



# Full wwPDB X-ray Structure Validation Report ⓘ

Feb 1, 2016 – 06:20 AM GMT

PDB ID : 2WR9  
Title : CRYSTAL STRUCTURE OF BURKHOLDERIA CENOCEPACIA LECTIN (BCLA) COMPLEXED WITH AMAN1-3MAN DISACCHARIDE  
Authors : Lameignere, E.; Shiao, T.C.; Roy, R.; Wimmerova, M.; Dubreuil, F.; Varrot, A.; Imberty, A.  
Deposited on : 2009-09-01  
Resolution : 1.75 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](mailto: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 (RC4), CSD as536be (2015)  
Xtriage (Phenix) : 1.9-1692  
EDS : rb-20026688  
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) : trunk26865

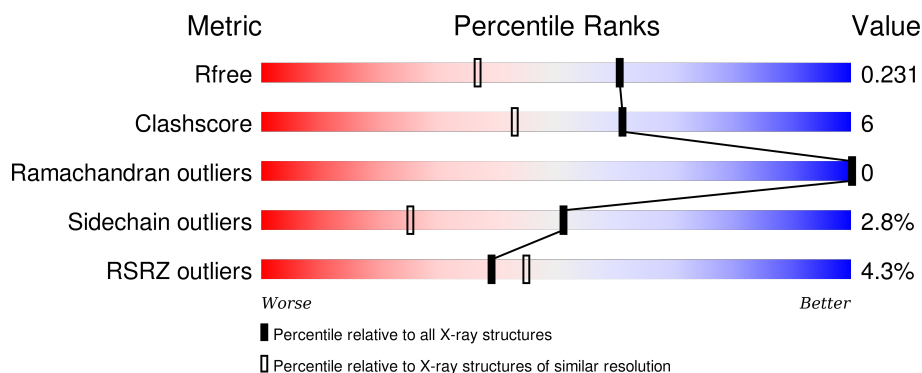
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

## *X-RAY DIFFRACTION*

The reported resolution of this entry is 1.75 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))
$R_{free}$	91344	1609 (1.76-1.76)
Clashscore	102246	1730 (1.76-1.76)
Ramachandran outliers	100387	1711 (1.76-1.76)
Sidechain outliers	100360	1711 (1.76-1.76)
RSRZ outliers	91569	1610 (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  $\geq 3$ , 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	128	<div> <div>2%</div> <div>84%</div> <div>9%</div> <div>7%</div> </div>
1	B	128	<div> <div>9%</div> <div>82%</div> <div>13%</div> <div>• •</div> </div>
1	C	128	<div> <div>3%</div> <div>80%</div> <div>13%</div> <div>• 5%</div> </div>
1	D	128	<div> <div>2%</div> <div>88%</div> <div>9%</div> <div>•</div> </div>

## 2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 4293 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 LECTIN.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
1	A	119	Total	C	N	O	0	2	0
			917	575	159	183			
1	B	123	Total	C	N	O	0	0	0
			939	586	167	186			
1	C	121	Total	C	N	O	0	0	0
			927	580	165	182			
1	D	124	Total	C	N	O	0	0	0
			946	590	168	188			

- Molecule 2 is a polymer of unknown type called SUGAR (2-MER).

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	2	Total	C	O	0	0
			23	12	11		
2	D	2	Total	C	O	0	0
			23	12	11		

- Molecule 3 is CALCIUM ION (three-letter code: CA) (formula: Ca).

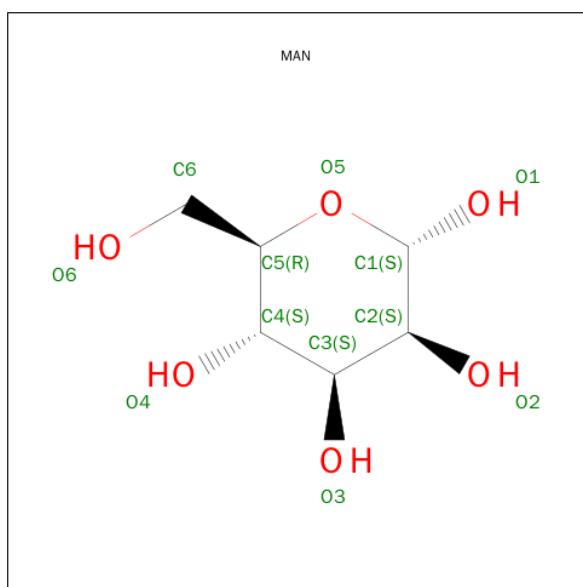
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	B	2	Total	Ca	0	0
			2	2		
3	A	2	Total	Ca	0	0
			2	2		
3	D	2	Total	Ca	0	0
			2	2		
3	C	2	Total	Ca	0	0
			2	2		

