Full wwPDB X-ray Structure Validation Report (i)

Feb 19, 2016 – 08:01 PM GMT

PDB ID	:	4XBI
Title	:	Structure Of A Malarial Protein Involved in Proteostasis
Authors	:	Egea, P.F.; Ah Young, A.P.; Cascio, D.
Deposited on	:	2014-12-17
Resolution	:	2.01 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 (i) symbol.

The following versions of software and data (see references (1)) were used in the production of this report:

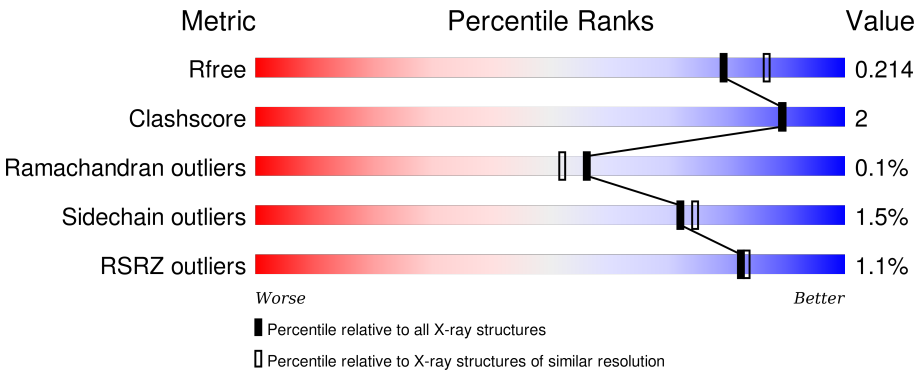
MolProbity	:	4.02b-467
Mogul	:	1.7.1 (RC1), CSD as537be (2016)
Xtriage (Phenix)	:	1.9-1692
EDS	:	rb-20026982
Percentile statistics	:	20151230.v01 (using entries in the PDB archive December 30th 2015)
Refmac	:	5.8.0135
CCP4	:	6.5.0
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	rb-20026982

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.01 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	7858 (2.04-2.00)
Clashscore	102246	9060 (2.04-2.00)
Ramachandran outliers	100387	8952 (2.04-2.00)
Sidechain outliers	100360	8951 (2.04-2.00)
RSRZ outliers	91569	7873 (2.04-2.00)

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 <=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	381	2% 92% 6%
1	B	381	% 92%

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	SO4	A	401	-	-	-	X
2	SO4	A	403	-	-	-	X

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 6227 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 ClpB protein, putative,Green fluorescent protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	377	2934	1870	492	565	7	0	0	0
1	B	370	2886	1835	485	559	7	0	1	0

There are 42 discrepancies between the modelled and reference sequences:

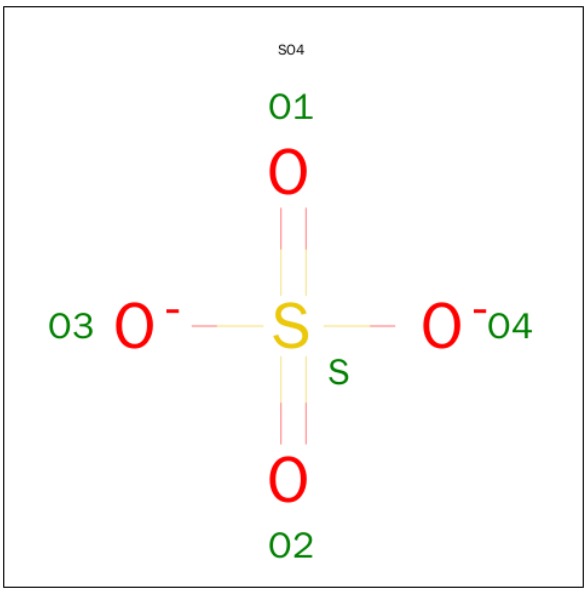
Chain	Residue	Modelled	Actual	Comment	Reference
A	1	MET	-	initiating methionine	UNP Q8IB03
A	2	GLY	-	expression tag	UNP Q8IB03
A	150	GLY	-	linker	UNP Q8IB03
A	179	ARG	SER	engineered mutation	UNP P42212
A	188	ASN	TYR	engineered mutation	UNP P42212
A	213	LEU	PHE	engineered mutation	UNP P42212
A	?	-	SER	deletion	UNP P42212
A	?	-	TYR	deletion	UNP P42212
A	215	CRO	GLY	chromophore	UNP P42212
A	229	ARG	GLN	engineered mutation	UNP P42212
A	248	SER	PHE	engineered mutation	UNP P42212
A	254	THR	ASN	engineered mutation	UNP P42212
A	294	PHE	TYR	engineered mutation	UNP P42212
A	302	THR	MET	engineered mutation	UNP P42212
A	312	ALA	VAL	engineered mutation	UNP P42212
A	320	VAL	ILE	engineered mutation	UNP P42212
A	355	VAL	ALA	engineered mutation	UNP P42212
A	380	LEU	-	expression tag	UNP P42212
A	381	VAL	-	expression tag	UNP P42212
A	382	PRO	-	expression tag	UNP P42212
A	383	ARG	-	expression tag	UNP P42212
B	1	MET	-	initiating methionine	UNP Q8IB03
B	2	GLY	-	expression tag	UNP Q8IB03
B	150	GLY	-	linker	UNP Q8IB03
B	179	ARG	SER	engineered mutation	UNP P42212

