



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 1, 2026 – 03:49 PM UTC

PDB ID : 2GRJ / pdb_00002grj
Title : Crystal structure of Dephospho-CoA kinase (EC 2.7.1.24) (Dephosphocoenzyme A kinase) (tm1387) from THERMOTOGA MARITIMA at 2.60 Å resolution
Authors : Joint Center for Structural Genomics (JCSG)
Deposited on : 2006-04-24
Resolution : 2.60 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

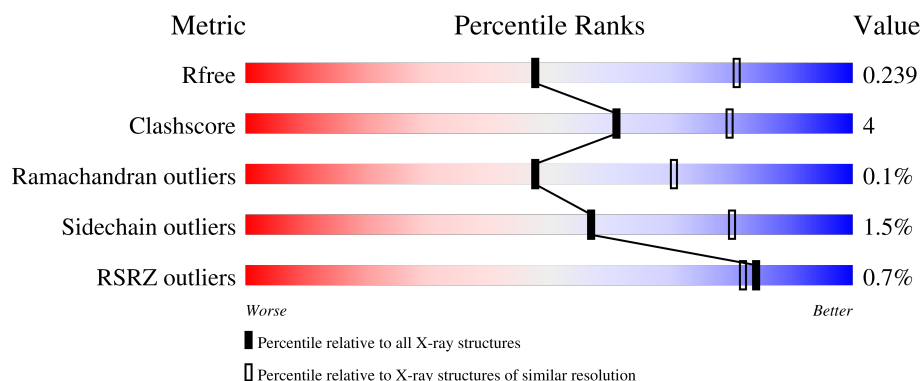
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.60 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.



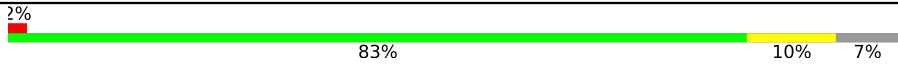
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	4008 (2.60-2.60)
Clashscore	190562	4347 (2.60-2.60)
Ramachandran outliers	187476	4277 (2.60-2.60)
Sidechain outliers	187428	4277 (2.60-2.60)
RSRZ outliers	180081	4008 (2.60-2.60)

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	192	86% 7% • 7%
1	B	192	87% 6% 7%
1	C	192	2% 86% 7% 7%
1	D	192	% 84% 9% 7%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	E	192	
1	F	192	
1	G	192	
1	H	192	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	COD	A	201	X	-	-	-
3	COD	B	201	X	-	-	-
3	COD	C	201	X	-	-	-
3	COD	D	201	X	-	-	-
3	COD	E	201	X	-	-	-
3	COD	F	201	X	-	-	-
3	COD	G	201	X	-	-	-
3	COD	H	201	X	-	-	-

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 11485 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 Dephospho-CoA kinase.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	179	Total	C	N	O	S	Se	0	0	0
			1363	868	242	247	2	4			
1	B	179	Total	C	N	O	S	Se	0	0	0
			1360	865	240	249	2	4			
1	C	179	Total	C	N	O	S	Se	0	0	0
			1349	861	241	241	2	4			
1	D	179	Total	C	N	O	S	Se	0	0	0
			1365	870	240	249	2	4			
1	E	179	Total	C	N	O	S	Se	0	0	0
			1346	861	234	245	2	4			
1	F	179	Total	C	N	O	S	Se	0	0	0
			1372	872	243	251	2	4			
1	G	179	Total	C	N	O	S	Se	0	0	0
			1337	855	237	239	2	4			
1	H	179	Total	C	N	O	S	Se	0	0	0
			1354	863	240	245	2	4			

There are 128 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-11	MSE	-	expression tag	UNP Q9X1A7
A	-10	GLY	-	expression tag	UNP Q9X1A7
A	-9	SER	-	expression tag	UNP Q9X1A7
A	-8	ASP	-	expression tag	UNP Q9X1A7
A	-7	LYS	-	expression tag	UNP Q9X1A7
A	-6	ILE	-	expression tag	UNP Q9X1A7
A	-5	HIS	-	expression tag	UNP Q9X1A7
A	-4	HIS	-	expression tag	UNP Q9X1A7
A	-3	HIS	-	expression tag	UNP Q9X1A7
A	-2	HIS	-	expression tag	UNP Q9X1A7
A	-1	HIS	-	expression tag	UNP Q9X1A7
A	0	HIS	-	expression tag	UNP Q9X1A7
A	1	MSE	MET	modified residue	UNP Q9X1A7

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
A	87	MSE	MET	modified residue	UNP Q9X1A7
A	112	MSE	MET	modified residue	UNP Q9X1A7
A	172	MSE	MET	modified residue	UNP Q9X1A7
B	-11	MSE	-	expression tag	UNP Q9X1A7
B	-10	GLY	-	expression tag	UNP Q9X1A7
B	-9	SER	-	expression tag	UNP Q9X1A7
B	-8	ASP	-	expression tag	UNP Q9X1A7
B	-7	LYS	-	expression tag	UNP Q9X1A7
B	-6	ILE	-	expression tag	UNP Q9X1A7
B	-5	HIS	-	expression tag	UNP Q9X1A7
B	-4	HIS	-	expression tag	UNP Q9X1A7
B	-3	HIS	-	expression tag	UNP Q9X1A7
B	-2	HIS	-	expression tag	UNP Q9X1A7
B	-1	HIS	-	expression tag	UNP Q9X1A7
B	0	HIS	-	expression tag	UNP Q9X1A7
B	1	MSE	MET	modified residue	UNP Q9X1A7
B	87	MSE	MET	modified residue	UNP Q9X1A7
B	112	MSE	MET	modified residue	UNP Q9X1A7
B	172	MSE	MET	modified residue	UNP Q9X1A7
C	-11	MSE	-	expression tag	UNP Q9X1A7
C	-10	GLY	-	expression tag	UNP Q9X1A7
C	-9	SER	-	expression tag	UNP Q9X1A7
C	-8	ASP	-	expression tag	UNP Q9X1A7
C	-7	LYS	-	expression tag	UNP Q9X1A7
C	-6	ILE	-	expression tag	UNP Q9X1A7
C	-5	HIS	-	expression tag	UNP Q9X1A7
C	-4	HIS	-	expression tag	UNP Q9X1A7
C	-3	HIS	-	expression tag	UNP Q9X1A7
C	-2	HIS	-	expression tag	UNP Q9X1A7
C	-1	HIS	-	expression tag	UNP Q9X1A7
C	0	HIS	-	expression tag	UNP Q9X1A7
C	1	MSE	MET	modified residue	UNP Q9X1A7
C	87	MSE	MET	modified residue	UNP Q9X1A7
C	112	MSE	MET	modified residue	UNP Q9X1A7
C	172	MSE	MET	modified residue	UNP Q9X1A7
D	-11	MSE	-	expression tag	UNP Q9X1A7
D	-10	GLY	-	expression tag	UNP Q9X1A7
D	-9	SER	-	expression tag	UNP Q9X1A7
D	-8	ASP	-	expression tag	UNP Q9X1A7
D	-7	LYS	-	expression tag	UNP Q9X1A7
D	-6	ILE	-	expression tag	UNP Q9X1A7
D	-5	HIS	-	expression tag	UNP Q9X1A7

Continued on next page...

Continued from previous page...

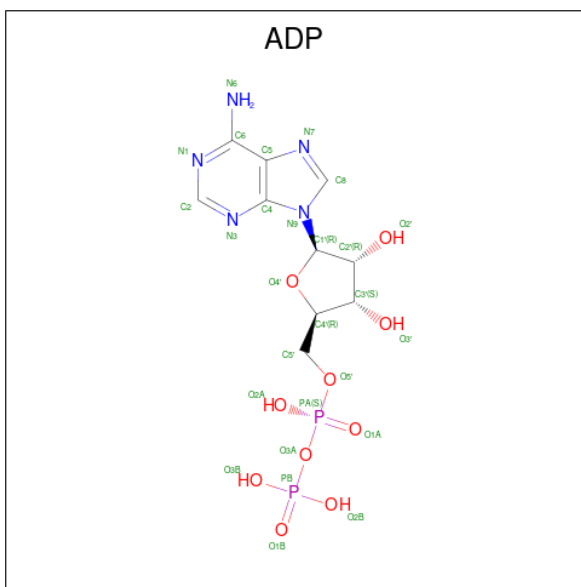
Chain	Residue	Modelled	Actual	Comment	Reference
D	-4	HIS	-	expression tag	UNP Q9X1A7
D	-3	HIS	-	expression tag	UNP Q9X1A7
D	-2	HIS	-	expression tag	UNP Q9X1A7
D	-1	HIS	-	expression tag	UNP Q9X1A7
D	0	HIS	-	expression tag	UNP Q9X1A7
D	1	MSE	MET	modified residue	UNP Q9X1A7
D	87	MSE	MET	modified residue	UNP Q9X1A7
D	112	MSE	MET	modified residue	UNP Q9X1A7
D	172	MSE	MET	modified residue	UNP Q9X1A7
E	-11	MSE	-	expression tag	UNP Q9X1A7
E	-10	GLY	-	expression tag	UNP Q9X1A7
E	-9	SER	-	expression tag	UNP Q9X1A7
E	-8	ASP	-	expression tag	UNP Q9X1A7
E	-7	LYS	-	expression tag	UNP Q9X1A7
E	-6	ILE	-	expression tag	UNP Q9X1A7
E	-5	HIS	-	expression tag	UNP Q9X1A7
E	-4	HIS	-	expression tag	UNP Q9X1A7
E	-3	HIS	-	expression tag	UNP Q9X1A7
E	-2	HIS	-	expression tag	UNP Q9X1A7
E	-1	HIS	-	expression tag	UNP Q9X1A7
E	0	HIS	-	expression tag	UNP Q9X1A7
E	1	MSE	MET	modified residue	UNP Q9X1A7
E	87	MSE	MET	modified residue	UNP Q9X1A7
E	112	MSE	MET	modified residue	UNP Q9X1A7
E	172	MSE	MET	modified residue	UNP Q9X1A7
F	-11	MSE	-	expression tag	UNP Q9X1A7
F	-10	GLY	-	expression tag	UNP Q9X1A7
F	-9	SER	-	expression tag	UNP Q9X1A7
F	-8	ASP	-	expression tag	UNP Q9X1A7
F	-7	LYS	-	expression tag	UNP Q9X1A7
F	-6	ILE	-	expression tag	UNP Q9X1A7
F	-5	HIS	-	expression tag	UNP Q9X1A7
F	-4	HIS	-	expression tag	UNP Q9X1A7
F	-3	HIS	-	expression tag	UNP Q9X1A7
F	-2	HIS	-	expression tag	UNP Q9X1A7
F	-1	HIS	-	expression tag	UNP Q9X1A7
F	0	HIS	-	expression tag	UNP Q9X1A7
F	1	MSE	MET	modified residue	UNP Q9X1A7
F	87	MSE	MET	modified residue	UNP Q9X1A7
F	112	MSE	MET	modified residue	UNP Q9X1A7
F	172	MSE	MET	modified residue	UNP Q9X1A7
G	-11	MSE	-	expression tag	UNP Q9X1A7

Continued on next page...

Continued from previous page...

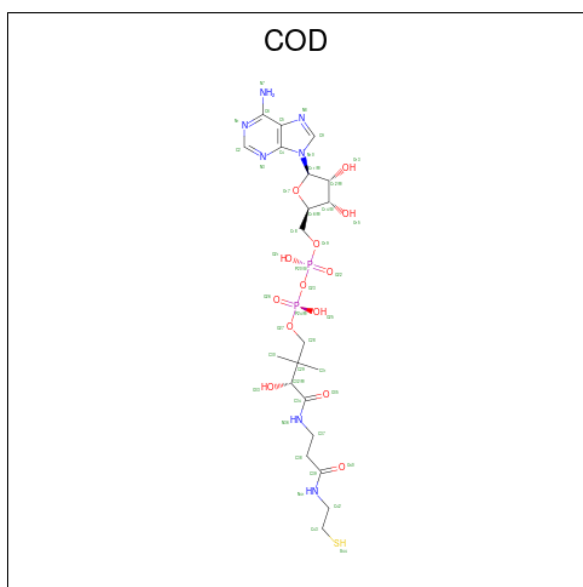
Chain	Residue	Modelled	Actual	Comment	Reference
G	-10	GLY	-	expression tag	UNP Q9X1A7
G	-9	SER	-	expression tag	UNP Q9X1A7
G	-8	ASP	-	expression tag	UNP Q9X1A7
G	-7	LYS	-	expression tag	UNP Q9X1A7
G	-6	ILE	-	expression tag	UNP Q9X1A7
G	-5	HIS	-	expression tag	UNP Q9X1A7
G	-4	HIS	-	expression tag	UNP Q9X1A7
G	-3	HIS	-	expression tag	UNP Q9X1A7
G	-2	HIS	-	expression tag	UNP Q9X1A7
G	-1	HIS	-	expression tag	UNP Q9X1A7
G	0	HIS	-	expression tag	UNP Q9X1A7
G	1	MSE	MET	modified residue	UNP Q9X1A7
G	87	MSE	MET	modified residue	UNP Q9X1A7
G	112	MSE	MET	modified residue	UNP Q9X1A7
G	172	MSE	MET	modified residue	UNP Q9X1A7
H	-11	MSE	-	expression tag	UNP Q9X1A7
H	-10	GLY	-	expression tag	UNP Q9X1A7
H	-9	SER	-	expression tag	UNP Q9X1A7
H	-8	ASP	-	expression tag	UNP Q9X1A7
H	-7	LYS	-	expression tag	UNP Q9X1A7
H	-6	ILE	-	expression tag	UNP Q9X1A7
H	-5	HIS	-	expression tag	UNP Q9X1A7
H	-4	HIS	-	expression tag	UNP Q9X1A7
H	-3	HIS	-	expression tag	UNP Q9X1A7
H	-2	HIS	-	expression tag	UNP Q9X1A7
H	-1	HIS	-	expression tag	UNP Q9X1A7
H	0	HIS	-	expression tag	UNP Q9X1A7
H	1	MSE	MET	modified residue	UNP Q9X1A7
H	87	MSE	MET	modified residue	UNP Q9X1A7
H	112	MSE	MET	modified residue	UNP Q9X1A7
H	172	MSE	MET	modified residue	UNP Q9X1A7

- Molecule 2 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total 27	C 10	N 5	O 10	P 2	0	0
2	B	1	Total 27	C 10	N 5	O 10	P 2	0	0
2	C	1	Total 27	C 10	N 5	O 10	P 2	0	0
2	D	1	Total 27	C 10	N 5	O 10	P 2	0	0
2	E	1	Total 27	C 10	N 5	O 10	P 2	0	0
2	F	1	Total 27	C 10	N 5	O 10	P 2	0	0
2	G	1	Total 27	C 10	N 5	O 10	P 2	0	0
2	H	1	Total 27	C 10	N 5	O 10	P 2	0	0

- Molecule 3 is DEPHOSPHO COENZYME A (CCD ID: COD) (formula: $\text{C}_{21}\text{H}_{35}\text{N}_7\text{O}_{13}\text{P}_2\text{S}$).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
3	A	1	Total 44	C 21	N 7	O 13	P 2	S 1	0	0
3	B	1	Total 44	C 21	N 7	O 13	P 2	S 1	0	0
3	C	1	Total 44	C 21	N 7	O 13	P 2	S 1	0	0
3	D	1	Total 44	C 21	N 7	O 13	P 2	S 1	0	0
3	E	1	Total 44	C 21	N 7	O 13	P 2	S 1	0	0
3	F	1	Total 44	C 21	N 7	O 13	P 2	S 1	0	0
3	G	1	Total 44	C 21	N 7	O 13	P 2	S 1	0	0
3	H	1	Total 44	C 21	N 7	O 13	P 2	S 1	0	0

- Molecule 4 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	C	1	Total 1 Cl 1	0	0
4	E	2	Total 2 Cl 2	0	0
4	H	1	Total 1 Cl 1	0	0

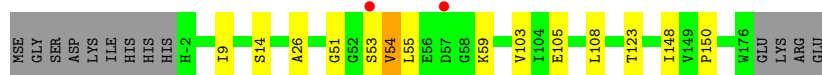
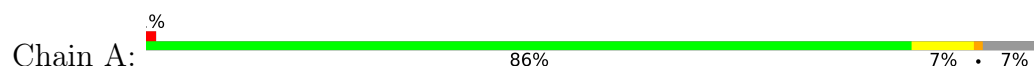
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	14	Total 14	O 14	0	0
5	B	7	Total 7	O 7	0	0
5	C	6	Total 6	O 6	0	0
5	D	13	Total 13	O 13	0	0
5	E	9	Total 9	O 9	0	0
5	F	8	Total 8	O 8	0	0
5	G	4	Total 4	O 4	0	0
5	H	6	Total 6	O 6	0	0

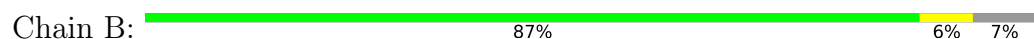
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

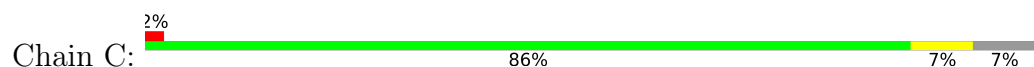
- Molecule 1: Dephospho-CoA kinase



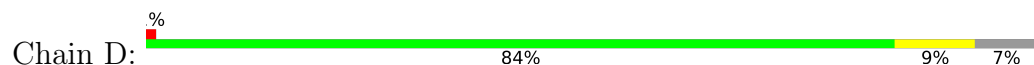
- Molecule 1: Dephospho-CoA kinase



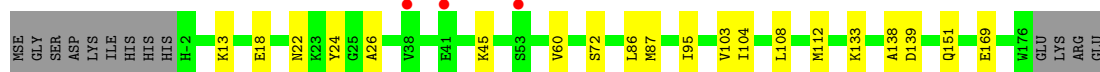
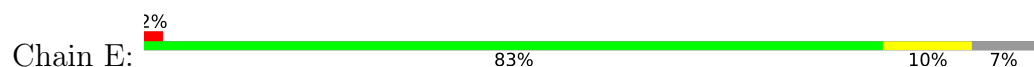
- Molecule 1: Dephospho-CoA kinase



- Molecule 1: Dephospho-CoA kinase



- Molecule 1: Dephospho-CoA kinase



- Molecule 1: Dephospho-CoA kinase

Chain F:

84%

9%

7%



● Molecule 1: Dephospho-CoA kinase

Chain G:

83%

10%

7%



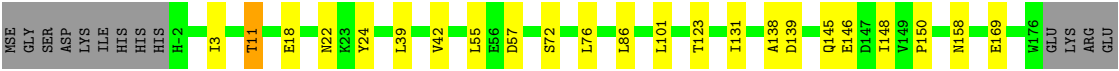
● Molecule 1: Dephospho-CoA kinase

Chain H:

