



# Full wwPDB X-ray Structure Validation Report ⓘ

Mar 12, 2026 – 05:36 AM UTC

PDB ID : 5F2V / pdb\_00005f2v  
Title : Crystal structure of the small alarmone synthetase 1 from *Bacillus subtilis* bound to AMPCPP  
Authors : Steinchen, W.; Schuhmacher, J.S.; Altegoer, F.; Bange, G.  
Deposited on : 2015-12-02  
Resolution : 2.80 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>.

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

MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

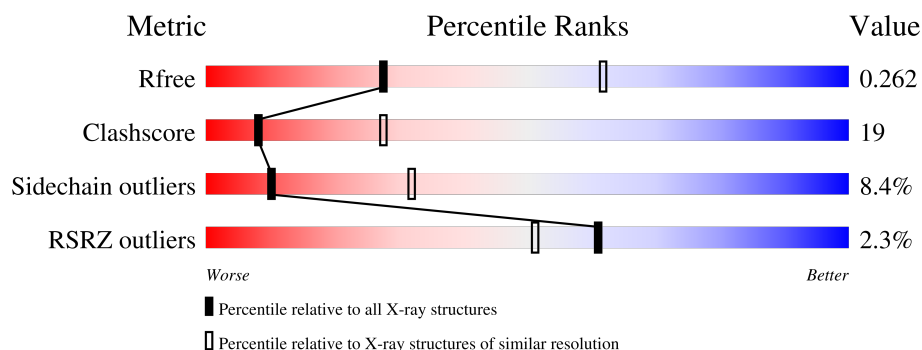
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.80 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	180053	3866 (2.80-2.80)
Clashscore	190562	4276 (2.80-2.80)
Sidechain outliers	187428	4198 (2.80-2.80)
RSRZ outliers	180081	3869 (2.80-2.80)

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	O	209	<div> <div>4%</div> <div> <div></div> <div>50%</div> <div>33%</div> <div>5%</div> <div>12%</div> </div> </div>
1	P	209	<div> <div>3%</div> <div> <div></div> <div>58%</div> <div>26%</div> <div>•</div> <div>12%</div> </div> </div>
1	Q	209	<div> <div>3%</div> <div> <div></div> <div>52%</div> <div>30%</div> <div>•</div> <div>14%</div> </div> </div>
1	R	209	<div> <div>%</div> <div> <div></div> <div>55%</div> <div>29%</div> <div>•</div> <div>12%</div> </div> </div>
1	S	209	<div> <div>3%</div> <div> <div></div> <div>55%</div> <div>30%</div> <div>•</div> <div>13%</div> </div> </div>
1	T	209	<div> <div>%</div> <div> <div></div> <div>54%</div> <div>33%</div> <div>6%</div> <div>7%</div> </div> </div>

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Mol	Chain	Length	Quality of chain
1	U	209	
1	V	209	
1	W	209	
1	X	209	
1	Y	209	
1	Z	209	

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
2	APC	T	301	-	-	X	-

## 2 Entry composition

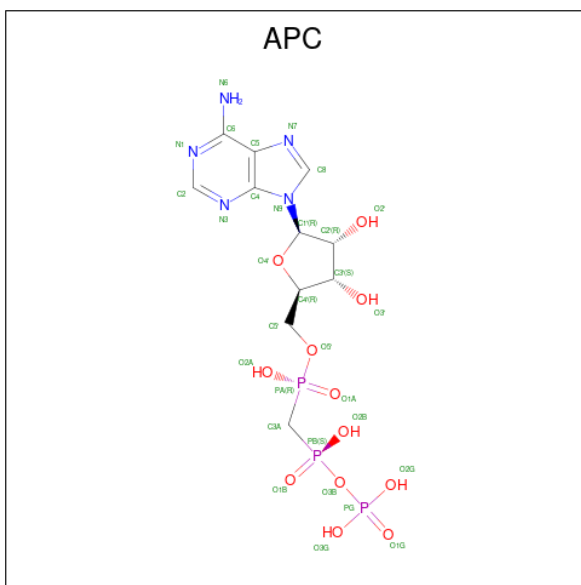
There are 4 unique types of molecules in this entry. The entry contains 18753 atoms, of which 168 are hydrogens and 0 are deuteriums.

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 GTP pyrophosphokinase YjbM.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	V	180	Total	C	N	O	S	0	0	0
			1476	942	259	269	6			
1	X	181	Total	C	N	O	S	0	0	0
			1491	952	260	273	6			
1	T	195	Total	C	N	O	S	0	0	0
			1611	1025	281	299	6			
1	S	182	Total	C	N	O	S	0	0	0
			1488	950	259	273	6			
1	Y	182	Total	C	N	O	S	0	0	0
			1479	946	256	271	6			
1	O	184	Total	C	N	O	S	0	0	0
			1504	961	261	276	6			
1	Z	179	Total	C	N	O	S	0	0	0
			1474	942	257	269	6			
1	W	187	Total	C	N	O	S	0	0	0
			1534	980	266	282	6			
1	U	186	Total	C	N	O	S	0	0	0
			1526	973	264	283	6			
1	P	183	Total	C	N	O	S	0	0	0
			1490	952	260	272	6			
1	R	184	Total	C	N	O	S	0	0	0
			1497	955	261	275	6			
1	Q	179	Total	C	N	O	S	0	0	0
			1468	938	256	268	6			

- Molecule 2 is DIPHOSPHOMETHYLPHOSPHONIC ACID ADENOSYL ESTER (CCD ID: APC) (formula:  $C_{11}H_{18}N_5O_{12}P_3$ ).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
2	V	1	Total 45	C 11	H 14	N 5	O 12	P 3	0	0
2	X	1	Total 45	C 11	H 14	N 5	O 12	P 3	0	0
2	T	1	Total 45	C 11	H 14	N 5	O 12	P 3	0	0
2	S	1	Total 45	C 11	H 14	N 5	O 12	P 3	0	0
2	Y	1	Total 45	C 11	H 14	N 5	O 12	P 3	0	0
2	O	1	Total 45	C 11	H 14	N 5	O 12	P 3	0	0
2	Z	1	Total 45	C 11	H 14	N 5	O 12	P 3	0	0
2	W	1	Total 45	C 11	H 14	N 5	O 12	P 3	0	0
2	U	1	Total 45	C 11	H 14	N 5	O 12	P 3	0	0
2	P	1	Total 45	C 11	H 14	N 5	O 12	P 3	0	0
2	R	1	Total 45	C 11	H 14	N 5	O 12	P 3	0	0
2	Q	1	Total 45	C 11	H 14	N 5	O 12	P 3	0	0

- Molecule 3 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	V	1	Total Mg 1 1	0	0
3	X	1	Total Mg 1 1	0	0
3	T	1	Total Mg 1 1	0	0
3	S	1	Total Mg 1 1	0	0
3	Y	1	Total Mg 1 1	0	0
3	O	1	Total Mg 1 1	0	0
3	Z	1	Total Mg 1 1	0	0
3	W	1	Total Mg 1 1	0	0
3	U	1	Total Mg 1 1	0	0
3	P	1	Total Mg 1 1	0	0
3	R	1	Total Mg 1 1	0	0
3	Q	1	Total Mg 1 1	0	0

- Molecule 4 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	V	22	Total O 22 22	0	0
4	X	18	Total O 18 18	0	0
4	T	21	Total O 21 21	0	0
4	S	19	Total O 19 19	0	0
4	Y	19	Total O 19 19	0	0
4	O	3	Total O 3 3	0	0
4	Z	9	Total O 9 9	0	0
4	W	20	Total O 20 20	0	0

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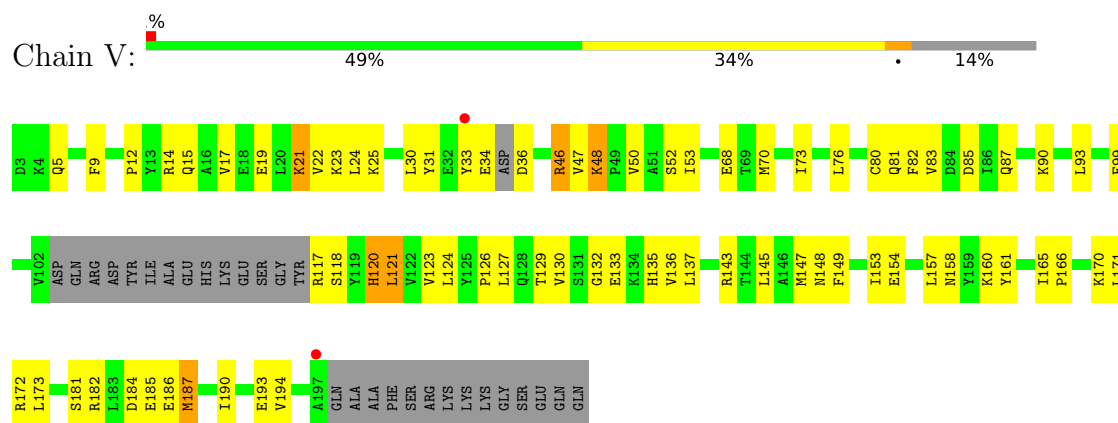
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	U	6	Total 6	O 6	0	0
4	P	7	Total 7	O 7	0	0
4	R	14	Total 14	O 14	0	0
4	Q	5	Total 5	O 5	0	0

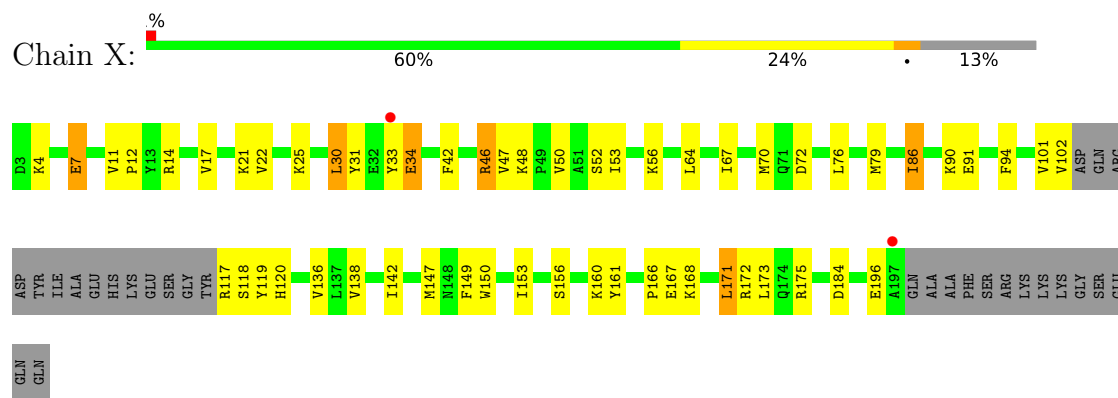
### 3 Residue-property plots [i](#)

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.

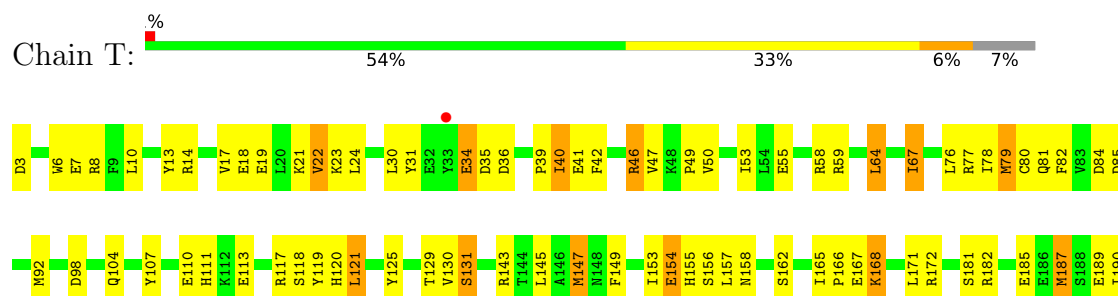
#### • Molecule 1: GTP pyrophosphokinase YjbM



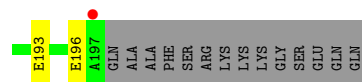
#### • Molecule 1: GTP pyrophosphokinase YjbM



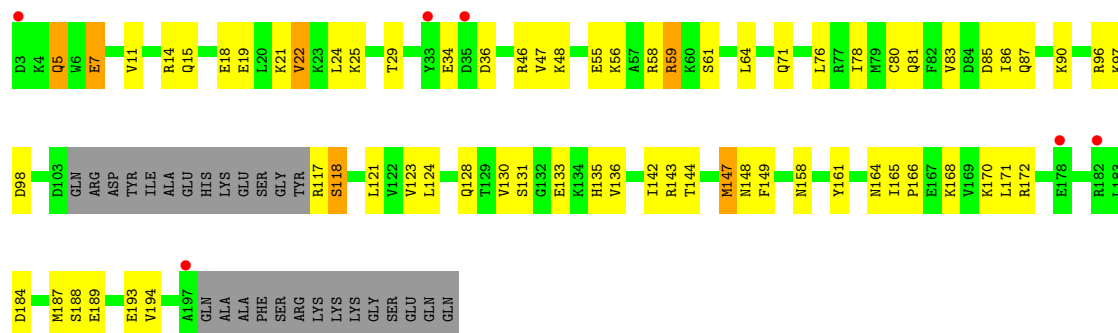
#### • Molecule 1: GTP pyrophosphokinase YjbM



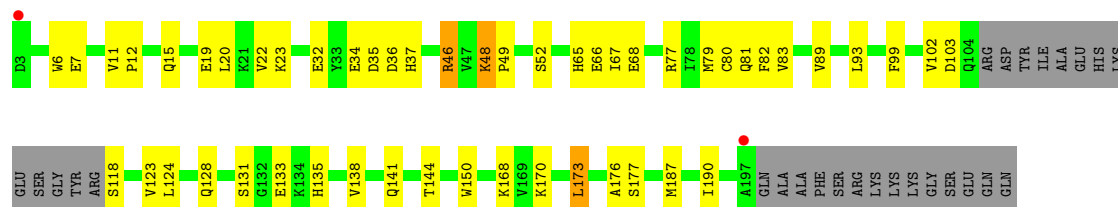




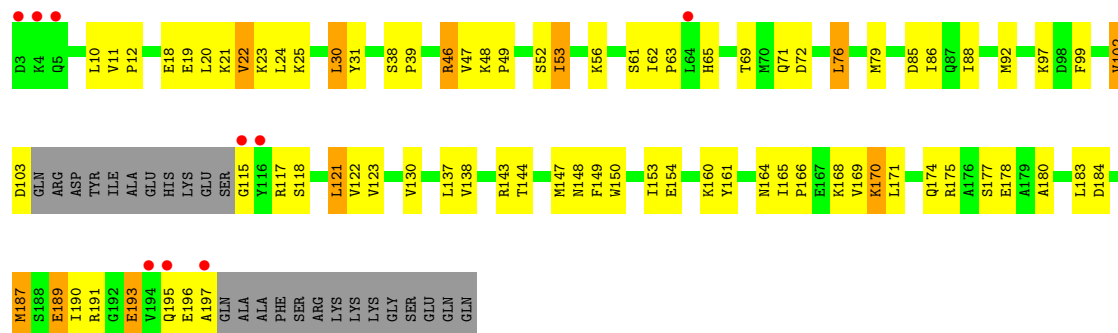
• Molecule 1: GTP pyrophosphokinase YjbM



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• Molecule 1: GTP pyrophosphokinase YjbM

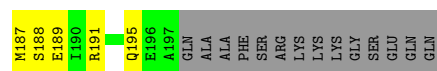
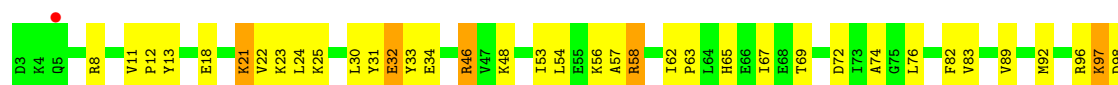




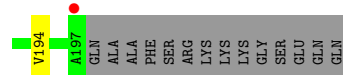
• Molecule 1: GTP pyrophosphokinase YjbM



• Molecule 1: GTP pyrophosphokinase YjbM



• Molecule 1: GTP pyrophosphokinase YjbM



• Molecule 1: GTP pyrophosphokinase YjbM





## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	116.67Å 103.63Å 138.29Å 90.00° 104.84° 90.00°	Depositor
Resolution (Å)	48.31 – 2.80 48.31 – 2.80	Depositor EDS
% Data completeness (in resolution range)	99.8 (48.31-2.80) 95.2 (48.31-2.80)	Depositor EDS
$R_{merge}$	0.09	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.51 (at 2.81Å)	Xtriage
Refinement program	PHENIX 1.9_1685	Depositor
R, $R_{free}$	0.193 , 0.264 (Not available) , 0.262	Depositor DCC
$R_{free}$ test set	2000 reflections (2.54%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	48.8	Xtriage
Anisotropy	0.570	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.30 , 31.4	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.48$ , $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.93	EDS
Total number of atoms	18753	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	56.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.03% 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: APC, MG

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	O	0.48	0/1531	0.84	0/2064
1	P	0.57	1/1516 (0.1%)	0.88	1/2044 (0.0%)
1	Q	0.50	0/1494	0.87	0/2013
1	R	0.51	0/1523	0.91	4/2053 (0.2%)
1	S	0.56	0/1514	0.88	1/2041 (0.0%)
1	T	0.55	0/1641	0.87	0/2211
1	U	0.50	0/1553	0.84	0/2092
1	V	0.55	0/1500	0.88	0/2018
1	W	0.57	1/1561 (0.1%)	0.91	1/2104 (0.0%)
1	X	0.55	0/1517	0.91	0/2043
1	Y	0.57	0/1505	0.89	2/2030 (0.1%)
1	Z	0.51	0/1500	0.87	2/2021 (0.1%)
All	All	0.54	2/18355 (0.0%)	0.88	11/24734 (0.0%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	P	11	VAL	CA-CB	6.18	1.57	1.54
1	W	11	VAL	CA-CB	6.03	1.57	1.54

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	W	11	VAL	CB-CA-C	-6.28	107.74	113.70
1	Y	48	LYS	CA-C-N	6.14	126.47	119.83
1	Y	48	LYS	C-N-CA	6.14	126.47	119.83
1	R	165	ILE	CA-C-N	6.00	126.02	119.90
1	R	165	ILE	C-N-CA	6.00	126.02	119.90
1	P	25	LYS	N-CA-C	-5.84	106.15	113.28
1	Z	115	SER	N-CA-C	5.76	117.21	110.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	R	11	VAL	CB-CA-C	-5.53	108.45	113.70
1	S	5	GLN	N-CA-C	-5.41	105.94	112.54
1	R	4	LYS	N-CA-C	-5.26	106.70	113.01
1	Z	8	VAL	CB-CA-C	-5.07	108.98	114.35

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	O	1504	0	1518	82	0
1	P	1490	0	1506	67	0
1	Q	1468	0	1491	75	0
1	R	1497	0	1511	61	0
1	S	1488	0	1506	55	0
1	T	1611	0	1625	69	0
1	U	1526	0	1542	80	0
1	V	1476	0	1509	72	0
1	W	1534	0	1554	55	0
1	X	1491	0	1521	51	0
1	Y	1479	0	1493	44	0
1	Z	1474	0	1504	87	0
2	O	31	14	14	5	0
2	P	31	14	14	5	0
2	Q	31	14	14	4	0
2	R	31	14	14	2	0
2	S	31	14	14	3	0
2	T	31	14	14	9	0
2	U	31	14	14	2	0
2	V	31	14	14	4	0
2	W	31	14	14	2	0
2	X	31	14	14	3	0
2	Y	31	14	14	3	0
2	Z	31	14	14	7	0
3	O	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	P	1	0	0	0	0
3	Q	1	0	0	0	0
3	R	1	0	0	0	0
3	S	1	0	0	0	0
3	T	1	0	0	0	0
3	U	1	0	0	0	0
3	V	1	0	0	0	0
3	W	1	0	0	0	0
3	X	1	0	0	0	0
3	Y	1	0	0	0	0
3	Z	1	0	0	0	0
4	O	3	0	0	4	0
4	P	7	0	0	2	0
4	Q	5	0	0	1	0
4	R	14	0	0	2	0
4	S	19	0	0	3	0
4	T	21	0	0	3	0
4	U	6	0	0	0	0
4	V	22	0	0	3	0
4	W	20	0	0	0	0
4	X	18	0	0	1	0
4	Y	19	0	0	1	0
4	Z	9	0	0	1	0
All	All	18585	168	18448	716	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 19.

