Full wwPDB X-ray Structure Validation Report (i)

Aug 17, 2026 – 10:51 pm BST

PDB ID	:	5JAJ / pdb_00005jaj
Title	:	Structure of chicken LGP2 witha 5'p 10-mer dsRNA and ADP-AlF4-Mg.
Authors	:	Cusack, S.; Uchikawa, E.
Deposited on	:	2016-04-12
Resolution	:	1.50 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:

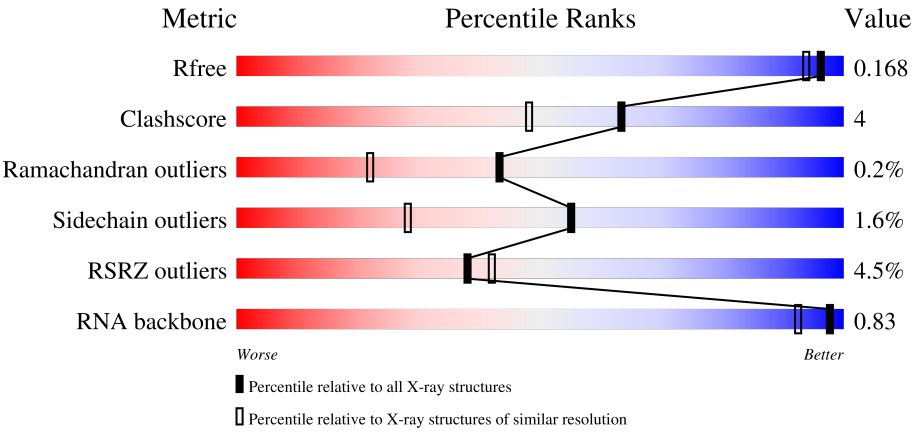
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.015 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.50

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 1.50 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	4037 (1.50-1.50)
Clashscore	190562	4235 (1.50-1.50)
Ramachandran outliers	187476	4153 (1.50-1.50)
Sidechain outliers	187428	4150 (1.50-1.50)
RSRZ outliers	180081	4039 (1.50-1.50)
RNA backbone	3983	1015 (2.10-0.90)

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	681	4% 88% 7%
2	X	11	64% 27% 9%
3	Y	10	80% 20%

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
8	EDO	A	706	-	-	X	-

2 Entry composition (i)

There are 10 unique types of molecules in this entry. The entry contains 6638 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 LGP2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	653	Total	C	N	O	S	0	37	0
			5530	3457	1008	1031	34			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-6	GLY	-	expression tag	UNP G0YYQ5
A	-5	ALA	-	expression tag	UNP G0YYQ5
A	-4	MET	-	expression tag	UNP G0YYQ5
A	-3	GLY	-	expression tag	UNP G0YYQ5
A	-2	GLY	-	expression tag	UNP G0YYQ5
A	-1	GLY	-	expression tag	UNP G0YYQ5
A	0	GLY	-	expression tag	UNP G0YYQ5
A	1	SER	-	expression tag	UNP G0YYQ5

- Molecule 2 is a RNA chain called RNA (5'-R(P*GP*GP*UP*AP*CP*GP*UP*AP*CP*CP *C)-3').

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	X	11	Total	C	N	O	P	0	2	0
			281	124	51	93	13			

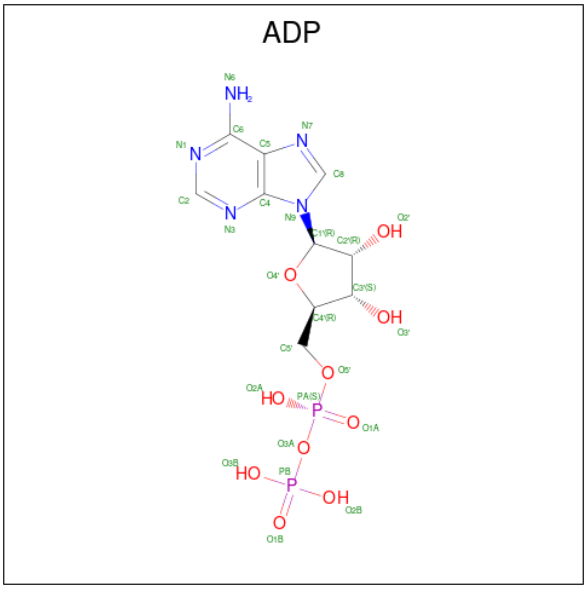
- Molecule 3 is a RNA chain called RNA (5'-R(P*GP*GP*UP*AP*CP*GP*UP*AP*CP*C)-3').

