



Full wwPDB X-ray Structure Validation Report ⓘ

May 17, 2020 – 02:00 pm BST

PDB ID : 3LSS
Title : Trypanosoma brucei seryl-tRNA synthetase in complex with ATP
Authors : Larson, E.T.; Merritt, E.A.; Medical Structural Genomics of Pathogenic Protozoa (MSGPP)
Deposited on : 2010-02-12
Resolution : 1.95 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 ⓘ symbol.

The following versions of software and data (see [references ⓘ](#)) 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 : 2.11
buster-report : 1.1.7 (2018)
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) : 2.11

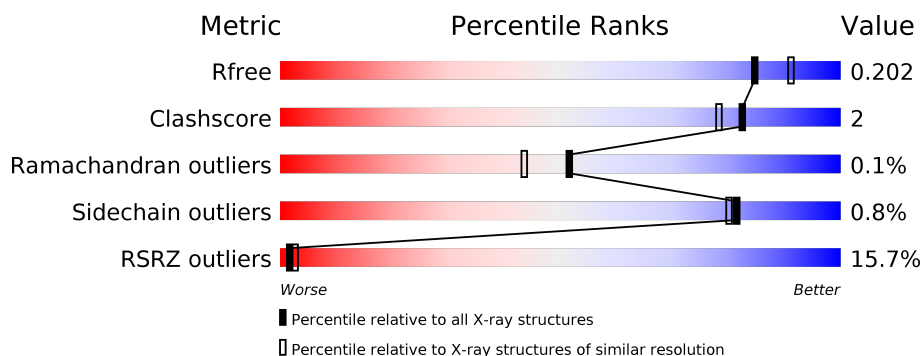
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.95 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	2580 (1.96-1.96)
Clashscore	141614	2705 (1.96-1.96)
Ramachandran outliers	138981	2678 (1.96-1.96)
Sidechain outliers	138945	2678 (1.96-1.96)
RSRZ outliers	127900	2539 (1.96-1.96)

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 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 $\leq 5\%$. 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	484	<div> <div>15%</div> <div>86%</div> <div>5%</div> <div>10%</div> </div>
1	B	484	<div> <div>14%</div> <div>90%</div> <div>7%</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
3	MLI	A	602	-	-	X	-

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 7683 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 Seryl-tRNA synthetase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	438	Total	C	N	O	S	0	9	0
			3509	2203	613	662	31			
1	B	468	Total	C	N	O	S	0	15	0
			3756	2355	653	718	30			

There are 10 discrepancies between the modelled and reference sequences:

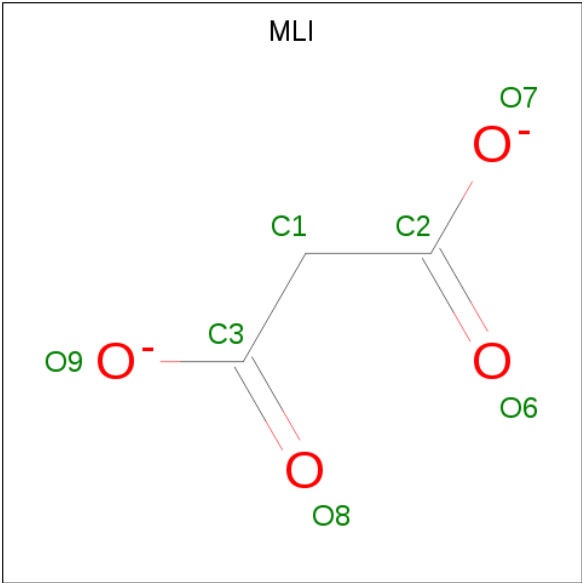
Chain	Residue	Modelled	Actual	Comment	Reference
A	-4	GLY	-	EXPRESSION TAG	UNP Q384V4
A	-3	PRO	-	EXPRESSION TAG	UNP Q384V4
A	-2	GLY	-	EXPRESSION TAG	UNP Q384V4
A	-1	SER	-	EXPRESSION TAG	UNP Q384V4
A	0	MET	-	EXPRESSION TAG	UNP Q384V4
B	-4	GLY	-	EXPRESSION TAG	UNP Q384V4
B	-3	PRO	-	EXPRESSION TAG	UNP Q384V4
B	-2	GLY	-	EXPRESSION TAG	UNP Q384V4
B	-1	SER	-	EXPRESSION TAG	UNP Q384V4
B	0	MET	-	EXPRESSION TAG	UNP Q384V4

- Molecule 2 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula: C₁₀H₁₆N₅O₁₃P₃).