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
B	188	ASN	TYR	engineered mutation	UNP P42212
B	213	LEU	PHE	engineered mutation	UNP P42212
B	?	-	SER	deletion	UNP P42212
B	?	-	TYR	deletion	UNP P42212
B	215	CRO	GLY	chromophore	UNP P42212
B	229	ARG	GLN	engineered mutation	UNP P42212
B	248	SER	PHE	engineered mutation	UNP P42212
B	254	THR	ASN	engineered mutation	UNP P42212
B	294	PHE	TYR	engineered mutation	UNP P42212
B	302	THR	MET	engineered mutation	UNP P42212
B	312	ALA	VAL	engineered mutation	UNP P42212
B	320	VAL	ILE	engineered mutation	UNP P42212
B	355	VAL	ALA	engineered mutation	UNP P42212
B	380	LEU	-	expression tag	UNP P42212
B	381	VAL	-	expression tag	UNP P42212
B	382	PRO	-	expression tag	UNP P42212
B	383	ARG	-	expression tag	UNP P42212

- Molecule 2 is SULFATE ION (three-letter code: SO4) (formula: O_4S).



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

Continued on next page...

Continued from previous page...

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

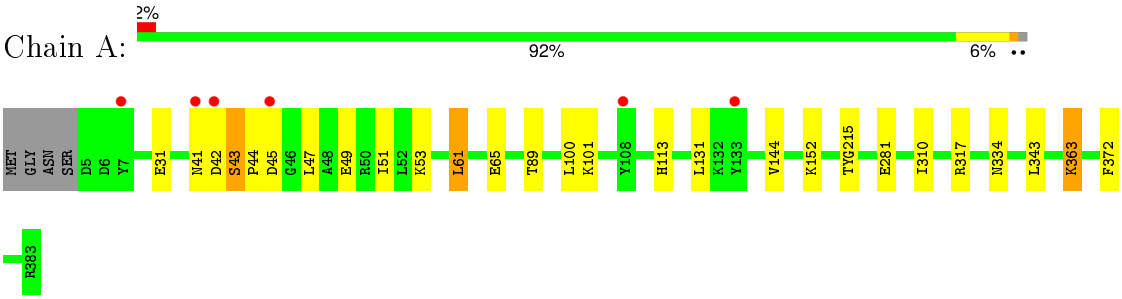
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
3	A	229	229	229	0	0
			Total	O		
3	B	153	153	153	0	0

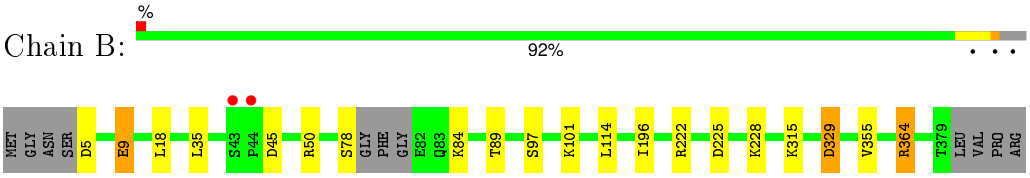
3 Residue-property plots (i)

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: ClpB protein, putative,Green fluorescent protein



- Molecule 1: ClpB protein, putative,Green fluorescent protein



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 65	Depositor
Cell constants a, b, c, α, β, γ	127.53Å 127.53Å 92.57Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	70.95 – 2.01 92.57 – 2.01	Depositor EDS
% Data completeness (in resolution range)	98.6 (70.95-2.01) 98.6 (92.57-2.01)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.56 (at 2.02Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.9_1692)	Depositor
R, R_{free}	0.167 , 0.202 0.176 , 0.214	Depositor DCC
R_{free} test set	2804 reflections (5.28%)	DCC
Wilson B-factor (Å^2)	36.5	Xtriage
Anisotropy	0.373	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.36 , 58.6	EDS
Estimated twinning fraction	0.042 for h,-h-k,-l	Xtriage
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Outliers	0 of 55948 reflections	Xtriage
F_o,F_c correlation	0.97	EDS
Total number of atoms	6227	wwPDB-VP
Average B, all atoms (Å^2)	45.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.15% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.375 respectively for untwinned datasets, and 0.333, 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: SO4, CRO

