



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 6, 2026 – 06:08 AM UTC

PDB ID : 4X62 / pdb_00004x62
Title : Crystal Structure of 30S ribosomal subunit from *Thermus thermophilus*
Authors : Demirci, H.; Chen, J.; Choi, J.; Soltis, M.; Puglisi, J.D.
Deposited on : 2014-12-06
Resolution : 3.45 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

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

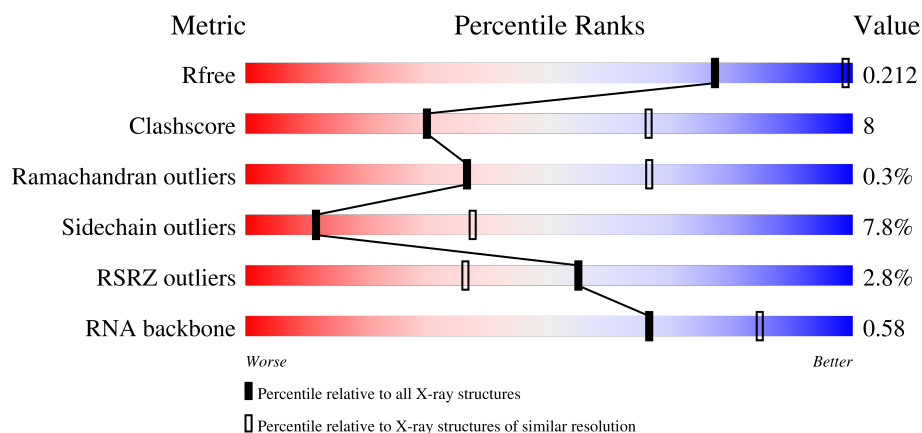
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.45 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.



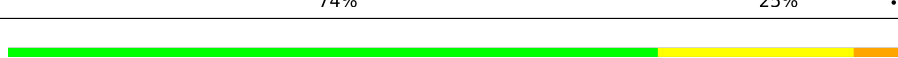
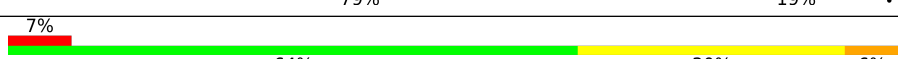
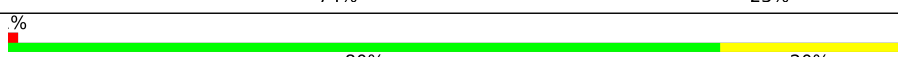
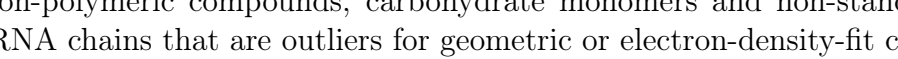
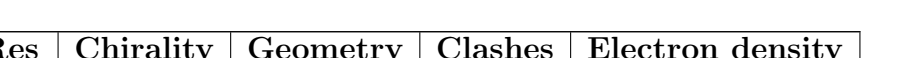
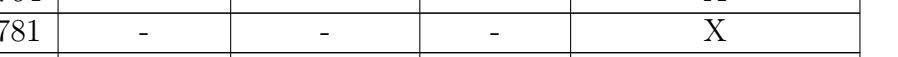
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	1736 (3.50-3.38)
Clashscore	190562	1808 (3.50-3.38)
Ramachandran outliers	187476	1776 (3.50-3.38)
Sidechain outliers	187428	1777 (3.50-3.38)
RSRZ outliers	180081	1736 (3.50-3.38)
RNA backbone	3983	1170 (3.88-3.00)

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	1522	0.2% 55% 37% 7%
2	B	236	3% 75% 23%
3	C	207	2% 74% 24%
4	D	208	7% 82% 13%

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Mol	Chain	Length	Quality of chain
5	E	151	
6	F	101	
7	G	155	
8	H	138	
9	I	127	
10	J	99	
11	K	119	
12	L	125	
13	M	118	
14	N	60	
15	O	88	
16	P	84	
17	Q	99	
18	R	73	
19	S	81	
20	T	99	
21	U	25	
22	a	6	
23	b	11	

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
25	MG	A	1712	-	-	-	X
25	MG	A	1762	-	-	-	X
25	MG	A	1764	-	-	-	X
25	MG	A	1781	-	-	-	X
25	MG	A	1805	-	-	-	X

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
25	MG	A	1808	-	-	-	X
25	MG	A	1814	-	-	-	X

2 Entry composition

There are 28 unique types of molecules in this entry. The entry contains 52777 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 RNA chain called 16S rRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	1512	Total	C	N	O	P	0	0	0
			32504	14477	6011	10505	1511			

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1534	C	A	conflict	GB 55771382
A	1535	A	C	conflict	GB 55771382

- Molecule 2 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	236	Total	C	N	O	S	0	0	1
			1874	1195	336	338	5			

- Molecule 3 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	C	207	Total	C	N	O	S	0	0	1
			1613	1016	315	281	1			

- Molecule 4 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	D	208	Total	C	N	O	S	0	0	0
			1703	1066	339	291	7			

- Molecule 5 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	E	151	Total	C	N	O	S	0	0	1
			1147	724	218	201	4			

- Molecule 6 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
6	F	101	Total	C	N	O	S	0	0	0
			843	531	155	154	3			

- Molecule 7 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
7	G	155	Total	C	N	O	S	0	0	0
			1257	781	252	218	6			

- Molecule 8 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
8	H	138	Total	C	N	O	S	0	0	0
			1116	705	215	193	3			

- Molecule 9 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
9	I	127	Total	C	N	O	0	0	0
			1010	639	197	174			

- Molecule 10 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	J	99	Total	C	N	O	S	0	0	1
			793	498	157	137	1			

- Molecule 11 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
11	K	119	Total	C	N	O	S	0	0	0
			885	549	168	165	3			

- Molecule 12 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
12	L	125	Total	C	N	O	S	0	0	1
			973	612	196	163	2			

- Molecule 13 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
13	M	118	Total	C	N	O	S	0	0	0
			937	579	193	163	2			

- Molecule 14 is a protein called 30S ribosomal protein S14 type Z.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
14	N	60	Total	C	N	O	S	0	0	0
			492	312	104	72	4			

- Molecule 15 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
15	O	88	Total	C	N	O	S	0	0	0
			734	459	147	126	2			

- Molecule 16 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
16	P	84	Total	C	N	O	S	0	0	1
			701	443	140	117	1			

- Molecule 17 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
17	Q	99	Total	C	N	O	S	0	0	0
			823	528	151	142	2			

- Molecule 18 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
18	R	73	Total	C	N	O	0	0	0
			598	381	118	99			

- Molecule 19 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
19	S	81	Total	C	N	O	S	0	0	1
			648	414	120	112	2			

- Molecule 20 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
20	T	99	Total	C	N	O	S	0	0	0
			763	470	162	129	2			

- Molecule 21 is a protein called 30S ribosomal protein Thx.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
21	U	25	Total	C	N	O	0	0	1
			209	128	51	30			

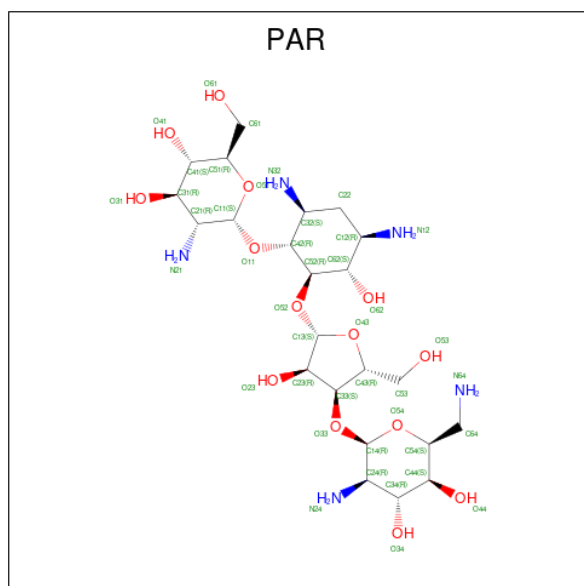
- Molecule 22 is a RNA chain called RNA (5'-D(*AP*AP*AP*UP*UP*U)-3').

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
22	a	6	Total	C	N	O	P	0	0	0
			123	57	21	40	5			

- Molecule 23 is a RNA chain called RNA (5'-D(P*GP*AP*CP*UP*(70U)P*UP*UP*(12A)P*AP*(PSU)P*C)-3').

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
23	b	11	Total	C	N	O	P	S	0	0	0
			247	112	37	85	11	2			

- Molecule 24 is PAROMOMYCIN (CCD ID: PAR) (formula: C₂₃H₄₅N₅O₁₄).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
24	A	1	Total	C	N	O	0	0
			42	23	5	14		

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
24	A	1	Total	C	N	O	0	0
			42	23	5	14		
24	A	1	Total	C	N	O	0	0
			42	23	5	14		
24	A	1	Total	C	N	O	0	0
			42	23	5	14		
24	A	1	Total	C	N	O	0	0
			42	23	5	14		
24	A	1	Total	C	N	O	0	0
			42	23	5	14		

- Molecule 25 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
25	A	261	Total	Mg	0	0
			261	261		
25	C	1	Total	Mg	0	0
			1	1		
25	D	1	Total	Mg	0	0
			1	1		
25	E	1	Total	Mg	0	0
			1	1		
25	F	1	Total	Mg	0	0
			1	1		
25	G	1	Total	Mg	0	0
			1	1		
25	H	1	Total	Mg	0	0
			1	1		
25	L	2	Total	Mg	0	0
			2	2		
25	P	4	Total	Mg	0	0
			4	4		
25	Q	2	Total	Mg	0	0
			2	2		
25	S	3	Total	Mg	0	0
			3	3		
25	T	1	Total	Mg	0	0
			1	1		
25	b	1	Total	Mg	0	0
			1	1		

- Molecule 26 is POTASSIUM ION (CCD ID: K) (formula: K).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
26	A	28	Total K 28 28	0	0
26	G	1	Total K 1 1	0	0

- Molecule 27 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
27	D	1	Total Zn 1 1	0	0
27	N	1	Total Zn 1 1	0	0

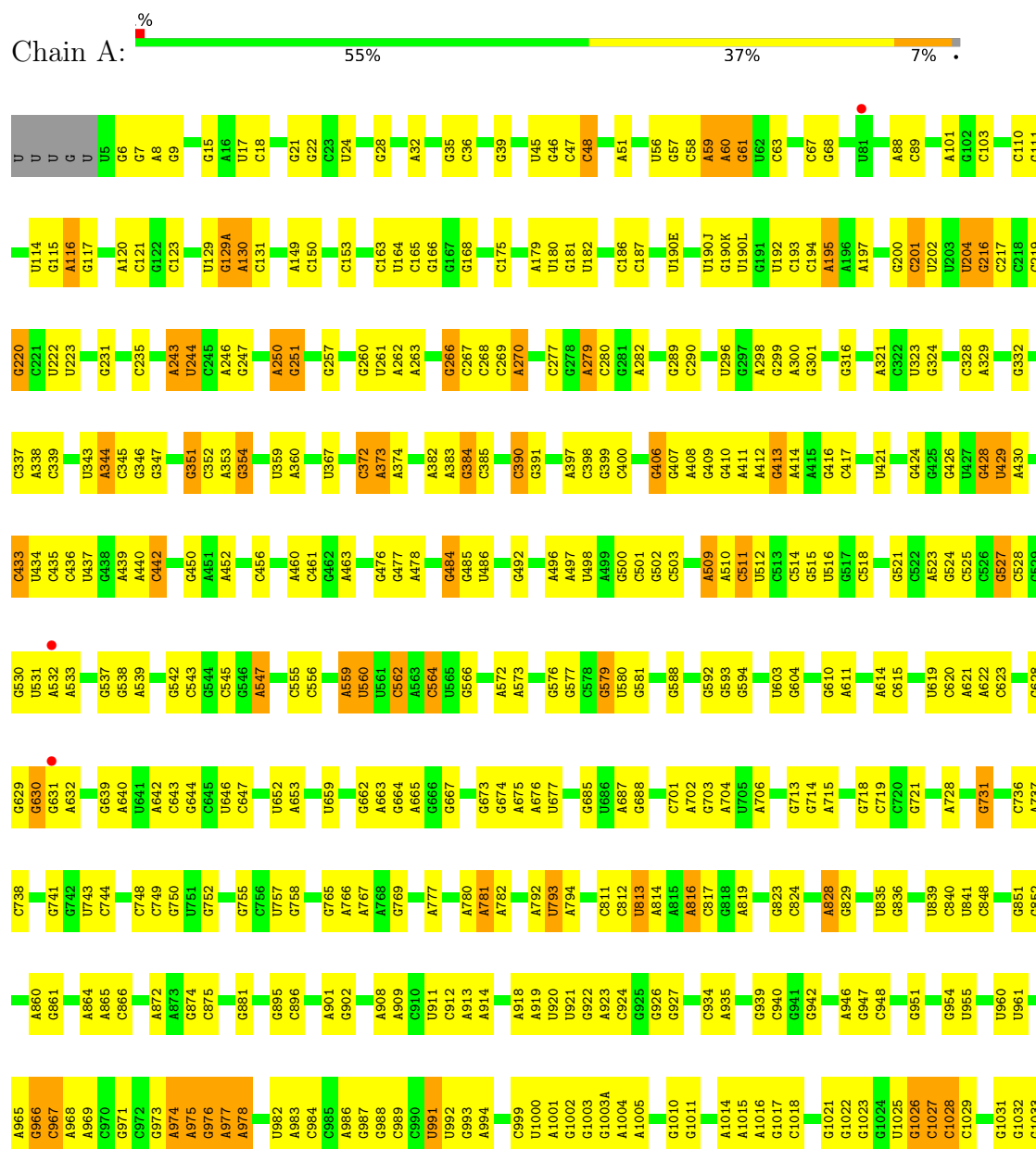
- Molecule 28 is water.

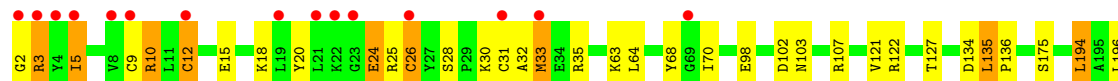
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
28	A	209	Total O 209 209	0	0
28	D	2	Total O 2 2	0	0
28	E	5	Total O 5 5	0	0
28	L	1	Total O 1 1	0	0
28	N	1	Total O 1 1	0	0
28	O	1	Total O 1 1	0	0
28	Q	1	Total O 1 1	0	0
28	T	1	Total O 1 1	0	0

3 Residue-property plots

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.

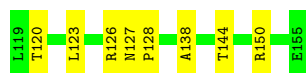
• Molecule 1: 16S rRNA



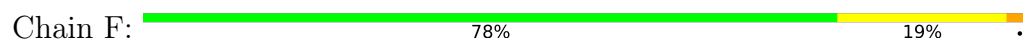




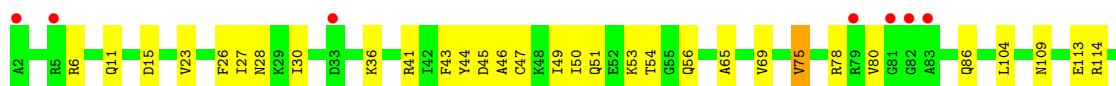
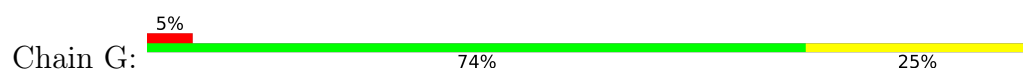
- Molecule 5: 30S ribosomal protein S5



- Molecule 6: 30S ribosomal protein S6



- Molecule 7: 30S ribosomal protein S7

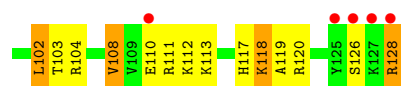


- Molecule 8: 30S ribosomal protein S8

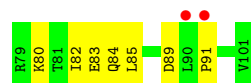
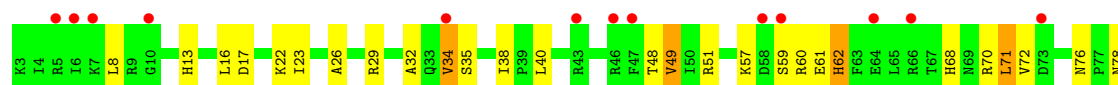


- Molecule 9: 30S ribosomal protein S9

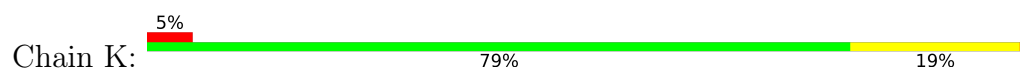




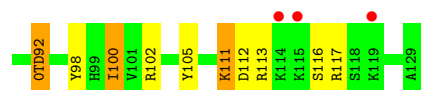
- Molecule 10: 30S ribosomal protein S10



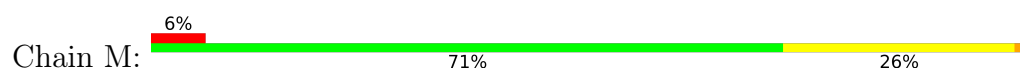
- Molecule 11: 30S ribosomal protein S11



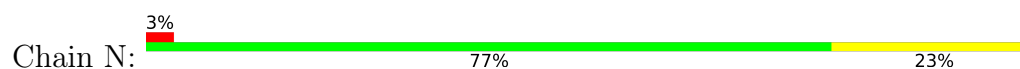
- Molecule 12: 30S ribosomal protein S12



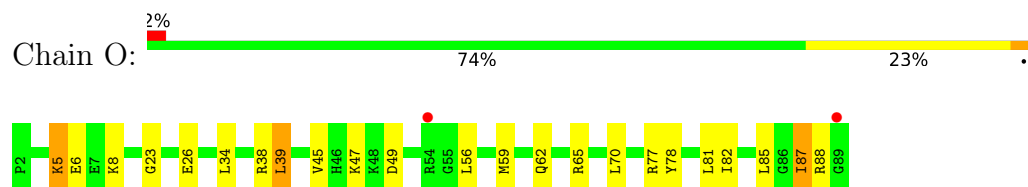
- Molecule 13: 30S ribosomal protein S13



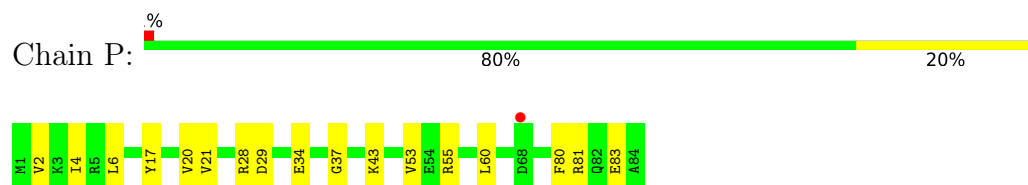
- Molecule 14: 30S ribosomal protein S14 type Z



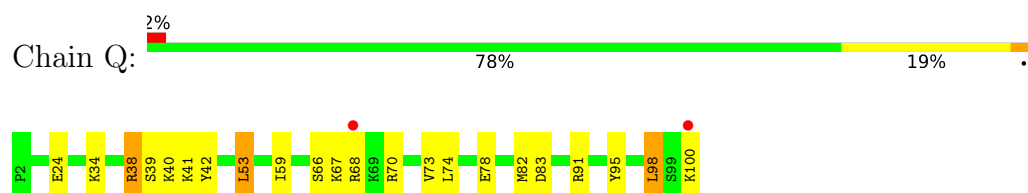
- Molecule 15: 30S ribosomal protein S15



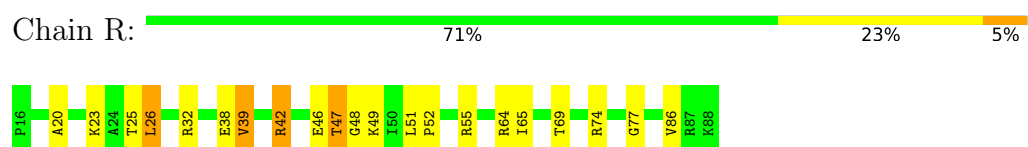
- Molecule 16: 30S ribosomal protein S16



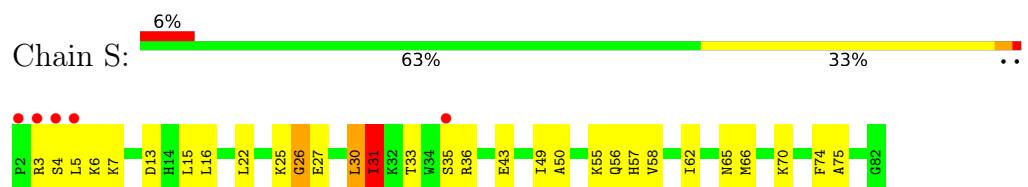
- Molecule 17: 30S ribosomal protein S17



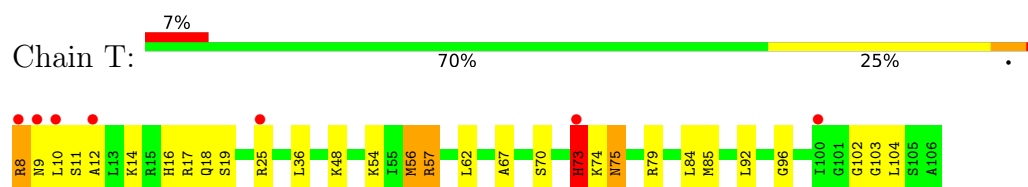
- Molecule 18: 30S ribosomal protein S18



- Molecule 19: 30S ribosomal protein S19

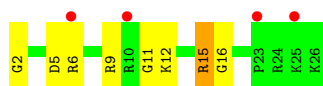


- Molecule 20: 30S ribosomal protein S20

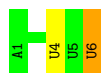


- Molecule 21: 30S ribosomal protein Thx

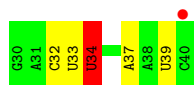




- Molecule 22: RNA (5'-D(*AP*AP*AP*UP*UP*U)-3')



- Molecule 23: RNA (5'-D(P*GP*AP*CP*UP*(70U)P*UP*UP*(12A)P*AP*(PSU)P*C)-3')



4 Data and refinement statistics

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, α , β , γ	400.83Å 400.83Å 175.09Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	34.88 – 3.45 34.88 – 3.45	Depositor EDS
% Data completeness (in resolution range)	99.0 (34.88-3.45) 94.9 (34.88-3.45)	Depositor EDS
R_{merge}	0.16	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.95 (at 3.47Å)	Xtriage
Refinement program	PHENIX (phenix.refine: dev_1938)	Depositor
R, R_{free}	0.181 , 0.214 0.180 , 0.212	Depositor DCC
R_{free} test set	9236 reflections (4.96%)	wwPDB-VP
Wilson B-factor (Å ²)	99.3	Xtriage
Anisotropy	0.099	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.26 , 80.0	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	52777	wwPDB-VP
Average B, all atoms (Å ²)	99.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.78% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 4OC, 7MG, UR3, MG, 70U, M2G, 5MC, ZN, 0TD, PSU, MA6, 2MG, PAR, K, 12A

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	0.24	0/36037	0.37	0/56239
2	B	0.35	0/1909	0.77	4/2579 (0.2%)
3	C	0.37	0/1637	0.73	0/2207
4	D	0.37	0/1733	0.83	5/2318 (0.2%)
5	E	0.44	0/1163	0.83	3/1566 (0.2%)
6	F	0.31	0/856	0.75	2/1154 (0.2%)
7	G	0.36	0/1276	0.77	0/1709
8	H	0.44	0/1136	0.77	0/1527
9	I	0.37	0/1029	0.79	1/1379 (0.1%)
10	J	0.37	0/806	0.85	0/1084
11	K	0.43	0/900	0.81	0/1213
12	L	0.42	0/978	0.92	7/1308 (0.5%)
13	M	0.37	0/947	0.77	1/1270 (0.1%)
14	N	0.37	0/501	0.67	0/664
15	O	0.35	0/745	0.69	0/992
16	P	0.43	0/717	0.75	1/965 (0.1%)
17	Q	0.41	0/836	0.81	0/1117
18	R	0.34	0/604	0.74	0/801
19	S	0.31	0/662	0.88	2/892 (0.2%)
20	T	0.43	0/765	0.83	2/1007 (0.2%)
21	U	0.33	0/213	0.76	0/279
22	a	0.23	0/137	0.36	0/211
23	b	0.18	0/184	0.35	0/277
All	All	0.30	0/55771	0.54	28/82758 (0.0%)

There are no bond length outliers.

