



wwPDB X-ray Structure Validation Summary Report ⓘ

Aug 23, 2023 – 07:27 AM EDT

PDB ID : 3DYO
Title : E. coli (lacZ) beta-galactosidase (H418N) in complex with IPTG
Authors : Juers, D.H.; Huber, R.E.; Matthews, B.W.
Deposited on : 2008-07-28
Resolution : 1.80 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 ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 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

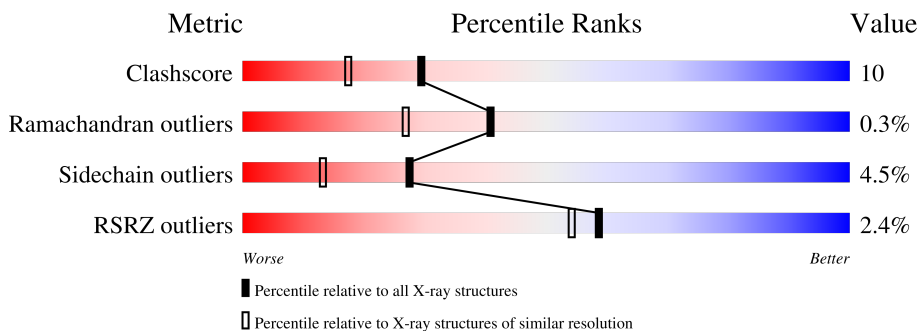
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.80 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))
Clashscore	141614	6793 (1.80-1.80)
Ramachandran outliers	138981	6697 (1.80-1.80)
Sidechain outliers	138945	6696 (1.80-1.80)
RSRZ outliers	127900	5850 (1.80-1.80)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1023	
1	B	1023	
1	C	1023	
1	D	1023	

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
5	DMS	B	8506	-	-	X	-
5	DMS	C	8411	-	-	X	-

2 Entry composition [i](#)

There are 6 unique types of molecules in this entry. The entry contains 36820 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-galactosidase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	1011	Total	C	N	O	S	0	0	0
			8123	5136	1439	1510	38			
1	B	1011	Total	C	N	O	S	0	0	0
			8123	5136	1439	1510	38			
1	C	1011	Total	C	N	O	S	0	0	0
			8123	5136	1439	1510	38			
1	D	1011	Total	C	N	O	S	0	0	0
			8123	5136	1439	1510	38			

There are 36 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	GLY	-	expression tag	UNP P00722
A	2	SER	-	expression tag	UNP P00722
A	3	HIS	-	expression tag	UNP P00722
A	4	MET	-	expression tag	UNP P00722
A	5	LEU	-	expression tag	UNP P00722
A	6	GLU	-	expression tag	UNP P00722
A	7	ASP	-	expression tag	UNP P00722
A	8	PRO	-	expression tag	UNP P00722
A	418	ASN	HIS	engineered mutation	UNP P00722
B	1	GLY	-	expression tag	UNP P00722
B	2	SER	-	expression tag	UNP P00722
B	3	HIS	-	expression tag	UNP P00722
B	4	MET	-	expression tag	UNP P00722
B	5	LEU	-	expression tag	UNP P00722
B	6	GLU	-	expression tag	UNP P00722
B	7	ASP	-	expression tag	UNP P00722
B	8	PRO	-	expression tag	UNP P00722
B	418	ASN	HIS	engineered mutation	UNP P00722
C	1	GLY	-	expression tag	UNP P00722
C	2	SER	-	expression tag	UNP P00722
C	3	HIS	-	expression tag	UNP P00722

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Chain	Residue	Modelled	Actual	Comment	Reference
C	4	MET	-	expression tag	UNP P00722
C	5	LEU	-	expression tag	UNP P00722
C	6	GLU	-	expression tag	UNP P00722
C	7	ASP	-	expression tag	UNP P00722
C	8	PRO	-	expression tag	UNP P00722
C	418	ASN	HIS	engineered mutation	UNP P00722
D	1	GLY	-	expression tag	UNP P00722
D	2	SER	-	expression tag	UNP P00722
D	3	HIS	-	expression tag	UNP P00722
D	4	MET	-	expression tag	UNP P00722
D	5	LEU	-	expression tag	UNP P00722
D	6	GLU	-	expression tag	UNP P00722
D	7	ASP	-	expression tag	UNP P00722
D	8	PRO	-	expression tag	UNP P00722
D	418	ASN	HIS	engineered mutation	UNP P00722

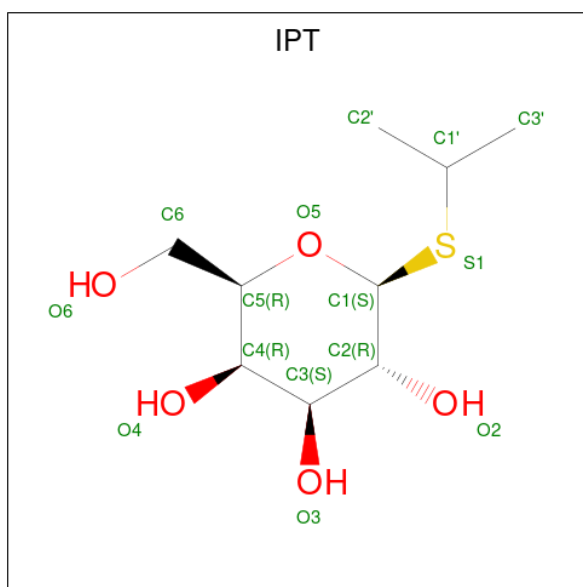
- Molecule 2 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	4	Total Mg 4 4	0	0
2	B	4	Total Mg 4 4	0	0
2	C	3	Total Mg 3 3	0	0
2	D	3	Total Mg 3 3	0	0

- Molecule 3 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	4	Total Na 4 4	0	0
3	B	5	Total Na 5 5	0	0
3	C	5	Total Na 5 5	0	0
3	D	4	Total Na 4 4	0	0

- Molecule 4 is 1-methylethyl 1-thio-beta-D-galactopyranoside (three-letter code: IPT) (formula: C₉H₁₈O₅S).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	A	1	Total	C	O	S	0	0
			15	9	5	1		
4	A	1	Total	C	O	S	0	0
			15	9	5	1		
4	A	1	Total	C	O	S	0	0
			15	9	5	1		
4	B	1	Total	C	O	S	0	0
			15	9	5	1		
4	B	1	Total	C	O	S	0	0
			15	9	5	1		
4	B	1	Total	C	O	S	0	0
			15	9	5	1		
4	C	1	Total	C	O	S	0	0
			15	9	5	1		
4	C	1	Total	C	O	S	0	0
			15	9	5	1		
4	C	1	Total	C	O	S	0	0
			15	9	5	1		
4	D	1	Total	C	O	S	0	0
			15	9	5	1		
4	D	1	Total	C	O	S	0	0
			15	9	5	1		
4	D	1	Total	C	O	S	0	0
			15	9	5	1		

- Molecule 5 is DIMETHYL SULFOXIDE (three-letter code: DMS) (formula: C₂H₆OS).



