



# Full wwPDB X-ray Structure Validation Report ⓘ

Oct 15, 2023 – 09:52 PM EDT

PDB ID : 8FV7  
Title : E coli. CTP synthase in complex with dF-dCTP + ATP  
Authors : Holyoak, T.; McLeod, M.J.; Tran, N.  
Deposited on : 2023-01-18  
Resolution : 2.08 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.

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 ⓘ](#)) 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 : 2.36  
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) : 2.36

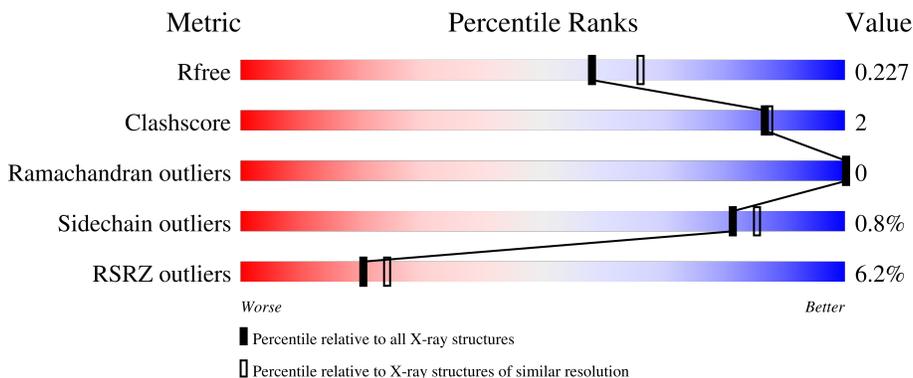
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.08 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	6189 (2.10-2.06)
Clashscore	141614	6738 (2.10-2.06)
Ramachandran outliers	138981	6663 (2.10-2.06)
Sidechain outliers	138945	6664 (2.10-2.06)
RSRZ outliers	127900	6057 (2.10-2.06)

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  $\geq 3$ , 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	AAA	545	
1	BBB	545	

## 2 Entry composition [i](#)

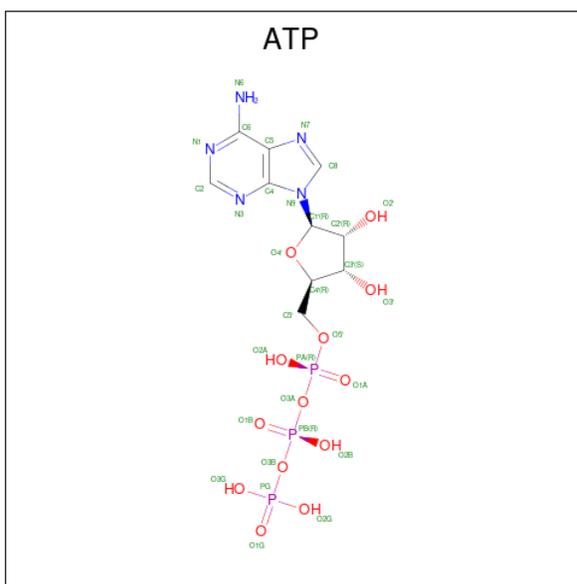
There are 5 unique types of molecules in this entry. The entry contains 9334 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 CTP synthase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	AAA	535	Total 4285	C 2707	N 756	O 797	S 25	0	16	0
1	BBB	535	Total 4264	C 2695	N 742	O 803	S 24	0	14	0

- Molecule 2 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula:  $C_{10}H_{16}N_5O_{13}P_3$ ).

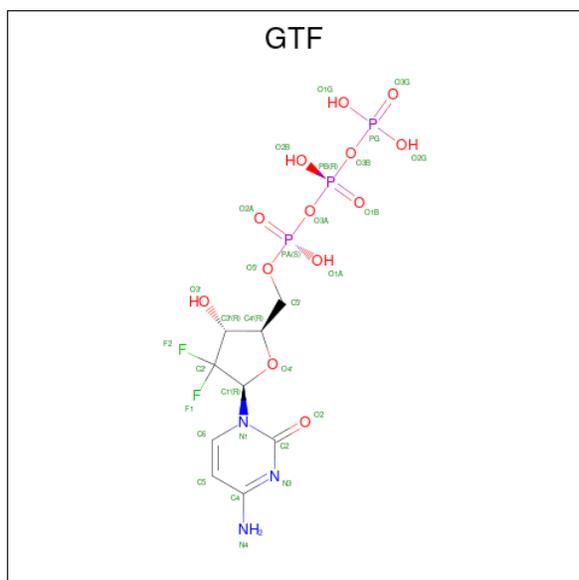


Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	P		
2	AAA	1	Total 31	C 10	N 5	O 13	P 3	0	0
2	BBB	1	Total 31	C 10	N 5	O 13	P 3	0	0

- Molecule 3 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	AAA	2	Total Na 2 2	0	0
3	BBB	2	Total Na 2 2	0	0

- Molecule 4 is 2'-deoxy-2',2'-difluorocytidine 5'-(tetrahydrogen triphosphate) (three-letter code: GTF) (formula: C<sub>9</sub>H<sub>14</sub>F<sub>2</sub>N<sub>3</sub>O<sub>13</sub>P<sub>3</sub>) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	
4	BBB	1	Total	C	F	N	O	P	0	0
			30	9	2	3	13	3		
4	BBB	1	Total	C	F	N	O	P	0	0
			30	9	2	3	13	3		

