



Full wwPDB X-ray Structure Validation Report ⓘ

Sep 24, 2025 – 03:45 am BST

PDB ID : 4CJ8 / pdb_00004cj8
Title : monoclinic crystal form of Bogt6a E192Q in complex with UDP-GalNAc, UDP and GalNAc
Authors : Pham, T.; Stinson, B.; Thiyagarajan, N.; Lizotte-Waniewski, M.; Brew, K.; Acharya, K.R.
Deposited on : 2013-12-19
Resolution : 3.50 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 : 1.8.4, CSD as541be (2020)
Xtrriage (Phenix) : 2.0
EDS : 3.0
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
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) : 2.46

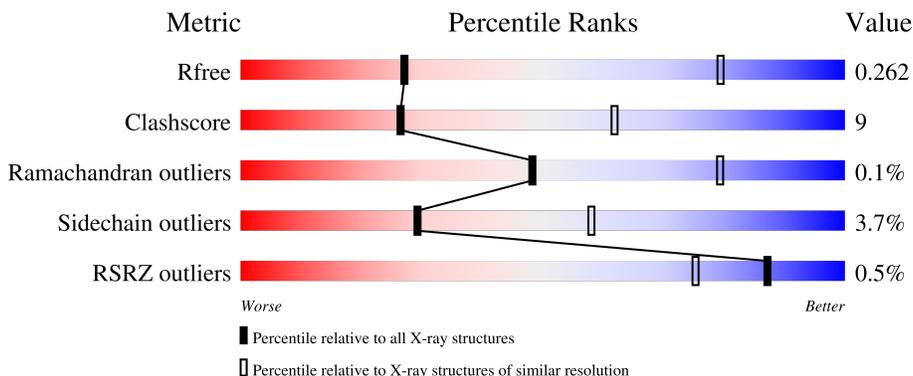
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.50 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}	164625	1094 (3.56-3.44)
Clashscore	180529	1045 (3.54-3.46)
Ramachandran outliers	177936	1032 (3.54-3.46)
Sidechain outliers	177891	1033 (3.54-3.46)
RSRZ outliers	164620	1093 (3.56-3.44)

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	248	 72% 22% . .
1	B	248	 75% 19% . .
1	C	248	 73% 23% . .
1	D	248	 76% 19% . .

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Mol	Chain	Length	Quality of chain
1	E	248	 76% 21% ..
1	F	248	 76% 21% ..
1	G	248	 77% 21% ..
1	H	248	 78% 21%
1	I	248	 77% 18% • 5%
1	J	248	 72% 20% • 5%
1	K	248	 73% 21% • •
1	L	248	 72% 21% • 5%
1	M	248	 % 75% 22% ..
1	N	248	 % 75% 21% • •
1	O	248	 3% 71% 23% • •
1	P	248	 81% 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
3	UDP	N	1244	-	-	X	-

2 Entry composition

There are 9 unique types of molecules in this entry. The entry contains 32877 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 GLYCOSYLTRANSFERASE FAMILY 6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	238	Total 1989	C 1300	N 324	O 358	S 7	10	0	0
1	B	238	Total 1989	C 1300	N 324	O 358	S 7	10	0	0
1	C	238	Total 1989	C 1300	N 324	O 358	S 7	10	0	0
1	D	237	Total 1983	C 1297	N 323	O 356	S 7	10	0	0
1	E	246	Total 2057	C 1342	N 341	O 367	S 7	10	0	0
1	F	246	Total 2057	C 1342	N 341	O 367	S 7	10	0	0
1	G	246	Total 2057	C 1342	N 341	O 367	S 7	10	0	0
1	H	247	Total 2063	C 1345	N 342	O 369	S 7	10	0	0
1	I	236	Total 1973	C 1291	N 320	O 355	S 7	10	0	0
1	J	236	Total 1973	C 1291	N 320	O 355	S 7	10	0	0
1	K	237	Total 1983	C 1297	N 323	O 356	S 7	10	0	0
1	L	236	Total 1973	C 1291	N 320	O 355	S 7	10	0	0
1	M	245	Total 2047	C 1336	N 338	O 366	S 7	10	0	0
1	N	243	Total 2027	C 1324	N 332	O 364	S 7	10	0	0
1	O	240	Total 2000	C 1306	N 326	O 361	S 7	10	0	0
1	P	243	Total 2027	C 1324	N 332	O 364	S 7	10	0	0

There are 48 discrepancies between the modelled and reference sequences:

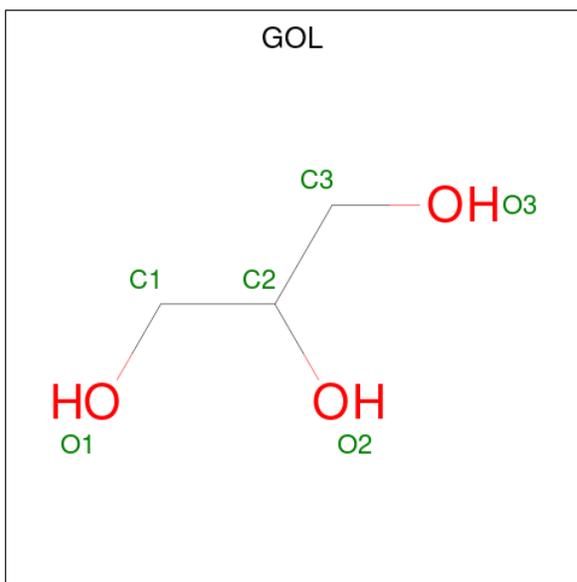
Chain	Residue	Modelled	Actual	Comment	Reference
A	-1	SER	-	expression tag	UNP A7LVT2
A	0	HIS	-	expression tag	UNP A7LVT2
A	192	GLN	GLU	engineered mutation	UNP A7LVT2
B	-1	SER	-	expression tag	UNP A7LVT2
B	0	HIS	-	expression tag	UNP A7LVT2
B	192	GLN	GLU	engineered mutation	UNP A7LVT2
C	-1	SER	-	expression tag	UNP A7LVT2
C	0	HIS	-	expression tag	UNP A7LVT2
C	192	GLN	GLU	engineered mutation	UNP A7LVT2
D	-1	SER	-	expression tag	UNP A7LVT2
D	0	HIS	-	expression tag	UNP A7LVT2
D	192	GLN	GLU	engineered mutation	UNP A7LVT2
E	-1	SER	-	expression tag	UNP A7LVT2
E	0	HIS	-	expression tag	UNP A7LVT2
E	192	GLN	GLU	engineered mutation	UNP A7LVT2
F	-1	SER	-	expression tag	UNP A7LVT2
F	0	HIS	-	expression tag	UNP A7LVT2
F	192	GLN	GLU	engineered mutation	UNP A7LVT2
G	-1	SER	-	expression tag	UNP A7LVT2
G	0	HIS	-	expression tag	UNP A7LVT2
G	192	GLN	GLU	engineered mutation	UNP A7LVT2
H	-1	SER	-	expression tag	UNP A7LVT2
H	0	HIS	-	expression tag	UNP A7LVT2
H	192	GLN	GLU	engineered mutation	UNP A7LVT2
I	-1	SER	-	expression tag	UNP A7LVT2
I	0	HIS	-	expression tag	UNP A7LVT2
I	192	GLN	GLU	engineered mutation	UNP A7LVT2
J	-1	SER	-	expression tag	UNP A7LVT2
J	0	HIS	-	expression tag	UNP A7LVT2
J	192	GLN	GLU	engineered mutation	UNP A7LVT2
K	-1	SER	-	expression tag	UNP A7LVT2
K	0	HIS	-	expression tag	UNP A7LVT2
K	192	GLN	GLU	engineered mutation	UNP A7LVT2
L	-1	SER	-	expression tag	UNP A7LVT2
L	0	HIS	-	expression tag	UNP A7LVT2
L	192	GLN	GLU	engineered mutation	UNP A7LVT2
M	-1	SER	-	expression tag	UNP A7LVT2
M	0	HIS	-	expression tag	UNP A7LVT2
M	192	GLN	GLU	engineered mutation	UNP A7LVT2
N	-1	SER	-	expression tag	UNP A7LVT2
N	0	HIS	-	expression tag	UNP A7LVT2
N	192	GLN	GLU	engineered mutation	UNP A7LVT2

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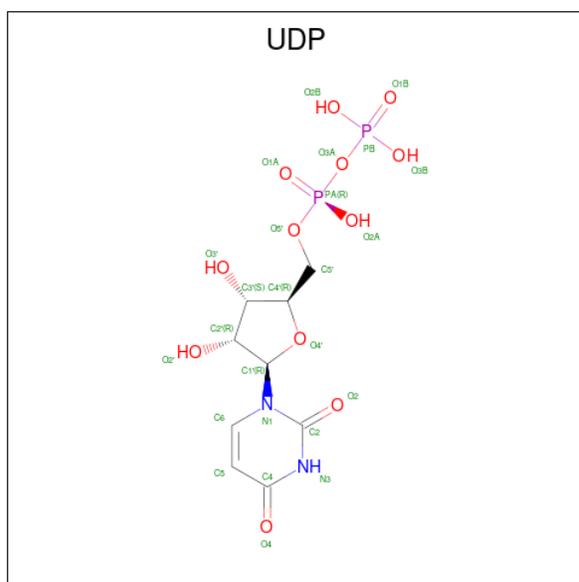
Chain	Residue	Modelled	Actual	Comment	Reference
O	-1	SER	-	expression tag	UNP A7LVT2
O	0	HIS	-	expression tag	UNP A7LVT2
O	192	GLN	GLU	engineered mutation	UNP A7LVT2
P	-1	SER	-	expression tag	UNP A7LVT2
P	0	HIS	-	expression tag	UNP A7LVT2
P	192	GLN	GLU	engineered mutation	UNP A7LVT2

- Molecule 2 is GLYCEROL (CCD ID: GOL) (formula: C₃H₈O₃).



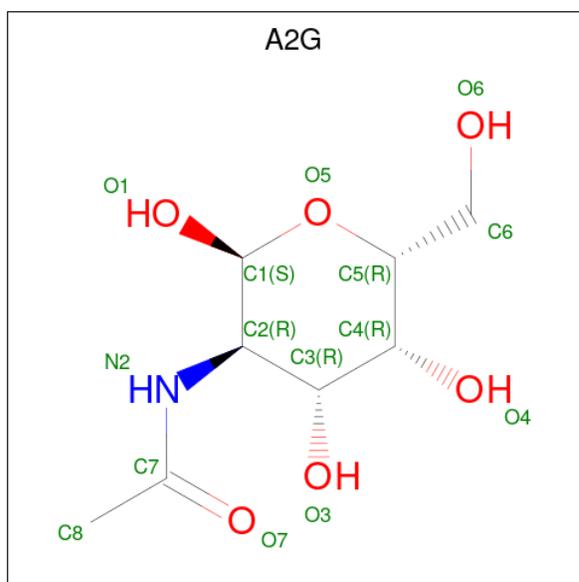
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total C O 6 3 3	0	0
2	A	1	Total C O 6 3 3	0	0
2	D	1	Total C O 6 3 3	0	0
2	G	1	Total C O 6 3 3	0	0
2	G	1	Total C O 6 3 3	0	0

- Molecule 3 is URIDINE-5'-DIPHOSPHATE (CCD ID: UDP) (formula: C₉H₁₄N₂O₁₂P₂).



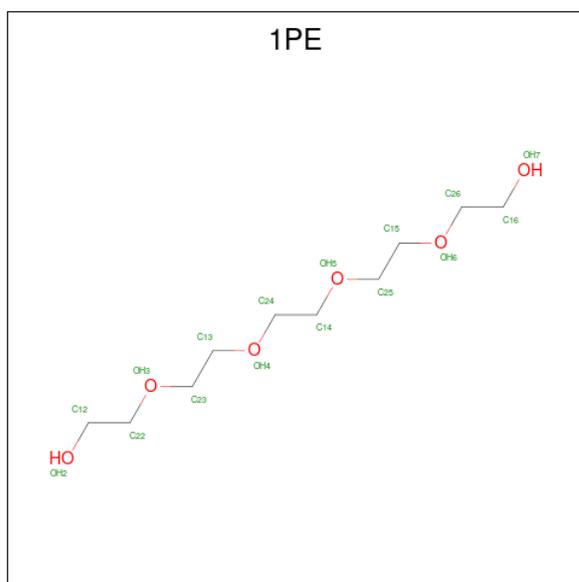
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	P		
3	A	1	Total 25	C 9	N 2	O 12	P 2	0	0
3	B	1	Total 25	C 9	N 2	O 12	P 2	0	0
3	C	1	Total 25	C 9	N 2	O 12	P 2	0	0
3	D	1	Total 25	C 9	N 2	O 12	P 2	0	0
3	I	1	Total 25	C 9	N 2	O 12	P 2	0	0
3	J	1	Total 25	C 9	N 2	O 12	P 2	0	0
3	K	1	Total 25	C 9	N 2	O 12	P 2	0	0
3	L	1	Total 25	C 9	N 2	O 12	P 2	0	0
3	M	1	Total 25	C 9	N 2	O 12	P 2	0	0
3	N	1	Total 25	C 9	N 2	O 12	P 2	0	0

- Molecule 4 is 2-acetamido-2-deoxy-alpha-D-galactopyranose (CCD ID: A2G) (formula: $C_8H_{15}NO_6$).



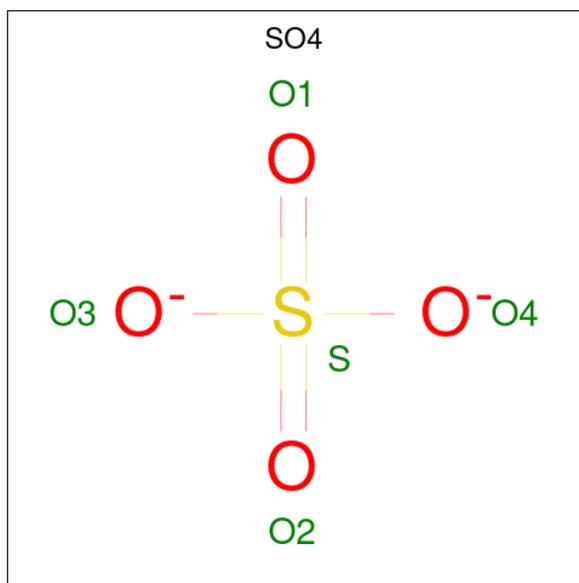
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
4	A	1	Total 15	8	1	6	0	0
4	B	1	Total 15	8	1	6	0	0
4	C	1	Total 15	8	1	6	0	0
4	D	1	Total 15	8	1	6	0	0
4	I	1	Total 15	8	1	6	0	0
4	J	1	Total 15	8	1	6	0	0
4	K	1	Total 15	8	1	6	0	0
4	L	1	Total 15	8	1	6	0	0

- Molecule 5 is PENTAETHYLENE GLYCOL (CCD ID: 1PE) (formula: C₁₀H₂₂O₆).



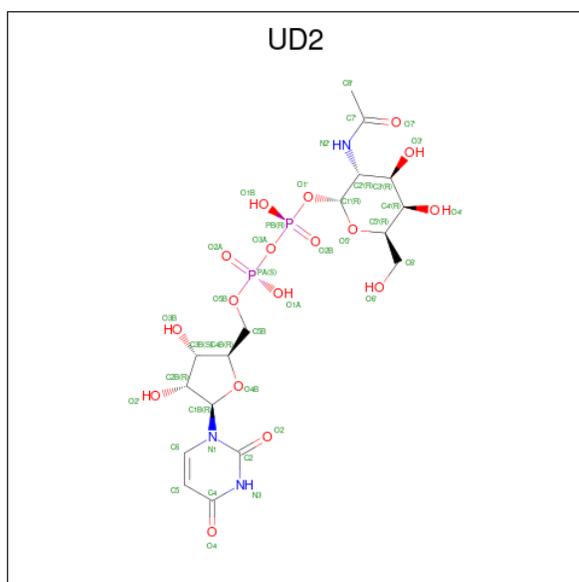
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	1	Total	C O	0	0
			16	10 6		

- Molecule 6 is SULFATE ION (CCD ID: SO4) (formula: O₄S).



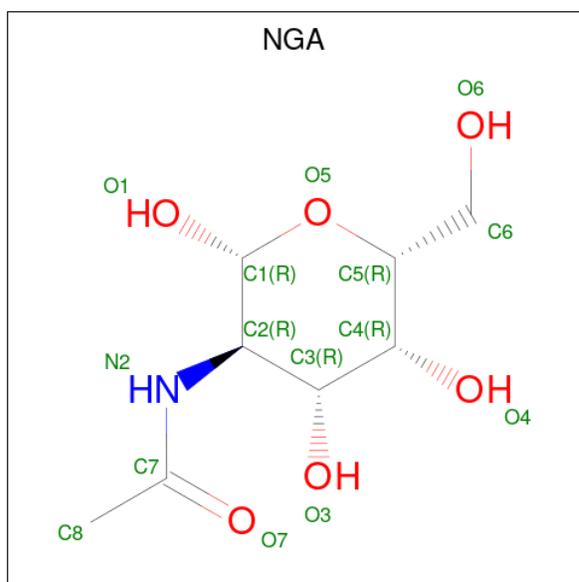
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	B	1	Total	O S	0	0
			5	4 1		

- Molecule 7 is URIDINE-DIPHOSPHATE-N-ACETYLGLACTOSAMINE (CCD ID: UD2) (formula: C₁₇H₂₇N₃O₁₇P₂).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	P		
7	E	1	Total	C	N	O	P	0	0
			39	17	3	17	2		
7	F	1	Total	C	N	O	P	0	0
			39	17	3	17	2		
7	G	1	Total	C	N	O	P	0	0
			39	17	3	17	2		
7	H	1	Total	C	N	O	P	0	0
			39	17	3	17	2		
7	O	1	Total	C	N	O	P	0	0
			39	17	3	17	2		
7	P	1	Total	C	N	O	P	0	0
			39	17	3	17	2		

- Molecule 8 is 2-acetamido-2-deoxy-beta-D-galactopyranose (CCD ID: NGA) (formula: $C_8H_{15}NO_6$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
8	M	1	14	8	1	5	0	0
8	N	1	14	8	1	5	0	0

- Molecule 9 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
9	B	2	Total	O	0	0
			2	2		
9	C	1	Total	O	0	0
			1	1		
9	D	1	Total	O	0	0
			1	1		
9	E	1	Total	O	0	0
			1	1		
9	L	2	Total	O	0	0
			2	2		

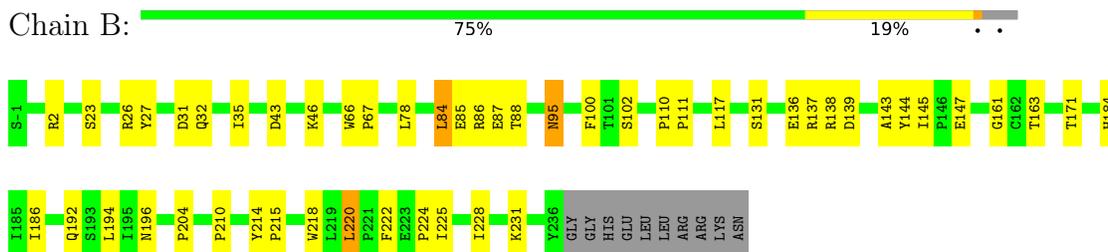
3 Residue-property plots i

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: GLYCOSYLTRANSFERASE FAMILY 6



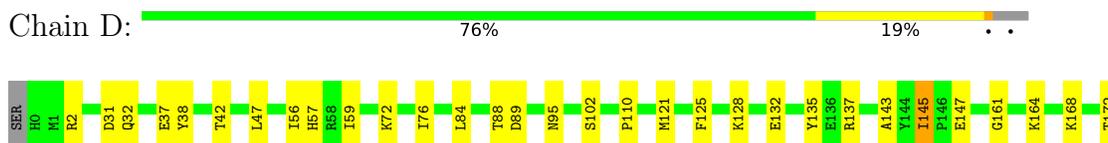
- Molecule 1: GLYCOSYLTRANSFERASE FAMILY 6



- Molecule 1: GLYCOSYLTRANSFERASE FAMILY 6



- Molecule 1: GLYCOSYLTRANSFERASE FAMILY 6





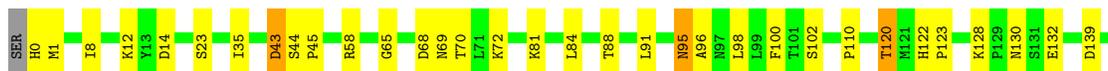
- Molecule 1: GLYCOSYLTRANSFERASE FAMILY 6

Chain E: 76% 21% ..



- Molecule 1: GLYCOSYLTRANSFERASE FAMILY 6

Chain F: 76% 21% ..



- Molecule 1: GLYCOSYLTRANSFERASE FAMILY 6

Chain G: 77% 21% ..



- Molecule 1: GLYCOSYLTRANSFERASE FAMILY 6

Chain H: 78% 21%



- Molecule 1: GLYCOSYLTRANSFERASE FAMILY 6

Chain I: 77% 18% • 5%





- Molecule 1: GLYCOSYLTRANSFERASE FAMILY 6

Chain J: 72% 20% 5%



- Molecule 1: GLYCOSYLTRANSFERASE FAMILY 6

Chain K: 73% 21% 2%



- Molecule 1: GLYCOSYLTRANSFERASE FAMILY 6

Chain L: 72% 21% 5%



- Molecule 1: GLYCOSYLTRANSFERASE FAMILY 6

Chain M: 75% 22% 2%



- Molecule 1: GLYCOSYLTRANSFERASE FAMILY 6

Chain N: 75% 21% 2%

4 Data and refinement statistics i

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	176.69Å 79.74Å 179.08Å 90.00° 95.23° 90.00°	Depositor
Resolution (Å)	87.98 – 3.50 87.98 – 3.50	Depositor EDS
% Data completeness (in resolution range)	97.7 (87.98-3.50) 90.3 (87.98-3.50)	Depositor EDS
R_{merge}	0.13	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.01 (at 3.49Å)	Xtrriage
Refinement program	PHENIX (PHENIX.REFINE: 1.8.4_1496)	Depositor
R, R_{free}	0.225 , 0.249 0.237 , 0.262	Depositor DCC
R_{free} test set	3137 reflections (5.06%)	wwPDB-VP
Wilson B-factor (Å ²)	60.6	Xtrriage
Anisotropy	0.241	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.29 , 41.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.46$, $\langle L^2 \rangle = 0.29$	Xtrriage
Estimated twinning fraction	0.086 for l,-k,h	Xtrriage
F_o, F_c correlation	0.88	EDS
Total number of atoms	32877	wwPDB-VP
Average B, all atoms (Å ²)	71.0	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 26.29 % 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 2.7089e-03. 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

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 1PE, UDP, A2G, SO4, GOL, NGA, UD2

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	0.23	0/2055	0.65	0/2791
1	B	0.24	0/2055	0.64	0/2791
1	C	0.24	0/2055	0.66	0/2791
1	D	0.24	0/2049	0.66	0/2783
1	E	0.24	0/2124	0.67	0/2881
1	F	0.24	0/2124	0.68	1/2881 (0.0%)
1	G	0.24	0/2124	0.67	1/2881 (0.0%)
1	H	0.24	0/2130	0.66	0/2889
1	I	0.24	0/2038	0.65	0/2768
1	J	0.25	0/2038	0.67	2/2768 (0.1%)
1	K	0.24	0/2049	0.66	0/2783
1	L	0.25	0/2038	0.65	0/2768
1	M	0.24	0/2113	0.66	0/2866
1	N	0.25	0/2093	0.66	0/2841
1	O	0.27	0/2066	0.67	0/2805
1	P	0.24	0/2093	0.68	1/2841 (0.0%)
All	All	0.24	0/33244	0.66	5/45128 (0.0%)

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	J	202	ASN	CA-C-N	5.70	123.82	119.66
1	J	202	ASN	C-N-CA	5.70	123.82	119.66
1	P	190	HIS	CB-CA-C	-5.49	109.77	117.23
1	G	192	GLN	N-CA-C	5.38	117.22	111.36
1	F	192	GLN	N-CA-C	5.06	116.88	111.36

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	1989	0	1926	39	0
1	B	1989	0	1926	35	0
1	C	1989	0	1926	33	0
1	D	1983	0	1921	28	0
1	E	2057	0	2001	32	0
1	F	2057	0	2001	32	0
1	G	2057	0	2001	38	0
1	H	2063	0	2006	34	0
1	I	1973	0	1914	29	0
1	J	1973	0	1914	38	0
1	K	1983	0	1921	40	0
1	L	1973	0	1914	35	1
1	M	2047	0	1992	36	0
1	N	2027	0	1966	44	0
1	O	2000	0	1933	63	0
1	P	2027	0	1968	35	0
2	A	12	0	16	0	0
2	D	6	0	8	0	0
2	G	12	0	16	1	0
3	A	25	0	11	4	0
3	B	25	0	11	5	0
3	C	25	0	11	3	1
3	D	25	0	11	6	0
3	I	25	0	11	2	0
3	J	25	0	11	2	0
3	K	25	0	11	4	0
3	L	25	0	11	2	0
3	M	25	0	11	4	0
3	N	25	0	11	18	0
4	A	15	0	12	1	0
4	B	15	0	12	0	0
4	C	15	0	12	0	0
4	D	15	0	12	0	0
4	I	15	0	12	0	0
4	J	15	0	12	0	0
4	K	15	0	12	2	0
4	L	15	0	12	5	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	A	16	0	22	1	0
6	B	5	0	0	0	0
7	E	39	0	25	5	0
7	F	39	0	25	4	0
7	G	39	0	25	7	0
7	H	39	0	25	4	0
7	O	39	0	25	20	0
7	P	39	0	25	3	0
8	M	14	0	13	2	0
8	N	14	0	13	2	0
9	B	2	0	0	0	0
9	C	1	0	0	0	0
9	D	1	0	0	0	0
9	E	1	0	0	0	0
9	L	2	0	0	0	0
All	All	32877	0	31674	588	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 9.