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

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

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

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

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

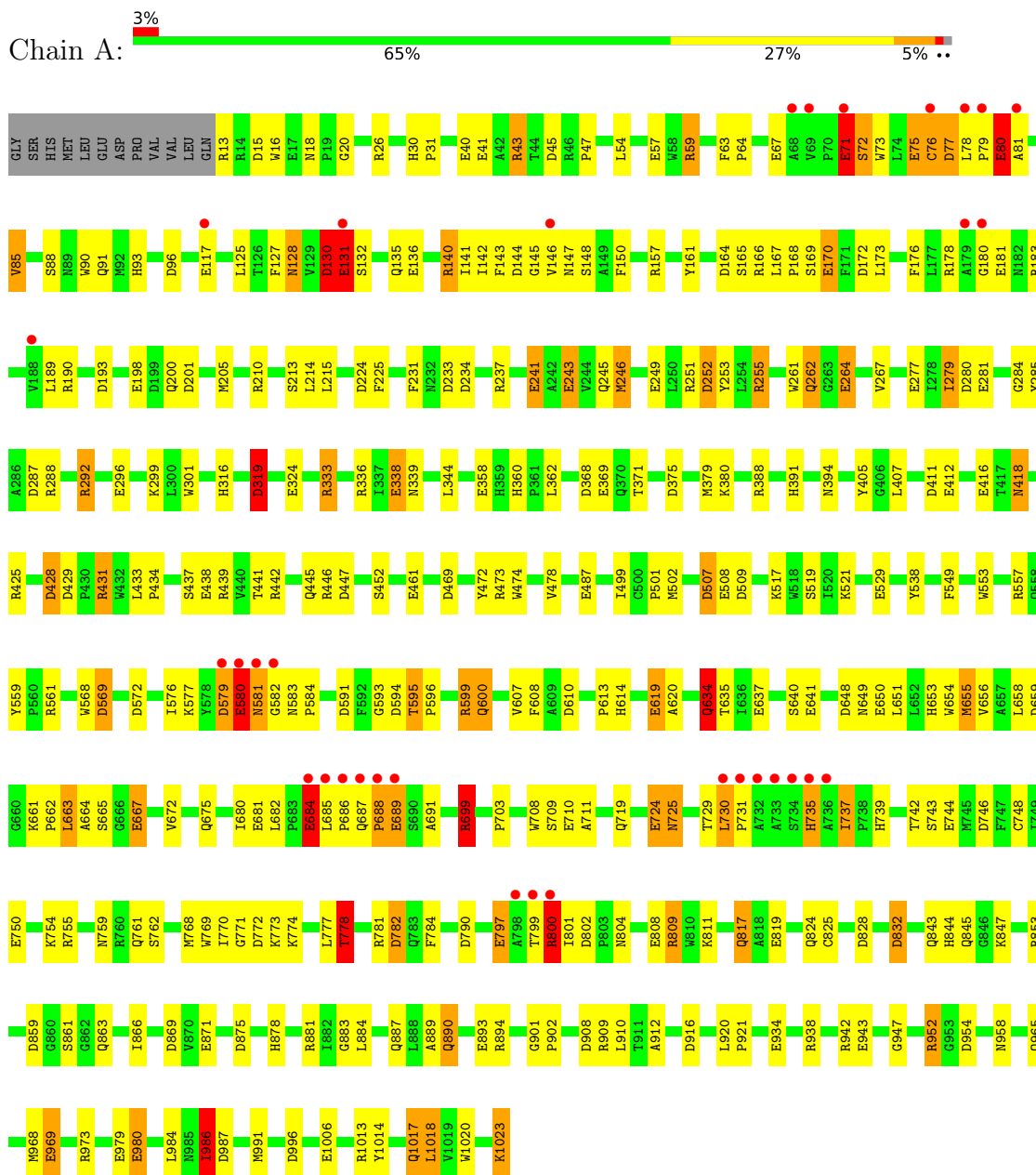
- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	862	Total 862	O 862	0	0
6	B	995	Total 995	O 995	0	0
6	C	974	Total 974	O 974	0	0
6	D	897	Total 897	O 897	0	0

