



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 27, 2014 – 04:29 AM GMT

PDB ID : 2YWW
Title : Crystal structure of aspartate carbamoyltransferase regulatory chain from Methanocaldococcus jannaschii
Authors : Kanagawa, M.; Baba, S.; Kuramitsu, S.; Yokoyama, S.; Kawai, G.; Sampei, G.; RIKEN Structural Genomics/Proteomics Initiative (RSGI)
Deposited on : 2007-04-23
Resolution : 2.00 Å(reported)

This is a full wwPDB 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/ValidationPDFNotes.html>

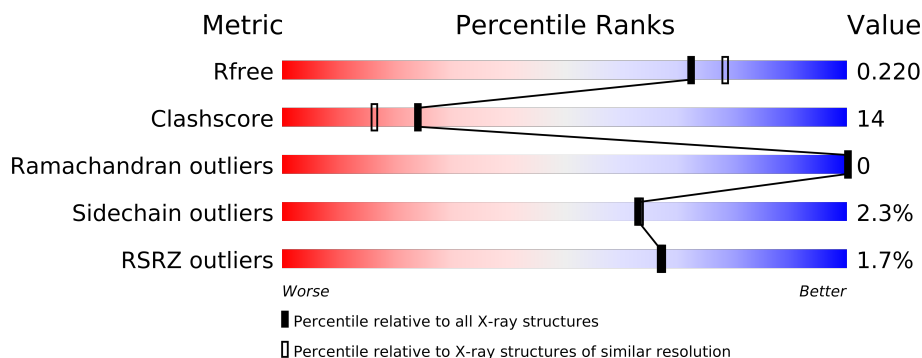
The following versions of software and data (see [references](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.15 2013
Xtriage (Phenix) : dev-1323
EDS : stable22639
Percentile statistics : 21963
Refmac : 5.8.0049
CCP4 : 6.3.0 (Settle)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP) : stable22683

1 Overall quality at a glance

The reported resolution of this entry is 2.00 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}	66092	4888 (2.00-2.00)
Clashscore	79885	6188 (2.00-2.00)
Ramachandran outliers	78287	6102 (2.00-2.00)
Sidechain outliers	78261	6100 (2.00-2.00)
RSRZ outliers	66119	4890 (2.00-2.00)

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. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density.

Mol	Chain	Length	Quality of chain
1	A	149	
1	B	149	

2 Entry composition i

There are 4 unique types of molecules in this entry. The entry contains 2534 atoms, of which 0 are hydrogen and 0 are deuterium.

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.

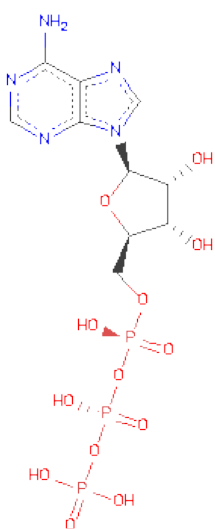
- Molecule 1 is a protein called Aspartate carbamoyltransferase regulatory chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	141	Total	C	N	O	S	0	0	0
			1115	718	189	202	6			
1	B	142	Total	C	N	O	S	0	0	0
			1125	723	190	206	6			

- Molecule 2 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	B	2	Total	Zn	0	0
			2	2		
2	A	2	Total	Zn	0	0
			2	2		

- Molecule 3 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula: C₁₀H₁₆N₅O₁₃P₃).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	B	1	Total	C	N	O	P	0	0
			31	10	5	13	3		
3	B	1	Total	C	N	O	P	0	0
			31	10	5	13	3		
3	A	1	Total	C	N	O	P	0	0
			31	10	5	13	3		
3	A	1	Total	C	N	O	P	0	0
			31	10	5	13	3		

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	75	Total	O	0	0
			75	75		
4	B	91	Total	O	0	0
			91	91		

3 Residue-property plots

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors 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.