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	Y	10	Total	C	N	O	P	0	0	0
			214	95	38	71	10			

- Molecule 4 is ZINC ION (CCD ID: ZN) (formula: Zn).

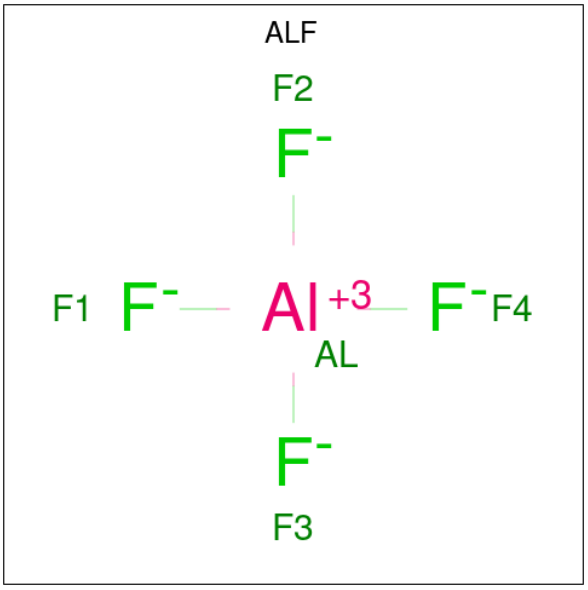
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total Zn 1 1	0	0

- Molecule 5 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
5	A	1	Total 27	C 10	N 5	O 10	P 2	0	0

- Molecule 6 is TETRAFLUOROALUMINATE ION (CCD ID: ALF) (formula: AlF_4).

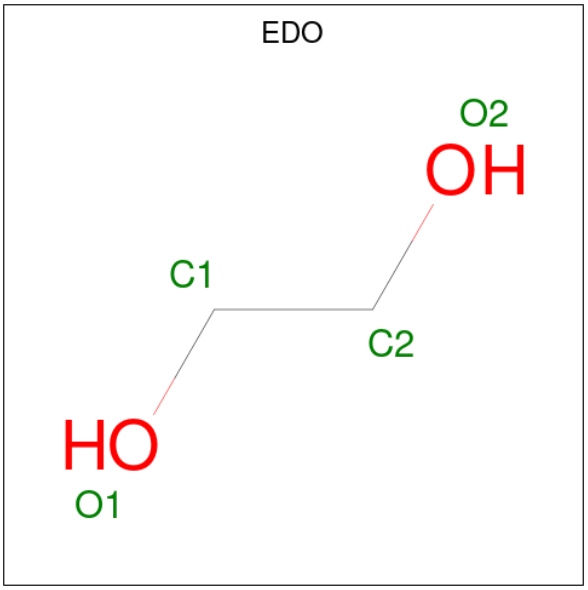


Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	1	Total Al F 5 1 4	0	0

- Molecule 7 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

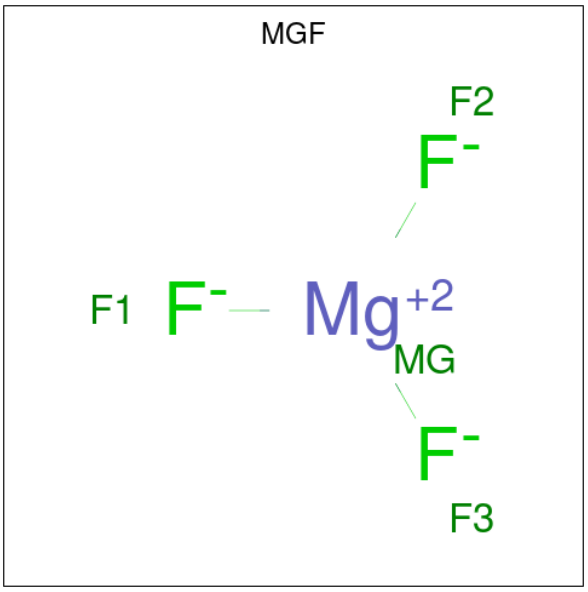
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	A	1	Total Mg 1 1	0	0

- Molecule 8 is 1,2-ETHANEDIOL (CCD ID: EDO) (formula: $C_2H_6O_2$).