All (716) 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:U:118:SER:HB2	1:U:147:MET:HE2	1.24	1.15
1:X:22:VAL:HG21	1:Y:22:VAL:HG21	1.25	1.12
1:V:153:ILE:HG13	1:U:187:MET:HE1	1.40	1.03
1:O:22:VAL:HG11	1:R:22:VAL:HG21	1.39	1.00
1:R:48:LYS:HE3	1:R:70:MET:HE3	1.42	0.99
1:Z:19:VAL:HG21	1:W:22:VAL:HG21	1.41	0.99
1:Z:43:ARG:HH21	1:Z:45:LYS:HD3	1.26	0.98
1:R:48:LYS:HG2	1:R:53:ILE:HG12	1.48	0.96
1:P:53:ILE:HG23	1:P:70:MET:HE1	1.46	0.94
1:R:118:SER:HB2	1:R:147:MET:HE2	1.53	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Z:184:MET:HE3	1:Z:184:MET:HA	1.54	0.90
1:R:24:LEU:HD12	1:R:76:LEU:HD22	1.54	0.89
1:Z:27:LEU:HD13	1:W:130:VAL:HG23	1.52	0.89
1:T:7:GLU:HB3	1:U:33:TYR:OH	1.73	0.89
1:T:187:MET:CE	1:T:190:ILE:HD12	2.02	0.89
1:O:46:ARG:HH21	1:O:48:LYS:HD3	1.36	0.89
1:Z:184:MET:HE3	1:Z:187:ILE:HD12	1.55	0.89
1:P:22:VAL:HG21	1:Q:22:VAL:HG21	1.54	0.89
1:R:48:LYS:HE3	1:R:70:MET:CE	2.03	0.88
1:Z:158:TYR:CD2	1:Z:163:PRO:HD2	2.07	0.87
1:P:118:SER:HB2	1:P:147:MET:HE2	1.54	0.87
1:U:101:VAL:HG13	1:U:121:LEU:HD13	1.56	0.86
1:S:24:LEU:HD12	1:S:76:LEU:HD23	1.58	0.85
1:T:129:THR:HG22	1:T:131:SER:H	1.39	0.85
1:O:30:LEU:HD13	1:R:130:VAL:HG23	1.59	0.84
1:W:48:LYS:HG2	1:W:53:ILE:HG12	1.59	0.83
1:V:31:TYR:O	1:V:33:TYR:N	2.10	0.83
1:U:57:ALA:HB1	1:U:62:ILE:HG12	1.61	0.83
1:Z:43:ARG:NH2	1:Z:45:LYS:HD3	1.95	0.82
1:P:48:LYS:HG2	1:P:53:ILE:HG12	1.60	0.82
1:Y:187:MET:HE1	1:Z:150:ILE:HG21	1.62	0.81
1:T:22:VAL:HG11	1:U:22:VAL:HG21	1.62	0.81
1:V:118:SER:HB2	1:V:147:MET:HE2	1.62	0.81
1:O:166:PRO:HG2	1:O:169:VAL:HG21	1.63	0.80
1:Z:184:MET:CE	1:Z:187:ILE:HD12	2.11	0.80
1:U:154:GLU:HG2	1:U:173:LEU:HD21	1.64	0.79
1:O:99:PHE:O	4:O:401:HOH:O	1.99	0.79
1:P:118:SER:HB2	1:P:147:MET:CE	2.12	0.79
1:Y:118:SER:OG	4:Y:401:HOH:O	2.00	0.79
1:O:130:VAL:HG23	1:R:30:LEU:HD22	1.65	0.78
1:Z:27:LEU:HD13	1:W:130:VAL:CG2	2.14	0.78
1:X:22:VAL:CG2	1:Y:22:VAL:HG21	2.11	0.78
1:Z:86:VAL:HA	1:Z:89:MET:HE2	1.65	0.77
1:Y:81:GLN:HG2	1:Z:146:PHE:HE1	1.48	0.77
1:U:161:TYR:HB2	1:U:165:ILE:HD13	1.67	0.77
1:O:48:LYS:HG2	1:O:53:ILE:HG12	1.67	0.77
1:U:57:ALA:CA	1:U:62:ILE:HG12	2.14	0.77
1:Z:49:SER:OG	2:Z:301:APC:O2A	2.03	0.76
1:R:191:ARG:HG3	1:R:191:ARG:HH11	1.50	0.76
1:Z:114:ARG:HD2	1:Z:181:ASP:OD2	1.86	0.76
1:W:48:LYS:HD2	1:W:52:SER:HB3	1.65	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:193:GLU:HG3	1:P:168:LYS:HE2	1.67	0.76
1:R:34:GLU:O	1:R:36:ASP:N	2.18	0.76
1:Z:4:GLU:HB2	1:W:33:TYR:OH	1.86	0.76
1:U:46:ARG:NH2	1:U:72:ASP:O	2.18	0.75
1:V:81:GLN:HG2	1:U:149:PHE:HE1	1.50	0.75
1:U:57:ALA:CB	1:U:62:ILE:HG12	2.17	0.75
1:P:24:LEU:HD13	1:P:78:ILE:HD11	1.69	0.75
1:Z:115:SER:HB2	1:Z:144:MET:HE2	1.69	0.75
1:X:48:LYS:HE3	1:X:70:MET:HE3	1.68	0.74
1:S:24:LEU:HD13	1:S:78:ILE:HD11	1.69	0.74
1:U:48:LYS:HG2	1:U:53:ILE:HG12	1.68	0.74
1:Z:11:ARG:HG2	1:Z:44:VAL:HG21	1.70	0.73
1:Y:81:GLN:HG2	1:Z:146:PHE:CE1	2.24	0.73
1:V:30:LEU:HD13	1:S:130:VAL:HG13	1.70	0.73
1:X:173:LEU:HD23	1:W:190:ILE:HD13	1.71	0.73
1:R:53:ILE:HA	1:R:70:MET:HE1	1.71	0.72
1:W:182:ARG:NH1	1:W:186:GLU:OE2	2.23	0.72
2:Y:301:APC:H8	2:Y:301:APC:H3A2	1.72	0.72
1:X:161:TYR:CD2	1:X:166:PRO:HD2	2.25	0.71
1:R:191:ARG:HG3	1:R:191:ARG:NH1	2.05	0.71
1:T:81:GLN:HG2	1:S:149:PHE:CE1	2.25	0.71
1:Q:62:ILE:HD12	1:Q:63:PRO:HD2	1.72	0.71
1:P:53:ILE:HG23	1:P:70:MET:CE	2.20	0.70
1:P:63:PRO:HD2	1:P:66:GLU:HG3	1.72	0.70
1:O:161:TYR:CE2	1:O:166:PRO:HD2	2.27	0.70
1:T:168:LYS:HE3	1:T:172:ARG:NH1	2.07	0.70
1:X:149:PHE:CE2	1:W:187:MET:HE3	2.27	0.70
1:U:117:ARG:NH1	1:U:181:SER:HA	2.07	0.70
1:O:63:PRO:HG2	1:O:65:HIS:NE2	2.07	0.70
1:T:187:MET:HE3	1:T:190:ILE:HD12	1.71	0.70
1:P:22:VAL:HG21	1:Q:22:VAL:CG2	2.22	0.70
1:R:12:PRO:HG3	1:R:134:LYS:NZ	2.06	0.70
1:X:22:VAL:HG21	1:Y:22:VAL:CG2	2.15	0.69
1:Z:30:TYR:HE2	1:W:8:ARG:HA	1.57	0.69
1:S:55:GLU:OE1	1:S:59:ARG:NH1	2.24	0.69
1:U:21:LYS:O	1:U:25:LYS:HG3	1.93	0.69
1:R:48:LYS:CG	1:R:53:ILE:HG12	2.22	0.69
1:R:55:GLU:OE2	1:R:59:ARG:NH1	2.24	0.69
2:Q:301:APC:H3A1	2:Q:301:APC:H8	1.75	0.69
2:Y:301:APC:H8	2:Y:301:APC:C3A	2.23	0.69
1:T:7:GLU:OE2	1:T:14:ARG:NH2	2.26	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:U:121:LEU:HD12	1:U:122:VAL:N	2.06	0.69
1:V:22:VAL:HG11	1:S:22:VAL:HG11	1.74	0.69
1:Z:87:LYS:HD3	1:Z:116:TYR:CE1	2.28	0.69
1:O:48:LYS:CG	1:O:53:ILE:HG12	2.23	0.69
1:Q:63:PRO:HG2	1:Q:66:GLU:OE1	1.94	0.68
2:T:301:APC:O3G	4:T:401:HOH:O	2.11	0.68
1:Q:96:ARG:NH2	1:Q:98:ASP:OD2	2.21	0.68
1:V:187:MET:HE1	1:U:153:ILE:HG13	1.75	0.68
1:O:166:PRO:HG2	1:O:169:VAL:CG2	2.24	0.68
1:V:81:GLN:HG2	1:U:149:PHE:CE1	2.28	0.67
2:Z:301:APC:H8	2:Z:301:APC:H3A1	1.74	0.67
1:O:46:ARG:NH2	1:O:48:LYS:HD3	2.09	0.67
1:X:48:LYS:NZ	1:X:72:ASP:OD2	2.26	0.67
2:T:301:APC:O1B	4:T:402:HOH:O	2.12	0.67
1:U:57:ALA:HA	1:U:62:ILE:HG21	1.76	0.67
1:O:161:TYR:CD2	1:O:166:PRO:HD2	2.29	0.67
1:Q:21:LYS:O	1:Q:25:LYS:HG3	1.94	0.67
1:S:5:GLN:N	4:S:401:HOH:O	2.27	0.67
1:T:111:HIS:CD2	1:T:119:TYR:HA	2.29	0.67
1:O:63:PRO:HG2	1:O:65:HIS:CE1	2.30	0.67
1:O:165:ILE:O	1:O:170:LYS:HE3	1.94	0.67
1:O:187:MET:HE3	1:O:190:ILE:HD12	1.76	0.66
1:T:168:LYS:HG3	1:S:193:GLU:CG	2.26	0.66
1:O:52:SER:OG	2:O:301:APC:O1A	2.09	0.66
1:Q:52:SER:O	1:Q:56:LYS:HG3	1.94	0.66
1:R:149:PHE:HE1	1:Q:81:GLN:HG2	1.59	0.66
1:X:48:LYS:HG2	1:X:53:ILE:HG13	1.77	0.66
1:O:174:GLN:O	1:O:178:GLU:HG3	1.96	0.66
1:O:175:ARG:NH2	4:O:402:HOH:O	2.27	0.66
1:U:118:SER:CB	1:U:147:MET:HE2	2.14	0.65
1:V:182:ARG:NH1	1:V:186:GLU:OE2	2.30	0.65
1:X:48:LYS:HE3	1:X:70:MET:CE	2.27	0.65
1:Q:83:VAL:HG22	1:Q:117:ARG:HB3	1.78	0.65
1:P:92:MET:O	4:P:401:HOH:O	2.14	0.65
1:O:18:GLU:O	1:O:22:VAL:HG12	1.96	0.65
1:Y:46:ARG:O	1:Y:46:ARG:HD3	1.96	0.65
1:O:22:VAL:CG1	1:R:22:VAL:HG21	2.23	0.65
1:P:102:VAL:HG23	1:P:103:ASP:H	1.62	0.65
1:Q:6:TRP:O	1:Q:9:PHE:N	2.29	0.65
1:V:93:LEU:HD12	1:V:121:LEU:HD21	1.78	0.65
1:X:149:PHE:CZ	1:W:187:MET:HE3	2.32	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:144:THR:OG1	1:O:147:MET:HB2	1.97	0.65
1:T:24:LEU:HD12	1:T:76:LEU:HD22	1.79	0.65
1:T:81:GLN:HG2	1:S:149:PHE:HE1	1.62	0.65
1:Z:27:LEU:CD1	1:W:130:VAL:HG23	2.24	0.64
1:P:46:ARG:O	1:P:46:ARG:HD3	1.97	0.64
1:V:153:ILE:HG13	1:U:187:MET:CE	2.23	0.64
1:S:15:GLN:O	1:S:19:GLU:HG3	1.97	0.64
1:U:48:LYS:HG2	1:U:53:ILE:CG1	2.27	0.64
1:R:31:TYR:HB2	1:R:38:SER:HB2	1.80	0.64
1:T:168:LYS:HE2	1:S:193:GLU:HG2	1.80	0.63
1:Z:11:ARG:CG	1:Z:44:VAL:HG21	2.27	0.63
1:V:24:LEU:HD12	1:V:76:LEU:HD22	1.80	0.63
1:Z:30:TYR:CZ	1:W:11:VAL:HG21	2.33	0.63
1:R:82:PHE:O	1:R:85:ASP:HB2	1.97	0.63
1:O:121:LEU:HD12	1:O:121:LEU:C	2.24	0.63
1:O:187:MET:CE	1:O:190:ILE:HD12	2.29	0.63
1:Q:54:LEU:O	1:Q:58:ARG:HG3	1.98	0.63
1:X:48:LYS:HG2	1:X:53:ILE:CG1	2.28	0.63
1:S:118:SER:HB2	1:S:147:MET:HE2	1.80	0.63
1:O:97:LYS:HA	4:O:401:HOH:O	1.98	0.63
1:S:14:ARG:HG2	1:S:47:VAL:HG21	1.80	0.63
1:X:117:ARG:HD2	1:X:184:ASP:OD2	1.99	0.63
1:W:48:LYS:HG2	1:W:53:ILE:CG1	2.26	0.62
1:Z:127:VAL:HG13	1:W:30:LEU:HD23	1.81	0.62
1:Y:36:ASP:OD1	1:Y:37:HIS:N	2.33	0.62
1:Y:82:PHE:HE1	1:Y:187:MET:HE3	1.64	0.62
1:V:14:ARG:HG2	1:V:47:VAL:HG21	1.80	0.62
1:O:160:LYS:HE3	1:O:161:TYR:CE1	2.35	0.62
1:Q:46:ARG:NH1	1:Q:72:ASP:O	2.32	0.62
1:Q:66:GLU:O	1:Q:66:GLU:HG2	1.99	0.62
1:V:160:LYS:HG2	1:V:161:TYR:CD1	2.34	0.61
1:V:19:GLU:O	1:V:23:LYS:HG3	2.00	0.61
1:S:117:ARG:HD2	1:S:184:ASP:OD2	2.00	0.61
1:V:15:GLN:HG3	1:V:127:LEU:HD11	1.82	0.61
1:O:130:VAL:HG23	1:R:30:LEU:CD2	2.31	0.60
1:P:53:ILE:CG2	1:P:70:MET:HE1	2.27	0.60
1:X:90:LYS:HD2	1:X:119:TYR:CZ	2.35	0.60
1:P:70:MET:CE	1:P:73:ILE:HG12	2.32	0.60
1:O:46:ARG:NH2	1:O:48:LYS:HB2	2.17	0.60
1:O:88:ILE:O	1:O:92:MET:HG3	2.02	0.60
1:U:57:ALA:HA	1:U:62:ILE:HG12	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:Z:301:APC:O3'	4:Z:401:HOH:O	2.17	0.60
1:U:54:LEU:O	1:U:57:ALA:HB3	2.00	0.60
1:Q:154:GLU:O	1:Q:158:ASN:HB2	2.02	0.60
1:T:24:LEU:HD12	1:T:76:LEU:CD2	2.31	0.60
1:V:31:TYR:O	1:V:34:GLU:N	2.34	0.60
1:S:21:LYS:O	1:S:25:LYS:HG3	2.02	0.60
1:U:150:TRP:CZ2	1:U:154:GLU:HG3	2.37	0.60
1:Z:125:GLN:HE22	1:Z:130:GLU:HG3	1.67	0.59
1:T:168:LYS:HG3	1:S:193:GLU:CD	2.27	0.59
1:X:48:LYS:HD3	2:X:301:APC:O1A	2.01	0.59
1:W:31:TYR:C	1:W:33:TYR:H	2.09	0.59
1:U:63:PRO:HB2	1:U:65:HIS:CE1	2.37	0.59
1:Q:46:ARG:O	1:Q:46:ARG:HD3	2.03	0.59
1:O:19:GLU:O	1:O:23:LYS:HG3	2.02	0.59
1:P:70:MET:HE2	1:P:73:ILE:HG12	1.84	0.59
1:P:158:ASN:ND2	1:P:165:ILE:HD11	2.18	0.59
1:X:160:LYS:HE3	1:X:161:TYR:CE1	2.38	0.59
1:X:172:ARG:HD2	1:W:189:GLU:HG2	1.84	0.59
1:T:77:ARG:HD3	1:T:143:ARG:HD2	1.84	0.59
1:S:87:GLN:HB2	4:S:418:HOH:O	2.01	0.59
1:T:34:GLU:C	1:T:36:ASP:H	2.10	0.59
1:T:117:ARG:HB2	1:T:147:MET:HG3	1.84	0.59
1:W:34:GLU:OE1	1:W:36:ASP:HB2	2.02	0.59
1:Z:30:TYR:CE2	1:W:8:ARG:HA	2.37	0.58
1:T:193:GLU:HG2	1:S:168:LYS:HG2	1.85	0.58
1:O:149:PHE:CE1	1:P:145:LEU:HD12	2.38	0.58
1:Z:60:PRO:C	1:Z:62:HIS:H	2.10	0.58
1:R:83:VAL:HG23	4:R:411:HOH:O	2.02	0.58
1:Y:89:VAL:O	1:Y:93:LEU:HG	2.04	0.58
1:V:161:TYR:CD2	1:V:166:PRO:HD3	2.39	0.58
1:X:14:ARG:HG2	1:X:47:VAL:HG21	1.85	0.58
1:Y:20:LEU:HD12	1:Y:138:VAL:HG11	1.85	0.58
1:P:33:TYR:CE1	1:Q:8:ARG:HB3	2.38	0.58
1:V:19:GLU:O	1:V:22:VAL:HG12	2.03	0.58
1:R:14:ARG:HG2	1:R:47:VAL:HG21	1.86	0.58
1:O:161:TYR:HB3	1:O:164:ASN:O	2.04	0.58
1:Z:87:LYS:HD3	1:Z:116:TYR:CZ	2.39	0.58
1:X:46:ARG:NH2	1:X:48:LYS:HB2	2.18	0.58
1:O:48:LYS:NZ	1:O:72:ASP:OD2	2.36	0.58
1:V:46:ARG:NH2	1:V:48:LYS:HB2	2.19	0.58
1:O:46:ARG:HD2	2:O:301:APC:O4'	2.04	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Z:115:SER:HB2	1:Z:144:MET:CE	2.33	0.58
1:Q:46:ARG:HD3	1:Q:46:ARG:C	2.29	0.58
1:V:31:TYR:C	1:V:33:TYR:H	2.10	0.57
1:U:63:PRO:HB2	1:U:65:HIS:NE2	2.19	0.57
1:O:21:LYS:O	1:O:25:LYS:HG3	2.04	0.57
1:Z:31:GLU:O	1:Z:33:ASP:N	2.35	0.57
1:V:48:LYS:HD2	1:V:52:SER:HB2	1.87	0.57
1:W:24:LEU:HD12	1:W:76:LEU:HD23	1.86	0.57
1:P:46:ARG:NH2	2:P:301:APC:H3A1	2.20	0.57
1:Z:43:ARG:NH1	1:Z:72:GLY:HA3	2.19	0.56
1:S:71:GLN:HB2	4:S:412:HOH:O	2.04	0.56
1:S:58:ARG:NH1	1:S:58:ARG:HB3	2.21	0.56
1:Y:150:TRP:CE2	1:Y:177:SER:HB2	2.39	0.56
1:W:55:GLU:OE2	1:W:59:ARG:HD3	2.05	0.56
1:P:46:ARG:HD3	1:P:46:ARG:C	2.31	0.56
1:P:161:TYR:HB3	1:P:164:ASN:O	2.05	0.56
1:X:21:LYS:O	1:X:25:LYS:HG3	2.06	0.56
1:X:48:LYS:HZ1	1:X:72:ASP:CG	2.11	0.56
1:T:49:PRO:O	1:T:53:ILE:HG13	2.06	0.56
1:V:82:PHE:O	1:V:85:ASP:HB2	2.04	0.56
1:Z:18:LYS:O	1:Z:22:LYS:HG3	2.06	0.56
1:W:24:LEU:HD12	1:W:76:LEU:CD2	2.36	0.56
1:W:46:ARG:O	1:W:46:ARG:HD3	2.06	0.56
1:Q:64:LEU:HD23	1:Q:64:LEU:O	2.06	0.56
1:V:46:ARG:O	1:V:46:ARG:HD3	2.05	0.56
1:S:48:LYS:HZ3	2:S:302:APC:H3A2	1.71	0.56
1:T:118:SER:HB2	1:T:147:MET:HE2	1.87	0.55
1:S:7:GLU:O	1:S:11:VAL:HG23	2.05	0.55
1:S:86:ILE:HG12	1:S:142:ILE:HG22	1.87	0.55
1:Z:5:ARG:O	1:Z:8:VAL:HG23	2.04	0.55
1:T:31:TYR:CE1	1:T:92:MET:HE1	2.42	0.55
1:T:149:PHE:HE1	1:S:81:GLN:HG3	1.71	0.55
1:Z:18:LYS:HG2	1:Z:22:LYS:HE3	1.87	0.55
1:P:48:LYS:HG2	1:P:53:ILE:CG1	2.34	0.55
1:Q:46:ARG:HH21	2:Q:301:APC:H3A2	1.72	0.55
1:X:118:SER:OG	1:X:119:TYR:N	2.38	0.55
1:Y:15:GLN:O	1:Y:19:GLU:HG3	2.07	0.55
1:R:34:GLU:OE2	1:R:34:GLU:HA	2.07	0.55
1:T:130:VAL:HG22	1:U:30:LEU:HD21	1.88	0.55
1:Q:34:GLU:HB2	1:Q:36:ASP:HB2	1.88	0.55
1:S:121:LEU:C	1:S:121:LEU:HD12	2.32	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Q:4:LYS:HA	1:Q:8:ARG:HH21	1.71	0.55
1:Y:19:GLU:O	1:Y:23:LYS:HG3	2.07	0.54
1:Z:127:VAL:HG13	1:W:30:LEU:CD2	2.36	0.54
1:U:18:GLU:O	1:U:22:VAL:HG23	2.06	0.54
1:U:101:VAL:HG13	1:U:121:LEU:CD1	2.34	0.54
1:T:154:GLU:O	1:T:158:ASN:HB2	2.07	0.54
1:Z:141:THR:OG1	1:Z:144:MET:HB2	2.08	0.54
1:Q:166:PRO:HG2	1:Q:169:VAL:HG21	1.89	0.54
1:O:22:VAL:HG11	1:R:22:VAL:CG2	2.27	0.54
1:O:63:PRO:HB2	1:O:65:HIS:CD2	2.43	0.54
1:U:67:ILE:C	1:U:69:THR:H	2.16	0.54
1:R:81:GLN:HG2	1:Q:149:PHE:CE1	2.42	0.54
1:T:18:GLU:O	1:T:22:VAL:HG12	2.08	0.54
1:Z:21:LEU:HA	1:Z:24:ILE:HD12	1.88	0.54
1:W:52:SER:OG	2:W:301:APC:O1A	2.20	0.54
1:R:64:LEU:O	1:R:67:ILE:HG12	2.07	0.54
1:W:48:LYS:HD2	1:W:52:SER:CB	2.34	0.54
1:V:129:THR:OG1	1:V:132:GLY:O	2.24	0.54
1:T:30:LEU:HD22	1:U:130:VAL:HG23	1.90	0.54
1:U:46:ARG:HD2	2:U:301:APC:O4'	2.08	0.54
1:Z:115:SER:O	1:Z:115:SER:OG	2.19	0.53
1:U:57:ALA:HB1	1:U:62:ILE:CG1	2.37	0.53
1:Q:43:VAL:HG23	4:Q:402:HOH:O	2.07	0.53
1:O:10:LEU:HD22	1:O:47:VAL:CG1	2.38	0.53
1:W:32:GLU:OE1	1:W:32:GLU:HA	2.08	0.53
1:W:71:GLN:OE1	1:W:122:VAL:HG21	2.08	0.53
1:T:46:ARG:O	1:T:46:ARG:HD3	2.08	0.53
1:U:58:ARG:HB2	1:U:58:ARG:CZ	2.39	0.53
1:Q:7:GLU:HG3	1:Q:8:ARG:HE	1.72	0.53
1:Z:147:TRP:NE1	1:Z:174:SER:HB3	2.23	0.53
1:U:30:LEU:HD12	1:U:30:LEU:O	2.08	0.53
1:R:49:PRO:HG2	1:R:52:SER:OG	2.09	0.53
1:X:64:LEU:HA	1:X:67:ILE:HG23	1.91	0.53
1:O:190:ILE:HD11	1:P:173:LEU:HA	1.91	0.53
2:R:301:APC:H3A2	2:R:301:APC:H8	1.90	0.53
1:P:22:VAL:CG2	1:Q:22:VAL:HG21	2.33	0.53
1:V:46:ARG:NH2	2:V:301:APC:O1A	2.34	0.53
1:T:42:PHE:CZ	1:T:79:MET:HE3	2.42	0.53
1:Z:21:LEU:HD12	1:Z:73:LEU:HD22	1.91	0.53
1:Z:184:MET:HA	1:Z:184:MET:CE	2.35	0.53
1:T:24:LEU:HD13	1:T:78:ILE:HD11	1.92	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:71:GLN:HG2	1:O:137:LEU:HD13	1.90	0.53
1:Q:117:ARG:O	1:Q:147:MET:HG3	2.08	0.53
1:X:46:ARG:HD2	2:X:301:APC:O4'	2.08	0.52
2:T:301:APC:C8	2:T:301:APC:H3A1	2.39	0.52
1:V:99:PHE:CE1	1:V:123:VAL:HG11	2.44	0.52
1:Z:154:LEU:HD12	1:Z:170:LEU:CD1	2.39	0.52
1:Q:62:ILE:CD1	1:Q:63:PRO:HD2	2.39	0.52
1:Y:77:ARG:HG2	1:Y:79:MET:SD	2.50	0.52
1:Y:83:VAL:HG22	1:Y:144:THR:HG21	1.91	0.52
1:U:101:VAL:CG1	1:U:121:LEU:HD13	2.32	0.52
1:R:12:PRO:HG3	1:R:134:LYS:CE	2.40	0.52
1:R:89:VAL:HA	1:R:92:MET:CE	2.40	0.52
1:Q:49:PRO:O	1:Q:53:ILE:HG13	2.10	0.52
1:T:55:GLU:OE1	1:T:59:ARG:NH1	2.43	0.52
1:O:23:LYS:NZ	4:O:403:HOH:O	2.30	0.52
1:U:62:ILE:HD12	1:U:62:ILE:C	2.35	0.52
1:U:161:TYR:CD2	1:U:166:PRO:HD2	2.45	0.52
1:T:168:LYS:HG3	1:S:193:GLU:HG2	1.92	0.52
1:Y:6:TRP:HH2	1:Y:67:ILE:HD13	1.74	0.52
1:W:46:ARG:NH2	1:W:48:LYS:HB2	2.25	0.52
1:Q:4:LYS:HA	1:Q:8:ARG:NH2	2.23	0.52
1:O:10:LEU:HD22	1:O:47:VAL:HG11	1.91	0.52
1:Z:60:PRO:O	1:Z:62:HIS:N	2.42	0.52
1:W:147:MET:HE1	1:W:181:SER:N	2.25	0.52
1:W:150:TRP:CE2	1:W:177:SER:HB2	2.45	0.52
1:P:121:LEU:C	1:P:121:LEU:HD12	2.35	0.52
1:Z:114:ARG:CZ	1:Z:144:MET:HG2	2.39	0.52
1:Z:125:GLN:HG3	1:W:98:ASP:OD1	2.10	0.52
1:Z:39:PHE:CZ	1:Z:76:MET:HE2	2.45	0.51
1:U:165:ILE:HB	1:U:170:LYS:HG3	1.92	0.51
1:R:71:GLN:HB2	4:R:406:HOH:O	2.09	0.51
2:V:301:APC:H2	4:V:410:HOH:O	2.10	0.51
1:O:149:PHE:HE1	1:P:81:GLN:HG2	1.75	0.51
1:U:24:LEU:HD12	1:U:76:LEU:HD23	1.92	0.51
1:P:130:VAL:HG23	1:Q:30:LEU:HD23	1.92	0.51
1:Q:120:HIS:O	1:Q:120:HIS:ND1	2.38	0.51
1:V:21:LYS:O	1:V:25:LYS:HG3	2.11	0.51
1:V:50:VAL:HA	1:V:53:ILE:HD12	1.93	0.51
1:W:46:ARG:NH2	1:W:48:LYS:HD3	2.26	0.51
1:P:11:VAL:N	1:P:12:PRO:HD2	2.26	0.51
1:V:22:VAL:HG11	1:S:22:VAL:CG1	2.41	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:P:7:GLU:HB3	1:Q:33:TYR:OH	2.10	0.51
1:X:31:TYR:C	1:X:33:TYR:H	2.18	0.51
1:X:86:ILE:HD13	1:X:142:ILE:HG22	1.93	0.51
1:T:129:THR:HG22	1:T:130:VAL:N	2.26	0.51
1:W:48:LYS:HD3	2:W:301:APC:O2A	2.10	0.51
1:T:82:PHE:O	1:T:85:ASP:HB2	2.11	0.51
1:T:167:GLU:O	1:T:171:LEU:HG	2.10	0.50
1:O:193:GLU:OE2	1:O:193:GLU:HA	2.11	0.50
1:V:17:VAL:O	1:V:21:LYS:HB2	2.11	0.50
1:W:167:GLU:OE1	1:W:170:LYS:HD3	2.10	0.50
1:U:146:ALA:HB3	1:U:184:ASP:OD1	2.11	0.50
1:R:31:TYR:CB	1:R:38:SER:HB2	2.42	0.50
1:X:150:TRP:O	1:X:153:ILE:HG22	2.11	0.50
2:O:301:APC:H3A1	2:O:301:APC:H8	1.93	0.50
1:R:34:GLU:C	1:R:36:ASP:N	2.69	0.50
1:Q:117:ARG:NH1	1:Q:184:ASP:OD2	2.44	0.50
1:P:156:SER:O	1:P:159:TYR:HB3	2.11	0.50
1:W:64:LEU:O	1:W:67:ILE:HG12	2.12	0.50
1:V:9:PHE:O	1:V:12:PRO:HD2	2.12	0.50