All (588) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:95:ASN:ND2	3:N:1244:UDP:H5'2	1.74	1.02
1:D:191:ASP:OD1	1:D:192:GLN:HG3	1.63	0.98
1:C:231:LYS:NZ	3:C:1237:UDP:O2A	1.96	0.97
1:G:95:ASN:ND2	1:G:96:ALA:H	1.63	0.96
1:F:95:ASN:HD22	1:F:96:ALA:H	0.99	0.93
1:P:97:ASN:ND2	1:P:231:LYS:HZ1	1.66	0.92
1:P:97:ASN:CG	1:P:231:LYS:HZ1	1.78	0.90
1:F:95:ASN:HD22	1:F:96:ALA:N	1.68	0.89
1:K:231:LYS:NZ	3:K:1237:UDP:O3B	2.05	0.88
1:P:97:ASN:ND2	1:P:231:LYS:NZ	2.21	0.88
1:O:69:ASN:CG	7:O:1241:UD2:HN3	1.82	0.87
1:O:13:TYR:CE1	7:O:1241:UD2:H5	2.10	0.87
1:K:191:ASP:OD1	1:K:192:GLN:HG2	1.78	0.83
1:G:95:ASN:ND2	7:G:1246:UD2:O3B	2.12	0.83
1:G:95:ASN:HD22	1:G:96:ALA:H	1.23	0.82
1:O:97:ASN:O	1:O:229:ARG:NH1	2.14	0.80
1:G:192:GLN:O	1:G:196:ASN:ND2	2.13	0.79
1:B:95:ASN:HD21	3:B:1237:UDP:H5'1	1.47	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:P:95:ASN:HB3	1:P:98:LEU:HD13	1.63	0.79
1:O:66:TRP:NE1	7:O:1241:UD2:O2A	2.16	0.79
1:G:231:LYS:NZ	7:G:1246:UD2:O3A	2.17	0.78
1:G:192:GLN:HE21	7:G:1246:UD2:H2'	1.49	0.78
1:K:192:GLN:O	1:K:196:ASN:ND2	2.17	0.77
1:H:213:LEU:HG	1:H:228:ILE:HD11	1.67	0.77
1:N:13:TYR:CZ	3:N:1244:UDP:C5	2.74	0.76
1:N:231:LYS:NZ	3:N:1244:UDP:O1A	2.18	0.75
1:G:95:ASN:ND2	1:G:96:ALA:N	2.35	0.74
1:A:135:TYR:HB2	1:A:137:ARG:HE	1.53	0.73
1:D:135:TYR:HB2	1:D:137:ARG:HE	1.54	0.73
1:O:13:TYR:CE1	7:O:1241:UD2:C5	2.71	0.73
1:N:66:TRP:CZ3	3:N:1244:UDP:O2A	2.42	0.72
1:N:95:ASN:HD22	3:N:1244:UDP:H5'2	1.49	0.72
1:M:231:LYS:NZ	3:M:1246:UDP:O1A	2.21	0.72
1:O:231:LYS:NZ	7:O:1241:UD2:O1A	2.23	0.72
1:N:95:ASN:ND2	3:N:1244:UDP:C5'	2.50	0.72
3:M:1246:UDP:O3B	8:M:1247:NGA:H83	1.89	0.71
3:C:1237:UDP:H5'2	3:C:1237:UDP:H6	1.57	0.70
1:D:191:ASP:CG	1:D:192:GLN:HG3	2.16	0.70
1:B:184:HIS:NE2	3:J:1237:UDP:O2B	2.23	0.70
1:H:95:ASN:HB3	1:H:98:LEU:HD13	1.72	0.70
1:O:95:ASN:ND2	7:O:1241:UD2:O3B	2.25	0.69
1:L:95:ASN:ND2	3:L:1237:UDP:O3'	2.25	0.69
1:O:31:ASP:OD1	1:O:31:ASP:N	2.16	0.69
1:O:13:TYR:HE1	7:O:1241:UD2:H5	1.58	0.69
1:O:7:TYR:HE1	1:O:96:ALA:HB2	1.56	0.68
1:E:192:GLN:HE21	7:E:1246:UD2:H2'	1.59	0.68
1:F:95:ASN:HB3	1:F:98:LEU:HD13	1.76	0.68
1:O:61:GLN:HG3	1:O:76:ILE:HD11	1.76	0.67
1:A:95:ASN:ND2	3:A:1237:UDP:O3'	2.26	0.67
1:C:215:PRO:HA	1:C:228:ILE:HB	1.76	0.66
1:D:121:MET:HB2	1:D:210:PRO:HD3	1.77	0.66
1:B:143:ALA:HB2	1:B:194:LEU:HD23	1.77	0.66
1:K:124:GLY:O	1:K:128:LYS:NZ	2.29	0.66
1:J:230:ASP:N	1:J:230:ASP:OD1	2.25	0.66
1:O:69:ASN:HB3	7:O:1241:UD2:C2	2.26	0.66
1:G:95:ASN:HD22	1:G:96:ALA:N	1.93	0.66
1:L:138:ARG:NH2	1:L:186:ILE:O	2.29	0.65
1:N:13:TYR:CE1	3:N:1244:UDP:C5	2.85	0.65
1:O:69:ASN:CG	7:O:1241:UD2:N3	2.53	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:94:PHE:HB3	1:J:98:LEU:HD11	1.79	0.65
1:P:231:LYS:NZ	7:P:1244:UDP:O1A	2.22	0.65
1:F:43:ASP:OD1	1:F:43:ASP:N	2.29	0.65
1:J:137:ARG:NH1	1:J:145:ILE:O	2.30	0.65
1:P:97:ASN:CG	1:P:231:LYS:NZ	2.54	0.65
1:B:95:ASN:ND2	3:B:1237:UDP:O3'	2.30	0.64
1:N:225:ILE:HG13	1:N:226:ILE:HG13	1.79	0.64
1:D:215:PRO:HA	1:D:228:ILE:HB	1.79	0.64
1:J:84:LEU:HD23	1:J:91:LEU:HD21	1.79	0.64
1:C:213:LEU:HG	1:C:228:ILE:HD11	1.79	0.64
1:F:192:GLN:HE21	7:F:1246:UDP:H2'	1.63	0.64
1:N:95:ASN:HD21	3:N:1244:UDP:H5'2	1.62	0.64
1:B:95:ASN:ND2	3:B:1237:UDP:C3'	2.61	0.63
1:B:192:GLN:O	1:B:196:ASN:ND2	2.28	0.63
1:G:192:GLN:NE2	7:G:1246:UDP:H2'	2.12	0.63
1:O:25:GLU:O	1:O:30:GLN:NE2	2.31	0.63
1:D:143:ALA:HB2	1:D:194:LEU:HD23	1.79	0.63
1:L:215:PRO:HA	1:L:228:ILE:HB	1.81	0.63
4:L:1238:A2G:H8B	4:L:1238:A2G:C3	2.28	0.63
1:E:8:ILE:O	7:E:1246:UDP:O2'	2.17	0.63
1:E:231:LYS:NZ	7:E:1246:UDP:O3A	2.33	0.62
1:L:231:LYS:NZ	3:L:1237:UDP:O2A	2.33	0.62
1:B:215:PRO:HA	1:B:228:ILE:HB	1.81	0.62
1:I:143:ALA:HB2	1:I:194:LEU:HD23	1.82	0.62
1:C:128:LYS:NZ	1:C:132:GLU:OE1	2.31	0.61
3:D:1237:UDP:H5'1	3:D:1237:UDP:PB	2.40	0.61
1:H:117:LEU:HB3	1:H:204:PRO:HA	1.82	0.61
1:O:97:ASN:OD1	1:O:97:ASN:N	2.32	0.61
1:C:50:GLU:OE2	1:C:58:ARG:NH1	2.34	0.61
1:I:213:LEU:HG	1:I:228:ILE:HD11	1.81	0.61
1:P:95:ASN:OD1	1:P:97:ASN:OD1	2.18	0.61
1:C:192:GLN:O	1:C:196:ASN:ND2	2.27	0.61
1:E:143:ALA:HB2	1:E:194:LEU:HD23	1.81	0.61
1:M:128:LYS:HD3	1:M:132:GLU:HG2	1.82	0.61
3:N:1244:UDP:O3B	8:N:1245:NGA:H3	2.01	0.61
1:A:8:ILE:O	3:A:1237:UDP:O2'	2.19	0.61
1:O:192:GLN:O	1:O:196:ASN:ND2	2.24	0.61
1:F:95:ASN:ND2	1:F:96:ALA:H	1.84	0.61
1:O:230:ASP:OD1	1:O:231:LYS:N	2.33	0.61
1:D:102:SER:HB3	1:D:225:ILE:HG23	1.82	0.60
1:F:45:PRO:O	1:F:58:ARG:NH1	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:143:ALA:HB2	1:C:194:LEU:HD13	1.83	0.60
1:K:95:ASN:HB3	1:K:98:LEU:HD13	1.81	0.60
1:J:10:THR:HG22	1:J:42:THR:HA	1.83	0.60
1:A:215:PRO:HA	1:A:228:ILE:HB	1.83	0.60
1:N:76:ILE:HD12	1:N:79:ARG:HG3	1.82	0.60
1:N:143:ALA:HB2	1:N:194:LEU:HD13	1.83	0.60
1:J:179:ARG:O	1:J:183:ASN:ND2	2.33	0.60
1:N:95:ASN:OD1	1:N:157:GLY:HA2	2.01	0.60
1:O:7:TYR:CZ	1:O:96:ALA:HA	2.37	0.60
1:G:10:THR:OG1	1:G:69:ASN:ND2	2.34	0.60
1:G:136:GLU:OE2	1:G:138:ARG:NE	2.34	0.60
1:E:29:MET:HB2	1:E:36:ILE:HD11	1.84	0.59
1:E:137:ARG:NH1	1:E:145:ILE:O	2.35	0.59
1:B:231:LYS:NZ	3:B:1237:UDP:O2A	2.35	0.59
1:K:115:ASN:ND2	1:K:203:PRO:O	2.35	0.59
1:N:13:TYR:CE1	3:N:1244:UDP:C4	2.91	0.59
1:P:97:ASN:HD21	1:P:231:LYS:NZ	2.00	0.59
1:M:216:GLU:HB2	1:M:227:LEU:HD21	1.84	0.59
1:O:66:TRP:CE2	7:O:1241:UD2:O2A	2.55	0.59
1:L:211:ALA:HB2	1:L:222:PHE:HB3	1.85	0.59
1:K:106:LYS:HG3	1:K:109:LEU:HD12	1.85	0.58
1:E:50:GLU:OE2	1:E:58:ARG:NH1	2.36	0.58
1:A:26:ARG:NH1	1:A:27:TYR:OH	2.36	0.58
1:G:8:ILE:O	7:G:1246:UD2:O2'	2.21	0.58
1:G:104:ILE:HG13	1:G:225:ILE:HD11	1.85	0.58
1:P:29:MET:HB2	1:P:36:ILE:HD11	1.85	0.58
1:D:211:ALA:HB2	1:D:222:PHE:HB3	1.84	0.58
1:E:70:THR:OG1	1:E:191:ASP:OD2	2.16	0.58
1:I:106:LYS:HG3	1:I:109:LEU:HD12	1.86	0.58
1:O:7:TYR:CE1	1:O:96:ALA:HA	2.38	0.58
1:H:230:ASP:HB3	1:H:233:LYS:HD3	1.84	0.58
1:B:137:ARG:NH1	1:B:145:ILE:O	2.36	0.58
1:B:136:GLU:OE2	1:B:138:ARG:NE	2.28	0.58
1:E:213:LEU:HG	1:E:228:ILE:HD11	1.86	0.58
1:K:233:LYS:NZ	1:M:223:GLU:OE1	2.36	0.58
1:H:2:ARG:HB3	1:H:35:ILE:HG13	1.86	0.58
1:H:45:PRO:O	1:H:58:ARG:NH1	2.37	0.57
1:K:70:THR:CG2	3:K:1237:UDP:H5'2	2.35	0.57
1:M:95:ASN:OD1	1:M:157:GLY:HA2	2.04	0.57
1:A:192:GLN:O	1:A:196:ASN:ND2	2.29	0.57
1:M:45:PRO:O	1:M:58:ARG:NH1	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:121:MET:HB2	1:A:210:PRO:HD3	1.85	0.57
1:L:54:LYS:HE2	1:L:54:LYS:H	1.68	0.57
1:A:23:SER:HB2	1:A:100:PHE:HB2	1.86	0.57
1:D:42:THR:HG21	1:D:47:LEU:HD21	1.85	0.57
1:A:186:ILE:HD11	1:I:67:PRO:HG3	1.85	0.57
1:C:102:SER:HB3	1:C:225:ILE:HG23	1.87	0.57
1:F:8:ILE:O	7:F:1246:UD2:O2'	2.22	0.57
1:O:94:PHE:HB3	1:O:98:LEU:HD11	1.86	0.57
1:P:95:ASN:ND2	7:P:1244:UD2:O3B	2.38	0.57
1:H:192:GLN:O	1:H:196:ASN:ND2	2.38	0.57
3:D:1237:UDP:H5'1	3:D:1237:UDP:O2B	2.03	0.57
1:K:84:LEU:HD13	1:K:91:LEU:HD21	1.86	0.57
4:L:1238:A2G:H8B	4:L:1238:A2G:O3	2.05	0.56
1:L:86:ARG:HG3	1:L:87:GLU:HG3	1.88	0.56
1:D:192:GLN:O	1:D:196:ASN:ND2	2.20	0.56
1:G:95:ASN:HB3	1:G:98:LEU:HG	1.88	0.56
1:K:189:TRP:O	1:K:193:SER:N	2.35	0.56
3:M:1246:UDP:O3B	8:M:1247:NGA:C8	2.53	0.56
1:E:96:ALA:O	1:E:229:ARG:NH2	2.38	0.56
1:G:70:THR:OG1	1:G:191:ASP:OD2	2.17	0.56
1:K:102:SER:HB3	1:K:225:ILE:HG23	1.88	0.56
1:A:137:ARG:HH11	1:A:147:GLU:HG3	1.70	0.56
1:L:64:LEU:HB3	1:L:68:ASP:HB2	1.88	0.55
1:O:95:ASN:HD21	7:O:1241:UD2:H4B	1.70	0.55
1:E:46:LYS:NZ	1:E:51:GLU:OE2	2.37	0.55
1:F:143:ALA:HB2	1:F:194:LEU:HD23	1.88	0.55
1:K:84:LEU:O	1:K:88:THR:OG1	2.23	0.55
1:P:50:GLU:OE2	1:P:58:ARG:NH1	2.39	0.55
1:A:45:PRO:O	1:A:58:ARG:NH1	2.38	0.55
1:K:192:GLN:NE2	4:K:1238:A2G:O1	2.39	0.55
1:F:120:THR:HG21	1:F:158:LEU:HG	1.89	0.55
1:M:188:ILE:HD12	1:M:189:TRP:HA	1.89	0.55
1:O:46:LYS:NZ	1:O:51:GLU:OE2	2.34	0.55
1:H:215:PRO:HA	1:H:228:ILE:HB	1.89	0.55
1:O:7:TYR:HE1	1:O:96:ALA:CB	2.19	0.55
1:D:84:LEU:O	1:D:88:THR:OG1	2.23	0.55
1:E:95:ASN:ND2	7:E:1246:UD2:H4B	2.22	0.55
1:L:102:SER:HB3	1:L:225:ILE:HB	1.88	0.55
1:N:64:LEU:HD12	1:N:68:ASP:HB3	1.89	0.55
1:N:102:SER:HB2	1:N:225:ILE:HB	1.88	0.55
1:A:231:LYS:NZ	3:A:1237:UDP:O2B	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:110:PRO:HG2	1:D:161:GLY:HA2	1.89	0.54
1:O:233:LYS:HG3	1:O:234:PRO:HD2	1.89	0.54
1:L:65:GLY:O	1:L:69:ASN:ND2	2.40	0.54
1:E:61:GLN:HG3	1:E:76:ILE:HG23	1.89	0.54
1:M:215:PRO:HA	1:M:228:ILE:HG23	1.89	0.54
1:P:8:ILE:O	7:P:1244:UD2:O2'	2.25	0.54
4:L:1238:A2G:H8B	4:L:1238:A2G:H3	1.89	0.54
1:I:102:SER:HB2	1:I:225:ILE:HG23	1.88	0.54
1:K:70:THR:HG22	3:K:1237:UDP:H5'2	1.89	0.54
1:N:188:ILE:HD12	1:N:189:TRP:HA	1.90	0.54
1:P:97:ASN:ND2	1:P:231:LYS:CE	2.71	0.54
1:A:42:THR:HG21	1:A:47:LEU:HD11	1.89	0.54
1:D:135:TYR:HB3	1:D:145:ILE:HG23	1.90	0.54
1:M:137:ARG:NH1	1:M:145:ILE:O	2.40	0.54
1:H:122:HIS:HD2	1:H:125:PHE:HD2	1.56	0.54
1:K:143:ALA:HB2	1:K:194:LEU:HD23	1.88	0.54
1:F:231:LYS:NZ	7:F:1246:UD2:O1A	2.39	0.53
1:O:7:TYR:OH	1:O:96:ALA:HA	2.08	0.53
1:O:13:TYR:CD1	7:O:1241:UD2:C5	2.91	0.53
1:H:8:ILE:O	7:H:1246:UD2:O2'	2.24	0.53
1:O:213:LEU:HD22	1:O:228:ILE:HD11	1.91	0.53
1:J:143:ALA:HA	1:J:197:LYS:HD3	1.91	0.53
1:H:91:LEU:HG	1:H:163:THR:HG22	1.91	0.53
1:J:135:TYR:OH	1:J:151:ARG:O	2.24	0.53
1:K:211:ALA:HB2	1:K:222:PHE:HB3	1.90	0.53
1:A:143:ALA:HB2	1:A:194:LEU:HD13	1.90	0.53
1:G:65:GLY:N	1:G:69:ASN:OD1	2.40	0.53
1:N:236:TYR:HB2	1:N:242:LEU:HD11	1.91	0.53
1:F:230:ASP:HB3	1:F:233:LYS:HG3	1.91	0.53
1:J:97:ASN:OD1	1:J:97:ASN:N	2.39	0.53
1:L:92:PHE:HD1	1:L:160:GLY:HA3	1.74	0.53
1:G:244:ARG:NH1	1:M:235:GLN:O	2.42	0.53
1:M:6:LEU:HD21	1:M:84:LEU:HD21	1.91	0.53
1:N:95:ASN:HD21	3:N:1244:UDP:C5'	2.19	0.53
1:C:153:TYR:OH	1:C:192:GLN:NE2	2.29	0.52
1:J:143:ALA:HB2	1:J:194:LEU:HD23	1.90	0.52
1:B:84:LEU:O	1:B:88:THR:OG1	2.24	0.52
1:K:23:SER:HB2	1:K:100:PHE:HB2	1.92	0.52
1:H:46:LYS:NZ	1:H:47:LEU:O	2.42	0.52
1:I:215:PRO:HA	1:I:228:ILE:HB	1.91	0.52
1:K:71:LEU:HB2	1:K:190:HIS:HD2	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:110:PRO:HG2	1:C:161:GLY:HA2	1.92	0.52
1:H:121:MET:HE2	1:H:126:TYR:HB2	1.92	0.52
1:J:121:MET:HB2	1:J:210:PRO:HD3	1.92	0.52
1:K:110:PRO:HG2	1:K:161:GLY:HA2	1.90	0.52
1:A:95:ASN:HB2	1:A:98:LEU:HD13	1.92	0.52
1:E:121:MET:HE2	1:E:126:TYR:HB2	1.91	0.52
1:L:42:THR:HG21	1:L:47:LEU:HD11	1.91	0.52
1:N:9:CYS:HB2	1:N:42:THR:HB	1.92	0.52
1:G:46:LYS:NZ	1:G:47:LEU:O	2.43	0.52
1:L:143:ALA:HB2	1:L:194:LEU:HD23	1.91	0.52
1:H:70:THR:OG1	1:H:191:ASP:OD2	2.25	0.51
1:J:29:MET:HB2	1:J:36:ILE:HD11	1.91	0.51
1:N:95:ASN:ND2	3:N:1244:UDP:H4'	2.25	0.51
1:I:192:GLN:O	1:I:196:ASN:ND2	2.32	0.51
1:I:84:LEU:O	1:I:88:THR:OG1	2.26	0.51
1:E:102:SER:HB3	1:E:225:ILE:HG23	1.93	0.51
1:H:135:TYR:HE2	1:H:196:ASN:HB3	1.76	0.51
1:J:145:ILE:HD11	1:J:197:LYS:HB2	1.92	0.51
1:B:224:PRO:HG2	1:F:219:LEU:HD22	1.93	0.51
1:E:147:GLU:N	1:E:147:GLU:OE1	2.44	0.51
1:L:84:LEU:HG	1:L:91:LEU:HD21	1.92	0.51
1:M:8:ILE:O	3:M:1246:UDP:O2'	2.20	0.51
1:B:23:SER:HB2	1:B:100:PHE:HB2	1.93	0.51
1:F:128:LYS:HD3	1:F:132:GLU:HG2	1.92	0.51
1:G:29:MET:HB2	1:G:36:ILE:HD11	1.91	0.51
1:J:198:TYR:O	1:J:202:ASN:ND2	2.44	0.50
1:L:136:GLU:OE2	1:L:138:ARG:NE	2.42	0.50
1:P:128:LYS:HD3	1:P:132:GLU:HG2	1.93	0.50
1:E:71:LEU:HD13	1:E:190:HIS:HB3	1.94	0.50
1:F:102:SER:HB3	1:F:225:ILE:HG23	1.94	0.50
1:I:8:ILE:O	3:I:1237:UDP:O2'	2.28	0.50
1:O:13:TYR:CE1	7:O:1241:UD2:C6	2.95	0.50
1:P:42:THR:OG1	1:P:43:ASP:N	2.45	0.50
1:M:31:ASP:OD1	1:M:32:GLN:N	2.44	0.50
1:N:95:ASN:ND2	3:N:1244:UDP:C4'	2.75	0.50
1:H:40:VAL:HG11	1:H:47:LEU:HD21	1.92	0.50
1:B:102:SER:HB3	1:B:225:ILE:HG23	1.94	0.50
1:L:230:ASP:HB3	1:L:233:LYS:HG3	1.94	0.50
1:P:23:SER:HB2	1:P:100:PHE:HB2	1.94	0.50
1:P:97:ASN:CG	1:P:231:LYS:CE	2.85	0.50
1:A:147:GLU:N	1:A:147:GLU:OE1	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:16:PHE:HB3	1:O:96:ALA:O	2.12	0.50
1:L:44:SER:O	1:L:58:ARG:NH2	2.45	0.50
1:O:8:ILE:O	7:O:1241:UD2:O2'	2.29	0.49
1:A:10:THR:OG1	3:A:1237:UDP:N3	2.45	0.49
1:G:85:GLU:HA	1:G:163:THR:HG21	1.94	0.49
1:G:102:SER:HB3	1:G:225:ILE:HG13	1.94	0.49
1:J:8:ILE:O	3:J:1237:UDP:O2'	2.28	0.49
1:B:31:ASP:OD1	1:B:32:GLN:N	2.45	0.49
1:N:8:ILE:HB	3:N:1244:UDP:O2'	2.11	0.49
1:N:130:ASN:ND2	1:N:149:GLU:O	2.42	0.49
1:O:137:ARG:NH1	1:O:145:ILE:O	2.44	0.49
1:D:95:ASN:CG	3:D:1237:UDP:O3'	2.55	0.49
1:N:95:ASN:HD22	3:N:1244:UDP:C5'	2.22	0.49
1:D:31:ASP:OD1	1:D:32:GLN:N	2.44	0.49
1:I:230:ASP:HB3	1:I:233:LYS:HG3	1.94	0.49
1:B:147:GLU:OE1	1:B:147:GLU:N	2.45	0.49
1:J:102:SER:HB2	1:J:225:ILE:HG23	1.94	0.49
1:N:84:LEU:O	1:N:88:THR:OG1	2.27	0.49
1:O:69:ASN:HB3	7:O:1241:UD2:O2	2.12	0.49
1:G:71:LEU:HD13	1:G:190:HIS:HB3	1.95	0.49
1:M:73:ARG:NH2	1:M:191:ASP:OD2	2.45	0.49
1:D:38:TYR:HB2	1:D:56:ILE:HA	1.95	0.49
1:D:219:LEU:HB2	1:O:127:ASN:HB2	1.94	0.49
3:D:1237:UDP:H5'1	3:D:1237:UDP:O3B	2.12	0.49
1:J:115:ASN:ND2	1:J:203:PRO:O	2.45	0.49
1:O:143:ALA:HA	1:O:197:LYS:HG3	1.95	0.49
1:A:219:LEU:HB2	1:M:127:ASN:HB2	1.95	0.49
1:P:102:SER:HB3	1:P:225:ILE:HG23	1.95	0.49
1:N:211:ALA:HB2	1:N:222:PHE:HB3	1.95	0.49
1:C:216:GLU:HG3	1:G:222:PHE:HA	1.94	0.48
1:J:134:THR:O	1:J:134:THR:OG1	2.30	0.48
1:B:78:LEU:HD21	1:B:171:THR:HG22	1.94	0.48
1:L:147:GLU:OE1	1:L:147:GLU:N	2.44	0.48
1:N:43:ASP:N	1:N:43:ASP:OD1	2.46	0.48
1:I:121:MET:HB2	1:I:210:PRO:HD3	1.95	0.48
1:I:139:ASP:OD2	1:M:66:TRP:NE1	2.46	0.48
1:K:214:TYR:CE1	1:M:221:PRO:HB3	2.48	0.48
1:O:84:LEU:HG	1:O:91:LEU:HD21	1.95	0.48
1:F:110:PRO:HG2	1:F:161:GLY:HA2	1.95	0.48
1:J:78:LEU:HD22	1:J:81:LYS:HD2	1.94	0.48
1:C:210:PRO:HB2	1:C:222:PHE:CZ	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:121:MET:HB2	1:K:210:PRO:HD3	1.95	0.48
1:L:192:GLN:O	1:L:196:ASN:ND2	2.38	0.48
1:F:130:ASN:ND2	1:F:150:GLY:O	2.47	0.48
1:L:143:ALA:HA	1:L:197:LYS:HG2	1.95	0.48
1:O:73:ARG:NH2	1:O:191:ASP:OD2	2.47	0.48
1:K:191:ASP:OD1	1:K:192:GLN:CG	2.56	0.48
1:N:213:LEU:HB3	1:N:228:ILE:HD11	1.96	0.48
1:C:131:SER:HB2	1:P:232:ASN:HB2	1.96	0.48
1:G:84:LEU:O	1:G:88:THR:OG1	2.26	0.48
1:I:211:ALA:HB2	1:I:222:PHE:HB3	1.94	0.48
1:K:135:TYR:HB3	1:K:145:ILE:HB	1.95	0.48
1:G:208:LEU:HD23	1:G:212:TYR:CG	2.48	0.47
1:I:179:ARG:O	1:I:182:THR:OG1	2.31	0.47
1:J:151:ARG:HG3	1:J:152:TYR:H	1.79	0.47
1:C:230:ASP:HB3	1:C:233:LYS:HD3	1.95	0.47
1:G:26:ARG:NH1	1:G:27:TYR:OH	2.47	0.47
1:O:44:SER:O	1:O:58:ARG:NH2	2.46	0.47
1:B:210:PRO:HB2	1:B:222:PHE:CZ	2.49	0.47
1:P:97:ASN:ND2	1:P:231:LYS:HE3	2.29	0.47
1:E:155:ALA:HB1	7:E:1246:UD2:H8'2	1.95	0.47
1:J:192:GLN:O	1:J:196:ASN:ND2	2.47	0.47
1:H:5:ILE:HD12	1:H:38:TYR:HE1	1.80	0.47
1:H:179:ARG:O	1:H:182:THR:OG1	2.29	0.47
1:I:214:TYR:CE1	1:P:221:PRO:HB3	2.50	0.47
1:K:135:TYR:HB2	1:K:137:ARG:NE	2.30	0.47
1:O:102:SER:HB3	1:O:225:ILE:HA	1.96	0.47
1:C:188:ILE:HA	1:C:189:TRP:HA	1.57	0.47
1:D:125:PHE:HD1	1:D:128:LYS:HD2	1.79	0.47
1:F:139:ASP:OD1	1:F:139:ASP:N	2.48	0.47
1:L:74:PHE:HE2	1:L:173:ILE:HD12	1.79	0.47
1:O:69:ASN:ND2	7:O:1241:UD2:HN3	2.12	0.47
1:C:97:ASN:OD1	1:C:97:ASN:N	2.47	0.47
1:F:65:GLY:O	1:F:69:ASN:N	2.45	0.47
1:L:188:ILE:HA	1:L:189:TRP:HA	1.59	0.47
1:B:138:ARG:NH1	1:J:188:ILE:HG21	2.30	0.47
1:E:214:TYR:CE2	1:E:220:LEU:HB2	2.50	0.47
1:P:136:GLU:HB3	1:P:143:ALA:O	2.15	0.47
1:C:136:GLU:OE2	1:C:138:ARG:NE	2.38	0.47
1:O:188:ILE:HA	1:O:189:TRP:HA	1.68	0.47
1:C:74:PHE:HB3	1:C:170:CYS:HB2	1.97	0.46
1:C:86:ARG:HG3	1:C:87:GLU:HG3	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:26:ARG:NH1	1:B:27:TYR:OH	2.48	0.46
3:D:1237:UDP:PB	3:D:1237:UDP:C5'	3.03	0.46
1:H:31:ASP:OD1	1:H:32:GLN:N	2.48	0.46
1:H:95:ASN:OD1	1:H:97:ASN:OD1	2.32	0.46
1:H:233:LYS:HG3	1:H:234:PRO:HD2	1.97	0.46
1:I:19:ASP:HB2	1:I:229:ARG:NH1	2.31	0.46
1:J:84:LEU:O	1:J:88:THR:OG1	2.27	0.46
1:P:238:GLY:HA2	1:P:239:HIS:HA	1.70	0.46
1:A:233:LYS:NZ	1:E:223:GLU:OE1	2.47	0.46
1:J:31:ASP:HB3	1:J:34:PHE:HD1	1.80	0.46
4:K:1238:A2G:O6	4:K:1238:A2G:O4	2.34	0.46
3:C:1237:UDP:H5'1	3:C:1237:UDP:O2B	2.15	0.46
1:F:188:ILE:HA	1:F:189:TRP:HA	1.67	0.46
1:J:78:LEU:HD11	1:J:171:THR:HA	1.98	0.46
1:B:218:TRP:HE1	1:N:132:GLU:HG3	1.81	0.46
1:B:117:LEU:HB2	1:B:204:PRO:HA	1.98	0.46
1:K:70:THR:OG1	1:K:190:HIS:NE2	2.47	0.46
1:K:117:LEU:HB2	1:K:204:PRO:HA	1.97	0.46
1:P:136:GLU:OE2	1:P:138:ARG:HD3	2.15	0.46
1:J:233:LYS:HB2	1:J:236:TYR:HD2	1.81	0.46
1:K:215:PRO:HA	1:K:228:ILE:HB	1.96	0.46
1:L:122:HIS:CE1	4:L:1238:A2G:O1	2.69	0.46
1:M:12:LYS:NZ	1:M:241:LEU:O	2.44	0.46
1:M:95:ASN:HB2	1:M:98:LEU:HD13	1.97	0.46
1:B:110:PRO:HG2	1:B:161:GLY:HA2	1.98	0.45
1:H:42:THR:HG21	1:H:47:LEU:HD11	1.99	0.45
1:H:71:LEU:HD13	1:H:190:HIS:HB3	1.97	0.45
1:I:139:ASP:OD1	1:I:139:ASP:N	2.49	0.45
1:J:38:TYR:HB2	1:J:56:ILE:HA	1.98	0.45
1:A:211:ALA:HB2	1:A:222:PHE:HB3	1.98	0.45
1:B:138:ARG:NH2	1:B:186:ILE:O	2.45	0.45
1:E:73:ARG:NH2	1:E:191:ASP:OD2	2.49	0.45
1:E:106:LYS:H	1:E:106:LYS:HD3	1.82	0.45
1:H:0:HIS:HA	1:H:1:MET:HA	1.56	0.45
1:M:84:LEU:O	1:M:88:THR:OG1	2.27	0.45
1:O:139:ASP:OD1	1:O:139:ASP:N	2.50	0.45
1:O:216:GLU:HB2	1:O:227:LEU:HD11	1.98	0.45
1:P:97:ASN:CG	1:P:231:LYS:HE3	2.42	0.45
1:B:95:ASN:ND2	3:B:1237:UDP:H3'	2.32	0.45
1:F:14:ASP:OD2	1:F:44:SER:OG	2.35	0.45
1:A:122:HIS:NE2	4:A:1238:A2G:O1	2.44	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:71:LEU:HD13	1:K:190:HIS:HB2	1.98	0.45
1:O:69:ASN:CB	7:O:1241:UD2:N3	2.79	0.45
1:O:73:ARG:O	1:O:76:ILE:HG22	2.15	0.45
1:G:97:ASN:HB2	1:G:229:ARG:HB2	1.99	0.45
1:H:10:THR:HG22	1:H:42:THR:HA	1.99	0.45
1:C:94:PHE:HB3	1:C:98:LEU:HD12	1.98	0.45
1:D:164:LYS:HG2	1:D:168:LYS:HE3	1.99	0.45
7:G:1246:UD2:H6	7:G:1246:UD2:H5'2	1.99	0.45
1:J:71:LEU:HD13	1:J:190:HIS:HB2	1.99	0.45
1:H:43:ASP:HB3	1:H:62:LYS:HA	1.98	0.45
1:J:188:ILE:HD12	1:J:189:TRP:HA	1.99	0.45
1:P:90:TYR:HD1	1:P:162:CYS:HA	1.80	0.45
1:A:110:PRO:HA	1:A:111:PRO:HD3	1.89	0.45
1:H:84:LEU:HD23	1:H:91:LEU:HD11	1.99	0.45
1:J:95:ASN:H	1:J:98:LEU:HD21	1.82	0.45
1:M:110:PRO:HG2	1:M:161:GLY:HA2	1.99	0.45
1:N:66:TRP:CH2	3:N:1244:UDP:O2A	2.70	0.45
1:F:203:PRO:HA	1:F:204:PRO:HD3	1.89	0.44
1:I:29:MET:H	1:I:36:ILE:HD11	1.82	0.44
1:I:92:PHE:HE1	1:I:118:LEU:HD13	1.83	0.44
1:O:102:SER:HB3	1:O:225:ILE:HG23	1.98	0.44
1:A:31:ASP:OD1	1:A:32:GLN:N	2.50	0.44
1:E:122:HIS:HA	1:E:123:PRO:HD3	1.88	0.44
1:H:231:LYS:HB2	1:H:231:LYS:HE3	1.80	0.44
1:N:31:ASP:OD1	1:N:32:GLN:N	2.51	0.44
1:A:137:ARG:NH1	1:A:147:GLU:HG3	2.32	0.44
1:L:134:THR:HB	1:L:189:TRP:HZ3	1.83	0.44
1:A:61:GLN:HE22	5:A:1240:1PE:H232	1.82	0.44
1:C:23:SER:HB2	1:C:100:PHE:HB2	1.99	0.44
1:G:23:SER:HB2	1:G:100:PHE:HB2	1.98	0.44
1:J:118:LEU:HD11	1:J:208:LEU:HD11	2.00	0.44
7:O:1241:UD2:O4'	7:O:1241:UD2:O6'	2.31	0.44
1:L:115:ASN:ND2	1:L:203:PRO:O	2.48	0.44
1:N:208:LEU:HD13	1:N:212:TYR:HD2	1.82	0.44
1:A:110:PRO:HG2	1:A:161:GLY:HA2	2.00	0.44
1:J:154:TYR:HE1	1:J:207:THR:HG23	1.83	0.44
1:O:75:HIS:HE1	1:O:177:VAL:HG11	1.82	0.44
1:G:238:GLY:HA3	1:G:239:HIS:HA	1.56	0.44
1:I:231:LYS:NZ	3:I:1237:UDP:O2A	2.34	0.44
1:J:40:VAL:HG13	1:J:58:ARG:HA	1.99	0.44
1:J:197:LYS:HE2	1:J:197:LYS:HB3	1.86	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:97:ASN:OD1	1:M:97:ASN:N	2.50	0.44
1:N:86:ARG:HG3	1:N:87:GLU:HG3	1.99	0.44
1:O:12:LYS:NZ	1:O:240:GLU:OE1	2.43	0.44
1:B:139:ASP:HA	1:B:144:TYR:CG	2.53	0.44
1:C:139:ASP:OD1	1:C:139:ASP:N	2.50	0.44
1:M:78:LEU:HA	1:M:81:LYS:HB2	2.00	0.44
1:E:215:PRO:HA	1:E:228:ILE:HB	2.00	0.44
1:N:10:THR:HG23	1:N:63:ASN:HB3	2.00	0.44
1:B:85:GLU:HA	1:B:163:THR:HG21	2.00	0.43
1:O:13:TYR:CD1	7:O:1241:UD2:C6	3.01	0.43
1:O:71:LEU:HD13	1:O:190:HIS:HB2	2.00	0.43
1:O:84:LEU:O	1:O:88:THR:OG1	2.26	0.43
1:A:22:LEU:HD11	1:A:48:TYR:HE2	1.83	0.43
1:C:19:ASP:HB2	1:C:229:ARG:NH1	2.33	0.43
1:C:84:LEU:O	1:C:88:THR:OG1	2.26	0.43
1:D:172:THR:O	1:D:175:SER:OG	2.29	0.43
3:D:1237:UDP:H5'1	3:D:1237:UDP:H6	1.83	0.43
1:M:122:HIS:HA	1:M:123:PRO:HD3	1.86	0.43
1:N:13:TYR:CZ	3:N:1244:UDP:H5	2.35	0.43
1:H:192:GLN:HE21	7:H:1246:UD2:H2'	1.83	0.43
1:M:95:ASN:H	1:M:98:LEU:HD22	1.83	0.43
1:N:192:GLN:HA	1:N:195:ILE:HG22	1.99	0.43
1:P:114:SER:OG	1:P:115:ASN:N	2.52	0.43
1:A:84:LEU:O	1:A:88:THR:OG1	2.34	0.43
1:B:110:PRO:HA	1:B:111:PRO:HD3	1.89	0.43
1:D:192:GLN:HA	1:D:195:ILE:HG22	2.00	0.43
1:E:189:TRP:HB2	1:E:192:GLN:HB2	2.01	0.43
2:G:1247:GOL:O3	2:G:1247:GOL:O1	2.35	0.43
1:K:219:LEU:HD21	1:M:126:TYR:CE2	2.53	0.43
1:L:216:GLU:HG3	1:N:222:PHE:HA	2.00	0.43
1:D:2:ARG:NH2	1:D:89:ASP:OD1	2.51	0.43
1:L:121:MET:HB2	1:L:210:PRO:HD3	2.01	0.43
4:L:1238:A2G:C3	4:L:1238:A2G:C8	2.94	0.43
1:M:215:PRO:HG2	1:M:218:TRP:CE3	2.54	0.43
1:E:42:THR:HG21	1:E:47:LEU:HD21	2.01	0.43
1:B:86:ARG:HG3	1:B:87:GLU:HG3	2.01	0.43
1:G:121:MET:HE3	1:G:210:PRO:HD3	2.00	0.43
1:G:139:ASP:OD1	1:G:139:ASP:N	2.51	0.43
1:K:135:TYR:O	1:K:137:ARG:N	2.45	0.43
1:O:12:LYS:HE3	1:O:13:TYR:HE1	1.84	0.43
1:D:72:LYS:O	1:D:76:ILE:HG13	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:231:LYS:NZ	7:G:1246:UD2:PA	2.92	0.42
1:H:122:HIS:HA	1:H:123:PRO:HD3	1.88	0.42
1:I:110:PRO:HA	1:I:111:PRO:HD3	1.89	0.42
1:M:143:ALA:HB2	1:M:194:LEU:HD22	2.01	0.42
1:E:78:LEU:HD21	1:E:171:THR:HG22	2.00	0.42
1:F:208:LEU:HD13	1:F:212:TYR:HB2	2.00	0.42
1:O:110:PRO:HA	1:O:111:PRO:HD3	1.88	0.42
1:A:188:ILE:HA	1:A:189:TRP:HA	1.64	0.42
1:L:224:PRO:HG2	1:N:219:LEU:HG	2.01	0.42
1:M:102:SER:HB3	1:M:225:ILE:HG23	2.02	0.42
1:O:214:TYR:CE2	1:O:220:LEU:HB2	2.54	0.42
1:P:231:LYS:C	1:P:233:LYS:H	2.27	0.42
1:A:64:LEU:HB3	1:A:68:ASP:HB2	2.02	0.42
1:A:95:ASN:HD22	1:A:95:ASN:HA	1.56	0.42
1:B:139:ASP:OD1	1:B:139:ASP:N	2.48	0.42
1:H:157:GLY:H	7:H:1246:UD2:H8'2	1.84	0.42
1:J:31:ASP:HB3	1:J:34:PHE:CD1	2.54	0.42
1:P:89:ASP:OD1	1:P:89:ASP:N	2.52	0.42
1:B:131:SER:HB2	1:N:232:ASN:HB2	2.02	0.42
1:N:16:PHE:HB3	1:N:96:ALA:O	2.20	0.42
1:A:132:GLU:CD	1:M:218:TRP:HE1	2.27	0.42
1:H:1:MET:SD	1:H:1:MET:N	2.92	0.42
1:L:23:SER:HB2	1:L:100:PHE:HB2	2.02	0.42
1:M:211:ALA:HB2	1:M:222:PHE:HB3	2.02	0.42
1:F:70:THR:OG1	1:F:191:ASP:OD2	2.23	0.42
1:L:6:LEU:HD11	1:L:91:LEU:HD23	2.01	0.42
1:P:102:SER:HB3	1:P:225:ILE:HA	2.02	0.42
1:C:110:PRO:HA	1:C:111:PRO:HD3	1.90	0.42
1:F:81:LYS:HE3	1:F:81:LYS:HB2	1.89	0.42
1:B:43:ASP:OD1	1:B:43:ASP:N	2.52	0.42
1:B:66:TRP:HA	1:B:67:PRO:HA	1.82	0.42
1:C:2:ARG:NH1	1:C:86:ARG:O	2.53	0.42
1:C:218:TRP:HE3	1:C:220:LEU:HD11	1.85	0.42
1:D:37:GLU:OE1	1:D:57:HIS:NE2	2.37	0.42
1:E:63:ASN:OD1	1:E:69:ASN:ND2	2.36	0.42
1:E:164:LYS:O	1:E:168:LYS:HG2	2.20	0.42
1:F:68:ASP:OD1	1:F:72:LYS:NZ	2.51	0.42
1:K:230:ASP:HB3	1:K:233:LYS:HE2	2.01	0.42
1:A:19:ASP:HB2	1:A:229:ARG:NH1	2.35	0.41
1:A:172:THR:O	1:A:175:SER:OG	2.31	0.41
1:F:84:LEU:O	1:F:88:THR:OG1	2.33	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:211:ALA:HB1	1:L:223:GLU:O	2.19	0.41
1:M:231:LYS:O	1:M:233:LYS:N	2.53	0.41
1:A:0:HIS:CD2	1:A:35:ILE:HD11	2.55	0.41
1:C:154:TYR:HE1	1:C:207:THR:HG23	1.84	0.41
1:I:46:LYS:NZ	1:I:51:GLU:OE1	2.52	0.41
1:J:201:ASP:N	1:J:201:ASP:OD1	2.53	0.41
1:K:2:ARG:NH2	1:K:89:ASP:OD1	2.48	0.41
1:K:235:GLN:OE1	1:M:102:SER:OG	2.37	0.41
1:N:238:GLY:HA2	1:N:239:HIS:HA	1.69	0.41
1:C:31:ASP:OD1	1:C:32:GLN:N	2.53	0.41
1:F:155:ALA:HB1	7:F:1246:UD2:H8'2	2.02	0.41
1:J:98:LEU:HB3	1:J:228:ILE:HG13	2.01	0.41
1:K:216:GLU:HG3	1:M:222:PHE:HA	2.01	0.41
1:K:233:LYS:HG2	1:K:234:PRO:HD2	2.02	0.41
1:P:97:ASN:HD21	1:P:231:LYS:HZ1	1.52	0.41
1:A:7:TYR:HD2	1:A:40:VAL:HG13	1.85	0.41
1:C:92:PHE:HE1	1:C:118:LEU:HD22	1.85	0.41
1:H:106:LYS:HD2	1:H:109:LEU:HB2	2.02	0.41
1:K:113:ASP:OD1	1:K:113:ASP:N	2.52	0.41
1:N:78:LEU:HD22	1:N:81:LYS:HD2	2.02	0.41
1:B:2:ARG:HH11	1:B:35:ILE:HG21	1.85	0.41
1:D:230:ASP:HB3	1:D:233:LYS:HG3	2.02	0.41
1:M:214:TYR:CE2	1:M:220:LEU:HB2	2.56	0.41
1:O:13:TYR:OH	1:O:66:TRP:HH2	2.04	0.41
1:C:219:LEU:HB2	1:P:127:ASN:HB2	2.03	0.41
1:E:117:LEU:HB2	1:E:204:PRO:HA	2.02	0.41
1:F:122:HIS:ND1	1:F:123:PRO:HD2	2.36	0.41
1:F:172:THR:O	1:F:175:SER:OG	2.36	0.41
7:H:1246:UD2:H6	7:H:1246:UD2:H5'2	2.01	0.41
1:K:70:THR:HG21	3:K:1237:UDP:H5'2	2.03	0.41
1:L:115:ASN:OD1	1:L:115:ASN:N	2.54	0.41
1:O:75:HIS:CE1	1:O:177:VAL:HG11	2.55	0.41
1:O:176:TRP:HE3	1:O:194:LEU:HD12	1.84	0.41
1:A:188:ILE:H	1:A:188:ILE:HG13	1.76	0.41
1:K:99:LEU:HB2	1:K:229:ARG:HH11	1.85	0.41
1:N:66:TRP:CG	1:N:67:PRO:HA	2.55	0.41
1:N:70:THR:HG23	1:N:191:ASP:HB2	2.03	0.41
1:P:186:ILE:HD11	1:P:190:HIS:CE1	2.55	0.41
1:A:66:TRP:HA	1:A:67:PRO:HA	1.81	0.41
1:A:70:THR:HG21	1:A:191:ASP:HB3	2.03	0.41
1:D:145:ILE:HD12	1:D:200:LEU:HD22	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:98:LEU:HD23	1:G:98:LEU:HA	1.91	0.41
1:G:110:PRO:HG2	1:G:161:GLY:HA2	2.02	0.41
1:G:214:TYR:HA	1:G:215:PRO:HD3	1.95	0.41
1:I:188:ILE:HA	1:I:189:TRP:HA	1.68	0.41
1:M:176:TRP:CD1	1:M:179:ARG:HH21	2.39	0.41
3:N:1244:UDP:O3B	8:N:1245:NGA:H5	2.21	0.41
1:O:98:LEU:HB3	1:O:228:ILE:HG12	2.02	0.41
1:O:143:ALA:HB2	1:O:194:LEU:HD13	2.03	0.41
1:C:5:ILE:HG23	1:C:38:TYR:HA	2.03	0.41
1:G:0:HIS:HB2	1:G:1:MET:H	1.58	0.41
1:J:137:ARG:CZ	1:J:147:GLU:HG2	2.51	0.41
1:L:45:PRO:O	1:L:58:ARG:NH1	2.54	0.41
1:L:192:GLN:HE21	1:L:192:GLN:HB2	1.68	0.41
1:F:102:SER:HB3	1:F:225:ILE:HA	2.02	0.40
1:G:218:TRP:HE3	1:G:220:LEU:HD11	1.86	0.40
1:I:28:PHE:HA	1:I:29:MET:HA	1.71	0.40
1:I:86:ARG:HG3	1:I:87:GLU:HG3	2.03	0.40
1:I:214:TYR:HA	1:I:215:PRO:HD3	1.95	0.40
1:L:66:TRP:CG	1:L:67:PRO:HA	2.56	0.40
1:P:64:LEU:HD13	1:P:68:ASP:HB3	2.02	0.40
1:D:132:GLU:N	1:D:132:GLU:OE1	2.55	0.40
1:E:230:ASP:HB3	1:E:233:LYS:HG3	2.03	0.40
1:G:113:ASP:OD1	1:G:113:ASP:N	2.52	0.40
1:I:43:ASP:OD1	1:I:43:ASP:N	2.54	0.40
1:I:66:TRP:CG	1:I:67:PRO:HA	2.57	0.40
1:O:7:TYR:CE1	1:O:96:ALA:CB	3.01	0.40
1:H:19:ASP:HB2	1:H:229:ARG:NH1	2.37	0.40
1:I:233:LYS:HA	1:I:234:PRO:HD3	1.97	0.40
1:K:102:SER:HA	1:K:103:PRO:HD3	1.97	0.40
1:E:42:THR:OG1	1:E:43:ASP:N	2.54	0.40
1:O:192:GLN:HG3	7:O:1241:UD2:O4'	2.21	0.40
1:B:214:TYR:CZ	1:B:220:LEU:HB2	2.57	0.40
1:C:128:LYS:HZ2	1:P:218:TRP:HZ2	1.68	0.40
1:D:137:ARG:NH1	1:D:147:GLU:OE1	2.35	0.40
1:F:23:SER:HB2	1:F:100:PHE:HB2	2.04	0.40
1:O:147:GLU:OE1	1:O:147:GLU:N	2.54	0.40
1:O:173:ILE:HG23	1:O:194:LEU:HG	2.04	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:L:184:HIS:CE1	3:C:1237:UDP:O3B[1_654]	2.14	0.06