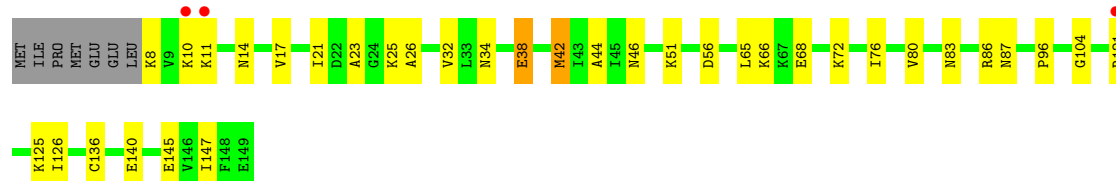
- Molecule 1: Aspartate carbamoyltransferase regulatory chain

Chain A: 



- Molecule 1: Aspartate carbamoyltransferase regulatory chain

Chain B: 



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	51.00Å 71.40Å 92.97Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	30.96 – 2.00 46.49 – 2.00	Depositor EDS
% Data completeness (in resolution range)	98.5 (30.96-2.00) 98.4 (46.49-2.00)	Depositor EDS
R_{merge}	0.06	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	6.66 (at 2.00Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.226 , 0.226 0.226 , 0.220	Depositor DCC
R_{free} test set	2295 reflections (10.95%)	DCC
Wilson B-factor (Å ²)	27.0	Xtriage
Anisotropy	0.371	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.39 , 47.7	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Outliers	0 of 23589 reflections	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	2534	wwPDB-VP
Average B, all atoms (Å ²)	32.0	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 36.73 % 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 4.7768e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

¹Intensities estimated from amplitudes.

5 Model quality

5.1 Standard geometry

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

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	0.30	0/1128	0.62	0/1511
1	B	0.31	0/1138	0.64	0/1523
All	All	0.31	0/2266	0.63	0/3034

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 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 hydrogens added by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, and the number in parentheses is this value normalized per 1000 atoms of the molecule in the chain. The Symm-Clashes column gives symmetry related clashes, in the same way as for the Clashes column.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1115	0	1217	40	0
1	B	1125	0	1223	32	0
2	A	2	0	0	0	0
2	B	2	0	0	0	0
3	A	62	0	24	1	0
3	B	62	0	24	1	0
4	A	75	0	0	3	0
4	B	91	0	0	4	0
All	All	2534	0	2488	69	0

Clashscore is defined as the number of clashes calculated for the entry per 1000 atoms (including hydrogens) of the entry. The overall clashscore for this entry is 14.

All (69) close contacts within the same asymmetric unit are listed below.

Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:A:22:ASP:HB2	1:A:25:LYS:HD2	1.53	0.89
1:A:74:SER:HB3	1:A:96:PRO:HB2	1.59	0.82
1:B:104:GLY:HA3	1:B:121:ARG:NH2	2.01	0.76
1:B:26:ALA:HB2	1:B:56:ASP:HB3	1.68	0.75
1:B:66:LYS:HE2	1:B:68:GLU:HB3	1.67	0.75
1:A:68:GLU:O	1:A:72:LYS:HG3	1.89	0.71
1:B:42:MET:HE1	1:B:44:ALA:HB2	1.72	0.71
1:A:26:ALA:HB2	1:A:56:ASP:HB3	1.72	0.70
1:A:82:ILE:HB	1:A:94:LEU:HB2	1.74	0.69
1:A:28:MET:HE2	1:A:32:VAL:HG13	1.75	0.69
1:A:67:LYS:NZ	1:A:97:GLN:HE21	1.91	0.69
1:A:8:LYS:HB3	1:B:8:LYS:HB2	1.75	0.68
1:A:74:SER:HB3	1:A:96:PRO:CB	2.24	0.68
1:B:38:GLU:CD	1:B:38:GLU:H	1.98	0.67
1:A:20:HIS:HD2	1:A:81:THR:OG1	1.81	0.64
1:A:23:ALA:HB1	1:A:46:ASN:ND2	2.12	0.64
1:B:42:MET:CE	1:B:44:ALA:HB2	2.29	0.61
1:A:68:GLU:CD	1:A:68:GLU:H	2.03	0.61
1:A:121:ARG:HB2	1:A:121:ARG:NH1	2.17	0.60
3:A:402:ATP:O2'	1:B:10:LYS:HD3	2.02	0.59
1:A:121:ARG:HB2	1:A:121:ARG:HH11	1.68	0.58
1:A:42:MET:HB2	4:A:528:HOH:O	2.03	0.57
1:A:67:LYS:HZ3	1:A:97:GLN:HE21	1.53	0.56
1:A:99:PRO:O	1:A:126:ILE:HG13	2.06	0.55
1:B:136:CYS:O	1:B:140:GLU:HA	2.08	0.54
1:A:8:LYS:NZ	1:B:11:LYS:HB2	2.22	0.54
1:A:75:LEU:O	1:A:146:VAL:HG21	2.08	0.54
1:B:25:LYS:HE3	4:B:576:HOH:O	2.07	0.53
1:B:23:ALA:HB1	1:B:46:ASN:ND2	2.23	0.53
1:A:13:THR:HG22	1:A:14:ASN:OD1	2.08	0.53
1:A:29:VAL:O	1:A:32:VAL:HG22	2.09	0.52
1:A:22:ASP:HB2	1:A:25:LYS:CD	2.35	0.52
1:A:50:LYS:HB3	1:A:50:LYS:NZ	2.25	0.52
1:A:126:ILE:HD13	1:A:134:ILE:HG12	1.92	0.52
1:A:37:LYS:HG3	4:A:538:HOH:O	2.10	0.51
1:B:126:ILE:HD12	1:B:126:ILE:N	2.28	0.49
1:B:68:GLU:O	1:B:72:LYS:HG3	2.13	0.49
1:B:104:GLY:HA3	1:B:121:ARG:HH21	1.77	0.49
1:B:23:ALA:HB1	1:B:46:ASN:HD22	1.76	0.49

