



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 3, 2025 – 08:23 PM EST

PDB ID : 6CAR
Title : Serial Femtosecond X-ray Crystal Structure of 30S ribosomal subunit from *Thermus thermophilus* in complex with Sisomicin
Authors : DeMirici, 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 types of validation reports are described at

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

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

MolProbity : 4.02b-467
Mogul : 2022.3.0, CSD as543be (2022)
Xtrriage (Phenix) : 1.21
EDS : 3.0
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4 : 9.0.004 (Gargrove)
Density-Fitness : 1.0.11
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.40

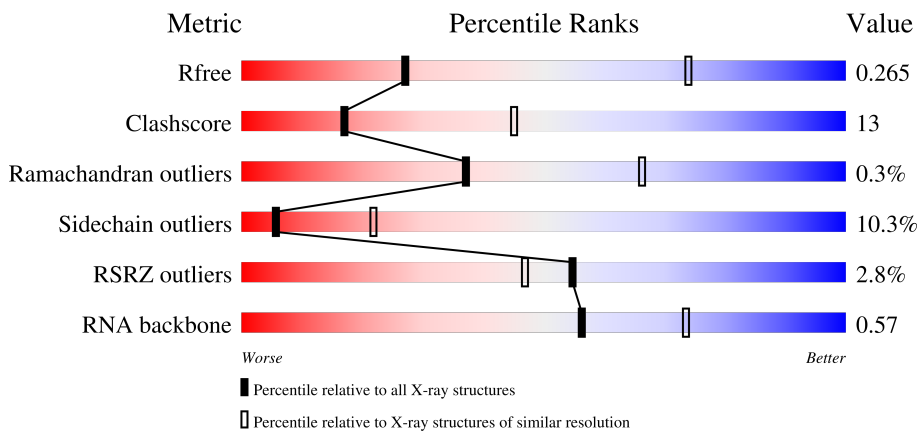
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.40 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	1140 (3.46-3.34)
Clashscore	180529	1172 (3.46-3.34)
Ramachandran outliers	177936	1172 (3.46-3.34)
Sidechain outliers	177891	1172 (3.46-3.34)
RSRZ outliers	164620	1140 (3.46-3.34)
RNA backbone	3690	1033 (3.80-3.00)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1517	
2	B	255	
3	C	238	
4	D	208	

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Mol	Chain	Length	Quality of chain
5	E	161	
6	F	101	
7	G	155	
8	H	138	
9	I	127	
10	J	104	
11	K	128	
12	L	131	
13	M	125	
14	N	60	
15	O	88	
16	P	88	
17	Q	104	
18	R	87	
19	S	92	
20	T	105	
21	U	26	
22	Y	6	
23	W	15	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
24	MG	A	1602	-	-	-	X
24	MG	A	1633	-	-	-	X
24	MG	A	1700	-	-	-	X
24	MG	A	1703	-	-	-	X
24	MG	A	1710	-	-	-	X

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
24	MG	A	1789	-	-	-	X

2 Entry composition [i](#)

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
			Total	C	N	O	S			
6	F	101	843	531	155	154	3	0	0	0

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
10	J	98	792	498	156	137	1	0	0	0

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

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

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
12	L	124	972	612	195	163	2	0	0	0

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

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

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

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

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
15	O	87	729	457	146	124	2	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
16	P	83	700	443	139	117	1	0	0	0

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
17	Q	99	823	528	152	141	2	0	0	0

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
			Total	C	N	O			
18	R	70	574	367	112	95	0	0	0

- 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).

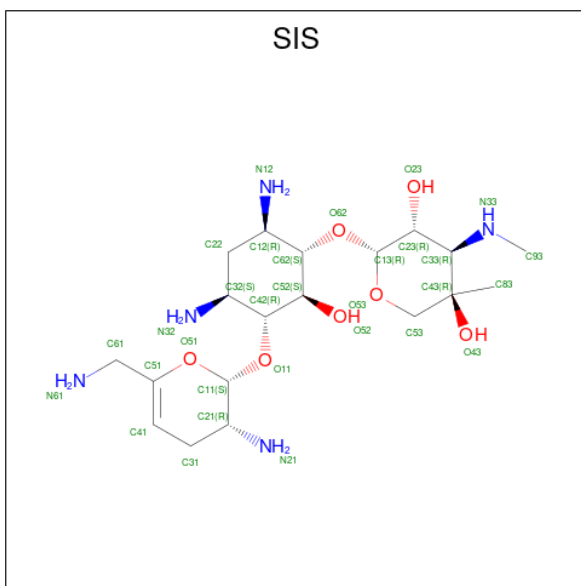
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
24	A	258	Total	Mg	0	0
			258	258		
24	B	2	Total	Mg	0	0
			2	2		
24	C	6	Total	Mg	0	0
			6	6		
24	D	3	Total	Mg	0	0
			3	3		
24	E	1	Total	Mg	0	0
			1	1		
24	F	1	Total	Mg	0	0
			1	1		

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
24	I	1	Total Mg 1 1	0	0
24	J	1	Total Mg 1 1	0	0
24	K	2	Total Mg 2 2	0	0
24	L	3	Total Mg 3 3	0	0
24	P	3	Total Mg 3 3	0	0
24	Q	1	Total Mg 1 1	0	0
24	S	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: C₁₉H₃₇N₅O₇).



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 1	Zn 1	0	0
26	N	1	Total 1	Zn 1	0	0

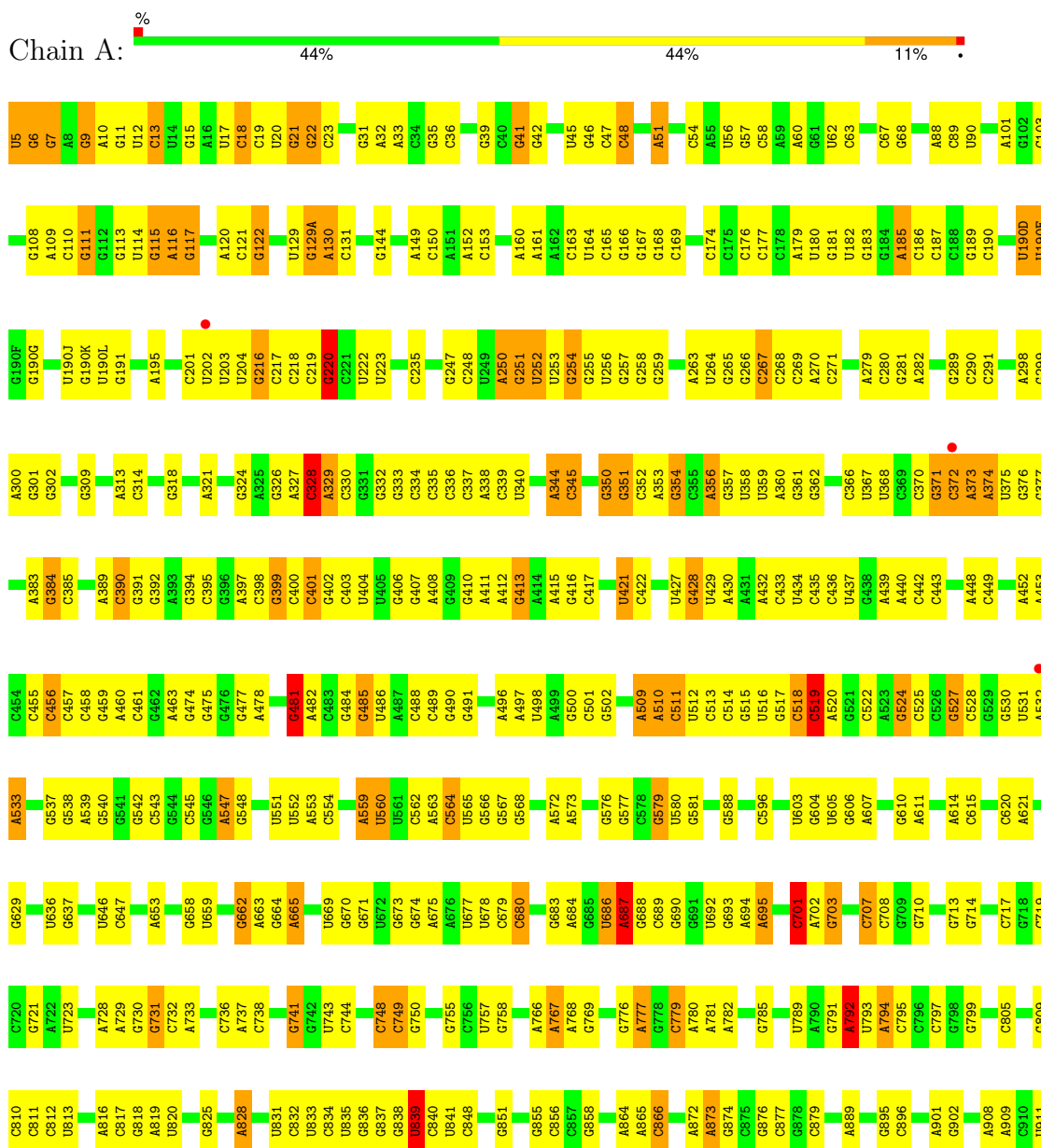
- Molecule 27 is water.