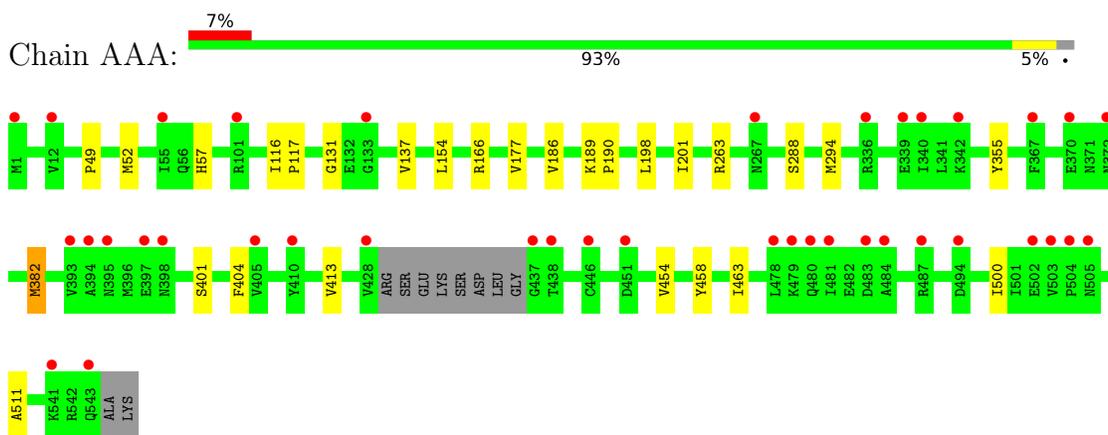
- Molecule 5 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	AAA	309	Total O 309 309	0	0
5	BBB	350	Total O 350 350	0	0

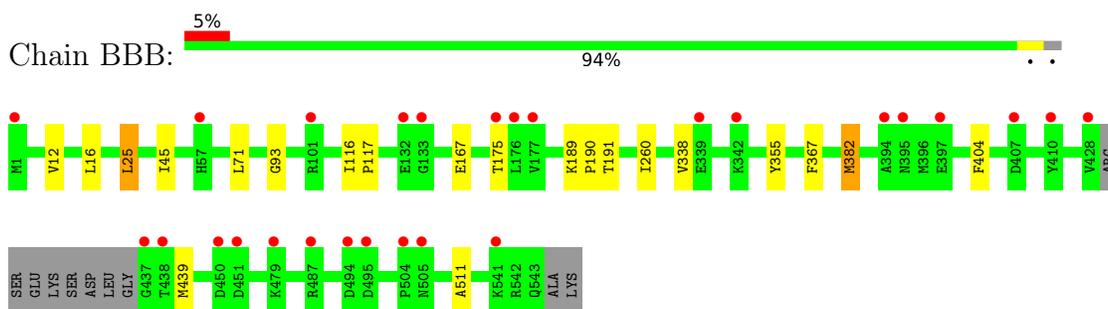
### 3 Residue-property plots [i](#)

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: CTP synthase



- Molecule 1: CTP synthase



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	158.98Å 108.46Å 128.90Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	83.13 – 2.08 82.99 – 2.08	Depositor EDS
% Data completeness (in resolution range)	99.8 (83.13-2.08) 99.8 (82.99-2.08)	Depositor EDS
$R_{merge}$	0.14	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.72 (at 2.08Å)	Xtrriage
Refinement program	REFMAC 5.8.0267	Depositor
R, $R_{free}$	0.203 , 0.222 0.209 , 0.227	Depositor DCC
$R_{free}$ test set	6615 reflections (4.95%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	35.3	Xtrriage
Anisotropy	0.026	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.37 , 40.9	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.50$ , $\langle L^2 \rangle = 0.34$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.95	EDS
Total number of atoms	9334	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	42.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 7.01% 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

### 5.1 Standard geometry

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

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	AAA	0.64	0/4382	0.70	0/5929
1	BBB	0.64	0/4352	0.70	0/5894
All	All	0.64	0/8734	0.70	0/11823

