



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 13, 2018 – 02:54 PM EDT

PDB ID : 5UV6
Title : Crystal structure of human Opioid Binding Protein/Cell Adhesion Molecule Like (OPCML)
Authors : Birtley, J.R.; Stern, L.J.; Gabra, H.; Zanini, E.
Deposited on : 2017-02-19
Resolution : 2.65 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<http://wwpdb.org/validation/2016/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467
Mogul : 1.7.2 (RC1), CSD as538be (2017)
Xtriage (Phenix) : 1.9-1692
EDS : rb-20030736
Percentile statistics : 20161228.v01 (using entries in the PDB archive December 28th 2016)
Refmac : 5.8.0135
CCP4 : 6.5.0
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : rb-20030736

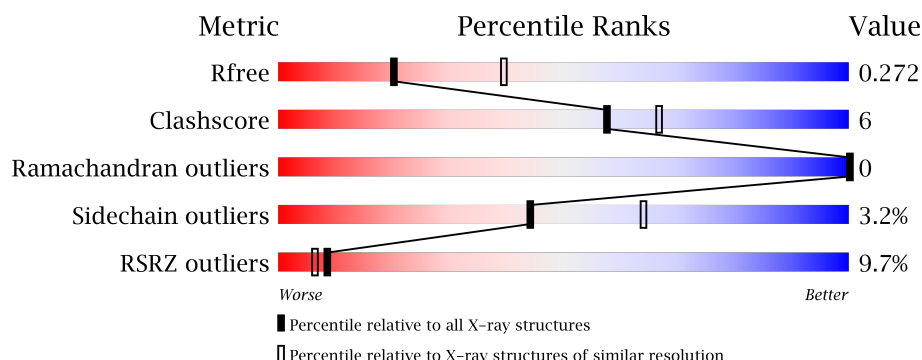
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.65 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}	100719	3491 (2.70-2.62)
Clashscore	112137	1026 (2.68-2.64)
Ramachandran outliers	110173	1010 (2.68-2.64)
Sidechain outliers	110143	1010 (2.68-2.64)
RSRZ outliers	101464	3511 (2.70-2.62)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	286	<div> <div>9%</div> <div>82%</div> <div>12%</div> <div>5%</div> </div>
1	B	286	<div> <div>9%</div> <div>79%</div> <div>16%</div> <div>• •</div> </div>

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	NAG	A	1004	-	-	-	X

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 4350 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.

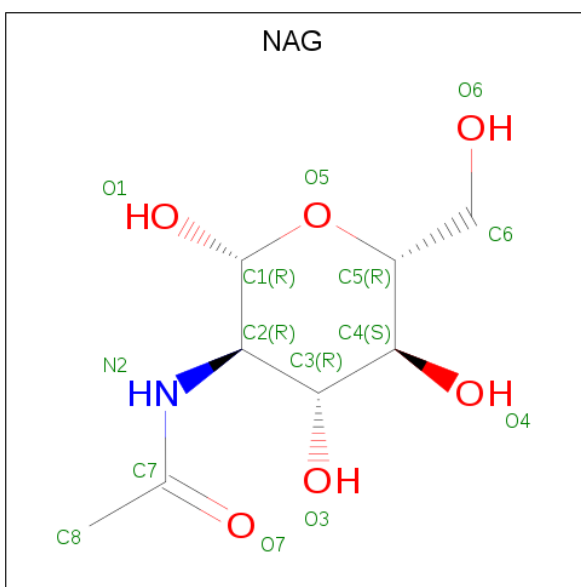
- Molecule 1 is a protein called Opioid-binding protein/cell adhesion molecule.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	273	Total	C	N	O	S	0	0	0
			2065	1294	351	408	12			
1	B	274	Total	C	N	O	S	0	0	0
			2111	1323	361	415	12			

There are 10 discrepancies between the modelled and reference sequences:

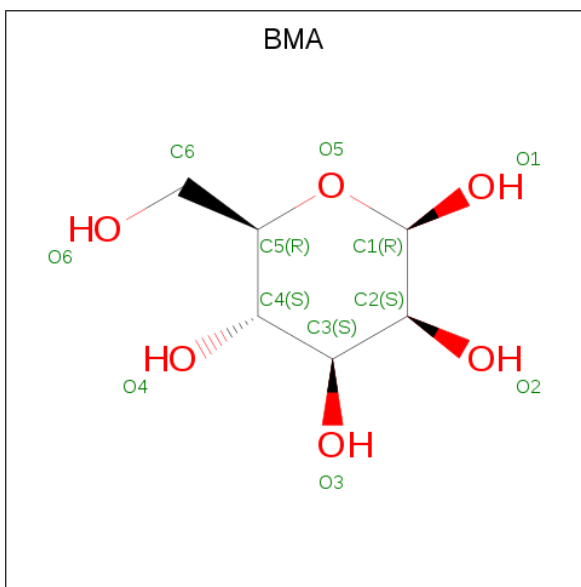
Chain	Residue	Modelled	Actual	Comment	Reference
A	317	ALA	-	expression tag	UNP Q14982
A	318	LEU	-	expression tag	UNP Q14982
A	319	VAL	-	expression tag	UNP Q14982
A	320	PRO	-	expression tag	UNP Q14982
A	321	ARG	-	expression tag	UNP Q14982
B	317	ALA	-	expression tag	UNP Q14982
B	318	LEU	-	expression tag	UNP Q14982
B	319	VAL	-	expression tag	UNP Q14982
B	320	PRO	-	expression tag	UNP Q14982
B	321	ARG	-	expression tag	UNP Q14982

- Molecule 2 is N-ACETYL-D-GLUCOSAMINE (three-letter code: NAG) (formula: C₈H₁₅NO₆).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	N	O	0	0
			14	8	1	5		
2	A	1	Total	C	N	O	0	0
			14	8	1	5		
2	A	1	Total	C	N	O	0	0
			14	8	1	5		
2	A	1	Total	C	N	O	0	0
			14	8	1	5		
2	B	1	Total	C	N	O	0	0
			14	8	1	5		
2	B	1	Total	C	N	O	0	0
			14	8	1	5		
2	B	1	Total	C	N	O	0	0
			14	8	1	5		

- Molecule 3 is BETA-D-MANNOSE (three-letter code: BMA) (formula: C₆H₁₂O₆).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			11	6	5		
3	B	1	Total	C	O	0	0
			11	6	5		

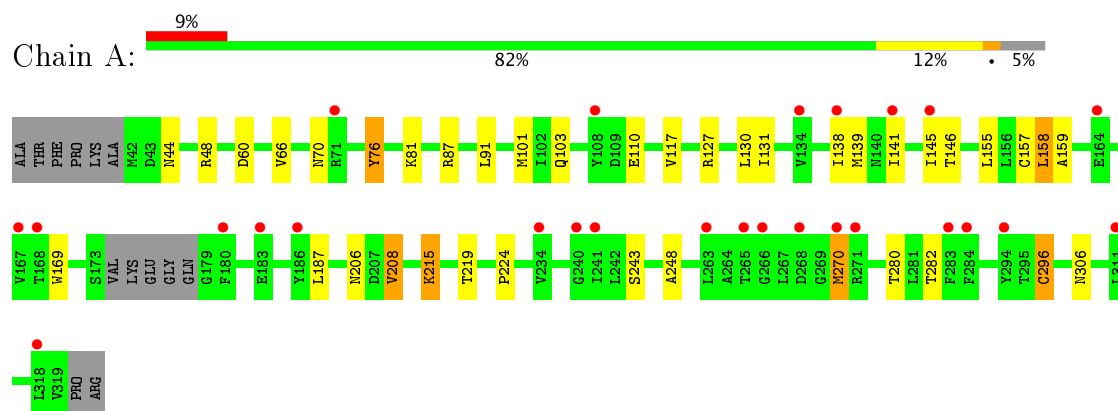
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	17	Total	O	0	0
			17	17		
4	B	23	Total	O	0	0
			23	23		