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

- Molecule 3 is MALONATE ION (three-letter code: MLI) (formula: C₃H₂O₄).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			7	3	4		
3	A	1	Total	C	O	0	0
			7	3	4		

- Molecule 4 is SODIUM ION (three-letter code: NA) (formula: Na).

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

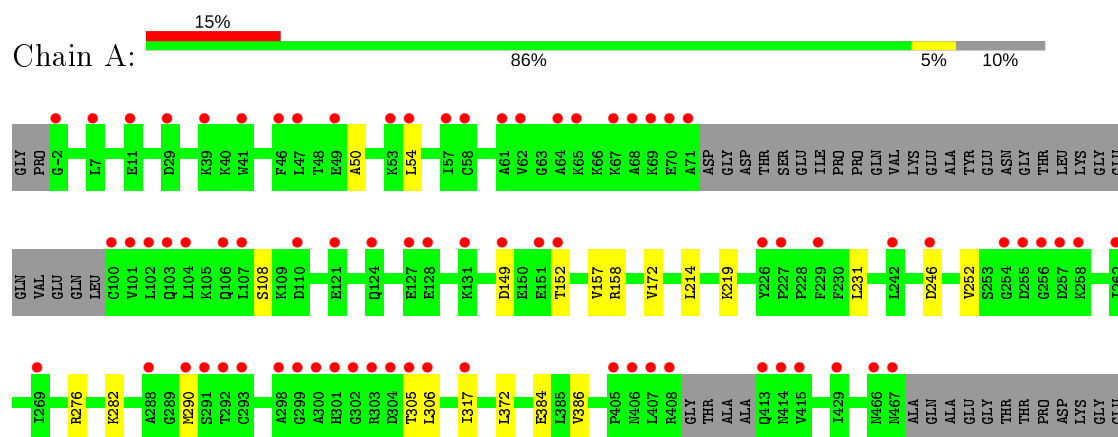
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	167	Total 167	O 167	0	1
5	B	174	Total 174	O 174	0	1

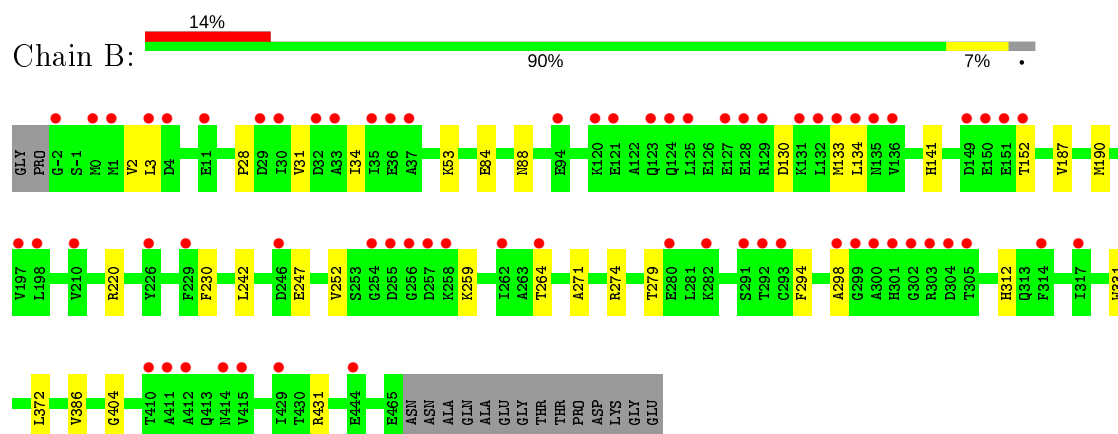
3 Residue-property plots [i](#)

