Full wwPDB X-ray Structure Validation Report ⓘ

May 16, 2020 – 04:00 am BST

PDB ID	:	6CAR
Title	:	Serial Femtosecond X-ray Crystal Structure of 30S ribosomal subunit from Thermus thermophilus in complex with Sisomicin
Authors	:	DeMirci, H.
Deposited on	:	2018-01-31
Resolution	:	3.40 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

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

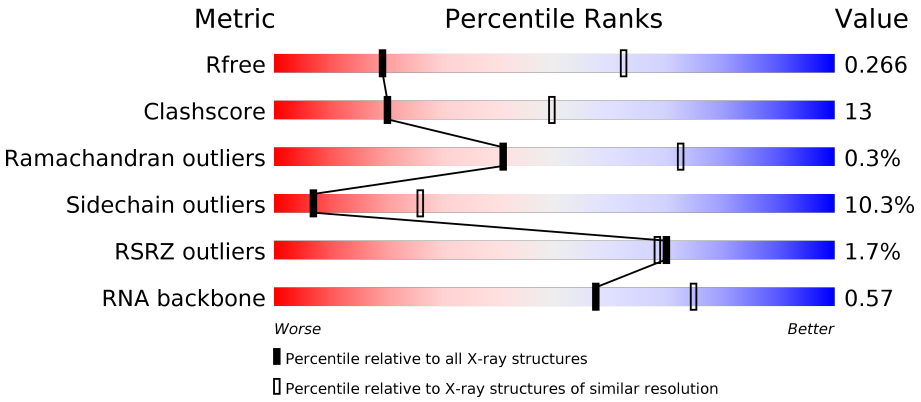
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.11
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.11

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 3.40 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1026 (3.48-3.32)
Clashscore	141614	1055 (3.48-3.32)
Ramachandran outliers	138981	1038 (3.48-3.32)
Sidechain outliers	138945	1038 (3.48-3.32)
RSRZ outliers	127900	2173 (3.50-3.30)
RNA backbone	3102	1006 (3.84-2.96)

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 on 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 <=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	1517	2% 44% 44% 11%
2	B	255	3% 60% 26% 6% 8%
3	C	238	% 55% 28% 13%
4	D	208	2% 65% 31%

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Mol	Chain	Length	Quality of chain
5	E	161	63% 25% 5% 7%
6	F	101	72% 26%
7	G	155	% 75% 23%
8	H	138	71% 25%
9	I	127	2% 66% 28% 6%
10	J	104	11% 53% 36% 5% 6%
11	K	128	% 61% 25% 5% 9%
12	L	131	2% 50% 40% 5% 5%
13	M	125	% 58% 34% 6%
14	N	60	60% 37%
15	O	88	66% 26% 7%
16	P	88	% 66% 26% 6%
17	Q	104	66% 28% 5%
18	R	87	47% 30% 20%
19	S	92	% 47% 35% 5% 13%
20	T	105	% 63% 27% 5% 6%
21	U	26	8% 69% 15% 8% 8%
22	Y	6	33% 50% 33% 17%
23	W	15	33% 47% 40% 13%

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
24	MG	A	1602	-	-	-	X
24	MG	A	1626	-	-	-	X
24	MG	A	1656	-	-	-	X
24	MG	A	1658	-	-	-	X
24	MG	A	1677	-	-	-	X

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
24	MG	A	1678	-	-	-	X
24	MG	A	1685	-	-	-	X
24	MG	A	1693	-	-	-	X
24	MG	A	1694	-	-	-	X
24	MG	A	1700	-	-	-	X
24	MG	A	1701	-	-	-	X
24	MG	A	1710	-	-	-	X
24	MG	A	1756	-	-	-	X
24	MG	A	1775	-	-	-	X
24	MG	A	1780	-	-	-	X
24	MG	A	1789	-	-	-	X
24	MG	A	1790	-	-	-	X
24	MG	A	1840	-	-	-	X
24	MG	A	1848	-	-	-	X
24	MG	A	1858	-	-	-	X
24	MG	C	302	-	-	-	X

2 Entry composition

There are 27 unique types of molecules in this entry. The entry contains 52778 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 Ribosomal RNA rRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	A	1511	32624	14531	6037	10539	1517	0	6	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	13	C	U	conflict	GB 55771382

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	234	1900	1213	341	341	5	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	C	206	1612	1016	314	281	1	0	0	0

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

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

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	E	150	1146	724	217	201	4	0	0	0

- 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	98	Total	C	N	O	S	0	0	0
			792	498	156	137	1			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
11	K	116	Total	C	N	O	S	0	0	0
			864	537	164	160	3			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
12	L	124	Total	C	N	O	S	0	0	0
			972	612	195	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	87	Total	C	N	O	S	0	0	0
			729	457	146	124	2			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
16	P	83	Total	C	N	O	S	0	0	0
			700	443	139	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	152	141	2			

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Q	96	GLN	GLU	conflict	UNP P0DOY7

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

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
18	R	70	Total	C	N	O	0	0	0
			574	367	112	95			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
19	S	80	Total	C	N	O	S	0	0	0
			647	414	119	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	24	Total	C	N	O	0	0	0
			208	128	50	30			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
22	Y	6	Total	C	N	O	P	0	0	0
			117	54	12	46	5			

- Molecule 23 is a RNA chain called RNA (5'-R(*GP*GP*GP*AP*UP*UP*GP*AP*AP*AP *AP*UP*CP*CP*C)-3').

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
23	W	15	Total	C	N	O	P	0	0	0
			319	144	60	101	14			

- Molecule 24 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
24	P	3	Total	Mg	0	0
			3	3		
24	J	1	Total	Mg	0	0
			1	1		
24	Q	1	Total	Mg	0	0
			1	1		
24	D	3	Total	Mg	0	0
			3	3		
24	K	2	Total	Mg	0	0
			2	2		
24	E	1	Total	Mg	0	0
			1	1		

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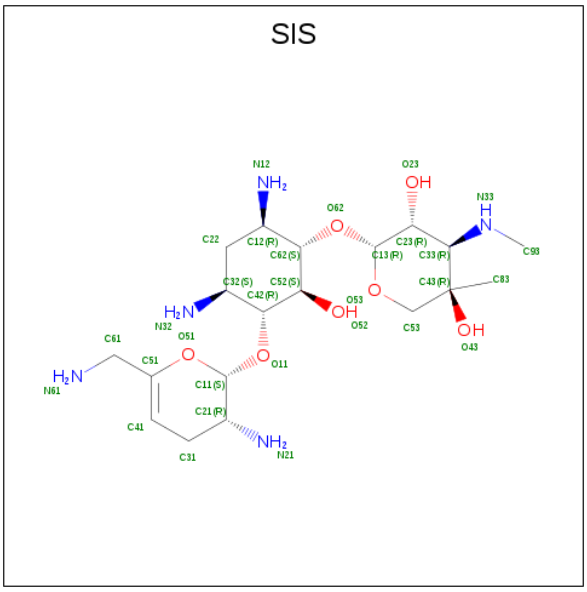
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
24	B	2	Total Mg 2 2	0	0
24	I	1	Total Mg 1 1	0	0
24	C	6	Total Mg 6 6	0	0
24	A	258	Total Mg 258 258	0	0
24	L	3	Total Mg 3 3	0	0
24	S	1	Total Mg 1 1	0	0
24	F	1	Total Mg 1 1	0	0

- Molecule 25 is (1S,2S,3R,4S,6R)-4,6-diamino-3-{[(2S,3R)-3-amino-6-(aminomethyl)-3,4-dihydro-2H-pyran-2-yl]oxy}-2-hydroxycyclohexyl 3-deoxy-4-C-methyl-3-(methylamino)-beta-L-arabinopyranoside (three-letter code: SIS) (formula: $C_{19}H_{37}N_5O_7$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
25	A	1	Total C N O 31 19 5 7	0	0

- Molecule 26 is ZINC ION (three-letter code: ZN) (formula: Zn).

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

- Molecule 27 is water.

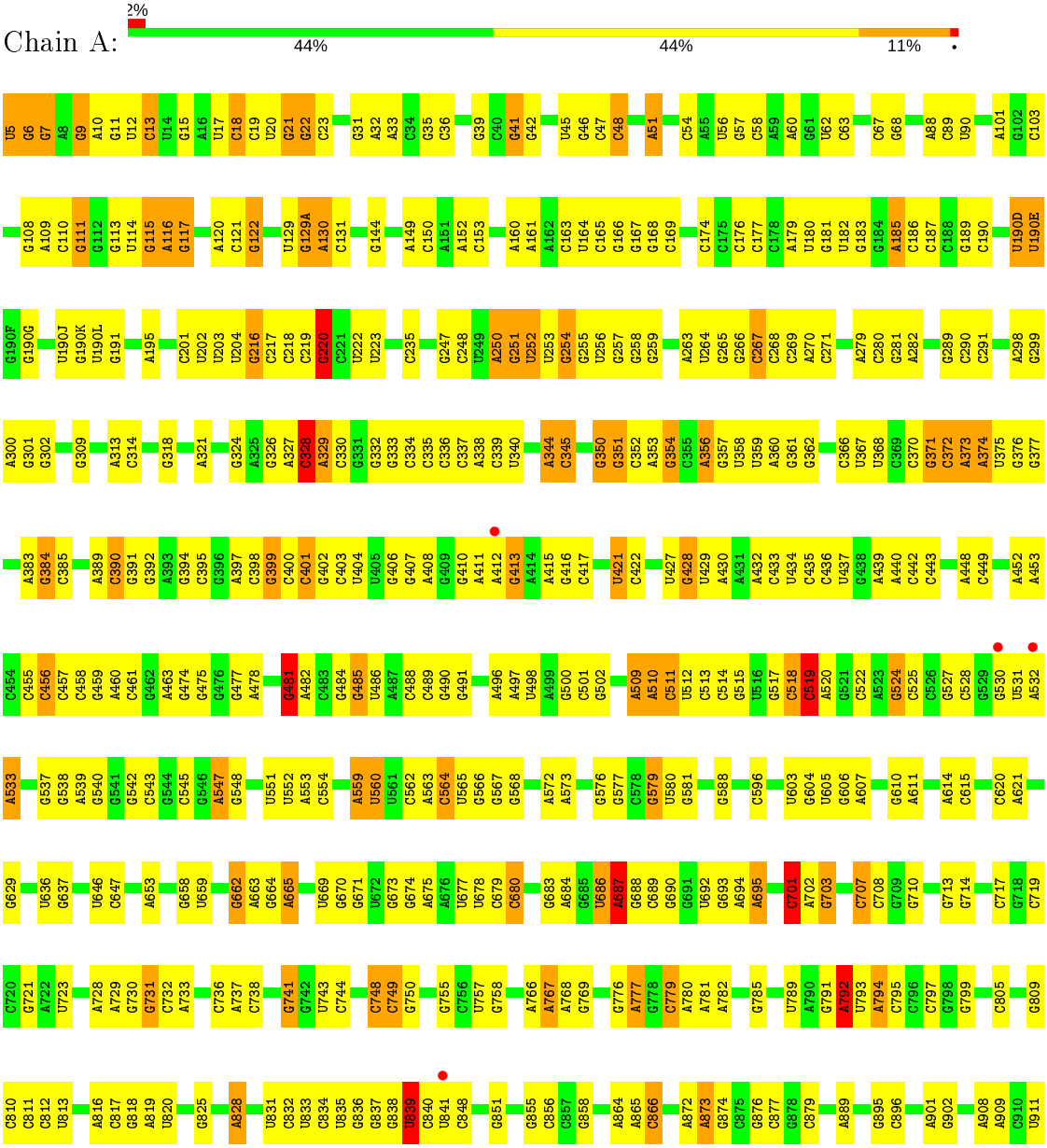
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
27	A	299	Total O 299 299	0	0
27	C	1	Total O 1 1	0	0
27	D	3	Total O 3 3	0	0
27	E	3	Total O 3 3	0	0
27	L	4	Total O 4 4	0	0
27	N	1	Total O 1 1	0	0
27	Q	1	Total O 1 1	0	0
27	T	2	Total O 2 2	0	0

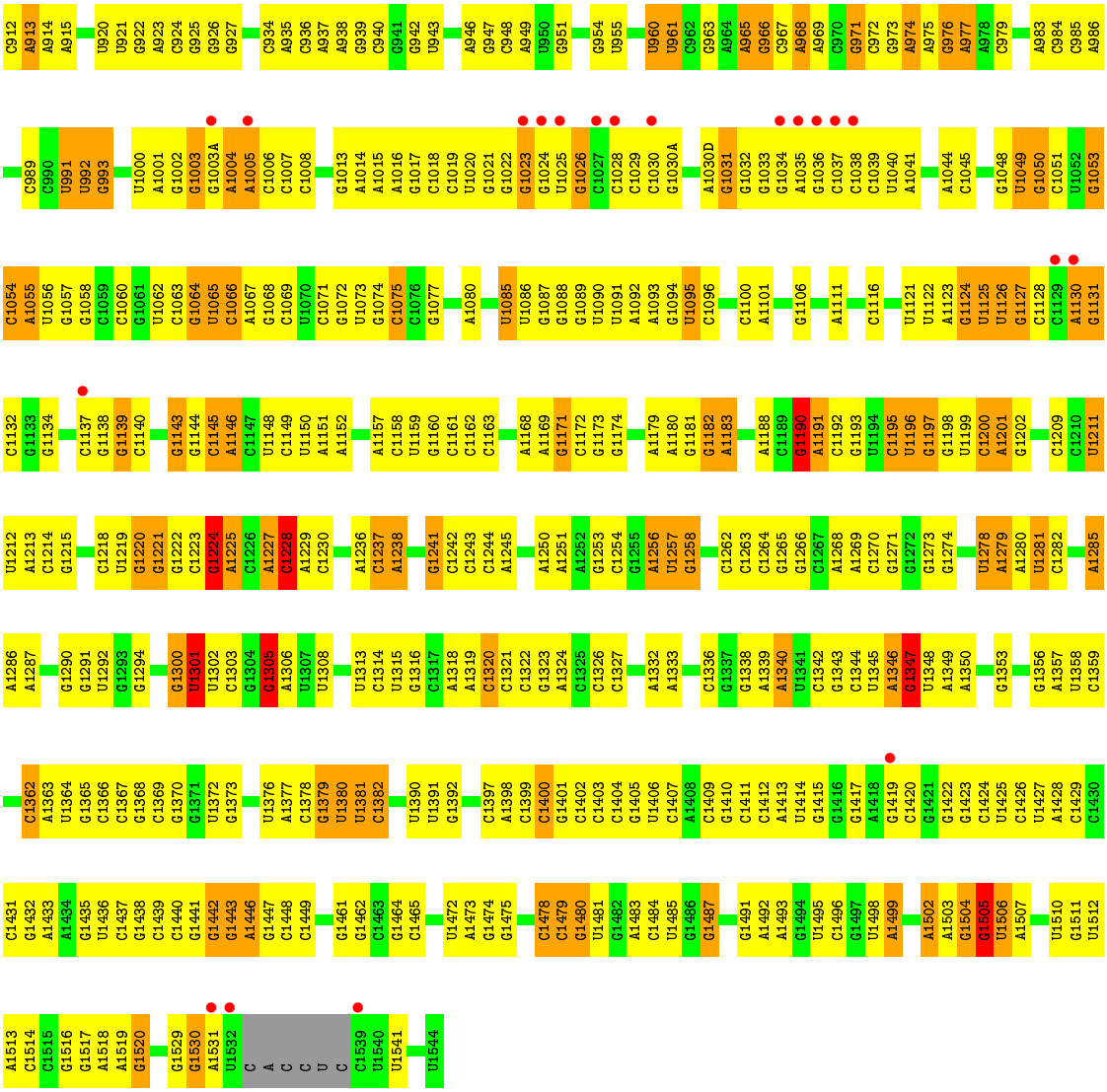
3 Residue-property plots (i)

These plots are drawn for all protein, RNA and DNA 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.

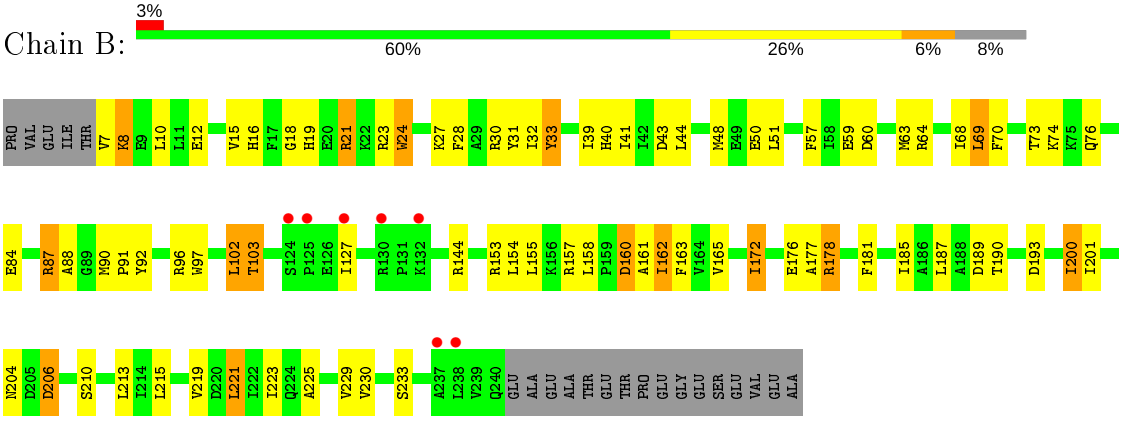
- Molecule 1: 16S Ribosomal RNA rRNA

Chain A:

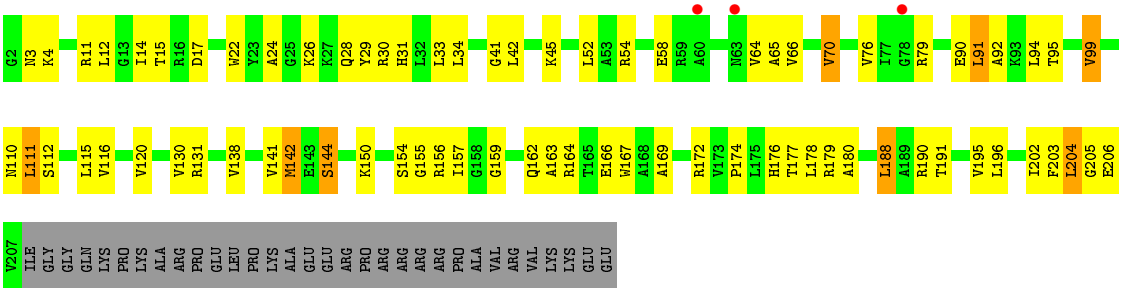




• Molecule 2: 30S ribosomal protein S2

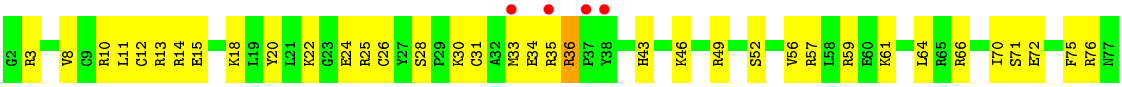


• Molecule 3: 30S ribosomal protein S3



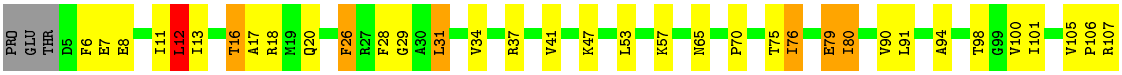
• Molecule 4: 30S ribosomal protein S4

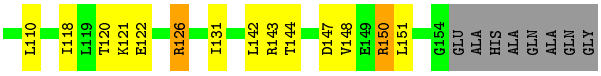
Chain D:



• Molecule 5: 30S ribosomal protein S5

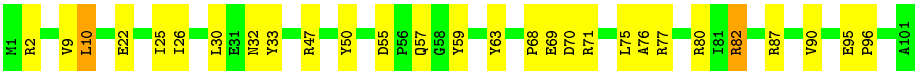
Chain E:





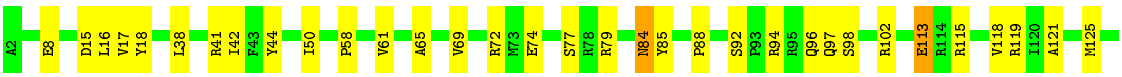
• Molecule 6: 30S ribosomal protein S6

Chain F:



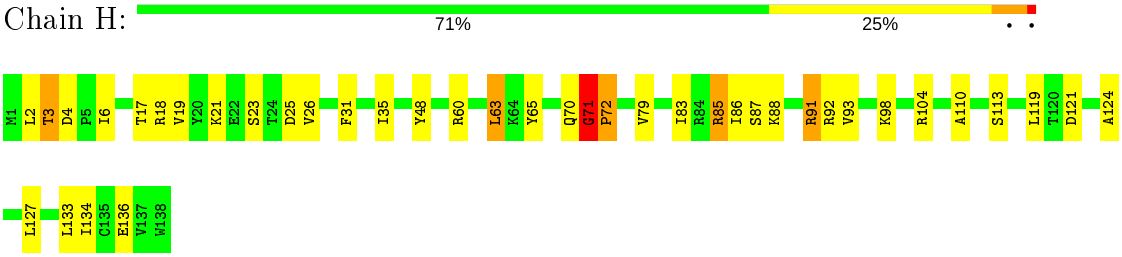
• Molecule 7: 30S ribosomal protein S7

Chain G:



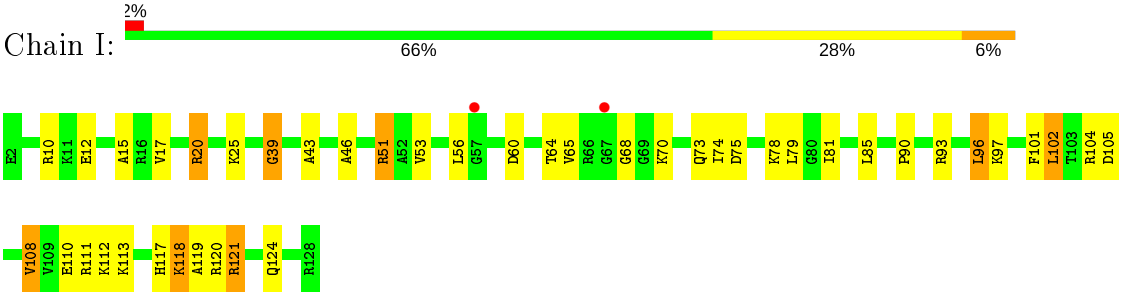
- Molecule 8: 30S ribosomal protein S8

Chain H:



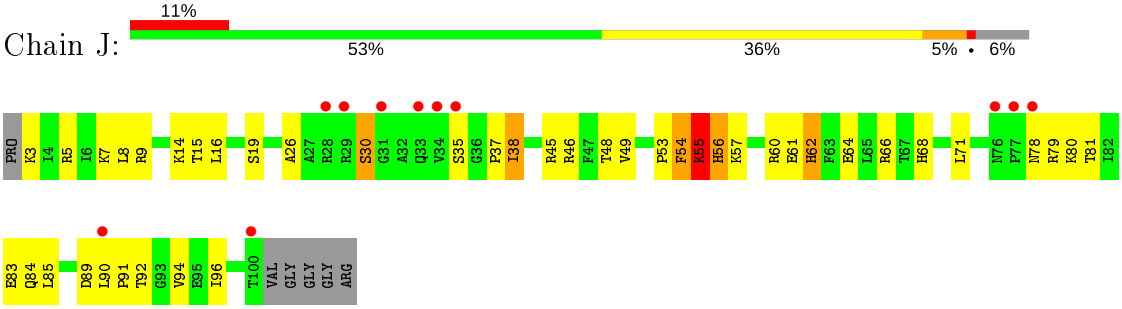
- Molecule 9: 30S ribosomal protein S9

Chain I:



