



# Full wwPDB X-ray Structure Validation Report ⓘ

May 24, 2020 – 11:24 am BST

PDB ID : 6NO5  
Title : ADP bound to K46bE&K114bD mutant ATP-grasp fold of Blastocystis hominis succinyl-CoA synthetase  
Authors : Huang, J.; Fraser, M.E.  
Deposited on : 2019-01-15  
Resolution : 2.07 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](mailto: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.

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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

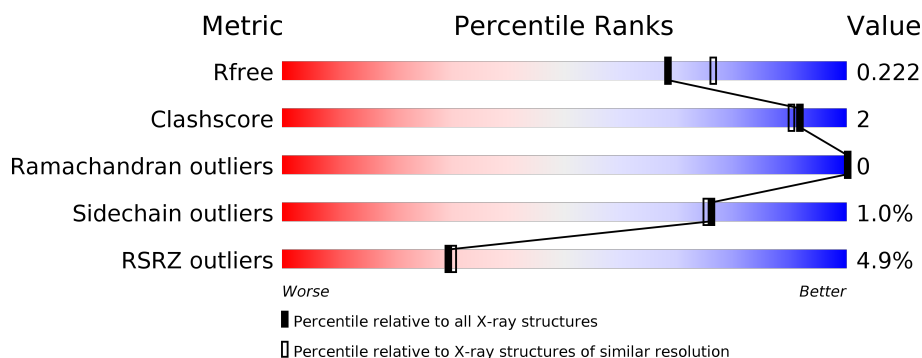
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

## *X-RAY DIFFRACTION*

The reported resolution of this entry is 2.07 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	2684 (2.08-2.04)
Clashscore	141614	2801 (2.08-2.04)
Ramachandran outliers	138981	2768 (2.08-2.04)
Sidechain outliers	138945	2768 (2.08-2.04)
RSRZ outliers	127900	2646 (2.08-2.04)

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  $\geq 3$ , 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	250	<div> <div>2%</div> <div> <div></div> <div>94%</div> <div>••</div> </div> </div>
1	B	250	<div> <div>6%</div> <div> <div></div> <div>88%</div> <div>6% 6%</div> </div> </div>
1	C	250	<div> <div>5%</div> <div> <div></div> <div>86%</div> <div>• 12%</div> </div> </div>
1	D	250	<div> <div>5%</div> <div> <div></div> <div>89%</div> <div>• 7%</div> </div> </div>

## 2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 14925 atoms, of which 7306 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 Succinate–CoA ligase [ADP-forming] subunit beta.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	239	Total	C	H	N	O	S	0	1	0
			3686	1157	1858	310	344	17			
1	B	234	Total	C	H	N	O	S	0	2	0
			3619	1133	1827	304	337	18			
1	C	221	Total	C	H	N	O	S	0	1	0
			3419	1074	1725	289	316	15			
1	D	233	Total	C	H	N	O	S	0	2	0
			3604	1130	1820	302	334	18			

There are 56 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	MET	-	initiating methionine	UNP B3FHP0
A	46	GLU	LYS	engineered mutation	UNP B3FHP0
A	114	ASP	LYS	engineered mutation	UNP B3FHP0
A	240	GLY	-	expression tag	UNP B3FHP0
A	241	LEU	-	expression tag	UNP B3FHP0
A	242	GLU	-	expression tag	UNP B3FHP0
A	243	HIS	-	expression tag	UNP B3FHP0
A	244	HIS	-	expression tag	UNP B3FHP0
A	245	HIS	-	expression tag	UNP B3FHP0
A	246	HIS	-	expression tag	UNP B3FHP0
A	247	HIS	-	expression tag	UNP B3FHP0
A	248	HIS	-	expression tag	UNP B3FHP0
A	249	HIS	-	expression tag	UNP B3FHP0
A	250	HIS	-	expression tag	UNP B3FHP0
B	1	MET	-	initiating methionine	UNP B3FHP0
B	46	GLU	LYS	engineered mutation	UNP B3FHP0
B	114	ASP	LYS	engineered mutation	UNP B3FHP0
B	240	GLY	-	expression tag	UNP B3FHP0
B	241	LEU	-	expression tag	UNP B3FHP0
B	242	GLU	-	expression tag	UNP B3FHP0
B	243	HIS	-	expression tag	UNP B3FHP0

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Chain	Residue	Modelled	Actual	Comment	Reference
B	244	HIS	-	expression tag	UNP B3FHP0
B	245	HIS	-	expression tag	UNP B3FHP0
B	246	HIS	-	expression tag	UNP B3FHP0
B	247	HIS	-	expression tag	UNP B3FHP0
B	248	HIS	-	expression tag	UNP B3FHP0
B	249	HIS	-	expression tag	UNP B3FHP0
B	250	HIS	-	expression tag	UNP B3FHP0
C	1	MET	-	initiating methionine	UNP B3FHP0
C	46	GLU	LYS	engineered mutation	UNP B3FHP0
C	114	ASP	LYS	engineered mutation	UNP B3FHP0
C	240	GLY	-	expression tag	UNP B3FHP0
C	241	LEU	-	expression tag	UNP B3FHP0
C	242	GLU	-	expression tag	UNP B3FHP0
C	243	HIS	-	expression tag	UNP B3FHP0
C	244	HIS	-	expression tag	UNP B3FHP0
C	245	HIS	-	expression tag	UNP B3FHP0
C	246	HIS	-	expression tag	UNP B3FHP0
C	247	HIS	-	expression tag	UNP B3FHP0
C	248	HIS	-	expression tag	UNP B3FHP0
C	249	HIS	-	expression tag	UNP B3FHP0
C	250	HIS	-	expression tag	UNP B3FHP0
D	1	MET	-	initiating methionine	UNP B3FHP0
D	46	GLU	LYS	engineered mutation	UNP B3FHP0
D	114	ASP	LYS	engineered mutation	UNP B3FHP0
D	240	GLY	-	expression tag	UNP B3FHP0
D	241	LEU	-	expression tag	UNP B3FHP0
D	242	GLU	-	expression tag	UNP B3FHP0
D	243	HIS	-	expression tag	UNP B3FHP0
D	244	HIS	-	expression tag	UNP B3FHP0
D	245	HIS	-	expression tag	UNP B3FHP0
D	246	HIS	-	expression tag	UNP B3FHP0
D	247	HIS	-	expression tag	UNP B3FHP0
D	248	HIS	-	expression tag	UNP B3FHP0
D	249	HIS	-	expression tag	UNP B3FHP0
D	250	HIS	-	expression tag	UNP B3FHP0

