



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 13, 2017 – 12:32 pm GMT

PDB ID : 2PGL
Title : Catalysis associated conformational changes revealed by human CD38 complexed with a non-hydrolyzable substrate analog
Authors : Liu, Q.; Kriksunov, I.A.; Moreau, C.; Graeff, R.; Potter, B.V.L.; Lee, H.C.; Hao, Q.
Deposited on : 2007-04-09
Resolution : 1.76 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	:	trunk28620
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)	:	recalc28949

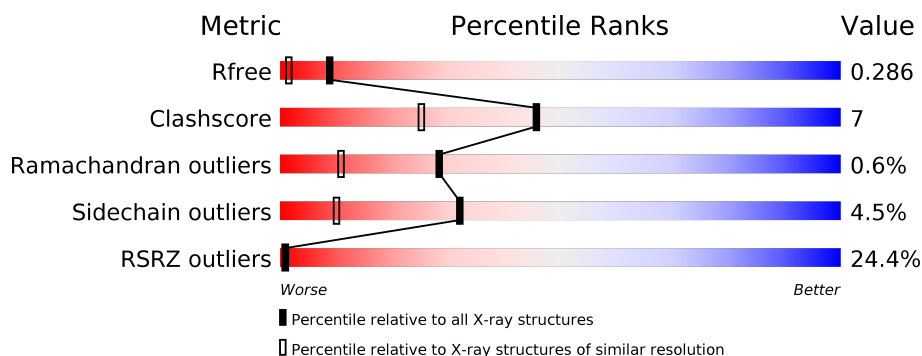
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.76 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	1762 (1.76-1.76)
Clashscore	112137	1889 (1.76-1.76)
Ramachandran outliers	110173	1868 (1.76-1.76)
Sidechain outliers	110143	1868 (1.76-1.76)
RSRZ outliers	101464	1770 (1.76-1.76)

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	262	
1	B	262	

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	N1C	A	301	X	-	-	-

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 4520 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.

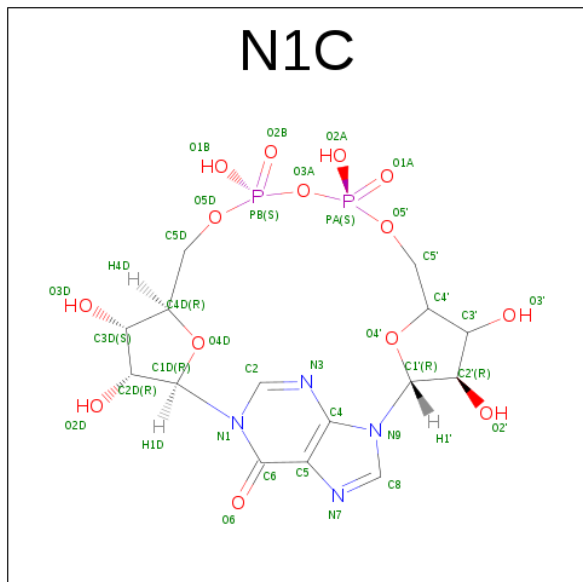
- Molecule 1 is a protein called ADP-ribosyl cyclase 1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	252	Total	C	N	O	S	0	0	0
			2050	1290	359	385	16			
1	B	252	Total	C	N	O	S	0	0	0
			2050	1290	359	385	16			

There are 24 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	39	LYS	-	CLONING ARTIFACT	UNP P28907
A	40	ARG	-	CLONING ARTIFACT	UNP P28907
A	41	GLU	-	CLONING ARTIFACT	UNP P28907
A	42	ALA	-	CLONING ARTIFACT	UNP P28907
A	43	GLU	-	CLONING ARTIFACT	UNP P28907
A	44	ALA	-	CLONING ARTIFACT	UNP P28907
A	49	THR	GLN	ENGINEERED	UNP P28907
A	100	ASP	ASN	ENGINEERED	UNP P28907
A	164	ASP	ASN	ENGINEERED	UNP P28907
A	209	ASP	ASN	ENGINEERED	UNP P28907
A	219	ASP	ASN	ENGINEERED	UNP P28907
A	226	GLN	GLU	ENGINEERED	UNP P28907
B	39	LYS	-	CLONING ARTIFACT	UNP P28907
B	40	ARG	-	CLONING ARTIFACT	UNP P28907
B	41	GLU	-	CLONING ARTIFACT	UNP P28907
B	42	ALA	-	CLONING ARTIFACT	UNP P28907
B	43	GLU	-	CLONING ARTIFACT	UNP P28907
B	44	ALA	-	CLONING ARTIFACT	UNP P28907
B	49	THR	GLN	ENGINEERED	UNP P28907
B	100	ASP	ASN	ENGINEERED	UNP P28907
B	164	ASP	ASN	ENGINEERED	UNP P28907
B	209	ASP	ASN	ENGINEERED	UNP P28907
B	219	ASP	ASN	ENGINEERED	UNP P28907
B	226	GLN	GLU	ENGINEERED	UNP P28907