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:B:145:GLU:HG2	1:B:147:ILE:HG13	1.94	0.48
1:B:66:LYS:HG2	4:B:534:HOH:O	2.13	0.47
1:A:23:ALA:HB1	1:A:46:ASN:HD22	1.79	0.47
1:B:32:VAL:HG21	1:B:76:ILE:HD11	1.96	0.47
1:A:49:SER:HB2	1:A:55:LYS:HG2	1.97	0.47
1:B:21:ILE:HA	1:B:80:VAL:HG12	1.97	0.46
1:A:135:ARG:HD3	1:A:140:GLU:O	2.15	0.46
1:A:67:LYS:HE3	1:A:71:ASP:OD2	2.16	0.46
1:B:42:MET:HE3	1:B:44:ALA:N	2.32	0.45
1:A:124:PHE:CE1	1:A:143:LEU:HD21	2.51	0.45
1:A:67:LYS:NZ	1:A:97:GLN:NE2	2.62	0.45
1:A:121:ARG:CB	1:A:121:ARG:HH11	2.29	0.45
1:A:139:CYS:O	1:A:140:GLU:HB2	2.17	0.44
1:A:126:ILE:CD1	1:A:134:ILE:HG12	2.48	0.44
1:A:95:LYS:HA	1:A:95:LYS:HD3	1.85	0.44
1:A:8:LYS:HZ1	1:B:11:LYS:HB2	1.82	0.44
1:B:66:LYS:HE3	4:B:531:HOH:O	2.18	0.43
1:A:54:LYS:HD2	4:A:560:HOH:O	2.16	0.43
1:A:107:LYS:HE2	1:A:147:ILE:HG21	2.01	0.43
1:B:14:ASN:HD22	1:B:86:ARG:HA	1.84	0.42
1:B:65:LEU:N	4:B:570:HOH:O	2.48	0.42
1:B:80:VAL:HG22	1:B:96:PRO:HG2	2.02	0.42
1:A:74:SER:CB	1:A:96:PRO:HB2	2.42	0.42
1:B:14:ASN:ND2	1:B:87:ASN:H	2.18	0.41
1:B:86:ARG:O	1:B:87:ASN:HB2	2.21	0.41
1:B:17:VAL:HB	1:B:83:ASN:HB2	2.03	0.41
1:B:125:LYS:HE3	1:B:125:LYS:HB2	1.85	0.40
1:A:76:ILE:HD11	1:A:148:PHE:CE2	2.55	0.40
1:B:80:VAL:CG2	1:B:96:PRO:HG2	2.51	0.40
1:B:51:LYS:NZ	3:B:400:ATP:PG	2.95	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	139/149 (93%)	136 (98%)	3 (2%)	0	100	100
1	B	140/149 (94%)	138 (99%)	2 (1%)	0	100	100
All	All	279/298 (94%)	274 (98%)	5 (2%)	0	100	100

There are no Ramachandran outliers to report.