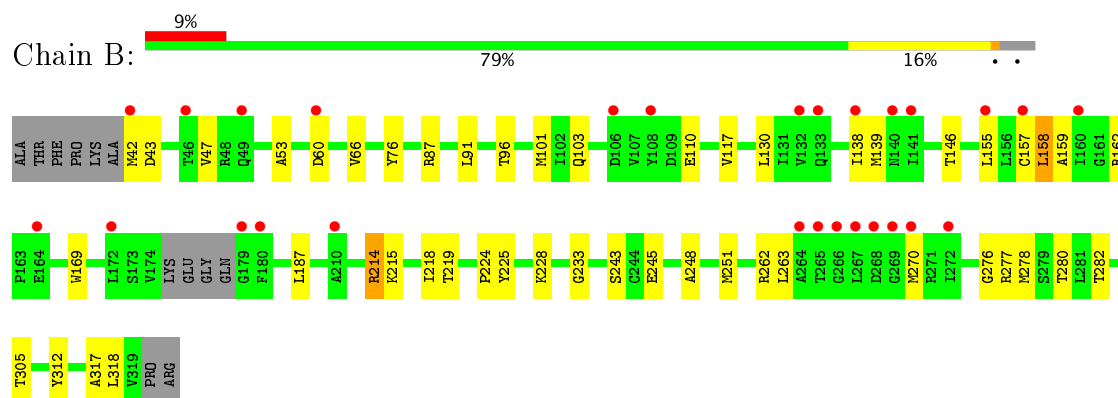
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of 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: Opioid-binding protein/cell adhesion molecule



- Molecule 1: Opioid-binding protein/cell adhesion molecule



4 Data and refinement statistics

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, α , β , γ	93.56 Å 93.56 Å 262.16 Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	18.44 – 2.65 41.84 – 2.65	Depositor EDS
% Data completeness (in resolution range)	96.2 (18.44-2.65) 80.8 (41.84-2.65)	Depositor EDS
R_{merge}	0.17	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.77 (at 2.65 Å)	Xtriage
Refinement program	PHENIX 1.11.1_2575, PHENIX 1.11.1_2575	Depositor
R, R_{free}	0.284 , 0.300 0.263 , 0.272	Depositor DCC
R_{free} test set	1439 reflections (5.16%)	DCC
Wilson B-factor (Å ²)	56.5	Xtriage
Anisotropy	0.400	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 49.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.54$, $\langle L^2 \rangle = 0.38$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.91	EDS
Total number of atoms	4350	wwPDB-VP
Average B, all atoms (Å ²)	84.0	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 68.21 % 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 4.5368e-06. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

¹ Intensities estimated from amplitudes.

² Theoretical 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: BMA, NAG

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	0.36	1/2102 (0.0%)	0.56	0/2871
1	B	0.34	0/2148	0.56	0/2924
All	All	0.35	1/4250 (0.0%)	0.56	0/5795

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	296	CYS	CB-SG	-5.70	1.72	1.81

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2065	0	1993	22	0
1	B	2111	0	2083	26	0
2	A	56	0	50	1	0
2	B	56	0	50	0	0
3	A	11	0	10	0	0
3	B	11	0	10	0	0
4	A	17	0	0	0	0
4	B	23	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	4350	0	4196	48	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 6.