- Molecule 2 is N1-CYCLIC INOSINE 5'-DIPHOSPHORIBOSE (three-letter code: N1C) (formula: $\text{C}_{15}\text{H}_{20}\text{N}_4\text{O}_{14}\text{P}_2$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total 35	C 15	N 4	O 14	P 2	0	0

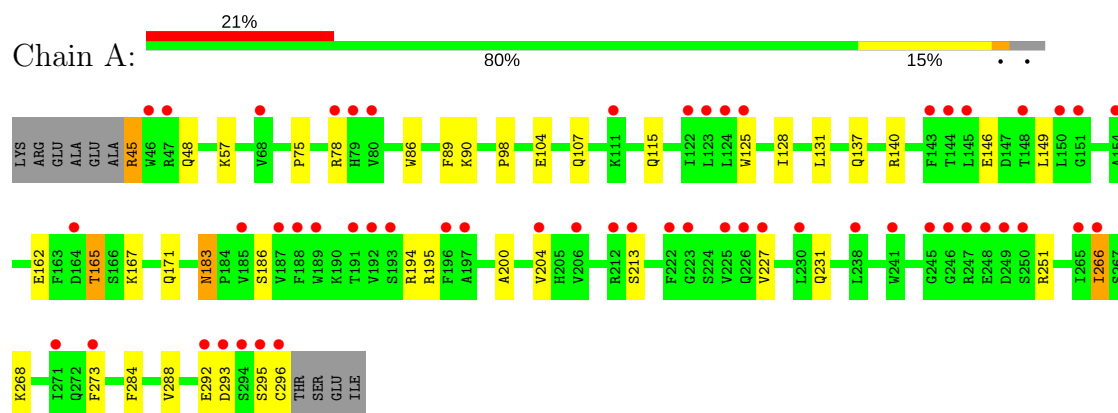
- Molecule 3 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	198	Total O 198 198	0	0
3	B	187	Total O 187 187	0	0

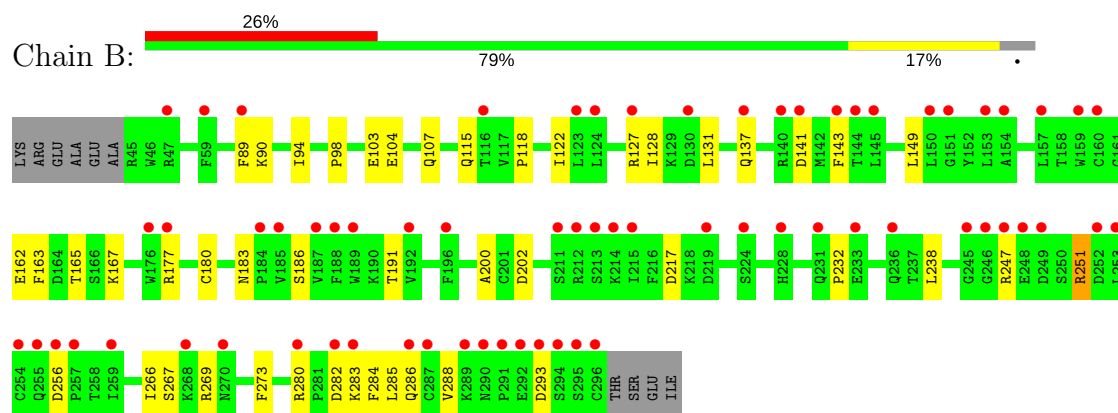
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of 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: ADP-ribosyl cyclase 1



• Molecule 1: ADP-ribosyl cyclase 1



4 Data and refinement statistics

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	41.87Å 53.20Å 65.71Å 105.79° 92.07° 95.20°	Depositor
Resolution (Å)	20.00 – 1.76 26.26 – 1.76	Depositor EDS
% Data completeness (in resolution range)	95.5 (20.00-1.76) 87.8 (26.26-1.76)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.11 (at 1.76Å)	Xtriage
Refinement program	REFMAC 5.3.0021	Depositor
R, R_{free}	0.210 , 0.245 0.254 , 0.286	Depositor DCC
R_{free} test set	2557 reflections (4.98%)	DCC
Wilson B-factor (Å ²)	20.1	Xtriage
Anisotropy	0.343	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.40 , 58.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	4520	wwPDB-VP
Average B, all atoms (Å ²)	36.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.74% of the height of the origin peak. No significant pseudotranslation is detected.*

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

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: N1C

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	0.63	0/2101	0.68	0/2846
1	B	0.62	0/2101	0.64	0/2846
All	All	0.62	0/4202	0.66	0/5692

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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	2050	0	1978	30	0
1	B	2050	0	1978	29	0
2	A	35	0	15	4	0
3	A	198	0	0	7	0
3	B	187	0	0	2	0
All	All	4520	0	3971	59	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 7.