81%

11%

7%



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	90.83Å 87.22Å 98.59Å 90.00° 106.92° 90.00°	Depositor
Resolution (Å)	25.29 – 2.60 25.29 – 2.60	Depositor EDS
% Data completeness (in resolution range)	98.4 (25.29-2.60) 98.4 (25.29-2.60)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.23 (at 2.60Å)	Xtrriage
Refinement program	REFMAC 5.2.0005	Depositor
R, R_{free}	0.191 , 0.245 (Not available) , 0.239	Depositor DCC
R_{free} test set	2249 reflections (4.97%)	wwPDB-VP
Wilson B-factor (Å ²)	39.0	Xtrriage
Anisotropy	0.346	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.35 , 56.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	11485	wwPDB-VP
Average B, all atoms (Å ²)	38.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 60.99 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 1.4010e-05. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

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: COD, ADP, CL

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	0.97	1/1371 (0.1%)	0.92	0/1843
1	B	0.98	1/1368 (0.1%)	0.94	0/1838
1	C	0.96	1/1359 (0.1%)	0.90	1/1830 (0.1%)
1	D	0.97	2/1374 (0.1%)	0.90	1/1845 (0.1%)
1	E	0.94	1/1356 (0.1%)	0.88	0/1824
1	F	0.93	0/1381	0.96	0/1854
1	G	0.89	1/1346 (0.1%)	0.93	0/1812
1	H	0.99	1/1363 (0.1%)	0.93	1/1831 (0.1%)
All	All	0.96	8/10918 (0.1%)	0.92	3/14677 (0.0%)

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	1	MSE	SE-CE	-6.30	1.76	1.95
1	D	1	MSE	SE-CE	-5.84	1.77	1.95
1	C	1	MSE	SE-CE	5.54	2.12	1.95
1	G	112	MSE	SE-CE	5.28	2.11	1.95
1	E	60	VAL	CA-CB	5.28	1.59	1.54
1	D	172	MSE	SE-CE	-5.25	1.79	1.95
1	A	9	ILE	CA-CB	5.05	1.59	1.54
1	H	11	THR	CA-CB	5.01	1.61	1.53

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	54	VAL	N-CA-C	6.74	118.62	112.29
1	C	57	ASP	N-CA-C	-5.81	102.19	111.02
1	H	55	LEU	N-CA-C	5.18	117.16	107.99

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	1363	0	1400	8	0
1	B	1360	0	1401	4	0
1	C	1349	0	1375	6	0
1	D	1365	0	1410	5	0
1	E	1346	0	1378	10	0
1	F	1372	0	1419	11	0
1	G	1337	0	1374	12	0
1	H	1354	0	1400	12	0
2	A	27	0	12	0	0
2	B	27	0	12	0	0
2	C	27	0	12	0	0
2	D	27	0	12	1	0
2	E	27	0	12	1	0
2	F	27	0	12	0	0
2	G	27	0	12	1	0
2	H	27	0	12	1	0
3	A	44	0	33	2	0
3	B	44	0	33	5	0
3	C	44	0	33	5	0
3	D	44	0	33	4	0
3	E	44	0	33	5	0
3	F	44	0	33	6	0
3	G	44	0	33	5	0
3	H	44	0	33	4	0
4	C	1	0	0	0	0
4	E	2	0	0	0	0
4	H	1	0	0	0	0
5	A	14	0	0	0	0
5	B	7	0	0	0	0
5	C	6	0	0	0	0
5	D	13	0	0	0	0
5	E	9	0	0	1	0
5	F	8	0	0	0	0
5	G	4	0	0	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	H	6	0	0	1	0
All	All	11485	0	11517	96	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 4.

All (96) 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)
3:C:201:COD:HC9	3:C:201:COD:HC16	1.57	0.86
1:G:95:ILE:HD11	1:G:104:ILE:HD11	1.58	0.86
3:E:201:COD:HC16	3:E:201:COD:HC9	1.60	0.82
3:F:201:COD:HC9	3:F:201:COD:HC16	1.62	0.82
3:B:201:COD:HC9	3:B:201:COD:HC16	1.65	0.78
3:A:201:COD:O33	3:A:201:COD:O21	2.01	0.78
3:G:201:COD:HC9	3:G:201:COD:HC16	1.71	0.72
1:B:95:ILE:HD11	1:B:104:ILE:HD11	1.72	0.71
1:E:95:ILE:HD11	1:E:104:ILE:HD11	1.73	0.69
1:D:95:ILE:HD11	1:D:104:ILE:HD11	1.76	0.68
3:C:201:COD:HC16	3:C:201:COD:C9	2.24	0.68
3:D:201:COD:HC9	3:D:201:COD:HC16	1.81	0.63
1:F:95:ILE:HD11	1:F:104:ILE:HD11	1.82	0.62
3:D:201:COD:O35	3:D:201:COD:C30	2.47	0.62
3:G:201:COD:O35	3:G:201:COD:C30	2.48	0.62
3:A:201:COD:HC16	3:A:201:COD:HC9	1.80	0.61
3:F:201:COD:HC16	3:F:201:COD:C9	2.30	0.61
3:G:201:COD:O35	3:G:201:COD:H301	2.02	0.59
3:B:201:COD:HC16	3:B:201:COD:C9	2.32	0.59
3:G:201:COD:HC16	3:G:201:COD:C9	2.33	0.59
1:G:134:ARG:O	1:H:22:ASN:HB3	2.03	0.59
3:E:201:COD:HC16	3:E:201:COD:C9	2.32	0.58
1:A:51:GLY:O	1:A:54:VAL:HG22	2.04	0.58
1:A:53:SER:C	1:A:55:LEU:H	2.12	0.58
1:C:95:ILE:HD11	1:C:104:ILE:HD11	1.85	0.57
1:A:53:SER:C	1:A:55:LEU:N	2.64	0.55
1:F:1:MSE:HE2	1:F:176:TRP:CE3	2.42	0.54
3:B:201:COD:H301	3:B:201:COD:O35	2.09	0.53
1:H:11:THR:HG22	1:H:131:ILE:HD11	1.89	0.53
1:H:3:ILE:HD12	1:H:101:LEU:HD11	1.89	0.53
3:D:201:COD:O35	3:D:201:COD:H301	2.09	0.53
1:C:87:MSE:HE2	1:C:112:MSE:HE1	1.92	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:22:ASN:OD1	1:F:135:ASN:ND2	2.43	0.52
2:E:200:ADP:O2A	1:F:18:GLU:OE1	2.28	0.52
1:H:39:LEU:HD11	3:H:201:COD:O35	2.09	0.52
1:G:145:GLN:HB3	1:G:148:ILE:HD12	1.92	0.51
3:E:201:COD:C9	3:E:201:COD:C16	2.89	0.51
3:C:201:COD:O35	3:C:201:COD:C30	2.58	0.51
1:G:18:GLU:O	1:G:22:ASN:ND2	2.45	0.50
3:B:201:COD:O35	3:B:201:COD:C30	2.58	0.50
1:H:42:VAL:HG12	1:H:42:VAL:O	2.12	0.49
3:H:201:COD:HC9	3:H:201:COD:HC16	1.94	0.49
1:F:138:ALA:O	1:F:139:ASP:C	2.55	0.49
1:G:123:THR:HG21	1:G:150:PRO:HA	1.95	0.49
1:G:18:GLU:OE1	2:H:200:ADP:O2A	2.30	0.48
3:H:201:COD:O35	3:H:201:COD:H301	2.13	0.48
1:B:123:THR:HG21	1:B:150:PRO:HA	1.95	0.48
1:C:39:LEU:HD22	1:C:46:LEU:HD11	1.96	0.48
1:F:166:LYS:O	1:F:170:GLU:HG2	2.12	0.48
1:H:76:LEU:HD11	3:H:201:COD:N7	2.28	0.48
3:F:201:COD:C9	3:F:201:COD:C16	2.91	0.48
3:G:201:COD:C9	3:G:201:COD:C16	2.92	0.47
3:C:201:COD:C9	3:C:201:COD:C16	2.91	0.47
1:C:3:ILE:HD12	1:C:101:LEU:HD11	1.96	0.47
1:F:34:ILE:HG23	1:F:90:ARG:HG2	1.97	0.47
1:H:24:TYR:OH	1:H:169:GLU:HA	2.14	0.47
1:E:133:LYS:O	1:F:23:LYS:HE3	2.15	0.47
1:G:26:ALA:HB1	1:G:103:VAL:HG23	1.97	0.47
1:H:123:THR:HG21	1:H:150:PRO:HA	1.98	0.46
3:E:201:COD:HC9	3:E:201:COD:C16	2.37	0.46
2:G:200:ADP:O2A	1:H:18:GLU:OE1	2.34	0.46
1:E:108:LEU:HD11	3:E:201:COD:C6	2.46	0.46
1:B:67:GLY:HA2	1:B:140:ARG:HH22	1.80	0.46
1:F:61:ASN:OD1	1:F:61:ASN:C	2.59	0.46
1:A:26:ALA:HB1	1:A:103:VAL:HG23	1.98	0.45
3:B:201:COD:C9	3:B:201:COD:C16	2.94	0.45
1:D:123:THR:HG21	1:D:150:PRO:HA	1.99	0.45
1:G:141:ARG:O	1:G:145:GLN:HG3	2.16	0.45
1:H:138:ALA:O	1:H:139:ASP:C	2.59	0.44
1:A:123:THR:HG21	1:A:150:PRO:HA	2.00	0.44
3:F:201:COD:O35	3:F:201:COD:H301	2.18	0.44
3:F:201:COD:O35	3:F:201:COD:C30	2.65	0.44
1:E:22:ASN:HB3	1:F:134:ARG:O	2.17	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:108:LEU:HD11	3:F:201:COD:C6	2.47	0.44
1:G:51:GLY:O	1:G:54:VAL:HG22	2.18	0.43
1:E:13:LYS:NZ	5:E:202:HOH:O	2.48	0.43
1:H:158:ASN:HB2	5:H:206:HOH:O	2.17	0.43
1:D:69:VAL:HG11	1:D:79:LEU:HD22	2.00	0.43
1:C:172:MSE:HE3	1:C:176:TRP:CD1	2.53	0.43
1:E:87:MSE:HE2	1:E:112:MSE:HE1	2.01	0.43
1:D:141:ARG:O	1:D:145:GLN:HG3	2.19	0.43
1:A:55:LEU:HA	1:A:59:LYS:O	2.20	0.42
1:A:108:LEU:CD2	1:A:148:ILE:HD11	2.49	0.42
1:C:22:ASN:HD22	2:D:200:ADP:C3'	2.32	0.42
1:B:159:SER:OG	1:B:160:THR:N	2.52	0.42
1:E:26:ALA:HB1	1:E:103:VAL:HG23	2.02	0.42
1:H:145:GLN:HB3	1:H:148:ILE:HD12	2.02	0.42
1:D:40:GLU:OE1	1:D:43:LYS:HE2	2.20	0.41
1:A:14:SER:HA	1:A:105:GLU:OE2	2.21	0.41
3:C:201:COD:O35	3:C:201:COD:H301	2.21	0.41
3:D:201:COD:HC16	3:D:201:COD:C9	2.50	0.41
1:E:138:ALA:O	1:E:139:ASP:C	2.62	0.41
1:G:79:LEU:O	1:G:83:VAL:HG22	2.21	0.41
1:E:24:TYR:OH	1:E:169:GLU:HG3	2.21	0.40
1:G:81:LEU:HD23	1:G:81:LEU:HA	1.94	0.40
1:G:44:GLU:O	1:G:48:GLU:HG3	2.22	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	177/192 (92%)	169 (96%)	7 (4%)	1 (1%)	21 42
1	B	177/192 (92%)	173 (98%)	4 (2%)	0	100 100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	C	177/192 (92%)	170 (96%)	7 (4%)	0	100	100
1	D	177/192 (92%)	170 (96%)	6 (3%)	1 (1%)	21	42
1	E	177/192 (92%)	170 (96%)	7 (4%)	0	100	100
1	F	177/192 (92%)	171 (97%)	6 (3%)	0	100	100
1	G	177/192 (92%)	168 (95%)	9 (5%)	0	100	100
1	H	177/192 (92%)	172 (97%)	5 (3%)	0	100	100
All	All	1416/1536 (92%)	1363 (96%)	51 (4%)	2 (0%)	48	70

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	54	VAL
1	D	57	ASP

5.3.2 Protein sidechains ⓘ

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	142/166 (86%)	142 (100%)	0	100	100
1	B	143/166 (86%)	140 (98%)	3 (2%)	47	73
1	C	138/166 (83%)	137 (99%)	1 (1%)	76	89
1	D	144/166 (87%)	141 (98%)	3 (2%)	47	73
1	E	140/166 (84%)	135 (96%)	5 (4%)	31	58
1	F	146/166 (88%)	145 (99%)	1 (1%)	76	89
1	G	138/166 (83%)	138 (100%)	0	100	100
1	H	142/166 (86%)	138 (97%)	4 (3%)	38	66
All	All	1133/1328 (85%)	1116 (98%)	17 (2%)	57	80

All (17) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	72	SER
1	B	136	ARG
1	B	151	GLN
1	C	72	SER
1	D	86	LEU
1	D	136	ARG
1	D	151	GLN
1	E	18	GLU
1	E	45	LYS
1	E	72	SER
1	E	86	LEU
1	E	151	GLN
1	F	73	ARG
1	H	57	ASP
1	H	72	SER
1	H	86	LEU
1	H	146	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	22	ASN
1	B	92	GLN
1	C	22	ASN
1	C	120	HIS
1	D	61	ASN
1	E	92	GLN
1	E	120	HIS
1	H	116	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry

Of 20 ligands modelled in this entry, 4 are monoatomic - leaving 16 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	ADP	C	200	-	28,29,29	1.49	4 (14%)	43,45,45	1.68	7 (16%)
2	ADP	E	200	-	28,29,29	1.59	5 (17%)	43,45,45	1.58	8 (18%)
3	COD	G	201	-	43,46,46	1.21	4 (9%)	62,68,68	2.21	21 (33%)
2	ADP	B	200	-	28,29,29	1.34	3 (10%)	43,45,45	1.87	11 (25%)
3	COD	B	201	-	43,46,46	1.36	7 (16%)	62,68,68	2.45	23 (37%)
3	COD	D	201	-	43,46,46	1.30	3 (6%)	62,68,68	2.37	23 (37%)
3	COD	F	201	-	43,46,46	1.25	4 (9%)	62,68,68	2.40	22 (35%)
2	ADP	H	200	-	28,29,29	1.30	5 (17%)	43,45,45	1.91	12 (27%)
3	COD	A	201	-	43,46,46	1.46	6 (13%)	62,68,68	2.06	19 (30%)
2	ADP	F	200	-	28,29,29	1.46	4 (14%)	43,45,45	1.65	8 (18%)
3	COD	C	201	-	43,46,46	1.28	6 (13%)	62,68,68	2.37	25 (40%)
2	ADP	D	200	-	28,29,29	1.48	6 (21%)	43,45,45	1.70	10 (23%)
2	ADP	G	200	-	28,29,29	1.63	5 (17%)	43,45,45	1.60	5 (11%)
3	COD	E	201	-	43,46,46	1.50	5 (11%)	62,68,68	2.32	24 (38%)
2	ADP	A	200	-	28,29,29	1.45	5 (17%)	43,45,45	1.72	11 (25%)
3	COD	H	201	-	43,46,46	1.31	5 (11%)	62,68,68	2.30	19 (30%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	ADP	C	200	-	-	2/16/32/32	0/3/3/3
3	COD	G	201	-	2/2/10/12	17/43/59/59	0/3/3/3
2	ADP	E	200	-	-	3/16/32/32	0/3/3/3
2	ADP	B	200	-	-	3/16/32/32	0/3/3/3

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	COD	D	201	-	2/2/10/12	21/43/59/59	0/3/3/3
3	COD	B	201	-	2/2/10/12	16/43/59/59	0/3/3/3
3	COD	F	201	-	2/2/10/12	20/43/59/59	0/3/3/3
3	COD	C	201	-	2/2/10/12	17/43/59/59	0/3/3/3
3	COD	A	201	-	2/2/10/12	17/43/59/59	0/3/3/3
2	ADP	F	200	-	-	3/16/32/32	0/3/3/3
2	ADP	H	200	-	-	3/16/32/32	0/3/3/3
2	ADP	D	200	-	-	2/16/32/32	0/3/3/3
2	ADP	G	200	-	-	3/16/32/32	0/3/3/3
3	COD	E	201	-	2/2/10/12	19/43/59/59	0/3/3/3
2	ADP	A	200	-	-	3/16/32/32	0/3/3/3
3	COD	H	201	-	2/2/10/12	20/43/59/59	0/3/3/3

All (77) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	G	200	ADP	PA-O3A	4.71	1.64	1.59
2	E	200	ADP	C5-C4	4.69	1.47	1.39
2	C	200	ADP	C5-C4	4.68	1.47	1.39
3	E	201	COD	P24-O23	4.66	1.64	1.59
2	A	200	ADP	C5-C4	4.58	1.47	1.39
3	D	201	COD	C5-C4	4.53	1.47	1.39
2	F	200	ADP	C5-C4	4.49	1.47	1.39
3	B	201	COD	C5-C4	4.49	1.47	1.39
3	F	201	COD	C5-C4	4.33	1.46	1.39
3	G	201	COD	C5-C4	4.29	1.46	1.39
3	C	201	COD	C5-C4	4.29	1.46	1.39
2	G	200	ADP	C5-C4	4.28	1.46	1.39
3	H	201	COD	C5-C4	4.25	1.46	1.39
2	D	200	ADP	C4-N9	-4.17	1.29	1.37
3	E	201	COD	P20-O23	4.04	1.63	1.59
3	A	201	COD	C5-C4	4.02	1.46	1.39
3	E	201	COD	C5-C4	3.91	1.46	1.39
3	D	201	COD	C5-N8	-3.86	1.32	1.39
2	E	200	ADP	PA-O3A	3.86	1.63	1.59
2	B	200	ADP	C5-C4	3.81	1.45	1.39
3	A	201	COD	C5-N8	-3.72	1.32	1.39
3	E	201	COD	C5-N8	-3.67	1.32	1.39
2	H	200	ADP	C5-C4	3.63	1.45	1.39
3	A	201	COD	P20-O23	3.53	1.63	1.59