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

- Molecule 9 is TRIFLUOROMAGNESATE (CCD ID: MGF) (formula: F_3Mg).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
9	Y	1	Total F Mg 4 3 1	0	0

- Molecule 10 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
10	A	489	Total O 489 489	0	0
10	X	48	Total O 48 48	0	0
10	Y	26	Total O 26 26	0	0

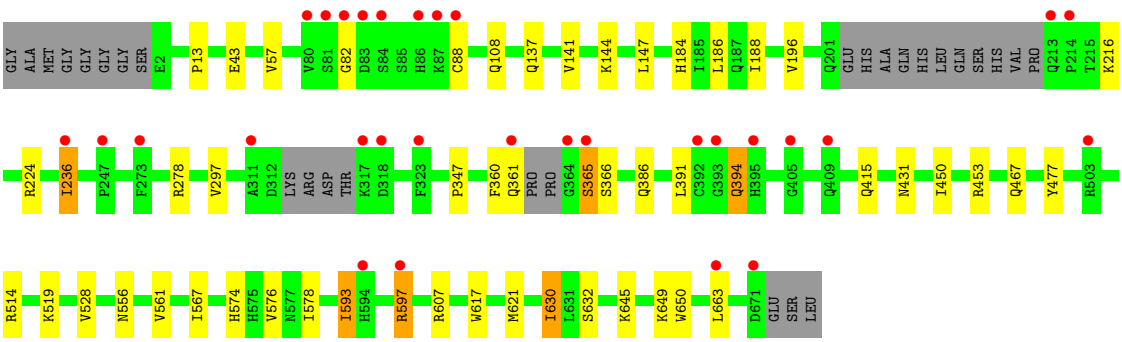
3 Residue-property plots (i)

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: LGP2

Chain A:

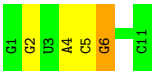




• Molecule 2: RNA (5'-R(P*GP*GP*UP*AP*CP*GP*UP*AP*CP*CP*C)-3')

Chain X:

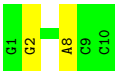




• Molecule 3: RNA (5'-R(P*GP*GP*UP*AP*CP*GP*UP*AP*CP*C)-3')

Chain Y:





4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	69.59Å 97.05Å 122.52Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	76.08 – 1.50 76.08 – 1.50	Depositor EDS
% Data completeness (in resolution range)	99.9 (76.08-1.50) 99.9 (76.08-1.50)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.05	Depositor
$< I/\sigma(I) >$ [1]	1.45 (at 1.50Å)	Xtriage
Refinement program	REFMAC 5.8.0131	Depositor
R, R_{free}	0.133 , 0.168 0.133 , 0.168	Depositor DCC
R_{free} test set	6681 reflections (5.02%)	wwPDB-VP
Wilson B-factor (Å^2)	20.7	Xtriage
Anisotropy	0.357	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 42.9	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	0.97	EDS
Total number of atoms	6638	wwPDB-VP
Average B, all atoms (Å^2)	29.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.86% 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

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: ALF, MG, ADP, EDO, MGF, ZN

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	0.82	2/5623 (0.0%)	0.80	1/7588 (0.0%)
2	X	0.58	0/313	0.78	0/483
3	Y	0.53	0/238	0.77	0/367
All	All	0.80	2/6174 (0.0%)	0.79	1/8438 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
2	X	0	1

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	431	ASN	CA-CB	-6.02	1.44	1.53
1	A	43	GLU	C-O	-5.38	1.17	1.24

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	365	SER	N-CA-C	-5.38	105.06	111.03

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	X	6	G	Sidechain

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	5530	0	5468	46	0
2	X	281	0	142	3	0
3	Y	214	0	109	2	0
4	A	1	0	0	0	0
5	A	27	0	12	0	0
6	A	5	0	0	0	0
7	A	1	0	0	0	0
8	A	12	0	18	4	0
9	Y	4	0	0	0	0
10	A	489	0	0	5	0
10	X	48	0	0	0	0
10	Y	26	0	0	0	0
All	All	6638	0	5749	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 4.