1:O:189:GLU:HB3	1:P:172:ARG:HD3	1.93	0.50
1:P:15:GLN:O	1:P:19:GLU:HG3	2.12	0.50
1:R:81:GLN:HG2	1:Q:149:PHE:HE1	1.75	0.50
1:R:96:ARG:HD3	1:R:99:PHE:CZ	2.47	0.50
1:R:165:ILE:O	1:R:170:LYS:HE2	2.11	0.50
1:V:48:LYS:HG2	1:V:53:ILE:HG13	1.93	0.50
1:W:64:LEU:C	1:W:66:GLU:H	2.19	0.50
1:Q:94:PHE:CD1	1:Q:101:VAL:HG21	2.47	0.50
1:O:180:ALA:O	1:O:183:LEU:HB3	2.12	0.49
1:Z:47:VAL:O	1:Z:51:LEU:HG	2.12	0.49
1:W:20:LEU:HD21	1:W:125:TYR:CE1	2.47	0.49
1:W:49:PRO:O	1:W:53:ILE:HG13	2.12	0.49
1:U:57:ALA:HA	1:U:62:ILE:CG2	2.39	0.49
1:P:117:ARG:HD2	1:P:184:ASP:OD2	2.13	0.49
1:Z:151:GLU:CG	1:Z:170:LEU:HD21	2.42	0.49
1:U:96:ARG:NH2	1:U:98:ASP:OD2	2.31	0.49
1:V:187:MET:CE	1:U:153:ILE:HG13	2.43	0.49
1:O:187:MET:CE	1:O:187:MET:HA	2.43	0.49
1:W:121:LEU:HD12	1:W:121:LEU:C	2.37	0.49
1:R:48:LYS:HD2	1:R:52:SER:HB2	1.94	0.49
1:Q:56:LYS:HE3	1:Q:59:ARG:NH1	2.28	0.49
1:V:143:ARG:NH1	1:V:148:ASN:OD1	2.44	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:T:301:APC:H8	2:T:301:APC:PA	2.53	0.49
1:Z:30:TYR:OH	1:W:8:ARG:HG3	2.13	0.49
1:Q:7:GLU:HG3	1:Q:8:ARG:NE	2.27	0.49
1:Q:74:ALA:HB1	1:Q:138:VAL:HG13	1.95	0.49
1:X:56:LYS:HD2	2:X:301:APC:O2G	2.13	0.49
1:X:42:PHE:CZ	1:X:79:MET:HE3	2.47	0.49
1:T:40:ILE:HD13	1:T:78:ILE:HG23	1.93	0.49
1:Z:31:GLU:C	1:Z:33:ASP:H	2.21	0.49
1:P:74:ALA:HB3	1:P:138:VAL:HG22	1.95	0.49
1:O:161:TYR:CD2	1:O:165:ILE:HA	2.48	0.49
1:R:83:VAL:HG22	1:R:144:THR:HG21	1.95	0.49
1:T:41:GLU:HG2	1:T:145:LEU:HD11	1.95	0.48
1:Z:46:PRO:O	1:Z:50:ILE:HG13	2.13	0.48
1:R:48:LYS:HD2	1:R:52:SER:CB	2.43	0.48
1:R:57:ALA:HA	1:R:62:ILE:HG22	1.94	0.48
1:V:161:TYR:CD2	1:V:166:PRO:CD	2.97	0.48
1:X:168:LYS:NZ	4:X:402:HOH:O	2.45	0.48
1:S:24:LEU:HD12	1:S:76:LEU:CD2	2.38	0.48
1:P:102:VAL:HG23	1:P:103:ASP:N	2.27	0.48
2:T:301:APC:H8	2:T:301:APC:C3A	2.43	0.48
1:Y:6:TRP:CH2	1:Y:67:ILE:HD13	2.47	0.48
1:Z:53:LYS:HD2	2:Z:301:APC:O3G	2.13	0.48
1:Q:144:THR:OG1	1:Q:147:MET:HB2	2.14	0.48
1:Z:53:LYS:NZ	2:Z:301:APC:O3G	2.28	0.48
1:U:158:ASN:HA	1:U:165:ILE:HD11	1.94	0.48
1:S:117:ARG:CZ	1:S:147:MET:HG2	2.44	0.48
2:S:302:APC:H8	2:S:302:APC:H3A1	1.95	0.48
1:R:89:VAL:HA	1:R:92:MET:HE3	1.94	0.48
1:Q:56:LYS:HA	1:Q:59:ARG:HH11	1.78	0.48
1:V:80:CYS:O	1:V:145:LEU:HG	2.14	0.48
1:T:111:HIS:NE2	1:T:120:HIS:HD2	2.12	0.48
1:Y:11:VAL:HB	1:Y:12:PRO:CD	2.43	0.48
1:U:57:ALA:O	1:U:62:ILE:HG23	2.13	0.48
1:Z:158:TYR:HB3	1:Z:161:ASN:O	2.14	0.48
1:Q:6:TRP:C	1:Q:8:ARG:N	2.72	0.48
1:O:85:ASP:O	1:O:88:ILE:HB	2.13	0.48
1:V:48:LYS:HD2	1:V:52:SER:CB	2.43	0.48
1:T:34:GLU:C	1:T:36:ASP:N	2.72	0.48
1:S:48:LYS:NZ	2:S:302:APC:H3A2	2.29	0.48
1:U:24:LEU:HD12	1:U:76:LEU:CD2	2.44	0.48
1:R:20:LEU:HB2	1:R:76:LEU:HD11	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:U:56:LYS:HD2	2:U:301:APC:O1G	2.13	0.48
1:P:99:PHE:CE1	1:P:123:VAL:HG11	2.49	0.48
1:Y:102:VAL:HG23	1:Y:103:ASP:H	1.79	0.47
1:P:46:ARG:NH2	2:P:301:APC:C3A	2.77	0.47
1:R:12:PRO:HG3	1:R:134:LYS:HE2	1.96	0.47
1:X:94:PHE:CE1	1:X:101:VAL:HG11	2.49	0.47
1:T:8:ARG:O	1:T:8:ARG:HD3	2.14	0.47
1:S:59:ARG:C	1:S:61:SER:H	2.23	0.47
1:U:82:PHE:HE1	1:U:187:MET:HE3	1.78	0.47
1:U:89:VAL:HA	1:U:92:MET:HE2	1.96	0.47
1:P:9:PHE:O	1:P:12:PRO:HD2	2.14	0.47
1:R:181:SER:O	1:R:185:GLU:HG3	2.14	0.47
1:Q:146:ALA:HB3	1:Q:184:ASP:OD2	2.14	0.47
1:U:67:ILE:C	1:U:69:THR:N	2.73	0.47
1:P:33:TYR:CZ	1:Q:8:ARG:HB3	2.49	0.47
1:P:46:ARG:HH21	2:P:301:APC:C3A	2.28	0.47
1:X:90:LYS:HD2	1:X:119:TYR:CE2	2.49	0.47
1:T:121:LEU:HD12	1:T:121:LEU:O	2.15	0.47
1:T:157:LEU:CD2	1:S:194:VAL:HG21	2.44	0.47
1:Z:153:SER:O	1:Z:156:TYR:HB3	2.13	0.47
1:W:48:LYS:NZ	1:W:72:ASP:OD2	2.47	0.47
1:P:12:PRO:O	1:P:127:LEU:HD21	2.14	0.47
1:R:149:PHE:HD2	1:Q:183:LEU:HD21	1.80	0.47
1:Q:166:PRO:HG2	1:Q:169:VAL:CG2	2.45	0.47
1:T:3:ASP:HA	1:T:6:TRP:HD1	1.80	0.47
2:Z:301:APC:H3A1	2:Z:301:APC:C8	2.41	0.47
1:O:160:LYS:HE3	1:O:161:TYR:HE1	1.79	0.47
1:U:150:TRP:NE1	1:U:177:SER:HB2	2.30	0.47
1:R:11:VAL:N	1:R:12:PRO:HD2	2.29	0.47
1:Z:45:LYS:HG2	1:Z:50:ILE:HG12	1.96	0.47
1:Y:124:LEU:HD11	1:Y:135:HIS:HB3	1.95	0.46
1:O:143:ARG:NH1	1:O:148:ASN:OD1	2.48	0.46
1:Z:95:ASP:OD1	1:W:128:GLN:HG3	2.14	0.46
1:Z:114:ARG:NH2	1:Z:144:MET:HG2	2.30	0.46
1:U:58:ARG:HB2	1:U:58:ARG:NH1	2.30	0.46
1:X:118:SER:O	1:X:119:TYR:HB2	2.16	0.46
1:T:118:SER:HB2	1:T:147:MET:CE	2.45	0.46
1:T:172:ARG:HE	1:S:189:GLU:HB3	1.79	0.46
1:Y:176:ALA:HB2	1:Z:187:ILE:HD11	1.96	0.46
1:T:46:ARG:HD3	1:T:46:ARG:C	2.40	0.46
2:T:301:APC:H3A1	2:T:301:APC:H8	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:T:301:APC:O2A	2:T:301:APC:PG	2.74	0.46
1:S:80:CYS:HB3	1:S:85:ASP:HB2	1.97	0.46
1:Y:34:GLU:O	1:Y:36:ASP:HB2	2.15	0.46
1:O:49:PRO:HD2	1:O:52:SER:HB3	1.97	0.46
1:R:48:LYS:NZ	1:R:72:ASP:OD2	2.46	0.46
1:V:68:GLU:OE1	4:V:402:HOH:O	2.21	0.46
1:X:30:LEU:O	1:X:30:LEU:HD23	2.16	0.46
1:X:53:ILE:HA	1:X:70:MET:HE1	1.98	0.46
1:T:19:GLU:OE1	1:T:125:TYR:OH	2.31	0.46
1:S:128:GLN:HE22	1:S:133:GLU:HG3	1.81	0.46
1:Q:82:PHE:O	1:Q:85:ASP:HB2	2.15	0.46
1:Q:59:ARG:NH2	1:Q:60:LYS:HE2	2.30	0.46
1:Z:86:VAL:HA	1:Z:89:MET:CE	2.39	0.46
1:P:95:ALA:HB3	4:P:401:HOH:O	2.14	0.46
1:V:48:LYS:HG2	1:V:53:ILE:CG1	2.46	0.46
1:T:64:LEU:O	1:T:67:ILE:HG12	2.16	0.46
1:T:107:TYR:HA	1:T:110:GLU:OE1	2.15	0.46
1:Y:150:TRP:HE1	1:Y:173:LEU:HD12	1.81	0.46
1:P:80:CYS:HB3	1:P:85:ASP:HB2	1.98	0.46
1:O:48:LYS:NZ	2:O:301:APC:H3A2	2.31	0.46
1:Q:59:ARG:HH11	1:Q:59:ARG:HB2	1.81	0.46
1:S:64:LEU:N	1:S:64:LEU:HD22	2.31	0.46
1:O:122:VAL:CG1	1:O:137:LEU:HD22	2.46	0.46
1:Z:184:MET:HE1	1:Z:187:ILE:HD12	1.94	0.46
1:W:150:TRP:HE1	1:W:173:LEU:HD23	1.81	0.46
1:P:158:ASN:HD22	1:P:165:ILE:HD11	1.80	0.46
1:V:5:GLN:O	1:V:9:PHE:N	2.47	0.45
1:S:124:LEU:HG	1:S:135:HIS:HB3	1.98	0.45
1:Y:190:ILE:HD11	1:Z:170:LEU:HA	1.97	0.45
1:O:123:VAL:HG23	1:O:138:VAL:HB	1.99	0.45
1:R:157:LEU:CD1	1:R:173:LEU:HD11	2.45	0.45
1:V:87:GLN:HE22	1:V:90:LYS:NZ	2.13	0.45
1:O:11:VAL:HB	1:O:12:PRO:HD3	1.97	0.45
1:O:150:TRP:NE1	1:O:177:SER:HB2	2.32	0.45
1:T:34:GLU:CD	1:U:8:ARG:HH12	2.24	0.45
1:S:165:ILE:HB	1:S:170:LYS:HZ3	1.81	0.45
1:Q:86:ILE:HG12	1:Q:142:ILE:HG22	1.98	0.45
1:P:182:ARG:NH1	1:P:186:GLU:OE2	2.47	0.45
1:Q:74:ALA:CB	1:Q:138:VAL:HG13	2.46	0.45
1:Q:90:LYS:HD2	1:Q:119:TYR:CZ	2.52	0.45
1:V:172:ARG:HH11	1:U:189:GLU:HG2	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Z:43:ARG:NH2	1:Z:45:LYS:HB2	2.31	0.45
1:Q:50:VAL:HA	1:Q:53:ILE:HG13	1.99	0.45
1:W:34:GLU:OE1	1:W:36:ASP:N	2.50	0.45
1:U:67:ILE:O	1:U:69:THR:N	2.49	0.45
1:Q:6:TRP:C	1:Q:8:ARG:H	2.25	0.45
1:V:160:LYS:O	1:V:160:LYS:HG3	2.15	0.45
1:X:48:LYS:HG2	1:X:53:ILE:HG12	1.98	0.45
1:R:115:GLY:C	1:R:117:ARG:H	2.25	0.45
2:V:301:APC:H2'	2:V:301:APC:N3	2.31	0.45
1:T:13:TYR:O	1:T:17:VAL:HG23	2.17	0.45
1:T:23:LYS:HD3	1:T:98:ASP:OD2	2.17	0.45
1:T:130:VAL:HG13	1:U:30:LEU:HD23	1.98	0.45
1:T:167:GLU:OE2	1:T:171:LEU:HD21	2.16	0.45
1:O:121:LEU:C	1:O:121:LEU:CD1	2.89	0.45
1:Z:10:TYR:CE1	1:Z:133:VAL:HG13	2.52	0.45
1:Z:71:ALA:CB	1:Z:135:VAL:HG22	2.47	0.45
1:Z:162:ILE:HA	1:Z:163:PRO:HD2	1.85	0.45
1:W:7:GLU:O	1:W:11:VAL:HG23	2.17	0.45
1:V:160:LYS:HG2	1:V:161:TYR:CE1	2.52	0.45
1:U:121:LEU:HD12	1:U:121:LEU:C	2.42	0.45
1:R:166:PRO:HG2	1:R:169:VAL:CG2	2.47	0.45
1:O:79:MET:HA	1:O:143:ARG:O	2.17	0.44
1:O:150:TRP:CZ2	1:O:154:GLU:HG3	2.51	0.44
1:V:153:ILE:HG22	1:V:173:LEU:HD21	1.99	0.44
1:T:189:GLU:OE1	1:S:172:ARG:NE	2.43	0.44
1:Y:46:ARG:HD3	1:Y:46:ARG:C	2.42	0.44
1:Z:125:GLN:HE22	1:Z:130:GLU:CG	2.31	0.44
1:P:83:VAL:HG22	1:P:117:ARG:HG2	1.98	0.44
1:S:166:PRO:O	1:S:170:LYS:HG3	2.17	0.44
1:Y:128:GLN:NE2	1:Y:133:GLU:HG3	2.33	0.44
1:Y:187:MET:HE1	1:Z:150:ILE:CG2	2.43	0.44
1:O:118:SER:O	1:O:118:SER:OG	2.34	0.44
1:P:92:MET:O	1:P:96:ARG:HG3	2.17	0.44
1:Q:98:ASP:OD1	1:Q:98:ASP:N	2.47	0.44
1:V:126:PRO:HG2	4:V:409:HOH:O	2.17	0.44
1:S:83:VAL:HG22	1:S:117:ARG:HG2	2.00	0.44
1:O:117:ARG:HD2	1:O:184:ASP:OD2	2.17	0.44
1:X:17:VAL:O	1:X:21:LYS:HB2	2.17	0.44
1:S:58:ARG:HB3	1:S:58:ARG:HH11	1.83	0.44
1:T:10:LEU:O	1:T:13:TYR:N	2.49	0.44
1:T:153:ILE:HG13	1:S:187:MET:CE	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Z:125:GLN:HE21	1:Z:125:GLN:N	2.16	0.44
1:Z:168:LEU:O	1:Z:171:GLN:HB3	2.17	0.44
1:W:9:PHE:O	1:W:12:PRO:HD2	2.18	0.44
1:Q:31:TYR:C	1:Q:33:TYR:H	2.25	0.44
1:X:34:GLU:H	1:X:34:GLU:HG3	1.51	0.44
1:X:167:GLU:OE2	1:X:171:LEU:HD13	2.17	0.44
1:P:19:GLU:HA	1:Q:22:VAL:HG11	2.00	0.44
1:R:90:LYS:HE2	1:R:119:TYR:CE1	2.53	0.44
1:R:118:SER:O	1:R:118:SER:OG	2.36	0.44
1:U:11:VAL:N	1:U:12:PRO:HD2	2.33	0.43
1:Q:56:LYS:HE2	2:Q:301:APC:O2G	2.18	0.43
1:Q:93:LEU:HD12	1:Q:121:LEU:HD21	2.00	0.43
1:V:76:LEU:C	2:V:301:APC:HN61	2.26	0.43
1:Y:170:LYS:O	1:Y:173:LEU:HB3	2.18	0.43
1:U:124:LEU:HG	1:U:135:HIS:HB3	2.00	0.43
1:P:186:GLU:HA	1:P:186:GLU:OE1	2.19	0.43
1:V:23:LYS:HE2	1:S:19:GLU:OE1	2.18	0.43
1:S:64:LEU:CD2	1:S:64:LEU:H	2.31	0.43
1:Y:46:ARG:NH2	2:Y:301:APC:H3A2	2.33	0.43
1:V:70:MET:HE3	1:V:70:MET:HB2	1.79	0.43
1:O:61:SER:O	1:O:62:ILE:HD13	2.19	0.43
1:O:193:GLU:HG2	1:P:172:ARG:HD2	2.00	0.43
1:R:172:ARG:HD2	1:Q:189:GLU:HB3	2.00	0.43
1:T:17:VAL:O	1:T:21:LYS:HB2	2.18	0.43
1:W:161:TYR:HB3	1:W:164:ASN:O	2.18	0.43
2:Q:301:APC:H3A1	2:Q:301:APC:C8	2.46	0.43
1:X:31:TYR:O	1:X:33:TYR:N	2.50	0.43
1:S:64:LEU:HD22	1:S:64:LEU:H	1.83	0.43
1:Q:56:LYS:HE3	1:Q:59:ARG:CZ	2.48	0.43
1:X:119:TYR:CD1	1:X:120:HIS:N	2.86	0.43
1:X:167:GLU:O	1:X:168:LYS:CB	2.65	0.43
1:Y:82:PHE:HZ	1:Z:150:ILE:HD13	1.82	0.43
1:O:193:GLU:CG	1:P:168:LYS:HE2	2.44	0.43
1:V:187:MET:HE2	1:V:187:MET:HB3	1.78	0.43
1:R:46:ARG:O	1:R:46:ARG:HD3	2.19	0.43
1:R:49:PRO:O	1:R:53:ILE:HG13	2.19	0.43
1:R:187:MET:HE3	1:Q:149:PHE:CE2	2.54	0.43
1:O:115:GLY:C	1:O:117:ARG:H	2.27	0.43
1:Z:60:PRO:C	1:Z:62:HIS:N	2.77	0.43
1:W:166:PRO:HG2	1:W:169:VAL:CG2	2.48	0.43
1:V:124:LEU:HG	1:V:135:HIS:HB3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S:34:GLU:C	1:S:36:ASP:N	2.77	0.42
1:Z:19:VAL:CG2	1:W:22:VAL:HG21	2.29	0.42
1:Z:43:ARG:HD2	2:Z:301:APC:O4'	2.19	0.42
1:P:30:LEU:HD13	1:Q:130:VAL:HG23	1.99	0.42
1:P:56:LYS:NZ	2:P:301:APC:O1G	2.45	0.42
1:R:56:LYS:HD2	2:R:301:APC:O3G	2.18	0.42
1:V:120:HIS:C	1:V:120:HIS:ND1	2.76	0.42
1:V:190:ILE:O	1:V:194:VAL:HG23	2.19	0.42
1:V:193:GLU:HG3	1:U:172:ARG:HG3	2.01	0.42
1:O:24:LEU:HD12	1:O:76:LEU:HD22	2.00	0.42
1:O:56:LYS:HD2	2:O:301:APC:O1G	2.18	0.42
1:O:187:MET:HE1	1:P:153:ILE:HG21	2.00	0.42
1:U:46:ARG:NH2	1:U:48:LYS:HB2	2.35	0.42
1:V:149:PHE:CE1	1:U:145:LEU:HD12	2.54	0.42
1:T:22:VAL:HG11	1:U:22:VAL:CG2	2.41	0.42
1:X:166:PRO:C	1:X:167:GLU:O	2.63	0.42
1:S:48:LYS:HE2	1:S:56:LYS:HD3	2.01	0.42
1:S:161:TYR:HB3	1:S:164:ASN:O	2.19	0.42
1:O:31:TYR:CD2	1:O:39:PRO:HD2	2.54	0.42
1:O:122:VAL:HG12	1:O:137:LEU:HD22	2.01	0.42
1:Z:79:PHE:O	1:Z:82:ASP:HB2	2.18	0.42
1:Z:158:TYR:CE2	1:Z:163:PRO:HG2	2.55	0.42
1:P:46:ARG:HH21	2:P:301:APC:H3A1	1.84	0.42
1:P:128:GLN:HE22	1:P:133:GLU:CG	2.32	0.42
1:Q:171:LEU:HD21	1:Q:175:ARG:NH2	2.34	0.42
1:V:46:ARG:HD3	1:V:46:ARG:C	2.43	0.42
1:V:165:ILE:HB	1:V:170:LYS:HG2	2.02	0.42
1:X:33:TYR:OH	1:Y:7:GLU:OE1	2.32	0.42
1:P:30:LEU:O	1:P:30:LEU:HD23	2.20	0.42
1:V:30:LEU:HD13	1:S:130:VAL:CG1	2.44	0.42
1:X:172:ARG:NH1	1:X:175:ARG:HD3	2.34	0.42
1:T:155:HIS:NE2	2:T:301:APC:H3'	2.34	0.42
1:O:102:VAL:HG23	1:O:103:ASP:N	2.33	0.42
1:Z:70:ILE:H	1:Z:70:ILE:HG13	1.63	0.42
1:W:11:VAL:N	1:W:12:PRO:HD2	2.35	0.42
1:Q:48:LYS:CG	1:Q:53:ILE:HG12	2.49	0.42
1:X:76:LEU:HD12	1:X:138:VAL:CG1	2.50	0.42
1:S:18:GLU:O	1:S:22:VAL:HG12	2.20	0.42
1:O:38:SER:HA	1:O:39:PRO:HD2	1.93	0.42
1:U:13:TYR:HD1	1:U:74:ALA:HB2	1.85	0.42
1:X:46:ARG:NH2	1:X:72:ASP:O	2.46	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Y:11:VAL:HB	1:Y:12:PRO:HD3	2.00	0.42
1:W:167:GLU:HA	1:W:170:LYS:HD3	2.02	0.42
1:Q:120:HIS:HD1	1:Q:120:HIS:C	2.28	0.42
1:Q:121:LEU:C	1:Q:121:LEU:HD12	2.45	0.42
1:T:168:LYS:HE3	1:T:172:ARG:HH12	1.85	0.42
1:Y:150:TRP:NE1	1:Y:177:SER:HB2	2.34	0.42
1:O:161:TYR:HD2	1:O:165:ILE:HA	1.85	0.42
1:Z:56:ARG:C	1:Z:58:SER:H	2.28	0.42
1:U:102:VAL:HG22	1:U:122:VAL:O	2.20	0.42
1:V:181:SER:O	1:V:185:GLU:HG3	2.19	0.42
1:T:147:MET:HE3	1:T:147:MET:HB3	1.93	0.42
2:T:301:APC:O2A	2:T:301:APC:O3B	2.37	0.42
1:Z:80:VAL:HG22	1:Z:114:ARG:HG2	2.02	0.42
1:Z:82:ASP:O	1:Z:85:ILE:HB	2.19	0.42
1:P:48:LYS:CG	1:P:53:ILE:CG1	2.98	0.42
1:Y:34:GLU:C	1:Y:36:ASP:N	2.78	0.41
1:Z:30:TYR:CE2	1:W:11:VAL:HG21	2.54	0.41
1:W:99:PHE:CE1	1:W:123:VAL:HG11	2.55	0.41
1:U:116:TYR:N	1:U:116:TYR:CD1	2.86	0.41
1:Y:99:PHE:CE1	1:Y:123:VAL:HG11	2.54	0.41
1:Z:167:LYS:NZ	1:Z:167:LYS:HB3	2.34	0.41
1:Y:168:LYS:HD3	1:Z:190:GLU:OE2	2.20	0.41
1:O:153:ILE:HD11	1:P:81:GLN:NE2	2.36	0.41
1:U:23:LYS:HD3	1:U:98:ASP:OD2	2.20	0.41
1:U:32:GLU:OE1	1:U:32:GLU:HA	2.17	0.41
1:R:62:ILE:HA	1:R:63:PRO:HD3	1.87	0.41
1:V:145:LEU:HD12	1:U:149:PHE:CE1	2.55	0.41
1:X:7:GLU:O	1:X:11:VAL:HG23	2.20	0.41
1:Y:65:HIS:CD2	1:Y:66:GLU:HG2	2.55	0.41
1:P:48:LYS:HB3	1:P:73:ILE:HA	2.03	0.41
1:P:127:LEU:HD12	1:P:127:LEU:HA	1.82	0.41
1:X:11:VAL:N	1:X:12:PRO:HD2	2.36	0.41
1:T:31:TYR:CE2	1:T:39:PRO:HD3	2.56	0.41
1:S:80:CYS:O	1:S:144:THR:HA	2.21	0.41
1:O:195:GLN:C	1:O:197:ALA:H	2.28	0.41
1:Z:157:LYS:C	1:Z:159:SER:H	2.28	0.41
1:P:33:TYR:CD1	1:Q:8:ARG:HD2	2.55	0.41
1:R:20:LEU:HA	1:R:20:LEU:HD23	1.78	0.41
1:Q:48:LYS:HG3	1:Q:53:ILE:HG12	2.03	0.41
1:V:15:GLN:CG	1:V:127:LEU:HD11	2.50	0.41
1:V:87:GLN:OE1	1:V:87:GLN:HA	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:X:172:ARG:HD3	1:X:172:ARG:HA	1.64	0.41
1:S:96:ARG:NH2	1:S:98:ASP:OD2	2.33	0.41
1:U:165:ILE:HA	1:U:166:PRO:HD2	1.84	0.41
1:U:191:ARG:O	1:U:195:GLN:HG2	2.20	0.41
1:Q:31:TYR:C	1:Q:33:TYR:N	2.78	0.41
1:V:48:LYS:CG	1:V:53:ILE:HG13	2.51	0.41
1:O:20:LEU:HD23	1:O:20:LEU:HA	1.91	0.41
1:V:48:LYS:HB3	1:V:73:ILE:HA	2.03	0.41
1:T:130:VAL:HG22	1:U:30:LEU:CD2	2.50	0.41
1:T:182:ARG:O	1:T:185:GLU:HB2	2.21	0.41
1:W:31:TYR:C	1:W:33:TYR:N	2.78	0.41
1:U:97:LYS:HE3	1:U:97:LYS:HB3	1.90	0.41
1:Q:15:GLN:NE2	1:Q:19:GLU:OE2	2.47	0.41
1:V:157:LEU:HD12	1:V:173:LEU:HD11	2.03	0.41
1:V:193:GLU:HG3	1:U:172:ARG:CG	2.51	0.41
1:T:22:VAL:CG1	1:U:22:VAL:HG21	2.42	0.41
1:T:165:ILE:HA	1:T:166:PRO:HD2	1.87	0.41
1:S:143:ARG:NH1	1:S:148:ASN:OD1	2.48	0.41
1:Y:48:LYS:HA	1:Y:49:PRO:HD3	1.77	0.41
1:Y:77:ARG:NE	1:Y:141:GLN:OE1	2.43	0.41
1:O:166:PRO:O	1:O:169:VAL:N	2.52	0.41
1:R:74:ALA:HB3	1:R:138:VAL:HG22	2.02	0.41
1:Q:120:HIS:ND1	1:Q:120:HIS:C	2.78	0.41
1:X:48:LYS:HD2	1:X:52:SER:HB2	2.03	0.41
1:U:31:TYR:O	1:U:34:GLU:N	2.54	0.41
1:U:46:ARG:HH21	1:U:48:LYS:HD3	1.86	0.41
1:Y:32:GLU:O	1:Y:32:GLU:HG2	2.21	0.40
1:R:178:GLU:O	1:R:182:ARG:HG3	2.21	0.40
1:Q:59:ARG:C	1:Q:61:SER:H	2.29	0.40
1:V:117:ARG:HD2	1:V:184:ASP:OD2	2.22	0.40
1:T:47:VAL:N	4:T:403:HOH:O	2.18	0.40
1:Y:11:VAL:N	1:Y:12:PRO:HD2	2.36	0.40
1:Y:176:ALA:CB	1:Z:187:ILE:HD11	2.51	0.40
1:Z:7:LEU:HB2	1:Z:11:ARG:NH2	2.36	0.40
1:Z:8:VAL:N	1:Z:9:PRO:HD2	2.36	0.40
1:P:182:ARG:HH12	1:P:186:GLU:CD	2.29	0.40
1:V:21:LYS:CG	1:V:25:LYS:HE3	2.51	0.40
1:U:57:ALA:C	1:U:62:ILE:HG12	2.46	0.40
1:P:20:LEU:HD23	1:P:20:LEU:HA	1.87	0.40
1:R:190:ILE:HD13	1:Q:173:LEU:HD23	2.02	0.40
1:V:154:GLU:O	1:V:158:ASN:HB2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:T:193:GLU:CG	1:S:168:LYS:HG2	2.49	0.40
1:O:19:GLU:O	1:O:22:VAL:HG13	2.22	0.40
1:O:46:ARG:HG2	1:O:47:VAL:N	2.30	0.40
1:P:190:ILE:O	1:P:194:VAL:HG23	2.20	0.40
1:V:31:TYR:C	1:V:33:TYR:N	2.72	0.40
1:V:137:LEU:HD23	1:V:137:LEU:HA	1.91	0.40
1:O:168:LYS:HE2	1:O:168:LYS:HB3	1.94	0.40
1:P:70:MET:HE2	1:P:73:ILE:CG1	2.49	0.40
1:Q:94:PHE:CE1	1:Q:101:VAL:HG11	2.57	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

