



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 02:52 PM UTC

PDB ID : 5O5K / pdb_00005o5k
Title : X-ray structure of a bacterial adenylyl cyclase soluble domain
Authors : Vercellino, I.; Korkhov, V.M.
Deposited on : 2017-06-02
Resolution : 3.40 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The 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 : 4-5-2 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

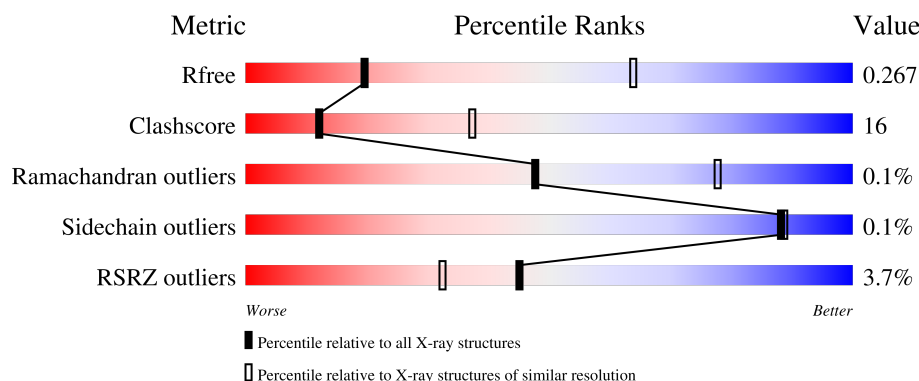
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.40 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	1001 (3.44-3.36)
Clashscore	190562	1022 (3.44-3.36)
Ramachandran outliers	187476	1012 (3.44-3.36)
Sidechain outliers	187428	1012 (3.44-3.36)
RSRZ outliers	180081	1001 (3.44-3.36)

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 ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	254	% 60% 24% • 15%
1	B	254	61% 24% 15%
1	C	254	63% 22% 15%
1	D	254	56% 28% 15%
1	E	254	59% 26% 15%

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Mol	Chain	Length	Quality of chain
1	F	254	% 61% 24% 15%
1	G	254	10% 60% 24% 15%
1	H	254	13% 59% 26% 15%
1	I	254	4% 60% 25% 15%
1	J	254	2% 54% 30% 15%
1	K	254	3% 60% 25% 15%

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	ONM	I	504	-	-	X	-
4	SO4	E	504	-	-	X	-

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 18919 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 Adenylate cyclase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	216	Total	C	N	O	S	0	0	0
			1670	1054	295	311	10			
1	B	216	Total	C	N	O	S	0	0	0
			1670	1054	295	311	10			
1	D	216	Total	C	N	O	S	0	0	0
			1670	1054	295	311	10			
1	C	216	Total	C	N	O	S	0	0	0
			1670	1054	295	311	10			
1	E	216	Total	C	N	O	S	0	0	0
			1670	1054	295	311	10			
1	F	216	Total	C	N	O	S	0	0	0
			1670	1054	295	311	10			
1	I	216	Total	C	N	O	S	0	0	0
			1670	1054	295	311	10			
1	J	216	Total	C	N	O	S	0	0	0
			1670	1054	295	311	10			
1	H	216	Total	C	N	O	S	0	0	0
			1670	1054	295	311	10			
1	G	216	Total	C	N	O	S	0	0	0
			1670	1054	295	311	10			
1	K	216	Total	C	N	O	S	0	0	0
			1670	1054	295	311	10			

There are 308 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	176	MET	-	initiating methionine	UNP X8CHM4
A	177	GLY	-	expression tag	UNP X8CHM4
A	178	HIS	-	expression tag	UNP X8CHM4
A	179	HIS	-	expression tag	UNP X8CHM4
A	180	HIS	-	expression tag	UNP X8CHM4
A	181	HIS	-	expression tag	UNP X8CHM4
A	182	HIS	-	expression tag	UNP X8CHM4

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Chain	Residue	Modelled	Actual	Comment	Reference
A	183	HIS	-	expression tag	UNP X8CHM4
A	184	HIS	-	expression tag	UNP X8CHM4
A	185	HIS	-	expression tag	UNP X8CHM4
A	186	HIS	-	expression tag	UNP X8CHM4
A	187	HIS	-	expression tag	UNP X8CHM4
A	188	SER	-	expression tag	UNP X8CHM4
A	189	SER	-	expression tag	UNP X8CHM4
A	190	GLY	-	expression tag	UNP X8CHM4
A	191	LEU	-	expression tag	UNP X8CHM4
A	192	GLU	-	expression tag	UNP X8CHM4
A	193	VAL	-	expression tag	UNP X8CHM4
A	194	LEU	-	expression tag	UNP X8CHM4
A	195	PHE	-	expression tag	UNP X8CHM4
A	196	GLN	-	expression tag	UNP X8CHM4
A	197	GLY	-	expression tag	UNP X8CHM4
A	198	PRO	-	expression tag	UNP X8CHM4
A	199	SER	-	expression tag	UNP X8CHM4
A	200	GLY	-	expression tag	UNP X8CHM4
A	201	HIS	-	expression tag	UNP X8CHM4
A	202	MET	-	expression tag	UNP X8CHM4
A	342	PRO	ALA	conflict	UNP X8CHM4
B	176	MET	-	initiating methionine	UNP X8CHM4
B	177	GLY	-	expression tag	UNP X8CHM4
B	178	HIS	-	expression tag	UNP X8CHM4
B	179	HIS	-	expression tag	UNP X8CHM4
B	180	HIS	-	expression tag	UNP X8CHM4
B	181	HIS	-	expression tag	UNP X8CHM4
B	182	HIS	-	expression tag	UNP X8CHM4
B	183	HIS	-	expression tag	UNP X8CHM4
B	184	HIS	-	expression tag	UNP X8CHM4
B	185	HIS	-	expression tag	UNP X8CHM4
B	186	HIS	-	expression tag	UNP X8CHM4
B	187	HIS	-	expression tag	UNP X8CHM4
B	188	SER	-	expression tag	UNP X8CHM4
B	189	SER	-	expression tag	UNP X8CHM4
B	190	GLY	-	expression tag	UNP X8CHM4
B	191	LEU	-	expression tag	UNP X8CHM4
B	192	GLU	-	expression tag	UNP X8CHM4
B	193	VAL	-	expression tag	UNP X8CHM4
B	194	LEU	-	expression tag	UNP X8CHM4
B	195	PHE	-	expression tag	UNP X8CHM4
B	196	GLN	-	expression tag	UNP X8CHM4

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Chain	Residue	Modelled	Actual	Comment	Reference
B	197	GLY	-	expression tag	UNP X8CHM4
B	198	PRO	-	expression tag	UNP X8CHM4
B	199	SER	-	expression tag	UNP X8CHM4
B	200	GLY	-	expression tag	UNP X8CHM4
B	201	HIS	-	expression tag	UNP X8CHM4
B	202	MET	-	expression tag	UNP X8CHM4
B	342	PRO	ALA	conflict	UNP X8CHM4
D	176	MET	-	initiating methionine	UNP X8CHM4
D	177	GLY	-	expression tag	UNP X8CHM4
D	178	HIS	-	expression tag	UNP X8CHM4
D	179	HIS	-	expression tag	UNP X8CHM4
D	180	HIS	-	expression tag	UNP X8CHM4
D	181	HIS	-	expression tag	UNP X8CHM4
D	182	HIS	-	expression tag	UNP X8CHM4
D	183	HIS	-	expression tag	UNP X8CHM4
D	184	HIS	-	expression tag	UNP X8CHM4
D	185	HIS	-	expression tag	UNP X8CHM4
D	186	HIS	-	expression tag	UNP X8CHM4
D	187	HIS	-	expression tag	UNP X8CHM4
D	188	SER	-	expression tag	UNP X8CHM4
D	189	SER	-	expression tag	UNP X8CHM4
D	190	GLY	-	expression tag	UNP X8CHM4
D	191	LEU	-	expression tag	UNP X8CHM4
D	192	GLU	-	expression tag	UNP X8CHM4
D	193	VAL	-	expression tag	UNP X8CHM4
D	194	LEU	-	expression tag	UNP X8CHM4
D	195	PHE	-	expression tag	UNP X8CHM4
D	196	GLN	-	expression tag	UNP X8CHM4
D	197	GLY	-	expression tag	UNP X8CHM4
D	198	PRO	-	expression tag	UNP X8CHM4
D	199	SER	-	expression tag	UNP X8CHM4
D	200	GLY	-	expression tag	UNP X8CHM4
D	201	HIS	-	expression tag	UNP X8CHM4
D	202	MET	-	expression tag	UNP X8CHM4
D	342	PRO	ALA	conflict	UNP X8CHM4
C	176	MET	-	initiating methionine	UNP X8CHM4
C	177	GLY	-	expression tag	UNP X8CHM4
C	178	HIS	-	expression tag	UNP X8CHM4
C	179	HIS	-	expression tag	UNP X8CHM4
C	180	HIS	-	expression tag	UNP X8CHM4
C	181	HIS	-	expression tag	UNP X8CHM4
C	182	HIS	-	expression tag	UNP X8CHM4

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Chain	Residue	Modelled	Actual	Comment	Reference
C	183	HIS	-	expression tag	UNP X8CHM4
C	184	HIS	-	expression tag	UNP X8CHM4
C	185	HIS	-	expression tag	UNP X8CHM4
C	186	HIS	-	expression tag	UNP X8CHM4
C	187	HIS	-	expression tag	UNP X8CHM4
C	188	SER	-	expression tag	UNP X8CHM4
C	189	SER	-	expression tag	UNP X8CHM4
C	190	GLY	-	expression tag	UNP X8CHM4
C	191	LEU	-	expression tag	UNP X8CHM4
C	192	GLU	-	expression tag	UNP X8CHM4
C	193	VAL	-	expression tag	UNP X8CHM4
C	194	LEU	-	expression tag	UNP X8CHM4
C	195	PHE	-	expression tag	UNP X8CHM4
C	196	GLN	-	expression tag	UNP X8CHM4
C	197	GLY	-	expression tag	UNP X8CHM4
C	198	PRO	-	expression tag	UNP X8CHM4
C	199	SER	-	expression tag	UNP X8CHM4
C	200	GLY	-	expression tag	UNP X8CHM4
C	201	HIS	-	expression tag	UNP X8CHM4
C	202	MET	-	expression tag	UNP X8CHM4
C	342	PRO	ALA	conflict	UNP X8CHM4
E	176	MET	-	initiating methionine	UNP X8CHM4
E	177	GLY	-	expression tag	UNP X8CHM4
E	178	HIS	-	expression tag	UNP X8CHM4
E	179	HIS	-	expression tag	UNP X8CHM4
E	180	HIS	-	expression tag	UNP X8CHM4
E	181	HIS	-	expression tag	UNP X8CHM4
E	182	HIS	-	expression tag	UNP X8CHM4
E	183	HIS	-	expression tag	UNP X8CHM4
E	184	HIS	-	expression tag	UNP X8CHM4
E	185	HIS	-	expression tag	UNP X8CHM4
E	186	HIS	-	expression tag	UNP X8CHM4
E	187	HIS	-	expression tag	UNP X8CHM4
E	188	SER	-	expression tag	UNP X8CHM4
E	189	SER	-	expression tag	UNP X8CHM4
E	190	GLY	-	expression tag	UNP X8CHM4
E	191	LEU	-	expression tag	UNP X8CHM4
E	192	GLU	-	expression tag	UNP X8CHM4
E	193	VAL	-	expression tag	UNP X8CHM4
E	194	LEU	-	expression tag	UNP X8CHM4
E	195	PHE	-	expression tag	UNP X8CHM4
E	196	GLN	-	expression tag	UNP X8CHM4

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Chain	Residue	Modelled	Actual	Comment	Reference
E	197	GLY	-	expression tag	UNP X8CHM4
E	198	PRO	-	expression tag	UNP X8CHM4
E	199	SER	-	expression tag	UNP X8CHM4
E	200	GLY	-	expression tag	UNP X8CHM4
E	201	HIS	-	expression tag	UNP X8CHM4
E	202	MET	-	expression tag	UNP X8CHM4
E	342	PRO	ALA	conflict	UNP X8CHM4
F	176	MET	-	initiating methionine	UNP X8CHM4
F	177	GLY	-	expression tag	UNP X8CHM4
F	178	HIS	-	expression tag	UNP X8CHM4
F	179	HIS	-	expression tag	UNP X8CHM4
F	180	HIS	-	expression tag	UNP X8CHM4
F	181	HIS	-	expression tag	UNP X8CHM4
F	182	HIS	-	expression tag	UNP X8CHM4
F	183	HIS	-	expression tag	UNP X8CHM4
F	184	HIS	-	expression tag	UNP X8CHM4
F	185	HIS	-	expression tag	UNP X8CHM4
F	186	HIS	-	expression tag	UNP X8CHM4
F	187	HIS	-	expression tag	UNP X8CHM4
F	188	SER	-	expression tag	UNP X8CHM4
F	189	SER	-	expression tag	UNP X8CHM4
F	190	GLY	-	expression tag	UNP X8CHM4
F	191	LEU	-	expression tag	UNP X8CHM4
F	192	GLU	-	expression tag	UNP X8CHM4
F	193	VAL	-	expression tag	UNP X8CHM4
F	194	LEU	-	expression tag	UNP X8CHM4
F	195	PHE	-	expression tag	UNP X8CHM4
F	196	GLN	-	expression tag	UNP X8CHM4
F	197	GLY	-	expression tag	UNP X8CHM4
F	198	PRO	-	expression tag	UNP X8CHM4
F	199	SER	-	expression tag	UNP X8CHM4
F	200	GLY	-	expression tag	UNP X8CHM4
F	201	HIS	-	expression tag	UNP X8CHM4
F	202	MET	-	expression tag	UNP X8CHM4
F	342	PRO	ALA	conflict	UNP X8CHM4
I	176	MET	-	initiating methionine	UNP X8CHM4
I	177	GLY	-	expression tag	UNP X8CHM4
I	178	HIS	-	expression tag	UNP X8CHM4
I	179	HIS	-	expression tag	UNP X8CHM4
I	180	HIS	-	expression tag	UNP X8CHM4
I	181	HIS	-	expression tag	UNP X8CHM4
I	182	HIS	-	expression tag	UNP X8CHM4

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Chain	Residue	Modelled	Actual	Comment	Reference
I	183	HIS	-	expression tag	UNP X8CHM4
I	184	HIS	-	expression tag	UNP X8CHM4
I	185	HIS	-	expression tag	UNP X8CHM4
I	186	HIS	-	expression tag	UNP X8CHM4
I	187	HIS	-	expression tag	UNP X8CHM4
I	188	SER	-	expression tag	UNP X8CHM4
I	189	SER	-	expression tag	UNP X8CHM4
I	190	GLY	-	expression tag	UNP X8CHM4
I	191	LEU	-	expression tag	UNP X8CHM4
I	192	GLU	-	expression tag	UNP X8CHM4
I	193	VAL	-	expression tag	UNP X8CHM4
I	194	LEU	-	expression tag	UNP X8CHM4
I	195	PHE	-	expression tag	UNP X8CHM4
I	196	GLN	-	expression tag	UNP X8CHM4
I	197	GLY	-	expression tag	UNP X8CHM4
I	198	PRO	-	expression tag	UNP X8CHM4
I	199	SER	-	expression tag	UNP X8CHM4
I	200	GLY	-	expression tag	UNP X8CHM4
I	201	HIS	-	expression tag	UNP X8CHM4
I	202	MET	-	expression tag	UNP X8CHM4
I	342	PRO	ALA	conflict	UNP X8CHM4
J	176	MET	-	initiating methionine	UNP X8CHM4
J	177	GLY	-	expression tag	UNP X8CHM4
J	178	HIS	-	expression tag	UNP X8CHM4
J	179	HIS	-	expression tag	UNP X8CHM4
J	180	HIS	-	expression tag	UNP X8CHM4
J	181	HIS	-	expression tag	UNP X8CHM4
J	182	HIS	-	expression tag	UNP X8CHM4
J	183	HIS	-	expression tag	UNP X8CHM4
J	184	HIS	-	expression tag	UNP X8CHM4
J	185	HIS	-	expression tag	UNP X8CHM4
J	186	HIS	-	expression tag	UNP X8CHM4
J	187	HIS	-	expression tag	UNP X8CHM4
J	188	SER	-	expression tag	UNP X8CHM4
J	189	SER	-	expression tag	UNP X8CHM4
J	190	GLY	-	expression tag	UNP X8CHM4
J	191	LEU	-	expression tag	UNP X8CHM4
J	192	GLU	-	expression tag	UNP X8CHM4
J	193	VAL	-	expression tag	UNP X8CHM4
J	194	LEU	-	expression tag	UNP X8CHM4
J	195	PHE	-	expression tag	UNP X8CHM4
J	196	GLN	-	expression tag	UNP X8CHM4

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Chain	Residue	Modelled	Actual	Comment	Reference
J	197	GLY	-	expression tag	UNP X8CHM4
J	198	PRO	-	expression tag	UNP X8CHM4
J	199	SER	-	expression tag	UNP X8CHM4
J	200	GLY	-	expression tag	UNP X8CHM4
J	201	HIS	-	expression tag	UNP X8CHM4
J	202	MET	-	expression tag	UNP X8CHM4
J	342	PRO	ALA	conflict	UNP X8CHM4
H	176	MET	-	initiating methionine	UNP X8CHM4
H	177	GLY	-	expression tag	UNP X8CHM4
H	178	HIS	-	expression tag	UNP X8CHM4
H	179	HIS	-	expression tag	UNP X8CHM4
H	180	HIS	-	expression tag	UNP X8CHM4
H	181	HIS	-	expression tag	UNP X8CHM4
H	182	HIS	-	expression tag	UNP X8CHM4
H	183	HIS	-	expression tag	UNP X8CHM4
H	184	HIS	-	expression tag	UNP X8CHM4
H	185	HIS	-	expression tag	UNP X8CHM4
H	186	HIS	-	expression tag	UNP X8CHM4
H	187	HIS	-	expression tag	UNP X8CHM4
H	188	SER	-	expression tag	UNP X8CHM4
H	189	SER	-	expression tag	UNP X8CHM4
H	190	GLY	-	expression tag	UNP X8CHM4
H	191	LEU	-	expression tag	UNP X8CHM4
H	192	GLU	-	expression tag	UNP X8CHM4
H	193	VAL	-	expression tag	UNP X8CHM4
H	194	LEU	-	expression tag	UNP X8CHM4
H	195	PHE	-	expression tag	UNP X8CHM4
H	196	GLN	-	expression tag	UNP X8CHM4
H	197	GLY	-	expression tag	UNP X8CHM4
H	198	PRO	-	expression tag	UNP X8CHM4
H	199	SER	-	expression tag	UNP X8CHM4
H	200	GLY	-	expression tag	UNP X8CHM4
H	201	HIS	-	expression tag	UNP X8CHM4
H	202	MET	-	expression tag	UNP X8CHM4
H	342	PRO	ALA	conflict	UNP X8CHM4
G	176	MET	-	initiating methionine	UNP X8CHM4
G	177	GLY	-	expression tag	UNP X8CHM4
G	178	HIS	-	expression tag	UNP X8CHM4
G	179	HIS	-	expression tag	UNP X8CHM4
G	180	HIS	-	expression tag	UNP X8CHM4
G	181	HIS	-	expression tag	UNP X8CHM4
G	182	HIS	-	expression tag	UNP X8CHM4

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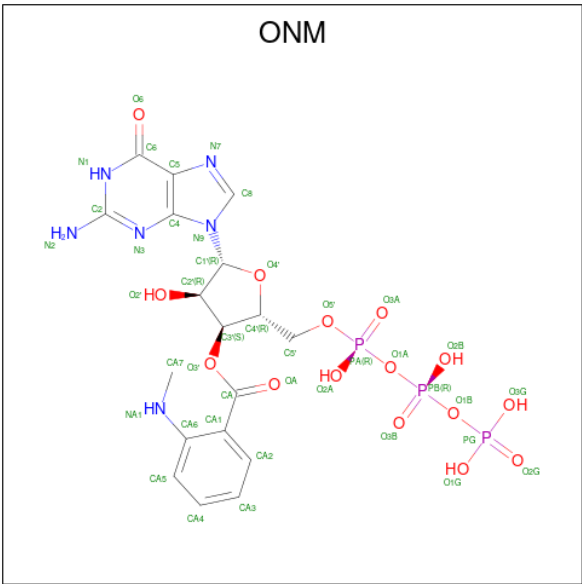
Chain	Residue	Modelled	Actual	Comment	Reference
G	183	HIS	-	expression tag	UNP X8CHM4
G	184	HIS	-	expression tag	UNP X8CHM4
G	185	HIS	-	expression tag	UNP X8CHM4
G	186	HIS	-	expression tag	UNP X8CHM4
G	187	HIS	-	expression tag	UNP X8CHM4
G	188	SER	-	expression tag	UNP X8CHM4
G	189	SER	-	expression tag	UNP X8CHM4
G	190	GLY	-	expression tag	UNP X8CHM4
G	191	LEU	-	expression tag	UNP X8CHM4
G	192	GLU	-	expression tag	UNP X8CHM4
G	193	VAL	-	expression tag	UNP X8CHM4
G	194	LEU	-	expression tag	UNP X8CHM4
G	195	PHE	-	expression tag	UNP X8CHM4
G	196	GLN	-	expression tag	UNP X8CHM4
G	197	GLY	-	expression tag	UNP X8CHM4
G	198	PRO	-	expression tag	UNP X8CHM4
G	199	SER	-	expression tag	UNP X8CHM4
G	200	GLY	-	expression tag	UNP X8CHM4
G	201	HIS	-	expression tag	UNP X8CHM4
G	202	MET	-	expression tag	UNP X8CHM4
G	342	PRO	ALA	conflict	UNP X8CHM4
K	176	MET	-	initiating methionine	UNP X8CHM4
K	177	GLY	-	expression tag	UNP X8CHM4
K	178	HIS	-	expression tag	UNP X8CHM4
K	179	HIS	-	expression tag	UNP X8CHM4
K	180	HIS	-	expression tag	UNP X8CHM4
K	181	HIS	-	expression tag	UNP X8CHM4
K	182	HIS	-	expression tag	UNP X8CHM4
K	183	HIS	-	expression tag	UNP X8CHM4
K	184	HIS	-	expression tag	UNP X8CHM4
K	185	HIS	-	expression tag	UNP X8CHM4
K	186	HIS	-	expression tag	UNP X8CHM4
K	187	HIS	-	expression tag	UNP X8CHM4
K	188	SER	-	expression tag	UNP X8CHM4
K	189	SER	-	expression tag	UNP X8CHM4
K	190	GLY	-	expression tag	UNP X8CHM4
K	191	LEU	-	expression tag	UNP X8CHM4
K	192	GLU	-	expression tag	UNP X8CHM4
K	193	VAL	-	expression tag	UNP X8CHM4
K	194	LEU	-	expression tag	UNP X8CHM4
K	195	PHE	-	expression tag	UNP X8CHM4
K	196	GLN	-	expression tag	UNP X8CHM4

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Chain	Residue	Modelled	Actual	Comment	Reference
K	197	GLY	-	expression tag	UNP X8CHM4
K	198	PRO	-	expression tag	UNP X8CHM4
K	199	SER	-	expression tag	UNP X8CHM4
K	200	GLY	-	expression tag	UNP X8CHM4
K	201	HIS	-	expression tag	UNP X8CHM4
K	202	MET	-	expression tag	UNP X8CHM4
K	342	PRO	ALA	conflict	UNP X8CHM4

- Molecule 2 is 3'-O-(N-METHYLANTHRANILOYL)-GUANOSINE-5'-TRIPHOSPHATE (CCD ID: ONM) (formula: C₁₈H₂₃N₆O₁₅P₃).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			42	18	6	15	3		
2	B	1	Total	C	N	O	P	0	0
			42	18	6	15	3		
2	D	1	Total	C	N	O	P	0	0
			42	18	6	15	3		
2	C	1	Total	C	N	O	P	0	0
			42	18	6	15	3		
2	E	1	Total	C	N	O	P	0	0
			42	18	6	15	3		
2	F	1	Total	C	N	O	P	0	0
			42	18	6	15	3		
2	I	1	Total	C	N	O	P	0	0
			42	18	6	15	3		

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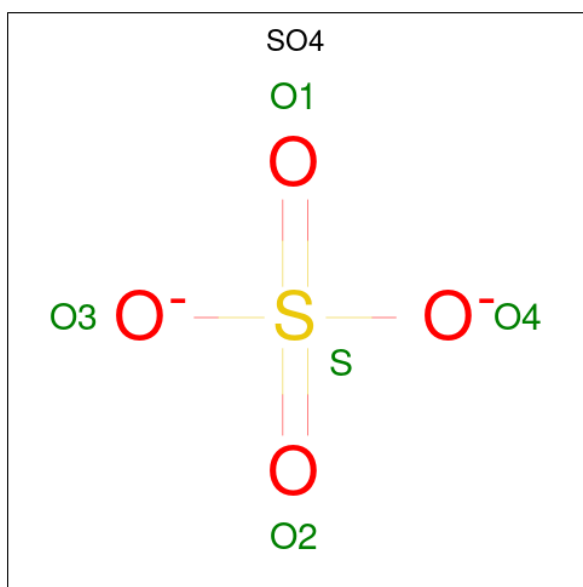
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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	J	1	Total	C	N	O	P	0	0
			42	18	6	15	3		
2	H	1	Total	C	N	O	P	0	0
			42	18	6	15	3		
2	G	1	Total	C	N	O	P	0	0
			42	18	6	15	3		
2	K	1	Total	C	N	O	P	0	0
			42	18	6	15	3		

- Molecule 3 is MANGANESE (II) ION (CCD ID: MN) (formula: Mn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	2	Total	Mn	0	0
			2	2		
3	B	2	Total	Mn	0	0
			2	2		
3	D	2	Total	Mn	0	0
			2	2		
3	C	2	Total	Mn	0	0
			2	2		
3	E	2	Total	Mn	0	0
			2	2		
3	F	2	Total	Mn	0	0
			2	2		
3	I	2	Total	Mn	0	0
			2	2		
3	J	2	Total	Mn	0	0
			2	2		
3	H	2	Total	Mn	0	0
			2	2		
3	G	2	Total	Mn	0	0
			2	2		
3	K	2	Total	Mn	0	0
			2	2		

- Molecule 4 is SULFATE ION (CCD ID: SO4) (formula: O₄S).