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	236/248 (95%)	219 (93%)	17 (7%)	0	100	100
1	B	236/248 (95%)	221 (94%)	15 (6%)	0	100	100
1	C	236/248 (95%)	219 (93%)	17 (7%)	0	100	100
1	D	235/248 (95%)	220 (94%)	14 (6%)	1 (0%)	30	64
1	E	244/248 (98%)	231 (95%)	13 (5%)	0	100	100
1	F	244/248 (98%)	227 (93%)	17 (7%)	0	100	100
1	G	244/248 (98%)	231 (95%)	12 (5%)	1 (0%)	30	64
1	H	245/248 (99%)	230 (94%)	15 (6%)	0	100	100
1	I	234/248 (94%)	221 (94%)	13 (6%)	0	100	100
1	J	234/248 (94%)	218 (93%)	16 (7%)	0	100	100
1	K	235/248 (95%)	216 (92%)	19 (8%)	0	100	100
1	L	234/248 (94%)	218 (93%)	16 (7%)	0	100	100
1	M	243/248 (98%)	233 (96%)	10 (4%)	0	100	100
1	N	241/248 (97%)	227 (94%)	13 (5%)	1 (0%)	30	64
1	O	238/248 (96%)	222 (93%)	15 (6%)	1 (0%)	30	64
1	P	241/248 (97%)	224 (93%)	17 (7%)	0	100	100
All	All	3820/3968 (96%)	3577 (94%)	239 (6%)	4 (0%)	48	79