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	AAA	4285	0	4331	19	0
1	BBB	4264	0	4286	18	0
2	AAA	31	0	12	0	0
2	BBB	31	0	12	0	0
3	AAA	2	0	0	0	0
3	BBB	2	0	0	0	0
4	BBB	60	0	20	0	0
5	AAA	309	0	0	0	0
5	BBB	350	0	0	0	0
All	All	9334	0	8661	37	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 (37) 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:BBB:175[B]:THR:HG21	1:BBB:191:THR:HA	1.67	0.77
1:AAA:154:LEU:HD13	1:AAA:201[B]:ILE:CD1	2.27	0.65
1:BBB:175[B]:THR:HG21	1:BBB:191:THR:CA	2.30	0.61
1:AAA:154:LEU:HD13	1:AAA:201[B]:ILE:HD12	1.83	0.59
1:AAA:355:TYR:CD1	1:AAA:404:PHE:HB3	2.38	0.58
1:BBB:355:TYR:CD1	1:BBB:404:PHE:HB3	2.39	0.58
1:BBB:175[B]:THR:HG21	1:BBB:191:THR:OG1	2.03	0.58
1:AAA:263[B]:ARG:HH11	1:AAA:263[B]:ARG:HB3	1.71	0.56
1:AAA:382[B]:MET:HA	1:AAA:511:ALA:HB1	1.87	0.55
1:AAA:166[A]:ARG:NE	1:AAA:166[A]:ARG:HA	2.26	0.51
1:AAA:177:VAL:HG12	1:AAA:186:VAL:HB	1.93	0.51
1:AAA:454:VAL:HG11	1:AAA:500:ILE:HG21	1.94	0.50
1:AAA:166[A]:ARG:HA	1:AAA:166[A]:ARG:HE	1.77	0.49
1:AAA:382[A]:MET:HA	1:AAA:511:ALA:HB1	1.94	0.49
1:AAA:263[B]:ARG:HB3	1:AAA:263[B]:ARG:NH1	2.28	0.48
1:BBB:71:LEU:C	1:BBB:71:LEU:HD12	2.34	0.48
1:BBB:338:VAL:HG11	1:BBB:367:PHE:CD1	2.49	0.47
1:BBB:25[A]:LEU:HD11	1:BBB:260:ILE:HD11	1.97	0.46
1:AAA:52[B]:MET:HG2	1:AAA:57:HIS:CB	2.46	0.45
1:AAA:198:LEU:O	1:AAA:201[B]:ILE:HG12	2.16	0.45
1:BBB:12:VAL:CG2	1:BBB:175[B]:THR:HG23	2.47	0.45
1:BBB:338:VAL:CG1	1:BBB:367:PHE:CD1	3.00	0.45
1:BBB:25[A]:LEU:HD11	1:BBB:260:ILE:CD1	2.47	0.45
1:AAA:458:TYR:CD1	1:AAA:463:ILE:HG21	2.53	0.43
1:BBB:167[B]:GLU:H	1:BBB:167[B]:GLU:CD	2.21	0.43
1:BBB:12:VAL:HG21	1:BBB:175[B]:THR:HG23	2.01	0.43
1:BBB:45:ILE:O	1:BBB:93:GLY:HA3	2.18	0.43
1:AAA:49:PRO:HA	1:AAA:52[A]:MET:SD	2.59	0.43
1:AAA:131:GLY:CA	1:AAA:137:VAL:HG21	2.49	0.43
1:AAA:189:LYS:HB3	1:AAA:190:PRO:HD3	2.01	0.42
1:AAA:401:SER:HA	1:AAA:413:VAL:O	2.19	0.42
1:BBB:382[B]:MET:HA	1:BBB:511:ALA:HB1	2.02	0.41
1:BBB:116:ILE:HA	1:BBB:117:PRO:HA	1.85	0.41
1:AAA:116:ILE:HA	1:AAA:117:PRO:HA	1.87	0.41
1:BBB:189:LYS:HB3	1:BBB:190:PRO:HD3	2.03	0.40
1:BBB:175[B]:THR:HG21	1:BBB:191:THR:CB	2.51	0.40
1:BBB:382[A]:MET:HA	1:BBB:511:ALA:HB1	2.02	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	AAA	547/545 (100%)	537 (98%)	10 (2%)	0	100	100
1	BBB	545/545 (100%)	531 (97%)	14 (3%)	0	100	100
All	All	1092/1090 (100%)	1068 (98%)	24 (2%)	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	AAA	469/461 (102%)	465 (99%)	4 (1%)	78	83
1	BBB	467/461 (101%)	459 (98%)	8 (2%)	60	65
All	All	936/922 (102%)	924 (99%)	12 (1%)	81	74

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

Mol	Chain	Res	Type
1	AAA	288	SER
1	AAA	294	MET
1	AAA	382[A]	MET
1	AAA	382[B]	MET
1	BBB	16[A]	LEU
1	BBB	16[B]	LEU
1	BBB	25[A]	LEU
1	BBB	25[B]	LEU

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
1	BBB	382[A]	MET
1	BBB	382[B]	MET
1	BBB	439[A]	MET
1	BBB	439[B]	MET

Sometimes 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 monosaccharides in this entry.

### 5.6 Ligand geometry [i](#)

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	$\# Z  > 2$
2	ATP	AAA	601	3	26,33,33	0.67	0	31,52,52	0.79	1 (3%)
4	GTF	BBB	701	3	25,31,31	0.58	0	35,50,50	0.99	3 (8%)
2	ATP	BBB	703	3	26,33,33	0.68	0	31,52,52	0.77	1 (3%)
4	GTF	BBB	704	3	25,31,31	0.55	0	35,50,50	0.91	3 (8%)

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	AAA	601	3	-	0/18/38/38	0/3/3/3
4	GTF	BBB	701	3	-	2/22/42/42	0/2/2/2
2	ATP	BBB	703	3	-	1/18/38/38	0/3/3/3
4	GTF	BBB	704	3	-	2/22/42/42	0/2/2/2

There are no bond length outliers.