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	D	200	ADP	C5-C4	3.42	1.45	1.39
2	C	200	ADP	C8-N7	3.42	1.38	1.31
2	G	200	ADP	C4-N9	-3.41	1.30	1.37
2	E	200	ADP	C4-N9	-3.38	1.30	1.37
3	F	201	COD	C5-N8	-3.29	1.33	1.39
3	H	201	COD	C5-N8	-3.27	1.33	1.39
2	F	200	ADP	C4-N9	-3.22	1.31	1.37
3	C	201	COD	C5-N8	-3.09	1.33	1.39
2	H	200	ADP	C5-N7	-3.06	1.33	1.39
2	C	200	ADP	PA-O3A	2.97	1.62	1.59
2	A	200	ADP	C4-N9	-2.93	1.31	1.37
2	B	200	ADP	C4-N9	-2.92	1.31	1.37
3	H	201	COD	P24-O23	2.90	1.62	1.59
3	H	201	COD	C4-N10	-2.86	1.31	1.37
3	G	201	COD	C5-N8	-2.85	1.33	1.39
3	A	201	COD	C37-N36	-2.81	1.39	1.46
2	D	200	ADP	C5-N7	-2.77	1.34	1.39
3	C	201	COD	C4-N10	-2.76	1.32	1.37
3	B	201	COD	C5-N8	-2.74	1.34	1.39
3	B	201	COD	C4-N10	-2.70	1.32	1.37
2	A	200	ADP	C5-N7	-2.69	1.34	1.39
2	E	200	ADP	C5-N7	-2.68	1.34	1.39
3	A	201	COD	P24-O23	2.67	1.62	1.59
2	F	200	ADP	C5-N7	-2.64	1.34	1.39
2	B	200	ADP	C8-N7	2.62	1.36	1.31
2	G	200	ADP	C5-N7	-2.61	1.34	1.39
3	B	201	COD	P20-O23	2.61	1.62	1.59
3	B	201	COD	P24-O23	2.54	1.62	1.59
3	F	201	COD	C4-N10	-2.42	1.32	1.37
2	F	200	ADP	C8-N7	2.40	1.36	1.31
3	A	201	COD	C4-N10	-2.37	1.32	1.37
3	G	201	COD	C4-N10	-2.37	1.32	1.37
2	A	200	ADP	C8-N7	2.33	1.36	1.31
2	C	200	ADP	C4-N9	-2.32	1.32	1.37
2	D	200	ADP	C8-N9	-2.31	1.33	1.37
3	B	201	COD	C37-N36	-2.31	1.41	1.46
2	H	200	ADP	C4-N9	-2.31	1.32	1.37
2	G	200	ADP	C5-C6	2.27	1.47	1.41
3	E	201	COD	C4-N10	-2.25	1.33	1.37
3	C	201	COD	P24-O23	2.23	1.61	1.59
2	E	200	ADP	C8-N7	2.22	1.36	1.31
3	C	201	COD	C37-N36	-2.16	1.41	1.46

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	D	201	COD	C4-N10	-2.15	1.33	1.37
3	F	201	COD	C9-N8	2.14	1.35	1.31
2	H	200	ADP	C8-N9	-2.13	1.33	1.37
2	D	200	ADP	PA-O3A	2.10	1.61	1.59
2	D	200	ADP	C8-N7	2.10	1.35	1.31
2	H	200	ADP	C8-N7	2.07	1.35	1.31
3	G	201	COD	C5-C6	2.05	1.46	1.41
3	C	201	COD	C9-N8	2.05	1.35	1.31
3	B	201	COD	O17-C16	-2.04	1.40	1.45
3	H	201	COD	C9-N8	2.03	1.35	1.31
2	A	200	ADP	PA-O3A	2.01	1.61	1.59

All (248) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	201	COD	C38-C37-N36	-6.13	98.95	112.00
3	D	201	COD	C5-C4-N3	-5.88	118.62	126.72
3	B	201	COD	O19-C18-C16	-5.83	89.14	108.99
3	E	201	COD	C5-C4-N3	-5.78	118.75	126.72
3	B	201	COD	O35-C34-N36	-5.55	111.25	122.98
2	H	200	ADP	C5-C4-N3	-5.54	119.08	126.72
3	H	201	COD	C5-C4-N3	-5.51	119.13	126.72
3	C	201	COD	C5-C4-N3	-5.45	119.21	126.72
3	F	201	COD	O19-C18-C16	-5.44	90.46	108.99
3	G	201	COD	C37-C38-C39	-5.43	103.35	112.39
3	H	201	COD	O35-C34-N36	-5.42	111.51	122.98
3	F	201	COD	C30-C29-C32	5.37	117.92	108.77
3	D	201	COD	O19-C18-C16	-5.35	90.79	108.99
3	D	201	COD	N3-C4-N10	5.34	136.26	127.17
2	B	200	ADP	N3-C2-N1	-5.25	120.64	128.58
3	F	201	COD	C5-C4-N3	-5.21	119.54	126.72
3	C	201	COD	O19-C18-C16	-5.20	91.27	108.99
3	B	201	COD	C37-C38-C39	-5.19	103.75	112.39
3	C	201	COD	C38-C37-N36	-5.18	100.98	112.00
3	E	201	COD	N3-C4-N10	5.17	135.96	127.17
2	C	200	ADP	C5-C4-N3	-5.14	119.64	126.72
3	D	201	COD	C37-C38-C39	-5.13	103.85	112.39
3	A	201	COD	C5-C4-N3	-5.11	119.68	126.72
3	C	201	COD	C30-C29-C32	5.08	117.43	108.77
3	E	201	COD	C12-C11-N10	-4.99	100.91	113.30
3	D	201	COD	C38-C37-N36	-4.97	101.43	112.00
3	H	201	COD	C38-C37-N36	-4.96	101.44	112.00

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	G	201	COD	C5-C4-N3	-4.89	119.98	126.72
2	F	200	ADP	C5-C4-N3	-4.88	120.00	126.72
3	B	201	COD	C37-N36-C34	4.81	131.19	122.55
2	G	200	ADP	C5-C4-N3	-4.74	120.19	126.72
3	F	201	COD	O35-C34-N36	-4.73	112.98	122.98
3	G	201	COD	C30-C29-C32	4.71	116.79	108.77
3	H	201	COD	C37-C38-C39	-4.66	104.64	112.39
3	E	201	COD	C38-C37-N36	-4.58	102.25	112.00
3	F	201	COD	C32-C34-N36	4.57	125.16	116.48
3	B	201	COD	C5-C4-N3	-4.56	120.44	126.72
3	E	201	COD	O35-C34-N36	-4.51	113.44	122.98
3	G	201	COD	O35-C34-N36	-4.45	113.57	122.98
3	H	201	COD	C30-C29-C32	4.41	116.28	108.77
3	E	201	COD	O17-C11-N10	4.40	116.53	108.09
2	H	200	ADP	N3-C4-N9	4.39	134.63	127.17
2	A	200	ADP	C5-C4-N3	-4.38	120.68	126.72
3	H	201	COD	O17-C11-N10	4.34	116.43	108.09
3	F	201	COD	N3-C2-N1	-4.34	122.01	128.58
3	C	201	COD	C12-C11-N10	-4.34	102.53	113.30
2	F	200	ADP	N3-C4-N9	4.29	134.46	127.17
2	H	200	ADP	N3-C2-N1	-4.28	122.10	128.58
3	A	201	COD	C38-C37-N36	-4.28	102.90	112.00
2	F	200	ADP	N3-C2-N1	-4.28	122.11	128.58
2	E	200	ADP	N3-C2-N1	-4.21	122.21	128.58
3	F	201	COD	C38-C37-N36	-4.20	103.06	112.00
3	B	201	COD	C32-C34-N36	4.20	124.45	116.48
3	D	201	COD	C30-C29-C32	4.19	115.92	108.77
2	A	200	ADP	N3-C4-N9	4.18	134.28	127.17
3	H	201	COD	N3-C4-N10	4.14	134.22	127.17
3	A	201	COD	N3-C4-N10	4.14	134.21	127.17
3	C	201	COD	N3-C4-N10	4.13	134.19	127.17
3	B	201	COD	N3-C2-N1	-4.12	122.34	128.58
3	C	201	COD	C16-O17-C11	-4.09	100.43	109.47
2	G	200	ADP	N3-C4-N9	4.09	134.12	127.17
3	A	201	COD	C30-C29-C32	4.07	115.71	108.77
2	D	200	ADP	N3-C2-N1	-4.06	122.44	128.58
3	F	201	COD	C37-N36-C34	4.03	129.78	122.55
3	H	201	COD	C32-C34-N36	4.03	124.12	116.48
3	H	201	COD	C37-N36-C34	4.00	129.73	122.55
3	A	201	COD	N3-C2-N1	-3.98	122.56	128.58
3	F	201	COD	N3-C4-N10	3.96	133.91	127.17
3	G	201	COD	N3-C4-N10	3.96	133.90	127.17

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	200	ADP	C2-N3-C4	3.94	121.45	111.83
2	B	200	ADP	N3-C4-N9	3.93	133.86	127.17
2	C	200	ADP	N3-C4-N9	3.93	133.84	127.17
2	B	200	ADP	C4-N9-C8	3.92	109.86	105.74
3	E	201	COD	N3-C2-N1	-3.88	122.71	128.58
3	G	201	COD	N3-C2-N1	-3.87	122.72	128.58
3	G	201	COD	C37-N36-C34	3.87	129.50	122.55
3	E	201	COD	C30-C29-C32	3.87	115.36	108.77
3	C	201	COD	O35-C34-N36	-3.86	114.82	122.98
2	B	200	ADP	C5-C4-N3	-3.86	121.41	126.72
2	B	200	ADP	C2-N3-C4	3.86	121.25	111.83
3	F	201	COD	C2-N3-C4	3.83	121.17	111.83
3	G	201	COD	C32-C34-N36	3.82	123.72	116.48
2	A	200	ADP	N3-C2-N1	-3.78	122.86	128.58
3	D	201	COD	N3-C2-N1	-3.77	122.88	128.58
2	D	200	ADP	C4-N9-C8	3.74	109.67	105.74
3	H	201	COD	C2-N3-C4	3.73	120.93	111.83
2	C	200	ADP	N3-C2-N1	-3.72	122.95	128.58
3	B	201	COD	N3-C4-N10	3.71	133.47	127.17
3	E	201	COD	O19-C18-C16	-3.65	96.58	108.99
3	B	201	COD	O40-C39-C38	-3.63	115.44	122.02
3	G	201	COD	C12-C11-N10	-3.62	104.30	113.30
2	F	200	ADP	C2-N3-C4	3.62	120.67	111.83
3	C	201	COD	N3-C2-N1	-3.56	123.20	128.58
3	F	201	COD	C12-C11-N10	-3.55	104.48	113.30
3	D	201	COD	C2-N3-C4	3.55	120.50	111.83
3	C	201	COD	C2-N3-C4	3.53	120.46	111.83
3	A	201	COD	C2-N3-C4	3.52	120.43	111.83
3	A	201	COD	C12-C11-N10	-3.52	104.57	113.30
3	C	201	COD	O17-C11-N10	3.51	114.83	108.09
3	E	201	COD	C2-N3-C4	3.50	120.39	111.83
3	G	201	COD	C2-N3-C4	3.48	120.33	111.83
3	F	201	COD	O17-C11-N10	3.47	114.75	108.09
3	A	201	COD	O15-C14-C16	3.45	120.98	111.08
2	C	200	ADP	C2-N3-C4	3.44	120.24	111.83
3	A	201	COD	O19-C18-C16	-3.40	97.42	108.99
3	H	201	COD	N3-C2-N1	-3.40	123.44	128.58
3	H	201	COD	C12-C11-N10	-3.39	104.87	113.30
3	B	201	COD	C2-N3-C4	3.39	120.10	111.83
3	B	201	COD	C30-C29-C32	3.38	114.53	108.77
2	E	200	ADP	C5-C4-N3	-3.37	122.08	126.72
3	F	201	COD	O17-C16-C18	3.33	120.00	109.33

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	G	200	ADP	C2-N3-C4	3.32	119.93	111.83
3	D	201	COD	O21-P20-O23	3.31	116.23	107.27
3	E	201	COD	C37-C38-C39	-3.29	106.92	112.39
2	G	200	ADP	N3-C2-N1	-3.28	123.62	128.58
3	E	201	COD	C16-O17-C11	-3.22	102.36	109.47
3	F	201	COD	C16-O17-C11	-3.21	102.37	109.47
3	D	201	COD	O17-C11-N10	3.21	114.25	108.09
3	F	201	COD	O23-P24-O26	-3.20	101.07	110.70
3	D	201	COD	O40-C39-N41	3.20	129.31	123.03
3	E	201	COD	N7-C6-N1	3.19	125.49	118.38
3	B	201	COD	C12-C11-N10	-3.19	105.39	113.30
3	C	201	COD	C37-N36-C34	3.18	128.26	122.55
3	D	201	COD	O17-C16-C14	3.18	111.46	105.15
3	C	201	COD	C37-C38-C39	-3.12	107.19	112.39
2	D	200	ADP	C5-C4-N3	-3.12	122.42	126.72
2	E	200	ADP	N3-C4-N9	3.12	132.47	127.17
2	A	200	ADP	O5'-PA-O1A	-3.11	96.61	108.94
2	E	200	ADP	C4-N9-C8	3.06	108.95	105.74
2	H	200	ADP	C4-C5-N7	-3.06	107.08	110.58
2	D	200	ADP	C2-N1-C6	3.06	123.75	118.73
3	D	201	COD	C31-C29-C32	-3.05	103.58	108.77
3	B	201	COD	C16-O17-C11	-3.00	102.84	109.47
3	H	201	COD	C31-C29-C32	-3.00	103.66	108.77
3	G	201	COD	O17-C11-N10	3.00	113.85	108.09
2	A	200	ADP	C2-N3-C4	2.99	119.14	111.83
3	A	201	COD	C37-C38-C39	-2.99	107.42	112.39
2	D	200	ADP	C4-N9-C1'	-2.95	119.74	126.63
2	E	200	ADP	C2-N1-C6	2.94	123.56	118.73
3	D	201	COD	C5-C6-N7	-2.93	116.02	123.29
2	G	200	ADP	C4-N9-C8	2.91	108.80	105.74
2	D	200	ADP	C2-N3-C4	2.91	118.94	111.83
3	A	201	COD	C16-O17-C11	-2.90	103.07	109.47
3	D	201	COD	O35-C34-N36	-2.89	116.86	122.98
3	C	201	COD	C4-C5-N8	-2.86	107.31	110.58
3	G	201	COD	C38-C37-N36	-2.85	105.92	112.00
2	E	200	ADP	C2-N3-C4	2.84	118.77	111.83
3	B	201	COD	C2-N1-C6	2.83	123.38	118.73
3	D	201	COD	N7-C6-N1	2.82	124.67	118.38
3	F	201	COD	C2-N1-C6	2.80	123.33	118.73
3	G	201	COD	O17-C11-C12	-2.79	100.65	106.62
3	E	201	COD	C37-N36-C34	2.78	127.55	122.55
2	B	200	ADP	C6-C5-C4	-2.78	113.38	117.18

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	201	COD	O15-C14-C12	2.74	120.59	111.82
3	H	201	COD	O27-C28-C29	2.73	114.93	110.55
2	B	200	ADP	C2-N1-C6	2.72	123.20	118.73
3	C	201	COD	O23-P24-O26	-2.71	102.55	110.70
3	C	201	COD	O25-P24-O26	2.71	125.05	112.44
3	H	201	COD	O19-C18-C16	-2.71	99.77	108.99
2	H	200	ADP	C4-N9-C8	2.69	108.56	105.74
3	G	201	COD	O21-P20-O23	2.68	114.53	107.27
3	C	201	COD	O21-P20-O22	2.65	124.77	112.44
2	F	200	ADP	C4-N9-C8	2.63	108.50	105.74
2	C	200	ADP	C4-N9-C8	2.62	108.49	105.74
3	F	201	COD	N7-C6-N1	2.62	124.21	118.38
2	D	200	ADP	C6-C5-N7	2.62	137.13	132.09
3	B	201	COD	O17-C11-N10	2.59	113.07	108.09
2	A	200	ADP	C4-N9-C8	2.59	108.46	105.74
3	A	201	COD	O35-C34-N36	-2.58	117.53	122.98
3	A	201	COD	N7-C6-N1	2.57	124.11	118.38
3	D	201	COD	C32-C34-N36	2.56	121.34	116.48
3	G	201	COD	C2-N1-C6	2.56	122.93	118.73
2	D	200	ADP	C4-C5-N7	-2.56	107.66	110.58
2	A	200	ADP	C2-N1-C6	2.54	122.91	118.73
2	A	200	ADP	O2A-PA-O1A	2.54	124.24	112.44
3	A	201	COD	C4-C5-N8	-2.51	107.72	110.58
3	E	201	COD	O17-C16-C18	2.50	117.35	109.33
2	B	200	ADP	C6-C5-N7	2.49	136.90	132.09
2	D	200	ADP	N3-C4-N9	2.49	131.41	127.17
3	E	201	COD	C2-N1-C6	2.49	122.82	118.73
3	G	201	COD	C4-C5-N8	-2.48	107.75	110.58
3	F	201	COD	C37-C38-C39	-2.46	108.29	112.39
3	C	201	COD	C4-N10-C11	-2.45	120.90	126.63
3	D	201	COD	C16-O17-C11	-2.45	104.06	109.47
3	C	201	COD	O17-C16-C14	2.45	110.01	105.15
3	B	201	COD	C4-N10-C11	-2.44	120.92	126.63
3	H	201	COD	O21-P20-O23	-2.44	100.68	107.27
3	D	201	COD	C37-N36-C34	2.44	126.93	122.55
3	D	201	COD	C38-C39-N41	-2.42	111.93	116.34
3	A	201	COD	O17-C16-C14	2.41	109.93	105.15
3	A	201	COD	C2-N1-C6	2.40	122.67	118.73
3	F	201	COD	C31-C29-C32	-2.39	104.69	108.77
2	H	200	ADP	C5-N7-C8	2.39	107.20	103.45
3	B	201	COD	O40-C39-N41	2.38	127.70	123.03
3	A	201	COD	C5-N8-C9	2.36	107.17	103.45

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	C	201	COD	C31-C29-C32	-2.34	104.77	108.77
3	B	201	COD	C31-C29-C32	-2.34	104.78	108.77
3	A	201	COD	O17-C11-N10	2.34	112.58	108.09
3	B	201	COD	O17-C16-C18	2.33	116.80	109.33
2	F	200	ADP	C2-N1-C6	2.33	122.55	118.73
3	E	201	COD	C5-N8-C9	2.32	107.09	103.45
2	C	200	ADP	C4-C5-N7	-2.32	107.94	110.58
3	F	201	COD	O27-C28-C29	2.28	114.22	110.55
2	B	200	ADP	O2B-PB-O1B	2.26	119.66	110.83
3	H	201	COD	C42-N41-C39	-2.26	118.61	122.82
3	G	201	COD	C14-C12-C11	2.25	105.73	101.46
3	F	201	COD	O21-P20-O22	2.25	122.90	112.44
3	C	201	COD	N7-C6-N1	2.25	123.38	118.38
2	A	200	ADP	O3B-PB-O2B	2.24	116.20	107.80
3	E	201	COD	C4-N10-C9	2.24	108.09	105.74
2	H	200	ADP	C2'-C3'-C4'	2.24	106.93	102.61
3	C	201	COD	C2-N1-C6	2.23	122.40	118.73
2	H	200	ADP	C6-C5-N7	2.22	136.38	132.09
3	B	201	COD	O17-C16-C14	2.22	109.56	105.15
3	G	201	COD	C31-C29-C32	-2.22	104.99	108.77
2	B	200	ADP	C4-N9-C1'	-2.20	121.48	126.63
3	E	201	COD	O35-C34-C32	2.20	127.03	120.89
2	E	200	ADP	C4-N9-C1'	-2.19	121.50	126.63
3	E	201	COD	C5-C6-N7	-2.19	117.87	123.29
2	F	200	ADP	N6-C6-N1	2.18	123.23	118.38
2	C	200	ADP	O3B-PB-O2B	2.17	115.95	107.80
3	D	201	COD	C18-C16-C14	2.17	123.02	115.21
3	E	201	COD	C4-C5-N8	-2.16	108.11	110.58
3	E	201	COD	C31-C29-C30	-2.16	104.89	109.20
2	H	200	ADP	N9-C8-N7	-2.16	110.87	113.94
3	D	201	COD	C14-C12-C11	2.15	105.53	101.46
3	B	201	COD	O27-C28-C29	2.15	114.00	110.55
2	D	200	ADP	N9-C8-N7	-2.14	110.91	113.94
2	A	200	ADP	N6-C6-N1	2.14	123.13	118.38
3	C	201	COD	C5-N8-C9	2.13	106.80	103.45
3	E	201	COD	C43-C42-N41	-2.12	107.49	112.31
2	B	200	ADP	C5-C6-N6	-2.12	118.05	123.29
2	H	200	ADP	C2-N1-C6	2.11	122.20	118.73
3	H	201	COD	C4-C5-N8	-2.11	108.17	110.58
3	C	201	COD	C4-N10-C9	2.10	107.95	105.74
3	H	201	COD	C5-C6-N7	-2.10	118.08	123.29
3	F	201	COD	O19-P20-O22	-2.09	100.64	108.94