- Molecule 4 is SULFATE ION (three-letter code: SO4) (formula: O<sub>4</sub>S).



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

- Molecule 5 is SUGAR (ALPHA-D-MANNOSE) (three-letter code: MAN) (formula: C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>).



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

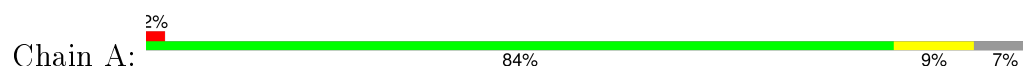
- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	115	Total	O	0	0
			115	115		
6	B	110	Total	O	0	0
			110	110		
6	C	121	Total	O	0	0
			121	121		
6	D	117	Total	O	0	0
			117	117		

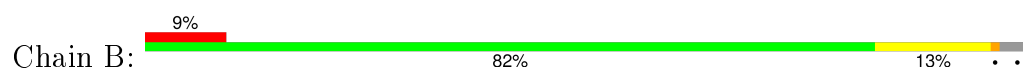
### 3 Residue-property plots [i](#)

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.

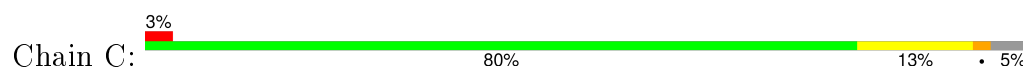
#### • Molecule 1: LECTIN



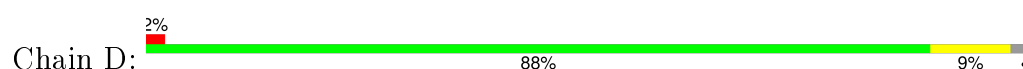
#### • Molecule 1: LECTIN



#### • Molecule 1: LECTIN



#### • Molecule 1: LECTIN



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	57.96 Å 48.97 Å 76.26 Å 90.00° 98.89° 90.00°	Depositor
Resolution (Å)	75.38 – 1.75 75.34 – 1.75	Depositor EDS
% Data completeness (in resolution range)	97.7 (75.38-1.75) 97.7 (75.34-1.75)	Depositor EDS
$R_{merge}$	0.08	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.73 (at 1.75 Å)	Xtriage
Refinement program	REFMAC 5.5.0072	Depositor
R, $R_{free}$	0.176 , 0.225 0.180 , 0.231	Depositor DCC
$R_{free}$ test set	2120 reflections (5.33%)	DCC
Wilson B-factor (Å <sup>2</sup> )	14.4	Xtriage
Anisotropy	0.147	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.36 , 47.5	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.32$	Xtriage
Outliers	2 of 41901 reflections (0.005%)	Xtriage
$F_o, F_c$ correlation	0.96	EDS
Total number of atoms	4293	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	16.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 44.39 % of the origin peak, indicating pseudo translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo translational symmetry is equal to 1.5378e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

<sup>1</sup> Intensities estimated from amplitudes.

<sup>2</sup> Theoretical 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: CA, SO4, MAN

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	0.76	0/942	0.81	1/1274 (0.1%)
1	B	0.81	0/961	0.83	1/1302 (0.1%)
1	C	0.80	0/949	0.88	2/1286 (0.2%)
1	D	0.79	0/968	0.85	1/1312 (0.1%)
All	All	0.79	0/3820	0.85	5/5174 (0.1%)