There are no protein backbone outliers to report in this entry.

### 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	O	163/187 (87%)	147 (90%)	16 (10%)	7	25
1	P	161/187 (86%)	151 (94%)	10 (6%)	16	45
1	Q	160/187 (86%)	148 (92%)	12 (8%)	12	37
1	R	162/187 (87%)	150 (93%)	12 (7%)	13	37
1	S	162/187 (87%)	147 (91%)	15 (9%)	8	27
1	T	176/187 (94%)	152 (86%)	24 (14%)	3	13
1	U	167/187 (89%)	154 (92%)	13 (8%)	11	35
1	V	162/187 (87%)	150 (93%)	12 (7%)	13	37
1	W	167/187 (89%)	157 (94%)	10 (6%)	17	47

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	X	164/187 (88%)	150 (92%)	14 (8%)	10	31
1	Y	160/187 (86%)	153 (96%)	7 (4%)	25	59
1	Z	162/187 (87%)	141 (87%)	21 (13%)	4	14
All	All	1966/2244 (88%)	1800 (92%)	166 (8%)	10	32

All (166) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	V	21	LYS
1	V	36	ASP
1	V	46	ARG
1	V	48	LYS
1	V	83	VAL
1	V	120	HIS
1	V	121	LEU
1	V	130	VAL
1	V	133	GLU
1	V	136	VAL
1	V	171	LEU
1	V	187	MET
1	X	4	LYS
1	X	7	GLU
1	X	30	LEU
1	X	34	GLU
1	X	46	ARG
1	X	50	VAL
1	X	86	ILE
1	X	91	GLU
1	X	102	VAL
1	X	136	VAL
1	X	147	MET
1	X	156	SER
1	X	171	LEU
1	X	196	GLU
1	T	22	VAL
1	T	34	GLU
1	T	35	ASP
1	T	40	ILE
1	T	46	ARG
1	T	50	VAL
1	T	58	ARG

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Mol	Chain	Res	Type
1	T	64	LEU
1	T	67	ILE
1	T	79	MET
1	T	80	CYS
1	T	84	ASP
1	T	104	GLN
1	T	113	GLU
1	T	121	LEU
1	T	131	SER
1	T	147	MET
1	T	154	GLU
1	T	156	SER
1	T	162	SER
1	T	168	LYS
1	T	181	SER
1	T	187	MET
1	T	196	GLU
1	S	7	GLU
1	S	22	VAL
1	S	29	THR
1	S	46	ARG
1	S	59	ARG
1	S	90	LYS
1	S	97	LYS
1	S	118	SER
1	S	123	VAL
1	S	131	SER
1	S	136	VAL
1	S	147	MET
1	S	158	ASN
1	S	171	LEU
1	S	188	SER
1	Y	35	ASP
1	Y	46	ARG
1	Y	52	SER
1	Y	68	GLU
1	Y	80	CYS
1	Y	131	SER
1	Y	173	LEU
1	O	22	VAL
1	O	30	LEU
1	O	46	ARG

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Mol	Chain	Res	Type
1	O	53	ILE
1	O	69	THR
1	O	76	LEU
1	O	86	ILE
1	O	102	VAL
1	O	121	LEU
1	O	170	LYS
1	O	171	LEU
1	O	187	MET
1	O	189	GLU
1	O	191	ARG
1	O	193	GLU
1	O	196	GLU
1	Z	4	GLU
1	Z	24	ILE
1	Z	27	LEU
1	Z	30	TYR
1	Z	31	GLU
1	Z	32	ASP
1	Z	43	ARG
1	Z	55	ARG
1	Z	59	ILE
1	Z	66	THR
1	Z	73	LEU
1	Z	76	MET
1	Z	77	CYS
1	Z	81	ASP
1	Z	98	VAL
1	Z	127	VAL
1	Z	130	GLU
1	Z	144	MET
1	Z	167	LYS
1	Z	170	LEU
1	Z	184	MET
1	W	33	TYR
1	W	37	HIS
1	W	46	ARG
1	W	48	LYS
1	W	67	ILE
1	W	78	ILE
1	W	93	LEU
1	W	147	MET

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Mol	Chain	Res	Type
1	W	158	ASN
1	W	173	LEU
1	U	21	LYS
1	U	32	GLU
1	U	46	ARG
1	U	58	ARG
1	U	83	VAL
1	U	97	LYS
1	U	103	ASP
1	U	120	HIS
1	U	121	LEU
1	U	154	GLU
1	U	156	SER
1	U	171	LEU
1	U	188	SER
1	P	33	TYR
1	P	46	ARG
1	P	48	LYS
1	P	66	GLU
1	P	100	THR
1	P	127	LEU
1	P	165	ILE
1	P	181	SER
1	P	185	GLU
1	P	188	SER
1	R	34	GLU
1	R	35	ASP
1	R	37	HIS
1	R	46	ARG
1	R	53	ILE
1	R	67	ILE
1	R	76	LEU
1	R	84	ASP
1	R	102	VAL
1	R	120	HIS
1	R	173	LEU
1	R	191	ARG
1	Q	46	ARG
1	Q	50	VAL
1	Q	68	GLU
1	Q	69	THR
1	Q	83	VAL

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Mol	Chain	Res	Type
1	Q	117	ARG
1	Q	120	HIS
1	Q	136	VAL
1	Q	138	VAL
1	Q	147	MET
1	Q	162	SER
1	Q	173	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (15) such sidechains are listed below:

Mol	Chain	Res	Type
1	V	158	ASN
1	T	104	GLN
1	T	120	HIS
1	T	158	ASN
1	Y	155	HIS
1	Z	78	GLN
1	Z	125	GLN
1	W	148	ASN
1	W	158	ASN
1	W	195	GLN
1	U	81	GLN
1	P	128	GLN
1	R	164	ASN
1	Q	81	GLN
1	Q	135	HIS

### 5.3.3 RNA ⓘ

There are no RNA molecules 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 oligosaccharides in this entry.