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	G	237	GLY

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Mol	Chain	Res	Type
1	N	146	PRO
1	D	224	PRO
1	O	45	PRO

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	215/223 (96%)	209 (97%)	6 (3%)	38	65
1	B	215/223 (96%)	211 (98%)	4 (2%)	52	73
1	C	215/223 (96%)	209 (97%)	6 (3%)	38	65
1	D	214/223 (96%)	210 (98%)	4 (2%)	52	73
1	E	221/223 (99%)	210 (95%)	11 (5%)	20	49
1	F	221/223 (99%)	208 (94%)	13 (6%)	16	44
1	G	221/223 (99%)	213 (96%)	8 (4%)	30	59
1	H	222/223 (100%)	219 (99%)	3 (1%)	62	79
1	I	213/223 (96%)	209 (98%)	4 (2%)	52	73
1	J	213/223 (96%)	205 (96%)	8 (4%)	28	57
1	K	214/223 (96%)	205 (96%)	9 (4%)	25	54
1	L	213/223 (96%)	203 (95%)	10 (5%)	22	51
1	M	220/223 (99%)	210 (96%)	10 (4%)	23	53
1	N	218/223 (98%)	206 (94%)	12 (6%)	18	46
1	O	215/223 (96%)	205 (95%)	10 (5%)	22	51
1	P	218/223 (98%)	209 (96%)	9 (4%)	26	55
All	All	3468/3568 (97%)	3341 (96%)	127 (4%)	29	58

All (127) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1	MET

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Mol	Chain	Res	Type
1	A	84	LEU
1	A	95	ASN
1	A	134	THR
1	A	188	ILE
1	A	191	ASP
1	B	46	LYS
1	B	84	LEU
1	B	95	ASN
1	B	220	LEU
1	C	0	HIS
1	C	5	ILE
1	C	66	TRP
1	C	95	ASN
1	C	134	THR
1	C	188	ILE
1	D	59	ILE
1	D	145	ILE
1	D	188	ILE
1	D	192	GLN
1	E	1	MET
1	E	51	GLU
1	E	95	ASN
1	E	106	LYS
1	E	107	GLU
1	E	130	ASN
1	E	185	ILE
1	E	188	ILE
1	E	191	ASP
1	E	213	LEU
1	E	236	TYR
1	F	0	HIS
1	F	1	MET
1	F	12	LYS
1	F	35	ILE
1	F	43	ASP
1	F	91	LEU
1	F	95	ASN
1	F	120	THR
1	F	149	GLU
1	F	158	LEU
1	F	190	HIS
1	F	219	LEU

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Mol	Chain	Res	Type
1	F	236	TYR
1	G	0	HIS
1	G	59	ILE
1	G	66	TRP
1	G	69	ASN
1	G	167	LEU
1	G	177	VAL
1	G	190	HIS
1	G	239	HIS
1	H	2	ARG
1	H	132	GLU
1	H	245	LYS
1	I	31	ASP
1	I	95	ASN
1	I	188	ILE
1	I	213	LEU
1	J	40	VAL
1	J	56	ILE
1	J	95	ASN
1	J	97	ASN
1	J	134	THR
1	J	177	VAL
1	J	189	TRP
1	J	230	ASP
1	K	62	LYS
1	K	69	ASN
1	K	95	ASN
1	K	188	ILE
1	K	190	HIS
1	K	191	ASP
1	K	192	GLN
1	K	200	LEU
1	K	208	LEU
1	L	51	GLU
1	L	54	LYS
1	L	80	ILE
1	L	95	ASN
1	L	106	LYS
1	L	169	LEU
1	L	186	ILE
1	L	188	ILE
1	L	192	GLN

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Mol	Chain	Res	Type
1	L	225	ILE
1	M	71	LEU
1	M	95	ASN
1	M	177	VAL
1	M	186	ILE
1	M	192	GLN
1	M	194	LEU
1	M	226	ILE
1	M	228	ILE
1	M	236	TYR
1	M	245	LYS
1	N	10	THR
1	N	43	ASP
1	N	64	LEU
1	N	70	THR
1	N	89	ASP
1	N	95	ASN
1	N	145	ILE
1	N	149	GLU
1	N	177	VAL
1	N	186	ILE
1	N	190	HIS
1	N	225	ILE
1	O	31	ASP
1	O	47	LEU
1	O	80	ILE
1	O	84	LEU
1	O	95	ASN
1	O	97	ASN
1	O	194	LEU
1	O	207	THR
1	O	231	LYS
1	O	233	LYS
1	P	6	LEU
1	P	64	LEU
1	P	70	THR
1	P	130	ASN
1	P	145	ILE
1	P	186	ILE
1	P	206	ILE
1	P	207	THR
1	P	231	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (51) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	30	GLN
1	A	55	HIS
1	A	95	ASN
1	A	115	ASN
1	A	192	GLN
1	B	95	ASN
1	B	97	ASN
1	B	202	ASN
1	C	61	GLN
1	C	95	ASN
1	C	183	ASN
1	C	235	GLN
1	D	55	HIS
1	D	115	ASN
1	D	192	GLN
1	E	95	ASN
1	E	192	GLN
1	F	95	ASN
1	F	192	GLN
1	G	95	ASN
1	G	192	GLN
1	H	52	ASN
1	H	95	ASN
1	H	122	HIS
1	H	192	GLN
1	H	232	ASN
1	H	239	HIS
1	I	95	ASN
1	I	130	ASN
1	I	184	HIS
1	J	95	ASN
1	J	192	GLN
1	J	202	ASN
1	K	130	ASN
1	K	192	GLN
1	K	202	ASN
1	L	95	ASN
1	L	192	GLN
1	L	232	ASN
1	M	127	ASN
1	M	190	HIS

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Mol	Chain	Res	Type
1	N	63	ASN
1	N	95	ASN
1	N	232	ASN
1	O	61	GLN
1	O	95	ASN
1	O	202	ASN
1	P	95	ASN
1	P	122	HIS
1	P	192	GLN
1	P	202	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

33 ligands are modelled in this entry.

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	A2G	I	1238	-	15,15,15	0.41	0	21,21,21	0.55	0
3	UDP	D	1237	-	24,26,26	1.11	2 (8%)	37,40,40	1.72	7 (18%)
7	UD2	E	1246	-	38,41,41	0.89	2 (5%)	57,62,62	1.36	6 (10%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
7	UD2	H	1246	-	38,41,41	0.88	2 (5%)	57,62,62	1.39	8 (14%)
3	UDP	C	1237	-	24,26,26	1.12	2 (8%)	37,40,40	1.71	7 (18%)
7	UD2	O	1241	-	38,41,41	0.89	2 (5%)	57,62,62	1.40	7 (12%)
3	UDP	L	1237	-	24,26,26	1.11	2 (8%)	37,40,40	1.62	7 (18%)
2	GOL	G	1248	-	5,5,5	0.37	0	5,5,5	0.26	0
4	A2G	J	1238	-	15,15,15	0.41	0	21,21,21	0.47	0
2	GOL	D	1239	-	5,5,5	0.37	0	5,5,5	0.27	0
3	UDP	J	1237	-	24,26,26	1.11	2 (8%)	37,40,40	1.63	7 (18%)
4	A2G	L	1238	-	15,15,15	0.42	0	21,21,21	0.48	0
3	UDP	A	1237	-	24,26,26	1.11	2 (8%)	37,40,40	1.71	6 (16%)
5	1PE	A	1240	-	15,15,15	0.53	0	14,14,14	0.46	0
3	UDP	B	1237	-	24,26,26	1.12	2 (8%)	37,40,40	1.66	7 (18%)
7	UD2	G	1246	-	38,41,41	0.88	2 (5%)	57,62,62	1.41	8 (14%)
7	UD2	P	1244	-	38,41,41	0.88	2 (5%)	57,62,62	1.35	7 (12%)
2	GOL	G	1247	-	5,5,5	0.37	0	5,5,5	0.23	0
2	GOL	A	1239	-	5,5,5	0.37	0	5,5,5	0.27	0
3	UDP	K	1237	-	24,26,26	1.11	2 (8%)	37,40,40	1.71	7 (18%)
4	A2G	D	1238	-	15,15,15	0.41	0	21,21,21	0.47	0
4	A2G	K	1238	-	15,15,15	0.41	0	21,21,21	0.46	0
3	UDP	N	1244	-	24,26,26	1.12	2 (8%)	37,40,40	1.72	7 (18%)
4	A2G	C	1238	-	15,15,15	0.41	0	21,21,21	0.85	1 (4%)
7	UD2	F	1246	-	38,41,41	0.88	2 (5%)	57,62,62	1.37	7 (12%)
2	GOL	A	1236	-	5,5,5	0.38	0	5,5,5	0.24	0
8	NGA	N	1245	-	14,14,15	0.54	0	17,19,21	0.65	0
8	NGA	M	1247	-	14,14,15	0.55	0	17,19,21	0.65	0
3	UDP	M	1246	-	24,26,26	1.12	3 (12%)	37,40,40	1.68	7 (18%)
4	A2G	A	1238	-	15,15,15	0.40	0	21,21,21	0.82	1 (4%)
6	SO4	B	1239	-	4,4,4	0.14	0	6,6,6	0.05	0
4	A2G	B	1238	-	15,15,15	0.40	0	21,21,21	0.87	1 (4%)
3	UDP	I	1237	-	24,26,26	1.11	2 (8%)	37,40,40	1.65	7 (18%)

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
4	A2G	I	1238	-	-	5/6/26/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	UDP	D	1237	-	-	4/16/32/32	0/2/2/2
7	UD2	E	1246	-	-	9/26/63/63	0/3/3/3
7	UD2	H	1246	-	-	8/26/63/63	0/3/3/3
3	UDP	C	1237	-	-	1/16/32/32	0/2/2/2
7	UD2	O	1241	-	-	10/26/63/63	0/3/3/3
3	UDP	L	1237	-	-	5/16/32/32	0/2/2/2
2	GOL	G	1248	-	-	2/4/4/4	-
4	A2G	J	1238	-	-	5/6/26/26	0/1/1/1
2	GOL	D	1239	-	-	2/4/4/4	-
3	UDP	J	1237	-	-	3/16/32/32	0/2/2/2
4	A2G	L	1238	-	-	4/6/26/26	0/1/1/1
3	UDP	A	1237	-	-	7/16/32/32	0/2/2/2
5	1PE	A	1240	-	-	3/13/13/13	-
3	UDP	B	1237	-	-	0/16/32/32	0/2/2/2
7	UD2	G	1246	-	-	6/26/63/63	0/3/3/3
7	UD2	P	1244	-	-	11/26/63/63	0/3/3/3
2	GOL	G	1247	-	-	2/4/4/4	-
2	GOL	A	1239	-	-	2/4/4/4	-
3	UDP	K	1237	-	-	0/16/32/32	0/2/2/2
4	A2G	D	1238	-	-	2/6/26/26	0/1/1/1
4	A2G	K	1238	-	-	3/6/26/26	0/1/1/1
3	UDP	N	1244	-	-	6/16/32/32	0/2/2/2
4	A2G	C	1238	-	-	3/6/26/26	0/1/1/1
7	UD2	F	1246	-	-	12/26/63/63	0/3/3/3
2	GOL	A	1236	-	-	2/4/4/4	-
8	NGA	N	1245	-	-	3/6/23/26	0/1/1/1
8	NGA	M	1247	-	-	3/6/23/26	0/1/1/1
3	UDP	M	1246	-	-	5/16/32/32	0/2/2/2
4	A2G	A	1238	-	-	4/6/26/26	0/1/1/1
4	A2G	B	1238	-	-	3/6/26/26	0/1/1/1
3	UDP	I	1237	-	-	0/16/32/32	0/2/2/2

All (33) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	L	1237	UDP	C4-N3	-2.43	1.34	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	N	1244	UDP	C4-N3	-2.43	1.34	1.38
3	D	1237	UDP	C4-N3	-2.42	1.34	1.38
3	K	1237	UDP	C4-N3	-2.42	1.34	1.38
3	A	1237	UDP	C4-N3	-2.42	1.34	1.38
3	J	1237	UDP	C4-N3	-2.42	1.34	1.38
3	C	1237	UDP	C4-N3	-2.41	1.34	1.38
7	E	1246	UD2	C4-N3	-2.40	1.34	1.38
3	I	1237	UDP	C4-N3	-2.40	1.34	1.38
7	O	1241	UD2	C4-N3	-2.38	1.34	1.38
7	F	1246	UD2	C4-N3	-2.38	1.34	1.38
3	B	1237	UDP	C4-N3	-2.38	1.34	1.38
7	P	1244	UD2	C4-N3	-2.37	1.34	1.38
7	G	1246	UD2	C4-N3	-2.36	1.34	1.38
3	M	1246	UDP	C4-N3	-2.35	1.34	1.38
7	H	1246	UD2	C4-N3	-2.33	1.34	1.38
3	B	1237	UDP	C2-N3	-2.11	1.34	1.38
3	N	1244	UDP	C2-N3	-2.11	1.34	1.38
3	M	1246	UDP	C2-N1	2.10	1.41	1.38
3	C	1237	UDP	C2-N3	-2.09	1.34	1.38
7	E	1246	UD2	C2-N3	-2.09	1.34	1.38
3	D	1237	UDP	C2-N3	-2.09	1.34	1.38
3	J	1237	UDP	C2-N3	-2.08	1.34	1.38
3	K	1237	UDP	C2-N3	-2.07	1.34	1.38
7	O	1241	UD2	C2-N3	-2.07	1.34	1.38
3	I	1237	UDP	C2-N3	-2.06	1.34	1.38
3	L	1237	UDP	C2-N3	-2.06	1.34	1.38
7	G	1246	UD2	C2-N3	-2.05	1.34	1.38
3	A	1237	UDP	C2-N3	-2.04	1.34	1.38
7	P	1244	UD2	C2-N3	-2.04	1.34	1.38
3	M	1246	UDP	C2-N3	-2.03	1.34	1.38
7	F	1246	UD2	C2-N3	-2.02	1.34	1.38
7	H	1246	UD2	C2-N3	-2.01	1.34	1.38

All (115) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	O	1241	UD2	C4-N3-C2	-4.52	120.62	126.58
3	D	1237	UDP	C4-N3-C2	-4.51	120.62	126.58
3	L	1237	UDP	C4-N3-C2	-4.50	120.65	126.58
3	N	1244	UDP	C4-N3-C2	-4.50	120.65	126.58
3	B	1237	UDP	C4-N3-C2	-4.50	120.65	126.58
3	C	1237	UDP	C4-N3-C2	-4.50	120.65	126.58

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	J	1237	UDP	C4-N3-C2	-4.50	120.65	126.58
3	K	1237	UDP	C4-N3-C2	-4.46	120.70	126.58
7	H	1246	UD2	C4-N3-C2	-4.44	120.72	126.58
3	A	1237	UDP	C4-N3-C2	-4.44	120.72	126.58
3	I	1237	UDP	C4-N3-C2	-4.43	120.74	126.58
7	G	1246	UD2	C4-N3-C2	-4.43	120.74	126.58
7	E	1246	UD2	C4-N3-C2	-4.42	120.75	126.58
7	F	1246	UD2	C4-N3-C2	-4.40	120.78	126.58
3	M	1246	UDP	C4-N3-C2	-4.30	120.90	126.58
7	P	1244	UD2	C4-N3-C2	-4.26	120.96	126.58
3	N	1244	UDP	N3-C2-N1	4.10	120.33	114.89
3	K	1237	UDP	N3-C2-N1	4.09	120.32	114.89
3	D	1237	UDP	N3-C2-N1	4.08	120.31	114.89
3	C	1237	UDP	N3-C2-N1	4.07	120.29	114.89
3	B	1237	UDP	N3-C2-N1	4.06	120.28	114.89
3	L	1237	UDP	N3-C2-N1	4.06	120.28	114.89
7	H	1246	UD2	N3-C2-N1	4.05	120.27	114.89
7	O	1241	UD2	N3-C2-N1	4.04	120.25	114.89
3	J	1237	UDP	N3-C2-N1	4.02	120.23	114.89
7	G	1246	UD2	N3-C2-N1	4.00	120.20	114.89
3	I	1237	UDP	N3-C2-N1	4.00	120.20	114.89
3	A	1237	UDP	N3-C2-N1	3.99	120.19	114.89
7	F	1246	UD2	N3-C2-N1	3.97	120.16	114.89
7	P	1244	UD2	N3-C2-N1	3.93	120.11	114.89
7	E	1246	UD2	N3-C2-N1	3.93	120.11	114.89
3	M	1246	UDP	N3-C2-N1	3.93	120.11	114.89
3	A	1237	UDP	PA-O3A-PB	-3.76	119.92	132.83
3	D	1237	UDP	PA-O3A-PB	-3.66	120.27	132.83
3	N	1244	UDP	PA-O3A-PB	-3.64	120.33	132.83
7	O	1241	UD2	PB-O3A-PA	-3.64	120.33	132.83
3	C	1237	UDP	PA-O3A-PB	-3.63	120.36	132.83
3	K	1237	UDP	PA-O3A-PB	-3.62	120.40	132.83
3	J	1237	UDP	C5-C4-N3	3.62	120.26	114.84
7	E	1246	UD2	C5-C4-N3	3.60	120.23	114.84
3	A	1237	UDP	C5-C4-N3	3.60	120.23	114.84
3	D	1237	UDP	C5-C4-N3	3.58	120.20	114.84
3	B	1237	UDP	C5-C4-N3	3.58	120.19	114.84
7	F	1246	UD2	C5-C4-N3	3.58	120.19	114.84
7	O	1241	UD2	C5-C4-N3	3.58	120.19	114.84
3	C	1237	UDP	C5-C4-N3	3.58	120.19	114.84
3	N	1244	UDP	C5-C4-N3	3.57	120.19	114.84
3	I	1237	UDP	C5-C4-N3	3.57	120.18	114.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	M	1246	UDP	C5-C4-N3	3.57	120.18	114.84
3	L	1237	UDP	C5-C4-N3	3.57	120.17	114.84
7	G	1246	UD2	C5-C4-N3	3.56	120.17	114.84
7	H	1246	UD2	C5-C4-N3	3.56	120.16	114.84
3	K	1237	UDP	C5-C4-N3	3.54	120.13	114.84
7	P	1244	UD2	C5-C4-N3	3.49	120.06	114.84
3	B	1237	UDP	PA-O3A-PB	-3.36	121.31	132.83
3	M	1246	UDP	PA-O3A-PB	-3.24	121.71	132.83
3	I	1237	UDP	PA-O3A-PB	-3.23	121.74	132.83
7	F	1246	UD2	O4-C4-C5	-3.10	119.71	125.16
3	J	1237	UDP	O4-C4-C5	-3.07	119.77	125.16
7	H	1246	UD2	O4-C4-C5	-3.05	119.80	125.16
3	A	1237	UDP	O4-C4-C5	-3.04	119.82	125.16
7	G	1246	UD2	O4-C4-C5	-3.03	119.84	125.16
3	M	1246	UDP	O4-C4-C5	-3.02	119.84	125.16
3	I	1237	UDP	O4-C4-C5	-3.00	119.88	125.16
3	D	1237	UDP	O4-C4-C5	-3.00	119.88	125.16
3	B	1237	UDP	O4-C4-C5	-3.00	119.89	125.16
7	E	1246	UD2	O4-C4-C5	-2.99	119.90	125.16
3	N	1244	UDP	O4-C4-C5	-2.99	119.91	125.16
7	P	1244	UD2	O4-C4-C5	-2.98	119.92	125.16
3	C	1237	UDP	O4-C4-C5	-2.98	119.92	125.16
3	K	1237	UDP	O4-C4-C5	-2.97	119.94	125.16
7	O	1241	UD2	O4-C4-C5	-2.96	119.95	125.16
7	E	1246	UD2	PB-O3A-PA	-2.94	122.74	132.83
3	L	1237	UDP	O4-C4-C5	-2.93	120.01	125.16
3	L	1237	UDP	PA-O3A-PB	-2.80	123.23	132.83
7	G	1246	UD2	PB-O3A-PA	-2.79	123.24	132.83
7	P	1244	UD2	PB-O3A-PA	-2.66	123.70	132.83
7	H	1246	UD2	PB-O3A-PA	-2.61	123.86	132.83
3	J	1237	UDP	PA-O3A-PB	-2.60	123.90	132.83
7	G	1246	UD2	C3B-C2B-C1B	2.60	106.37	101.43
3	M	1246	UDP	C3'-C2'-C1'	2.59	106.34	101.43
3	K	1237	UDP	C3'-C2'-C1'	2.57	106.31	101.43
3	D	1237	UDP	C3'-C2'-C1'	2.56	106.29	101.43
4	C	1238	A2G	C1-C2-N2	2.54	113.67	110.73
3	C	1237	UDP	C3'-C2'-C1'	2.54	106.26	101.43
4	B	1238	A2G	C1-C2-N2	2.54	113.67	110.73
7	O	1241	UD2	C3B-C2B-C1B	2.52	106.21	101.43
3	N	1244	UDP	C3'-C2'-C1'	2.52	106.21	101.43
7	H	1246	UD2	C3B-C2B-C1B	2.51	106.19	101.43
7	F	1246	UD2	C3B-C2B-C1B	2.43	106.05	101.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	1238	A2G	C1-C2-N2	2.42	113.53	110.73
3	M	1246	UDP	C1'-N1-C2	2.41	121.94	117.57
3	A	1237	UDP	C3'-C2'-C1'	2.41	106.01	101.43
7	P	1244	UD2	C3B-C2B-C1B	2.39	105.97	101.43
7	F	1246	UD2	PB-O3A-PA	-2.29	124.97	132.83
3	N	1244	UDP	O2-C2-N1	-2.24	119.80	122.79
3	J	1237	UDP	O2-C2-N1	-2.24	119.80	122.79
3	L	1237	UDP	O2-C2-N1	-2.23	119.82	122.79
3	K	1237	UDP	O2-C2-N1	-2.22	119.83	122.79
3	B	1237	UDP	C3'-C2'-C1'	2.22	105.64	101.43
3	D	1237	UDP	O2-C2-N1	-2.21	119.84	122.79
3	C	1237	UDP	O2-C2-N1	-2.21	119.84	122.79
3	I	1237	UDP	C3'-C2'-C1'	2.21	105.62	101.43
7	H	1246	UD2	O2-C2-N1	-2.20	119.86	122.79
7	H	1246	UD2	O5'-C1'-O1'	-2.19	108.50	111.36
3	B	1237	UDP	O2-C2-N1	-2.19	119.88	122.79
7	F	1246	UD2	O2-C2-N1	-2.17	119.90	122.79
3	J	1237	UDP	C3'-C2'-C1'	2.17	105.54	101.43
7	G	1246	UD2	O2-C2-N1	-2.17	119.91	122.79
3	I	1237	UDP	O2-C2-N1	-2.14	119.95	122.79
3	L	1237	UDP	C3'-C2'-C1'	2.13	105.47	101.43
7	O	1241	UD2	O2-C2-N1	-2.09	120.01	122.79
7	P	1244	UD2	O2-C2-N1	-2.07	120.04	122.79
7	G	1246	UD2	O3A-PB-O1'	-2.06	98.33	102.48
7	E	1246	UD2	O3A-PB-O1'	-2.04	98.38	102.48

There are no chirality outliers.