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	131/139 (94%)	128 (98%)	3 (2%)	63	63
1	B	132/139 (95%)	129 (98%)	3 (2%)	63	63
All	All	263/278 (95%)	257 (98%)	6 (2%)	63	63

All (6) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	11	LYS
1	A	130	ASN
1	A	135	ARG
1	B	34	ASN
1	B	38	GLU
1	B	42	MET

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (10) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	20	HIS
1	A	34	ASN
1	A	46	ASN
1	A	87	ASN
1	A	97	GLN
1	A	130	ASN
1	B	14	ASN
1	B	20	HIS

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Mol	Chain	Res	Type
1	B	34	ASN
1	B	46	ASN

5.3.3 RNA ⓘ

There are no RNA chains 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 ⓘ

There are no carbohydrates in this entry.

5.6 Ligand geometry ⓘ

Of 8 ligands modelled in this entry, 4 are monoatomic - leaving 4 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$
3	ATP	A	402	2	33,33,33	1.93	5 (15%)	52,52,52	3.09	23 (44%)
3	ATP	A	403	2	33,33,33	1.89	7 (21%)	52,52,52	3.05	21 (40%)
3	ATP	B	400	2	33,33,33	1.75	6 (18%)	52,52,52	3.07	21 (40%)
3	ATP	B	401	2	33,33,33	1.87	5 (15%)	52,52,52	3.08	23 (44%)

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
3	ATP	A	402	2	-	0/22/38/38	0/1/3/3
3	ATP	A	403	2	-	0/22/38/38	0/1/3/3
3	ATP	B	400	2	-	0/22/38/38	0/1/3/3
3	ATP	B	401	2	-	0/22/38/38	0/1/3/3

All (23) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	402	ATP	PB-O3A	5.23	1.69	1.59
3	B	401	ATP	PB-O3A	4.95	1.68	1.59
3	A	403	ATP	PG-O3B	4.77	1.68	1.60
3	A	402	ATP	PG-O3B	4.70	1.68	1.60
3	A	402	ATP	PA-O3A	4.64	1.68	1.59
3	B	401	ATP	PG-O3B	4.48	1.68	1.60
3	B	400	ATP	PG-O3B	4.47	1.68	1.60
3	A	403	ATP	PB-O3B	4.26	1.67	1.59
3	A	403	ATP	PB-O3A	4.22	1.67	1.59
3	B	401	ATP	PA-O3A	3.90	1.66	1.59
3	B	401	ATP	PB-O3B	3.85	1.66	1.59
3	A	403	ATP	PA-O3A	3.83	1.66	1.59
3	B	400	ATP	PB-O3B	3.82	1.66	1.59
3	A	403	ATP	O4'-C1'	3.79	1.47	1.41
3	A	402	ATP	PB-O3B	3.64	1.66	1.59
3	B	400	ATP	O4'-C1'	3.61	1.46	1.41
3	B	400	ATP	PB-O3A	3.53	1.66	1.59
3	B	401	ATP	O4'-C1'	3.45	1.46	1.41
3	A	402	ATP	O4'-C1'	3.37	1.46	1.41
3	B	400	ATP	PA-O3A	2.89	1.65	1.59
3	A	403	ATP	C8-N7	-2.20	1.30	1.34
3	B	400	ATP	C8-N7	-2.16	1.30	1.34
3	A	403	ATP	PG-O3G	2.03	1.62	1.54

All (88) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	400	ATP	N3-C2-N1	-8.93	121.24	128.71
3	A	402	ATP	N3-C2-N1	-8.74	121.40	128.71
3	A	403	ATP	N3-C2-N1	-8.72	121.42	128.71
3	B	401	ATP	N3-C2-N1	-8.58	121.54	128.71
3	B	400	ATP	O3A-PB-O3B	-7.86	85.67	101.66
3	A	402	ATP	O3A-PB-O3B	-7.57	86.26	101.66
3	A	403	ATP	O3A-PB-O3B	-7.57	86.28	101.66
3	B	401	ATP	O3A-PB-O3B	-7.34	86.73	101.66