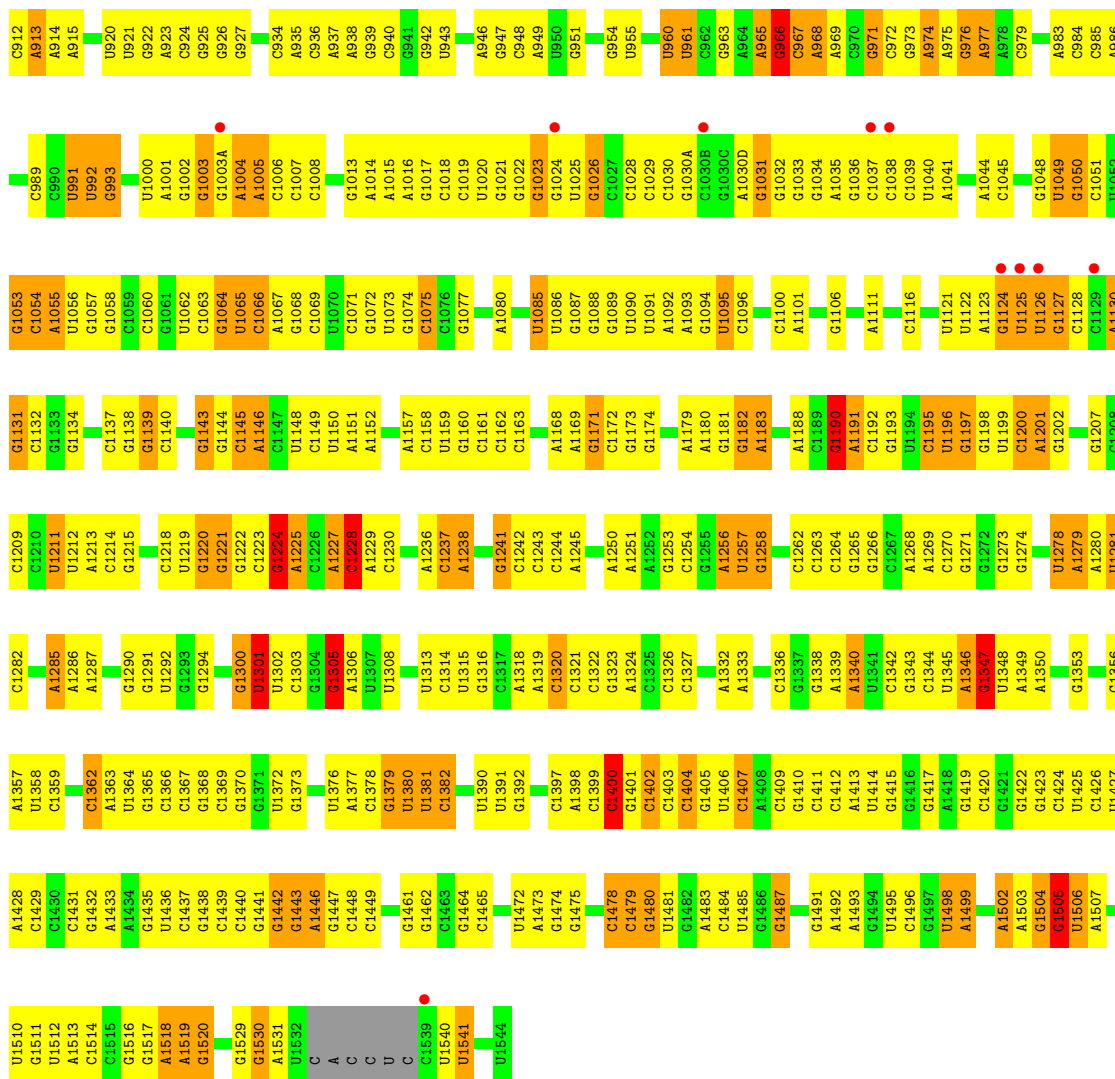
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
27	A	299	Total 299	O 299	0	0
27	C	1	Total 1	O 1	0	0
27	D	3	Total 3	O 3	0	0
27	E	3	Total 3	O 3	0	0
27	L	4	Total 4	O 4	0	0
27	N	1	Total 1	O 1	0	0
27	Q	1	Total 1	O 1	0	0
27	T	2	Total 2	O 2	0	0

3 Residue-property plots i

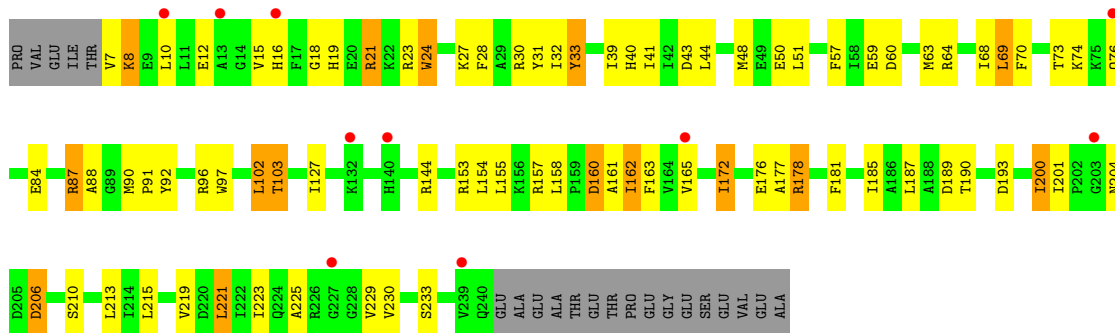
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density.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