All (135) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	1236	GOL	O1-C1-C2-C3
2	D	1239	GOL	O1-C1-C2-C3
2	G	1247	GOL	O1-C1-C2-C3
2	G	1248	GOL	O1-C1-C2-C3
3	A	1237	UDP	C5'-O5'-PA-O1A
3	J	1237	UDP	PA-O3A-PB-O2B
3	L	1237	UDP	C5'-O5'-PA-O3A
3	M	1246	UDP	C3'-C4'-C5'-O5'
3	M	1246	UDP	C5'-O5'-PA-O1A
3	M	1246	UDP	C5'-O5'-PA-O2A
3	N	1244	UDP	C5'-O5'-PA-O1A
3	N	1244	UDP	C5'-O5'-PA-O2A

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Mol	Chain	Res	Type	Atoms
3	N	1244	UDP	PA-O3A-PB-O3B
4	A	1238	A2G	C1-C2-N2-C7
4	A	1238	A2G	O7-C7-N2-C2
4	A	1238	A2G	C8-C7-N2-C2
4	B	1238	A2G	C1-C2-N2-C7
4	B	1238	A2G	O7-C7-N2-C2
4	B	1238	A2G	C8-C7-N2-C2
4	C	1238	A2G	C1-C2-N2-C7
4	C	1238	A2G	O7-C7-N2-C2
4	C	1238	A2G	C8-C7-N2-C2
4	D	1238	A2G	O7-C7-N2-C2
4	D	1238	A2G	C8-C7-N2-C2
4	I	1238	A2G	C1-C2-N2-C7
4	I	1238	A2G	O7-C7-N2-C2
4	I	1238	A2G	C8-C7-N2-C2
4	J	1238	A2G	O7-C7-N2-C2
4	J	1238	A2G	C8-C7-N2-C2
4	K	1238	A2G	O7-C7-N2-C2
4	K	1238	A2G	C8-C7-N2-C2
4	L	1238	A2G	C1-C2-N2-C7
4	L	1238	A2G	C3-C2-N2-C7
4	L	1238	A2G	O7-C7-N2-C2
4	L	1238	A2G	C8-C7-N2-C2
7	E	1246	UD2	C8'-C7'-N2'-C2'
7	E	1246	UD2	O7'-C7'-N2'-C2'
7	E	1246	UD2	C5B-O5B-PA-O1A
7	F	1246	UD2	C8'-C7'-N2'-C2'
7	F	1246	UD2	O7'-C7'-N2'-C2'
7	F	1246	UD2	C5B-O5B-PA-O1A
7	F	1246	UD2	C5B-O5B-PA-O2A
7	G	1246	UD2	C8'-C7'-N2'-C2'
7	G	1246	UD2	O7'-C7'-N2'-C2'
7	G	1246	UD2	C5B-O5B-PA-O1A
7	G	1246	UD2	C5B-O5B-PA-O3A
7	H	1246	UD2	C8'-C7'-N2'-C2'
7	H	1246	UD2	O7'-C7'-N2'-C2'
7	H	1246	UD2	C5B-O5B-PA-O1A
7	H	1246	UD2	C5B-O5B-PA-O2A
7	O	1241	UD2	C8'-C7'-N2'-C2'
7	O	1241	UD2	O7'-C7'-N2'-C2'
7	O	1241	UD2	C5B-O5B-PA-O1A
7	O	1241	UD2	C5B-O5B-PA-O2A

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Mol	Chain	Res	Type	Atoms
7	O	1241	UD2	PB-O3A-PA-O5B
7	P	1244	UD2	C8'-C7'-N2'-C2'
7	P	1244	UD2	O7'-C7'-N2'-C2'
7	P	1244	UD2	C5B-O5B-PA-O1A
7	P	1244	UD2	C5B-O5B-PA-O2A
8	M	1247	NGA	C3-C2-N2-C7
8	M	1247	NGA	C8-C7-N2-C2
8	M	1247	NGA	O7-C7-N2-C2
8	N	1245	NGA	C3-C2-N2-C7
8	N	1245	NGA	C8-C7-N2-C2
8	N	1245	NGA	O7-C7-N2-C2
3	A	1237	UDP	C3'-C4'-C5'-O5'
3	C	1237	UDP	O4'-C4'-C5'-O5'
3	D	1237	UDP	C3'-C4'-C5'-O5'
7	G	1246	UD2	C3B-C4B-C5B-O5B
7	G	1246	UD2	O4B-C4B-C5B-O5B
5	A	1240	1PE	OH5-C14-C24-OH4
7	E	1246	UD2	C3'-C2'-N2'-C7'
7	F	1246	UD2	C1'-O1'-PB-O3A
7	P	1244	UD2	C1'-O1'-PB-O3A
2	G	1247	GOL	O1-C1-C2-O2
3	L	1237	UDP	C3'-C4'-C5'-O5'
3	L	1237	UDP	O4'-C4'-C5'-O5'
4	J	1238	A2G	C3-C2-N2-C7
7	F	1246	UD2	C3'-C2'-N2'-C7'
2	A	1239	GOL	O1-C1-C2-C3
2	A	1236	GOL	O1-C1-C2-O2
2	A	1239	GOL	O1-C1-C2-O2
7	H	1246	UD2	C3'-C2'-N2'-C7'
3	D	1237	UDP	O4'-C4'-C5'-O5'
3	M	1246	UDP	O4'-C4'-C5'-O5'
4	K	1238	A2G	O5-C5-C6-O6
2	D	1239	GOL	O1-C1-C2-O2
2	G	1248	GOL	O1-C1-C2-O2
4	I	1238	A2G	O5-C5-C6-O6
4	J	1238	A2G	O5-C5-C6-O6
4	A	1238	A2G	O5-C5-C6-O6
7	F	1246	UD2	PB-O3A-PA-O2A
7	O	1241	UD2	PA-O3A-PB-O2B
3	A	1237	UDP	O4'-C4'-C5'-O5'
7	P	1244	UD2	C1'-O1'-PB-O1B
7	P	1244	UD2	C3'-C2'-N2'-C7'

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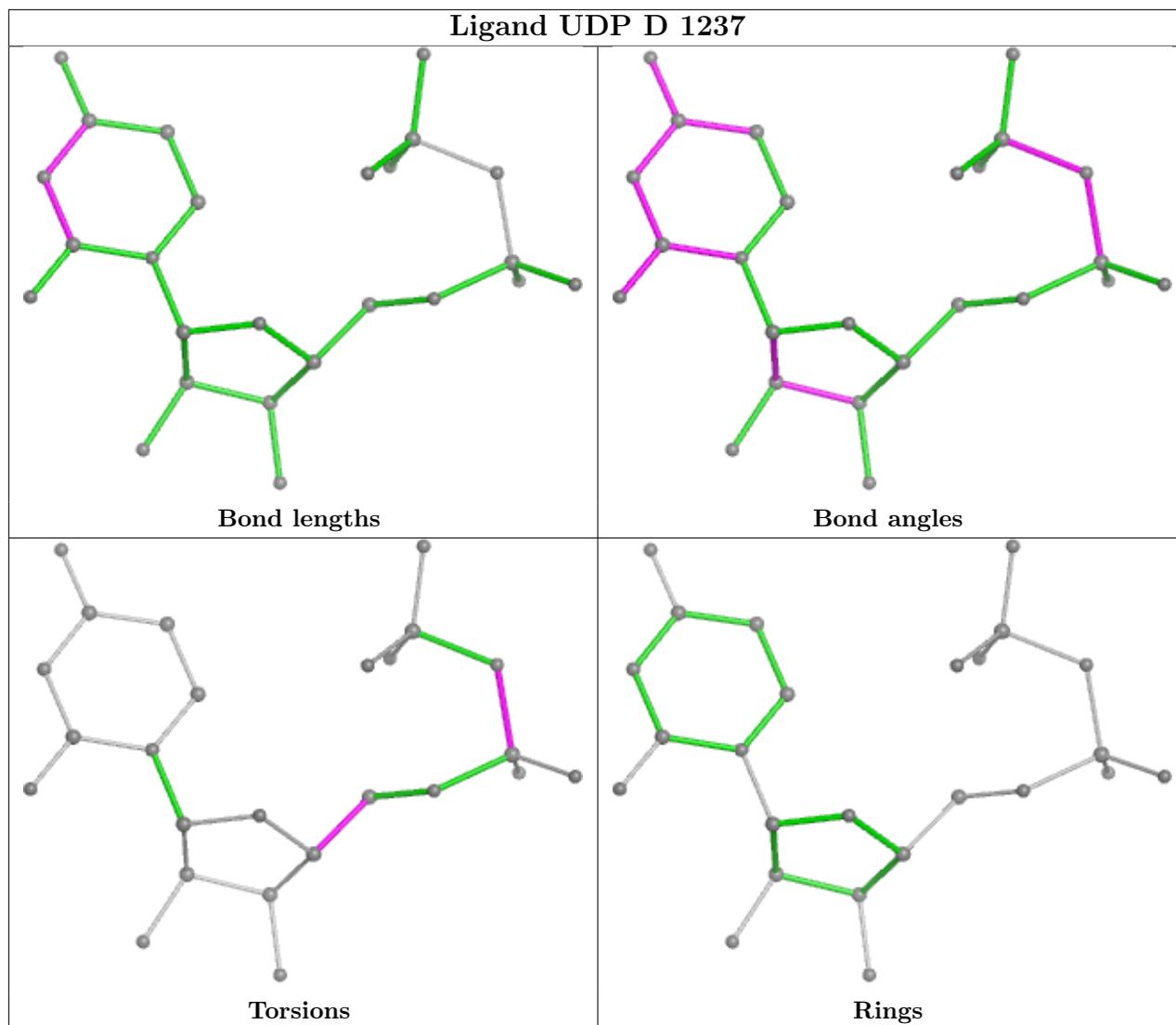
Mol	Chain	Res	Type	Atoms
3	D	1237	UDP	PB-O3A-PA-O5'
5	A	1240	1PE	OH6-C15-C25-OH5
3	L	1237	UDP	PA-O3A-PB-O2B
3	A	1237	UDP	C5'-O5'-PA-O3A
3	M	1246	UDP	C5'-O5'-PA-O3A
7	E	1246	UD2	C5B-O5B-PA-O3A
3	A	1237	UDP	PB-O3A-PA-O1A
7	E	1246	UD2	PB-O3A-PA-O2A
3	A	1237	UDP	C5'-O5'-PA-O2A
3	L	1237	UDP	C5'-O5'-PA-O2A
3	N	1244	UDP	C3'-C4'-C5'-O5'
3	N	1244	UDP	O4'-C4'-C5'-O5'
7	E	1246	UD2	C1'-C2'-N2'-C7'
7	F	1246	UD2	C1'-C2'-N2'-C7'
7	F	1246	UD2	PB-O3A-PA-O1A
7	O	1241	UD2	PA-O3A-PB-O1B
7	P	1244	UD2	PB-O3A-PA-O2A
7	F	1246	UD2	C1'-O1'-PB-O1B
7	O	1241	UD2	C1'-O1'-PB-O3A
4	I	1238	A2G	C3-C2-N2-C7
3	D	1237	UDP	PB-O3A-PA-O1A
7	P	1244	UD2	PB-O3A-PA-O1A
3	J	1237	UDP	PA-O3A-PB-O3B
3	N	1244	UDP	C5'-O5'-PA-O3A
7	F	1246	UD2	C5B-O5B-PA-O3A
7	H	1246	UD2	C5B-O5B-PA-O3A
7	O	1241	UD2	C5B-O5B-PA-O3A
7	P	1244	UD2	C5B-O5B-PA-O3A
7	F	1246	UD2	O4B-C4B-C5B-O5B
3	A	1237	UDP	PB-O3A-PA-O2A
7	E	1246	UD2	PB-O3A-PA-O1A
7	H	1246	UD2	PA-O3A-PB-O1B
7	E	1246	UD2	C5B-O5B-PA-O2A
7	H	1246	UD2	O4B-C4B-C5B-O5B
7	P	1244	UD2	O4B-C4B-C5B-O5B
3	J	1237	UDP	PA-O3A-PB-O1B
5	A	1240	1PE	OH4-C13-C23-OH3
7	O	1241	UD2	C4'-C5'-C6'-O6'
4	J	1238	A2G	C1-C2-N2-C7

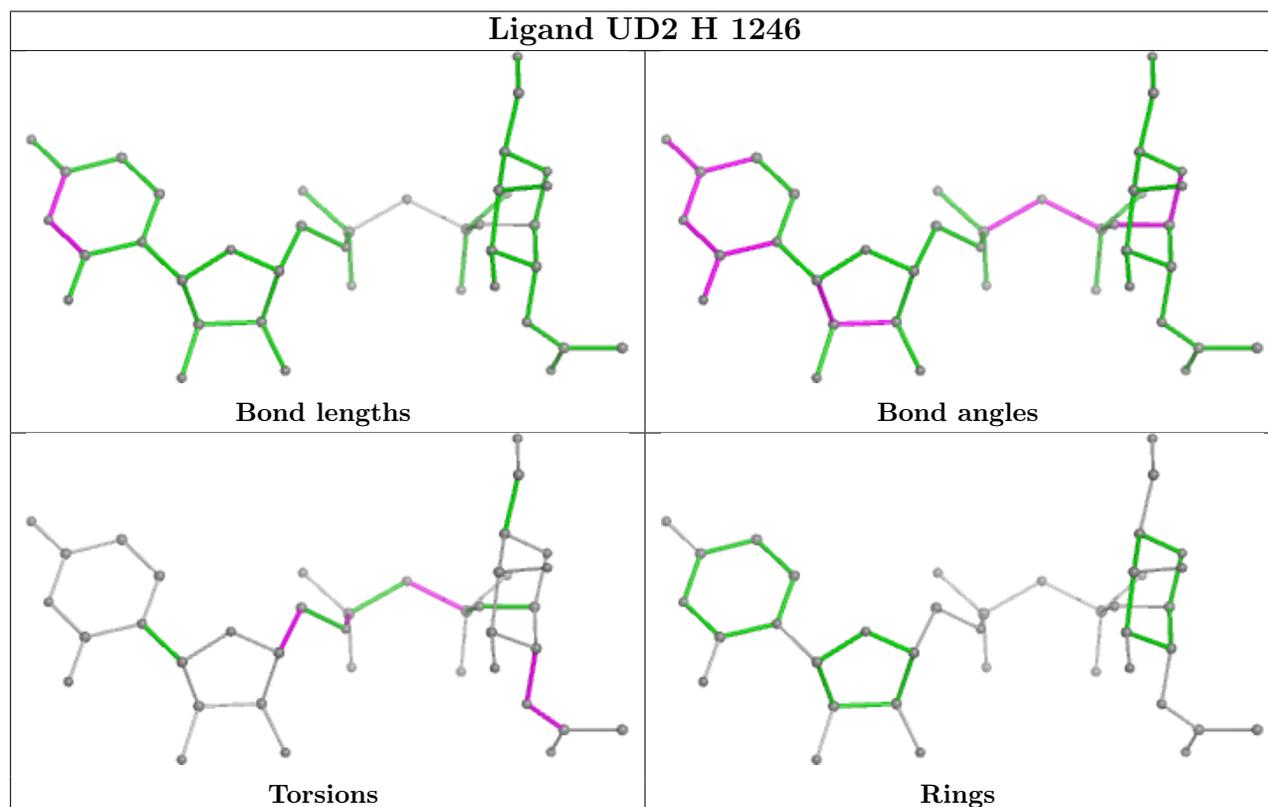
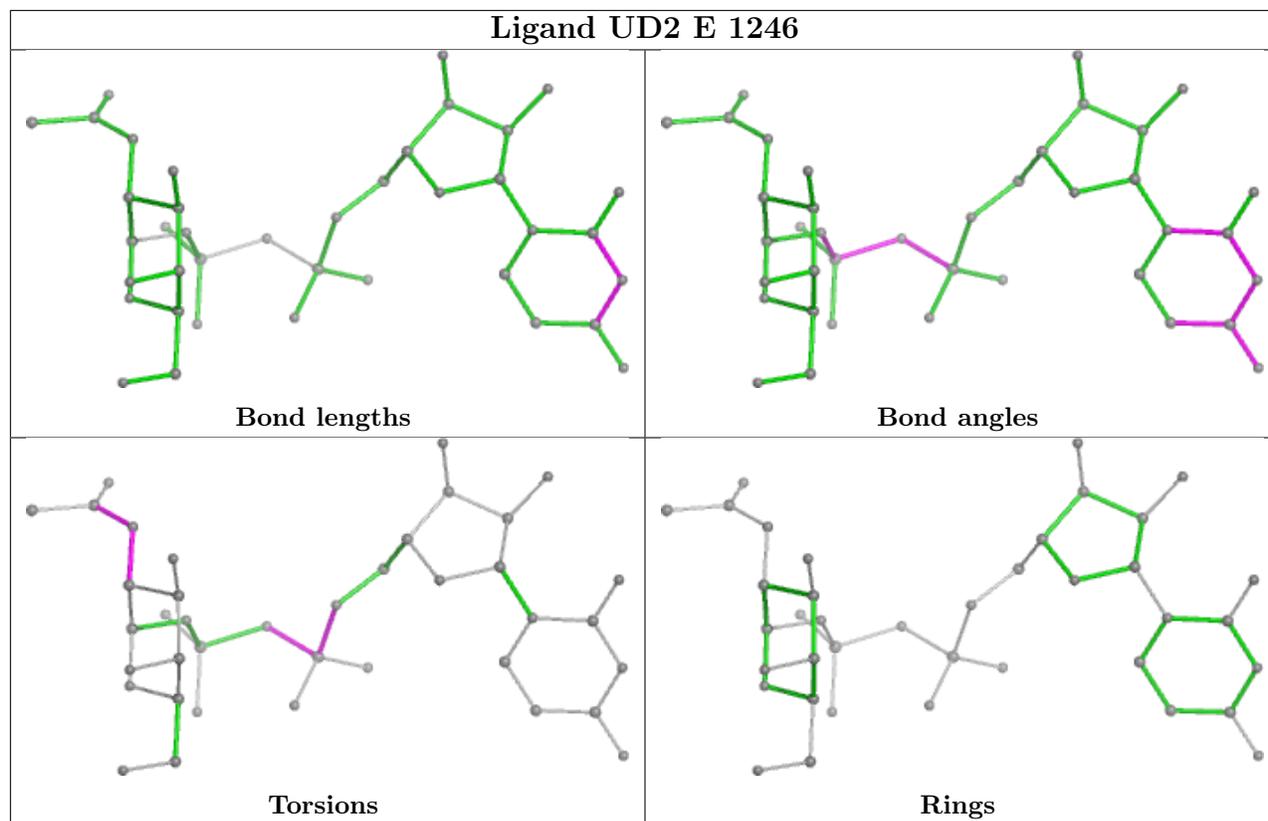
There are no ring outliers.

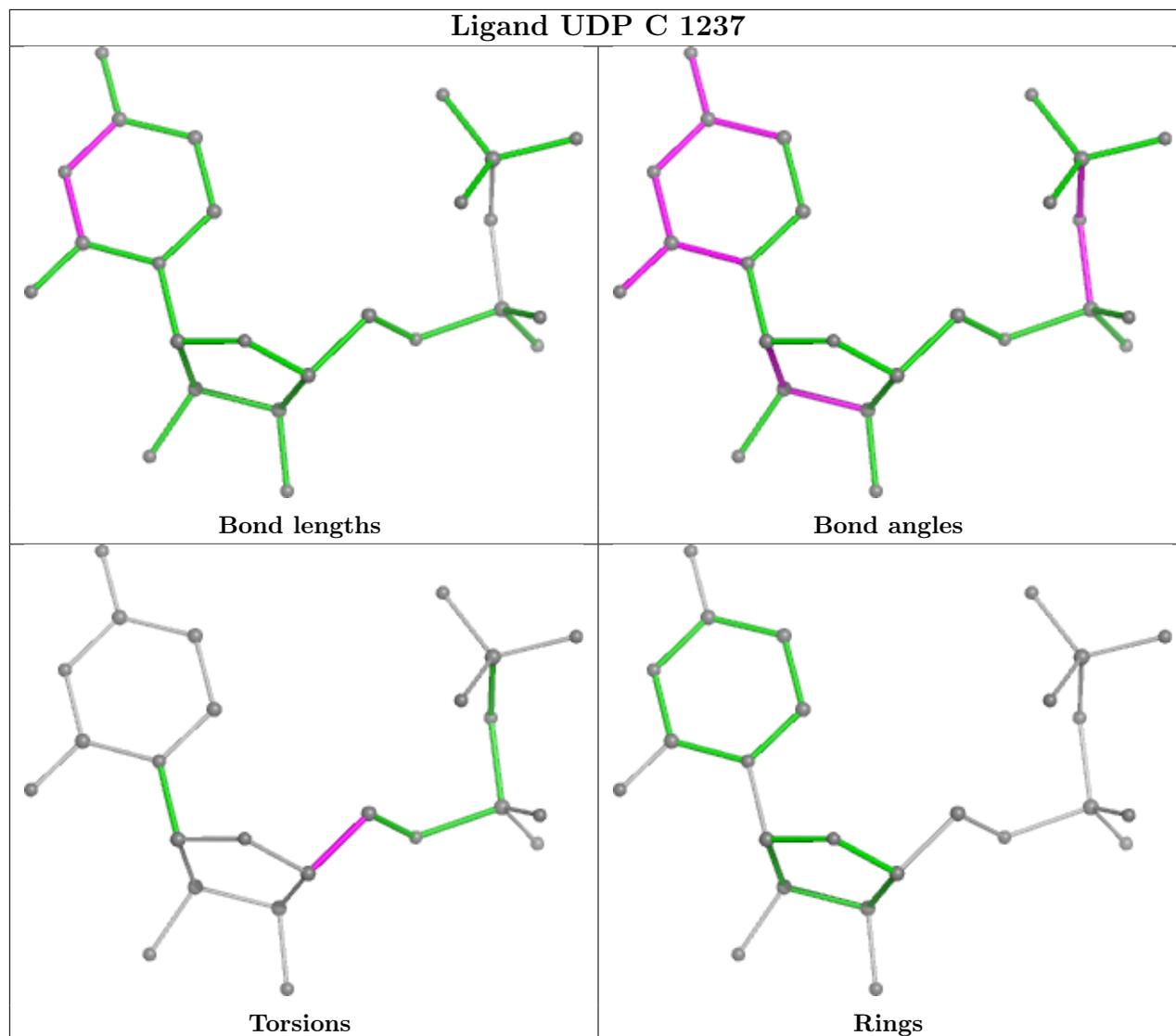
23 monomers are involved in 104 short contacts:

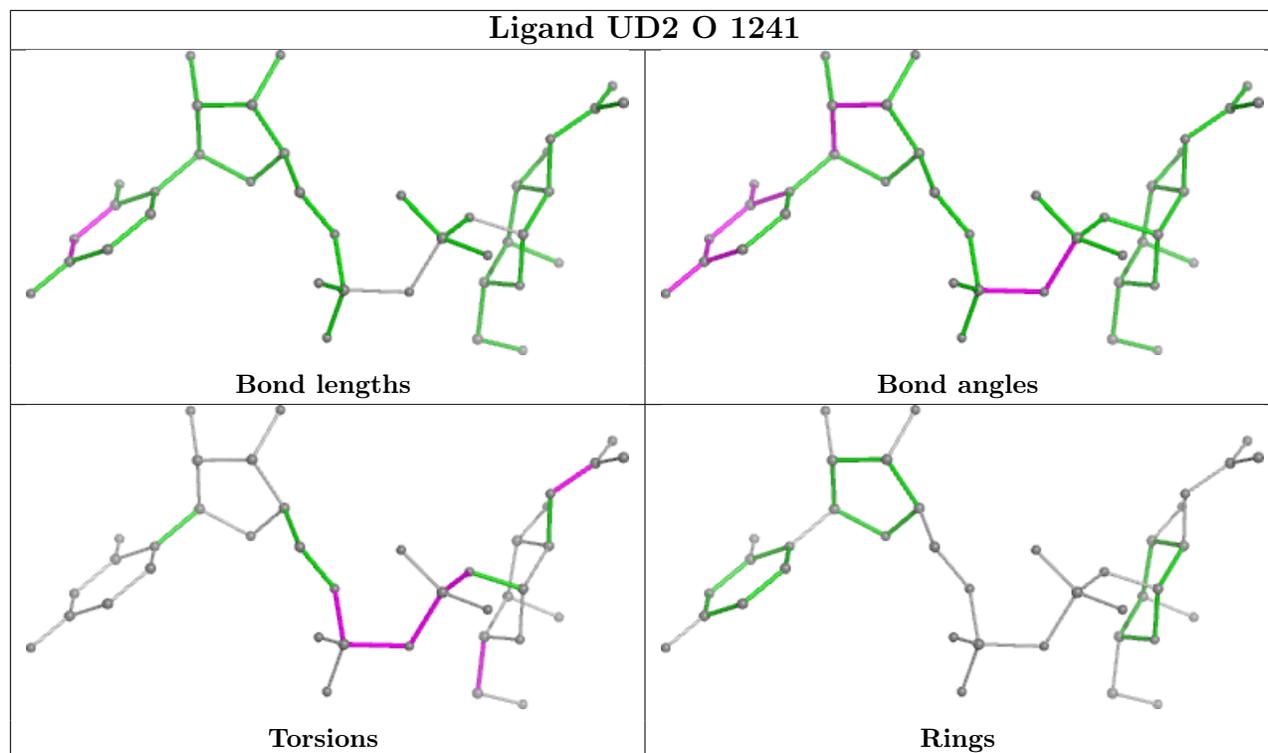
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	D	1237	UDP	6	0
7	E	1246	UD2	5	0
7	H	1246	UD2	4	0
3	C	1237	UDP	3	1
7	O	1241	UD2	20	0
3	L	1237	UDP	2	0
3	J	1237	UDP	2	0
4	L	1238	A2G	5	0
3	A	1237	UDP	4	0
5	A	1240	1PE	1	0
3	B	1237	UDP	5	0
7	G	1246	UD2	7	0
7	P	1244	UD2	3	0
2	G	1247	GOL	1	0
3	K	1237	UDP	4	0
4	K	1238	A2G	2	0
3	N	1244	UDP	18	0
7	F	1246	UD2	4	0
8	N	1245	NGA	2	0
8	M	1247	NGA	2	0
3	M	1246	UDP	4	0
4	A	1238	A2G	1	0
3	I	1237	UDP	2	0