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	0.44	0/2969	0.52	0/4019
1	B	0.33	0/2921	0.48	0/3956
All	All	0.39	0/5890	0.50	0/7975

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	2934	0	2861	15	0
1	B	2886	0	2804	13	0
2	A	15	0	0	1	0
2	B	10	0	0	1	0
3	A	229	0	0	4	2
3	B	153	0	0	2	1
All	All	6227	0	5665	28	2

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 2.

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)
1:A:281:GLU:OE2	3:A:617:HOH:O	1.85	0.93
2:A:402:SO4:O1	3:A:720:HOH:O	1.91	0.87
1:A:363:LYS:NZ	3:A:501:HOH:O	2.14	0.81
1:B:315:LYS:NZ	1:B:329:ASP:OD2	2.17	0.78
1:B:45:ASP:O	1:B:50:ARG:NH1	2.26	0.68
1:A:101:LYS:HA	1:A:113:HIS:CE1	2.34	0.63
1:B:222:ARG:NH2	2:B:402:SO4:O2	2.31	0.63
1:B:5:ASP:N	3:B:644:HOH:O	2.32	0.62
1:A:49:GLU:O	1:A:53:LYS:HG2	2.07	0.55
1:A:317:ARG:NE	3:A:678:HOH:O	2.40	0.55
1:A:61:LEU:HD22	1:A:65:GLU:HG3	1.89	0.54
1:B:225:ASP:HA	1:B:228:LYS:HE2	1.92	0.51
1:A:42:ASP:O	1:A:44:PRO:HD3	2.11	0.51
1:A:51:ILE:HD13	1:A:144:VAL:HG22	1.92	0.50
1:A:372:PHE:CD2	1:B:355:VAL:HG11	2.47	0.50
1:A:43:SER:O	1:A:45:ASP:N	2.46	0.48
1:B:78:SER:HB2	1:B:84:LYS:NZ	2.29	0.47
1:A:53:LYS:HE2	1:A:53:LYS:HB3	1.59	0.47
1:B:196:ILE:HD13	1:B:364:ARG:HH21	1.80	0.46
1:A:310:ILE:HG13	1:A:334:ASN:HB2	1.98	0.46
1:B:9:GLU:H	1:B:9:GLU:CD	2.20	0.44
1:B:89:THR:HB	3:B:620:HOH:O	2.18	0.44
1:A:47:LEU:HA	1:A:152:LYS:HD2	2.00	0.43
1:B:97[B]:SER:OG	1:B:114:LEU:HD23	2.19	0.42
1:A:31:GLU:OE1	1:A:89:THR:HB	2.20	0.42
1:A:215:CRO:HD1	1:A:215:CRO:N2	2.34	0.42
1:B:101:LYS:HE2	1:B:101:LYS:HB3	1.78	0.41
1:B:18:LEU:HD21	1:B:35:LEU:HA	2.03	0.40

All (2) 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	Interatomic distance (Å)	Clash overlap (Å)
3:A:505:HOH:O	3:A:571:HOH:O[5_555]	1.96	0.24
3:A:568:HOH:O	3:B:529:HOH:O[5_555]	2.14	0.06

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	372/381 (98%)	363 (98%)	8 (2%)	1 (0%)	46	40
1	B	364/381 (96%)	360 (99%)	4 (1%)	0	100	100
All	All	736/762 (97%)	723 (98%)	12 (2%)	1 (0%)	56	52

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	43	SER

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	312/336 (93%)	306 (98%)	6 (2%)	65	66
1	B	308/336 (92%)	305 (99%)	3 (1%)	82	85
All	All	620/672 (92%)	611 (98%)	9 (2%)	72	74

All (9) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	41	ASN
1	A	61	LEU
1	A	100	LEU
1	A	131	LEU
1	A	343	LEU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	363	LYS
1	B	9	GLU
1	B	329	ASP
1	B	364	ARG

Some 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)

2 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the chemical component dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
1	CRO	A	215	1	23,23,24	4.88	8 (34%)	30,32,34	3.02	8 (26%)
1	CRO	B	215	1	23,23,24	4.81	7 (30%)	30,32,34	2.73	5 (16%)

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
1	CRO	A	215	1	-	0/12/31/32	0/2/2/2
1	CRO	B	215	1	-	0/12/31/32	0/2/2/2