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	BBB	701	GTF	PB-O3A-PA	2.64	141.88	132.83
4	BBB	701	GTF	F2-C2'-F1	2.54	108.10	105.20
4	BBB	704	GTF	PB-O3A-PA	2.48	141.33	132.83
4	BBB	704	GTF	F2-C2'-F1	2.36	107.89	105.20
4	BBB	701	GTF	C4'-O4'-C1'	-2.21	105.47	109.45
2	BBB	703	ATP	C5-C6-N6	2.20	123.69	120.35
2	AAA	601	ATP	C5-C6-N6	2.17	123.65	120.35
4	BBB	704	GTF	C4'-O4'-C1'	-2.06	105.75	109.45

There are no chirality outliers.

All (5) torsion outliers are listed below:

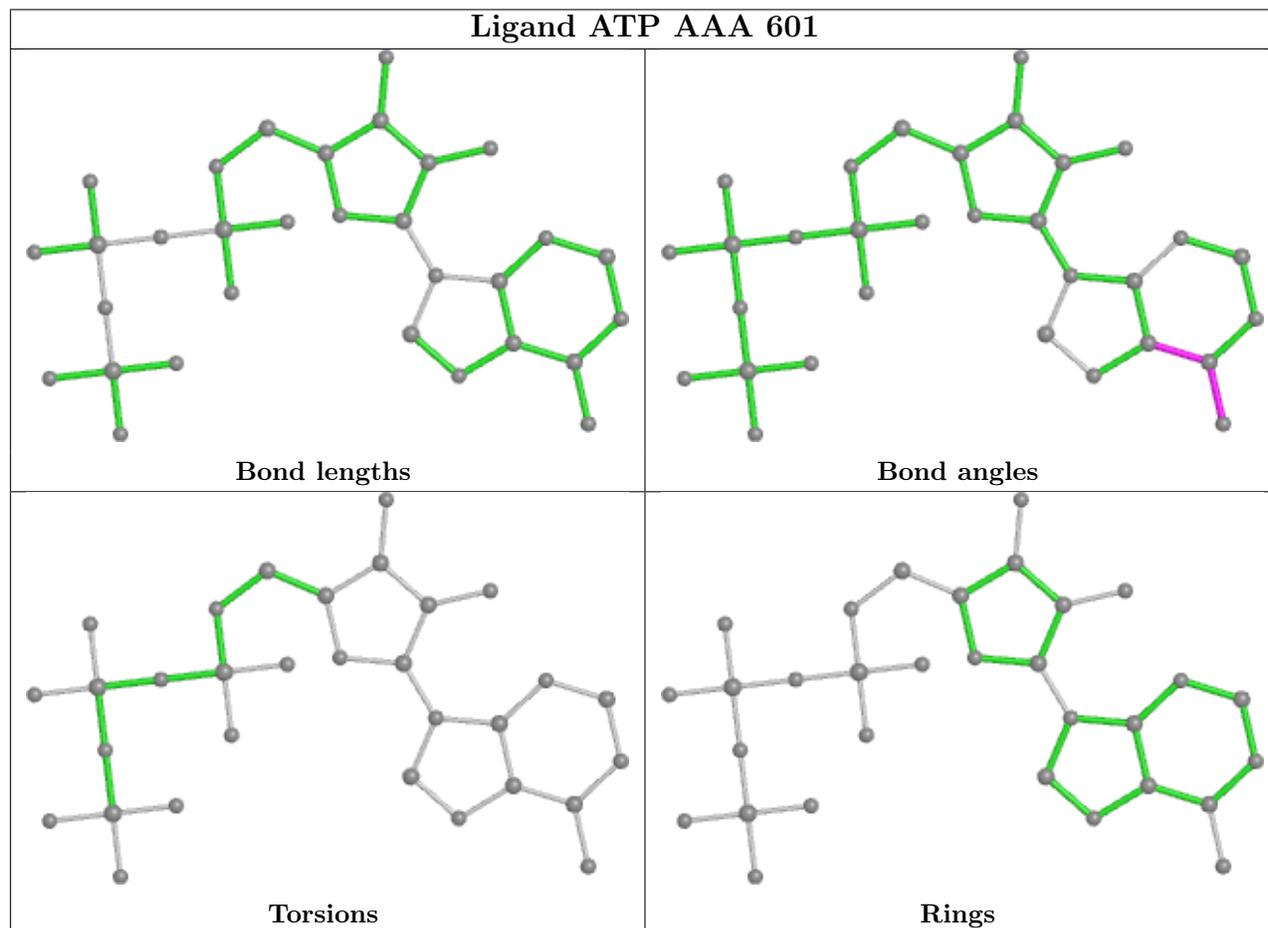
Mol	Chain	Res	Type	Atoms
4	BBB	704	GTF	PB-O3B-PG-O1G
2	BBB	703	ATP	PA-O3A-PB-O2B
4	BBB	701	GTF	PA-O3A-PB-O2B
4	BBB	704	GTF	PA-O3A-PB-O1B
4	BBB	701	GTF	PB-O3B-PG-O3G