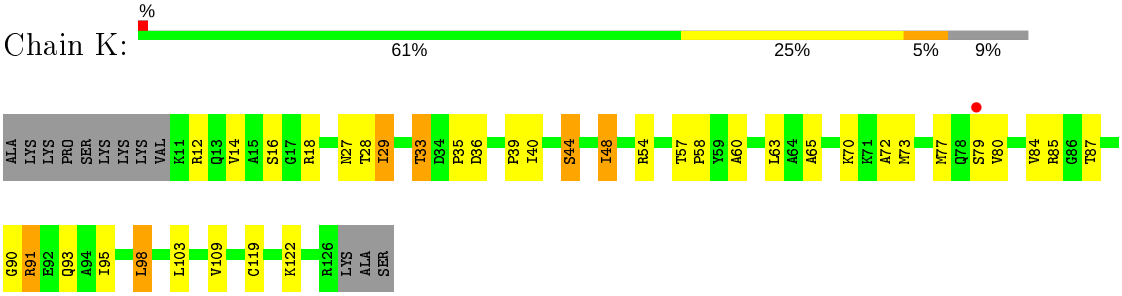
- Molecule 10: 30S ribosomal protein S10

Chain J:



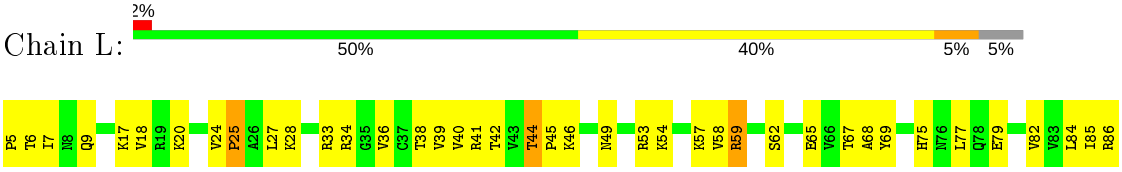
- Molecule 11: 30S ribosomal protein S11

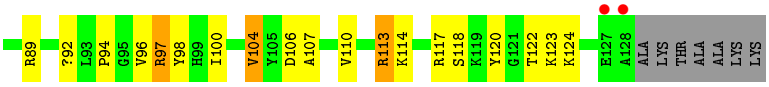
Chain K:



- Molecule 12: 30S ribosomal protein S12

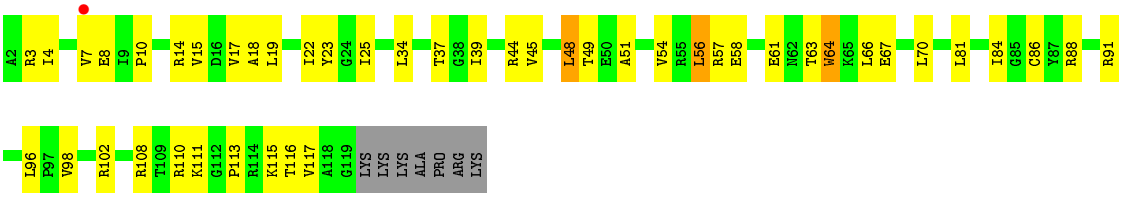
Chain L:





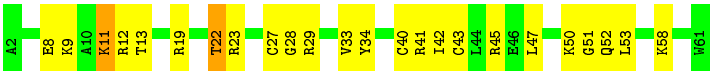
• Molecule 13: 30S ribosomal protein S13

Chain M:



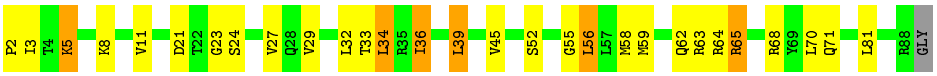
• Molecule 14: 30S ribosomal protein S14 type Z

Chain N:



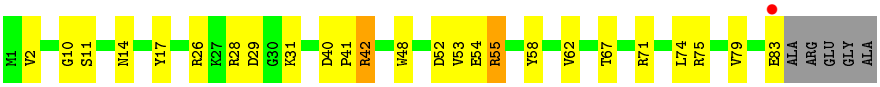
• Molecule 15: 30S ribosomal protein S15

Chain O:



• Molecule 16: 30S ribosomal protein S16

Chain P:

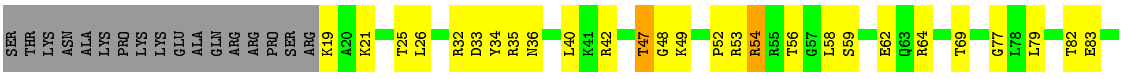


• Molecule 17: 30S ribosomal protein S17

Chain Q:

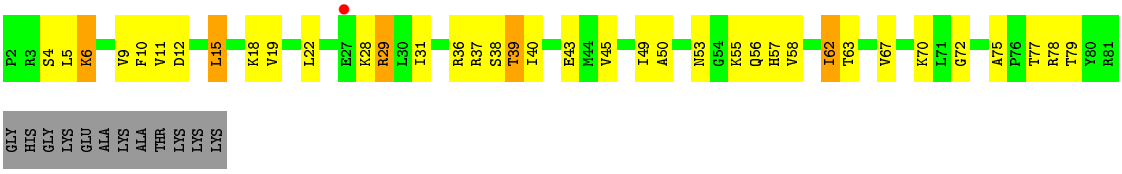
• Molecule 18: 30S ribosomal protein S18

Chain R:



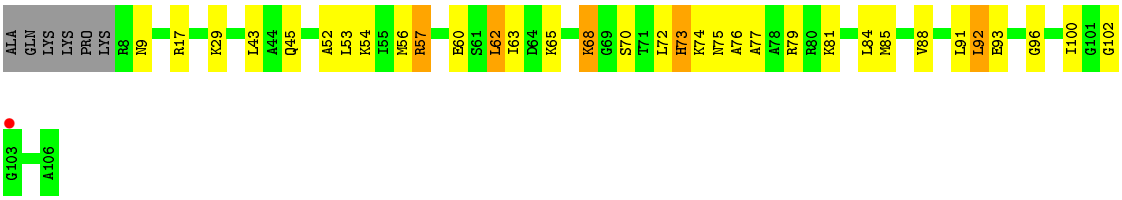
• Molecule 19: 30S ribosomal protein S19

Chain S:



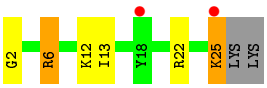
• Molecule 20: 30S ribosomal protein S20

Chain T:



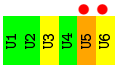
• Molecule 21: 30S ribosomal protein Thx

Chain U:



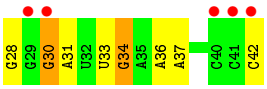
• Molecule 22: RNA (5'-R(*UP*UP*UP*UP*UP*U)-3')

Chain Y:



• Molecule 23: RNA (5'-R(*GP*GP*GP*AP*UP*UP*GP*AP*AP*AP*AP*UP*CP*CP*C)-3')

Chain W:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, α, β, γ	402.60Å 402.60Å 175.90Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	39.26 – 3.40 39.26 – 3.40	Depositor EDS
% Data completeness (in resolution range)	99.9 (39.26-3.40) 99.9 (39.26-3.40)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.05 (at 3.40Å)	Xtriage
Refinement program	PHENIX (1.11.1_2575)	Depositor
R, R_{free}	0.222 , 0.266 0.222 , 0.266	Depositor DCC
R_{free} test set	999 reflections (0.51%)	wwPDB-VP
Wilson B-factor (Å^2)	87.0	Xtriage
Anisotropy	0.036	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.27 , 95.5	EDS
L-test for twinning[2]	$< \|L\| > = 0.38$, $< L^2 > = 0.20$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.91	EDS
Total number of atoms	52778	wwPDB-VP
Average B, all atoms (Å^2)	95.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.42% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ 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: SIS, ZN, MA6, G7M, 0TD, MG, 2MG, 5MC, UR3, 4OC, M2G, PSU

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	0.55	0/36117	1.13	125/56362 (0.2%)
2	B	0.33	0/1935	0.50	0/2609
3	C	0.32	0/1636	0.51	0/2205
4	D	0.33	0/1733	0.50	0/2318
5	E	0.37	0/1162	0.58	1/1564 (0.1%)
6	F	0.32	0/856	0.51	0/1154
7	G	0.34	0/1276	0.49	0/1709
8	H	0.39	0/1136	0.59	0/1527
9	I	0.32	0/1029	0.53	1/1379 (0.1%)
10	J	0.31	0/805	0.57	0/1082
11	K	0.33	0/879	0.55	0/1187
12	L	0.35	0/977	0.56	0/1306
13	M	0.32	0/947	0.51	0/1270
14	N	0.39	0/501	0.51	0/664
15	O	0.36	0/740	0.54	0/987
16	P	0.36	0/716	0.56	0/963
17	Q	0.38	0/836	0.58	0/1117
18	R	0.33	0/579	0.54	0/768
19	S	0.29	0/661	0.53	0/890
20	T	0.35	0/765	0.52	0/1007
21	U	0.30	0/212	0.46	0/277
22	Y	0.41	0/128	1.23	0/196
23	W	0.49	0/357	1.12	0/555
All	All	0.49	0/55983	0.99	127/83096 (0.2%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
3	C	0	1
8	H	0	1
10	J	0	2
12	L	0	1
13	M	0	2
All	All	0	7

There are no bond length outliers.

All (127) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	254	G	O5'-P-OP1	-9.09	97.52	105.70
1	A	1422	G	N3-C2-N2	-8.14	114.20	119.90
1	A	1143	G	N3-C2-N2	-8.08	114.24	119.90
1	A	792	A	P-O3'-C3'	7.91	129.19	119.70
1	A	1502	A	N1-C6-N6	7.84	123.31	118.60
1	A	662	G	C6-N1-C2	7.82	129.79	125.10
1	A	328	C	C2-N1-C1'	7.68	127.25	118.80
1	A	410	G	C8-N9-C4	7.67	109.47	106.40
1	A	839	U	C2-N1-C1'	7.62	126.84	117.70
1	A	410	G	N9-C4-C5	-7.49	102.40	105.40
1	A	481	G	N3-C4-N9	7.49	130.50	126.00
1	A	1134	G	N3-C2-N2	-7.29	114.79	119.90
1	A	21	G	O5'-P-OP1	-7.29	99.14	105.70
1	A	710	G	N3-C2-N2	-7.14	114.90	119.90
1	A	1502	A	C6-C5-N7	-7.08	127.34	132.30
1	A	22	G	N1-C6-O6	-7.01	115.69	119.90
1	A	1305	G	P-O3'-C3'	7.01	128.11	119.70
1	A	1075	C	N3-C4-C5	-7.00	119.10	121.90
1	A	357	G	N3-C2-N2	-6.92	115.05	119.90
1	A	662	G	N9-C4-C5	-6.83	102.67	105.40
1	A	15	G	N1-C6-O6	6.83	124.00	119.90
1	A	1301	U	P-O3'-C3'	6.77	127.82	119.70
1	A	913	A	P-O3'-C3'	6.69	127.73	119.70
1	A	1190	G	P-O3'-C3'	6.67	127.70	119.70
1	A	1003	G	N3-C4-N9	-6.51	122.09	126.00
1	A	481	G	N3-C4-C5	-6.49	125.35	128.60
1	A	839	U	N1-C2-O2	6.42	127.29	122.80
1	A	1294	G	N3-C2-N2	-6.41	115.42	119.90
1	A	318	G	N3-C2-N2	-6.34	115.46	119.90
1	A	456	C	C2-N1-C1'	6.34	125.77	118.80
1	A	1502	A	C4-C5-N7	6.32	113.86	110.70
1	A	741	G	N3-C4-C5	6.32	131.76	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	144	G	N3-C2-N2	-6.31	115.48	119.90
1	A	1193	G	N3-C2-N2	-6.29	115.50	119.90
1	A	1502	A	C5-N7-C8	-6.21	100.80	103.90
1	A	1200	C	N1-C2-O2	6.19	122.62	118.90
1	A	1039	C	C2-N3-C4	-6.05	116.87	119.90
1	A	1200	C	C2-N1-C1'	6.05	125.45	118.80
1	A	662	G	N3-C2-N2	6.03	124.12	119.90
1	A	257	G	N3-C2-N2	-5.98	115.71	119.90
1	A	1520[A]	G	N3-C2-N2	-5.98	115.72	119.90
1	A	1520[B]	G	N3-C2-N2	-5.98	115.72	119.90
1	A	1502	A	N7-C8-N9	5.97	116.78	113.80
9	I	39	GLY	N-CA-C	-5.96	98.19	113.10
1	A	491	G	N3-C2-N2	-5.96	115.73	119.90
1	A	1143	G	N9-C4-C5	5.92	107.77	105.40
1	A	328	C	C6-N1-C1'	-5.89	113.73	120.80
1	A	662	G	N3-C4-C5	5.86	131.53	128.60
1	A	1382	C	C5-C6-N1	5.86	123.93	121.00
1	A	717	C	N1-C2-O2	5.76	122.35	118.90
1	A	1228	C	N1-C2-O2	5.74	122.34	118.90
1	A	1039	C	N1-C2-N3	5.74	123.22	119.20
1	A	1224	G	C4-N9-C1'	-5.74	119.04	126.50
1	A	41	G	N3-C2-N2	-5.73	115.89	119.90
1	A	717	C	C2-N1-C1'	5.73	125.10	118.80
1	A	174	C	C2-N1-C1'	5.72	125.09	118.80
1	A	328	C	N1-C2-O2	5.70	122.32	118.90
1	A	779	C	C6-N1-C2	-5.68	118.03	120.30
1	A	1075	C	C6-N1-C2	-5.67	118.03	120.30
1	A	403	C	N1-C2-O2	-5.66	115.50	118.90
1	A	701	C	P-O3'-C3'	5.60	126.42	119.70
1	A	399	G	N3-C4-C5	5.59	131.40	128.60
1	A	1201	A	P-O3'-C3'	5.57	126.38	119.70
1	A	185	A	N9-C4-C5	-5.55	103.58	105.80
1	A	410	G	N1-C6-O6	5.55	123.23	119.90
1	A	680	C	C6-N1-C2	-5.55	118.08	120.30
1	A	1346	A	P-O3'-C3'	5.54	126.34	119.70
1	A	111	G	N3-C4-N9	-5.51	122.69	126.00
1	A	837	G	N3-C4-N9	-5.49	122.71	126.00
1	A	18	C	C6-N1-C2	-5.48	118.11	120.30
1	A	1220	G	N3-C4-N9	-5.48	122.71	126.00
1	A	662	G	C5-C6-N1	-5.47	108.76	111.50
1	A	1422	G	N9-C4-C5	5.47	107.59	105.40
1	A	15	G	C5-C6-O6	-5.45	125.33	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	481	G	C5-C6-O6	-5.45	125.33	128.60
1	A	1300	G	P-O3'-C3'	5.44	126.22	119.70
5	E	12	LEU	CA-CB-CG	5.43	127.79	115.30
1	A	21	G	C6-C5-N7	-5.41	127.15	130.40
1	A	1158	C	N1-C2-O2	5.40	122.14	118.90
1	A	1209	C	C2-N1-C1'	5.38	124.72	118.80
1	A	839	U	C5-C6-N1	5.36	125.38	122.70
1	A	1224	G	C6-C5-N7	5.33	133.60	130.40
1	A	1003	G	N3-C2-N2	-5.33	116.17	119.90
1	A	111	G	N3-C4-C5	5.32	131.26	128.60
1	A	1174	G	N3-C4-N9	-5.29	122.83	126.00
1	A	1347	G	P-O3'-C3'	5.28	126.04	119.70
1	A	1221	G	N3-C4-N9	-5.27	122.84	126.00
1	A	1484	C	C5-C6-N1	5.26	123.63	121.00
1	A	1134	G	N1-C2-N2	5.25	120.92	116.20
1	A	117	G	N1-C6-O6	5.24	123.04	119.90
1	A	1089	G	N3-C2-N2	-5.24	116.23	119.90
1	A	1228	C	N3-C2-O2	-5.24	118.23	121.90
1	A	1143	G	N1-C2-N2	5.22	120.90	116.20
1	A	1065	U	P-O3'-C3'	5.22	125.97	119.70
1	A	1479	C	C2-N1-C1'	5.22	124.54	118.80
1	A	1382	C	C6-N1-C2	-5.19	118.22	120.30
1	A	220	G	C4-N9-C1'	5.18	133.23	126.50
1	A	805	C	C6-N1-C2	-5.18	118.23	120.30
1	A	825	G	N3-C4-N9	-5.18	122.89	126.00
1	A	248	C	C6-N1-C2	5.17	122.37	120.30
1	A	767	A	OP2-P-O3'	5.17	116.58	105.20
1	A	1019	C	N1-C2-O2	-5.17	115.80	118.90
1	A	401	C	N1-C2-O2	-5.17	115.80	118.90
1	A	839	U	N3-C2-O2	-5.16	118.59	122.20
1	A	1224	G	C8-N9-C1'	5.16	133.71	127.00
1	A	1143	G	N3-C4-N9	-5.16	122.91	126.00
1	A	1134	G	N9-C4-C5	5.15	107.46	105.40
1	A	1039	C	C5-C6-N1	-5.14	118.43	121.00
1	A	1003	G	N9-C4-C5	5.10	107.44	105.40
1	A	1505	G	O5'-P-OP2	-5.09	101.11	105.70
1	A	519	C	N1-C2-O2	5.09	121.95	118.90
1	A	687	A	P-O3'-C3'	5.09	125.81	119.70
1	A	707	C	C6-N1-C2	5.08	122.33	120.30
1	A	816	A	N9-C4-C5	5.08	107.83	105.80
1	A	779	C	C2-N1-C1'	5.08	124.39	118.80
1	A	117	G	C6-C5-N7	-5.08	127.35	130.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	144	G	N3-C4-N9	-5.07	122.96	126.00
1	A	1200	C	N3-C2-O2	-5.07	118.35	121.90
1	A	717	C	C6-N1-C1'	-5.06	114.72	120.80
1	A	858	G	C4-C5-N7	5.06	112.83	110.80
1	A	1237	C	C6-N1-C2	-5.05	118.28	120.30
1	A	330	C	N1-C2-O2	5.04	121.92	118.90
1	A	866	C	O5'-P-OP1	-5.04	101.17	105.70
1	A	12	U	C5-C6-N1	5.04	125.22	122.70
1	A	1380	U	P-O3'-C3'	5.04	125.74	119.70
1	A	410	G	C5-C6-O6	-5.03	125.58	128.60
1	A	1066	C	C6-N1-C2	5.02	122.31	120.30

There are no chirality outliers.

All (7) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
3	C	166	GLU	Peptide
8	H	71	GLY	Peptide
10	J	54	PHE	Peptide
10	J	55	LYS	Peptide
12	L	25	PRO	Peptide
13	M	111	LYS	Peptide
13	M	113	PRO	Peptide

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	32624	0	16496	664	0
2	B	1900	0	1951	49	0
3	C	1612	0	1677	46	0
4	D	1703	0	1763	48	0
5	E	1146	0	1207	36	0
6	F	843	0	857	19	0
7	G	1257	0	1296	23	0
8	H	1116	0	1177	23	0
9	I	1010	0	1037	35	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
10	J	792	0	835	37	0
11	K	864	0	881	22	0
12	L	972	0	1058	39	0
13	M	937	0	995	27	0
14	N	492	0	529	24	0
15	O	729	0	768	15	0
16	P	700	0	720	16	0
17	Q	823	0	893	20	0
18	R	574	0	644	20	0
19	S	647	0	673	32	0
20	T	763	0	861	20	0
21	U	208	0	221	7	0
22	Y	117	0	62	3	0
23	W	319	0	164	6	0
24	A	258	0	0	0	0
24	B	2	0	0	0	0
24	C	6	0	0	0	0
24	D	3	0	0	0	0
24	E	1	0	0	0	0
24	F	1	0	0	0	0
24	I	1	0	0	0	0
24	J	1	0	0	0	0
24	K	2	0	0	0	0
24	L	3	0	0	0	0
24	P	3	0	0	0	0
24	Q	1	0	0	0	0
24	S	1	0	0	0	0
25	A	31	0	37	5	0
26	D	1	0	0	0	0
26	N	1	0	0	0	0
27	A	299	0	0	6	0
27	C	1	0	0	0	0
27	D	3	0	0	0	0
27	E	3	0	0	0	0
27	L	4	0	0	1	0
27	N	1	0	0	0	0
27	Q	1	0	0	0	0
27	T	2	0	0	0	0
All	All	52778	0	36802	1102	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 13.