• Molecule 1: 16S Ribosomal RNA rRNA



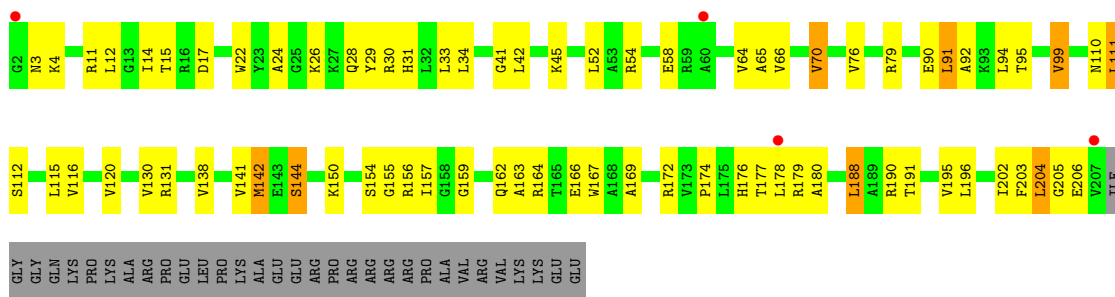


• Molecule 2: 30S ribosomal protein S2

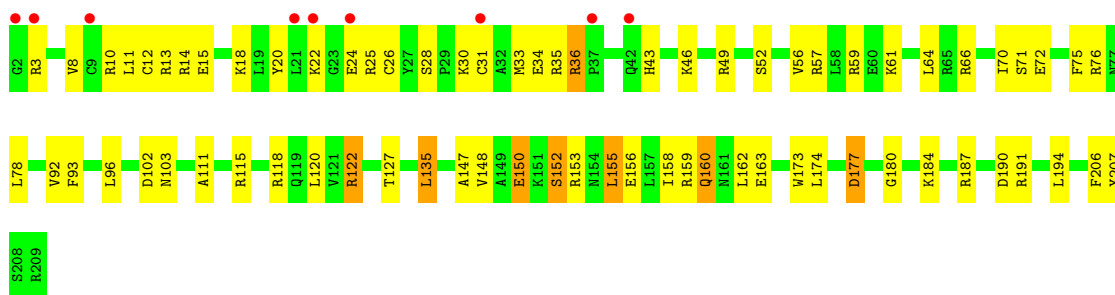


• Molecule 3: 30S ribosomal protein S3

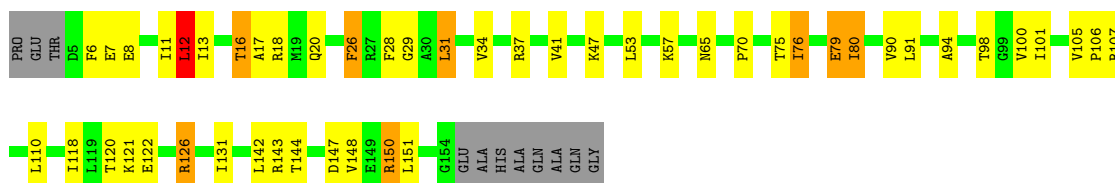




• Molecule 4: 30S ribosomal protein S4



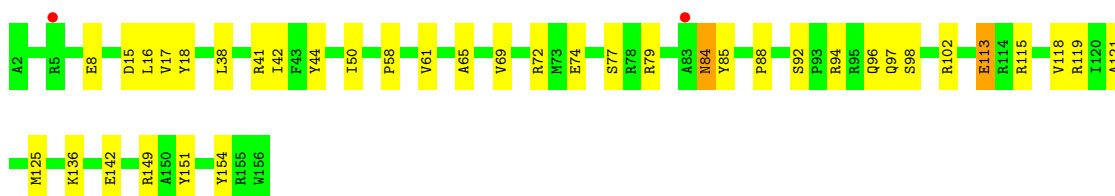
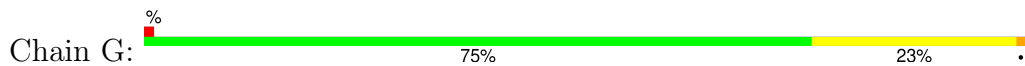
• Molecule 5: 30S ribosomal protein S5



• Molecule 6: 30S ribosomal protein S6

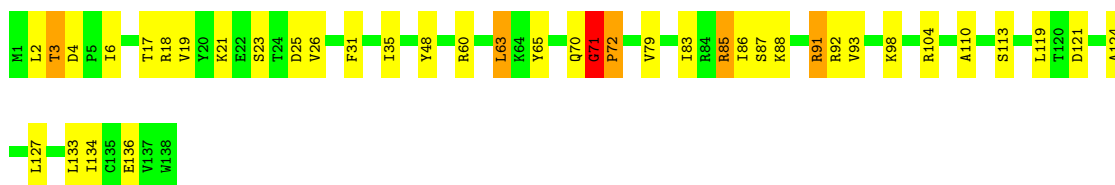


• Molecule 7: 30S ribosomal protein S7



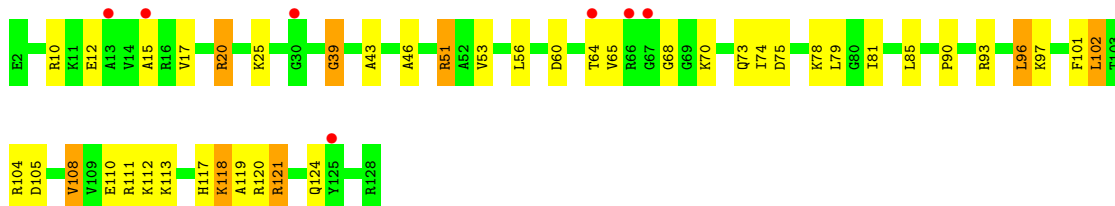
- Molecule 8: 30S ribosomal protein S8

Chain H:  71% 25%



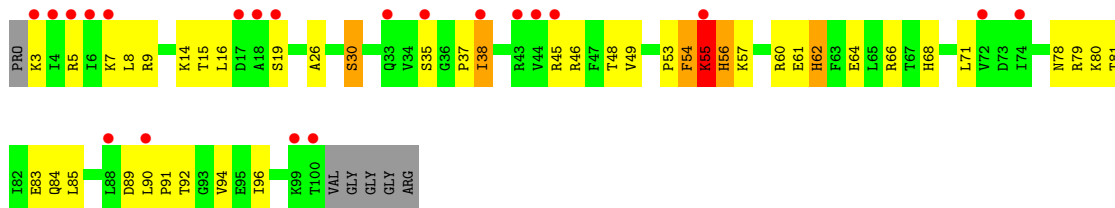
- Molecule 9: 30S ribosomal protein S9

Chain I:  6% 66% 28% 6%



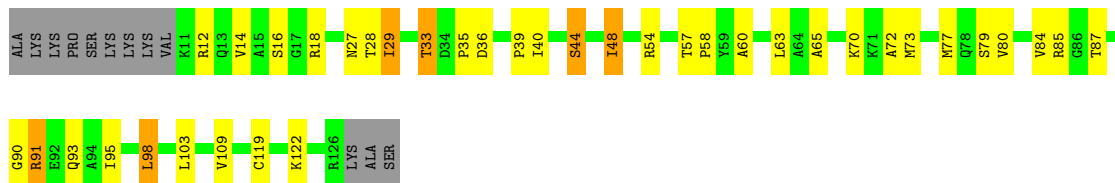
- Molecule 10: 30S ribosomal protein S10