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	115	ASP	CB-CG-OD1	5.95	123.65	118.30
1	C	9	ARG	NE-CZ-NH2	-5.76	117.42	120.30
1	C	9	ARG	NE-CZ-NH1	5.48	123.04	120.30
1	D	115	ASP	CB-CG-OD1	5.41	123.17	118.30
1	B	54	ARG	NE-CZ-NH2	-5.17	117.72	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	917	0	873	5	0
1	B	939	0	895	13	0

*Continued on next page...*



*Continued from previous page...*

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	927	0	885	18	0
1	D	946	0	902	8	0
2	A	23	0	18	0	0
2	D	23	0	18	0	0
3	A	2	0	0	0	0
3	B	2	0	0	0	0
3	C	2	0	0	0	0
3	D	2	0	0	0	0
4	B	20	0	0	0	0
4	C	10	0	0	0	0
4	D	5	0	0	0	0
5	C	12	0	10	1	0
6	A	115	0	0	1	0
6	B	110	0	0	3	0
6	C	121	0	0	5	0
6	D	117	0	0	3	0
All	All	4293	0	3601	41	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 6.

All (41) 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:C:128:GLY:HA2	6:D:2047:HOH:O	1.36	1.25
1:B:13:PHE:HE2	1:B:106:VAL:CG2	2.01	0.73
1:B:13:PHE:CE2	1:B:106:VAL:CG2	2.84	0.60
1:B:13:PHE:CE2	1:B:106:VAL:HG22	2.38	0.59
1:B:13:PHE:HE2	1:B:106:VAL:HG22	1.70	0.56
6:B:2084:HOH:O	1:C:78:LYS:HE3	2.07	0.55
1:C:75:VAL:HG21	1:C:110:ASP:HB3	1.88	0.55
1:D:32:GLN:NE2	6:D:2022:HOH:O	2.40	0.54
1:C:71:PHE:HZ	1:C:123:LEU:HD21	1.73	0.53
1:C:38:PHE:HB2	1:C:70:ARG:CG	2.38	0.53
1:C:8:ASN:C	1:C:8:ASN:HD22	2.12	0.53
1:C:38:PHE:HB2	1:C:70:ARG:HG3	1.89	0.53
1:B:18:ASN:ND2	6:B:2007:HOH:O	2.34	0.53
1:C:24:ILE:HG21	1:D:24:ILE:HG21	1.91	0.52
1:B:70:ARG:NH1	1:B:72:GLU:OE2	2.36	0.51
1:C:75:VAL:HG21	1:C:110:ASP:CB	2.41	0.50
1:B:93:LYS:HD3	1:B:97:SER:OG	2.12	0.50

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:13:PHE:HE2	1:D:106:VAL:CG2	2.25	0.50
1:B:95:ASP:HB2	1:C:78:LYS:HD3	1.94	0.48
1:A:24:ILE:HG21	1:B:24:ILE:HG21	1.96	0.47
1:C:54:ARG:HG3	6:C:2061:HOH:O	2.13	0.47
1:A:11:GLY:N	6:A:2003:HOH:O	2.39	0.47
1:A:39:ILE:HD12	1:A:46:ALA:CB	2.45	0.47
1:B:32:GLN:NE2	6:B:2017:HOH:O	2.47	0.46
1:D:70:ARG:NH2	6:D:2068:HOH:O	2.49	0.46
1:A:107:VAL:HB	1:A:116:TYR:O	2.16	0.46
1:C:8:ASN:C	1:C:8:ASN:ND2	2.69	0.45
1:C:107:VAL:HB	1:C:116:TYR:O	2.16	0.45
1:C:39:ILE:HD13	1:C:63:ASN:O	2.17	0.45
1:C:9:ARG:NH2	1:D:92:LYS:O	2.50	0.45
1:C:37:LEU:C	1:C:37:LEU:HD23	2.37	0.45
1:D:13:PHE:CE2	1:D:106:VAL:CG2	3.00	0.44
6:C:2057:HOH:O	1:D:128:GLY:HA2	2.17	0.43
1:C:11:GLY:HA2	6:C:2009:HOH:O	2.18	0.43
1:B:75:VAL:HG21	1:B:110:ASP:CB	2.49	0.43
1:A:71:PHE:HZ	1:A:123:LEU:HD21	1.83	0.42
1:D:16:PRO:HA	1:D:17:PRO:HD3	1.99	0.41
1:B:75:VAL:HG21	1:B:110:ASP:HB2	2.02	0.41
1:B:112:HIS:N	1:B:112:HIS:ND1	2.69	0.41
1:C:53:THR:O	6:C:2058:HOH:O	2.22	0.41
5:C:1129:MAN:O1	6:C:2119:HOH:O	2.20	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	118/128 (92%)	115 (98%)	3 (2%)	0	<b>100</b> <b>100</b>