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: Seryl-tRNA synthetase



• Molecule 1: Seryl-tRNA synthetase



4 Data and refinement statistics

Property	Value	Source
Space group	H 3 2	Depositor
Cell constants a, b, c, α , β , γ	175.65Å 175.65Å 248.52Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	34.57 – 1.95 34.56 – 1.95	Depositor EDS
% Data completeness (in resolution range)	99.9 (34.57-1.95) 99.9 (34.56-1.95)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.26 (at 1.95Å)	Xtriage
Refinement program	REFMAC	Depositor
R, R_{free}	0.168 , 0.195 0.179 , 0.202	Depositor DCC
R_{free} test set	5392 reflections (5.05%)	wwPDB-VP
Wilson B-factor (Å ²)	27.7	Xtriage
Anisotropy	0.380	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.40 , 55.5	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	0.96	EDS
Total number of atoms	7683	wwPDB-VP
Average B, all atoms (Å ²)	50.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.28% 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 [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: NA, MLI, 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	0.61	0/3601	0.66	0/4844
1	B	0.61	0/3879	0.67	4/5223 (0.1%)
All	All	0.61	0/7480	0.66	4/10067 (0.0%)

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	220	ARG	NE-CZ-NH1	5.59	123.09	120.30
1	B	431	ARG	NE-CZ-NH2	-5.39	117.61	120.30
1	B	230	PHE	CB-CA-C	-5.16	100.08	110.40
1	B	220	ARG	NE-CZ-NH2	-5.14	117.73	120.30

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	3509	0	3498	14	0
1	B	3756	0	3733	22	0
2	A	31	0	12	1	0
2	B	31	0	12	1	0
3	A	14	0	4	3	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	A	1	0	0	0	0
5	A	167	0	0	2	0
5	B	174	0	0	0	0
All	All	7683	0	7259	36	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 2.

All (36) 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:214:LEU:HD13	1:A:290[B]:MET:SD	2.08	0.94
1:B:2:VAL:CG2	1:B:130[B]:ASP:OD1	2.27	0.82
1:B:2:VAL:HG21	1:B:130[B]:ASP:OD1	1.85	0.76
1:B:2:VAL:HB	1:B:133[B]:MET:SD	2.28	0.73
1:B:134:LEU:HD11	1:B:242:LEU:HD12	1.71	0.72
1:B:252[B]:VAL:HG23	1:B:259:LYS:HB2	1.77	0.67
1:B:2:VAL:HG22	1:B:130[B]:ASP:OD1	1.95	0.65
1:B:2:VAL:CG2	1:B:133[B]:MET:SD	2.84	0.64
1:A:149:ASP:OD2	1:A:152:THR:HG22	2.00	0.62
1:A:219:LYS:NZ	5:A:911:HOH:O	2.35	0.60
1:A:50:ALA:O	1:A:54:LEU:HD12	2.06	0.55
1:B:31:VAL:HA	1:B:34:ILE:HD12	1.89	0.55
1:B:2:VAL:CB	1:B:133[B]:MET:SD	2.95	0.54
1:B:2:VAL:HG23	1:B:133[B]:MET:SD	2.48	0.54
1:A:276:ARG:HH11	3:A:602:MLI:H11	1.72	0.53
1:B:372:LEU:HB3	1:B:386:VAL:HB	1.91	0.52
1:A:290[B]:MET:HG2	1:A:317:ILE:HD12	1.92	0.52
1:A:252:VAL:HG22	1:B:252[B]:VAL:HG12	1.93	0.51
1:A:276:ARG:HD3	3:A:602:MLI:H11	1.93	0.50
1:A:231:LEU:CD2	1:B:190:MET:HG2	2.42	0.50
1:B:84:GLU:O	1:B:88[A]:ASN:ND2	2.45	0.49
1:A:172:VAL:HG21	1:A:306:LEU:HB3	1.94	0.49
1:A:282:LYS:O	5:A:960:HOH:O	2.20	0.48
1:A:157:VAL:HG12	1:A:158:ARG:HG3	1.96	0.47
1:B:247:GLU:HA	1:B:298:ALA:HB3	1.96	0.47
1:A:372:LEU:HB3	1:A:386:VAL:HB	1.97	0.47
2:B:501:ATP:O2A	2:B:501:ATP:O2G	2.33	0.46
3:A:601:MLI:O7	3:A:601:MLI:O9	2.33	0.45
1:B:3:LEU:O	1:B:133[B]:MET:SD	2.76	0.44
1:B:187:VAL:O	1:B:190:MET:HB3	2.19	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2:VAL:HG21	1:B:130[B]:ASP:CG	2.37	0.42
1:A:384:GLU:OE2	2:A:501:ATP:O3G	2.39	0.41
1:B:279:THR:HA	1:B:404:GLY:O	2.20	0.41
1:B:294:PHE:HA	1:B:312:HIS:O	2.22	0.40
1:B:271:ALA:O	1:B:274:ARG:HG2	2.22	0.40
1:B:141:HIS:HB2	1:B:331:TRP:CH2	2.57	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	441/484 (91%)	429 (97%)	12 (3%)	0	100	100
1	B	481/484 (99%)	467 (97%)	13 (3%)	1 (0%)	47	38
All	All	922/968 (95%)	896 (97%)	25 (3%)	1 (0%)	51	43