Chain J:  20% 53% 36% 5% 6%



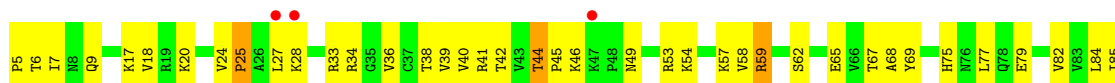
- Molecule 11: 30S ribosomal protein S11

Chain K:  61% 25% 5% 9%



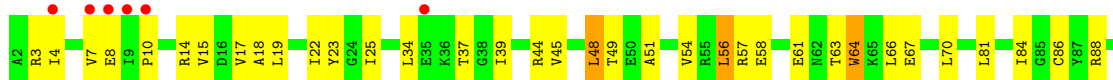
- Molecule 12: 30S ribosomal protein S12

Chain L:  5% 50% 40% 5%

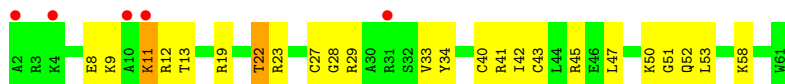




- Molecule 13: 30S ribosomal protein S13



- Molecule 14: 30S ribosomal protein S14 type Z



- Molecule 15: 30S ribosomal protein S15



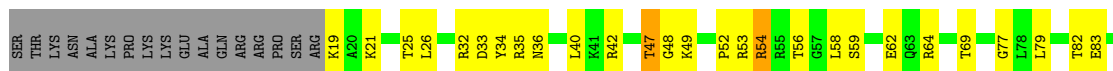
- Molecule 16: 30S ribosomal protein S16



- Molecule 17: 30S ribosomal protein S17



- Molecule 18: 30S ribosomal protein S18



R87
K88

- Molecule 19: 30S ribosomal protein S19

Chain S: 9% 47% 35% 5% 13%

P2 R3 S4 L5 K6 K7 C8 V9 F10 F11 D12 D11 L15 K18 V19 L22 K28 R29 L30 L31 I31 K32 T33 K34 S35 R36 R37 S38 T39 I40 E43 M44 V45 I49 A50 N53 G54 K55 Q56 H57 V58 I62 T63 V67 K70 L71 G72 A75 P76 T77 R78

T79 Y80 R81 GLY HIS GLY LYS LYS ALA ALA ALA THR LYS LYS

- Molecule 20: 30S ribosomal protein S20

Chain T: 4% 63% 27% 5% 6%

ALA GLN LYS LYS PRO LYS R8 R9 N9 R17 K29 L43 A44 Q45 A52 L53 K54 I55 M56 R57 E60 S61 L62 I63 D64 K65 K68 G69 S70 T71 L72 H73 K74 N75 A76 A77 A78 R79 R80 K81 L84 M85 V88 L91 L92 E93 G96 I100 G101 G102

A106

- Molecule 21: 30S ribosomal protein Thx

Chain U: 35% 69% 15% 8% 8%

G2 D5 R6 R7 T8 R9 R10 G11 I13 G16 T17 Y18 R22 P23 R24 K25 LYS LYS

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

Chain Y: 17% 50% 33% 17%

U1 U2 U3 U4 U5 U6

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

Chain W: 47% 40% 13%

G28 G29 G30 A31 U32 U33 G34 A35 A36 A37 C42

4 Data and refinement statistics

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) 99.7 (39.26-3.40)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.05 (at 3.40Å)	Xtrriage
Refinement program	PHENIX (1.11.1_2575)	Depositor
R, R_{free}	0.222 , 0.266 0.223 , 0.265	Depositor DCC
R_{free} test set	195638 reflections (0.51%)	wwPDB-VP
Wilson B-factor (Å ²)	87.0	Xtrriage
Anisotropy	0.036	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 128.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.38$, $\langle L^2 \rangle = 0.20$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.90	EDS
Total number of atoms	52778	wwPDB-VP
Average B, all atoms (Å ²)	95.0	wwPDB-VP

Xtrriage'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.*

¹Intensities estimated from amplitudes.

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

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 4OC, UR3, ZN, M2G, SIS, G7M, MG, 2MG, 0TD, PSU, MA6, 5MC

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(°)	Ideal(°)
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(°)	Ideal(°)
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(°)	Ideal(°)
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(°)	Ideal(°)
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 [i](#)

