wwPDB X-ray Structure Validation Summary Report (i)

Aug 30, 2023 – 12:46 AM EDT

PDB ID	:	3MUY
Title	:	E. coli (lacZ) beta-galactosidase (R599A)
Authors	:	Dugdale, M.L.; Vance, M.; Driedger, M.L.; Nibber, A.; Tran, A.; Huber, R.E.
Deposited on	:	2010-05-03
Resolution	:	2.50 Å(reported)

This is a wwPDB X-ray Structure Validation Summary Report for a publicly released PDB entry.

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 (i) 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 (1)) were used in the production of this report:

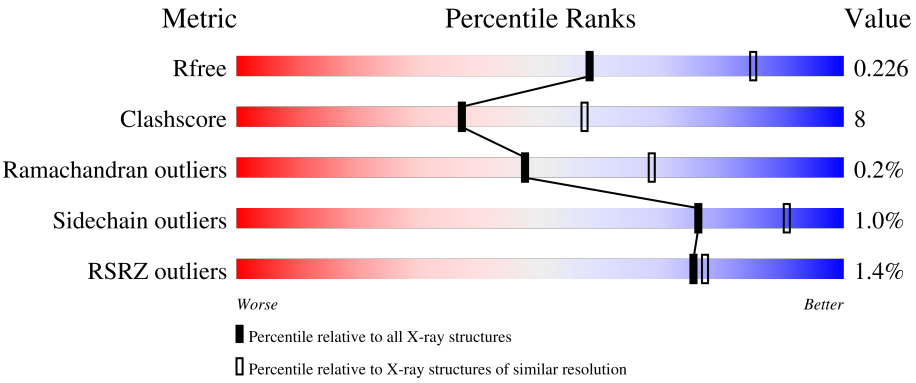
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35

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 2.50 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	4661 (2.50-2.50)
Clashscore	141614	5346 (2.50-2.50)
Ramachandran outliers	138981	5231 (2.50-2.50)
Sidechain outliers	138945	5233 (2.50-2.50)
RSRZ outliers	127900	4559 (2.50-2.50)

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 <=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	1	1023	2% 80% 18%
1	2	1023	% 78% 20%
1	3	1023	% 78% 20%
1	4	1023	2% 80% 18%

2 Entry composition (i)

There are 5 unique types of molecules in this entry. The entry contains 36360 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 Beta-D-galactosidase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	1	1011	Total	C	N	O	S	0	0	0
			8119	5135	1437	1509	38			
1	2	1011	Total	C	N	O	S	0	0	0
			8119	5135	1437	1509	38			
1	3	1011	Total	C	N	O	S	0	0	0
			8119	5135	1437	1509	38			
1	4	1011	Total	C	N	O	S	0	0	0
			8119	5135	1437	1509	38			

There are 36 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
1	1	GLY	-	expression tag	UNP C6UB28
1	2	SER	-	expression tag	UNP C6UB28
1	3	HIS	-	expression tag	UNP C6UB28
1	4	MET	-	expression tag	UNP C6UB28
1	5	LEU	-	expression tag	UNP C6UB28
1	6	GLU	-	expression tag	UNP C6UB28
1	7	ASP	-	expression tag	UNP C6UB28
1	8	PRO	-	expression tag	UNP C6UB28
1	599	ALA	ARG	engineered mutation	UNP C6UB28
2	1	GLY	-	expression tag	UNP C6UB28
2	2	SER	-	expression tag	UNP C6UB28
2	3	HIS	-	expression tag	UNP C6UB28
2	4	MET	-	expression tag	UNP C6UB28
2	5	LEU	-	expression tag	UNP C6UB28
2	6	GLU	-	expression tag	UNP C6UB28
2	7	ASP	-	expression tag	UNP C6UB28
2	8	PRO	-	expression tag	UNP C6UB28
2	599	ALA	ARG	engineered mutation	UNP C6UB28
3	1	GLY	-	expression tag	UNP C6UB28
3	2	SER	-	expression tag	UNP C6UB28
3	3	HIS	-	expression tag	UNP C6UB28

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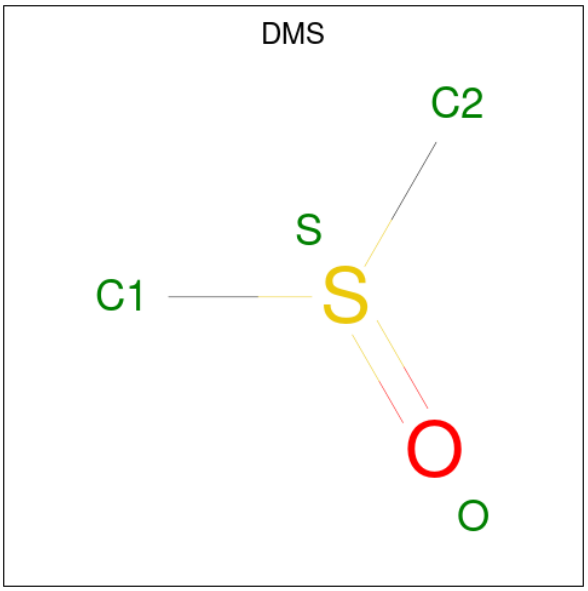
Chain	Residue	Modelled	Actual	Comment	Reference
3	4	MET	-	expression tag	UNP C6UB28
3	5	LEU	-	expression tag	UNP C6UB28
3	6	GLU	-	expression tag	UNP C6UB28
3	7	ASP	-	expression tag	UNP C6UB28
3	8	PRO	-	expression tag	UNP C6UB28
3	599	ALA	ARG	engineered mutation	UNP C6UB28
4	1	GLY	-	expression tag	UNP C6UB28
4	2	SER	-	expression tag	UNP C6UB28
4	3	HIS	-	expression tag	UNP C6UB28
4	4	MET	-	expression tag	UNP C6UB28
4	5	LEU	-	expression tag	UNP C6UB28
4	6	GLU	-	expression tag	UNP C6UB28
4	7	ASP	-	expression tag	UNP C6UB28
4	8	PRO	-	expression tag	UNP C6UB28
4	599	ALA	ARG	engineered mutation	UNP C6UB28

- Molecule 2 is DIMETHYL SULFOXIDE (three-letter code: DMS) (formula: C_2H_6OS).