All (48) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:215:LYS:NZ	1:A:215:LYS:HB3	2.05	0.71
1:B:110:GLU:OE2	1:B:162:ARG:NH2	2.27	0.67
1:A:270:MET:HA	1:A:282:THR:O	1.93	0.67
1:B:66:VAL:HG23	1:B:117:VAL:HG12	1.76	0.66
1:B:228:LYS:HB2	1:B:245:GLU:HB3	1.77	0.66
1:B:139:MET:HB2	1:B:158:LEU:HD12	1.81	0.62
1:B:251:MET:SD	1:B:277:ARG:HG3	2.39	0.62
1:B:270:MET:HA	1:B:282:THR:O	1.99	0.61
1:A:296:CYS:O	1:A:306:ASN:HA	2.00	0.61
1:B:224:PRO:HB3	1:B:248:ALA:HB2	1.83	0.60
1:B:243:SER:HB2	1:B:280:THR:HG22	1.85	0.59
1:A:139:MET:HB2	1:A:158:LEU:HD12	1.85	0.56
1:A:127:ARG:HH11	1:A:127:ARG:HG2	1.72	0.55
1:A:215:LYS:HB3	1:A:215:LYS:HZ3	1.71	0.55
1:A:224:PRO:HB3	1:A:248:ALA:HB2	1.90	0.54
1:B:263:LEU:HB3	1:B:270:MET:HE3	1.88	0.54
1:B:263:LEU:HB3	1:B:270:MET:CE	2.38	0.54
1:A:66:VAL:HG23	1:A:117:VAL:HG12	1.91	0.52
1:A:91:LEU:HD11	1:A:101:MET:HB2	1.92	0.52
1:B:91:LEU:HD11	1:B:101:MET:HB2	1.92	0.52
1:B:262:ARG:HG3	1:B:263:LEU:N	2.25	0.50
1:B:146:THR:HG22	1:B:219:THR:OG1	2.10	0.50
1:A:138:ILE:HD13	1:A:159:ALA:HB2	1.93	0.49
1:B:157:CYS:HB2	1:B:169:TRP:CZ2	2.48	0.49
1:A:243:SER:HB2	1:A:280:THR:HG22	1.94	0.48
1:A:110:GLU:HG3	1:A:130:LEU:O	2.13	0.48
1:A:146:THR:HG22	1:A:219:THR:OG1	2.14	0.48
1:A:157:CYS:HB2	1:A:169:TRP:CZ2	2.49	0.47
1:B:317:ALA:C	1:B:318:LEU:HD12	2.34	0.47
1:B:87:ARG:O	1:B:103:GLN:HG2	2.15	0.46
1:B:276:GLY:O	1:B:278:MET:N	2.47	0.46
1:A:206:ASN:OD1	1:A:208:VAL:HG13	2.16	0.45
1:A:70:ASN:HD22	2:A:1001:NAG:H83	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:138:ILE:HD12	1:A:157:CYS:SG	2.57	0.44
1:A:155:LEU:HD12	1:A:187:LEU:HD23	1.98	0.44
1:B:155:LEU:HD12	1:B:187:LEU:HD23	1.98	0.44
1:A:141:ILE:HD11	1:A:169:TRP:CH2	2.53	0.43
1:A:44:ASN:HB3	1:A:131:ILE:HD12	2.00	0.42
1:B:155:LEU:HD11	1:B:218:ILE:HD11	2.01	0.42
1:B:214:ARG:NH2	1:B:215:LYS:HG2	2.35	0.42
1:A:87:ARG:O	1:A:103:GLN:HG2	2.20	0.41
1:A:76:TYR:CZ	1:A:81:LYS:HB2	2.55	0.41
1:B:47:VAL:HG21	1:B:53:ALA:HA	2.01	0.41
1:B:110:GLU:HG3	1:B:130:LEU:O	2.20	0.41
1:B:214:ARG:NE	1:B:214:ARG:HA	2.35	0.41
1:B:233:GLY:HA2	1:B:312:TYR:O	2.21	0.41
1:B:138:ILE:HD13	1:B:159:ALA:HB2	2.03	0.40
1:B:225:TYR:HA	1:B:305:THR:HG21	2.04	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	269/286 (94%)	258 (96%)	11 (4%)	0	100	100
1	B	270/286 (94%)	256 (95%)	14 (5%)	0	100	100
All	All	539/572 (94%)	514 (95%)	25 (5%)	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	227/250 (91%)	219 (96%)	8 (4%)	41	60
1	B	238/250 (95%)	231 (97%)	7 (3%)	48	68
All	All	465/500 (93%)	450 (97%)	15 (3%)	44	64

All (15) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	48	ARG
1	A	60	ASP
1	A	76	TYR
1	A	145	ILE
1	A	158	LEU
1	A	208	VAL
1	A	215	LYS
1	A	270	MET
1	B	42	MET
1	B	43	ASP
1	B	60	ASP
1	B	76	TYR
1	B	96	THR
1	B	158	LEU
1	B	214	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	44	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