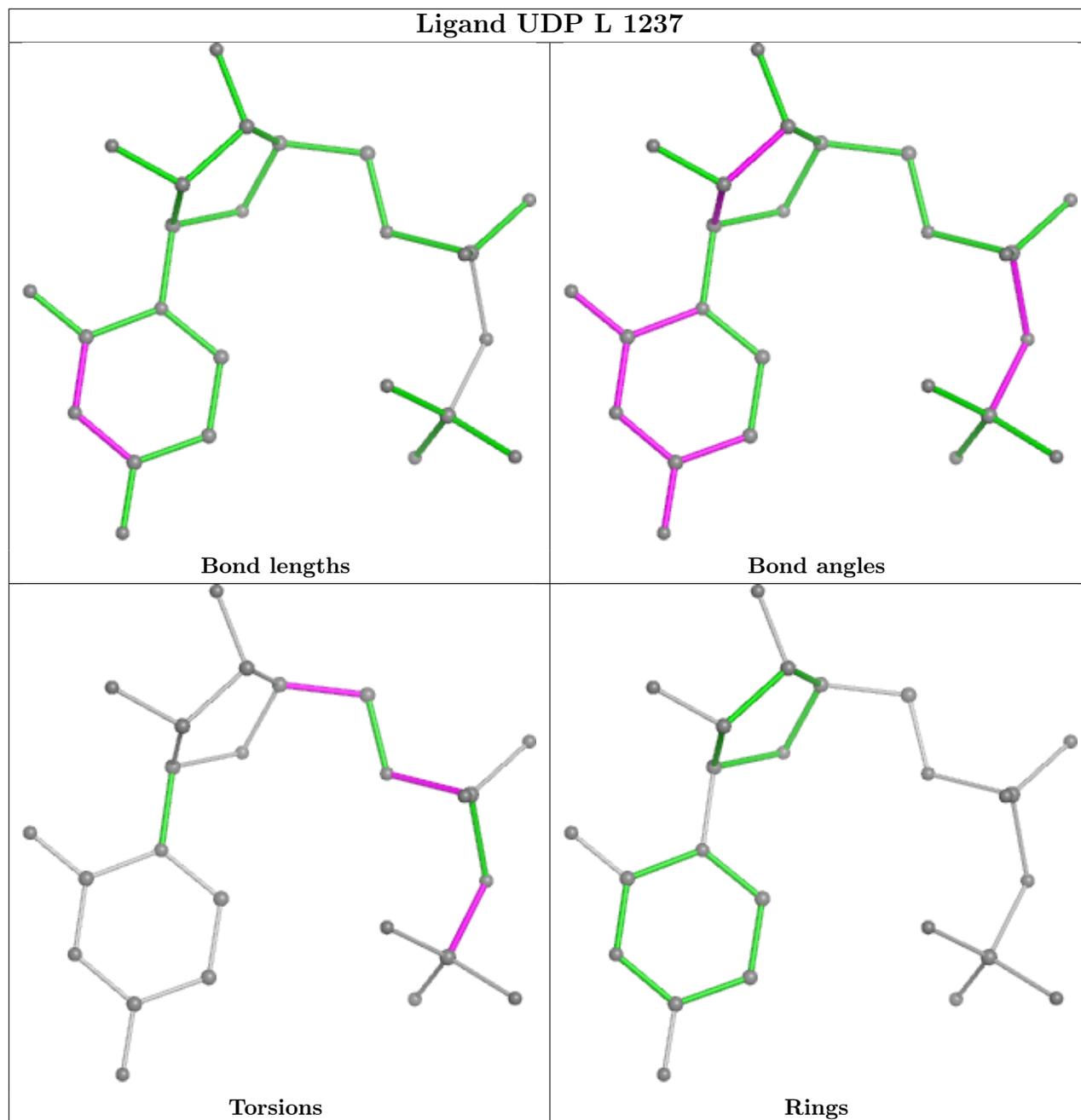
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

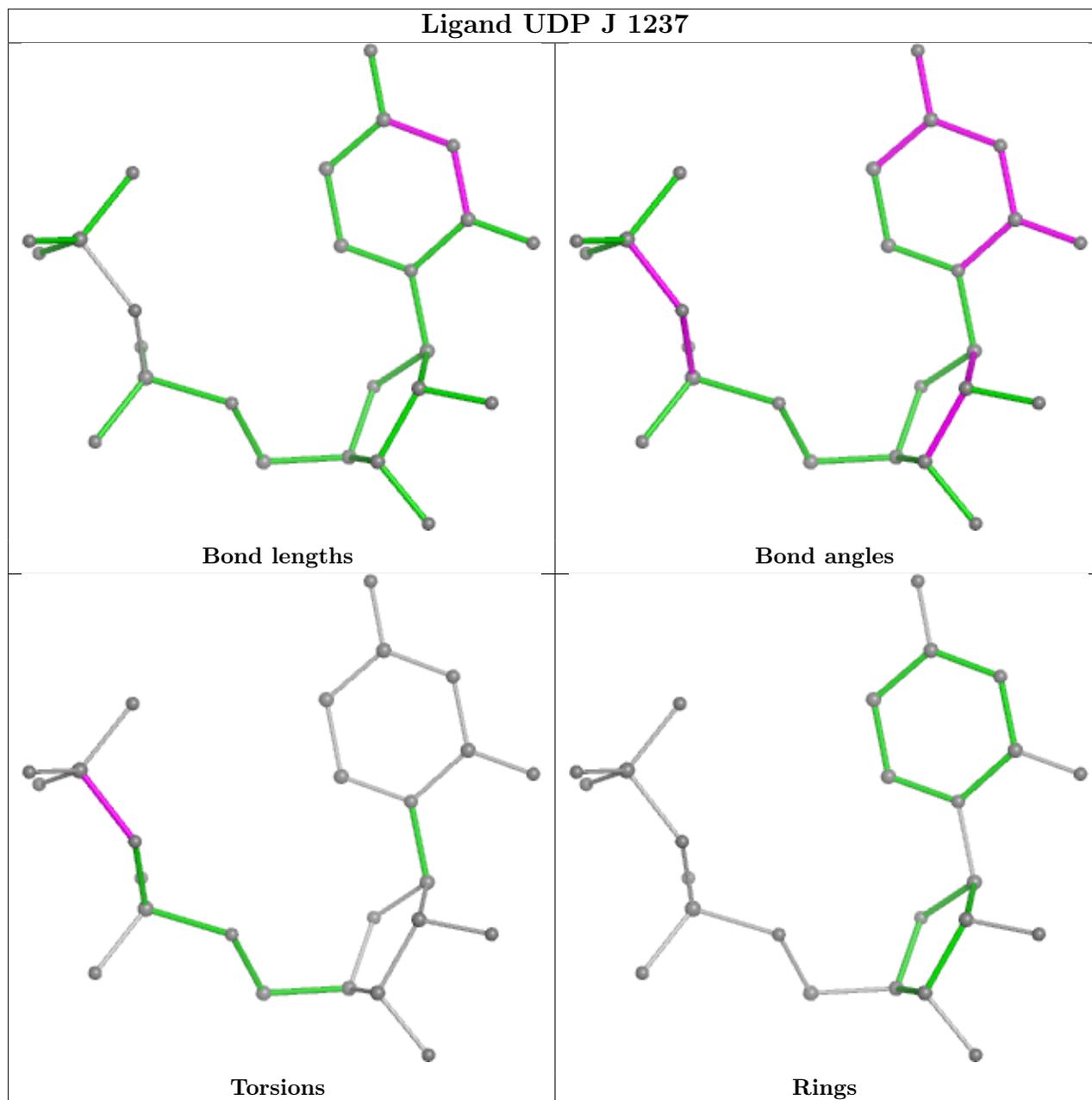


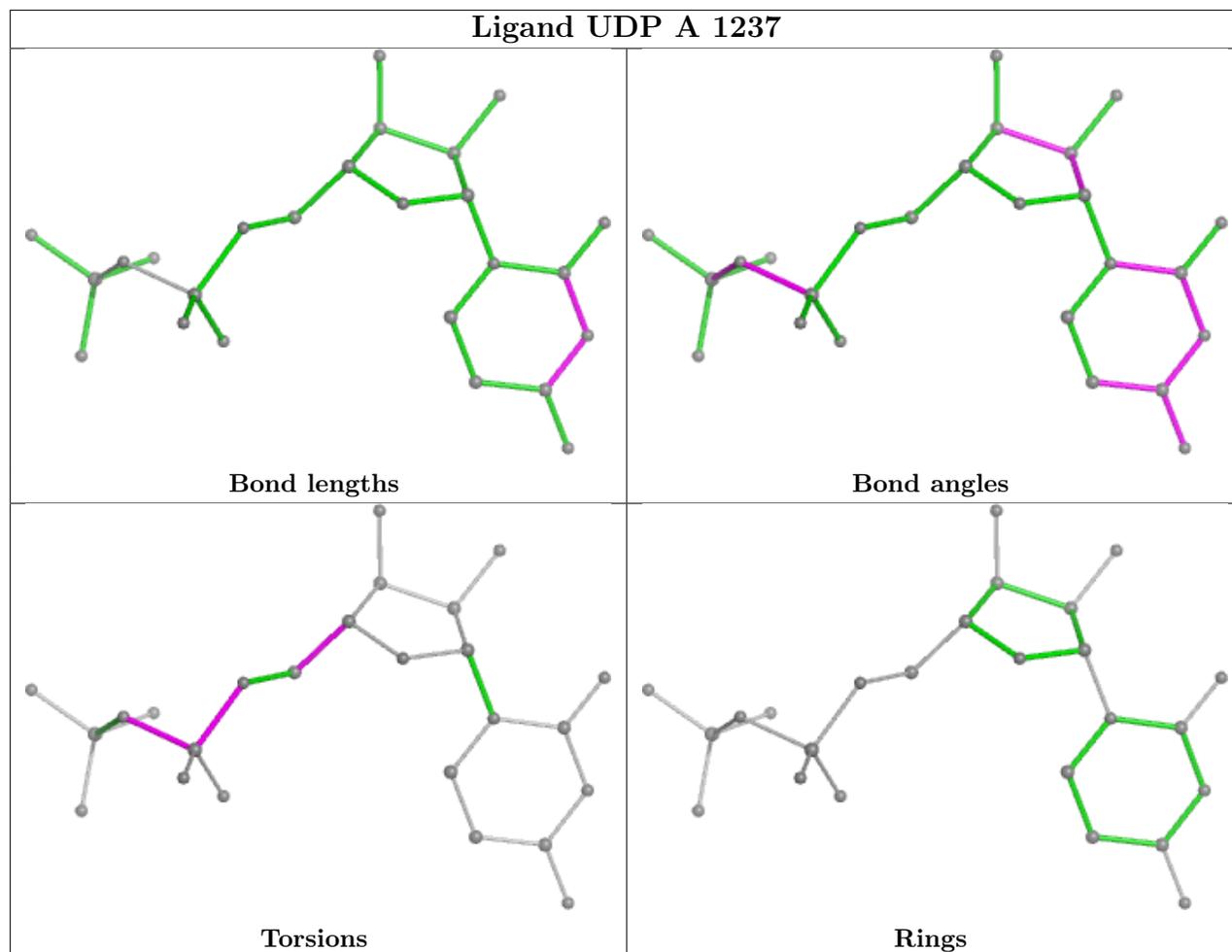


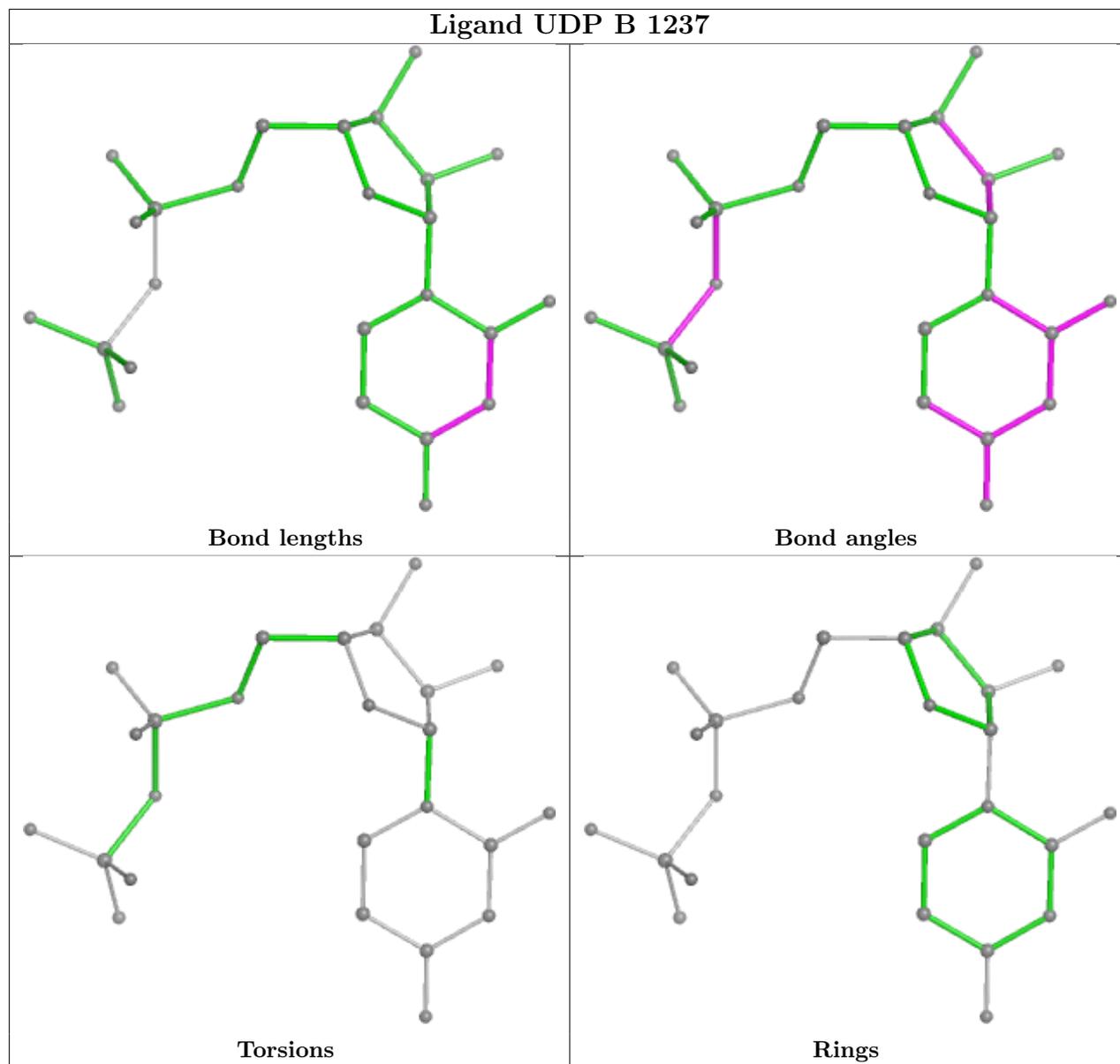


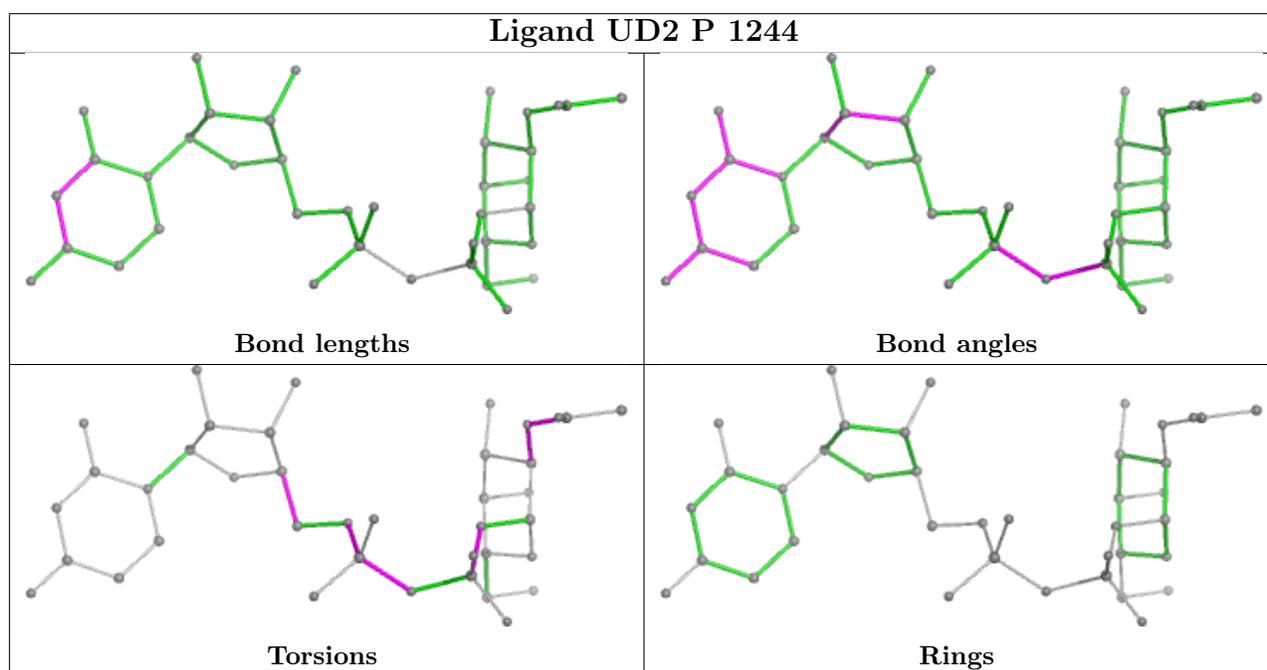
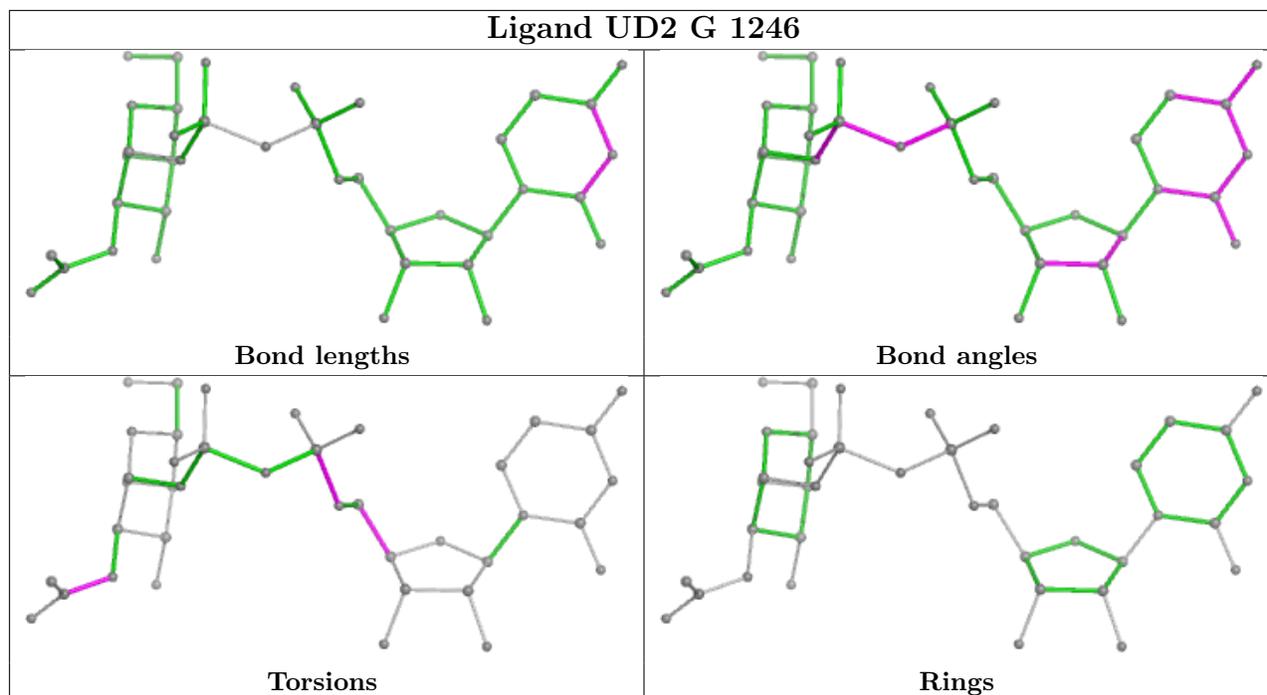