- Molecule 2 is ADENOSINE-5'-DIPHOSPHATE (three-letter code: ADP) (formula:  $C_{10}H_{15}N_5O_{10}P_2$ ) (labeled as "Ligand of Interest" by author).

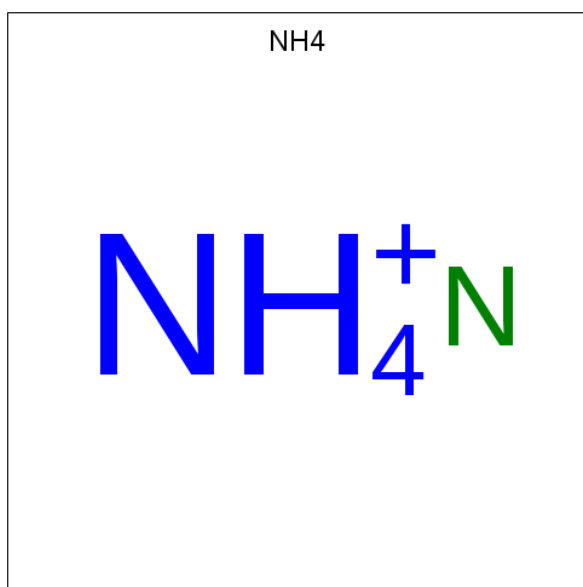


Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
2	A	1	Total	C	H	N	O	P	0	0
			42	10	15	5	10	2		
2	B	1	Total	C	H	N	O	P	0	0
			42	10	15	5	10	2		
2	C	1	Total	C	H	N	O	P	0	0
			42	10	15	5	10	2		
2	D	1	Total	C	H	N	O	P	0	0
			42	10	15	5	10	2		

- Molecule 3 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	B	1	Total	Mg	0	0
			1	1		
3	A	1	Total	Mg	0	0
			1	1		
3	D	1	Total	Mg	0	0
			1	1		
3	C	1	Total	Mg	0	0
			1	1		

- Molecule 4 is AMMONIUM ION (three-letter code: NH4) (formula: H<sub>4</sub>N).



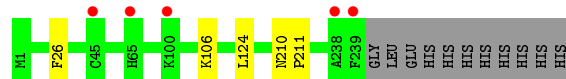
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	B	1	Total	H	N	0	0
			5	4	1		
4	B	1	Total	H	N	0	0
			5	4	1		
4	C	1	Total	H	N	0	0
			5	4	1		
4	D	1	Total	H	N	0	0
			5	4	1		

- Molecule 5 is water.

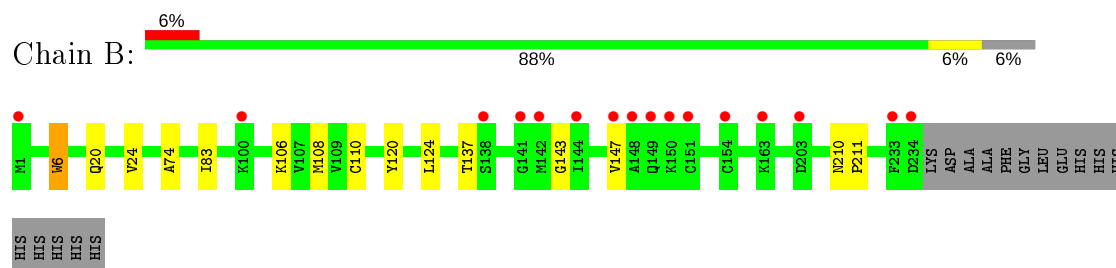
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	138	Total	O	0	0
			138	138		
5	B	94	Total	O	0	0
			94	94		
5	C	87	Total	O	0	0
			87	87		
5	D	86	Total	O	0	0
			86	86		



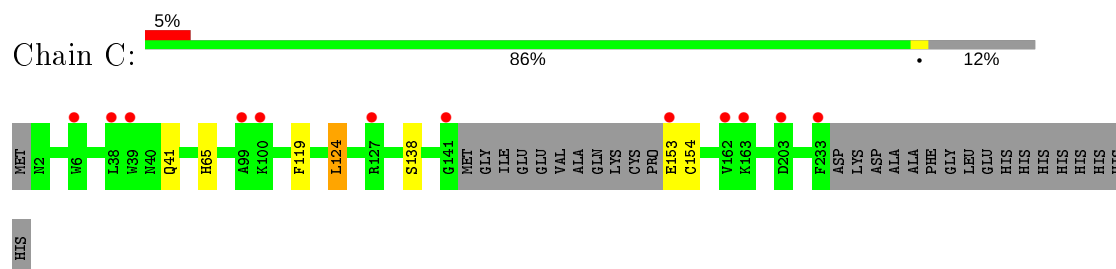
- Molecule 1: Succinate-CoA ligase [ADP-forming] subunit beta