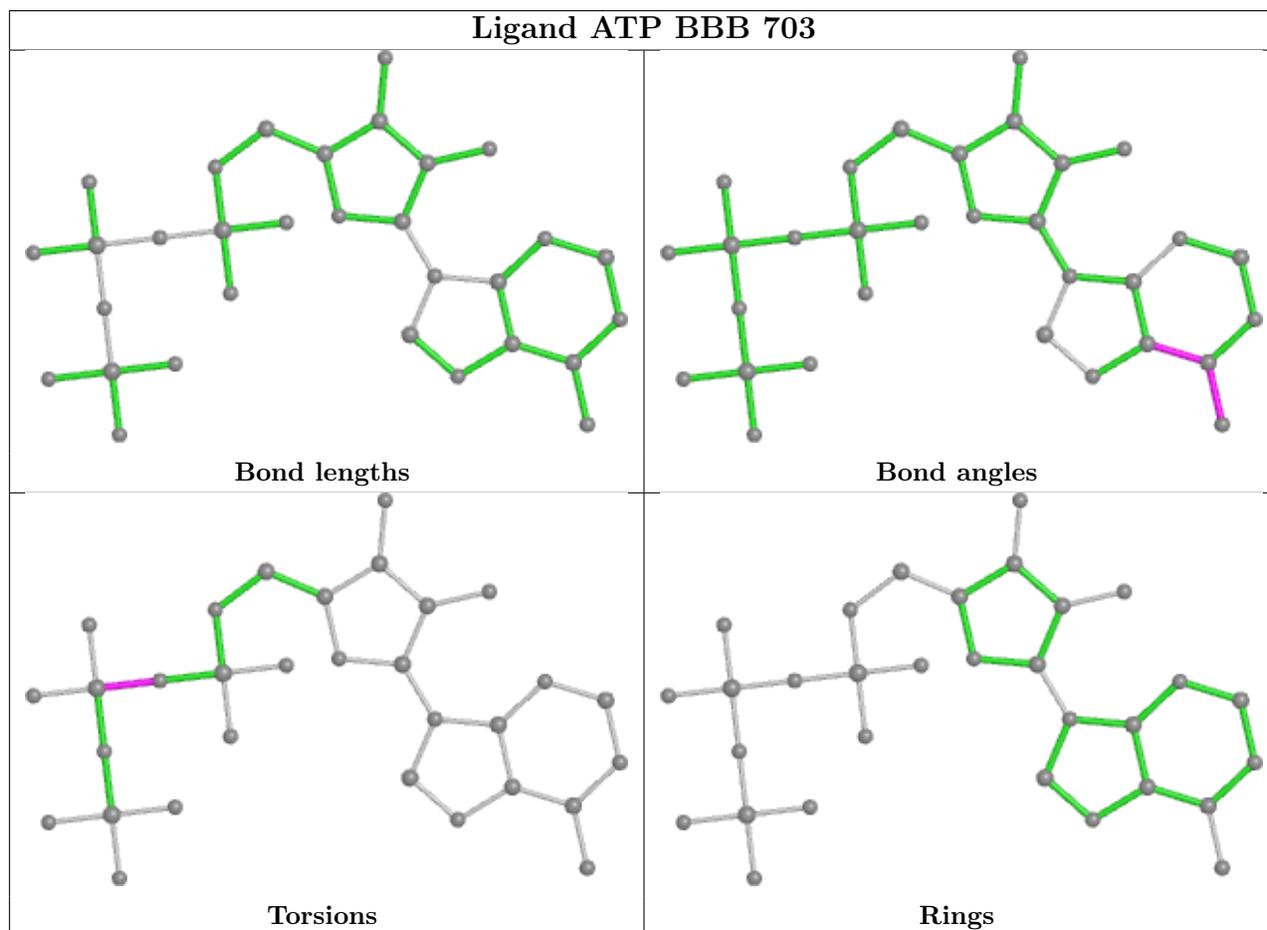
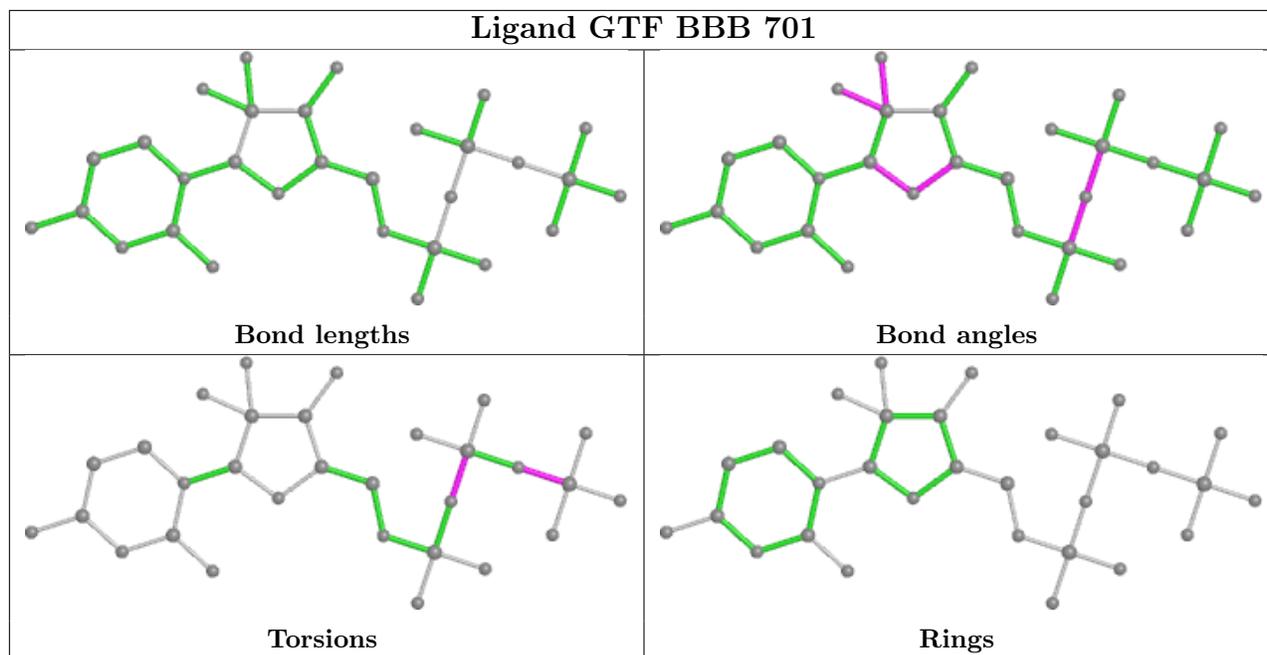
There are no ring outliers.