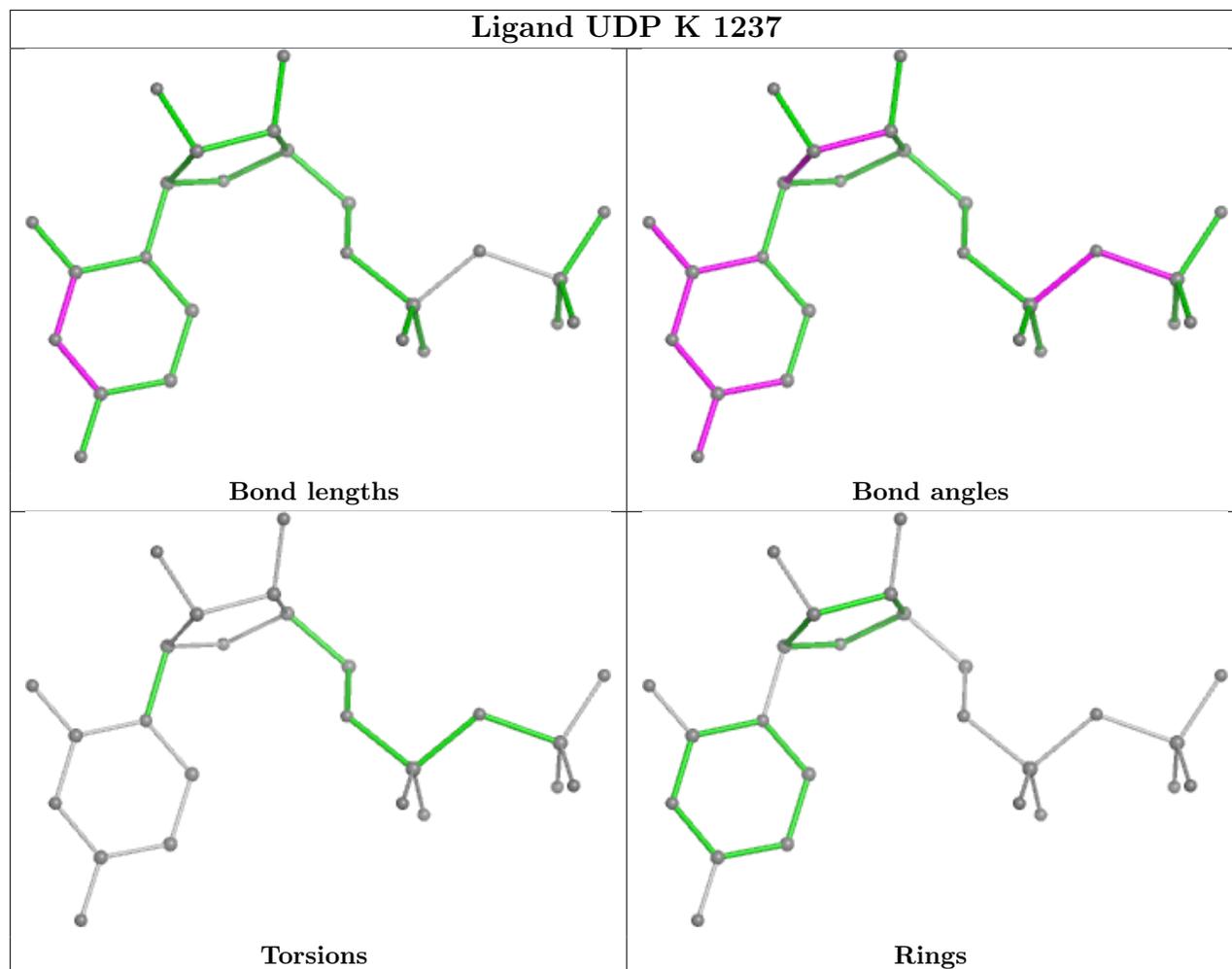


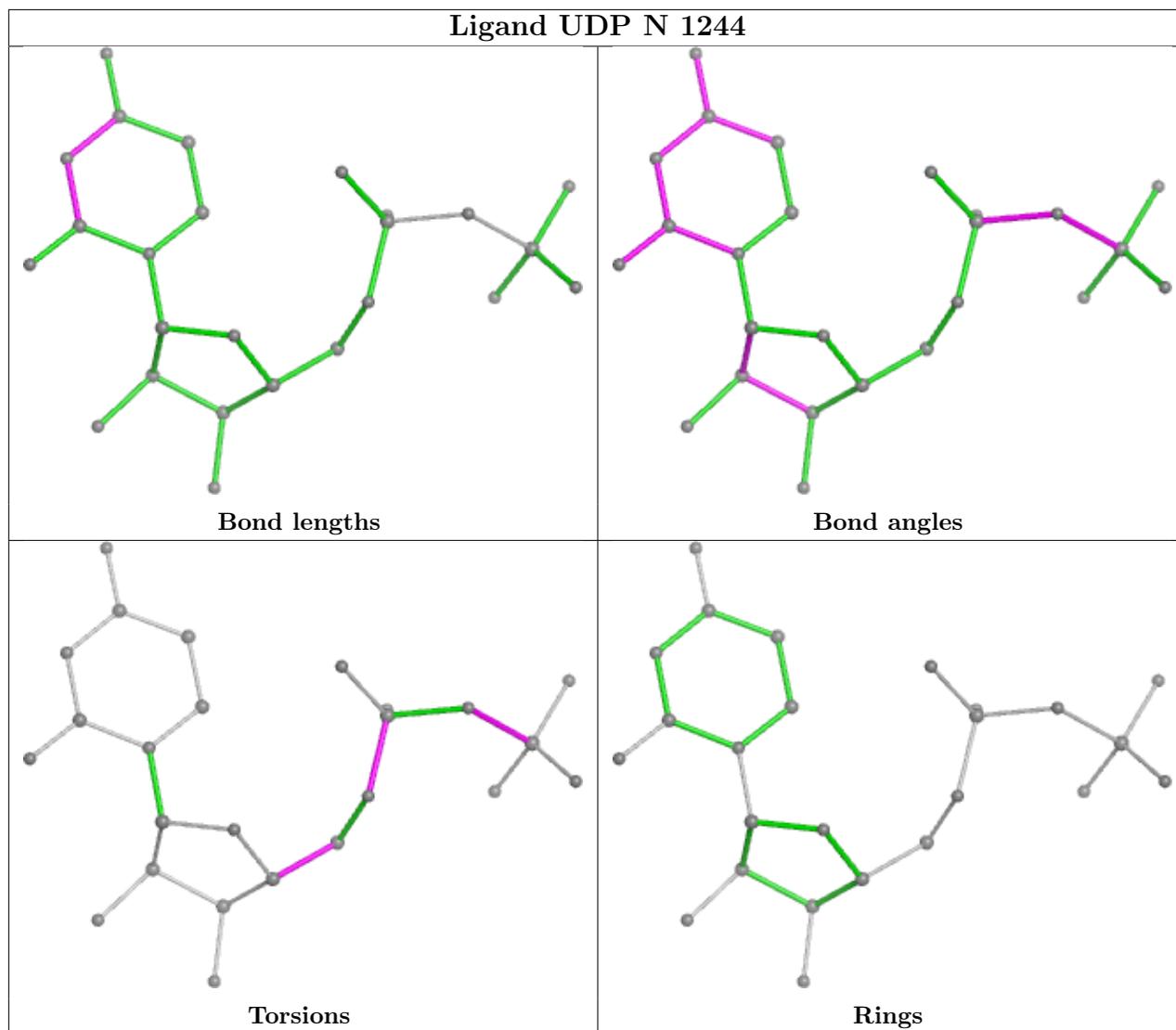


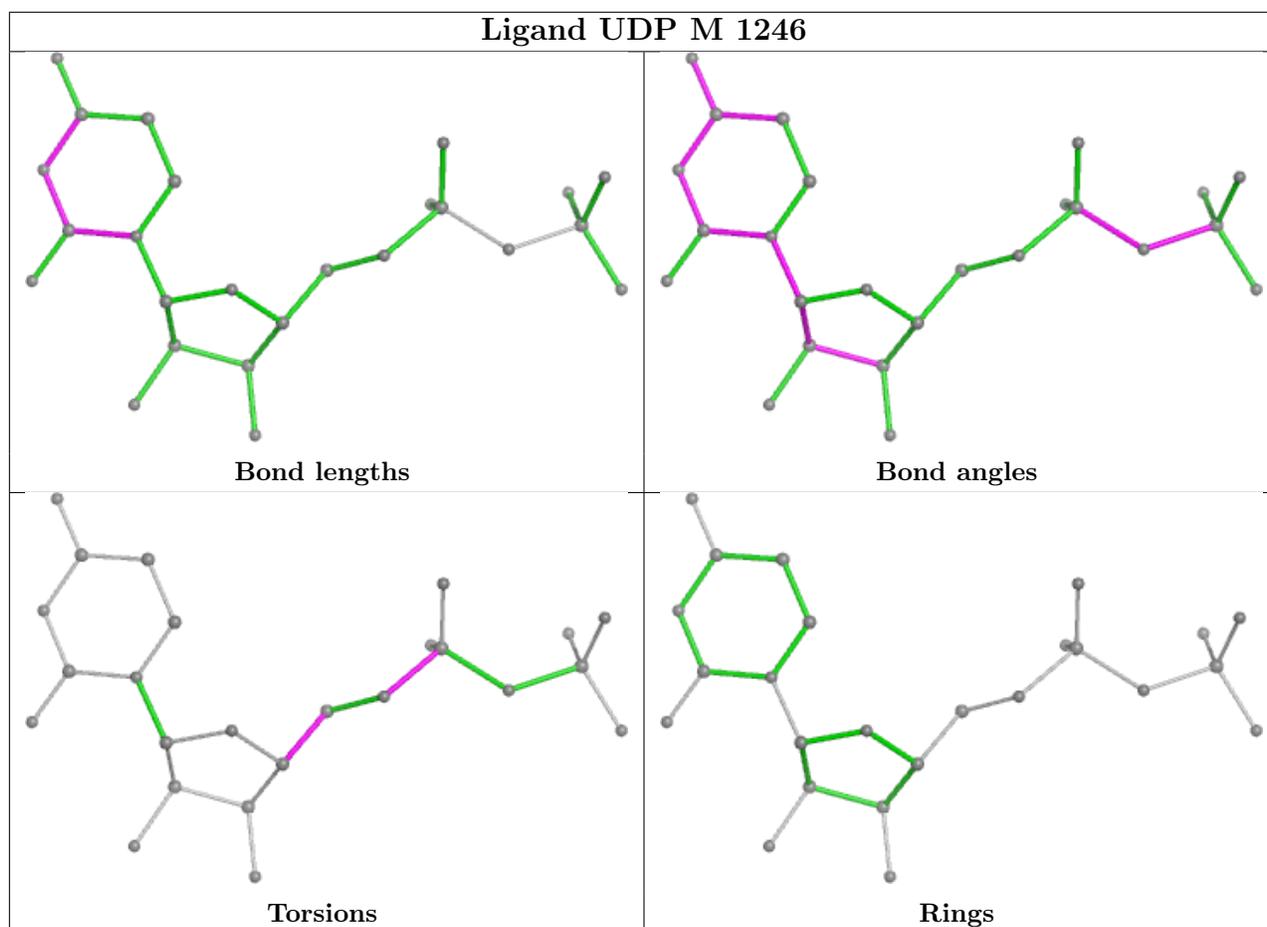
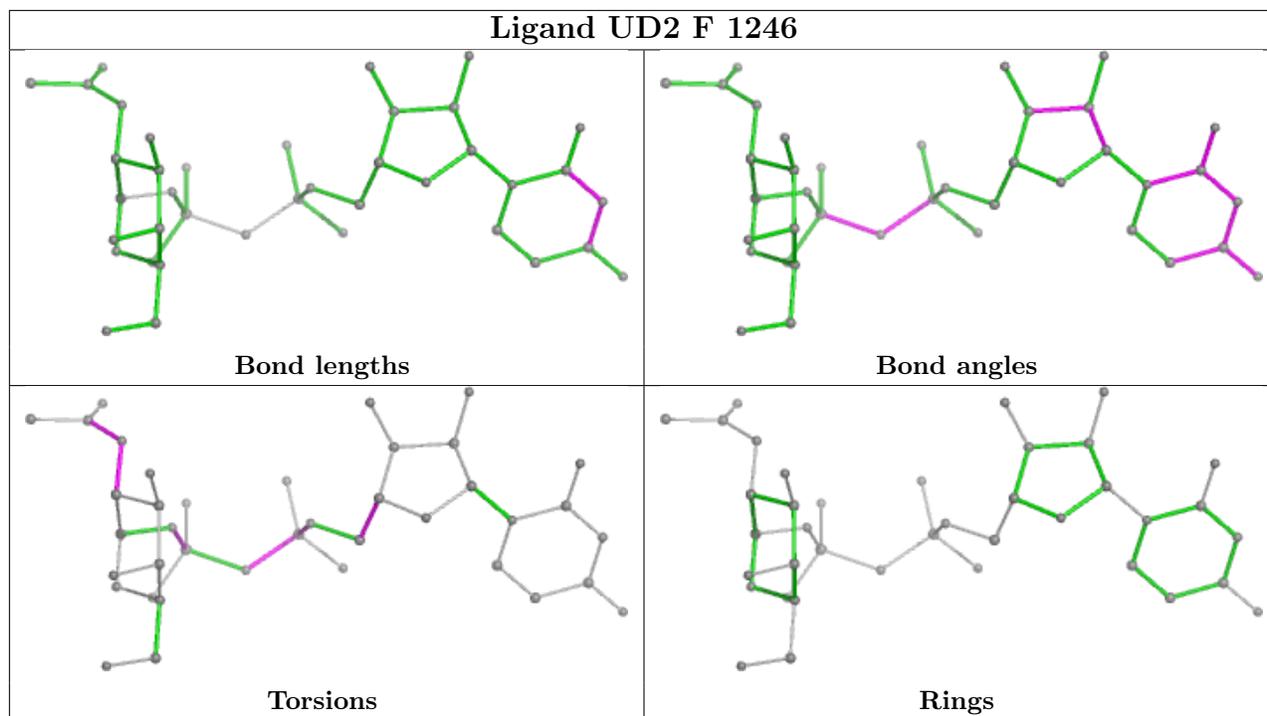


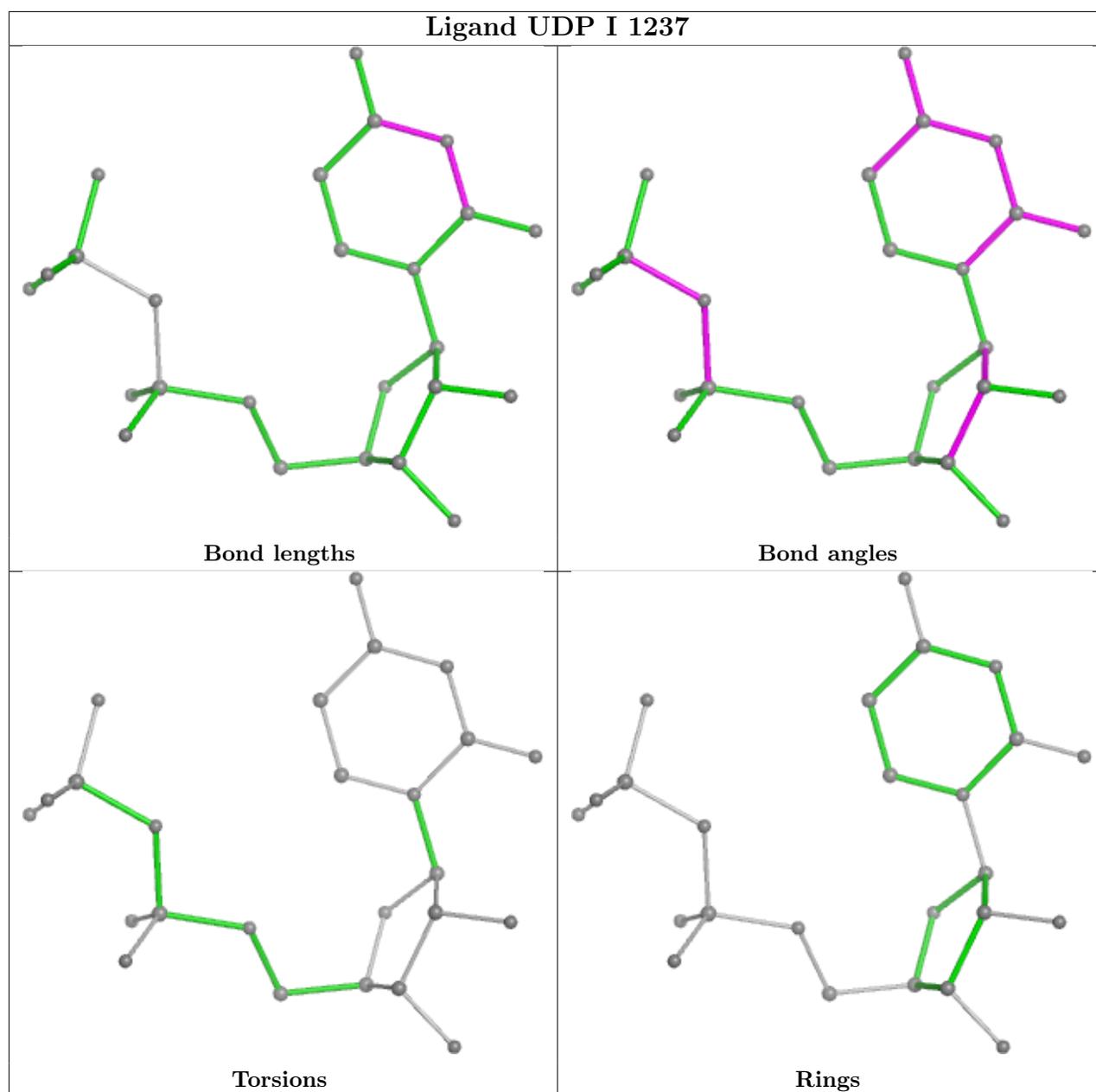












5.7 Other polymers [i](#)

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	238/248 (95%)	-0.08	0 100 100	32, 51, 65, 92	3 (1%)
1	B	238/248 (95%)	0.03	0 100 100	37, 63, 81, 102	3 (1%)
1	C	238/248 (95%)	0.04	1 (0%) 89 79	31, 63, 82, 100	3 (1%)
1	D	237/248 (95%)	0.11	1 (0%) 89 79	34, 64, 82, 89	3 (1%)
1	E	246/248 (99%)	0.05	0 100 100	25, 56, 84, 94	3 (1%)
1	F	246/248 (99%)	0.19	0 100 100	30, 62, 88, 99	3 (1%)
1	G	246/248 (99%)	0.05	1 (0%) 89 79	28, 58, 79, 92	3 (1%)
1	H	247/248 (99%)	0.21	0 100 100	28, 66, 94, 104	3 (1%)
1	I	236/248 (95%)	0.02	1 (0%) 89 79	39, 66, 88, 109	3 (1%)
1	J	236/248 (95%)	0.29	1 (0%) 89 79	50, 84, 99, 109	3 (1%)
1	K	237/248 (95%)	0.07	1 (0%) 89 79	41, 70, 85, 110	3 (1%)
1	L	236/248 (95%)	0.21	0 100 100	46, 79, 102, 111	3 (1%)
1	M	245/248 (98%)	0.11	2 (0%) 82 67	37, 66, 85, 102	3 (1%)
1	N	243/248 (97%)	0.39	3 (1%) 76 57	53, 94, 110, 120	3 (1%)
1	O	240/248 (96%)	0.51	7 (2%) 54 36	66, 106, 126, 140	3 (1%)
1	P	243/248 (97%)	0.22	1 (0%) 89 79	42, 81, 98, 113	3 (1%)
All	All	3852/3968 (97%)	0.15	19 (0%) 87 75	25, 68, 104, 140	48 (1%)

All (19) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	O	186	ILE	3.1
1	N	194	LEU	2.8
1	M	33	SER	2.6
1	O	159	SER	2.5
1	N	225	ILE	2.5

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Mol	Chain	Res	Type	RSRZ
1	O	160	GLY	2.4
1	G	193	SER	2.4
1	N	239	HIS	2.3
1	O	187	PRO	2.3
1	I	29	MET	2.3
1	J	78	LEU	2.3
1	M	193	SER	2.2
1	D	188	ILE	2.1
1	O	194	LEU	2.1
1	P	117	LEU	2.1
1	O	155	ALA	2.1
1	C	127	ASN	2.0
1	O	69	ASN	2.0
1	K	116	GLY	2.0

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

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 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(\AA^2)	Q<0.9
4	A2G	A	1238	15/15	0.66	0.20	44,53,68,73	0
4	A2G	I	1238	15/15	0.66	0.21	56,76,86,94	0
2	GOL	D	1239	6/6	0.72	0.12	55,65,68,76	0
5	1PE	A	1240	16/16	0.72	0.16	68,77,84,86	0
4	A2G	L	1238	15/15	0.73	0.17	60,67,74,75	0
4	A2G	K	1238	15/15	0.73	0.13	69,81,85,89	0
4	A2G	J	1238	15/15	0.75	0.18	50,70,76,78	0
2	GOL	A	1236	6/6	0.75	0.13	55,65,67,68	0
4	A2G	D	1238	15/15	0.75	0.17	69,75,81,81	0

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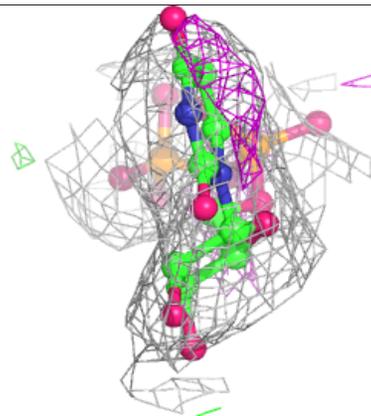
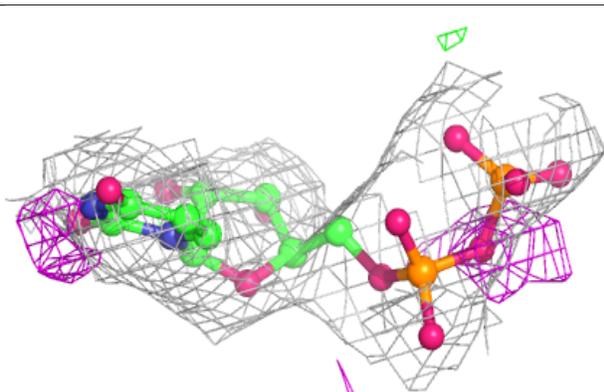
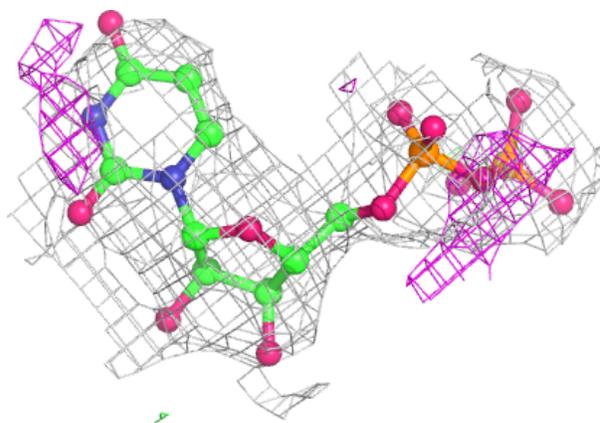
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
2	GOL	G	1248	6/6	0.75	0.15	54,67,71,75	0
2	GOL	G	1247	6/6	0.76	0.14	66,71,72,81	0
6	SO4	B	1239	5/5	0.76	0.13	98,98,105,119	0
4	A2G	B	1238	15/15	0.77	0.16	42,55,65,66	0
3	UDP	A	1237	25/25	0.77	0.15	51,57,90,100	0
7	UD2	O	1241	39/39	0.78	0.15	87,114,125,131	0
3	UDP	L	1237	25/25	0.80	0.12	73,86,101,108	0
3	UDP	J	1237	25/25	0.81	0.12	86,102,113,122	0
3	UDP	C	1237	25/25	0.82	0.10	61,78,107,131	0
3	UDP	N	1244	25/25	0.82	0.11	94,104,109,113	0
8	NGA	N	1245	14/15	0.82	0.17	84,93,100,104	0
4	A2G	C	1238	15/15	0.83	0.16	52,68,77,78	0
3	UDP	B	1237	25/25	0.83	0.14	64,78,111,133	0
2	GOL	A	1239	6/6	0.85	0.12	53,57,59,61	0
7	UD2	P	1244	39/39	0.86	0.14	70,80,93,94	0
3	UDP	I	1237	25/25	0.86	0.11	63,70,91,112	0
7	UD2	F	1246	39/39	0.88	0.14	48,61,77,79	0
7	UD2	H	1246	39/39	0.88	0.14	52,61,72,84	0
3	UDP	M	1246	25/25	0.88	0.14	66,71,77,82	0
3	UDP	K	1237	25/25	0.88	0.10	56,74,91,101	0
7	UD2	E	1246	39/39	0.88	0.15	48,59,75,79	0
3	UDP	D	1237	25/25	0.89	0.10	66,73,101,104	0
8	NGA	M	1247	14/15	0.89	0.18	84,93,100,104	0
7	UD2	G	1246	39/39	0.89	0.13	50,58,70,78	0

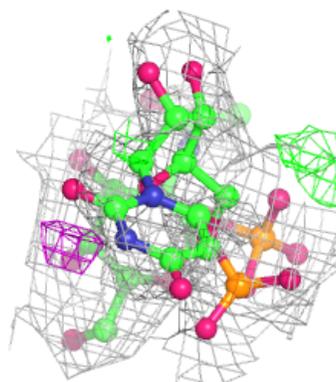
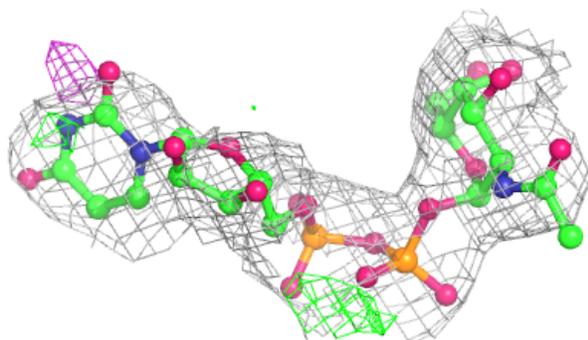
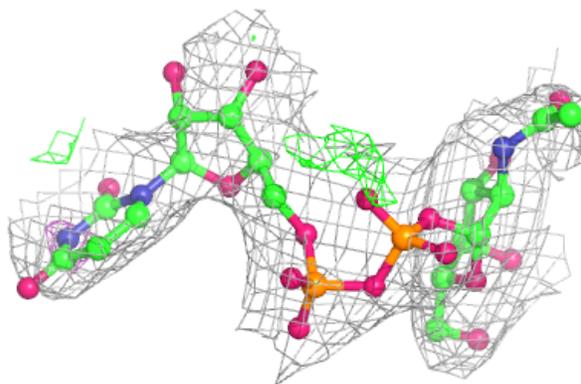
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around UDP A 1237:

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

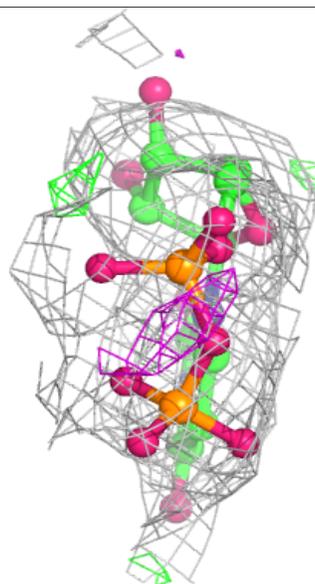
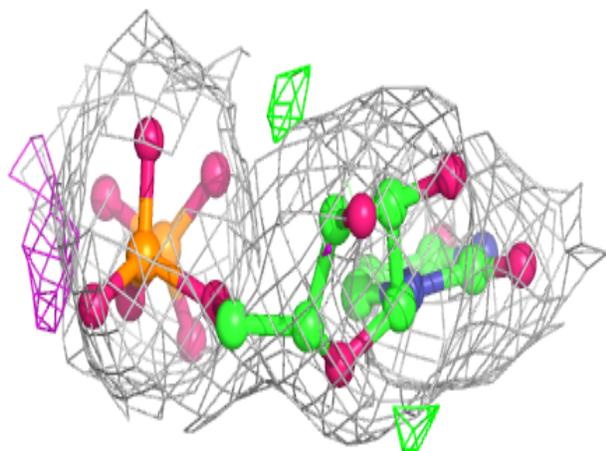
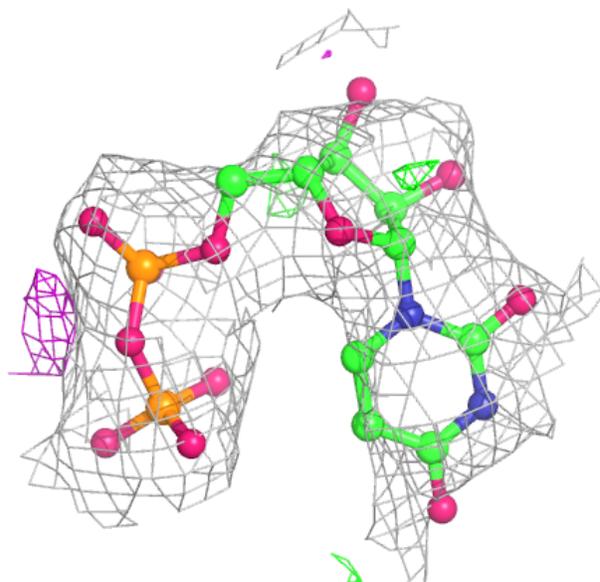
**Electron density around UD2 O 1241:**

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



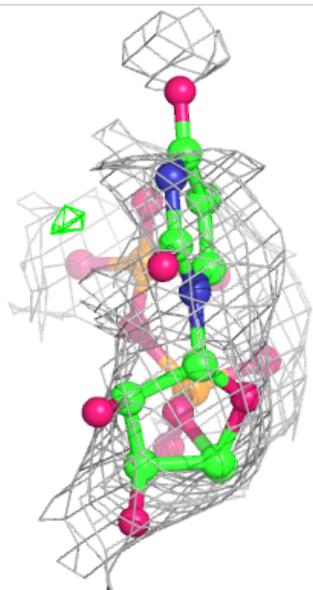
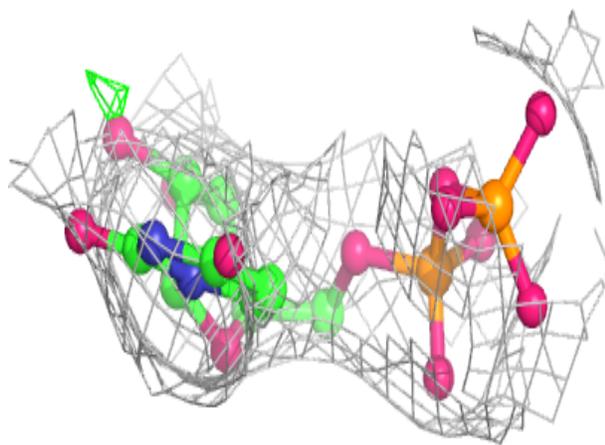
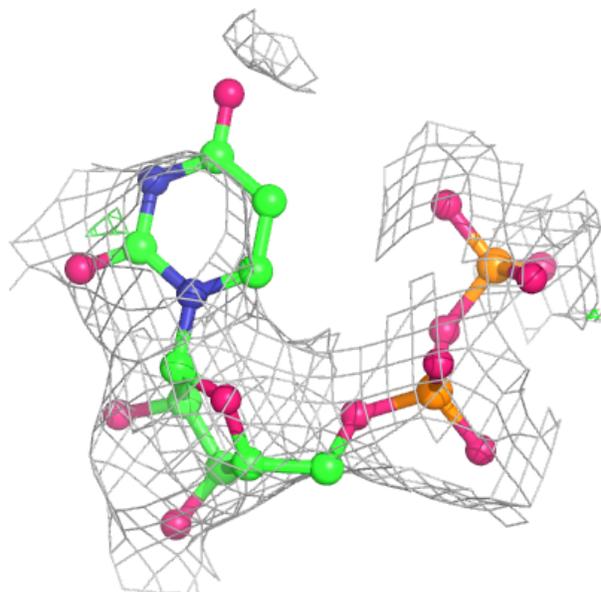
Electron density around UDP L 1237:

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and green (positive)