10 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	NAG	A	1001	1,2	14,14,15	1.85	4 (28%)	15,19,21	1.28	1 (6%)
2	NAG	A	1002	3,2	14,14,15	1.86	3 (21%)	15,19,21	1.15	1 (6%)
3	BMA	A	1003	2	11,11,12	1.73	1 (9%)	13,15,17	1.28	3 (23%)
2	NAG	A	1004	1	14,14,15	2.05	4 (28%)	15,19,21	1.23	2 (13%)
2	NAG	A	1005	1	14,14,15	1.95	4 (28%)	15,19,21	1.42	4 (26%)
2	NAG	B	2001	1,2	14,14,15	1.77	3 (21%)	15,19,21	1.09	1 (6%)
2	NAG	B	2002	3,2	14,14,15	1.84	4 (28%)	15,19,21	1.65	3 (20%)
3	BMA	B	2003	2	11,11,12	1.97	3 (27%)	13,15,17	1.60	3 (23%)
2	NAG	B	2004	1	14,14,15	1.80	3 (21%)	15,19,21	1.23	1 (6%)
2	NAG	B	2005	1	14,14,15	2.04	4 (28%)	15,19,21	1.02	1 (6%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	NAG	A	1001	1,2	-	0/6/23/26	0/1/1/1
2	NAG	A	1002	3,2	-	0/6/23/26	0/1/1/1
3	BMA	A	1003	2	-	0/2/19/22	0/1/1/1
2	NAG	A	1004	1	-	0/6/23/26	0/1/1/1
2	NAG	A	1005	1	-	0/6/23/26	0/1/1/1
2	NAG	B	2001	1,2	-	0/6/23/26	0/1/1/1
2	NAG	B	2002	3,2	-	0/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	BMA	B	2003	2	-	0/2/19/22	0/1/1/1
2	NAG	B	2004	1	-	0/6/23/26	0/1/1/1
2	NAG	B	2005	1	-	0/6/23/26	0/1/1/1

All (33) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	2003	BMA	C2-C3	-2.54	1.49	1.52
2	B	2004	NAG	C2-N2	2.05	1.49	1.46
2	A	1004	NAG	O5-C5	2.07	1.47	1.43
2	B	2002	NAG	O5-C5	2.08	1.47	1.43
2	B	2001	NAG	C2-N2	2.12	1.50	1.46
2	A	1001	NAG	O5-C5	2.12	1.47	1.43
2	B	2005	NAG	O5-C5	2.14	1.48	1.43
2	A	1005	NAG	O5-C5	2.18	1.48	1.43
2	A	1001	NAG	C2-N2	2.23	1.50	1.46
2	A	1002	NAG	C2-N2	2.36	1.50	1.46
2	B	2002	NAG	C2-N2	2.47	1.50	1.46
3	B	2003	BMA	O5-C5	2.53	1.48	1.43
2	A	1004	NAG	C2-N2	2.77	1.51	1.46
2	A	1005	NAG	C2-N2	2.78	1.51	1.46
2	B	2005	NAG	C2-N2	2.90	1.51	1.46
2	A	1005	NAG	C7-N2	3.16	1.46	1.34
2	B	2004	NAG	C7-N2	3.19	1.46	1.34
2	B	2001	NAG	C7-N2	3.27	1.46	1.34
2	A	1001	NAG	C7-N2	3.36	1.46	1.34
2	B	2002	NAG	C7-N2	3.37	1.46	1.34
2	A	1002	NAG	C7-N2	3.45	1.47	1.34
2	B	2005	NAG	C7-N2	3.66	1.47	1.34
2	B	2002	NAG	O5-C1	3.88	1.50	1.43
2	A	1004	NAG	C7-N2	3.92	1.48	1.34
2	B	2001	NAG	O5-C1	3.99	1.50	1.43
2	A	1002	NAG	O5-C1	4.08	1.50	1.43
2	B	2004	NAG	O5-C1	4.14	1.50	1.43
2	A	1001	NAG	O5-C1	4.22	1.50	1.43
2	A	1005	NAG	O5-C1	4.33	1.50	1.43
2	B	2005	NAG	O5-C1	4.65	1.51	1.43
3	A	1003	BMA	O5-C1	4.65	1.51	1.43
2	A	1004	NAG	O5-C1	4.67	1.51	1.43
3	B	2003	BMA	O5-C1	5.04	1.52	1.43