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	200	ADP	O2A-PA-O1A	2.09	122.15	112.44
2	F	200	ADP	C5-C6-N6	-2.07	118.15	123.29
3	G	201	COD	N7-C6-N1	2.06	122.97	118.38
3	G	201	COD	O23-P24-O26	-2.06	104.52	110.70
2	E	200	ADP	C6-C5-N7	2.05	136.05	132.09
3	A	201	COD	C5-C6-N7	-2.05	118.20	123.29
3	E	201	COD	O40-C39-N41	2.05	127.05	123.03
2	A	200	ADP	C2'-C3'-C4'	2.03	106.53	102.61
3	C	201	COD	C32-C34-N36	2.02	120.32	116.48
3	B	201	COD	N7-C6-N1	2.00	122.84	118.38
3	G	201	COD	O13-C12-C14	-2.00	105.40	111.82

All (16) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
3	A	201	COD	C32
3	A	201	COD	C16
3	B	201	COD	C32
3	B	201	COD	C16
3	C	201	COD	C32
3	C	201	COD	C16
3	D	201	COD	C32
3	D	201	COD	C16
3	E	201	COD	C32
3	E	201	COD	C16
3	F	201	COD	C32
3	F	201	COD	C16
3	G	201	COD	C32
3	G	201	COD	C16
3	H	201	COD	C32
3	H	201	COD	C16

All (169) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	200	ADP	PA-O3A-PB-O2B
2	A	200	ADP	PA-O3A-PB-O3B
2	B	200	ADP	PA-O3A-PB-O2B
2	C	200	ADP	PA-O3A-PB-O2B
2	E	200	ADP	PA-O3A-PB-O2B
2	F	200	ADP	PA-O3A-PB-O2B
2	G	200	ADP	PA-O3A-PB-O2B

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
2	H	200	ADP	PA-O3A-PB-O2B
2	H	200	ADP	PA-O3A-PB-O3B
3	A	201	COD	C18-O19-P20-O21
3	A	201	COD	P20-O23-P24-O27
3	A	201	COD	C28-C29-C32-O33
3	A	201	COD	C28-C29-C32-C34
3	A	201	COD	C30-C29-C32-O33
3	A	201	COD	C30-C29-C32-C34
3	A	201	COD	C31-C29-C32-O33
3	A	201	COD	C31-C29-C32-C34
3	A	201	COD	C32-C34-N36-C37
3	A	201	COD	O35-C34-N36-C37
3	B	201	COD	C28-C29-C32-O33
3	B	201	COD	C28-C29-C32-C34
3	B	201	COD	C30-C29-C32-O33
3	B	201	COD	C30-C29-C32-C34
3	B	201	COD	C31-C29-C32-O33
3	B	201	COD	C31-C29-C32-C34
3	B	201	COD	C32-C34-N36-C37
3	B	201	COD	N36-C37-C38-C39
3	C	201	COD	C28-C29-C32-O33
3	C	201	COD	C28-C29-C32-C34
3	C	201	COD	C30-C29-C32-O33
3	C	201	COD	C30-C29-C32-C34
3	C	201	COD	C31-C29-C32-O33
3	C	201	COD	C31-C29-C32-C34
3	C	201	COD	C32-C34-N36-C37
3	C	201	COD	N36-C37-C38-C39
3	D	201	COD	C18-O19-P20-O21
3	D	201	COD	C18-O19-P20-O22
3	D	201	COD	C18-O19-P20-O23
3	D	201	COD	C28-C29-C32-O33
3	D	201	COD	C28-C29-C32-C34
3	D	201	COD	C30-C29-C32-O33
3	D	201	COD	C30-C29-C32-C34
3	D	201	COD	C31-C29-C32-O33
3	D	201	COD	C31-C29-C32-C34
3	D	201	COD	C32-C34-N36-C37
3	D	201	COD	N36-C37-C38-C39
3	E	201	COD	C28-C29-C32-O33
3	E	201	COD	C28-C29-C32-C34
3	E	201	COD	C30-C29-C32-O33

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
3	E	201	COD	C30-C29-C32-C34
3	E	201	COD	C31-C29-C32-O33
3	E	201	COD	C31-C29-C32-C34
3	E	201	COD	C32-C34-N36-C37
3	E	201	COD	O35-C34-N36-C37
3	F	201	COD	O27-C28-C29-C32
3	F	201	COD	C28-C29-C32-O33
3	F	201	COD	C28-C29-C32-C34
3	F	201	COD	C30-C29-C32-O33
3	F	201	COD	C30-C29-C32-C34
3	F	201	COD	C31-C29-C32-O33
3	F	201	COD	C31-C29-C32-C34
3	F	201	COD	C32-C34-N36-C37
3	F	201	COD	N36-C37-C38-C39
3	G	201	COD	C28-C29-C32-O33
3	G	201	COD	C28-C29-C32-C34
3	G	201	COD	C30-C29-C32-O33
3	G	201	COD	C30-C29-C32-C34
3	G	201	COD	C31-C29-C32-O33
3	G	201	COD	C31-C29-C32-C34
3	G	201	COD	O33-C32-C34-O35
3	G	201	COD	C32-C34-N36-C37
3	G	201	COD	N36-C37-C38-C39
3	H	201	COD	C28-O27-P24-O26
3	H	201	COD	O27-C28-C29-C30
3	H	201	COD	O27-C28-C29-C31
3	H	201	COD	O27-C28-C29-C32
3	H	201	COD	C28-C29-C32-O33
3	H	201	COD	C30-C29-C32-O33
3	H	201	COD	C30-C29-C32-C34
3	H	201	COD	C32-C34-N36-C37
3	H	201	COD	N36-C37-C38-C39
3	B	201	COD	O35-C34-N36-C37
3	C	201	COD	O35-C34-N36-C37
3	D	201	COD	O35-C34-N36-C37
3	H	201	COD	O35-C34-N36-C37
3	C	201	COD	O17-C16-C18-O19
3	D	201	COD	C14-C16-C18-O19
3	H	201	COD	C14-C16-C18-O19
3	F	201	COD	O35-C34-N36-C37
3	G	201	COD	O35-C34-N36-C37
3	B	201	COD	O17-C16-C18-O19

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
3	F	201	COD	O17-C16-C18-O19
3	C	201	COD	C14-C16-C18-O19
3	A	201	COD	O17-C16-C18-O19
3	B	201	COD	C14-C16-C18-O19
3	E	201	COD	O17-C16-C18-O19
3	A	201	COD	O33-C32-C34-O35
3	C	201	COD	O33-C32-C34-O35
3	D	201	COD	O33-C32-C34-O35
3	F	201	COD	O33-C32-C34-O35
3	H	201	COD	O33-C32-C34-O35
3	F	201	COD	C14-C16-C18-O19
3	H	201	COD	C31-C29-C32-O33
3	F	201	COD	C29-C32-C34-O35
3	B	201	COD	C29-C32-C34-N36
3	C	201	COD	C29-C32-C34-N36
3	E	201	COD	C29-C32-C34-N36
3	F	201	COD	C29-C32-C34-N36
3	A	201	COD	O33-C32-C34-N36
3	D	201	COD	O33-C32-C34-N36
3	G	201	COD	O33-C32-C34-N36
3	H	201	COD	C16-C18-O19-P20
3	E	201	COD	N36-C37-C38-C39
2	D	200	ADP	PA-O3A-PB-O2B
2	D	200	ADP	PA-O3A-PB-O3B
2	F	200	ADP	PA-O3A-PB-O3B
3	B	201	COD	O33-C32-C34-O35
3	E	201	COD	O33-C32-C34-O35
3	D	201	COD	O27-C28-C29-C30
3	F	201	COD	O27-C28-C29-C30
3	H	201	COD	C28-C29-C32-C34
3	A	201	COD	C16-C18-O19-P20
3	A	201	COD	C18-O19-P20-O23
3	B	201	COD	C18-O19-P20-O22
3	E	201	COD	C18-O19-P20-O21
3	E	201	COD	C18-O19-P20-O22
3	E	201	COD	C18-O19-P20-O23
3	H	201	COD	C18-O19-P20-O22
3	G	201	COD	C16-C18-O19-P20
3	A	201	COD	N36-C37-C38-C39
3	D	201	COD	C29-C32-C34-O35
3	G	201	COD	C29-C32-C34-O35
3	H	201	COD	C29-C32-C34-O35

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
3	D	201	COD	O17-C16-C18-O19
3	A	201	COD	C29-C32-C34-N36
3	D	201	COD	C29-C32-C34-N36
3	G	201	COD	C29-C32-C34-N36
3	H	201	COD	C29-C32-C34-N36
3	B	201	COD	O33-C32-C34-N36
3	F	201	COD	C37-C38-C39-O40
3	C	201	COD	C37-C38-C39-O40
3	C	201	COD	C37-C38-C39-N41
3	F	201	COD	C37-C38-C39-N41
2	A	200	ADP	PA-O3A-PB-O1B
2	E	200	ADP	PA-O3A-PB-O1B
2	F	200	ADP	PA-O3A-PB-O1B
2	B	200	ADP	PA-O3A-PB-O3B
2	C	200	ADP	PA-O3A-PB-O3B
2	E	200	ADP	PA-O3A-PB-O3B
2	G	200	ADP	PA-O3A-PB-O3B
3	G	201	COD	C37-C38-C39-N41
3	H	201	COD	C31-C29-C32-C34
3	G	201	COD	C37-C38-C39-O40
3	B	201	COD	C29-C32-C34-O35
3	C	201	COD	C29-C32-C34-O35
3	E	201	COD	C29-C32-C34-O35
2	B	200	ADP	PA-O3A-PB-O1B
2	G	200	ADP	PA-O3A-PB-O1B
2	H	200	ADP	PA-O3A-PB-O1B
3	D	201	COD	O27-C28-C29-C31
3	E	201	COD	O27-C28-C29-C31
3	F	201	COD	O27-C28-C29-C31
3	G	201	COD	O27-C28-C29-C31
3	E	201	COD	C16-C18-O19-P20
3	C	201	COD	O33-C32-C34-N36
3	E	201	COD	O33-C32-C34-N36
3	F	201	COD	O33-C32-C34-N36
3	H	201	COD	O33-C32-C34-N36
3	D	201	COD	O27-C28-C29-C32

There are no ring outliers.

12 monomers are involved in 40 short contacts:

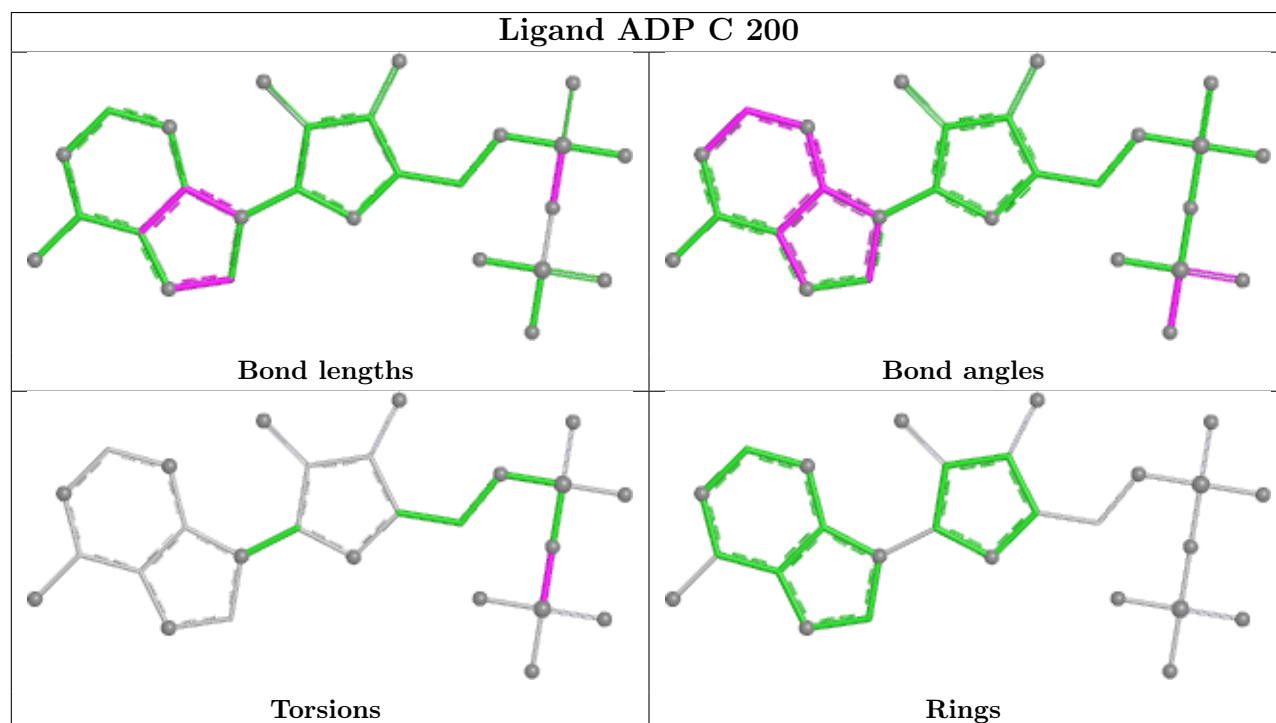
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	E	200	ADP	1	0

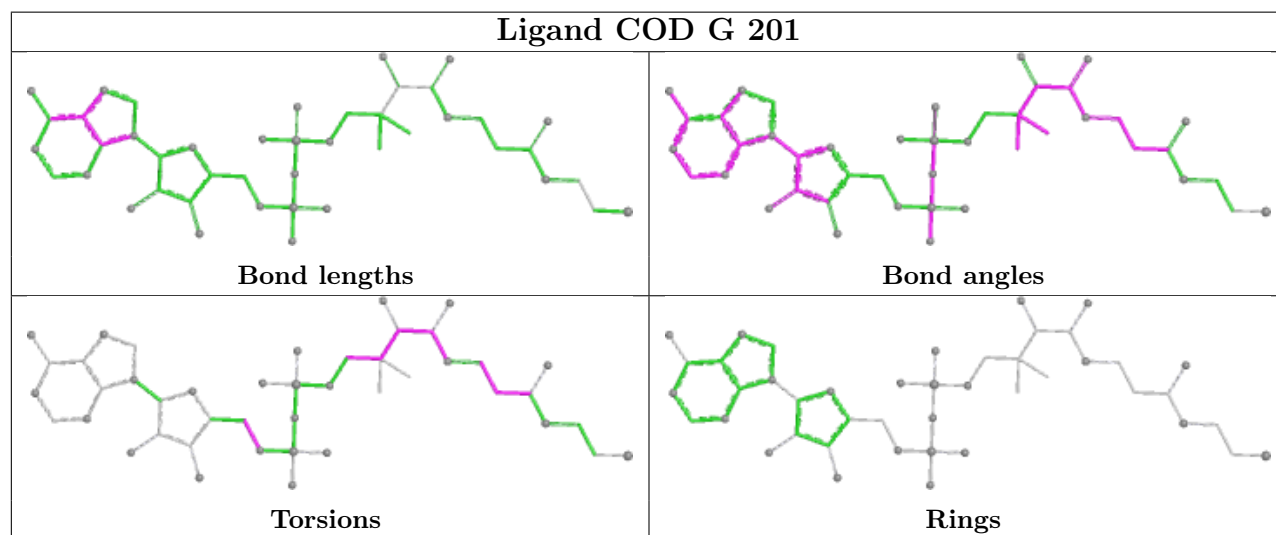
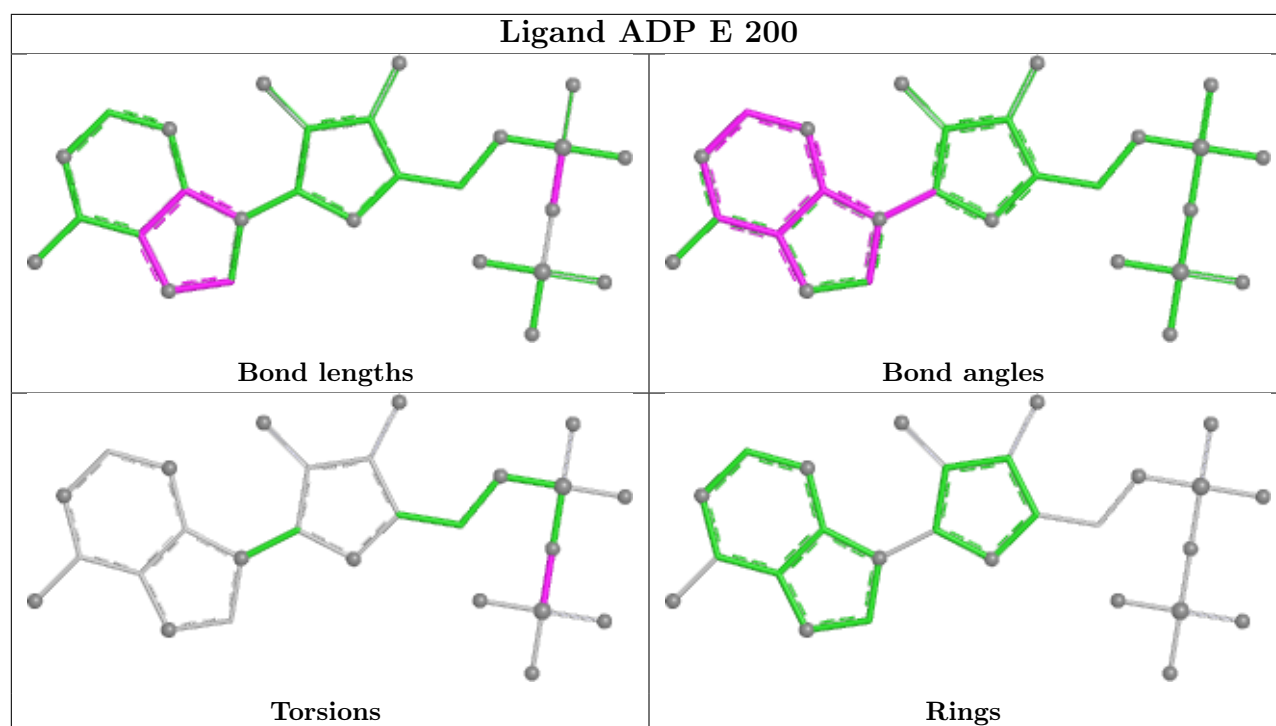
Continued on next page...