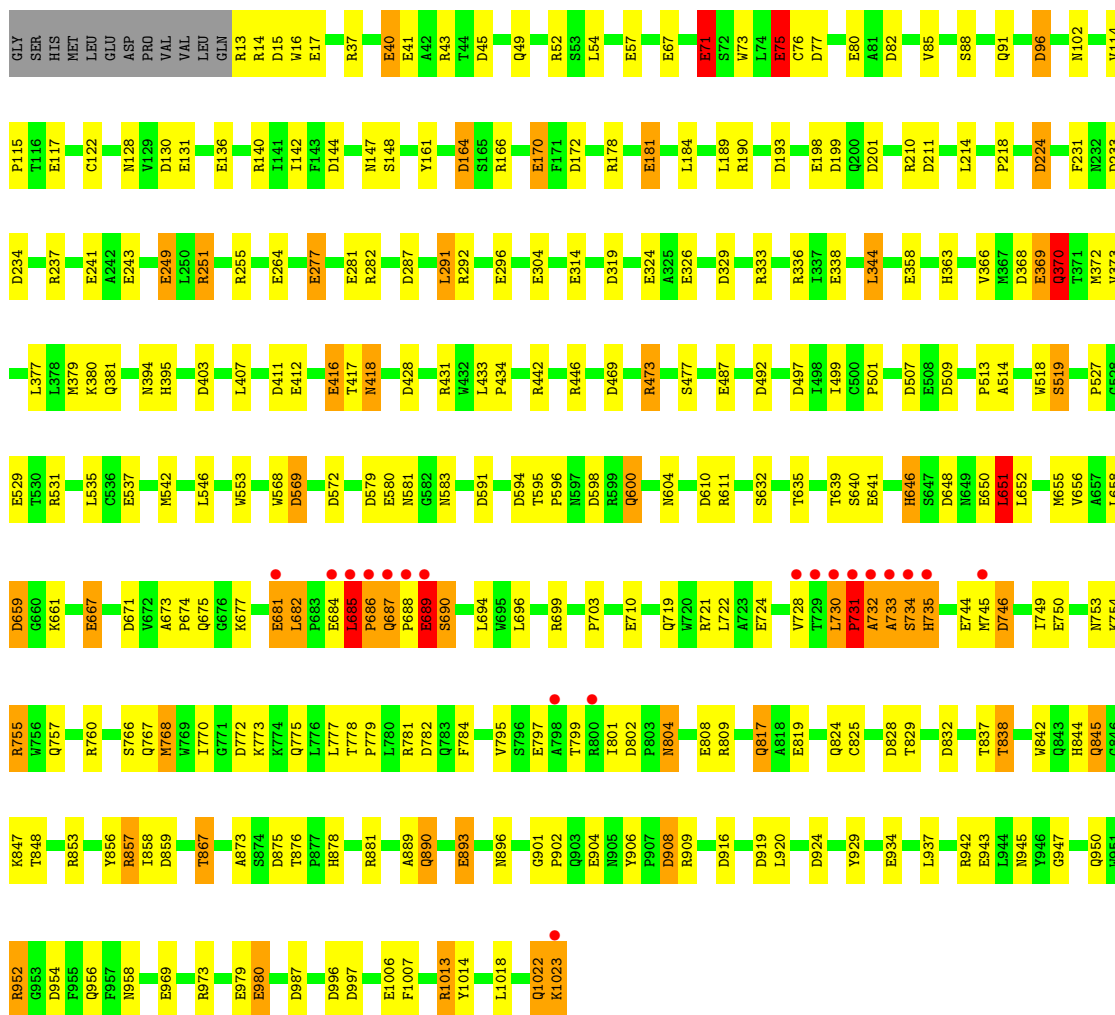
3 Residue-property plots i

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.