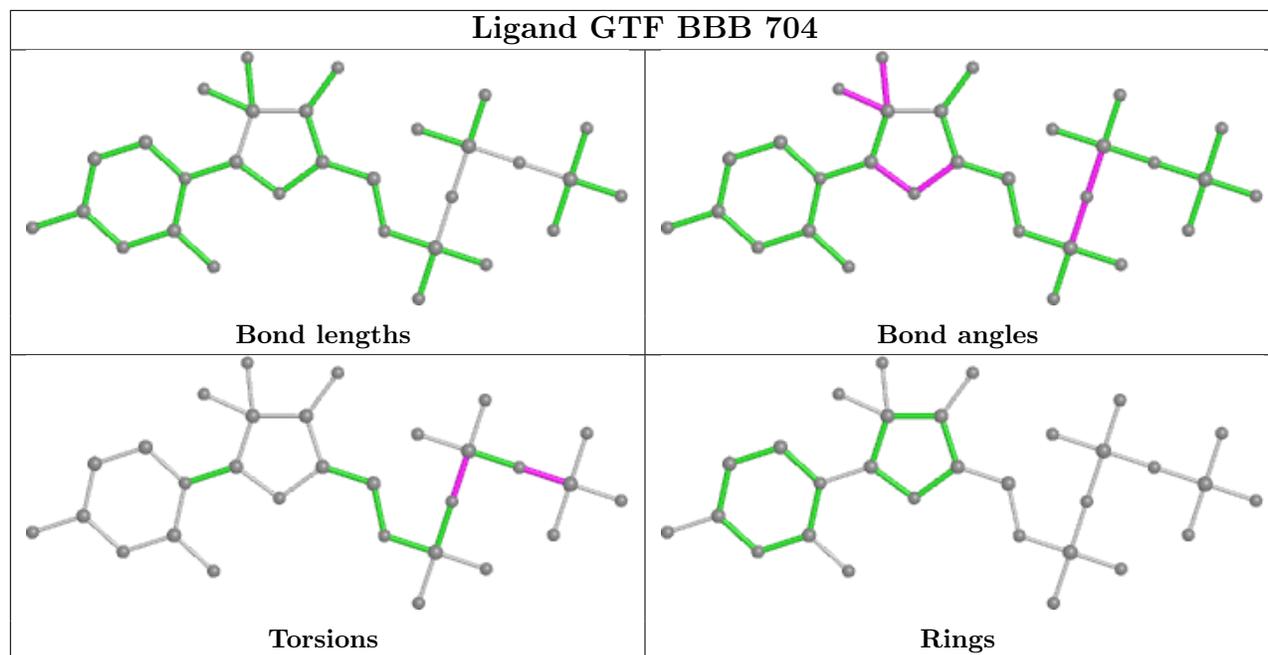
No monomer is involved in short contacts.

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	AAA	535/545 (98%)	0.59	39 (7%) 15 18	24, 41, 68, 84	0
1	BBB	535/545 (98%)	0.44	27 (5%) 28 33	23, 39, 66, 87	0
All	All	1070/1090 (98%)	0.52	66 (6%) 20 24	23, 40, 66, 87	0

All (66) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	AAA	437	GLY	9.6
1	AAA	494	ASP	6.9
1	BBB	428	VAL	5.6
1	AAA	395	ASN	5.6
1	AAA	504	PRO	4.5
1	BBB	1	MET	4.5
1	BBB	504	PRO	4.4
1	AAA	339	GLU	4.4
1	AAA	1	MET	4.1
1	BBB	437	GLY	4.0
1	AAA	481	ILE	4.0
1	BBB	494	ASP	3.8
1	BBB	395	ASN	3.7
1	AAA	394	ALA	3.6
1	BBB	339	GLU	3.6
1	BBB	132	GLU	3.5
1	AAA	543	GLN	3.4
1	AAA	479	LYS	3.3
1	AAA	397	GLU	3.3
1	BBB	505	ASN	3.3
1	AAA	342	LYS	3.2
1	AAA	541	LYS	3.2
1	BBB	394	ALA	3.1
1	AAA	370	GLU	3.1