## 5.6 Ligand geometry

Of 24 ligands modelled in this entry, 12 are monoatomic - leaving 12 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	APC	U	301	3	29,33,33	2.02	10 (34%)	44,52,52	2.15	13 (29%)
2	APC	Q	301	3	29,33,33	2.08	10 (34%)	44,52,52	2.19	13 (29%)
2	APC	W	301	3	29,33,33	1.99	8 (27%)	44,52,52	2.17	15 (34%)
2	APC	Z	301	3	29,33,33	2.04	9 (31%)	44,52,52	2.15	12 (27%)
2	APC	P	301	3	29,33,33	2.13	11 (37%)	44,52,52	2.26	14 (31%)
2	APC	X	301	3	29,33,33	2.01	10 (34%)	44,52,52	2.30	15 (34%)
2	APC	R	301	3	29,33,33	1.91	8 (27%)	44,52,52	2.24	19 (43%)
2	APC	O	301	3	29,33,33	2.05	10 (34%)	44,52,52	2.20	14 (31%)
2	APC	Y	301	3	29,33,33	1.96	10 (34%)	44,52,52	2.28	16 (36%)
2	APC	V	301	3	29,33,33	2.03	9 (31%)	44,52,52	2.11	13 (29%)
2	APC	S	302	3	29,33,33	2.06	10 (34%)	44,52,52	2.17	10 (22%)
2	APC	T	301	3	29,33,33	2.25	10 (34%)	44,52,52	2.65	18 (40%)

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	APC	U	301	3	-	7/19/38/38	0/3/3/3
2	APC	Q	301	3	-	7/19/38/38	0/3/3/3
2	APC	W	301	3	-	10/19/38/38	0/3/3/3
2	APC	Z	301	3	-	6/19/38/38	0/3/3/3
2	APC	P	301	3	-	9/19/38/38	0/3/3/3
2	APC	X	301	3	-	9/19/38/38	0/3/3/3
2	APC	R	301	3	-	3/19/38/38	0/3/3/3
2	APC	O	301	3	-	9/19/38/38	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	APC	Y	301	3	-	7/19/38/38	0/3/3/3
2	APC	V	301	3	-	3/19/38/38	0/3/3/3
2	APC	S	302	3	-	9/19/38/38	0/3/3/3
2	APC	T	301	3	-	10/19/38/38	0/3/3/3

All (115) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	P	301	APC	C5-N7	5.06	1.48	1.39
2	Q	301	APC	C5-N7	4.85	1.47	1.39
2	W	301	APC	C5-N7	4.74	1.47	1.39
2	X	301	APC	C5-N7	4.67	1.47	1.39
2	O	301	APC	C5-N7	4.58	1.47	1.39
2	T	301	APC	C8-N9	-4.53	1.29	1.37
2	S	302	APC	C8-N9	-4.48	1.29	1.37
2	Z	301	APC	C5-N7	4.42	1.47	1.39
2	V	301	APC	C5-N7	4.36	1.47	1.39
2	V	301	APC	C5-C4	4.34	1.46	1.39
2	T	301	APC	C5-C4	4.34	1.46	1.39
2	U	301	APC	C5-N7	4.13	1.46	1.39
2	Q	301	APC	C5-C4	4.04	1.46	1.39
2	U	301	APC	C5-C4	3.99	1.46	1.39
2	P	301	APC	C8-N7	3.98	1.39	1.31
2	T	301	APC	C5-N7	3.95	1.46	1.39
2	Z	301	APC	C8-N9	-3.92	1.30	1.37
2	X	301	APC	C8-N7	3.87	1.39	1.31
2	Z	301	APC	C5-C4	3.86	1.46	1.39
2	R	301	APC	C5-N7	3.83	1.46	1.39
2	V	301	APC	C8-N7	3.82	1.39	1.31
2	S	302	APC	C5-C4	3.82	1.45	1.39
2	W	301	APC	C8-N7	3.75	1.38	1.31
2	R	301	APC	C8-N7	3.74	1.38	1.31
2	X	301	APC	C5-C4	3.68	1.45	1.39
2	S	302	APC	C5-N7	3.67	1.45	1.39
2	O	301	APC	C5-C4	3.66	1.45	1.39
2	Y	301	APC	C5-N7	3.65	1.45	1.39
2	R	301	APC	C5-C4	3.65	1.45	1.39
2	T	301	APC	PB-O3B	3.63	1.62	1.58
2	S	302	APC	C8-N7	3.63	1.38	1.31
2	Y	301	APC	C8-N9	-3.63	1.31	1.37
2	Y	301	APC	C4-N9	-3.62	1.30	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	O	301	APC	C8-N7	3.61	1.38	1.31
2	U	301	APC	C8-N9	-3.60	1.31	1.37
2	U	301	APC	C8-N7	3.58	1.38	1.31
2	Q	301	APC	C8-N7	3.58	1.38	1.31
2	W	301	APC	C5-C4	3.56	1.45	1.39
2	R	301	APC	C6-N6	3.51	1.43	1.34
2	T	301	APC	C6-N6	3.50	1.43	1.34
2	Z	301	APC	C6-N6	3.48	1.43	1.34
2	Y	301	APC	C5-C4	3.47	1.45	1.39
2	V	301	APC	C6-N6	3.46	1.43	1.34
2	W	301	APC	C6-N6	3.43	1.43	1.34
2	O	301	APC	C8-N9	-3.42	1.31	1.37
2	O	301	APC	C6-N6	3.41	1.42	1.34
2	P	301	APC	C5-C4	3.40	1.45	1.39
2	U	301	APC	C6-N6	3.38	1.42	1.34
2	T	301	APC	C8-N7	3.38	1.38	1.31
2	P	301	APC	C8-N9	-3.33	1.31	1.37
2	V	301	APC	C4-N9	-3.33	1.30	1.37
2	Z	301	APC	C8-N7	3.33	1.38	1.31
2	Q	301	APC	C6-N6	3.32	1.42	1.34
2	S	302	APC	C6-N6	3.30	1.42	1.34
2	T	301	APC	PA-O2A	-3.25	1.48	1.56
2	X	301	APC	C6-N6	3.24	1.42	1.34
2	P	301	APC	C6-N6	3.24	1.42	1.34
2	Q	301	APC	C4-N9	-3.23	1.31	1.37
2	X	301	APC	C8-N9	-3.23	1.32	1.37
2	O	301	APC	PB-O3B	3.21	1.62	1.58
2	Y	301	APC	C6-N6	3.14	1.42	1.34
2	Z	301	APC	C4-N9	-3.13	1.31	1.37
2	T	301	APC	O4'-C1'	3.11	1.49	1.42
2	Y	301	APC	C8-N7	3.10	1.37	1.31
2	W	301	APC	C8-N9	-3.06	1.32	1.37
2	R	301	APC	C8-N9	-3.06	1.32	1.37
2	O	301	APC	C4-N9	-3.04	1.31	1.37
2	U	301	APC	C4-N9	-2.94	1.31	1.37
2	R	301	APC	C4-N9	-2.92	1.31	1.37
2	V	301	APC	PB-O3B	2.92	1.61	1.58
2	Q	301	APC	C8-N9	-2.87	1.32	1.37
2	P	301	APC	PB-O3B	2.85	1.61	1.58
2	X	301	APC	C4-N9	-2.82	1.31	1.37
2	W	301	APC	C4-N9	-2.81	1.31	1.37
2	Q	301	APC	O4'-C1'	2.78	1.48	1.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	P	301	APC	C4-N9	-2.77	1.31	1.37
2	Y	301	APC	O4'-C1'	2.75	1.48	1.42
2	S	302	APC	C4-N9	-2.72	1.32	1.37
2	P	301	APC	C2'-C3'	-2.64	1.46	1.53
2	X	301	APC	C2'-C3'	-2.62	1.46	1.53
2	Q	301	APC	C2'-C3'	-2.60	1.46	1.53
2	S	302	APC	C2'-C3'	-2.56	1.46	1.53
2	P	301	APC	PA-O2A	-2.53	1.50	1.56
2	S	302	APC	O4'-C1'	2.50	1.47	1.42
2	Q	301	APC	PB-O3B	2.50	1.61	1.58
2	O	301	APC	PA-O2A	-2.45	1.50	1.56
2	U	301	APC	C2'-C3'	-2.43	1.46	1.53
2	Z	301	APC	O4'-C1'	2.41	1.47	1.42
2	W	301	APC	O4'-C1'	2.41	1.47	1.42
2	V	301	APC	O4'-C1'	2.39	1.47	1.42
2	O	301	APC	C2'-C3'	-2.37	1.46	1.53
2	Y	301	APC	PB-O2B	-2.37	1.50	1.56
2	U	301	APC	PA-O2A	-2.33	1.50	1.56
2	S	302	APC	PA-O2A	-2.30	1.50	1.56
2	U	301	APC	O4'-C1'	2.30	1.47	1.42
2	X	301	APC	PB-O3B	2.29	1.60	1.58
2	T	301	APC	C4-N9	-2.28	1.32	1.37
2	S	302	APC	PB-O3B	2.28	1.60	1.58
2	W	301	APC	C2'-C3'	-2.26	1.47	1.53
2	R	301	APC	PB-O3B	2.25	1.60	1.58
2	V	301	APC	C2'-C3'	-2.23	1.47	1.53
2	Y	301	APC	PA-O2A	-2.22	1.51	1.56
2	Z	301	APC	PA-O2A	-2.21	1.51	1.56
2	X	301	APC	O4'-C1'	2.18	1.47	1.42
2	P	301	APC	PB-O2B	-2.17	1.51	1.56
2	Y	301	APC	C2'-C3'	-2.12	1.47	1.53
2	Z	301	APC	PB-O3B	2.11	1.60	1.58
2	Q	301	APC	PA-O2A	-2.11	1.51	1.56
2	T	301	APC	C2'-C3'	-2.10	1.47	1.53
2	X	301	APC	PA-O2A	-2.10	1.51	1.56
2	R	301	APC	O4'-C1'	2.09	1.46	1.42
2	V	301	APC	PA-O2A	-2.07	1.51	1.56
2	U	301	APC	PB-O2B	-2.07	1.51	1.56
2	P	301	APC	C3'-C4'	-2.05	1.47	1.53
2	O	301	APC	O4'-C1'	2.04	1.46	1.42

All (172) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	X	301	APC	C4-N9-C8	9.24	115.44	105.74
2	U	301	APC	C4-N9-C8	9.00	115.18	105.74
2	O	301	APC	C4-N9-C8	8.60	114.76	105.74
2	W	301	APC	C4-N9-C8	8.52	114.69	105.74
2	Q	301	APC	C4-N9-C8	8.50	114.67	105.74
2	P	301	APC	C4-N9-C8	8.49	114.66	105.74
2	V	301	APC	C4-N9-C8	8.35	114.50	105.74
2	S	302	APC	C4-N9-C8	8.22	114.37	105.74
2	Z	301	APC	C4-N9-C8	8.09	114.24	105.74
2	R	301	APC	C4-N9-C8	7.99	114.13	105.74
2	Y	301	APC	C4-N9-C8	7.62	113.74	105.74
2	T	301	APC	C4-N9-C8	7.35	113.46	105.74
2	Y	301	APC	PB-O3B-PG	-4.92	114.80	132.45
2	T	301	APC	N3-C4-N9	4.89	135.48	127.17
2	T	301	APC	C5-C4-N3	-4.84	120.05	126.72
2	T	301	APC	C1'-N9-C8	-4.74	116.58	127.09
2	T	301	APC	C2'-C3'-C4'	4.30	110.93	102.61
2	Z	301	APC	N3-C4-N9	4.26	134.42	127.17
2	S	302	APC	PB-O3B-PG	-4.26	117.19	132.45
2	T	301	APC	PB-O3B-PG	-4.21	117.35	132.45
2	T	301	APC	O5'-C5'-C4'	4.21	123.34	108.99
2	W	301	APC	N3-C2-N1	-4.21	122.21	128.58
2	X	301	APC	N3-C2-N1	-4.17	122.27	128.58
2	X	301	APC	PB-O3B-PG	-4.16	117.53	132.45
2	P	301	APC	O2G-PG-O3B	4.10	118.38	104.64
2	T	301	APC	O2A-PA-O1A	-4.09	96.64	109.95
2	R	301	APC	N3-C4-N9	4.05	134.06	127.17
2	Q	301	APC	PB-O3B-PG	-4.00	118.12	132.45
2	X	301	APC	N3-C4-N9	3.94	133.87	127.17
2	O	301	APC	N3-C2-N1	-3.91	122.67	128.58
2	S	302	APC	N3-C4-N9	3.88	133.77	127.17
2	Q	301	APC	N3-C2-N1	-3.83	122.78	128.58
2	U	301	APC	N3-C4-N9	3.81	133.65	127.17
2	S	302	APC	O3G-PG-O3B	3.77	117.28	104.64
2	O	301	APC	O2G-PG-O3B	3.77	117.27	104.64
2	P	301	APC	N3-C4-N9	3.75	133.55	127.17
2	W	301	APC	N3-C4-N9	3.75	133.54	127.17
2	T	301	APC	O1A-PA-C3A	-3.74	99.19	109.05
2	Y	301	APC	N3-C2-N1	-3.72	122.95	128.58
2	Y	301	APC	O2G-PG-O3B	3.69	117.02	104.64
2	P	301	APC	C5-C4-N3	-3.64	121.71	126.72
2	Z	301	APC	C5-C4-N3	-3.64	121.71	126.72
2	P	301	APC	O3G-PG-O3B	3.63	116.80	104.64

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	P	301	APC	N3-C2-N1	-3.62	123.09	128.58
2	Z	301	APC	PB-O3B-PG	-3.61	119.52	132.45
2	R	301	APC	N3-C2-N1	-3.60	123.12	128.58
2	S	302	APC	N3-C2-N1	-3.60	123.13	128.58
2	U	301	APC	O2G-PG-O3B	3.59	116.68	104.64
2	O	301	APC	N3-C4-N9	3.59	133.27	127.17
2	U	301	APC	N3-C2-N1	-3.55	123.20	128.58
2	T	301	APC	O4'-C4'-C3'	-3.50	98.21	105.15
2	Y	301	APC	N3-C4-N9	3.43	133.00	127.17
2	P	301	APC	PB-O3B-PG	-3.34	120.48	132.45
2	R	301	APC	C5-C4-N3	-3.30	122.17	126.72
2	T	301	APC	C4-C5-N7	-3.30	106.81	110.58
2	V	301	APC	O3G-PG-O3B	3.28	115.64	104.64
2	S	302	APC	C5-C4-N3	-3.28	122.20	126.72
2	Q	301	APC	N3-C4-N9	3.26	132.72	127.17
2	W	301	APC	C5-C4-N3	-3.24	122.26	126.72
2	Y	301	APC	O3G-PG-O3B	3.21	115.40	104.64
2	Q	301	APC	C2-N1-C6	3.19	123.97	118.73
2	V	301	APC	N3-C4-N9	3.18	132.57	127.17
2	Q	301	APC	O4'-C1'-N9	3.13	114.09	108.09
2	Q	301	APC	C4-N9-C1'	-3.11	119.36	126.63
2	T	301	APC	O3'-C3'-C2'	-3.09	101.91	111.82
2	W	301	APC	O2G-PG-O3B	3.03	114.81	104.64
2	V	301	APC	N3-C2-N1	-3.03	123.99	128.58
2	O	301	APC	PB-O3B-PG	-3.02	121.64	132.45
2	Z	301	APC	N3-C2-N1	-3.00	124.04	128.58
2	P	301	APC	O3G-PG-O2G	-3.00	96.55	107.80
2	Q	301	APC	O3G-PG-O3B	3.00	114.68	104.64
2	U	301	APC	C2-N1-C6	2.98	123.63	118.73
2	V	301	APC	O4'-C1'-N9	2.98	113.82	108.09
2	R	301	APC	O2G-PG-O3B	2.98	114.63	104.64
2	Y	301	APC	C2-N1-C6	2.98	123.62	118.73
2	Z	301	APC	O2G-PG-O3B	2.97	114.58	104.64
2	P	301	APC	C4-C5-N7	-2.96	107.20	110.58
2	R	301	APC	O5'-C5'-C4'	2.95	119.03	108.99
2	O	301	APC	O3G-PG-O3B	2.95	114.52	104.64
2	X	301	APC	C5-C4-N3	-2.94	122.67	126.72
2	O	301	APC	C2'-C3'-C4'	2.93	108.27	102.61
2	Y	301	APC	C5-C4-N3	-2.92	122.69	126.72
2	V	301	APC	N6-C6-N1	2.90	124.83	118.38
2	Z	301	APC	O4'-C1'-C2'	-2.90	100.42	106.62
2	O	301	APC	C2-N1-C6	2.89	123.47	118.73

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	O	301	APC	C5-C4-N3	-2.89	122.74	126.72
2	U	301	APC	PB-O3B-PG	-2.88	122.15	132.45
2	W	301	APC	C2-N1-C6	2.84	123.40	118.73
2	V	301	APC	C2-N1-C6	2.84	123.39	118.73
2	R	301	APC	PB-O3B-PG	-2.82	122.36	132.45
2	Y	301	APC	O2A-PA-C3A	2.79	118.30	106.73
2	R	301	APC	O3G-PG-O3B	2.77	113.93	104.64
2	T	301	APC	O3G-PG-O3B	2.76	113.89	104.64
2	U	301	APC	C5-C4-N3	-2.75	122.93	126.72
2	S	302	APC	C2-N1-C6	2.75	123.24	118.73
2	S	302	APC	C4-C5-N7	-2.73	107.46	110.58
2	T	301	APC	O2G-PG-O3B	2.73	113.79	104.64
2	X	301	APC	C2-N1-C6	2.71	123.19	118.73
2	V	301	APC	O2G-PG-O3B	2.71	113.73	104.64
2	T	301	APC	O3G-PG-O1G	-2.70	100.30	110.83
2	V	301	APC	C5-C4-N9	-2.66	102.91	105.81
2	U	301	APC	O3G-PG-O3B	2.66	113.56	104.64
2	R	301	APC	C2-N1-C6	2.65	123.09	118.73
2	X	301	APC	O3G-PG-O3B	2.65	113.53	104.64
2	S	302	APC	C1'-N9-C8	-2.61	121.31	127.09
2	X	301	APC	O4'-C1'-N9	2.58	113.05	108.09
2	T	301	APC	O4'-C4'-C5'	2.56	117.54	109.33
2	V	301	APC	O4'-C1'-C2'	-2.56	101.14	106.62
2	Z	301	APC	O3G-PG-O3B	2.55	113.20	104.64
2	Y	301	APC	C4-N9-C1'	-2.50	120.79	126.63
2	Y	301	APC	O3G-PG-O1G	-2.49	101.14	110.83
2	P	301	APC	C2-N3-C4	2.47	117.86	111.83
2	W	301	APC	C4-C5-N7	-2.46	107.77	110.58
2	W	301	APC	C2-N3-C4	2.45	117.83	111.83
2	X	301	APC	C4-N9-C1'	-2.45	120.90	126.63
2	W	301	APC	O2B-PB-C3A	2.45	116.86	106.73
2	X	301	APC	N9-C8-N7	-2.44	110.47	113.94
2	Y	301	APC	O4'-C1'-N9	2.42	112.73	108.09
2	R	301	APC	O3G-PG-O1G	-2.41	101.43	110.83
2	O	301	APC	O3G-PG-O1G	-2.41	101.46	110.83
2	O	301	APC	C4-C5-N7	-2.38	107.86	110.58
2	Q	301	APC	C5-C4-N3	-2.35	123.48	126.72
2	T	301	APC	N3-C2-N1	-2.35	125.03	128.58
2	V	301	APC	C4'-O4'-C1'	-2.35	104.29	109.47
2	P	301	APC	N9-C8-N7	-2.31	110.66	113.94
2	U	301	APC	C4-C5-N7	-2.30	107.95	110.58
2	P	301	APC	C6-C5-N7	2.29	136.51	132.09

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	R	301	APC	C2'-C1'-N9	2.28	118.98	113.30
2	X	301	APC	C2-N3-C4	2.28	117.40	111.83
2	R	301	APC	O4'-C1'-C2'	-2.28	101.74	106.62
2	R	301	APC	C4'-O4'-C1'	-2.27	104.45	109.47
2	Y	301	APC	C2'-C3'-C4'	2.26	106.98	102.61
2	V	301	APC	PB-O3B-PG	-2.24	124.41	132.45
2	Q	301	APC	O2G-PG-O3B	2.24	112.15	104.64
2	Z	301	APC	O4'-C1'-N9	2.23	112.38	108.09
2	R	301	APC	O2G-PG-O1G	-2.22	102.17	110.83
2	W	301	APC	N9-C8-N7	-2.22	110.78	113.94
2	Z	301	APC	C4-C5-N7	-2.21	108.05	110.58
2	Q	301	APC	C4'-O4'-C1'	-2.21	104.59	109.47
2	T	301	APC	C2-N3-C4	2.21	117.22	111.83
2	U	301	APC	N9-C8-N7	-2.20	110.82	113.94
2	R	301	APC	O1A-PA-C3A	2.19	114.83	109.05
2	Z	301	APC	C2-N1-C6	2.19	122.33	118.73
2	W	301	APC	O3G-PG-O3B	2.19	111.98	104.64
2	U	301	APC	C5-C4-N9	-2.19	103.43	105.81
2	O	301	APC	C3'-C2'-C1'	2.18	105.60	101.46
2	W	301	APC	O4'-C1'-N9	2.15	112.23	108.09
2	Z	301	APC	C4'-O4'-C1'	-2.15	104.72	109.47
2	X	301	APC	C5-C4-N9	-2.15	103.47	105.81
2	Y	301	APC	C4-C5-N7	-2.15	108.12	110.58
2	U	301	APC	C4-N9-C1'	-2.13	121.65	126.63
2	S	302	APC	O3G-PG-O1G	-2.12	102.59	110.83
2	O	301	APC	C2-N3-C4	2.11	116.99	111.83
2	Y	301	APC	O1A-PA-C3A	-2.10	103.51	109.05
2	P	301	APC	C2-N1-C6	2.10	122.18	118.73
2	X	301	APC	C4-C5-N7	-2.09	108.19	110.58
2	U	301	APC	O2G-PG-O1G	-2.08	102.74	110.83
2	Q	301	APC	C5'-C4'-C3'	-2.08	107.74	115.21
2	X	301	APC	O1B-PB-C3A	2.08	114.52	109.05
2	R	301	APC	C3'-C2'-C1'	2.06	105.36	101.46
2	W	301	APC	C4-N9-C1'	-2.06	121.81	126.63
2	W	301	APC	C6-C5-N7	2.04	136.03	132.09
2	X	301	APC	O2G-PG-O3B	2.04	111.48	104.64
2	Q	301	APC	C4-C5-N7	-2.04	108.25	110.58
2	R	301	APC	C1'-N9-C8	-2.04	122.57	127.09
2	O	301	APC	C4-N9-C1'	-2.03	121.89	126.63
2	W	301	APC	PB-O3B-PG	-2.03	125.19	132.45
2	P	301	APC	C4-N9-C1'	-2.02	121.92	126.63
2	R	301	APC	N6-C6-N1	2.01	122.86	118.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	V	301	APC	C5-C6-N6	-2.01	118.31	123.29
2	R	301	APC	C2-N3-C4	2.00	116.72	111.83
2	Y	301	APC	O2B-PB-O1B	2.00	116.46	109.95

There are no chirality outliers.