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:13:C:H42	1:A:915:A:H62	1.34	0.76
1:A:1435:G:H2'	1:A:1436:U:C6	2.20	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:835:U:OP1	18:R:64:ARG:NH2	2.19	0.71
1:A:1392:G:N2	1:A:1502:A:H8	1.88	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:974:A:OP2	14:N:41:ARG:NH1	2.24	0.71
1:A:1004:A:H5''	1:A:1025:U:C4	2.26	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:45:U:H2'	1:A:46:G:C8	2.27	0.70
1:A:1029:C:H2'	1:A:1030:C:C6	2.26	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:1406:U:O2'	1:A:1517[B]:G:N2	2.27	0.67
1:A:1510:U:H2'	1:A:1511:G:C8	2.29	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:359:U:H2'	1:A:360:A:C8	2.31	0.65
1:A:1035:A:H2'	1:A:1036:G: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:191:G:O2'	20:T:102:GLY:O	2.06	0.64
1:A:925:G:H1	1:A:1391:U:H3	1.44	0.64
1:A:1087:G:H2'	1:A:1088:G:H8	1.62	0.64
5:E:105:VAL:HB	5:E:106:PRO:HD3	1.79	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:440:A:H3'	1:A:442:C:C6	2.32	0.63
1:A:1000:U:H2'	1:A:1001:A:C8	2.33	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:269:C:H2'	1:A:270:A:H8	1.63	0.63
1:A:1381:U:H2'	1:A:1382:C:H6	1.61	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:372:C:H4'	1:A:373:A:O5'	1.98	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
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:250:A:H4'	1:A:251:G:O5'	1.98	0.62
1:A:1504:G:OP1	1:A:1507:A:H4'	1.99	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:176:C:OP1	20:T:29:LYS:NZ	2.22	0.61
1:A:427:U:OP1	4:D:13:ARG:NH2	2.32	0.61
1:A:737:A:H2'	1:A:738:C:C6	2.36	0.61
1:A:1145:C:O2'	1:A:1146:A:O5'	2.18	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:56:U:H2'	1:A:57:G:H8	1.65	0.61
1:A:456:C:H2'	1:A:457:C:H6	1.66	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:OTD: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:235:C:H5'	17:Q:70:ARG:HG2	1.84	0.60
1:A:707:C:OP1	11:K:85:ARG:NH1	2.34	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
8:H:4:ASP:OD2	8:H:85:ARG:NH1	2.35	0.60
8:H:19:VAL:HG23	8:H:21:LYS:HG2	1.84	0.60
12:L:27:LEU:HG	12:L:28:LYS:H	1.67	0.60
1:A:564:C:O2'	8:H:91:ARG:NH2	2.35	0.59
1:A:1513:A:H2'	1:A:1514:C:H6	1.65	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:299:G:H2'	1:A:300:A:C8	2.38	0.59
1:A:1002:G:H2'	1:A:1003:G:C8	2.37	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:OD1	7:G:84:ASN:N	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
3:C:26:LYS:HZ2	10:J:45:ARG:HE	1.50	0.57
10:J:38:ILE:HG23	10:J:71:LEU:HB3	1.87	0.57
21:U:12:LYS:HG2	21:U:22:ARG:HB3	1.86	0.57
1:A:864:A:H2'	1:A:865:A:C8	2.40	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: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:939:G:H2'	1:A:940:C:C6	2.40	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
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: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:1419:G:H1	1:A:1481:U:H3	1.51	0.56
1:A:416:G:H2'	1:A:417:C:H6	1.69	0.56
1:A:1314:C:H2'	1:A:1315:U:C6	2.39	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
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: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:1031:G:H2'	1:A:1032:G:H8	1.71	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: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
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
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: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
1:A:1366:C:O3'	10:J:60:ARG:NH2	2.38	0.54
15:O:56:LEU:HA	15:O:59:MET:HE2	1.89	0.54
1:A:344:A:H5'	1:A:345:C:H5	1.72	0.54
1:A:1037:C:H2'	1:A:1038:C:C6	2.42	0.54
6:F:68:PRO:HG2	6:F:71:ARG:HG3	1.89	0.54
1:A:686:U:HO2'	1:A:687:A:H8	1.53	0.54
1:A:967:5MC:H2'	1:A:968:A:N7	2.23	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1077:G:N2	1:A:1080:A:OP2	2.38	0.54
4:D:26:CYS:HA	4:D:31:CYS:HB2	1.88	0.54
1:A:662:G:H1	1:A:743:U:H3	1.56	0.54
1:A:1143:G:H2'	1:A:1144:G:H8	1.72	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
1:A:1123:A:H4'	10:J:37:PRO:HD2	1.89	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: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
3:C:26:LYS:HD3	10:J:45:ARG:HH21	1.73	0.54
5:E:12:LEU:HD13	5:E:31:LEU:HB2	1.90	0.54
1:A:416:G:H2'	1:A:417:C:C6	2.43	0.54
1:A:1095:U:H2'	1:A:1096:C:C6	2.42	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: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
1:A:1502:A:H2	1:A:1505:G:H1	1.57	0.53
9:I:53:VAL:HG21	9:I:85:LEU:HD21	1.90	0.53
1:A:390:C:O3'	16:P:28:ARG:NH2	2.41	0.53
1:A:664:G:OP1	18:R:64:ARG:HD2	2.08	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
3:C:174:PRO:HB2	3:C:177:THR:HG22	1.89	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: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
1:A:1124:G:H5'	10:J:35:SER:O	2.08	0.53
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
4:D:156:GLU:O	4:D:160:GLN:HB2	2.09	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: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
1:A:1148:U:H2'	1:A:1149:C:O4'	2.09	0.53
3:C:12:LEU:HD11	14:N:51:GLY:HA2	1.90	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
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: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
1:A:1281:U:H5'	1:A:1282:C:H5	1.74	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:401:C:O2'	1:A:621:A:N3	2.38	0.52
1:A:559:A:OP1	5:E:126:ARG:NH2	2.39	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
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:8:GLU:HB3	5:E:34:VAL:HG22	1.91	0.52
5:E:17:ALA:HB2	5:E:26:PHE:HD2	1.75	0.52
1:A:89:C:H2'	1:A:90:U:O4'	2.10	0.52
1:A:399:G:H2'	1:A:400:C:C6	2.43	0.52
1:A:1402:4OC:HM22	1:A:1403:C:H5'	1.91	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:436:C:H2'	1:A:437:U:C6	2.44	0.52
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
10:J:15:THR:HG22	10:J:94:VAL:HB	1.92	0.52
1:A:449:C:O2	16:P:42:ARG:NH1	2.43	0.52
1:A:1323:G:H2'	1:A:1324:A:C8	2.44	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:404:U:OP2	4:D:118:ARG:NH1	2.43	0.52
1:A:488:C:H2'	1:A:489:C:H6	1.75	0.52
1:A:1399:C:C2	1:A:1502:A:N6	2.78	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:580:U:H2'	1:A:581:G:O4'	2.10	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:O5'	1:A:1030(D):A:H8	1.94	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:908:A:H2'	1:A:909:A:H8	1.74	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
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: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
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
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: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
1:A:836:G:C6	1:A:851:G:C6	2.99	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:992:U:H3	1:A:1044:A:H62	1.59	0.51
1:A:1376:U:OP1	7:G:98:SER:OG	2.19	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:553:A:H2'	1:A:554:C:C6	2.45	0.51
1:A:1266:G:N2	1:A:1269:A:OP2	2.32	0.51
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
1:A:1145:C:HO2'	1:A:1146:A:P	2.34	0.50
4:D:43:HIS:HB3	4:D:46:LYS:HD2	1.93	0.50
4:D:111:ALA:HB2	4:D:120:LEU:HD12	1.93	0.50
1:A:62:U:H2'	1:A:63:C:C6	2.46	0.50
1:A:509:A:O2'	1:A:510:A:OP1	2.26	0.50
1:A:1313:U:O4	19:S:4:SER:OG	2.18	0.50
1:A:1367:C:C5'	10:J:60:ARG:HE	2.24	0.50
1:A:743:U:H2'	1:A:744:C:C6	2.46	0.50
1:A:1162:C:H2'	1:A:1163:C:H6	1.75	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
1:A:1347:G:H3'	9:I:108:VAL:O	2.12	0.50
5:E:11:ILE:HG22	5:E:12:LEU:HD12	1.92	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
1:A:1318:A:O2'	19:S:37:ARG:HB3	2.12	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:376:G:OP2	16:P:67:THR:HG21	2.12	0.50
1:A:985:C:H2'	1:A:986:A:C8	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
4:D:190:ASP:OD1	4:D:191:ARG:N	2.44	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
1:A:1074:G:C5	1:A:1075:C:C5	3.00	0.49
9:I:10:ARG:NH1	9:I:75:ASP:OD2	2.45	0.49
1:A:671:G:H5'	6:F:77:ARG:HH21	1.76	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: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: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
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
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:872:A:C8	1:A:874:G:C8	3.00	0.49
1:A:939:G:H5''	7:G:102:ARG:NH2	2.28	0.49
1:A:1326:C:H2'	1:A:1327:C:C6	2.46	0.49
3:C:112:SER:HB3	3:C:115:LEU:HD12	1.94	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:977:A:O2'	1:A:979:C:OP2	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
2:B:204:ASN:H	2:B:204:ASN:HD22	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:457:C:C2	1:A:458:C:C5	3.01	0.49
1:A:1410:G:H2'	1:A:1411:C:C6	2.48	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: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
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
8:H:110:ALA:HB3	8:H:121:ASP:HB3	1.94	0.48
1:A:924:C:H2'	1:A:925:G:C8	2.48	0.48
1:A:1221:G:OP2	19:S:37:ARG:NH2	2.47	0.48
6:F:50:TYR:CE1	18:R:77:GLY:HA2	2.48	0.48
13:M:54:VAL:O	13:M:58:GLU:HG2	2.12	0.48
2:B:88:ALA:HB2	2:B:219:VAL:HG13	1.96	0.48
2:B:160:ASP:N	2:B:160:ASP:OD1	2.43	0.48
1:A:5:U:H4'	1:A:6:G:O5'	2.12	0.48
1:A:620:C:C2	4:D:135:LEU:HD22	2.49	0.48
1:A:1111:A:N1	3:C:177:THR:HB	2.28	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:522:C:OP2	12:L:69:TYR:OH	2.25	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
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:946:A:H2'	1:A:947:G:H8	1.75	0.48
1:A:1179:A:H2'	1:A:1180:A:O4'	2.14	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: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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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: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:1225:A:H2'	1:A:1225:A:N3	2.29	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: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: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
1:A:865:A:H2'	1:A:866:C:C6	2.50	0.47
1:A:1139:G:H4'	1:A:1140:C:H5'	1.95	0.47
1:A:1223:C:OP2	19:S:78:ARG:NH2	2.46	0.47
1:A:1347:G:O6	9:I:10:ARG:NH2	2.48	0.47
10:J:49:VAL:HG13	14:N:41:ARG:HD2	1.95	0.47
11:K:33:THR:HA	11:K:39:PRO:HA	1.96	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:684:A:O2'	11:K:39:PRO:O	2.33	0.47
1:A:936:C:H2'	1:A:937:A:O4'	2.15	0.47
1:A:1409:C:H2'	1:A:1410:G:C8	2.50	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: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
1:A:1390:U:H2'	1:A:1391:U:C6	2.50	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: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
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
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:94:ARG:O	7:G:97:GLN:HB3	2.15	0.46
7:G:121:ALA:O	7:G:125:MET:HG3	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:960:U:H4'	1:A:961:U:C5'	2.45	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
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
1:A:1342:C:O2'	9:I:124:GLN:HB2	2.16	0.46
2:B:16:HIS:ND1	2:B:210:SER:HB2	2.30	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:728:A:H2'	1:A:729:A:C8	2.50	0.46
1:A:924:C:O2'	1:A:1502:A:N6	2.44	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:HA	8:H:18:ARG:HD3	1.73	0.46
1:A:57:G:H2'	1:A:58:C:H6	1.79	0.46
1:A:270:A:H2'	1:A:271:C:C6	2.51	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:789:U:H2'	1:A:791:G:OP2	2.15	0.45
1:A:1030:C:H2'	1:A:1030(A):G:C8	2.51	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:547:A:H4'	1:A:548:G:O5'	2.17	0.45
1:A:839:U:H2'	1:A:839:U:O2	2.16	0.45
1:A:976:G:N2	1:A:1362:C:OP2	2.39	0.45
4:D:78:LEU:HB3	4:D:93:PHE:HE1	1.81	0.45
1:A:302:G:H5''	12:L:17:LYS:NZ	2.32	0.45
1:A:749:C:H2'	1:A:750:G:H8	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:47:ARG:HA	6:F:57:GLN:HG2	1.97	0.45
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:32:A:H2'	1:A:33:A:C8	2.52	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: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
1:A:1350:A:OP2	9:I:118:LYS:HE3	2.17	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:437:U:H5''	4:D:155:LEU:HD11	1.97	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
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
4:D:11:LEU:HD13	4:D:66:ARG:HD2	1.99	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:OTD: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: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
1:A:1008:C:H42	1:A:1021:G:H1	1.60	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:179:A:H2'	1:A:180:U:C6	2.52	0.44
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
1:A:1419:G:H2'	1:A:1420:C:C6	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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: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:437:U:C5'	4:D:155:LEU:HD11	2.48	0.44
1:A:794:A:H2'	1:A:795:C:C6	2.52	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
2:B:158:LEU:HD12	2:B:158:LEU:H	1.82	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:1349:A:OP1	9:I:120:ARG:HB2	2.18	0.44
1:A:299:G:N2	1:A:565:U:O2	2.51	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
3:C:111:LEU:HD21	3:C:144:SER:O	2.18	0.44
12:L:44:THR:HA	12:L:45:PRO:HD3	1.84	0.44
12:L:110:VAL:CG2	12:L:120:TYR:HB3	2.47	0.44
13:M:91:ARG:HA	13:M:91:ARG:HD2	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:339:C:H2'	1:A:340:U:C6	2.53	0.44
1:A:673:G:O3'	6:F:87:ARG:NH2	2.50	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
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
6:F:25:ILE:HD13	6:F:82:ARG:HD2	2.00	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: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
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
3:C:155:GLY:HA3	3:C:163:ALA:HB1	1.99	0.44
15:O:2:PRO:HB2	15:O:3:ILE:H	1.54	0.44
15:O:24:SER:HB2	15:O:27:VAL:HG23	1.99	0.44
17:Q:29:HIS:HB3	17:Q:33:GLY:H	1.82	0.44
1:A:374:A:N3	1:A:374:A:H2'	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: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:51:A:N7	1:A:114:U:O2'	2.45	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: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
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:152:A:C8	1:A:153:C:C5	3.05	0.43
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
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: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: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
1:A:1085:U:H3'	1:A:1086:U:C5	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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:HA	13:M:70:LEU:HD23	1.75	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
1:A:1270:C:H2'	1:A:1271:G:C8	2.53	0.43
9:I:70:LYS:O	9:I:74:ILE:HG13	2.19	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
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
16:P:28:ARG:HG3	16:P:29:ASP:OD1	2.19	0.43
1:A:9:G:H5''	5:E:126:ARG:HD3	1.99	0.43
1:A:527:G7M:H8	1:A:527:G7M:H5''	2.00	0.43
1:A:1150:U:O4	1:A:1151:A:N6	2.51	0.43
1:A:1221:G:O3'	19:S:77:THR:HG21	2.18	0.43
1:A:1424:C:H2'	1:A:1425:U:O4'	2.18	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: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
1:A:1190:G:H5'	3:C:176:HIS:NE2	2.34	0.43
1:A:1285:A:O5'	1:A:1285:A:H8	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
2:B:51:LEU:HG	2:B:201:ILE:HG23	2.01	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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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:567:G:H2'	1:A:568:G:O4'	2.19	0.43
1:A:1161:C:C2	1:A:1162:C:C5	3.07	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:103:C:P	20:T:17:ARG:HH12	2.42	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
1:A:1006:C:H2'	1:A:1007:C:C6	2.53	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
2:B:91:PRO:HG2	2:B:155:LEU:HG	2.00	0.43
6:F:70:ASP:OD1	6:F:70:ASP:N	2.51	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
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
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: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
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
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:41:G:H2'	1:A:42:G:C8	2.54	0.42
1:A:263:A:OP2	20:T:79:ARG:NH1	2.51	0.42
1:A:954:G:H2'	1:A:955:U:O4'	2.19	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
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:309:G:O2'	1:A:607:A:N1	2.51	0.42
1:A:517:G:H8	1:A:517:G:OP2	2.01	0.42
1:A:736:C:O2'	6:F:90:VAL:O	2.35	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
6:F:95:GLU:HA	6:F:96:PRO:HD3	1.90	0.42
8:H:25:ASP:N	8:H:25:ASP:OD1	2.50	0.42
19:S:31:ILE:HD12	19:S:31:ILE:HA	1.88	0.42
1:A:60:A:OP2	1:A:60:A:H8	2.02	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: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
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: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
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
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:719:C:O2'	18:R:49:LYS:HB3	2.20	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
4:D:52:SER:O	4:D:56:VAL:HG23	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:173:TRP:O	4:D:174:LEU:HD23	2.19	0.42
17:Q:5:VAL:HA	17:Q:59:ILE:O	2.19	0.42
1:A:46:G:H2'	1:A:366:C:C5	2.55	0.42
1:A:177:C:OP1	20:T:65:LYS:HD3	2.19	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
1:A:1106:G:H5''	3:C:172:ARG:HB3	2.00	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:339:C:H2'	1:A:340:U:H6	1.85	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
2:B:24:TRP:HB3	2:B:40:HIS:CE1	2.54	0.42
21:U:25:LYS:HE3	21:U:25:LYS:HA	2.00	0.42
1:A:62:U:H2'	1:A:63:C:H6	1.85	0.42
1:A:1405:G:H1'	1:A:1519[A]:MA6:O4'	2.20	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:1397:C:C4	22:Y:5:U:H5''	2.55	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: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
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
12:L:117:ARG:NE	12:L:123:LYS:O	2.51	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

