CXS, SCN, PT, 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	0.99	0/1987	1.11	12/2718 (0.4%)

There are no bond length outliers.

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	177	ASP	CB-CG-OD1	7.30	124.87	118.30
1	A	21	MET	CG-SD-CE	7.09	111.55	100.20
1	A	145	ARG	NE-CZ-NH1	6.06	123.33	120.30
1	A	102	ARG	NE-CZ-NH2	-5.74	117.43	120.30
1	A	100	LEU	CA-CB-CG	5.57	128.11	115.30
1	A	102	ARG	NE-CZ-NH1	5.46	123.03	120.30
1	A	81	GLU	OE1-CD-OE2	-5.37	116.86	123.30
1	A	249	ARG	CG-CD-NE	-5.22	100.84	111.80
1	A	87	ARG	NE-CZ-NH1	5.14	122.87	120.30
1	A	87	ARG	NE-CZ-NH2	-5.12	117.74	120.30
1	A	128	LEU	CA-CB-CG	-5.10	103.57	115.30
1	A	179	ARG	NE-CZ-NH2	-5.06	117.77	120.30

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	1944	0	1901	24	0
2	A	14	0	18	0	0
3	A	18	0	24	0	0
4	A	5	0	0	0	0
5	A	7	0	0	0	0
6	A	96	0	0	8	0
7	A	65	0	0	1	0
All	All	2149	0	1943	28	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 7.

All (28) 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)
6:A:340:SCN:N	7:A:401:HOH:O	2.20	0.73
1:A:37:TYR:HB2	1:A:42:GLN:HB3	1.84	0.59
1:A:230:ASP:N	1:A:230:ASP:OD1	2.28	0.59
1:A:178:GLU:CB	6:A:330:SCN:C	2.81	0.59
6:A:315:SCN:C	6:A:317:SCN:S	2.92	0.58
1:A:6:ASN:H	1:A:6:ASN:ND2	2.02	0.56
1:A:82:ARG:HD2	1:A:283:TRP:CD1	2.40	0.55
1:A:244:LEU:HG	1:A:262:GLY:HA2	1.89	0.54
1:A:37:TYR:HB2	1:A:42:GLN:CB	2.40	0.52
1:A:249:ARG:HD2	1:A:255:TRP:CZ2	2.46	0.51
1:A:49:ARG:HG2	6:A:326:SCN:S	2.51	0.51
1:A:175:ARG:CZ	1:A:192:TYR:OH	2.60	0.49
1:A:49:ARG:HG2	6:A:326:SCN:C	2.43	0.48
1:A:82:ARG:HD2	1:A:283:TRP:CG	2.48	0.48
1:A:82:ARG:NH2	1:A:107:GLN:OE1	2.30	0.47
6:A:315:SCN:S	6:A:317:SCN:S	3.15	0.45
1:A:14:ASN:HA	1:A:50:GLN:NE2	2.32	0.43
6:A:324:SCN:C	6:A:327:SCN:S	3.07	0.43
1:A:83:TRP:CE2	1:A:219:GLY:HA3	2.53	0.43
1:A:142:ASP:N	1:A:142:ASP:OD1	2.51	0.43
1:A:38:SER:N	1:A:42:GLN:OE1	2.51	0.43
1:A:88:TYR:CD1	1:A:154:GLY:HA3	2.53	0.43
1:A:279:PRO:O	1:A:280:ASP:C	2.58	0.42
1:A:18:ILE:HG21	1:A:74:ILE:HD12	2.01	0.42
1:A:150:VAL:O	1:A:153:VAL:HG12	2.20	0.42
1:A:88:TYR:CE1	1:A:154:GLY:HA3	2.55	0.41
1:A:145:ARG:HD2	1:A:145:ARG:C	2.39	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:68:PRO:HB3	6:A:340:SCN:N	2.36	0.41

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	257/315 (82%)	242 (94%)	14 (5%)	1 (0%)	39 22

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	109	ALA

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	199/256 (78%)	189 (95%)	10 (5%)	30 11

All (10) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	6	ASN
1	A	20	GLU

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Mol	Chain	Res	Type
1	A	108	SER
1	A	111	ILE
1	A	129	ARG
1	A	145	ARG
1	A	175	ARG
1	A	182	SER
1	A	249	ARG
1	A	272	ASP

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	6	ASN
1	A	14	ASN
1	A	50	GLN
1	A	221	ASN