All (28) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	I	39	GLY	N-CA-C	-9.41	102.14	114.85

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	D	28	SER	CA-C-N	-8.36	113.21	121.65
4	D	28	SER	C-N-CA	-8.36	113.21	121.65
4	D	26	CYS	N-CA-C	-7.95	103.58	113.28
19	S	26	GLY	N-CA-C	7.80	120.27	110.29
12	L	27	LEU	CB-CA-C	-6.48	108.08	115.79
12	L	44	THR	CA-C-N	6.41	126.36	120.21
12	L	44	THR	C-N-CA	6.41	126.36	120.21
13	M	67	GLU	CB-CA-C	-6.36	109.22	116.54
19	S	30	LEU	CB-CA-C	-6.31	108.29	115.79
12	L	26	ALA	N-CA-C	-6.18	105.50	113.16
2	B	9	GLU	CB-CA-C	-5.98	109.69	116.63
20	T	9	ASN	N-CA-C	5.94	116.12	108.34
6	F	55	ASP	CA-C-N	5.88	125.98	119.87
6	F	55	ASP	C-N-CA	5.88	125.98	119.87
12	L	30	ALA	CA-C-N	5.81	125.19	118.85
12	L	30	ALA	C-N-CA	5.81	125.19	118.85
4	D	33	MET	N-CA-C	-5.67	105.85	112.89
12	L	105	TYR	CB-CA-C	-5.51	110.24	116.63
5	E	23	GLY	N-CA-C	5.45	118.43	110.63
20	T	73	HIS	CB-CA-C	-5.42	109.33	115.79
2	B	8	LYS	CB-CA-C	-5.36	109.94	117.23
5	E	105	VAL	CA-C-N	-5.22	114.29	119.56
5	E	105	VAL	C-N-CA	-5.22	114.29	119.56
16	P	37	GLY	N-CA-C	5.17	117.57	110.69
4	D	12	CYS	N-CA-C	-5.15	104.93	111.11
2	B	90	MET	CA-C-N	5.14	125.34	120.31
2	B	90	MET	C-N-CA	5.14	125.34	120.31

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	32504	0	16434	432	0
2	B	1874	0	1887	32	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	C	1613	0	1677	37	0
4	D	1703	0	1763	22	0
5	E	1147	0	1207	28	0
6	F	843	0	857	12	0
7	G	1257	0	1296	23	0
8	H	1116	0	1177	25	0
9	I	1010	0	1037	36	0
10	J	793	0	835	23	0
11	K	885	0	904	14	0
12	L	973	0	1058	29	0
13	M	937	0	995	17	0
14	N	492	0	529	11	0
15	O	734	0	771	11	0
16	P	701	0	720	9	0
17	Q	823	0	891	16	0
18	R	598	0	670	15	0
19	S	648	0	672	17	0
20	T	763	0	861	20	0
21	U	209	0	221	5	0
22	a	123	0	65	2	0
23	b	247	0	129	2	0
24	A	252	0	270	12	0
25	A	261	0	0	0	0
25	C	1	0	0	0	0
25	D	1	0	0	0	0
25	E	1	0	0	0	0
25	F	1	0	0	0	0
25	G	1	0	0	0	0
25	H	1	0	0	0	0
25	L	2	0	0	0	0
25	P	4	0	0	0	0
25	Q	2	0	0	0	0
25	S	3	0	0	0	0
25	T	1	0	0	0	0
25	b	1	0	0	0	0
26	A	28	0	0	0	0
26	G	1	0	0	0	0
27	D	1	0	0	0	0
27	N	1	0	0	0	0
28	A	209	0	0	4	0
28	D	2	0	0	0	0
28	E	5	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
28	L	1	0	0	0	0
28	N	1	0	0	0	0
28	O	1	0	0	0	0
28	Q	1	0	0	0	0
28	T	1	0	0	0	0
All	All	52777	0	36926	744	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 8.