All (89) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	X	301	APC	PA-C3A-PB-O1B
2	X	301	APC	PA-C3A-PB-O2B
2	X	301	APC	PA-C3A-PB-O3B
2	X	301	APC	PB-C3A-PA-O1A
2	X	301	APC	PB-C3A-PA-O2A
2	X	301	APC	PB-C3A-PA-O5'
2	X	301	APC	C5'-O5'-PA-C3A
2	X	301	APC	O4'-C4'-C5'-O5'
2	X	301	APC	C3'-C4'-C5'-O5'
2	T	301	APC	PA-C3A-PB-O1B
2	T	301	APC	PA-C3A-PB-O2B
2	T	301	APC	PA-C3A-PB-O3B
2	T	301	APC	PB-C3A-PA-O1A
2	T	301	APC	PB-C3A-PA-O2A
2	T	301	APC	PB-C3A-PA-O5'
2	T	301	APC	C4'-C5'-O5'-PA
2	S	302	APC	PA-C3A-PB-O1B
2	S	302	APC	PA-C3A-PB-O3B
2	S	302	APC	PB-C3A-PA-O1A
2	S	302	APC	PB-C3A-PA-O2A
2	S	302	APC	PB-C3A-PA-O5'
2	S	302	APC	O4'-C4'-C5'-O5'
2	Y	301	APC	C5'-O5'-PA-C3A
2	Y	301	APC	O4'-C4'-C5'-O5'
2	O	301	APC	PB-C3A-PA-O1A
2	O	301	APC	PB-C3A-PA-O5'
2	O	301	APC	O4'-C4'-C5'-O5'
2	Z	301	APC	PB-C3A-PA-O1A
2	Z	301	APC	O4'-C4'-C5'-O5'
2	W	301	APC	PB-O3B-PG-O2G
2	W	301	APC	PA-C3A-PB-O1B
2	W	301	APC	PB-C3A-PA-O1A
2	W	301	APC	PB-C3A-PA-O2A
2	W	301	APC	PB-C3A-PA-O5'

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Mol	Chain	Res	Type	Atoms
2	W	301	APC	O4'-C4'-C5'-O5'
2	U	301	APC	PB-O3B-PG-O2G
2	U	301	APC	PB-O3B-PG-O3G
2	U	301	APC	PA-C3A-PB-O1B
2	U	301	APC	O4'-C4'-C5'-O5'
2	P	301	APC	PB-C3A-PA-O1A
2	P	301	APC	PB-C3A-PA-O2A
2	P	301	APC	PB-C3A-PA-O5'
2	P	301	APC	C5'-O5'-PA-O1A
2	P	301	APC	O4'-C4'-C5'-O5'
2	R	301	APC	PB-O3B-PG-O2G
2	R	301	APC	C4'-C5'-O5'-PA
2	Q	301	APC	PA-C3A-PB-O3B
2	Q	301	APC	PB-C3A-PA-O1A
2	Q	301	APC	PB-C3A-PA-O2A
2	Q	301	APC	PB-C3A-PA-O5'
2	T	301	APC	O4'-C4'-C5'-O5'
2	S	302	APC	C3'-C4'-C5'-O5'
2	Y	301	APC	C3'-C4'-C5'-O5'
2	Z	301	APC	C3'-C4'-C5'-O5'
2	W	301	APC	C3'-C4'-C5'-O5'
2	P	301	APC	C3'-C4'-C5'-O5'
2	Q	301	APC	O4'-C4'-C5'-O5'
2	Q	301	APC	C3'-C4'-C5'-O5'
2	V	301	APC	O4'-C4'-C5'-O5'
2	V	301	APC	C3'-C4'-C5'-O5'
2	T	301	APC	C3'-C4'-C5'-O5'
2	O	301	APC	C3'-C4'-C5'-O5'
2	U	301	APC	C3'-C4'-C5'-O5'
2	O	301	APC	PB-O3B-PG-O1G
2	P	301	APC	PB-O3B-PG-O1G
2	O	301	APC	C5'-O5'-PA-O1A
2	S	302	APC	PA-C3A-PB-O2B
2	Y	301	APC	PA-C3A-PB-O2B
2	O	301	APC	PB-C3A-PA-O2A
2	Z	301	APC	PB-C3A-PA-O2A
2	W	301	APC	PA-C3A-PB-O2B
2	W	301	APC	PA-C3A-PB-O3B
2	U	301	APC	PA-C3A-PB-O2B
2	U	301	APC	PA-C3A-PB-O3B
2	Q	301	APC	PA-C3A-PB-O2B
2	Z	301	APC	C4'-C5'-O5'-PA

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Mol	Chain	Res	Type	Atoms
2	Y	301	APC	C4'-C5'-O5'-PA
2	T	301	APC	C5'-O5'-PA-O2A
2	Y	301	APC	PA-C3A-PB-O1B
2	Y	301	APC	PB-C3A-PA-O1A
2	O	301	APC	C5'-O5'-PA-O2A
2	Z	301	APC	C5'-O5'-PA-O2A
2	P	301	APC	PA-C3A-PB-O1B
2	P	301	APC	C5'-O5'-PA-O2A
2	R	301	APC	PB-O3B-PG-O3G
2	O	301	APC	C4'-C5'-O5'-PA
2	S	302	APC	C5'-O5'-PA-C3A
2	V	301	APC	O4'-C1'-N9-C8
2	W	301	APC	PB-O3B-PG-O1G

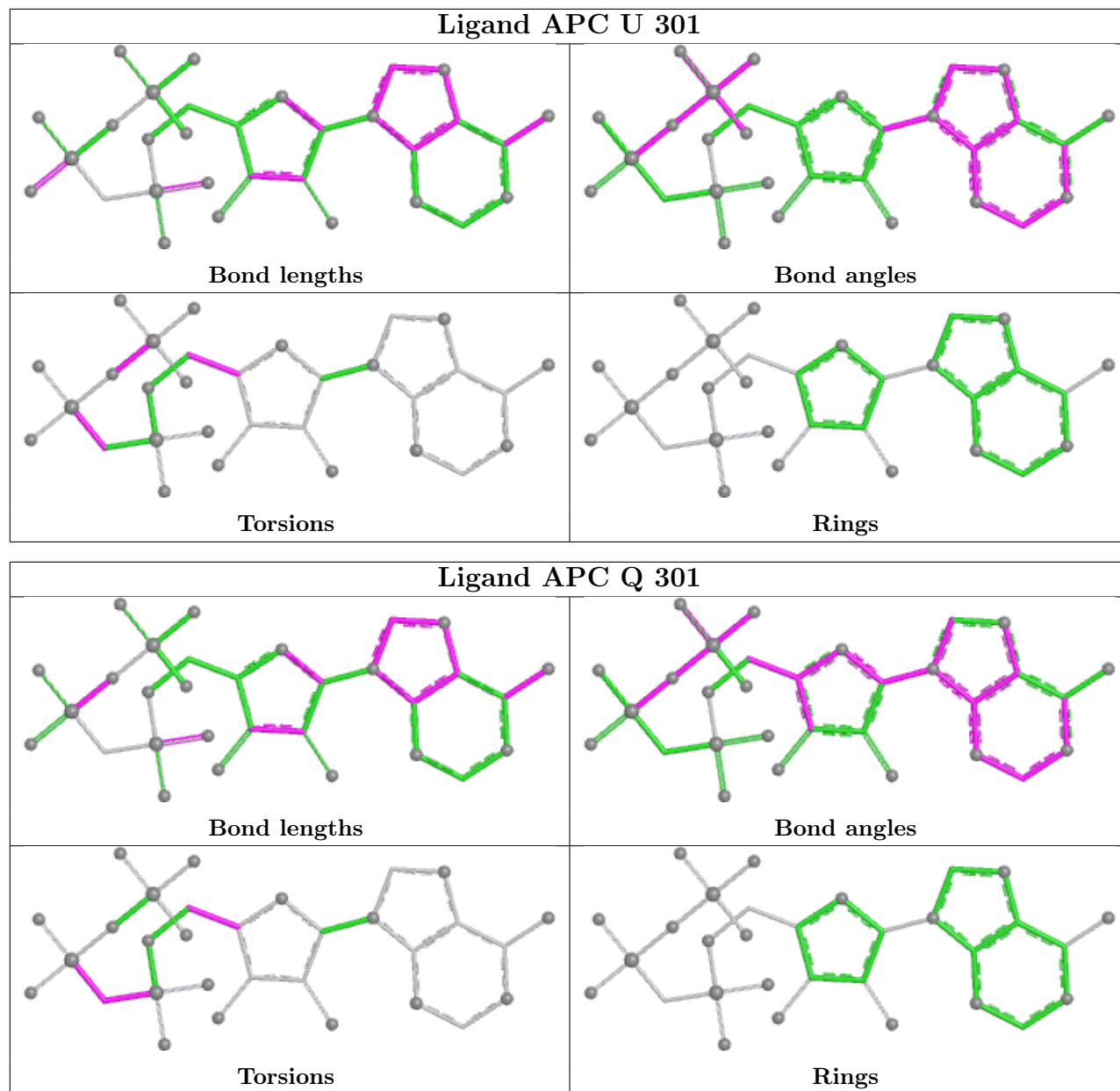
There are no ring outliers.

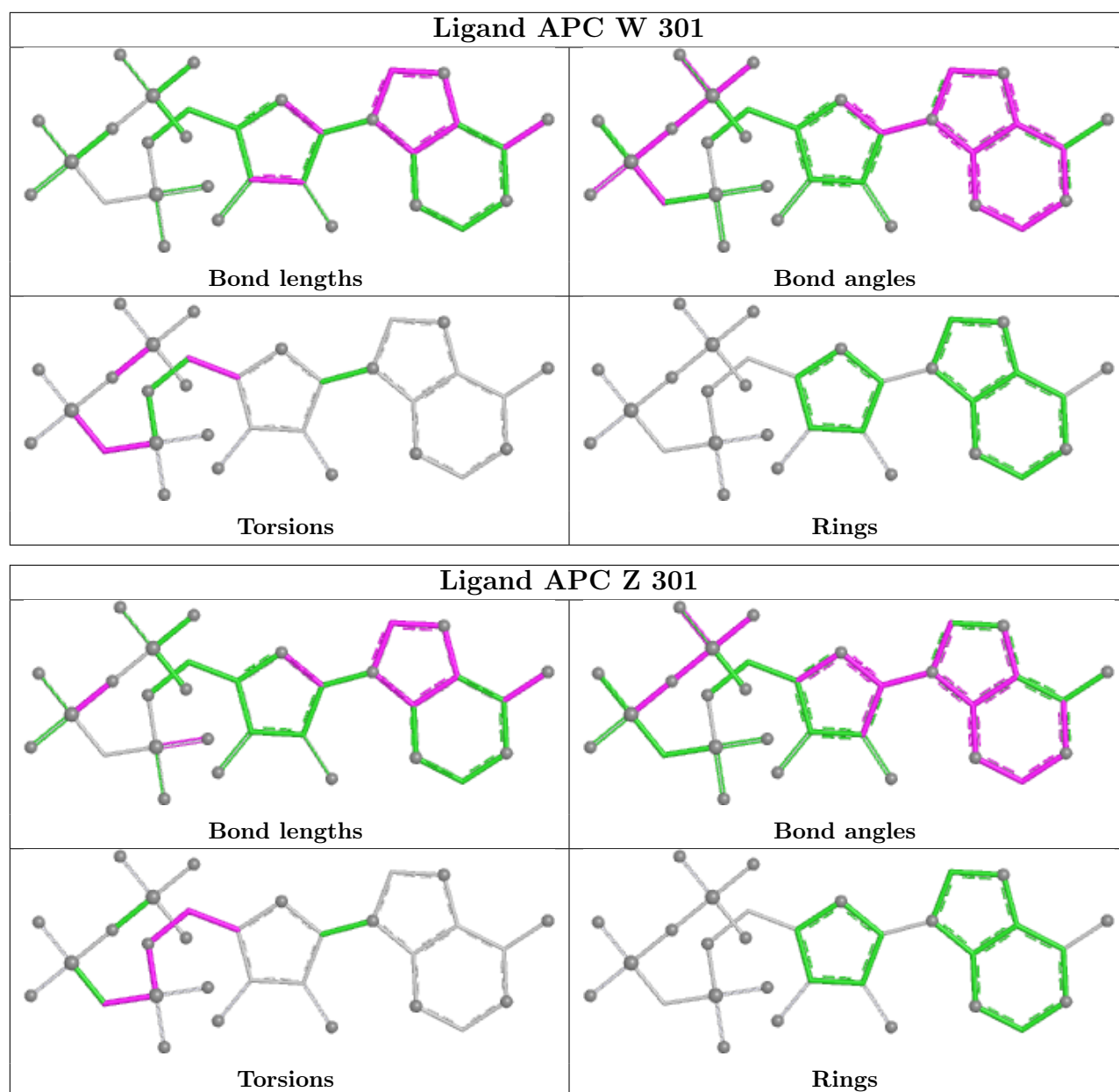
12 monomers are involved in 49 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	U	301	APC	2	0
2	Q	301	APC	4	0
2	W	301	APC	2	0
2	Z	301	APC	7	0
2	P	301	APC	5	0
2	X	301	APC	3	0
2	R	301	APC	2	0
2	O	301	APC	5	0
2	Y	301	APC	3	0
2	V	301	APC	4	0
2	S	302	APC	3	0
2	T	301	APC	9	0

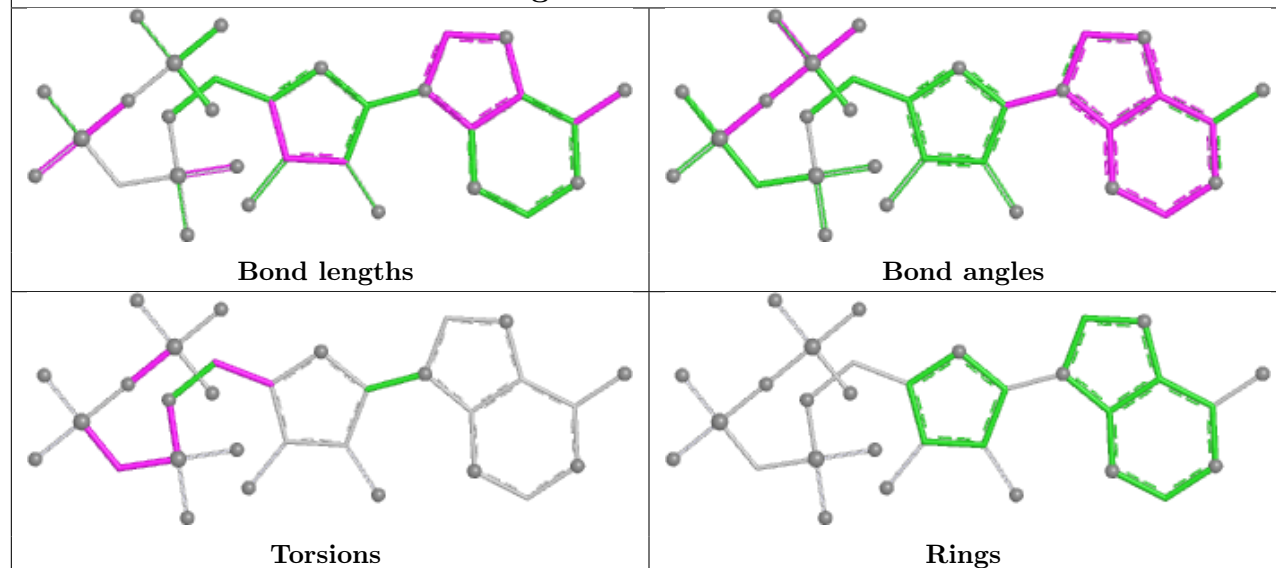
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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.

