Full wwPDB X-ray Structure Validation Report (i)

Jan 25, 2023 – 10:18 AM EST

PDB ID	:	4H3W
Title	:	Crystal structure of a putative secreted protein (BDI_1231) from Parabacteroides distasonis ATCC 8503 at 2.00 A resolution
Authors	:	Joint Center for Structural Genomics (JCSG)
Deposited on	:	2012-09-14
Resolution	:	1.87 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
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 (i)) were used in the production of this report:

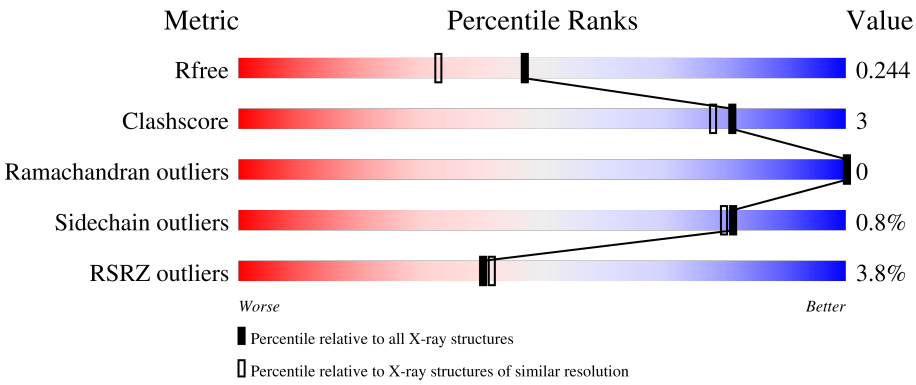
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.31.2
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.2

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 1.87 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	9470 (1.90-1.86)
Clashscore	141614	10282 (1.90-1.86)
Ramachandran outliers	138981	10152 (1.90-1.86)
Sidechain outliers	138945	10152 (1.90-1.86)
RSRZ outliers	127900	9303 (1.90-1.86)

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	A	330	3% 90% • • 5%
1	B	330	3% 89% 5% • 5%

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 5381 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 hypothetical protein.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	N	O	S	Se			
1	A	313	2497	1602	385	500	1	9	0	16	0
1	B	312	2491	1597	389	495	1	9	0	13	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	0	GLY	-	expression tag	UNP A6LBC8
B	0	GLY	-	expression tag	UNP A6LBC8

- Molecule 2 is water.

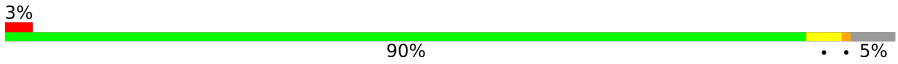
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
2	A	205	205	205	0	0
2	B	188	188	188	0	0

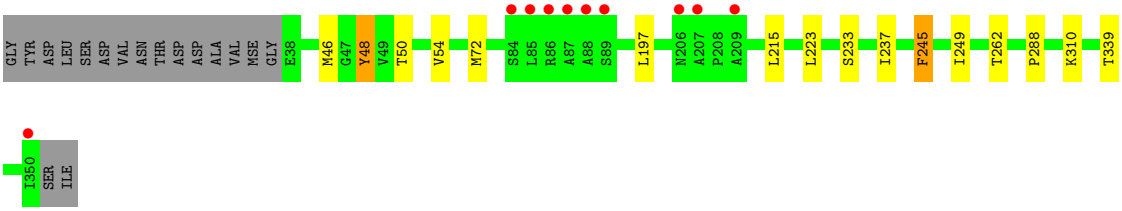
3 Residue-property plots (i)

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: hypothetical protein

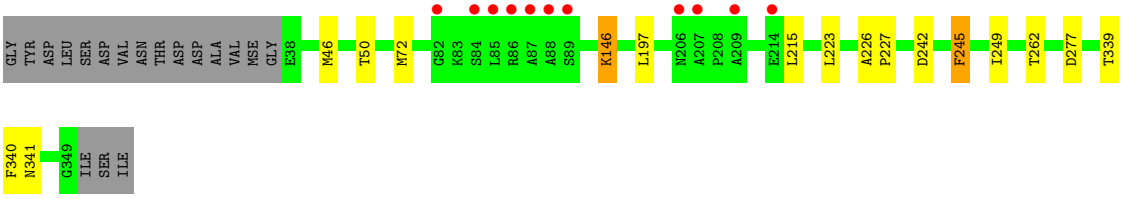
Chain A:





• Molecule 1: hypothetical protein

Chain B:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α, β, γ	38.75Å 65.32Å 78.76Å 91.64° 92.35° 104.50°	Depositor
Resolution (Å)	48.32 – 1.87 34.50 – 1.87	Depositor EDS
% Data completeness (in resolution range)	86.6 (48.32-1.87) 86.7 (34.50-1.87)	Depositor EDS
R_{merge}	0.06	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.13 (at 1.87Å)	Xtriage
Refinement program	REFMAC 5.7.0029	Depositor
R, R_{free}	0.196 , 0.238 0.203 , 0.244	Depositor DCC
R_{free} test set	2703 reflections (5.07%)	wwPDB-VP
Wilson B-factor (Å^2)	28.9	Xtriage
Anisotropy	0.537	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.30 , 35.9	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	5381	wwPDB-VP
Average B, all atoms (Å^2)	42.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 7.22% 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, 0.333 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: MLY

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	0.59	0/2331	0.75	0/3177
1	B	0.58	0/2324	0.74	1/3166 (0.0%)
All	All	0.58	0/4655	0.74	1/6343 (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	B	277	ASP	CB-CG-OD1	5.46	123.22	118.30

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	2497	0	2447	13	0
1	B	2491	0	2441	14	0
2	A	205	0	0	0	0
2	B	188	0	0	2	0
All	All	5381	0	4888	26	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 3.

All (26) 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:B:245[B]:PHE:CE2	1:B:249:ILE:HG13	2.23	0.74
1:A:245[B]:PHE:CE2	1:A:249:ILE:HG13	2.27	0.69
1:B:46:MSE:HB3	1:B:340:PHE:O	2.00	0.61
1:A:245[B]:PHE:CE2	1:A:249:ILE:CG1	2.92	0.53
1:A:72:MSE:HE2	1:A:223:LEU:HD21	1.94	0.50
1:B:72:MSE:HE2	1:B:223:LEU:HD21	1.95	0.49
1:A:46:MSE:SE	1:A:339:THR:HG23	2.62	0.49
1:B:245[B]:PHE:CE2	1:B:249:ILE:CG1	2.95	0.49
1:B:46:MSE:CB	1:B:340:PHE:O	2.63	0.47
1:A:262:THR:OG1	1:A:339:THR:HB	2.16	0.45
1:B:262:THR:OG1	1:B:339:THR:HB	2.17	0.45
1:A:54:VAL:O	1:A:233[B]:SER:OG	2.28	0.43
1:B:245[B]:PHE:CD2	1:B:249:ILE:HG13	2.53	0.43
1:B:197:LEU:HD22	1:B:215:LEU:HD21	2.00	0.43
1:B:50[A]:THR:HG22	2:B:438:HOH:O	2.19	0.42
1:A:245[B]:PHE:CD2	1:A:249:ILE:HG13	2.53	0.42
1:B:341[A]:ASN:ND2	2:B:540:HOH:O	2.51	0.42
1:A:197:LEU:HD22	1:A:215:LEU:HD21	2.01	0.42
1:A:288:PRO:HA	1:B:146:MLY:O	2.20	0.41
1:B:226:ALA:HB1	1:B:227:PRO:HD2	2.03	0.41
1:B:197:LEU:CD2	1:B:215:LEU:HD21	2.50	0.41
1:A:197:LEU:CD2	1:A:215:LEU:HD21	2.50	0.41
1:B:242:ASP:HB3	1:B:245[A]:PHE:CD2	2.56	0.41
1:A:48:TYR:CD1	1:A:48:TYR:C	2.94	0.40
1:A:48:TYR:HD1	1:A:48:TYR:O	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	301/330 (91%)	289 (96%)	12 (4%)	0	100	100
1	B	298/330 (90%)	289 (97%)	9 (3%)	0	100	100
All	All	599/660 (91%)	578 (96%)	21 (4%)	0	100	100

There are no Ramachandran outliers to report.