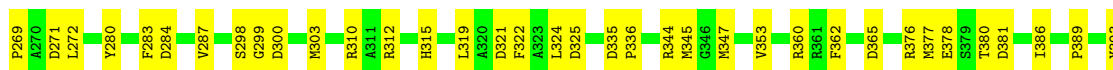
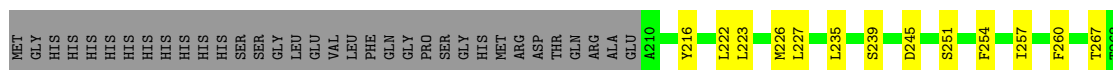
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total	O	S	0	0
			5	4	1		
4	A	1	Total	O	S	0	0
			5	4	1		
4	B	1	Total	O	S	0	0
			5	4	1		
4	D	1	Total	O	S	0	0
			5	4	1		
4	C	1	Total	O	S	0	0
			5	4	1		
4	C	1	Total	O	S	0	0
			5	4	1		
4	E	1	Total	O	S	0	0
			5	4	1		
4	E	1	Total	O	S	0	0
			5	4	1		
4	F	1	Total	O	S	0	0
			5	4	1		
4	I	1	Total	O	S	0	0
			5	4	1		
4	J	1	Total	O	S	0	0
			5	4	1		
4	J	1	Total	O	S	0	0
			5	4	1		
4	H	1	Total	O	S	0	0
			5	4	1		

- Molecule 1: Adenylate cyclase

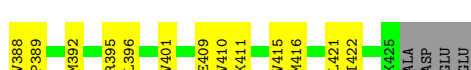
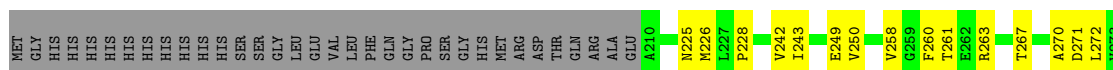




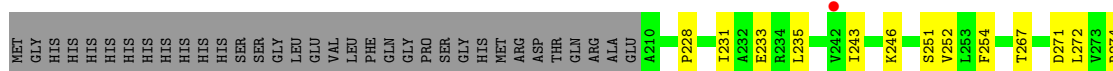
• Molecule 1: Adenylate cyclase



• Molecule 1: Adenylate cyclase

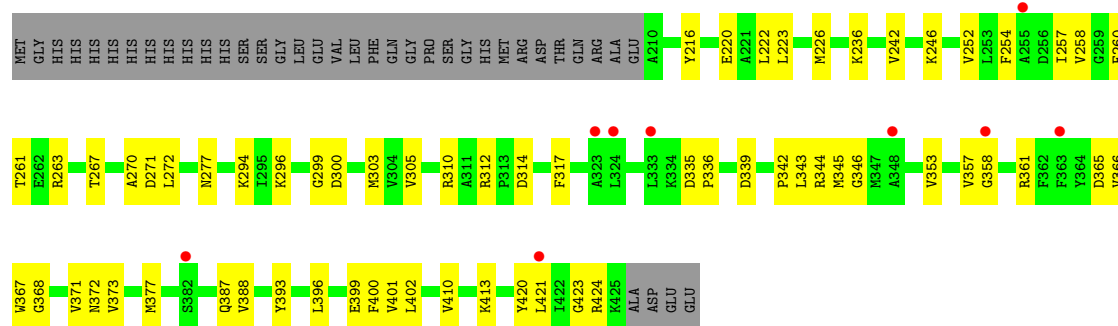


• Molecule 1: Adenylate cyclase

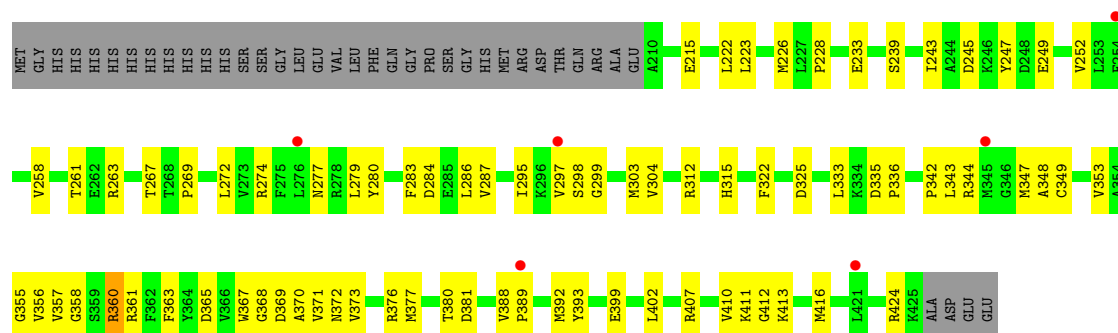


• Molecule 1: Adenylate cyclase

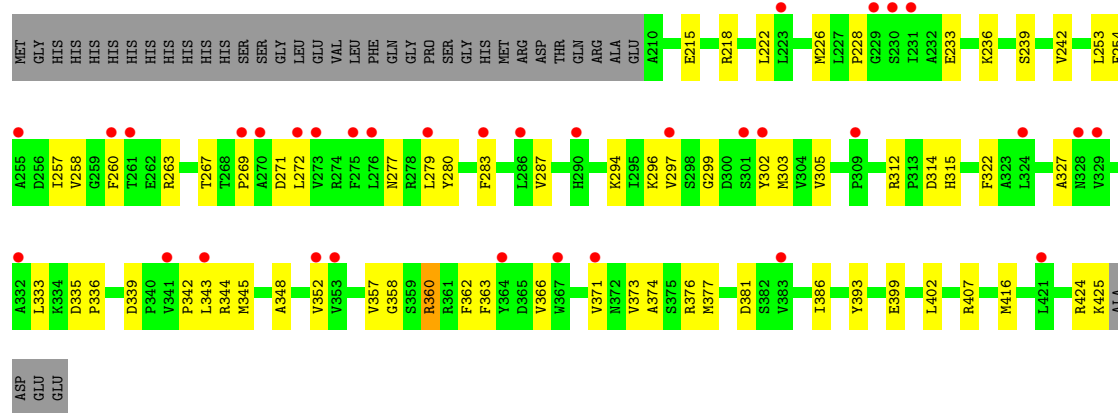




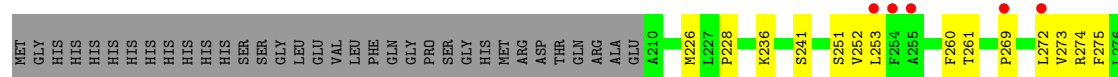
- Molecule 1: Adenylate cyclase

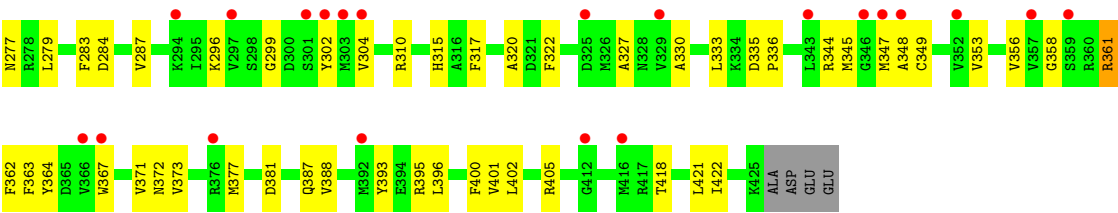


- Molecule 1: Adenylate cyclase

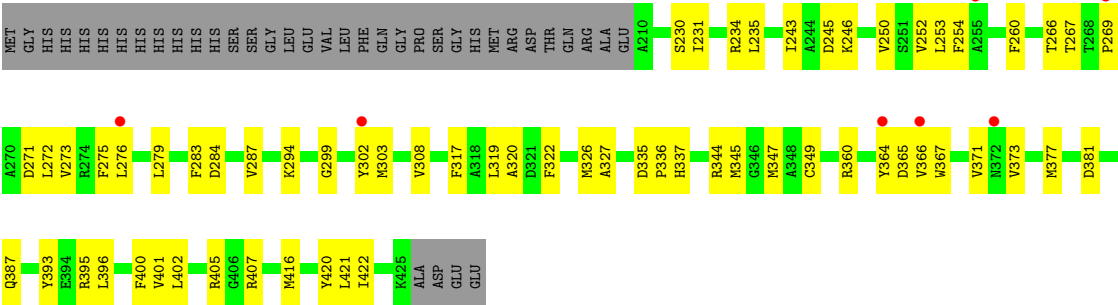


- Molecule 1: Adenylate cyclase





● Molecule 1: Adenylate cyclase



4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	145.42Å 85.69Å 318.01Å 90.00° 103.77° 90.00°	Depositor
Resolution (Å)	47.30 – 3.40 47.30 – 3.40	Depositor EDS
% Data completeness (in resolution range)	98.3 (47.30-3.40) 98.3 (47.30-3.40)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.15 (at 3.40Å)	Xtriage
Refinement program	PHENIX (1.10.1_2155: ???)	Depositor
R, R_{free}	0.245 , 0.266 0.246 , 0.267	Depositor DCC
R_{free} test set	2002 reflections (3.79%)	wwPDB-VP
Wilson B-factor (Å ²)	106.7	Xtriage
Anisotropy	0.131	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.29 , 129.2	EDS
L-test for twinning ²	$\langle L \rangle = 0.43$, $\langle L^2 \rangle = 0.26$	Xtriage
Estimated twinning fraction	0.036 for h,-k,-h-l	Xtriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	18919	wwPDB-VP
Average B, all atoms (Å ²)	149.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.32% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: ONM, MN, SO4

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# $ Z > 5$	RMSZ	# $ Z > 5$
1	A	0.75	0/1701	1.03	2/2297 (0.1%)
1	B	0.79	3/1701 (0.2%)	1.02	4/2297 (0.2%)
1	C	0.76	1/1701 (0.1%)	1.05	1/2297 (0.0%)
1	D	0.65	0/1701	0.91	2/2297 (0.1%)
1	E	0.49	0/1701	0.75	0/2297
1	F	0.44	0/1701	0.70	0/2297
1	G	0.41	1/1701 (0.1%)	0.64	0/2297
1	H	0.44	0/1701	0.67	1/2297 (0.0%)
1	I	0.43	0/1701	0.71	0/2297
1	J	0.41	0/1701	0.66	1/2297 (0.0%)
1	K	0.34	0/1701	0.57	0/2297
All	All	0.56	5/18711 (0.0%)	0.81	11/25267 (0.0%)

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	227	LEU	CA-C	10.85	1.63	1.52
1	C	227	LEU	CA-C	6.23	1.58	1.52
1	B	227	LEU	C-O	-5.88	1.18	1.24
1	B	227	LEU	N-CA	-5.74	1.41	1.45
1	G	388	VAL	C-O	5.61	1.28	1.24

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	227	LEU	O-C-N	12.18	131.05	121.55
1	A	406	GLY	N-CA-C	8.82	120.47	111.56
1	H	360	ARG	NE-CZ-NH1	-6.83	114.67	121.50
1	J	360	ARG	NE-CZ-NH1	-6.50	115.00	121.50
1	B	227	LEU	CA-C-N	-6.24	113.52	119.76

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	227	LEU	C-N-CA	-6.24	113.52	119.76
1	A	272	LEU	CB-CG-CD2	-5.86	93.11	110.70
1	D	279	LEU	CA-CB-CG	5.50	135.54	116.30
1	C	227	LEU	O-C-N	5.47	126.50	121.80
1	B	227	LEU	CA-C-O	-5.20	115.50	120.64
1	D	367	TRP	CA-CB-CG	5.10	123.29	113.60

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	A	1670	0	1670	57	0
1	B	1670	0	1670	50	0
1	C	1670	0	1670	50	0
1	D	1670	0	1670	60	0
1	E	1670	0	1670	49	0
1	F	1670	0	1670	52	0
1	G	1670	0	1670	60	0
1	H	1670	0	1670	57	0
1	I	1670	0	1670	77	0
1	J	1670	0	1670	91	0
1	K	1670	0	1670	47	1
2	A	42	0	19	4	0
2	B	42	0	19	0	0
2	C	42	0	19	1	0
2	D	42	0	19	3	0
2	E	42	0	19	3	0
2	F	42	0	19	6	0
2	G	42	0	19	5	0
2	H	42	0	19	7	0
2	I	42	0	19	22	0
2	J	42	0	19	13	0
2	K	42	0	19	5	0
3	A	2	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	2	0	0	0	0
3	C	2	0	0	1	0
3	D	2	0	0	0	0
3	E	2	0	0	0	0
3	F	2	0	0	0	0
3	G	2	0	0	0	0
3	H	2	0	0	0	0
3	I	2	0	0	0	0
3	J	2	0	0	0	0
3	K	2	0	0	0	0
4	A	10	0	0	0	0
4	B	5	0	0	0	0
4	C	10	0	0	0	0
4	D	5	0	0	1	0
4	E	10	0	0	3	0
4	F	5	0	0	0	0
4	H	5	0	0	1	0
4	I	5	0	0	0	0
4	J	10	0	0	0	0
All	All	18919	0	18579	586	1

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 16.

All (586) 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)
2:H:504:ONM:C4'	2:H:504:ONM:O4'	1.65	1.22
2:K:501:ONM:O4'	2:K:501:ONM:C4'	1.65	1.21
2:I:504:ONM:O4'	2:I:504:ONM:C4'	1.64	1.18
2:A:501:ONM:O4'	2:A:501:ONM:C4'	1.63	1.16
2:J:501:ONM:O4'	2:J:501:ONM:C4'	1.64	1.15
1:A:267:THR:HB	1:A:272:LEU:CD1	1.76	1.14
1:I:216:TYR:CE1	1:J:215:GLU:OE1	2.06	1.09
2:G:501:ONM:O4'	2:G:501:ONM:C4'	1.64	1.07
1:D:223:LEU:HD21	1:C:222:LEU:HD13	1.32	1.05
1:A:267:THR:HB	1:A:272:LEU:HD13	1.38	1.01
1:C:267:THR:HB	1:C:272:LEU:CD1	1.95	0.97
1:J:344:ARG:NH2	2:J:501:ONM:O3G	1.99	0.95
1:K:267:THR:HB	1:K:272:LEU:CD1	1.98	0.94
1:F:267:THR:HB	1:F:272:LEU:CD1	1.98	0.93