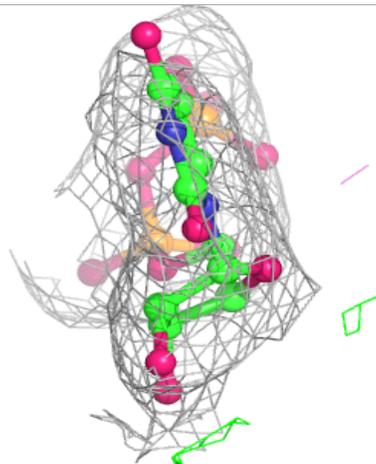
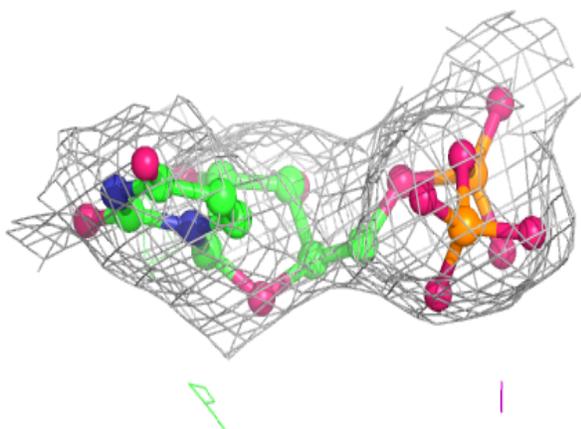
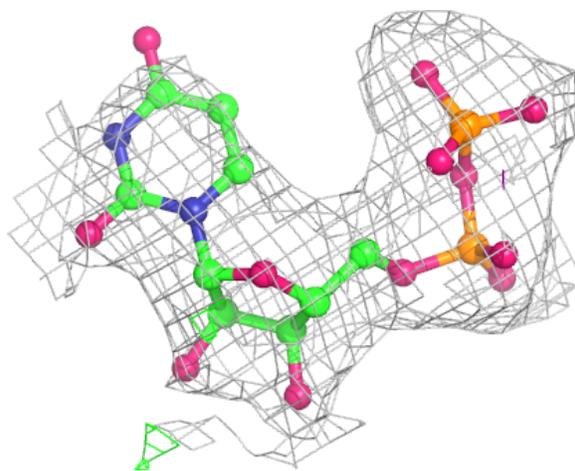
Electron density around UDP J 1237:

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



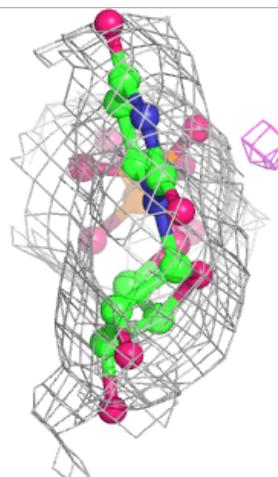
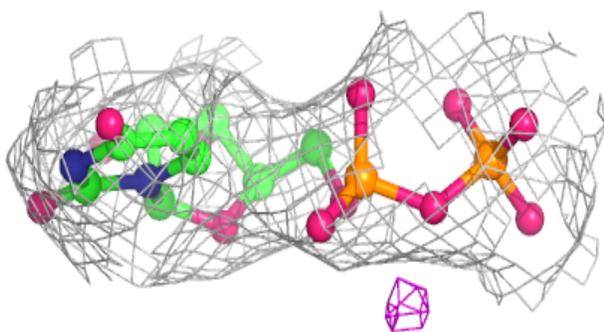
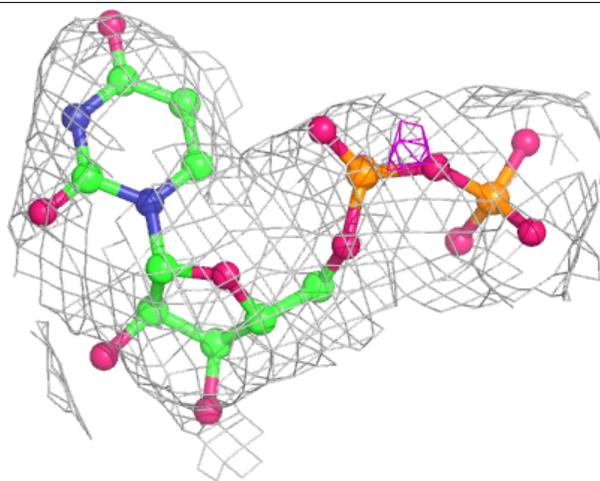
Electron density around UDP C 1237:

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



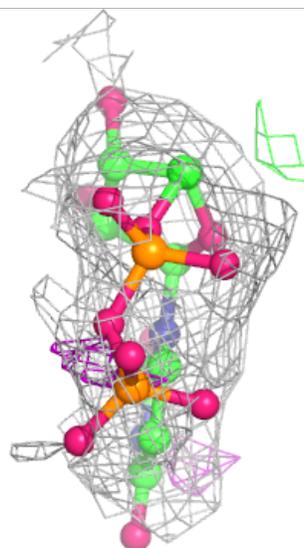
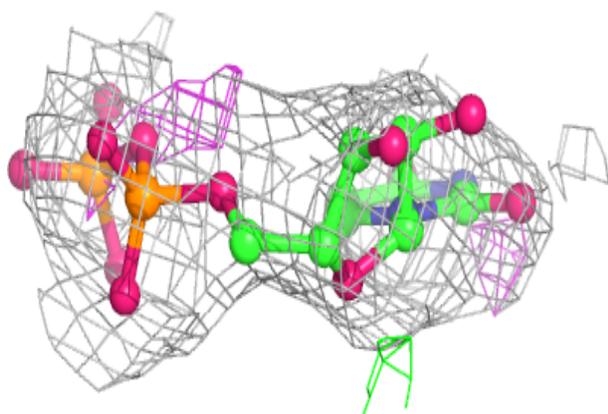
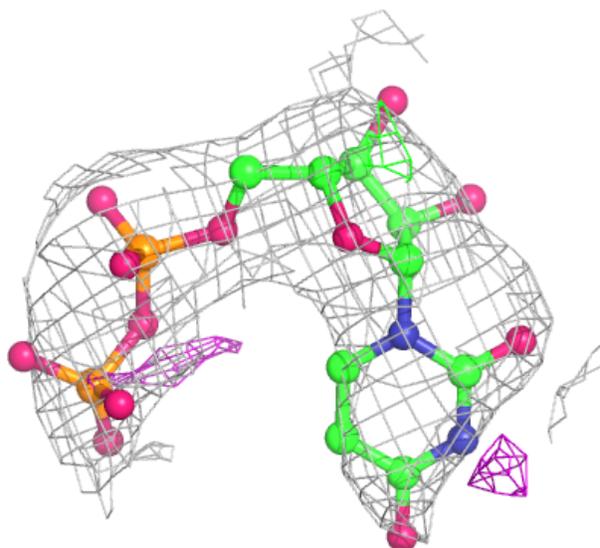
Electron density around UDP N 1244:

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



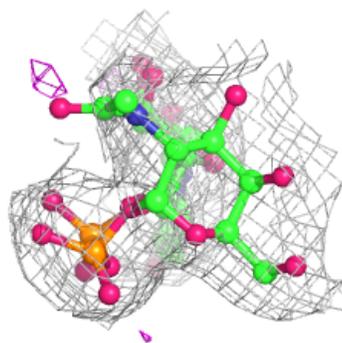
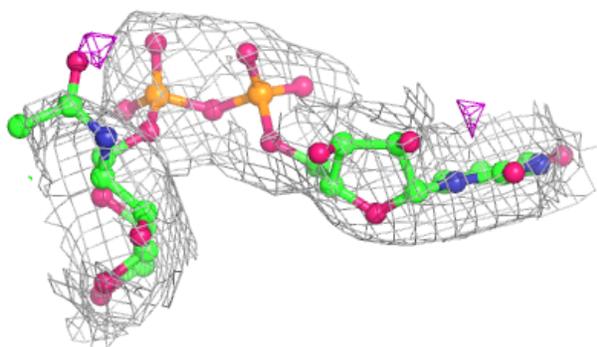
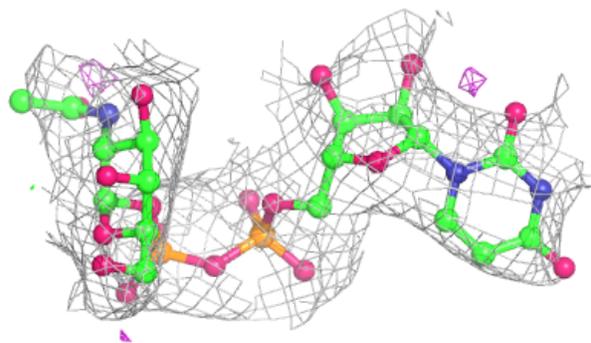
Electron density around UDP B 1237:

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



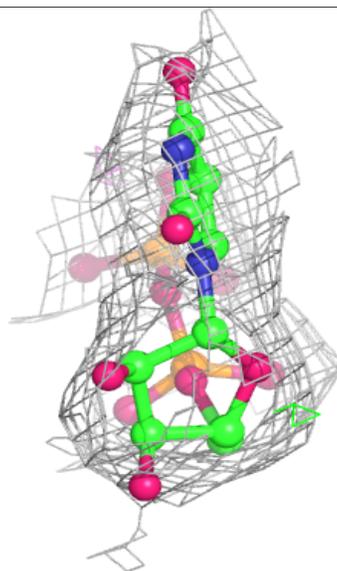
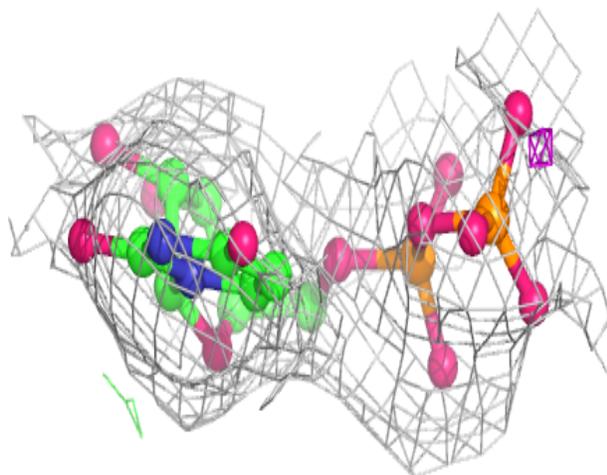
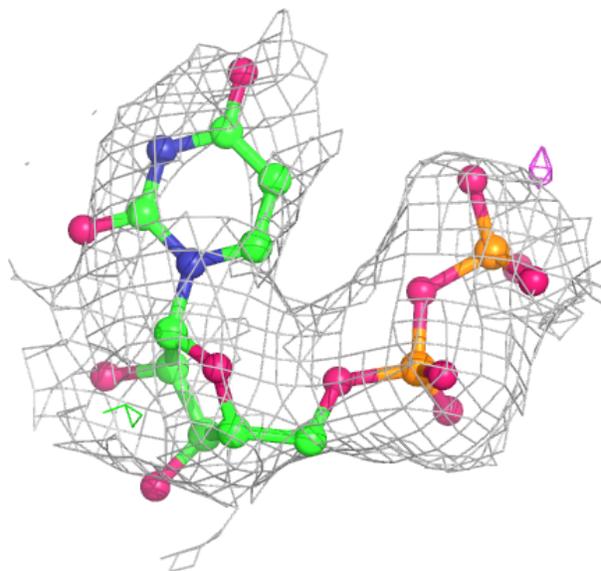
Electron density around UD2 P 1244:

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



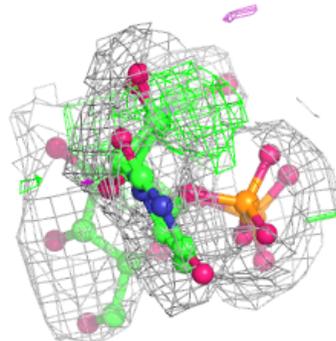
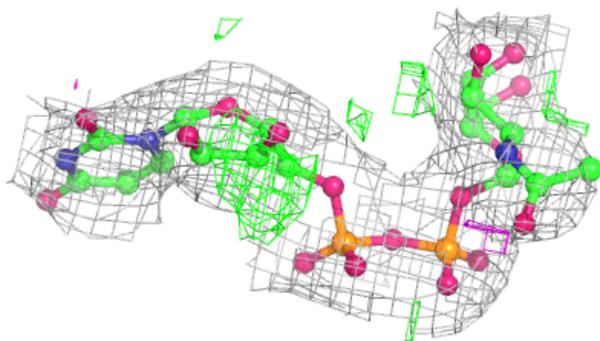
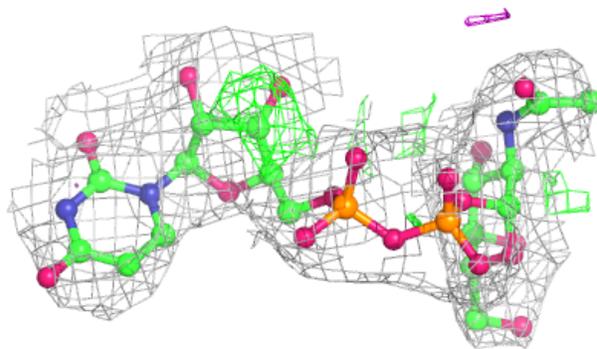
Electron density around UDP I 1237:

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

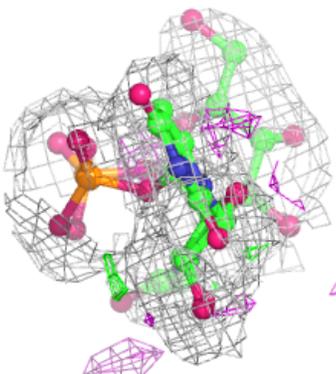
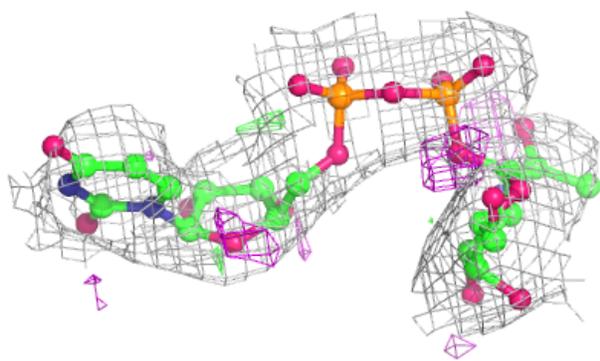
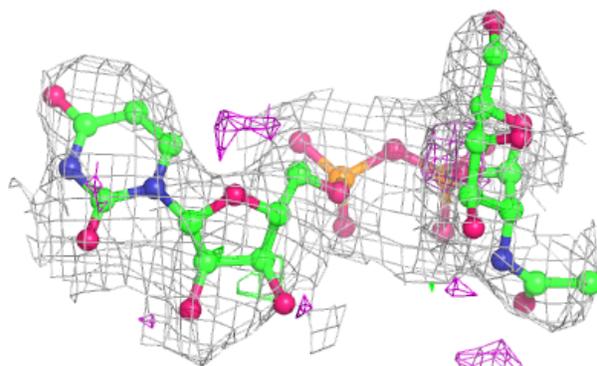


Electron density around UD2 F 1246:

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

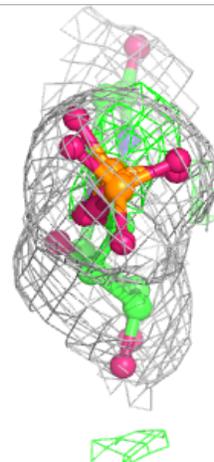
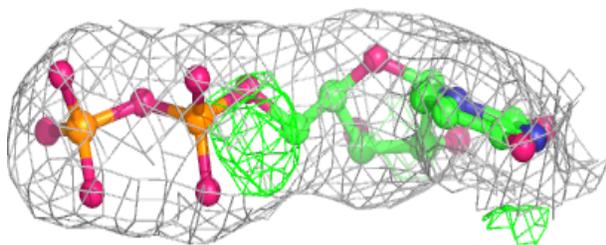
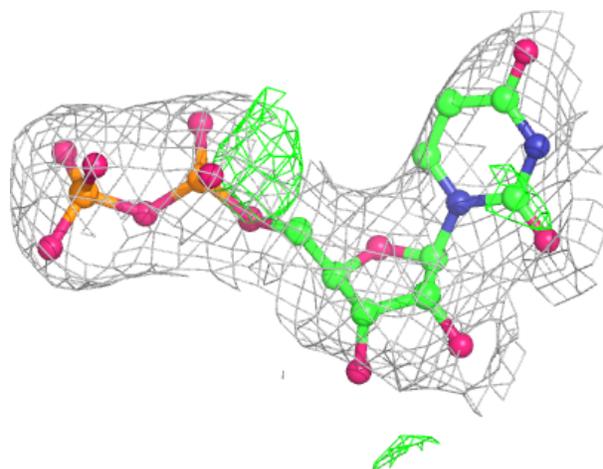
**Electron density around UD2 H 1246:**

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



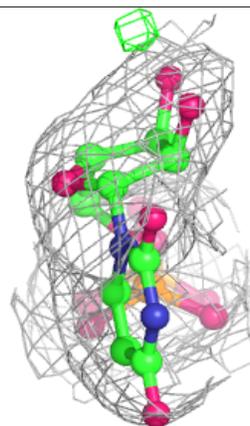
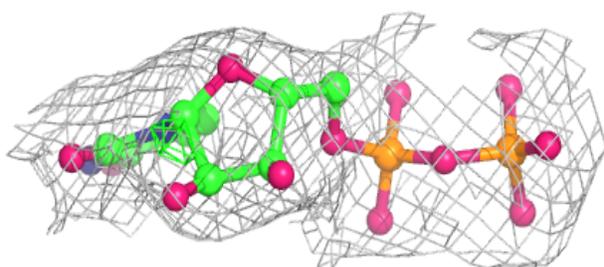
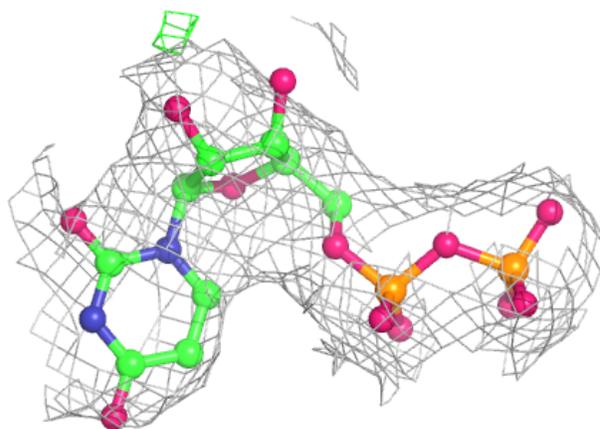
Electron density around UDP M 1246:

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

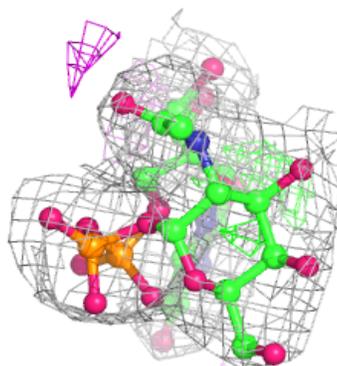
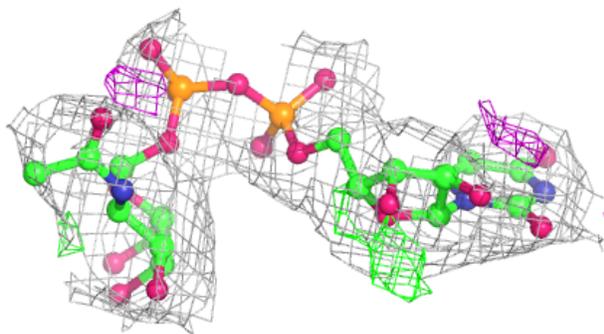
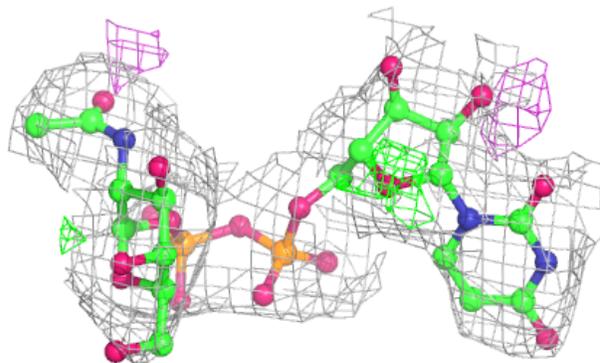


Electron density around UDP K 1237:

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

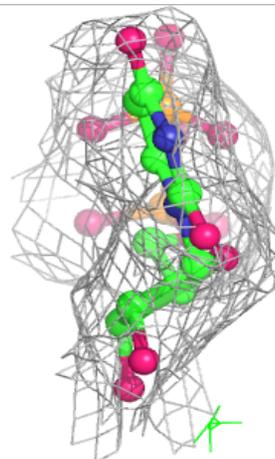
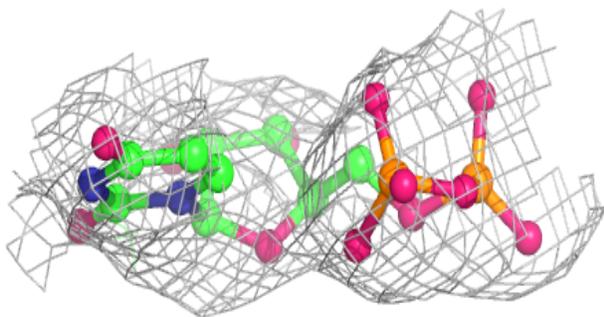
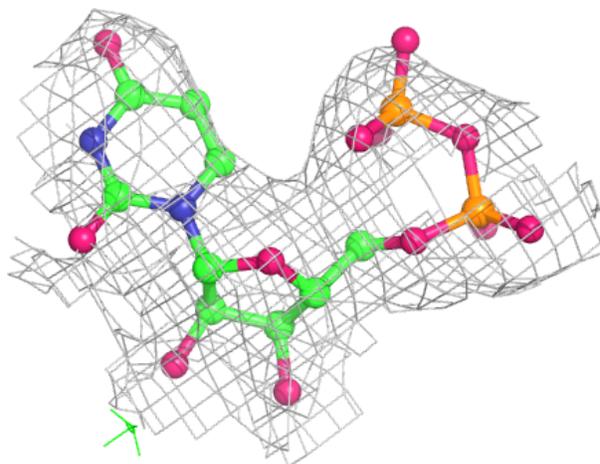
**Electron density around UD2 E 1246:**

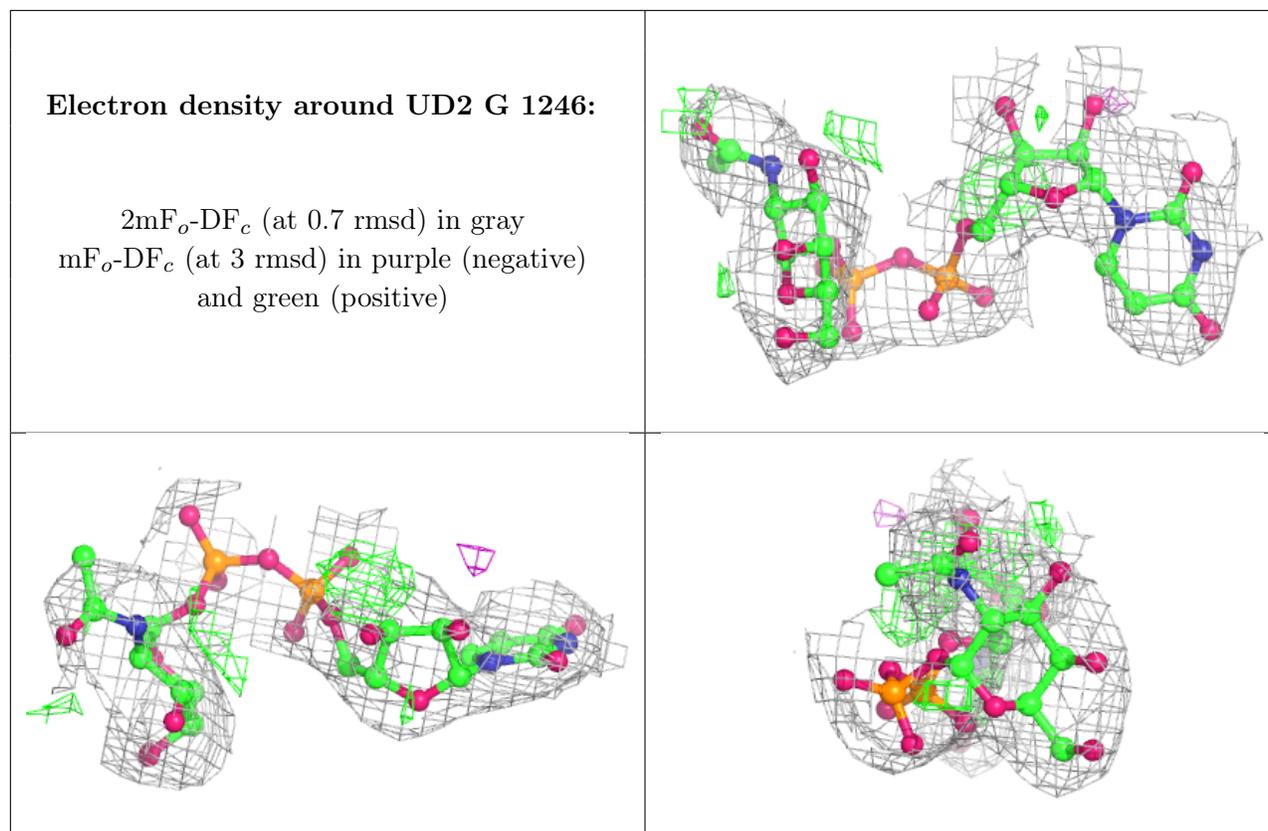
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around UDP D 1237:

$2mF_o-DF_c$ (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.