All (1102) 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:955:U:H1'	1:A:1227:A:H61	1.31	0.94
1:A:481:G:HO2'	1:A:482:A:H8	1.00	0.94
1:A:664:G:H22	1:A:741:G:H1	1.13	0.91
1:A:407:G:OP1	4:D:115:ARG:NH1	2.06	0.89
20:T:100:ILE:HG22	20:T:102:GLY:H	1.39	0.88
17:Q:66:SER:O	17:Q:70:ARG:NH1	2.06	0.87
1:A:677:U:H3	1:A:713:G:H22	1.22	0.84
1:A:673:G:H2'	1:A:674:G:C8	2.13	0.83
13:M:10:PRO:HB2	13:M:18:ALA:HB1	1.62	0.81
1:A:9:G:OP2	5:E:121:LYS:NZ	2.12	0.81
1:A:103:C:OP1	20:T:17:ARG:NH1	2.15	0.79
1:A:922:G:H2'	1:A:923:A:C8	2.16	0.79
12:L:38:THR:HB	12:L:57:LYS:HB2	1.63	0.79
1:A:1427:U:H2'	1:A:1428:A:H8	1.48	0.78
19:S:50:ALA:HA	19:S:58:VAL:O	1.84	0.77
1:A:1435:G:H2'	1:A:1436:U:C6	2.20	0.76
1:A:13:C:H42	1:A:915:A:H62	1.34	0.76
1:A:1516[B]:G:N2	1:A:1519[B]:MA6:OP2	2.19	0.76
1:A:1397:C:N4	22:Y:5:U:OP2	2.19	0.76
1:A:1443:G:H5"	1:A:1446:A:H5'	1.67	0.75
1:A:1301:U:OP2	1:A:1303:C:N4	2.20	0.74
1:A:1228:C:H4'	13:M:116:THR:HA	1.68	0.74
9:I:110:GLU:OE2	9:I:113:LYS:NZ	2.19	0.74
3:C:58:GLU:HB3	10:J:92:THR:HG21	1.69	0.74
1:A:1368:G:H5"	9:I:112:LYS:HB3	1.68	0.74
1:A:1128:C:O2'	1:A:1130:A:N7	2.20	0.73
1:A:440:A:H3'	1:A:442:C:H6	1.53	0.73
1:A:1126:U:O4	1:A:1127:G:N2	2.21	0.73
1:A:1427:U:H2'	1:A:1428:A:C8	2.24	0.73
3:C:70:VAL:HG21	3:C:76:VAL:HG21	1.70	0.73
1:A:537:G:OP1	12:L:113:ARG:NH2	2.22	0.72
1:A:216:G:H2'	1:A:217:C:C6	2.25	0.72
1:A:190(K):G:H2'	1:A:190(L):U:C6	2.25	0.71
1:A:1022:G:N2	1:A:1023:G:N7	2.37	0.71
1:A:1392:G:N2	1:A:1502:A:H8	1.88	0.71
1:A:835:U:OP1	18:R:64:ARG:NH2	2.19	0.71
1:A:501:C:H2'	1:A:502:G:H8	1.52	0.71
20:T:92:LEU:O	20:T:96:GLY:HA2	1.90	0.71
1:A:1004:A:H5"	1:A:1025:U:C4	2.26	0.71
1:A:974:A:OP2	14:N:41:ARG:NH1	2.24	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:86:ILE:HD11	8:H:136:GLU:HG3	1.72	0.71
9:I:97:LYS:HA	9:I:102:LEU:HD11	1.71	0.71
1:A:1087:G:H2'	1:A:1088:G:C8	2.25	0.71
1:A:532:A:N6	3:C:159:GLY:O	2.23	0.70
3:C:156:ARG:H	3:C:163:ALA:HA	1.54	0.70
11:K:90:GLY:HA2	11:K:93:GLN:HB2	1.72	0.70
1:A:1513:A:H2'	1:A:1514:C:C6	2.26	0.70
1:A:1029:C:H2'	1:A:1030:C:C6	2.26	0.70
1:A:45:U:H2'	1:A:46:G:C8	2.27	0.70
1:A:1412:C:H2'	1:A:1413:A:C8	2.27	0.70
11:K:29:ILE:HB	11:K:44:SER:HB2	1.74	0.70
1:A:542:G:OP1	4:D:10:ARG:NH2	2.25	0.70
1:A:951:G:OP2	13:M:102:ARG:NH2	2.25	0.69
13:M:49:THR:HG22	13:M:51:ALA:H	1.57	0.68
1:A:701:C:H5"	1:A:703:G:H5'	1.75	0.68
15:O:39:LEU:HD13	15:O:56:LEU:HB2	1.74	0.68
1:A:384:G:H2'	1:A:385:C:H6	1.57	0.68
1:A:501:C:OP1	12:L:117:ARG:NH2	2.26	0.68
11:K:80:VAL:HG21	11:K:103:LEU:HD13	1.74	0.68
17:Q:22:LEU:HD11	17:Q:39:SER:HB2	1.74	0.68
1:A:1125:U:OP2	1:A:1145:C:N4	2.27	0.68
10:J:55:LYS:HD2	10:J:56:HIS:H	1.59	0.68
1:A:21:G:H2'	1:A:22:G:C8	2.29	0.68
1:A:750:G:N3	15:O:23:GLY:HA3	2.08	0.68
1:A:501:C:H2'	1:A:502:G:C8	2.29	0.67
9:I:15:ALA:HB2	9:I:65:VAL:HG13	1.77	0.67
1:A:35:G:H2'	1:A:36:C:C6	2.30	0.67
10:J:61:GLU:OE1	14:N:45:ARG:NH1	2.27	0.67
1:A:190(J):U:H2'	1:A:190(K):G:C8	2.29	0.67
1:A:1510:U:H2'	1:A:1511:G:C8	2.29	0.67
1:A:1406:U:O2'	1:A:1517[B]:G:N2	2.27	0.67
1:A:413:G:H2'	1:A:428:G:N2	2.10	0.67
1:A:922:G:H2'	1:A:923:A:H8	1.56	0.67
1:A:335:C:O2'	1:A:1433:A:N3	2.28	0.67
1:A:13:C:H42	1:A:915:A:N6	1.94	0.66
3:C:188:LEU:HD11	3:C:195:VAL:HG13	1.78	0.66
1:A:1392:G:H21	1:A:1502:A:H8	1.43	0.66
1:A:1125:U:H3	10:J:5:ARG:HH21	1.41	0.66
1:A:113:G:H1'	1:A:354:G:H5'	1.76	0.66
1:A:877:C:O2	8:H:3:THR:HG21	1.96	0.66
1:A:384:G:H2'	1:A:385:C:C6	2.31	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:84:GLU:OE2	2:B:233:SER:OG	2.10	0.66
1:A:413:G:H2'	1:A:428:G:H22	1.60	0.66
1:A:979:C:O2	14:N:19:ARG:NE	2.27	0.66
1:A:1143:G:H2'	1:A:1144:G:C8	2.31	0.65
1:A:1035:A:H2'	1:A:1036:G:C8	2.31	0.65
1:A:359:U:H2'	1:A:360:A:C8	2.31	0.65
20:T:56:MET:HE1	20:T:85:MET:HA	1.78	0.65
1:A:56:U:H2'	1:A:57:G:C8	2.31	0.65
1:A:946:A:H2'	1:A:947:G:C8	2.31	0.65
3:C:17:ASP:O	3:C:54:ARG:NH2	2.30	0.65
3:C:91:LEU:HD21	3:C:99:VAL:HG22	1.78	0.65
1:A:1196:U:OP1	1:A:1197:G:H5'	1.97	0.65
3:C:138:VAL:O	3:C:142:MET:HB2	1.95	0.65
6:F:22:GLU:OE1	6:F:82:ARG:NH1	2.30	0.65
11:K:57:THR:HG23	11:K:60:ALA:H	1.61	0.65
1:A:1404:5MC:H2'	1:A:1405:G:C8	2.32	0.65
18:R:32:ARG:HA	18:R:69:THR:HG21	1.79	0.65
1:A:269:C:H2'	1:A:270:A:C8	2.31	0.64
9:I:46:ALA:HB2	9:I:74:ILE:HG23	1.79	0.64
1:A:1195:C:H3'	1:A:1196:U:H5"	1.77	0.64
1:A:1345:U:OP1	9:I:120:ARG:NH1	2.30	0.64
12:L:58:VAL:O	12:L:65:GLU:HA	1.98	0.64
1:A:1087:G:H2'	1:A:1088:G:H8	1.62	0.64
1:A:925:G:H1	1:A:1391:U:H3	1.44	0.64
5:E:105:VAL:HB	5:E:106:PRO:HD3	1.79	0.64
1:A:191:G:O2'	20:T:102:GLY:O	2.06	0.64
1:A:566:G:H4'	1:A:567:G:OP1	1.96	0.64
8:H:113:SER:HB2	8:H:134:ILE:HD11	1.79	0.64
1:A:17:U:H2'	1:A:18:C:C6	2.33	0.64
1:A:1241:G:H2'	1:A:1242:C:C6	2.33	0.63
1:A:1000:U:H2'	1:A:1001:A:C8	2.33	0.63
1:A:440:A:H3'	1:A:442:C:C6	2.32	0.63
9:I:25:LYS:N	9:I:60:ASP:OD1	2.31	0.63
10:J:15:THR:O	10:J:19:SER:HB2	1.97	0.63
1:A:1326:C:OP2	21:U:6:ARG:NH2	2.31	0.63
3:C:33:LEU:HD21	14:N:53:LEU:HD22	1.80	0.63
1:A:1381:U:H2'	1:A:1382:C:H6	1.61	0.63
1:A:269:C:H2'	1:A:270:A:H8	1.63	0.63
1:A:967:5MC:H2'	1:A:968:A:C8	2.33	0.63
16:P:26:ARG:HD2	16:P:31:LYS:O	1.98	0.63
9:I:51:ARG:HG3	9:I:56:LEU:HD21	1.81	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:97:TRP:HZ2	2:B:102:LEU:HD22	1.64	0.63
1:A:1060:C:OP1	14:N:45:ARG:NH2	2.32	0.62
1:A:895:G:H2'	1:A:896:C:C6	2.34	0.62
1:A:1005:A:N3	1:A:1026:G:N2	2.48	0.62
1:A:1367:C:H5'	10:J:60:ARG:HE	1.64	0.62
1:A:1008:C:N4	1:A:1021:G:H1	1.98	0.62
1:A:1034:G:H2'	1:A:1035:A:H8	1.63	0.62
1:A:372:C:H4'	1:A:373:A:O5'	1.98	0.62
4:D:8:VAL:HG21	4:D:115:ARG:HE	1.65	0.62
1:A:1419:G:N2	1:A:1481:U:O2	2.29	0.62
7:G:50:ILE:HD11	7:G:61:VAL:HG11	1.80	0.62
1:A:1504:G:OP1	1:A:1507:A:H4'	1.99	0.62
1:A:250:A:H4'	1:A:251:G:O5'	1.98	0.62
19:S:50:ALA:HB1	19:S:57:HIS:HB3	1.82	0.62
19:S:45:VAL:HA	19:S:62:ILE:HG13	1.82	0.61
1:A:1029:C:H2'	1:A:1030:C:H6	1.64	0.61
5:E:110:LEU:HD13	5:E:118:ILE:HG21	1.81	0.61
2:B:19:HIS:CE1	2:B:206:ASP:HB2	2.34	0.61
4:D:102:ASP:OD1	4:D:103:ASN:N	2.32	0.61
1:A:1145:C:O2'	1:A:1146:A:O5'	2.18	0.61
1:A:176:C:OP1	20:T:29:LYS:NZ	2.22	0.61
1:A:737:A:H2'	1:A:738:C:C6	2.36	0.61
1:A:427:U:OP1	4:D:13:ARG:NH2	2.32	0.61
19:S:12:ASP:H	19:S:38:SER:HB3	1.64	0.61
5:E:11:ILE:HB	5:E:31:LEU:HB3	1.80	0.61
7:G:113:GLU:HB2	7:G:119:ARG:HG2	1.83	0.61
1:A:456:C:H2'	1:A:457:C:H6	1.66	0.61
1:A:56:U:H2'	1:A:57:G:H8	1.65	0.61
1:A:1405:G:N7	25:A:1809:SIS:N33	2.49	0.61
19:S:31:ILE:HG22	19:S:49:ILE:HG23	1.83	0.61
20:T:43:LEU:HB2	20:T:52:ALA:HB2	1.82	0.61
1:A:1391:U:H2'	1:A:1392:G:C8	2.36	0.61
1:A:1291:G:OP1	7:G:41:ARG:NH2	2.19	0.60
2:B:63:MET:HB3	2:B:225:ALA:HB1	1.83	0.60
2:B:178:ARG:HB3	8:H:72:PRO:HG3	1.83	0.60
1:A:35:G:H2'	1:A:36:C:H6	1.67	0.60
1:A:662:G:H2'	1:A:663:A:C8	2.37	0.60
1:A:452:A:O2'	1:A:453:A:O4'	2.20	0.60
12:L:25:PRO:HD2	12:L:97:ARG:HH12	1.67	0.60
1:A:1125:U:H3	10:J:5:ARG:NH2	1.99	0.60
12:L:53:ARG:HH12	12:L:92:0TD:CG	2.14	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:27:CYS:SG	14:N:29:ARG:HB2	2.41	0.60
1:A:1028:C:H42	1:A:1033:G:H1	1.48	0.60
8:H:6:ILE:HB	8:H:85:ARG:HH12	1.66	0.60
1:A:1530:G:H2'	1:A:1531:A:C8	2.36	0.60
1:A:1071:C:H2'	1:A:1072:G:H8	1.65	0.60
1:A:1435:G:H2'	1:A:1436:U:H6	1.64	0.60
1:A:707:C:OP1	11:K:85:ARG:NH1	2.34	0.60
1:A:235:C:H5'	17:Q:70:ARG:HG2	1.84	0.60
8:H:19:VAL:HG23	8:H:21:LYS:HG2	1.84	0.60
8:H:4:ASP:OD2	8:H:85:ARG:NH1	2.35	0.60
12:L:27:LEU:HG	12:L:28:LYS:H	1.67	0.60
1:A:1513:A:H2'	1:A:1514:C:H6	1.65	0.59
1:A:564:C:O2'	8:H:91:ARG:NH2	2.35	0.59
1:A:539:A:H2'	1:A:540:G:C8	2.38	0.59
1:A:603:U:H2'	1:A:604:G:C8	2.38	0.59
17:Q:59:ILE:HD12	17:Q:73:VAL:HA	1.83	0.59
1:A:1002:G:H2'	1:A:1003:G:C8	2.37	0.59
1:A:299:G:H2'	1:A:300:A:C8	2.38	0.59
3:C:180:ALA:HB1	3:C:205:GLY:O	2.03	0.59
1:A:1366:C:H2'	1:A:1367:C:C6	2.38	0.59
1:A:1241:G:H2'	1:A:1242:C:H6	1.67	0.59
12:L:24:VAL:HG13	12:L:98:TYR:HE2	1.67	0.59
1:A:359:U:H2'	1:A:360:A:H8	1.66	0.59
1:A:109:A:C6	1:A:326:G:C6	2.91	0.59
1:A:551:U:H2'	1:A:552:U:C6	2.37	0.59
1:A:1072:G:H2'	1:A:1073:U:C6	2.38	0.58
7:G:38:LEU:O	7:G:42:ILE:HG13	2.03	0.58
17:Q:59:ILE:HG23	17:Q:71:PHE:CD2	2.38	0.58
1:A:456:C:H2'	1:A:457:C:C6	2.39	0.58
1:A:1316:G:N2	1:A:1319:A:OP2	2.32	0.58
1:A:324:G:OP1	20:T:70:SER:OG	2.19	0.58
15:O:11:VAL:HG21	15:O:34:LEU:HD13	1.85	0.58
1:A:1512:U:H2'	1:A:1513:A:C8	2.39	0.58
2:B:68:ILE:HG12	2:B:161:ALA:HB3	1.86	0.58
3:C:14:ILE:HG22	3:C:15:THR:HG23	1.86	0.58
1:A:13:C:N4	1:A:915:A:H62	1.99	0.58
1:A:216:G:H2'	1:A:217:C:H6	1.68	0.58
16:P:10:GLY:HA3	16:P:14:ASN:O	2.04	0.58
1:A:57:G:H2'	1:A:58:C:C6	2.38	0.58
7:G:84:ASN:N	7:G:84:ASN:OD1	2.35	0.58
1:A:976:G:OP2	1:A:1358:U:O2'	2.22	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:155:GLY:HA2	3:C:164:ARG:H	1.68	0.57
17:Q:6:LEU:HB3	17:Q:23:VAL:HG11	1.85	0.57
6:F:2:ARG:CZ	6:F:69:GLU:HG2	2.34	0.57
1:A:524:G:H2'	1:A:525:C:C6	2.39	0.57
10:J:38:ILE:HG23	10:J:71:LEU:HB3	1.87	0.57
3:C:26:LYS:HZ2	10:J:45:ARG:HE	1.50	0.57
21:U:12:LYS:HG2	21:U:22:ARG:HB3	1.86	0.57
1:A:1356:G:H2'	1:A:1357:A:C8	2.40	0.57
1:A:1541:PSU:H2'	27:A:2117:HOH:O	2.03	0.57
1:A:864:A:H2'	1:A:865:A:C8	2.40	0.57
1:A:1073:U:OP2	5:E:57:LYS:NZ	2.27	0.57
1:A:1372:U:H2'	1:A:1373:G:O4'	2.05	0.57
2:B:223:ILE:HD13	2:B:230:VAL:HG21	1.85	0.57
3:C:26:LYS:O	3:C:30:ARG:NH1	2.38	0.57
1:A:920:U:H2'	1:A:921:U:C6	2.39	0.57
2:B:102:LEU:HD21	2:B:162:ILE:HD11	1.87	0.57
6:F:10:LEU:HD12	6:F:59:TYR:HB3	1.87	0.57
1:A:1343:G:H2'	1:A:1344:C:C6	2.40	0.57
11:K:84:VAL:HG11	11:K:91:ARG:HD3	1.85	0.57
1:A:1127:G:H1	1:A:1145:C:H42	1.53	0.57
1:A:1478:C:H2'	1:A:1479:C:H6	1.70	0.57
1:A:939:G:H2'	1:A:940:C:C6	2.40	0.57
2:B:32:ILE:HD11	2:B:190:THR:HG23	1.87	0.57
10:J:30:SER:HB3	10:J:80:LYS:HB2	1.86	0.57
11:K:58:PRO:HB2	11:K:93:GLN:HG3	1.87	0.57
1:A:1419:G:H1	1:A:1481:U:H3	1.51	0.56
1:A:677:U:O2	1:A:777:A:O2'	2.23	0.56
1:A:1100:C:OP1	2:B:96:ARG:NH1	2.38	0.56
1:A:416:G:H2'	1:A:417:C:H6	1.69	0.56
4:D:57:ARG:HB3	4:D:206:PHE:HB2	1.87	0.56
11:K:18:ARG:NH2	11:K:35:PRO:O	2.30	0.56
1:A:1314:C:H2'	1:A:1315:U:C6	2.39	0.56
12:L:59:ARG:CZ	12:L:65:GLU:HG2	2.35	0.56
1:A:337:C:H2'	1:A:338:A:C8	2.41	0.56
13:M:3:ARG:HA	13:M:8:GLU:O	2.04	0.56
21:U:12:LYS:HB3	21:U:22:ARG:HD2	1.87	0.56
1:A:973:G:H3'	1:A:974:A:H5"	1.87	0.56
4:D:15:GLU:OE1	4:D:59:ARG:NH2	2.36	0.56
1:A:579:G:H5'	1:A:728:A:H1'	1.86	0.56
3:C:64:VAL:HG12	3:C:66:VAL:HG23	1.88	0.56
1:A:1251:A:N3	1:A:1369:C:O2'	2.35	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:24:VAL:HG13	12:L:98:TYR:CE2	2.40	0.55
1:A:1031:G:H2'	1:A:1032:G:H8	1.71	0.55
1:A:129(A):G:H1'	1:A:190(E):U:H2'	1.88	0.55
1:A:811:C:O2'	1:A:901:A:N1	2.40	0.55
1:A:922:G:H4'	5:E:20:GLN:HA	1.87	0.55
1:A:908:A:H2'	1:A:909:A:C8	2.41	0.55
8:H:31:PHE:O	8:H:35:ILE:HG12	2.06	0.55
18:R:40:LEU:HB3	18:R:79:LEU:HD11	1.88	0.55
1:A:1495:U:H2'	1:A:1496:C:C6	2.42	0.55
18:R:47:THR:HA	18:R:83:GLU:HB2	1.89	0.55
1:A:1262:C:H2'	1:A:1263:C:H6	1.71	0.55
2:B:162:ILE:HD12	2:B:177:ALA:HB2	1.88	0.55
3:C:150:LYS:HG3	3:C:169:ALA:HB2	1.88	0.55
13:M:64:TRP:O	13:M:66:LEU:HG	2.06	0.55
1:A:1062:U:H2'	1:A:1063:C:C6	2.42	0.55
1:A:1376:U:H2'	1:A:1377:A:C8	2.42	0.55
1:A:45:U:H2'	1:A:46:G:H8	1.67	0.55
1:A:911:U:H2'	1:A:912:C:C6	2.42	0.55
12:L:42:THR:HA	12:L:53:ARG:O	2.07	0.55
15:O:29:VAL:HG13	15:O:63:ARG:HG3	1.89	0.55
19:S:28:LYS:HG2	19:S:29:ARG:H	1.72	0.55
1:A:401:C:H2'	1:A:402:G:C8	2.41	0.55
1:A:938:A:N3	1:A:1376:U:O2'	2.32	0.55
5:E:13:ILE:HA	5:E:29:GLY:O	2.07	0.55
1:A:338:A:H2'	1:A:339:C:H6	1.72	0.55
1:A:358:U:H2'	1:A:359:U:C6	2.42	0.55
1:A:509:A:N3	1:A:543:C:O2'	2.30	0.55
16:P:53:VAL:HG12	16:P:79:VAL:HG22	1.87	0.55
1:A:1003(A):G:C5	1:A:1004:A:H1'	2.41	0.54
1:A:1366:C:O3'	10:J:60:ARG:NH2	2.38	0.54
1:A:280:C:C2	17:Q:38:ARG:HD3	2.41	0.54
1:A:1057:G:H5"	3:C:154:SER:HB2	1.89	0.54
1:A:1291:G:H4'	9:I:39:GLY:HA3	1.88	0.54
15:O:56:LEU:HA	15:O:59:MET:HE2	1.89	0.54
1:A:1037:C:H2'	1:A:1038:C:C6	2.42	0.54
1:A:344:A:H5'	1:A:345:C:H5	1.72	0.54
6:F:68:PRO:HG2	6:F:71:ARG:HG3	1.89	0.54
1:A:1030(A):G:N2	1:A:1030(D):A:OP2	2.41	0.54
1:A:1053:G:H4'	1:A:1054:C:H5"	1.89	0.54
1:A:1077:G:N2	1:A:1080:A:OP2	2.38	0.54
1:A:686:U:HO2'	1:A:687:A:H8	1.53	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:967:5MC:H2'	1:A:968:A:N7	2.23	0.54
4:D:26:CYS:HA	4:D:31:CYS:HB2	1.88	0.54
1:A:1143:G:H2'	1:A:1144:G:H8	1.72	0.54
1:A:662:G:H1	1:A:743:U:H3	1.56	0.54
9:I:112:LYS:HA	9:I:119:ALA:HB2	1.89	0.54
10:J:53:PRO:HA	14:N:41:ARG:HH21	1.71	0.54
1:A:7:G:H5'	1:A:298:A:O4'	2.08	0.54
5:E:144:THR:O	5:E:148:VAL:HG23	2.07	0.54
7:G:77:SER:HA	7:G:85:TYR:O	2.07	0.54
1:A:1123:A:H4'	10:J:37:PRO:HD2	1.89	0.54
1:A:1125:U:O4	10:J:5:ARG:NE	2.40	0.54
1:A:1197:G:H5"	27:A:2024:HOH:O	2.08	0.54
1:A:1253:G:H2'	1:A:1254:C:C6	2.42	0.54
1:A:1399:C:H4'	1:A:1400:5MC:H5"	1.89	0.54
5:E:12:LEU:HD13	5:E:31:LEU:HB2	1.90	0.54
3:C:26:LYS:HD3	10:J:45:ARG:HH21	1.73	0.54
1:A:1095:U:H2'	1:A:1096:C:C6	2.42	0.54
1:A:416:G:H2'	1:A:417:C:C6	2.43	0.54
10:J:79:ARG:O	10:J:83:GLU:N	2.40	0.54
14:N:8:GLU:HB2	14:N:11:LYS:HE3	1.89	0.54
18:R:87:ARG:O	18:R:88:LYS:HB2	2.06	0.54
1:A:31:G:N2	1:A:48:C:OP1	2.30	0.54
1:A:528:C:H41	12:L:49:ASN:ND2	2.05	0.54
3:C:24:ALA:HB1	3:C:28:GLN:HB2	1.88	0.53
1:A:1502:A:H2	1:A:1505:G:H1	1.57	0.53
1:A:190(J):U:H2'	1:A:190(K):G:H8	1.72	0.53
1:A:737:A:H2'	1:A:738:C:H6	1.73	0.53
1:A:983:A:O2'	1:A:1050:G:OP2	2.25	0.53
1:A:1080:A:O3'	5:E:16:THR:OG1	2.26	0.53
9:I:53:VAL:HG21	9:I:85:LEU:HD21	1.90	0.53
1:A:1262:C:H2'	1:A:1263:C:C6	2.44	0.53
1:A:1326:C:H2'	1:A:1327:C:H6	1.73	0.53
1:A:1417:G:O2'	1:A:1483:A:N6	2.41	0.53
1:A:664:G:OP1	18:R:64:ARG:HD2	2.08	0.53
3:C:174:PRO:HB2	3:C:177:THR:HG22	1.89	0.53
1:A:390:C:O3'	16:P:28:ARG:NH2	2.41	0.53
1:A:130:A:OP2	1:A:190(E):U:O2'	2.15	0.53
1:A:373:A:H1'	1:A:481:G:N3	2.24	0.53
1:A:518:C:H4'	1:A:519:C:O5'	2.08	0.53
1:A:1499:A:H1'	1:A:1520[A]:G:H5'	1.91	0.53
5:E:28:PHE:O	5:E:47:LYS:HA	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1250:A:H4'	9:I:68:GLY:N	2.23	0.53
1:A:1405:G:H2'	1:A:1406:U:H6	1.74	0.53
1:A:235:C:N4	27:A:1909:HOH:O	2.41	0.53
1:A:708:C:OP1	11:K:85:ARG:NH2	2.42	0.53
4:D:156:GLU:O	4:D:160:GLN:HB2	2.09	0.53
1:A:1124:G:H5'	10:J:35:SER:O	2.08	0.53
1:A:335:C:H2'	1:A:336:C:H6	1.73	0.53
9:I:112:LYS:HE3	9:I:117:HIS:O	2.08	0.53
1:A:1148:U:H2'	1:A:1149:C:O4'	2.09	0.53
1:A:113:G:H2'	1:A:114:U:C6	2.44	0.53
1:A:939:G:H5"	7:G:102:ARG:NH1	2.24	0.53
4:D:14:ARG:HG3	4:D:59:ARG:NH2	2.23	0.53
12:L:6:THR:OG1	12:L:9:GLN:HG3	2.08	0.53
3:C:12:LEU:HD11	14:N:51:GLY:HA2	1.90	0.53
19:S:36:ARG:NH1	19:S:53:ASN:HA	2.24	0.53
1:A:337:C:H2'	1:A:338:A:H8	1.74	0.53
11:K:27:ASN:OD1	11:K:28:THR:N	2.42	0.53
16:P:40:ASP:HB3	16:P:48:TRP:HB2	1.90	0.53
1:A:1281:U:H5'	1:A:1282:C:H5	1.74	0.53
1:A:401:C:H2'	1:A:402:G:H8	1.74	0.53
1:A:404:U:H5'	4:D:122:ARG:HD2	1.90	0.53
9:I:43:ALA:HA	9:I:74:ILE:HD13	1.91	0.53
1:A:23:C:N4	27:A:1911:HOH:O	2.42	0.52
1:A:394:G:H2'	1:A:395:C:C6	2.44	0.52
1:A:972:C:H4'	10:J:57:LYS:HD3	1.91	0.52
1:A:1168:A:H2'	1:A:1169:A:C8	2.44	0.52
1:A:1495:U:O4	25:A:1809:SIS:N12	2.42	0.52
1:A:559:A:OP1	5:E:126:ARG:NH2	2.39	0.52
1:A:401:C:O2'	1:A:621:A:N3	2.38	0.52
3:C:155:GLY:HA2	3:C:164:ARG:O	2.09	0.52
1:A:1338:G:H2'	1:A:1339:A:C8	2.45	0.52
5:E:17:ALA:HB2	5:E:26:PHE:HD2	1.75	0.52
5:E:8:GLU:HB3	5:E:34:VAL:HG22	1.91	0.52
1:A:1402:4OC:HM22	1:A:1403:C:H5'	1.91	0.52
1:A:399:G:H2'	1:A:400:C:C6	2.43	0.52
1:A:89:C:H2'	1:A:90:U:O4'	2.10	0.52
1:A:436:C:H2'	1:A:437:U:H6	1.74	0.52
1:A:603:U:H2'	1:A:604:G:H8	1.74	0.52
1:A:610:G:C4	1:A:611:A:C8	2.98	0.52
1:A:671:G:H5'	6:F:77:ARG:NH2	2.25	0.52
10:J:7:LYS:HG2	10:J:9:ARG:HH21	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1162:C:H2'	1:A:1163:C:C6	2.45	0.52
1:A:1491:G:C5	25:A:1809:SIS:H4	2.45	0.52
1:A:436:C:H2'	1:A:437:U:C6	2.44	0.52
10:J:15:THR:HG22	10:J:94:VAL:HB	1.92	0.52
1:A:1323:G:H2'	1:A:1324:A:C8	2.44	0.52