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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:1063:C:H2'	1:A:1064:G:C8	2.56	0.41
1:A:1223:C:P	19:S:78:ARG:HH21	2.43	0.41
1:A:1238:A:C2	1:A:1241:G:N3	2.86	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
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:HD13	12:L:7:ILE:HA	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
23:W:28:G:H2'	23:W:28:G:N3	2.34	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
1:A:1057:G:H2'	1:A:1058:G:O4'	2.20	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:109:A:H5'	1:A:110:C:C5	2.56	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
1:A:1048:G:O3'	1:A:1049:U:H3'	2.21	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
3:C:110:ASN:O	3:C:141:VAL:HG22	2.20	0.41
4:D:57:ARG:NH2	5:E:107:ARG:HE	2.18	0.41
4:D:152:SER:O	4:D:158:ILE:HD12	2.20	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:40:ILE:HB	19:S:67:VAL:O	2.21	0.41
19:S:55:LYS:HG2	19:S:56:GLN:HG3	2.02	0.41
20:T:62:LEU:HD22	20:T:62:LEU:HA	1.71	0.41
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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:HD2	19:S:29:ARG:N	2.36	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
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
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
2:B:172:ILE:H	2:B:172:ILE:HG13	1.51	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:324:G:N2	1:A:327:A:C8	2.89	0.41
1:A:345:C:H6	1:A:345:C:OP2	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
1:A:1116:C:O2'	9:I:108:VAL:HG21	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
2:B:33:TYR:HB2	2:B:43:ASP:HA	2.03	0.41
2:B:87:ARG:HH21	2:B:219:VAL:HB	1.85	0.41
2:B:215:LEU:HD23	2:B:215:LEU:HA	1.84	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
19:S:5:LEU:HD21	19:S:70:LYS:HZ1	1.85	0.41
1:A:10:A:H2'	1:A:11:G:C8	2.56	0.41
1:A:166:G:H2'	1:A:167:G:H8	1.86	0.41
1:A:383:A:C5	1:A:384:G:H1'	2.55	0.41
1:A:545:C:H5'	4:D:72:GLU:HB2	2.02	0.41
1:A:791:G:H2'	1:A:792:A:H5'	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1049:U:H4'	1:A:1050:G:O5'	2.21	0.41
1:A:1057:G:H5''	3:C:154:SER:CB	2.50	0.41
1:A:1242:C:H2'	1:A:1243:C:H6	1.86	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
2:B:16:HIS:CE1	2:B:210:SER:HB2	2.56	0.41
2:B:59:GLU:HB2	2:B:221:LEU:HD11	2.03	0.41
2:B:68:ILE:O	2:B:90:MET:HB3	2.20	0.41
2:B:103:THR:OG1	2:B:176:GLU:OE1	2.37	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
8:H:63:LEU:H	8:H:63:LEU:HD22	1.85	0.41
9:I:53:VAL:CG2	9:I:85:LEU:HD21	2.50	0.41
10:J:90:LEU:N	10:J:91:PRO:HD2	2.35	0.41
13:M:3:ARG:NE	13:M:7:VAL:HG12	2.36	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:HE3	20:T:68:LYS:HA	2.03	0.41
20:T:76:ALA:O	20:T:79:ARG:HB2	2.21	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
1:A:1072:G:C6	1:A:1073:U:C4	3.08	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:971:G:H1'	1:A:1365:G:O2'	2.21	0.40
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:1224:G:H2'	19:S:78:ARG:HH22	1.85	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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:A:1407:5MC:N4	25:A:1809:SIS:O53	2.51	0.40
2:B:8:LYS:N	2:B:8:LYS:HE3	2.36	0.40
2:B:70:PHE:HE2	2:B:90:MET:HG3	1.87	0.40
9:I:17:VAL:HG11	9:I:81:ILE:HA	2.03	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
1:A:1441:G:H4'	1:A:1442:G:C6	2.55	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: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
1:A:1121:U:H2'	1:A:1122:U:C6	2.57	0.40
2:B:76:GLN:NE2	2:B:206:ASP:OD2	2.55	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
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
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%)	30	60
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%)	8	30
9	I	125/127 (98%)	112 (90%)	13 (10%)	0	100	100
10	J	96/104 (92%)	81 (84%)	13 (14%)	2 (2%)	5	24
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%)	13	39
21	U	22/26 (85%)	22 (100%)	0	0	100	100
All	All	2336/2521 (93%)	2153 (92%)	177 (8%)	6 (0%)	37	66