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

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

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

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	2	1	Total C O S 4 2 1 1	0	0
2	2	1	Total C O S 4 2 1 1	0	0
2	2	1	Total C O S 4 2 1 1	0	0
2	2	1	Total C O S 4 2 1 1	0	0
2	2	1	Total C O S 4 2 1 1	0	0
2	2	1	Total C O S 4 2 1 1	0	0
2	2	1	Total C O S 4 2 1 1	0	0
2	2	1	Total C O S 4 2 1 1	0	0
2	2	1	Total C O S 4 2 1 1	0	0
2	2	1	Total C O S 4 2 1 1	0	0
2	2	1	Total C O S 4 2 1 1	0	0
2	2	1	Total C O S 4 2 1 1	0	0
2	2	1	Total C O S 4 2 1 1	0	0
2	2	1	Total C O S 4 2 1 1	0	0
2	2	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	3	1	Total C O S 4 2 1 1	0	0
2	4	1	Total C O S 4 2 1 1	0	0
2	4	1	Total C O S 4 2 1 1	0	0
2	4	1	Total C O S 4 2 1 1	0	0
2	4	1	Total C O S 4 2 1 1	0	0
2	4	1	Total C O S 4 2 1 1	0	0
2	4	1	Total C O S 4 2 1 1	0	0
2	4	1	Total C O S 4 2 1 1	0	0
2	4	1	Total C O S 4 2 1 1	0	0
2	4	1	Total C O S 4 2 1 1	0	0
2	4	1	Total C O S 4 2 1 1	0	0
2	4	1	Total C O S 4 2 1 1	0	0
2	4	1	Total C O S 4 2 1 1	0	0
2	4	1	Total C O S 4 2 1 1	0	0

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

- Molecule 3 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	1	3	Total Mg 3 3	0	0
3	2	2	Total Mg 2 2	0	0
3	3	2	Total Mg 2 2	0	0
3	4	3	Total Mg 3 3	0	0

- Molecule 4 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	1	3	Total Na 3 3	0	0
4	2	4	Total Na 4 4	0	0
4	3	5	Total Na 5 5	0	0
4	4	4	Total Na 4 4	0	0

- Molecule 5 is water.

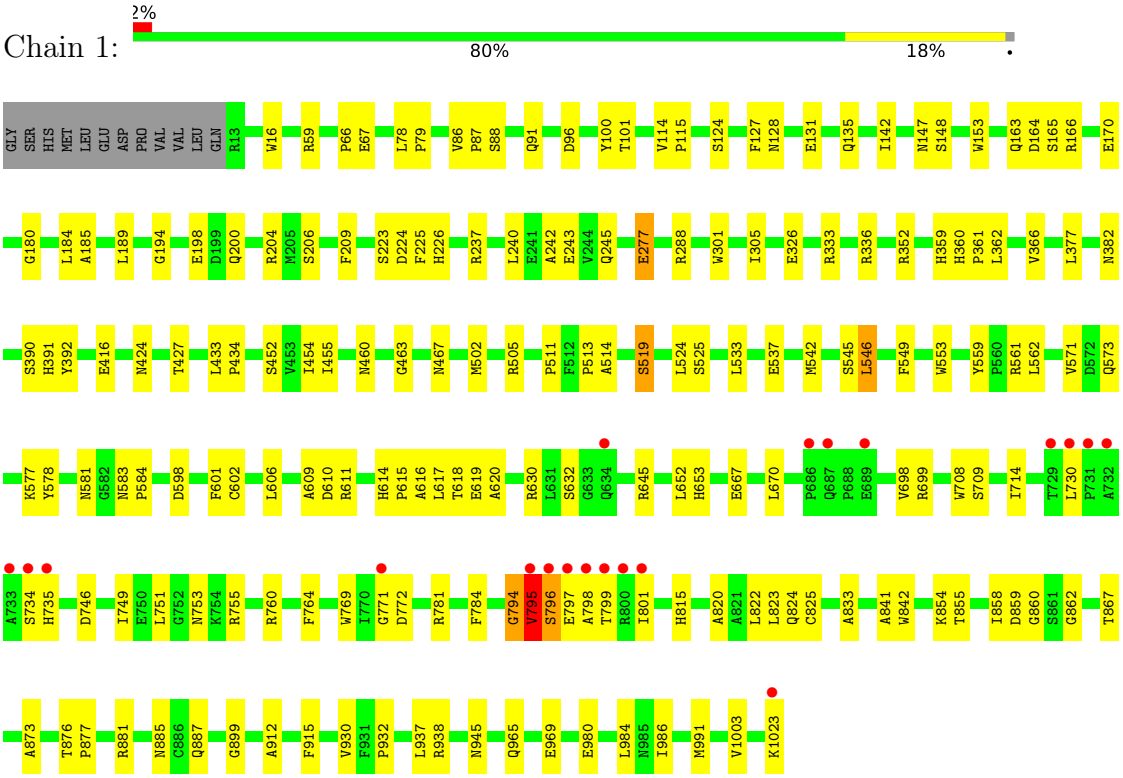
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	1	846	Total O 846 846	0	0
5	2	821	Total O 821 821	0	0
5	3	838	Total O 838 838	0	0
5	4	833	Total O 833 833	0	0

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.