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	121/128 (94%)	118 (98%)	3 (2%)	0	100	100
1	C	119/128 (93%)	117 (98%)	2 (2%)	0	100	100
1	D	122/128 (95%)	119 (98%)	3 (2%)	0	100	100
All	All	480/512 (94%)	469 (98%)	11 (2%)	0	100	100

There are no Ramachandran outliers to report.

### 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	97/104 (93%)	94 (97%)	3 (3%)	47	21
1	B	100/104 (96%)	95 (95%)	5 (5%)	30	8
1	C	98/104 (94%)	97 (99%)	1 (1%)	82	69
1	D	101/104 (97%)	99 (98%)	2 (2%)	63	39
All	All	396/416 (95%)	385 (97%)	11 (3%)	51	25

All (11) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	32	GLN
1	A	54	ARG
1	A	92	LYS
1	B	9	ARG
1	B	14	SER
1	B	74	SER
1	B	112	HIS
1	B	114	SER
1	C	8	ASN
1	D	9	ARG
1	D	43	GLN

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	32	GLN
1	B	32	GLN
1	C	8	ASN
1	C	32	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](#)

4 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	$\# Z  > 2$
2	MAN	A	1129	3,2	11,11,12	0.71	0	14,15,17	1.34	2 (14%)
2	MAN	A	1130	2	12,12,12	0.65	0	17,17,17	2.25	4 (23%)
2	MAN	D	1129	3,2	11,11,12	0.73	0	14,15,17	0.86	0
2	MAN	D	1130	2	12,12,12	0.77	0	17,17,17	1.71	3 (17%)

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	MAN	A	1129	3,2	-	0/2/19/22	0/1/1/1
2	MAN	A	1130	2	-	0/2/22/22	0/1/1/1

*Continued on next page...*

*Continued from previous page...*

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	MAN	D	1129	3,2	-	0/2/19/22	0/1/1/1
2	MAN	D	1130	2	-	0/2/22/22	0/1/1/1

There are no bond length outliers.

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	1130	MAN	O1-C1-O5	-4.04	99.20	110.25
2	A	1130	MAN	C1-C2-C3	-4.00	104.48	110.43
2	D	1130	MAN	O3-C3-C2	-2.14	105.53	110.34
2	A	1130	MAN	O3-C3-C2	-2.04	105.74	110.34
2	A	1129	MAN	C1-O5-C5	2.33	115.21	112.25
2	A	1129	MAN	O4-C4-C5	2.94	117.03	109.24
2	D	1130	MAN	C1-O5-C5	3.29	119.56	113.47
2	A	1130	MAN	O5-C1-C2	3.56	115.48	109.80
2	A	1130	MAN	O1-C1-O5	6.13	127.02	110.25

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.6 Ligand geometry ⓘ

Of 16 ligands modelled in this entry, 8 are monoatomic - leaving 8 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	SO4	B	1131	-	4,4,4	0.17	0	6,6,6	0.64	0
4	SO4	B	1132	-	4,4,4	0.34	0	6,6,6	0.11	0
4	SO4	B	1133	-	4,4,4	0.62	0	6,6,6	0.74	0
4	SO4	B	1134	-	4,4,4	0.46	0	6,6,6	0.38	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
5	MAN	C	1129	3	12,12,12	0.74	0	17,17,17	2.41	4 (23%)
4	SO4	C	1132	-	4,4,4	0.18	0	6,6,6	0.21	0
4	SO4	C	1133	-	4,4,4	0.42	0	6,6,6	0.75	0
4	SO4	D	1133	-	4,4,4	0.51	0	6,6,6	0.37	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	SO4	B	1131	-	-	0/0/0/0	0/0/0/0
4	SO4	B	1132	-	-	0/0/0/0	0/0/0/0
4	SO4	B	1133	-	-	0/0/0/0	0/0/0/0
4	SO4	B	1134	-	-	0/0/0/0	0/0/0/0
5	MAN	C	1129	3	-	0/2/22/22	0/1/1/1
4	SO4	C	1132	-	-	0/0/0/0	0/0/0/0
4	SO4	C	1133	-	-	0/0/0/0	0/0/0/0
4	SO4	D	1133	-	-	0/0/0/0	0/0/0/0