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 44 ligands modelled in this entry, 7 are monoatomic - leaving 37 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	CXS	A	301	-	14,14,14	2.62	2 (14%)	17,18,18	3.07	7 (41%)
3	GOL	A	302	-	5,5,5	0.42	0	5,5,5	0.32	0
3	GOL	A	303	-	5,5,5	0.34	0	5,5,5	0.33	0
4	SO4	A	304	-	4,4,4	0.59	0	6,6,6	0.33	0
3	GOL	A	305	-	5,5,5	0.28	0	5,5,5	0.31	0
6	SCN	A	307	5	2,2,2	1.41	0	1,1,1	0.45	0
6	SCN	A	308	5	2,2,2	1.53	1 (50%)	1,1,1	0.23	0
6	SCN	A	309	-	2,2,2	1.52	1 (50%)	1,1,1	0.21	0
6	SCN	A	310	5	2,2,2	1.53	1 (50%)	1,1,1	0.26	0
6	SCN	A	311	5	2,2,2	1.68	1 (50%)	1,1,1	0.35	0
6	SCN	A	312	5	2,2,2	1.63	1 (50%)	1,1,1	0.59	0
6	SCN	A	314	5	2,2,2	1.63	1 (50%)	1,1,1	0.54	0
6	SCN	A	315	5	2,2,2	1.69	1 (50%)	1,1,1	0.30	0
6	SCN	A	316	5	2,2,2	1.55	1 (50%)	1,1,1	0.19	0
6	SCN	A	317	5	2,2,2	1.84	1 (50%)	1,1,1	0.38	0
6	SCN	A	318	5	2,2,2	1.67	1 (50%)	1,1,1	0.19	0
6	SCN	A	319	5	2,2,2	1.63	1 (50%)	1,1,1	0.19	0
6	SCN	A	321	5	2,2,2	1.55	1 (50%)	1,1,1	0.23	0
6	SCN	A	322	5	2,2,2	1.79	1 (50%)	1,1,1	0.50	0
6	SCN	A	324	5	2,2,2	1.57	1 (50%)	1,1,1	0.32	0
6	SCN	A	325	-	2,2,2	1.58	1 (50%)	1,1,1	0.31	0
6	SCN	A	326	5	2,2,2	1.77	1 (50%)	1,1,1	0.48	0
6	SCN	A	327	-	2,2,2	1.64	1 (50%)	1,1,1	0.21	0
6	SCN	A	328	-	2,2,2	1.59	1 (50%)	1,1,1	0.40	0
6	SCN	A	330	-	2,2,2	1.63	1 (50%)	1,1,1	0.19	0
6	SCN	A	331	5	2,2,2	1.73	1 (50%)	1,1,1	0.37	0
6	SCN	A	332	-	2,2,2	1.53	1 (50%)	1,1,1	0.32	0
6	SCN	A	333	-	2,2,2	1.70	1 (50%)	1,1,1	0.38	0
6	SCN	A	335	-	2,2,2	1.57	1 (50%)	1,1,1	0.29	0
6	SCN	A	336	-	2,2,2	1.50	1 (50%)	1,1,1	0.61	0
6	SCN	A	337	-	2,2,2	1.38	0	1,1,1	0.33	0
6	SCN	A	338	5	2,2,2	1.54	1 (50%)	1,1,1	0.29	0
6	SCN	A	340	5	2,2,2	1.80	1 (50%)	1,1,1	0.48	0
6	SCN	A	341	-	2,2,2	1.57	1 (50%)	1,1,1	0.15	0
6	SCN	A	342	-	2,2,2	1.63	1 (50%)	1,1,1	0.32	0
6	SCN	A	343	-	2,2,2	1.60	1 (50%)	1,1,1	0.16	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
6	SCN	A	344	-	2,2,2	1.57	1 (50%)	1,1,1	0.35	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	CXS	A	301	-	-	0/8/16/16	0/1/1/1
3	GOL	A	302	-	-	0/4/4/4	0/0/0/0
3	GOL	A	303	-	-	0/4/4/4	0/0/0/0
4	SO4	A	304	-	-	0/0/0/0	0/0/0/0
3	GOL	A	305	-	-	0/4/4/4	0/0/0/0
6	SCN	A	307	5	-	0/0/0/0	0/0/0/0
6	SCN	A	308	5	-	0/0/0/0	0/0/0/0
6	SCN	A	309	-	-	0/0/0/0	0/0/0/0
6	SCN	A	310	5	-	0/0/0/0	0/0/0/0
6	SCN	A	311	5	-	0/0/0/0	0/0/0/0
6	SCN	A	312	5	-	0/0/0/0	0/0/0/0
6	SCN	A	314	5	-	0/0/0/0	0/0/0/0
6	SCN	A	315	5	-	0/0/0/0	0/0/0/0
6	SCN	A	316	5	-	0/0/0/0	0/0/0/0
6	SCN	A	317	5	-	0/0/0/0	0/0/0/0
6	SCN	A	318	5	-	0/0/0/0	0/0/0/0
6	SCN	A	319	5	-	0/0/0/0	0/0/0/0
6	SCN	A	321	5	-	0/0/0/0	0/0/0/0
6	SCN	A	322	5	-	0/0/0/0	0/0/0/0
6	SCN	A	324	5	-	0/0/0/0	0/0/0/0
6	SCN	A	325	-	-	0/0/0/0	0/0/0/0
6	SCN	A	326	5	-	0/0/0/0	0/0/0/0
6	SCN	A	327	-	-	0/0/0/0	0/0/0/0
6	SCN	A	328	-	-	0/0/0/0	0/0/0/0
6	SCN	A	330	-	-	0/0/0/0	0/0/0/0
6	SCN	A	331	5	-	0/0/0/0	0/0/0/0
6	SCN	A	332	-	-	0/0/0/0	0/0/0/0
6	SCN	A	333	-	-	0/0/0/0	0/0/0/0
6	SCN	A	335	-	-	0/0/0/0	0/0/0/0
6	SCN	A	336	-	-	0/0/0/0	0/0/0/0
6	SCN	A	337	-	-	0/0/0/0	0/0/0/0
6	SCN	A	338	5	-	0/0/0/0	0/0/0/0
6	SCN	A	340	5	-	0/0/0/0	0/0/0/0
6	SCN	A	341	-	-	0/0/0/0	0/0/0/0