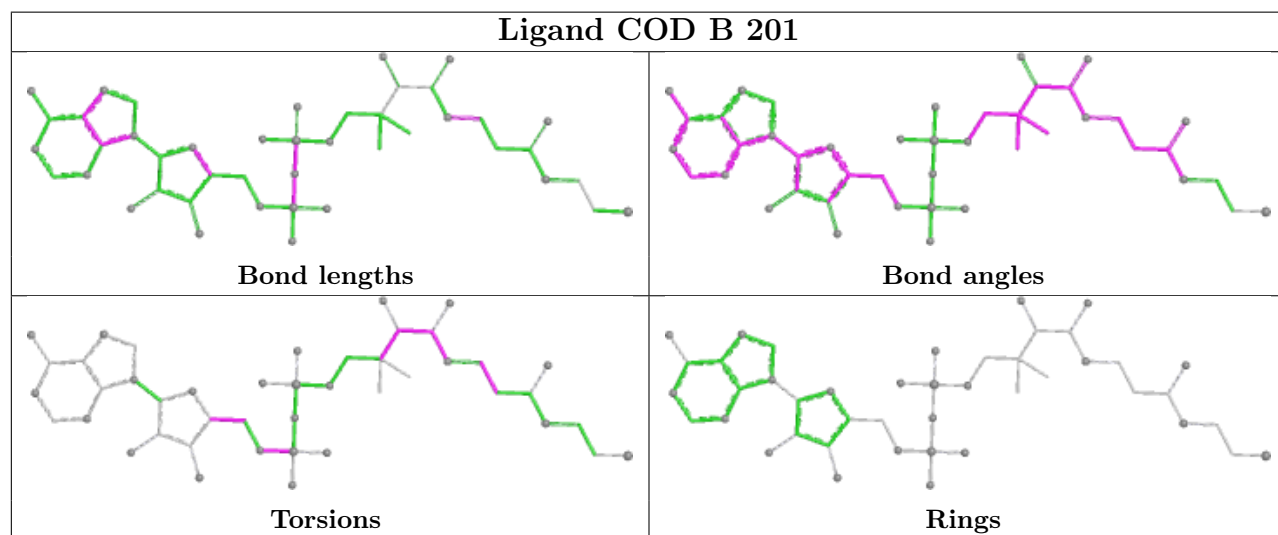
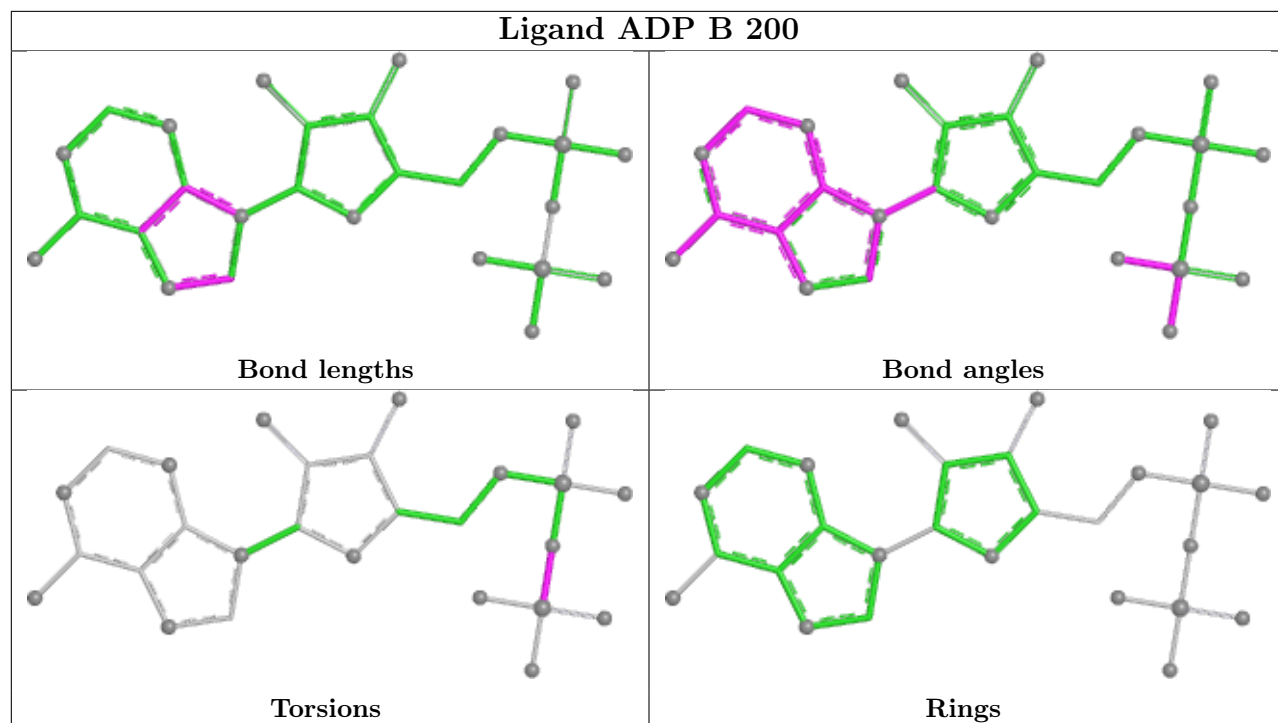
Continued from previous page...

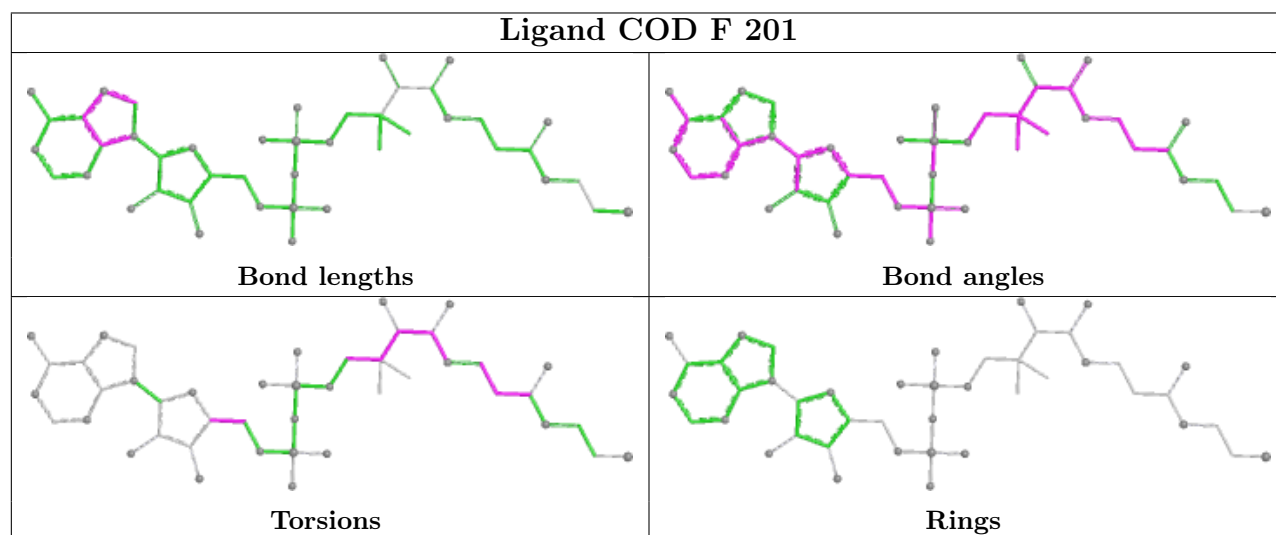
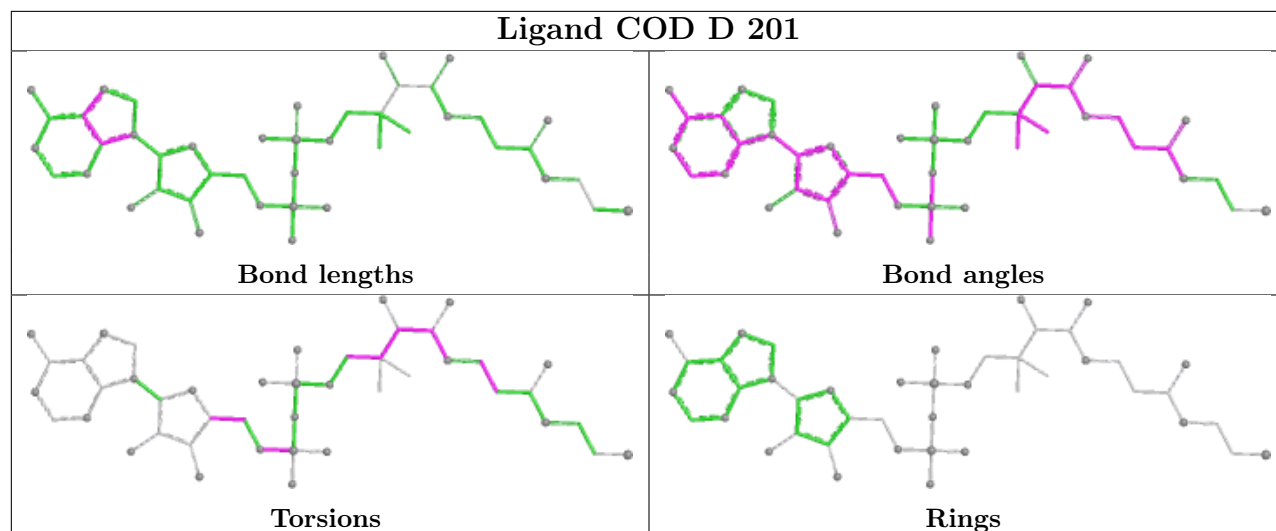
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	G	201	COD	5	0
3	B	201	COD	5	0
3	D	201	COD	4	0
3	F	201	COD	6	0
2	H	200	ADP	1	0
3	A	201	COD	2	0
3	C	201	COD	5	0
2	D	200	ADP	1	0
2	G	200	ADP	1	0
3	E	201	COD	5	0
3	H	201	COD	4	0

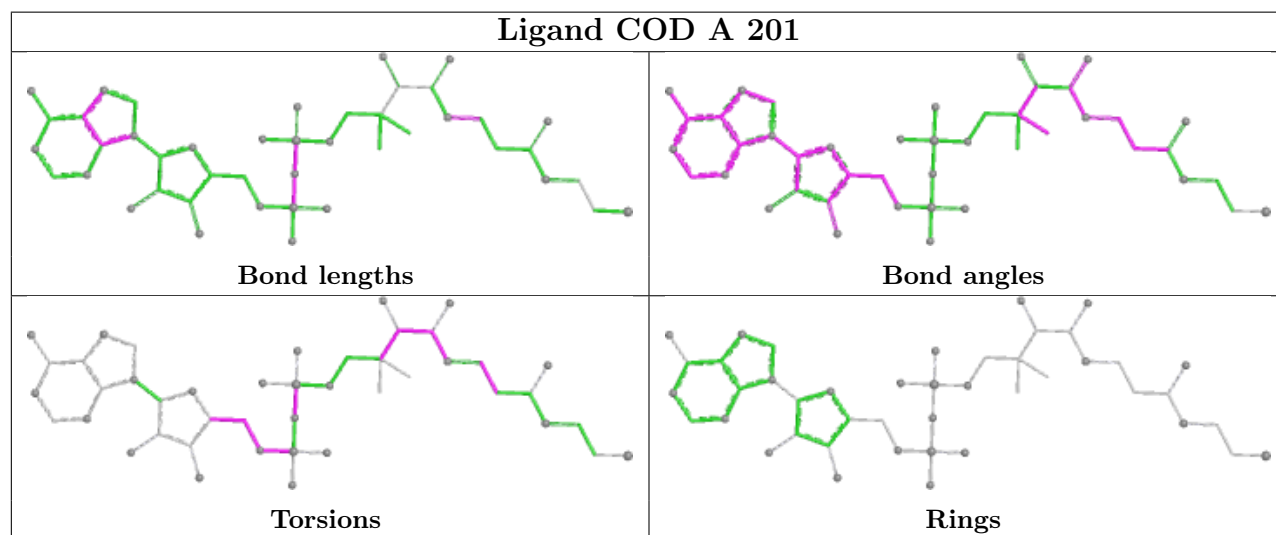
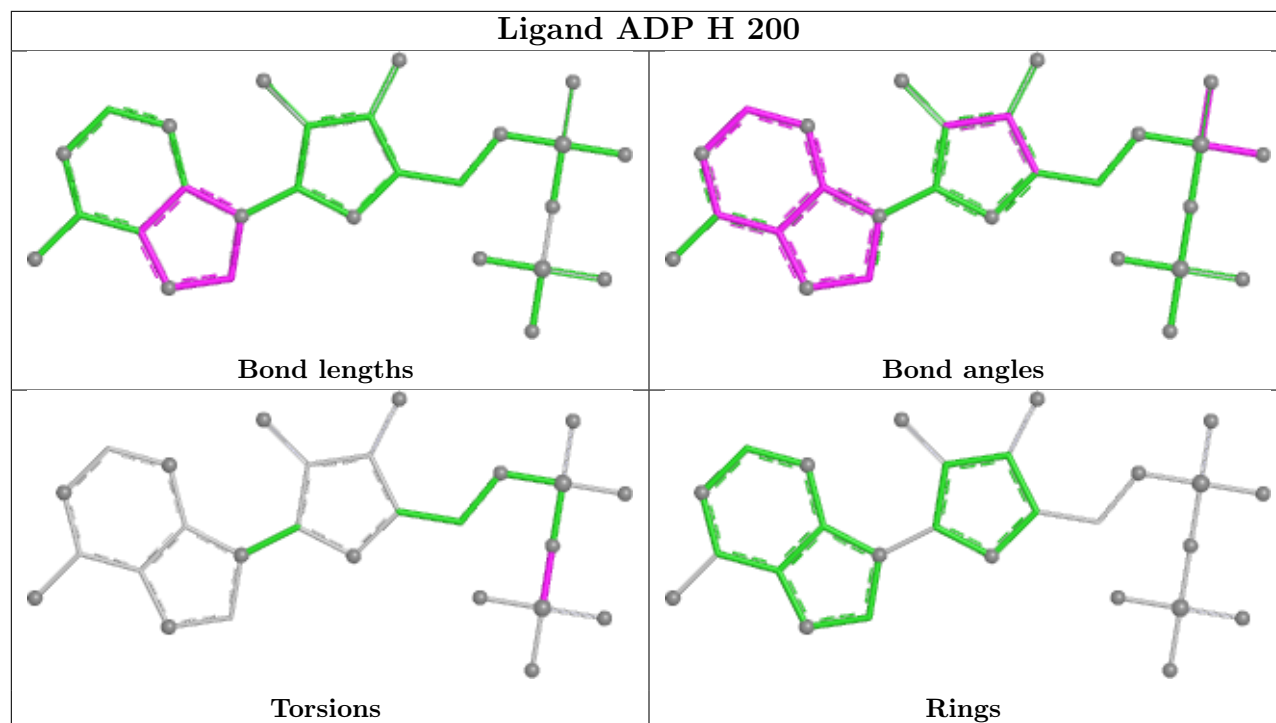
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

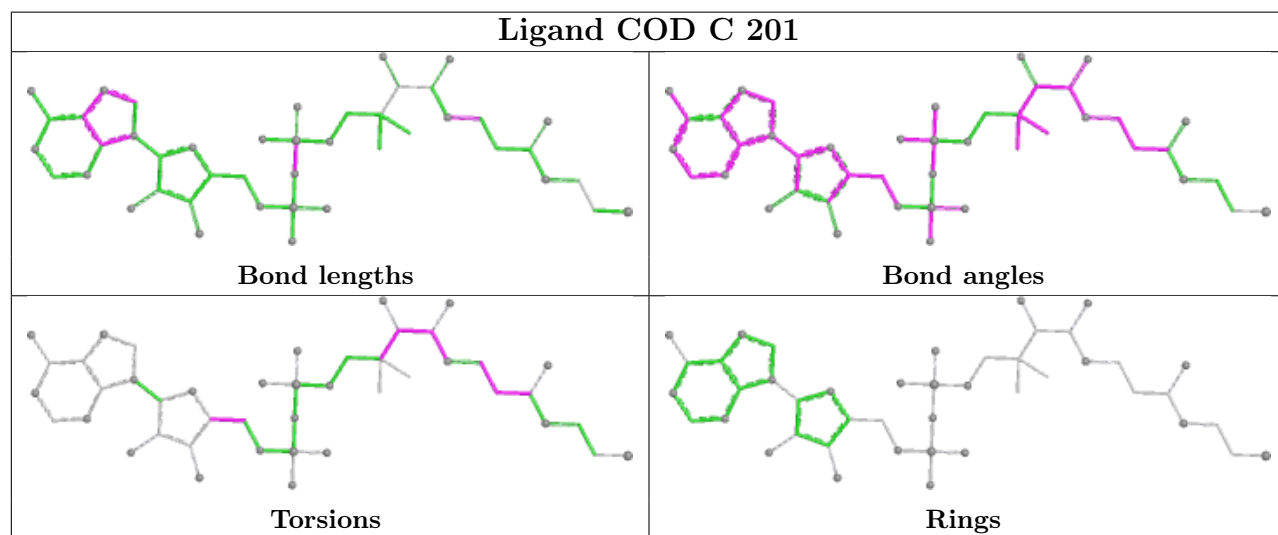
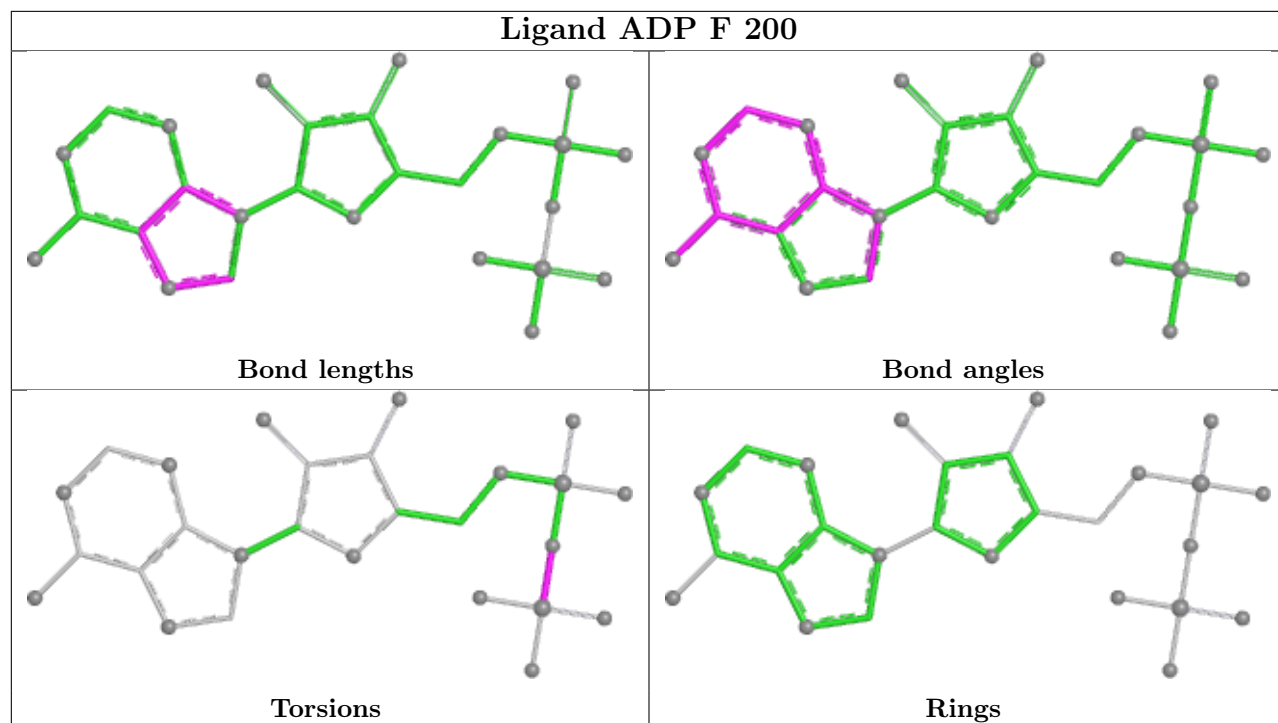