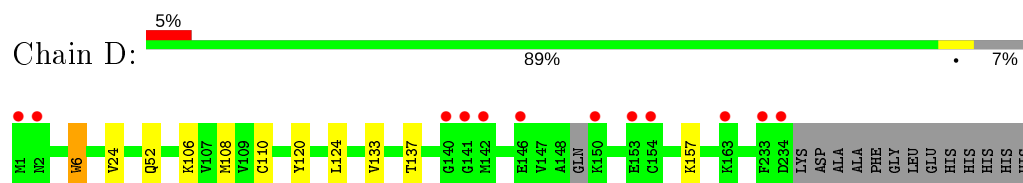
- Molecule 1: Succinate-CoA ligase [ADP-forming] subunit beta



- Molecule 1: Succinate-CoA ligase [ADP-forming] subunit beta



- Molecule 1: Succinate-CoA ligase [ADP-forming] subunit beta



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	89.05Å 82.49Å 91.25Å 90.00° 118.92° 90.00°	Depositor
Resolution (Å)	36.65 – 2.07 36.65 – 2.07	Depositor EDS
% Data completeness (in resolution range)	99.8 (36.65-2.07) 99.8 (36.65-2.07)	Depositor EDS
$R_{merge}$	0.10	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.70 (at 2.06Å)	Xtriage
Refinement program	PHENIX dev_3311	Depositor
R, $R_{free}$	0.194 , 0.222 0.194 , 0.222	Depositor DCC
$R_{free}$ test set	3505 reflections (4.97%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	37.3	Xtriage
Anisotropy	0.114	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.37 , 40.3	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.50$ , $\langle L^2 \rangle = 0.34$	Xtriage
Estimated twinning fraction	0.000 for -h-l,k,h 0.000 for l,k,-h-l 0.012 for h,-k,-h-l 0.012 for -h-l,-k,l 0.037 for l,-k,h	Xtriage
$F_o, F_c$ correlation	0.96	EDS
Total number of atoms	14925	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	54.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 9.37% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>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: NH4, MG, ADP

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	0.27	0/1863	0.47	0/2509
1	B	0.28	0/1832	0.48	0/2467
1	C	0.27	0/1727	0.48	0/2325
1	D	0.28	0/1821	0.47	0/2452
All	All	0.28	0/7243	0.47	0/9753

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 [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	1828	1858	1856	2	0
1	B	1792	1827	1821	9	0
1	C	1694	1725	1721	5	0
1	D	1784	1820	1816	7	0
2	A	27	15	12	0	0
2	B	27	15	12	0	0
2	C	27	15	12	0	0
2	D	27	15	12	0	0
3	A	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	1	0	0	0	0
3	C	1	0	0	0	0
3	D	1	0	0	0	0
4	B	2	8	0	0	0
4	C	1	4	0	0	0
4	D	1	4	0	0	0
5	A	138	0	0	0	0
5	B	94	0	0	0	0
5	C	87	0	0	0	0
5	D	86	0	0	0	0
All	All	7619	7306	7262	23	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 (23) 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:B:120:TYR:HB3	1:B:137:THR:HG22	1.68	0.74
1:D:6:TRP:CD2	1:D:24[A]:VAL:HG21	2.30	0.66
1:B:6:TRP:CG	1:B:24:VAL:HG21	2.41	0.56
1:B:6:TRP:CD2	1:B:24:VAL:HG21	2.43	0.54
1:D:120:TYR:HB3	1:D:137:THR:HG22	1.90	0.54
1:D:52:GLN:HB2	1:D:106:LYS:HG3	1.90	0.53
1:D:6:TRP:CE2	1:D:24[A]:VAL:HG21	2.48	0.49
1:C:119:PHE:CD1	1:C:138:SER:HA	2.52	0.44
1:B:108[A]:MET:HG2	1:B:110:CYS:SG	2.58	0.43
1:D:6:TRP:CG	1:D:24[A]:VAL:HG21	2.52	0.43
1:B:210:ASN:HA	1:B:211:PRO:HA	1.86	0.43
1:C:119:PHE:HD1	1:C:138:SER:HA	1.83	0.43
1:B:20:GLN:O	1:B:108[A]:MET:HE1	2.19	0.42
1:B:6:TRP:HB3	1:B:108[B]:MET:HE2	2.00	0.42
1:A:26:PHE:CE2	1:A:106:LYS:HD3	2.54	0.42
1:D:108:MET:SD	1:D:110[B]:CYS:SG	3.17	0.42
1:C:153:GLU:HG2	1:C:154:CYS:N	2.35	0.42
1:B:143:GLY:O	1:B:147:VAL:HG23	2.20	0.41
1:C:124:LEU:HD12	1:C:124:LEU:O	2.21	0.41
1:A:210:ASN:HA	1:A:211:PRO:HA	1.89	0.41
1:D:133:VAL:HG11	1:D:157:LYS:HG3	2.03	0.40
1:B:74:ALA:HB2	1:B:83:ILE:HD12	2.03	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	238/250 (95%)	236 (99%)	2 (1%)	0	100	100
1	B	234/250 (94%)	231 (99%)	3 (1%)	0	100	100
1	C	218/250 (87%)	216 (99%)	2 (1%)	0	100	100
1	D	231/250 (92%)	229 (99%)	2 (1%)	0	100	100
All	All	921/1000 (92%)	912 (99%)	9 (1%)	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	199/208 (96%)	198 (100%)	1 (0%)	88	89
1	B	197/208 (95%)	194 (98%)	3 (2%)	65	62
1	C	185/208 (89%)	183 (99%)	2 (1%)	73	72
1	D	196/208 (94%)	194 (99%)	2 (1%)	76	75
All	All	777/832 (93%)	769 (99%)	8 (1%)	76	75

All (8) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	124	LEU
1	B	6	TRP
1	B	106	LYS
1	B	124	LEU
1	C	65	HIS
1	C	124	LEU
1	D	6	TRP
1	D	124	LEU