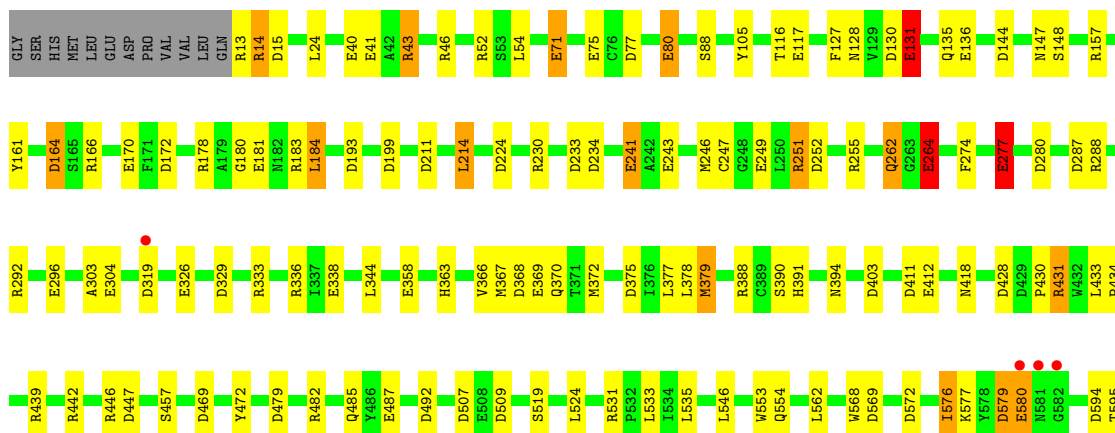
- Molecule 1: Beta-galactosidase

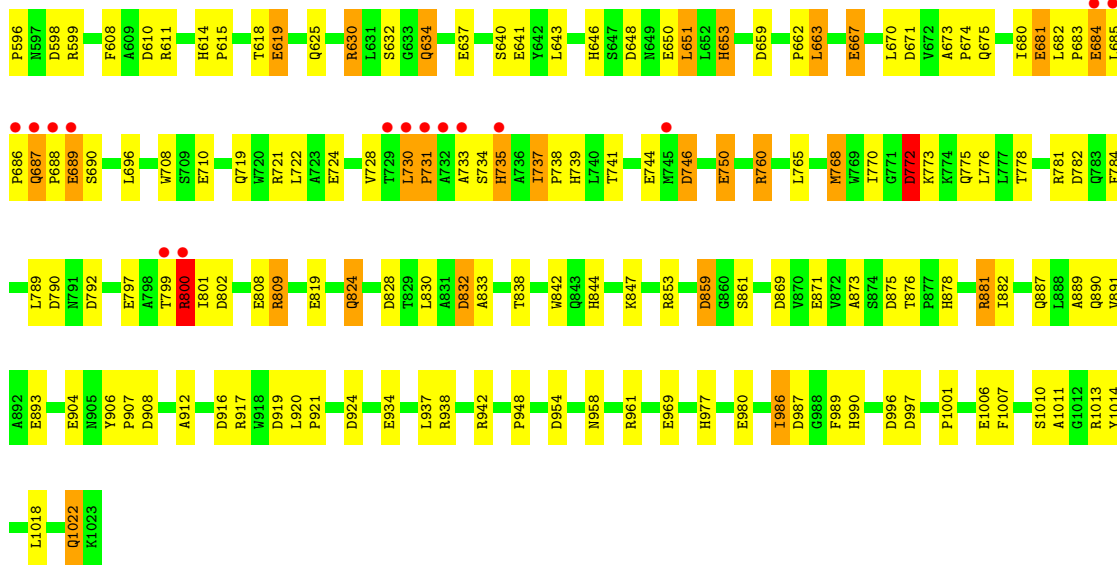


- Molecule 1: Beta-galactosidase

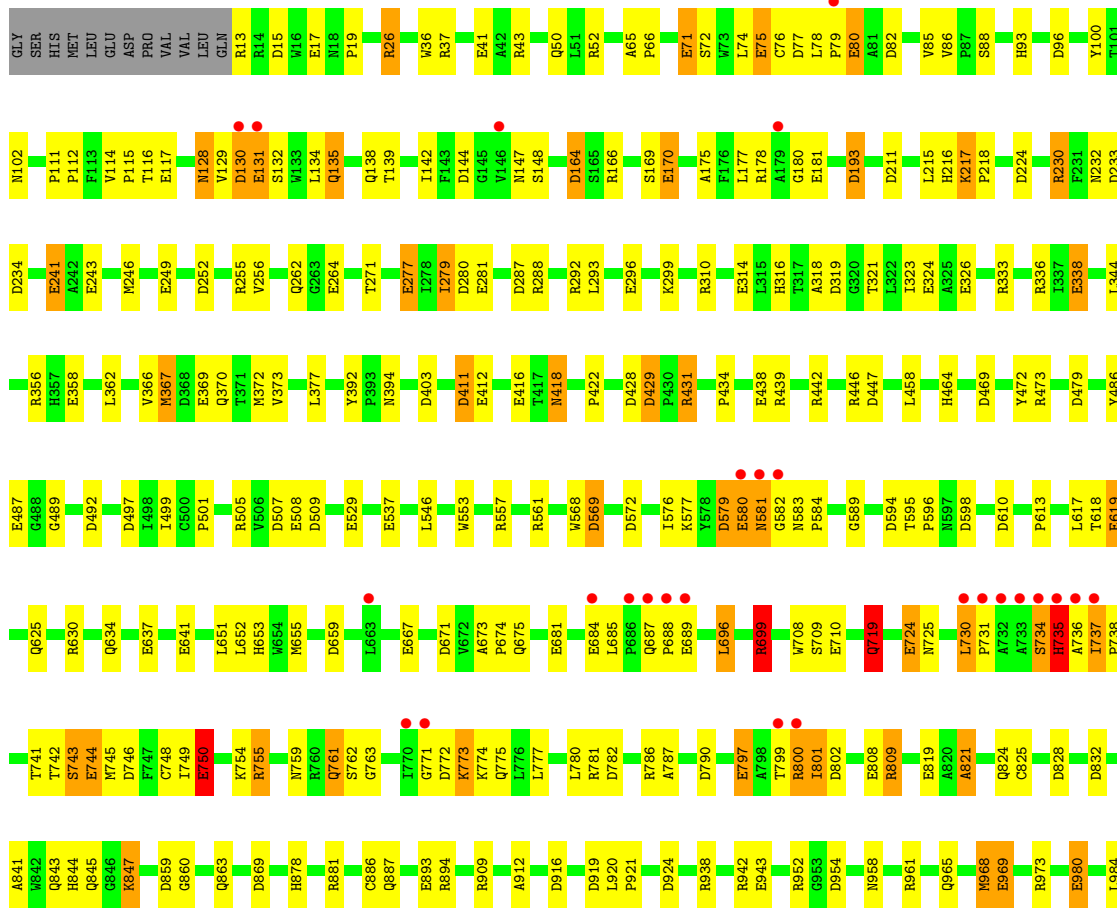


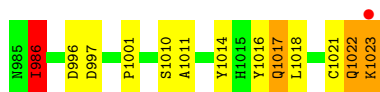
• Molecule 1: Beta-galactosidase





• Molecule 1: Beta-galactosidase





4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	152.01Å 162.52Å 204.01Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	30.00 – 1.80 29.95 – 1.80	Depositor EDS
% Data completeness (in resolution range)	98.0 (30.00-1.80) 97.7 (29.95-1.80)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	0.08	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.61 (at 1.80Å)	Xtrriage
Refinement program	TNT	Depositor
R, R_{free}	0.173 , 0.241 0.175 , (Not available)	Depositor DCC
R_{free} test set	No test flags present.	wwPDB-VP
Wilson B-factor (Å ²)	17.4	Xtrriage
Anisotropy	0.149	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 90.2	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.97	EDS
Total number of atoms	36820	wwPDB-VP
Average B, all atoms (Å ²)	25.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 40.80 % 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 2.5942e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: MG, NA, DMS, IPT

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	1.09	52/8364 (0.6%)	1.66	169/11411 (1.5%)
1	B	1.11	52/8364 (0.6%)	1.62	174/11411 (1.5%)
1	C	1.11	46/8364 (0.5%)	1.63	164/11411 (1.4%)
1	D	1.06	45/8364 (0.5%)	1.62	154/11411 (1.3%)
All	All	1.09	195/33456 (0.6%)	1.63	661/45644 (1.4%)

The worst 5 of 195 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	619	GLU	CD-OE2	9.61	1.36	1.25
1	B	641	GLU	CD-OE1	-8.74	1.16	1.25
1	B	241	GLU	CD-OE2	8.39	1.34	1.25
1	A	241	GLU	CD-OE2	8.30	1.34	1.25
1	B	650	GLU	CD-OE2	8.26	1.34	1.25

The worst 5 of 661 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	809	ARG	NE-CZ-NH1	20.37	130.49	120.30
1	A	251	ARG	NE-CZ-NH1	16.10	128.35	120.30
1	D	809	ARG	NE-CZ-NH1	14.65	127.62	120.30
1	A	251	ARG	NE-CZ-NH2	-14.48	113.06	120.30
1	D	699	ARG	NE-CZ-NH1	13.84	127.22	120.30

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	8123	0	7715	202	0
1	B	8123	0	7715	136	0
1	C	8123	0	7715	121	0
1	D	8123	0	7715	149	0
2	A	4	0	0	0	0
2	B	4	0	0	0	0
2	C	3	0	0	0	0
2	D	3	0	0	0	0
3	A	4	0	0	0	0
3	B	5	0	0	0	0
3	C	5	0	0	0	0
3	D	4	0	0	0	0
4	A	45	0	53	0	0
4	B	45	0	53	3	0
4	C	45	0	53	1	0
4	D	45	0	53	1	0
5	A	96	0	144	13	0
5	B	104	0	156	18	0
5	C	96	0	144	14	0
5	D	92	0	138	6	0
6	A	862	0	0	19	0
6	B	995	0	0	20	0
6	C	974	0	0	12	0
6	D	897	0	0	12	0
All	All	36820	0	31654	615	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 10.

The worst 5 of 615 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)
5:D:8403:DMS:S	5:D:8403:DMS:C2	2.08	1.41
1:A:1017:GLN:HE21	1:A:1018:LEU:N	1.46	1.11
1:C:737:ILE:HD12	1:C:738:PRO:HD2	1.16	1.08

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:750:GLU:HG3	1:D:755:ARG:HG3	1.37	1.06
1:A:730:LEU:HD22	1:A:731:PRO:HD2	1.36	1.05

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	1009/1023 (99%)	959 (95%)	49 (5%)	1 (0%)	51	36
1	B	1009/1023 (99%)	967 (96%)	35 (4%)	7 (1%)	22	10
1	C	1009/1023 (99%)	973 (96%)	34 (3%)	2 (0%)	47	33
1	D	1009/1023 (99%)	976 (97%)	30 (3%)	3 (0%)	41	27
All	All	4036/4092 (99%)	3875 (96%)	148 (4%)	13 (0%)	41	27

5 of 13 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	686	PRO
1	B	731	PRO
1	B	735	HIS
1	C	731	PRO
1	D	688	PRO

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	864/875 (99%)	818 (95%)	46 (5%)	22	9
1	B	864/875 (99%)	827 (96%)	37 (4%)	29	14
1	C	864/875 (99%)	832 (96%)	32 (4%)	34	19
1	D	864/875 (99%)	822 (95%)	42 (5%)	25	11
All	All	3456/3500 (99%)	3299 (96%)	157 (4%)	27	13

5 of 157 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	D	72	SER
1	D	737	ILE
1	D	129	VAL
1	D	418	ASN
1	D	773	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 48 such sidechains are listed below:

Mol	Chain	Res	Type
1	C	370	GLN
1	C	878	HIS
1	C	394	ASN
1	C	702	GLN
1	D	262	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](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 141 ligands modelled in this entry, 32 are monoatomic - leaving 109 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
5	DMS	C	8427	-	3,3,3	0.12	0	3,3,3	0.46	0
5	DMS	B	8421	-	3,3,3	0.55	0	3,3,3	0.50	0
5	DMS	C	8415	-	3,3,3	1.92	1 (33%)	3,3,3	0.20	0
4	IPT	C	2001	3	14,15,15	0.68	0	18,21,21	1.36	3 (16%)
5	DMS	C	8402	-	3,3,3	1.59	1 (33%)	3,3,3	0.52	0
5	DMS	B	8403	-	3,3,3	1.44	1 (33%)	3,3,3	0.77	0
5	DMS	D	8402	-	3,3,3	1.97	1 (33%)	3,3,3	0.30	0
4	IPT	B	2001	3	14,15,15	0.78	0	18,21,21	1.43	2 (11%)
5	DMS	A	8417	-	3,3,3	1.05	0	3,3,3	0.35	0
5	DMS	B	8423	-	3,3,3	1.76	1 (33%)	3,3,3	0.53	0
5	DMS	B	8404	-	3,3,3	1.30	1 (33%)	3,3,3	1.29	1 (33%)
5	DMS	B	8504	-	3,3,3	0.43	0	3,3,3	0.19	0
5	DMS	C	8404	-	3,3,3	1.49	1 (33%)	3,3,3	1.12	0
4	IPT	C	2004	-	14,15,15	0.46	0	18,21,21	1.69	3 (16%)
5	DMS	B	8410	-	3,3,3	1.71	1 (33%)	3,3,3	0.57	0
5	DMS	A	8415	-	3,3,3	1.41	0	3,3,3	0.58	0
5	DMS	D	8404	-	3,3,3	1.27	0	3,3,3	0.20	0
5	DMS	A	8420	-	3,3,3	0.92	0	3,3,3	0.23	0
5	DMS	A	8402	-	3,3,3	1.69	1 (33%)	3,3,3	0.30	0
5	DMS	C	8502	-	3,3,3	0.64	0	3,3,3	1.25	1 (33%)
4	IPT	C	2003	-	14,15,15	0.61	0	18,21,21	1.46	3 (16%)
5	DMS	B	8417	-	3,3,3	1.54	1 (33%)	3,3,3	1.81	1 (33%)
5	DMS	D	8412	-	3,3,3	1.45	1 (33%)	3,3,3	0.52	0
5	DMS	B	8411	-	3,3,3	0.95	0	3,3,3	0.64	0
5	DMS	B	8407	-	3,3,3	1.86	2 (66%)	3,3,3	0.47	0
5	DMS	B	8427	-	3,3,3	0.77	0	3,3,3	0.21	0
5	DMS	A	8504	-	3,3,3	0.66	0	3,3,3	0.12	0
5	DMS	D	8423	-	3,3,3	0.64	0	3,3,3	0.19	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
5	DMS	A	8502	-	3,3,3	2.04	1 (33%)	3,3,3	0.65	0
5	DMS	B	8420	-	3,3,3	2.51	2 (66%)	3,3,3	0.55	0
5	DMS	A	8419	-	3,3,3	0.60	0	3,3,3	0.34	0
5	DMS	B	8502	-	3,3,3	1.32	1 (33%)	3,3,3	1.09	0
5	DMS	B	8506	-	3,3,3	1.61	1 (33%)	3,3,3	0.41	0
5	DMS	B	8501	-	3,3,3	1.50	1 (33%)	3,3,3	0.38	0
5	DMS	B	8402	-	3,3,3	0.83	0	3,3,3	0.36	0
5	DMS	B	8416	-	3,3,3	0.69	0	3,3,3	0.74	0
5	DMS	D	8407	-	3,3,3	1.47	1 (33%)	3,3,3	0.40	0
5	DMS	A	8406	-	3,3,3	0.53	0	3,3,3	0.39	0
5	DMS	D	8416	-	3,3,3	1.17	0	3,3,3	0.09	0
5	DMS	A	8501	-	3,3,3	0.88	0	3,3,3	0.31	0
5	DMS	D	8417	-	3,3,3	1.24	0	3,3,3	0.86	0
5	DMS	A	8408	-	3,3,3	0.52	0	3,3,3	0.19	0
5	DMS	C	8409	-	3,3,3	1.12	0	3,3,3	0.26	0
5	DMS	B	8413	-	3,3,3	1.20	0	3,3,3	0.60	0
5	DMS	B	8406	-	3,3,3	0.82	0	3,3,3	0.18	0
5	DMS	B	8401	-	3,3,3	0.83	0	3,3,3	1.29	1 (33%)
5	DMS	B	8412	-	3,3,3	0.89	0	3,3,3	0.55	0
5	DMS	D	8409	-	3,3,3	2.32	1 (33%)	3,3,3	0.88	0
5	DMS	D	8408	-	3,3,3	1.03	0	3,3,3	0.51	0
5	DMS	C	8413	-	3,3,3	1.77	1 (33%)	3,3,3	0.16	0
5	DMS	A	8401	-	3,3,3	0.60	0	3,3,3	0.19	0
4	IPT	D	2001	3	14,15,15	0.51	0	18,21,21	1.50	5 (27%)
5	DMS	C	8420	-	3,3,3	1.04	0	3,3,3	0.19	0
5	DMS	B	8425	3	3,3,3	1.10	0	3,3,3	0.20	0
5	DMS	C	8421	-	3,3,3	0.40	0	3,3,3	0.32	0
5	DMS	C	8416	-	3,3,3	0.78	0	3,3,3	0.15	0
5	DMS	B	8405	-	3,3,3	1.45	1 (33%)	3,3,3	0.53	0
5	DMS	D	8415	-	3,3,3	1.82	0	3,3,3	0.33	0
5	DMS	C	8503	-	3,3,3	1.06	0	3,3,3	0.25	0
5	DMS	C	8408	-	3,3,3	0.49	0	3,3,3	1.24	1 (33%)
5	DMS	D	8503	-	3,3,3	0.83	0	3,3,3	0.18	0
4	IPT	A	2003	-	14,15,15	0.69	0	18,21,21	2.15	4 (22%)
5	DMS	D	8501	-	3,3,3	0.15	0	3,3,3	0.56	0
5	DMS	D	8403	-	3,3,3	2.57	1 (33%)	3,3,3	0.42	0
5	DMS	A	8423	-	3,3,3	1.67	1 (33%)	3,3,3	0.16	0
5	DMS	C	8405	-	3,3,3	0.84	0	3,3,3	0.18	0
5	DMS	C	8411	-	3,3,3	2.22	2 (66%)	3,3,3	0.21	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
5	DMS	D	8405	-	3,3,3	0.99	0	3,3,3	0.37	0
5	DMS	C	8414	-	3,3,3	0.96	0	3,3,3	0.99	0
5	DMS	A	8414	-	3,3,3	0.95	0	3,3,3	0.52	0
5	DMS	A	8403	-	3,3,3	1.77	1 (33%)	3,3,3	1.19	1 (33%)
4	IPT	A	2001	3	14,15,15	0.74	0	18,21,21	1.01	0
5	DMS	A	8405	-	3,3,3	0.64	0	3,3,3	0.14	0
4	IPT	D	2002	-	14,15,15	0.98	1 (7%)	18,21,21	1.12	1 (5%)
5	DMS	A	8411	-	3,3,3	0.78	0	3,3,3	0.20	0
5	DMS	B	8414	-	3,3,3	1.35	1 (33%)	3,3,3	1.07	0
5	DMS	C	8401	-	3,3,3	1.23	0	3,3,3	0.69	0
5	DMS	A	8421	-	3,3,3	0.89	0	3,3,3	0.21	0
5	DMS	C	8423	-	3,3,3	1.50	0	3,3,3	0.45	0
5	DMS	C	8410	-	3,3,3	1.82	1 (33%)	3,3,3	0.54	0
5	DMS	C	8407	-	3,3,3	1.61	1 (33%)	3,3,3	0.53	0
5	DMS	A	8409	-	3,3,3	2.42	2 (66%)	3,3,3	0.27	0
5	DMS	B	8409	-	3,3,3	2.38	1 (33%)	3,3,3	0.48	0
5	DMS	A	8410	-	3,3,3	0.76	0	3,3,3	0.15	0
5	DMS	D	8419	-	3,3,3	0.56	0	3,3,3	0.24	0
4	IPT	D	2003	-	14,15,15	0.58	0	18,21,21	1.85	5 (27%)
5	DMS	B	8415	-	3,3,3	1.69	1 (33%)	3,3,3	0.46	0
4	IPT	A	2002	-	14,15,15	1.12	1 (7%)	18,21,21	1.73	2 (11%)
5	DMS	A	8413	-	3,3,3	2.20	1 (33%)	3,3,3	0.31	0
5	DMS	D	8414	-	3,3,3	0.81	0	3,3,3	0.38	0
5	DMS	C	8412	-	3,3,3	1.16	0	3,3,3	0.41	0
5	DMS	D	8421	-	3,3,3	1.20	1 (33%)	3,3,3	0.34	0
5	DMS	C	8403	-	3,3,3	1.71	1 (33%)	3,3,3	0.46	0
5	DMS	A	8404	-	3,3,3	0.65	0	3,3,3	0.57	0
5	DMS	A	8407	-	3,3,3	1.25	0	3,3,3	0.25	0
5	DMS	C	8504	-	3,3,3	0.67	0	3,3,3	0.25	0
5	DMS	D	8411	-	3,3,3	1.43	1 (33%)	3,3,3	0.64	0
5	DMS	A	8412	-	3,3,3	0.44	0	3,3,3	0.27	0
5	DMS	C	8425	3	3,3,3	1.65	1 (33%)	3,3,3	0.16	0
5	DMS	D	8705	-	3,3,3	0.75	0	3,3,3	0.50	0
5	DMS	B	8408	-	3,3,3	1.33	0	3,3,3	0.39	0
5	DMS	D	8401	-	3,3,3	2.27	2 (66%)	3,3,3	0.95	0
5	DMS	C	8501	-	3,3,3	1.31	1 (33%)	3,3,3	0.96	0
4	IPT	B	2003	-	14,15,15	0.76	0	18,21,21	1.43	2 (11%)
5	DMS	D	8410	-	3,3,3	1.31	0	3,3,3	0.43	0
5	DMS	D	8413	-	3,3,3	1.22	0	3,3,3	0.07	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
5	DMS	D	8406	-	3,3,3	1.01	0	3,3,3	0.75	0
5	DMS	A	8416	-	3,3,3	0.90	0	3,3,3	0.24	0
4	IPT	B	2004	-	14,15,15	0.55	0	18,21,21	2.05	4 (22%)