1:A:449:C:O2	16:P:42:ARG:NH1	2.43	0.52
3:C:180:ALA:HB3	3:C:203:PHE:HE1	1.75	0.52
4:D:150:GLU:HA	4:D:153:ARG:HG3	1.91	0.52
1:A:1399:C:C2	1:A:1502:A:N6	2.78	0.52
1:A:488:C:H2'	1:A:489:C:H6	1.75	0.52
1:A:404:U:OP2	4:D:118:ARG:NH1	2.43	0.52
15:O:21:ASP:OD2	15:O:24:SER:OG	2.27	0.52
2:B:21:ARG:HA	2:B:39:ILE:HA	1.91	0.51
3:C:41:GLY:O	3:C:45:LYS:HG2	2.10	0.51
2:B:69:LEU:HG	2:B:155:LEU:HD11	1.92	0.51
1:A:1006:C:H2'	1:A:1007:C:H6	1.75	0.51
1:A:1014:A:H2'	1:A:1015:A:C8	2.45	0.51
1:A:1030(D):A:H8	1:A:1030(D):A:O5'	1.94	0.51
1:A:580:U:H2'	1:A:581:G:O4'	2.10	0.51
4:D:12:CYS:HB3	4:D:33:MET:HG2	1.92	0.51
8:H:6:ILE:HB	8:H:85:ARG:NH1	2.25	0.51
16:P:17:TYR:HE2	16:P:41:PRO:HG3	1.75	0.51
5:E:7:GLU:OE1	5:E:37:ARG:NH2	2.42	0.51
9:I:10:ARG:HG2	9:I:75:ASP:HB2	1.91	0.51
1:A:1003(A):G:H2'	1:A:1004:A:H4'	1.93	0.51
1:A:1437:C:H2'	1:A:1438:G:H8	1.76	0.51
1:A:908:A:H2'	1:A:909:A:H8	1.74	0.51
5:E:75:THR:OG1	5:E:76:ILE:N	2.42	0.51
1:A:1238:A:H2	1:A:1241:G:N3	2.08	0.51
1:A:1211:U:H1'	1:A:1213:A:C2	2.46	0.51
1:A:1218:C:H2'	1:A:1219:U:C6	2.46	0.51
1:A:264:U:H2'	1:A:265:G:O4'	2.10	0.51
1:A:407:G:H2'	1:A:408:A:H8	1.75	0.51
1:A:457:C:H2'	1:A:458:C:H6	1.75	0.51
1:A:707:C:H2'	1:A:708:C:C6	2.46	0.51
2:B:60:ASP:CG	2:B:64:ARG:HH12	2.12	0.51
9:I:85:LEU:HD23	9:I:96:LEU:HD21	1.92	0.51
10:J:81:THR:O	10:J:85:LEU:HD23	2.11	0.51
1:A:1376:U:OP1	7:G:98:SER:OG	2.19	0.51
1:A:517:G:N1	1:A:533:A:OP2	2.40	0.51
1:A:646:U:H2'	1:A:647:C:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:836:G:C6	1:A:851:G:C6	2.99	0.51
1:A:992:U:H3	1:A:1044:A:H62	1.59	0.51
4:D:64:LEU:HD12	4:D:75:PHE:HZ	1.75	0.51
13:M:57:ARG:HG3	13:M:61:GLU:HG3	1.93	0.51
1:A:160:A:H2'	1:A:161:A:O4'	2.11	0.51
5:E:80:ILE:HD12	5:E:91:LEU:HB2	1.93	0.51
1:A:1266:G:N2	1:A:1269:A:OP2	2.32	0.51
1:A:553:A:H2'	1:A:554:C:C6	2.45	0.51
1:A:1145:C:HO2'	1:A:1146:A:P	2.34	0.50
1:A:376:G:H2'	1:A:377:G:C8	2.46	0.50
1:A:757:U:O2'	1:A:879:C:O2	2.28	0.50
4:D:111:ALA:HB2	4:D:120:LEU:HD12	1.93	0.50
4:D:43:HIS:HB3	4:D:46:LYS:HD2	1.93	0.50
1:A:1313:U:O4	19:S:4:SER:OG	2.18	0.50
1:A:509:A:O2'	1:A:510:A:OP1	2.26	0.50
1:A:62:U:H2'	1:A:63:C:C6	2.46	0.50
1:A:1367:C:C5'	10:J:60:ARG:HE	2.24	0.50
1:A:1162:C:H2'	1:A:1163:C:H6	1.75	0.50
1:A:743:U:H2'	1:A:744:C:C6	2.46	0.50
10:J:64:GLU:OE2	10:J:66:ARG:NH2	2.31	0.50
1:A:1017:G:H2'	1:A:1018:C:C6	2.46	0.50
19:S:43:GLU:N	19:S:43:GLU:OE1	2.45	0.50
1:A:415:A:H2'	1:A:416:G:H8	1.77	0.50
1:A:955:U:H1'	1:A:1227:A:N6	2.14	0.50
5:E:11:ILE:HG22	5:E:12:LEU:HD12	1.92	0.50
1:A:1347:G:H3'	9:I:108:VAL:O	2.12	0.50
1:A:1318:A:O2'	19:S:37:ARG:HB3	2.12	0.50
1:A:219:C:H2'	1:A:220:G:O4'	2.11	0.50
1:A:736:C:H2'	1:A:737:A:C8	2.46	0.50
11:K:77:MET:HE1	11:K:80:VAL:HG22	1.93	0.50
20:T:45:GLN:HA	20:T:91:LEU:HD12	1.94	0.50
1:A:1001:A:H2'	1:A:1002:G:C8	2.47	0.50
1:A:110:C:H2'	1:A:111:G:O4'	2.11	0.50
1:A:407:G:H2'	1:A:408:A:C8	2.46	0.50
1:A:513:C:H2'	1:A:514:C:C6	2.47	0.50
1:A:954:G:H2'	1:A:955:U:C6	2.47	0.50
2:B:57:PHE:HE2	2:B:185:ILE:HD11	1.77	0.50
3:C:11:ARG:HA	3:C:178:LEU:HD11	1.92	0.50
11:K:72:ALA:HB1	11:K:77:MET:HG3	1.94	0.50
1:A:985:C:H2'	1:A:986:A:C8	2.47	0.50
1:A:376:G:OP2	16:P:67:THR:HG21	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1222:G:H5"	19:S:78:ARG:HE	1.77	0.49
1:A:1256:A:H4'	1:A:1257:U:O5'	2.11	0.49
1:A:1308:U:OP1	13:M:98:VAL:N	2.36	0.49
1:A:421:U:H5'	1:A:422:C:C5	2.47	0.49
1:A:743:U:H2'	1:A:744:C:H6	1.76	0.49
4:D:190:ASP:OD1	4:D:191:ARG:N	2.44	0.49
1:A:1074:G:C5	1:A:1075:C:C5	3.00	0.49
1:A:513:C:H2'	1:A:514:C:H6	1.76	0.49
1:A:948:C:H2'	1:A:949:A:H8	1.77	0.49
9:I:10:ARG:NH1	9:I:75:ASP:OD2	2.45	0.49
1:A:1053:G:HO2'	1:A:1199:U:H5	1.60	0.49
6:F:76:ALA:O	6:F:80:ARG:HG3	2.12	0.49
1:A:671:G:H5'	6:F:77:ARG:HH21	1.76	0.49
1:A:1409:C:H2'	1:A:1410:G:H8	1.78	0.49
10:J:16:LEU:HD23	10:J:94:VAL:HG23	1.94	0.49
1:A:1236:A:H2'	1:A:1237:C:C6	2.48	0.49
1:A:1339:A:H2'	1:A:1340:A:O4'	2.12	0.49
1:A:164:U:H2'	1:A:165:C:C6	2.47	0.49
1:A:456:C:C2	1:A:457:C:C5	3.01	0.49
1:A:939:G:H5"	7:G:102:ARG:CZ	2.42	0.49
10:J:26:ALA:O	10:J:84:GLN:NE2	2.46	0.49
14:N:50:LYS:HB3	14:N:52:GLN:HG3	1.94	0.49
1:A:1326:C:H2'	1:A:1327:C:C6	2.46	0.49
1:A:872:A:C8	1:A:874:G:C8	3.00	0.49
3:C:112:SER:HB3	3:C:115:LEU:HD12	1.94	0.49
1:A:939:G:H5"	7:G:102:ARG:NH2	2.28	0.49
11:K:14:VAL:HG21	11:K:40:ILE:HD13	1.95	0.49
14:N:41:ARG:HG3	14:N:42:ILE:N	2.27	0.49
15:O:62:GLN:OE1	15:O:65:ARG:NH2	2.28	0.49
1:A:1198:G:H2'	1:A:1199:U:C6	2.48	0.49
1:A:1290:G:H2'	1:A:1291:G:H8	1.77	0.49
1:A:1369:C:H2'	1:A:1370:G:C8	2.48	0.49
1:A:977:A:O2'	1:A:979:C:OP2	2.28	0.49
2:B:204:ASN:HD22	2:B:204:ASN:H	1.60	0.49
13:M:63:THR:HG23	13:M:64:TRP:CD2	2.48	0.49
1:A:164:U:H2'	1:A:165:C:H6	1.77	0.49
1:A:614:A:H2'	1:A:615:C:C6	2.48	0.49
1:A:872:A:H4'	1:A:873:A:OP1	2.13	0.49
10:J:48:THR:OG1	10:J:62:HIS:HB3	2.13	0.49
12:L:46:LYS:HG3	12:L:94:PRO:HD3	1.95	0.49
23:W:36:A:H2'	23:W:37:A:H8	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1410:G:H2'	1:A:1411:C:C6	2.48	0.49
1:A:457:C:C2	1:A:458:C:C5	3.01	0.49
2:B:27:LYS:HD2	2:B:193:ASP:OD1	2.12	0.49
12:L:41:ARG:O	12:L:54:LYS:HA	2.12	0.49
19:S:72:GLY:HA2	19:S:75:ALA:HB3	1.95	0.49
1:A:452:A:O2'	1:A:453:A:O5'	2.31	0.48
3:C:11:ARG:HG2	3:C:178:LEU:HG	1.94	0.48
1:A:1171:G:H2'	1:A:1172:C:H6	1.78	0.48
1:A:1428:A:H2'	1:A:1429:C:C6	2.49	0.48
1:A:176:C:H2'	1:A:177:C:C6	2.48	0.48
1:A:344:A:H5'	1:A:345:C:C5	2.47	0.48
8:H:110:ALA:HB3	8:H:121:ASP:HB3	1.94	0.48
1:A:1221:G:OP2	19:S:37:ARG:NH2	2.47	0.48
1:A:924:C:H2'	1:A:925:G:C8	2.48	0.48
13:M:54:VAL:O	13:M:58:GLU:HG2	2.12	0.48
6:F:50:TYR:CE1	18:R:77:GLY:HA2	2.48	0.48
2:B:160:ASP:N	2:B:160:ASP:OD1	2.43	0.48
2:B:88:ALA:HB2	2:B:219:VAL:HG13	1.96	0.48
1:A:1111:A:N1	3:C:177:THR:HB	2.28	0.48
1:A:620:C:C2	4:D:135:LEU:HD22	2.49	0.48
1:A:5:U:H4'	1:A:6:G:O5'	2.12	0.48
5:E:142:LEU:O	5:E:143:ARG:NH1	2.37	0.48
1:A:1054:C:N4	23:W:34:G:C8	2.81	0.48
4:D:28:SER:O	4:D:30:LYS:N	2.39	0.48
1:A:1020:U:H2'	1:A:1021:G:H8	1.77	0.48
1:A:1064:G:H1'	1:A:1190:G:H21	1.79	0.48
1:A:522:C:OP2	12:L:69:TYR:OH	2.25	0.48
10:J:49:VAL:HG13	14:N:41:ARG:HB2	1.96	0.48
11:K:84:VAL:HG21	11:K:95:ILE:HD11	1.95	0.48
1:A:1179:A:H2'	1:A:1180:A:O4'	2.14	0.48
1:A:946:A:H2'	1:A:947:G:H8	1.75	0.48
7:G:72:ARG:HG2	7:G:142:GLU:OE1	2.14	0.48
1:A:1131:G:H2'	1:A:1132:C:C6	2.49	0.48
3:C:58:GLU:HB2	3:C:65:ALA:HB3	1.95	0.48
4:D:18:LYS:HE2	4:D:20:TYR:HE1	1.78	0.48
5:E:31:LEU:HD23	5:E:31:LEU:HA	1.68	0.48
13:M:4:ILE:HD12	13:M:56:LEU:HB3	1.95	0.48
1:A:1029:C:C2	1:A:1030:C:C5	3.02	0.47
1:A:1031:G:H2'	1:A:1032:G:C8	2.49	0.47
1:A:335:C:H2'	1:A:336:C:C6	2.49	0.47
1:A:362:G:OP2	12:L:34:ARG:NH2	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:658:G:H2'	1:A:659:U:C6	2.49	0.47
1:A:679:C:H2'	1:A:680:C:H6	1.78	0.47
2:B:30:ARG:HD2	2:B:31:TYR:CZ	2.49	0.47
9:I:118:LYS:HD2	9:I:121:ARG:HB2	1.96	0.47
1:A:1326:C:C2	1:A:1327:C:C5	3.01	0.47
1:A:1518[B]:MA6:H102	1:A:1519[B]:MA6:H103	1.95	0.47
8:H:48:TYR:HA	8:H:60:ARG:O	2.15	0.47
12:L:117:ARG:NH2	12:L:124:LYS:HD3	2.28	0.47
1:A:1225:A:N3	1:A:1225:A:H2'	2.29	0.47
1:A:186:C:H2'	1:A:187:C:C6	2.48	0.47
1:A:252:U:H2'	1:A:253:U:C6	2.50	0.47
1:A:1130:A:H5"	9:I:20:ARG:HH22	1.78	0.47
1:A:222:U:H2'	1:A:223:U:C6	2.49	0.47
1:A:389:A:C6	1:A:390:C:H1'	2.50	0.47
1:A:415:A:H2'	1:A:416:G:C8	2.49	0.47
1:A:983:A:N1	1:A:1222:G:N2	2.62	0.47
15:O:36:ILE:HG12	15:O:59:MET:HE3	1.97	0.47
1:A:338:A:H2'	1:A:339:C:C6	2.48	0.47
1:A:838:G:H2'	1:A:839:U:H5"	1.96	0.47
2:B:18:GLY:HA3	2:B:41:ILE:HA	1.96	0.47
13:M:23:TYR:HD2	13:M:67:GLU:HA	1.80	0.47
1:A:176:C:H2'	1:A:177:C:H6	1.78	0.47
13:M:15:VAL:O	13:M:19:LEU:HG	2.15	0.47
1:A:1223:C:OP2	19:S:78:ARG:NH2	2.46	0.47
1:A:186:C:H2'	1:A:187:C:H6	1.79	0.47
1:A:394:G:H2'	1:A:395:C:H6	1.78	0.47
1:A:865:A:H2'	1:A:866:C:C6	2.50	0.47
1:A:1347:G:O6	9:I:10:ARG:NH2	2.48	0.47
11:K:33:THR:HA	11:K:39:PRO:HA	1.96	0.47
10:J:49:VAL:HG13	14:N:41:ARG:HD2	1.95	0.47
1:A:1139:G:H4'	1:A:1140:C:H5'	1.95	0.47
1:A:663:A:N6	27:A:1924:HOH:O	2.48	0.47
1:A:689:C:H2'	1:A:690:G:O4'	2.15	0.47
15:O:64:ARG:HH21	15:O:68:ARG:NH2	2.12	0.47
1:A:13:C:H41	1:A:20:U:H3	1.63	0.47
1:A:767:A:H2'	1:A:768:A:O4'	2.15	0.47
10:J:46:ARG:NH1	10:J:64:GLU:OE1	2.48	0.47
1:A:1409:C:H2'	1:A:1410:G:C8	2.50	0.47
1:A:936:C:H2'	1:A:937:A:O4'	2.15	0.47
1:A:684:A:O2'	11:K:39:PRO:O	2.33	0.47
12:L:84:LEU:H	12:L:104:VAL:HG11	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:12:ARG:HG3	14:N:13:THR:H	1.79	0.47
14:N:22:THR:HB	14:N:33:VAL:HB	1.97	0.47
12:L:89:ARG:CZ	12:L:97:ARG:HG2	2.45	0.47
1:A:67:C:H2'	1:A:68:G:C8	2.50	0.46
2:B:74:LYS:NZ	2:B:206:ASP:OD1	2.48	0.46
5:E:101:ILE:O	5:E:120:THR:HB	2.15	0.46
1:A:1390:U:H2'	1:A:1391:U:C6	2.50	0.46
1:A:190(D):U:O2'	1:A:190(E):U:H5'	2.15	0.46
1:A:217:C:H2'	1:A:218:C:C6	2.51	0.46
1:A:267:C:H2'	1:A:268:C:C6	2.50	0.46
1:A:455:C:H2'	1:A:456:C:H6	1.80	0.46
4:D:127:THR:HB	4:D:147:ALA:HB3	1.97	0.46
5:E:90:VAL:O	5:E:120:THR:HA	2.15	0.46
10:J:14:LYS:HB3	10:J:14:LYS:HE2	1.70	0.46
1:A:1015:A:H2'	1:A:1016:A:C8	2.50	0.46
1:A:1238:A:N7	1:A:1303:C:H1'	2.29	0.46
1:A:1414:U:H2'	1:A:1415:G:C8	2.50	0.46
1:A:538:G:H2'	1:A:539:A:C8	2.51	0.46
1:A:665:A:H2'	1:A:732:C:O2	2.15	0.46
1:A:731:G:OP1	1:A:766:A:H1'	2.15	0.46
7:G:18:TYR:OH	7:G:58:PRO:HG2	2.15	0.46
1:A:129:U:O3'	1:A:129(A):G:H3'	2.16	0.46
4:D:24:GLU:HG2	4:D:25:ARG:H	1.81	0.46
6:F:9:VAL:HB	6:F:87:ARG:HB2	1.98	0.46
7:G:121:ALA:O	7:G:125:MET:HG3	2.15	0.46
7:G:94:ARG:O	7:G:97:GLN:HB3	2.15	0.46
14:N:23:ARG:NH1	14:N:28:GLY:O	2.48	0.46
19:S:11:VAL:HG13	19:S:38:SER:HB2	1.96	0.46
1:A:1090:U:H2'	1:A:1091:U:C6	2.50	0.46
1:A:1366:C:H2'	1:A:1367:C:H6	1.81	0.46
1:A:1400:5MC:H3'	1:A:1401:G:H5'	1.97	0.46
1:A:960:U:H4'	1:A:961:U:C5'	2.45	0.46
9:I:65:VAL:HG11	9:I:73:GLN:HB3	1.97	0.46
10:J:48:THR:O	14:N:34:TYR:OH	2.33	0.46
12:L:68:ALA:HB1	12:L:100:ILE:HG13	1.95	0.46
12:L:77:LEU:HD21	12:L:107:ALA:HB2	1.97	0.46
1:A:1000:U:H2'	1:A:1001:A:H8	1.77	0.46
1:A:1191:A:OP1	3:C:4:LYS:HE3	2.16	0.46
2:B:16:HIS:ND1	2:B:210:SER:HB2	2.30	0.46
1:A:1342:C:O2'	9:I:124:GLN:HB2	2.16	0.46
11:K:70:LYS:HA	11:K:73:MET:HG2	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:924:C:O2'	1:A:1502:A:N6	2.44	0.46
1:A:728:A:H2'	1:A:729:A:C8	2.50	0.46
5:E:122:GLU:OE1	5:E:131:ILE:HG13	2.16	0.46
6:F:26:ILE:HG21	6:F:63:TYR:HE2	1.80	0.46
12:L:36:VAL:HG22	12:L:82:VAL:HG12	1.97	0.46
14:N:47:LEU:HB3	14:N:53:LEU:HD21	1.97	0.46
1:A:88:A:H2'	1:A:89:C:O4'	2.16	0.46
2:B:181:PHE:CE2	8:H:70:GLN:HB3	2.51	0.46
17:Q:3:LYS:HB3	17:Q:61:GLU:HB3	1.97	0.46
3:C:179:ARG:HG2	3:C:206:GLU:O	2.15	0.46
8:H:18:ARG:HD3	8:H:18:ARG:HA	1.73	0.46
1:A:270:A:H2'	1:A:271:C:C6	2.51	0.46
1:A:57:G:H2'	1:A:58:C:H6	1.79	0.46
2:B:181:PHE:CD2	8:H:70:GLN:HB3	2.51	0.46
6:F:33:TYR:CG	6:F:75:LEU:HD23	2.51	0.46
12:L:82:VAL:O	12:L:106:ASP:HB2	2.16	0.46
19:S:77:THR:HG22	19:S:78:ARG:HD2	1.98	0.46
1:A:1030:C:H2'	1:A:1030(A):G:C8	2.51	0.45
1:A:789:U:H2'	1:A:791:G:OP2	2.15	0.45
19:S:5:LEU:O	19:S:6:LYS:HE3	2.16	0.45
1:A:13:C:N4	1:A:20:U:H3	2.13	0.45
5:E:80:ILE:CD1	5:E:91:LEU:HB2	2.46	0.45
11:K:16:SER:HA	11:K:79:SER:O	2.17	0.45
14:N:33:VAL:HA	14:N:40:CYS:HA	1.98	0.45
17:Q:3:LYS:HD3	17:Q:61:GLU:O	2.16	0.45
20:T:72:LEU:O	20:T:74:LYS:N	2.49	0.45
1:A:1347:G:N2	1:A:1373:G:H2'	2.31	0.45
19:S:10:PHE:O	19:S:39:THR:OG1	2.30	0.45
19:S:18:LYS:O	19:S:22:LEU:HG	2.16	0.45
1:A:1278:U:H5'	1:A:1279:A:O4'	2.15	0.45
1:A:1512:U:H2'	1:A:1513:A:H8	1.79	0.45
9:I:15:ALA:HA	9:I:64:THR:O	2.16	0.45
16:P:74:LEU:O	16:P:79:VAL:HG23	2.16	0.45
1:A:976:G:N2	1:A:1362:C:OP2	2.39	0.45
1:A:547:A:H4'	1:A:548:G:O5'	2.17	0.45
1:A:839:U:O2	1:A:839:U:H2'	2.16	0.45
4:D:78:LEU:HB3	4:D:93:PHE:HE1	1.81	0.45
1:A:1055:A:N7	1:A:1200:C:N4	2.64	0.45
1:A:1437:C:H2'	1:A:1438:G:C8	2.51	0.45
1:A:749:C:H2'	1:A:750:G:H8	1.81	0.45
6:F:47:ARG:HA	6:F:57:GLN:HG2	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:65:ALA:O	7:G:69:VAL:HG23	2.17	0.45
7:G:92:SER:O	7:G:96:GLN:HG3	2.16	0.45
1:A:302:G:H5"	12:L:17:LYS:NZ	2.32	0.45
1:A:1350:A:OP2	9:I:118:LYS:HE3	2.17	0.45
1:A:255:G:H2'	1:A:256:U:C6	2.52	0.45
1:A:327:A:O2'	1:A:328:C:H6	2.00	0.45
1:A:32:A:H2'	1:A:33:A:C8	2.52	0.45
1:A:452:A:H2'	1:A:453:A:C8	2.51	0.45
1:A:679:C:H2'	1:A:680:C:C6	2.51	0.45
1:A:713:G:H2'	1:A:714:G:C8	2.52	0.45
1:A:974:A:OP1	1:A:974:A:H8	1.99	0.45
16:P:11:SER:N	16:P:14:ASN:O	2.48	0.45
23:W:36:A:H2'	23:W:37:A:C8	2.51	0.45
1:A:185:A:H2'	1:A:186:C:C6	2.52	0.45
1:A:391:G:C6	1:A:392:G:C5	3.05	0.45
1:A:477:G:H2'	1:A:478:A:C8	2.51	0.45
5:E:151:LEU:HD23	5:E:151:LEU:HA	1.73	0.45
7:G:15:ASP:OD1	7:G:44:TYR:OH	2.34	0.45
1:A:1474:G:C2	1:A:1475:G:C5	3.04	0.45
1:A:1516[A]:G:H2'	1:A:1518[A]:MA6:OP2	2.16	0.45
1:A:519:C:H2'	1:A:520:A:C8	2.51	0.45
1:A:560:U:H5'	1:A:566:G:N2	2.31	0.45
4:D:11:LEU:HD13	4:D:66:ARG:HD2	1.99	0.45
1:A:437:U:H5"	4:D:155:LEU:HD11	1.97	0.45
5:E:100:VAL:HG13	5:E:118:ILE:HG22	1.99	0.45
8:H:65:TYR:HA	8:H:79:VAL:HG23	1.99	0.45
9:I:90:PRO:O	9:I:93:ARG:HG3	2.16	0.45
12:L:46:LYS:HB2	12:L:92:0TD:H8	1.99	0.45
14:N:27:CYS:HB3	14:N:43:CYS:SG	2.56	0.45
17:Q:58:GLU:OE1	17:Q:75:ARG:NE	2.50	0.45
1:A:1008:C:H42	1:A:1021:G:H1	1.60	0.45
1:A:115:G:H4'	1:A:116:A:O5'	2.17	0.45
1:A:463:A:H2'	1:A:474:G:O4'	2.16	0.45
1:A:983:A:C2	1:A:984:C:C6	3.05	0.45
7:G:151:TYR:HB3	7:G:154:TYR:HD2	1.81	0.45
13:M:15:VAL:HG21	13:M:48:LEU:HD21	1.99	0.45
18:R:33:ASP:OD1	18:R:36:ASN:N	2.50	0.45
1:A:1419:G:H2'	1:A:1420:C:C6	2.52	0.44
1:A:1428:A:H2'	1:A:1429:C:H6	1.82	0.44
1:A:1443:G:H5"	1:A:1446:A:C5'	2.41	0.44
1:A:179:A:H2'	1:A:180:U:C6	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:371:G:O2'	1:A:372:C:H5'	2.16	0.44
1:A:942:G:H2'	1:A:943:U:H6	1.81	0.44
11:K:54:ARG:O	11:K:57:THR:HG22	2.17	0.44
18:R:52:PRO:HB2	18:R:54:ARG:HG3	1.99	0.44
1:A:1229:A:H2'	1:A:1230:C:C6	2.52	0.44
1:A:1414:U:H2'	1:A:1415:G:H8	1.82	0.44
1:A:254:G:OP1	17:Q:67:LYS:O	2.35	0.44
1:A:327:A:O2'	1:A:328:C:O4'	2.31	0.44
1:A:375:U:C2	1:A:376:G:C8	3.06	0.44
1:A:432:A:H3'	1:A:433:C:H6	1.82	0.44
1:A:794:A:H2'	1:A:795:C:C6	2.52	0.44
2:B:158:LEU:H	2:B:158:LEU:HD12	1.82	0.44
1:A:437:U:C5'	4:D:155:LEU:HD11	2.48	0.44
1:A:1349:A:OP1	9:I:120:ARG:HB2	2.18	0.44
1:A:356:A:N3	1:A:368:U:O2'	2.47	0.44
1:A:552:U:H2'	1:A:553:A:C8	2.52	0.44
1:A:611:A:H2	1:A:629:G:H22	1.58	0.44
1:A:1464:G:H2'	1:A:1465:C:C6	2.52	0.44
1:A:1491:G:C6	25:A:1809:SIS:H4	2.52	0.44
1:A:299:G:N2	1:A:565:U:O2	2.51	0.44
3:C:111:LEU:HD21	3:C:144:SER:O	2.18	0.44
12:L:110:VAL:CG2	12:L:120:TYR:HB3	2.47	0.44
12:L:44:THR:HA	12:L:45:PRO:HD3	1.84	0.44
13:M:91:ARG:HD2	13:M:91:ARG:HA	1.70	0.44
18:R:21:LYS:HE3	18:R:54:ARG:O	2.17	0.44
1:A:448:A:OP2	1:A:485:G:N2	2.44	0.44
1:A:757:U:H2'	1:A:758:G:O4'	2.17	0.44
5:E:65:ASN:ND2	5:E:65:ASN:O	2.51	0.44
12:L:27:LEU:HB3	12:L:62:SER:HB2	1.98	0.44
14:N:58:LYS:HE3	14:N:58:LYS:HB3	1.80	0.44
17:Q:59:ILE:HD11	17:Q:73:VAL:HG22	2.00	0.44
1:A:1040:U:H2'	1:A:1041:A:C8	2.53	0.44
1:A:1505:G:O2'	1:A:1506:U:OP2	2.32	0.44
1:A:339:C:H2'	1:A:340:U:C6	2.53	0.44
1:A:769:G:H4'	1:A:1513:A:H4'	2.00	0.44
1:A:831:U:H2'	1:A:832:C:H6	1.83	0.44
6:F:25:ILE:HD13	6:F:82:ARG:HD2	2.00	0.44
1:A:673:G:O3'	6:F:87:ARG:NH2	2.50	0.44
13:M:23:TYR:CD2	13:M:67:GLU:HA	2.53	0.44
16:P:55:ARG:O	16:P:58:TYR:HB3	2.17	0.44
18:R:40:LEU:HD23	18:R:40:LEU:HA	1.79	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1092:A:N3	1:A:1183:A:N6	2.65	0.44
1:A:1244:C:H2'	1:A:1245:A:H8	1.82	0.44
1:A:1253:G:H2'	1:A:1254:C:H6	1.81	0.44
1:A:149:A:H2'	1:A:150:C:C6	2.52	0.44
1:A:636:U:H2'	1:A:637:G:C8	2.52	0.44
1:A:677:U:H2'	1:A:678:U:H6	1.83	0.44
3:C:155:GLY:HA3	3:C:163:ALA:HB1	1.99	0.44
15:O:24:SER:HB2	15:O:27:VAL:HG23	1.99	0.44
15:O:2:PRO:HB2	15:O:3:ILE:H	1.54	0.44
17:Q:29:HIS:HB3	17:Q:33:GLY:H	1.82	0.44
1:A:1171:G:H2'	1:A:1172:C:C6	2.53	0.44
1:A:1342:C:H2'	1:A:1343:G:C8	2.53	0.44
1:A:1498:UR3:O4'	1:A:1519[A]:MA6:H2	2.18	0.44