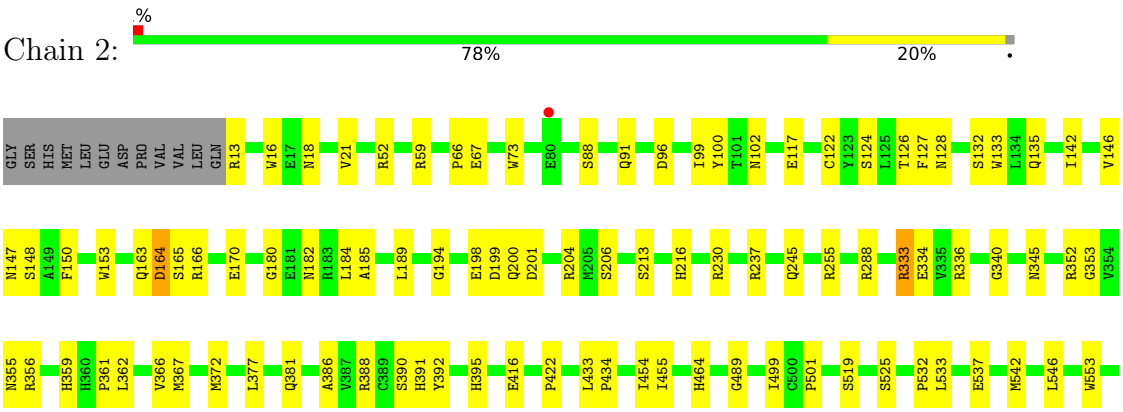
• Molecule 1: Beta-D-galactosidase

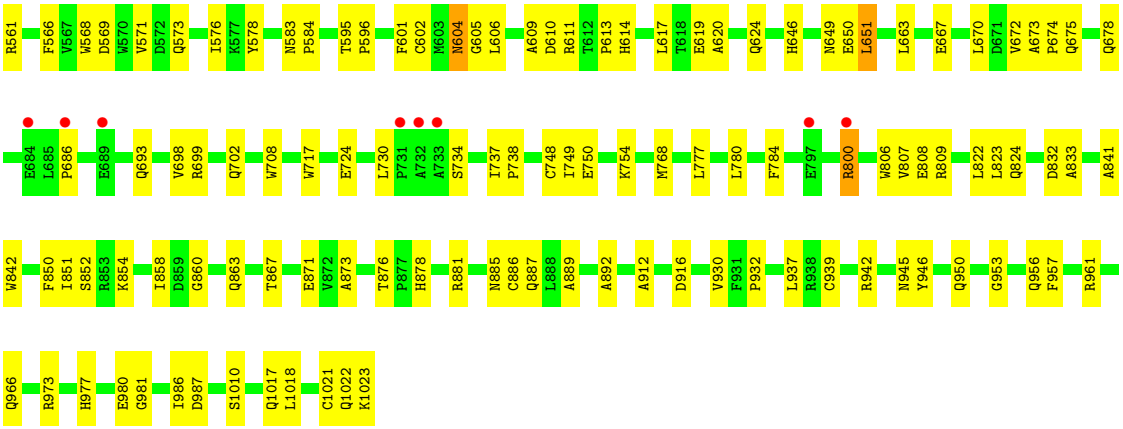
Chain 1:



• Molecule 1: Beta-D-galactosidase

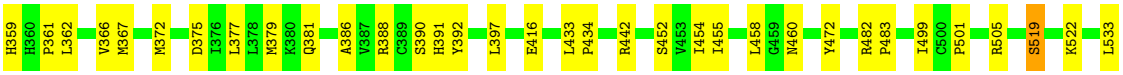
Chain 2:

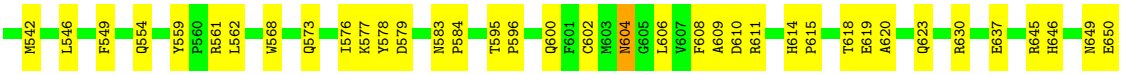


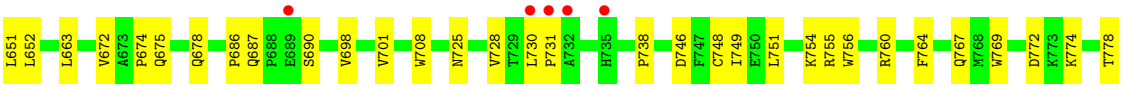


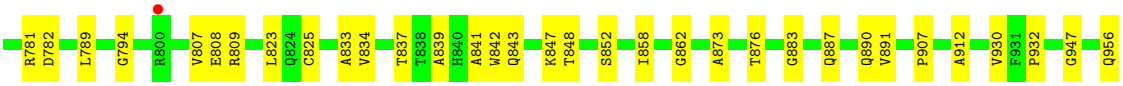
• Molecule 1: Beta-D-galactosidase

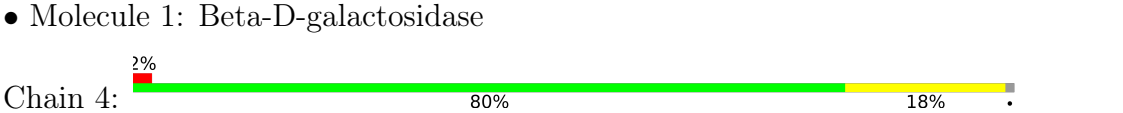
Chain 3:





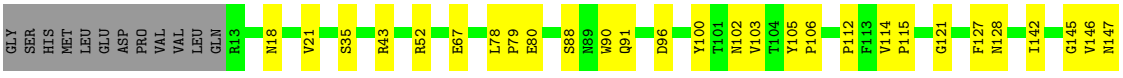


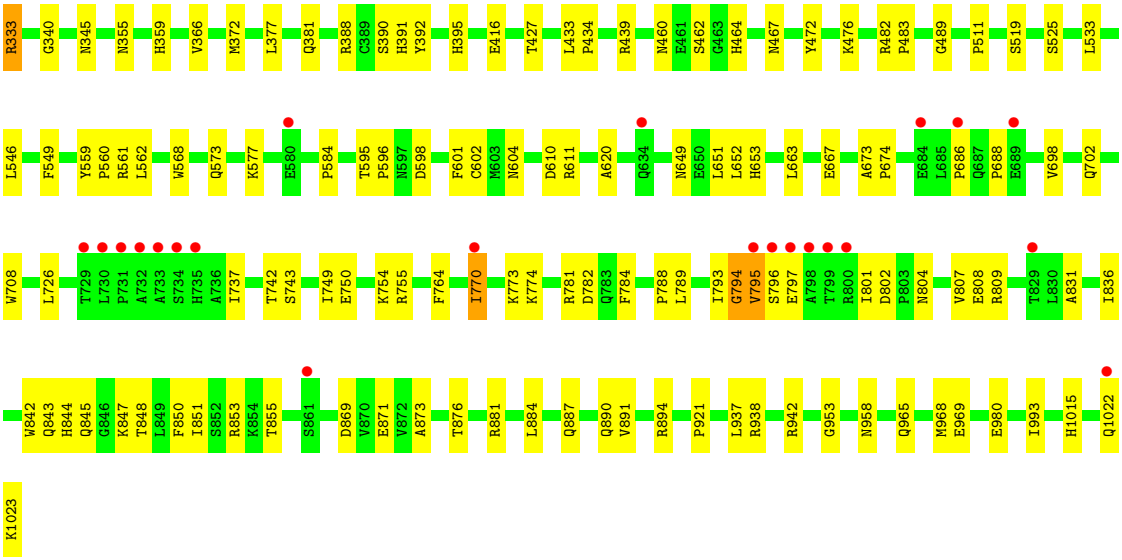




• Molecule 1: Beta-D-galactosidase

Chain 4:




R333 G340 N345 N355 H359 V366 M372 L377 Q381 R388 C389 S390 H391 Y392 H395 E416 T427 L433 P434 R439 M460 E461 S462 G463 H464 N467 Y472 K476 R482 P483 G489 P511 S519 S525 L533
L546 F549 Y559 P560 R561 L562 W568 Q573 K577 E580 P584 T595 P596 N597 D598 F601 C602 M603 N604 D610 R611 A620 Q634 N649 E650 L651 L652 H653 L663 E667 A673 P674 E684 L685 P686 Q687 P688 E689 V698 Q702
W708 L726 T729 L730 P731 A732 A733 S734 H735 A736 I737 T742 S743 I749 E750 K754 R755 F764 I770 K773 K774 R781 D782 Q783 F784 P788 L789 I793 G794 V795 S796 E797 A798 T799 R800 I801 D802 P803 N804 V807 E808 R809 T829 L830 A831 I836
W842 Q843 H844 Q845 G846 K847 T848 L849 F850 I851 S852 R853 K854 T855 S861 D869 V870 E871 V872 A873 T876 R881 L884 Q887 Q890 V891 R894 P921 L937 R938 R942 G953 N958 Q965 M968 E969 E980 I993 H1015 Q1022
K1023

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	149.27Å 167.24Å 200.61Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	86.02 – 2.50 86.02 – 2.50	Depositor EDS
% Data completeness (in resolution range)	99.7 (86.02-2.50) 99.8 (86.02-2.50)	Depositor EDS
R_{merge}	0.18	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.82 (at 2.51Å)	Xtriage
Refinement program	CNS 1.2	Depositor
R, R_{free}	0.179 , 0.235 0.170 , 0.226	Depositor DCC
R_{free} test set	2456 reflections (1.42%)	wwPDB-VP
Wilson B-factor (Å^2)	20.7	Xtriage
Anisotropy	0.718	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 58.8	EDS
L-test for twinning[2]	$< \|L\| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	36360	wwPDB-VP
Average B, all atoms (Å^2)	20.0	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 37.76 % 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 4.0857e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

[1] Intensities estimated from amplitudes.

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

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	1	0.33	0/8361	0.61	0/11408
1	2	0.33	0/8361	0.61	0/11408
1	3	0.33	0/8361	0.61	0/11408
1	4	0.33	0/8361	0.61	1/11408 (0.0%)
All	All	0.33	0/33444	0.61	1/45632 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	4	770	ILE	N-CA-C	-5.47	96.23	111.00

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	1	8119	0	7708	126	0
1	2	8119	0	7707	134	0
1	3	8119	0	7707	132	0
1	4	8119	0	7707	123	0
2	1	108	0	162	1	0
2	2	136	0	204	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	3	140	0	210	1	0
2	4	136	0	204	1	0
3	1	3	0	0	0	0
3	2	2	0	0	0	0
3	3	2	0	0	0	0
3	4	3	0	0	0	0
4	1	3	0	0	0	0
4	2	4	0	0	0	0
4	3	5	0	0	0	0
4	4	4	0	0	0	0
5	1	846	0	0	2	0
5	2	821	0	0	4	0
5	3	838	0	0	8	0
5	4	833	0	0	3	0
All	All	36360	0	31609	506	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 8.

The worst 5 of 506 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)
1:4:142:ILE:HG12	1:4:170:GLU:HG2	1.37	1.05
1:2:966:GLN:HE22	1:2:977:HIS:H	1.04	0.93
1:1:142:ILE:HG12	1:1:170:GLU:HG2	1.52	0.92
1:2:142:ILE:HG12	1:2:170:GLU:HG2	1.54	0.87
1:4:804:ASN:ND2	1:4:809:ARG:HH21	1.73	0.86

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	1	1009/1023 (99%)	948 (94%)	56 (6%)	5 (0%)	29 48
1	2	1009/1023 (99%)	959 (95%)	49 (5%)	1 (0%)	51 73
1	3	1009/1023 (99%)	953 (94%)	55 (6%)	1 (0%)	51 73
1	4	1009/1023 (99%)	946 (94%)	60 (6%)	3 (0%)	41 61
All	All	4036/4092 (99%)	3806 (94%)	220 (6%)	10 (0%)	47 68

5 of 10 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	1	795	VAL
1	1	794	GLY
1	4	794	GLY
1	1	796	SER
1	1	798	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	1	863/874 (99%)	856 (99%)	7 (1%)	81 93
1	2	863/874 (99%)	852 (99%)	11 (1%)	69 87
1	3	863/874 (99%)	853 (99%)	10 (1%)	71 88
1	4	863/874 (99%)	858 (99%)	5 (1%)	86 95
All	All	3452/3496 (99%)	3419 (99%)	33 (1%)	76 90

5 of 33 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	4	112	PRO
1	4	333	ARG
1	4	850	PHE
1	2	730	LEU
1	2	651	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 14 such sidechains are listed below:

Mol	Chain	Res	Type
1	2	966	GLN
1	2	1022	GLN
1	4	863	GLN
1	3	824	GLN
1	4	804	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 monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 156 ligands modelled in this entry, 26 are monoatomic - leaving 130 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	DMS	1	8401	-	3,3,3	0.21	0	3,3,3	0.61	0
2	DMS	1	8609	-	3,3,3	0.23	0	3,3,3	0.65	0
2	DMS	2	8604	-	3,3,3	0.24	0	3,3,3	0.62	0
2	DMS	4	8403	-	3,3,3	0.19	0	3,3,3	0.59	0
2	DMS	1	8409	-	3,3,3	0.26	0	3,3,3	0.61	0
2	DMS	2	8605	-	3,3,3	0.23	0	3,3,3	0.63	0
2	DMS	4	8423	-	3,3,3	0.26	0	3,3,3	0.61	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	DMS	1	8406	-	3,3,3	0.25	0	3,3,3	0.63	0
2	DMS	1	8606	-	3,3,3	0.25	0	3,3,3	0.60	0
2	DMS	4	8412	-	3,3,3	0.23	0	3,3,3	0.61	0
2	DMS	4	8417	-	3,3,3	0.23	0	3,3,3	0.62	0
2	DMS	1	8403	-	3,3,3	0.23	0	3,3,3	0.61	0
2	DMS	2	8504	-	3,3,3	0.24	0	3,3,3	0.62	0
2	DMS	3	8420	-	3,3,3	0.25	0	3,3,3	0.61	0
2	DMS	1	8407	-	3,3,3	0.22	0	3,3,3	0.63	0
2	DMS	2	8406	-	3,3,3	0.20	0	3,3,3	0.60	0
2	DMS	2	8502	-	3,3,3	0.24	0	3,3,3	0.64	0
2	DMS	3	8417	-	3,3,3	0.25	0	3,3,3	0.64	0
2	DMS	1	8425	4	3,3,3	0.20	0	3,3,3	0.60	0
2	DMS	4	8421	-	3,3,3	0.24	0	3,3,3	0.64	0
2	DMS	1	8610	-	3,3,3	0.32	0	3,3,3	0.67	0
2	DMS	1	8402	-	3,3,3	0.20	0	3,3,3	0.61	0
2	DMS	3	1024	-	3,3,3	0.23	0	3,3,3	0.62	0
2	DMS	1	8412	-	3,3,3	0.25	0	3,3,3	0.58	0
2	DMS	3	8604	-	3,3,3	0.21	0	3,3,3	0.59	0
2	DMS	4	8411	-	3,3,3	0.30	0	3,3,3	0.62	0
2	DMS	4	8508	-	3,3,3	0.21	0	3,3,3	0.60	0
2	DMS	2	8411	-	3,3,3	0.26	0	3,3,3	0.61	0
2	DMS	3	8421	-	3,3,3	0.25	0	3,3,3	0.60	0
2	DMS	4	8701	-	3,3,3	0.29	0	3,3,3	0.60	0
2	DMS	1	8604	-	3,3,3	0.26	0	3,3,3	0.63	0
2	DMS	3	8402	-	3,3,3	0.31	0	3,3,3	0.67	0
2	DMS	2	8423	-	3,3,3	0.24	0	3,3,3	0.61	0
2	DMS	4	8614	-	3,3,3	0.25	0	3,3,3	0.60	0
2	DMS	3	8609	-	3,3,3	0.20	0	3,3,3	0.63	0
2	DMS	2	8602	-	3,3,3	0.26	0	3,3,3	0.60	0
2	DMS	3	8409	-	3,3,3	0.26	0	3,3,3	0.61	0
2	DMS	3	8428	-	3,3,3	0.23	0	3,3,3	0.62	0
2	DMS	4	8617	-	3,3,3	0.24	0	3,3,3	0.61	0
2	DMS	2	8408	-	3,3,3	0.24	0	3,3,3	0.64	0
2	DMS	3	8415	-	3,3,3	0.26	0	3,3,3	0.63	0
2	DMS	2	8611	-	3,3,3	0.26	0	3,3,3	0.65	0
2	DMS	2	8421	-	3,3,3	0.25	0	3,3,3	0.64	0
2	DMS	3	8408	-	3,3,3	0.23	0	3,3,3	0.64	0
2	DMS	1	8501	-	3,3,3	0.22	0	3,3,3	0.65	0
2	DMS	4	8618	-	3,3,3	0.20	0	3,3,3	0.59	0
2	DMS	2	8609	-	3,3,3	0.22	0	3,3,3	0.60	0
2	DMS	2	8612	-	3,3,3	0.22	0	3,3,3	0.62	0
2	DMS	4	8703	-	3,3,3	0.20	0	3,3,3	0.58	0
2	DMS	4	8414	-	3,3,3	0.26	0	3,3,3	0.62	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	DMS	4	8410	-	3,3,3	0.25	0	3,3,3	0.65	0
2	DMS	3	8404	-	3,3,3	0.20	0	3,3,3	0.65	0
2	DMS	4	8405	-	3,3,3	0.27	0	3,3,3	0.66	0
2	DMS	3	8403	-	3,3,3	0.30	0	3,3,3	0.66	0
2	DMS	4	8402	-	3,3,3	0.18	0	3,3,3	0.61	0
2	DMS	2	8410	-	3,3,3	0.24	0	3,3,3	0.64	0
2	DMS	3	8410	-	3,3,3	0.24	0	3,3,3	0.61	0
2	DMS	3	8412	-	3,3,3	0.25	0	3,3,3	0.61	0
2	DMS	4	8607	-	3,3,3	0.24	0	3,3,3	0.62	0
2	DMS	3	8607	-	3,3,3	0.21	0	3,3,3	0.59	0
2	DMS	2	8405	-	3,3,3	0.17	0	3,3,3	0.58	0