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:467:GLN:NE2	1:A:477[A]:TYR:CE2	2.47	0.82
1:A:649:LYS:HE3	10:A:930:HOH:O	1.88	0.73
1:A:137[A]:GLN:CD	1:A:188[A]:ILE:HD11	2.17	0.69
1:A:147[A]:LEU:HD23	8:A:706:EDO:H21	1.77	0.67
1:A:574:HIS:HB3	1:A:630[A]:ILE:HD12	1.79	0.64
1:A:108[A]:GLN:HA	1:A:108[A]:GLN:OE1	1.98	0.63
1:A:236[A]:ILE:N	1:A:236[A]:ILE:HD13	2.15	0.62
1:A:621:MET:HE3	1:A:630[A]:ILE:HD11	1.83	0.60
1:A:528[B]:VAL:HG13	10:A:1064:HOH:O	2.02	0.60
1:A:184:HIS:CE1	1:A:188[B]:ILE:HD11	2.38	0.58
1:A:186:LEU:HD13	1:A:519:LYS:HG2	1.87	0.56
1:A:561:VAL:HG11	1:A:617:TRP:CH2	2.40	0.55
1:A:361:GLN:HG3	1:A:394:GLN:OE1	2.08	0.54
1:A:137[A]:GLN:HG2	1:A:188[A]:ILE:CD1	2.37	0.54
1:A:467:GLN:HG2	1:A:477[A]:TYR:CD2	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:593:ILE:HD11	1:A:607:ARG:HG3	1.91	0.52
1:A:82:GLY:HA3	1:A:597[B]:ARG:NH1	2.24	0.51
1:A:278[B]:ARG:NH2	1:A:556:ASN:OD1	2.43	0.51
1:A:467:GLN:HG2	1:A:477[A]:TYR:CG	2.44	0.51
1:A:576:VAL:HG12	1:A:630[A]:ILE:HD13	1.93	0.50
1:A:645:LYS:NZ	3:Y:2:G:OP1	2.46	0.48
1:A:360:PHE:O	1:A:394:GLN:HB3	2.12	0.48
1:A:141[A]:VAL:HG23	10:A:978:HOH:O	2.13	0.48
1:A:561:VAL:HG11	1:A:617:TRP:CZ2	2.49	0.48
1:A:576:VAL:CG1	1:A:630[A]:ILE:HD13	2.43	0.48
1:A:147[A]:LEU:CD2	8:A:706:EDO:H21	2.44	0.48
1:A:567[B]:ILE:HD13	1:A:650:TRP:HH2	1.79	0.47
1:A:216:LYS:HE3	1:A:477[A]:TYR:CE2	2.50	0.47
1:A:137[A]:GLN:CG	1:A:188[A]:ILE:CD1	2.93	0.46
1:A:366:SER:HB3	1:A:450[A]:ILE:HD12	1.97	0.46
1:A:632[A]:SER:HB2	2:X:2[A]:G:H5"	1.99	0.45
1:A:567[B]:ILE:HD13	1:A:650:TRP:CH2	2.51	0.44
1:A:57[A]:VAL:HG11	1:A:415:GLN:HB2	2.00	0.44
1:A:144:LYS:HG2	8:A:706:EDO:H22	1.99	0.43
1:A:137[A]:GLN:CG	1:A:188[A]:ILE:HD11	2.49	0.43
1:A:144:LYS:HA	8:A:706:EDO:H22	2.01	0.43
1:A:216:LYS:HE3	1:A:477[A]:TYR:HE2	1.83	0.43
1:A:578[B]:ILE:HD12	1:A:578[B]:ILE:C	2.44	0.42
1:A:593:ILE:N	1:A:593:ILE:HD13	2.34	0.42
1:A:224:ARG:HG3	1:A:347:PRO:HD3	2.00	0.42
1:A:386[B]:GLN:HG3	10:A:1127:HOH:O	2.20	0.42
2:X:5:C:H2'	2:X:6:G:C8	2.54	0.42
1:A:621:MET:HB2	1:A:630[A]:ILE:HD11	2.01	0.42
1:A:453:ARG:HD3	1:A:477[A]:TYR:CE1	2.54	0.42
1:A:13:PRO:HB3	1:A:196:VAL:HG11	2.01	0.41
1:A:649:LYS:CE	10:A:930:HOH:O	2.58	0.41
1:A:391:LEU:O	1:A:394:GLN:HG2	2.21	0.41
2:X:4:A:C2	3:Y:8:A:C2	3.08	0.41