1:A:374:A:H2'	1:A:374:A:N3	2.33	0.44
1:A:458:C:C2	1:A:459:G:C8	3.06	0.44
1:A:730:G:C5	1:A:731:G:H1'	2.53	0.44
1:A:1290:G:H2'	1:A:1291:G:C8	2.52	0.44
1:A:1391:U:H2'	1:A:1392:G:H8	1.83	0.44
1:A:1410:G:H2'	1:A:1411:C:H6	1.83	0.44
1:A:113:G:C1'	1:A:354:G:H5'	2.45	0.44
1:A:500:G:H2'	1:A:501:C:C6	2.53	0.44
1:A:51:A:N7	1:A:114:U:O2'	2.45	0.44
4:D:64:LEU:HD12	4:D:75:PHE:CZ	2.53	0.44
9:I:78:LYS:HD3	9:I:101:PHE:CD1	2.53	0.44
16:P:17:TYR:CE2	16:P:41:PRO:HG3	2.53	0.44
17:Q:63:ARG:HG2	17:Q:64:PRO:HD2	2.00	0.44
18:R:59:SER:H	18:R:62:GLU:HB2	1.83	0.44
1:A:1273:G:H2'	1:A:1274:G:O4'	2.17	0.43
1:A:1401:G:C2	1:A:1402:4OC:H1'	2.52	0.43
1:A:1423:G:H2'	1:A:1424:C:C6	2.53	0.43
1:A:152:A:C8	1:A:153:C:C5	3.05	0.43
7:G:115:ARG:HB2	7:G:118:VAL:HG23	1.99	0.43
8:H:119:LEU:HB2	8:H:124:ALA:HB2	2.00	0.43
9:I:93:ARG:HB3	9:I:93:ARG:NH1	2.33	0.43
10:J:8:LEU:HD23	10:J:96:ILE:HG12	2.00	0.43
16:P:28:ARG:NH1	16:P:29:ASP:OD1	2.50	0.43
1:A:1085:U:H3'	1:A:1086:U:C5	2.53	0.43
1:A:113:G:H2'	1:A:114:U:H6	1.83	0.43
1:A:120:A:C6	1:A:122:G:C2	3.06	0.43
1:A:1264:C:H2'	1:A:1265:G:C8	2.52	0.43
1:A:1461:G:H2'	1:A:1462:G:H8	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:185:A:H2'	1:A:186:C:H6	1.83	0.43
1:A:333:G:H2'	1:A:334:C:H6	1.83	0.43
2:B:15:VAL:HG12	2:B:210:SER:HB3	2.00	0.43
4:D:3:ARG:HD3	4:D:3:ARG:HA	1.86	0.43
6:F:30:LEU:HD23	6:F:30:LEU:HA	1.81	0.43
13:M:70:LEU:HD23	13:M:70:LEU:HA	1.75	0.43
1:A:1270:C:H2'	1:A:1271:G:C8	2.53	0.43
1:A:434:U:H2'	1:A:435:C:C6	2.53	0.43
1:A:463:A:H3'	1:A:474:G:H8	1.83	0.43
1:A:514:C:H2'	1:A:515:G:H8	1.84	0.43
1:A:768:A:H2'	1:A:769:G:O4'	2.18	0.43
9:I:70:LYS:O	9:I:74:ILE:HG13	2.19	0.43
1:A:1244:C:H2'	1:A:1245:A:C8	2.53	0.43
1:A:1438:G:H2'	1:A:1439:C:C6	2.54	0.43
1:A:1464:G:H2'	1:A:1465:C:H6	1.82	0.43
1:A:189:G:H2'	1:A:190:C:C6	2.54	0.43
1:A:358:U:H2'	1:A:359:U:H6	1.83	0.43
16:P:28:ARG:HG3	16:P:29:ASP:OD1	2.19	0.43
1:A:1150:U:O4	1:A:1151:A:N6	2.51	0.43
1:A:1424:C:H2'	1:A:1425:U:O4'	2.18	0.43
1:A:527:G7M:H8	1:A:527:G7M:H5"	2.00	0.43
1:A:9:G:H5"	5:E:126:ARG:HD3	1.99	0.43
18:R:25:THR:HG22	18:R:42:ARG:HH22	1.83	0.43
18:R:53:ARG:HA	18:R:56:THR:OG1	2.17	0.43
19:S:5:LEU:HD12	19:S:9:VAL:HG13	2.01	0.43
1:A:1221:G:O3'	19:S:77:THR:HG21	2.18	0.43
1:A:1285:A:H8	1:A:1285:A:O5'	2.02	0.43
1:A:1318:A:H4'	19:S:10:PHE:CD2	2.54	0.43
1:A:1425:U:H2'	1:A:1426:C:H6	1.84	0.43
1:A:190(K):G:H2'	1:A:190(L):U:H6	1.78	0.43
1:A:372:C:H1'	1:A:373:A:OP2	2.19	0.43
1:A:539:A:H2'	1:A:540:G:H8	1.83	0.43
1:A:939:G:H2'	1:A:940:C:H6	1.82	0.43
1:A:991:U:O2	1:A:993:G:H8	2.00	0.43
2:B:51:LEU:HG	2:B:201:ILE:HG23	2.01	0.43
1:A:1190:G:H5'	3:C:176:HIS:NE2	2.34	0.43
5:E:79:GLU:O	8:H:104:ARG:NH1	2.52	0.43
13:M:23:TYR:HE2	13:M:70:LEU:HB3	1.84	0.43
1:A:1013:G:N2	1:A:1016:A:OP2	2.51	0.43
1:A:1034:G:H2'	1:A:1035:A:C8	2.49	0.43
1:A:1162:C:C2	1:A:1163:C:C5	3.07	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:442:C:H2'	1:A:443:C:H6	1.82	0.43
1:A:674:G:H2'	1:A:675:A:C8	2.54	0.43
1:A:833:U:H2'	1:A:834:C:C6	2.54	0.43
2:B:16:HIS:CD2	2:B:204:ASN:HB2	2.54	0.43
11:K:48:ILE:HD12	11:K:63:LEU:HB2	2.01	0.43
13:M:10:PRO:O	13:M:45:VAL:HG11	2.19	0.43
17:Q:45:HIS:HB3	17:Q:72:ARG:HG2	1.99	0.43
1:A:1161:C:C2	1:A:1162:C:C5	3.07	0.43
1:A:567:G:H2'	1:A:568:G:O4'	2.19	0.43
12:L:110:VAL:HG23	12:L:120:TYR:HB3	2.00	0.43
21:U:13:ILE:HG22	21:U:22:ARG:NE	2.33	0.43
1:A:1006:C:H2'	1:A:1007:C:C6	2.53	0.43
1:A:103:C:P	20:T:17:ARG:HH12	2.42	0.43
1:A:1220:G:H2'	1:A:1221:G:C8	2.54	0.43
1:A:1318:A:H4'	19:S:10:PHE:CE2	2.54	0.43
1:A:1518[B]:MA6:H93	1:A:1519[B]:MA6:N1	2.34	0.43
1:A:390:C:H2'	1:A:391:G:C8	2.54	0.43
1:A:501:C:O3'	12:L:118:SER:OG	2.35	0.43
1:A:965:A:H4'	1:A:966:M2G:OP1	2.17	0.43
2:B:91:PRO:HG2	2:B:155:LEU:HG	2.00	0.43
6:F:70:ASP:N	6:F:70:ASP:OD1	2.51	0.43
1:A:1320:C:H2'	1:A:1321:C:O4'	2.19	0.43
1:A:1413:A:H2	1:A:1487:G:H22	1.65	0.43
1:A:605:U:H2'	1:A:606:G:O4'	2.19	0.43
1:A:809:G:C6	1:A:810:C:C5	3.06	0.43
3:C:24:ALA:HB3	3:C:29:TYR:HD1	1.84	0.43
12:L:53:ARG:NH1	12:L:92:0TD:OD2	2.35	0.43
20:T:88:VAL:O	20:T:92:LEU:HB2	2.19	0.43
1:A:1157:A:C2	1:A:1181:G:N3	2.87	0.42
1:A:1213:A:N6	1:A:1215:G:N3	2.67	0.42
1:A:1323:G:H2'	1:A:1324:A:H8	1.83	0.42
1:A:19:C:H2'	1:A:20:U:H6	1.82	0.42
1:A:560:U:H5'	1:A:566:G:C2	2.54	0.42
1:A:828:A:H4'	1:A:828:A:OP1	2.18	0.42
2:B:28:PHE:CD2	2:B:190:THR:HA	2.54	0.42
11:K:122:LYS:HE3	11:K:122:LYS:HB2	1.84	0.42
1:A:538:G:H5"	12:L:114:LYS:HB2	2.01	0.42
1:A:658:G:H2'	1:A:659:U:H6	1.84	0.42
1:A:748:C:H6	1:A:748:C:O5'	2.01	0.42
4:D:150:GLU:HB3	4:D:153:ARG:NH2	2.35	0.42
4:D:159:ARG:O	4:D:163:GLU:HB2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:184:LYS:HB2	4:D:184:LYS:HE3	1.84	0.42
13:M:96:LEU:O	13:M:110:ARG:NH1	2.52	0.42
15:O:52:SER:O	15:O:55:GLY:N	2.53	0.42
1:A:1025:U:H2'	1:A:1026:G:C4	2.53	0.42
1:A:1034:G:C2	1:A:1035:A:C5	3.07	0.42
1:A:1493:A:N1	23:W:36:A:O2'	2.45	0.42
1:A:41:G:H2'	1:A:42:G:C8	2.54	0.42
1:A:954:G:H2'	1:A:955:U:O4'	2.19	0.42
3:C:130:VAL:HG11	3:C:157:ILE:HG23	2.02	0.42
7:G:16:LEU:H	7:G:16:LEU:HD22	1.85	0.42
1:A:263:A:OP2	20:T:79:ARG:NH1	2.51	0.42
1:A:517:G:OP2	1:A:517:G:H8	2.01	0.42
1:A:309:G:O2'	1:A:607:A:N1	2.51	0.42
1:A:779:C:H2'	1:A:780:A:O4'	2.19	0.42
1:A:1056:U:H5'	3:C:163:ALA:HB2	2.00	0.42
1:A:736:C:O2'	6:F:90:VAL:O	2.35	0.42
6:F:95:GLU:HA	6:F:96:PRO:HD3	1.90	0.42
8:H:25:ASP:OD1	8:H:25:ASP:N	2.50	0.42
19:S:31:ILE:HA	19:S:31:ILE:HD12	1.88	0.42
1:A:1020:U:H2'	1:A:1021:G:C8	2.54	0.42
1:A:1160:G:C2	1:A:1161:C:C6	3.07	0.42
1:A:1305:G:OP2	21:U:2:GLY:N	2.53	0.42
1:A:290:C:H2'	1:A:291:C:O4'	2.19	0.42
1:A:313:A:H2'	1:A:314:C:C6	2.54	0.42
1:A:350:G:O2'	1:A:351:G:H5'	2.20	0.42
1:A:60:A:OP2	1:A:60:A:H8	2.02	0.42
2:B:50:GLU:HB3	2:B:200:ILE:O	2.18	0.42
7:G:74:GLU:O	7:G:88:PRO:HA	2.19	0.42
17:Q:56:VAL:HG12	17:Q:77:VAL:HB	2.01	0.42
19:S:36:ARG:HH12	19:S:53:ASN:HA	1.84	0.42
1:A:1242:C:H2'	1:A:1243:C:C6	2.54	0.42
1:A:1257:U:O2'	1:A:1258:G:OP2	2.34	0.42
1:A:328:C:H4'	1:A:329:A:O5'	2.19	0.42
1:A:565:U:H3'	1:A:566:G:H2'	2.01	0.42
3:C:26:LYS:HD3	10:J:45:ARG:NH2	2.34	0.42
5:E:131:ILE:HD13	5:E:131:ILE:HA	1.90	0.42
23:W:30:G:C2	23:W:31:A:C8	3.07	0.42
1:A:1448:C:H2'	1:A:1449:C:H6	1.85	0.42
1:A:1495:U:H2'	1:A:1496:C:H6	1.81	0.42
1:A:719:C:O2'	18:R:49:LYS:HB3	2.20	0.42
4:D:173:TRP:O	4:D:174:LEU:HD23	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:52:SER:O	4:D:56:VAL:HG23	2.19	0.42
17:Q:5:VAL:HA	17:Q:59:ILE:O	2.19	0.42
1:A:1106:G:H5"	3:C:172:ARG:HB3	2.00	0.42
1:A:177:C:OP1	20:T:65:LYS:HD3	2.19	0.42
1:A:46:G:H2'	1:A:366:C:C5	2.55	0.42
1:A:674:G:H2'	1:A:675:A:H8	1.84	0.42
1:A:983:A:H2	1:A:984:C:C6	2.37	0.42
13:M:56:LEU:HD23	13:M:56:LEU:HA	1.82	0.42
13:M:84:ILE:HG13	13:M:86:CYS:H	1.85	0.42
14:N:9:LYS:HD2	14:N:23:ARG:HB2	2.02	0.42
15:O:55:GLY:HA2	15:O:58:MET:HE2	2.02	0.42
20:T:54:LYS:HA	20:T:57:ARG:NH1	2.35	0.42
20:T:60:GLU:HG3	20:T:81:LYS:HE3	2.02	0.42
1:A:1069:C:O2'	1:A:1192:C:H1'	2.20	0.42
1:A:1291:G:H2'	1:A:1292:U:C6	2.55	0.42
1:A:1378:C:C5	1:A:1379:G:C8	3.08	0.42
1:A:1480:G:C6	1:A:1481:U:C4	3.07	0.42
1:A:339:C:H2'	1:A:340:U:H6	1.85	0.42
2:B:24:TRP:HB3	2:B:40:HIS:CE1	2.54	0.42
21:U:25:LYS:HA	21:U:25:LYS:HE3	2.00	0.42
1:A:1405:G:H1'	1:A:1519[A]:MA6:O4'	2.20	0.42
1:A:62:U:H2'	1:A:63:C:H6	1.85	0.42
18:R:53:ARG:NH1	18:R:58:LEU:O	2.44	0.42
1:A:1264:C:H2'	1:A:1265:G:H8	1.85	0.41
1:A:1342:C:H2'	1:A:1343:G:H8	1.84	0.41
1:A:1425:U:H2'	1:A:1426:C:C6	2.55	0.41
1:A:1431:C:H2'	1:A:1432:G:O4'	2.20	0.41
1:A:1472:U:H2'	1:A:1473:A:C8	2.55	0.41
13:M:34:LEU:HD13	13:M:39:ILE:HB	2.01	0.41
15:O:55:GLY:O	15:O:59:MET:HG3	2.20	0.41
1:A:1397:C:C4	22:Y:5:U:H5"	2.55	0.41
1:A:1262:C:C2	1:A:1263:C:C5	3.08	0.41
1:A:1423:G:H2'	1:A:1424:C:H6	1.85	0.41
1:A:1426:C:H2'	1:A:1427:U:C6	2.55	0.41
1:A:258:G:H2'	1:A:259:G:H8	1.85	0.41
1:A:411:A:OP2	4:D:25:ARG:NH2	2.47	0.41
1:A:511:C:C2	1:A:512:U:C5	3.08	0.41
1:A:530:G:O6	22:Y:3:U:H1'	2.20	0.41
12:L:117:ARG:NE	12:L:123:LYS:O	2.51	0.41
1:A:1063:C:H2'	1:A:1064:G:C8	2.56	0.41
1:A:1238:A:C2	1:A:1241:G:N3	2.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:971:G:C8	1:A:1365:G:H4'	2.55	0.41
1:A:1390:U:H2'	1:A:1391:U:H6	1.86	0.41
1:A:1440:C:H2'	1:A:1441:G:O4'	2.21	0.41
1:A:552:U:H4'	12:L:86:ARG:HG3	2.02	0.41
1:A:818:G:O2'	1:A:820:U:OP2	2.27	0.41
4:D:76:ARG:HD2	4:D:207:TYR:CE1	2.55	0.41
5:E:150:ARG:HE	5:E:150:ARG:HB2	1.73	0.41
12:L:7:ILE:HA	12:L:7:ILE:HD13	1.82	0.41
17:Q:60:ILE:HG12	17:Q:61:GLU:N	2.35	0.41
18:R:26:LEU:HA	18:R:26:LEU:HD12	1.77	0.41
1:A:1223:C:P	19:S:78:ARG:HH21	2.43	0.41
23:W:28:G:H2'	23:W:28:G:N3	2.34	0.41
1:A:1057:G:H2'	1:A:1058:G:O4'	2.20	0.41
1:A:252:U:H2'	1:A:253:U:H6	1.85	0.41
1:A:673:G:H2'	1:A:674:G:H8	1.75	0.41
1:A:963:G:HO2'	10:J:54:PHE:HZ	1.65	0.41
5:E:17:ALA:HA	5:E:26:PHE:HA	2.02	0.41
12:L:5:PRO:HD2	27:L:304:HOH:O	2.19	0.41
1:A:1048:G:O3'	1:A:1049:U:H3'	2.21	0.41
1:A:109:A:H5'	1:A:110:C:C5	2.56	0.41
1:A:1181:G:O2'	1:A:1182:G:O5'	2.36	0.41
1:A:1270:C:H4'	1:A:1313:U:O2'	2.19	0.41
1:A:1502:A:H5'	1:A:1504:G:N7	2.35	0.41
1:A:219:C:C4	1:A:220:G:C8	3.09	0.41
1:A:370:C:O2'	1:A:371:G:H5'	2.21	0.41
1:A:442:C:H2'	1:A:443:C:C6	2.56	0.41
1:A:474:G:H2'	1:A:475:G:H8	1.85	0.41
1:A:620:C:H2'	1:A:621:A:O4'	2.20	0.41
1:A:942:G:H2'	1:A:943:U:C6	2.55	0.41
3:C:110:ASN:O	3:C:141:VAL:HG22	2.20	0.41
4:D:152:SER:O	4:D:158:ILE:HD12	2.20	0.41
4:D:57:ARG:NH2	5:E:107:ARG:HE	2.18	0.41
7:G:17:VAL:HG12	7:G:18:TYR:CD1	2.55	0.41
12:L:69:TYR:O	12:L:100:ILE:HB	2.21	0.41
19:S:55:LYS:HG2	19:S:56:GLN:HG3	2.02	0.41
19:S:40:ILE:HB	19:S:67:VAL:O	2.21	0.41
20:T:62:LEU:HA	20:T:62:LEU:HD22	1.71	0.41
1:A:1028:C:H2'	1:A:1029:C:C6	2.55	0.41
1:A:1091:U:O2	1:A:1093:A:C8	2.73	0.41
1:A:1160:G:C6	1:A:1161:C:C5	3.09	0.41
1:A:1254:C:OP1	10:J:45:ARG:HG2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:21:G:O5'	1:A:21:G:H8	2.03	0.41
1:A:411:A:N3	1:A:413:G:O2'	2.39	0.41
1:A:669:U:H2'	1:A:670:G:C8	2.55	0.41
1:A:677:U:H2'	1:A:678:U:C6	2.55	0.41
5:E:53:LEU:H	5:E:53:LEU:HG	1.63	0.41
13:M:51:ALA:O	13:M:54:VAL:HG12	2.21	0.41
16:P:71:ARG:HD3	16:P:75:ARG:HH21	1.86	0.41
17:Q:59:ILE:HG23	17:Q:71:PHE:HD2	1.84	0.41
19:S:29:ARG:N	19:S:29:ARG:HD2	2.36	0.41
1:A:1036:G:H2'	1:A:1037:C:C6	2.56	0.41
1:A:1405:G:O2'	1:A:1518[B]:MA6:O2'	2.36	0.41
1:A:1478:C:H2'	1:A:1479:C:C6	2.54	0.41
1:A:361:G:H2'	1:A:362:G:O4'	2.20	0.41
1:A:683:G:H2'	1:A:684:A:C8	2.55	0.41
1:A:977:A:N6	1:A:1224:G:O5'	2.54	0.41
2:B:172:ILE:HG13	2:B:172:ILE:H	1.51	0.41
2:B:70:PHE:O	2:B:92:TYR:HA	2.21	0.41
2:B:88:ALA:HB1	2:B:90:MET:HG2	2.02	0.41
4:D:70:ILE:HG22	4:D:71:SER:O	2.21	0.41
6:F:69:GLU:CD	6:F:69:GLU:H	2.23	0.41
12:L:40:VAL:HG11	12:L:75:HIS:CE1	2.55	0.41
16:P:52:ASP:OD1	16:P:55:ARG:HB2	2.21	0.41
1:A:1172:C:H2'	1:A:1173:G:H8	1.86	0.41
1:A:1268:A:N3	1:A:1326:C:O2'	2.48	0.41
1:A:1406:U:C5	1:A:1407:5MC:HM52	2.56	0.41
1:A:324:G:N2	1:A:327:A:C8	2.89	0.41
1:A:345:C:OP2	1:A:345:C:H6	2.04	0.41
1:A:563:A:H2'	1:A:567:G:C8	2.56	0.41
1:A:707:C:H2'	1:A:708:C:H6	1.84	0.41
2:B:215:LEU:HD23	2:B:215:LEU:HA	1.84	0.41
2:B:87:ARG:HH21	2:B:219:VAL:HB	1.85	0.41
2:B:33:TYR:HB2	2:B:43:ASP:HA	2.03	0.41
3:C:116:VAL:O	3:C:120:VAL:HG23	2.21	0.41
4:D:61:LYS:HD2	4:D:207:TYR:OH	2.20	0.41
1:A:1116:C:O2'	9:I:108:VAL:HG21	2.21	0.41
19:S:5:LEU:HD21	19:S:70:LYS:HZ1	1.85	0.41
1:A:1049:U:H4'	1:A:1050:G:O5'	2.21	0.41
1:A:1242:C:H2'	1:A:1243:C:H6	1.86	0.41
1:A:166:G:H2'	1:A:167:G:H8	1.86	0.41
2:B:103:THR:OG1	2:B:176:GLU:OE1	2.37	0.41
2:B:16:HIS:CE1	2:B:210:SER:HB2	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:68:ILE:O	2:B:90:MET:HB3	2.20	0.41
1:A:545:C:H5'	4:D:72:GLU:HB2	2.02	0.41
8:H:63:LEU:H	8:H:63:LEU:HD22	1.85	0.41
10:J:90:LEU:N	10:J:91:PRO:HD2	2.35	0.41
18:R:19:LYS:HB2	18:R:19:LYS:HE3	1.79	0.41
19:S:15:LEU:O	19:S:19:VAL:HG12	2.20	0.41
20:T:68:LYS:HA	20:T:68:LYS:HE3	2.03	0.41
20:T:76:ALA:O	20:T:79:ARG:HB2	2.21	0.41
1:A:1057:G:H5"	3:C:154:SER:CB	2.50	0.41
1:A:10:A:H2'	1:A:11:G:C8	2.56	0.41
1:A:1251:A:H4'	9:I:12:GLU:OE2	2.21	0.41
1:A:1315:U:H2'	1:A:1316:G:O4'	2.21	0.41
1:A:383:A:C5	1:A:384:G:H1'	2.55	0.41
1:A:791:G:H2'	1:A:792:A:H5'	2.02	0.41
2:B:59:GLU:HB2	2:B:221:LEU:HD11	2.03	0.41
3:C:91:LEU:HD23	3:C:92:ALA:N	2.36	0.41
4:D:148:VAL:HG11	4:D:158:ILE:HD13	2.03	0.41
9:I:53:VAL:CG2	9:I:85:LEU:HD21	2.50	0.41
13:M:3:ARG:NE	13:M:7:VAL:HG12	2.36	0.41
1:A:1072:G:C6	1:A:1073:U:C4	3.08	0.41
1:A:129(A):G:C2	1:A:190(E):U:H5"	2.56	0.41
1:A:440:A:C8	1:A:442:C:C5	3.08	0.41
1:A:489:C:H2'	1:A:490:G:H8	1.85	0.41
1:A:563:A:N6	27:A:1936:HOH:O	2.54	0.41
2:B:48:MET:HA	2:B:51:LEU:HB2	2.02	0.41
3:C:202:ILE:HG22	3:C:204:LEU:HD23	2.03	0.41
13:M:22:ILE:HB	13:M:25:ILE:HB	2.02	0.41
14:N:47:LEU:HD12	14:N:52:GLN:HB2	2.02	0.41
20:T:63:ILE:HG22	20:T:77:ALA:HB1	2.04	0.41
21:U:6:ARG:H	21:U:6:ARG:HG2	1.64	0.41
1:A:1007:C:C2	1:A:1023:G:N1	2.89	0.40
1:A:1072:G:C5	1:A:1073:U:C4	3.09	0.40
1:A:971:G:H1'	1:A:1365:G:O2'	2.21	0.40
3:C:26:LYS:H	3:C:26:LYS:HG2	1.56	0.40
4:D:162:LEU:HD23	4:D:162:LEU:HA	1.86	0.40
8:H:17:THR:HG22	8:H:63:LEU:HG	2.02	0.40
13:M:88:ARG:HG3	13:M:98:VAL:CG1	2.51	0.40
14:N:50:LYS:HG2	14:N:52:GLN:HE21	1.85	0.40
1:A:1224:G:H2'	19:S:78:ARG:HH22	1.85	0.40
1:A:1257:U:H4'	1:A:1258:G:O5'	2.21	0.40
1:A:1332:A:H2'	1:A:1333:A:C8	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1407:5MC:N4	25:A:1809:SIS:O53	2.51	0.40
1:A:376:G:H2'	1:A:377:G:H8	1.86	0.40
1:A:427:U:OP2	4:D:36:ARG:NH2	2.47	0.40
2:B:70:PHE:HE2	2:B:90:MET:HG3	1.87	0.40
2:B:8:LYS:N	2:B:8:LYS:HE3	2.36	0.40
9:I:17:VAL:HG11	9:I:81:ILE:HA	2.03	0.40
1:A:1441:G:H4'	1:A:1442:G:C6	2.55	0.40
1:A:17:U:H2'	1:A:18:C:H6	1.83	0.40
1:A:458:C:C4	1:A:459:G:C5	3.09	0.40
1:A:552:U:H2'	1:A:553:A:H8	1.86	0.40
1:A:855:G:C6	1:A:856:C:C4	3.09	0.40
2:B:189:ASP:OD1	2:B:189:ASP:N	2.43	0.40
3:C:116:VAL:HG21	3:C:202:ILE:HD11	2.03	0.40
5:E:147:ASP:OD1	5:E:147:ASP:N	2.53	0.40
7:G:113:GLU:HG3	7:G:119:ARG:HA	2.03	0.40
8:H:87:SER:HB2	8:H:93:VAL:HB	2.04	0.40
11:K:65:ALA:HB1	11:K:98:LEU:HD23	2.04	0.40
15:O:5:LYS:HD3	15:O:5:LYS:H	1.86	0.40
18:R:34:TYR:CE1	18:R:35:ARG:HG3	2.56	0.40
1:A:477:G:C2	1:A:478:A:C5	3.10	0.40
1:A:692:U:H2'	1:A:694:A:OP2	2.20	0.40
2:B:97:TRP:CZ2	2:B:102:LEU:HD22	2.50	0.40
5:E:94:ALA:HB1	5:E:98:THR:HG21	2.02	0.40
8:H:70:GLN:HB3	8:H:71:GLY:H	1.76	0.40
9:I:10:ARG:HD3	9:I:105:ASP:HB3	2.04	0.40
10:J:16:LEU:HD11	10:J:68:HIS:O	2.21	0.40
18:R:47:THR:HG22	18:R:48:GLY:H	1.87	0.40
1:A:1121:U:H2'	1:A:1122:U:C6	2.57	0.40
1:A:168:G:C2	1:A:169:C:C5	3.09	0.40
1:A:538:G:H2'	1:A:539:A:H8	1.86	0.40
1:A:695:A:H61	1:A:797:C:H1'	1.86	0.40
2:B:76:GLN:NE2	2:B:206:ASP:OD2	2.55	0.40
4:D:173:TRP:HB2	4:D:187:ARG:O	2.22	0.40
4:D:177:ASP:OD1	4:D:180:GLY:N	2.54	0.40
4:D:22:LYS:HB2	4:D:26:CYS:SG	2.61	0.40
4:D:92:VAL:O	4:D:96:LEU:HD13	2.22	0.40
17:Q:7:THR:O	17:Q:23:VAL:HG13	2.21	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	232/255 (91%)	214 (92%)	17 (7%)	1 (0%)	34 67
3	C	204/238 (86%)	180 (88%)	24 (12%)	0	100 100
4	D	206/208 (99%)	195 (95%)	11 (5%)	0	100 100
5	E	148/161 (92%)	142 (96%)	6 (4%)	0	100 100
6	F	99/101 (98%)	96 (97%)	3 (3%)	0	100 100
7	G	153/155 (99%)	147 (96%)	6 (4%)	0	100 100
8	H	136/138 (99%)	128 (94%)	6 (4%)	2 (2%)	10 36
9	I	125/127 (98%)	112 (90%)	13 (10%)	0	100 100
10	J	96/104 (92%)	81 (84%)	13 (14%)	2 (2%)	7 30
11	K	114/128 (89%)	106 (93%)	8 (7%)	0	100 100
12	L	121/131 (92%)	111 (92%)	10 (8%)	0	100 100
13	M	116/125 (93%)	103 (89%)	13 (11%)	0	100 100
14	N	58/60 (97%)	49 (84%)	9 (16%)	0	100 100
15	O	85/88 (97%)	82 (96%)	3 (4%)	0	100 100
16	P	81/88 (92%)	73 (90%)	8 (10%)	0	100 100
17	Q	97/104 (93%)	91 (94%)	6 (6%)	0	100 100
18	R	68/87 (78%)	65 (96%)	3 (4%)	0	100 100
19	S	78/92 (85%)	72 (92%)	6 (8%)	0	100 100
20	T	97/105 (92%)	84 (87%)	12 (12%)	1 (1%)	15 46
21	U	22/26 (85%)	22 (100%)	0	0	100 100
All	All	2336/2521 (93%)	2153 (92%)	177 (8%)	6 (0%)	41 72