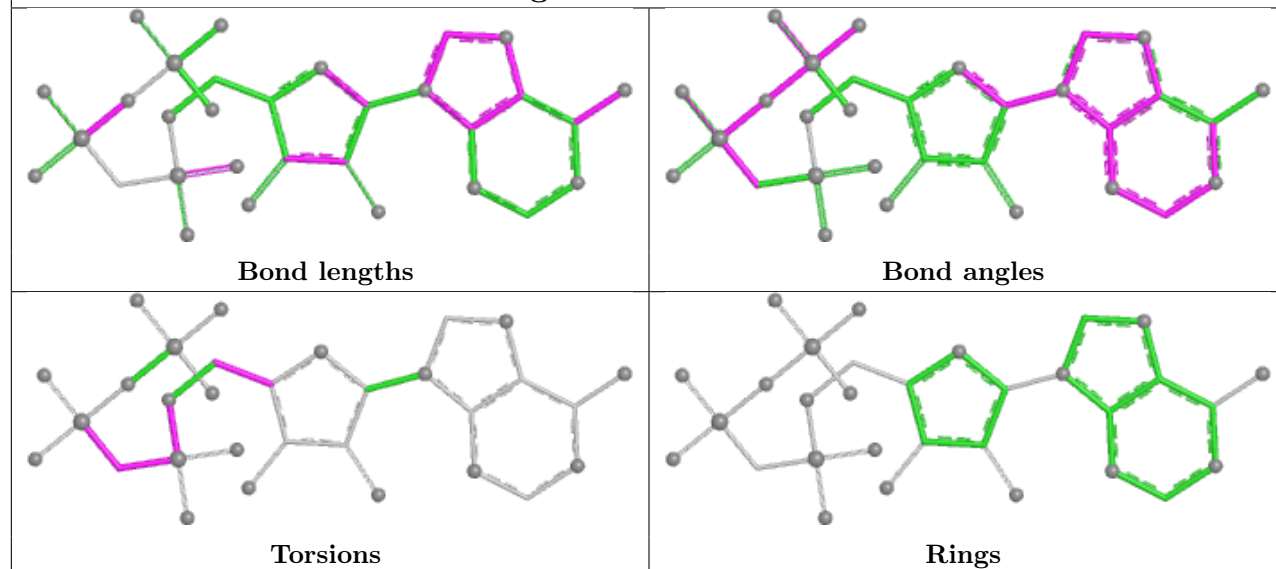




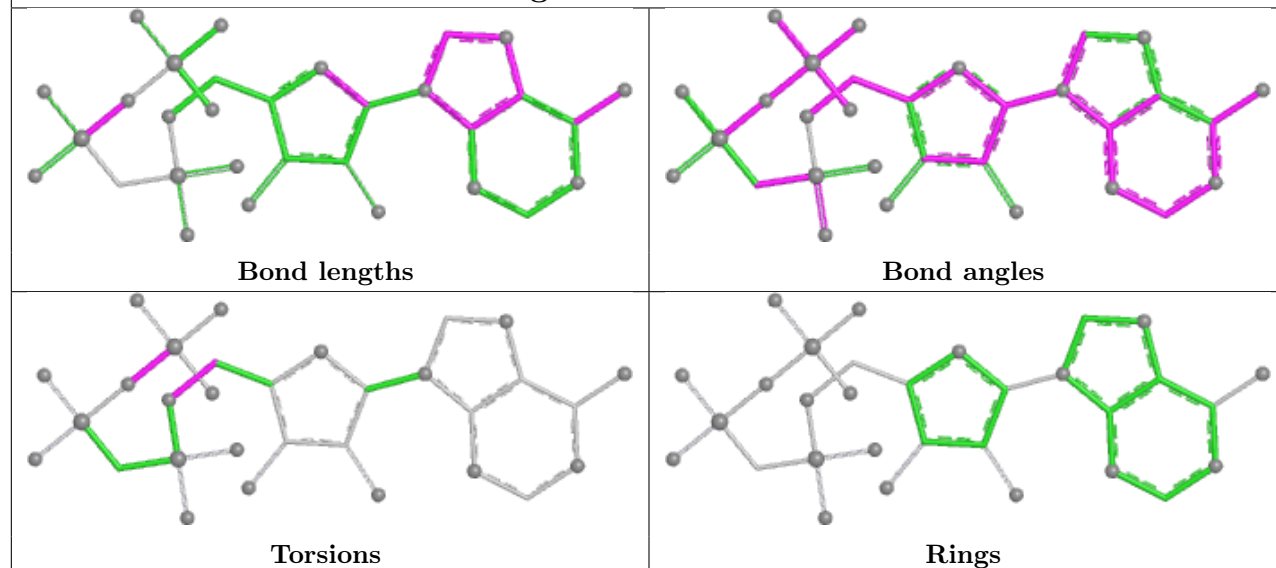
## Ligand APC P 301



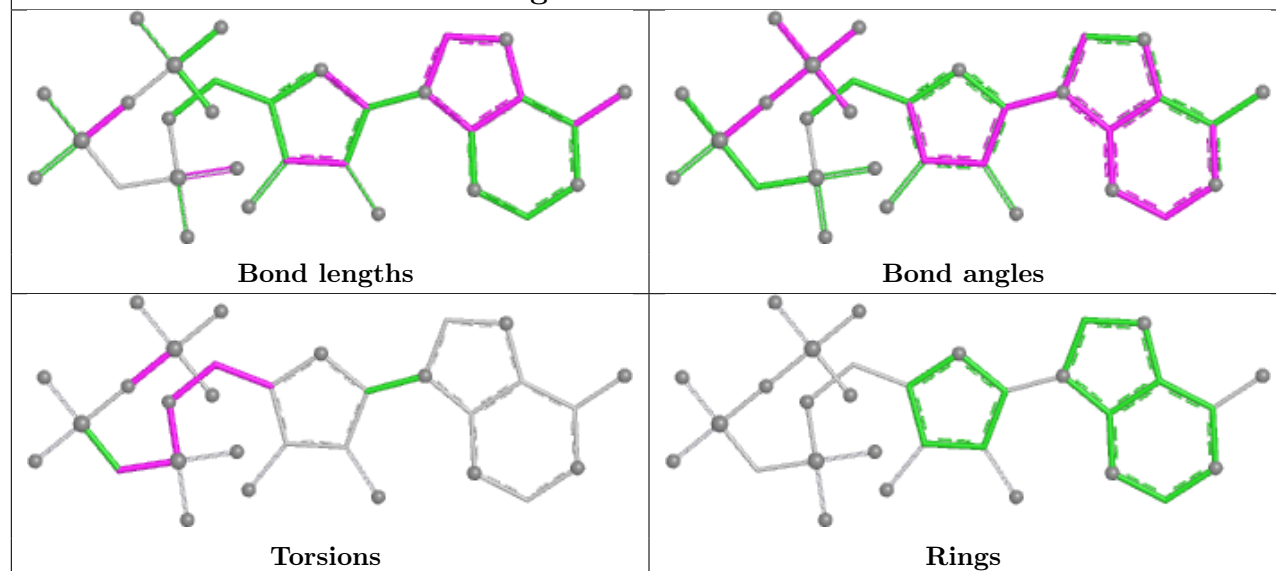
## Ligand APC X 301



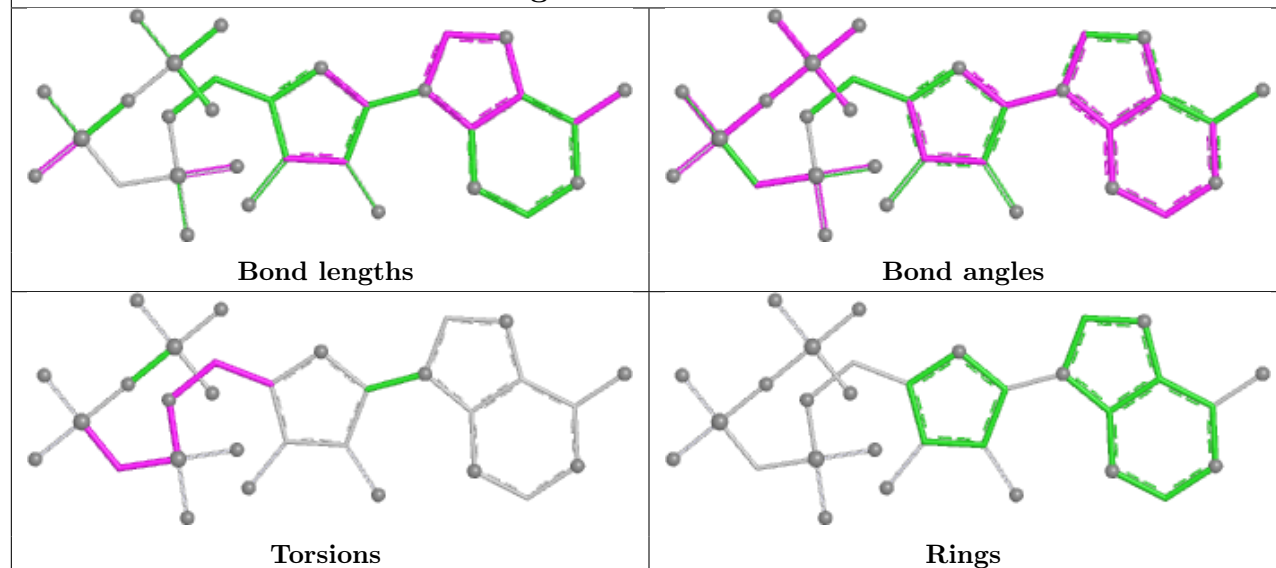
## Ligand APC R 301



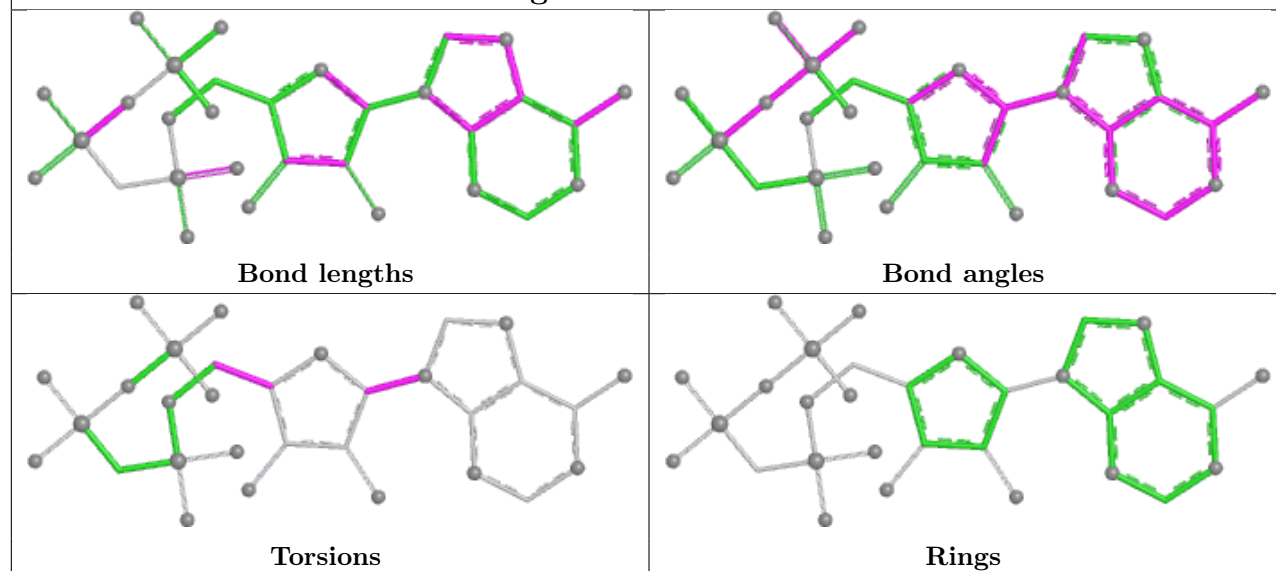
## Ligand APC O 301

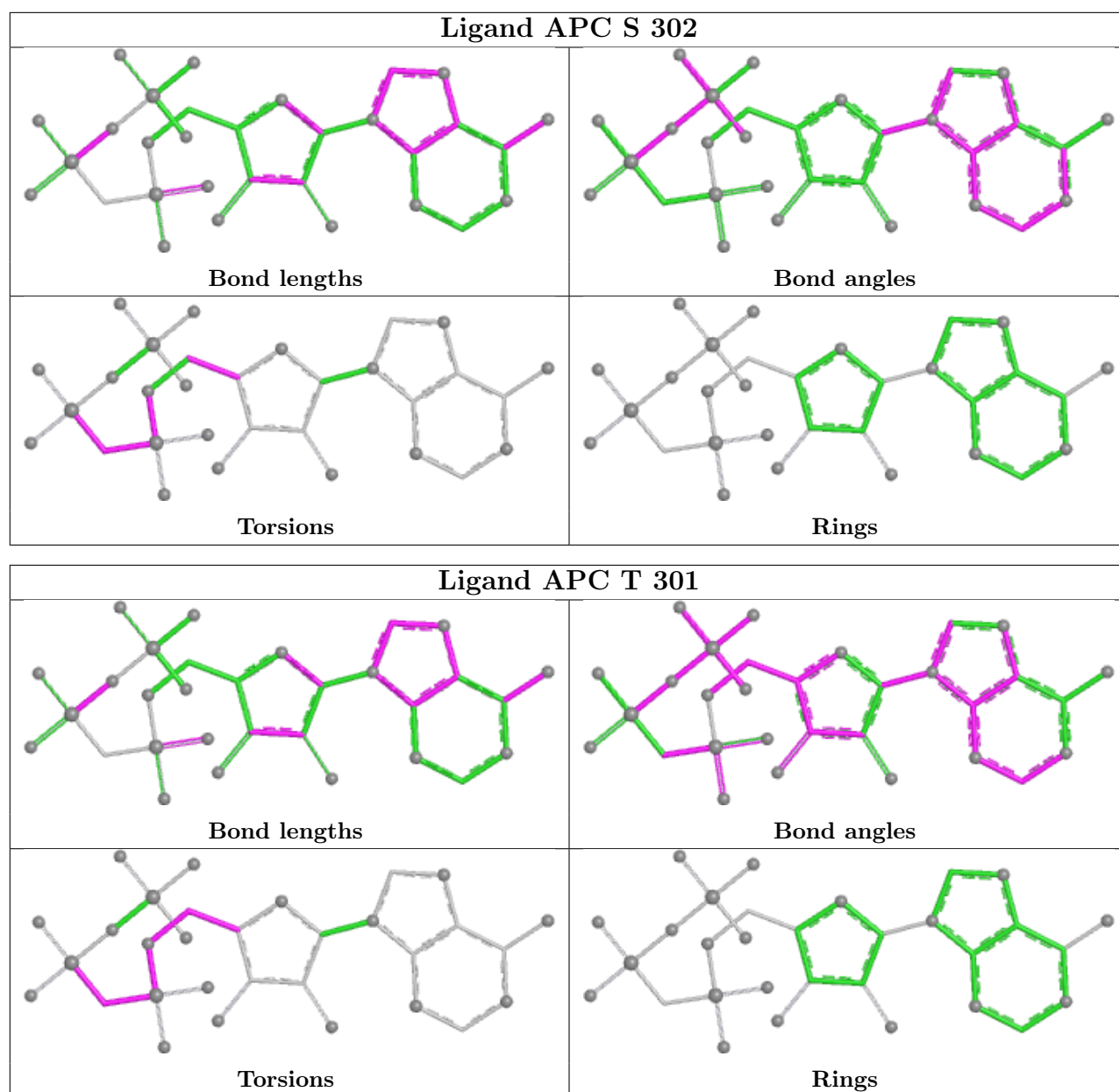


## Ligand APC Y 301



## Ligand APC V 301





## 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	O	184/209 (88%)	0.13	9 (4%)	35 27	42, 61, 103, 116	0
1	P	183/209 (87%)	0.05	6 (3%)	49 39	35, 51, 98, 117	0
1	Q	179/209 (85%)	0.21	6 (3%)	48 39	43, 62, 109, 124	0
1	R	184/209 (88%)	-0.05	2 (1%)	78 70	38, 54, 81, 102	0
1	S	182/209 (87%)	-0.10	6 (3%)	49 39	28, 46, 78, 100	0
1	T	195/209 (93%)	-0.23	2 (1%)	79 72	30, 46, 83, 98	0
1	U	186/209 (88%)	0.08	4 (2%)	62 52	36, 56, 96, 112	0
1	V	180/209 (86%)	-0.23	2 (1%)	78 70	33, 45, 81, 89	0
1	W	187/209 (89%)	-0.18	4 (2%)	63 54	29, 47, 78, 99	0
1	X	181/209 (86%)	-0.16	2 (1%)	78 70	31, 47, 80, 96	0
1	Y	182/209 (87%)	-0.23	2 (1%)	78 70	30, 45, 78, 98	0
1	Z	179/209 (85%)	0.11	6 (3%)	48 39	37, 58, 103, 120	0
All	All	2202/2508 (87%)	-0.05	51 (2%)	61 51	28, 52, 94, 124	0

All (51) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	Y	197	ALA	4.8
1	O	3	ASP	4.6
1	V	33	TYR	4.1
1	R	197	ALA	4.0
1	P	197	ALA	3.9
1	W	197	ALA	3.9
1	T	197	ALA	3.5
1	T	33	TYR	3.5
1	Z	30	TYR	3.5
1	Q	197	ALA	3.4
1	S	3	ASP	3.4

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Mol	Chain	Res	Type	RSRZ
1	O	195	GLN	3.3
1	U	114	SER	3.2
1	S	178	GLU	3.2
1	O	197	ALA	3.1
1	Z	61	LEU	3.1
1	X	197	ALA	3.1
1	O	64	LEU	3.1
1	V	197	ALA	3.0
1	O	5	GLN	3.0
1	P	3	ASP	2.9
1	R	3	ASP	2.9
1	W	109	ALA	2.9
1	O	4	LYS	2.8
1	U	5	GLN	2.7
1	P	104	GLN	2.7
1	S	197	ALA	2.7
1	P	103	ASP	2.6
1	Y	3	ASP	2.6
1	Q	51	ALA	2.6
1	O	194	VAL	2.6
1	Z	194	ALA	2.5
1	Q	5	GLN	2.3
1	Q	64	LEU	2.3
1	S	182	ARG	2.2
1	X	33	TYR	2.2
1	O	115	GLY	2.2
1	O	116	TYR	2.2
1	Q	4	LYS	2.2
1	W	3	ASP	2.2
1	Q	50	VAL	2.1
1	S	35	ASP	2.1
1	U	116	TYR	2.1
1	U	115	GLY	2.1
1	P	165	ILE	2.1
1	Z	60	PRO	2.0
1	P	169	VAL	2.0
1	Z	193	GLU	2.0
1	W	32	GLU	2.0
1	Z	3	TRP	2.0
1	S	33	TYR	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 oligosaccharides 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, 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.

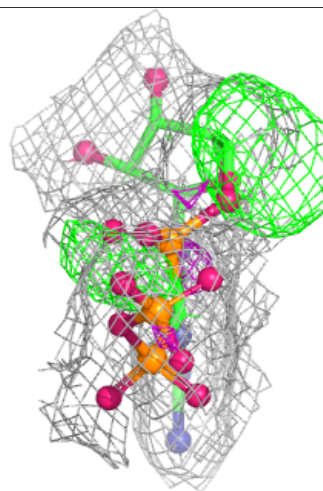
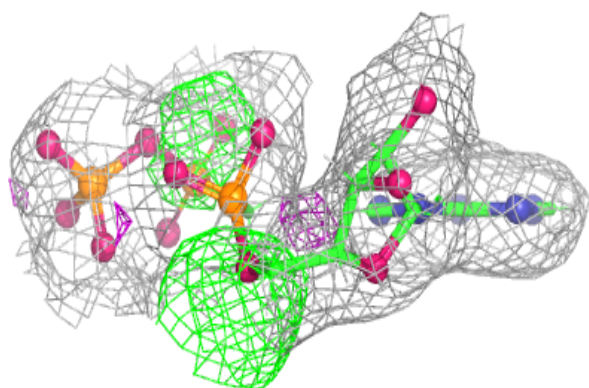
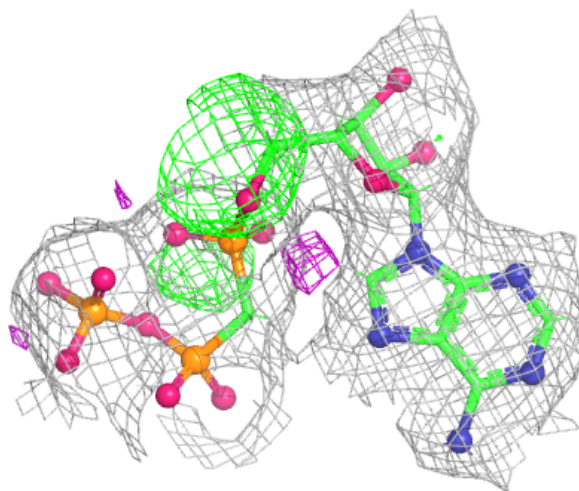
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
3	MG	U	302	1/1	0.76	0.17	75,75,75,75	0
3	MG	Z	302	1/1	0.88	0.23	59,59,59,59	0
2	APC	T	301	31/31	0.88	0.10	23,37,54,60	0
3	MG	O	302	1/1	0.89	0.22	63,63,63,63	0
3	MG	Q	302	1/1	0.89	0.11	62,62,62,62	0
2	APC	Z	301	31/31	0.90	0.09	45,66,84,89	0
3	MG	W	302	1/1	0.90	0.09	45,45,45,45	0
2	APC	Q	301	31/31	0.91	0.08	52,71,85,92	0
3	MG	X	302	1/1	0.92	0.13	39,39,39,39	0
2	APC	O	301	31/31	0.92	0.08	47,62,77,82	0
2	APC	V	301	31/31	0.93	0.08	33,47,55,56	0
3	MG	P	302	1/1	0.94	0.15	39,39,39,39	0
2	APC	U	301	31/31	0.94	0.08	44,58,73,75	0
2	APC	P	301	31/31	0.95	0.07	35,46,55,62	0
3	MG	T	302	1/1	0.95	0.08	52,52,52,52	0
3	MG	S	301	1/1	0.95	0.19	39,39,39,39	0
2	APC	Y	301	31/31	0.96	0.07	30,40,50,52	0
2	APC	X	301	31/31	0.96	0.06	35,46,58,63	0
2	APC	R	301	31/31	0.96	0.06	34,49,56,61	0
3	MG	Y	302	1/1	0.96	0.07	39,39,39,39	0
2	APC	S	302	31/31	0.96	0.07	30,44,55,56	0
2	APC	W	301	31/31	0.97	0.06	32,42,51,56	0
3	MG	V	302	1/1	0.97	0.10	44,44,44,44	0
3	MG	R	302	1/1	0.99	0.05	46,46,46,46	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.

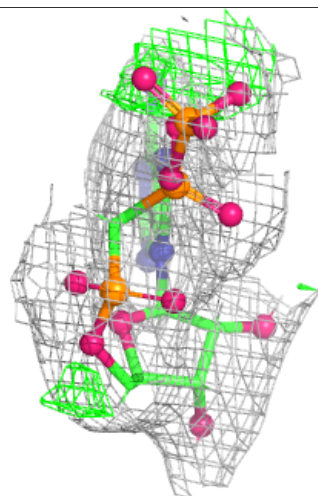
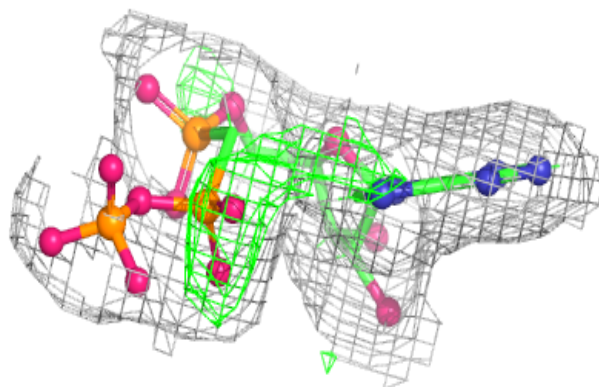
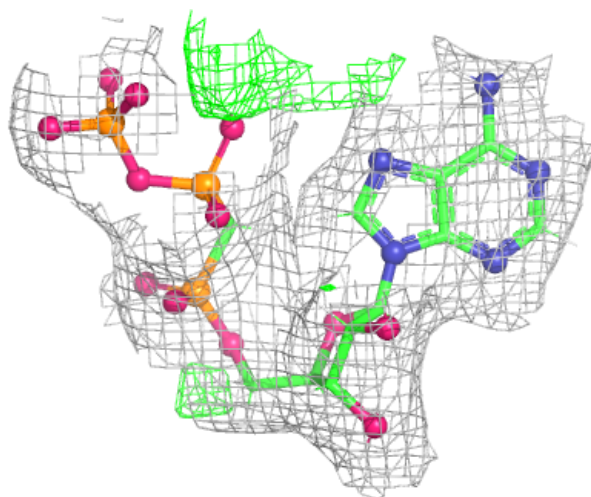
**Electron density around APC T 301:**

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



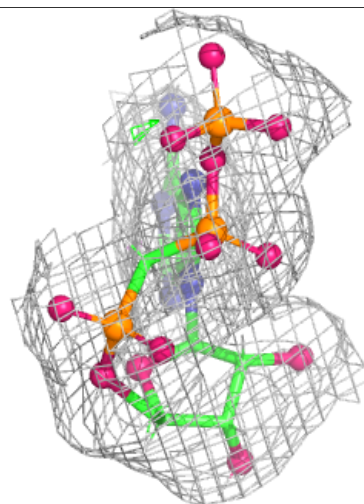
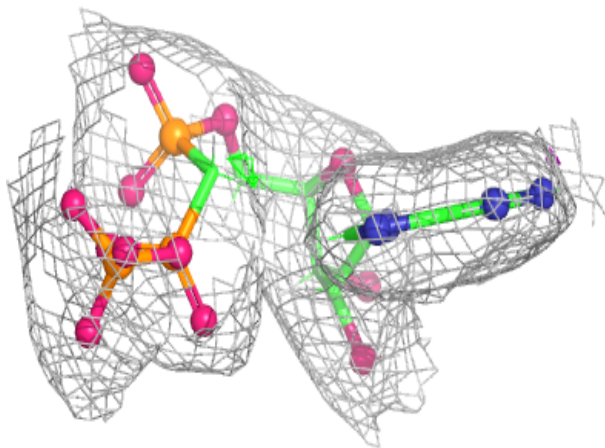
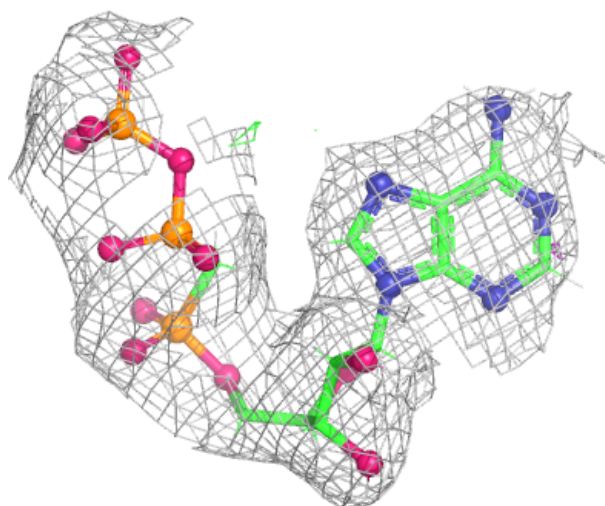
**Electron density around APC Z 301:**