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	682/681 (100%)	671 (98%)	10 (2%)	1 (0%)	48 24

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	297	VAL

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	604/589 (102%)	592 (98%)	12 (2%)	48 20

All (12) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	88	CYS
1	A	236[A]	ILE
1	A	236[B]	ILE
1	A	365	SER
1	A	394	GLN
1	A	514	ARG
1	A	593	ILE
1	A	597[A]	ARG
1	A	597[B]	ARG
1	A	630[A]	ILE

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Mol	Chain	Res	Type
1	A	630[B]	ILE
1	A	663	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	4	HIS
1	A	187	GLN
1	A	361	GLN
1	A	408	ASN
1	A	419	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	X	9/11 (81%)	0	0
3	Y	9/10 (90%)	0	0
All	All	18/21 (85%)	0	0

There are no RNA backbone outliers to report.

There are no RNA pucker outliers to report.

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 oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 8 ligands modelled in this entry, 2 are monoatomic - leaving 6 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	$\#\|Z\| > 2$
8	EDO	A	705	-	3,3,3	0.51	0	2,2,2	0.60	0
5	ADP	A	702	6,7	27,29,29	1.14	3 (11%)	42,45,45	1.93	13 (30%)
8	EDO	A	706	-	3,3,3	0.33	0	2,2,2	0.25	0
9	MGF	Y	101	10	0,3,3	-	-	-		
8	EDO	A	707	-	3,3,3	0.33	0	2,2,2	0.09	0
6	ALF	A	703	10,5	0,4,4	-	-	-		

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
8	EDO	A	706	-	-	1/1/1/1	-
8	EDO	A	705	-	-	0/1/1/1	-
5	ADP	A	702	6,7	-	3/16/32/32	0/3/3/3
8	EDO	A	707	-	-	0/1/1/1	-

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	702	ADP	C5-C4	3.59	1.45	1.39
5	A	702	ADP	C5-C6	2.36	1.47	1.41
5	A	702	ADP	C2-N1	2.27	1.38	1.33

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	A	702	ADP	C4-N9-C8	4.89	111.03	105.73
5	A	702	ADP	N3-C4-N9	3.97	133.63	127.08
5	A	702	ADP	N9-C8-N7	-3.53	109.08	113.91
5	A	702	ADP	N3-C2-N1	-3.43	123.23	128.60
5	A	702	ADP	C5-C4-N3	-3.39	122.33	126.75
5	A	702	ADP	C5-N7-C8	3.32	108.23	103.51
5	A	702	ADP	C5-C6-N6	-2.97	116.97	123.43
5	A	702	ADP	C2-N3-C4	2.94	118.70	111.75
5	A	702	ADP	N6-C6-N1	2.75	124.38	118.35
5	A	702	ADP	C4-C5-N7	-2.38	107.72	110.62

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	A	702	ADP	C6-C5-N7	2.29	136.30	132.02
5	A	702	ADP	PA-O3A-PB	-2.18	125.34	132.83
5	A	702	ADP	O4'-C1'-N9	-2.01	104.11	108.06

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	702	ADP	PA-O3A-PB-O3B
5	A	702	ADP	PA-O3A-PB-O2B
8	A	706	EDO	O1-C1-C2-O2
5	A	702	ADP	PA-O3A-PB-O1B