All (59) 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:165:THR:HG23	1:A:167:LYS:H	1.40	0.86
1:A:115:GLN:HE22	1:A:149:LEU:H	1.25	0.84
1:B:115:GLN:HE22	1:B:149:LEU:H	1.24	0.82
1:A:266:ILE:HD11	1:A:273:PHE:HB2	1.64	0.78
1:A:231:GLN:HG3	3:A:498:HOH:O	1.84	0.76
1:A:268:LYS:HD3	1:B:163:PHE:HE1	1.52	0.74
1:B:165:THR:HG23	1:B:167:LYS:H	1.53	0.72
1:A:162:GLU:OE2	1:A:165:THR:HG21	1.91	0.70
1:A:268:LYS:HD3	1:B:163:PHE:CE1	2.27	0.70
1:B:103:GLU:HG2	1:B:191:THR:OG1	1.91	0.69
1:B:183:ASN:ND2	1:B:186:SER:H	1.94	0.66
1:A:183:ASN:ND2	1:A:186:SER:H	1.95	0.65
1:B:127:ARG:HH12	1:B:217:ASP:HB3	1.64	0.62
1:B:266:ILE:HD11	1:B:273:PHE:HB2	1.81	0.62
1:A:75:PRO:O	1:A:78:ARG:HB2	2.00	0.61
1:A:183:ASN:HD21	1:A:186:SER:H	1.48	0.61
1:A:194:ARG:NH2	3:A:326:HOH:O	2.36	0.59
1:B:232:PRO:HG3	1:B:269:ARG:O	2.02	0.58
1:A:293:ASP:HB3	1:A:296:CYS:SG	2.43	0.58
1:B:162:GLU:HB2	1:B:165:THR:HG22	1.85	0.58
1:A:140:ARG:NH2	3:A:388:HOH:O	2.37	0.57
1:B:137:GLN:HG2	3:B:474:HOH:O	2.03	0.57
2:A:301:N1C:H2D	2:A:301:N1C:O6	2.04	0.57
1:B:284:PHE:O	1:B:288:VAL:HG23	2.05	0.56
1:A:251:ARG:HD3	1:A:251:ARG:H	1.71	0.56
1:A:146:GLU:OE2	2:A:301:N1C:O6	2.23	0.56
1:B:122:ILE:HD12	1:B:200:ALA:HA	1.90	0.52
1:A:98:PRO:O	1:A:183:ASN:HA	2.10	0.52
1:B:180:CYS:HB2	3:B:324:HOH:O	2.10	0.52
1:B:104:GLU:HA	1:B:107:GLN:HG2	1.92	0.51
1:A:125:TRP:O	2:A:301:N1C:H5D1	2.11	0.51
1:B:183:ASN:HD21	1:B:186:SER:H	1.60	0.49
1:B:90:LYS:HG2	1:B:94:ILE:HG13	1.95	0.49
1:B:115:GLN:NE2	1:B:149:LEU:H	2.03	0.48
1:B:127:ARG:HD2	1:B:127:ARG:N	2.27	0.48
1:A:137:GLN:NE2	3:A:419:HOH:O	2.47	0.47
1:A:200:ALA:HB1	1:A:204:VAL:HG22	1.97	0.47
1:A:266:ILE:CD1	1:A:273:PHE:HB2	2.41	0.47
1:A:200:ALA:HB1	1:A:204:VAL:CG2	2.46	0.46
1:A:162:GLU:HB2	1:A:165:THR:HG22	1.97	0.45
1:A:266:ILE:HD11	1:A:273:PHE:CB	2.41	0.45
1:B:266:ILE:HD11	1:B:273:PHE:CB	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:86:TRP:CE2	1:A:90:LYS:HG3	2.51	0.45
1:B:280:ARG:NH1	1:B:283:LYS:HE3	2.32	0.44
1:A:165:THR:CG2	1:A:167:LYS:H	2.20	0.44
1:B:118:PRO:HD2	1:B:143:PHE:CE2	2.54	0.43
1:B:98:PRO:O	1:B:183:ASN:HA	2.18	0.43
1:B:90:LYS:CG	1:B:94:ILE:HG13	2.48	0.43
1:A:104:GLU:HA	1:A:107:GLN:HG2	2.00	0.42
3:A:398:HOH:O	1:B:177:ARG:HD2	2.18	0.42
1:B:238:LEU:HB3	1:B:266:ILE:HD13	2.01	0.42
2:A:301:N1C:H8	3:A:334:HOH:O	2.19	0.42
1:B:266:ILE:HG13	1:B:267:SER:N	2.34	0.41
1:A:48:GLN:NE2	1:A:171:GLN:HB3	2.35	0.41
1:A:284:PHE:O	1:A:288:VAL:HG23	2.20	0.41
1:A:195:ARG:HG3	3:A:326:HOH:O	2.20	0.40
1:B:162:GLU:HB2	1:B:165:THR:CG2	2.50	0.40
1:B:251:ARG:HG3	1:B:251:ARG:H	1.54	0.40
1:A:45:ARG:HH11	1:A:45:ARG:HG2	1.86	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	250/262 (95%)	239 (96%)	10 (4%)	1 (0%)	38	18
1	B	250/262 (95%)	234 (94%)	14 (6%)	2 (1%)	22	7
All	All	500/524 (95%)	473 (95%)	24 (5%)	3 (1%)	28	11