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:267:THR:HB	1:D:272:LEU:CD1	2.03	0.88
1:I:216:TYR:HE1	1:J:215:GLU:OE1	1.56	0.86
2:I:504:ONM:OA	1:J:372:ASN:HB2	1.76	0.85
1:I:353:VAL:HG21	1:J:269:PRO:HB2	1.59	0.84
1:D:401:VAL:HG13	1:D:422:ILE:HB	1.57	0.84
1:I:216:TYR:CZ	1:J:215:GLU:OE1	2.31	0.84
1:I:258:VAL:HB	1:I:342:PRO:HB2	1.60	0.84
1:E:401:VAL:HG13	1:E:422:ILE:HB	1.61	0.83
1:A:296:LYS:NZ	1:A:365:ASP:OD1	2.12	0.82
2:I:504:ONM:O1A	1:J:376:ARG:NH2	2.12	0.82
1:A:215:GLU:OE1	1:C:310:ARG:NH1	2.13	0.82
2:I:504:ONM:HN22	1:J:303:MET:HE1	1.45	0.81
1:J:243:ILE:O	1:J:355:GLY:HA3	1.80	0.81
1:A:220:GLU:OE2	1:A:236:LYS:NZ	2.14	0.80
1:A:401:VAL:HG13	1:A:422:ILE:HB	1.61	0.80
1:G:296:LYS:HB3	1:G:363:PHE:HE2	1.46	0.79
1:F:233:GLU:HG2	1:G:310:ARG:HH12	1.47	0.78
1:A:267:THR:CB	1:A:272:LEU:CD1	2.59	0.78
1:I:277:ASN:OD1	1:J:358:GLY:N	2.16	0.78
1:G:320:ALA:HA	1:G:347:MET:HE1	1.64	0.78
1:G:373:VAL:O	1:G:377:MET:HG2	1.85	0.77
1:F:243:ILE:O	1:F:355:GLY:HA3	1.85	0.77
1:F:296:LYS:HB3	1:F:363:PHE:HE1	1.50	0.76
1:D:223:LEU:HD11	1:C:222:LEU:HD22	1.67	0.76
1:E:373:VAL:O	1:E:377:MET:HG2	1.86	0.76
1:K:267:THR:HB	1:K:272:LEU:HD13	1.67	0.76
1:G:284:ASP:OD1	1:G:302:TYR:OH	2.01	0.76
1:J:344:ARG:HG2	1:J:381:ASP:HB3	1.67	0.75
1:F:296:LYS:HB3	1:F:363:PHE:CE1	2.22	0.75
1:D:267:THR:HB	1:D:272:LEU:HD12	1.68	0.75
1:G:252:VAL:HG21	1:G:371:VAL:HG12	1.69	0.75
1:J:267:THR:HB	1:J:272:LEU:HD13	1.68	0.75
1:E:249:GLU:OE2	1:E:395:ARG:NH2	2.20	0.74
1:I:373:VAL:O	1:I:377:MET:HG2	1.89	0.73
1:H:344:ARG:NH2	2:H:504:ONM:O3G	2.19	0.73
1:C:267:THR:HB	1:C:272:LEU:HD11	1.71	0.72
2:H:504:ONM:OA	1:G:372:ASN:ND2	2.22	0.72
1:K:344:ARG:HG2	1:K:381:ASP:HB3	1.72	0.72
1:J:393:TYR:HD1	1:J:402:LEU:HD13	1.55	0.71
1:G:296:LYS:HB3	1:G:363:PHE:CE2	2.26	0.70
1:A:387:GLN:OE1	1:A:418:THR:HG21	1.92	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:258:VAL:HB	1:H:342:PRO:HB2	1.73	0.70
1:H:269:PRO:HB2	1:G:353:VAL:HG21	1.72	0.70
1:F:312:ARG:HD2	1:F:315:HIS:HA	1.74	0.69
1:I:216:TYR:OH	1:J:215:GLU:OE1	2.09	0.69
1:C:410:VAL:HG23	1:C:413:LYS:HB2	1.73	0.69
1:K:387:GLN:OE1	1:K:405:ARG:NH1	2.26	0.69
1:A:387:GLN:HG2	1:A:418:THR:HG23	1.75	0.69
1:B:324:LEU:HD21	1:B:421:LEU:HD22	1.76	0.68
1:A:267:THR:HB	1:A:272:LEU:HD11	1.74	0.68
1:A:349:CYS:SG	1:A:395:ARG:NH2	2.67	0.68
1:I:296:LYS:HE3	1:J:298:SER:OG	1.93	0.68
1:J:267:THR:HB	1:J:272:LEU:CD1	2.23	0.68
1:A:393:TYR:HD1	1:A:402:LEU:HD13	1.59	0.68
1:E:270:ALA:HB1	1:E:274:ARG:NH2	2.09	0.67
1:J:373:VAL:O	1:J:377:MET:HG2	1.94	0.67
1:K:373:VAL:O	1:K:377:MET:HG2	1.95	0.67
1:D:267:THR:HG22	1:D:271:ASP:HB2	1.77	0.66
1:K:401:VAL:HG13	1:K:422:ILE:HB	1.76	0.66
1:H:327:ALA:HB2	1:H:345:MET:HE1	1.77	0.66
1:H:253:LEU:HD22	1:H:322:PHE:HE2	1.59	0.66
1:G:393:TYR:HD1	1:G:402:LEU:HD13	1.59	0.66
1:I:223:LEU:HD21	1:J:222:LEU:HD13	1.78	0.66
1:I:361:ARG:NH2	1:J:228:PRO:HG3	2.09	0.66
1:G:275:PHE:CG	1:G:336:PRO:HD3	2.32	0.65
1:F:233:GLU:HG2	1:G:310:ARG:NH1	2.11	0.65
1:J:279:LEU:HD12	1:J:333:LEU:HD13	1.79	0.64
1:E:344:ARG:HG2	1:E:381:ASP:HB3	1.78	0.64
1:F:324:LEU:HD21	1:F:421:LEU:HD22	1.78	0.64
1:I:317:PHE:HD2	1:I:400:PHE:HE2	1.44	0.64
1:D:327:ALA:HB2	1:D:345:MET:HE1	1.78	0.64
1:I:372:ASN:OD1	1:J:261:THR:OG1	2.14	0.64
1:J:356:VAL:HG22	1:J:363:PHE:O	1.97	0.64
1:F:235:LEU:HD21	1:F:356:VAL:HG21	1.80	0.64
1:I:358:GLY:N	1:J:277:ASN:OD1	2.26	0.64
1:D:243:ILE:O	1:D:355:GLY:HA3	1.97	0.63
1:E:267:THR:HB	1:E:272:LEU:HD13	1.80	0.63
2:A:501:ONM:O1G	1:B:411:LYS:NZ	2.22	0.63
1:G:260:PHE:CZ	1:G:272:LEU:HG	2.34	0.63
1:I:372:ASN:HD21	2:J:501:ONM:H5'2	1.64	0.62
2:H:504:ONM:H3'	1:G:372:ASN:OD1	1.99	0.62
1:A:353:VAL:HG21	1:B:269:PRO:HB2	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:366:VAL:HG23	1:E:371:VAL:HG11	1.81	0.62
1:J:299:GLY:HA3	2:J:501:ONM:C8	2.28	0.62
1:J:393:TYR:CD1	1:J:402:LEU:HD13	2.34	0.62
1:H:358:GLY:N	1:G:277:ASN:OD1	2.32	0.62
1:B:245:ASP:HB3	1:C:239:SER:OG	1.99	0.62
1:C:324:LEU:HD21	1:C:421:LEU:HD22	1.81	0.62
1:F:347:MET:HE2	1:F:392:MET:HE1	1.82	0.62
1:K:260:PHE:HE2	2:K:501:ONM:CA2	2.13	0.62
1:D:226:MET:HE2	1:C:226:MET:HE2	1.83	0.61
1:B:410:VAL:HG23	1:B:413:LYS:HB2	1.83	0.61
1:I:246:LYS:HA	1:I:353:VAL:HG22	1.82	0.61
1:G:317:PHE:HD2	1:G:400:PHE:HE2	1.47	0.61
1:F:254:PHE:CZ	1:F:303:MET:HG3	2.35	0.61
1:B:235:LEU:CD1	1:B:243:ILE:HD12	2.31	0.61
1:B:267:THR:HB	1:B:272:LEU:HD13	1.81	0.61
1:G:377:MET:O	1:G:387:GLN:NE2	2.33	0.61
1:C:300:ASP:OD2	3:C:504:MN:MN	1.58	0.60
1:I:353:VAL:CG2	1:J:269:PRO:HB2	2.30	0.60
1:E:267:THR:HG22	1:E:271:ASP:HB2	1.83	0.60
1:G:228:PRO:HG2	1:G:364:TYR:CD2	2.36	0.60
1:D:353:VAL:HG21	1:C:269:PRO:HB2	1.84	0.60
1:D:387:GLN:OE1	1:D:418:THR:HG21	2.01	0.60
2:I:504:ONM:HA71	1:J:369:ASP:HB2	1.84	0.60
2:I:504:ONM:O2'	1:J:371:VAL:HG23	2.01	0.60
1:H:277:ASN:OD1	1:G:358:GLY:N	2.31	0.59
1:D:267:THR:HB	1:D:272:LEU:HD11	1.82	0.59
1:F:267:THR:HB	1:F:272:LEU:HD11	1.82	0.59
1:I:312:ARG:NH1	1:I:314:ASP:OD2	2.26	0.59
1:E:327:ALA:HB2	1:E:345:MET:HE1	1.83	0.59
1:I:257:ILE:HB	1:I:300:ASP:OD1	2.02	0.59
1:I:258:VAL:CB	1:I:342:PRO:HB2	2.32	0.59
2:H:504:ONM:OA	2:H:504:ONM:NA1	2.30	0.59
1:K:260:PHE:HE2	2:K:501:ONM:HA2	1.68	0.59
1:C:257:ILE:HB	1:C:300:ASP:OD1	2.02	0.59
1:I:226:MET:HE2	1:J:226:MET:HE2	1.85	0.59
1:I:310:ARG:HH22	1:H:236:LYS:HB2	1.66	0.59
1:I:377:MET:O	1:I:387:GLN:NE2	2.33	0.59
1:C:393:TYR:HD1	1:C:402:LEU:HD13	1.68	0.59
1:H:399:GLU:HB3	1:H:424:ARG:HH11	1.68	0.59
1:C:280:TYR:CD1	1:C:283:PHE:HD2	2.21	0.58
1:E:242:VAL:HG21	1:F:274:ARG:HG2	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:267:THR:HB	1:F:272:LEU:HD12	1.83	0.58
1:H:260:PHE:CZ	1:H:272:LEU:HG	2.38	0.58
1:J:365:ASP:HB3	1:J:367:TRP:CZ2	2.38	0.58
1:H:376:ARG:NH2	2:G:501:ONM:O3A	2.37	0.58
1:I:294:LYS:HD3	1:J:361:ARG:HB2	1.85	0.58
1:A:367:TRP:NE1	1:B:299:GLY:HA2	2.19	0.58
1:C:280:TYR:HD1	1:C:283:PHE:HD2	1.51	0.58
1:I:252:VAL:HG21	1:I:371:VAL:HG12	1.84	0.58
1:K:377:MET:O	1:K:387:GLN:NE2	2.37	0.58
1:I:300:ASP:HB2	2:I:504:ONM:O4'	2.04	0.58
1:H:296:LYS:HB3	1:H:363:PHE:CE1	2.38	0.58
1:K:327:ALA:HB2	1:K:345:MET:HE1	1.86	0.58
1:I:299:GLY:HA3	2:I:504:ONM:C4	2.34	0.58
1:I:258:VAL:HA	2:I:504:ONM:O2G	2.04	0.57
1:I:261:THR:OG1	1:J:412:GLY:HA3	2.04	0.57
1:A:344:ARG:HG2	1:A:381:ASP:HB3	1.85	0.57
1:J:258:VAL:HB	1:J:342:PRO:HB2	1.86	0.57
1:C:344:ARG:HG2	1:C:381:ASP:HB3	1.86	0.57
1:F:246:LYS:HD2	1:G:241:SER:OG	2.04	0.57
1:A:226:MET:HE3	1:B:362:PHE:O	2.05	0.57
1:F:294:LYS:HE3	1:F:302:TYR:HE1	1.70	0.57
1:A:216:TYR:HD1	1:B:216:TYR:HD1	1.53	0.57
1:J:348:ALA:HB3	1:J:370:ALA:O	2.05	0.57
1:A:283:PHE:CD2	1:A:326:MET:HE2	2.40	0.57
1:I:367:TRP:HB3	2:J:501:ONM:CA3	2.35	0.57
1:A:258:VAL:HG13	1:A:344:ARG:NH1	2.19	0.56
1:H:279:LEU:HD12	1:H:333:LEU:HD13	1.85	0.56
1:G:377:MET:HE1	1:G:418:THR:OG1	2.05	0.56
1:C:402:LEU:HA	1:C:420:TYR:O	2.05	0.56
1:E:267:THR:HB	1:E:272:LEU:CD1	2.36	0.56
1:F:319:LEU:HD23	1:F:347:MET:HE3	1.87	0.56
1:G:299:GLY:HA3	2:G:501:ONM:N3	2.20	0.56
1:I:335:ASP:OD2	1:I:339:ASP:N	2.38	0.56
1:G:304:VAL:HG21	1:G:322:PHE:CZ	2.40	0.56
1:A:296:LYS:HE2	1:A:303:MET:CE	2.35	0.56
1:F:407:ARG:HA	1:F:416:MET:O	2.05	0.56
1:I:393:TYR:HD1	1:I:402:LEU:HD13	1.70	0.56
1:H:287:VAL:HG12	1:H:322:PHE:CE1	2.41	0.56
4:D:504:SO4:O1	1:F:274:ARG:NH2	2.38	0.56
1:F:306:SER:HB2	1:F:319:LEU:HD13	1.88	0.56
1:I:270:ALA:HA	1:J:353:VAL:HG21	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:258:VAL:HB	1:B:342:PRO:HB2	1.89	0.56
1:I:368:GLY:HA2	2:J:501:ONM:CA5	2.37	0.55
1:B:296:LYS:HB3	1:B:363:PHE:CE1	2.41	0.55
1:D:262:GLU:OE2	1:D:262:GLU:N	2.38	0.55
1:E:250:VAL:HG11	1:E:308:VAL:HG13	1.87	0.55
1:I:261:THR:HG21	1:J:372:ASN:OD1	2.06	0.55
1:D:268:THR:O	1:D:272:LEU:HD13	2.06	0.55
1:H:335:ASP:HB2	1:H:336:PRO:HD2	1.89	0.55
1:G:396:LEU:HD23	1:G:421:LEU:HD13	1.88	0.55
1:K:267:THR:HB	1:K:272:LEU:HD11	1.83	0.55
1:I:361:ARG:HH21	1:J:228:PRO:HG3	1.71	0.55
1:B:235:LEU:CD1	1:B:243:ILE:CD1	2.85	0.55
1:D:335:ASP:HB2	1:D:336:PRO:HD2	1.88	0.55
1:A:228:PRO:HG3	1:B:361:ARG:NH2	2.22	0.55
1:I:220:GLU:OE2	1:I:236:LYS:NZ	2.40	0.55
2:I:504:ONM:NA1	1:J:368:GLY:C	2.65	0.55
1:G:344:ARG:HG2	1:G:381:ASP:HB3	1.89	0.55
1:D:373:VAL:O	1:D:377:MET:HG2	2.07	0.54
2:F:501:ONM:H5'2	2:F:501:ONM:N3	2.22	0.54
1:D:387:GLN:HG2	1:D:418:THR:HG23	1.89	0.54
1:C:222:LEU:CD2	1:C:226:MET:SD	2.95	0.54
1:K:234:ARG:NH2	1:K:243:ILE:HG23	2.23	0.54
1:I:267:THR:HG22	1:I:271:ASP:HB2	1.90	0.54
1:J:245:ASP:HB2	1:J:247:TYR:CE2	2.43	0.54
1:F:344:ARG:HH22	2:F:501:ONM:PG	2.31	0.54
1:B:373:VAL:O	1:B:377:MET:HG2	2.08	0.54
1:H:393:TYR:HD1	1:H:402:LEU:HD13	1.72	0.54
1:I:377:MET:HE3	1:I:387:GLN:HG2	1.90	0.54
1:I:372:ASN:ND2	2:J:501:ONM:H5'2	2.22	0.53
1:E:274:ARG:HD3	4:E:504:SO4:S	2.48	0.53
1:F:409:GLU:HG2	1:F:415:VAL:HG22	1.91	0.53
1:K:254:PHE:CZ	1:K:303:MET:HE2	2.43	0.53
1:E:283:PHE:CE2	1:E:326:MET:HE2	2.44	0.53
1:D:396:LEU:HD23	1:D:421:LEU:HD13	1.91	0.53
1:H:269:PRO:HB2	1:G:353:VAL:CG2	2.37	0.53
1:K:396:LEU:HD23	1:K:421:LEU:HD13	1.89	0.53
1:C:335:ASP:HB2	1:C:336:PRO:HD2	1.90	0.53
1:I:299:GLY:HA3	2:I:504:ONM:N9	2.24	0.53
1:H:312:ARG:HD3	1:H:314:ASP:OD1	2.09	0.53
1:K:299:GLY:HA3	2:K:501:ONM:C4	2.39	0.53
1:B:250:VAL:HG11	1:B:308:VAL:HG13	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:312:ARG:HG3	1:C:315:HIS:HB3	1.90	0.53
1:F:344:ARG:NH2	2:F:501:ONM:O3G	2.42	0.53
1:J:263:ARG:HH12	1:J:342:PRO:HD2	1.74	0.52
1:B:296:LYS:HB3	1:B:363:PHE:HE1	1.75	0.52
1:H:344:ARG:HG2	1:H:381:ASP:HB3	1.91	0.52
2:H:504:ONM:N3	2:H:504:ONM:H5'1	2.25	0.52
1:K:320:ALA:HA	1:K:347:MET:HE1	1.91	0.52
1:D:252:VAL:HG13	1:D:374:ALA:HB2	1.91	0.52
1:E:365:ASP:HB3	1:E:367:TRP:CH2	2.44	0.52
1:G:349:CYS:SG	1:G:395:ARG:NH2	2.82	0.52
1:F:279:LEU:HD12	1:F:333:LEU:HD13	1.91	0.52
1:F:376:ARG:O	1:F:380:THR:HG22	2.09	0.52
1:J:356:VAL:HG13	1:J:363:PHE:H	1.75	0.52
2:A:501:ONM:HN22	1:B:303:MET:HE1	1.74	0.52
1:I:246:LYS:O	1:H:239:SER:HA	2.10	0.52
1:J:344:ARG:HH22	2:J:501:ONM:PG	2.32	0.52
1:A:373:VAL:O	1:A:377:MET:HG2	2.10	0.52
1:C:267:THR:HG22	1:C:271:ASP:HB2	1.91	0.52
1:A:296:LYS:HE2	1:A:303:MET:HE3	1.92	0.51
1:A:393:TYR:CD1	1:A:402:LEU:HD13	2.42	0.51
1:K:234:ARG:NH2	1:K:245:ASP:OD2	2.44	0.51
1:A:335:ASP:HB2	1:A:336:PRO:HD2	1.92	0.51
1:E:320:ALA:HA	1:E:347:MET:HE1	1.92	0.51
1:K:335:ASP:HB2	1:K:336:PRO:HD2	1.91	0.51
1:G:327:ALA:HB2	1:G:345:MET:HE1	1.93	0.51
1:E:361:ARG:NH2	1:F:228:PRO:HG3	2.26	0.51
2:G:501:ONM:H5'2	2:G:501:ONM:O3B	2.10	0.51
1:J:377:MET:HG3	1:J:389:PRO:HD3	1.92	0.51
1:D:296:LYS:HE3	1:C:298:SER:OG	2.10	0.51
1:H:294:LYS:O	1:G:361:ARG:HG3	2.11	0.51
1:K:275:PHE:CG	1:K:336:PRO:HD3	2.46	0.51
1:E:243:ILE:O	1:E:355:GLY:HA3	2.11	0.51
1:I:372:ASN:HD21	2:J:501:ONM:C5'	2.24	0.51
1:C:257:ILE:HG21	1:C:260:PHE:HD1	1.76	0.50
1:I:254:PHE:CZ	1:I:303:MET:HE2	2.46	0.50
1:I:344:ARG:NH1	2:I:504:ONM:O1G	2.45	0.50
1:I:365:ASP:HB3	1:I:367:TRP:CH2	2.46	0.50
1:J:377:MET:O	1:J:381:ASP:HB2	2.10	0.50
1:D:409:GLU:HG2	1:D:415:VAL:HG22	1.93	0.50
1:G:261:THR:HG23	2:G:501:ONM:O5'	2.12	0.50
1:A:408:ILE:O	1:A:415:VAL:HA	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:245:ASP:HB2	1:D:247:TYR:HE2	1.77	0.50
1:C:345:MET:HE3	1:C:386:ILE:HG12	1.93	0.50
1:C:376:ARG:O	1:C:380:THR:HG22	2.11	0.50
1:K:275:PHE:CD1	1:K:336:PRO:HD3	2.47	0.50
1:D:353:VAL:HG21	1:C:269:PRO:CB	2.40	0.50
1:J:239:SER:HA	1:K:246:LYS:O	2.12	0.50
1:D:216:TYR:HD1	1:C:216:TYR:HD1	1.58	0.50
1:D:253:LEU:HB2	1:D:319:LEU:HD21	1.93	0.50
1:F:393:TYR:HD1	1:F:402:LEU:HD13	1.76	0.50
1:I:346:GLY:HA3	1:I:377:MET:C	2.37	0.50
1:I:260:PHE:HE2	2:I:504:ONM:CA2	2.24	0.50
1:D:344:ARG:HG2	1:D:381:ASP:HB3	1.93	0.50
1:D:294:LYS:NZ	1:C:360:ARG:O	2.31	0.50
1:K:349:CYS:SG	1:K:395:ARG:NH2	2.85	0.50
1:G:356:VAL:HG22	1:G:363:PHE:O	2.12	0.49
1:K:267:THR:HG22	1:K:271:ASP:HB2	1.93	0.49
1:C:222:LEU:O	1:C:226:MET:HG3	2.11	0.49
1:F:231:ILE:HG13	1:F:364:TYR:CD1	2.47	0.49
1:F:254:PHE:CE1	1:F:303:MET:HG3	2.48	0.49
1:G:287:VAL:HG12	1:G:322:PHE:CE1	2.47	0.49
1:I:277:ASN:HB2	1:J:357:VAL:HG12	1.94	0.49
1:J:347:MET:HB2	1:J:388:VAL:HG12	1.94	0.49
1:H:312:ARG:HD2	1:H:315:HIS:HA	1.94	0.49
1:B:410:VAL:HG21	1:B:416:MET:SD	2.53	0.49
1:E:284:ASP:OD1	1:E:302:TYR:OH	2.27	0.49
1:K:407:ARG:HA	1:K:416:MET:O	2.12	0.49
1:A:222:LEU:HD12	1:B:236:LYS:HG3	1.94	0.49
1:E:348:ALA:HA	1:E:392:MET:HG3	1.94	0.49
1:D:388:VAL:HG23	1:D:419:TRP:HB2	1.94	0.49
1:F:373:VAL:O	1:F:377:MET:HG2	2.12	0.49
2:I:504:ONM:O1B	1:J:411:LYS:HD3	2.12	0.49
1:J:376:ARG:O	1:J:380:THR:HG22	2.13	0.49
1:H:257:ILE:HA	1:H:343:LEU:HD23	1.94	0.49
1:G:393:TYR:CD1	1:G:402:LEU:HD13	2.45	0.49
1:D:261:THR:O	1:D:264:ALA:N	2.32	0.49
1:H:296:LYS:HB3	1:H:363:PHE:HE1	1.76	0.49
1:G:287:VAL:HG12	1:G:322:PHE:CZ	2.47	0.49
1:D:283:PHE:O	1:D:287:VAL:HG13	2.13	0.49
1:H:263:ARG:HH12	1:H:342:PRO:HD2	1.77	0.49
1:H:399:GLU:HB3	1:H:424:ARG:NH1	2.28	0.49
1:K:253:LEU:HB2	1:K:319:LEU:HD21	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:K:501:ONM:O3B	2:K:501:ONM:H5'2	2.13	0.49
1:D:377:MET:O	1:D:387:GLN:NE2	2.46	0.48
1:J:410:VAL:HG23	1:J:413:LYS:HB2	1.95	0.48
1:A:387:GLN:HG2	1:A:418:THR:CG2	2.42	0.48
1:D:377:MET:HE3	1:D:387:GLN:HG2	1.95	0.48
1:E:396:LEU:HD23	1:E:421:LEU:HD13	1.96	0.48
1:I:257:ILE:HA	1:I:343:LEU:HD23	1.96	0.48
1:B:344:ARG:HG2	1:B:381:ASP:HB3	1.95	0.48
1:D:377:MET:HE2	1:D:388:VAL:C	2.39	0.48
1:I:357:VAL:HG12	1:J:277:ASN:HB2	1.94	0.48
1:B:239:SER:OG	1:C:245:ASP:HB3	2.13	0.48
1:B:406:GLY:O	1:B:417:ARG:HA	2.13	0.48
1:I:310:ARG:NH1	1:H:233:GLU:O	2.27	0.48
1:B:342:PRO:O	1:B:343:LEU:HD23	2.13	0.48
1:E:335:ASP:HB2	1:E:336:PRO:HD2	1.96	0.48
1:K:250:VAL:HG11	1:K:308:VAL:HG13	1.94	0.48
1:B:235:LEU:HD12	1:B:243:ILE:CD1	2.44	0.48
1:D:260:PHE:O	1:D:263:ARG:HB2	2.14	0.48
1:I:367:TRP:NE1	1:J:299:GLY:HA2	2.29	0.48
1:H:258:VAL:HG13	1:H:344:ARG:HH21	1.77	0.48
1:I:368:GLY:HA2	2:J:501:ONM:CA6	2.43	0.48
2:I:504:ONM:N2	1:J:303:MET:HE1	2.21	0.48
1:H:360:ARG:HG3	1:G:284:ASP:HB3	1.95	0.48
1:A:267:THR:HG22	1:A:271:ASP:HB2	1.95	0.48
1:D:263:ARG:HH12	1:D:342:PRO:CD	2.27	0.48
1:J:280:TYR:CD2	1:J:297:VAL:HG21	2.48	0.48
1:H:299:GLY:HA2	1:G:367:TRP:HE1	1.78	0.48
1:I:410:VAL:HG23	1:I:413:LYS:HB2	1.95	0.48
1:H:254:PHE:CE1	1:H:303:MET:HG3	2.49	0.48
1:K:266:THR:HB	1:K:337:HIS:ND1	2.29	0.47
1:B:347:MET:HE2	1:B:392:MET:HE1	1.97	0.47
1:E:258:VAL:HB	1:E:342:PRO:HB2	1.97	0.47
1:I:242:VAL:HG21	1:J:274:ARG:HG2	1.95	0.47
1:K:234:ARG:NH1	1:K:243:ILE:HG12	2.29	0.47
1:K:287:VAL:HG12	1:K:322:PHE:CZ	2.49	0.47
1:A:377:MET:O	1:A:387:GLN:NE2	2.48	0.47
1:C:287:VAL:HG12	1:C:322:PHE:CZ	2.49	0.47
1:H:242:VAL:HG21	1:G:274:ARG:HG2	1.94	0.47
1:E:226:MET:HE3	1:F:362:PHE:O	2.15	0.47
1:J:252:VAL:HG11	1:J:371:VAL:HA	1.95	0.47
1:J:399:GLU:HB3	1:J:424:ARG:HH11	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:368:GLY:O	1:A:371:VAL:HG22	2.14	0.47
1:C:410:VAL:HG21	1:C:416:MET:SD	2.54	0.47
1:I:242:VAL:HB	1:J:274:ARG:HG2	1.97	0.47
1:B:279:LEU:HD12	1:B:333:LEU:HD13	1.97	0.47
1:F:254:PHE:CZ	1:F:303:MET:HE2	2.49	0.47
1:H:263:ARG:HH12	1:H:342:PRO:CD	2.27	0.47
1:G:279:LEU:HD22	1:G:333:LEU:HD13	1.97	0.47
1:I:242:VAL:CB	1:J:274:ARG:HG2	2.45	0.46
1:B:425:LYS:HB3	1:B:425:LYS:HE2	1.77	0.46
1:C:267:THR:HB	1:C:272:LEU:HD13	1.88	0.46
1:F:294:LYS:HE3	1:F:302:TYR:CE1	2.49	0.46
1:F:399:GLU:HB3	1:F:424:ARG:HH11	1.80	0.46
1:K:317:PHE:HD2	1:K:400:PHE:HE2	1.63	0.46
1:F:251:SER:HA	1:F:348:ALA:O	2.15	0.46
1:F:297:VAL:HG13	1:F:297:VAL:O	2.15	0.46
1:J:410:VAL:HG21	1:J:416:MET:SD	2.55	0.46
1:H:348:ALA:HB3	1:H:374:ALA:HB2	1.98	0.46
1:A:407:ARG:NH1	1:A:407:ARG:HG3	2.31	0.46
1:F:267:THR:HG22	1:F:271:ASP:HB2	1.97	0.46
1:H:335:ASP:OD2	1:H:339:ASP:N	2.45	0.46
1:A:283:PHE:CE2	1:A:326:MET:HE2	2.51	0.46
1:B:376:ARG:O	1:B:380:THR:HG22	2.15	0.46
1:H:215:GLU:HA	1:H:218:ARG:HD2	1.96	0.46
1:H:267:THR:HG22	1:H:271:ASP:HB2	1.97	0.46
1:H:360:ARG:NH2	4:H:501:SO4:O1	2.49	0.46
1:B:252:VAL:HG11	1:B:371:VAL:HA	1.96	0.46
1:B:335:ASP:HB2	1:B:336:PRO:HD2	1.97	0.46
1:E:275:PHE:HD1	1:E:278:ARG:NH2	2.12	0.46
1:J:233:GLU:CD	1:K:230:SER:HB3	2.41	0.46
1:B:223:LEU:HD12	1:B:223:LEU:HA	1.59	0.46
1:D:221:ALA:O	1:D:224:ALA:HB3	2.16	0.46
1:I:367:TRP:HB3	2:J:501:ONM:CA2	2.45	0.46
1:J:295:ILE:HD13	1:J:295:ILE:HA	1.73	0.46
1:K:287:VAL:HG12	1:K:322:PHE:CE1	2.51	0.46
1:A:406:GLY:O	1:A:417:ARG:HA	2.16	0.46
1:G:405:ARG:HB3	1:G:418:THR:HG22	1.97	0.46
1:I:368:GLY:H	2:J:501:ONM:H2'	1.63	0.46
1:I:396:LEU:HD23	1:I:421:LEU:HD13	1.97	0.46
1:K:393:TYR:HD1	1:K:402:LEU:HD13	1.80	0.46
1:A:292:LEU:HD22	1:A:306:SER:HB2	1.97	0.46
1:A:298:SER:O	1:A:300:ASP:N	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:408:ILE:HD12	1:A:410:VAL:HG13	1.96	0.46
1:D:273:VAL:HG21	1:C:353:VAL:HG11	1.98	0.46
1:I:270:ALA:CA	1:J:353:VAL:HG21	2.45	0.46
1:J:356:VAL:HG22	1:J:363:PHE:C	2.41	0.46
1:H:226:MET:HE2	1:G:226:MET:HE2	1.97	0.46
1:H:373:VAL:O	1:H:377:MET:HG2	2.16	0.45
1:G:251:SER:OG	1:G:315:HIS:ND1	2.41	0.45
1:A:250:VAL:HG11	1:A:308:VAL:HG13	1.97	0.45
1:D:279:LEU:HD23	1:D:333:LEU:HD13	1.97	0.45
1:C:251:SER:HB3	1:C:319:LEU:HD22	1.97	0.45
1:D:263:ARG:NH1	1:D:342:PRO:HD2	2.31	0.45
1:D:399:GLU:HB3	1:D:424:ARG:HH11	1.81	0.45
2:E:501:ONM:H5'2	2:E:501:ONM:O3B	2.16	0.45
1:K:269:PRO:O	1:K:273:VAL:HG23	2.16	0.45
1:B:267:THR:HB	1:B:272:LEU:CD1	2.46	0.45
1:D:276:LEU:HD12	1:D:276:LEU:HA	1.63	0.45
1:D:280:TYR:CE2	1:D:297:VAL:HG11	2.51	0.45
4:E:505:SO4:O2	1:F:274:ARG:HD3	2.16	0.45
1:F:280:TYR:CD2	1:F:297:VAL:HG21	2.51	0.45
1:G:356:VAL:HG13	1:G:363:PHE:O	2.17	0.45
1:A:353:VAL:HG21	1:B:269:PRO:CB	2.46	0.45
1:C:272:LEU:HD23	2:C:501:ONM:CA4	2.47	0.45
1:F:279:LEU:O	1:F:282:ALA:HB3	2.17	0.45
1:J:280:TYR:HD1	1:J:283:PHE:HD2	1.64	0.45
1:B:389:PRO:HB3	1:B:416:MET:HE2	1.99	0.45
1:I:335:ASP:HB2	1:I:336:PRO:HD2	1.98	0.45
1:H:366:VAL:HG23	1:H:371:VAL:HG11	1.99	0.45
1:G:335:ASP:HB2	1:G:336:PRO:HD2	1.98	0.45
1:A:377:MET:O	1:A:381:ASP:HB2	2.16	0.45
1:D:245:ASP:HB2	1:D:247:TYR:CE2	2.51	0.45
1:I:377:MET:HE2	1:I:388:VAL:C	2.42	0.45
1:J:261:THR:OG1	2:J:501:ONM:OA	2.34	0.45
1:A:254:PHE:CE1	1:A:303:MET:HG3	2.53	0.44
1:C:377:MET:HG3	1:C:389:PRO:HD3	1.98	0.44
1:G:283:PHE:HZ	1:G:330:ALA:HB2	1.81	0.44
1:K:276:LEU:HD12	1:K:276:LEU:HA	1.75	0.44
1:A:327:ALA:HB2	1:A:345:MET:HE1	1.99	0.44
1:A:410:VAL:HG23	1:A:413:LYS:HB2	1.99	0.44
1:B:320:ALA:HB1	1:B:421:LEU:HD11	1.98	0.44
2:I:504:ONM:NA1	1:J:369:ASP:N	2.65	0.44
1:H:407:ARG:HA	1:H:416:MET:O	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:344:ARG:HD3	1:G:381:ASP:O	2.17	0.44
1:D:295:ILE:HD13	1:D:295:ILE:HA	1.83	0.44
1:D:410:VAL:HG23	1:D:413:LYS:HB2	1.99	0.44
1:H:377:MET:O	1:H:381:ASP:HB2	2.18	0.44
1:J:284:ASP:O	1:J:287:VAL:HG22	2.18	0.44
1:H:352:VAL:CG1	1:H:366:VAL:HB	2.47	0.44
1:A:251:SER:HB3	1:A:319:LEU:HD23	2.00	0.44
1:A:387:GLN:CG	1:A:418:THR:CG2	2.95	0.44
1:G:275:PHE:CD1	1:G:336:PRO:HD3	2.53	0.44
1:D:354:ALA:HB1	1:D:364:TYR:CZ	2.53	0.44
1:E:261:THR:HG23	2:E:501:ONM:H5'1	2.00	0.44
1:E:367:TRP:HB3	2:F:501:ONM:CA2	2.48	0.44
1:H:283:PHE:HB3	1:H:302:TYR:CZ	2.53	0.44
1:G:401:VAL:HG13	1:G:422:ILE:HB	2.00	0.44
1:B:343:LEU:HD23	1:B:343:LEU:HA	1.76	0.44
1:G:356:VAL:CG1	1:G:362:PHE:HB2	2.48	0.44
1:A:255:ALA:O	1:A:301:SER:HA	2.18	0.44
1:A:376:ARG:CZ	1:A:411:LYS:HB3	2.48	0.44
1:B:408:ILE:HD12	1:B:410:VAL:HG13	2.00	0.44
1:D:366:VAL:HG23	1:D:371:VAL:HG11	2.00	0.44
1:H:352:VAL:HG11	1:H:366:VAL:HB	1.99	0.44
1:F:393:TYR:CD1	1:F:402:LEU:HD13	2.53	0.44
2:I:504:ONM:HA1	1:J:368:GLY:C	2.25	0.44
1:K:231:ILE:HG13	1:K:364:TYR:CD1	2.53	0.44
1:D:344:ARG:HB3	1:D:378:GLU:HG2	2.00	0.43
2:F:501:ONM:OA	2:F:501:ONM:NA1	2.50	0.43
1:J:368:GLY:O	1:J:371:VAL:HG22	2.18	0.43
1:D:249:GLU:OE2	1:D:395:ARG:NH2	2.52	0.43
1:J:407:ARG:HA	1:J:416:MET:O	2.18	0.43
1:B:347:MET:HB2	1:B:388:VAL:HG12	2.00	0.43
1:F:252:VAL:HG12	1:F:305:VAL:HG22	2.01	0.43
1:B:284:ASP:O	1:B:287:VAL:HG22	2.18	0.43
1:C:235:LEU:HD12	1:C:362:PHE:CE2	2.53	0.43
1:C:254:PHE:CZ	1:C:303:MET:HG3	2.54	0.43
1:E:377:MET:HE3	1:E:387:GLN:HG2	2.01	0.43
1:K:365:ASP:HB3	1:K:367:TRP:CH2	2.54	0.43
1:B:222:LEU:O	1:B:226:MET:HG3	2.18	0.43
1:E:276:LEU:HA	1:E:276:LEU:HD12	1.70	0.43
1:H:305:VAL:HG21	1:H:366:VAL:HG21	2.00	0.43
1:K:284:ASP:OD1	1:K:302:TYR:OH	2.33	0.43
1:H:222:LEU:HD12	1:G:236:LYS:HG3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:222:LEU:HD22	1:C:226:MET:SD	2.59	0.43
1:C:223:LEU:HA	1:C:223:LEU:HD12	1.73	0.43
1:E:376:ARG:NH2	1:E:411:LYS:HD2	2.33	0.43
1:J:343:LEU:HD23	1:J:343:LEU:HA	1.83	0.43
1:G:228:PRO:HG2	1:G:364:TYR:CE2	2.53	0.43
1:E:258:VAL:HG21	1:E:383:VAL:HG12	2.00	0.43
1:E:377:MET:HG3	1:E:389:PRO:HD3	2.01	0.43
1:J:335:ASP:HB2	1:J:336:PRO:HD2	1.99	0.43
1:K:366:VAL:HG23	1:K:371:VAL:HG11	2.01	0.43
1:A:267:THR:CB	1:A:272:LEU:HD13	2.28	0.43
1:A:344:ARG:HD2	1:A:378:GLU:O	2.18	0.43
1:E:287:VAL:HG12	1:E:322:PHE:CZ	2.54	0.43
1:E:389:PRO:HB3	1:E:416:MET:HE2	2.00	0.43
2:I:504:ONM:N2	1:J:365:ASP:OD1	2.52	0.43
1:J:348:ALA:HB2	1:J:373:VAL:HG23	2.01	0.43
1:G:304:VAL:HG21	1:G:322:PHE:CE2	2.54	0.43
1:G:377:MET:HE3	1:G:387:GLN:HG2	2.01	0.43
1:K:231:ILE:HG22	1:K:235:LEU:HD23	2.00	0.43
1:K:234:ARG:CZ	1:K:243:ILE:HG23	2.49	0.42
1:A:228:PRO:O	1:A:229:GLY:C	2.61	0.42
1:D:255:ALA:O	1:D:301:SER:HA	2.19	0.42
1:D:410:VAL:HG21	1:D:416:MET:SD	2.59	0.42
1:I:260:PHE:HE2	2:I:504:ONM:HA2	1.84	0.42
2:I:504:ONM:CA6	1:J:368:GLY:HA2	2.49	0.42
1:A:392:MET:HG2	1:A:396:LEU:HD13	2.01	0.42
1:I:367:TRP:HE1	1:J:299:GLY:HA2	1.83	0.42
1:J:347:MET:HE2	1:J:392:MET:SD	2.58	0.42
1:B:312:ARG:HD2	1:B:315:HIS:HA	2.02	0.42
1:E:377:MET:HE2	1:E:388:VAL:C	2.44	0.42
1:J:286:LEU:HD21	1:J:325:ASP:HB3	2.02	0.42
1:H:263:ARG:NH1	1:H:342:PRO:HD2	2.35	0.42
1:G:348:ALA:CB	1:G:373:VAL:HG23	2.49	0.42
1:E:258:VAL:HG11	1:E:383:VAL:HG11	2.01	0.42
2:I:504:ONM:CA5	1:J:368:GLY:HA2	2.49	0.42
1:D:367:TRP:NE1	1:C:299:GLY:HA2	2.34	0.42
1:H:228:PRO:HG3	1:G:361:ARG:NH2	2.35	0.42
1:E:409:GLU:HG2	1:E:415:VAL:HG22	2.01	0.42
1:H:345:MET:HB3	1:H:386:ILE:HG23	2.02	0.42
1:A:407:ARG:HG3	1:A:407:ARG:HH11	1.84	0.42
2:A:501:ONM:N2	1:B:303:MET:HE1	2.35	0.42
1:E:260:PHE:HE1	1:E:275:PHE:HE2	1.67	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:263:ARG:NH1	1:E:342:PRO:HD2	2.35	0.42
1:H:280:TYR:CD2	1:H:297:VAL:HG21	2.55	0.42
1:H:393:TYR:CD1	1:H:402:LEU:HD13	2.55	0.42
1:B:377:MET:O	1:B:381:ASP:HB2	2.20	0.42
1:E:225:ASN:HD21	1:F:360:ARG:HA	1.85	0.42
2:E:501:ONM:N2	1:F:366:VAL:O	2.53	0.42
1:I:272:LEU:HD23	2:I:504:ONM:CA3	2.50	0.42
1:J:376:ARG:NH2	1:J:411:LYS:HD2	2.35	0.42
2:D:501:ONM:HN22	1:C:365:ASP:CG	2.28	0.42
1:E:274:ARG:HD3	4:E:504:SO4:O2	2.19	0.42
1:I:226:MET:HE1	1:J:226:MET:HB3	2.00	0.42
1:G:269:PRO:O	1:G:273:VAL:HG23	2.20	0.42
1:G:279:LEU:HD11	1:G:283:PHE:CE2	2.54	0.42
1:A:295:ILE:HD12	1:A:295:ILE:HG23	1.79	0.41
1:A:367:TRP:HE1	1:B:299:GLY:HA2	1.83	0.41
1:C:344:ARG:NH1	1:C:378:GLU:OE2	2.53	0.41
1:J:249:GLU:HB3	1:J:315:HIS:NE2	2.35	0.41
1:J:360:ARG:O	1:J:361:ARG:C	2.63	0.41
1:J:399:GLU:HB3	1:J:424:ARG:NH1	2.36	0.41
1:F:335:ASP:HB2	1:F:336:PRO:HD2	2.02	0.41
1:A:228:PRO:HG3	1:B:361:ARG:HH21	1.85	0.41
1:C:319:LEU:HD23	1:C:347:MET:HE3	2.02	0.41
1:C:407:ARG:HG3	1:C:417:ARG:HG2	2.02	0.41
1:E:275:PHE:CZ	1:E:279:LEU:HD12	2.55	0.41
1:E:296:LYS:NZ	1:E:303:MET:HE1	2.36	0.41
1:F:276:LEU:HD12	1:F:276:LEU:HA	1.78	0.41
1:F:300:ASP:OD2	2:F:501:ONM:O2A	2.38	0.41
1:H:297:VAL:O	1:H:297:VAL:HG13	2.20	0.41
1:K:279:LEU:HD11	1:K:283:PHE:CE2	2.55	0.41
1:B:252:VAL:HG13	1:B:374:ALA:HB2	2.03	0.41
1:D:393:TYR:HD1	1:D:402:LEU:HD13	1.86	0.41
1:F:373:VAL:HG12	1:F:413:LYS:HG3	2.02	0.41
1:I:401:VAL:HG12	1:I:423:GLY:O	2.20	0.41
1:J:304:VAL:HG21	1:J:322:PHE:CE2	2.56	0.41
1:K:252:VAL:HG11	1:K:371:VAL:HG12	2.03	0.41
1:K:402:LEU:HA	1:K:420:TYR:O	2.21	0.41
1:A:305:VAL:HG12	1:A:308:VAL:HG22	2.03	0.41
1:D:286:LEU:HD21	1:D:325:ASP:HB3	2.02	0.41
1:C:284:ASP:O	1:C:287:VAL:HG22	2.21	0.41
1:I:242:VAL:CG2	1:J:274:ARG:HG2	2.50	0.41
1:H:357:VAL:HG12	1:G:277:ASN:HB2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:283:PHE:CE2	1:K:326:MET:HE2	2.55	0.41
1:B:346:GLY:HA2	1:B:387:GLN:O	2.20	0.41
1:D:263:ARG:HH12	1:D:342:PRO:HD2	1.85	0.41
1:E:354:ALA:HB1	1:E:364:TYR:CZ	2.56	0.41
1:I:222:LEU:HD13	1:J:223:LEU:HD11	2.03	0.41
1:J:349:CYS:C	1:J:370:ALA:HB2	2.45	0.41
1:C:321:ASP:O	1:C:325:ASP:HB2	2.21	0.41
1:H:425:LYS:HB3	1:H:425:LYS:HE2	1.92	0.41
1:B:267:THR:HG22	1:B:271:ASP:HB2	2.02	0.41
1:D:216:TYR:CD1	1:C:216:TYR:HB2	2.56	0.41
1:D:287:VAL:HG12	1:D:322:PHE:CZ	2.56	0.41
1:E:260:PHE:HE1	1:E:275:PHE:CE2	2.39	0.41
1:F:312:ARG:HG3	1:F:315:HIS:HB3	2.03	0.41
1:I:258:VAL:HB	1:I:342:PRO:CB	2.39	0.41
1:I:305:VAL:HG21	1:I:366:VAL:HG21	2.03	0.41
1:I:399:GLU:HB3	1:I:424:ARG:HH11	1.86	0.41
1:J:312:ARG:HD2	1:J:315:HIS:HA	2.03	0.41
1:G:253:LEU:HD22	1:G:322:PHE:HE2	1.85	0.41
1:K:349:CYS:SG	1:K:395:ARG:CZ	3.09	0.41
1:C:251:SER:HB3	1:C:319:LEU:CD2	2.51	0.41
1:J:245:ASP:HB2	1:J:247:TYR:HE2	1.84	0.41
1:D:260:PHE:CD2	2:D:501:ONM:H4'	2.56	0.40
1:D:260:PHE:N	2:D:501:ONM:O2B	2.54	0.40
1:E:263:ARG:HH12	1:E:342:PRO:HD2	1.86	0.40
1:F:297:VAL:HA	1:F:301:SER:O	2.20	0.40
1:H:362:PHE:O	1:G:226:MET:HE3	2.21	0.40
1:E:410:VAL:HG21	1:E:416:MET:SD	2.62	0.40
1:I:263:ARG:HH12	1:I:342:PRO:CD	2.35	0.40
2:H:504:ONM:H3'	1:G:372:ASN:CG	2.47	0.40
1:A:349:CYS:SG	1:A:395:ARG:CZ	3.10	0.40
1:B:345:MET:HE3	1:B:345:MET:HB2	1.99	0.40
1:D:268:THR:H	1:D:268:THR:HG23	1.59	0.40
1:E:228:PRO:HG2	1:E:364:TYR:CD2	2.57	0.40
1:E:283:PHE:CD2	1:E:326:MET:HE2	2.56	0.40
1:F:319:LEU:HB3	1:F:347:MET:HE3	2.02	0.40
1:F:357:VAL:HG13	1:F:367:TRP:CH2	2.57	0.40
1:I:254:PHE:O	1:I:345:MET:HA	2.22	0.40
1:I:402:LEU:HD23	1:I:420:TYR:O	2.21	0.40
1:K:252:VAL:HG11	1:K:371:VAL:HA	2.03	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:294:LYS:NZ	1:K:360:ARG:O[2_759]	2.16	0.04