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	SCN	A	342	-	-	0/0/0/0	0/0/0/0
6	SCN	A	343	-	-	0/0/0/0	0/0/0/0
6	SCN	A	344	-	-	0/0/0/0	0/0/0/0

All (32) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	301	CXS	C1-S	-6.80	1.67	1.77
6	A	317	SCN	C-S	-2.60	1.48	1.63
6	A	340	SCN	C-S	-2.54	1.48	1.63
6	A	322	SCN	C-S	-2.52	1.48	1.63
6	A	326	SCN	C-S	-2.51	1.48	1.63
6	A	331	SCN	C-S	-2.44	1.49	1.63
6	A	333	SCN	C-S	-2.40	1.49	1.63
6	A	315	SCN	C-S	-2.38	1.49	1.63
6	A	311	SCN	C-S	-2.37	1.49	1.63
6	A	318	SCN	C-S	-2.36	1.49	1.63
6	A	314	SCN	C-S	-2.31	1.49	1.63
6	A	312	SCN	C-S	-2.31	1.49	1.63
6	A	327	SCN	C-S	-2.31	1.49	1.63
6	A	330	SCN	C-S	-2.30	1.49	1.63
6	A	319	SCN	C-S	-2.29	1.50	1.63
6	A	342	SCN	C-S	-2.29	1.50	1.63
6	A	343	SCN	C-S	-2.26	1.50	1.63
6	A	328	SCN	C-S	-2.23	1.50	1.63
6	A	325	SCN	C-S	-2.21	1.50	1.63
6	A	324	SCN	C-S	-2.21	1.50	1.63
6	A	344	SCN	C-S	-2.21	1.50	1.63
6	A	341	SCN	C-S	-2.20	1.50	1.63
6	A	335	SCN	C-S	-2.19	1.50	1.63
6	A	321	SCN	C-S	-2.18	1.50	1.63
6	A	316	SCN	C-S	-2.18	1.50	1.63
6	A	338	SCN	C-S	-2.16	1.50	1.63
6	A	332	SCN	C-S	-2.15	1.50	1.63
6	A	310	SCN	C-S	-2.14	1.50	1.63
6	A	308	SCN	C-S	-2.13	1.50	1.63
6	A	309	SCN	C-S	-2.13	1.51	1.63
6	A	336	SCN	C-S	-2.08	1.51	1.63
2	A	301	CXS	O1-S	6.27	1.63	1.45

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	301	CXS	O2-S-C1	-5.16	103.23	106.87
2	A	301	CXS	O3-S-O1	-2.87	104.91	111.26
2	A	301	CXS	O2-S-O1	-2.58	106.68	113.96
2	A	301	CXS	C7-C8-C9	-2.46	106.35	111.44
2	A	301	CXS	C9-C4-C5	-2.40	106.88	110.87
2	A	301	CXS	O3-S-C1	4.28	113.89	104.99
2	A	301	CXS	O1-S-C1	8.78	113.07	106.87

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

7 monomers are involved in 8 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	A	315	SCN	2	0
6	A	317	SCN	2	0
6	A	324	SCN	1	0
6	A	326	SCN	2	0
6	A	327	SCN	1	0
6	A	330	SCN	1	0
6	A	340	SCN	2	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	263/315 (83%)	0.88	24 (9%)	11 10	23, 35, 61, 76	0