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	401	ATP	O5'-PA-O1A	-6.19	85.12	109.37
3	A	403	ATP	O5'-PA-O1A	-6.16	85.26	109.37
3	B	401	ATP	PB-O3B-PG	-6.15	113.66	131.68
3	A	402	ATP	O5'-PA-O1A	-6.12	85.40	109.37
3	B	401	ATP	PA-O3A-PB	-6.09	113.81	131.68
3	A	402	ATP	PB-O3B-PG	-6.02	114.03	131.68
3	B	400	ATP	PB-O3B-PG	-6.01	114.07	131.68
3	B	400	ATP	O5'-PA-O1A	-5.98	85.97	109.37
3	A	402	ATP	PA-O3A-PB	-5.83	114.60	131.68
3	A	403	ATP	PB-O3B-PG	-5.80	114.68	131.68
3	A	402	ATP	O2A-PA-O5'	-5.74	79.54	108.51
3	B	401	ATP	O2A-PA-O5'	-5.72	79.68	108.51
3	A	403	ATP	PA-O3A-PB	-5.67	115.04	131.68
3	B	400	ATP	PA-O3A-PB	-5.54	115.43	131.68
3	B	400	ATP	N3-C4-N9	5.49	135.35	125.43
3	B	400	ATP	O2A-PA-O5'	-5.48	80.88	108.51
3	A	403	ATP	O2A-PA-O5'	-5.46	80.97	108.51
3	A	403	ATP	N3-C4-N9	5.45	135.27	125.43
3	B	401	ATP	N3-C4-N9	5.18	134.78	125.43
3	A	402	ATP	N3-C4-N9	5.17	134.77	125.43
3	A	402	ATP	O2G-PG-O3B	-5.02	81.33	105.14
3	B	400	ATP	O2G-PG-O3B	-4.92	81.81	105.14
3	A	403	ATP	O2G-PG-O3B	-4.84	82.17	105.14
3	B	401	ATP	O2G-PG-O3B	-4.72	82.76	105.14
3	B	400	ATP	O3A-PB-O1B	-4.45	79.33	111.28
3	A	403	ATP	O3A-PB-O1B	-4.20	81.13	111.28
3	A	402	ATP	O2G-PG-O1G	4.16	124.02	110.44
3	B	401	ATP	O3A-PB-O1B	-4.13	81.66	111.28
3	B	401	ATP	O3G-PG-O3B	-4.08	85.76	105.14
3	A	402	ATP	O3A-PB-O1B	-4.07	82.04	111.28
3	A	403	ATP	O3G-PG-O3B	-4.00	86.16	105.14
3	B	401	ATP	O2B-PB-O3A	-3.91	86.58	105.14
3	B	401	ATP	O2G-PG-O1G	3.83	122.95	110.44
3	A	403	ATP	O2B-PB-O3A	-3.78	87.19	105.14
3	B	400	ATP	O2G-PG-O1G	3.75	122.70	110.44
3	A	402	ATP	O2B-PB-O3A	-3.75	87.34	105.14
3	B	400	ATP	O3G-PG-O3B	-3.74	87.40	105.14
3	B	400	ATP	O3B-PG-O1G	-3.73	85.48	111.00
3	A	402	ATP	O3G-PG-O3B	-3.70	87.58	105.14
3	A	402	ATP	O3B-PG-O1G	-3.63	86.20	111.00
3	B	400	ATP	O3A-PA-O5'	-3.56	87.50	103.41
3	B	401	ATP	O3B-PG-O1G	-3.55	86.70	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	403	ATP	O3B-PG-O1G	-3.54	86.81	111.00
3	A	403	ATP	O2G-PG-O1G	3.44	121.67	110.44
3	B	400	ATP	O2B-PB-O3A	-3.43	88.88	105.14
3	A	403	ATP	O3A-PA-O5'	-3.35	88.44	103.41
3	A	402	ATP	O4'-C1'-N9	3.09	111.32	108.44
3	A	403	ATP	C4-C5-N7	-3.00	106.95	109.52
3	A	402	ATP	O3A-PA-O5'	-2.95	90.21	103.41
3	B	401	ATP	O3A-PA-O5'	-2.93	90.31	103.41
3	A	402	ATP	C5-C4-N3	-2.87	119.45	125.70
3	B	401	ATP	C5-C4-N3	-2.86	119.47	125.70
3	B	401	ATP	O4'-C1'-N9	2.84	111.08	108.44
3	A	402	ATP	O2B-PB-O3B	2.83	118.57	105.14
3	B	400	ATP	C5-C4-N3	-2.80	119.60	125.70
3	B	401	ATP	O2B-PB-O3B	2.80	118.40	105.14
3	A	403	ATP	C5-C4-N3	-2.79	119.62	125.70
3	A	403	ATP	O2B-PB-O3B	2.75	118.16	105.14
3	B	400	ATP	C4-C5-N7	-2.73	107.18	109.52
3	A	402	ATP	C4-C5-N7	-2.73	107.18	109.52
3	B	401	ATP	C4-C5-N7	-2.70	107.21	109.52
3	A	403	ATP	O3G-PG-O2G	2.70	118.13	107.61
3	B	401	ATP	O3G-PG-O2G	2.49	117.31	107.61
3	B	400	ATP	O3G-PG-O2G	2.49	117.31	107.61
3	A	402	ATP	C2-N3-C4	2.49	121.09	114.01
3	B	400	ATP	O2B-PB-O3B	2.48	116.90	105.14
3	B	401	ATP	C2-N3-C4	2.46	121.00	114.01
3	A	402	ATP	O2A-PA-O3A	2.44	116.71	105.14
3	A	403	ATP	O2A-PA-O3A	2.36	116.36	105.14
3	B	401	ATP	O2A-PA-O3A	2.36	116.33	105.14
3	A	402	ATP	O3G-PG-O2G	2.36	116.79	107.61
3	B	400	ATP	C2-N3-C4	2.35	120.71	114.01
3	A	403	ATP	C2-N3-C4	2.35	120.70	114.01
3	B	400	ATP	O2A-PA-O3A	2.33	116.18	105.14
3	A	403	ATP	O3G-PG-O1G	2.30	117.97	110.44
3	B	400	ATP	O3G-PG-O1G	2.19	117.59	110.44
3	B	401	ATP	O3G-PG-O1G	2.17	117.54	110.44
3	A	402	ATP	O4'-C1'-C2'	-2.14	103.49	106.77
3	B	401	ATP	O2A-PA-O1A	2.13	124.12	112.21
3	A	402	ATP	O2A-PA-O1A	2.13	124.11	112.21