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	214/254 (84%)	211 (99%)	2 (1%)	1 (0%)	24	54
1	B	214/254 (84%)	211 (99%)	3 (1%)	0	100	100
1	C	214/254 (84%)	211 (99%)	3 (1%)	0	100	100
1	D	214/254 (84%)	213 (100%)	1 (0%)	0	100	100
1	E	214/254 (84%)	211 (99%)	3 (1%)	0	100	100
1	F	214/254 (84%)	208 (97%)	6 (3%)	0	100	100
1	G	214/254 (84%)	209 (98%)	4 (2%)	1 (0%)	24	54
1	H	214/254 (84%)	210 (98%)	4 (2%)	0	100	100
1	I	214/254 (84%)	212 (99%)	2 (1%)	0	100	100
1	J	214/254 (84%)	206 (96%)	8 (4%)	0	100	100
1	K	214/254 (84%)	210 (98%)	4 (2%)	0	100	100
All	All	2354/2794 (84%)	2312 (98%)	40 (2%)	2 (0%)	48	78

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	G	361	ARG
1	A	299	GLY

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	175/207 (84%)	175 (100%)	0	100	100
1	B	175/207 (84%)	175 (100%)	0	100	100
1	C	175/207 (84%)	175 (100%)	0	100	100
1	D	175/207 (84%)	174 (99%)	1 (1%)	78	80
1	E	175/207 (84%)	175 (100%)	0	100	100
1	F	175/207 (84%)	175 (100%)	0	100	100
1	G	175/207 (84%)	175 (100%)	0	100	100
1	H	175/207 (84%)	175 (100%)	0	100	100
1	I	175/207 (84%)	175 (100%)	0	100	100
1	J	175/207 (84%)	175 (100%)	0	100	100
1	K	175/207 (84%)	175 (100%)	0	100	100
All	All	1925/2277 (84%)	1924 (100%)	1 (0%)	88	89

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	D	279	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	337	HIS
1	B	372	ASN
1	F	403	GLN
1	H	290	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 [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 46 ligands modelled in this entry, 22 are monoatomic - leaving 24 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
4	SO4	F	502	-	4,4,4	0.34	0	6,6,6	0.27	0
4	SO4	D	504	-	4,4,4	1.36	0	6,6,6	0.63	0
4	SO4	E	505	-	4,4,4	1.18	0	6,6,6	0.47	0
4	SO4	I	503	-	4,4,4	0.32	0	6,6,6	0.24	0
4	SO4	J	505	-	4,4,4	0.52	0	6,6,6	0.22	0
4	SO4	B	502	-	4,4,4	0.27	0	6,6,6	0.16	0
2	ONM	B	501	3	44,45,45	3.39	21 (47%)	65,69,69	2.32	15 (23%)
4	SO4	H	501	-	4,4,4	0.33	0	6,6,6	0.17	0
4	SO4	J	502	-	4,4,4	0.38	0	6,6,6	0.52	0
2	ONM	K	501	3	44,45,45	4.95	23 (52%)	65,69,69	2.68	26 (40%)
2	ONM	J	501	3	44,45,45	4.03	21 (47%)	65,69,69	2.54	21 (32%)
4	SO4	A	504	-	4,4,4	0.34	0	6,6,6	0.13	0
2	ONM	E	501	3	44,45,45	4.26	24 (54%)	65,69,69	2.23	21 (32%)
4	SO4	C	503	-	4,4,4	0.28	0	6,6,6	0.19	0
2	ONM	A	501	3	44,45,45	3.61	18 (40%)	65,69,69	2.47	22 (33%)
4	SO4	E	504	-	4,4,4	0.31	0	6,6,6	0.30	0
4	SO4	A	505	-	4,4,4	1.22	0	6,6,6	1.27	1 (16%)
4	SO4	C	502	-	4,4,4	0.24	0	6,6,6	0.17	0
2	ONM	C	501	3	44,45,45	3.39	23 (52%)	65,69,69	2.26	19 (29%)
2	ONM	F	501	3	44,45,45	3.70	22 (50%)	65,69,69	2.20	18 (27%)
2	ONM	H	504	3	44,45,45	4.36	22 (50%)	65,69,69	2.63	20 (30%)
2	ONM	D	501	3	44,45,45	3.89	24 (54%)	65,69,69	2.73	23 (35%)
2	ONM	G	501	3	44,45,45	4.63	23 (52%)	65,69,69	2.68	24 (36%)
2	ONM	I	504	3	44,45,45	4.34	23 (52%)	65,69,69	2.25	24 (36%)

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	ONM	C	501	3	-	9/32/48/48	0/4/4/4
2	ONM	F	501	3	-	5/32/48/48	0/4/4/4
2	ONM	B	501	3	-	8/32/48/48	0/4/4/4
2	ONM	K	501	3	-	4/32/48/48	0/4/4/4
2	ONM	E	501	3	-	10/32/48/48	0/4/4/4
2	ONM	J	501	3	-	6/32/48/48	0/4/4/4
2	ONM	A	501	3	-	5/32/48/48	0/4/4/4
2	ONM	D	501	3	-	8/32/48/48	0/4/4/4
2	ONM	H	504	3	-	8/32/48/48	0/4/4/4
2	ONM	G	501	3	-	7/32/48/48	0/4/4/4
2	ONM	I	504	3	-	5/32/48/48	0/4/4/4

All (244) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	K	501	ONM	PB-O1A	13.63	1.74	1.59
2	G	501	ONM	PB-O1A	12.81	1.73	1.59
2	E	501	ONM	PA-O1A	11.66	1.72	1.59
2	H	504	ONM	PA-O1A	11.33	1.71	1.59
2	D	501	ONM	PB-O1A	11.22	1.71	1.59
2	K	501	ONM	PB-O1B	11.20	1.71	1.59
2	K	501	ONM	PA-O1A	10.93	1.71	1.59
2	G	501	ONM	PA-O1A	10.68	1.71	1.59
2	A	501	ONM	C3'-C4'	-10.45	1.25	1.52
2	B	501	ONM	C3'-C4'	-10.44	1.25	1.52
2	C	501	ONM	C3'-C4'	-10.34	1.26	1.52
2	E	501	ONM	PB-O1A	10.30	1.70	1.59
2	I	504	ONM	PB-O1B	10.09	1.70	1.59
2	D	501	ONM	PA-O1A	9.95	1.70	1.59
2	D	501	ONM	C3'-C4'	-9.94	1.27	1.52
2	H	504	ONM	PB-O1A	9.86	1.70	1.59
2	G	501	ONM	C3'-C4'	-9.71	1.27	1.52
2	H	504	ONM	C3'-C4'	-9.71	1.27	1.52
2	I	504	ONM	PA-O1A	9.70	1.70	1.59
2	F	501	ONM	C3'-C4'	-9.68	1.27	1.52
2	I	504	ONM	C3'-C4'	-9.64	1.28	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	H	504	ONM	O4'-C4'	9.30	1.65	1.45
2	K	501	ONM	C3'-C4'	-9.19	1.29	1.52
2	K	501	ONM	O4'-C4'	9.13	1.65	1.45
2	J	501	ONM	C3'-C4'	-9.08	1.29	1.52
2	E	501	ONM	C3'-C4'	-9.05	1.29	1.52
2	J	501	ONM	O4'-C4'	8.84	1.64	1.45
2	G	501	ONM	O4'-C4'	8.83	1.64	1.45
2	I	504	ONM	O4'-C4'	8.83	1.64	1.45
2	A	501	ONM	O4'-C4'	8.31	1.63	1.45
2	F	501	ONM	O4'-C4'	8.26	1.63	1.45
2	I	504	ONM	PB-O1A	8.24	1.68	1.59
2	E	501	ONM	O4'-C4'	8.19	1.63	1.45
2	K	501	ONM	C4-N3	8.14	1.52	1.34
2	G	501	ONM	C4-N3	8.13	1.52	1.34
2	G	501	ONM	PB-O1B	8.06	1.68	1.59
2	J	501	ONM	PA-O1A	7.95	1.68	1.59
2	A	501	ONM	PB-O1A	7.87	1.68	1.59
2	C	501	ONM	O4'-C4'	7.79	1.62	1.45
2	D	501	ONM	O4'-C4'	7.79	1.62	1.45
2	H	504	ONM	PB-O1B	7.76	1.67	1.59
2	G	501	ONM	C2'-C3'	7.76	1.70	1.53
2	K	501	ONM	O3'-CA	7.65	1.50	1.34
2	K	501	ONM	C2'-C3'	7.56	1.69	1.53
2	I	504	ONM	C4-N3	7.48	1.51	1.34
2	F	501	ONM	PB-O1B	7.48	1.67	1.59
2	E	501	ONM	O3'-CA	7.48	1.49	1.34
2	B	501	ONM	O4'-C4'	7.25	1.61	1.45
2	J	501	ONM	C2'-C3'	7.19	1.68	1.53
2	H	504	ONM	C2'-C3'	7.03	1.68	1.53
2	A	501	ONM	PA-O1A	7.00	1.67	1.59
2	H	504	ONM	C4-N3	6.80	1.49	1.34
2	K	501	ONM	C2-N3	6.74	1.49	1.33
2	J	501	ONM	PB-O1A	6.73	1.66	1.59
2	J	501	ONM	C4-N3	6.70	1.49	1.34
2	J	501	ONM	PB-O1B	6.56	1.66	1.59
2	I	504	ONM	O3'-CA	6.54	1.48	1.34
2	A	501	ONM	C4-N3	6.34	1.48	1.34
2	G	501	ONM	C2'-C1'	-6.30	1.33	1.53
2	I	504	ONM	C2-N3	6.29	1.48	1.33
2	G	501	ONM	C2-N3	6.24	1.48	1.33
2	E	501	ONM	C4-N3	6.24	1.48	1.34
2	J	501	ONM	O3'-CA	6.22	1.47	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	I	504	ONM	C2-N2	6.22	1.48	1.34
2	D	501	ONM	C2'-C1'	-6.18	1.34	1.53
2	B	501	ONM	PA-O1A	6.18	1.66	1.59
2	C	501	ONM	PB-O1A	6.16	1.66	1.59
2	F	501	ONM	O3'-CA	6.12	1.47	1.34
2	H	504	ONM	O3'-CA	6.04	1.47	1.34
2	E	501	ONM	PB-O1B	6.03	1.66	1.59
2	F	501	ONM	C2-N2	5.99	1.48	1.34
2	K	501	ONM	O3'-C3'	5.96	1.53	1.44
2	F	501	ONM	PA-O1A	5.91	1.65	1.59
2	J	501	ONM	C2-N2	5.88	1.47	1.34
2	B	501	ONM	PB-O1A	5.84	1.65	1.59
2	K	501	ONM	CA7-NA1	5.83	1.54	1.45
2	F	501	ONM	C2'-C3'	5.81	1.65	1.53
2	F	501	ONM	C4-N3	5.77	1.47	1.34
2	E	501	ONM	CA1-CA	5.70	1.62	1.50
2	G	501	ONM	C2-N2	5.70	1.47	1.34
2	J	501	ONM	C2-N3	5.70	1.47	1.33
2	D	501	ONM	C4-N3	5.57	1.47	1.34
2	A	501	ONM	PB-O1B	5.55	1.65	1.59
2	B	501	ONM	C4-N3	5.54	1.46	1.34
2	J	501	ONM	O3'-C3'	5.49	1.53	1.44
2	A	501	ONM	C2-N3	5.46	1.46	1.33
2	C	501	ONM	PA-O1A	5.44	1.65	1.59
2	C	501	ONM	C4-N3	5.44	1.46	1.34
2	C	501	ONM	C2'-C1'	-5.43	1.36	1.53
2	K	501	ONM	C2'-C1'	-5.43	1.36	1.53
2	I	504	ONM	C2'-C3'	5.37	1.64	1.53
2	A	501	ONM	C2'-C1'	-5.36	1.36	1.53
2	B	501	ONM	C2'-C1'	-5.34	1.36	1.53
2	E	501	ONM	CA6-NA1	5.34	1.47	1.37
2	F	501	ONM	C2'-C1'	-5.31	1.36	1.53
2	K	501	ONM	C2-N2	5.31	1.46	1.34
2	G	501	ONM	O3'-CA	5.23	1.45	1.34
2	I	504	ONM	C2'-C1'	-5.22	1.37	1.53
2	H	504	ONM	C2-N2	5.12	1.46	1.34
2	E	501	ONM	C2'-C3'	5.11	1.64	1.53
2	H	504	ONM	C6-N1	5.11	1.48	1.38
2	F	501	ONM	PB-O1A	5.10	1.65	1.59
2	D	501	ONM	C2'-C3'	5.10	1.64	1.53
2	K	501	ONM	CA6-NA1	5.09	1.46	1.37
2	E	501	ONM	C2'-C1'	-5.03	1.37	1.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	H	504	ONM	C2-N3	5.02	1.45	1.33
2	H	504	ONM	C2'-C1'	-4.99	1.37	1.53
2	C	501	ONM	C2-N2	4.97	1.45	1.34
2	I	504	ONM	CA6-NA1	4.97	1.46	1.37
2	B	501	ONM	C2-N3	4.96	1.45	1.33
2	G	501	ONM	CA6-NA1	4.95	1.46	1.37
2	A	501	ONM	C2'-C3'	4.92	1.63	1.53
2	B	501	ONM	C2-N2	4.90	1.45	1.34
2	F	501	ONM	C2-N3	4.90	1.45	1.33
2	D	501	ONM	C2-N3	4.89	1.45	1.33
2	E	501	ONM	C2-N2	4.82	1.45	1.34
2	C	501	ONM	C2'-C3'	4.81	1.63	1.53
2	B	501	ONM	O3'-CA	4.80	1.44	1.34
2	A	501	ONM	C2-N2	4.79	1.45	1.34
2	J	501	ONM	C2'-C1'	-4.78	1.38	1.53
2	E	501	ONM	C2-N3	4.70	1.44	1.33
2	C	501	ONM	PB-O1B	4.63	1.64	1.59
2	E	501	ONM	O3'-C3'	4.59	1.51	1.44
2	B	501	ONM	PB-O1B	4.58	1.64	1.59
2	I	504	ONM	C6-N1	4.57	1.47	1.38
2	I	504	ONM	CA1-CA	4.54	1.59	1.50
2	G	501	ONM	CA1-CA	4.51	1.59	1.50
2	G	501	ONM	C6-N1	4.51	1.47	1.38
2	J	501	ONM	CA1-CA	4.50	1.59	1.50
2	J	501	ONM	CA6-NA1	4.47	1.45	1.37
2	H	504	ONM	CA1-CA	4.45	1.59	1.50
2	K	501	ONM	CA1-CA	4.35	1.59	1.50
2	C	501	ONM	C2-N3	4.34	1.43	1.33
2	C	501	ONM	O3'-CA	4.28	1.43	1.34
2	D	501	ONM	C2-N2	4.27	1.44	1.34
2	B	501	ONM	C2'-C3'	4.25	1.62	1.53
2	J	501	ONM	O4'-C1'	4.24	1.51	1.42
2	D	501	ONM	C5-N7	-4.22	1.30	1.39
2	H	504	ONM	O4'-C1'	4.18	1.51	1.42
2	J	501	ONM	C6-N1	4.16	1.46	1.38
2	B	501	ONM	CA6-NA1	4.12	1.45	1.37
2	F	501	ONM	CA1-CA	4.05	1.58	1.50
2	H	504	ONM	C2-N1	4.05	1.47	1.37
2	H	504	ONM	CA6-NA1	4.00	1.44	1.37
2	E	501	ONM	CA7-NA1	3.99	1.51	1.45
2	G	501	ONM	O4'-C1'	3.97	1.51	1.42
2	D	501	ONM	PB-O1B	3.95	1.63	1.59