All (744) 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:A:235:C:H5'	17:Q:70:ARG:HG2	1.55	0.88
1:A:989:C:H42	1:A:1216:G:H1	1.22	0.85
1:A:664:G:H22	1:A:741:G:H1	1.26	0.83
11:K:15:ALA:HA	11:K:77:MET:HA	1.60	0.83
1:A:153:C:H42	1:A:168:G:H1	1.26	0.83
1:A:537:G:OP1	12:L:113:ARG:NH2	2.11	0.82
1:A:48:C:OP1	24:A:1603:PAR:N12	2.11	0.82
13:M:88:ARG:HH11	19:S:3:ARG:HH21	1.25	0.81
1:A:1162:C:H42	1:A:1174:G:H1	1.23	0.81
1:A:951:G:OP2	13:M:102:ARG:NH2	2.18	0.76
5:E:24:ARG:NH1	22:a:6:U:OP2	2.19	0.75
1:A:269:C:H2'	1:A:270:A:H8	1.53	0.73
4:D:32:ALA:HA	4:D:35:ARG:HG2	1.70	0.72
7:G:146:GLU:HA	7:G:149:ARG:HG2	1.73	0.71
1:A:975:A:H4'	1:A:976:G:H5''	1.72	0.71
14:N:9:LYS:HE2	14:N:23:ARG:HB2	1.72	0.71
1:A:501:C:OP1	12:L:117:ARG:NH2	2.23	0.70
5:E:79:GLU:HG3	5:E:93:PRO:HD2	1.73	0.70
12:L:53:ARG:NH1	12:L:92:OTD:OD2	2.25	0.70
1:A:559:A:OP1	5:E:126:ARG:NH2	2.22	0.70
17:Q:66:SER:O	17:Q:70:ARG:NH1	2.25	0.70
8:H:10:LEU:HD22	8:H:83:ILE:HD11	1.75	0.69
3:C:14:ILE:HG22	3:C:15:THR:HG23	1.74	0.69
19:S:50:ALA:HB1	19:S:57:HIS:HB3	1.73	0.69
1:A:673:G:H2'	1:A:674:G:C8	2.27	0.69
1:A:1427:U:H2'	1:A:1428:A:H8	1.58	0.69
1:A:201:C:H42	1:A:216:G:H1	1.39	0.69
5:E:88:LYS:HB3	5:E:123:LEU:HB2	1.76	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:564:C:O2'	8:H:91:ARG:NH2	2.27	0.68
1:A:713:G:H2'	1:A:714:G:C8	2.29	0.68
1:A:677:U:H3	1:A:713:G:H22	1.39	0.68
20:T:67:ALA:O	20:T:73:HIS:ND1	2.27	0.68
1:A:1003:G:N2	1:A:1039:C:N3	2.42	0.68
24:A:1602:PAR:H23	24:A:1602:PAR:HN21	1.57	0.68
1:A:1266:G:N2	1:A:1269:A:OP2	2.27	0.67
2:B:223:ILE:HD13	2:B:230:VAL:H	1.59	0.67
3:C:64:VAL:HG23	3:C:99:VAL:HG11	1.77	0.67
10:J:8:LEU:HB2	10:J:70:ARG:HB2	1.76	0.66
1:A:989:C:N4	1:A:1216:G:H1	1.91	0.66
24:A:1606:PAR:HN21	24:A:1606:PAR:H322	1.43	0.66
1:A:1326:C:OP1	21:U:12:LYS:NZ	2.29	0.66
1:A:1347:G:O6	9:I:10:ARG:NH2	2.23	0.66
8:H:85:ARG:NE	8:H:87:SER:O	2.28	0.66
1:A:1244:C:H42	1:A:1293:G:H1	1.42	0.66
3:C:36:ASP:OD1	3:C:59:ARG:NH2	2.29	0.66
10:J:82:ILE:HA	10:J:85:LEU:HB2	1.78	0.66
1:A:1010:G:H2'	1:A:1011:G:H8	1.61	0.66
6:F:10:LEU:HD12	6:F:59:TYR:HB3	1.78	0.65
1:A:299:G:N1	28:A:2050:HOH:O	2.28	0.65
1:A:1162:C:N4	1:A:1174:G:H1	1.93	0.65
7:G:109:ASN:OD1	7:G:119:ARG:NH2	2.29	0.65
1:A:1391:U:H2'	1:A:1392:G:C8	2.31	0.65
5:E:80:ILE:HD13	5:E:138:ALA:HB1	1.79	0.65
9:I:46:ALA:HB2	9:I:74:ILE:HG23	1.78	0.65
1:A:1435:G:H2'	1:A:1436:U:C6	2.32	0.65
1:A:974:A:OP2	14:N:41:ARG:NH1	2.30	0.64
8:H:113:SER:HB2	8:H:134:ILE:HD11	1.80	0.64
1:A:1086:U:H3	1:A:1099:G:H22	1.45	0.64
5:E:81:GLU:HG3	5:E:90:VAL:HG22	1.80	0.64
20:T:56:MET:HE2	20:T:85:MET:HA	1.80	0.64
12:L:24:VAL:HG13	12:L:98:TYR:HE2	1.63	0.63
1:A:153:C:N4	1:A:168:G:H1	1.95	0.63
1:A:1200:C:O2'	1:A:1205:U:O4	2.15	0.63
3:C:156:ARG:H	3:C:163:ALA:HA	1.63	0.63
9:I:51:ARG:HG3	9:I:56:LEU:HD21	1.79	0.63
1:A:542:G:OP1	4:D:10:ARG:NH2	2.31	0.63
1:A:1356:G:H2'	1:A:1357:A:C8	2.34	0.63
1:A:390:C:O3'	16:P:28:ARG:NH2	2.32	0.62
13:M:10:PRO:HB2	13:M:18:ALA:HB1	1.80	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1122:U:O4	1:A:1123:A:N6	2.32	0.62
6:F:9:VAL:HB	6:F:87:ARG:HB2	1.80	0.62
17:Q:53:LEU:HD23	17:Q:82:MET:HE1	1.80	0.62
1:A:1124:G:N7	1:A:1145:C:O2'	2.27	0.62
1:A:1250:A:H2'	1:A:1251:A:C8	2.34	0.62
1:A:1422:G:N2	1:A:1478:C:N3	2.42	0.62
10:J:89:ASP:HB2	10:J:91:PRO:HD2	1.82	0.62
15:O:87:ILE:HG22	15:O:88:ARG:H	1.63	0.62
1:A:442:C:H42	1:A:492:G:H1	1.47	0.62
1:A:456:C:H42	1:A:476:G:H1	1.46	0.62
1:A:1147:C:HO2'	9:I:5:TYR:HH	1.48	0.62
4:D:102:ASP:OD1	4:D:103:ASN:N	2.31	0.62
1:A:1128:C:H42	1:A:1143:G:H1	1.47	0.61
1:A:409:G:H1	1:A:433:C:H42	1.47	0.61
8:H:103:VAL:HG12	8:H:104:ARG:HG2	1.81	0.61
20:T:10:LEU:HG	20:T:12:ALA:H	1.64	0.61
1:A:652:U:O4	1:A:752:G:O2'	2.18	0.61
1:A:1128:C:OP1	9:I:66:ARG:NH1	2.34	0.61
1:A:1292:U:OP1	7:G:41:ARG:NH2	2.34	0.61
19:S:55:LYS:HG2	19:S:56:GLN:HG3	1.80	0.61
1:A:1397:C:OP2	5:E:24:ARG:NH2	2.33	0.61
1:A:946:A:H2'	1:A:947:G:C8	2.36	0.60
8:H:86:ILE:HD12	8:H:133:LEU:HD22	1.84	0.60
1:A:413:G:N2	1:A:429:U:OP2	2.34	0.60
1:A:1391:U:H2'	1:A:1392:G:H8	1.64	0.60
3:C:19:GLU:HG2	3:C:54:ARG:HE	1.65	0.60
3:C:64:VAL:HB	3:C:99:VAL:HG21	1.82	0.60
10:J:29:ARG:HD2	10:J:84:GLN:HE22	1.67	0.60
11:K:29:ILE:HG22	11:K:44:SER:HB2	1.82	0.60
1:A:1028:C:H42	1:A:1033:G:H1	1.49	0.60
1:A:835:U:OP1	18:R:64:ARG:NH2	2.31	0.60
19:S:36:ARG:NH2	19:S:75:ALA:O	2.31	0.60
3:C:11:ARG:NH1	3:C:177:THR:O	2.35	0.60
1:A:1502:A:H2	1:A:1505:G:H1	1.50	0.59
8:H:34:GLU:OE2	8:H:37:ARG:NH1	2.33	0.59
13:M:49:THR:HG22	13:M:51:ALA:H	1.66	0.59
1:A:1323:G:H2'	1:A:1324:A:C8	2.37	0.59
12:L:48:PRO:HD2	12:L:92:OTD:H3	1.83	0.59
9:I:25:LYS:N	9:I:60:ASP:OD1	2.34	0.59
1:A:674:G:H2'	1:A:675:A:H8	1.67	0.59
1:A:1182:G:O2'	1:A:1183:A:OP2	2.19	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:113:GLU:HB2	7:G:119:ARG:HG3	1.85	0.59
7:G:23:VAL:O	7:G:27:ILE:HG12	2.03	0.59
12:L:41:ARG:HE	12:L:57:LYS:HE2	1.68	0.59
3:C:27:LYS:HD3	3:C:27:LYS:H	1.67	0.58
5:E:33:VAL:HG22	5:E:43:LEU:HD23	1.84	0.58
1:A:190(K):G:H2'	1:A:190(L):U:H6	1.69	0.58
11:K:27:ASN:OD1	11:K:28:THR:N	2.36	0.58
3:C:3:ASN:OD1	3:C:3:ASN:N	2.36	0.58
5:E:98:THR:N	5:E:117:ASP:OD2	2.37	0.58
1:A:190(J):U:H2'	1:A:190(K):G:C8	2.38	0.58
1:A:269:C:H2'	1:A:270:A:C8	2.37	0.58
2:B:55:PHE:HD2	2:B:221:LEU:HG	1.68	0.58
7:G:54:THR:HG22	7:G:56:GLN:H	1.68	0.58
9:I:15:ALA:HB2	9:I:65:VAL:HG13	1.86	0.58
1:A:60:A:H4'	1:A:61:G:O5'	2.04	0.58
1:A:1240:U:OP1	7:G:119:ARG:NH1	2.36	0.58
11:K:57:THR:HG22	11:K:59:TYR:H	1.67	0.58
1:A:372:C:H4'	1:A:373:A:O5'	2.04	0.58
1:A:579:G:H5'	1:A:728:A:H1'	1.85	0.58
1:A:991:U:O4	1:A:1212:U:O2'	2.16	0.57
2:B:122:PHE:HA	2:B:127:ILE:HG12	1.86	0.57
1:A:1345:U:OP1	9:I:120:ARG:NH1	2.37	0.57
1:A:646:U:H2'	1:A:647:C:C6	2.40	0.57
1:A:976:G:OP2	1:A:1358:U:O2'	2.23	0.57
12:L:111:LYS:HE3	12:L:112:ASP:H	1.69	0.57
3:C:126:ARG:HE	3:C:128:PHE:HD1	1.51	0.57
1:A:741:G:OP2	24:A:1604:PAR:O41	2.22	0.57
10:J:32:ALA:HB2	10:J:76:ASN:HB2	1.87	0.56
1:A:714:G:H2'	1:A:715:A:C8	2.40	0.56
1:A:765:G:N2	1:A:813:U:OP2	2.38	0.56
1:A:984:C:H42	1:A:1221:G:H1	1.51	0.56
1:A:1049:U:O2'	14:N:3:ARG:NH1	2.38	0.56
10:J:57:LYS:HE2	10:J:60:ARG:NH2	2.20	0.56
15:O:56:LEU:HA	15:O:59:MET:HE2	1.86	0.56
1:A:1249:C:O2'	9:I:73:GLN:NE2	2.38	0.56
1:A:103:C:OP1	20:T:17:ARG:NH1	2.38	0.56
1:A:190(J):U:H2'	1:A:190(K):G:H8	1.71	0.56
1:A:243:A:H4'	1:A:244:U:O5'	2.05	0.56
1:A:523:A:N6	12:L:92:OTD:OD1	2.36	0.56
1:A:662:G:N7	24:A:1604:PAR:N12	2.53	0.56
1:A:1057:G:H5''	3:C:154:SER:HB2	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:Q:24:GLU:HG2	17:Q:39:SER:HB3	1.88	0.56
2:B:77:ALA:HB2	2:B:211:ILE:HD13	1.87	0.56
5:E:110:LEU:HD13	5:E:118:ILE:HG21	1.87	0.56
11:K:72:ALA:HB1	11:K:77:MET:HE2	1.86	0.56
7:G:78:ARG:NH1	7:G:154:TYR:O	2.37	0.56
12:L:70:ILE:HD13	12:L:77:LEU:HD12	1.88	0.56
1:A:1143:G:H2'	1:A:1144:G:C8	2.41	0.56
1:A:1392:G:N2	1:A:1502:A:H8	2.03	0.55
1:A:21:G:H2'	1:A:22:G:C8	2.41	0.55
1:A:1026:G:H3'	1:A:1027:C:H5''	1.87	0.55
3:C:68:VAL:HG12	3:C:70:VAL:HG23	1.88	0.55
1:A:1435:G:H2'	1:A:1436:U:H6	1.72	0.55
10:J:48:THR:HA	10:J:62:HIS:HB3	1.86	0.55
1:A:1001:A:H2'	1:A:1002:G:C8	2.42	0.55
7:G:69:VAL:HG21	7:G:104:LEU:HD21	1.89	0.55
1:A:28:G:O2'	1:A:296:U:OP1	2.21	0.55
1:A:1152:A:OP1	10:J:68:HIS:ND1	2.39	0.55
1:A:1513:A:H2'	1:A:1514:C:C6	2.42	0.55
1:A:279:A:OP2	17:Q:95:TYR:OH	2.19	0.55
1:A:359:U:H2'	1:A:360:A:C8	2.42	0.55
1:A:921:U:O2	5:E:19:MET:HB2	2.06	0.55
1:A:1402:4OC:HM22	1:A:1403:C:H5'	1.89	0.55
7:G:122:HIS:HA	7:G:125:MET:HE2	1.88	0.55
1:A:359:U:H2'	1:A:360:A:H8	1.72	0.54
1:A:975:A:H5'	1:A:975:A:H8	1.71	0.54
1:A:1520:G:H2'	1:A:1521:G:H8	1.72	0.54
2:B:75:LYS:HA	2:B:78:GLN:HB2	1.87	0.54
1:A:130:A:OP2	1:A:190(E):U:O2'	2.20	0.54
19:S:33:THR:HG22	19:S:35:SER:H	1.72	0.54
1:A:920:U:H2'	1:A:921:U:C6	2.42	0.54
1:A:1152:A:H5'	10:J:13:HIS:HB2	1.89	0.54
3:C:91:LEU:HD21	3:C:99:VAL:HG22	1.89	0.54
1:A:501:C:H2'	1:A:502:G:H8	1.73	0.54
1:A:1028:C:H2'	1:A:1029:C:H6	1.71	0.54
1:A:1073:U:O2	2:B:104:ASN:ND2	2.39	0.54
1:A:1288:A:H2'	1:A:1289:A:C8	2.43	0.54
9:I:97:LYS:HA	9:I:102:LEU:HD11	1.88	0.54
1:A:250:A:H4'	1:A:251:G:O5'	2.07	0.54
3:C:131:ARG:HH11	3:C:166:GLU:HG3	1.73	0.54
3:C:189:ALA:HB3	3:C:196:LEU:HB2	1.87	0.54
1:A:190(K):G:H2'	1:A:190(L):U:C6	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1305:G:OP2	21:U:2:GLY:N	2.41	0.54
15:O:5:LYS:H	15:O:5:LYS:HD2	1.72	0.54
18:R:32:ARG:HH21	18:R:65:ILE:HD13	1.72	0.54
1:A:1510:U:H2'	1:A:1511:G:C8	2.42	0.53
6:F:100:ASN:ND2	18:R:23:LYS:O	2.40	0.53
14:N:27:CYS:SG	14:N:29:ARG:HB2	2.48	0.53
1:A:1521:G:H2'	1:A:1522:U:C6	2.44	0.53
1:A:390:C:H2'	1:A:391:G:C8	2.43	0.53
9:I:32:ASP:OD1	9:I:33:PHE:N	2.41	0.53
17:Q:40:LYS:HD2	17:Q:42:TYR:CZ	2.43	0.53
1:A:116:A:H5''	28:A:1916:HOH:O	2.08	0.53
2:B:178:ARG:HH22	8:H:74:PRO:HB3	1.74	0.53
5:E:80:ILE:HD12	5:E:91:LEU:HB2	1.90	0.53
11:K:12:ARG:HD2	11:K:14:VAL:HG22	1.91	0.53
3:C:6:HIS:HD2	3:C:8:ILE:H	1.55	0.53
1:A:1379:G:OP1	7:G:6:ARG:NH1	2.42	0.53
1:A:1521:G:H2'	1:A:1522:U:H6	1.74	0.53
13:M:16:ASP:OD1	13:M:16:ASP:N	2.42	0.53
1:A:1031:G:H2'	1:A:1032:G:C8	2.44	0.52
1:A:1250:A:H4'	9:I:68:GLY:N	2.24	0.52
1:A:1308:U:OP2	13:M:99:ARG:HG3	2.09	0.52
3:C:147:LYS:HE2	3:C:205:GLY:H	1.73	0.52
7:G:28:ASN:OD1	7:G:36:LYS:NZ	2.41	0.52
1:A:1132:C:H2'	1:A:1133:G:H8	1.74	0.52
3:C:155:GLY:HA2	3:C:164:ARG:H	1.74	0.52
1:A:1343:G:H2'	1:A:1344:C:C6	2.45	0.52
3:C:35:GLU:HB3	3:C:59:ARG:HH22	1.73	0.52
4:D:98:GLU:OE2	4:D:107:ARG:NE	2.39	0.52
10:J:26:ALA:O	10:J:84:GLN:NE2	2.43	0.52
1:A:175:C:H4'	20:T:25:ARG:HD3	1.92	0.52
1:A:1287:A:H2	1:A:1353:G:H1'	1.73	0.52
1:A:477:G:H2'	1:A:478:A:H8	1.73	0.52
1:A:895:G:H2'	1:A:896:C:C6	2.44	0.52
1:A:1427:U:H2'	1:A:1428:A:C8	2.42	0.52
8:H:116:LYS:HD2	8:H:127:LEU:HD12	1.92	0.52
17:Q:68:ARG:O	17:Q:68:ARG:HG3	2.09	0.52
1:A:989:C:HO2'	1:A:1017:G:HO2'	1.54	0.52
2:B:124:SER:HB2	2:B:125:PRO:HD2	1.91	0.52
9:I:44:VAL:O	9:I:51:ARG:NH2	2.42	0.52
1:A:56:U:H2'	1:A:57:G:H8	1.75	0.52
1:A:1178:G:OP1	9:I:93:ARG:NH1	2.43	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:32:ALA:O	10:J:34:VAL:HG23	2.10	0.52
1:A:201:C:N4	1:A:216:G:H1	2.07	0.52
1:A:757:U:H2'	1:A:758:G:O4'	2.09	0.51
1:A:1054:C:C4	23:b:34:70U:H1'	2.45	0.51
1:A:750:G:N3	15:O:23:GLY:HA3	2.25	0.51
4:D:18:LYS:NZ	4:D:31:CYS:SG	2.83	0.51
1:A:17:U:H2'	1:A:18:C:C6	2.45	0.51
1:A:948:C:OP1	13:M:109:THR:HG22	2.10	0.51
1:A:983:A:O2'	1:A:1050:G:OP2	2.29	0.51
1:A:1054:C:N4	23:b:34:70U:H1'	2.24	0.51
13:M:24:GLY:HA3	13:M:66:LEU:HD22	1.91	0.51
1:A:978:A:O2'	1:A:1322:C:N3	2.43	0.51
1:A:523:A:H61	12:L:92:0TD:CG	2.21	0.51
1:A:674:G:H2'	1:A:675:A:C8	2.45	0.51
1:A:1034:G:H2'	1:A:1035:A:H8	1.75	0.51
3:C:34:LEU:HG	14:N:25:VAL:HG21	1.93	0.51
1:A:299:G:H2'	1:A:300:A:C8	2.46	0.51
1:A:580:U:H2'	1:A:581:G:O4'	2.10	0.51
1:A:1314:C:H2'	1:A:1315:U:C6	2.46	0.51
1:A:614:A:H2'	1:A:615:C:C6	2.46	0.51
1:A:662:G:H2'	1:A:663:A:C8	2.45	0.51
1:A:667:G:O2'	15:O:49:ASP:OD1	2.22	0.51
1:A:1190:G:OP1	3:C:5:ILE:HG13	2.11	0.51
16:P:4:ILE:HG12	16:P:21:VAL:HG22	1.93	0.51
1:A:1137:C:H4'	1:A:1138:G:C2	2.45	0.51
1:A:192:U:H1'	20:T:103:GLY:HA2	1.92	0.51
2:B:33:TYR:HB2	2:B:43:ASP:HA	1.93	0.51
8:H:121:ASP:OD1	8:H:121:ASP:N	2.39	0.51
1:A:1313:U:O4	19:S:4:SER:OG	2.23	0.50
1:A:298:A:N6	28:A:2050:HOH:O	2.44	0.50
1:A:1028:C:H2'	1:A:1029:C:C6	2.46	0.50
1:A:1065:U:H4'	1:A:1066:C:O5'	2.11	0.50
12:L:46:LYS:HG3	12:L:92:0TD:H8	1.93	0.50
1:A:501:C:H2'	1:A:502:G:C8	2.46	0.50
1:A:918:A:H2'	1:A:919:A:C8	2.46	0.50
1:A:1191:A:H5''	3:C:4:LYS:HE2	1.92	0.50
1:A:1504:G:OP1	1:A:1507:A:H4'	2.11	0.50
1:A:390:C:H2'	1:A:391:G:H8	1.76	0.50
1:A:1003:G:H2'	1:A:1003(A):G:C8	2.47	0.50
1:A:1349:A:OP1	9:I:120:ARG:HB2	2.11	0.50
1:A:261:U:OP2	20:T:79:ARG:NH2	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:450:G:OP1	16:P:43:LYS:NZ	2.44	0.50
1:A:562:C:H1'	12:L:15:ARG:HG3	1.92	0.50
11:K:86:GLY:O	11:K:91:ARG:NH2	2.44	0.50
1:A:204:U:H5''	1:A:216:G:OP1	2.11	0.50
1:A:1031:G:H2'	1:A:1032:G:H8	1.75	0.50
1:A:35:G:H2'	1:A:36:C:C6	2.47	0.50
9:I:112:LYS:HE3	9:I:117:HIS:O	2.11	0.50
12:L:57:LYS:HG2	12:L:67:THR:HG22	1.94	0.50
1:A:262:A:H2'	1:A:263:A:C8	2.47	0.50
1:A:1154:G:H2'	1:A:1155:G:H8	1.75	0.50
12:L:24:VAL:HG13	12:L:98:TYR:CE2	2.45	0.49
1:A:384:G:H2'	1:A:385:C:C6	2.47	0.49
1:A:413:G:H1'	1:A:428:G:N2	2.26	0.49
1:A:6:G:H4'	1:A:298:A:H4'	1.92	0.49
1:A:1392:G:H21	1:A:1502:A:H8	1.60	0.49
20:T:92:LEU:O	20:T:96:GLY:N	2.45	0.49
1:A:477:G:H2'	1:A:478:A:C8	2.47	0.49
3:C:70:VAL:HG21	3:C:76:VAL:HG11	1.94	0.49
9:I:17:VAL:HG11	9:I:81:ILE:HA	1.94	0.49
13:M:63:THR:HG23	13:M:64:TRP:H	1.77	0.49
15:O:39:LEU:HD13	15:O:56:LEU:HB2	1.94	0.49
24:A:1602:PAR:H23	24:A:1602:PAR:N21	2.25	0.49
7:G:26:PHE:CE2	7:G:30:ILE:HD11	2.47	0.49
12:L:56:ALA:HB2	12:L:70:ILE:HD11	1.95	0.49
1:A:1072:G:H2'	1:A:1073:U:C6	2.48	0.49
4:D:31:CYS:C	4:D:33:MET:H	2.21	0.49
6:F:2:ARG:HG3	6:F:69:GLU:HG2	1.95	0.49
1:A:1017:G:H2'	1:A:1018:C:C6	2.48	0.49
2:B:97:TRP:HZ2	2:B:102:LEU:HD13	1.77	0.49
3:C:155:GLY:HA3	3:C:163:ALA:HB1	1.94	0.49
5:E:12:LEU:HD13	5:E:31:LEU:HB2	1.94	0.49
14:N:24:CYS:SG	14:N:40:CYS:N	2.85	0.49
18:R:46:GLU:CD	18:R:46:GLU:H	2.21	0.49
12:L:83:VAL:HG21	12:L:100:ILE:HG12	1.94	0.49
1:A:1466:C:H2'	1:A:1467:G:O4'	2.13	0.49
10:J:57:LYS:HG3	10:J:60:ARG:HH21	1.78	0.49
19:S:30:LEU:HB3	19:S:31:ILE:H	1.43	0.49
1:A:324:G:OP1	20:T:70:SER:OG	2.30	0.48
3:C:131:ARG:HE	3:C:135:LYS:HD2	1.78	0.48
1:A:417:C:H42	1:A:426:G:H1	1.60	0.48
1:A:1314:C:H2'	1:A:1315:U:H6	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1347:G:O2'	1:A:1348:U:P	2.71	0.48
1:A:620:C:C2	4:D:135:LEU:HD22	2.47	0.48
12:L:8:ASN:OD1	17:Q:34:LYS:HE2	2.13	0.48
17:Q:83:ASP:OD1	17:Q:83:ASP:N	2.45	0.48
1:A:811:C:O2'	1:A:901:A:N1	2.46	0.48
1:A:1241:G:H2'	1:A:1242:C:C6	2.48	0.48
2:B:24:TRP:HB2	2:B:190:THR:HG22	1.95	0.48
1:A:1035:A:H2'	1:A:1036:G:H8	1.79	0.48
1:A:1263:C:H2'	1:A:1264:C:H6	1.78	0.48
3:C:148:GLY:HA3	3:C:172:ARG:O	2.13	0.48
1:A:1157:A:C2	1:A:1181:G:C4	3.01	0.48
1:A:316:G:OP2	1:A:351:G:O2'	2.32	0.48
1:A:864:A:H2'	1:A:865:A:C8	2.48	0.48
1:A:973:G:H3'	1:A:974:A:H5''	1.95	0.48
1:A:1062:U:H2'	1:A:1063:C:C6	2.49	0.48
1:A:1148:U:H2'	1:A:1149:C:O4'	2.14	0.48
10:J:49:VAL:HG23	14:N:41:ARG:HD2	1.95	0.48
1:A:56:U:H2'	1:A:57:G:C8	2.49	0.48
1:A:646:U:H2'	1:A:647:C:H6	1.77	0.48
1:A:860:A:H2'	1:A:861:G:O4'	2.14	0.48
5:E:102:ALA:HB1	5:E:106:PRO:HG2	1.96	0.48
13:M:22:ILE:HB	13:M:25:ILE:HB	1.96	0.48
1:A:500:G:H2'	1:A:501:C:C6	2.48	0.48
1:A:1049:U:H4'	1:A:1050:G:O5'	2.14	0.48
1:A:1443:G:H4'	1:A:1446:A:O5'	2.14	0.48
4:D:20:TYR:HD2	4:D:26:CYS:HB3	1.78	0.48
8:H:17:THR:O	8:H:78:GLN:NE2	2.37	0.48
20:T:75:ASN:OD1	20:T:75:ASN:N	2.45	0.48
1:A:555:C:H2'	1:A:556:C:C6	2.49	0.47
1:A:560:U:H5'	1:A:566:G:C2	2.48	0.47
1:A:1046:A:H3'	1:A:1047:G:H8	1.79	0.47
17:Q:98:LEU:H	17:Q:98:LEU:HG	1.59	0.47
1:A:908:A:H2'	1:A:909:A:H8	1.79	0.47
1:A:1399:C:C2	1:A:1502:A:N6	2.82	0.47
8:H:4:ASP:OD2	8:H:85:ARG:NH1	2.47	0.47
9:I:65:VAL:HG21	9:I:77:ILE:HD11	1.96	0.47
10:J:49:VAL:HG23	14:N:41:ARG:HB2	1.96	0.47
1:A:954:G:H2'	1:A:955:U:C6	2.49	0.47
10:J:38:ILE:H	10:J:71:LEU:HB2	1.79	0.47
11:K:69:ALA:O	11:K:73:MET:HG2	2.14	0.47
1:A:769:G:H4'	1:A:1513:A:H4'	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:A:1601:PAR:O44	24:A:1601:PAR:N64	2.41	0.47
1:A:296:U:O2'	1:A:556:C:O2	2.32	0.47
1:A:1475:G:H2'	1:A:1476:G:H8	1.79	0.47
1:A:222:U:H2'	1:A:223:U:H6	1.80	0.47
1:A:1355:G:H2'	1:A:1356:G:C8	2.50	0.47
1:A:1397:C:N4	22:a:4:U:OP2	2.48	0.47
2:B:174:VAL:O	2:B:178:ARG:HG2	2.15	0.47
1:A:257:G:H1	1:A:269:C:H42	1.60	0.47
1:A:344:A:H5'	1:A:345:C:C5	2.50	0.47
1:A:456:C:N4	1:A:476:G:H1	2.13	0.47
1:A:560:U:H5'	1:A:566:G:N2	2.29	0.47
1:A:610:G:C4	1:A:611:A:C8	3.02	0.47
1:A:736:C:H2'	1:A:737:A:C8	2.49	0.47
1:A:1291:G:H4'	9:I:39:GLY:HA3	1.96	0.47
1:A:1520:G:H2'	1:A:1521:G:C8	2.49	0.47
13:M:15:VAL:HG23	13:M:43:THR:O	2.15	0.47
20:T:36:LEU:HD12	20:T:62:LEU:HD12	1.96	0.47
21:U:12:LYS:O	21:U:16:GLY:N	2.48	0.47
1:A:1422:G:H1	1:A:1478:C:H42	1.61	0.47
8:H:21:LYS:O	8:H:65:TYR:OH	2.29	0.47
13:M:86:CYS:SG	13:M:87:TYR:N	2.87	0.47
3:C:150:LYS:HB3	3:C:201:TYR:HB2	1.97	0.47
5:E:45:PHE:CE2	5:E:47:LYS:HD2	2.49	0.47
1:A:440:A:H3'	1:A:442:C:H6	1.80	0.47
1:A:989:C:N3	1:A:1216:G:N2	2.53	0.47
1:A:1305:G:N2	1:A:1331:G:H1'	2.30	0.47
9:I:8:GLY:HA3	9:I:79:LEU:HB3	1.96	0.47
1:A:165:C:H2'	1:A:166:G:H8	1.80	0.46
1:A:399:G:H2'	1:A:400:C:C6	2.50	0.46
1:A:524:G:H2'	1:A:525:C:C6	2.50	0.46
1:A:1073:U:C2	1:A:1074:G:C8	3.03	0.46
1:A:1527:C:O2'	1:A:1528:U:H5'	2.16	0.46
1:A:323:U:H2'	1:A:324:G:O4'	2.15	0.46
1:A:639:G:H2'	1:A:640:A:H8	1.79	0.46
1:A:1280:A:H5'	10:J:40:LEU:HD22	1.97	0.46
14:N:27:CYS:HB3	14:N:43:CYS:SG	2.54	0.46
1:A:235:C:N4	28:A:1984:HOH:O	2.49	0.46
1:A:1095:U:H2'	1:A:1096:C:C6	2.50	0.46
2:B:178:ARG:NH2	8:H:74:PRO:HB3	2.30	0.46
7:G:26:PHE:O	7:G:30:ILE:HG13	2.15	0.46
7:G:46:ALA:O	7:G:50:ILE:HG12	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:U:6:ARG:HB2	21:U:15:ARG:NH1	2.31	0.46
1:A:57:G:H2'	1:A:58:C:H6	1.81	0.46
1:A:1244:C:N4	1:A:1293:G:H1	2.10	0.46
1:A:1315:U:H2'	1:A:1316:G:O4'	2.16	0.46
10:J:8:LEU:HB3	10:J:16:LEU:HD22	1.98	0.46
20:T:16:HIS:O	20:T:19:SER:HB3	2.16	0.46
1:A:57:G:H2'	1:A:58:C:C6	2.51	0.46
1:A:382:A:H2'	1:A:383:A:C8	2.50	0.46
1:A:528:C:H41	12:L:49:ASN:ND2	2.14	0.46
1:A:538:G:H2'	1:A:539:A:H8	1.79	0.46
1:A:1218:C:H2'	1:A:1219:U:C6	2.51	0.46
2:B:223:ILE:HD13	2:B:230:VAL:N	2.29	0.46
1:A:1010:G:H2'	1:A:1011:G:C8	2.46	0.46
1:A:1371:G:O3'	9:I:69:GLY:HA3	2.15	0.46
1:A:1241:G:H2'	1:A:1242:C:H6	1.81	0.46
4:D:9:CYS:O	4:D:12:CYS:HB2	2.16	0.46
16:P:34:GLU:OE2	16:P:55:ARG:HD3	2.16	0.46
1:A:360:A:H61	24:A:1603:PAR:H44	1.81	0.46
1:A:547:A:OP2	4:D:2:GLY:N	2.49	0.46
1:A:767:A:O2'	1:A:1524:C:O2	2.32	0.46
1:A:1401:G:C2	1:A:1402:4OC:H1'	2.51	0.46
4:D:135:LEU:HA	4:D:136:PRO:HD3	1.84	0.46
9:I:75:ASP:O	9:I:78:LYS:HB3	2.15	0.46
1:A:1163:C:H2'	1:A:1164:G:H8	1.80	0.46
13:M:67:GLU:HB3	13:M:68:GLY:H	1.50	0.46
13:M:91:ARG:HB2	13:M:98:VAL:HG13	1.98	0.46
16:P:81:ARG:HG2	16:P:83:GLU:HG2	1.97	0.46
21:U:5:ASP:O	21:U:11:GLY:HA3	2.15	0.46
1:A:538:G:H2'	1:A:539:A:C8	2.50	0.45
1:A:1086:U:H3	1:A:1099:G:N2	2.13	0.45
1:A:1516:G:N2	1:A:1519:MA6:OP2	2.48	0.45
12:L:102:ARG:HE	12:L:102:ARG:HB3	1.62	0.45
1:A:737:A:H2'	1:A:738:C:C6	2.51	0.45
1:A:1367:C:OP2	9:I:112:LYS:NZ	2.48	0.45
7:G:78:ARG:HG2	7:G:80:VAL:HG23	1.98	0.45
20:T:67:ALA:HA	20:T:73:HIS:H	1.80	0.45
1:A:895:G:H2'	1:A:896:C:H6	1.82	0.45
1:A:1071:C:H2'	1:A:1072:G:H8	1.80	0.45
1:A:1124:G:H5'	10:J:35:SER:HB3	1.98	0.45
1:A:1320:C:N3	19:S:36:ARG:HD3	2.31	0.45
1:A:1368:G:OP2	9:I:112:LYS:HD3	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:110:GLU:OE2	9:I:113:LYS:NZ	2.49	0.45
1:A:337:C:H2'	1:A:338:A:H8	1.81	0.45
1:A:737:A:H2'	1:A:738:C:H6	1.81	0.45
1:A:872:A:C8	1:A:874:G:C8	3.05	0.45
1:A:1014:A:H2'	1:A:1015:A:C8	2.52	0.45
1:A:1116:C:O2'	9:I:108:VAL:HG21	2.16	0.45
1:A:1179:A:HO2'	1:A:1180:A:P	2.37	0.45
1:A:1187:G:O2'	9:I:111:ARG:NH1	2.49	0.45
6:F:44:GLY:HA2	6:F:59:TYR:CZ	2.51	0.45
7:G:75:VAL:HG21	7:G:86:GLN:HB3	1.98	0.45
19:S:50:ALA:HA	19:S:58:VAL:O	2.16	0.45
1:A:399:G:H2'	1:A:400:C:H6	1.80	0.45
2:B:114:ARG:HH11	2:B:118:LEU:HD11	1.81	0.45
1:A:45:U:H2'	1:A:46:G:C8	2.51	0.45
1:A:222:U:H2'	1:A:223:U:C6	2.51	0.45
1:A:977:A:C2'	1:A:978:A:H5'	2.47	0.45
1:A:1287:A:H2'	1:A:1288:A:C8	2.51	0.45
3:C:30:ARG:HB3	14:N:36:PHE:O	2.17	0.45
5:E:79:GLU:O	8:H:104:ARG:NH1	2.48	0.45
8:H:6:ILE:HB	8:H:85:ARG:NH1	2.32	0.45
1:A:192:U:H2'	1:A:193:C:H6	1.82	0.45
1:A:277:C:OP1	17:Q:68:ARG:NH2	2.29	0.45
11:K:80:VAL:HG11	11:K:103:LEU:HD13	1.99	0.45
1:A:603:U:H2'	1:A:604:G:H8	1.82	0.45
8:H:36:LEU:HD23	8:H:39:LEU:HD23	1.97	0.45
10:J:51:ARG:NH2	10:J:61:GLU:HB2	2.31	0.45
15:O:62:GLN:OE1	15:O:65:ARG:NH2	2.50	0.45
18:R:38:GLU:CD	18:R:38:GLU:H	2.25	0.45
1:A:194:C:H2'	1:A:195:A:H5''	1.98	0.45
1:A:1160:G:C6	1:A:1161:C:C5	3.05	0.45
1:A:1425:U:H3	1:A:1475:G:H1	1.64	0.45
2:B:74:LYS:C	2:B:76:GLN:H	2.25	0.45
3:C:108:ASN:ND2	3:C:111:LEU:HG	2.32	0.45
12:L:54:LYS:HD2	12:L:54:LYS:N	2.32	0.45
1:A:192:U:C1'	20:T:103:GLY:HA2	2.46	0.45
1:A:623:C:OP2	24:A:1605:PAR:O61	2.29	0.45
1:A:1034:G:H2'	1:A:1035:A:C8	2.52	0.45
3:C:150:LYS:HG3	3:C:169:ALA:HB2	1.99	0.45
12:L:78:GLN:N	12:L:81:SER:OG	2.44	0.45
19:S:22:LEU:O	19:S:26:GLY:N	2.50	0.45
19:S:27:GLU:CD	19:S:27:GLU:H	2.25	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1052:U:H2'	1:A:1200:C:H41	1.82	0.44
3:C:153:VAL:HG22	3:C:198:VAL:HG22	1.98	0.44
20:T:57:ARG:HE	20:T:102:GLY:HA2	1.82	0.44
2:B:44:LEU:HD12	2:B:44:LEU:H	1.82	0.44
3:C:6:HIS:CD2	3:C:8:ILE:HB	2.52	0.44
6:F:50:TYR:CE1	18:R:77:GLY:HA2	2.52	0.44
1:A:280:C:O2	17:Q:38:ARG:HG3	2.18	0.44
8:H:108:GLY:HA3	8:H:138:TRP:HB3	1.99	0.44
18:R:32:ARG:HA	18:R:69:THR:HG21	1.99	0.44
1:A:179:A:H2'	1:A:180:U:C6	2.52	0.44
1:A:911:U:H2'	1:A:912:C:C6	2.53	0.44
1:A:983:A:H5'	1:A:984:C:OP2	2.17	0.44
1:A:1151:A:C2	1:A:1152:A:C5	3.06	0.44
1:A:1179:A:H2'	1:A:1180:A:C8	2.53	0.44
1:A:1399:C:H4'	1:A:1400:5MC:H5''	1.99	0.44
2:B:73:THR:N	2:B:170:GLU:OE1	2.39	0.44
2:B:98:LEU:HG	2:B:101:MET:HE3	2.00	0.44
6:F:62:TRP:CH2	6:F:64:GLN:HB2	2.52	0.44
20:T:10:LEU:HD12	20:T:11:SER:H	1.82	0.44
1:A:384:G:H2'	1:A:385:C:H6	1.82	0.44
1:A:463:A:H4'	16:P:80:PHE:O	2.18	0.44
1:A:1189:C:P	10:J:51:ARG:HH22	2.40	0.44
2:B:91:PRO:HG3	2:B:154:LEU:HB2	1.98	0.44
18:R:26:LEU:HD21	18:R:39:VAL:HG23	1.99	0.44
1:A:59:A:H1'	1:A:354:G:N2	2.33	0.44
1:A:619:U:N3	4:D:134:ASP:OD1	2.27	0.44
1:A:851:G:H2'	1:A:852:G:C8	2.53	0.44
1:A:1163:C:C2	1:A:1164:G:C8	3.05	0.44
1:A:1373:G:H5''	7:G:36:LYS:HB2	2.00	0.44
5:E:33:VAL:HG11	5:E:109:ILE:HA	1.99	0.44
6:F:69:GLU:H	6:F:69:GLU:HG3	1.58	0.44
9:I:21:PRO:HA	9:I:59:PHE:HA	1.99	0.44
17:Q:40:LYS:HG2	17:Q:41:LYS:N	2.32	0.44
1:A:685:G:N2	1:A:704:A:OP2	2.45	0.44
1:A:1087:G:H2'	1:A:1088:G:H8	1.83	0.44
9:I:126:SER:C	9:I:128:ARG:H	2.26	0.44
1:A:7:G:H5'	1:A:298:A:O4'	2.18	0.44
1:A:743:U:H2'	1:A:744:C:C6	2.53	0.44
1:A:1016:A:H2'	1:A:1017:G:O4'	2.18	0.44
1:A:1131:G:H2'	1:A:1132:C:C6	2.52	0.44
1:A:1263:C:H2'	1:A:1264:C:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:63:LYS:HD2	4:D:198:VAL:HG22	2.00	0.44
7:G:45:ASP:O	7:G:49:ILE:HG13	2.17	0.44
9:I:16:ARG:O	9:I:63:ILE:HA	2.18	0.44
15:O:85:LEU:HD13	15:O:87:ILE:HD11	1.99	0.44
18:R:20:ALA:O	18:R:55:ARG:NH1	2.50	0.44
1:A:15:G:H1'	5:E:19:MET:HE2	1.99	0.44
1:A:266:G:H5'	1:A:268:C:H41	1.82	0.44
1:A:621:A:H2'	1:A:622:A:C8	2.53	0.44
1:A:1262:C:H42	1:A:1273:G:H1	1.66	0.44
1:A:1477:C:H2'	1:A:1478:C:H6	1.83	0.44
5:E:31:LEU:HD23	5:E:31:LEU:HA	1.81	0.44
1:A:413:G:H1'	1:A:428:G:H21	1.83	0.43
1:A:1022:G:C2	1:A:1023:G:C8	3.06	0.43
1:A:1068:G:H8	1:A:1068:G:OP2	2.01	0.43
2:B:48:MET:HA	2:B:51:LEU:HB2	1.99	0.43
2:B:55:PHE:HA	2:B:58:ILE:HD12	1.99	0.43
4:D:24:GLU:C	4:D:26:CYS:H	2.26	0.43
4:D:24:GLU:OE2	4:D:25:ARG:N	2.50	0.43
5:E:102:ALA:O	5:E:107:ARG:NH1	2.51	0.43
17:Q:67:LYS:HA	17:Q:70:ARG:HH12	1.82	0.43
1:A:503:C:OP2	12:L:116:SER:OG	2.23	0.43
1:A:1158:C:C4	1:A:1160:G:C8	3.06	0.43
6:F:4:TYR:CZ	6:F:72:VAL:HG21	2.52	0.43
1:A:204:U:H5'	1:A:216:G:C8	2.53	0.43
1:A:360:A:N6	24:A:1603:PAR:H44	2.33	0.43
1:A:1028:C:N4	1:A:1033:G:H1	2.16	0.43
1:A:1492:A:OP1	12:L:47:LYS:N	2.52	0.43
17:Q:59:ILE:HD13	17:Q:73:VAL:HA	2.01	0.43
1:A:643:C:C2	1:A:644:G:C8	3.06	0.43
1:A:664:G:OP1	18:R:64:ARG:HD2	2.19	0.43
5:E:81:GLU:HG2	5:E:88:LYS:HE2	1.99	0.43
1:A:149:A:H2'	1:A:150:C:C6	2.53	0.43
1:A:629:G:H2'	1:A:630:G:O4'	2.18	0.43
1:A:908:A:H2'	1:A:909:A:C8	2.54	0.43
9:I:28:VAL:HG22	9:I:63:ILE:HB	2.00	0.43
20:T:62:LEU:HD23	20:T:62:LEU:HA	1.74	0.43
1:A:509:A:N3	1:A:543:C:O2'	2.43	0.43
1:A:511:C:C2	1:A:512:U:C5	3.06	0.43
1:A:659:U:OP2	15:O:8:LYS:NZ	2.43	0.43
4:D:3:ARG:NH2	4:D:5:ILE:HD11	2.33	0.43
5:E:6:PHE:HD1	5:E:6:PHE:HA	1.74	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:76:ALA:O	6:F:80:ARG:HG3	2.18	0.43
2:B:187:LEU:HD23	2:B:201:ILE:O	2.18	0.43
4:D:3:ARG:HE	4:D:3:ARG:HB2	1.66	0.43
7:G:15:ASP:OD1	7:G:44:TYR:OH	2.36	0.43
10:J:38:ILE:H	10:J:71:LEU:CB	2.32	0.43
1:A:8:A:N6	4:D:205:GLU:O	2.51	0.43
1:A:823:G:H2'	1:A:824:C:C6	2.53	0.43
7:G:65:ALA:O	7:G:69:VAL:HG23	2.18	0.43
20:T:85:MET:HE2	20:T:104:LEU:HD23	2.01	0.43
1:A:1273:G:H2'	1:A:1274:G:O4'	2.18	0.43
1:A:1300:G:O2'	1:A:1301:U:P	2.76	0.43
5:E:72:GLN:HE21	5:E:144:THR:HG23	1.83	0.43
1:A:603:U:H2'	1:A:604:G:C8	2.54	0.43
1:A:718:G:O6	18:R:74:ARG:NH1	2.52	0.43
1:A:1084:G:H5'	1:A:1102:A:OP2	2.19	0.43
2:B:129:GLU:N	2:B:129:GLU:OE2	2.52	0.43
3:C:157:ILE:HD13	3:C:166:GLU:HB2	2.01	0.43
12:L:27:LEU:O	12:L:29:GLY:N	2.52	0.43
13:M:15:VAL:HG21	13:M:48:LEU:HD21	2.01	0.43
1:A:434:U:H2'	1:A:435:C:C6	2.53	0.42
1:A:780:A:O2'	1:A:781:A:H5''	2.19	0.42
1:A:881:G:OP2	12:L:12:ARG:NH2	2.51	0.42
1:A:1035:A:H2'	1:A:1036:G:C8	2.54	0.42
1:A:1090:U:H2'	1:A:1091:U:C6	2.54	0.42
2:B:73:THR:HG23	2:B:95:GLN:O	2.19	0.42
1:A:442:C:N4	1:A:492:G:H1	2.15	0.42
1:A:999:C:H2'	1:A:1000:U:C6	2.54	0.42
1:A:1063:C:OP2	1:A:1064:G:O2'	2.37	0.42
1:A:343:U:O2'	1:A:346:G:O6	2.26	0.42
1:A:476:G:H2'	1:A:477:G:H8	1.83	0.42
1:A:592:G:H2'	1:A:593:G:H8	1.84	0.42
1:A:836:G:C6	1:A:851:G:C6	3.08	0.42
1:A:976:G:H5'	1:A:1358:U:O2'	2.20	0.42
9:I:45:ALA:O	9:I:48:GLU:HB2	2.18	0.42
12:L:38:THR:O	12:L:79:GLU:HG3	2.19	0.42
15:O:78:TYR:CZ	15:O:82:ILE:HD11	2.54	0.42
20:T:14:LYS:HE2	20:T:18:GLN:HE21	1.83	0.42
1:A:514:C:H2'	1:A:515:G:H8	1.83	0.42
1:A:987:G:H2'	1:A:988:G:C8	2.54	0.42
3:C:124:ILE:HG12	3:C:130:VAL:HG22	2.00	0.42
9:I:44:VAL:HG12	9:I:51:ARG:NH2	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:S:13:ASP:HA	19:S:16:LEU:HB3	2.01	0.42
1:A:476:G:H2'	1:A:477:G:C8	2.55	0.42
1:A:1474:G:H2'	1:A:1475:G:H8	1.84	0.42
24:A:1605:PAR:H532	24:A:1605:PAR:HN61	1.85	0.42
12:L:7:ILE:O	12:L:11:VAL:HG23	2.20	0.42
1:A:416:G:H2'	1:A:417:C:H6	1.84	0.42
1:A:736:C:H2'	1:A:737:A:H8	1.84	0.42
3:C:93:LYS:HD3	3:C:93:LYS:HA	1.88	0.42
9:I:50:LEU:HB3	9:I:56:LEU:H	1.85	0.42
11:K:115:PRO:C	11:K:117:ASN:H	2.26	0.42
1:A:246:A:C2	1:A:282:A:C5	3.07	0.42
1:A:559:A:P	5:E:126:ARG:HH22	2.39	0.42
14:N:50:LYS:HE2	14:N:50:LYS:HB3	1.90	0.42
19:S:66:MET:HE3	19:S:74:PHE:CE1	2.54	0.42
20:T:8:ARG:NH1	20:T:8:ARG:HB3	2.35	0.42
1:A:88:A:H2'	1:A:89:C:O4'	2.20	0.42
1:A:110:C:H2'	1:A:111:G:O4'	2.20	0.42
1:A:129:U:O3'	1:A:129(A):G:H3'	2.19	0.42
1:A:436:C:H2'	1:A:437:U:H6	1.84	0.42
1:A:676:A:H2'	1:A:677:U:H6	1.85	0.42
1:A:706:A:O4'	11:K:29:ILE:HD11	2.20	0.42
1:A:983:A:H2	1:A:984:C:C6	2.38	0.42
7:G:43:PHE:O	7:G:47:CYS:HB2	2.20	0.42
10:J:51:ARG:HG3	10:J:60:ARG:O	2.19	0.42
11:K:84:VAL:HG11	11:K:91:ARG:HE	1.85	0.42
1:A:216:G:O2'	1:A:217:C:O4'	2.35	0.42
1:A:922:G:C6	1:A:923:A:C6	3.08	0.42
1:A:1230:C:H2'	1:A:1231:G:H8	1.85	0.42
1:A:1312:G:N7	19:S:4:SER:HB3	2.35	0.42
16:P:6:LEU:HD23	16:P:17:TYR:CG	2.54	0.42
1:A:24:U:OP1	12:L:23:LYS:NZ	2.45	0.42
1:A:719:C:O2'	18:R:49:LYS:HB3	2.20	0.42
10:J:76:ASN:O	10:J:78:ASN:N	2.50	0.42
18:R:47:THR:HG22	18:R:48:GLY:H	1.85	0.42
1:A:372:C:H1'	1:A:373:A:OP2	2.20	0.41
1:A:484:G:H5'	1:A:486:U:O4'	2.19	0.41
1:A:1342:C:H2'	1:A:1343:G:H8	1.84	0.41
1:A:1349:A:OP2	9:I:118:LYS:NZ	2.51	0.41
2:B:231:GLU:H	2:B:231:GLU:CD	2.28	0.41
18:R:42:ARG:HH11	18:R:42:ARG:HB3	1.84	0.41
1:A:1021:G:H2'	1:A:1022:G:H8	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1286:A:H2'	1:A:1287:A:H4'	2.01	0.41
1:A:1423:G:H2'	1:A:1424:C:C6	2.55	0.41
7:G:51:GLN:C	7:G:53:LYS:H	2.28	0.41
1:A:875:C:O2'	8:H:14:ARG:NH1	2.48	0.41
1:A:1396:A:H4'	1:A:1397:C:H5''	2.01	0.41
4:D:194:LEU:HD13	4:D:194:LEU:HA	1.87	0.41
5:E:11:ILE:HB	5:E:31:LEU:HB3	2.01	0.41
1:A:114:U:H5''	24:A:1603:PAR:H52	2.02	0.41
1:A:219:C:C4	1:A:220:G:C8	3.07	0.41
1:A:514:C:H2'	1:A:515:G:C8	2.55	0.41
1:A:828:A:H2'	1:A:829:G:O4'	2.20	0.41
1:A:851:G:H2'	1:A:852:G:H8	1.84	0.41
1:A:923:A:H2'	1:A:924:C:C6	2.55	0.41
1:A:986:A:H2'	1:A:987:G:C8	2.56	0.41
1:A:1106:G:H5''	3:C:172:ARG:HG2	2.02	0.41
1:A:1402:4OC:H2'	1:A:1403:C:O4'	2.19	0.41
8:H:7:ALA:HB2	8:H:85:ARG:HD2	2.02	0.41
11:K:51:LYS:HD2	11:K:51:LYS:HA	1.96	0.41
1:A:260:G:H2'	1:A:261:U:C6	2.55	0.41
1:A:1218:C:H2'	1:A:1219:U:H6	1.85	0.41
1:A:1502:A:H2	1:A:1505:G:N1	2.17	0.41
16:P:60:LEU:HD23	16:P:60:LEU:HA	1.94	0.41
1:A:123:C:O2'	1:A:290:C:O2	2.35	0.41
1:A:186:C:H2'	1:A:187:C:C6	2.56	0.41
1:A:373:A:C2	1:A:374:A:C8	3.08	0.41
1:A:642:A:N7	8:H:115:SER:HA	2.35	0.41
1:A:731:G:OP1	1:A:766:A:H1'	2.20	0.41
2:B:20:GLU:H	2:B:20:GLU:HG3	1.68	0.41
5:E:127:ASN:HA	5:E:128:PRO:HD3	1.94	0.41
8:H:102:ARG:H	8:H:102:ARG:NE	2.19	0.41
1:A:165:C:H2'	1:A:166:G:C8	2.56	0.41
1:A:823:G:H2'	1:A:824:C:H6	1.85	0.41
1:A:865:A:H2'	1:A:866:C:C6	2.55	0.41
1:A:1026:G:O6	1:A:1027:C:N4	2.53	0.41
6:F:47:ARG:H	6:F:47:ARG:HG2	1.69	0.41
19:S:31:ILE:HG22	19:S:49:ILE:HA	2.02	0.41
4:D:68:TYR:OH	4:D:196:LEU:HD11	2.20	0.41
1:A:406:G:H2'	1:A:407:G:H8	1.85	0.41
1:A:500:G:H2'	1:A:501:C:H6	1.86	0.41
1:A:706:A:C4'	11:K:29:ILE:HD11	2.51	0.41
1:A:939:G:H2'	1:A:940:C:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:983:A:H1'	1:A:1049:U:O2	2.20	0.41
1:A:1060:C:H2'	1:A:1061:G:H8	1.85	0.41
1:A:1222:G:OP2	1:A:1322:C:N4	2.37	0.41
1:A:1316:G:N2	1:A:1318:A:H3'	2.36	0.41
1:A:1370:G:C2	1:A:1371:G:C8	3.08	0.41
2:B:127:ILE:H	2:B:127:ILE:HG13	1.63	0.41
3:C:20:SER:OG	3:C:40:ARG:NH2	2.44	0.41
4:D:30:LYS:HA	4:D:35:ARG:HH11	1.86	0.41
5:E:51:VAL:HB	5:E:52:PRO:HD3	2.03	0.41
8:H:25:ASP:OD1	8:H:25:ASP:N	2.54	0.41
9:I:39:GLY:O	9:I:40:LEU:HD23	2.21	0.41
15:O:26:GLU:OE1	15:O:77:ARG:HD2	2.20	0.41
16:P:28:ARG:NH1	16:P:29:ASP:OD1	2.51	0.41
19:S:5:LEU:O	19:S:6:LYS:HB2	2.21	0.41
1:A:407:G:H2'	1:A:408:A:C8	2.56	0.41
1:A:593:G:H2'	1:A:594:G:H8	1.86	0.41
1:A:1127:G:N2	1:A:1146:A:H62	2.19	0.41
1:A:1284:C:H3'	1:A:1285:A:H8	1.86	0.41
1:A:1460:A:H2'	1:A:1461:G:O4'	2.21	0.41
1:A:1477:C:H2'	1:A:1478:C:C6	2.56	0.41
2:B:144:ARG:HG3	2:B:145:LEU:N	2.35	0.41
8:H:34:GLU:OE2	8:H:37:ARG:HD3	2.21	0.41
1:A:1072:G:H2'	1:A:1073:U:H6	1.86	0.40
1:A:1168:A:H2'	1:A:1169:A:C8	2.55	0.40
1:A:1262:C:H2'	1:A:1263:C:H6	1.86	0.40
1:A:1414:U:H2'	1:A:1415:G:H8	1.86	0.40
2:B:47:THR:HA	2:B:202:PRO:HG2	2.03	0.40
13:M:77:ASN:OD1	13:M:80:ARG:NH1	2.44	0.40
1:A:67:C:H2'	1:A:68:G:C8	2.56	0.40
1:A:338:A:H2'	1:A:339:C:H6	1.86	0.40
1:A:1107:C:C4	1:A:1108:G:C8	3.09	0.40
1:A:1372:U:H2'	1:A:1373:G:O4'	2.21	0.40
4:D:121:VAL:O	4:D:134:ASP:HA	2.22	0.40
19:S:5:LEU:HD21	19:S:70:LYS:HZ1	1.86	0.40
1:A:977:A:H2'	1:A:978:A:H5'	2.03	0.40
1:A:1126:U:H1'	1:A:1280:A:C6	2.57	0.40
1:A:1154:G:H2'	1:A:1155:G:C8	2.56	0.40
1:A:1172:C:H2'	1:A:1173:G:H8	1.85	0.40
2:B:32:ILE:HD11	2:B:190:THR:HG23	2.03	0.40
5:E:75:THR:OG1	5:E:76:ILE:N	2.54	0.40
6:F:8:ILE:HD11	6:F:79:LEU:HD13	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:51:VAL:HG11	8:H:60:ARG:HG3	2.03	0.40
17:Q:100:LYS:HB2	17:Q:100:LYS:HE3	1.92	0.40
1:A:186:C:H2'	1:A:187:C:H6	1.86	0.40
1:A:200:G:H2'	1:A:201:C:O4'	2.22	0.40
1:A:628:G:H2'	1:A:629:G:C8	2.56	0.40
1:A:792:A:H4'	1:A:793:U:O5'	2.21	0.40
1:A:814:A:H2'	1:A:816:A:H5''	2.04	0.40
1:A:975:A:H5'	1:A:975:A:C8	2.53	0.40
1:A:1127:G:H21	1:A:1147:C:N4	2.19	0.40
1:A:1277:C:O2'	1:A:1279:A:H1'	2.22	0.40
1:A:1386:G:H2'	1:A:1387:G:H8	1.87	0.40
13:M:34:LEU:HD23	13:M:34:LEU:HA	1.95	0.40
18:R:51:LEU:HA	18:R:52:PRO:HD3	1.86	0.40
1:A:164:U:H2'	1:A:165:C:C6	2.57	0.40
1:A:1064:G:N2	1:A:1190:G:O2'	2.55	0.40
1:A:1298:C:H4'	1:A:1299:A:C4	2.55	0.40
1:A:1410:G:H2'	1:A:1411:C:C6	2.57	0.40
2:B:180:LEU:HA	2:B:180:LEU:HD23	1.82	0.40
12:L:60:LEU:HB3	12:L:62:SER:H	1.86	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
2	B	234/236 (99%)	207 (88%)	26 (11%)	1 (0%)	30 61
3	C	205/207 (99%)	188 (92%)	17 (8%)	0	100 100
4	D	206/208 (99%)	200 (97%)	5 (2%)	1 (0%)	24 56
5	E	149/151 (99%)	145 (97%)	4 (3%)	0	100 100
6	F	99/101 (98%)	95 (96%)	4 (4%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
7	G	153/155 (99%)	144 (94%)	9 (6%)	0	100	100
8	H	136/138 (99%)	133 (98%)	3 (2%)	0	100	100
9	I	125/127 (98%)	114 (91%)	10 (8%)	1 (1%)	16	47
10	J	97/99 (98%)	78 (80%)	17 (18%)	2 (2%)	5	28
11	K	117/119 (98%)	104 (89%)	13 (11%)	0	100	100
12	L	122/125 (98%)	113 (93%)	8 (7%)	1 (1%)	16	47
13	M	116/118 (98%)	111 (96%)	5 (4%)	0	100	100
14	N	58/60 (97%)	53 (91%)	5 (9%)	0	100	100
15	O	86/88 (98%)	84 (98%)	2 (2%)	0	100	100
16	P	82/84 (98%)	78 (95%)	4 (5%)	0	100	100
17	Q	97/99 (98%)	94 (97%)	3 (3%)	0	100	100
18	R	71/73 (97%)	67 (94%)	4 (6%)	0	100	100
19	S	79/81 (98%)	71 (90%)	7 (9%)	1 (1%)	9	37
20	T	97/99 (98%)	85 (88%)	12 (12%)	0	100	100
21	U	23/25 (92%)	22 (96%)	1 (4%)	0	100	100
All	All	2352/2393 (98%)	2186 (93%)	159 (7%)	7 (0%)	36	66