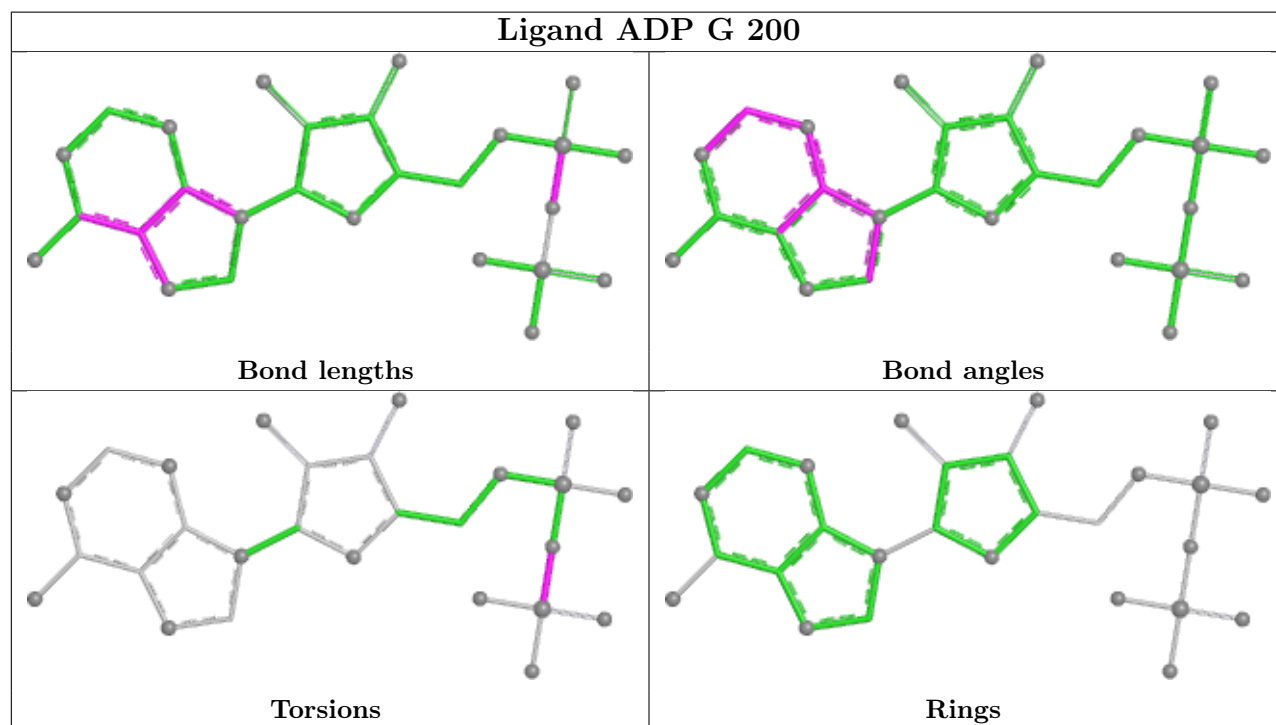
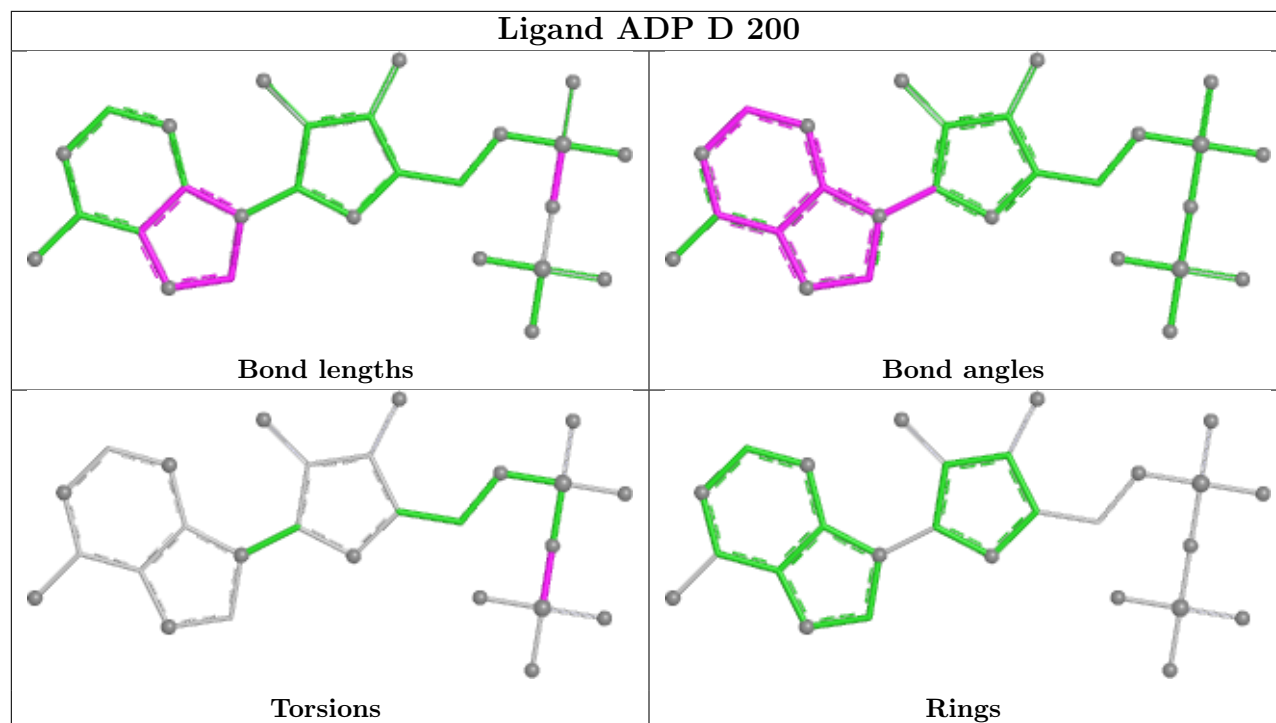


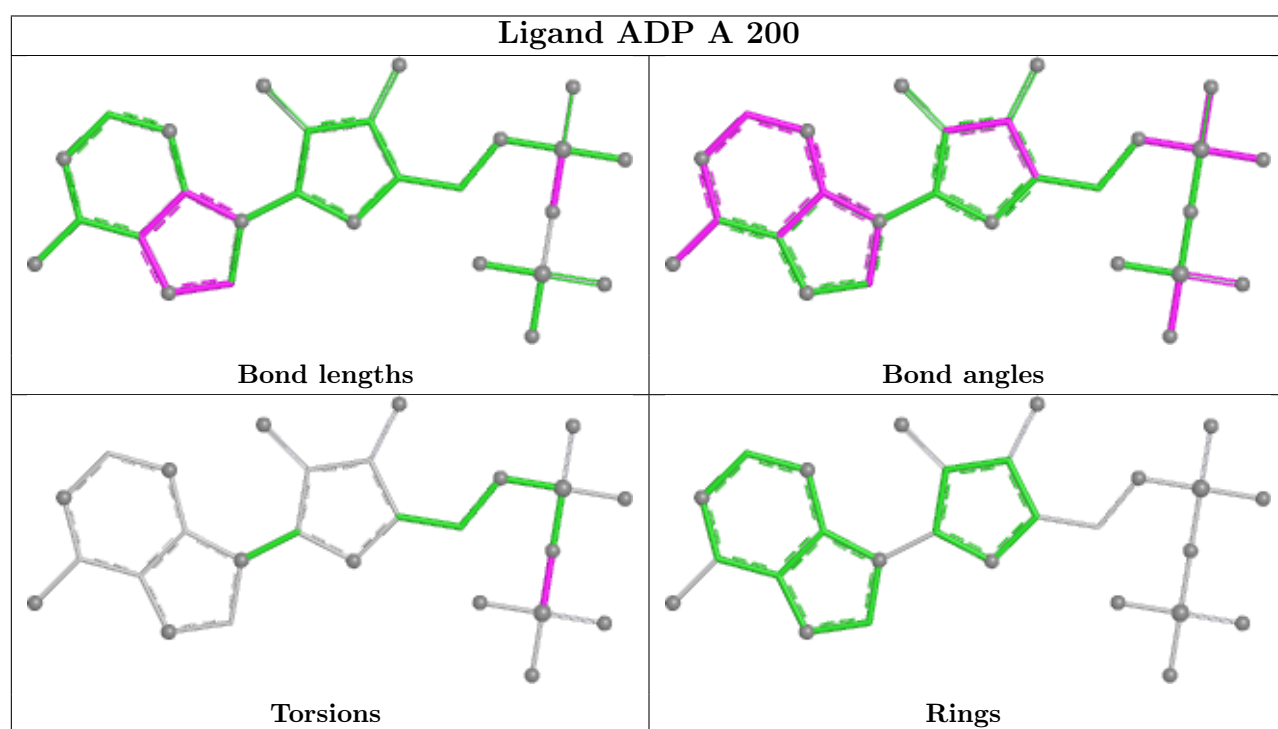
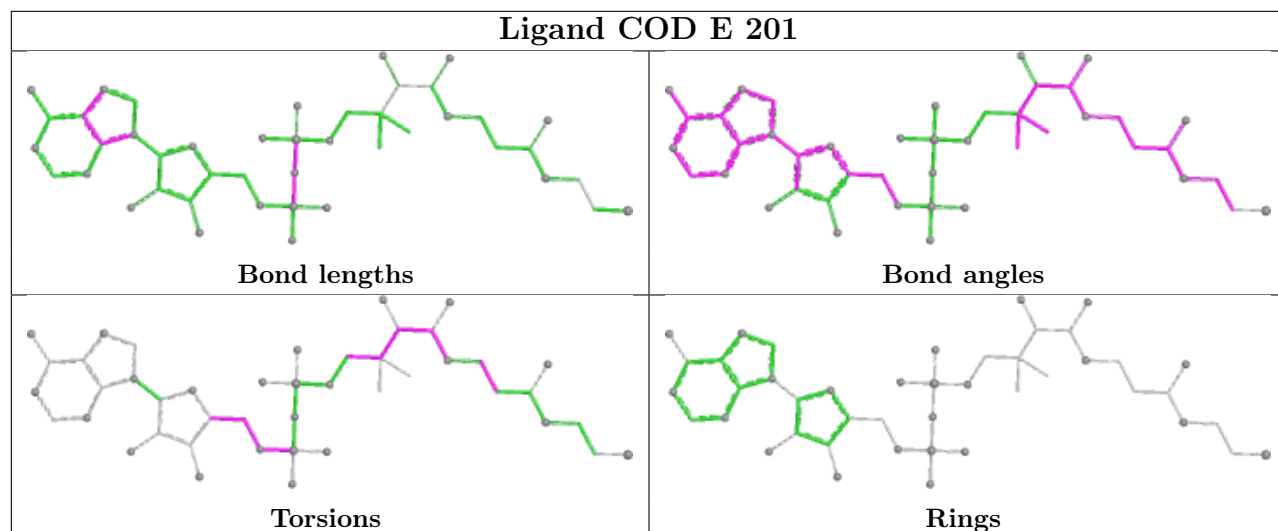


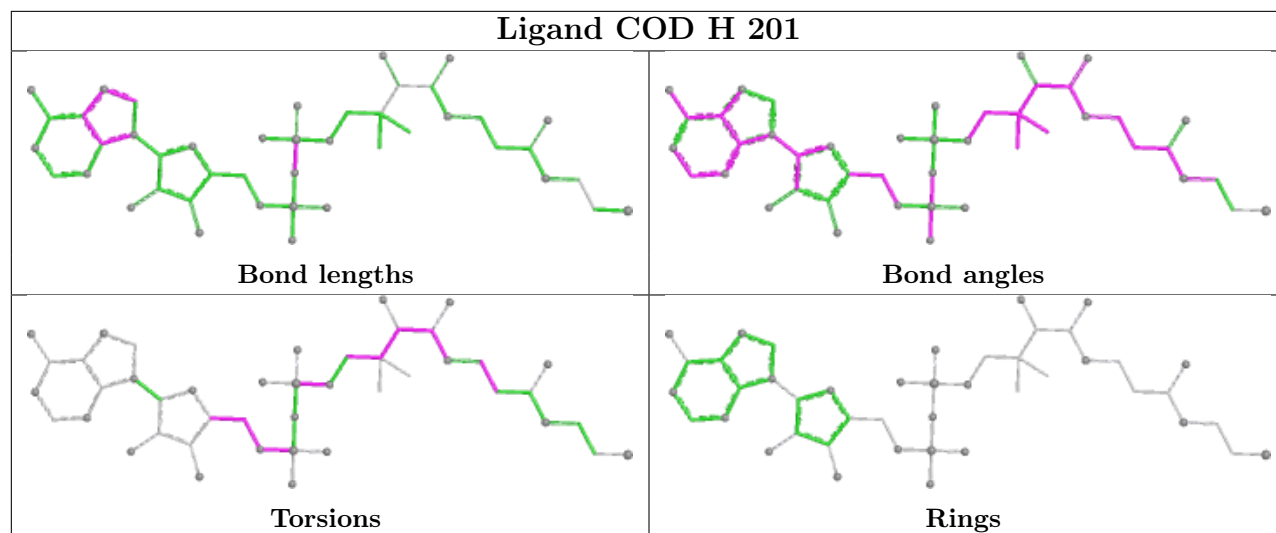












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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	175/192 (91%)	-0.22	2 (1%) 78 74	29, 36, 47, 55	0
1	B	175/192 (91%)	-0.12	0 100 100	30, 36, 47, 58	0
1	C	175/192 (91%)	-0.05	3 (1%) 69 64	30, 36, 48, 60	0
1	D	175/192 (91%)	-0.09	2 (1%) 78 74	30, 36, 48, 63	0
1	E	175/192 (91%)	0.01	3 (1%) 69 64	30, 36, 47, 59	0
1	F	175/192 (91%)	-0.07	0 100 100	30, 36, 47, 59	0
1	G	175/192 (91%)	-0.07	0 100 100	30, 37, 47, 63	0
1	H	175/192 (91%)	-0.09	0 100 100	29, 36, 47, 64	0
All	All	1400/1536 (91%)	-0.09	10 (0%) 84 82	29, 36, 47, 64	0

All (10) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	51	GLY	2.8
1	E	53	SER	2.5
1	E	38	VAL	2.5
1	A	53	SER	2.4
1	A	57	ASP	2.4
1	C	57	ASP	2.3
1	C	58	GLY	2.3
1	E	41	GLU	2.2
1	D	53	SER	2.1
1	C	56	GLU	2.0

6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

6.3 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

6.4 Ligands ⓘ

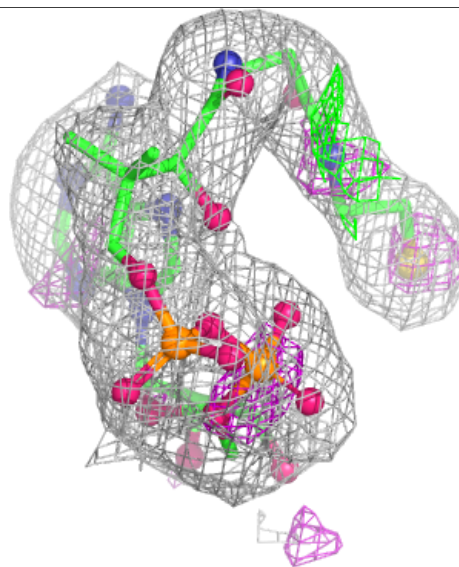
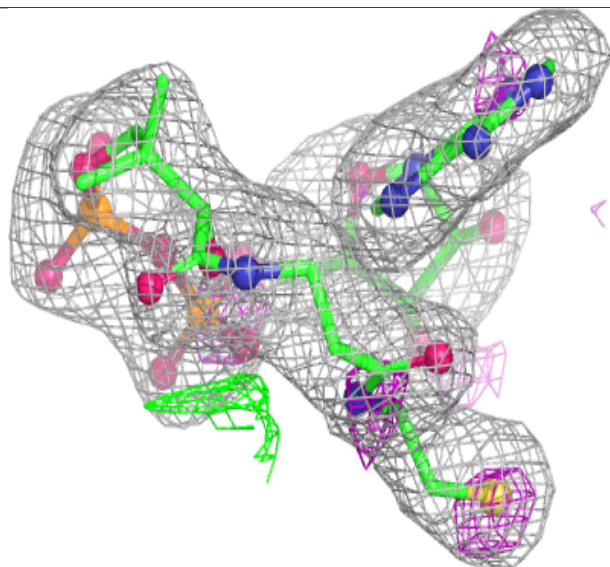
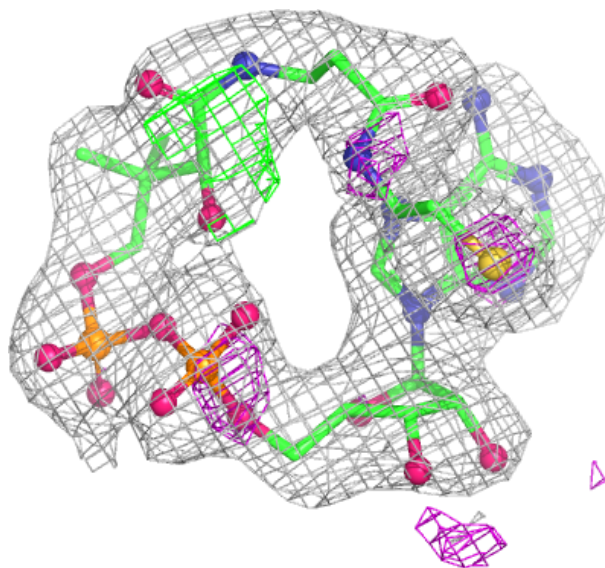
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
4	CL	E	182	1/1	0.78	0.09	67,67,67,67	0
4	CL	C	181	1/1	0.89	0.13	55,55,55,55	0
3	COD	H	201	44/44	0.94	0.08	22,32,42,49	0
3	COD	G	201	44/44	0.95	0.08	28,44,50,52	0
3	COD	A	201	44/44	0.95	0.07	16,28,35,40	0
3	COD	B	201	44/44	0.95	0.09	15,31,36,40	0
4	CL	E	181	1/1	0.95	0.11	44,44,44,44	0
3	COD	C	201	44/44	0.95	0.08	18,32,42,47	0
3	COD	F	201	44/44	0.96	0.08	14,30,40,52	0
3	COD	D	201	44/44	0.96	0.08	14,30,36,51	0
3	COD	E	201	44/44	0.96	0.08	25,36,43,51	0
4	CL	H	181	1/1	0.96	0.13	44,44,44,44	0
2	ADP	D	200	27/27	0.97	0.07	16,25,30,36	0
2	ADP	G	200	27/27	0.97	0.07	24,36,43,45	0
2	ADP	H	200	27/27	0.97	0.07	17,34,39,41	0
2	ADP	A	200	27/27	0.97	0.08	19,29,33,37	0
2	ADP	C	200	27/27	0.97	0.08	14,23,30,34	0
2	ADP	F	200	27/27	0.98	0.07	19,29,35,39	0
2	ADP	B	200	27/27	0.98	0.07	7,26,33,43	0
2	ADP	E	200	27/27	0.98	0.07	15,33,40,43	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.