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	I	504	ONM	O3'-C3'	3.93	1.50	1.44
2	K	501	ONM	O4'-C1'	3.86	1.50	1.42
2	A	501	ONM	O3'-CA	3.85	1.42	1.34
2	E	501	ONM	O4'-C1'	3.77	1.50	1.42
2	A	501	ONM	CA1-CA	3.75	1.58	1.50
2	H	504	ONM	O3'-C3'	3.74	1.50	1.44
2	F	501	ONM	O4'-C1'	3.64	1.50	1.42
2	G	501	ONM	CA7-NA1	3.63	1.51	1.45
2	F	501	ONM	CA6-NA1	3.62	1.44	1.37
2	J	501	ONM	C2-N1	3.58	1.46	1.37
2	I	504	ONM	C2-N1	3.55	1.46	1.37
2	K	501	ONM	C5-C6	3.55	1.57	1.44
2	C	501	ONM	C4-N9	-3.54	1.29	1.38
2	F	501	ONM	O3'-C3'	3.52	1.50	1.44
2	D	501	ONM	C8-N9	-3.51	1.29	1.37
2	J	501	ONM	C5-C6	3.48	1.57	1.44
2	A	501	ONM	C5-C6	3.48	1.57	1.44
2	F	501	ONM	C4-N9	-3.48	1.29	1.38
2	J	501	ONM	C4-N9	-3.46	1.29	1.38
2	G	501	ONM	C2-N1	3.43	1.46	1.37
2	A	501	ONM	CA6-NA1	3.42	1.43	1.37
2	D	501	ONM	O3'-CA	3.42	1.41	1.34
2	C	501	ONM	CA1-CA	3.39	1.57	1.50
2	B	501	ONM	CA1-CA	3.29	1.57	1.50
2	G	501	ONM	C5-C6	3.24	1.56	1.44
2	D	501	ONM	CA6-NA1	3.23	1.43	1.37
2	I	504	ONM	O4'-C1'	3.22	1.49	1.42
2	D	501	ONM	CA1-CA	3.18	1.56	1.50
2	I	504	ONM	C5-C6	3.17	1.56	1.44
2	I	504	ONM	CA7-NA1	3.16	1.50	1.45
2	F	501	ONM	C2-N1	3.14	1.45	1.37
2	B	501	ONM	O4'-C1'	3.11	1.49	1.42
2	H	504	ONM	PA-O5'	3.07	1.71	1.59
2	B	501	ONM	C5-N7	-3.06	1.32	1.39
2	K	501	ONM	C6-N1	3.04	1.44	1.38
2	F	501	ONM	CA7-NA1	3.03	1.50	1.45
2	C	501	ONM	CA6-NA1	3.00	1.42	1.37
2	A	501	ONM	O4'-C1'	2.97	1.48	1.42
2	G	501	ONM	O3'-C3'	2.95	1.49	1.44
2	C	501	ONM	C5-N7	-2.93	1.33	1.39
2	K	501	ONM	C2-N1	2.81	1.44	1.37
2	D	501	ONM	O4'-C1'	2.79	1.48	1.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	501	ONM	CA7-NA1	2.75	1.49	1.45
2	F	501	ONM	C6-N1	2.74	1.44	1.38
2	D	501	ONM	C4-N9	-2.72	1.31	1.38
2	F	501	ONM	C5-C6	2.70	1.54	1.44
2	E	501	ONM	C6-N1	2.68	1.43	1.38
2	J	501	ONM	CA7-NA1	2.65	1.49	1.45
2	B	501	ONM	C5-C6	2.64	1.54	1.44
2	E	501	ONM	C2-N1	2.63	1.44	1.37
2	F	501	ONM	PA-O5'	2.62	1.69	1.59
2	C	501	ONM	CA7-NA1	2.59	1.49	1.45
2	H	504	ONM	CA7-NA1	2.57	1.49	1.45
2	H	504	ONM	C5-N7	-2.55	1.34	1.39
2	C	501	ONM	O4'-C1'	2.54	1.47	1.42
2	B	501	ONM	C4-N9	-2.53	1.31	1.38
2	A	501	ONM	C2-N1	2.51	1.43	1.37
2	E	501	ONM	C5-N7	-2.50	1.34	1.39
2	J	501	ONM	PA-O5'	2.48	1.69	1.59
2	E	501	ONM	C4-N9	-2.46	1.31	1.38
2	E	501	ONM	PA-O5'	2.44	1.68	1.59
2	I	504	ONM	C4-N9	-2.43	1.31	1.38
2	D	501	ONM	CA7-NA1	2.42	1.49	1.45
2	K	501	ONM	PA-O5'	2.41	1.68	1.59
2	E	501	ONM	CA4-CA5	2.37	1.43	1.38
2	C	501	ONM	C5-C6	2.37	1.53	1.44
2	C	501	ONM	O3'-C3'	2.31	1.48	1.44
2	D	501	ONM	C2-N1	2.30	1.43	1.37
2	D	501	ONM	C6-N1	2.30	1.43	1.38
2	C	501	ONM	O6-C6	-2.30	1.19	1.23
2	B	501	ONM	C6-N1	2.27	1.43	1.38
2	H	504	ONM	C5-C6	2.26	1.52	1.44
2	E	501	ONM	O6-C6	-2.25	1.19	1.23
2	I	504	ONM	C8-N7	2.24	1.38	1.32
2	D	501	ONM	O6-C6	-2.24	1.19	1.23
2	C	501	ONM	C2-N1	2.21	1.43	1.37
2	F	501	ONM	O6-C6	-2.21	1.19	1.23
2	D	501	ONM	C5-C4	-2.21	1.32	1.38
2	K	501	ONM	O6-C6	-2.18	1.19	1.23
2	A	501	ONM	CA7-NA1	2.17	1.48	1.45
2	B	501	ONM	O3'-C3'	2.17	1.48	1.44
2	I	504	ONM	CA1-CA6	2.15	1.44	1.41
2	B	501	ONM	C2-N1	2.15	1.42	1.37
2	I	504	ONM	PA-O5'	2.13	1.67	1.59

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	G	501	ONM	CA4-CA5	2.13	1.42	1.38
2	G	501	ONM	CA2-CA1	2.12	1.43	1.39
2	K	501	ONM	C8-N7	2.11	1.38	1.32
2	C	501	ONM	C6-N1	2.11	1.42	1.38
2	E	501	ONM	C5-C6	2.09	1.52	1.44
2	D	501	ONM	C5-C6	2.09	1.52	1.44
2	D	501	ONM	CA1-CA6	-2.08	1.37	1.41
2	G	501	ONM	PA-O5'	2.07	1.67	1.59
2	G	501	ONM	CA1-CA6	2.07	1.44	1.41
2	C	501	ONM	C8-N9	-2.05	1.32	1.37
2	H	504	ONM	C4-N9	-2.05	1.32	1.38
2	K	501	ONM	C1'-N9	2.02	1.53	1.47
2	A	501	ONM	C4-N9	-2.01	1.32	1.38

All (234) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	501	ONM	C1'-N9-C8	-10.95	95.63	126.73
2	A	501	ONM	C1'-N9-C8	-10.31	97.44	126.73
2	B	501	ONM	C1'-N9-C8	-10.25	97.60	126.73
2	C	501	ONM	C1'-N9-C8	-9.37	100.11	126.73
2	D	501	ONM	C1'-N9-C4	8.99	153.05	126.49
2	J	501	ONM	C1'-N9-C8	-8.80	101.73	126.73
2	G	501	ONM	C1'-N9-C8	-8.74	101.90	126.73
2	H	504	ONM	O3'-CA-CA1	8.62	125.42	111.71
2	B	501	ONM	C1'-N9-C4	8.61	151.91	126.49
2	A	501	ONM	C1'-N9-C4	8.57	151.81	126.49
2	K	501	ONM	C1'-N9-C8	-8.30	103.15	126.73
2	F	501	ONM	C1'-N9-C8	-7.98	104.07	126.73
2	I	504	ONM	C1'-N9-C8	-7.89	104.30	126.73
2	E	501	ONM	C1'-N9-C8	-7.71	104.82	126.73
2	H	504	ONM	C1'-N9-C8	-7.67	104.95	126.73
2	C	501	ONM	C1'-N9-C4	7.31	148.07	126.49
2	H	504	ONM	C1'-N9-C4	7.21	147.79	126.49
2	K	501	ONM	C1'-N9-C4	7.16	147.64	126.49
2	J	501	ONM	O4'-C1'-N9	-7.13	92.20	108.36
2	J	501	ONM	C1'-N9-C4	6.73	146.36	126.49
2	I	504	ONM	C1'-N9-C4	6.25	144.96	126.49
2	G	501	ONM	C3'-O3'-CA	-6.17	107.40	117.24
2	G	501	ONM	N9-C8-N7	-5.99	102.29	113.40
2	G	501	ONM	C1'-N9-C4	5.97	144.13	126.49
2	K	501	ONM	C4'-O4'-C1'	-5.96	96.30	109.47

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	501	ONM	C1'-N9-C4	5.87	143.84	126.49
2	G	501	ONM	C4'-O4'-C1'	-5.87	96.50	109.47
2	H	504	ONM	CA6-CA1-CA	-5.83	113.03	122.11
2	K	501	ONM	CA7-NA1-CA6	-5.71	113.37	122.37
2	E	501	ONM	C1'-N9-C4	5.64	143.16	126.49
2	E	501	ONM	C4'-O4'-C1'	-5.50	97.33	109.47
2	D	501	ONM	C5-C4-N3	-5.35	119.87	128.39
2	E	501	ONM	N9-C8-N7	-5.30	103.57	113.40
2	C	501	ONM	N9-C8-N7	-5.06	104.02	113.40
2	J	501	ONM	O3'-CA-CA1	5.03	119.72	111.71
2	F	501	ONM	N9-C8-N7	-4.85	104.41	113.40
2	I	504	ONM	C4'-O4'-C1'	-4.84	98.77	109.47
2	D	501	ONM	C2-N1-C6	-4.78	116.43	125.11
2	J	501	ONM	C2-N3-C4	4.74	120.47	112.30
2	F	501	ONM	C3'-O3'-CA	4.59	124.57	117.24
2	K	501	ONM	C5-C4-N3	-4.58	121.10	128.39
2	B	501	ONM	N9-C8-N7	-4.53	105.00	113.40
2	E	501	ONM	O4'-C1'-N9	4.51	118.57	108.36
2	D	501	ONM	N9-C8-N7	-4.47	105.10	113.40
2	D	501	ONM	C4'-O4'-C1'	-4.46	99.62	109.47
2	A	501	ONM	C5-C4-N3	-4.38	121.42	128.39
2	G	501	ONM	O4'-C1'-N9	4.34	118.20	108.36
2	K	501	ONM	O4'-C1'-N9	4.29	118.08	108.36
2	H	504	ONM	O6-C6-C5	-4.26	115.27	126.53
2	G	501	ONM	C8-N9-C4	4.23	113.95	106.03
2	H	504	ONM	C3'-C2'-C1'	4.22	109.17	99.89
2	F	501	ONM	O4'-C1'-N9	-4.22	98.81	108.36
2	H	504	ONM	CA1-CA6-NA1	-4.20	116.76	121.36
2	A	501	ONM	N9-C8-N7	-4.20	105.61	113.40
2	A	501	ONM	O3'-CA-CA1	4.18	118.36	111.71
2	H	504	ONM	N2-C2-N1	4.15	125.52	116.76
2	K	501	ONM	O3G-PG-O1B	4.12	118.46	104.64
2	K	501	ONM	O3'-C3'-C2'	4.08	121.91	110.17
2	K	501	ONM	C2-N3-C4	4.03	119.23	112.30
2	J	501	ONM	N9-C8-N7	-3.89	106.19	113.40
2	D	501	ONM	N9-C4-N3	3.87	133.69	125.95
2	I	504	ONM	C2-N3-C4	3.85	118.93	112.30
2	G	501	ONM	O1A-PA-O3A	3.83	122.22	110.70
2	H	504	ONM	CA2-CA1-CA	3.83	126.40	118.66
2	G	501	ONM	C3'-C2'-C1'	-3.82	91.48	99.89
2	F	501	ONM	C2-N3-C4	3.82	118.88	112.30
2	C	501	ONM	O4'-C1'-N9	-3.82	99.70	108.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	501	ONM	C5-C4-N3	-3.82	122.32	128.39
2	J	501	ONM	C6-C5-N7	3.81	137.23	130.29
2	G	501	ONM	C8-N7-C5	3.79	111.00	104.26
2	B	501	ONM	O3'-CA-CA1	3.71	117.62	111.71
2	B	501	ONM	C2-N3-C4	3.71	118.69	112.30
2	C	501	ONM	C2-N3-C4	3.71	118.69	112.30
2	D	501	ONM	C2-N3-C4	3.69	118.66	112.30
2	J	501	ONM	N2-C2-N1	3.67	124.52	116.76
2	I	504	ONM	N9-C8-N7	-3.61	106.70	113.40
2	A	501	ONM	O3'-C3'-C4'	-3.61	100.82	109.52
2	K	501	ONM	O3'-CA-CA1	3.60	117.44	111.71
2	G	501	ONM	O2'-C2'-C3'	3.59	121.24	111.19
2	I	504	ONM	O3'-CA-CA1	3.57	117.39	111.71
2	H	504	ONM	O5'-C5'-C4'	3.55	121.09	108.99
2	J	501	ONM	C3'-C2'-C1'	3.55	107.70	99.89
2	G	501	ONM	C2-N3-C4	3.54	118.39	112.30
2	D	501	ONM	O4'-C1'-N9	3.53	116.36	108.36
2	K	501	ONM	C2-N1-C6	-3.53	118.71	125.11
2	K	501	ONM	N9-C8-N7	-3.52	106.87	113.40
2	J	501	ONM	O1G-PG-O1B	3.52	116.45	104.64
2	I	504	ONM	O6-C6-C5	-3.49	117.31	126.53
2	K	501	ONM	C5-C6-N1	3.49	122.14	113.25
2	F	501	ONM	N2-C2-N1	3.49	124.12	116.76
2	K	501	ONM	C3'-O3'-CA	3.48	122.81	117.24
2	I	504	ONM	O4'-C1'-N9	3.46	116.20	108.36
2	D	501	ONM	O3'-CA-CA1	3.40	117.12	111.71
2	D	501	ONM	O1B-PB-O3B	-3.39	100.49	110.70
2	F	501	ONM	C3'-C2'-C1'	3.38	107.33	99.89
2	F	501	ONM	C6-C5-N7	3.31	136.31	130.29
2	E	501	ONM	O3'-CA-CA1	3.30	116.96	111.71
2	G	501	ONM	O3'-C3'-C2'	3.29	119.64	110.17
2	I	504	ONM	CA1-CA6-NA1	3.25	124.92	121.36
2	A	501	ONM	C4'-O4'-C1'	-3.22	102.35	109.47
2	H	504	ONM	O6-C6-N1	3.21	126.15	120.11
2	K	501	ONM	C2'-C1'-N9	3.21	122.18	113.25
2	D	501	ONM	O2B-PB-O1A	3.20	115.93	107.27
2	E	501	ONM	C8-N9-C4	3.20	112.02	106.03
2	A	501	ONM	CA7-NA1-CA6	-3.20	117.33	122.37
2	D	501	ONM	O4'-C1'-C2'	-3.17	99.83	106.62
2	B	501	ONM	O5'-C5'-C4'	-3.17	98.20	108.99
2	C	501	ONM	N2-C2-N1	3.15	123.41	116.76
2	F	501	ONM	N1-C2-N3	-3.13	117.60	123.32

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	504	ONM	O3'-C3'-C2'	3.12	119.14	110.17
2	C	501	ONM	C5-C4-N3	-3.11	123.44	128.39
2	F	501	ONM	C8-N9-C4	3.10	111.84	106.03
2	C	501	ONM	C8-N9-C4	3.08	111.80	106.03
2	G	501	ONM	O3G-PG-O1B	3.07	114.94	104.64
2	G	501	ONM	C5'-C4'-C3'	-3.07	104.15	114.38
2	J	501	ONM	N1-C2-N3	-3.06	117.71	123.32
2	H	504	ONM	C2-N3-C4	3.05	117.56	112.30
2	A	501	ONM	C8-N7-C5	3.05	109.69	104.26
2	B	501	ONM	C4'-O4'-C1'	-3.05	102.74	109.47
2	A	501	ONM	C2-N1-C6	-3.01	119.65	125.11
2	G	501	ONM	O3'-C3'-C4'	-2.97	102.36	109.52
2	D	501	ONM	O6-C6-C5	-2.96	118.72	126.53
2	F	501	ONM	O3'-CA-CA1	2.96	116.42	111.71
2	J	501	ONM	O2B-PB-O1B	2.96	115.27	107.27
2	A	501	ONM	C2-N3-C4	2.95	117.38	112.30
2	B	501	ONM	C8-N7-C5	2.94	109.50	104.26
2	C	501	ONM	C8-N7-C5	2.93	109.49	104.26
2	H	504	ONM	C2'-C3'-C4'	2.92	108.36	103.24
2	D	501	ONM	C8-N7-C5	2.92	109.45	104.26
2	K	501	ONM	C5'-C4'-C3'	-2.91	104.67	114.38
2	E	501	ONM	N2-C2-N1	2.91	122.90	116.76
2	K	501	ONM	CA5-CA6-NA1	-2.91	117.71	121.33
2	I	504	ONM	C5-C6-N1	2.89	120.61	113.25
2	A	501	ONM	C4-C5-N7	-2.88	106.11	110.67
2	I	504	ONM	O5'-C5'-C4'	2.88	118.78	108.99
2	I	504	ONM	CA5-CA6-NA1	-2.87	117.75	121.33
2	E	501	ONM	C8-N7-C5	2.87	109.37	104.26
2	J	501	ONM	O5'-PA-O3A	-2.85	97.66	108.94
2	J	501	ONM	C3'-O3'-CA	2.84	121.77	117.24
2	J	501	ONM	C8-N9-C4	2.83	111.32	106.03
2	D	501	ONM	C8-N9-C4	2.82	111.32	106.03
2	A	501	ONM	O6-C6-N1	-2.80	114.84	120.11
2	G	501	ONM	C5-C4-N3	-2.79	123.95	128.39
2	E	501	ONM	C3'-C2'-C1'	-2.77	93.79	99.89
2	A	501	ONM	O4'-C1'-C2'	-2.77	100.69	106.62
2	G	501	ONM	CA2-CA1-CA6	2.76	121.91	118.81
2	J	501	ONM	C5-C6-N1	2.76	120.27	113.25
2	E	501	ONM	O2A-PA-O1A	2.75	114.72	107.27
2	I	504	ONM	CA2-CA1-CA6	2.74	121.89	118.81
2	A	501	ONM	O1B-PB-O3B	-2.73	102.48	110.70
2	G	501	ONM	C2'-C3'-C4'	2.73	108.02	103.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	501	ONM	C2-N1-C6	-2.71	120.19	125.11
2	I	504	ONM	N1-C2-N3	-2.70	118.38	123.32
2	K	501	ONM	O4'-C1'-C2'	-2.70	100.84	106.62
2	E	501	ONM	C2-N3-C4	2.65	116.87	112.30
2	K	501	ONM	N9-C4-N3	2.64	131.24	125.95
2	E	501	ONM	O6-C6-C5	-2.62	119.60	126.53
2	H	504	ONM	N2-C2-N3	-2.60	114.59	119.67
2	D	501	ONM	C5-C6-N1	2.59	119.85	113.25
2	H	504	ONM	O3'-CA-OA	-2.58	119.35	123.55
2	F	501	ONM	CA1-CA6-NA1	-2.55	118.57	121.36
2	K	501	ONM	O6-C6-N1	-2.55	115.32	120.11
2	G	501	ONM	N1-C2-N3	-2.55	118.66	123.32
2	I	504	ONM	CA7-NA1-CA6	-2.54	118.36	122.37
2	G	501	ONM	O3'-CA-CA1	2.53	115.74	111.71
2	C	501	ONM	C4-C5-N7	-2.53	106.66	110.67
2	A	501	ONM	C8-N9-C4	2.52	110.74	106.03
2	C	501	ONM	C6-C5-N7	2.52	134.87	130.29
2	I	504	ONM	CA2-CA1-CA	-2.50	113.59	118.66
2	J	501	ONM	O3'-C3'-C2'	2.50	117.35	110.17
2	A	501	ONM	O3'-C3'-C2'	-2.49	103.00	110.17
2	G	501	ONM	N9-C4-N3	2.49	130.93	125.95
2	G	501	ONM	O6-C6-C5	-2.49	119.96	126.53
2	D	501	ONM	C3'-C2'-C1'	-2.48	94.43	99.89
2	D	501	ONM	O2A-PA-O1A	2.47	113.95	107.27
2	C	501	ONM	C2'-C1'-N9	-2.46	106.41	113.25
2	I	504	ONM	C8-N9-C4	2.43	110.58	106.03
2	A	501	ONM	C2'-C3'-C4'	2.43	107.49	103.24
2	J	501	ONM	C5-C4-N3	-2.43	124.53	128.39
2	E	501	ONM	O4'-C4'-C5'	-2.42	101.58	109.33
2	K	501	ONM	O2B-PB-O3B	-2.42	101.20	112.44
2	C	501	ONM	C3'-C2'-C1'	2.41	105.18	99.89
2	E	501	ONM	C3'-O3'-CA	2.40	121.07	117.24
2	F	501	ONM	C5-C6-N1	2.39	119.35	113.25
2	C	501	ONM	CA7-NA1-CA6	-2.39	118.59	122.37
2	K	501	ONM	O1A-PA-O3A	2.39	117.91	110.70
2	A	501	ONM	N9-C4-N3	2.39	130.74	125.95
2	B	501	ONM	C8-N9-C4	2.38	110.49	106.03
2	I	504	ONM	O4'-C4'-C3'	2.38	109.93	104.92
2	C	501	ONM	C2-N1-C6	-2.37	120.81	125.11
2	K	501	ONM	C8-N7-C5	2.37	108.47	104.26
2	C	501	ONM	O3G-PG-O1B	2.36	112.56	104.64
2	A	501	ONM	O3'-CA-OA	-2.36	119.71	123.55

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	504	ONM	O1A-PA-O3A	-2.36	103.61	110.70
2	J	501	ONM	C4-C5-N7	-2.36	106.93	110.67
2	A	501	ONM	O4'-C1'-N9	2.36	113.70	108.36
2	H	504	ONM	C3'-O3'-CA	2.35	121.00	117.24
2	K	501	ONM	O3'-CA-OA	2.35	127.36	123.55
4	A	505	SO4	O4-S-O1	-2.30	97.52	109.56
2	C	501	ONM	C5'-C4'-C3'	-2.29	106.74	114.38
2	H	504	ONM	C2-N1-C6	-2.28	120.98	125.11
2	F	501	ONM	O1G-PG-O1B	2.27	112.26	104.64
2	K	501	ONM	C6-C5-N7	2.26	134.41	130.29
2	B	501	ONM	C3'-C2'-C1'	2.25	104.85	99.89
2	E	501	ONM	O3G-PG-O1B	2.22	112.07	104.64
2	I	504	ONM	O3'-C3'-C2'	2.20	116.49	110.17
2	E	501	ONM	C5-C6-N1	2.19	118.82	113.25
2	F	501	ONM	CA7-NA1-CA6	-2.19	118.92	122.37
2	E	501	ONM	O2B-PB-O1A	2.18	113.17	107.27
2	F	501	ONM	C8-N7-C5	2.17	108.13	104.26
2	I	504	ONM	C6-C5-N7	2.17	134.24	130.29
2	K	501	ONM	O2'-C2'-C3'	2.17	117.25	111.19
2	J	501	ONM	C2-N1-C6	-2.16	121.20	125.11
2	G	501	ONM	C6-C5-N7	2.15	134.20	130.29
2	D	501	ONM	C6-C5-C4	2.15	122.06	118.83
2	I	504	ONM	C2-N1-C6	-2.14	121.23	125.11
2	C	501	ONM	C5-C6-N1	2.11	118.63	113.25
2	D	501	ONM	O3'-CA-OA	-2.10	120.13	123.55
2	B	501	ONM	C4-C5-N7	-2.10	107.34	110.67
2	H	504	ONM	C5-C6-N1	2.09	118.58	113.25
2	E	501	ONM	C6-C5-N7	2.09	134.09	130.29
2	D	501	ONM	O3'-C3'-C2'	-2.09	104.16	110.17
2	I	504	ONM	N2-C2-N1	2.09	121.16	116.76
2	I	504	ONM	C5-C4-N3	-2.07	125.10	128.39
2	B	501	ONM	C5-C6-N1	2.07	118.52	113.25
2	J	501	ONM	CA2-CA1-CA6	2.05	121.12	118.81
2	I	504	ONM	C6-C5-C4	-2.04	115.75	118.83
2	A	501	ONM	CA6-CA1-CA	-2.04	118.94	122.11
2	F	501	ONM	C6-C5-C4	-2.03	115.77	118.83
2	B	501	ONM	N9-C4-N3	2.03	130.02	125.95
2	C	501	ONM	O6-C6-C5	-2.03	121.18	126.53
2	E	501	ONM	C2-N1-C6	-2.03	121.44	125.11
2	D	501	ONM	C2'-C1'-N9	2.02	118.86	113.25
2	E	501	ONM	CA4-CA3-CA2	-2.01	117.76	120.24

There are no chirality outliers.