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	C	1129	MAN	C1-O5-C5	-4.44	105.27	113.47
5	C	1129	MAN	C1-C2-C3	-4.16	104.24	110.43
5	C	1129	MAN	O5-C1-C2	3.71	115.71	109.80
5	C	1129	MAN	O1-C1-O5	5.99	126.63	110.25

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	C	1129	MAN	1	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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	119/128 (92%)	0.04	3 (2%) 61 67	6, 14, 26, 36	1 (0%)
1	B	123/128 (96%)	0.23	11 (8%) 12 14	5, 13, 31, 35	1 (0%)
1	C	121/128 (94%)	0.14	4 (3%) 50 56	6, 14, 28, 34	2 (1%)
1	D	124/128 (96%)	-0.02	3 (2%) 62 69	6, 12, 26, 30	2 (1%)
All	All	487/512 (95%)	0.10	21 (4%) 39 45	5, 13, 29, 36	6 (1%)

All (21) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	10	ALA	5.1
1	D	128	GLY	4.2
1	B	11	GLY	3.7
1	B	114	SER	3.6
1	B	8	ASN	3.5
1	A	10	ALA	3.5
1	B	9	ARG	3.4
1	C	9	ARG	3.4
1	B	112	HIS	3.3
1	C	94	SER	3.1
1	C	8	ASN	3.1
1	A	11	GLY	3.0
1	D	43	GLN	2.9
1	A	128[A]	GLY	2.8
1	B	111	GLY	2.5
1	C	11	GLY	2.5
1	B	95	ASP	2.4
1	B	94	SER	2.4
1	D	9	ARG	2.4
1	B	7	SER	2.3
1	B	12	GLU	2.2



## 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](#)

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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
2	MAN	A	1130	12/12	0.94	0.11	0.63	12,15,17,18	0
2	MAN	A	1129	11/12	0.97	0.09	0.25	10,12,14,15	0
2	MAN	D	1130	12/12	0.97	0.10	0.07	8,14,16,16	0
2	MAN	D	1129	11/12	0.98	0.07	-0.61	8,11,12,13	0

## 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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
4	SO4	C	1132	5/5	0.95	0.12	1.90	46,47,48,49	0
4	SO4	B	1132	5/5	0.95	0.14	1.11	41,41,43,43	0
5	MAN	C	1129	12/12	0.87	0.16	0.59	22,26,29,30	0
3	CA	B	1130	1/1	0.96	0.14	0.23	32,32,32,32	0
4	SO4	B	1131	5/5	0.95	0.13	0.10	34,36,39,39	0
4	SO4	C	1133	5/5	0.98	0.10	-0.34	28,30,32,33	0
3	CA	A	1132	1/1	1.00	0.07	-0.46	5,5,5,5	0
4	SO4	B	1133	5/5	0.98	0.08	-0.77	25,28,29,30	0
3	CA	D	1131	1/1	1.00	0.07	-0.80	3,3,3,3	0
4	SO4	B	1134	5/5	0.99	0.07	-0.91	23,24,27,30	0
3	CA	C	1130	1/1	0.99	0.04	-1.15	19,19,19,19	0
3	CA	A	1131	1/1	1.00	0.06	-1.20	7,7,7,7	0
4	SO4	D	1133	5/5	0.98	0.07	-1.22	24,25,27,29	0
3	CA	D	1132	1/1	0.99	0.05	-1.38	7,7,7,7	0
3	CA	B	1129	1/1	0.99	0.04	-1.58	21,21,21,21	0

*Continued on next page...*

*Continued from previous page...*

Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors( $\text{\AA}^2$ )	Q<0.9
3	CA	C	1131	1/1	0.99	0.05	-1.95	15,15,15,15	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.