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	258/251 (103%)	253 (98%)	5 (2%)	57	49
1	B	255/251 (102%)	253 (99%)	2 (1%)	81	80
All	All	513/502 (102%)	506 (99%)	7 (1%)	81	62

All (7) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	48	TYR
1	A	50[A]	THR
1	A	50[B]	THR
1	A	245[A]	PHE
1	A	245[B]	PHE
1	B	245[A]	PHE
1	B	245[B]	PHE

Sometimes 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)

51 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	MLY	B	91	1	9,10,11	0.55	0	6,11,13	0.47	0
1	MLY	B	124	1	9,10,11	0.73	0	6,11,13	0.40	0
1	MLY	B	81	1	5,6,11	0.61	0	2,6,13	0.54	0
1	MLY	A	79	1	5,6,11	0.70	0	2,6,13	0.17	0
1	MLY	A	91	1	9,10,11	0.55	0	6,11,13	0.46	0
1	MLY	B	343	1	5,6,11	0.76	0	2,6,13	0.96	0
1	MLY	A	83	1	9,10,11	0.47	0	6,11,13	0.84	0
1	MLY	B	333	1	9,10,11	0.50	0	6,11,13	0.66	0
1	MLY	B	305	1	4,5,11	0.64	0	1,5,13	0.03	0
1	MLY	B	170	1	9,10,11	0.51	0	6,11,13	1.03	0
1	MLY	B	310	1	9,10,11	0.70	0	6,11,13	0.90	0
1	MLY	B	83	1	9,10,11	0.44	0	6,11,13	0.85	0
1	MLY	A	202	1	3,4,11	0.74	0	2,4,13	0.99	0
1	MLY	A	345	1	9,10,11	0.71	0	6,11,13	0.58	0
1	MLY	A	59	1	5,6,11	0.58	0	2,6,13	0.17	0
1	MLY	A	181	1	5,6,11	0.41	0	2,6,13	0.59	0
1	MLY	A	334	1	9,10,11	0.62	0	6,11,13	0.45	0
1	MLY	A	175	1	9,10,11	0.58	0	6,11,13	0.32	0
1	MLY	B	312	1	9,10,11	0.56	0	6,11,13	0.62	0
1	MLY	B	178	1	9,10,11	0.40	0	6,11,13	0.71	0
1	MLY	B	79	1	4,5,11	0.62	0	1,5,13	0.22	0
1	MLY	A	312	1	9,10,11	0.71	0	6,11,13	0.56	0
1	MLY	A	333	1	9,10,11	0.48	0	6,11,13	0.81	0
1	MLY	A	170[B]	-	9,10,11	0.39	0	6,11,13	0.50	0
1	MLY	B	128	1	3,4,11	0.55	0	2,4,13	0.90	0
1	MLY	B	181	1	9,10,11	0.58	0	6,11,13	0.78	0
1	MLY	A	178	1	9,10,11	0.67	0	6,11,13	0.71	0
1	MLY	B	202	1	3,4,11	0.55	0	2,4,13	1.22	0
1	MLY	B	59	1	9,10,11	0.50	0	6,11,13	1.05	0
1	MLY	A	128	1	9,10,11	0.61	0	6,11,13	0.32	0
1	MLY	A	346	1	9,10,11	0.63	0	6,11,13	0.64	0
1	MLY	A	146	1	4,5,11	0.50	0	1,5,13	1.46	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
1	MLY	B	293	1	9,10,11	0.49	0	6,11,13	0.45	0
1	MLY	B	175	1	9,10,11	0.71	0	6,11,13	0.39	0
1	MLY	B	146	1	9,10,11	1.06	1 (11%)	6,11,13	1.06	0
1	MLY	B	192	1	9,10,11	0.60	0	6,11,13	0.22	0
1	MLY	B	345	1	9,10,11	0.88	0	6,11,13	0.60	0
1	MLY	B	334	1	9,10,11	0.70	0	6,11,13	0.39	0