All (75) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	501	ONM	PB-O1B-PG-O3G
2	D	501	ONM	C5'-O5'-PA-O2A
2	C	501	ONM	C5'-O5'-PA-O3A
2	C	501	ONM	C5'-O5'-PA-O2A
2	C	501	ONM	C5'-O5'-PA-O1A
2	E	501	ONM	O4'-C4'-C5'-O5'
2	E	501	ONM	C5'-O5'-PA-O2A
2	E	501	ONM	PB-O1B-PG-O3G
2	F	501	ONM	PB-O1B-PG-O1G
2	J	501	ONM	CA1-CA-O3'-C3'
2	J	501	ONM	OA-CA-O3'-C3'
2	J	501	ONM	C5'-O5'-PA-O1A
2	H	504	ONM	CA1-CA-O3'-C3'
2	H	504	ONM	OA-CA-O3'-C3'
2	H	504	ONM	C2'-C3'-O3'-CA
2	H	504	ONM	C5'-O5'-PA-O3A
2	G	501	ONM	PB-O1B-PG-O3G
2	K	501	ONM	CA5-CA6-NA1-CA7
2	K	501	ONM	CA1-CA6-NA1-CA7
2	K	501	ONM	PB-O1A-PA-O5'
2	D	501	ONM	O4'-C4'-C5'-O5'
2	H	504	ONM	C3'-C4'-C5'-O5'
2	G	501	ONM	CA5-CA6-NA1-CA7
2	E	501	ONM	OA-CA-O3'-C3'
2	J	501	ONM	C3'-C4'-C5'-O5'
2	E	501	ONM	CA1-CA-O3'-C3'
2	G	501	ONM	CA1-CA6-NA1-CA7
2	J	501	ONM	O4'-C4'-C5'-O5'
2	B	501	ONM	CA5-CA6-NA1-CA7
2	D	501	ONM	C3'-C4'-C5'-O5'
2	C	501	ONM	C3'-C4'-C5'-O5'
2	E	501	ONM	C3'-C4'-C5'-O5'
2	H	504	ONM	O4'-C4'-C5'-O5'
2	C	501	ONM	O4'-C4'-C5'-O5'
2	B	501	ONM	CA1-CA6-NA1-CA7
2	D	501	ONM	CA1-CA6-NA1-CA7
2	I	504	ONM	CA1-CA6-NA1-CA7
2	G	501	ONM	PB-O1A-PA-O5'
2	B	501	ONM	PB-O1B-PG-O1G
2	J	501	ONM	PB-O1B-PG-O1G
2	H	504	ONM	PB-O1B-PG-O1G
2	E	501	ONM	PA-O1A-PB-O3B

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Mol	Chain	Res	Type	Atoms
2	F	501	ONM	PB-O1A-PA-O2A
2	I	504	ONM	PA-O1A-PB-O3B
2	G	501	ONM	C4'-C5'-O5'-PA
2	D	501	ONM	CA5-CA6-NA1-CA7
2	I	504	ONM	CA5-CA6-NA1-CA7
2	D	501	ONM	C5'-O5'-PA-O3A
2	D	501	ONM	C5'-O5'-PA-O1A
2	E	501	ONM	C5'-O5'-PA-O3A
2	E	501	ONM	C5'-O5'-PA-O1A
2	H	504	ONM	C5'-O5'-PA-O2A
2	G	501	ONM	C5'-O5'-PA-O3A
2	C	501	ONM	PB-O1B-PG-O2G
2	B	501	ONM	PB-O1B-PG-O2G
2	G	501	ONM	PB-O1B-PG-O2G
2	A	501	ONM	PB-O1A-PA-O3A
2	B	501	ONM	C2'-C1'-N9-C8
2	K	501	ONM	C4'-C5'-O5'-PA
2	F	501	ONM	OA-CA-O3'-C3'
2	F	501	ONM	C2'-C1'-N9-C8
2	A	501	ONM	PB-O1B-PG-O2G
2	A	501	ONM	PB-O1B-PG-O1G
2	B	501	ONM	PB-O1B-PG-O3G
2	C	501	ONM	PB-O1B-PG-O3G
2	C	501	ONM	PB-O1B-PG-O1G
2	F	501	ONM	C2'-C1'-N9-C4
2	A	501	ONM	PA-O1A-PB-O2B
2	B	501	ONM	PA-O1A-PB-O2B
2	B	501	ONM	PG-O1B-PB-O2B
2	D	501	ONM	PA-O1A-PB-O2B
2	C	501	ONM	PA-O1A-PB-O2B
2	E	501	ONM	PA-O1A-PB-O2B
2	I	504	ONM	PA-O1A-PB-O2B
2	I	504	ONM	PG-O1B-PB-O2B

There are no ring outliers.

14 monomers are involved in 74 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	D	504	SO4	1	0
4	E	505	SO4	1	0
4	H	501	SO4	1	0
2	K	501	ONM	5	0

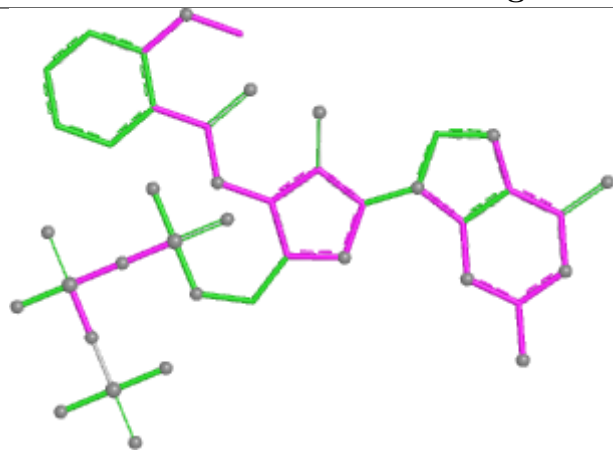
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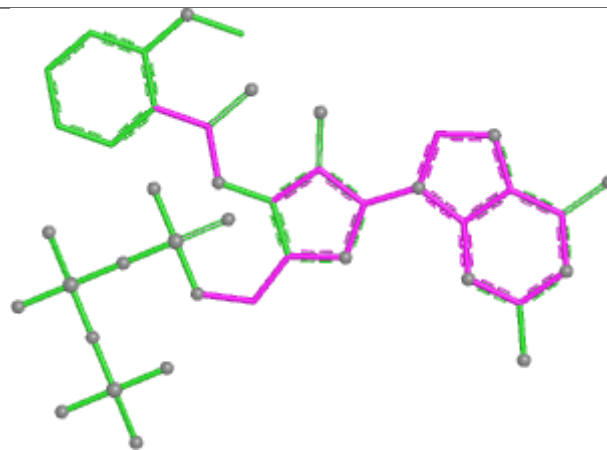
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	J	501	ONM	13	0
2	E	501	ONM	3	0
2	A	501	ONM	4	0
4	E	504	SO4	2	0
2	C	501	ONM	1	0
2	F	501	ONM	6	0
2	H	504	ONM	7	0
2	D	501	ONM	3	0
2	G	501	ONM	5	0
2	I	504	ONM	22	0

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.