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	28	PRO

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	387/412 (94%)	384 (99%)	3 (1%)	81	80
1	B	416/412 (101%)	412 (99%)	4 (1%)	76	74
All	All	803/824 (98%)	796 (99%)	7 (1%)	81	77

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

Mol	Chain	Res	Type
1	A	108	SER
1	A	246	ASP
1	A	305	THR
1	B	53[A]	LYS
1	B	53[B]	LYS
1	B	152	THR
1	B	264	THR

Some 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](#)

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](#)

Of 5 ligands modelled in this entry, 1 is 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	$\# Z > 2$
2	ATP	A	501	-	26,33,33	1.11	3 (11%)	31,52,52	1.63	9 (29%)
2	ATP	B	501	-	26,33,33	1.12	2 (7%)	31,52,52	1.36	4 (12%)
3	MLI	A	601	-	0,6,6	0.00	-	0,7,7	0.00	-
3	MLI	A	602	-	0,6,6	0.00	-	0,7,7	0.00	-

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	ATP	A	501	-	-	5/18/38/38	0/3/3/3
2	ATP	B	501	-	-	5/18/38/38	0/3/3/3
3	MLI	A	601	-	-	0/0/4/4	-
3	MLI	A	602	-	-	0/0/4/4	-

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	501	ATP	C2-N3	3.06	1.37	1.32
2	A	501	ATP	C5-C4	2.58	1.47	1.40
2	B	501	ATP	C5-C4	2.52	1.47	1.40
2	A	501	ATP	C2-N3	2.50	1.36	1.32
2	A	501	ATP	C8-N7	2.29	1.38	1.34

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	501	ATP	N3-C2-N1	-3.67	122.94	128.68
2	B	501	ATP	N3-C2-N1	-3.44	123.30	128.68
2	A	501	ATP	N6-C6-N1	3.36	125.55	118.57
2	A	501	ATP	PB-O3B-PG	-2.87	122.99	132.83
2	B	501	ATP	N6-C6-N1	2.79	124.37	118.57
2	A	501	ATP	C1'-N9-C4	-2.75	121.81	126.64
2	A	501	ATP	PA-O3A-PB	-2.62	123.82	132.83
2	A	501	ATP	C2-N1-C6	2.55	123.12	118.75
2	B	501	ATP	C2-N1-C6	2.35	122.78	118.75
2	A	501	ATP	C3'-C2'-C1'	2.13	104.18	100.98

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	501	ATP	C5-C6-N6	-2.10	117.16	120.35
2	B	501	ATP	C1'-N9-C4	-2.03	123.07	126.64
2	A	501	ATP	O3B-PG-O1G	-2.03	99.94	111.19

There are no chirality outliers.

All (10) torsion outliers are listed below:

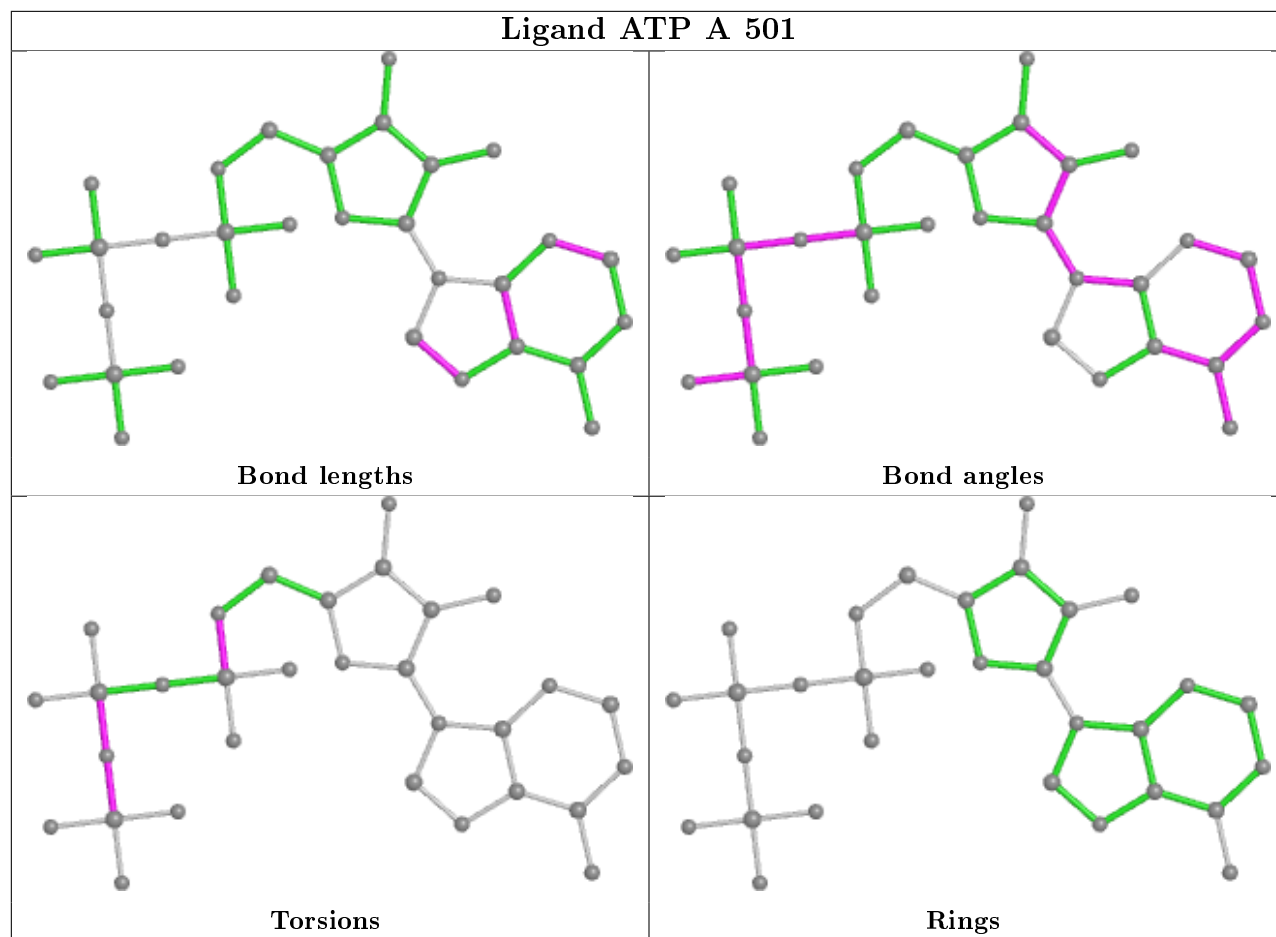
Mol	Chain	Res	Type	Atoms
2	B	501	ATP	C5'-O5'-PA-O1A
2	A	501	ATP	PB-O3B-PG-O2G
2	A	501	ATP	PB-O3B-PG-O3G
2	B	501	ATP	PA-O3A-PB-O3B
2	A	501	ATP	PG-O3B-PB-O1B
2	A	501	ATP	PG-O3B-PB-O2B
2	B	501	ATP	PB-O3B-PG-O1G
2	B	501	ATP	C5'-O5'-PA-O3A
2	B	501	ATP	PG-O3B-PB-O2B
2	A	501	ATP	C5'-O5'-PA-O1A