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	247	ARG

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Mol	Chain	Res	Type
1	B	293	ASP
1	A	128	ILE

5.3.2 Protein sidechains ⓘ

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	233/241 (97%)	222 (95%)	11 (5%)	30	9
1	B	233/241 (97%)	223 (96%)	10 (4%)	33	11
All	All	466/482 (97%)	445 (96%)	21 (4%)	32	10

All (21) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	45	ARG
1	A	57	LYS
1	A	89	PHE
1	A	131	LEU
1	A	165	THR
1	A	183	ASN
1	A	213	SER
1	A	227	VAL
1	A	266	ILE
1	A	292	GLU
1	A	295	SER
1	B	89	PHE
1	B	128	ILE
1	B	131	LEU
1	B	141	ASP
1	B	202	ASP
1	B	251	ARG
1	B	256	ASP
1	B	282	ASP
1	B	285	LEU
1	B	286	GLN

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	48	GLN
1	A	115	GLN
1	A	134	GLN
1	A	137	GLN
1	A	139	GLN
1	A	183	ASN
1	B	115	GLN
1	B	183	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 carbohydrates in this entry.

5.6 Ligand geometry [i](#)

1 ligand is 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	N1C	A	301	-	32,39,39	2.08	6 (18%)	32,62,62	2.29	11 (34%)

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	N1C	A	301	-	3/3/10/10	0/18/58/58	0/0/5/5

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	301	N1C	C3'-C4'	-8.00	1.32	1.53
2	A	301	N1C	O3'-C3'	-4.23	1.33	1.43
2	A	301	N1C	O4'-C1'	2.08	1.44	1.41
2	A	301	N1C	C6-N1	2.43	1.41	1.38
2	A	301	N1C	C2-N3	3.13	1.35	1.30
2	A	301	N1C	C6-C5	4.90	1.49	1.41

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	301	N1C	C4'-O4'-C1'	-4.21	105.29	109.77
2	A	301	N1C	C5-C6-N1	-2.24	118.92	120.52
2	A	301	N1C	C6-C5-C4	-2.09	118.48	119.92
2	A	301	N1C	C5'-C4'-C3'	2.49	124.79	115.29
2	A	301	N1C	C4D-O4D-C1D	2.70	112.64	109.77
2	A	301	N1C	O4'-C4'-C3'	3.15	111.42	105.17
2	A	301	N1C	C2-N3-C4	3.87	122.34	116.41
2	A	301	N1C	O3'-C3'-C2'	4.06	124.84	111.83
2	A	301	N1C	O4'-C4'-C5'	4.26	123.79	109.40
2	A	301	N1C	O3'-C3'-C4'	4.39	123.91	111.09
2	A	301	N1C	C2'-C3'-C4'	4.43	111.25	102.62

All (3) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
2	A	301	N1C	C4'
2	A	301	N1C	N1
2	A	301	N1C	C3'

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	301	N1C	4	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	252/262 (96%)	1.23	55 (21%)  	26, 33, 47, 58	0
1	B	252/262 (96%)	1.50	68 (26%)  	27, 35, 53, 64	0
All	All	504/524 (96%)	1.36	123 (24%)  	26, 34, 50, 64	0