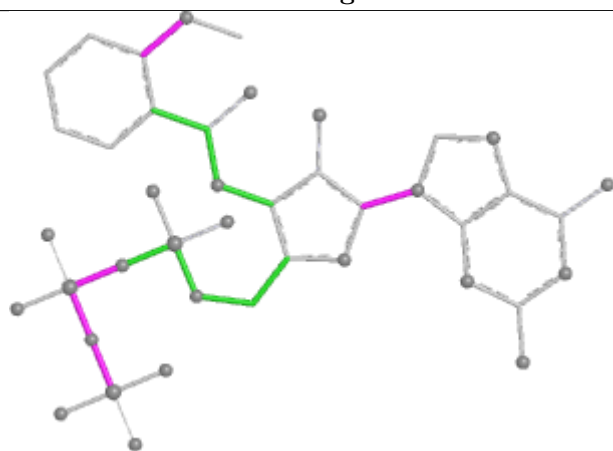
Ligand ONM B 501



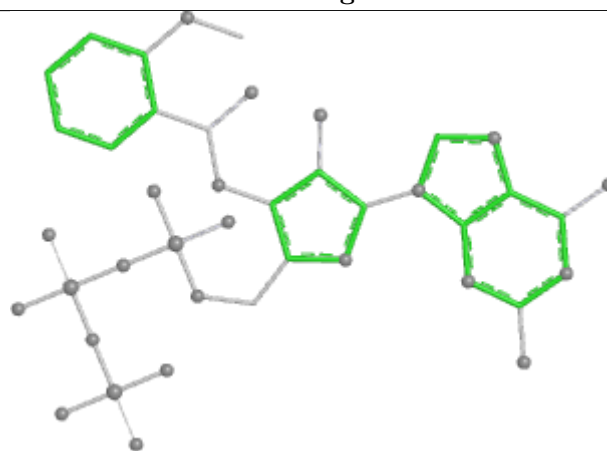
Bond lengths



Bond angles

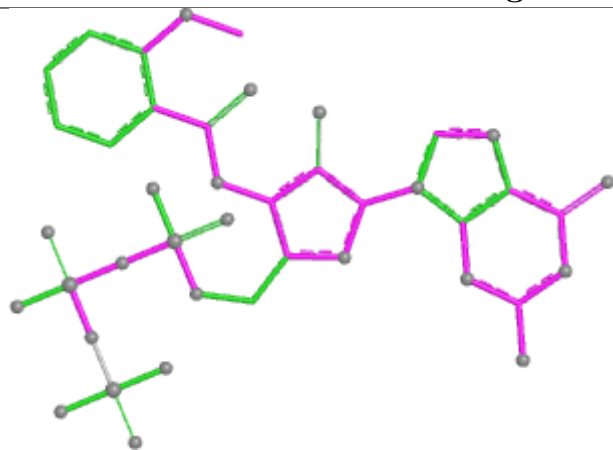


Torsions

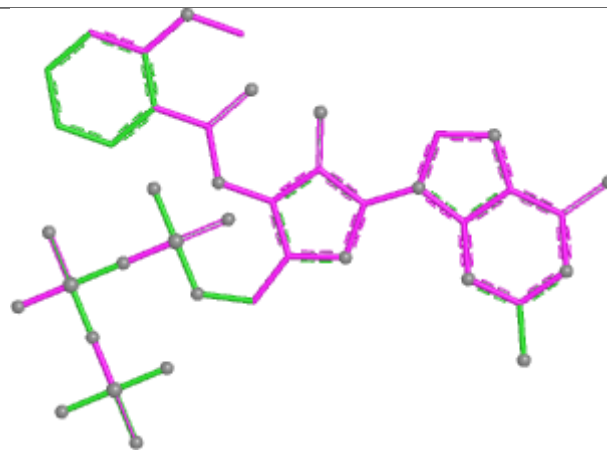


Rings

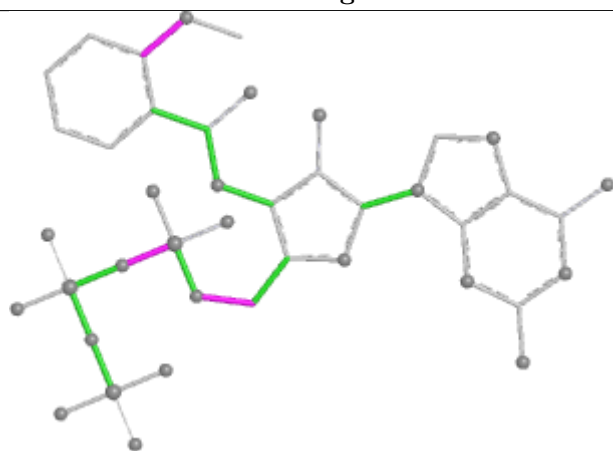
Ligand ONM K 501



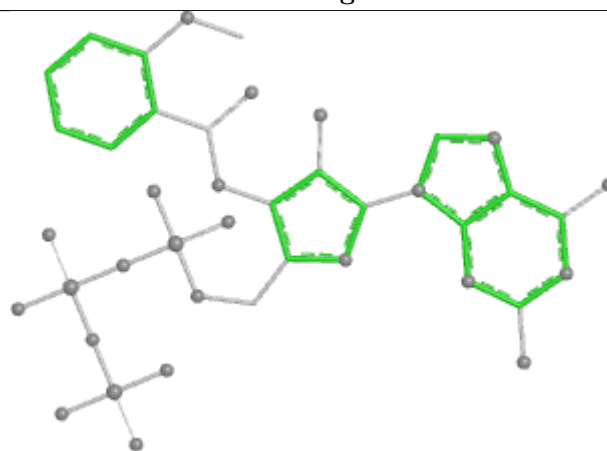
Bond lengths



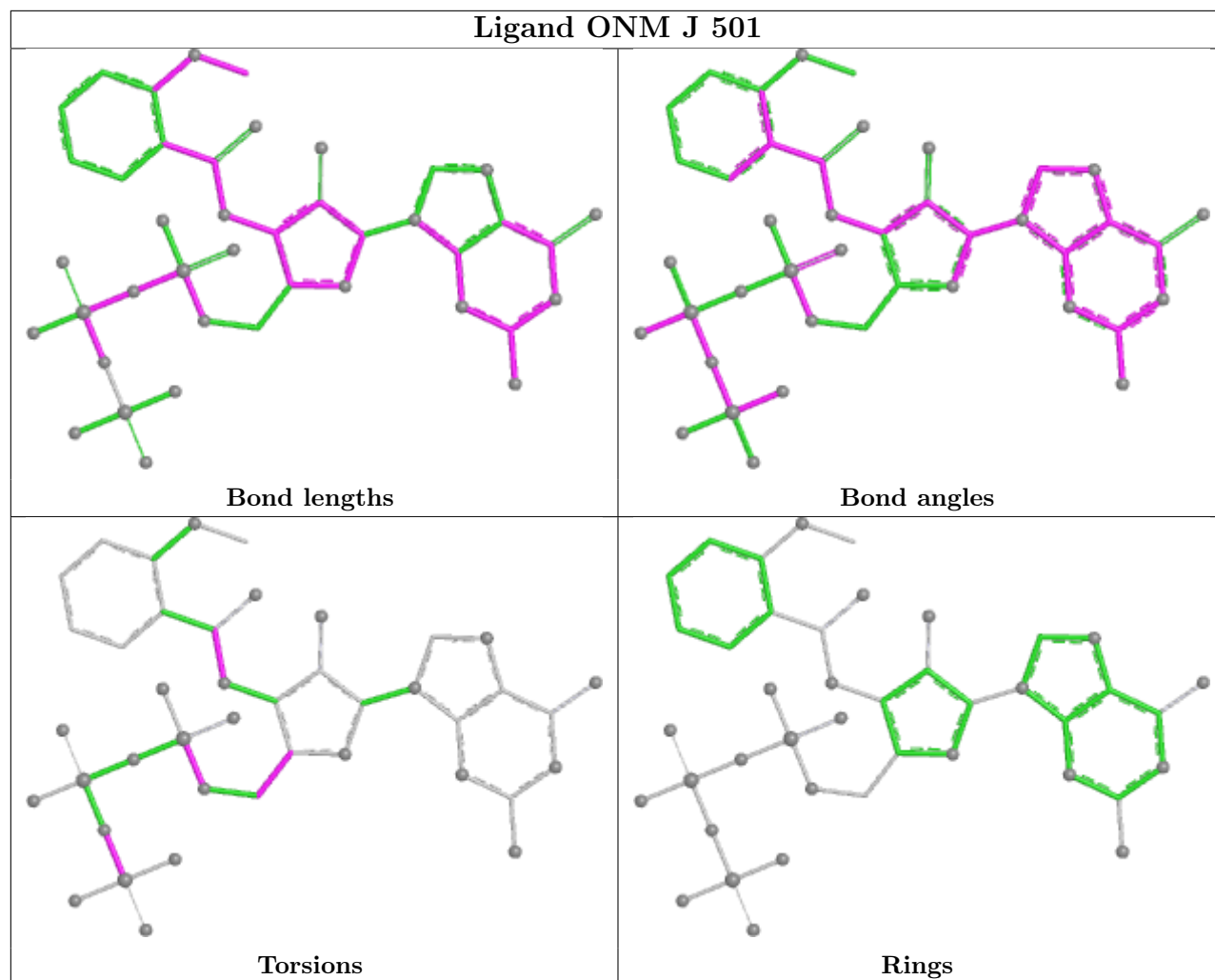
Bond angles



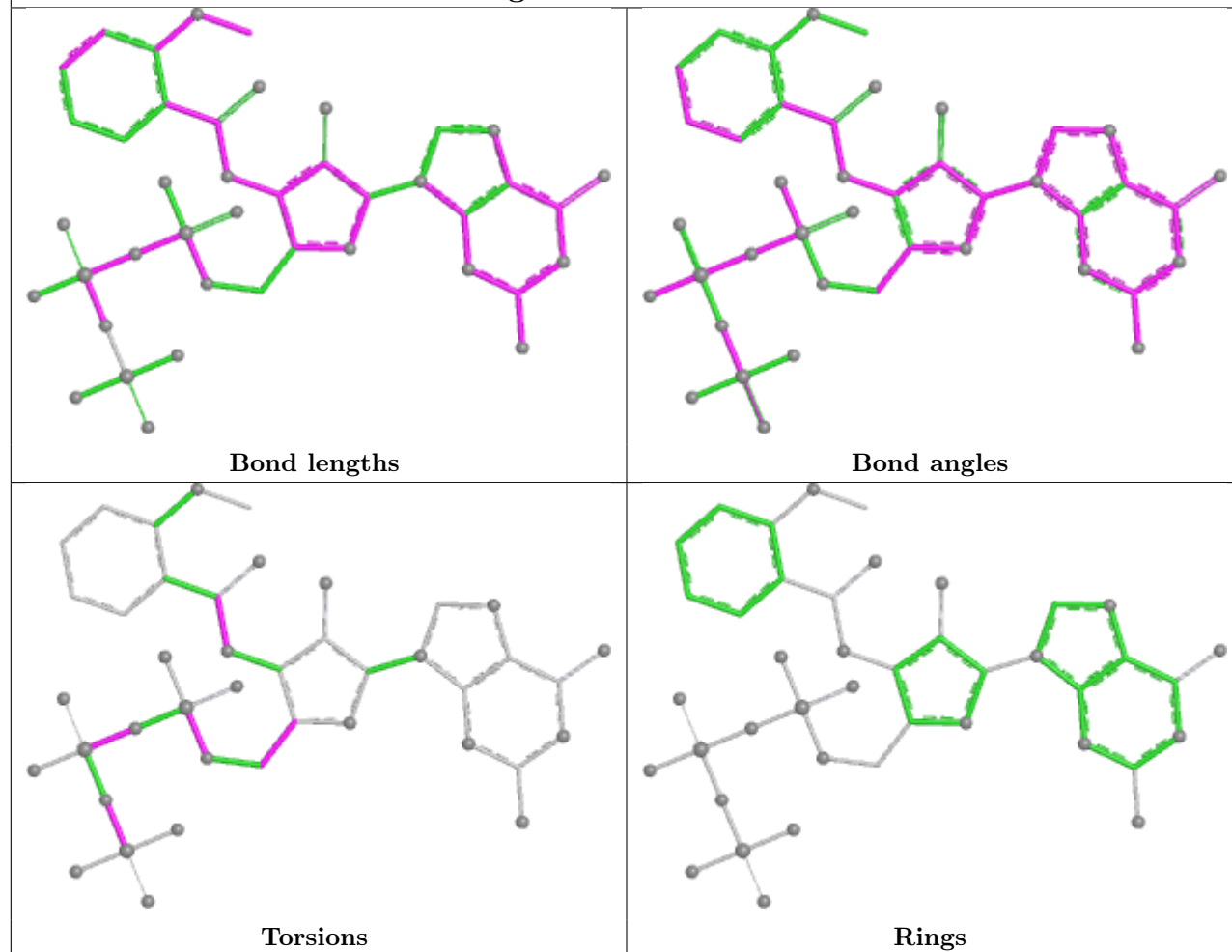
Torsions



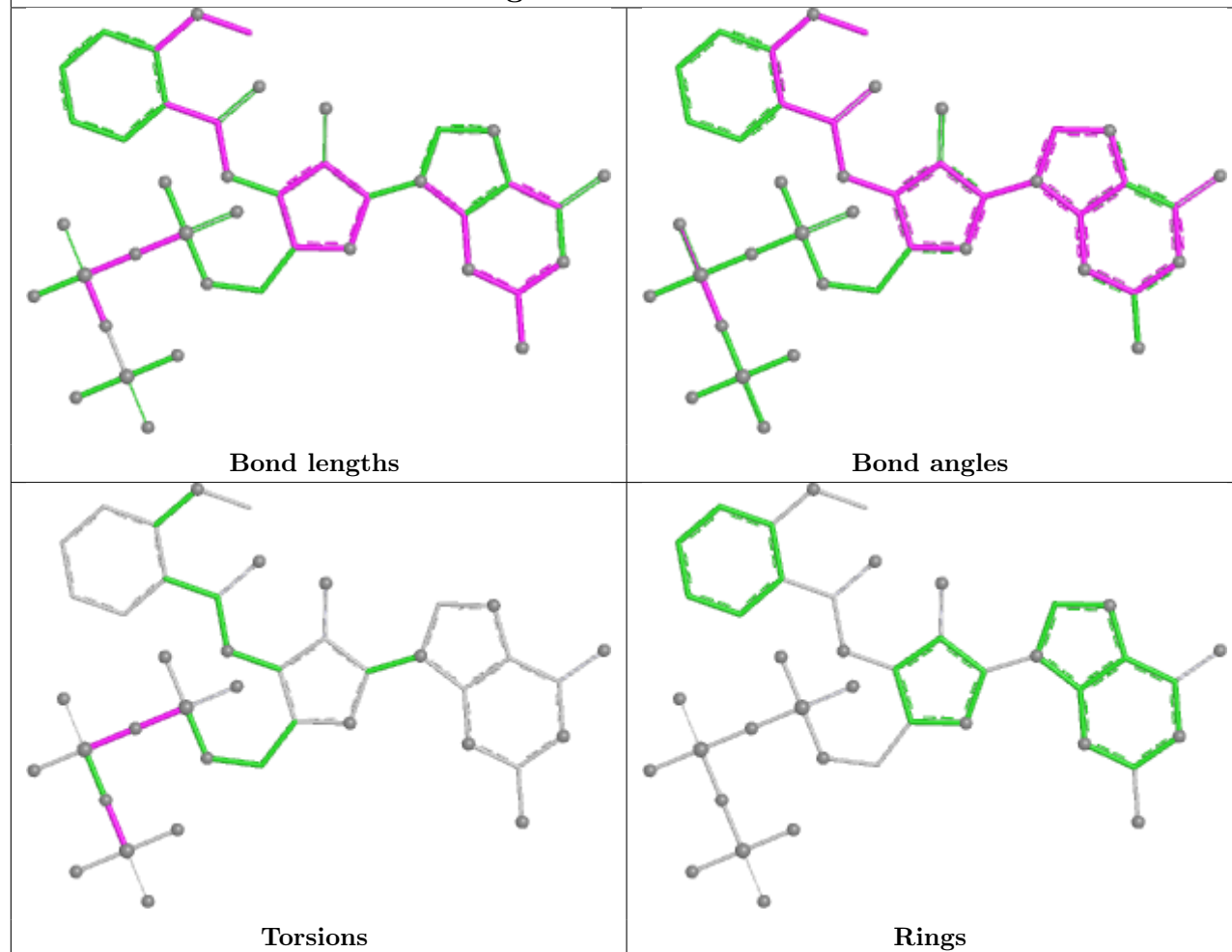
Rings



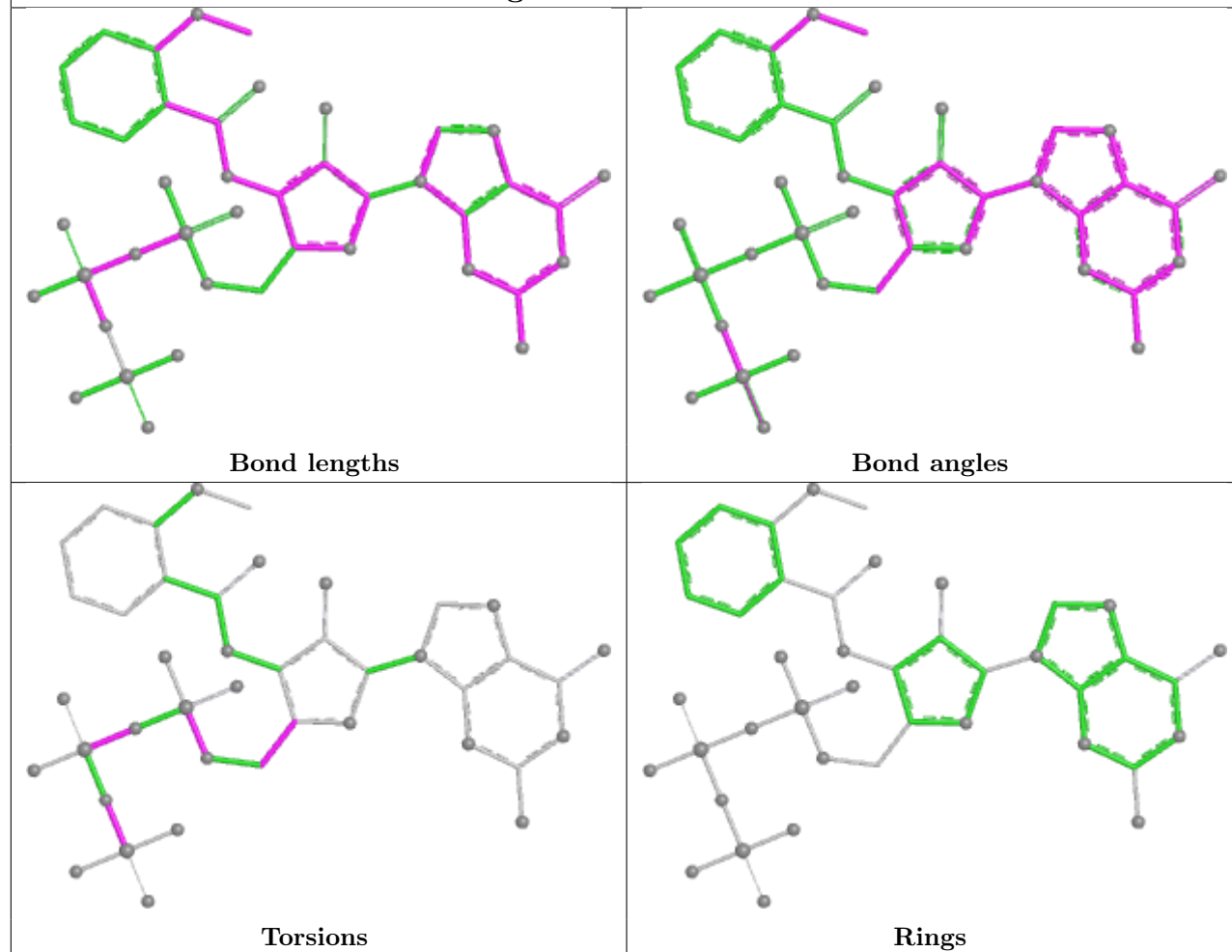
Ligand ONM E 501

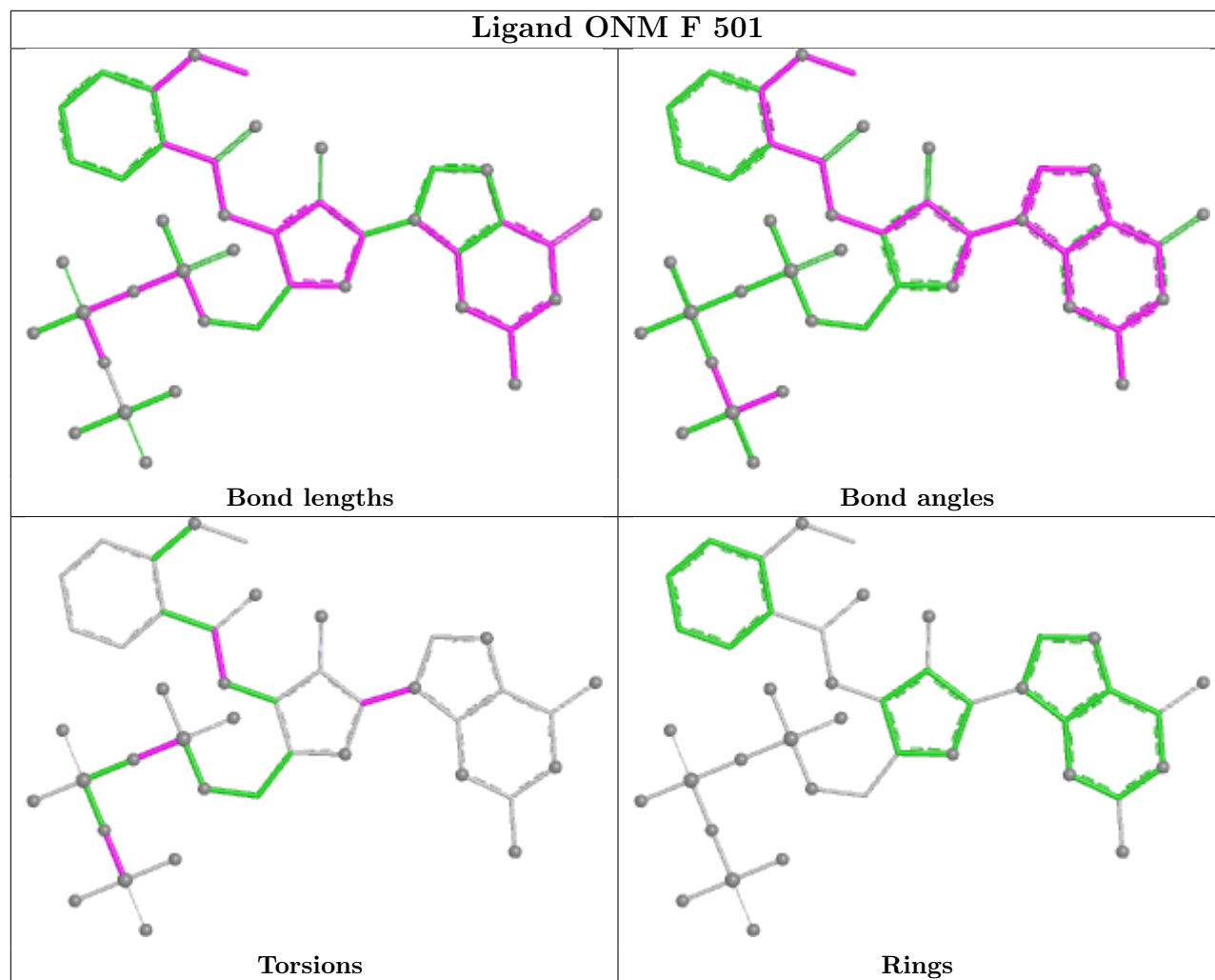


Ligand ONM A 501

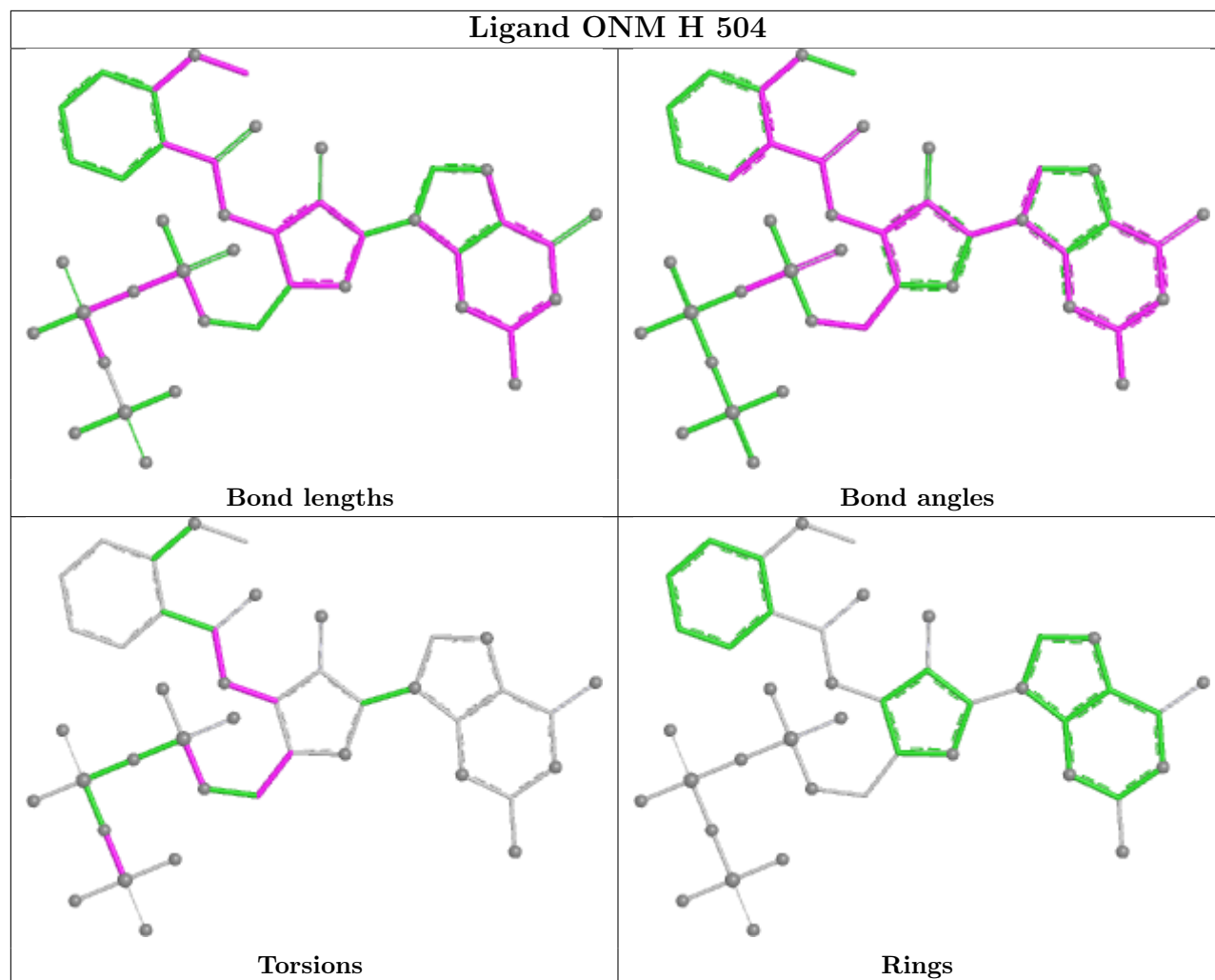


Ligand ONM C 501

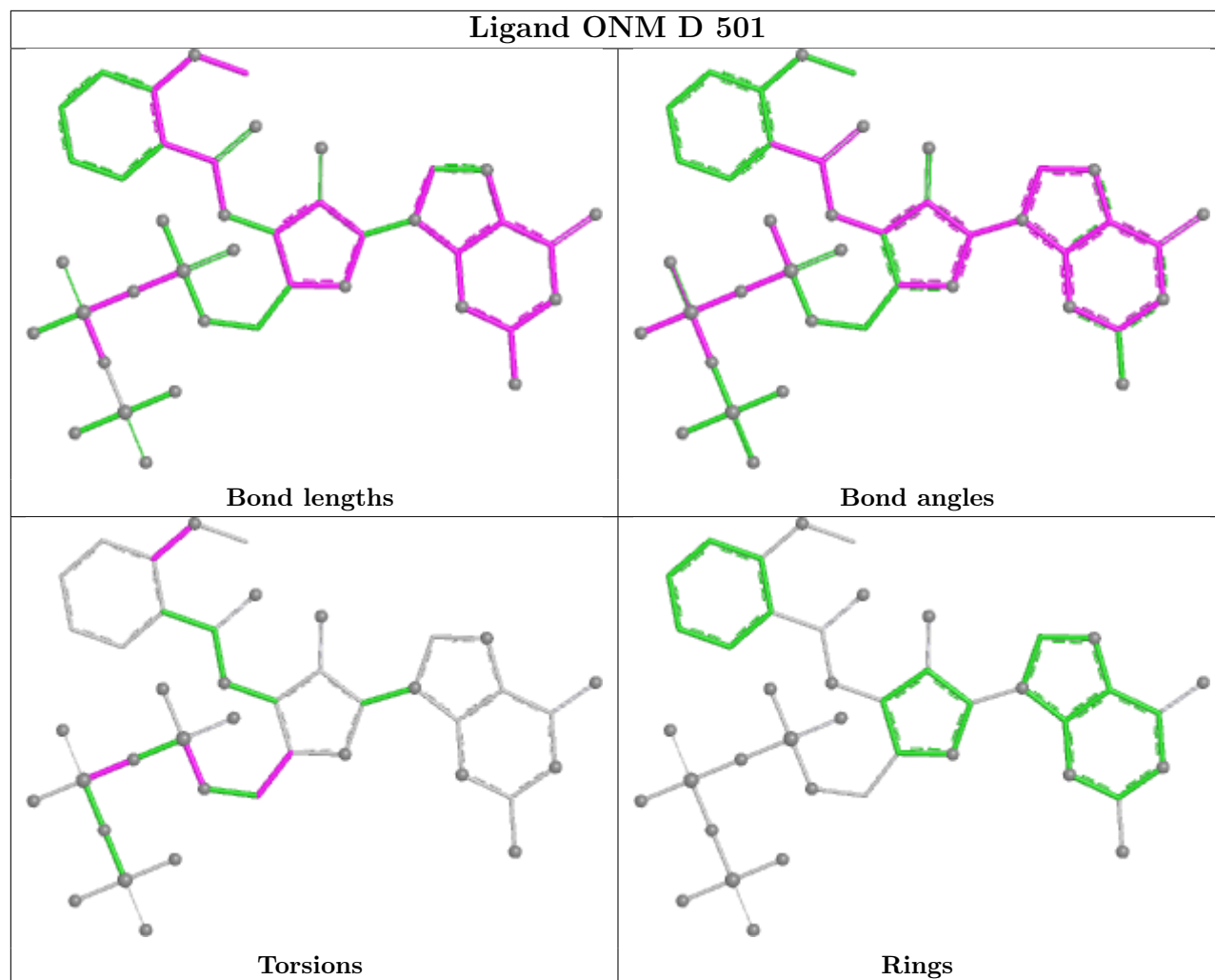




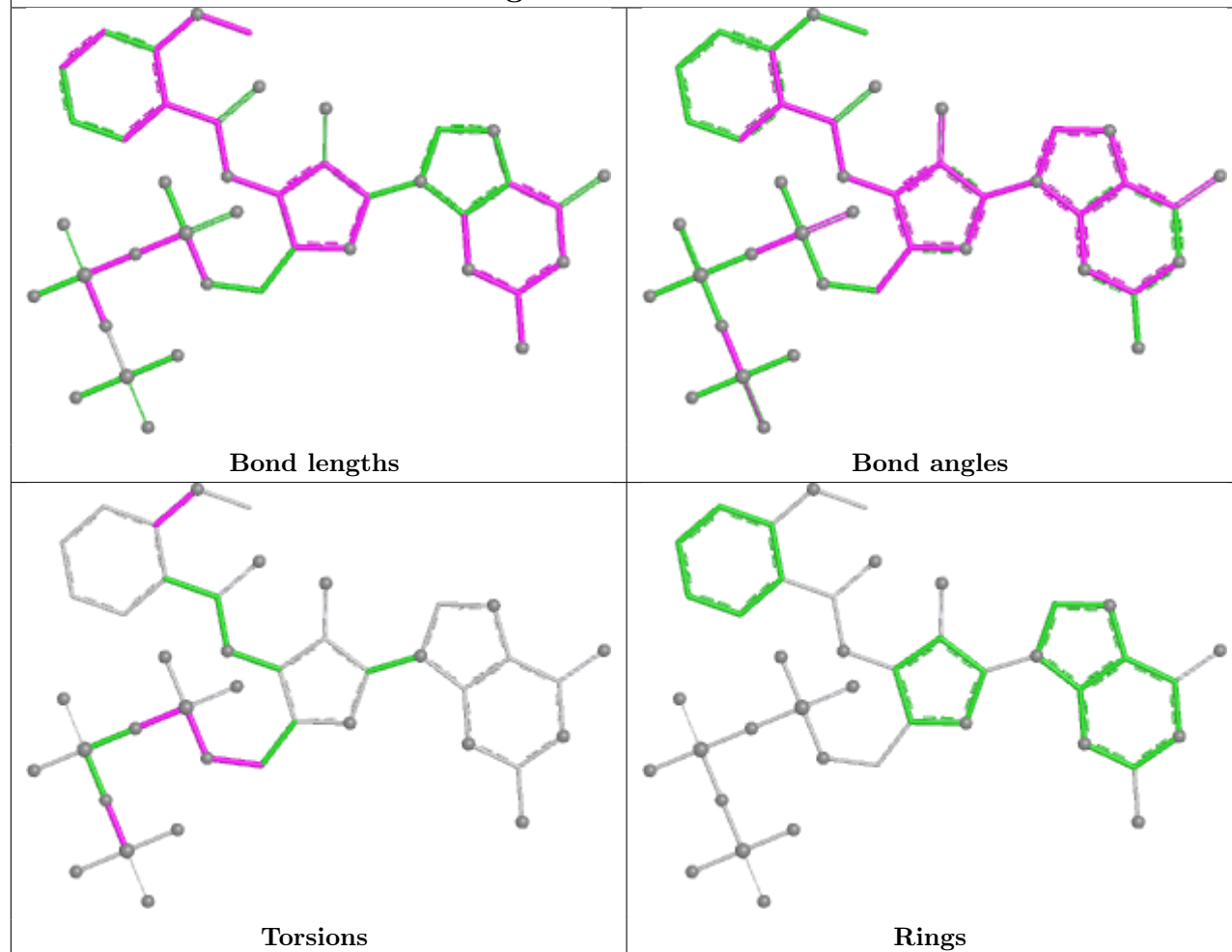
Ligand ONM H 504

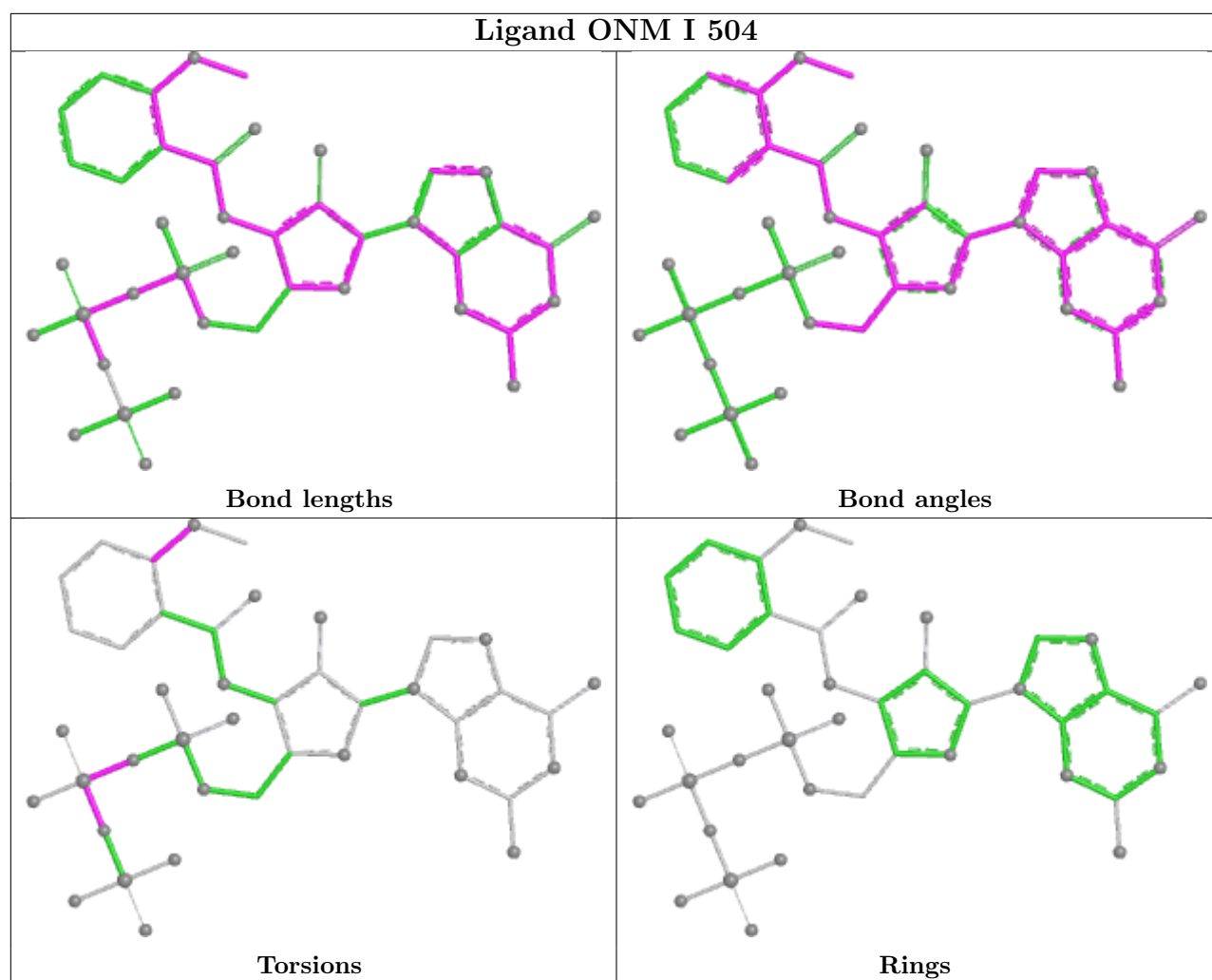


Ligand ONM D 501



Ligand ONM G 501





5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	216/254 (85%)	-0.33	3 (1%) 73 59	40, 72, 142, 305	0
1	B	216/254 (85%)	-0.38	0 100 100	37, 81, 156, 301	0
1	C	216/254 (85%)	-0.41	0 100 100	33, 73, 139, 263	0
1	D	216/254 (85%)	-0.29	0 100 100	46, 88, 173, 318	0
1	E	216/254 (85%)	-0.09	1 (0%) 87 78	60, 128, 229, 357	0
1	F	216/254 (85%)	0.29	3 (1%) 73 59	82, 151, 262, 417	0
1	G	216/254 (85%)	0.70	26 (12%) 9 9	91, 199, 305, 396	0
1	H	216/254 (85%)	1.06	34 (15%) 5 6	104, 186, 308, 402	0
1	I	216/254 (85%)	0.64	9 (4%) 40 29	101, 163, 268, 448	0
1	J	216/254 (85%)	0.36	6 (2%) 55 41	105, 187, 281, 372	0
1	K	216/254 (85%)	0.33	7 (3%) 50 37	130, 212, 317, 380	0
All	All	2376/2794 (85%)	0.17	89 (3%) 45 32	33, 143, 271, 448	0

All (89) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	H	297	VAL	5.4
1	H	286	LEU	5.3
1	H	255	ALA	5.1
1	H	371	VAL	4.7
1	H	261	THR	4.5
1	G	302	TYR	4.2
1	G	366	VAL	4.1
1	G	253	LEU	3.9
1	H	343	LEU	3.8
1	G	357	VAL	3.8
1	A	410	VAL	3.7
1	H	269	PRO	3.5

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Mol	Chain	Res	Type	RSRZ
1	G	367	TRP	3.3
1	K	302	TYR	3.3
1	H	328	ASN	3.3
1	I	382	SER	3.3
1	K	372	ASN	3.3
1	G	346	GLY	3.3
1	I	363	PHE	3.2
1	H	301	SER	3.1
1	G	303	MET	3.1
1	G	352	VAL	3.0
1	G	301	SER	3.0
1	H	383	VAL	3.0
1	G	255	ALA	2.9
1	H	341	VAL	2.9
1	H	352	VAL	2.9
1	H	273	VAL	2.8
1	H	231	ILE	2.8
1	I	324	LEU	2.8
1	H	324	LEU	2.8
1	H	260	PHE	2.7
1	H	367	TRP	2.7
1	G	347	MET	2.7
1	H	270	ALA	2.6
1	G	416	MET	2.6
1	G	254	PHE	2.6
1	H	290	HIS	2.6
1	H	275	PHE	2.6
1	H	309	PRO	2.5
1	G	269	PRO	2.5
1	A	238	SER	2.5
1	G	343	LEU	2.5
1	H	283	PHE	2.5
1	K	269	PRO	2.5
1	H	230	SER	2.5
1	I	421	LEU	2.5
1	I	323	ALA	2.5
1	F	370	ALA	2.4
1	I	255	ALA	2.4
1	K	255	ALA	2.4
1	H	421	LEU	2.4
1	I	348	ALA	2.4
1	E	309	PRO	2.4

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Mol	Chain	Res	Type	RSRZ
1	F	242	VAL	2.4
1	J	276	LEU	2.4
1	H	272	LEU	2.4
1	A	409	GLU	2.4
1	H	279	LEU	2.3
1	K	366	VAL	2.3
1	G	359	SER	2.3
1	K	364	TYR	2.3
1	G	272	LEU	2.3
1	G	376	ARG	2.3
1	H	229	GLY	2.3
1	I	333	LEU	2.3
1	H	364	TYR	2.3
1	J	389	PRO	2.2
1	H	276	LEU	2.2
1	H	329	VAL	2.2
1	G	297	VAL	2.2
1	F	392	MET	2.2
1	G	392	MET	2.2
1	J	345	MET	2.2
1	K	276	LEU	2.2
1	J	297	VAL	2.2
1	G	412	GLY	2.2
1	G	325	ASP	2.2
1	G	329	VAL	2.1
1	H	302	TYR	2.1
1	G	294	LYS	2.1
1	G	348	ALA	2.1
1	J	254	PHE	2.1
1	G	304	VAL	2.1
1	J	421	LEU	2.1
1	H	353	VAL	2.1
1	H	223	LEU	2.1
1	H	332	ALA	2.0
1	I	358	GLY	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, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