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 12 ligands modelled in this entry, 4 are modelled with single atom and 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	$\# Z  > 2$
2	ADP	B	301	3	24,29,29	0.61	0	29,45,45	0.69	1 (3%)
2	ADP	C	301	3	24,29,29	0.60	0	29,45,45	0.65	1 (3%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
2	ADP	A	301	3	24,29,29	0.59	0	29,45,45	0.68	1 (3%)
2	ADP	D	301	3	24,29,29	0.59	0	29,45,45	0.65	1 (3%)

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	ADP	B	301	3	-	3/12/32/32	0/3/3/3
2	ADP	C	301	3	-	2/12/32/32	0/3/3/3
2	ADP	A	301	3	-	3/12/32/32	0/3/3/3
2	ADP	D	301	3	-	2/12/32/32	0/3/3/3

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	301	ADP	C5-C6-N6	2.40	124.00	120.35
2	B	301	ADP	C5-C6-N6	2.33	123.89	120.35
2	D	301	ADP	C5-C6-N6	2.26	123.78	120.35
2	C	301	ADP	C5-C6-N6	2.24	123.75	120.35

There are no chirality outliers.

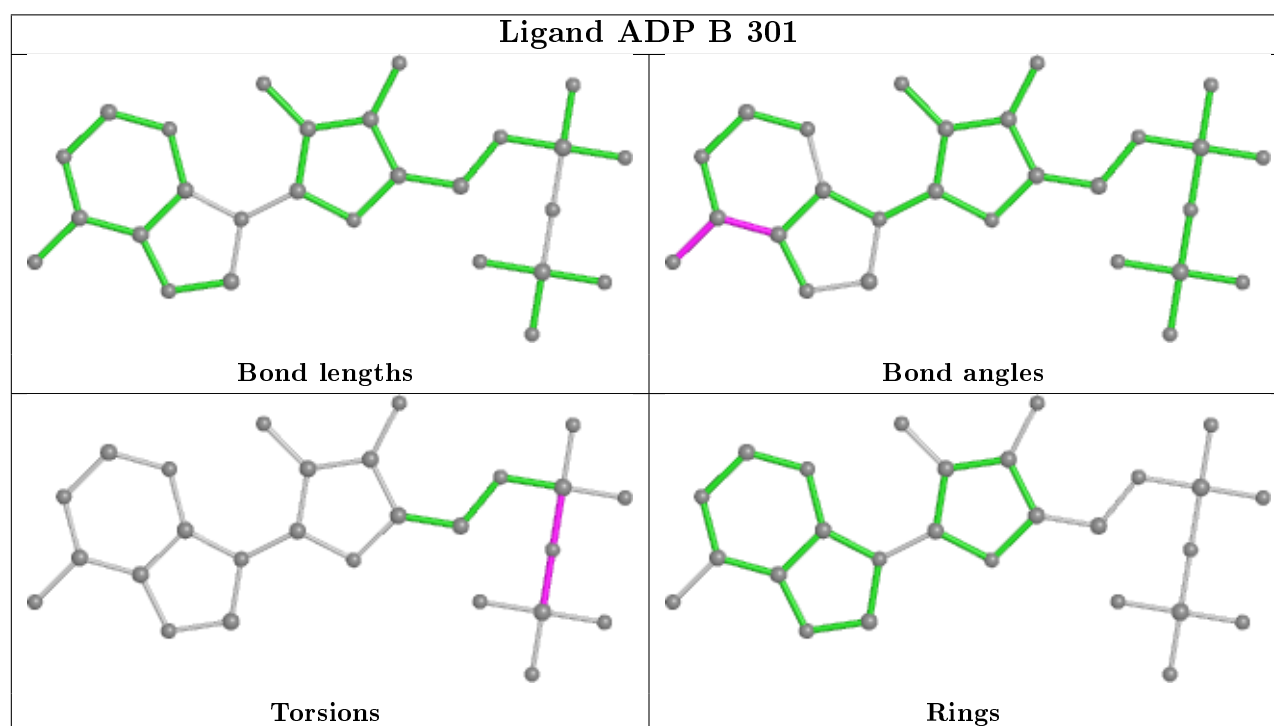
All (10) torsion outliers are listed below:

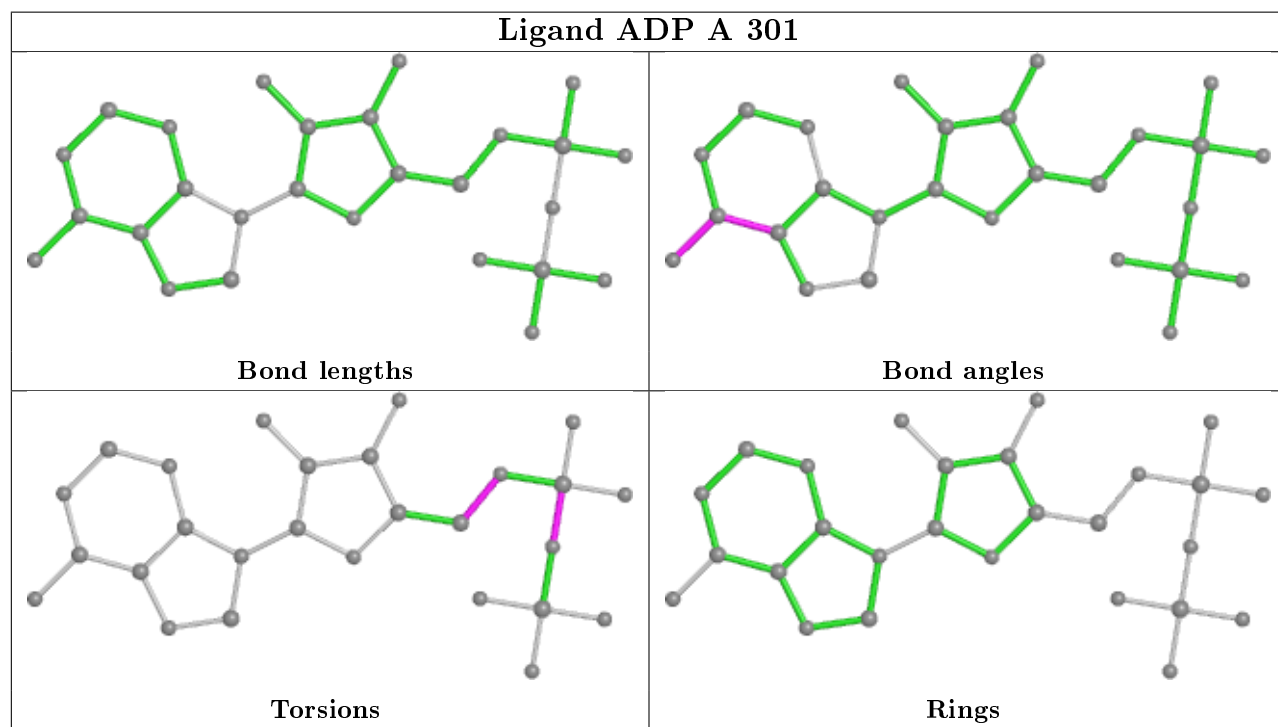
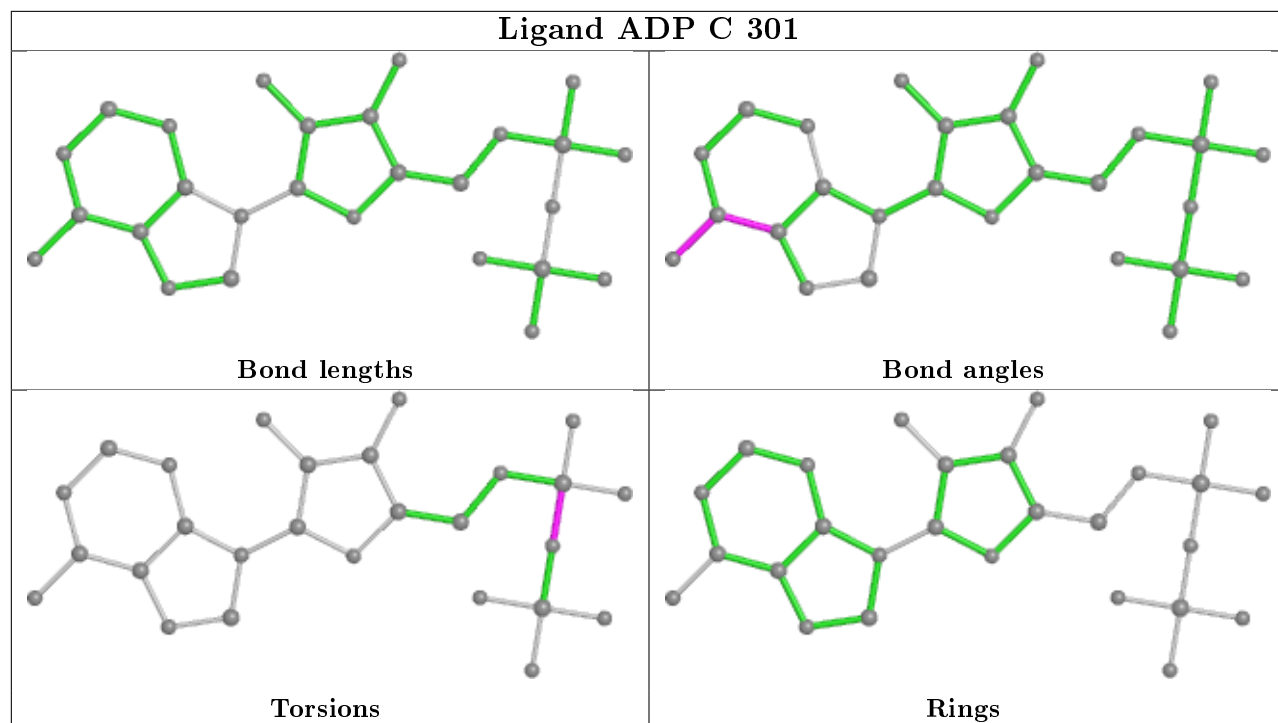
Mol	Chain	Res	Type	Atoms
2	D	301	ADP	PB-O3A-PA-O1A
2	B	301	ADP	PB-O3A-PA-O1A
2	C	301	ADP	PB-O3A-PA-O1A
2	A	301	ADP	PB-O3A-PA-O1A
2	C	301	ADP	PB-O3A-PA-O2A
2	B	301	ADP	PA-O3A-PB-O1B
2	D	301	ADP	PB-O3A-PA-O2A
2	B	301	ADP	PB-O3A-PA-O2A
2	A	301	ADP	C4'-C5'-O5'-PA
2	A	301	ADP	PB-O3A-PA-O2A