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
12	L	28	LYS
19	S	31	ILE
10	J	72	VAL
9	I	119	ALA
10	J	34	VAL
2	B	229	VAL
4	D	5	ILE

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	
2	B	194/204 (95%)	179 (92%)	15 (8%)	12	38
3	C	160/161 (99%)	154 (96%)	6 (4%)	29	56
4	D	180/180 (100%)	169 (94%)	11 (6%)	17	44
5	E	115/116 (99%)	102 (89%)	13 (11%)	5	24
6	F	90/90 (100%)	84 (93%)	6 (7%)	15	41
7	G	126/126 (100%)	120 (95%)	6 (5%)	23	50
8	H	119/119 (100%)	109 (92%)	10 (8%)	10	35
9	I	98/98 (100%)	88 (90%)	10 (10%)	7	27
10	J	87/89 (98%)	78 (90%)	9 (10%)	7	27
11	K	90/90 (100%)	84 (93%)	6 (7%)	15	41
12	L	103/103 (100%)	95 (92%)	8 (8%)	11	37
13	M	94/94 (100%)	85 (90%)	9 (10%)	8	30
14	N	49/49 (100%)	47 (96%)	2 (4%)	27	54
15	O	79/79 (100%)	69 (87%)	10 (13%)	4	20
16	P	72/72 (100%)	69 (96%)	3 (4%)	26	53
17	Q	94/94 (100%)	88 (94%)	6 (6%)	16	43
18	R	64/64 (100%)	58 (91%)	6 (9%)	8	30
19	S	71/71 (100%)	64 (90%)	7 (10%)	7	28
20	T	76/76 (100%)	67 (88%)	9 (12%)	5	22
21	U	19/20 (95%)	17 (90%)	2 (10%)	6	26
All	All	1980/1995 (99%)	1826 (92%)	154 (8%)	11	37

All (154) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	20	GLU
2	B	46	LYS
2	B	61	LEU
2	B	69	LEU
2	B	78	GLN
2	B	82	ARG
2	B	114	ARG
2	B	142	LEU
2	B	144	ARG
2	B	157	ARG
2	B	187	LEU

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Mol	Chain	Res	Type
2	B	206	ASP
2	B	208	ILE
2	B	221	LEU
2	B	236	TYR
3	C	3	ASN
3	C	27	LYS
3	C	111	LEU
3	C	192	THR
3	C	196	LEU
3	C	204	LEU
4	D	3	ARG
4	D	10	ARG
4	D	15	GLU
4	D	24	GLU
4	D	64	LEU
4	D	70	ILE
4	D	122	ARG
4	D	127	THR
4	D	135	LEU
4	D	175	SER
4	D	194	LEU
5	E	6	PHE
5	E	12	LEU
5	E	16	THR
5	E	31	LEU
5	E	34	VAL
5	E	41	VAL
5	E	43	LEU
5	E	64	ARG
5	E	76	ILE
5	E	80	ILE
5	E	89	ILE
5	E	120	THR
5	E	150	ARG
6	F	10	LEU
6	F	16	GLN
6	F	24	GLU
6	F	47	ARG
6	F	69	GLU
6	F	86	ARG
7	G	11	GLN
7	G	75	VAL