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%)	2 9
3	C	160/187 (86%)	136 (85%)	24 (15%)	2 9
4	D	180/180 (100%)	168 (93%)	12 (7%)	13 38
5	E	115/122 (94%)	102 (89%)	13 (11%)	4 18
6	F	90/90 (100%)	86 (96%)	4 (4%)	24 50
7	G	126/126 (100%)	120 (95%)	6 (5%)	21 48
8	H	119/119 (100%)	106 (89%)	13 (11%)	5 19
9	I	98/98 (100%)	88 (90%)	10 (10%)	6 22
10	J	87/91 (96%)	80 (92%)	7 (8%)	10 31
11	K	88/98 (90%)	77 (88%)	11 (12%)	3 14
12	L	103/107 (96%)	89 (86%)	14 (14%)	3 12
13	M	94/100 (94%)	83 (88%)	11 (12%)	4 16
14	N	49/49 (100%)	47 (96%)	2 (4%)	26 51
15	O	79/79 (100%)	66 (84%)	13 (16%)	2 7
16	P	72/74 (97%)	66 (92%)	6 (8%)	9 30
17	Q	94/96 (98%)	89 (95%)	5 (5%)	19 45
18	R	61/76 (80%)	57 (93%)	4 (7%)	14 39
19	S	71/79 (90%)	64 (90%)	7 (10%)	6 23
20	T	76/81 (94%)	66 (87%)	10 (13%)	3 13
21	U	19/21 (90%)	17 (90%)	2 (10%)	5 21

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	1983/2092 (95%)	1779 (90%)	204 (10%)	6 22

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

Sometimes 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 [i](#)

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	1519[A]	1	19,26,27	1.28	2 (10%)	18,38,41	0.70	0
1	5MC	A	967	1	19,22,23	0.97	1 (5%)	26,32,35	0.99	3 (11%)
1	5MC	A	1400	1	19,22,23	1.18	2 (10%)	26,32,35	1.02	2 (7%)
12	0TD	L	92	12	8,9,10	2.66	2 (25%)	6,11,13	1.77	1 (16%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
1	4OC	A	1402	1	20,23,24	1.19	3 (15%)	25,32,35	0.71	0
1	MA6	A	1519[B]	1	19,26,27	1.42	3 (15%)	18,38,41	0.60	0
1	PSU	A	1540	1	18,21,22	1.18	1 (5%)	21,30,33	1.85	5 (23%)
1	5MC	A	1404	1	19,22,23	0.89	1 (5%)	26,32,35	1.02	2 (7%)
1	MA6	A	1518[B]	1	19,26,27	1.40	2 (10%)	18,38,41	0.66	0
1	PSU	A	1541	1	18,21,22	1.06	1 (5%)	21,30,33	1.62	3 (14%)
1	M2G	A	966	1	20,27,28	1.60	4 (20%)	19,40,43	1.32	2 (10%)
1	2MG	A	1207	1	18,26,27	1.56	4 (22%)	16,38,41	1.34	2 (12%)
1	5MC	A	1407	1	19,22,23	1.16	3 (15%)	26,32,35	0.99	1 (3%)
1	MA6	A	1518[A]	1	19,26,27	1.04	1 (5%)	18,38,41	0.74	0
1	PSU	A	516	24,1	18,21,22	1.19	1 (5%)	21,30,33	1.85	5 (23%)
1	G7M	A	527	1	20,26,27	1.30	1 (5%)	16,39,42	0.95	1 (6%)
1	UR3	A	1498	1	19,22,23	0.87	2 (10%)	26,32,35	1.06	1 (3%)