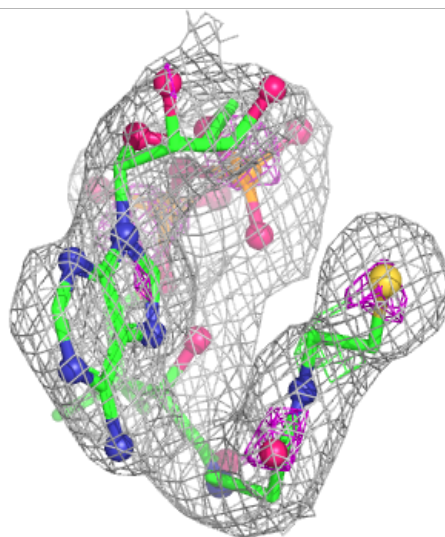
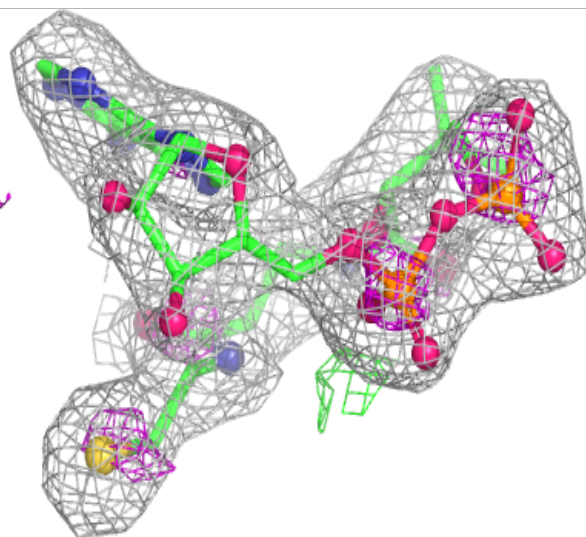
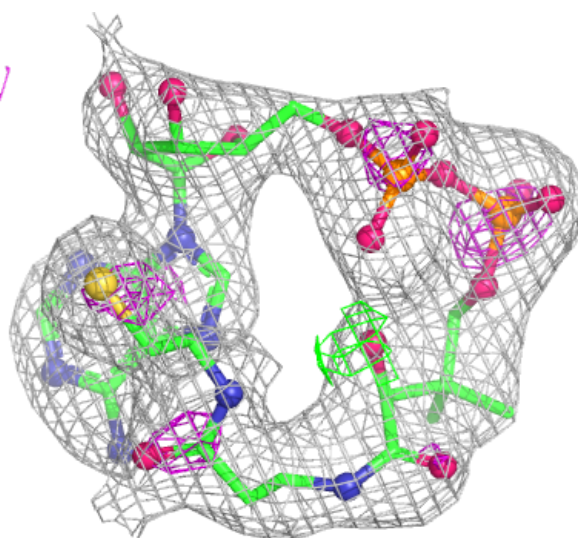
Electron density around COD H 201:

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



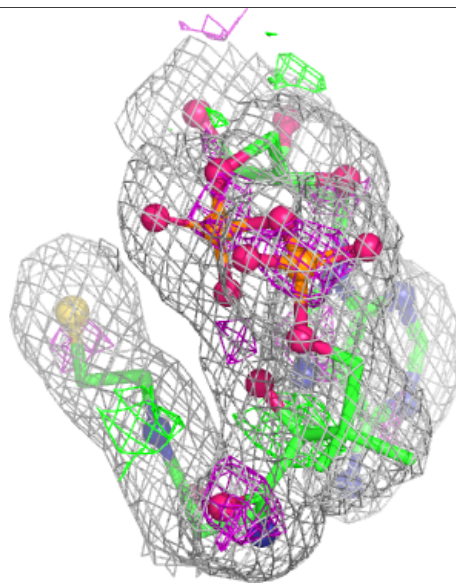
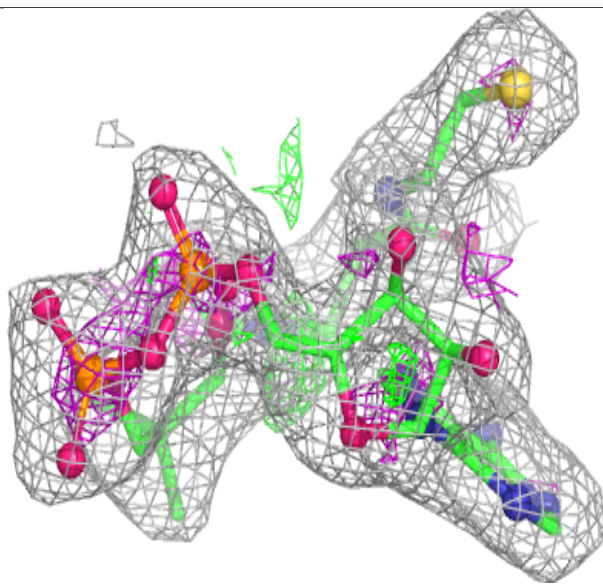
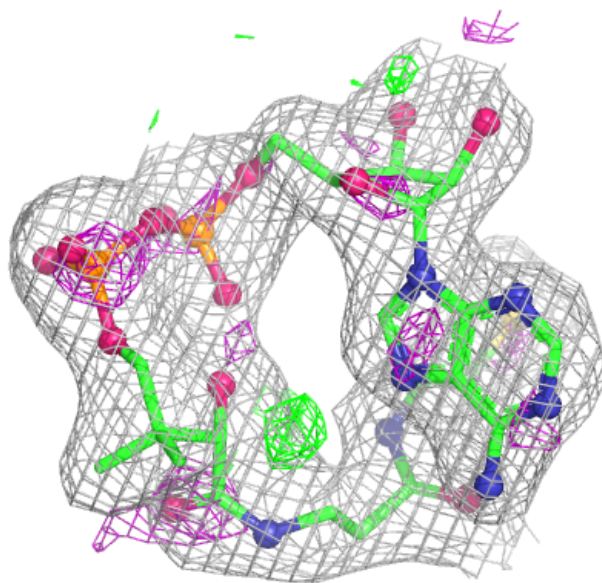
Electron density around COD G 201:

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



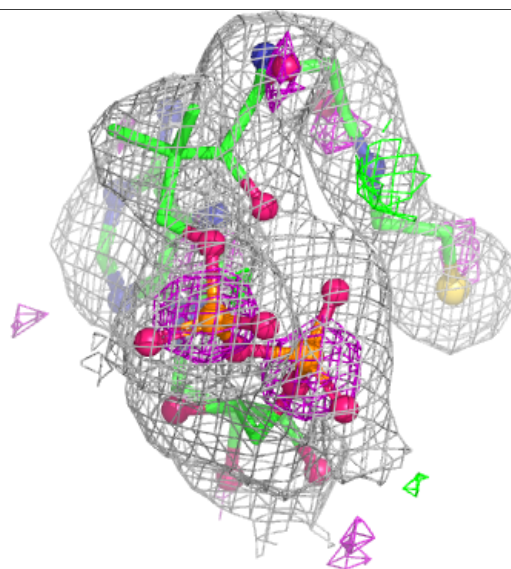
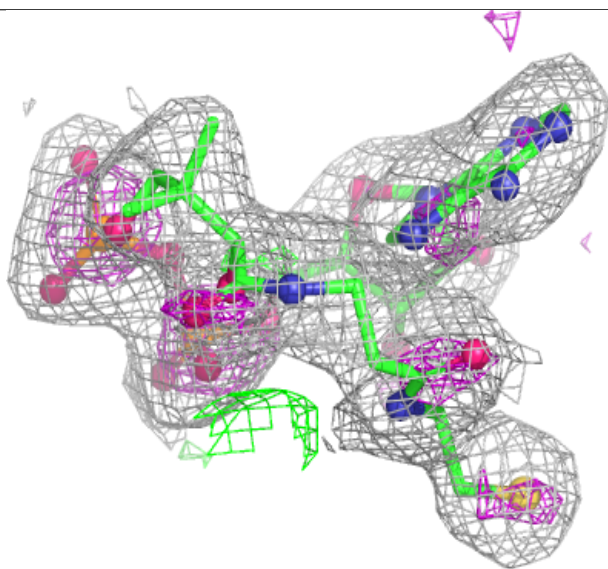
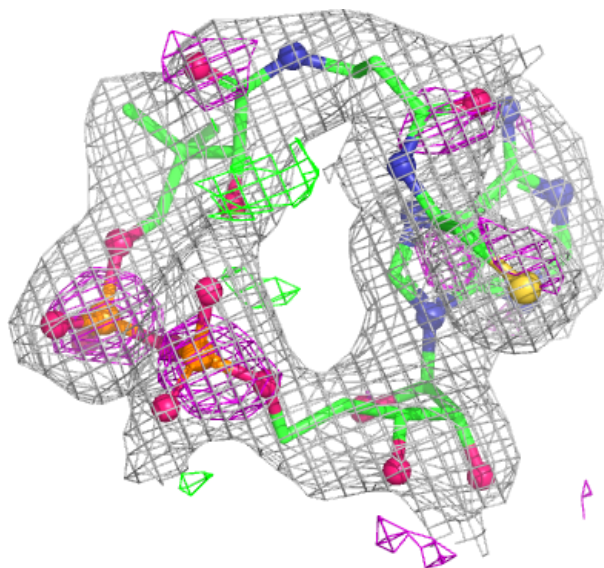
Electron density around COD A 201:

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



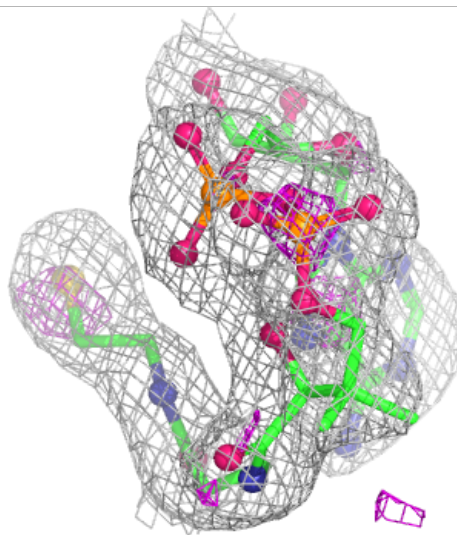
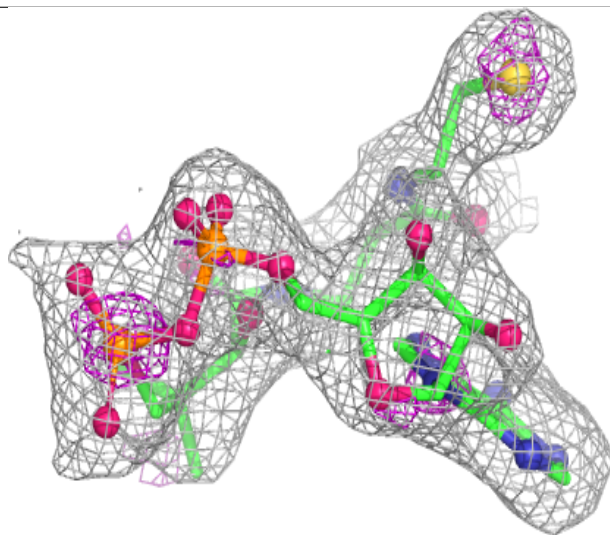
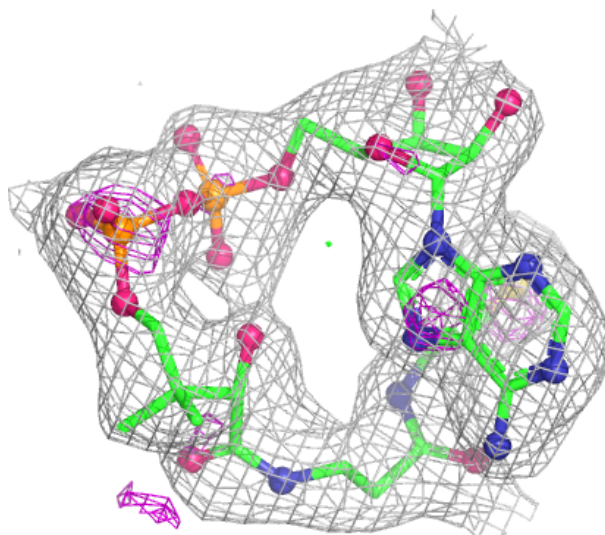
Electron density around COD B 201:

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



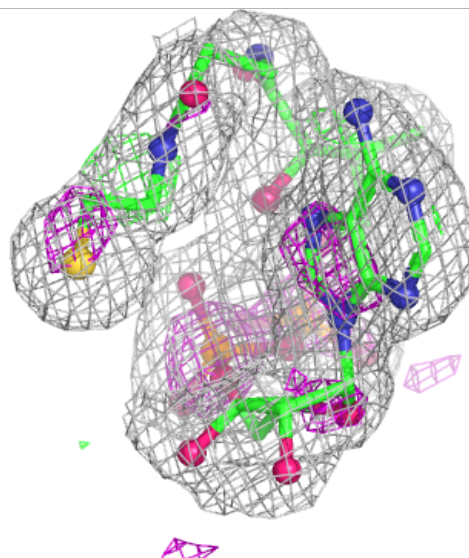
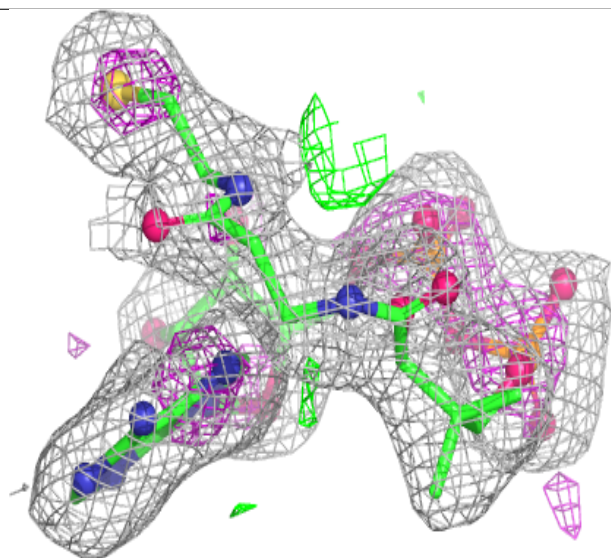
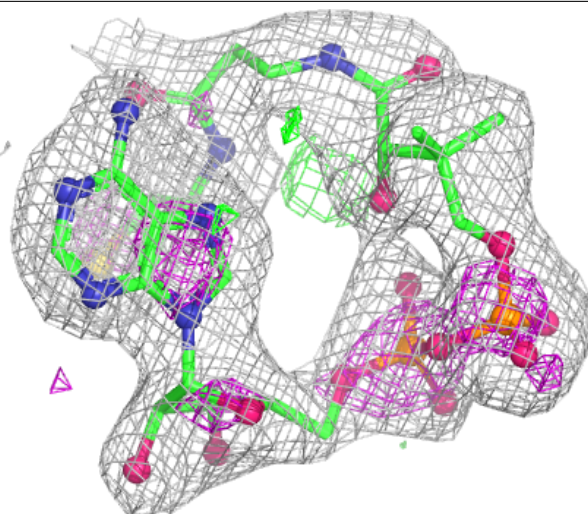
Electron density around COD C 201:

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



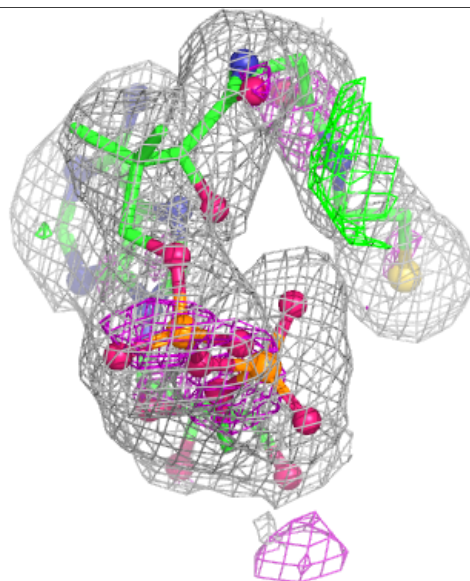
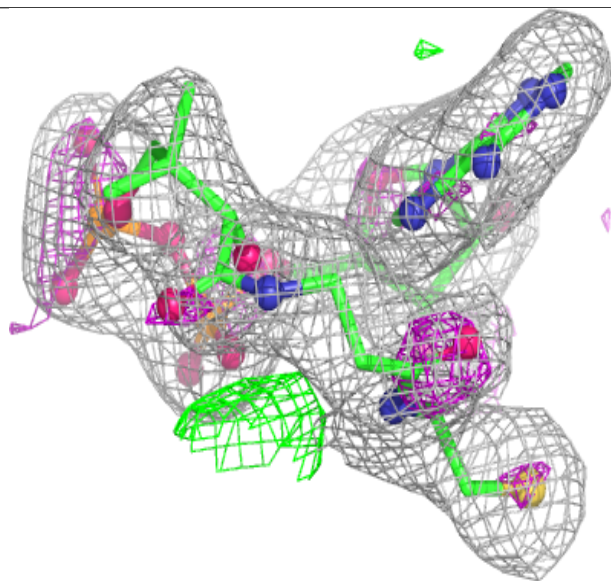
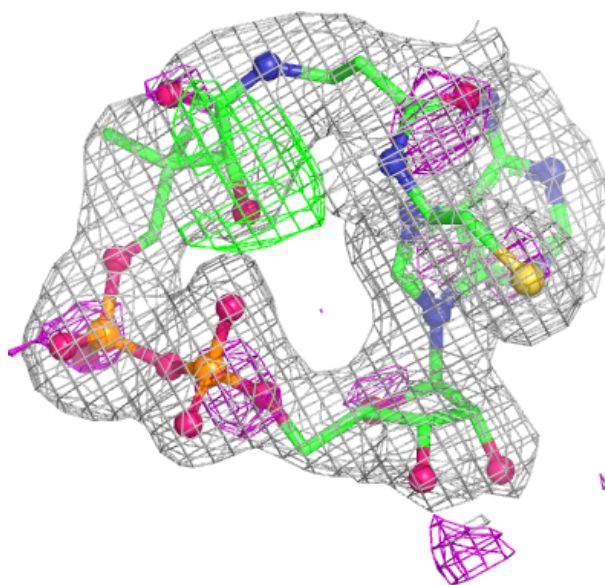
Electron density around COD F 201:

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



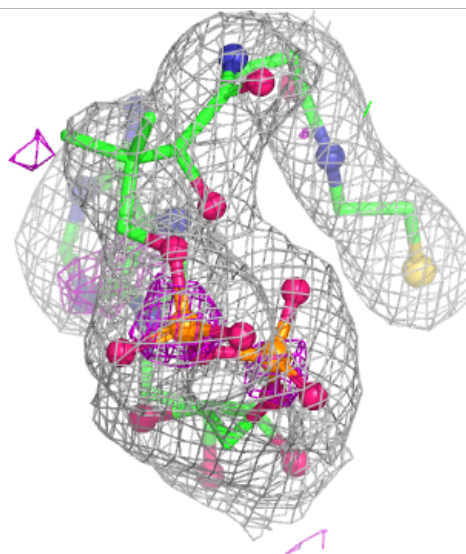
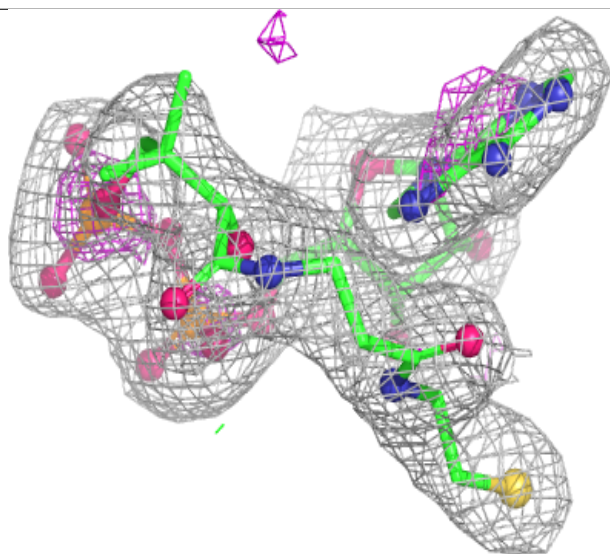
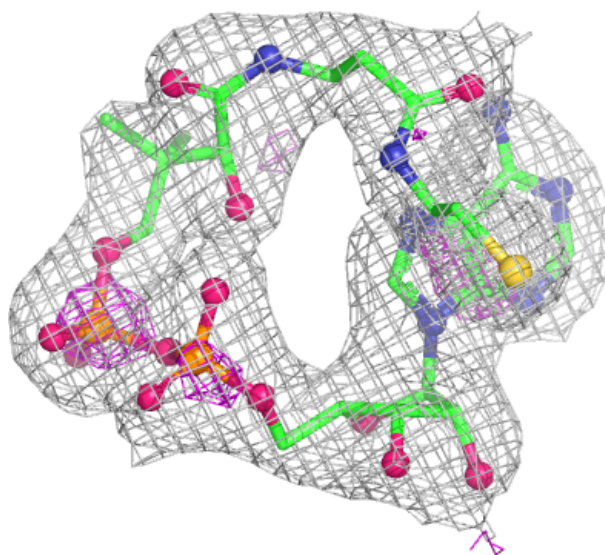
Electron density around COD D 201:

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



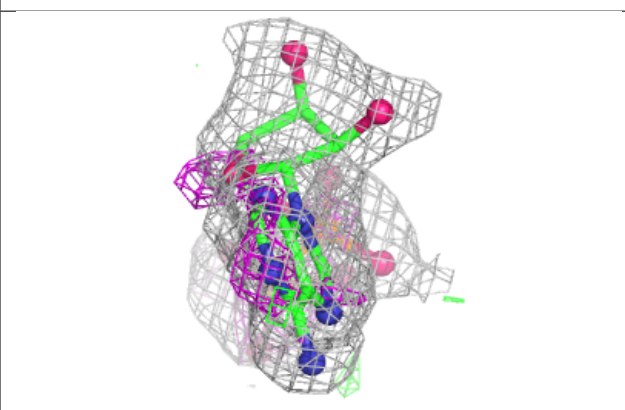
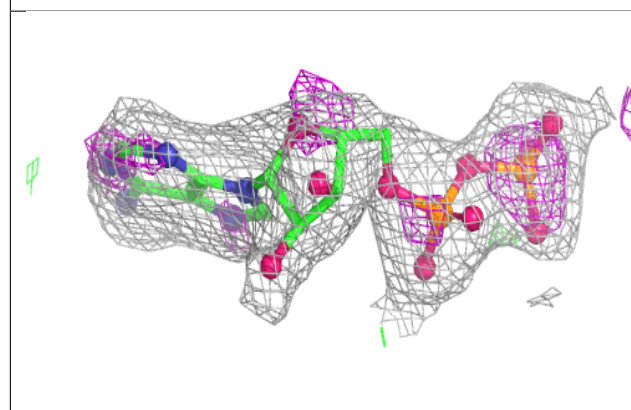
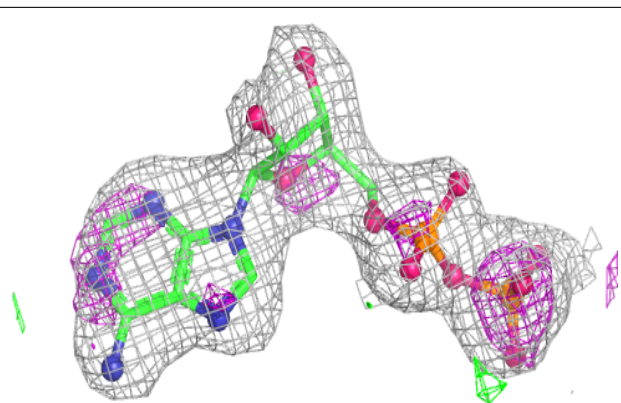
Electron density around COD E 201:

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

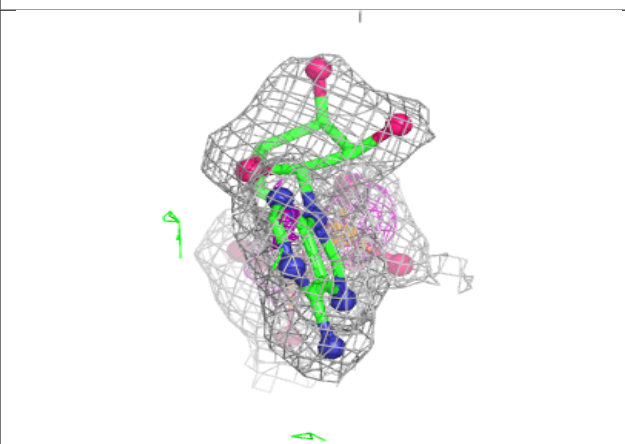
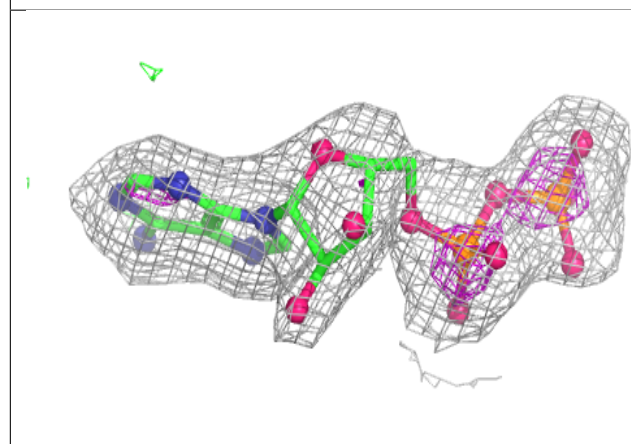
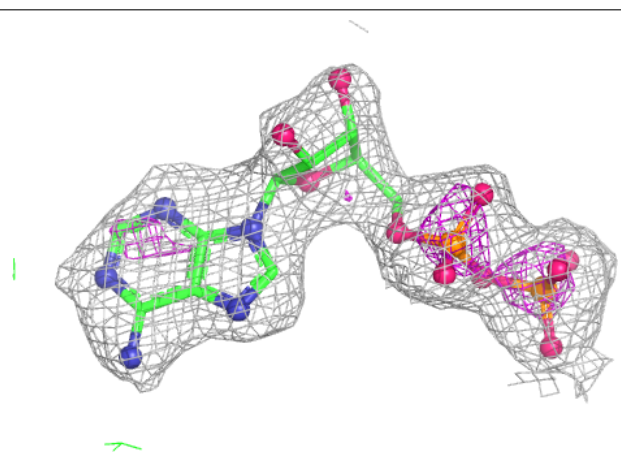


Electron density around ADP D 200:

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

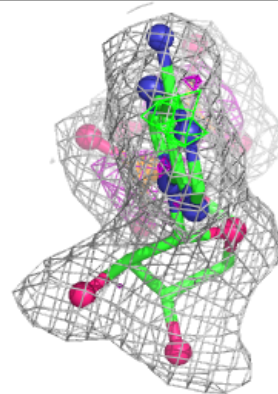
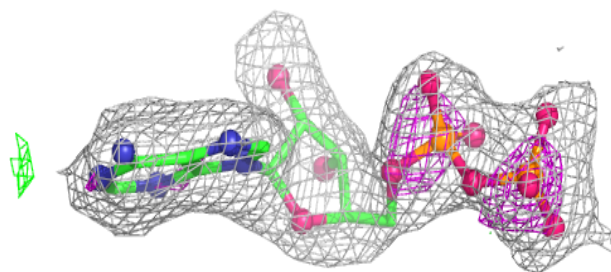
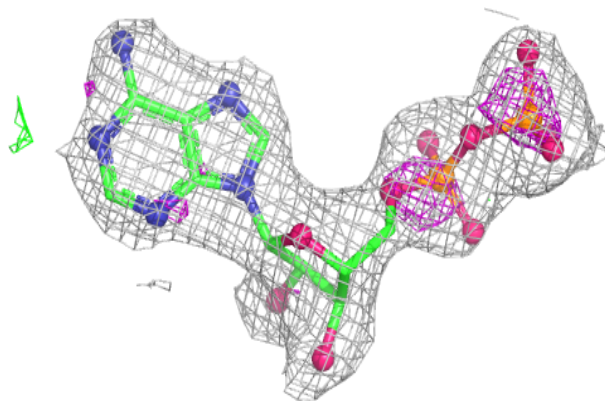
**Electron density around ADP G 200:**

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

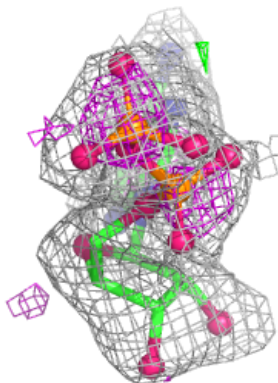
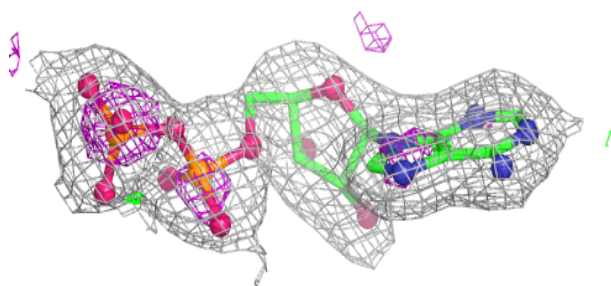
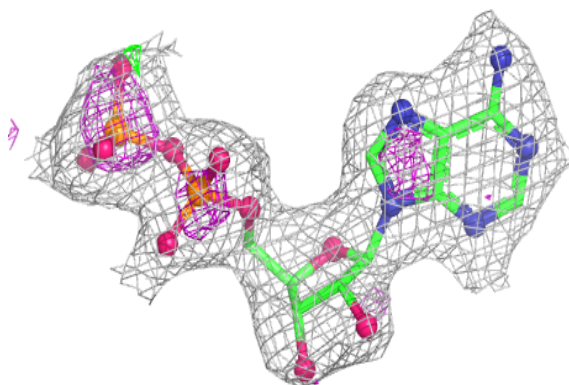


Electron density around ADP H 200:

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

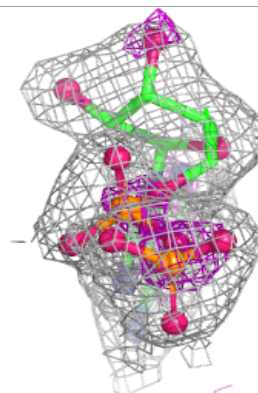
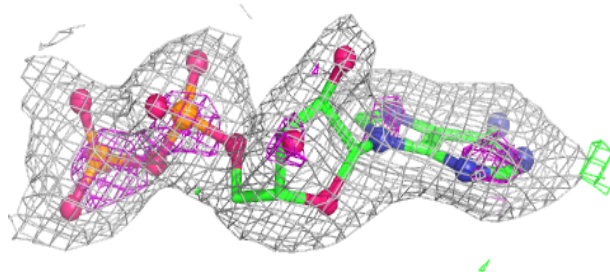
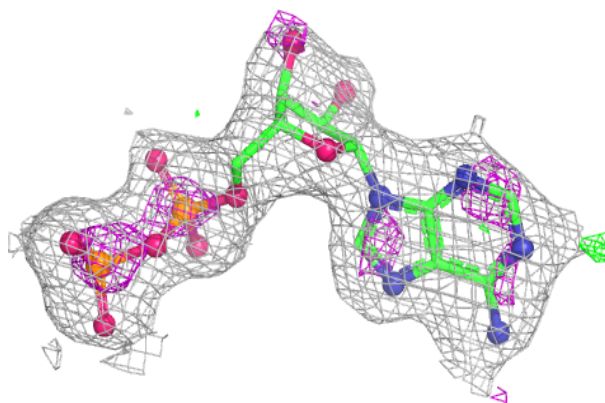
**Electron density around ADP A 200:**

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

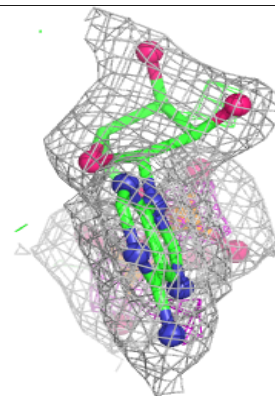
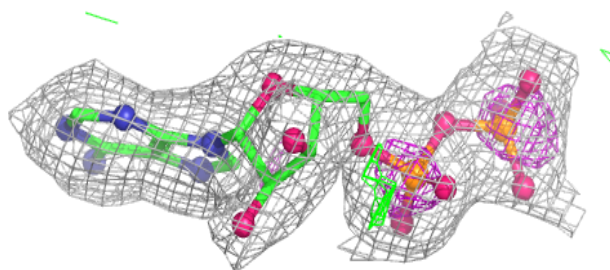
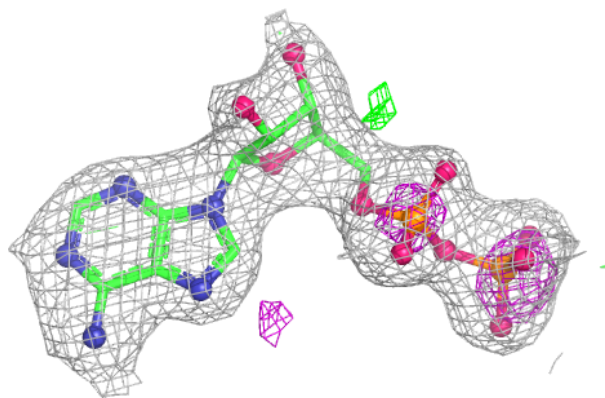


Electron density around ADP C 200:

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

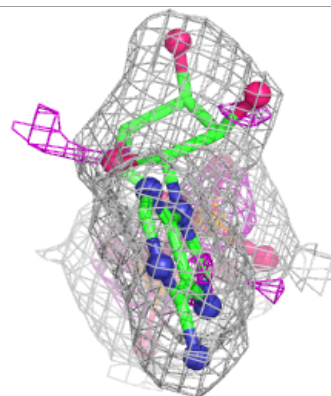
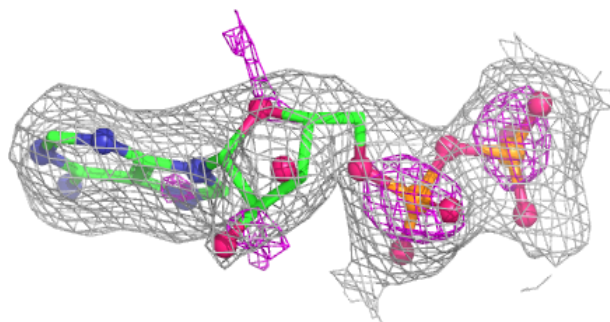
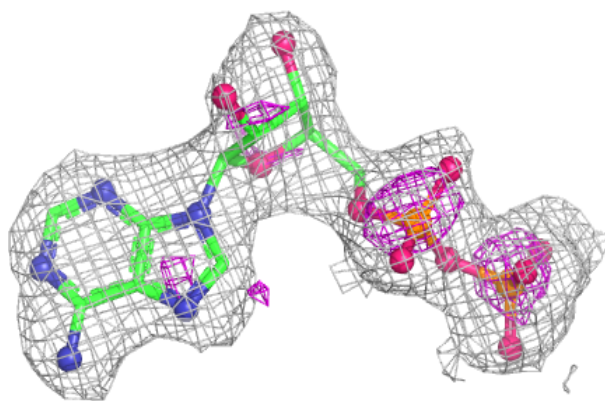
**Electron density around ADP F 200:**

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

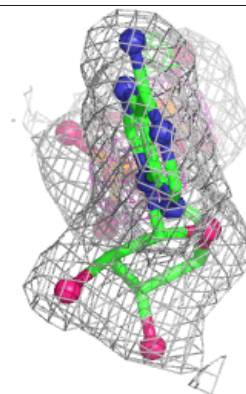
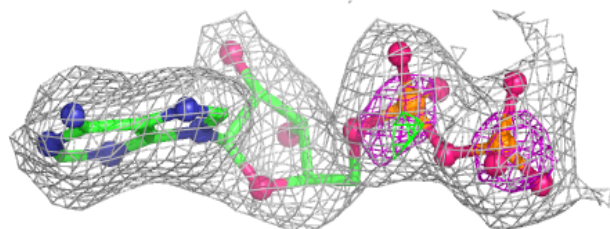


Electron density around ADP B 200:

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

**Electron density around ADP E 200:**

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



6.5 Other polymers [i](#)

There are no such residues in this entry.