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Mol	Chain	Res	Type
7	G	114	ARG
7	G	124	LEU
7	G	135	VAL
7	G	156	TRP
8	H	26	VAL
8	H	39	LEU
8	H	84	ARG
8	H	85	ARG
8	H	91	ARG
8	H	102	ARG
8	H	121	ASP
8	H	127	LEU
8	H	129	VAL
8	H	133	LEU
9	I	44	VAL
9	I	65	VAL
9	I	79	LEU
9	I	96	LEU
9	I	102	LEU
9	I	103	THR
9	I	104	ARG
9	I	108	VAL
9	I	118	LYS
9	I	128	ARG
10	J	17	ASP
10	J	22	LYS
10	J	23	ILE
10	J	49	VAL
10	J	59	SER
10	J	62	HIS
10	J	71	LEU
10	J	80	LYS
10	J	83	GLU
11	K	11	LYS
11	K	29	ILE
11	K	48	ILE
11	K	80	VAL
11	K	92	GLU
11	K	114	VAL
12	L	20	LYS
12	L	28	LYS
12	L	39	VAL

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Mol	Chain	Res	Type
12	L	42	THR
12	L	60	LEU
12	L	83	VAL
12	L	100	ILE
12	L	111	LYS
13	M	4	ILE
13	M	56	LEU
13	M	58	GLU
13	M	62	ASN
13	M	63	THR
13	M	70	LEU
13	M	94	ARG
13	M	98	VAL
13	M	115	LYS
14	N	22	THR
14	N	26	ARG
15	O	5	LYS
15	O	6	GLU
15	O	34	LEU
15	O	38	ARG
15	O	39	LEU
15	O	45	VAL
15	O	47	LYS
15	O	70	LEU
15	O	81	LEU
15	O	87	ILE
16	P	2	VAL
16	P	20	VAL
16	P	53	VAL
17	Q	38	ARG
17	Q	53	LEU
17	Q	74	LEU
17	Q	78	GLU
17	Q	91	ARG
17	Q	98	LEU
18	R	25	THR
18	R	26	LEU
18	R	39	VAL
18	R	42	ARG
18	R	47	THR
18	R	86	VAL
19	S	7	LYS

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Mol	Chain	Res	Type
19	S	15	LEU
19	S	25	LYS
19	S	31	ILE
19	S	43	GLU
19	S	62	ILE
19	S	65	ASN
20	T	8	ARG
20	T	48	LYS
20	T	54	LYS
20	T	56	MET
20	T	57	ARG
20	T	73	HIS
20	T	74	LYS
20	T	75	ASN
20	T	84	LEU
21	U	9	ARG
21	U	15	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (19) such sidechains are listed below:

Mol	Chain	Res	Type
2	B	113	HIS
3	C	162	GLN
4	D	119	GLN
4	D	160	GLN
5	E	72	GLN
6	F	73	ASN
6	F	100	ASN
7	G	13	GLN
9	I	31	GLN
9	I	73	GLN
9	I	117	HIS
9	I	124	GLN
10	J	76	ASN
10	J	78	ASN
11	K	62	GLN
11	K	93	GLN
11	K	99	GLN
12	L	49	ASN
20	T	18	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1510/1522 (99%)	236 (15%)	40 (2%)
22	a	5/6 (83%)	1 (20%)	0
23	b	10/11 (90%)	3 (30%)	0
All	All	1525/1539 (99%)	240 (15%)	40 (2%)

All (240) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	9	G
1	A	32	A
1	A	39	G
1	A	47	C
1	A	48	C
1	A	51	A
1	A	59	A
1	A	61	G
1	A	63	C
1	A	101	A
1	A	116	A
1	A	117	G
1	A	120	A
1	A	121	C
1	A	129(A)	G
1	A	130	A
1	A	131	C
1	A	163	C
1	A	182	U
1	A	195	A
1	A	197	A
1	A	201	C
1	A	202	U
1	A	204	U
1	A	216	G
1	A	220	G
1	A	231	G
1	A	243	A
1	A	244	U
1	A	247	G
1	A	251	G
1	A	267	C
1	A	270	A

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Mol	Chain	Res	Type
1	A	279	A
1	A	289	G
1	A	301	G
1	A	321	A
1	A	328	C
1	A	329	A
1	A	332	G
1	A	344	A
1	A	347	G
1	A	351	G
1	A	352	C
1	A	353	A
1	A	354	G
1	A	367	U
1	A	373	A
1	A	384	G
1	A	390	C
1	A	397	A
1	A	398	C
1	A	406	G
1	A	410	G
1	A	411	A
1	A	412	A
1	A	413	G
1	A	414	A
1	A	421	U
1	A	424	G
1	A	429	U
1	A	430	A
1	A	433	C
1	A	439	A
1	A	442	C
1	A	452	A
1	A	460	A
1	A	461	C
1	A	484	G
1	A	485	G
1	A	497	A
1	A	498	U
1	A	509	A
1	A	510	A
1	A	511	C

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Mol	Chain	Res	Type
1	A	518	C
1	A	521	G
1	A	527	7MG
1	A	531	U
1	A	532	A
1	A	533	A
1	A	545	C
1	A	547	A
1	A	559	A
1	A	560	U
1	A	562	C
1	A	564	C
1	A	572	A
1	A	573	A
1	A	576	G
1	A	577	G
1	A	579	G
1	A	588	G
1	A	630	G
1	A	631	G
1	A	632	A
1	A	653	A
1	A	665	A
1	A	687	A
1	A	688	G
1	A	702	A
1	A	703	G
1	A	721	G
1	A	731	G
1	A	748	C
1	A	749	C
1	A	755	G
1	A	777	A
1	A	781	A
1	A	782	A
1	A	793	U
1	A	794	A
1	A	813	U
1	A	816	A
1	A	817	C
1	A	819	A
1	A	828	A

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Mol	Chain	Res	Type
1	A	839	U
1	A	840	C
1	A	841	U
1	A	848	C
1	A	902	G
1	A	914	A
1	A	926	G
1	A	927	G
1	A	934	C
1	A	935	A
1	A	942	G
1	A	960	U
1	A	961	U
1	A	965	A
1	A	966	M2G
1	A	967	5MC
1	A	968	A
1	A	969	A
1	A	971	G
1	A	974	A
1	A	975	A
1	A	976	G
1	A	977	A
1	A	978	A
1	A	982	U
1	A	991	U
1	A	992	U
1	A	993	G
1	A	994	A
1	A	1004	A
1	A	1005	A
1	A	1025	U
1	A	1026	G
1	A	1027	C
1	A	1028	C
1	A	1050	G
1	A	1054	C
1	A	1055	A
1	A	1065	U
1	A	1066	C
1	A	1068	G
1	A	1094	G

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Mol	Chain	Res	Type
1	A	1095	U
1	A	1101	A
1	A	1117	G
1	A	1123	A
1	A	1125	U
1	A	1126	U
1	A	1127	G
1	A	1129	C
1	A	1130	A
1	A	1131	G
1	A	1137	C
1	A	1138	G
1	A	1139	G
1	A	1152	A
1	A	1158	C
1	A	1159	U
1	A	1171	G
1	A	1180	A
1	A	1181	G
1	A	1183	A
1	A	1184	G
1	A	1196	U
1	A	1197	G
1	A	1201	A
1	A	1202	G
1	A	1212	U
1	A	1213	A
1	A	1225	A
1	A	1227	A
1	A	1238	A
1	A	1249	C
1	A	1257	U
1	A	1258	G
1	A	1270	C
1	A	1280	A
1	A	1281	U
1	A	1282	C
1	A	1286	A
1	A	1287	A
1	A	1300	G
1	A	1301	U
1	A	1302	U

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Mol	Chain	Res	Type
1	A	1320	C
1	A	1331	G
1	A	1332	A
1	A	1338	G
1	A	1348	U
1	A	1353	G
1	A	1359	C
1	A	1362	C
1	A	1363	A
1	A	1364	U
1	A	1370	G
1	A	1394	A
1	A	1397	C
1	A	1398	A
1	A	1400	5MC
1	A	1402	4OC
1	A	1421	G
1	A	1442	G
1	A	1443	G
1	A	1446	A
1	A	1487	G
1	A	1492	A
1	A	1497	G
1	A	1498	UR3
1	A	1499	A
1	A	1502	A
1	A	1504	G
1	A	1505	G
1	A	1506	U
1	A	1517	G
1	A	1519	MA6
1	A	1520	G
1	A	1528	U
1	A	1529	G
1	A	1530	G
22	a	6	U
23	b	32	C
23	b	33	U
23	b	34	70U

All (40) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	60	A
1	A	115	G
1	A	129(A)	G
1	A	181	G
1	A	243	A
1	A	250	A
1	A	266	G
1	A	328	C
1	A	329	A
1	A	352	C
1	A	372	C
1	A	428	G
1	A	429	U
1	A	484	G
1	A	496	A
1	A	509	A
1	A	530	G
1	A	559	A
1	A	687	A
1	A	701	C
1	A	748	C
1	A	812	C
1	A	913	A
1	A	965	A
1	A	1049	U
1	A	1065	U
1	A	1067	A
1	A	1129	C
1	A	1179	A
1	A	1182	G
1	A	1201	A
1	A	1256	A
1	A	1281	U
1	A	1285	A
1	A	1300	G
1	A	1331	G
1	A	1347	G
1	A	1443	G
1	A	1505	G
1	A	1528	U

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

18 non-standard protein/DNA/RNA residues 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$
12	0TD	L	92	12	8,9,10	2.39	1 (12%)	6,11,13	2.01	2 (33%)
23	PSU	b	39	23	18,21,22	1.94	7 (38%)	21,30,33	1.62	4 (19%)
1	5MC	A	967	1	19,22,23	1.07	2 (10%)	26,32,35	0.98	2 (7%)
1	MA6	A	1518	1	23,26,27	0.91	1 (4%)	33,38,41	0.90	1 (3%)
1	2MG	A	1207	1	23,26,27	1.19	4 (17%)	33,38,41	1.15	4 (12%)
1	7MG	A	527	1	23,26,27	4.32	4 (17%)	27,39,42	2.20	9 (33%)
1	5MC	A	1407	1	19,22,23	1.01	0	26,32,35	1.00	2 (7%)
1	5MC	A	1400	1	19,22,23	1.10	2 (10%)	26,32,35	1.04	3 (11%)
1	5MC	A	1404	1	19,22,23	1.10	1 (5%)	26,32,35	0.94	2 (7%)
1	PSU	A	1540	1	18,21,22	1.94	7 (38%)	21,30,33	1.61	4 (19%)
1	UR3	A	1498	1	19,22,23	0.65	0	26,32,35	1.05	1 (3%)
23	70U	b	34	22,23	22,26,27	3.54	10 (45%)	27,37,40	1.70	6 (22%)
23	12A	b	37	25,23	33,36,37	2.52	7 (21%)	46,52,55	2.37	13 (28%)
1	MA6	A	1519	1	23,26,27	1.00	2 (8%)	33,38,41	0.91	1 (3%)
1	4OC	A	1402	1	20,23,24	0.95	2 (10%)	25,32,35	0.77	0
1	M2G	A	966	1	24,27,28	1.04	2 (8%)	33,40,43	0.83	0
1	PSU	A	1541	1,25	18,21,22	1.92	7 (38%)	21,30,33	1.62	3 (14%)
1	PSU	A	516	1,25	18,21,22	2.02	7 (38%)	21,30,33	1.51	4 (19%)

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
12	0TD	L	92	12	-	2/7/12/14	-
23	PSU	b	39	23	-	2/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	5MC	A	967	1	-	2/7/25/26	0/2/2/2
1	MA6	A	1518	1	-	2/11/29/30	0/3/3/3
1	2MG	A	1207	1	-	0/9/27/28	0/3/3/3
1	7MG	A	527	1	-	2/7/37/38	0/3/3/3
1	5MC	A	1407	1	-	0/7/25/26	0/2/2/2
1	5MC	A	1400	1	-	2/7/25/26	0/2/2/2
1	5MC	A	1404	1	-	0/7/25/26	0/2/2/2
1	PSU	A	1540	1	-	1/7/25/26	0/2/2/2
1	UR3	A	1498	1	-	0/7/25/26	0/2/2/2
23	70U	b	34	22,23	-	8/13/31/32	0/2/2/2
23	12A	b	37	25,23	-	5/25/43/44	0/3/3/3
1	MA6	A	1519	1	-	3/11/29/30	0/3/3/3
1	4OC	A	1402	1	-	2/9/29/30	0/2/2/2
1	M2G	A	966	1	-	3/11/29/30	0/3/3/3
1	PSU	A	1541	1,25	-	1/7/25/26	0/2/2/2
1	PSU	A	516	1,25	-	0/7/25/26	0/2/2/2

All (66) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	527	7MG	C8-N9	-19.77	1.33	1.45
23	b	37	12A	C2-S2	10.91	1.84	1.75
23	b	34	70U	O4-C4	8.70	1.40	1.23
23	b	34	70U	C2-S2	8.30	1.81	1.67
12	L	92	0TD	CB-CA	-6.25	1.52	1.54
23	b	34	70U	C6-N1	-6.22	1.27	1.38
23	b	34	70U	C4-N3	-4.86	1.29	1.38
23	b	37	12A	CC-N	4.83	1.48	1.35
23	b	37	12A	CC-N6	4.23	1.46	1.37
23	b	34	70U	C5M-C5	4.14	1.57	1.51
1	A	527	7MG	C2-N2	3.87	1.43	1.34
23	b	37	12A	C6-N6	3.74	1.47	1.39
1	A	516	PSU	C6-C5	3.73	1.39	1.35
1	A	1540	PSU	C6-C5	3.71	1.39	1.35
23	b	34	70U	O9-C8	3.67	1.44	1.33
1	A	1541	PSU	C6-C5	3.51	1.39	1.35
1	A	516	PSU	C2-N1	-3.45	1.32	1.36
23	b	39	PSU	C6-C5	3.45	1.39	1.35
23	b	39	PSU	C4-N3	-3.40	1.32	1.38
23	b	34	70U	O9-C9	-3.40	1.37	1.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	516	PSU	C4-N3	-3.40	1.32	1.38
23	b	39	PSU	C2-N1	-3.40	1.32	1.36
1	A	516	PSU	C2-N3	-3.39	1.31	1.37
23	b	37	12A	C8-N9	-3.35	1.31	1.37
1	A	1541	PSU	C4-N3	-3.31	1.32	1.38
1	A	1540	PSU	C4-N3	-3.29	1.32	1.38
1	A	1541	PSU	C2-N1	-3.29	1.32	1.36
1	A	1540	PSU	C2-N1	-3.25	1.32	1.36
1	A	1540	PSU	C2-N3	-3.21	1.32	1.37
23	b	39	PSU	C2-N3	-3.16	1.32	1.37
1	A	1541	PSU	C2-N3	-3.10	1.32	1.37
1	A	1400	5MC	C2-N1	3.08	1.46	1.40
1	A	1207	2MG	C2-N2	2.94	1.39	1.33
23	b	34	70U	C4-C5	-2.92	1.38	1.45
23	b	34	70U	C6-C5	2.83	1.43	1.35
1	A	966	M2G	C2-N2	2.82	1.40	1.35
1	A	527	7MG	C5-N7	2.75	1.39	1.35
1	A	1404	5MC	C5-C4	-2.60	1.42	1.44
23	b	34	70U	C2-N3	-2.58	1.31	1.38
1	A	967	5MC	C2-N1	2.53	1.45	1.40
1	A	516	PSU	O4-C4	-2.52	1.18	1.23
1	A	1540	PSU	O4-C4	-2.51	1.18	1.23
1	A	1207	2MG	C2-N1	2.48	1.40	1.36
1	A	527	7MG	C4-N3	2.48	1.39	1.34
23	b	39	PSU	O4-C4	-2.46	1.18	1.23
23	b	37	12A	C5-N7	-2.44	1.34	1.39
1	A	966	M2G	C4-N3	2.44	1.39	1.34
1	A	1541	PSU	O4-C4	-2.42	1.19	1.23
23	b	39	PSU	C6-N1	-2.32	1.32	1.36
1	A	1518	MA6	C5-C4	2.30	1.43	1.39
1	A	967	5MC	C2-N3	2.29	1.40	1.36
1	A	1541	PSU	C6-N1	-2.26	1.32	1.36
1	A	1400	5MC	C2-N3	2.25	1.40	1.36
1	A	1402	4OC	C2-N3	2.23	1.40	1.36
23	b	37	12A	C4-N3	2.19	1.37	1.34
1	A	1540	PSU	C6-N1	-2.17	1.32	1.36
23	b	39	PSU	O2-C2	-2.14	1.18	1.23
1	A	516	PSU	O2-C2	-2.11	1.18	1.23
1	A	1540	PSU	O2-C2	-2.10	1.18	1.23
1	A	1519	MA6	C5-C4	2.09	1.42	1.39
1	A	1207	2MG	C4-N3	2.09	1.39	1.34
1	A	1207	2MG	C8-N9	2.08	1.42	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1541	PSU	O2-C2	-2.07	1.19	1.23
1	A	1519	MA6	C8-N9	2.06	1.41	1.37
1	A	1402	4OC	O2-C2	-2.02	1.19	1.23
1	A	516	PSU	C6-N1	-2.01	1.33	1.36

All (61) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
23	b	37	12A	C2M-S2-C2	8.76	108.82	102.25
23	b	37	12A	C5-C4-N3	-5.75	121.12	127.18
1	A	527	7MG	C5-C6-N1	4.92	119.59	110.94
23	b	34	70U	C5M-C5-C4	4.77	124.46	118.00
1	A	527	7MG	N9-C4-N3	4.70	132.34	125.46
1	A	527	7MG	C2-N3-C4	4.65	120.30	112.30
23	b	37	12A	N6-CC-N	4.56	120.04	113.77
23	b	39	PSU	N1-C2-N3	4.47	119.88	115.17
1	A	1541	PSU	N1-C2-N3	4.42	119.83	115.17
1	A	1540	PSU	N1-C2-N3	4.34	119.75	115.17
23	b	34	70U	O9-C8-C5M	4.22	119.80	111.28
1	A	527	7MG	C5-C4-N3	-4.19	120.27	128.13
23	b	37	12A	C6-C5-N7	4.08	136.88	132.43
23	b	37	12A	N3-C4-N9	4.04	132.12	126.99
1	A	516	PSU	N1-C2-N3	3.84	119.22	115.17
1	A	527	7MG	N9-C8-N7	3.38	108.16	103.37
23	b	37	12A	N9-C8-N7	-3.31	109.24	113.94
1	A	1541	PSU	C4-N3-C2	-3.30	121.82	126.37
1	A	1540	PSU	C4-N3-C2	-3.24	121.91	126.37
23	b	37	12A	C4-C5-N7	-3.22	106.89	110.58
23	b	39	PSU	C4-N3-C2	-3.21	121.95	126.37
23	b	37	12A	C5-N7-C8	3.10	108.33	103.45
23	b	37	12A	CA-N-CC	2.97	126.92	121.99
1	A	1498	UR3	C6-N1-C2	-2.91	119.42	121.80
23	b	37	12A	C4-N9-C8	2.90	108.78	105.74
23	b	37	12A	C2-N3-C4	2.87	119.81	112.29
23	b	39	PSU	O2-C2-N1	-2.85	119.85	122.79
12	L	92	0TD	CSB-SB-CB	-2.82	97.29	102.36
23	b	37	12A	OO-CC-N6	-2.78	118.69	123.64
1	A	1207	2MG	C5-C4-N3	-2.76	124.00	128.39
23	b	37	12A	N3-C2-N1	-2.75	121.98	127.00
1	A	527	7MG	C2-N1-C6	-2.74	120.14	125.11
1	A	516	PSU	C4-N3-C2	-2.73	122.61	126.37
1	A	527	7MG	C6-C5-C4	-2.67	117.70	122.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
23	b	34	70U	C5-C4-N3	2.67	119.29	115.21
1	A	527	7MG	O6-C6-C5	-2.65	121.13	127.62
12	L	92	0TD	OD1-CG-CB	-2.52	117.15	122.44
1	A	1541	PSU	O2-C2-N1	-2.51	120.20	122.79
23	b	34	70U	C5-C6-N1	-2.47	119.61	122.94
1	A	516	PSU	C6-C5-C4	-2.47	116.51	118.17
1	A	1207	2MG	O6-C6-N1	-2.44	115.52	120.11
1	A	1207	2MG	N9-C4-N3	2.43	130.81	125.95
1	A	1400	5MC	N4-C4-N3	-2.43	114.11	118.51
1	A	1540	PSU	O2-C2-N1	-2.42	120.29	122.79
1	A	527	7MG	C6-C5-N7	2.39	135.64	131.93
1	A	1407	5MC	N4-C4-N3	-2.39	114.18	118.51
23	b	34	70U	C8-C5M-C5	2.34	116.96	113.19
1	A	1404	5MC	N4-C4-N3	-2.20	114.52	118.51
1	A	1407	5MC	C5-C4-N3	2.19	124.00	121.75
1	A	967	5MC	N4-C4-N3	-2.17	114.58	118.51
1	A	1207	2MG	C2-N1-C6	-2.17	121.93	124.55
1	A	1400	5MC	O2-C2-N3	-2.15	118.94	122.33
1	A	1540	PSU	C5-C6-N1	-2.13	119.18	122.14
1	A	516	PSU	O4'-C1'-C2'	2.12	108.08	105.15
1	A	1518	MA6	C2-N1-C6	2.11	116.99	111.83
23	b	39	PSU	C5-C6-N1	-2.10	119.22	122.14
1	A	967	5MC	C5-C4-N3	2.06	123.86	121.75
23	b	34	70U	C1'-N1-C6	-2.04	117.79	121.15
1	A	1400	5MC	C5-C4-N3	2.03	123.84	121.75
1	A	1519	MA6	C2-N1-C6	2.02	116.75	111.83
1	A	1404	5MC	C5-C4-N3	2.01	123.81	121.75

There are no chirality outliers.

All (35) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	966	M2G	C4'-C5'-O5'-P
1	A	967	5MC	O4'-C4'-C5'-O5'
1	A	1402	4OC	O4'-C4'-C5'-O5'
1	A	1519	MA6	O4'-C4'-C5'-O5'
1	A	1519	MA6	C5-C6-N6-C9
23	b	34	70U	C4-C5-C5M-C8
23	b	34	70U	C6-C5-C5M-C8
23	b	37	12A	CB-CA-N-CC
23	b	37	12A	C-CA-CB-OG1
23	b	37	12A	C-CA-CB-CG2

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Mol	Chain	Res	Type	Atoms
23	b	34	70U	C5M-C8-O9-C9
23	b	34	70U	O8-C8-O9-C9
1	A	967	5MC	C3'-C4'-C5'-O5'
1	A	1400	5MC	O4'-C4'-C5'-O5'
1	A	1519	MA6	C3'-C4'-C5'-O5'
1	A	1402	4OC	C3'-C4'-C5'-O5'
23	b	37	12A	N-CA-CB-OG1
1	A	1400	5MC	C3'-C4'-C5'-O5'
23	b	39	PSU	O4'-C4'-C5'-O5'
23	b	34	70U	O4'-C4'-C5'-O5'
23	b	34	70U	C3'-C4'-C5'-O5'
1	A	966	M2G	O4'-C4'-C5'-O5'
1	A	1518	MA6	C3'-C4'-C5'-O5'
1	A	1518	MA6	O4'-C4'-C5'-O5'
23	b	37	12A	N-CA-CB-CG2
23	b	34	70U	C5-C5M-C8-O9
1	A	966	M2G	C3'-C4'-C5'-O5'
12	L	92	0TD	CG-CB-SB-CSB
1	A	527	7MG	C3'-C4'-C5'-O5'
23	b	34	70U	C5-C5M-C8-O8
1	A	1541	PSU	O4'-C1'-C5-C4
1	A	527	7MG	O4'-C4'-C5'-O5'
23	b	39	PSU	C3'-C4'-C5'-O5'
12	L	92	0TD	SB-CB-CG-OD2
1	A	1540	PSU	O4'-C4'-C5'-O5'

There are no ring outliers.