All (123) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	246	GLY	13.1
1	B	249	ASP	9.1
1	A	249	ASP	8.4
1	A	246	GLY	8.2
1	A	247	ARG	8.0
1	B	295	SER	7.8
1	B	291	PRO	7.8
1	B	245	GLY	7.5
1	B	213	SER	7.1
1	B	248	GLU	7.1
1	B	292	GLU	6.7
1	B	290	ASN	6.6
1	B	294	SER	6.6
1	B	293	ASP	6.2
1	B	296	CYS	6.1
1	B	212	ARG	5.8
1	A	248	GLU	5.5
1	A	124	LEU	5.4
1	B	247	ARG	5.3
1	A	292	GLU	5.2
1	B	270	ASN	4.9
1	A	145	LEU	4.8
1	A	213	SER	4.7
1	A	245	GLY	4.5

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Mol	Chain	Res	Type	RSRZ
1	A	47	ARG	4.5
1	B	159	TRP	4.4
1	A	46	TRP	4.1
1	B	211	SER	4.1
1	A	189	TRP	3.9
1	B	189	TRP	3.9
1	A	123	LEU	3.8
1	A	79	HIS	3.8
1	A	295	SER	3.7
1	B	286	GLN	3.7
1	A	222	PHE	3.6
1	B	188	PHE	3.6
1	A	192	VAL	3.6
1	B	254	CYS	3.6
1	A	206	VAL	3.6
1	A	78	ARG	3.5
1	A	238	LEU	3.4
1	A	212	ARG	3.4
1	A	80	VAL	3.4
1	B	137	GLN	3.3
1	B	160	CYS	3.3
1	B	150	LEU	3.3
1	B	153	LEU	3.2
1	A	164	ASP	3.2
1	B	127	ARG	3.2
1	A	144	THR	3.1
1	B	282	ASP	3.1
1	B	283	LYS	3.1
1	A	196	PHE	3.1
1	B	143	PHE	3.1
1	A	294	SER	3.1
1	B	287	CYS	3.1
1	A	148	THR	3.1
1	A	227	VAL	3.1
1	B	145	LEU	3.1
1	B	89	PHE	3.0
1	A	150	LEU	3.0
1	A	225	VAL	3.0
1	B	192	VAL	3.0
1	A	204	VAL	2.9
1	A	154	ALA	2.9
1	A	125	TRP	2.9

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Mol	Chain	Res	Type	RSRZ
1	A	188	PHE	2.8
1	A	187	VAL	2.8
1	B	214	LYS	2.8
1	B	228	HIS	2.8
1	B	219	ASP	2.8
1	A	193	SER	2.8
1	A	266	ILE	2.7
1	B	231	GLN	2.7
1	B	252	ASP	2.7
1	A	296	CYS	2.6
1	B	185	VAL	2.6
1	B	157	LEU	2.6
1	A	122	ILE	2.6
1	A	68	VAL	2.6
1	A	230	LEU	2.5
1	A	143	PHE	2.5
1	B	140	ARG	2.5
1	B	184	PRO	2.5
1	B	144	THR	2.4
1	B	123	LEU	2.4
1	B	253	LEU	2.4
1	A	293	ASP	2.4
1	B	215	ILE	2.3
1	A	111	LYS	2.3
1	B	141	ASP	2.3
1	A	151	GLY	2.3
1	A	197	ALA	2.3
1	A	191	THR	2.3
1	B	196	PHE	2.3
1	B	59	PHE	2.2
1	B	47	ARG	2.2
1	B	124	LEU	2.2
1	B	176	TRP	2.2
1	B	257	PRO	2.2
1	B	289	LYS	2.2
1	B	280	ARG	2.2
1	B	187	VAL	2.1
1	B	116	THR	2.1
1	B	177	ARG	2.1
1	B	236	GLN	2.1
1	B	154	ALA	2.1
1	B	256	ASP	2.1

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Mol	Chain	Res	Type	RSRZ
1	B	151	GLY	2.1
1	B	255	GLN	2.1
1	B	224	SER	2.1
1	A	185	VAL	2.1
1	A	223	GLY	2.1
1	B	233	GLU	2.1
1	A	265	ILE	2.1
1	A	226	GLN	2.0
1	B	268	LYS	2.0
1	B	130	ASP	2.0
1	A	250	SER	2.0
1	A	241	TRP	2.0
1	A	271	ILE	2.0
1	B	259	ILE	2.0
1	A	273	PHE	2.0

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 carbohydrates in this entry.

6.4 Ligands [i](#)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors(Å ²)	Q < 0.9
2	N1C	A	301	35/35	0.80	0.17	-0.44	25,44,50,52	0

6.5 Other polymers [i](#)

There are no such residues in this entry.