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



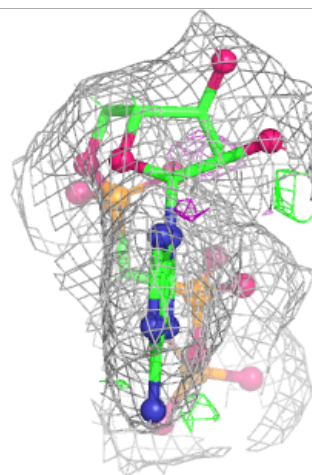
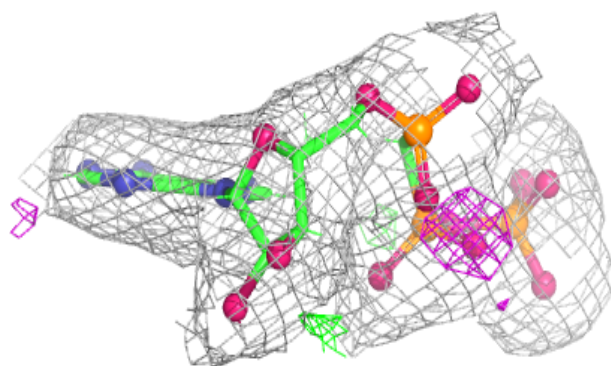
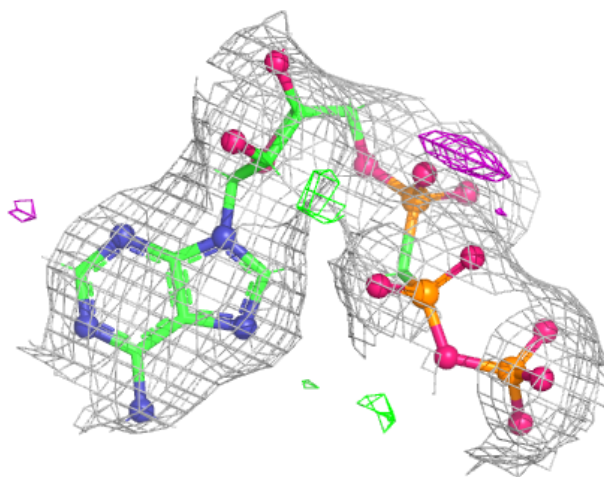
**Electron density around APC Q 301:**

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



**Electron density around APC O 301:**

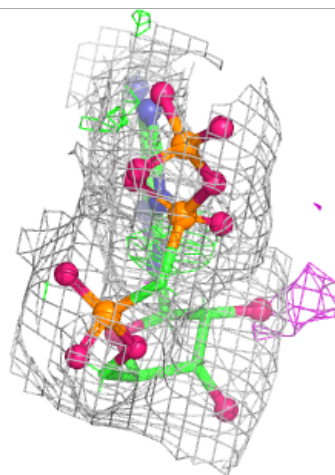
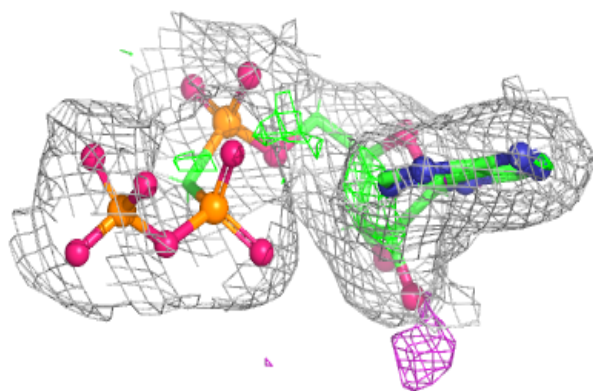
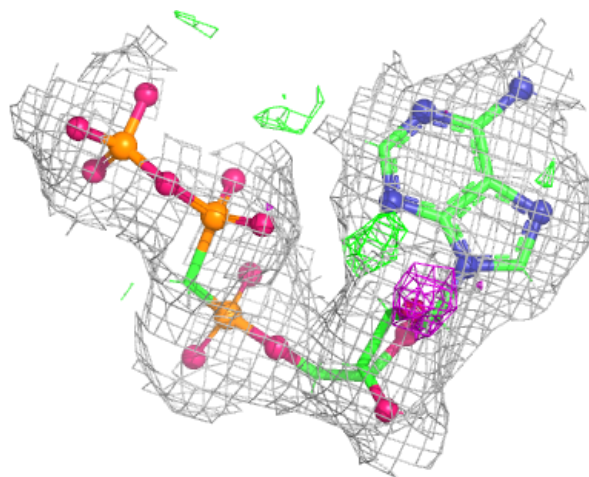
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





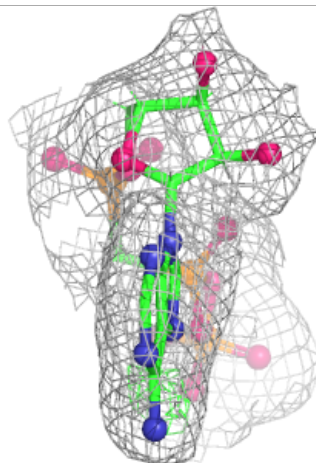
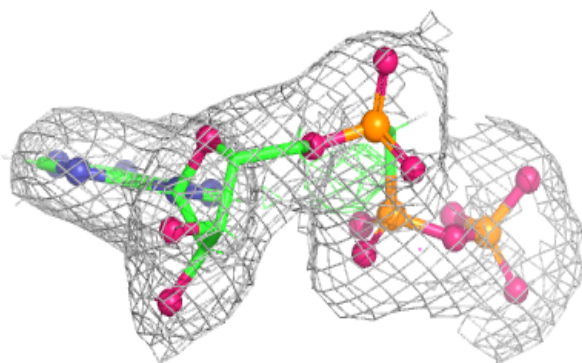
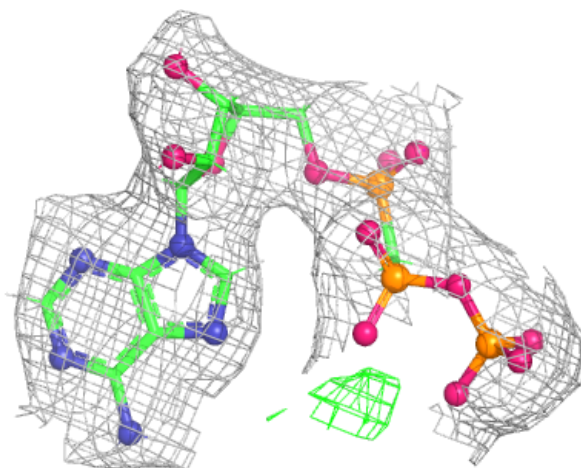
**Electron density around APC V 301:**

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



**Electron density around APC U 301:**

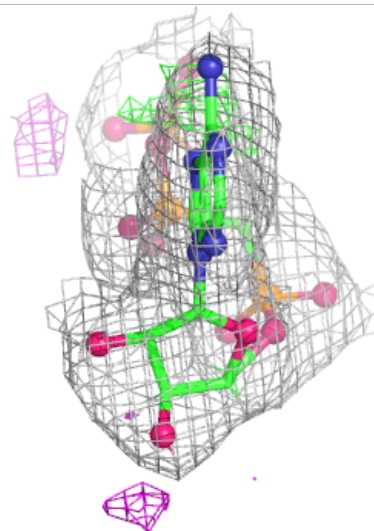
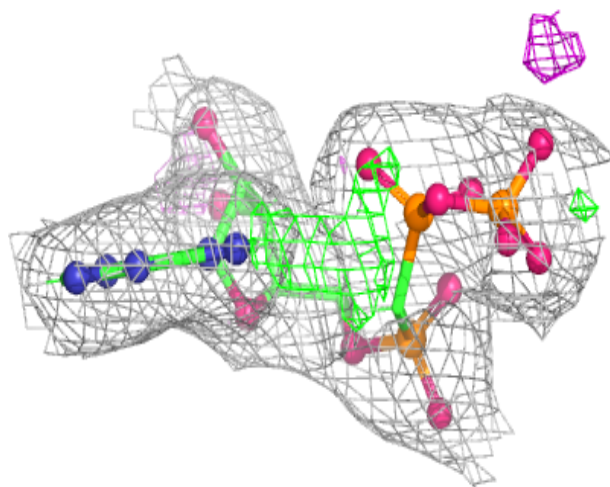
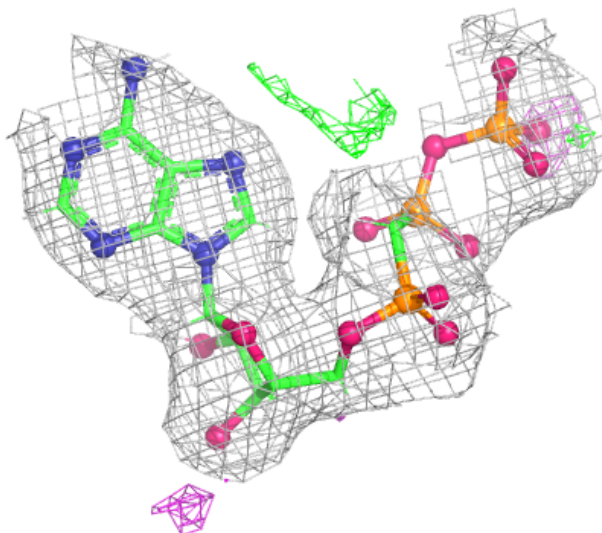
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





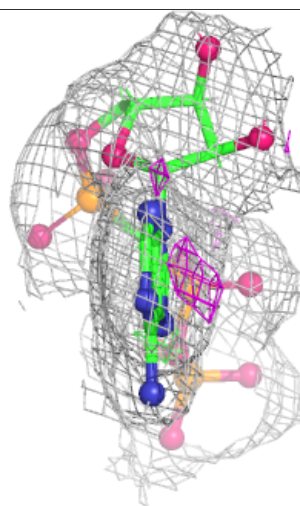
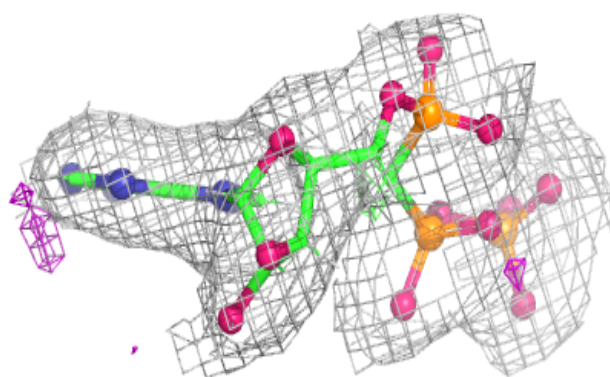
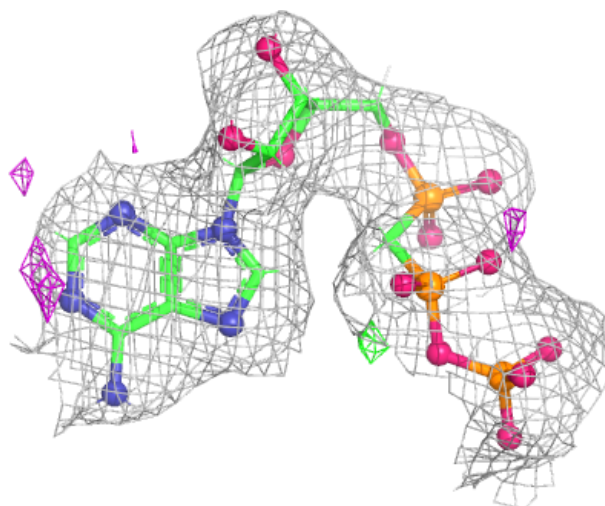
**Electron density around APC P 301:**

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



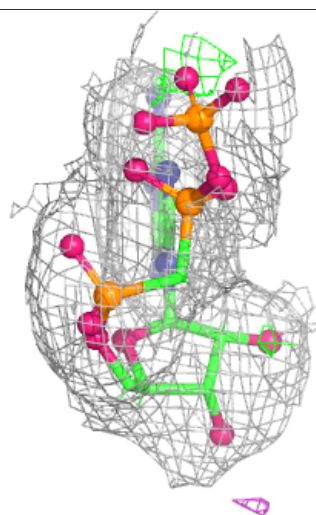
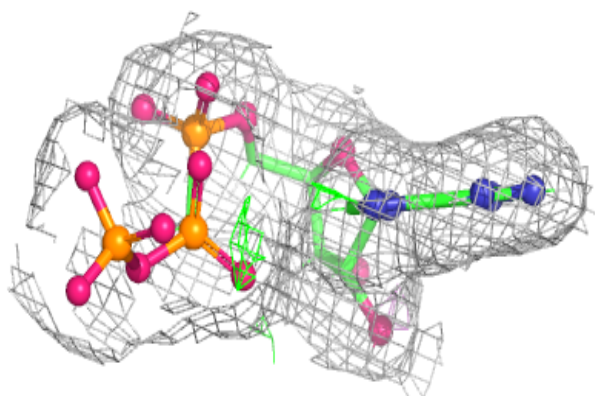
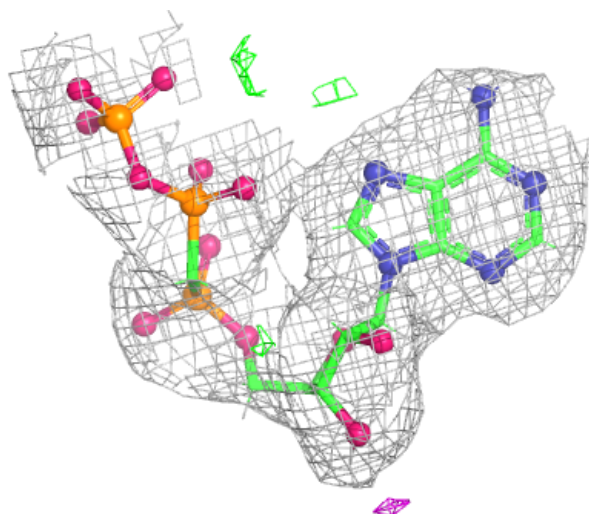
**Electron density around APC Y 301:**

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



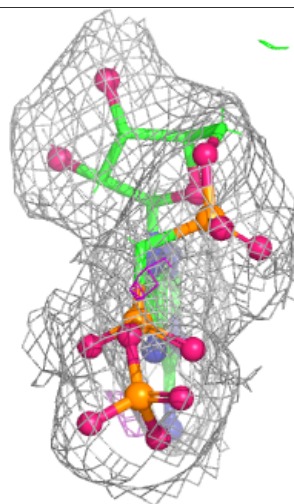
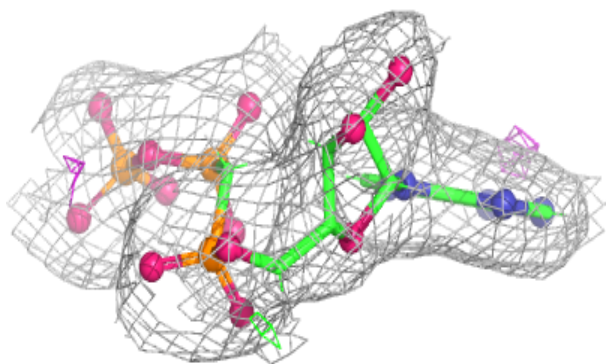
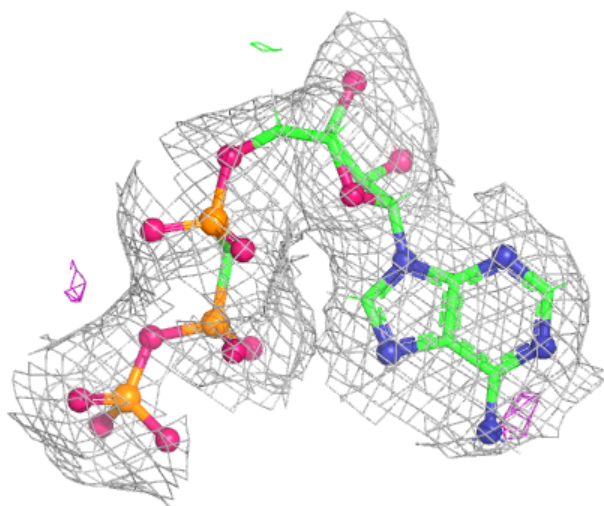
**Electron density around APC X 301:**

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



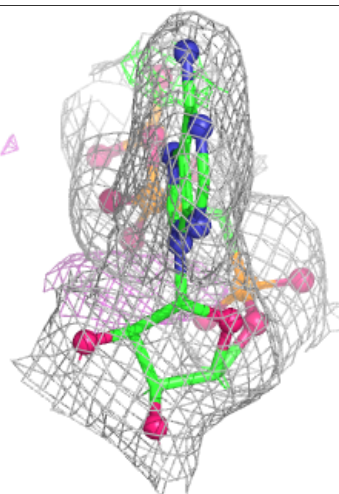
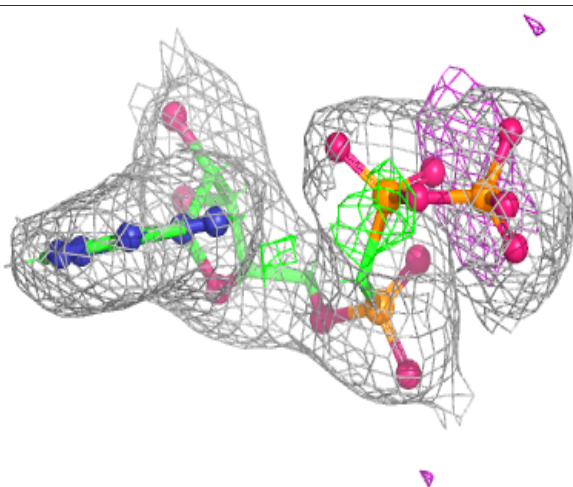
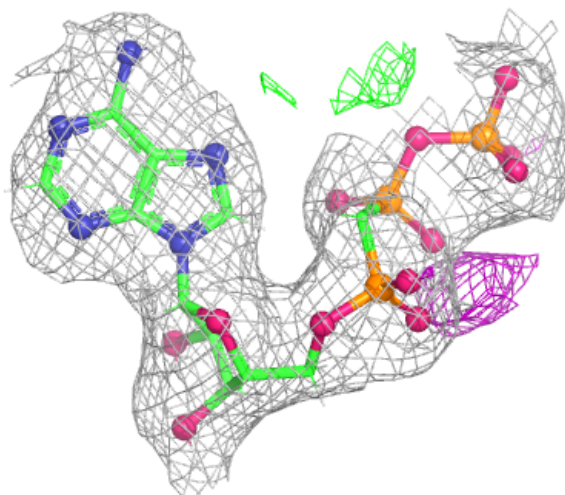
**Electron density around APC R 301:**

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



**Electron density around APC S 302:**

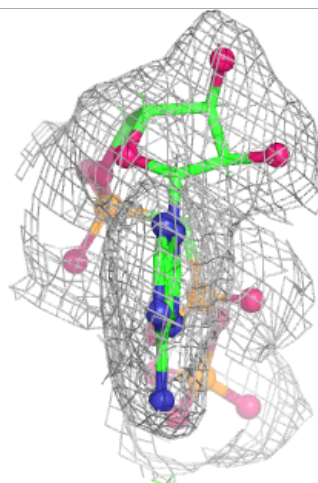
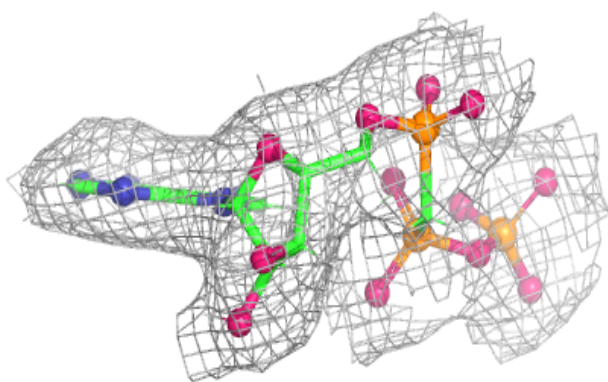
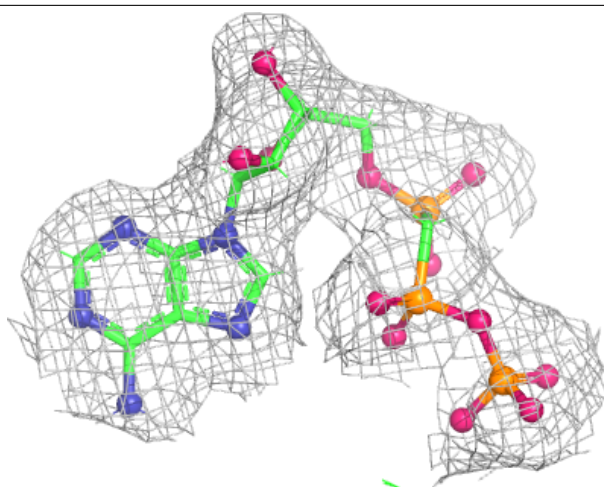
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





**Electron density around APC W 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.