5 monomers are involved in 12 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
12	L	92	0TD	5	0
1	A	1400	5MC	1	0
23	b	34	70U	2	0
1	A	1519	MA6	1	0
1	A	1402	4OC	3	0

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

Of 317 ligands modelled in this entry, 311 are monoatomic - leaving 6 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
24	PAR	A	1604	-	44,45,45	1.29	5 (11%)	63,67,67	1.65	12 (19%)
24	PAR	A	1603	-	44,45,45	1.42	5 (11%)	63,67,67	1.67	12 (19%)
24	PAR	A	1605	-	44,45,45	1.26	5 (11%)	63,67,67	1.64	11 (17%)
24	PAR	A	1601	-	44,45,45	1.25	7 (15%)	63,67,67	1.64	11 (17%)
24	PAR	A	1602	-	44,45,45	1.34	7 (15%)	63,67,67	1.66	11 (17%)
24	PAR	A	1606	-	44,45,45	1.46	6 (13%)	63,67,67	1.62	10 (15%)

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
24	PAR	A	1604	-	-	6/18/94/94	1/4/4/4
24	PAR	A	1603	-	-	7/18/94/94	1/4/4/4
24	PAR	A	1605	-	-	4/18/94/94	1/4/4/4
24	PAR	A	1601	-	-	6/18/94/94	0/4/4/4
24	PAR	A	1602	-	-	4/18/94/94	0/4/4/4
24	PAR	A	1606	-	-	7/18/94/94	0/4/4/4

All (35) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
24	A	1603	PAR	C13-C23	4.84	1.59	1.52
24	A	1606	PAR	C13-C23	4.05	1.58	1.52
24	A	1606	PAR	C52-C42	4.03	1.60	1.52
24	A	1601	PAR	C52-C42	3.98	1.60	1.52
24	A	1603	PAR	C52-C42	3.68	1.59	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
24	A	1602	PAR	C13-C23	3.66	1.57	1.52
24	A	1604	PAR	C13-C23	3.33	1.57	1.52
24	A	1604	PAR	C52-C42	3.17	1.58	1.52
24	A	1605	PAR	C13-C23	3.04	1.56	1.52
24	A	1605	PAR	C52-C42	3.00	1.58	1.52
24	A	1605	PAR	C34-C24	2.90	1.57	1.53
24	A	1603	PAR	O43-C13	2.82	1.46	1.41
24	A	1606	PAR	C34-C24	2.78	1.57	1.53
24	A	1602	PAR	C34-C24	2.76	1.57	1.53
24	A	1604	PAR	C34-C24	2.72	1.57	1.53
24	A	1606	PAR	C31-C21	2.71	1.57	1.53
24	A	1603	PAR	C34-C24	2.67	1.56	1.53
24	A	1602	PAR	C31-C21	2.60	1.56	1.53
24	A	1602	PAR	C14-C24	2.52	1.57	1.52
24	A	1602	PAR	C52-C42	2.48	1.57	1.52
24	A	1602	PAR	C11-C21	2.37	1.57	1.52
24	A	1605	PAR	C33-C43	2.31	1.58	1.52
24	A	1604	PAR	C31-C21	2.31	1.56	1.53
24	A	1603	PAR	C14-C24	2.30	1.56	1.52
24	A	1606	PAR	C62-C52	2.28	1.58	1.52
24	A	1601	PAR	C13-C23	2.27	1.55	1.52
24	A	1605	PAR	C14-C24	2.22	1.56	1.52
24	A	1601	PAR	C33-C43	2.17	1.58	1.52
24	A	1601	PAR	C62-C52	2.16	1.58	1.52
24	A	1604	PAR	C33-C43	2.12	1.58	1.52
24	A	1601	PAR	C34-C24	2.05	1.56	1.53
24	A	1601	PAR	C22-C12	-2.05	1.49	1.53
24	A	1601	PAR	C31-C21	2.02	1.56	1.53
24	A	1606	PAR	C14-C24	2.01	1.56	1.52
24	A	1602	PAR	C33-C43	2.00	1.58	1.52

All (67) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	A	1604	PAR	O33-C14-C24	6.57	118.83	108.08
24	A	1601	PAR	O33-C14-C24	6.55	118.80	108.08
24	A	1602	PAR	O33-C14-C24	6.55	118.80	108.08
24	A	1603	PAR	O33-C14-C24	6.55	118.80	108.08
24	A	1606	PAR	O33-C14-C24	6.51	118.74	108.08
24	A	1605	PAR	O33-C14-C24	6.49	118.69	108.08
24	A	1603	PAR	C13-C23-C33	3.83	106.71	102.10
24	A	1606	PAR	C13-C23-C33	3.72	106.58	102.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	A	1602	PAR	C13-C23-C33	3.47	106.28	102.10
24	A	1604	PAR	C13-C23-C33	3.41	106.20	102.10
24	A	1601	PAR	C34-C24-N24	-3.17	104.56	111.05
24	A	1602	PAR	O11-C11-O51	3.15	118.99	110.69
24	A	1605	PAR	C34-C24-N24	-3.12	104.66	111.05
24	A	1603	PAR	C34-C24-N24	-3.12	104.67	111.05
24	A	1605	PAR	C13-C23-C33	3.07	105.80	102.10
24	A	1604	PAR	C34-C24-N24	-3.06	104.78	111.05
24	A	1606	PAR	C34-C24-N24	-3.03	104.85	111.05
24	A	1602	PAR	C34-C24-N24	-3.02	104.87	111.05
24	A	1601	PAR	O34-C34-C44	-2.99	103.33	110.38
24	A	1601	PAR	C13-C23-C33	2.99	105.69	102.10
24	A	1601	PAR	O11-C11-O51	2.98	118.55	110.69
24	A	1606	PAR	C14-O33-C33	-2.97	110.93	117.98
24	A	1603	PAR	O34-C34-C44	-2.97	103.37	110.38
24	A	1603	PAR	C14-O33-C33	-2.96	110.95	117.98
24	A	1604	PAR	C14-O33-C33	-2.94	111.00	117.98
24	A	1606	PAR	O11-C11-O51	2.94	118.43	110.69
24	A	1606	PAR	O34-C34-C44	-2.94	103.45	110.38
24	A	1605	PAR	O11-C11-O51	2.92	118.38	110.69
24	A	1604	PAR	O34-C34-C44	-2.92	103.50	110.38
24	A	1602	PAR	O34-C34-C44	-2.91	103.51	110.38
24	A	1601	PAR	C14-O33-C33	-2.90	111.10	117.98
24	A	1605	PAR	O34-C34-C44	-2.90	103.54	110.38
24	A	1603	PAR	O11-C11-O51	2.90	118.32	110.69
24	A	1605	PAR	C14-O33-C33	-2.85	111.22	117.98
24	A	1602	PAR	C14-O33-C33	-2.84	111.25	117.98
24	A	1604	PAR	O11-C11-O51	2.83	118.15	110.69
24	A	1604	PAR	C13-O52-C52	-2.79	111.36	117.98
24	A	1605	PAR	C13-O52-C52	-2.64	111.72	117.98
24	A	1601	PAR	O52-C13-O43	-2.60	108.71	111.37
24	A	1603	PAR	O52-C13-O43	-2.58	108.74	111.37
24	A	1604	PAR	O52-C13-O43	-2.54	108.77	111.37
24	A	1603	PAR	C13-O52-C52	-2.54	111.96	117.98
24	A	1602	PAR	C13-O52-C52	-2.48	112.10	117.98
24	A	1602	PAR	C22-C12-C62	2.48	113.79	110.08
24	A	1603	PAR	O51-C51-C61	2.41	112.42	106.44
24	A	1605	PAR	O51-C51-C61	2.39	112.36	106.44
24	A	1605	PAR	O52-C13-O43	-2.39	108.93	111.37
24	A	1606	PAR	C13-O52-C52	-2.38	112.33	117.98
24	A	1601	PAR	C13-O52-C52	-2.35	112.42	117.98
24	A	1602	PAR	C11-O51-C51	2.34	118.28	113.72

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	A	1606	PAR	O51-C51-C61	2.31	112.15	106.44
24	A	1602	PAR	O51-C51-C61	2.30	112.14	106.44
24	A	1604	PAR	O51-C51-C61	2.24	112.00	106.44
24	A	1604	PAR	O54-C54-C44	2.23	113.71	109.70
24	A	1601	PAR	O51-C51-C61	2.21	111.92	106.44
24	A	1606	PAR	O52-C13-O43	-2.13	109.19	111.37
24	A	1606	PAR	O54-C54-C44	2.13	113.53	109.70
24	A	1601	PAR	C11-O51-C51	2.12	117.86	113.72
24	A	1605	PAR	O54-C54-C44	2.10	113.49	109.70
24	A	1604	PAR	C22-C12-C62	2.10	113.22	110.08
24	A	1602	PAR	O52-C13-O43	-2.09	109.23	111.37
24	A	1601	PAR	O54-C54-C44	2.09	113.46	109.70
24	A	1603	PAR	C22-C32-C42	2.07	114.58	109.50
24	A	1603	PAR	C11-O51-C51	2.05	117.73	113.72
24	A	1604	PAR	O52-C52-C42	2.03	112.57	107.42
24	A	1603	PAR	O54-C54-C44	2.01	113.33	109.70
24	A	1605	PAR	O52-C52-C42	2.00	112.50	107.42

There are no chirality outliers.

All (34) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
24	A	1601	PAR	C43-C33-O33-C14
24	A	1601	PAR	C44-C54-C64-N64
24	A	1602	PAR	C23-C13-O52-C52
24	A	1602	PAR	O43-C13-O52-C52
24	A	1603	PAR	C44-C54-C64-N64
24	A	1603	PAR	O54-C54-C64-N64
24	A	1604	PAR	C21-C11-O11-C42
24	A	1604	PAR	O54-C54-C64-N64
24	A	1605	PAR	C21-C11-O11-C42
24	A	1606	PAR	O51-C11-O11-C42
24	A	1606	PAR	C23-C13-O52-C52
24	A	1606	PAR	O43-C13-O52-C52
24	A	1606	PAR	O54-C54-C64-N64
24	A	1605	PAR	O51-C11-O11-C42
24	A	1606	PAR	O54-C14-O33-C33
24	A	1603	PAR	O43-C43-C53-O53
24	A	1601	PAR	C33-C43-C53-O53
24	A	1602	PAR	O54-C14-O33-C33
24	A	1601	PAR	O43-C43-C53-O53
24	A	1603	PAR	O51-C11-O11-C42

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Mol	Chain	Res	Type	Atoms
24	A	1604	PAR	O54-C14-O33-C33
24	A	1604	PAR	C44-C54-C64-N64
24	A	1603	PAR	C33-C43-C53-O53
24	A	1603	PAR	C41-C51-C61-O61
24	A	1606	PAR	C21-C11-O11-C42
24	A	1606	PAR	C44-C54-C64-N64
24	A	1603	PAR	C43-C33-O33-C14
24	A	1601	PAR	C52-C42-O11-C11
24	A	1605	PAR	C62-C52-O52-C13
24	A	1601	PAR	C24-C14-O33-C33
24	A	1602	PAR	C43-C33-O33-C14
24	A	1604	PAR	C23-C33-O33-C14
24	A	1604	PAR	C43-C33-O33-C14
24	A	1605	PAR	C42-C52-O52-C13

All (3) ring outliers are listed below:

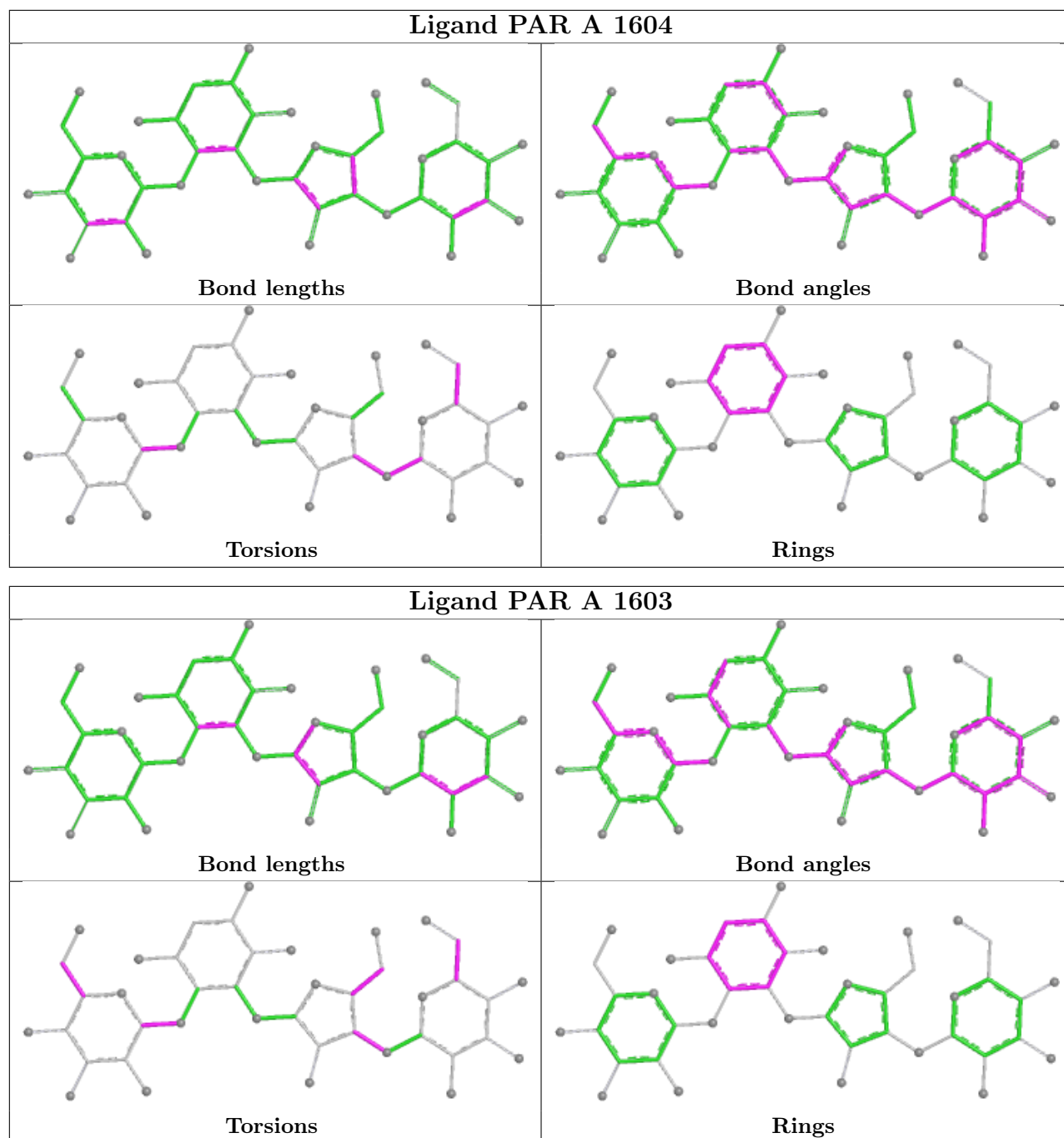
Mol	Chain	Res	Type	Atoms
24	A	1603	PAR	C12-C22-C32-C42-C52-C62
24	A	1605	PAR	C12-C22-C32-C42-C52-C62
24	A	1604	PAR	C12-C22-C32-C42-C52-C62

6 monomers are involved in 12 short contacts:

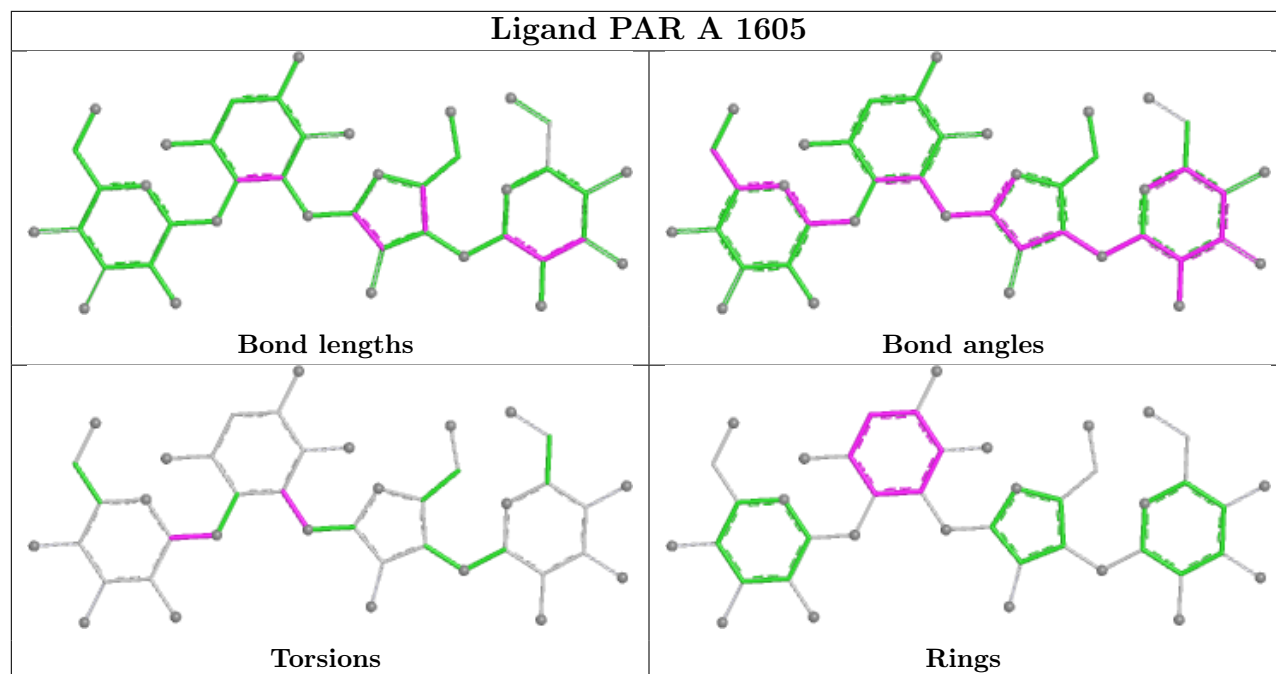
Mol	Chain	Res	Type	Clashes	Symm-Clashes
24	A	1604	PAR	2	0
24	A	1603	PAR	4	0
24	A	1605	PAR	2	0
24	A	1601	PAR	1	0
24	A	1602	PAR	2	0
24	A	1606	PAR	1	0

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

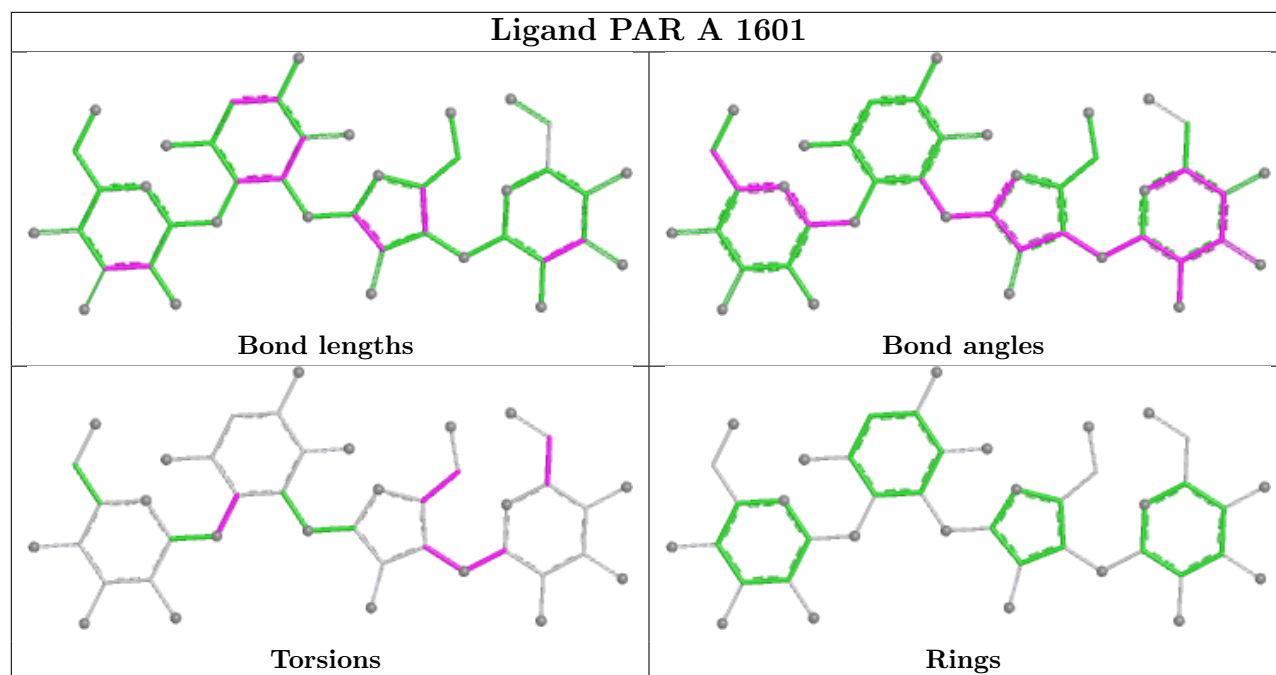
equivalents in the CSD to analyse the geometry.