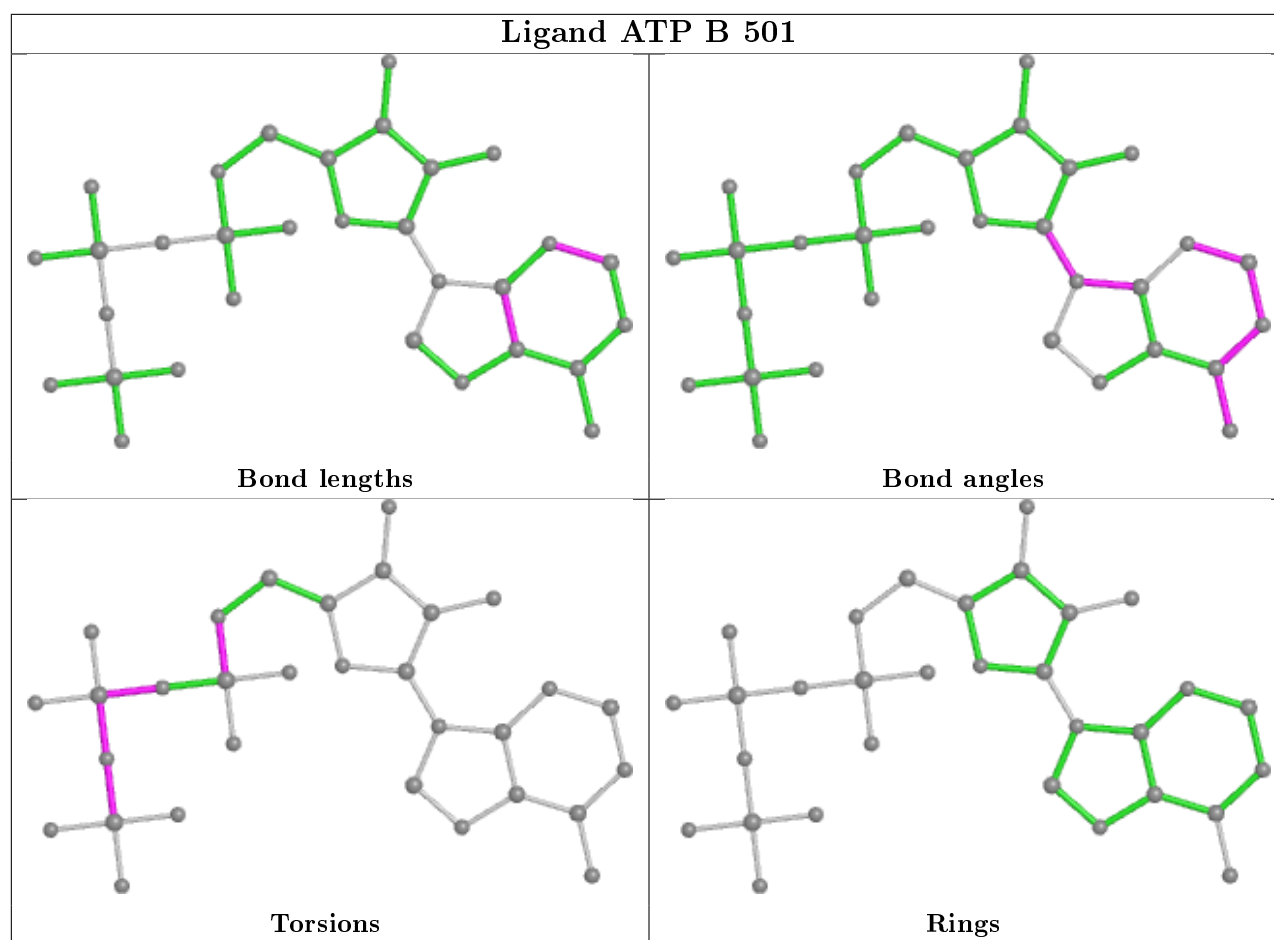
There are no ring outliers.

4 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	501	ATP	1	0
2	B	501	ATP	1	0
3	A	601	MLI	1	0
3	A	602	MLI	2	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 than 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.





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	438/484 (90%)	0.81	75 (17%) 1 2	28, 41, 103, 140	0
1	B	468/484 (96%)	0.63	67 (14%) 2 4	28, 44, 87, 130	1 (0%)
All	All	906/968 (93%)	0.72	142 (15%) 2 3	28, 42, 94, 140	1 (0%)

All (142) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	301	HIS	10.8
1	B	300	ALA	10.3
1	B	301	HIS	10.2
1	A	466	ASN	9.3
1	B	132	LEU	8.9
1	A	304	ASP	8.1
1	A	69	LYS	7.7
1	A	408	ARG	7.7
1	A	299	GLY	7.4
1	A	305	THR	7.3
1	B	125	LEU	7.1
1	A	405	PRO	7.0
1	A	68	ALA	6.7
1	A	300	ALA	6.6
1	B	414	ASN	6.3
1	A	255	ASP	6.3
1	A	407	LEU	6.2
1	B	299	GLY	6.2
1	B	151	GLU	6.1
1	B	304	ASP	6.0
1	B	298	ALA	5.8
1	B	254	GLY	5.7
1	A	303	ARG	5.7
1	A	102	LEU	5.6