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
10	J	55	LYS

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Mol	Chain	Res	Type
10	J	56	HIS
8	H	71	GLY
8	H	72	PRO
20	T	73	HIS
2	B	229	VAL

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
2	B	202/219 (92%)	172 (85%)	30 (15%)	3 12
3	C	160/187 (86%)	136 (85%)	24 (15%)	3 12
4	D	180/180 (100%)	168 (93%)	12 (7%)	16 46
5	E	115/122 (94%)	102 (89%)	13 (11%)	6 21
6	F	90/90 (100%)	86 (96%)	4 (4%)	28 58
7	G	126/126 (100%)	120 (95%)	6 (5%)	25 56
8	H	119/119 (100%)	106 (89%)	13 (11%)	6 23
9	I	98/98 (100%)	88 (90%)	10 (10%)	7 26
10	J	87/91 (96%)	80 (92%)	7 (8%)	12 38
11	K	88/98 (90%)	77 (88%)	11 (12%)	4 17
12	L	103/107 (96%)	89 (86%)	14 (14%)	3 14
13	M	94/100 (94%)	83 (88%)	11 (12%)	5 20
14	N	49/49 (100%)	47 (96%)	2 (4%)	30 59
15	O	79/79 (100%)	66 (84%)	13 (16%)	2 9
16	P	72/74 (97%)	66 (92%)	6 (8%)	11 36
17	Q	94/96 (98%)	89 (95%)	5 (5%)	22 52
18	R	61/76 (80%)	57 (93%)	4 (7%)	16 46
19	S	71/79 (90%)	64 (90%)	7 (10%)	8 27
20	T	76/81 (94%)	66 (87%)	10 (13%)	4 15
21	U	19/21 (90%)	17 (90%)	2 (10%)	7 25

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	1983/2092 (95%)	1779 (90%)	204 (10%)	7 26

All (204) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	7	VAL
2	B	8	LYS
2	B	10	LEU
2	B	12	GLU
2	B	21	ARG
2	B	23	ARG
2	B	24	TRP
2	B	33	TYR
2	B	44	LEU
2	B	69	LEU
2	B	73	THR
2	B	87	ARG
2	B	102	LEU
2	B	103	THR
2	B	127	ILE
2	B	144	ARG
2	B	153	ARG
2	B	154	LEU
2	B	157	ARG
2	B	160	ASP
2	B	162	ILE
2	B	163	PHE
2	B	165	VAL
2	B	172	ILE
2	B	178	ARG
2	B	187	LEU
2	B	200	ILE
2	B	206	ASP
2	B	213	LEU
2	B	221	LEU
3	C	3	ASN
3	C	22	TRP
3	C	31	HIS
3	C	34	LEU
3	C	42	LEU
3	C	52	LEU
3	C	70	VAL

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Mol	Chain	Res	Type
3	C	79	ARG
3	C	90	GLU
3	C	91	LEU
3	C	94	LEU
3	C	95	THR
3	C	99	VAL
3	C	111	LEU
3	C	131	ARG
3	C	142	MET
3	C	144	SER
3	C	162	GLN
3	C	167	TRP
3	C	188	LEU
3	C	190	ARG
3	C	191	THR
3	C	196	LEU
3	C	204	LEU
4	D	34	GLU
4	D	35	ARG
4	D	36	ARG
4	D	49	ARG
4	D	122	ARG
4	D	135	LEU
4	D	150	GLU
4	D	152	SER
4	D	155	LEU
4	D	160	GLN
4	D	177	ASP
4	D	194	LEU
5	E	6	PHE
5	E	12	LEU
5	E	16	THR
5	E	18	ARG
5	E	26	PHE
5	E	31	LEU
5	E	41	VAL
5	E	70	PRO
5	E	76	ILE
5	E	79	GLU
5	E	80	ILE
5	E	126	ARG
5	E	150	ARG

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Mol	Chain	Res	Type
6	F	10	LEU
6	F	32	ASN
6	F	55	ASP
6	F	82	ARG
7	G	8	GLU
7	G	79	ARG
7	G	84	ASN
7	G	113	GLU
7	G	136	LYS
7	G	149	ARG
8	H	2	LEU
8	H	3	THR
8	H	23	SER
8	H	26	VAL
8	H	63	LEU
8	H	83	ILE
8	H	85	ARG
8	H	88	LYS
8	H	91	ARG
8	H	92	ARG
8	H	98	LYS
8	H	127	LEU
8	H	133	LEU
9	I	20	ARG
9	I	51	ARG
9	I	79	LEU
9	I	96	LEU
9	I	102	LEU
9	I	104	ARG
9	I	108	VAL
9	I	111	ARG
9	I	118	LYS
9	I	121	ARG
10	J	3	LYS
10	J	30	SER
10	J	38	ILE
10	J	55	LYS
10	J	62	HIS
10	J	78	ASN
10	J	89	ASP
11	K	12	ARG
11	K	29	ILE

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Mol	Chain	Res	Type
11	K	33	THR
11	K	36	ASP
11	K	44	SER
11	K	48	ILE
11	K	87	THR
11	K	91	ARG
11	K	98	LEU
11	K	109	VAL
11	K	119	CYS
12	L	18	VAL
12	L	20	LYS
12	L	33	ARG
12	L	39	VAL
12	L	44	THR
12	L	59	ARG
12	L	67	THR
12	L	79	GLU
12	L	85	ILE
12	L	96	VAL
12	L	97	ARG
12	L	104	VAL
12	L	113	ARG
12	L	122	THR
13	M	14	ARG
13	M	17	VAL
13	M	37	THR
13	M	44	ARG
13	M	48	LEU
13	M	56	LEU
13	M	64	TRP
13	M	81	LEU
13	M	108	ARG
13	M	115	LYS
13	M	117	VAL
14	N	11	LYS
14	N	22	THR
15	O	5	LYS
15	O	8	LYS
15	O	32	LEU
15	O	33	THR
15	O	34	LEU
15	O	36	ILE

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Mol	Chain	Res	Type
15	O	39	LEU
15	O	45	VAL
15	O	56	LEU
15	O	65	ARG
15	O	70	LEU
15	O	71	GLN
15	O	81	LEU
16	P	2	VAL
16	P	42	ARG
16	P	54	GLU
16	P	55	ARG
16	P	62	VAL
16	P	83	GLU
17	Q	13	ASP
17	Q	53	LEU
17	Q	60	ILE
17	Q	76	LEU
17	Q	91	ARG
18	R	47	THR
18	R	54	ARG
18	R	82	THR
18	R	87	ARG
19	S	6	LYS
19	S	15	LEU
19	S	29	ARG
19	S	39	THR
19	S	62	ILE
19	S	63	THR
19	S	79	THR
20	T	9	ASN
20	T	53	LEU
20	T	57	ARG
20	T	62	LEU
20	T	68	LYS
20	T	73	HIS
20	T	75	ASN
20	T	84	LEU
20	T	92	LEU
20	T	93	GLU
21	U	6	ARG
21	U	25	LYS

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such

sidechains are listed below:

Mol	Chain	Res	Type
2	B	204	ASN
9	I	3	GLN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1503/1517 (99%)	247 (16%)	45 (2%)
22	Y	5/6 (83%)	2 (40%)	0
23	W	14/15 (93%)	4 (28%)	0
All	All	1522/1538 (98%)	253 (16%)	45 (2%)

All (253) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	6	G
1	A	7	G
1	A	9	G
1	A	13	C
1	A	39	G
1	A	47	C
1	A	48	C
1	A	51	A
1	A	54	C
1	A	101	A
1	A	108	G
1	A	116	A
1	A	117	G
1	A	121	C
1	A	122	G
1	A	129(A)	G
1	A	130	A
1	A	131	C
1	A	163	C
1	A	182	U
1	A	183	G
1	A	190(D)	U
1	A	190(E)	U
1	A	190(G)	G
1	A	195	A
1	A	201	C
1	A	202	U

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Mol	Chain	Res	Type
1	A	203	U
1	A	204	U
1	A	216	G
1	A	220	G
1	A	247	G
1	A	251	G
1	A	252	U
1	A	266	G
1	A	267	C
1	A	279	A
1	A	282	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	345	C
1	A	350	G
1	A	351	G
1	A	352	C
1	A	353	A
1	A	354	G
1	A	356	A
1	A	367	U
1	A	371	G
1	A	373	A
1	A	374	A
1	A	384	G
1	A	390	C
1	A	397	A
1	A	398	C
1	A	406	G
1	A	412	A
1	A	413	G
1	A	421	U
1	A	429	U
1	A	430	A
1	A	439	A
1	A	460	A
1	A	461	C

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Mol	Chain	Res	Type
1	A	481	G
1	A	485	G
1	A	486	U
1	A	497	A
1	A	498	U
1	A	509	A
1	A	510	A
1	A	511	C
1	A	518	C
1	A	519	C
1	A	524	G
1	A	531	U
1	A	533	A
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	596	C
1	A	653	A
1	A	665	A
1	A	686	U
1	A	687	A
1	A	688	G
1	A	693	G
1	A	695	A
1	A	701	C
1	A	702	A
1	A	703	G
1	A	721	G
1	A	723	U
1	A	731	G
1	A	733	A
1	A	749	C
1	A	755	G
1	A	776	G

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Mol	Chain	Res	Type
1	A	777	A
1	A	781	A
1	A	782	A
1	A	785	G
1	A	792	A
1	A	793	U
1	A	794	A
1	A	799	G
1	A	812	C
1	A	813	U
1	A	817	C
1	A	819	A
1	A	828	A
1	A	839	U
1	A	840	C
1	A	841	U
1	A	848	C
1	A	873	A
1	A	876	G
1	A	889	A
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	960	U
1	A	961	U
1	A	966	M2G
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	989	C
1	A	991	U
1	A	992	U
1	A	993	G
1	A	1004	A
1	A	1005	A

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Mol	Chain	Res	Type
1	A	1023	G
1	A	1024	G
1	A	1026	G
1	A	1031	G
1	A	1045	C
1	A	1050	G
1	A	1051	C
1	A	1053	G
1	A	1054	C
1	A	1055	A
1	A	1064	G
1	A	1065	U
1	A	1066	C
1	A	1068	G
1	A	1085	U
1	A	1094	G
1	A	1095	U
1	A	1101	A
1	A	1124	G
1	A	1125	U
1	A	1126	U
1	A	1127	G
1	A	1130	A
1	A	1131	G
1	A	1137	C
1	A	1138	G
1	A	1139	G
1	A	1146	A
1	A	1152	A
1	A	1159	U
1	A	1171	G
1	A	1183	A
1	A	1188	A
1	A	1190	G
1	A	1191	A
1	A	1195	C
1	A	1196	U
1	A	1197	G
1	A	1201	A
1	A	1202	G
1	A	1211	U
1	A	1212	U