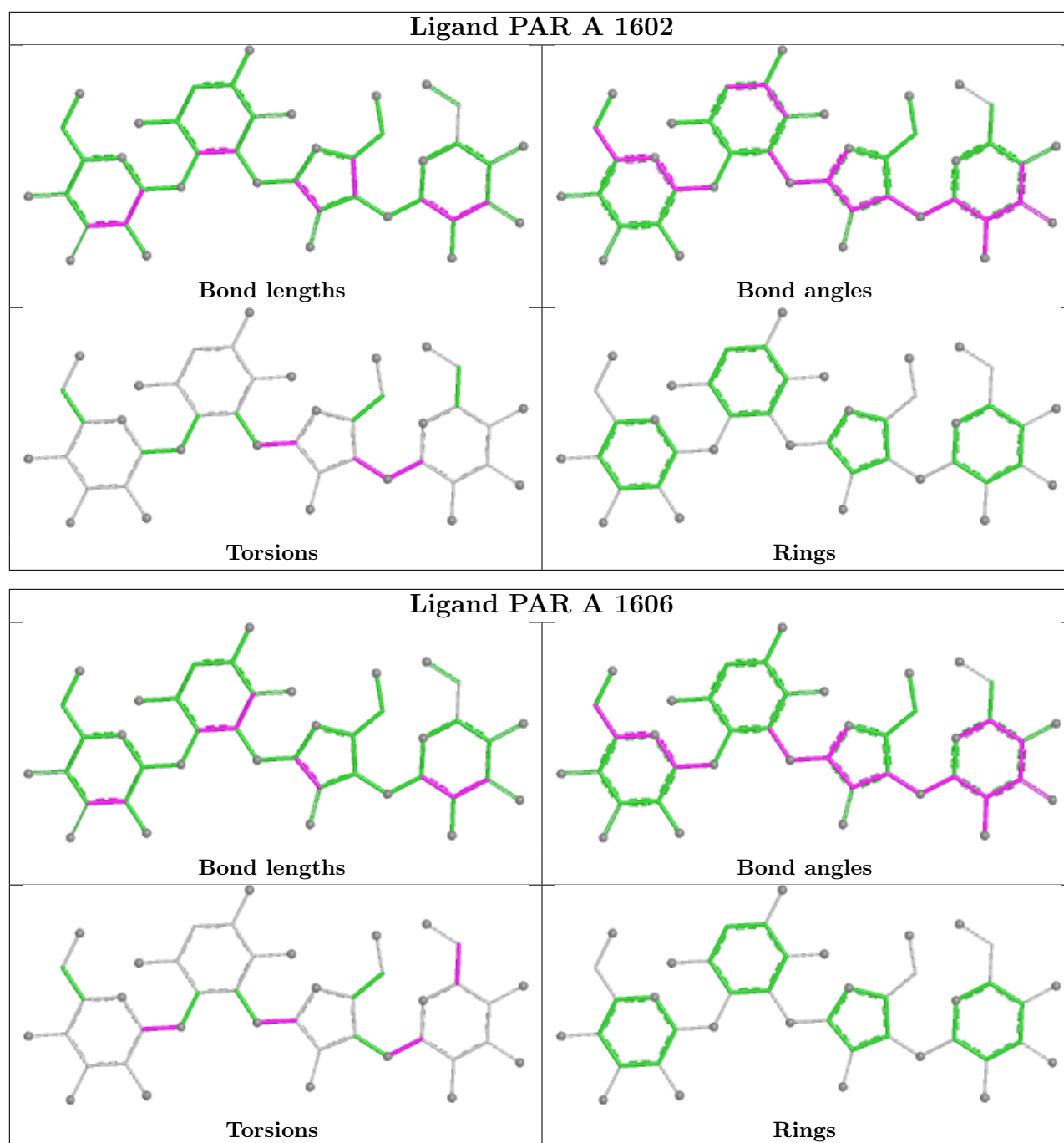


Ligand PAR A 1605



Ligand PAR A 1601





5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	1498/1522 (98%)	-0.39	8 (0%) 87 72	59, 85, 160, 268	0
2	B	236/236 (100%)	0.10	6 (2%) 58 39	64, 122, 200, 249	0
3	C	207/207 (100%)	0.08	4 (1%) 66 45	51, 118, 164, 206	0
4	D	208/208 (100%)	0.23	15 (7%) 21 16	65, 93, 142, 179	0
5	E	151/151 (100%)	-0.00	2 (1%) 75 55	51, 83, 120, 214	0
6	F	101/101 (100%)	-0.11	0 100 100	82, 115, 150, 182	0
7	G	155/155 (100%)	0.15	7 (4%) 38 24	76, 103, 163, 256	0
8	H	138/138 (100%)	-0.23	0 100 100	55, 78, 104, 134	0
9	I	127/127 (100%)	0.36	6 (4%) 36 23	89, 121, 167, 198	0
10	J	99/99 (100%)	0.89	15 (15%) 5 6	72, 149, 243, 315	0
11	K	119/119 (100%)	0.35	6 (5%) 34 22	64, 87, 135, 187	0
12	L	124/125 (99%)	0.33	9 (7%) 21 16	52, 83, 137, 254	0
13	M	118/118 (100%)	0.32	7 (5%) 28 19	69, 103, 146, 225	0
14	N	60/60 (100%)	0.63	2 (3%) 49 32	84, 107, 145, 226	0
15	O	88/88 (100%)	0.03	2 (2%) 61 41	66, 93, 148, 180	0
16	P	84/84 (100%)	0.15	1 (1%) 76 57	63, 79, 106, 172	0
17	Q	99/99 (100%)	0.07	2 (2%) 65 44	58, 81, 130, 157	0
18	R	73/73 (100%)	-0.02	0 100 100	62, 100, 161, 218	0
19	S	81/81 (100%)	0.55	5 (6%) 26 18	43, 122, 195, 234	0
20	T	99/99 (100%)	0.28	7 (7%) 22 16	64, 80, 134, 184	0
21	U	25/25 (100%)	1.12	4 (16%) 5 5	56, 105, 153, 179	0
22	a	6/6 (100%)	-0.11	0 100 100	85, 99, 114, 129	0
23	b	8/11 (72%)	0.79	1 (12%) 8 7	92, 133, 188, 212	0
All	All	3904/3932 (99%)	-0.02	109 (2%) 55 36	43, 95, 167, 315	0

All (109) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
11	K	129	SER	8.1
11	K	128	ALA	7.7
13	M	8	GLU	6.4
19	S	3	ARG	6.3
4	D	31	CYS	6.1
4	D	9	CYS	5.6
7	G	33	ASP	5.2
4	D	2	GLY	5.2
12	L	19	ARG	5.1
10	J	64	GLU	4.7
7	G	81	GLY	4.6
1	A	1129	C	4.4
21	U	25	LYS	4.3
19	S	2	PRO	4.3
4	D	22	LYS	4.2
20	T	8	ARG	4.1
12	L	28	LYS	4.0
13	M	7	VAL	4.0
21	U	6	ARG	3.8
4	D	4	TYR	3.8
7	G	82	GLY	3.6
4	D	19	LEU	3.6
4	D	26	CYS	3.6
19	S	4	SER	3.5
9	I	126	SER	3.5
12	L	47	LYS	3.5
10	J	58	ASP	3.5
19	S	5	LEU	3.4
9	I	8	GLY	3.4
10	J	6	ILE	3.4
10	J	46	ARG	3.3
11	K	126	ARG	3.3
9	I	127	LYS	3.3
12	L	119	LYS	3.2
13	M	2	ALA	3.2
2	B	12	GLU	3.0
10	J	90	LEU	3.0
13	M	10	PRO	3.0
12	L	17	LYS	3.0
17	Q	100	LYS	3.0
5	E	81	GLU	2.9
7	G	79	ARG	2.9

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Mol	Chain	Res	Type	RSRZ
4	D	21	LEU	2.9
4	D	33	MET	2.9
9	I	125	TYR	2.9
1	A	1539	C	2.8
14	N	8	GLU	2.8
2	B	13	ALA	2.8
10	J	7	LYS	2.8
5	E	5	ASP	2.7
20	T	9	ASN	2.7
10	J	5	ARG	2.7
4	D	5	ILE	2.6
11	K	118	GLY	2.6
3	C	167	TRP	2.6
10	J	43	ARG	2.6
2	B	7	VAL	2.5
11	K	111	ASP	2.5
12	L	115	LYS	2.5
1	A	1054	C	2.5
12	L	29	GLY	2.5
12	L	114	LYS	2.5
17	Q	68	ARG	2.5
11	K	31	THR	2.5
9	I	128	ARG	2.5
14	N	2	ALA	2.5
7	G	5	ARG	2.5
4	D	8	VAL	2.5
2	B	88	ALA	2.5
4	D	12	CYS	2.5
7	G	83	ALA	2.5
13	M	9	ILE	2.4
13	M	32	GLU	2.4
23	b	40	C	2.4
10	J	34	VAL	2.4
21	U	23	PRO	2.4
1	A	81	U	2.4
1	A	631	G	2.4
21	U	10	ARG	2.4
19	S	35	SER	2.4
10	J	73	ASP	2.3
20	T	10	LEU	2.3
10	J	59	SER	2.3
15	O	89	GLY	2.3

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Mol	Chain	Res	Type	RSRZ
3	C	188	LEU	2.3
20	T	12	ALA	2.3
1	A	532	A	2.3
3	C	154	SER	2.2
9	I	110	GLU	2.2
20	T	100	ILE	2.2
10	J	91	PRO	2.2
1	A	1281	U	2.2
15	O	54	ARG	2.2
20	T	25	ARG	2.2
1	A	1125	U	2.2
2	B	136	VAL	2.1
4	D	3	ARG	2.1
2	B	133	LYS	2.1
7	G	2	ALA	2.1
4	D	23	GLY	2.1
10	J	47	PHE	2.1
12	L	64	TYR	2.1
13	M	5	ALA	2.1
3	C	207	VAL	2.1
16	P	68	ASP	2.1
4	D	69	GLY	2.0
10	J	66	ARG	2.0
20	T	73	HIS	2.0
10	J	10	GLY	2.0

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

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
1	PSU	A	1540	20/21	0.86	0.20	179,185,198,202	0
1	PSU	A	516	20/21	0.88	0.11	88,95,107,108	0
23	PSU	b	39	20/21	0.88	0.11	113,131,153,156	0
1	PSU	A	1541	20/21	0.89	0.20	175,188,215,219	0
12	0TD	L	92	10/11	0.91	0.20	75,104,119,121	0
23	12A	b	37	34/35	0.92	0.13	79,96,123,125	0
23	70U	b	34	25/26	0.92	0.13	89,109,130,140	0
1	5MC	A	967	21/22	0.94	0.11	83,87,94,99	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
1	UR3	A	1498	21/22	0.94	0.12	67,68,71,71	0
1	M2G	A	966	25/26	0.95	0.10	80,84,98,102	0
1	2MG	A	1207	24/25	0.96	0.08	101,106,112,114	0
1	5MC	A	1400	21/22	0.97	0.08	72,74,90,93	0
1	4OC	A	1402	22/23	0.97	0.09	71,73,77,85	0
1	5MC	A	1407	21/22	0.97	0.08	73,74,76,76	0
1	7MG	A	527	24/25	0.97	0.08	71,73,75,76	0
1	MA6	A	1518	24/25	0.97	0.09	67,69,70,71	0
1	MA6	A	1519	24/25	0.97	0.11	66,67,68,68	0
1	5MC	A	1404	21/22	0.98	0.08	68,69,71,72	0

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($\text{\AA}^2$)	Q<0.9
26	K	A	1890	1/1	0.41	0.21	144,144,144,144	0
25	MG	A	1715	1/1	0.47	0.37	101,101,101,101	0
25	MG	A	1798	1/1	0.51	0.38	72,72,72,72	0
25	MG	A	1764	1/1	0.55	0.61	85,85,85,85	0
25	MG	A	1784	1/1	0.57	0.38	115,115,115,115	0
25	MG	A	1714	1/1	0.60	0.26	102,102,102,102	0
25	MG	A	1724	1/1	0.60	0.16	75,75,75,75	0
26	K	A	1887	1/1	0.61	0.18	106,106,106,106	0
25	MG	A	1634	1/1	0.61	0.14	95,95,95,95	0
26	K	A	1872	1/1	0.62	0.25	139,139,139,139	0
25	MG	A	1639	1/1	0.63	0.21	175,175,175,175	0
26	K	A	1879	1/1	0.65	0.21	132,132,132,132	0
25	MG	A	1836	1/1	0.65	0.27	92,92,92,92	0
25	MG	A	1708	1/1	0.65	0.20	156,156,156,156	0
25	MG	A	1726	1/1	0.66	0.28	157,157,157,157	0
25	MG	A	1683	1/1	0.67	0.13	92,92,92,92	0
26	K	A	1875	1/1	0.68	0.15	126,126,126,126	0
26	K	A	1883	1/1	0.68	0.24	141,141,141,141	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
25	MG	A	1800	1/1	0.69	0.20	213,213,213,213	0
26	K	A	1878	1/1	0.69	0.31	166,166,166,166	0
25	MG	A	1808	1/1	0.70	0.62	87,87,87,87	0
25	MG	A	1643	1/1	0.71	0.28	74,74,74,74	0
25	MG	A	1801	1/1	0.71	0.09	257,257,257,257	0
25	MG	A	1805	1/1	0.71	0.53	79,79,79,79	0
25	MG	A	1859	1/1	0.72	0.19	82,82,82,82	0
25	MG	A	1795	1/1	0.74	0.33	54,54,54,54	0
25	MG	A	1703	1/1	0.74	0.26	62,62,62,62	0
25	MG	A	1647	1/1	0.74	0.23	73,73,73,73	0
25	MG	A	1863	1/1	0.75	0.12	66,66,66,66	0
25	MG	A	1781	1/1	0.75	0.51	78,78,78,78	0
25	MG	Q	202	1/1	0.76	0.32	83,83,83,83	0
25	MG	A	1674	1/1	0.76	0.25	107,107,107,107	0
25	MG	A	1729	1/1	0.76	0.19	59,59,59,59	0
25	MG	A	1811	1/1	0.76	0.23	61,61,61,61	0
25	MG	A	1812	1/1	0.76	0.24	69,69,69,69	0
25	MG	A	1640	1/1	0.76	0.30	90,90,90,90	0
25	MG	A	1779	1/1	0.76	0.28	96,96,96,96	0
25	MG	A	1712	1/1	0.76	0.56	235,235,235,235	0
26	K	A	1894	1/1	0.76	0.14	128,128,128,128	0
25	MG	C	301	1/1	0.77	0.10	70,70,70,70	0
25	MG	A	1697	1/1	0.77	0.17	70,70,70,70	0
25	MG	A	1839	1/1	0.77	0.26	76,76,76,76	0
25	MG	A	1725	1/1	0.77	0.24	69,69,69,69	0
26	K	A	1893	1/1	0.77	0.23	138,138,138,138	0
25	MG	A	1762	1/1	0.77	0.44	74,74,74,74	0
25	MG	A	1790	1/1	0.78	0.23	84,84,84,84	0
25	MG	A	1856	1/1	0.78	0.09	80,80,80,80	0
25	MG	A	1688	1/1	0.78	0.31	159,159,159,159	0
26	K	A	1867	1/1	0.79	0.12	113,113,113,113	0
26	K	A	1871	1/1	0.79	0.36	125,125,125,125	0
25	MG	A	1616	1/1	0.79	0.18	63,63,63,63	0
26	K	A	1888	1/1	0.79	0.18	140,140,140,140	0
26	K	A	1889	1/1	0.79	0.14	106,106,106,106	0
25	MG	A	1675	1/1	0.79	0.30	69,69,69,69	0
26	K	A	1877	1/1	0.79	0.18	130,130,130,130	0
25	MG	A	1740	1/1	0.79	0.19	88,88,88,88	0
25	MG	A	1825	1/1	0.80	0.34	83,83,83,83	0
25	MG	A	1759	1/1	0.80	0.29	82,82,82,82	0
25	MG	A	1769	1/1	0.80	0.18	101,101,101,101	0
25	MG	A	1814	1/1	0.80	0.45	85,85,85,85	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
25	MG	A	1818	1/1	0.80	0.28	74,74,74,74	0
26	K	A	1880	1/1	0.80	0.17	96,96,96,96	0
26	K	A	1881	1/1	0.80	0.21	138,138,138,138	0
25	MG	A	1666	1/1	0.81	0.22	59,59,59,59	0
25	MG	A	1730	1/1	0.81	0.12	70,70,70,70	0
25	MG	P	102	1/1	0.81	0.15	73,73,73,73	0
25	MG	Q	201	1/1	0.81	0.18	95,95,95,95	0
25	MG	A	1826	1/1	0.81	0.44	86,86,86,86	0
25	MG	A	1835	1/1	0.81	0.27	75,75,75,75	0
25	MG	A	1766	1/1	0.81	0.09	53,53,53,53	0
25	MG	A	1679	1/1	0.81	0.35	207,207,207,207	0
25	MG	A	1772	1/1	0.81	0.41	59,59,59,59	0
26	K	A	1876	1/1	0.81	0.11	121,121,121,121	0
25	MG	A	1720	1/1	0.81	0.39	228,228,228,228	0
25	MG	A	1782	1/1	0.82	0.16	67,67,67,67	0
25	MG	A	1676	1/1	0.82	0.14	75,75,75,75	0
25	MG	A	1768	1/1	0.82	0.18	60,60,60,60	0
26	K	A	1873	1/1	0.82	0.19	99,99,99,99	0
25	MG	A	1657	1/1	0.82	0.09	48,48,48,48	0
25	MG	A	1860	1/1	0.82	0.23	72,72,72,72	0
25	MG	A	1761	1/1	0.83	0.14	76,76,76,76	0
25	MG	A	1686	1/1	0.83	0.27	87,87,87,87	0
25	MG	A	1704	1/1	0.83	0.15	88,88,88,88	0
25	MG	A	1817	1/1	0.83	0.20	76,76,76,76	0
25	MG	A	1694	1/1	0.84	0.35	235,235,235,235	0
25	MG	L	201	1/1	0.84	0.43	87,87,87,87	0
25	MG	A	1649	1/1	0.84	0.08	58,58,58,58	0
25	MG	A	1773	1/1	0.84	0.14	79,79,79,79	0
25	MG	A	1840	1/1	0.84	0.15	71,71,71,71	0
25	MG	S	103	1/1	0.84	0.10	78,78,78,78	0
25	MG	A	1842	1/1	0.84	0.11	64,64,64,64	0
26	K	A	1868	1/1	0.84	0.17	130,130,130,130	0
26	K	A	1870	1/1	0.84	0.36	112,112,112,112	0
25	MG	A	1735	1/1	0.84	0.26	63,63,63,63	0
25	MG	A	1678	1/1	0.84	0.16	71,71,71,71	0
25	MG	A	1741	1/1	0.84	0.27	74,74,74,74	0
25	MG	A	1744	1/1	0.84	0.23	95,95,95,95	0
25	MG	A	1858	1/1	0.85	0.12	68,68,68,68	0
25	MG	A	1829	1/1	0.85	0.18	67,67,67,67	0
25	MG	A	1832	1/1	0.85	0.27	63,63,63,63	0
25	MG	A	1672	1/1	0.85	0.32	73,73,73,73	0
26	K	A	1885	1/1	0.85	0.29	154,154,154,154	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
25	MG	A	1742	1/1	0.85	0.12	62,62,62,62	0
25	MG	A	1609	1/1	0.85	0.19	110,110,110,110	0
25	MG	A	1723	1/1	0.85	0.25	72,72,72,72	0
24	PAR	A	1605	42/42	0.85	0.23	178,184,186,188	0
25	MG	A	1853	1/1	0.85	0.24	75,75,75,75	0
25	MG	A	1669	1/1	0.85	0.18	69,69,69,69	0
25	MG	A	1607	1/1	0.86	0.06	81,81,81,81	0
25	MG	A	1854	1/1	0.86	0.06	55,55,55,55	0
25	MG	A	1716	1/1	0.86	0.14	65,65,65,65	0
25	MG	A	1857	1/1	0.86	0.19	69,69,69,69	0
25	MG	A	1750	1/1	0.86	0.15	73,73,73,73	0
26	K	A	1891	1/1	0.86	0.15	122,122,122,122	0
25	MG	A	1671	1/1	0.86	0.14	67,67,67,67	0
25	MG	A	1776	1/1	0.86	0.14	72,72,72,72	0
25	MG	A	1630	1/1	0.87	0.21	25,25,25,25	0
25	MG	A	1763	1/1	0.87	0.53	71,71,71,71	0
25	MG	A	1841	1/1	0.87	0.18	53,53,53,53	0
25	MG	L	202	1/1	0.87	0.08	64,64,64,64	0
25	MG	A	1700	1/1	0.87	0.47	76,76,76,76	0
25	MG	A	1846	1/1	0.87	0.20	70,70,70,70	0
25	MG	A	1847	1/1	0.87	0.20	70,70,70,70	0
25	MG	A	1848	1/1	0.87	0.25	70,70,70,70	0
25	MG	A	1701	1/1	0.87	0.12	138,138,138,138	0
25	MG	A	1803	1/1	0.87	0.39	71,71,71,71	0
25	MG	A	1756	1/1	0.87	0.21	57,57,57,57	0
25	MG	A	1636	1/1	0.87	0.42	82,82,82,82	0
25	MG	A	1788	1/1	0.87	0.57	88,88,88,88	0
25	MG	A	1684	1/1	0.87	0.24	72,72,72,72	0
25	MG	A	1838	1/1	0.87	0.23	51,51,51,51	0
25	MG	A	1760	1/1	0.88	0.21	69,69,69,69	0
25	MG	A	1629	1/1	0.88	0.16	77,77,77,77	0
24	PAR	A	1602	42/42	0.88	0.36	148,176,197,207	0
25	MG	A	1831	1/1	0.88	0.24	52,52,52,52	0
25	MG	A	1709	1/1	0.88	0.08	66,66,66,66	0
25	MG	A	1623	1/1	0.88	0.19	60,60,60,60	0
25	MG	A	1783	1/1	0.88	0.17	108,108,108,108	0
25	MG	A	1747	1/1	0.88	0.21	67,67,67,67	0
25	MG	A	1732	1/1	0.88	0.22	61,61,61,61	0
25	MG	A	1734	1/1	0.88	0.21	84,84,84,84	0
25	MG	A	1815	1/1	0.88	0.13	68,68,68,68	0
25	MG	A	1792	1/1	0.88	0.14	104,104,104,104	0
25	MG	A	1624	1/1	0.88	0.16	76,76,76,76	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
24	PAR	A	1604	42/42	0.89	0.21	98,143,203,207	0
26	K	A	1874	1/1	0.89	0.21	114,114,114,114	0
25	MG	A	1713	1/1	0.89	0.14	209,209,209,209	0
25	MG	A	1865	1/1	0.89	0.33	80,80,80,80	0
25	MG	A	1646	1/1	0.89	0.18	80,80,80,80	0
25	MG	D	302	1/1	0.89	0.15	80,80,80,80	0
25	MG	F	201	1/1	0.89	0.06	65,65,65,65	0
25	MG	A	1685	1/1	0.89	0.27	51,51,51,51	0
25	MG	A	1843	1/1	0.89	0.19	82,82,82,82	0
25	MG	A	1819	1/1	0.89	0.12	57,57,57,57	0
25	MG	A	1758	1/1	0.89	0.25	68,68,68,68	0
25	MG	A	1625	1/1	0.89	0.37	81,81,81,81	0
25	MG	A	1687	1/1	0.89	0.10	82,82,82,82	0
25	MG	A	1780	1/1	0.89	0.40	60,60,60,60	0
25	MG	A	1736	1/1	0.89	0.77	85,85,85,85	0
25	MG	A	1705	1/1	0.89	0.19	56,56,56,56	0
25	MG	A	1667	1/1	0.89	0.18	53,53,53,53	0
25	MG	A	1680	1/1	0.89	0.20	75,75,75,75	0
25	MG	A	1777	1/1	0.90	0.35	92,92,92,92	0
25	MG	A	1820	1/1	0.90	0.22	71,71,71,71	0
25	MG	A	1823	1/1	0.90	0.28	68,68,68,68	0
25	MG	A	1807	1/1	0.90	0.46	61,61,61,61	0
25	MG	A	1711	1/1	0.90	0.18	43,43,43,43	0
25	MG	A	1618	1/1	0.90	0.10	94,94,94,94	0
25	MG	A	1748	1/1	0.90	0.07	50,50,50,50	0
25	MG	A	1665	1/1	0.90	0.13	89,89,89,89	0
25	MG	A	1635	1/1	0.90	0.08	43,43,43,43	0
25	MG	A	1816	1/1	0.90	0.36	74,74,74,74	0
26	K	A	1892	1/1	0.90	0.29	116,116,116,116	0
25	MG	A	1613	1/1	0.90	0.33	68,68,68,68	0
25	MG	A	1785	1/1	0.90	0.12	167,167,167,167	0
25	MG	A	1824	1/1	0.91	0.27	69,69,69,69	0
25	MG	A	1786	1/1	0.91	0.15	185,185,185,185	0
25	MG	A	1787	1/1	0.91	0.17	125,125,125,125	0
25	MG	A	1810	1/1	0.91	0.25	64,64,64,64	0
25	MG	A	1749	1/1	0.91	0.37	98,98,98,98	0
25	MG	A	1673	1/1	0.91	0.10	100,100,100,100	0
25	MG	S	101	1/1	0.91	0.16	49,49,49,49	0
25	MG	S	102	1/1	0.91	0.11	68,68,68,68	0
25	MG	A	1754	1/1	0.91	0.11	54,54,54,54	0
25	MG	b	101	1/1	0.91	0.13	79,79,79,79	0
24	PAR	A	1603	42/42	0.91	0.27	101,140,178,184	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
25	MG	A	1695	1/1	0.91	0.31	59,59,59,59	0
24	PAR	A	1606	42/42	0.91	0.27	138,156,165,169	0
25	MG	A	1770	1/1	0.91	0.27	40,40,40,40	0
25	MG	A	1706	1/1	0.91	0.13	115,115,115,115	0
25	MG	A	1804	1/1	0.91	0.32	61,61,61,61	0
25	MG	A	1660	1/1	0.91	0.23	78,78,78,78	0
25	MG	A	1656	1/1	0.92	0.07	34,34,34,34	0
25	MG	A	1722	1/1	0.92	0.15	39,39,39,39	0
25	MG	A	1731	1/1	0.92	0.23	76,76,76,76	0
25	MG	A	1644	1/1	0.92	0.10	141,141,141,141	0
25	MG	A	1845	1/1	0.92	0.19	68,68,68,68	0
25	MG	A	1733	1/1	0.92	0.20	82,82,82,82	0
25	MG	A	1681	1/1	0.92	0.12	69,69,69,69	0
25	MG	A	1710	1/1	0.92	0.10	62,62,62,62	0
25	MG	A	1849	1/1	0.92	0.08	42,42,42,42	0
25	MG	A	1852	1/1	0.92	0.18	61,61,61,61	0
26	K	A	1884	1/1	0.92	0.09	150,150,150,150	0
25	MG	A	1789	1/1	0.92	0.27	80,80,80,80	0
26	K	A	1886	1/1	0.92	0.06	105,105,105,105	0
25	MG	A	1809	1/1	0.92	0.27	42,42,42,42	0
25	MG	A	1692	1/1	0.92	0.11	104,104,104,104	0
25	MG	A	1791	1/1	0.92	0.31	60,60,60,60	0
25	MG	A	1752	1/1	0.92	0.18	58,58,58,58	0
26	K	A	1869	1/1	0.92	0.21	160,160,160,160	0
25	MG	A	1793	1/1	0.92	0.25	76,76,76,76	0
25	MG	A	1753	1/1	0.92	0.10	52,52,52,52	0
25	MG	A	1796	1/1	0.92	0.07	70,70,70,70	0
25	MG	A	1862	1/1	0.93	0.17	81,81,81,81	0
25	MG	A	1691	1/1	0.93	0.10	65,65,65,65	0
25	MG	A	1771	1/1	0.93	0.54	67,67,67,67	0
25	MG	A	1866	1/1	0.93	0.08	65,65,65,65	0
25	MG	A	1610	1/1	0.93	0.12	98,98,98,98	0
25	MG	A	1821	1/1	0.93	0.30	78,78,78,78	0
25	MG	A	1655	1/1	0.93	0.09	83,83,83,83	0
25	MG	A	1638	1/1	0.93	0.27	64,64,64,64	0
25	MG	A	1745	1/1	0.93	0.19	44,44,44,44	0
25	MG	A	1717	1/1	0.93	0.23	44,44,44,44	0
26	K	A	1882	1/1	0.93	0.08	85,85,85,85	0
25	MG	P	103	1/1	0.93	0.12	76,76,76,76	0
25	MG	A	1827	1/1	0.93	0.15	58,58,58,58	0
25	MG	A	1828	1/1	0.93	0.14	55,55,55,55	0
25	MG	A	1850	1/1	0.93	0.20	51,51,51,51	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
25	MG	A	1719	1/1	0.93	0.32	50,50,50,50	0
25	MG	A	1830	1/1	0.93	0.25	40,40,40,40	0
25	MG	A	1626	1/1	0.93	0.11	51,51,51,51	0
25	MG	A	1670	1/1	0.93	0.16	41,41,41,41	0
25	MG	A	1834	1/1	0.93	0.07	35,35,35,35	0
25	MG	A	1751	1/1	0.93	0.07	39,39,39,39	0
24	PAR	A	1601	42/42	0.93	0.14	59,68,108,122	0
25	MG	A	1661	1/1	0.93	0.35	152,152,152,152	0
26	K	G	202	1/1	0.93	0.12	153,153,153,153	0
25	MG	A	1641	1/1	0.94	0.10	57,57,57,57	0
25	MG	A	1822	1/1	0.94	0.29	69,69,69,69	0
25	MG	A	1855	1/1	0.94	0.14	55,55,55,55	0
25	MG	P	104	1/1	0.94	0.20	80,80,80,80	0
25	MG	A	1707	1/1	0.94	0.12	44,44,44,44	0
25	MG	A	1642	1/1	0.94	0.20	71,71,71,71	0
25	MG	A	1696	1/1	0.94	0.11	55,55,55,55	0
25	MG	A	1619	1/1	0.94	0.09	87,87,87,87	0
25	MG	A	1813	1/1	0.94	0.16	58,58,58,58	0
25	MG	T	201	1/1	0.94	0.22	41,41,41,41	0
25	MG	A	1861	1/1	0.94	0.11	60,60,60,60	0
25	MG	A	1844	1/1	0.94	0.06	49,49,49,49	0
25	MG	A	1739	1/1	0.94	0.12	54,54,54,54	0
25	MG	A	1699	1/1	0.94	0.21	46,46,46,46	0
25	MG	A	1662	1/1	0.94	0.15	78,78,78,78	0
25	MG	A	1664	1/1	0.94	0.10	83,83,83,83	0
25	MG	A	1631	1/1	0.94	0.13	69,69,69,69	0
25	MG	A	1645	1/1	0.94	0.10	48,48,48,48	0
25	MG	H	201	1/1	0.94	0.13	48,48,48,48	0
25	MG	A	1693	1/1	0.94	0.17	67,67,67,67	0
25	MG	A	1864	1/1	0.95	0.34	70,70,70,70	0
25	MG	A	1622	1/1	0.95	0.07	50,50,50,50	0
25	MG	A	1833	1/1	0.95	0.19	55,55,55,55	0
25	MG	A	1653	1/1	0.95	0.08	53,53,53,53	0
25	MG	A	1608	1/1	0.95	0.12	84,84,84,84	0
25	MG	A	1663	1/1	0.95	0.11	64,64,64,64	0
25	MG	A	1611	1/1	0.95	0.46	60,60,60,60	0
25	MG	A	1743	1/1	0.95	0.06	52,52,52,52	0
25	MG	A	1794	1/1	0.95	0.08	61,61,61,61	0
25	MG	A	1755	1/1	0.95	0.08	52,52,52,52	0
25	MG	A	1689	1/1	0.95	0.09	79,79,79,79	0
25	MG	A	1797	1/1	0.95	0.13	49,49,49,49	0
25	MG	A	1648	1/1	0.95	0.13	39,39,39,39	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
25	MG	A	1682	1/1	0.95	0.10	81,81,81,81	0
25	MG	A	1658	1/1	0.95	0.07	78,78,78,78	0
25	MG	A	1802	1/1	0.95	0.18	58,58,58,58	0
25	MG	A	1633	1/1	0.96	0.29	52,52,52,52	0
25	MG	A	1620	1/1	0.96	0.06	56,56,56,56	0
25	MG	A	1757	1/1	0.96	0.09	40,40,40,40	0
25	MG	A	1621	1/1	0.96	0.09	74,74,74,74	0
25	MG	A	1727	1/1	0.96	0.07	44,44,44,44	0
25	MG	A	1737	1/1	0.96	0.07	34,34,34,34	0
25	MG	A	1774	1/1	0.96	0.15	34,34,34,34	0
25	MG	A	1728	1/1	0.96	0.06	54,54,54,54	0
25	MG	A	1690	1/1	0.96	0.13	57,57,57,57	0
25	MG	A	1895	1/1	0.96	0.08	64,64,64,64	0
25	MG	A	1851	1/1	0.96	0.23	77,77,77,77	0
25	MG	A	1778	1/1	0.96	0.06	42,42,42,42	0
25	MG	A	1837	1/1	0.96	0.20	53,53,53,53	0
25	MG	G	201	1/1	0.96	0.07	53,53,53,53	0
25	MG	A	1632	1/1	0.96	0.27	34,34,34,34	0
25	MG	A	1698	1/1	0.96	0.10	27,27,27,27	0
25	MG	A	1651	1/1	0.96	0.28	71,71,71,71	0
25	MG	P	101	1/1	0.96	0.10	46,46,46,46	0
25	MG	A	1767	1/1	0.96	0.14	71,71,71,71	0
25	MG	A	1677	1/1	0.97	0.14	52,52,52,52	0
25	MG	A	1746	1/1	0.97	0.09	60,60,60,60	0
25	MG	A	1806	1/1	0.97	0.09	38,38,38,38	0
25	MG	A	1775	1/1	0.97	0.10	46,46,46,46	0
25	MG	A	1738	1/1	0.97	0.15	76,76,76,76	0
25	MG	A	1627	1/1	0.97	0.12	71,71,71,71	0
25	MG	E	201	1/1	0.97	0.04	88,88,88,88	0
25	MG	A	1628	1/1	0.97	0.07	48,48,48,48	0
25	MG	A	1799	1/1	0.97	0.14	48,48,48,48	0
25	MG	A	1652	1/1	0.97	0.06	139,139,139,139	0
25	MG	A	1617	1/1	0.97	0.08	39,39,39,39	0
25	MG	A	1721	1/1	0.97	0.18	29,29,29,29	0
25	MG	A	1702	1/1	0.97	0.08	73,73,73,73	0
25	MG	A	1637	1/1	0.98	0.04	56,56,56,56	0
25	MG	A	1659	1/1	0.98	0.07	16,16,16,16	0
25	MG	A	1654	1/1	0.98	0.16	57,57,57,57	0
25	MG	A	1765	1/1	0.98	0.05	57,57,57,57	0
25	MG	A	1650	1/1	0.98	0.03	41,41,41,41	0
25	MG	A	1615	1/1	0.98	0.07	47,47,47,47	0
25	MG	A	1614	1/1	0.98	0.04	77,77,77,77	0