1	MLY	A	293	1	9,10,11	0.56	0	6,11,13	0.53	0
1	MLY	A	337	1	9,10,11	0.65	0	6,11,13	0.66	0
1	MLY	A	192	1	4,5,11	0.63	0	1,5,13	0.63	0
1	MLY	A	124	1	9,10,11	0.72	0	6,11,13	0.43	0
1	MLY	A	81	1	9,10,11	0.60	0	6,11,13	0.48	0
1	MLY	A	305	1	4,5,11	0.65	0	1,5,13	0.30	0
1	MLY	B	346	1	9,10,11	0.67	0	6,11,13	0.67	0
1	MLY	A	145	1	9,10,11	0.63	0	6,11,13	1.02	0
1	MLY	A	310	1	9,10,11	0.62	0	6,11,13	1.00	1 (16%)
1	MLY	B	145	1	9,10,11	0.81	0	6,11,13	0.54	0
1	MLY	A	343	1	5,6,11	0.88	0	2,6,13	0.61	0
1	MLY	B	337	1	9,10,11	0.60	0	6,11,13	0.69	0
1	MLY	A	170[A]	-	9,10,11	0.41	0	6,11,13	0.53	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
1	MLY	B	91	1	-	1/8/9/11	-
1	MLY	B	124	1	-	3/8/9/11	-
1	MLY	B	81	1	-	0/4/5/11	-
1	MLY	A	79	1	-	3/4/5/11	-
1	MLY	A	91	1	-	1/8/9/11	-
1	MLY	B	343	1	-	0/4/5/11	-
1	MLY	A	83	1	-	2/8/9/11	-
1	MLY	B	333	1	-	0/8/9/11	-
1	MLY	B	305	1	-	0/3/4/11	-
1	MLY	B	170	1	-	3/8/9/11	-
1	MLY	B	310	1	-	4/8/9/11	-
1	MLY	B	83	1	-	2/8/9/11	-
1	MLY	A	202	1	-	0/0/2/11	-
1	MLY	A	345	1	-	0/8/9/11	-
1	MLY	A	59	1	-	1/4/5/11	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	MLY	A	181	1	-	0/4/5/11	-
1	MLY	A	334	1	-	0/8/9/11	-
1	MLY	A	175	1	-	3/8/9/11	-
1	MLY	B	312	1	-	2/8/9/11	-
1	MLY	B	178	1	-	2/8/9/11	-
1	MLY	B	79	1	-	2/3/4/11	-
1	MLY	A	312	1	-	2/8/9/11	-
1	MLY	A	333	1	-	0/8/9/11	-
1	MLY	A	170[B]	-	-	1/8/9/11	-
1	MLY	B	128	1	-	0/0/2/11	-
1	MLY	B	181	1	-	3/8/9/11	-
1	MLY	A	178	1	-	2/8/9/11	-
1	MLY	B	202	1	-	0/0/2/11	-
1	MLY	B	59	1	-	1/8/9/11	-
1	MLY	A	128	1	-	3/8/9/11	-
1	MLY	A	346	1	-	2/8/9/11	-
1	MLY	A	146	1	-	0/3/4/11	-
1	MLY	B	293	1	-	0/8/9/11	-
1	MLY	B	175	1	-	3/8/9/11	-
1	MLY	B	146	1	-	1/8/9/11	-
1	MLY	B	192	1	-	2/8/9/11	-
1	MLY	B	345	1	-	0/8/9/11	-
1	MLY	B	334	1	-	0/8/9/11	-
1	MLY	A	293	1	-	0/8/9/11	-
1	MLY	A	337	1	-	2/8/9/11	-
1	MLY	A	192	1	-	0/3/4/11	-
1	MLY	A	124	1	-	3/8/9/11	-
1	MLY	A	81	1	-	1/8/9/11	-
1	MLY	A	305	1	-	0/3/4/11	-
1	MLY	B	346	1	-	2/8/9/11	-
1	MLY	A	145	1	-	0/8/9/11	-
1	MLY	A	310	1	-	3/8/9/11	-
1	MLY	B	145	1	-	1/8/9/11	-
1	MLY	A	343	1	-	0/4/5/11	-
1	MLY	B	337	1	-	1/8/9/11	-
1	MLY	A	170[A]	-	-	2/8/9/11	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	146	MLY	CB-CA	-2.46	1.50	1.53