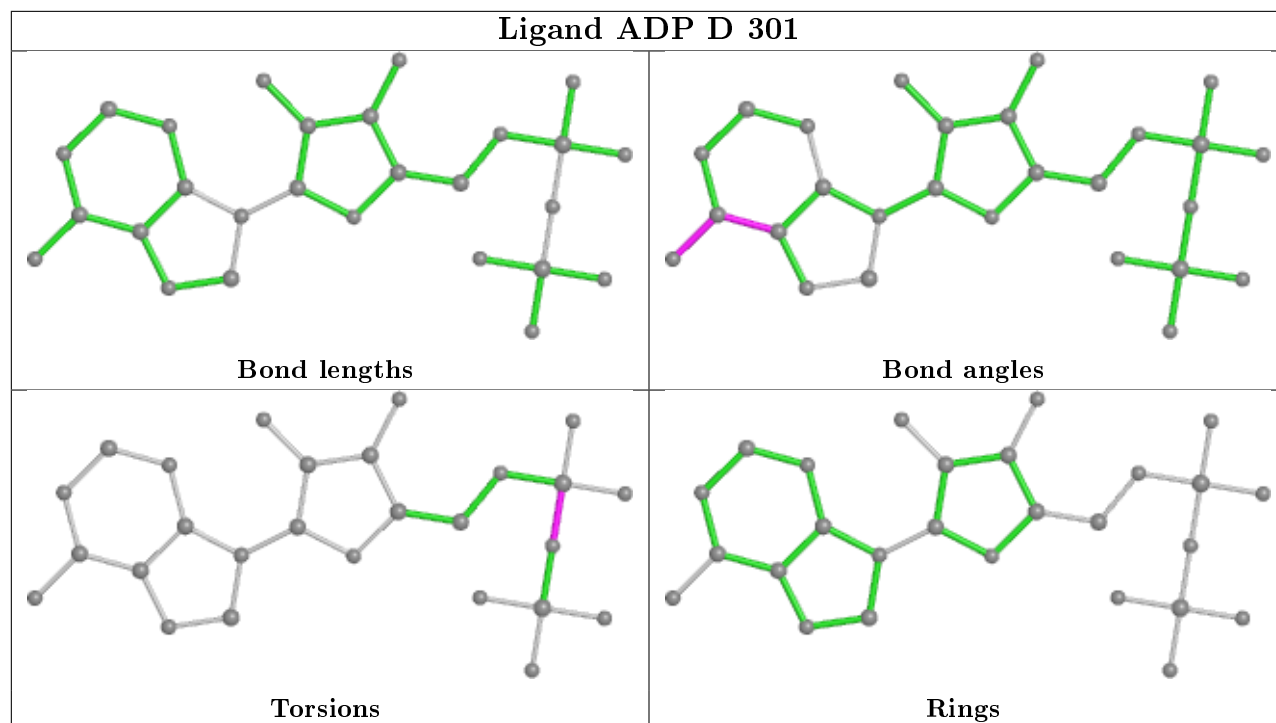
There are no ring outliers.

No monomer is involved in short contacts.

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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	239/250 (95%)	0.07	5 (2%) 63 65	30, 41, 87, 108	0
1	B	234/250 (93%)	0.08	16 (6%) 17 18	29, 44, 95, 114	0
1	C	221/250 (88%)	0.21	12 (5%) 25 26	30, 46, 82, 103	0
1	D	233/250 (93%)	0.16	12 (5%) 27 27	30, 45, 92, 119	0
All	All	927/1000 (92%)	0.13	45 (4%) 29 30	29, 44, 87, 119	0

All (45) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	151	CYS	5.0
1	A	239	PHE	5.0
1	D	1	MET	4.4
1	D	141	GLY	4.4
1	D	234	ASP	4.2
1	B	1	MET	4.0
1	D	154	CYS	3.9
1	C	100	LYS	3.9
1	A	238	ALA	3.5
1	B	147	VAL	3.5
1	B	163	LYS	3.4
1	D	146	GLU	3.3
1	C	153	GLU	3.3
1	C	163	LYS	3.3
1	D	163	LYS	3.2
1	A	100	LYS	3.0
1	D	150	LYS	3.0
1	B	142	MET	3.0
1	C	141	GLY	3.0
1	D	233	PHE	2.9
1	B	234	ASP	2.7

*Continued on next page...*

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Mol	Chain	Res	Type	RSRZ
1	B	150	LYS	2.7
1	C	233	PHE	2.7
1	B	144	ILE	2.6
1	B	203	ASP	2.6
1	C	39	TRP	2.6
1	B	149	GLN	2.6
1	C	99	ALA	2.5
1	B	138	SER	2.5
1	D	2	ASN	2.5
1	B	233	PHE	2.3
1	A	65	HIS	2.3
1	C	127	ARG	2.3
1	B	100	LYS	2.3
1	D	140	GLY	2.3
1	D	142	MET	2.3
1	B	141	GLY	2.2
1	C	162	VAL	2.2
1	C	203	ASP	2.1
1	A	45	CYS	2.1
1	D	153	GLU	2.0
1	C	38	LEU	2.0
1	B	148	ALA	2.0
1	C	6	TRP	2.0
1	B	154	CYS	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](#)