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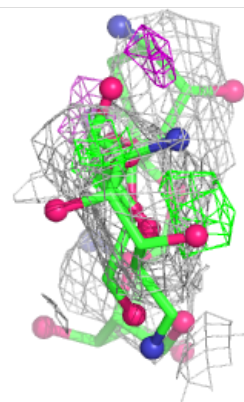
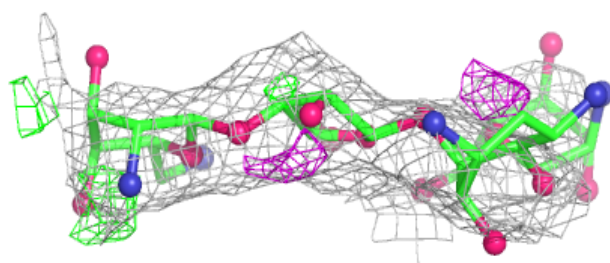
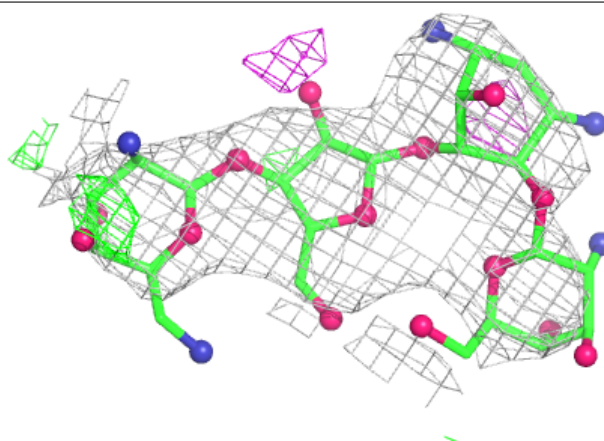
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
27	ZN	D	301	1/1	0.98	0.21	57,57,57,57	0
25	MG	A	1668	1/1	0.99	0.09	43,43,43,43	0
25	MG	A	1612	1/1	0.99	0.11	63,63,63,63	0
25	MG	A	1718	1/1	0.99	0.07	43,43,43,43	0
27	ZN	N	101	1/1	0.99	0.02	83,83,83,83	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.

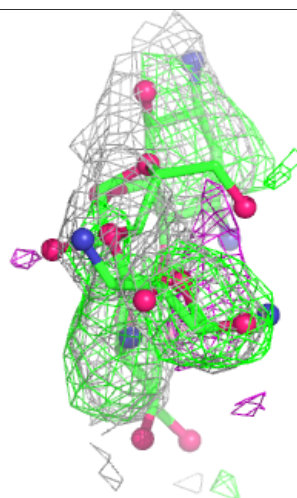
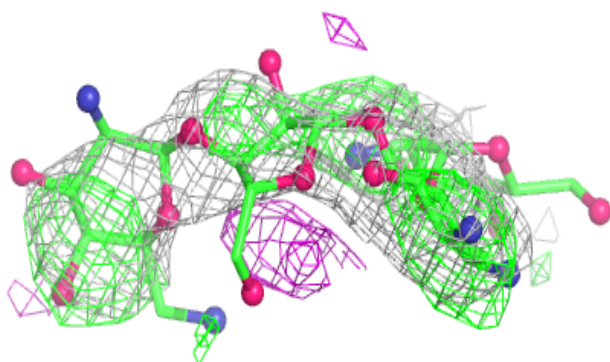
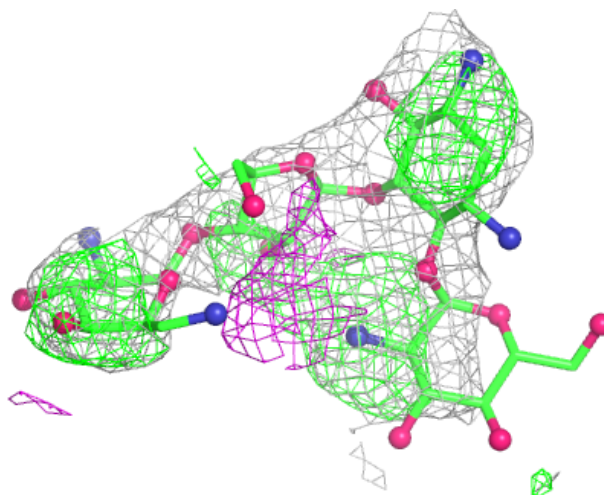
Electron density around PAR A 1605:

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



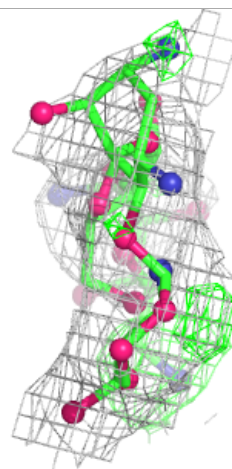
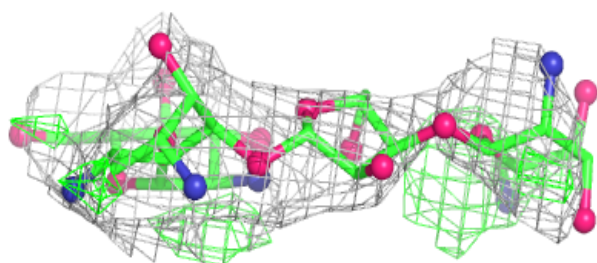
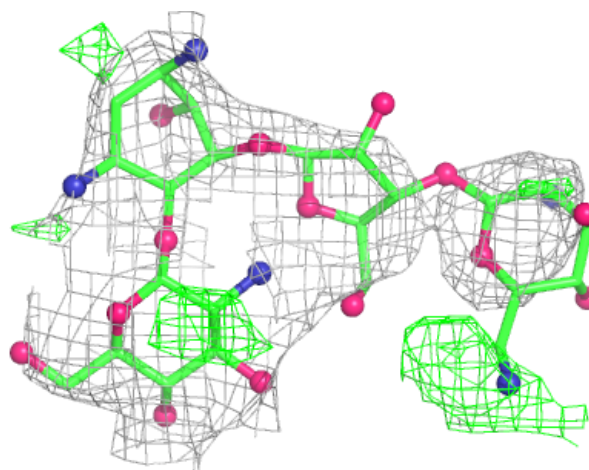
Electron density around PAR A 1602:

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



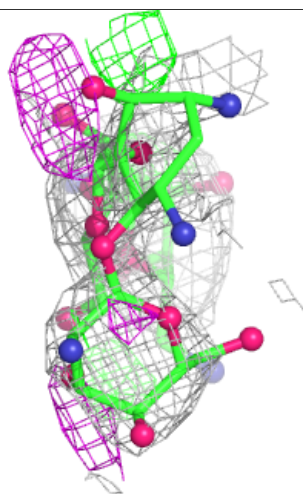
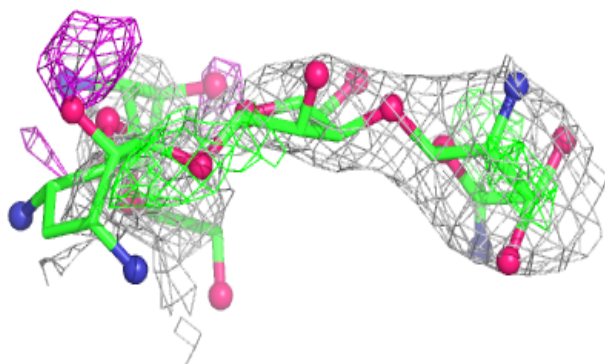
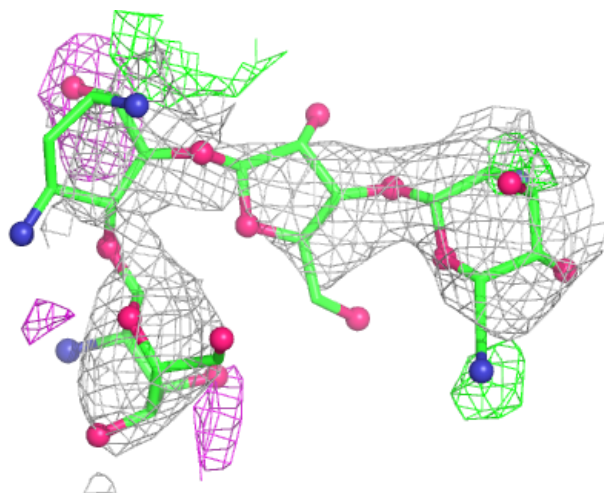
Electron density around PAR A 1604:

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



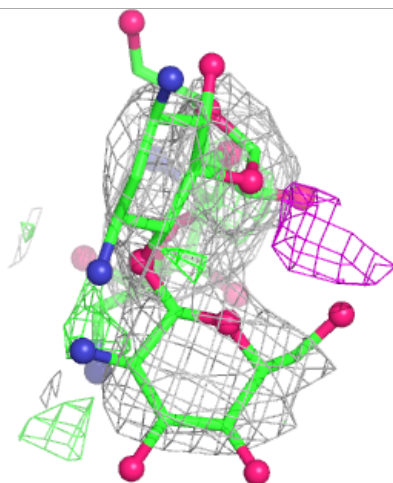
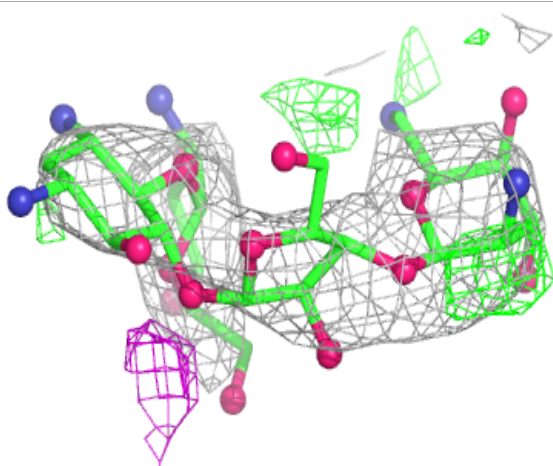
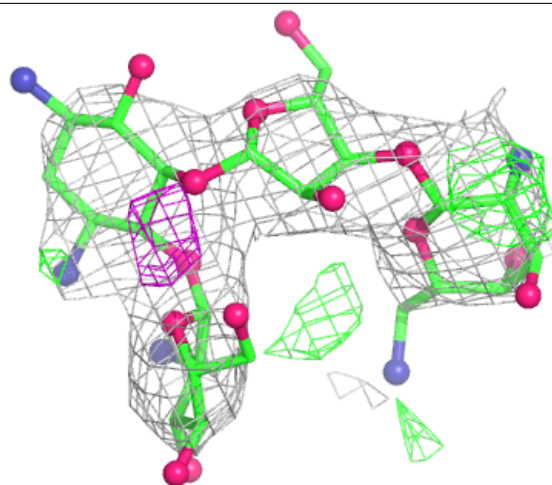
Electron density around PAR A 1603:

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



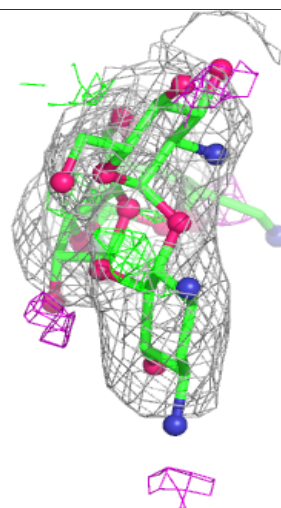
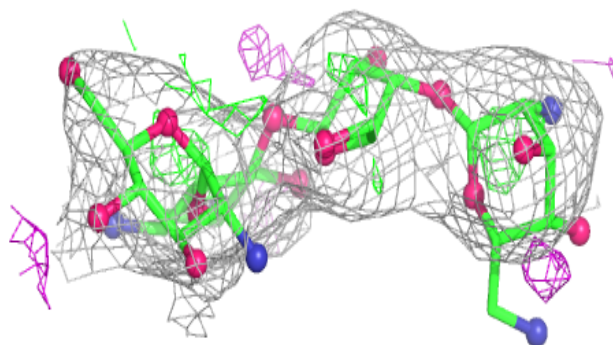
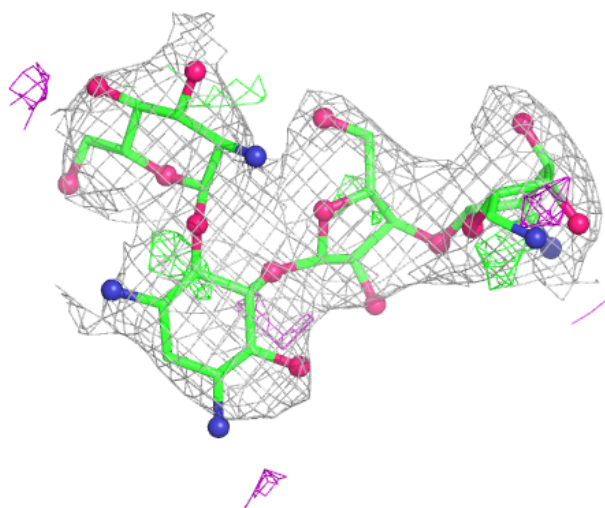
Electron density around PAR A 1606:

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



Electron density around PAR A 1601:

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



6.5 Other polymers ⓘ

There are no such residues in this entry.