2	DMS	3	8401	-	3,3,3	0.22	0	3,3,3	0.61	0
2	DMS	1	8602	-	3,3,3	0.24	0	3,3,3	0.62	0
2	DMS	3	8612	-	3,3,3	0.27	0	3,3,3	0.66	0
2	DMS	4	8419	-	3,3,3	0.22	0	3,3,3	0.63	0
2	DMS	4	8610	-	3,3,3	0.24	0	3,3,3	0.59	0
2	DMS	1	8607	-	3,3,3	0.22	0	3,3,3	0.62	0
2	DMS	2	8603	-	3,3,3	0.27	0	3,3,3	0.63	0
2	DMS	3	8608	-	3,3,3	0.22	0	3,3,3	0.63	0
2	DMS	4	8501	-	3,3,3	0.24	0	3,3,3	0.62	0
2	DMS	1	8504	-	3,3,3	0.28	0	3,3,3	0.62	0
2	DMS	4	8404	-	3,3,3	0.26	0	3,3,3	0.66	0
2	DMS	2	8508	-	3,3,3	0.25	0	3,3,3	0.62	0
2	DMS	3	8411	-	3,3,3	0.26	0	3,3,3	0.64	0
2	DMS	2	8608	-	3,3,3	0.24	0	3,3,3	0.62	0
2	DMS	3	8414	-	3,3,3	0.27	0	3,3,3	0.62	0
2	DMS	3	8605	-	3,3,3	0.23	0	3,3,3	0.62	0
2	DMS	2	8414	-	3,3,3	0.24	0	3,3,3	0.62	0
2	DMS	2	8613	-	3,3,3	0.25	0	3,3,3	0.63	0
2	DMS	2	8606	-	3,3,3	0.22	0	3,3,3	0.61	0
2	DMS	1	8605	-	3,3,3	0.23	0	3,3,3	0.62	0
2	DMS	4	8503	-	3,3,3	0.27	0	3,3,3	0.61	0
2	DMS	3	8405	-	3,3,3	0.21	0	3,3,3	0.62	0
2	DMS	4	1024	4	3,3,3	0.21	0	3,3,3	0.60	0
2	DMS	4	8608	-	3,3,3	0.25	0	3,3,3	0.63	0
2	DMS	3	8423	-	3,3,3	0.25	0	3,3,3	0.62	0
2	DMS	4	8615	-	3,3,3	0.25	0	3,3,3	0.64	0
2	DMS	2	8425	4	3,3,3	0.25	0	3,3,3	0.61	0
2	DMS	3	8601	-	3,3,3	0.26	0	3,3,3	0.60	0
2	DMS	1	8421	-	3,3,3	0.26	0	3,3,3	0.61	0
2	DMS	1	8503	-	3,3,3	0.25	0	3,3,3	0.61	0
2	DMS	2	8403	-	3,3,3	0.30	0	3,3,3	0.61	0
2	DMS	1	8404	-	3,3,3	0.29	0	3,3,3	0.63	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	DMS	2	8402	-	3,3,3	0.29	0	3,3,3	0.59	0
2	DMS	2	8416	-	3,3,3	0.22	0	3,3,3	0.62	0
2	DMS	4	8612	-	3,3,3	0.22	0	3,3,3	0.63	0
2	DMS	2	8409	-	3,3,3	0.26	0	3,3,3	0.67	0
2	DMS	2	8401	-	3,3,3	0.28	0	3,3,3	0.65	0
2	DMS	1	8414	-	3,3,3	0.26	0	3,3,3	0.61	0
2	DMS	4	8409	-	3,3,3	0.25	0	3,3,3	0.64	0
2	DMS	3	8416	-	3,3,3	0.26	0	3,3,3	0.63	0
2	DMS	2	8420	-	3,3,3	0.26	0	3,3,3	0.61	0
2	DMS	1	8408	-	3,3,3	0.24	0	3,3,3	0.65	0
2	DMS	3	8602	-	3,3,3	0.21	0	3,3,3	0.60	0
2	DMS	2	8417	-	3,3,3	0.25	0	3,3,3	0.62	0
2	DMS	3	8611	-	3,3,3	0.25	0	3,3,3	0.60	0
2	DMS	4	8406	-	3,3,3	0.31	0	3,3,3	0.57	0
2	DMS	2	8404	-	3,3,3	0.25	0	3,3,3	0.62	0
2	DMS	2	8610	-	3,3,3	0.30	0	3,3,3	0.65	0
2	DMS	1	8411	-	3,3,3	0.29	0	3,3,3	0.63	0
2	DMS	1	8603	-	3,3,3	0.19	0	3,3,3	0.60	0
2	DMS	4	8705	-	3,3,3	0.23	0	3,3,3	0.64	0
2	DMS	3	8613	-	3,3,3	0.19	0	3,3,3	0.60	0
2	DMS	3	8407	-	3,3,3	0.25	0	3,3,3	0.60	0
2	DMS	3	8610	-	3,3,3	0.29	0	3,3,3	0.65	0
2	DMS	3	8501	-	3,3,3	0.24	0	3,3,3	0.65	0
2	DMS	3	8606	-	3,3,3	0.19	0	3,3,3	0.64	0
2	DMS	1	8405	-	3,3,3	0.27	0	3,3,3	0.63	0
2	DMS	2	8607	-	3,3,3	0.20	0	3,3,3	0.61	0
2	DMS	3	8425	4	3,3,3	0.25	0	3,3,3	0.61	0
2	DMS	4	8416	-	3,3,3	0.22	0	3,3,3	0.62	0
2	DMS	2	8601	-	3,3,3	0.26	0	3,3,3	0.62	0
2	DMS	4	8611	-	3,3,3	0.19	0	3,3,3	0.60	0
2	DMS	4	8401	-	3,3,3	0.23	0	3,3,3	0.64	0
2	DMS	4	8408	-	3,3,3	0.26	0	3,3,3	0.63	0
2	DMS	3	8603	-	3,3,3	0.23	0	3,3,3	0.60	0
2	DMS	4	8613	-	3,3,3	0.25	0	3,3,3	0.63	0
2	DMS	1	8416	-	3,3,3	0.26	0	3,3,3	0.62	0
2	DMS	2	8412	-	3,3,3	0.30	0	3,3,3	0.63	0
2	DMS	1	8419	-	3,3,3	0.24	0	3,3,3	0.62	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.