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Mol	Chain	Res	Type
1	A	1214	C
1	A	1224	G
1	A	1225	A
1	A	1227	A
1	A	1228	C
1	A	1238	A
1	A	1241	G
1	A	1256	A
1	A	1257	U
1	A	1258	G
1	A	1278	U
1	A	1279	A
1	A	1280	A
1	A	1281	U
1	A	1286	A
1	A	1287	A
1	A	1300	G
1	A	1301	U
1	A	1302	U
1	A	1306	A
1	A	1320	C
1	A	1322	C
1	A	1336	C
1	A	1340	A
1	A	1346	A
1	A	1347	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	1379	G
1	A	1381	U
1	A	1398	A
1	A	1400	5MC
1	A	1442	G
1	A	1443	G
1	A	1446	A
1	A	1447	G
1	A	1478	C
1	A	1480	G

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Mol	Chain	Res	Type
1	A	1485	U
1	A	1487	G
1	A	1492	A
1	A	1499	A
1	A	1503	A
1	A	1504	G
1	A	1505	G
1	A	1506	U
1	A	1529	G
1	A	1530	G
22	Y	5	U
22	Y	6	U
23	W	30	G
23	W	33	U
23	W	34	G
23	W	42	C

All (45) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	5	U
1	A	115	G
1	A	129(A)	G
1	A	181	G
1	A	204	U
1	A	250	A
1	A	251	G
1	A	281	G
1	A	328	C
1	A	372	C
1	A	428	G
1	A	429	U
1	A	484	G
1	A	485	G
1	A	496	A
1	A	509	A
1	A	518	C
1	A	559	A
1	A	687	A
1	A	701	C
1	A	748	C
1	A	792	A

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Mol	Chain	Res	Type
1	A	812	C
1	A	913	A
1	A	960	U
1	A	965	A
1	A	992	U
1	A	1049	U
1	A	1065	U
1	A	1067	A
1	A	1126	U
1	A	1145	C
1	A	1182	G
1	A	1190	G
1	A	1201	A
1	A	1256	A
1	A	1257	U
1	A	1285	A
1	A	1300	G
1	A	1301	U
1	A	1305	G
1	A	1346	A
1	A	1347	G
1	A	1380	U
1	A	1505	G

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

17 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	$\#\|Z\| > 2$
1	MA6	A	1518[A]	1	19,26,27	0.79	0	18,38,41	0.76	0
1	5MC	A	967	1	15,22,23	0.97	0	19,32,35	1.09	2 (10%)
1	MA6	A	1518[B]	1	19,26,27	1.30	2 (10%)	18,38,41	0.69	0
1	PSU	A	516	1,24	17,21,22	1.03	1 (5%)	20,30,33	3.13	6 (30%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
1	4OC	A	1402	1	16,23,24	1.01	2 (12%)	17,32,35	0.65	0
1	2MG	A	1207	1	19,26,27	2.22	4 (21%)	21,38,41	2.02	3 (14%)
1	G7M	A	527	1	20,26,27	1.75	3 (15%)	20,39,42	1.93	5 (25%)
1	5MC	A	1400	1	15,22,23	0.94	0	19,32,35	1.00	1 (5%)
1	5MC	A	1404	1	15,22,23	0.89	0	19,32,35	1.00	1 (5%)
1	PSU	A	1541	1	17,21,22	1.11	1 (5%)	20,30,33	3.49	6 (30%)
1	MA6	A	1519[B]	1	19,26,27	1.29	3 (15%)	18,38,41	0.59	0
1	5MC	A	1407	1	15,22,23	0.96	0	19,32,35	1.07	1 (5%)
12	0TD	L	92	12	4,9,10	1.43	1 (25%)	3,11,13	1.85	1 (33%)
1	MA6	A	1519[A]	1	19,26,27	1.18	2 (10%)	18,38,41	0.64	0
1	UR3	A	1498	1	14,22,23	0.82	1 (7%)	15,32,35	1.11	1 (6%)
1	M2G	A	966	1	20,27,28	2.17	5 (25%)	22,40,43	2.42	3 (13%)
1	PSU	A	1540	1	17,21,22	1.06	1 (5%)	20,30,33	3.11	6 (30%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	MA6	A	1518[A]	1	-	3/7/29/30	0/3/3/3
1	5MC	A	967	1	-	2/5/25/26	0/2/2/2
1	MA6	A	1518[B]	1	-	1/7/29/30	0/3/3/3
1	PSU	A	516	1,24	-	0/7/25/26	0/2/2/2
1	4OC	A	1402	1	-	2/9/29/30	0/2/2/2
1	2MG	A	1207	1	-	0/5/27/28	0/3/3/3
1	G7M	A	527	1	-	2/3/25/26	0/3/3/3
1	5MC	A	1400	1	-	2/5/25/26	0/2/2/2
1	5MC	A	1404	1	-	0/5/25/26	0/2/2/2
1	PSU	A	1541	1	-	1/7/25/26	0/2/2/2
1	MA6	A	1519[B]	1	-	3/7/29/30	0/3/3/3
1	5MC	A	1407	1	-	0/5/25/26	0/2/2/2
12	0TD	L	92	12	-	1/3/12/14	-
1	MA6	A	1519[A]	1	-	3/7/29/30	0/3/3/3
1	UR3	A	1498	1	-	0/5/25/26	0/2/2/2
1	M2G	A	966	1	-	3/7/29/30	0/3/3/3
1	PSU	A	1540	1	-	0/7/25/26	0/2/2/2

All (26) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1207	2MG	C2-N2	6.58	1.39	1.34
1	A	966	M2G	C6-N1	6.48	1.44	1.33
1	A	1207	2MG	C6-N1	5.94	1.43	1.33
1	A	527	G7M	C2-N2	5.83	1.45	1.33
1	A	966	M2G	C2-N1	4.30	1.42	1.34
1	A	966	M2G	C2-N2	3.92	1.41	1.34
1	A	1518[B]	MA6	C6-N1	3.66	1.38	1.33
1	A	1541	PSU	C4-N3	3.61	1.39	1.33
1	A	1519[B]	MA6	C6-N1	3.51	1.38	1.33
1	A	966	M2G	C4-N3	3.24	1.40	1.35
1	A	1540	PSU	C4-N3	3.16	1.38	1.33
1	A	1519[A]	MA6	C6-N1	3.01	1.37	1.33
1	A	516	PSU	C4-N3	2.98	1.38	1.33
1	A	527	G7M	C4-N3	2.88	1.40	1.35
1	A	527	G7M	C6-N1	2.74	1.37	1.33
1	A	1519[B]	MA6	C2-N1	2.56	1.38	1.33
1	A	1402	4OC	C4-N4	2.51	1.41	1.36
1	A	1519[A]	MA6	C2-N1	2.37	1.38	1.33
1	A	1207	2MG	C2-N1	2.32	1.41	1.34
1	A	1518[B]	MA6	C2-N1	2.31	1.38	1.33
1	A	1207	2MG	C4-N3	2.27	1.39	1.35
1	A	1498	UR3	C6-N1	2.23	1.38	1.35
1	A	1402	4OC	C5-C4	2.15	1.44	1.39
1	A	1519[B]	MA6	C2-N3	2.10	1.35	1.32
1	A	966	M2G	C6-C5	2.04	1.44	1.41
12	L	92	0TD	CB-SB	-2.01	1.79	1.84

All (36) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1541	PSU	N1-C2-N3	-12.44	118.54	128.43
1	A	1540	PSU	N1-C2-N3	-10.73	119.90	128.43
1	A	516	PSU	N1-C2-N3	-10.57	120.03	128.43
1	A	966	M2G	C5-C6-N1	-8.46	111.86	123.43
1	A	1207	2MG	C5-C6-N1	-7.37	113.36	123.43
1	A	1541	PSU	C4-N3-C2	6.58	120.69	115.14
1	A	966	M2G	C6-N1-C2	6.00	123.33	116.18
1	A	516	PSU	C4-N3-C2	5.97	120.19	115.14
1	A	1540	PSU	C4-N3-C2	5.41	119.71	115.14
1	A	516	PSU	C5-C4-N3	-4.50	119.56	125.36
1	A	527	G7M	C2-N3-C4	4.23	120.19	115.36
1	A	527	G7M	N3-C2-N1	-4.19	121.63	127.22

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1540	PSU	C5-C4-N3	-3.87	120.37	125.36
1	A	1207	2MG	C6-N1-C2	3.74	121.87	115.18
1	A	1541	PSU	C6-N1-C2	3.64	121.37	115.36
1	A	1541	PSU	C5-C4-N3	-3.59	120.74	125.36
1	A	527	G7M	C6-C5-C4	-3.56	117.40	120.80
1	A	516	PSU	C5-C6-N1	-3.17	120.55	124.44
1	A	1540	PSU	C6-N1-C2	3.16	120.57	115.36
1	A	1540	PSU	C5-C6-N1	-3.15	120.57	124.44
1	A	516	PSU	C6-N1-C2	2.95	120.22	115.36
1	A	527	G7M	C5-C6-N1	-2.91	119.44	123.43
1	A	527	G7M	C6-N1-C2	2.85	120.45	115.93
12	L	92	0TD	CSB-SB-CB	-2.71	96.53	101.85
1	A	1207	2MG	C4-C5-N7	2.48	111.98	109.40
1	A	1540	PSU	C5-C1'-C2'	-2.35	111.13	115.32
1	A	1400	5MC	C2-N3-C4	2.33	118.83	116.02
1	A	1541	PSU	C5-C6-N1	-2.29	121.62	124.44
1	A	967	5MC	N4-C4-N3	-2.26	113.83	117.03
1	A	1498	UR3	C3'-C2'-C1'	2.25	104.37	100.98
1	A	1404	5MC	N4-C4-N3	-2.17	113.96	117.03
1	A	1407	5MC	CM5-C5-C4	-2.16	119.53	121.72
1	A	1541	PSU	O4'-C1'-C5	2.16	113.27	109.93
1	A	516	PSU	O4'-C1'-C2'	2.14	108.12	104.66
1	A	966	M2G	CM2-N2-C2	2.06	123.25	121.29
1	A	967	5MC	CM5-C5-C6	2.03	122.95	118.68

There are no chirality outliers.

All (23) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	1400	5MC	O4'-C4'-C5'-O5'
1	A	1519[B]	MA6	C5-C6-N6-C9
12	L	92	0TD	CG-CB-SB-CSB
1	A	966	M2G	C4'-C5'-O5'-P
1	A	967	5MC	O4'-C4'-C5'-O5'
1	A	527	G7M	C3'-C4'-C5'-O5'
1	A	1400	5MC	C3'-C4'-C5'-O5'
1	A	1519[A]	MA6	C3'-C4'-C5'-O5'
1	A	1519[A]	MA6	O4'-C4'-C5'-O5'
1	A	1519[B]	MA6	N1-C6-N6-C9
1	A	967	5MC	C3'-C4'-C5'-O5'
1	A	966	M2G	O4'-C4'-C5'-O5'
1	A	1518[A]	MA6	C5-C6-N6-C9

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Mol	Chain	Res	Type	Atoms
1	A	1518[B]	MA6	C5-C6-N6-C9
1	A	1519[A]	MA6	C5-C6-N6-C9
1	A	966	M2G	C3'-C4'-C5'-O5'
1	A	1518[A]	MA6	O4'-C4'-C5'-O5'
1	A	527	G7M	O4'-C4'-C5'-O5'
1	A	1541	PSU	O4'-C1'-C5-C4
1	A	1402	4OC	O4'-C4'-C5'-O5'
1	A	1518[A]	MA6	C3'-C4'-C5'-O5'
1	A	1519[B]	MA6	C5-C6-N6-C10
1	A	1402	4OC	C3'-C4'-C5'-O5'

There are no ring outliers.

14 monomers are involved in 22 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	1518[A]	MA6	1	0
1	A	967	5MC	2	0
1	A	1518[B]	MA6	3	0
1	A	1402	4OC	2	0
1	A	527	G7M	1	0
1	A	1400	5MC	2	0
1	A	1404	5MC	1	0
1	A	1541	PSU	1	0
1	A	1519[B]	MA6	3	0
1	A	1407	5MC	2	0
12	L	92	0TD	3	0
1	A	1519[A]	MA6	2	0
1	A	1498	UR3	1	0
1	A	966	M2G	1	0

5.5 Carbohydrates (i)

There are no carbohydrates in this entry.

5.6 Ligand geometry (i)

Of 286 ligands modelled in this entry, 285 are monoatomic - leaving 1 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	$\#\|Z\| > 2$
25	SIS	A	1809	-	28,33,33	1.34	2 (7%)	28,49,49	1.30	2 (7%)

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
25	SIS	A	1809	-	-	2/9/65/65	0/3/3/3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
25	A	1809	SIS	C31-C41	-4.72	1.40	1.50
25	A	1809	SIS	C61-C51	-3.70	1.40	1.48

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
25	A	1809	SIS	C93-N33-C33	-4.70	107.54	114.38
25	A	1809	SIS	C13-O62-C62	-2.09	112.80	117.96

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
25	A	1809	SIS	C23-C33-N33-C93
25	A	1809	SIS	C52-C42-O11-C11

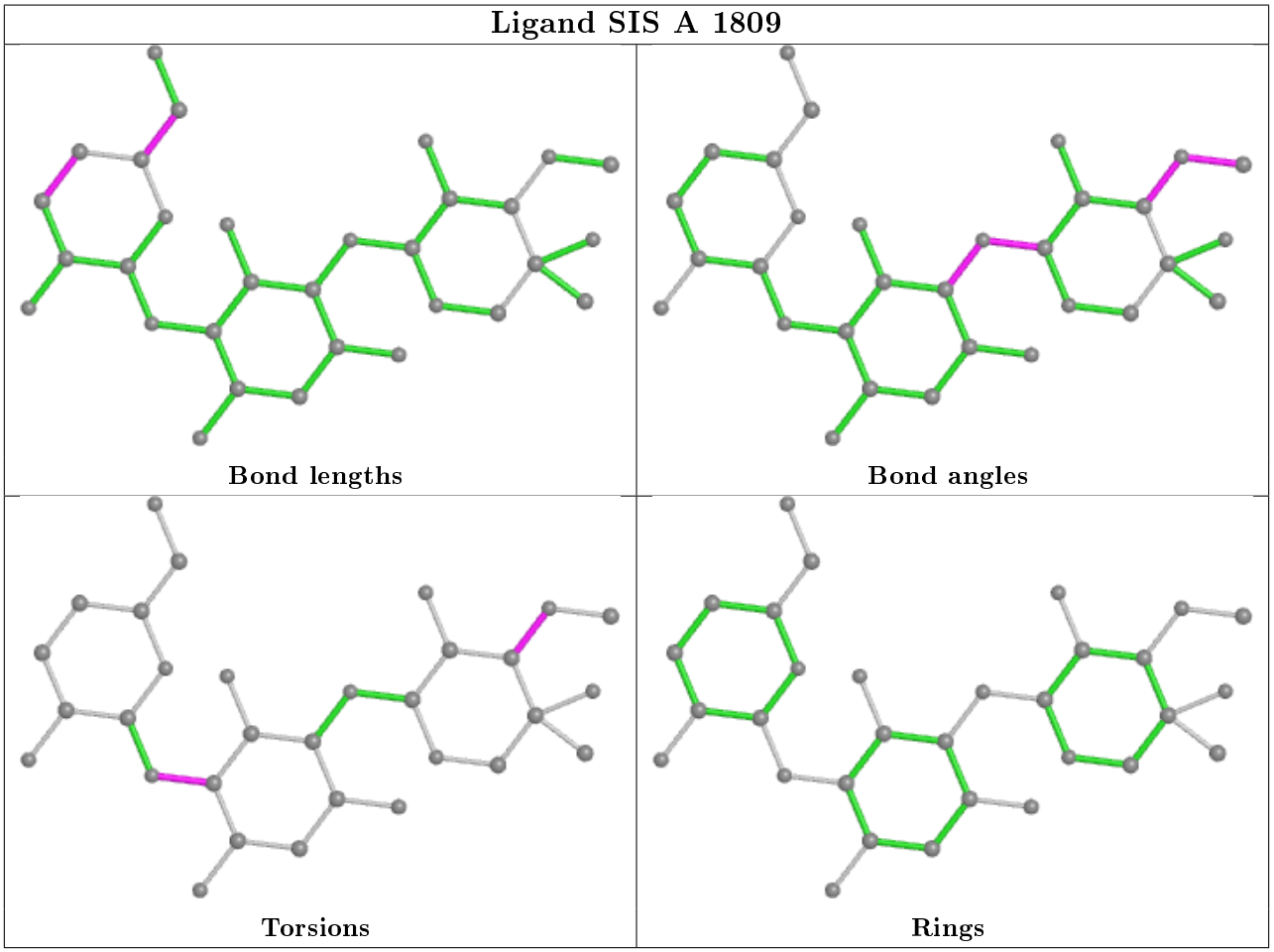
There are no ring outliers.

1 monomer is involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
25	A	1809	SIS	5	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 then 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 SIS A 1809



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} 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	1497/1517 (98%)	0.18	24 (1%) 72 70	46, 82, 168, 310	0
2	B	234/255 (91%)	0.01	7 (2%) 50 49	68, 109, 179, 214	0
3	C	206/238 (86%)	0.09	3 (1%) 73 72	83, 128, 176, 190	0
4	D	208/208 (100%)	-0.19	4 (1%) 66 65	55, 98, 149, 205	0
5	E	150/161 (93%)	-0.30	0 100 100	40, 67, 101, 166	0
6	F	101/101 (100%)	-0.18	0 100 100	61, 94, 140, 175	0
7	G	155/155 (100%)	-0.15	1 (0%) 89 89	67, 97, 166, 204	0
8	H	138/138 (100%)	-0.47	0 100 100	37, 56, 85, 132	0
9	I	127/127 (100%)	0.07	2 (1%) 72 70	79, 121, 162, 195	0
10	J	98/104 (94%)	0.72	11 (11%) 5 6	88, 158, 233, 294	0
11	K	116/128 (90%)	-0.17	1 (0%) 84 83	56, 76, 110, 157	0
12	L	123/131 (93%)	-0.20	2 (1%) 72 70	46, 84, 135, 190	0
13	M	118/125 (94%)	-0.15	1 (0%) 86 85	74, 101, 147, 226	0
14	N	60/60 (100%)	-0.19	0 100 100	86, 111, 151, 202	0
15	O	87/88 (98%)	-0.27	0 100 100	44, 76, 119, 160	0
16	P	83/88 (94%)	-0.25	1 (1%) 79 77	56, 77, 111, 190	0
17	Q	99/104 (95%)	-0.28	0 100 100	43, 62, 98, 140	0
18	R	70/87 (80%)	-0.19	0 100 100	50, 81, 135, 168	0
19	S	80/92 (86%)	0.29	1 (1%) 77 76	94, 128, 185, 245	0
20	T	99/105 (94%)	-0.30	1 (1%) 82 81	56, 79, 134, 181	0
21	U	24/26 (92%)	0.41	2 (8%) 11 13	91, 123, 151, 154	0
22	Y	6/6 (100%)	1.62	2 (33%) 0 0	103, 112, 178, 209	0
23	W	15/15 (100%)	1.63	5 (33%) 0 0	89, 126, 196, 199	0
All	All	3894/4059 (95%)	0.01	68 (1%) 70 68	37, 89, 169, 310	0

All (68) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	1129	C	10.6
10	J	33	GLN	7.4
12	L	128	ALA	5.8
10	J	100	THR	5.4
10	J	90	LEU	4.6
1	A	1539	C	4.3
1	A	1003(A)	G	4.1
2	B	127	ILE	4.1
22	Y	6	U	4.1
2	B	125	PRO	4.1
4	D	37	PRO	3.8
10	J	34	VAL	3.8
1	A	1038	C	3.3
2	B	237	ALA	3.3
23	W	29	G	3.3
10	J	77	PRO	3.2
3	C	78	GLY	3.2
1	A	1028	C	3.1
21	U	18	TYR	3.1
3	C	60	ALA	3.0
16	P	83	GLU	3.0
1	A	1037	C	3.0
1	A	1024	G	2.9
1	A	1023	G	2.9
10	J	28	ARG	2.9
21	U	25	LYS	2.9
7	G	156	TRP	2.8
1	A	1532	U	2.8
23	W	42	C	2.8
1	A	1036	G	2.7
1	A	412	A	2.7
4	D	33	MET	2.6
9	I	67	GLY	2.6
2	B	132	LYS	2.6
4	D	38	TYR	2.5
2	B	130	ARG	2.5
23	W	40	C	2.5
10	J	29	ARG	2.5
1	A	530	G	2.5
23	W	30	G	2.5
1	A	1034	G	2.4
23	W	41	C	2.4

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Mol	Chain	Res	Type	RSRZ
2	B	238	LEU	2.4
1	A	532	A	2.4
12	L	127	GLU	2.4
13	M	7	VAL	2.3
10	J	31	GLY	2.3
1	A	1027	C	2.3
1	A	1025	U	2.3
19	S	27	GLU	2.3
1	A	1531	A	2.3
1	A	1030	C	2.3
9	I	57	GLY	2.3
22	Y	5	U	2.3
11	K	79	SER	2.3
10	J	35	SER	2.3
10	J	78	ASN	2.2
1	A	1130	A	2.2
10	J	76	ASN	2.2
1	A	1137	C	2.1
1	A	1419	G	2.1
3	C	63	ASN	2.1
20	T	103	GLY	2.1
2	B	124	SER	2.1
1	A	841	U	2.1
1	A	1005	A	2.1
4	D	35	ARG	2.0
1	A	1035	A	2.0

6.2 Non-standard residues in protein, DNA, RNA chains (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, 95^{th} 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	0.81	0.51	217,234,249,254	0
1	MA6	A	1518[B]	24/25	0.93	0.26	59,61,62,62	24
1	PSU	A	516	20/21	0.93	0.18	101,114,117,118	0
1	PSU	A	1541	20/21	0.93	0.33	218,237,269,281	0
1	MA6	A	1518[A]	24/25	0.93	0.26	60,62,62,62	24
1	2MG	A	1207	24/25	0.94	0.15	103,112,118,122	0
1	5MC	A	1407	21/22	0.95	0.23	64,67,69,73	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
1	MA6	A	1519[A]	24/25	0.95	0.25	58,59,60,60	24
1	M2G	A	966	25/26	0.95	0.19	72,88,97,99	0
1	MA6	A	1519[B]	24/25	0.95	0.25	57,59,60,60	24
12	0TD	L	92	10/11	0.96	0.19	74,79,85,86	0
1	4OC	A	1402	22/23	0.96	0.21	63,67,78,82	0
1	G7M	A	527	24/25	0.96	0.20	60,73,83,89	0
1	5MC	A	1404	21/22	0.96	0.20	59,60,63,73	0
1	UR3	A	1498	21/22	0.97	0.21	59,62,65,78	0
1	5MC	A	967	21/22	0.97	0.15	74,79,84,87	0
1	5MC	A	1400	21/22	0.97	0.17	58,66,88,93	0