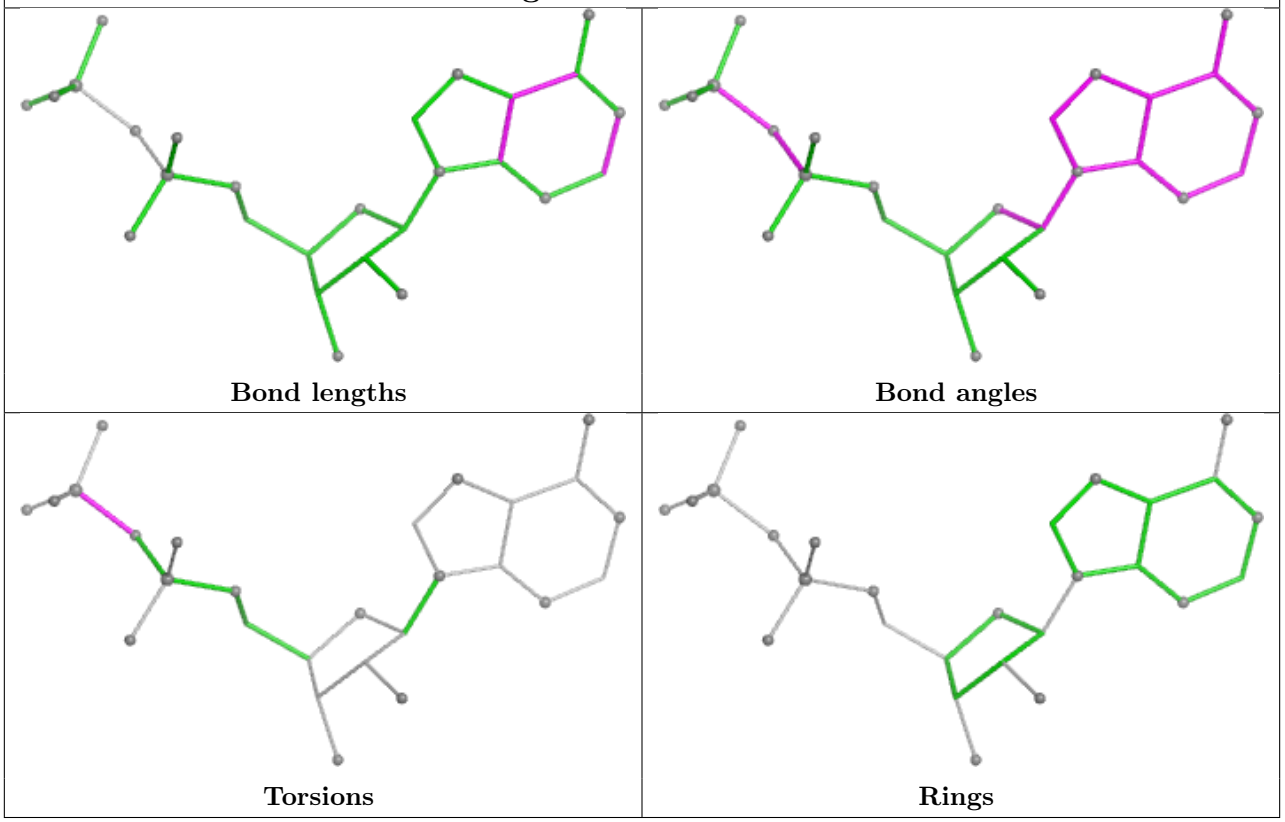
There are no ring outliers.

1 monomer is involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
8	A	706	EDO	4	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand ADP A 702



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	653/681 (95%)	0.05	30 (4%) 37 41	9, 26, 56, 81	37 (5%)
2	X	11/11 (100%)	-0.52	0 100 100	10, 19, 29, 52	2 (18%)
3	Y	10/10 (100%)	-0.82	0 100 100	15, 17, 28, 43	0
All	All	674/702 (96%)	0.03	30 (4%) 38 42	9, 25, 56, 81	39 (5%)

All (30) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	364	GLY	5.8
1	A	82	GLY	5.3
1	A	213	GLN	3.8
1	A	409	GLN	3.6
1	A	214	PRO	3.2
1	A	83	ASP	3.2
1	A	81	SER	3.1
1	A	317	LYS	2.8
1	A	86	HIS	2.7
1	A	365	SER	2.7
1	A	503[A]	ARG	2.6
1	A	311	ALA	2.6
1	A	395	HIS	2.6
1	A	87	LYS	2.5
1	A	318	ASP	2.4
1	A	323	PHE	2.4
1	A	393	GLY	2.4
1	A	236[A]	ILE	2.4
1	A	671	ASP	2.3
1	A	84	SER	2.3
1	A	273	PHE	2.2
1	A	663	LEU	2.2
1	A	361	GLN	2.2

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Mol	Chain	Res	Type	RSRZ
1	A	405	GLY	2.2
1	A	594	HIS	2.2
1	A	88	CYS	2.2
1	A	247	PRO	2.1
1	A	392	CYS	2.1
1	A	597[A]	ARG	2.0
1	A	80	VAL	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 oligosaccharides in this entry.