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	RSRZ
1	AAA	336	ARG	3.1
1	AAA	487	ARG	3.1
1	AAA	505	ASN	3.0
1	AAA	410	TYR	2.9
1	AAA	367	PHE	2.8
1	BBB	342	LYS	2.7
1	BBB	541	LYS	2.7
1	AAA	372	ASN	2.7
1	BBB	407	ASP	2.7
1	BBB	133	GLY	2.7
1	AAA	267	ASN	2.7
1	AAA	478	LEU	2.7
1	AAA	398	ASN	2.6
1	AAA	503	VAL	2.6
1	AAA	480	GLN	2.6
1	BBB	177	VAL	2.5
1	AAA	438	THR	2.5
1	BBB	438	THR	2.5
1	BBB	451	ASP	2.5
1	BBB	487	ARG	2.4
1	AAA	446[A]	CYS	2.4
1	BBB	397	GLU	2.4
1	BBB	57	HIS	2.4
1	BBB	479	LYS	2.3
1	BBB	410	TYR	2.3
1	BBB	495	ASP	2.3
1	BBB	176	LEU	2.3
1	AAA	393	VAL	2.3
1	AAA	340	ILE	2.3
1	BBB	101	ARG	2.2
1	AAA	484	ALA	2.2
1	AAA	405	VAL	2.2
1	AAA	502	GLU	2.2
1	AAA	483	ASP	2.2
1	AAA	451	ASP	2.1
1	BBB	175[A]	THR	2.1
1	AAA	12	VAL	2.1
1	BBB	450	ASP	2.1
1	AAA	101	ARG	2.1
1	AAA	55	ILE	2.0
1	AAA	133	GLY	2.0
1	AAA	428	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 monosaccharides in this entry.

## 6.4 Ligands [i](#)

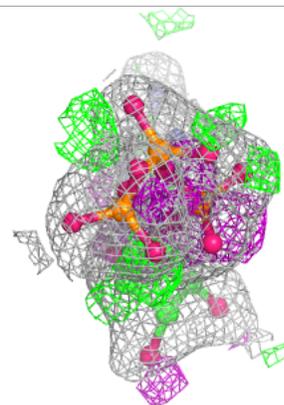
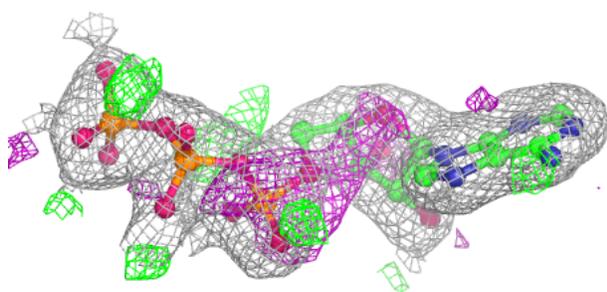
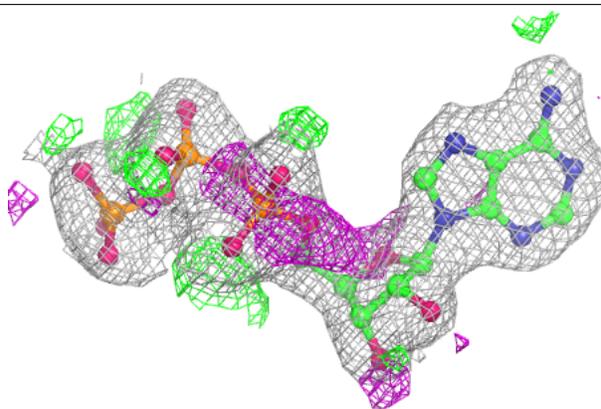
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 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
3	NA	AAA	602	1/1	0.77	0.15	57,57,57,57	0
3	NA	BBB	705	1/1	0.82	0.11	46,46,46,46	0
3	NA	BBB	702	1/1	0.94	0.20	44,44,44,44	0
3	NA	AAA	603	1/1	0.94	0.12	49,49,49,49	0
2	ATP	AAA	601	31/31	0.96	0.12	36,42,47,48	0
2	ATP	BBB	703	31/31	0.98	0.13	34,37,42,45	0
4	GTF	BBB	701	30/30	0.98	0.17	23,24,28,28	0
4	GTF	BBB	704	30/30	0.98	0.15	24,26,30,31	0