3 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	1	8409	DMS	1	0
2	3	8402	DMS	1	0
2	4	1024	DMS	1	0

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} 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	1	1011/1023 (98%)	-0.40	20 (1%)	65	68	5, 17, 37, 78	0
1	2	1011/1023 (98%)	-0.45	9 (0%)	84	86	4, 17, 37, 68	0
1	3	1011/1023 (98%)	-0.47	7 (0%)	87	89	4, 17, 39, 70	0
1	4	1011/1023 (98%)	-0.34	22 (2%)	62	65	4, 17, 38, 81	0
All	All	4044/4092 (98%)	-0.41	58 (1%)	75	77	4, 17, 38, 81	0

The worst 5 of 58 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	1	799	THR	8.1
1	1	800	ARG	7.9
1	4	800	ARG	7.0
1	4	798	ALA	6.9
1	1	798	ALA	6.7

6.2 Non-standard residues in protein, DNA, RNA chains

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

6.3 Carbohydrates

There are no monosaccharides in this entry.

6.4 Ligands

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} 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
2	DMS	4	8417	4/4	0.80	0.38	91,91,91,92	0
4	NA	4	3104	1/1	0.80	0.19	54,54,54,54	0
4	NA	3	3103	1/1	0.81	0.14	34,34,34,34	0
2	DMS	1	8610	4/4	0.82	0.19	66,66,67,68	0
2	DMS	4	8503	4/4	0.82	0.28	83,83,84,84	0
2	DMS	4	8614	4/4	0.86	0.17	61,61,62,62	0
2	DMS	2	8417	4/4	0.86	0.29	63,65,65,65	0
2	DMS	3	8420	4/4	0.86	0.26	73,74,74,75	0
2	DMS	4	1024	4/4	0.87	0.22	70,70,70,70	0
2	DMS	4	8613	4/4	0.88	0.17	56,57,58,58	0
2	DMS	2	8410	4/4	0.88	0.23	87,87,88,88	0
2	DMS	3	8609	4/4	0.89	0.17	52,52,54,54	0
2	DMS	2	8601	4/4	0.89	0.24	69,69,70,70	0
2	DMS	4	8618	4/4	0.89	0.18	59,59,60,61	0
2	DMS	2	8609	4/4	0.89	0.24	67,68,68,68	0
2	DMS	1	8407	4/4	0.89	0.22	72,72,73,73	0
2	DMS	3	8428	4/4	0.90	0.21	79,79,79,79	0
4	NA	4	3103	1/1	0.90	0.14	41,41,41,41	0
2	DMS	3	8415	4/4	0.90	0.17	60,61,61,62	0
2	DMS	3	8410	4/4	0.91	0.25	77,78,78,78	0
2	DMS	3	8608	4/4	0.91	0.17	58,59,59,60	0
4	NA	3	3104	1/1	0.91	0.18	39,39,39,39	0
2	DMS	2	8603	4/4	0.91	0.26	71,72,72,73	0
2	DMS	1	8604	4/4	0.91	0.18	66,67,67,68	0
2	DMS	2	8613	4/4	0.92	0.19	63,64,65,65	0
2	DMS	4	8615	4/4	0.92	0.25	49,50,51,52	0
2	DMS	3	8407	4/4	0.92	0.23	69,70,70,71	0
3	MG	1	3003	1/1	0.92	0.09	41,41,41,41	0
2	DMS	2	8423	4/4	0.92	0.18	76,76,76,76	0
2	DMS	1	8419	4/4	0.92	0.21	68,68,68,68	0
2	DMS	1	8416	4/4	0.92	0.27	57,57,57,58	0
2	DMS	1	8609	4/4	0.92	0.17	43,43,45,45	0
2	DMS	2	8420	4/4	0.93	0.18	57,57,58,58	0
2	DMS	2	8612	4/4	0.93	0.18	48,49,50,52	0
2	DMS	3	8606	4/4	0.93	0.26	54,54,54,55	0
2	DMS	2	8409	4/4	0.93	0.22	42,43,44,45	0
2	DMS	1	8602	4/4	0.93	0.16	80,80,80,80	0
2	DMS	3	8610	4/4	0.93	0.20	49,49,49,50	0
2	DMS	2	8602	4/4	0.93	0.19	63,64,64,65	0
4	NA	3	3105	1/1	0.93	0.37	54,54,54,54	0
4	NA	4	3101	1/1	0.93	0.10	18,18,18,18	0
2	DMS	1	8414	4/4	0.93	0.14	50,50,50,52	0
2	DMS	3	8416	4/4	0.93	0.18	70,70,70,71	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	DMS	4	8414	4/4	0.94	0.16	52,52,53,54	0
2	DMS	3	8417	4/4	0.94	0.27	66,66,67,67	0
2	DMS	4	8421	4/4	0.94	0.15	60,61,61,62	0
2	DMS	1	8421	4/4	0.94	0.24	69,69,69,69	0
2	DMS	3	8421	4/4	0.94	0.18	58,58,58,58	0
2	DMS	4	8610	4/4	0.94	0.14	55,55,55,56	0
2	DMS	4	8611	4/4	0.94	0.16	67,67,67,68	0
2	DMS	4	8612	4/4	0.94	0.14	60,60,61,62	0
2	DMS	3	8425	4/4	0.94	0.27	58,58,59,59	0
2	DMS	2	8508	4/4	0.94	0.17	72,72,73,73	0
2	DMS	3	8601	4/4	0.94	0.25	59,59,59,60	0
2	DMS	2	8606	4/4	0.94	0.12	46,47,47,48	0
2	DMS	3	8607	4/4	0.94	0.17	65,65,65,66	0
4	NA	1	3103	1/1	0.94	0.09	30,30,30,30	0
4	NA	2	3104	1/1	0.94	0.10	27,27,27,27	0
2	DMS	2	8608	4/4	0.94	0.16	53,54,55,55	0
2	DMS	1	8605	4/4	0.94	0.11	71,71,71,72	0
2	DMS	2	8610	4/4	0.94	0.24	51,51,52,52	0
2	DMS	3	8611	4/4	0.94	0.30	60,61,62,62	0
2	DMS	3	8612	4/4	0.94	0.18	47,47,48,49	0
2	DMS	3	8613	4/4	0.94	0.17	61,61,61,63	0
2	DMS	1	8501	4/4	0.95	0.18	47,47,48,48	0
2	DMS	4	8508	4/4	0.95	0.19	58,58,58,58	0
2	DMS	4	8703	4/4	0.95	0.19	59,59,60,60	0
2	DMS	2	8604	4/4	0.95	0.18	62,63,63,63	0