6.4 Ligands (i)

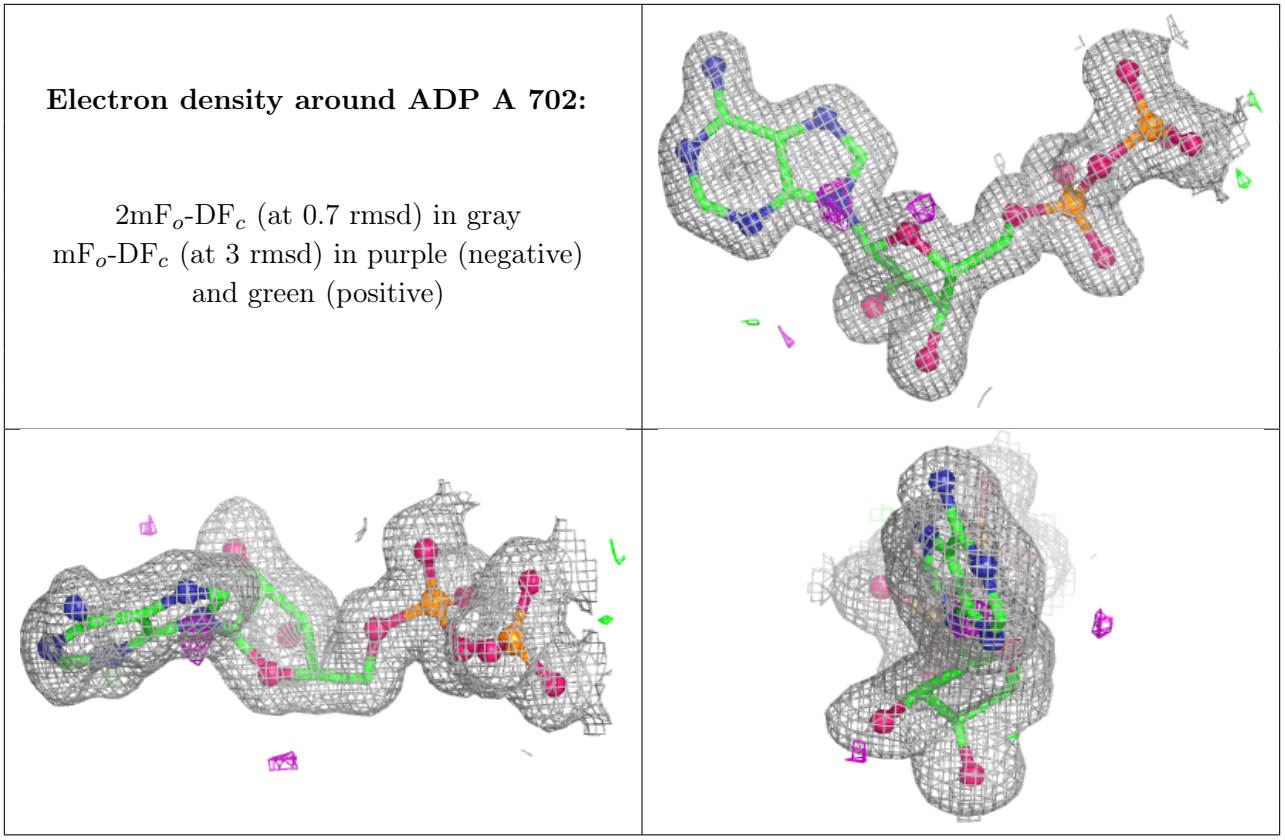
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
8	EDO	A	706	4/4	0.93	0.08	34,35,37,37	0
8	EDO	A	705	4/4	0.96	0.08	24,30,34,40	0
9	MGF	Y	101	4/4	0.97	0.07	25,29,35,48	0
8	EDO	A	707	4/4	0.98	0.05	25,26,27,28	0
6	ALF	A	703	5/5	0.99	0.03	17,18,20,25	0
7	MG	A	704	1/1	0.99	0.02	18,18,18,18	0
5	ADP	A	702	27/27	0.99	0.04	18,22,30,31	0
4	ZN	A	701	1/1	1.00	0.02	24,24,24,24	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around ADP A 702:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



6.5 Other polymers (i)

There are no such residues in this entry.