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	310	MLY	CD-CE-NZ	-2.18	107.88	113.79

There are no chirality outliers.

All (64) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	79	MLY	C-CA-CB-CG
1	A	312	MLY	O-C-CA-CB
1	A	337	MLY	O-C-CA-CB
1	B	79	MLY	C-CA-CB-CG
1	B	310	MLY	O-C-CA-CB
1	B	312	MLY	O-C-CA-CB
1	B	181	MLY	CD-CE-NZ-CH1
1	A	175	MLY	CD-CE-NZ-CH1
1	B	170	MLY	CD-CE-NZ-CH1
1	B	170	MLY	CD-CE-NZ-CH2
1	B	175	MLY	CD-CE-NZ-CH1
1	B	181	MLY	CD-CE-NZ-CH2
1	B	310	MLY	CD-CE-NZ-CH1
1	B	310	MLY	CD-CE-NZ-CH2
1	A	175	MLY	CG-CD-CE-NZ
1	A	312	MLY	CG-CD-CE-NZ
1	B	175	MLY	CG-CD-CE-NZ
1	B	310	MLY	CG-CD-CE-NZ
1	B	312	MLY	CG-CD-CE-NZ
1	A	170[A]	MLY	CG-CD-CE-NZ
1	B	145	MLY	CG-CD-CE-NZ
1	A	175	MLY	CD-CE-NZ-CH2
1	B	175	MLY	CD-CE-NZ-CH2
1	A	124	MLY	CG-CD-CE-NZ
1	B	124	MLY	CG-CD-CE-NZ
1	A	337	MLY	CG-CD-CE-NZ
1	B	181	MLY	CG-CD-CE-NZ
1	B	337	MLY	CG-CD-CE-NZ
1	B	146	MLY	CG-CD-CE-NZ
1	A	310	MLY	CD-CE-NZ-CH1
1	A	310	MLY	CD-CE-NZ-CH2

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Mol	Chain	Res	Type	Atoms
1	B	346	MLY	CG-CD-CE-NZ
1	A	79	MLY	CA-CB-CG-CD
1	A	346	MLY	CG-CD-CE-NZ
1	A	124	MLY	CE-CD-CG-CB
1	B	124	MLY	CE-CD-CG-CB
1	A	128	MLY	CG-CD-CE-NZ
1	A	170[B]	MLY	CE-CD-CG-CB
1	A	178	MLY	CE-CD-CG-CB
1	A	83	MLY	CA-CB-CG-CD
1	A	128	MLY	CA-CB-CG-CD
1	B	83	MLY	CA-CB-CG-CD
1	A	346	MLY	C-CA-CB-CG
1	B	346	MLY	C-CA-CB-CG
1	B	178	MLY	CE-CD-CG-CB
1	B	79	MLY	N-CA-CB-CG
1	B	192	MLY	CA-CB-CG-CD
1	A	310	MLY	CG-CD-CE-NZ
1	A	128	MLY	CE-CD-CG-CB
1	B	192	MLY	CD-CE-NZ-CH2
1	A	79	MLY	N-CA-CB-CG
1	B	59	MLY	C-CA-CB-CG
1	B	124	MLY	CD-CE-NZ-CH1
1	A	124	MLY	CD-CE-NZ-CH1
1	B	178	MLY	CG-CD-CE-NZ
1	A	59	MLY	C-CA-CB-CG
1	A	178	MLY	CG-CD-CE-NZ
1	A	170[A]	MLY	CA-CB-CG-CD
1	B	170	MLY	CA-CB-CG-CD
1	A	91	MLY	CD-CE-NZ-CH2
1	B	91	MLY	CD-CE-NZ-CH2
1	A	81	MLY	CE-CD-CG-CB
1	A	83	MLY	N-CA-CB-CG
1	B	83	MLY	N-CA-CB-CG

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	B	146	MLY	1	0

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

There are no ligands in this entry.

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	279/330 (84%)	-0.10	10 (3%)	42	44	23, 37, 72, 124	0
1	B	278/330 (84%)	-0.07	11 (3%)	38	39	24, 38, 68, 138	0
All	All	557/660 (84%)	-0.08	21 (3%)	40	42	23, 37, 70, 138	0

All (21) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	88	ALA	7.0
1	B	88	ALA	6.9
1	B	85	LEU	6.5
1	A	84	SER	6.4
1	A	350	ILE	5.5
1	B	84	SER	4.7
1	B	87	ALA	4.6
1	A	87	ALA	4.6
1	A	85	LEU	4.3
1	B	86	ARG	4.3
1	A	86	ARG	3.5
1	A	206	ASN	2.9
1	A	207	ALA	2.8
1	B	89	SER	2.7
1	B	214	GLU	2.7
1	B	82	GLY	2.7
1	A	89	SER	2.5
1	B	207	ALA	2.4
1	B	206	ASN	2.3
1	B	209	ALA	2.3
1	A	209	ALA	2.2