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	IPT	D	2002	-	-	0/6/26/26	0/1/1/1
4	IPT	B	2003	-	-	0/6/26/26	0/1/1/1
4	IPT	A	2003	-	-	0/6/26/26	0/1/1/1
4	IPT	C	2003	-	-	1/6/26/26	0/1/1/1
4	IPT	D	2001	3	-	1/6/26/26	0/1/1/1
4	IPT	B	2001	3	-	1/6/26/26	0/1/1/1
4	IPT	D	2003	-	-	0/6/26/26	0/1/1/1
4	IPT	A	2002	-	-	0/6/26/26	0/1/1/1
4	IPT	B	2004	-	-	2/6/26/26	0/1/1/1
4	IPT	C	2001	3	-	1/6/26/26	0/1/1/1
4	IPT	A	2001	3	-	1/6/26/26	0/1/1/1
4	IPT	C	2004	-	-	3/6/26/26	0/1/1/1

The worst 5 of 45 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	D	8403	DMS	C2-S	4.37	2.08	1.75
5	B	8409	DMS	O-S	3.79	1.75	1.50
5	A	8409	DMS	O-S	3.59	1.74	1.50
5	A	8413	DMS	O-S	3.58	1.74	1.50
5	D	8409	DMS	O-S	3.54	1.74	1.50

The worst 5 of 40 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	2003	IPT	C3-C4-C5	-6.13	99.31	110.24
4	B	2004	IPT	C2-C1-S1	-5.04	103.53	111.30
4	A	2002	IPT	C2-C1-S1	-4.89	103.77	111.30
4	B	2001	IPT	C2-C1-S1	-4.76	103.97	111.30
4	C	2004	IPT	C4-C3-C2	4.58	118.82	110.82

There are no chirality outliers.

5 of 10 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	C	2003	IPT	C2'-C1'-S1-C1
4	C	2004	IPT	C3'-C1'-S1-C1
4	B	2004	IPT	C4-C5-C6-O6
4	C	2004	IPT	O5-C5-C6-O6
4	C	2004	IPT	C4-C5-C6-O6

There are no ring outliers.