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	2003	BMA	C1-O5-C5	-3.43	107.43	112.17
2	A	1004	NAG	C2-N2-C7	-3.08	118.45	122.94
2	A	1005	NAG	O5-C1-C2	-2.96	107.36	111.47
2	B	2002	NAG	O4-C4-C3	-2.59	104.73	110.36
2	B	2004	NAG	C2-N2-C7	-2.56	119.20	122.94
3	B	2003	BMA	O5-C1-C2	-2.48	106.91	110.79
2	A	1005	NAG	C6-C5-C4	-2.32	107.57	113.00
3	A	1003	BMA	C1-O5-C5	-2.28	109.03	112.17
2	A	1005	NAG	C4-C3-C2	-2.17	107.84	111.02
2	A	1001	NAG	C1-C2-N2	-2.04	107.00	110.49
3	A	1003	BMA	C2-C3-C4	2.17	114.67	110.88
2	A	1005	NAG	C1-C2-N2	2.18	114.22	110.49
2	B	2005	NAG	C8-C7-N2	2.20	120.09	116.11
2	B	2002	NAG	C8-C7-N2	2.20	120.09	116.11
2	B	2001	NAG	C4-C3-C2	2.34	114.45	111.02
2	A	1002	NAG	C8-C7-N2	2.39	120.42	116.11
2	A	1004	NAG	C8-C7-N2	2.44	120.52	116.11
3	B	2003	BMA	C3-C4-C5	2.48	114.59	110.22
3	A	1003	BMA	C1-C2-C3	2.50	112.83	109.65
2	B	2002	NAG	C4-C3-C2	4.03	116.93	111.02

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	1001	NAG	1	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 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	273/286 (95%)	0.68	26 (9%) 9 7	46, 84, 131, 164	0
1	B	274/286 (95%)	0.67	27 (9%) 8 6	45, 83, 120, 142	0
All	All	547/572 (95%)	0.68	53 (9%) 8 6	45, 84, 125, 164	0

All (53) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	241	ILE	4.9
1	A	266	GLY	4.7
1	B	108	TYR	4.5
1	A	268	ASP	4.4
1	B	266	GLY	4.3
1	B	267	LEU	4.0
1	B	141	ILE	3.9
1	A	141	ILE	3.8
1	B	268	ASP	3.6
1	A	180	PHE	3.5
1	A	240	GLY	3.4
1	A	167	VAL	3.4
1	B	180	PHE	3.3
1	A	138	ILE	3.2
1	B	270	MET	3.1
1	A	265	THR	3.1
1	A	311	LEU	3.1
1	B	210	ALA	3.1
1	A	183	GLU	3.0
1	A	164	GLU	2.9
1	A	283	PHE	2.9
1	A	108	TYR	2.8
1	B	133	GLN	2.8
1	A	234	VAL	2.8

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Mol	Chain	Res	Type	RSRZ
1	B	60	ASP	2.7
1	A	284	PHE	2.7
1	A	168	THR	2.5
1	B	264	ALA	2.5
1	B	132	VAL	2.5
1	B	155	LEU	2.5
1	B	272	ILE	2.5
1	B	106	ASP	2.5
1	B	42	MET	2.5
1	A	71	ARG	2.4
1	A	186	TYR	2.4
1	B	140	ASN	2.3
1	B	164	GLU	2.3
1	A	270	MET	2.3
1	A	145	ILE	2.3
1	B	265	THR	2.2
1	B	269	GLY	2.2
1	B	160	ILE	2.2
1	A	318	LEU	2.2
1	B	157	CYS	2.2
1	A	271	ARG	2.2
1	A	263	LEU	2.1
1	B	172	LEU	2.1
1	B	46	THR	2.1
1	A	294	TYR	2.1
1	B	49	GLN	2.1
1	B	138	ILE	2.1
1	B	179	GLY	2.0
1	A	134	VAL	2.0

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 carbohydrates 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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors(Å ²)	Q<0.9
2	NAG	A	1004	14/15	0.61	0.48	12.74	78,114,167,196	0
2	NAG	B	2005	14/15	0.85	0.28	1.60	71,88,116,125	0
2	NAG	A	1005	14/15	0.94	0.26	0.90	61,71,91,93	0
2	NAG	B	2004	14/15	0.92	0.24	0.53	65,76,107,107	0
2	NAG	B	2001	14/15	0.95	0.16	-0.74	63,77,90,91	0
2	NAG	A	1001	14/15	0.94	0.17	-0.75	58,64,85,96	0
3	BMA	B	2003	11/12	0.75	0.18	-	118,118,118,118	0
2	NAG	B	2002	14/15	0.88	0.19	-	75,96,119,120	0
3	BMA	A	1003	11/12	0.81	0.20	-	102,102,102,102	0
2	NAG	A	1002	14/15	0.94	0.14	-	62,78,95,100	0

6.5 Other polymers ⓘ

There are no such residues in this entry.