All (15) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	215	CRO	CA2-C2	-10.64	1.37	1.48
1	B	215	CRO	CA2-C2	-10.04	1.37	1.48
1	A	215	CRO	C2-N3	-2.93	1.32	1.39
1	B	215	CRO	C2-N3	-2.76	1.32	1.39
1	B	215	CRO	CA3-N3	-2.24	1.42	1.47
1	A	215	CRO	CA3-N3	-2.19	1.42	1.47
1	A	215	CRO	OH-CZ	2.13	1.42	1.37
1	A	215	CRO	CG2-CB2	2.39	1.51	1.46
1	B	215	CRO	C1-N2	2.46	1.36	1.32
1	B	215	CRO	CG2-CB2	2.79	1.52	1.46
1	A	215	CRO	C1-N2	3.15	1.37	1.32
1	A	215	CRO	O2-C2	8.10	1.40	1.23
1	B	215	CRO	O2-C2	8.18	1.40	1.23
1	B	215	CRO	CB2-CA2	17.94	1.51	1.35
1	A	215	CRO	CB2-CA2	18.18	1.51	1.35

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	215	CRO	O2-C2-CA2	-7.42	126.71	130.97
1	A	215	CRO	CG2-CB2-CA2	-6.78	121.68	130.27
1	B	215	CRO	O2-C2-CA2	-6.05	127.49	130.97
1	B	215	CRO	CG2-CB2-CA2	-5.84	122.88	130.27
1	A	215	CRO	N3-C1-N2	-3.59	108.87	111.53
1	B	215	CRO	N3-C1-N2	-3.54	108.91	111.53
1	A	215	CRO	CB2-CA2-C2	-2.09	119.30	122.24
1	A	215	CRO	CG1-CB1-CA1	-2.00	108.91	112.42
1	A	215	CRO	CB2-CA2-N2	2.05	132.35	128.71
1	B	215	CRO	CA1-C1-N2	2.37	127.10	123.71
1	A	215	CRO	CA1-C1-N2	2.91	127.88	123.71
1	B	215	CRO	CA2-C2-N3	10.39	108.51	103.37
1	A	215	CRO	CA2-C2-N3	11.03	108.83	103.37

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
1	A	215	CRO	1	0

5.5 Carbohydrates (i)

There are no carbohydrates in this entry.

5.6 Ligand geometry (i)

5 ligands 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	SO4	A	401	-	4,4,4	0.38	0	6,6,6	0.21	0
2	SO4	A	402	-	4,4,4	0.22	0	6,6,6	0.20	0
2	SO4	A	403	-	4,4,4	0.14	0	6,6,6	0.30	0
2	SO4	B	401	-	4,4,4	0.26	0	6,6,6	0.09	0
2	SO4	B	402	-	4,4,4	0.26	0	6,6,6	0.11	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	SO4	A	401	-	-	0/0/0/0	0/0/0/0
2	SO4	A	402	-	-	0/0/0/0	0/0/0/0
2	SO4	A	403	-	-	0/0/0/0	0/0/0/0
2	SO4	B	401	-	-	0/0/0/0	0/0/0/0
2	SO4	B	402	-	-	0/0/0/0	0/0/0/0

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	402	SO4	1	0
2	B	402	SO4	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 (i)

6.1 Protein, DNA and RNA chains (i)

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	376/381 (98%)	-0.10	6 (1%)	74	76	20, 40, 73, 107	0
1	B	369/381 (96%)	-0.18	2 (0%)	91	92	27, 45, 78, 111	0
All	All	745/762 (97%)	-0.14	8 (1%)	82	83	20, 44, 76, 111	0

All (8) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	108	TYR	3.0
1	A	45	ASP	3.0
1	A	133	TYR	2.9
1	A	41	ASN	2.8
1	B	43	SER	2.4
1	A	42	ASP	2.3
1	B	44	PRO	2.2
1	A	7	TYR	2.0

6.2 Non-standard residues in protein, DNA, RNA chains (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
1	CRO	B	215	22/23	0.97	0.11	-	25,28,36,38	0
1	CRO	A	215	22/23	0.97	0.11	-	20,26,28,30	0

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
2	SO4	A	403	5/5	0.78	0.22	13.69	27,34,73,81	0
2	SO4	A	401	5/5	0.99	0.17	3.49	44,44,54,55	0
2	SO4	B	401	5/5	0.96	0.13	-	92,93,96,98	0
2	SO4	A	402	5/5	0.94	0.11	-	62,74,80,83	0
2	SO4	B	402	5/5	0.91	0.20	-	109,112,114,114	0

6.5 Other polymers (i)

There are no such residues in this entry.