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. 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(Å^2)	Q<0.9
1	MLY	B	83	11/12	0.80	0.21	75,82,87,89	0
1	MLY	B	81	7/12	0.85	0.18	54,58,63,65	0
1	MLY	B	128	5/12	0.85	0.12	63,63,65,65	0
1	MLY	A	81	11/12	0.86	0.23	68,76,95,97	0
1	MLY	A	83	11/12	0.89	0.26	76,79,89,94	0
1	MLY	A	202	5/12	0.90	0.24	61,63,66,67	0
1	MLY	A	128	11/12	0.91	0.18	61,81,108,109	0
1	MLY	B	59	11/12	0.93	0.15	38,44,80,83	0
1	MLY	A	79	7/12	0.93	0.18	65,66,78,80	0
1	MLY	A	124	11/12	0.93	0.11	38,50,77,82	0
1	MLY	A	346	11/12	0.93	0.11	29,37,59,59	0
1	MLY	A	170[A]	11/12	0.94	0.14	42,46,48,49	8
1	MLY	A	170[B]	11/12	0.94	0.14	42,49,55,56	8
1	MLY	B	146	11/12	0.94	0.15	26,34,49,59	0
1	MLY	B	170	11/12	0.94	0.10	38,52,85,87	0
1	MLY	B	334	11/12	0.94	0.10	32,38,56,64	0
1	MLY	A	145	11/12	0.95	0.14	29,35,62,63	0
1	MLY	A	91	11/12	0.95	0.12	59,68,74,80	0
1	MLY	B	79	6/12	0.95	0.13	57,60,62,65	0
1	MLY	A	293	11/12	0.95	0.09	32,38,53,63	0
1	MLY	A	305	6/12	0.95	0.09	32,37,38,47	0
1	MLY	B	91	11/12	0.95	0.16	53,63,77,78	0
1	MLY	B	124	11/12	0.95	0.11	42,47,67,67	0
1	MLY	A	333	11/12	0.95	0.09	32,34,62,63	0
1	MLY	A	334	11/12	0.95	0.09	34,41,57,58	0
1	MLY	A	337	11/12	0.95	0.18	30,40,96,107	0
1	MLY	B	293	11/12	0.95	0.09	33,39,68,69	0
1	MLY	B	312	11/12	0.95	0.15	35,45,74,78	0
1	MLY	A	345	11/12	0.95	0.10	27,32,66,69	0
1	MLY	B	181	11/12	0.96	0.12	27,37,86,89	0
1	MLY	A	312	11/12	0.96	0.16	32,40,68,68	0
1	MLY	B	310	11/12	0.96	0.10	34,45,79,81	0
1	MLY	A	175	11/12	0.96	0.10	28,38,72,73	0
1	MLY	B	333	11/12	0.96	0.09	30,39,63,66	0
1	MLY	A	146	6/12	0.96	0.10	31,40,43,47	0
1	MLY	B	337	11/12	0.96	0.15	32,38,88,92	0
1	MLY	B	345	11/12	0.96	0.12	28,37,66,70	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
1	MLY	A	178	11/12	0.97	0.11	29,33,70,73	0
1	MLY	B	305	6/12	0.97	0.06	36,38,41,42	0
1	MLY	A	310	11/12	0.97	0.07	31,40,59,61	0
1	MLY	A	192	6/12	0.97	0.10	29,34,43,51	0
1	MLY	B	175	11/12	0.97	0.09	32,40,84,87	0
1	MLY	B	178	11/12	0.97	0.08	30,36,67,67	0
1	MLY	A	343	7/12	0.97	0.10	28,31,38,45	0
1	MLY	B	343	7/12	0.97	0.09	29,32,39,42	0
1	MLY	B	202	5/12	0.97	0.20	56,64,65,65	0
1	MLY	B	346	11/12	0.97	0.09	32,39,49,51	0
1	MLY	B	192	11/12	0.98	0.13	31,45,109,113	0
1	MLY	B	145	11/12	0.98	0.10	27,32,64,69	0
1	MLY	A	181	7/12	0.98	0.07	26,29,41,42	0
1	MLY	A	59	7/12	0.98	0.06	38,40,48,50	0

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

There are no ligands in this entry.

6.5 Other polymers (i)

There are no such residues in this entry.