6.3 Carbohydrates (i)

There are no carbohydrates 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(Å^2)	Q<0.9
24	MG	A	1710	1/1	0.33	0.85	255,255,255,255	0
24	MG	A	1700	1/1	0.36	1.29	261,261,261,261	0
24	MG	A	1602	1/1	0.43	1.26	201,201,201,201	0
24	MG	A	1790	1/1	0.48	0.43	189,189,189,189	0
24	MG	A	1619	1/1	0.55	0.30	71,71,71,71	0
24	MG	A	1789	1/1	0.57	0.78	247,247,247,247	0
24	MG	A	1685	1/1	0.61	0.62	82,82,82,82	0
24	MG	A	1678	1/1	0.61	0.81	78,78,78,78	0
24	MG	A	1693	1/1	0.62	0.60	91,91,91,91	0
24	MG	C	303	1/1	0.63	0.25	137,137,137,137	0
24	MG	A	1758	1/1	0.63	0.28	115,115,115,115	0
24	MG	A	1846	1/1	0.64	0.22	76,76,76,76	0
24	MG	A	1677	1/1	0.64	0.77	76,76,76,76	0
24	MG	A	1734	1/1	0.67	0.27	66,66,66,66	0
24	MG	A	1701	1/1	0.68	0.42	145,145,145,145	0
24	MG	A	1810	1/1	0.69	0.22	122,122,122,122	0
24	MG	A	1694	1/1	0.69	0.41	71,71,71,71	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	A	1756	1/1	0.71	0.97	74,74,74,74	0
24	MG	A	1848	1/1	0.72	0.41	79,79,79,79	0
24	MG	A	1656	1/1	0.72	0.63	37,37,37,37	0
24	MG	A	1834	1/1	0.73	0.18	96,96,96,96	0
24	MG	A	1717	1/1	0.74	0.15	161,161,161,161	0
24	MG	A	1856	1/1	0.74	0.27	58,58,58,58	0
24	MG	L	201	1/1	0.74	0.32	83,83,83,83	0
24	MG	A	1858	1/1	0.74	0.85	66,66,66,66	0
24	MG	A	1775	1/1	0.74	0.57	81,81,81,81	0
24	MG	A	1841	1/1	0.74	0.37	58,58,58,58	0
24	MG	C	302	1/1	0.75	0.46	69,69,69,69	0
24	MG	A	1818	1/1	0.75	0.20	101,101,101,101	0
24	MG	E	201	1/1	0.75	0.36	70,70,70,70	0
24	MG	A	1692	1/1	0.76	0.32	184,184,184,184	0
24	MG	A	1624	1/1	0.76	0.39	56,56,56,56	0
24	MG	A	1658	1/1	0.77	0.52	94,94,94,94	0
24	MG	A	1712	1/1	0.77	0.39	67,67,67,67	0
24	MG	A	1722	1/1	0.78	0.35	59,59,59,59	0
24	MG	A	1703	1/1	0.78	0.38	214,214,214,214	0
24	MG	A	1612	1/1	0.78	0.28	182,182,182,182	0
24	MG	A	1626	1/1	0.78	0.49	48,48,48,48	0
24	MG	A	1780	1/1	0.78	0.56	67,67,67,67	0
24	MG	A	1755	1/1	0.78	0.39	44,44,44,44	0
24	MG	A	1800	1/1	0.79	0.38	99,99,99,99	0
24	MG	P	102	1/1	0.79	0.21	93,93,93,93	0
24	MG	A	1840	1/1	0.79	0.43	52,52,52,52	0
24	MG	A	1652	1/1	0.79	0.38	52,52,52,52	0
24	MG	A	1672	1/1	0.80	0.24	65,65,65,65	0
24	MG	A	1715	1/1	0.80	0.29	75,75,75,75	0
24	MG	Q	201	1/1	0.81	0.15	50,50,50,50	0
24	MG	A	1696	1/1	0.81	0.37	112,112,112,112	0
24	MG	I	301	1/1	0.81	0.17	89,89,89,89	0
24	MG	A	1617	1/1	0.81	0.43	179,179,179,179	0
24	MG	A	1857	1/1	0.81	0.32	103,103,103,103	0
24	MG	A	1659	1/1	0.81	0.42	135,135,135,135	0
24	MG	A	1682	1/1	0.81	0.12	53,53,53,53	0
24	MG	A	1728	1/1	0.81	0.52	78,78,78,78	0
24	MG	A	1799	1/1	0.81	0.43	51,51,51,51	0
24	MG	A	1632	1/1	0.82	0.72	180,180,180,180	0
24	MG	C	301	1/1	0.82	0.20	44,44,44,44	0
24	MG	A	1779	1/1	0.82	0.35	54,54,54,54	0
24	MG	A	1774	1/1	0.82	0.14	51,51,51,51	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	A	1808	1/1	0.82	0.37	76,76,76,76	0
24	MG	A	1845	1/1	0.82	0.62	110,110,110,110	0
24	MG	A	1680	1/1	0.82	0.25	92,92,92,92	0
24	MG	A	1671	1/1	0.82	0.19	76,76,76,76	0
24	MG	A	1731	1/1	0.83	0.37	112,112,112,112	0
24	MG	A	1765	1/1	0.83	0.32	89,89,89,89	0
24	MG	A	1805	1/1	0.83	0.27	73,73,73,73	0
24	MG	A	1665	1/1	0.83	0.31	68,68,68,68	0
24	MG	A	1816	1/1	0.84	0.14	77,77,77,77	0
24	MG	A	1767	1/1	0.84	0.46	63,63,63,63	0
24	MG	A	1660	1/1	0.84	0.18	124,124,124,124	0
24	MG	A	1705	1/1	0.84	0.42	62,62,62,62	0
24	MG	A	1827	1/1	0.85	0.28	140,140,140,140	0
24	MG	A	1666	1/1	0.85	0.17	41,41,41,41	0
24	MG	A	1613	1/1	0.85	0.23	118,118,118,118	0
24	MG	A	1642	1/1	0.85	0.42	51,51,51,51	0
24	MG	A	1753	1/1	0.85	0.45	73,73,73,73	0
24	MG	A	1720	1/1	0.85	0.28	43,43,43,43	0
24	MG	A	1601	1/1	0.85	0.34	70,70,70,70	0
24	MG	A	1854	1/1	0.85	0.40	65,65,65,65	0
24	MG	A	1823	1/1	0.86	0.12	101,101,101,101	0
24	MG	A	1807	1/1	0.86	0.23	47,47,47,47	0
24	MG	A	1675	1/1	0.86	0.09	94,94,94,94	0
24	MG	A	1768	1/1	0.86	0.19	43,43,43,43	0
24	MG	A	1781	1/1	0.86	0.19	74,74,74,74	0
24	MG	A	1684	1/1	0.86	0.11	66,66,66,66	0
24	MG	A	1689	1/1	0.86	0.18	105,105,105,105	0
24	MG	A	1802	1/1	0.86	0.24	67,67,67,67	0
24	MG	A	1627	1/1	0.86	0.24	111,111,111,111	0
24	MG	L	202	1/1	0.86	0.14	67,67,67,67	0
24	MG	A	1773	1/1	0.86	0.38	64,64,64,64	0
24	MG	A	1713	1/1	0.86	0.25	53,53,53,53	0
24	MG	A	1674	1/1	0.86	0.24	45,45,45,45	0
24	MG	A	1826	1/1	0.87	0.32	110,110,110,110	0
24	MG	A	1721	1/1	0.87	0.26	59,59,59,59	0
24	MG	K	201	1/1	0.87	0.19	36,36,36,36	0
24	MG	A	1702	1/1	0.87	0.29	252,252,252,252	0
24	MG	A	1716	1/1	0.87	0.48	61,61,61,61	0
24	MG	A	1736	1/1	0.87	0.06	81,81,81,81	0
24	MG	A	1838	1/1	0.87	0.21	39,39,39,39	0
24	MG	K	202	1/1	0.87	0.10	72,72,72,72	0
24	MG	A	1825	1/1	0.88	0.12	86,86,86,86	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	S	101	1/1	0.88	0.25	79,79,79,79	0
24	MG	L	203	1/1	0.88	0.15	45,45,45,45	0
24	MG	A	1806	1/1	0.88	0.62	201,201,201,201	0
24	MG	A	1616	1/1	0.88	0.24	62,62,62,62	0
24	MG	A	1832	1/1	0.88	0.28	38,38,38,38	0
24	MG	A	1745	1/1	0.88	0.20	64,64,64,64	0
24	MG	A	1770	1/1	0.88	0.18	61,61,61,61	0
24	MG	A	1766	1/1	0.88	0.26	23,23,23,23	0
24	MG	A	1673	1/1	0.88	0.22	51,51,51,51	0
24	MG	A	1795	1/1	0.88	0.30	60,60,60,60	0
24	MG	A	1653	1/1	0.88	0.39	64,64,64,64	0
24	MG	A	1730	1/1	0.89	0.23	67,67,67,67	0
24	MG	A	1631	1/1	0.89	0.23	54,54,54,54	0
24	MG	A	1695	1/1	0.89	0.42	211,211,211,211	0
24	MG	A	1706	1/1	0.89	0.30	91,91,91,91	0
24	MG	A	1740	1/1	0.89	0.19	55,55,55,55	0
24	MG	A	1637	1/1	0.89	0.21	63,63,63,63	0
24	MG	A	1847	1/1	0.89	0.15	47,47,47,47	0
24	MG	A	1639	1/1	0.89	0.66	115,115,115,115	0
24	MG	A	1844	1/1	0.89	0.25	75,75,75,75	0
24	MG	A	1811	1/1	0.89	0.10	76,76,76,76	0
24	MG	P	103	1/1	0.89	0.21	60,60,60,60	0
24	MG	A	1669	1/1	0.89	0.20	81,81,81,81	0
24	MG	A	1749	1/1	0.89	0.29	45,45,45,45	0
24	MG	D	304	1/1	0.89	0.28	61,61,61,61	0
24	MG	A	1817	1/1	0.89	0.13	73,73,73,73	0
24	MG	A	1742	1/1	0.89	0.16	40,40,40,40	0
24	MG	A	1615	1/1	0.90	0.49	44,44,44,44	0
24	MG	A	1836	1/1	0.90	0.39	36,36,36,36	0
24	MG	A	1759	1/1	0.90	0.36	66,66,66,66	0
24	MG	A	1726	1/1	0.90	0.17	40,40,40,40	0
24	MG	A	1718	1/1	0.90	0.22	54,54,54,54	0
24	MG	A	1843	1/1	0.90	0.33	48,48,48,48	0
24	MG	A	1792	1/1	0.90	0.21	73,73,73,73	0
24	MG	A	1837	1/1	0.90	0.44	66,66,66,66	0
24	MG	A	1839	1/1	0.90	0.52	57,57,57,57	0
24	MG	A	1668	1/1	0.90	0.29	53,53,53,53	0
24	MG	A	1764	1/1	0.90	0.44	93,93,93,93	0
24	MG	B	302	1/1	0.90	0.13	56,56,56,56	0
24	MG	A	1842	1/1	0.91	0.28	59,59,59,59	0
24	MG	A	1804	1/1	0.91	0.24	60,60,60,60	0
24	MG	A	1803	1/1	0.91	0.30	29,29,29,29	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	A	1760	1/1	0.91	0.38	35,35,35,35	0
24	MG	A	1752	1/1	0.91	0.11	60,60,60,60	0
24	MG	A	1822	1/1	0.91	0.10	64,64,64,64	0
24	MG	A	1778	1/1	0.91	0.14	67,67,67,67	0
24	MG	A	1690	1/1	0.91	0.29	143,143,143,143	0
24	MG	A	1853	1/1	0.91	0.51	59,59,59,59	0
24	MG	A	1633	1/1	0.91	0.61	207,207,207,207	0
24	MG	A	1735	1/1	0.91	0.13	28,28,28,28	0
24	MG	A	1793	1/1	0.91	0.24	81,81,81,81	0
24	MG	A	1646	1/1	0.91	0.34	91,91,91,91	0
24	MG	A	1645	1/1	0.91	0.20	67,67,67,67	0
24	MG	A	1769	1/1	0.92	0.28	63,63,63,63	0
24	MG	A	1813	1/1	0.92	0.09	100,100,100,100	0
24	MG	A	1831	1/1	0.92	0.20	48,48,48,48	0
24	MG	A	1849	1/1	0.92	0.24	77,77,77,77	0
24	MG	A	1783	1/1	0.92	0.28	58,58,58,58	0
24	MG	D	303	1/1	0.92	0.10	78,78,78,78	0
24	MG	A	1748	1/1	0.92	0.38	63,63,63,63	0
24	MG	A	1691	1/1	0.92	0.21	59,59,59,59	0
24	MG	A	1657	1/1	0.92	0.24	80,80,80,80	0
24	MG	A	1851	1/1	0.92	0.51	56,56,56,56	0
24	MG	A	1787	1/1	0.92	0.28	169,169,169,169	0
24	MG	F	201	1/1	0.92	0.10	52,52,52,52	0
24	MG	A	1606	1/1	0.92	0.19	54,54,54,54	0
24	MG	A	1697	1/1	0.92	0.20	176,176,176,176	0
24	MG	A	1610	1/1	0.92	0.31	139,139,139,139	0
24	MG	A	1620	1/1	0.92	0.36	16,16,16,16	0
24	MG	A	1814	1/1	0.92	0.08	100,100,100,100	0
24	MG	A	1604	1/1	0.92	0.56	48,48,48,48	0
24	MG	A	1655	1/1	0.92	0.15	55,55,55,55	0
24	MG	A	1835	1/1	0.93	0.20	36,36,36,36	0
24	MG	A	1663	1/1	0.93	0.20	80,80,80,80	0
24	MG	A	1651	1/1	0.93	0.07	48,48,48,48	0
24	MG	A	1724	1/1	0.93	0.19	29,29,29,29	0
24	MG	A	1738	1/1	0.93	0.69	60,60,60,60	0
24	MG	A	1725	1/1	0.93	0.22	67,67,67,67	0
24	MG	A	1719	1/1	0.93	0.30	55,55,55,55	0
24	MG	A	1801	1/1	0.93	0.23	74,74,74,74	0
24	MG	C	306	1/1	0.93	0.15	41,41,41,41	0
24	MG	A	1641	1/1	0.93	0.42	112,112,112,112	0
24	MG	A	1737	1/1	0.93	0.21	52,52,52,52	0
24	MG	A	1628	1/1	0.93	0.44	72,72,72,72	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	A	1634	1/1	0.93	0.15	42,42,42,42	0
24	MG	A	1733	1/1	0.93	0.17	34,34,34,34	0
24	MG	A	1704	1/1	0.93	0.17	61,61,61,61	0
24	MG	A	1852	1/1	0.94	0.42	58,58,58,58	0
24	MG	A	1732	1/1	0.94	0.11	28,28,28,28	0
24	MG	A	1640	1/1	0.94	0.11	59,59,59,59	0
24	MG	A	1776	1/1	0.94	0.34	63,63,63,63	0
24	MG	A	1667	1/1	0.94	0.40	197,197,197,197	0
24	MG	A	1707	1/1	0.94	0.12	50,50,50,50	0
24	MG	A	1681	1/1	0.94	0.23	104,104,104,104	0
24	MG	A	1855	1/1	0.94	0.28	26,26,26,26	0
24	MG	A	1622	1/1	0.94	0.28	103,103,103,103	0
24	MG	A	1729	1/1	0.94	0.13	29,29,29,29	0
24	MG	A	1603	1/1	0.94	0.11	84,84,84,84	0
24	MG	A	1625	1/1	0.94	0.21	117,117,117,117	0
24	MG	A	1796	1/1	0.94	0.12	87,87,87,87	0
24	MG	A	1611	1/1	0.94	0.29	132,132,132,132	0
24	MG	A	1761	1/1	0.94	0.23	34,34,34,34	0
24	MG	A	1727	1/1	0.94	0.13	53,53,53,53	0
24	MG	A	1833	1/1	0.94	0.20	97,97,97,97	0
24	MG	A	1782	1/1	0.94	0.19	34,34,34,34	0
24	MG	P	101	1/1	0.95	0.21	9,9,9,9	0
24	MG	A	1785	1/1	0.95	0.21	82,82,82,82	0
24	MG	A	1688	1/1	0.95	0.29	29,29,29,29	0
24	MG	A	1821	1/1	0.95	0.09	86,86,86,86	0
24	MG	A	1714	1/1	0.95	0.15	68,68,68,68	0
24	MG	A	1859	1/1	0.95	0.13	45,45,45,45	0
24	MG	A	1744	1/1	0.95	0.12	46,46,46,46	0
24	MG	A	1676	1/1	0.95	0.08	49,49,49,49	0
24	MG	A	1763	1/1	0.95	0.17	40,40,40,40	0
24	MG	A	1699	1/1	0.95	0.41	79,79,79,79	0
24	MG	A	1829	1/1	0.95	0.09	69,69,69,69	0
24	MG	A	1661	1/1	0.95	0.17	153,153,153,153	0
24	MG	A	1723	1/1	0.95	0.65	74,74,74,74	0
24	MG	A	1635	1/1	0.95	0.40	46,46,46,46	0
24	MG	A	1609	1/1	0.95	0.15	52,52,52,52	0
25	SIS	A	1809	31/31	0.95	0.23	32,57,79,80	0
24	MG	A	1824	1/1	0.95	0.14	83,83,83,83	0
24	MG	A	1623	1/1	0.95	0.22	72,72,72,72	0
24	MG	A	1786	1/1	0.95	0.07	80,80,80,80	0
24	MG	C	305	1/1	0.95	0.15	36,36,36,36	0
24	MG	A	1636	1/1	0.95	0.09	68,68,68,68	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	A	1621	1/1	0.96	0.21	48,48,48,48	0
24	MG	A	1750	1/1	0.96	0.15	34,34,34,34	0
24	MG	A	1649	1/1	0.96	0.22	75,75,75,75	0
24	MG	A	1747	1/1	0.96	0.08	26,26,26,26	0
24	MG	C	304	1/1	0.96	0.09	77,77,77,77	0
24	MG	A	1711	1/1	0.96	0.15	37,37,37,37	0
24	MG	A	1638	1/1	0.96	0.83	159,159,159,159	0
24	MG	A	1687	1/1	0.96	0.17	132,132,132,132	0
24	MG	A	1708	1/1	0.96	0.16	58,58,58,58	0
24	MG	A	1751	1/1	0.96	0.11	25,25,25,25	0
24	MG	A	1815	1/1	0.96	0.09	88,88,88,88	0
24	MG	A	1605	1/1	0.96	0.29	115,115,115,115	0
24	MG	A	1772	1/1	0.96	0.19	40,40,40,40	0
24	MG	A	1650	1/1	0.96	0.15	80,80,80,80	0
24	MG	A	1664	1/1	0.96	0.16	64,64,64,64	0
24	MG	A	1741	1/1	0.96	0.18	32,32,32,32	0
24	MG	A	1754	1/1	0.96	0.15	39,39,39,39	0
24	MG	A	1771	1/1	0.96	0.21	39,39,39,39	0
24	MG	A	1643	1/1	0.97	0.20	96,96,96,96	0
24	MG	A	1797	1/1	0.97	0.12	48,48,48,48	0
24	MG	D	302	1/1	0.97	0.15	52,52,52,52	0
24	MG	A	1788	1/1	0.97	0.14	80,80,80,80	0
24	MG	A	1644	1/1	0.97	0.19	38,38,38,38	0
24	MG	A	1812	1/1	0.97	0.06	98,98,98,98	0
24	MG	A	1683	1/1	0.97	0.21	37,37,37,37	0
24	MG	J	201	1/1	0.97	0.09	36,36,36,36	0
24	MG	A	1618	1/1	0.97	0.25	64,64,64,64	0
24	MG	A	1777	1/1	0.97	0.21	46,46,46,46	0
24	MG	A	1630	1/1	0.97	0.17	61,61,61,61	0
24	MG	A	1654	1/1	0.97	0.12	57,57,57,57	0
24	MG	A	1820	1/1	0.97	0.09	107,107,107,107	0
24	MG	A	1647	1/1	0.97	0.20	36,36,36,36	0
24	MG	A	1828	1/1	0.97	0.07	43,43,43,43	0
24	MG	A	1709	1/1	0.97	0.29	57,57,57,57	0
24	MG	A	1762	1/1	0.97	0.19	22,22,22,22	0
24	MG	A	1608	1/1	0.97	0.10	38,38,38,38	0
24	MG	A	1679	1/1	0.97	0.18	54,54,54,54	0
24	MG	A	1830	1/1	0.97	0.10	36,36,36,36	0
24	MG	A	1607	1/1	0.97	0.10	108,108,108,108	0
24	MG	A	1686	1/1	0.97	0.18	67,67,67,67	0
24	MG	A	1746	1/1	0.97	0.10	35,35,35,35	0
24	MG	A	1794	1/1	0.97	0.22	64,64,64,64	0

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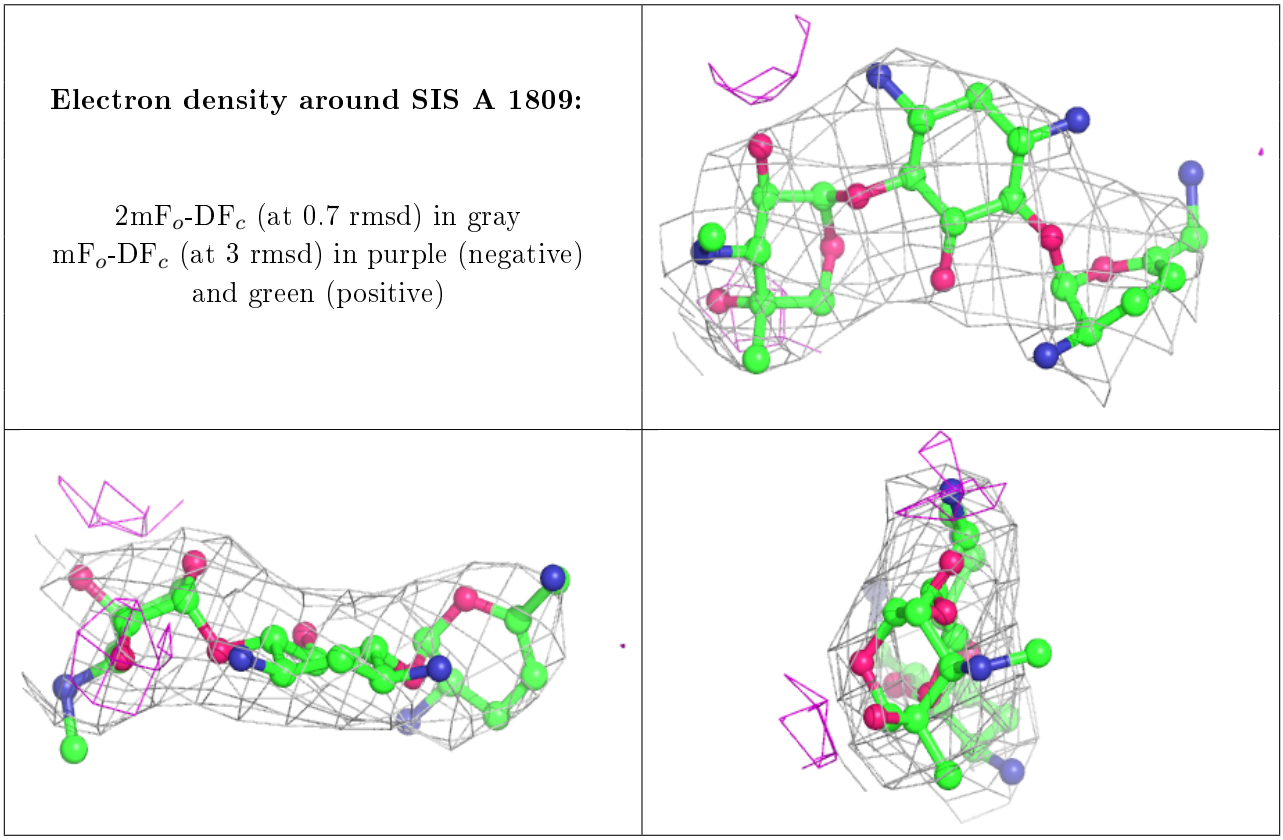
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
24	MG	B	301	1/1	0.97	0.10	74,74,74,74	0
24	MG	A	1819	1/1	0.98	0.11	62,62,62,62	0
24	MG	A	1629	1/1	0.98	0.15	66,66,66,66	0
24	MG	A	1798	1/1	0.98	0.13	70,70,70,70	0
24	MG	A	1743	1/1	0.98	0.12	65,65,65,65	0
24	MG	A	1614	1/1	0.98	0.30	78,78,78,78	0
26	ZN	D	301	1/1	0.98	0.20	83,83,83,83	0
24	MG	A	1757	1/1	0.98	0.30	45,45,45,45	0
24	MG	A	1739	1/1	0.98	0.07	48,48,48,48	0
26	ZN	N	101	1/1	0.98	0.13	112,112,112,112	0
24	MG	A	1850	1/1	0.98	0.05	30,30,30,30	0
24	MG	A	1791	1/1	0.98	0.09	93,93,93,93	0
24	MG	A	1698	1/1	0.98	0.23	56,56,56,56	0
24	MG	A	1648	1/1	0.98	0.09	64,64,64,64	0
24	MG	A	1784	1/1	0.98	0.10	63,63,63,63	0
24	MG	A	1662	1/1	0.99	0.07	61,61,61,61	0
24	MG	A	1670	1/1	0.99	0.12	60,60,60,60	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 SIS A 1809:

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



6.5 Other polymers (i)

There are no such residues in this entry.