34 monomers are involved in 54 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	B	8403	DMS	1	0
4	B	2001	IPT	2	0
5	A	8417	DMS	1	0
5	B	8504	DMS	1	0
4	C	2004	IPT	1	0
5	A	8415	DMS	1	0
5	A	8420	DMS	2	0
5	C	8502	DMS	1	0
5	B	8417	DMS	1	0
5	B	8506	DMS	8	0
5	B	8416	DMS	3	0
5	A	8501	DMS	1	0
5	D	8417	DMS	1	0
5	B	8413	DMS	1	0
5	B	8412	DMS	3	0
5	C	8420	DMS	2	0
5	C	8421	DMS	1	0
5	C	8416	DMS	3	0
5	D	8415	DMS	1	0
5	C	8408	DMS	1	0
5	D	8503	DMS	1	0
5	D	8403	DMS	1	0
5	C	8411	DMS	4	0
5	A	8414	DMS	1	0
5	A	8403	DMS	1	0
5	A	8411	DMS	1	0
5	A	8410	DMS	1	0
4	D	2003	IPT	1	0
5	D	8414	DMS	1	0
5	C	8412	DMS	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	A	8412	DMS	3	0
5	D	8406	DMS	1	0
5	A	8416	DMS	1	0
4	B	2004	IPT	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	1011/1023 (98%)	-0.18	33 (3%) 46 40	11, 22, 52, 99	0
1	B	1011/1023 (98%)	-0.30	19 (1%) 66 63	10, 19, 49, 100	0
1	C	1011/1023 (98%)	-0.36	19 (1%) 66 63	11, 18, 46, 99	0
1	D	1011/1023 (98%)	-0.21	27 (2%) 54 49	13, 23, 51, 99	0
All	All	4044/4092 (98%)	-0.26	98 (2%) 59 54	10, 20, 50, 100	0

The worst 5 of 98 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	735	HIS	8.6
1	D	730	LEU	8.4
1	B	732	ALA	7.8
1	B	686	PRO	6.7
1	C	735	HIS	6.6