All (24) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	38	SER	6.9
1	A	100	LEU	5.0
1	A	231	VAL	4.9
1	A	109	ALA	4.0
1	A	25	GLY	4.0
1	A	279	PRO	3.7
1	A	281	GLY	3.7
1	A	265	PHE	3.2
1	A	110	GLY	3.1
1	A	222	ARG	2.9
1	A	284	PHE	2.9
1	A	283	TRP	2.9
1	A	227	THR	2.8
1	A	142	ASP	2.7
1	A	226	HIS	2.6
1	A	141	ILE	2.6
1	A	277	ASN	2.5
1	A	280	ASP	2.5
1	A	78	CYS	2.4
1	A	230	ASP	2.3
1	A	253	GLY	2.1
1	A	122	PHE	2.1
1	A	41	ALA	2.0
1	A	217	VAL	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(Å ²)	Q<0.9
4	SO4	A	304	5/5	0.85	0.48	14.89	80,82,88,89	0
3	GOL	A	305	6/6	0.93	0.28	8.36	67,73,80,87	0
6	SCN	A	317	3/3	0.77	0.26	7.64	52,52,57,70	0
6	SCN	A	318	3/3	0.94	0.23	6.97	71,71,75,76	0
3	GOL	A	302	6/6	0.67	0.15	3.22	67,72,73,76	0
2	CXS	A	301	14/14	0.94	0.17	2.76	38,48,65,68	0
5	PT	A	320	1/1	0.95	0.07	-1.83	55,55,55,55	1
6	SCN	A	307	3/3	0.96	0.08	-2.28	47,47,61,61	0
6	SCN	A	316	3/3	0.97	0.17	-	59,59,65,69	0
6	SCN	A	326	3/3	0.69	0.16	-	62,62,62,79	0
5	PT	A	313	1/1	0.97	0.05	-	57,57,57,57	0
6	SCN	A	315	3/3	0.71	0.21	-	75,75,83,85	0
6	SCN	A	333	3/3	0.84	0.56	-	74,74,80,89	0
3	GOL	A	303	6/6	0.76	0.13	-	63,65,67,71	0
6	SCN	A	308	3/3	0.80	0.17	-	55,55,62,63	0
6	SCN	A	314	3/3	0.94	0.11	-	48,48,56,65	0
5	PT	A	334	1/1	0.95	0.13	-	105,105,105,105	0
6	SCN	A	338	3/3	0.87	0.23	-	63,63,71,75	0
6	SCN	A	328	3/3	0.61	0.55	-	86,86,98,107	0
6	SCN	A	330	3/3	0.57	0.59	-	77,77,84,86	0
6	SCN	A	324	3/3	0.96	0.14	-	65,65,67,81	0
6	SCN	A	337	3/3	0.72	0.31	-	72,72,73,77	0
6	SCN	A	332	3/3	0.79	0.15	-	65,65,65,72	0
6	SCN	A	321	3/3	0.96	0.09	-	48,48,56,66	0
6	SCN	A	311	3/3	0.97	0.06	-	55,55,67,68	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors(\AA^2)	Q<0.9
6	SCN	A	331	3/3	0.95	0.20	-	67,67,71,73	0
6	SCN	A	312	3/3	0.92	0.13	-	51,51,54,65	0
6	SCN	A	342	3/3	0.09	0.38	-	77,77,83,98	0
6	SCN	A	336	3/3	0.84	0.41	-	88,88,95,95	0
6	SCN	A	344	3/3	0.61	0.27	-	89,89,95,98	0
6	SCN	A	340	3/3	0.86	0.26	-	68,68,75,79	0
6	SCN	A	335	3/3	0.65	0.27	-	85,85,87,88	0
5	PT	A	339	1/1	0.98	0.14	-	113,113,113,113	0
6	SCN	A	322	3/3	0.81	0.39	-	86,86,89,92	0
6	SCN	A	327	3/3	0.91	0.17	-	78,78,78,85	0
6	SCN	A	341	3/3	0.12	0.37	-	83,83,97,103	0
6	SCN	A	343	3/3	0.59	0.12	-	68,68,77,80	0
5	PT	A	306	1/1	0.98	0.03	-	56,56,56,56	0
6	SCN	A	319	3/3	0.86	0.32	-	73,73,76,77	0
5	PT	A	329	1/1	0.97	0.11	-	96,96,96,96	0
6	SCN	A	310	3/3	0.87	0.14	-	58,58,65,65	0
6	SCN	A	309	3/3	0.73	0.40	-	80,80,84,95	0
6	SCN	A	325	3/3	0.71	0.26	-	64,64,72,82	0
5	PT	A	323	1/1	0.99	0.09	-	88,88,88,88	0

6.5 Other polymers [i](#)

There are no such residues in this entry.