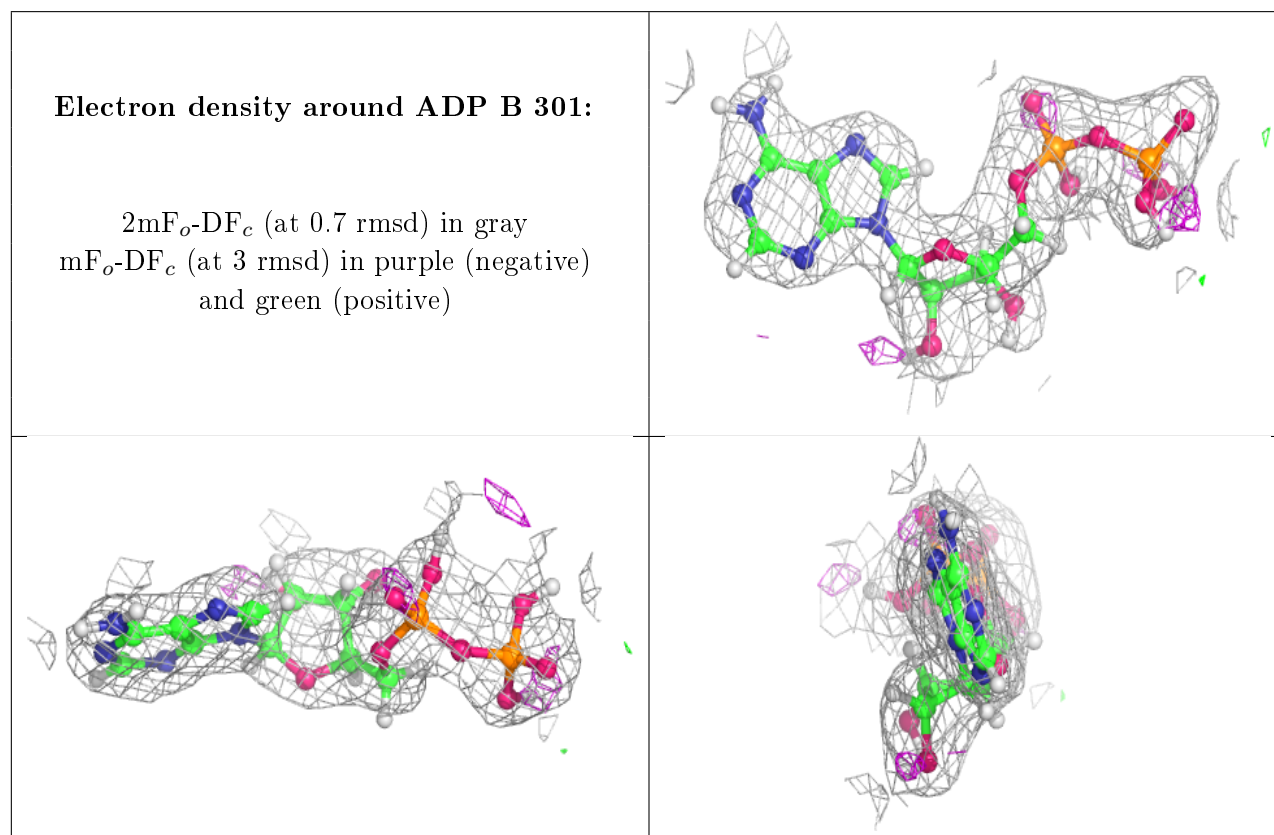
There are no carbohydrates in this entry.

## 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. The B-factors column lists the minimum, median, 95<sup>th</sup> 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.

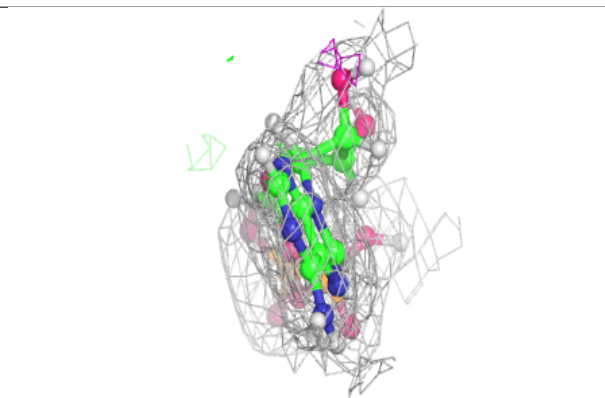
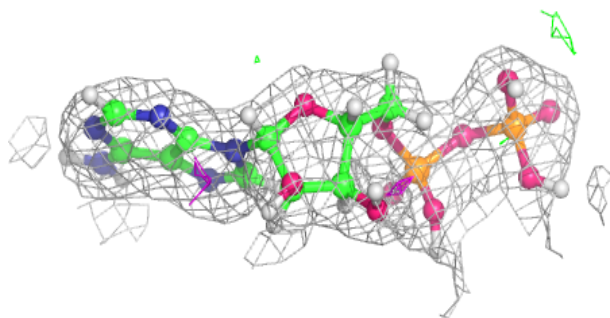
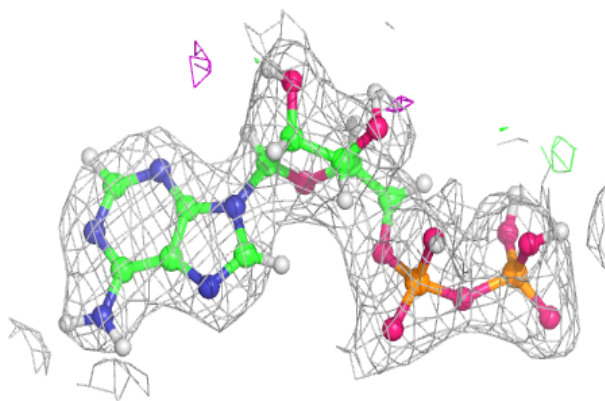
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
4	NH4	B	303	1/1	0.77	0.13	45,54,54,54	0
4	NH4	C	303	1/1	0.88	0.13	47,57,57,57	0
4	NH4	D	303	1/1	0.91	0.13	46,56,56,56	0
3	MG	A	302	1/1	0.93	0.08	37,37,37,37	0
3	MG	B	302	1/1	0.93	0.07	42,42,42,42	0
3	MG	C	302	1/1	0.93	0.06	46,46,46,46	0
3	MG	D	302	1/1	0.95	0.14	39,39,39,39	0
2	ADP	B	301	27/27	0.96	0.10	37,47,58,63	0
4	NH4	B	304	1/1	0.96	0.07	49,58,58,58	0
2	ADP	A	301	27/27	0.97	0.10	35,43,52,56	0
2	ADP	D	301	27/27	0.98	0.10	35,42,53,54	0
2	ADP	C	301	27/27	0.98	0.09	35,44,57,60	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.