6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

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

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled ‘Q < 0.9’ lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
3	NA	C	3105	1/1	0.78	0.13	48,48,48,48	0
5	DMS	A	8423	4/4	0.80	0.30	58,63,65,100	0
2	MG	A	3003	1/1	0.86	0.15	52,52,52,52	0
5	DMS	D	8421	4/4	0.86	0.17	47,55,65,100	0
5	DMS	B	8416	4/4	0.88	0.29	21,75,100,100	0
5	DMS	B	8420	4/4	0.88	0.22	56,57,69,82	0
4	IPT	C	2004	15/15	0.88	0.25	29,55,100,100	0
5	DMS	A	8421	4/4	0.89	0.17	28,62,80,100	0
5	DMS	B	8417	4/4	0.90	0.24	28,29,73,100	0
4	IPT	D	2003	15/15	0.90	0.20	28,36,55,63	0
5	DMS	B	8423	4/4	0.90	0.14	35,58,73,80	0
5	DMS	D	8416	4/4	0.90	0.20	36,61,87,100	0
4	IPT	B	2004	15/15	0.90	0.20	31,45,99,100	0
5	DMS	D	8423	4/4	0.90	0.12	49,50,66,96	0
5	DMS	C	8421	4/4	0.91	0.14	38,46,62,68	0
5	DMS	A	8417	4/4	0.91	0.18	30,36,38,100	0
5	DMS	A	8419	4/4	0.91	0.15	38,62,71,100	0
5	DMS	C	8416	4/4	0.91	0.28	22,78,100,100	0
5	DMS	A	8420	4/4	0.92	0.16	45,55,55,65	0
3	NA	B	3105	1/1	0.92	0.11	48,48,48,48	0
4	IPT	B	2003	15/15	0.92	0.17	23,30,38,42	0
4	IPT	A	2003	15/15	0.92	0.16	26,35,77,100	0
4	IPT	C	2003	15/15	0.93	0.18	18,28,47,67	0
5	DMS	C	8501	4/4	0.93	0.11	25,48,53,60	0
5	DMS	D	8413	4/4	0.93	0.19	39,40,52,56	0
5	DMS	A	8413	4/4	0.93	0.16	44,46,52,52	0
5	DMS	D	8417	4/4	0.93	0.19	30,35,64,98	0
5	DMS	B	8415	4/4	0.93	0.12	28,32,48,100	0
5	DMS	A	8416	4/4	0.93	0.22	43,44,100,100	0
5	DMS	D	8501	4/4	0.93	0.13	31,37,48,74	0
5	DMS	D	8503	4/4	0.93	0.11	25,47,53,100	0
5	DMS	A	8502	4/4	0.94	0.15	36,41,54,100	0
5	DMS	C	8503	4/4	0.94	0.10	38,47,52,55	0
5	DMS	D	8406	4/4	0.94	0.14	36,57,85,100	0
5	DMS	A	8409	4/4	0.94	0.12	38,39,50,66	0
5	DMS	C	8425	4/4	0.94	0.17	34,36,52,57	0
5	DMS	B	8413	4/4	0.95	0.15	32,42,44,69	0
2	MG	D	3003	1/1	0.95	0.10	48,48,48,48	0
5	DMS	C	8427	4/4	0.95	0.14	38,49,72,73	0
5	DMS	A	8414	4/4	0.95	0.15	38,40,91,100	0
5	DMS	A	8415	4/4	0.95	0.10	27,31,48,49	0
5	DMS	C	8504	4/4	0.95	0.09	37,66,69,100	0
3	NA	D	3105	1/1	0.95	0.09	64,64,64,64	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
5	DMS	D	8409	4/4	0.95	0.10	28,31,34,46	0
5	DMS	A	8501	4/4	0.95	0.14	36,53,54,57	0
5	DMS	B	8425	4/4	0.95	0.18	41,42,43,50	0
5	DMS	B	8427	4/4	0.95	0.17	41,68,100,100	0
5	DMS	C	8403	4/4	0.95	0.16	23,33,36,100	0
5	DMS	C	8414	4/4	0.95	0.12	23,41,47,52	0
2	MG	B	3011	1/1	0.95	0.08	41,41,41,41	0
5	DMS	C	8420	4/4	0.95	0.15	47,52,67,79	0
5	DMS	D	8705	4/4	0.95	0.18	38,47,100,100	0
5	DMS	C	8413	4/4	0.96	0.14	28,48,50,100	0
3	NA	A	3105	1/1	0.96	0.05	46,46,46,46	0
5	DMS	C	8415	4/4	0.96	0.10	21,26,37,46	0
5	DMS	A	8410	4/4	0.96	0.11	40,45,58,61	0
5	DMS	A	8504	4/4	0.96	0.12	58,65,69,89	0
5	DMS	B	8403	4/4	0.96	0.14	26,33,38,100	0
5	DMS	C	8423	4/4	0.96	0.10	27,40,47,77	0
5	DMS	B	8407	4/4	0.96	0.10	25,39,43,50	0
5	DMS	B	8409	4/4	0.96	0.10	24,34,36,41	0
4	IPT	B	2001	15/15	0.96	0.09	16,20,28,33	0
3	NA	B	3103	1/1	0.96	0.07	31,31,31,31	0
4	IPT	A	2001	15/15	0.96	0.09	17,25,58,60	0
5	DMS	D	8403	4/4	0.96	0.12	28,33,42,42	0
4	IPT	A	2002	15/15	0.96	0.09	15,22,30,34	0
5	DMS	D	8407	4/4	0.96	0.10	25,34,40,44	0
2	MG	C	3003	1/1	0.96	0.09	15,15,15,15	1
5	DMS	D	8410	4/4	0.96	0.11	32,41,45,71	0
4	IPT	D	2001	15/15	0.96	0.09	20,30,34,52	0
4	IPT	D	2002	15/15	0.96	0.09	13,22,31,32	0
5	DMS	A	8403	4/4	0.96	0.14	24,26,36,100	0
5	DMS	B	8506	4/4	0.96	0.17	44,50,100,100	0
5	DMS	C	8402	4/4	0.96	0.09	20,21,32,34	0
5	DMS	A	8408	4/4	0.96	0.11	31,37,48,82	0
5	DMS	C	8404	4/4	0.96	0.10	20,23,40,53	0
5	DMS	C	8410	4/4	0.96	0.10	17,33,39,100	0
5	DMS	B	8408	4/4	0.97	0.09	39,42,42,56	0
5	DMS	C	8502	4/4	0.97	0.08	28,29,41,44	0
5	DMS	A	8411	4/4	0.97	0.09	28,29,36,43	0
5	DMS	B	8412	4/4	0.97	0.12	34,35,39,57	0
5	DMS	D	8402	4/4	0.97	0.09	12,25,29,42	0
5	DMS	A	8412	4/4	0.97	0.15	36,51,51,65	0
5	DMS	C	8408	4/4	0.97	0.11	31,35,41,100	0
5	DMS	C	8409	4/4	0.97	0.09	33,38,43,51	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
5	DMS	B	8414	4/4	0.97	0.11	24,42,50,100	0
3	NA	D	3103	1/1	0.97	0.08	31,31,31,31	0
5	DMS	D	8412	4/4	0.97	0.10	30,39,46,62	0
5	DMS	A	8404	4/4	0.97	0.07	24,33,36,44	0
5	DMS	D	8414	4/4	0.97	0.17	30,61,100,100	0
5	DMS	D	8415	4/4	0.97	0.07	26,30,37,48	0
5	DMS	A	8407	4/4	0.97	0.11	32,34,40,47	0
2	MG	A	3012	1/1	0.97	0.15	40,40,40,40	0
5	DMS	D	8419	4/4	0.97	0.12	55,62,64,72	0
3	NA	A	3103	1/1	0.97	0.09	33,33,33,33	0
5	DMS	B	8404	4/4	0.97	0.08	19,20,32,38	0
4	IPT	C	2001	15/15	0.97	0.09	14,19,31,37	0
5	DMS	B	8502	4/4	0.97	0.07	19,29,62,68	0
5	DMS	B	8504	4/4	0.97	0.14	53,54,60,65	0
5	DMS	D	8404	4/4	0.98	0.08	18,30,34,35	0
5	DMS	D	8405	4/4	0.98	0.11	33,33,39,39	0
5	DMS	A	8405	4/4	0.98	0.09	33,34,34,35	0
5	DMS	B	8410	4/4	0.98	0.10	22,35,44,48	0
5	DMS	D	8408	4/4	0.98	0.11	26,34,43,47	0
5	DMS	B	8501	4/4	0.98	0.07	21,24,32,32	0
5	DMS	A	8406	4/4	0.98	0.07	28,51,52,61	0
5	DMS	D	8411	4/4	0.98	0.09	27,35,38,100	0
5	DMS	B	8402	4/4	0.98	0.08	19,20,32,36	0
3	NA	B	3104	1/1	0.98	0.14	29,29,29,29	0
2	MG	A	3002	1/1	0.98	0.07	23,23,23,23	0
5	DMS	B	8405	4/4	0.98	0.10	28,32,33,38	0
5	DMS	B	8406	4/4	0.98	0.08	35,36,44,100	0
5	DMS	C	8405	4/4	0.98	0.09	28,29,32,33	0
5	DMS	C	8407	4/4	0.98	0.08	28,28,36,43	0
3	NA	C	3104	1/1	0.98	0.14	26,26,26,26	0
5	DMS	B	8421	4/4	0.98	0.13	36,47,100,100	0
5	DMS	D	8401	4/4	0.98	0.09	14,22,23,26	0
2	MG	D	3002	1/1	0.98	0.11	27,27,27,27	0
5	DMS	C	8412	4/4	0.98	0.10	31,35,37,54	0
3	NA	D	3101	1/1	0.99	0.06	19,19,19,19	0
5	DMS	A	8401	4/4	0.99	0.07	15,24,25,26	0
5	DMS	A	8402	4/4	0.99	0.07	18,25,26,31	0
3	NA	D	3102	1/1	0.99	0.05	17,17,17,17	0
5	DMS	C	8411	4/4	0.99	0.07	21,23,23,27	0
3	NA	A	3102	1/1	0.99	0.06	15,15,15,15	0
2	MG	A	3001	1/1	0.99	0.05	17,17,17,17	0
2	MG	C	3002	1/1	0.99	0.05	18,18,18,18	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
3	NA	B	3101	1/1	0.99	0.06	17,17,17,17	0
5	DMS	B	8401	4/4	0.99	0.10	16,22,22,24	0
3	NA	B	3102	1/1	0.99	0.05	15,15,15,15	0
2	MG	B	3001	1/1	0.99	0.05	16,16,16,16	0
2	MG	D	3001	1/1	0.99	0.06	18,18,18,18	0
2	MG	B	3002	1/1	0.99	0.06	19,19,19,19	0
3	NA	C	3101	1/1	0.99	0.10	15,15,15,15	0
3	NA	C	3102	1/1	0.99	0.06	16,16,16,16	0
5	DMS	C	8401	4/4	0.99	0.08	15,15,21,22	0
3	NA	C	3103	1/1	0.99	0.07	30,30,30,30	0
2	MG	B	3007	1/1	0.99	0.16	26,26,26,26	0
3	NA	A	3101	1/1	0.99	0.05	21,21,21,21	0
5	DMS	B	8411	4/4	0.99	0.07	23,27,36,47	0
2	MG	C	3001	1/1	1.00	0.06	15,15,15,15	0

6.5 Other polymers [i](#)

There are no such residues in this entry.