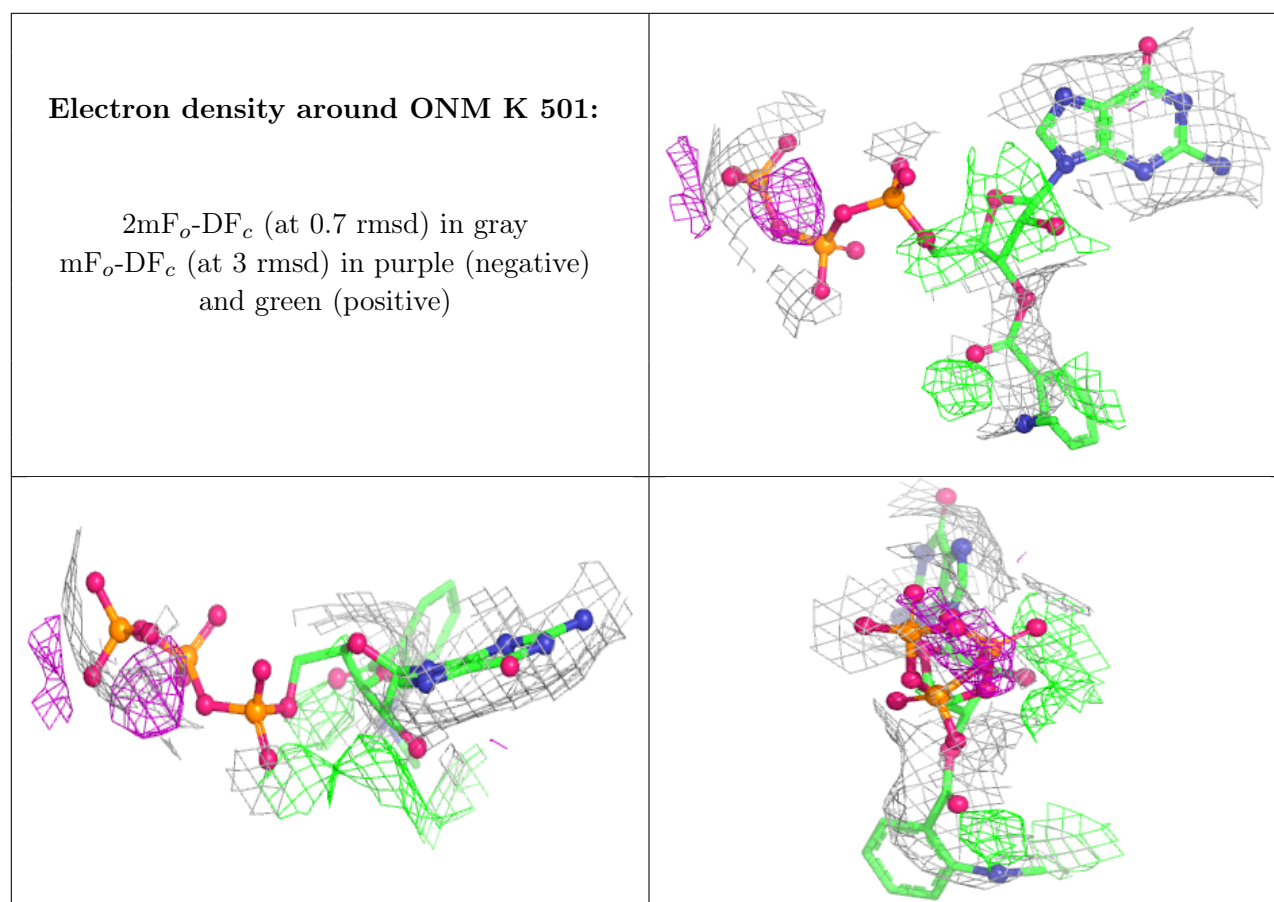
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
4	SO4	I	503	5/5	0.22	0.10	258,260,262,263	0
4	SO4	H	501	5/5	0.36	0.10	263,265,267,267	0
4	SO4	C	503	5/5	0.57	0.11	216,219,220,220	0
4	SO4	F	502	5/5	0.59	0.14	236,238,238,240	0
4	SO4	J	505	5/5	0.69	0.11	253,258,261,262	0
2	ONM	K	501	42/42	0.71	0.15	164,174,200,206	0
4	SO4	A	505	5/5	0.79	0.13	135,135,136,137	0
4	SO4	E	504	5/5	0.80	0.10	203,209,213,215	0
2	ONM	H	504	42/42	0.81	0.14	140,149,160,163	0
2	ONM	G	501	42/42	0.82	0.15	167,175,200,207	0
3	MN	K	503	1/1	0.85	0.07	258,258,258,258	0
4	SO4	A	504	5/5	0.86	0.19	177,180,181,182	0
4	SO4	J	502	5/5	0.86	0.10	179,184,188,188	0
4	SO4	D	504	5/5	0.88	0.09	121,121,121,122	0
4	SO4	C	502	5/5	0.90	0.08	119,125,129,129	0
3	MN	I	502	1/1	0.90	0.06	236,236,236,236	0
2	ONM	E	501	42/42	0.91	0.10	123,130,153,159	0
2	ONM	I	504	42/42	0.91	0.11	163,168,193,200	0
3	MN	G	503	1/1	0.91	0.07	213,213,213,213	0
3	MN	H	503	1/1	0.92	0.10	182,182,182,182	0
3	MN	B	504	1/1	0.92	0.07	150,150,150,150	0
4	SO4	E	505	5/5	0.93	0.08	123,123,123,124	0
2	ONM	J	501	42/42	0.93	0.12	148,156,169,172	0
3	MN	F	504	1/1	0.93	0.05	164,164,164,164	0
2	ONM	F	501	42/42	0.94	0.10	127,135,141,142	0
4	SO4	B	502	5/5	0.94	0.07	117,122,127,127	0
3	MN	J	504	1/1	0.94	0.05	175,175,175,175	0
2	ONM	D	501	42/42	0.95	0.08	49,62,86,92	0
2	ONM	C	501	42/42	0.96	0.07	67,76,88,91	0
2	ONM	B	501	42/42	0.96	0.07	70,80,91,94	0
2	ONM	A	501	42/42	0.97	0.07	59,68,91,97	0
3	MN	H	502	1/1	0.97	0.04	146,146,146,146	0

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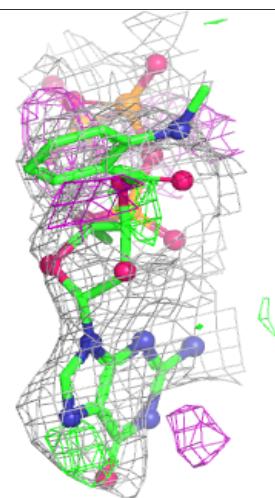
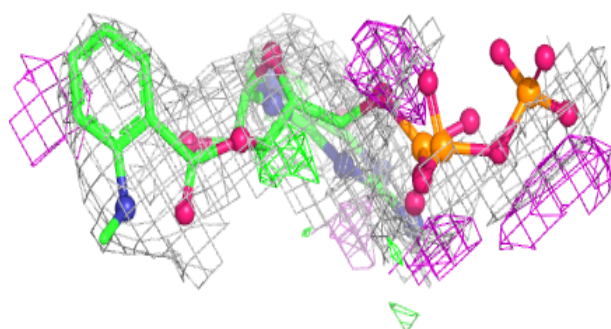
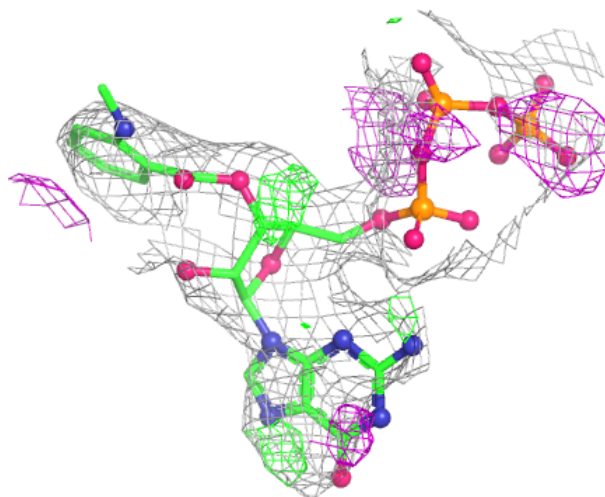
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
3	MN	E	503	1/1	0.97	0.04	146,146,146,146	0
3	MN	K	502	1/1	0.98	0.04	209,209,209,209	0
3	MN	C	505	1/1	0.98	0.05	146,146,146,146	0
3	MN	D	503	1/1	0.98	0.04	111,111,111,111	0
3	MN	G	502	1/1	0.98	0.03	157,157,157,157	0
3	MN	F	503	1/1	0.98	0.03	136,136,136,136	0
3	MN	D	502	1/1	0.99	0.03	79,79,79,79	0
3	MN	E	502	1/1	0.99	0.03	127,127,127,127	0
3	MN	I	501	1/1	0.99	0.03	126,126,126,126	0
3	MN	A	503	1/1	0.99	0.02	101,101,101,101	0
3	MN	J	503	1/1	0.99	0.03	137,137,137,137	0
3	MN	A	502	1/1	1.00	0.01	67,67,67,67	0
3	MN	C	504	1/1	1.00	0.01	68,68,68,68	0
3	MN	B	503	1/1	1.00	0.02	88,88,88,88	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.



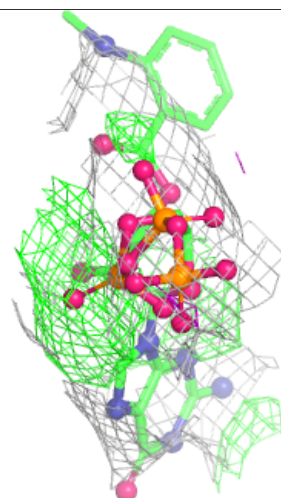
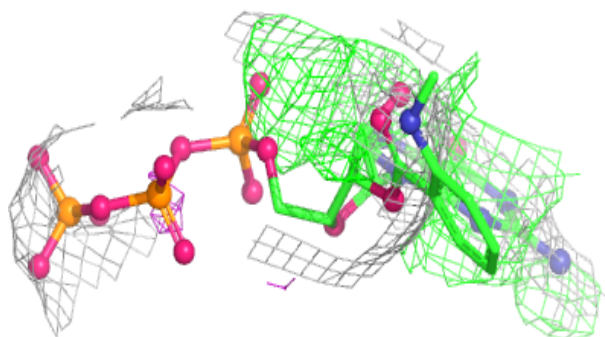
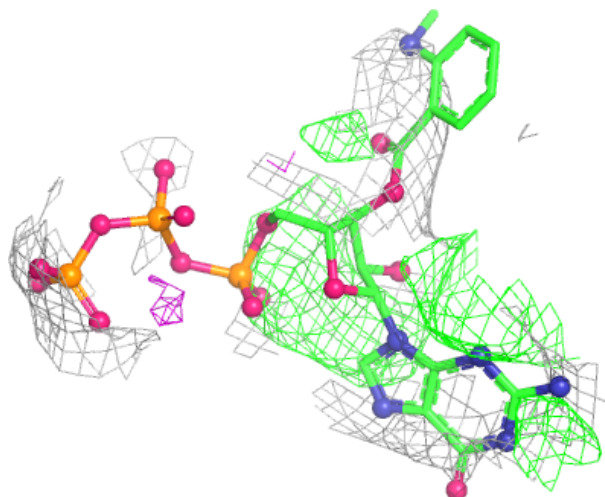
Electron density around ONM H 504:

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



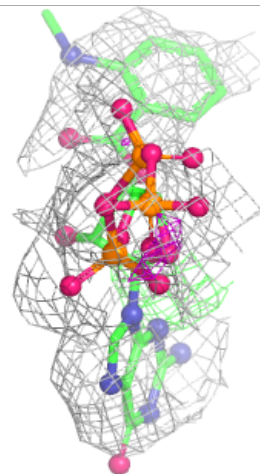
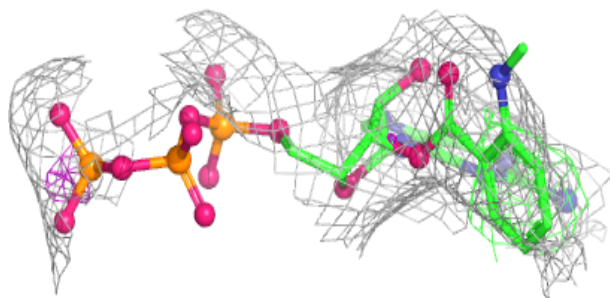
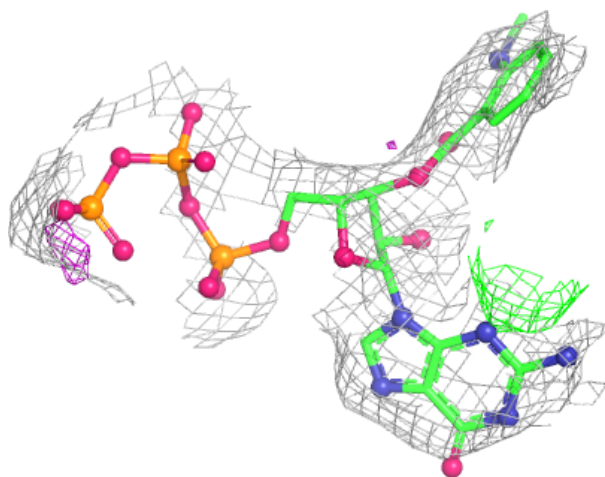
Electron density around ONM G 501:

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 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



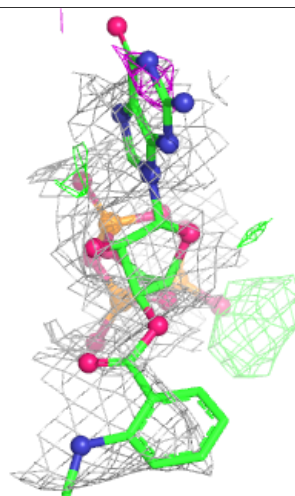
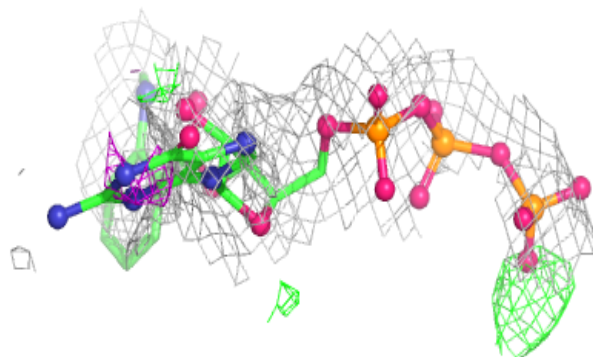
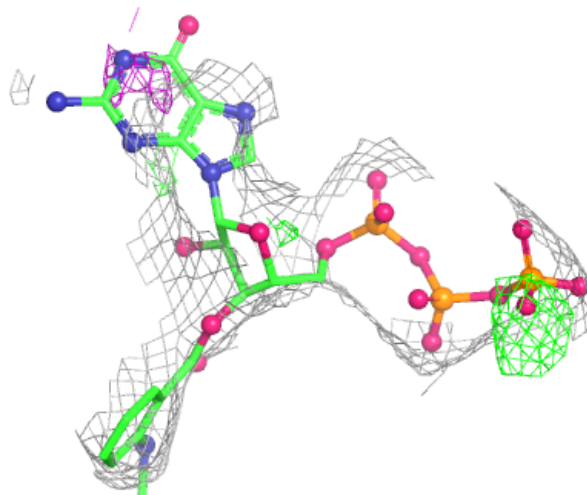
Electron density around ONM E 501:

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 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



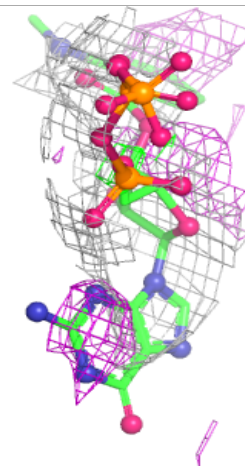
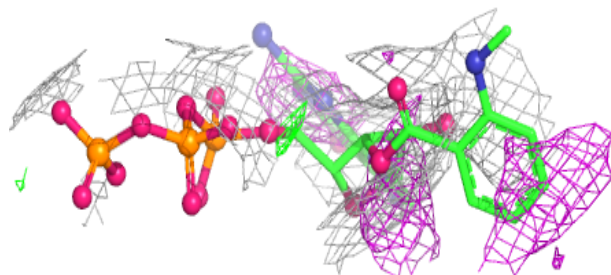
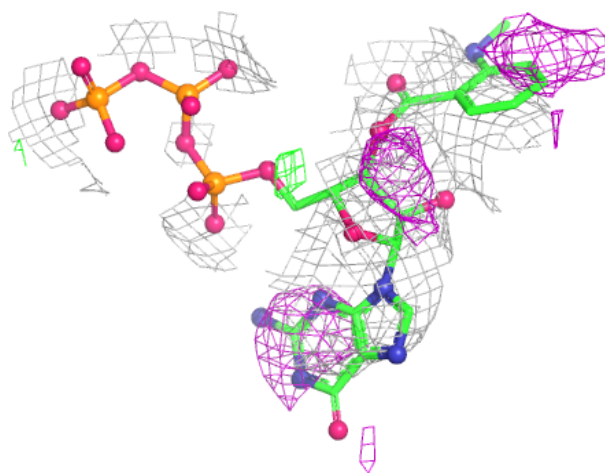
Electron density around ONM I 504:

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 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



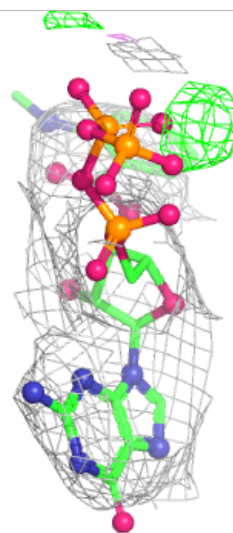
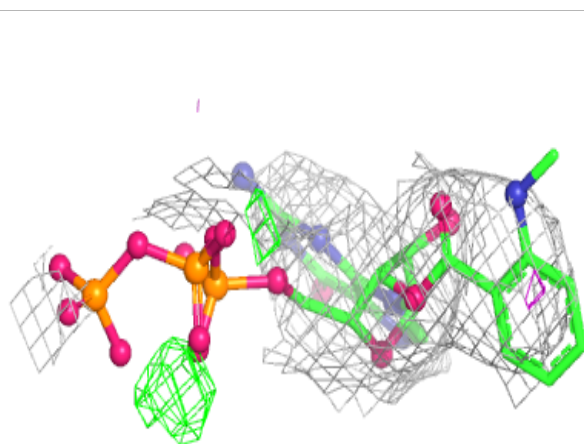
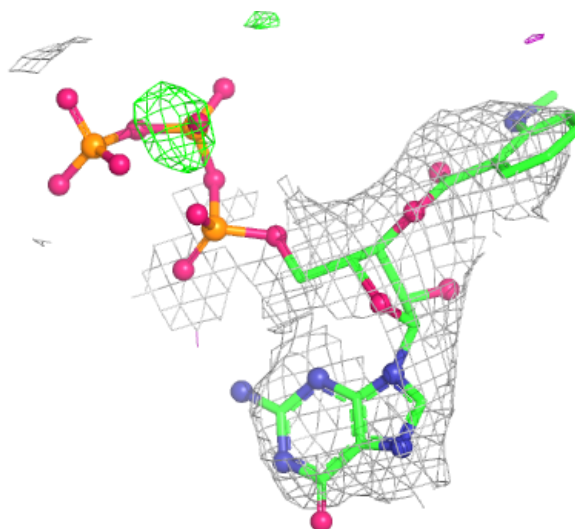
Electron density around ONM J 501:

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



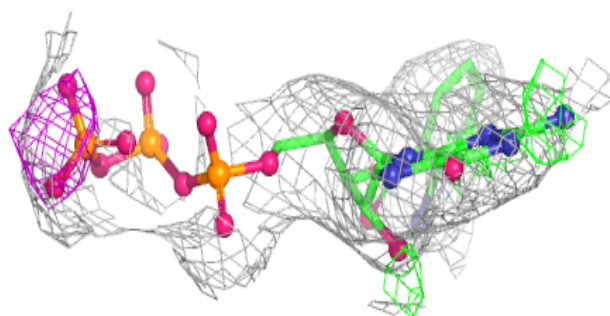
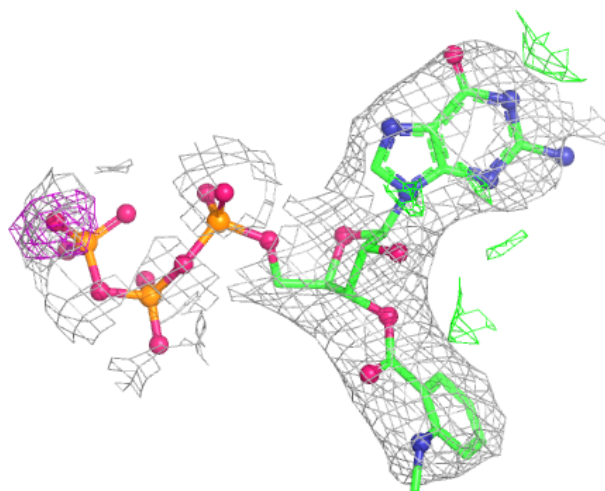
Electron density around ONM F 501:

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 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



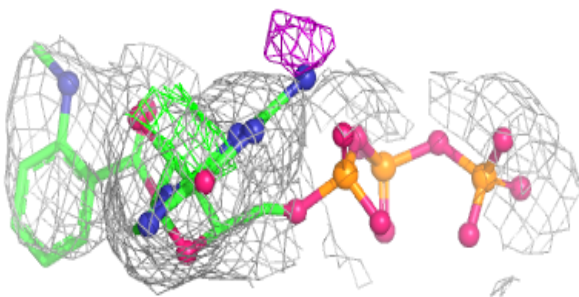
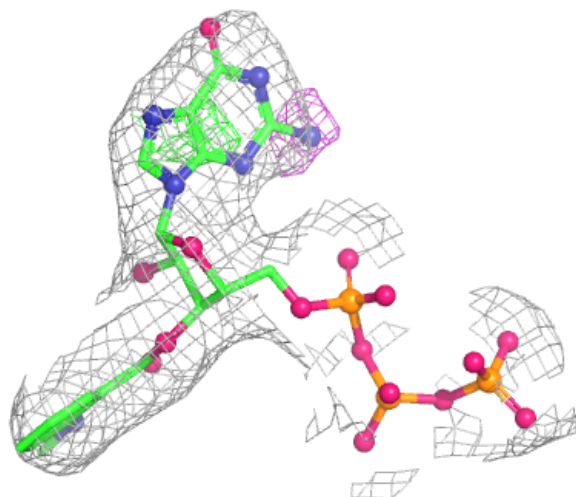
Electron density around ONM D 501:

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



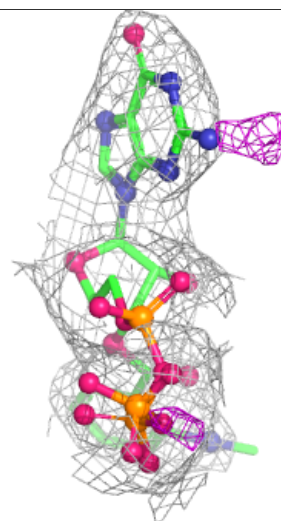
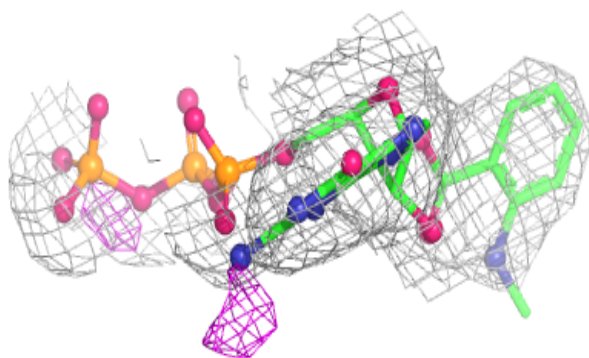
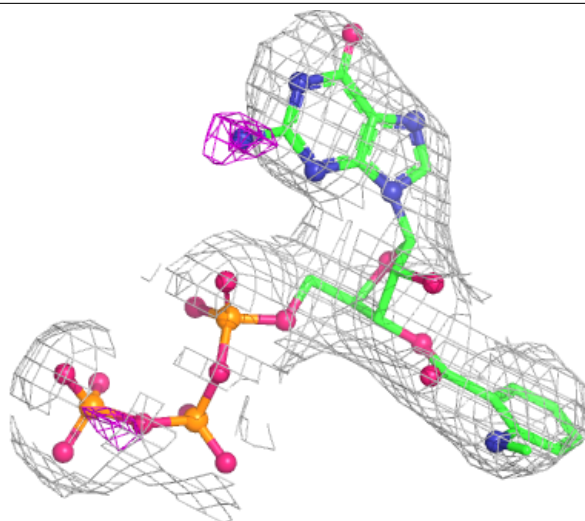
Electron density around ONM C 501:

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



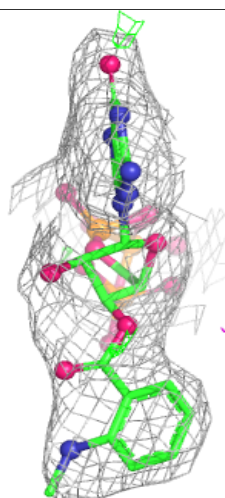
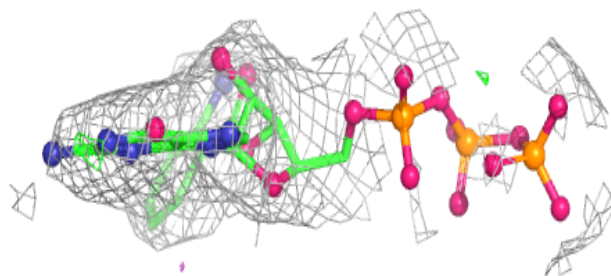
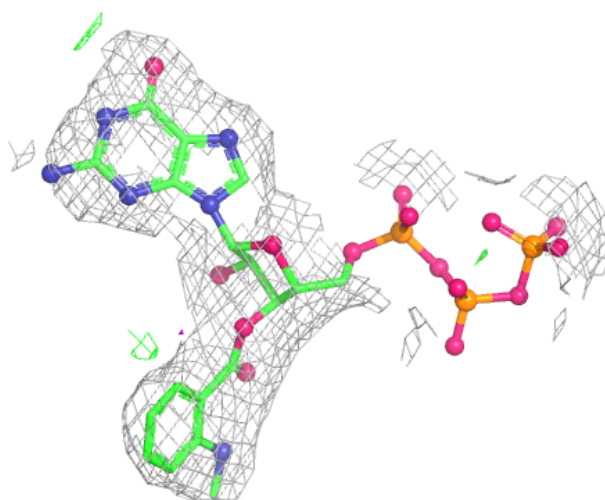
Electron density around ONM B 501:

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



Electron density around ONM A 501:

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



6.5 Other polymers ⓘ

There are no such residues in this entry.