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues

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	141/149 (94%)	0.15	2 (1%) 72 72	17, 31, 51, 57	0
1	B	142/149 (95%)	0.01	3 (2%) 60 61	18, 28, 46, 58	0
All	All	283/298 (94%)	0.08	5 (1%) 67 66	17, 30, 51, 58	0

All (5) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	10	LYS	3.6
1	A	10	LYS	2.6
1	B	11	LYS	2.5
1	A	8	LYS	2.2
1	B	121	ARG	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	RSR	LLDF	B-factors(\AA^2)	Q<0.9
3	ATP	A	403	31/31	0.12	-0.27	25,27,30,36	0
3	ATP	B	401	31/31	0.13	-0.34	24,29,32,35	0
3	ATP	A	402	31/31	0.12	-0.36	24,30,33,33	0
3	ATP	B	400	31/31	0.11	-0.45	25,30,33,37	0
2	ZN	A	504	1/1	0.08	-1.09	27,27,27,27	0
2	ZN	A	501	1/1	0.08	-1.12	28,28,28,28	0
2	ZN	B	503	1/1	0.09	-1.18	20,20,20,20	0
2	ZN	B	502	1/1	0.09	-1.47	29,29,29,29	0

6.5 Other polymers ⓘ

There are no such residues in this entry.