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	B	33	ALA	5.5
1	B	412	ALA	5.3
1	B	32	ASP	5.3
1	A	101	VAL	5.3
1	B	303	ARG	5.3
1	A	414	ASN	5.1
1	A	298	ALA	5.1
1	B	29	ASP	5.0
1	A	71	ALA	4.9
1	A	254	GLY	4.9
1	B	124	GLN	4.9
1	A	57	ILE	4.8
1	A	54	LEU	4.7
1	B	30	ILE	4.6
1	B	-2	GLY	4.6
1	A	67	LYS	4.5
1	A	100	CYS	4.5
1	A	70	GLU	4.5
1	B	121	GLU	4.2
1	B	415	VAL	4.2
1	B	255	ASP	4.2
1	B	36	GLU	4.2
1	A	406	ASN	4.1
1	A	46	PHE	4.1
1	A	107	LEU	4.0
1	B	149	ASP	4.0
1	B	305	THR	3.9
1	A	306	LEU	3.9
1	A	257	ASP	3.9
1	B	131	LYS	3.9
1	B	257	ASP	3.7
1	B	128	GLU	3.7
1	B	0	MET	3.6
1	B	282	LYS	3.6
1	A	413	GLN	3.5
1	A	258	LYS	3.5
1	A	467	ASN	3.4
1	A	61	ALA	3.4
1	B	11	GLU	3.4
1	B	292	THR	3.4
1	B	302	GLY	3.4
1	A	290[A]	MET	3.4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	A	-2	GLY	3.3
1	B	229	PHE	3.3
1	A	65	LYS	3.3
1	A	151	GLU	3.3
1	A	246	ASP	3.3
1	B	410	THR	3.3
1	B	123	GLN	3.2
1	B	127	GLU	3.2
1	B	120	LYS	3.2
1	A	29	ASP	3.1
1	A	242	LEU	3.1
1	B	94[A]	GLU	3.0
1	A	128	GLU	3.0
1	A	226	TYR	3.0
1	B	256	GLY	3.0
1	B	429	ILE	3.0
1	B	133[A]	MET	3.0
1	A	103	GLN	2.9
1	B	3	LEU	2.9
1	A	229	PHE	2.9
1	A	39	LYS	2.8
1	A	302	GLY	2.8
1	A	292	THR	2.8
1	B	246	ASP	2.8
1	A	62	VAL	2.8
1	A	256	GLY	2.8
1	B	37	ALA	2.7
1	A	124	GLN	2.7
1	A	7[A]	LEU	2.7
1	B	134	LEU	2.7
1	B	198	LEU	2.7
1	A	152	THR	2.7
1	B	280	GLU	2.7
1	B	258	LYS	2.7
1	A	64	ALA	2.6
1	A	291	SER	2.6
1	A	47	LEU	2.5
1	B	226	TYR	2.5
1	B	314	PHE	2.5
1	A	131	LYS	2.4
1	B	135	ASN	2.4
1	A	262	ILE	2.4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	A	41	TRP	2.4
1	A	58	CYS	2.4
1	B	152	THR	2.4
1	A	11	GLU	2.4
1	B	317	ILE	2.3
1	B	411	ALA	2.3
1	B	4	ASP	2.3
1	A	269	ILE	2.3
1	B	35	ILE	2.3
1	A	149	ASP	2.3
1	B	1	MET	2.2
1	B	264	THR	2.2
1	A	317	ILE	2.2
1	B	150	GLU	2.2
1	B	197	VAL	2.2
1	A	110	ASP	2.2
1	A	127	GLU	2.2
1	A	53	LYS	2.2
1	B	129	ARG	2.2
1	A	49	GLU	2.2
1	B	293	CYS	2.2
1	A	227	PRO	2.1
1	A	415	VAL	2.1
1	A	121	GLU	2.1
1	A	429	ILE	2.1
1	B	262	ILE	2.1
1	A	293	CYS	2.1
1	A	104	LEU	2.1
1	B	136	VAL	2.1
1	A	106	GLN	2.1
1	A	288	ALA	2.0
1	B	444	GLU	2.0
1	B	291	SER	2.0
1	B	210	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