2	DMS	3	1024	4/4	0.95	0.11	77,77,77,77	0
2	DMS	4	8410	4/4	0.95	0.36	65,65,65,65	0
2	DMS	4	8411	4/4	0.95	0.24	38,40,41,42	0
2	DMS	2	8605	4/4	0.95	0.12	62,62,63,63	0
2	DMS	3	8605	4/4	0.95	0.11	63,64,64,65	0
2	DMS	1	8425	4/4	0.95	0.17	49,49,49,49	0
2	DMS	4	8419	4/4	0.96	0.14	52,52,52,53	0
2	DMS	1	8406	4/4	0.96	0.14	58,59,60,60	0
2	DMS	4	8423	4/4	0.96	0.13	63,63,63,64	0
2	DMS	1	8408	4/4	0.96	0.17	45,46,47,47	0
2	DMS	3	8603	4/4	0.96	0.23	64,64,64,65	0
2	DMS	2	8611	4/4	0.96	0.20	60,60,61,62	0
2	DMS	4	8705	4/4	0.96	0.20	57,57,58,58	0
2	DMS	4	8607	4/4	0.96	0.12	53,54,54,55	0
2	DMS	2	8425	4/4	0.96	0.28	52,53,53,53	0
2	DMS	2	8502	4/4	0.96	0.16	48,48,48,49	0
2	DMS	1	8503	4/4	0.96	0.15	63,63,64,64	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	DMS	3	8409	4/4	0.96	0.17	39,39,40,40	0
2	DMS	2	8402	4/4	0.96	0.17	28,28,29,32	0
2	DMS	3	8412	4/4	0.96	0.17	43,44,44,45	0
2	DMS	2	8406	4/4	0.96	0.20	58,58,59,59	0
2	DMS	4	8617	4/4	0.96	0.16	70,71,71,71	0
2	DMS	2	8408	4/4	0.96	0.16	55,55,55,56	0
2	DMS	1	8504	4/4	0.96	0.17	43,43,43,44	0
2	DMS	4	8608	4/4	0.96	0.12	52,52,52,53	0
2	DMS	4	8406	4/4	0.96	0.15	34,34,34,35	0
2	DMS	4	8409	4/4	0.96	0.18	45,45,45,46	0
2	DMS	1	8409	4/4	0.96	0.16	51,52,52,52	0
2	DMS	2	8411	4/4	0.96	0.16	38,40,40,40	0
2	DMS	3	8423	4/4	0.96	0.14	63,63,64,64	0
2	DMS	4	8416	4/4	0.96	0.15	51,51,52,53	0
2	DMS	1	8412	4/4	0.96	0.23	44,45,46,47	0
2	DMS	3	8602	4/4	0.97	0.11	55,55,56,56	0
2	DMS	3	8404	4/4	0.97	0.13	30,31,32,33	0
2	DMS	1	8402	4/4	0.97	0.15	28,29,31,31	0
2	DMS	4	8501	4/4	0.97	0.12	43,43,44,45	0
2	DMS	4	8405	4/4	0.97	0.22	42,43,43,43	0
3	MG	1	3001	1/1	0.97	0.05	14,14,14,14	0
2	DMS	3	8408	4/4	0.97	0.18	38,39,40,41	0
3	MG	2	3001	1/1	0.97	0.06	11,11,11,11	0
3	MG	2	3002	1/1	0.97	0.07	12,12,12,12	0
3	MG	4	3001	1/1	0.97	0.06	7,7,7,7	0
3	MG	4	3002	1/1	0.97	0.09	11,11,11,11	0
4	NA	1	3102	1/1	0.97	0.10	16,16,16,16	0
2	DMS	4	8701	4/4	0.97	0.14	21,22,23,25	0
4	NA	2	3102	1/1	0.97	0.11	29,29,29,29	0
2	DMS	4	8408	4/4	0.97	0.18	34,36,37,37	0
2	DMS	2	8412	4/4	0.97	0.19	37,37,38,38	0
2	DMS	2	8404	4/4	0.97	0.14	38,39,40,41	0
2	DMS	1	8607	4/4	0.97	0.18	53,53,53,54	0
2	DMS	3	8414	4/4	0.97	0.18	41,41,43,43	0
4	NA	4	3102	1/1	0.97	0.12	18,18,18,18	0
2	DMS	3	8501	4/4	0.97	0.13	34,36,36,36	0
2	DMS	3	8402	4/4	0.97	0.19	27,27,27,29	0
2	DMS	1	8606	4/4	0.98	0.15	39,40,40,41	0
2	DMS	2	8414	4/4	0.98	0.22	50,51,52,52	0
2	DMS	3	8403	4/4	0.98	0.17	34,34,35,35	0
2	DMS	2	8416	4/4	0.98	0.09	52,52,53,54	0
2	DMS	3	8405	4/4	0.98	0.12	32,32,33,34	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	MG	3	3001	1/1	0.98	0.06	15,15,15,15	0
3	MG	3	3002	1/1	0.98	0.13	17,17,17,17	0
2	DMS	2	8405	4/4	0.98	0.12	40,40,40,40	0
2	DMS	4	8402	4/4	0.98	0.15	25,28,28,29	0
3	MG	4	3003	1/1	0.98	0.11	29,29,29,29	0
4	NA	1	3101	1/1	0.98	0.09	17,17,17,17	0
2	DMS	4	8403	4/4	0.98	0.10	26,26,27,29	0
2	DMS	4	8404	4/4	0.98	0.17	45,46,47,48	0
2	DMS	1	8404	4/4	0.98	0.15	38,39,39,39	0
4	NA	2	3103	1/1	0.98	0.13	28,28,28,28	0
2	DMS	2	8421	4/4	0.98	0.17	52,53,53,53	0
4	NA	3	3101	1/1	0.98	0.06	10,10,10,10	0
4	NA	3	3102	1/1	0.98	0.14	17,17,17,17	0
2	DMS	2	8607	4/4	0.98	0.13	44,45,46,46	0
2	DMS	3	8604	4/4	0.98	0.16	44,44,44,44	0
2	DMS	1	8603	4/4	0.98	0.18	57,57,58,58	0
2	DMS	1	8405	4/4	0.98	0.16	32,32,33,33	0
2	DMS	1	8411	4/4	0.98	0.17	40,41,41,42	0
2	DMS	2	8504	4/4	0.98	0.20	63,63,63,63	0
2	DMS	2	8403	4/4	0.98	0.15	29,29,29,30	0
2	DMS	1	8401	4/4	0.99	0.10	12,12,13,15	0
3	MG	1	3002	1/1	0.99	0.17	23,23,23,23	0
2	DMS	4	8401	4/4	0.99	0.13	20,20,20,22	0
2	DMS	1	8403	4/4	0.99	0.11	29,29,30,31	0
2	DMS	2	8401	4/4	0.99	0.15	14,17,17,19	0
4	NA	2	3101	1/1	0.99	0.09	12,12,12,12	0
2	DMS	3	8401	4/4	0.99	0.13	16,17,17,18	0
2	DMS	4	8412	4/4	0.99	0.17	33,33,34,35	0
2	DMS	3	8411	4/4	0.99	0.18	38,38,38,38	0

6.5 Other polymers (i)

There are no such residues in this entry.