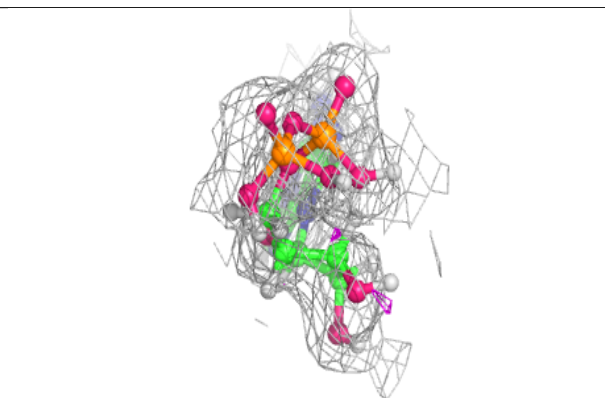
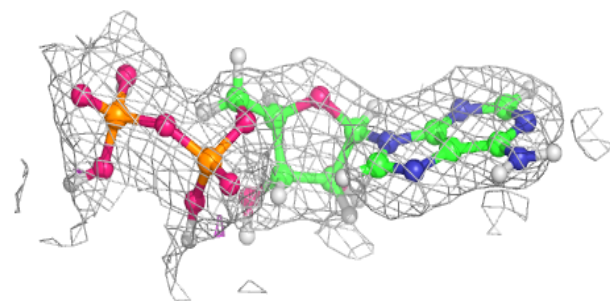
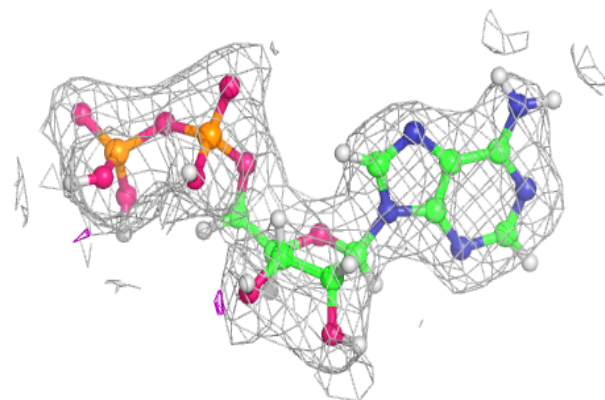


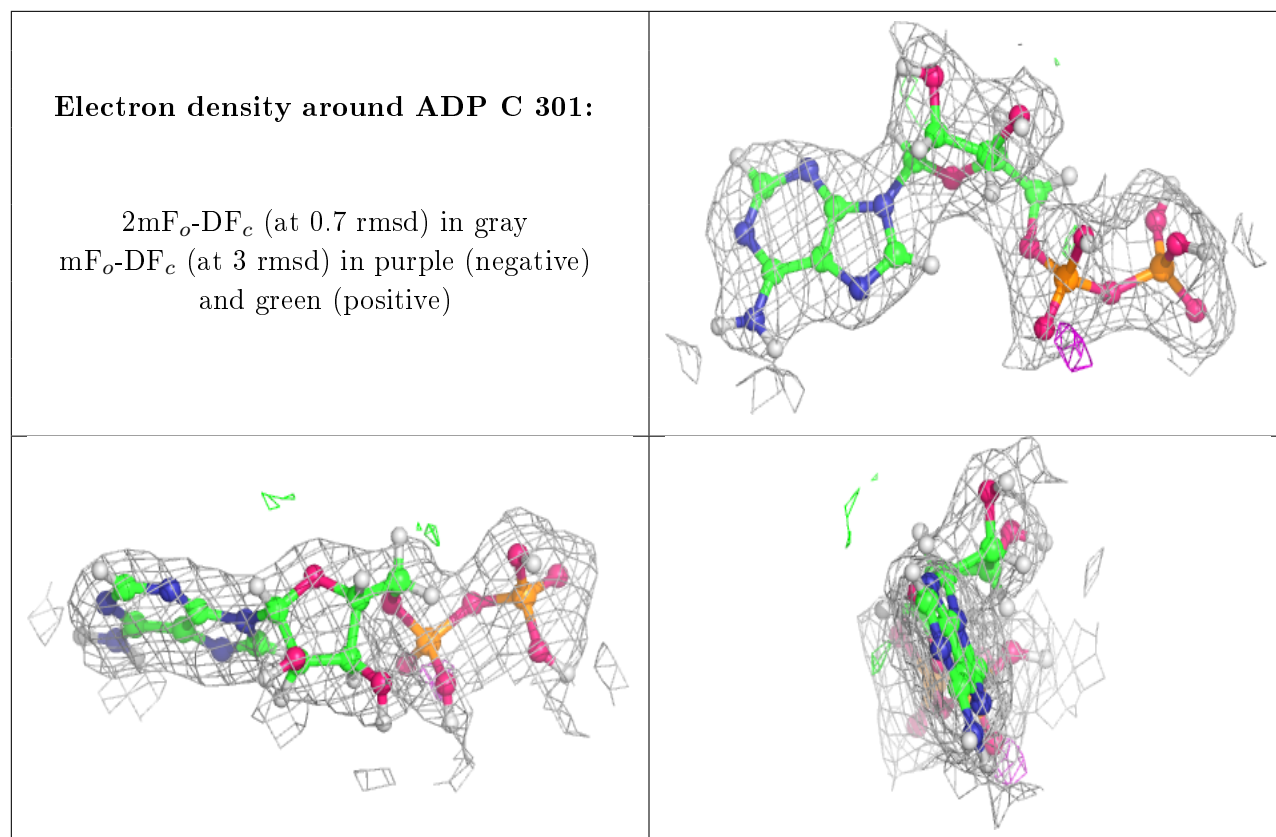
**Electron density around ADP A 301:**

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

**Electron density around ADP D 301:**

$2mF_o-DF_c$  (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.