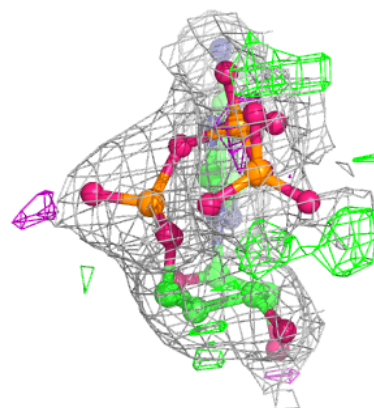
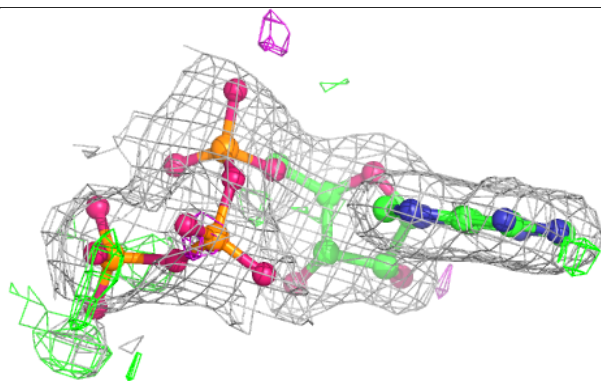
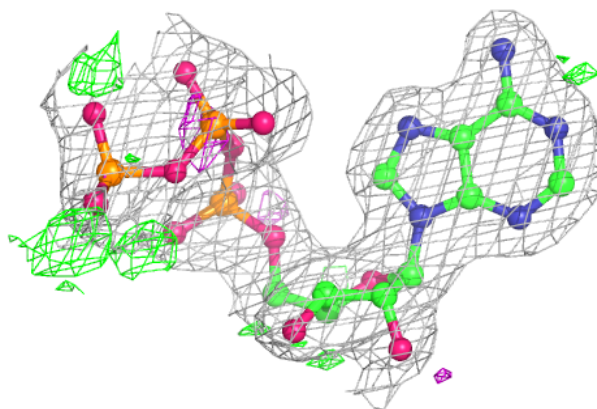
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
3	MLI	A	601	7/7	0.71	0.35	57,62,68,70	0
3	MLI	A	602	7/7	0.90	0.22	48,64,70,73	0
2	ATP	B	501	31/31	0.93	0.10	33,44,75,79	5
2	ATP	A	501	31/31	0.94	0.09	35,44,62,67	8
4	NA	A	600	1/1	0.96	0.08	37,37,37,37	1

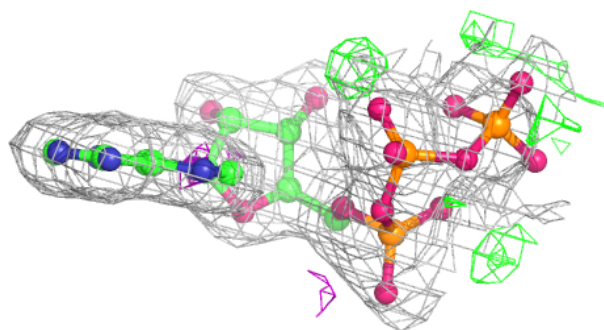
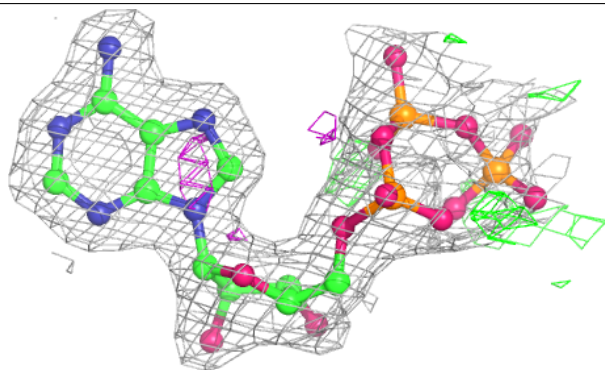
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around ATP B 501:

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

**Electron density around ATP A 501:**

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



6.5 Other polymers

There are no such residues in this entry.