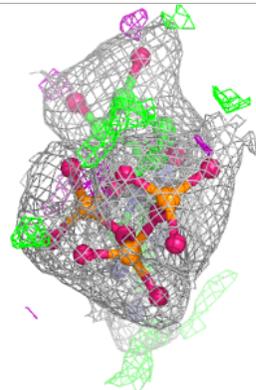
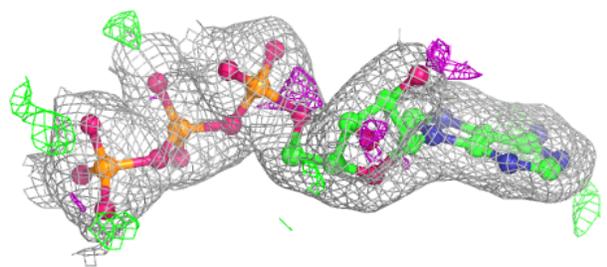
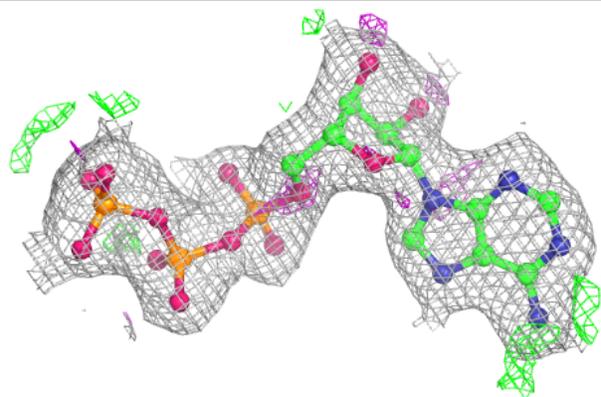
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

**Electron density around ATP AAA 601:**

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

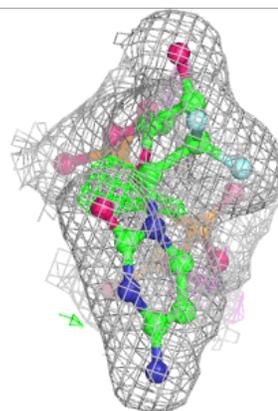
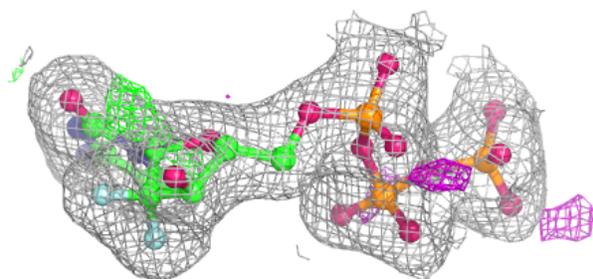
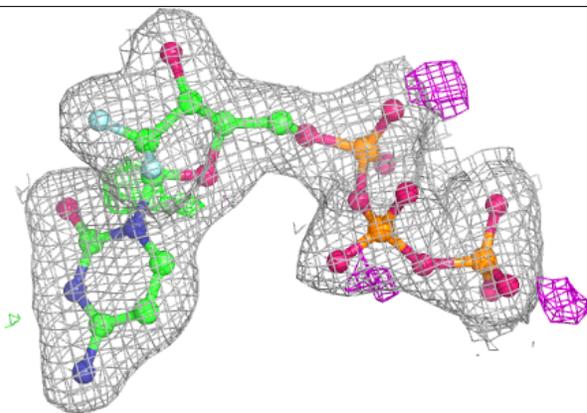
**Electron density around ATP BBB 703:**

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

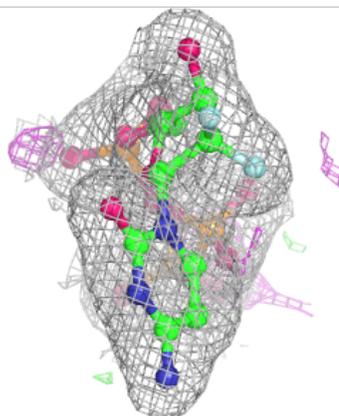
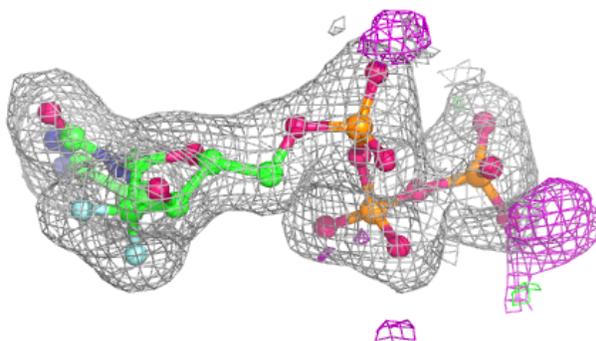
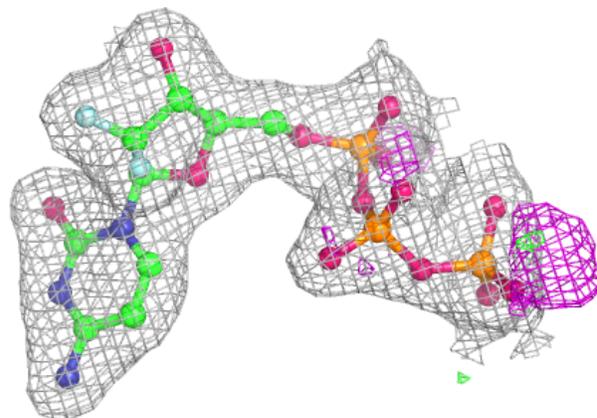


**Electron density around GTF BBB 701:**

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

**Electron density around GTF BBB 704:**

$2mF_o-DF_c$  (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.