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

All (34) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
12	L	92	0TD	CB-CA	-6.26	1.52	1.54
1	A	527	G7M	C2-N2	4.86	1.45	1.34
1	A	1518[B]	MA6	C6-N1	4.34	1.38	1.32
1	A	966	M2G	C6-N1	4.26	1.44	1.37
1	A	1519[B]	MA6	C6-N1	4.16	1.38	1.32
1	A	516	PSU	C6-C5	4.03	1.39	1.35
1	A	1540	PSU	C6-C5	4.01	1.39	1.35
1	A	1541	PSU	C6-C5	3.68	1.39	1.35
1	A	1207	2MG	C6-N1	3.65	1.43	1.37
1	A	1519[A]	MA6	C6-N1	3.58	1.37	1.32
1	A	1400	5MC	C2-N1	3.36	1.47	1.40
1	A	966	M2G	C2-N2	3.35	1.41	1.35
1	A	1518[A]	MA6	C6-C5	-3.26	1.39	1.44
1	A	966	M2G	C2-N3	3.23	1.35	1.30
1	A	1207	2MG	C2-N1	3.21	1.41	1.36
1	A	1207	2MG	C2-N2	3.02	1.39	1.33
12	L	92	0TD	CB-SB	-2.84	1.79	1.82
1	A	1402	4OC	O2-C2	-2.81	1.18	1.23
1	A	1407	5MC	C2-N1	2.81	1.46	1.40
1	A	1519[B]	MA6	C2-N1	2.67	1.38	1.33
1	A	1207	2MG	C5-C6	-2.66	1.42	1.47
1	A	1407	5MC	C2-N3	2.66	1.41	1.36
1	A	1402	4OC	C4-N4	2.63	1.41	1.36
1	A	1498	UR3	C2-N3	2.55	1.44	1.39
1	A	1400	5MC	C2-N3	2.55	1.41	1.36
1	A	1519[A]	MA6	C2-N1	2.47	1.38	1.33
1	A	1518[B]	MA6	C2-N1	2.40	1.38	1.33
1	A	1402	4OC	C2-N3	2.39	1.41	1.36
1	A	966	M2G	C2-N1	2.35	1.42	1.36
1	A	967	5MC	C2-N3	2.35	1.41	1.36
1	A	1519[B]	MA6	C2-N3	2.18	1.35	1.32
1	A	1498	UR3	C2-N1	2.12	1.41	1.38
1	A	1404	5MC	C2-N1	2.10	1.44	1.40
1	A	1407	5MC	C6-C5	2.02	1.37	1.34

All (28) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1540	PSU	C4-N3-C2	-4.83	119.71	126.37
1	A	516	PSU	N1-C2-N3	4.61	120.03	115.17
1	A	516	PSU	C4-N3-C2	-4.49	120.19	126.37
1	A	1540	PSU	N1-C2-N3	4.49	119.90	115.17

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1541	PSU	C4-N3-C2	-4.12	120.69	126.37
1	A	1207	2MG	O6-C6-N1	-3.74	116.19	120.62
1	A	966	M2G	O6-C6-C5	3.49	131.24	124.32
1	A	1498	UR3	C6-N1-C2	-3.30	119.10	121.80
12	L	92	0TD	CSB-SB-CB	-3.24	96.53	102.36
1	A	1541	PSU	N1-C2-N3	3.20	118.54	115.17
1	A	966	M2G	O6-C6-N1	-3.13	116.90	120.62
1	A	1207	2MG	O6-C6-C5	3.10	130.46	124.32
1	A	1541	PSU	O2-C2-N1	-2.70	120.01	122.79
1	A	516	PSU	C6-N1-C2	-2.66	120.22	122.69
1	A	967	5MC	N4-C4-N3	-2.58	113.83	118.51
1	A	527	G7M	C2-N1-C6	-2.55	120.45	125.11
1	A	1404	5MC	N4-C4-N3	-2.51	113.96	118.51
1	A	967	5MC	C5-C4-N3	2.48	124.30	121.75
1	A	1540	PSU	O2-C2-N1	-2.46	120.25	122.79
1	A	1400	5MC	N4-C4-N3	-2.37	114.22	118.51
1	A	516	PSU	O2-C2-N1	-2.34	120.38	122.79
1	A	1404	5MC	C5-C4-N3	2.30	124.11	121.75
1	A	1407	5MC	N4-C4-N3	-2.29	114.37	118.51
1	A	1540	PSU	C6-N1-C2	-2.28	120.57	122.69
1	A	516	PSU	O4'-C1'-C2'	2.15	108.12	105.15
1	A	1400	5MC	O2-C2-N3	-2.11	119.01	122.33
1	A	1540	PSU	O4-C4-C5	-2.01	119.00	124.01
1	A	967	5MC	C4-N3-C2	-2.00	118.03	120.81

There are no chirality outliers.

All (22) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	966	M2G	C4'-C5'-O5'-P
1	A	1400	5MC	O4'-C4'-C5'-O5'
1	A	1518[A]	MA6	C5-C6-N6-C10
1	A	1519[B]	MA6	C5-C6-N6-C9
12	L	92	0TD	CG-CB-SB-CSB
1	A	967	5MC	O4'-C4'-C5'-O5'
1	A	527	G7M	C3'-C4'-C5'-O5'
1	A	1519[A]	MA6	O4'-C4'-C5'-O5'
1	A	1519[A]	MA6	C3'-C4'-C5'-O5'
1	A	1519[B]	MA6	N1-C6-N6-C9
1	A	1400	5MC	C3'-C4'-C5'-O5'
1	A	966	M2G	O4'-C4'-C5'-O5'
1	A	966	M2G	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
1	A	967	5MC	C3'-C4'-C5'-O5'
1	A	527	G7M	O4'-C4'-C5'-O5'
1	A	1402	4OC	O4'-C4'-C5'-O5'
1	A	1518[A]	MA6	O4'-C4'-C5'-O5'
1	A	1518[A]	MA6	C3'-C4'-C5'-O5'
1	A	1518[B]	MA6	C5-C6-N6-C10
1	A	1519[A]	MA6	C5-C6-N6-C10
12	L	92	0TD	SB-CB-CG-OD1
1	A	1541	PSU	O4'-C1'-C5-C4

There are no ring outliers.

14 monomers are involved in 22 short contacts:

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides 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	-	31,33,33	1.71	4 (12%)	28,49,49	1.38	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 (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
25	A	1809	SIS	C41-C51	5.47	1.40	1.32
25	A	1809	SIS	C31-C41	-4.99	1.40	1.50
25	A	1809	SIS	C61-C51	-3.85	1.40	1.48
25	A	1809	SIS	C53-C43	2.54	1.54	1.52

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
25	A	1809	SIS	C93-N33-C33	-5.04	107.54	114.47
25	A	1809	SIS	C13-O62-C62	-2.19	112.80	117.98

There are no chirality outliers.

All (2) torsion outliers are listed below:

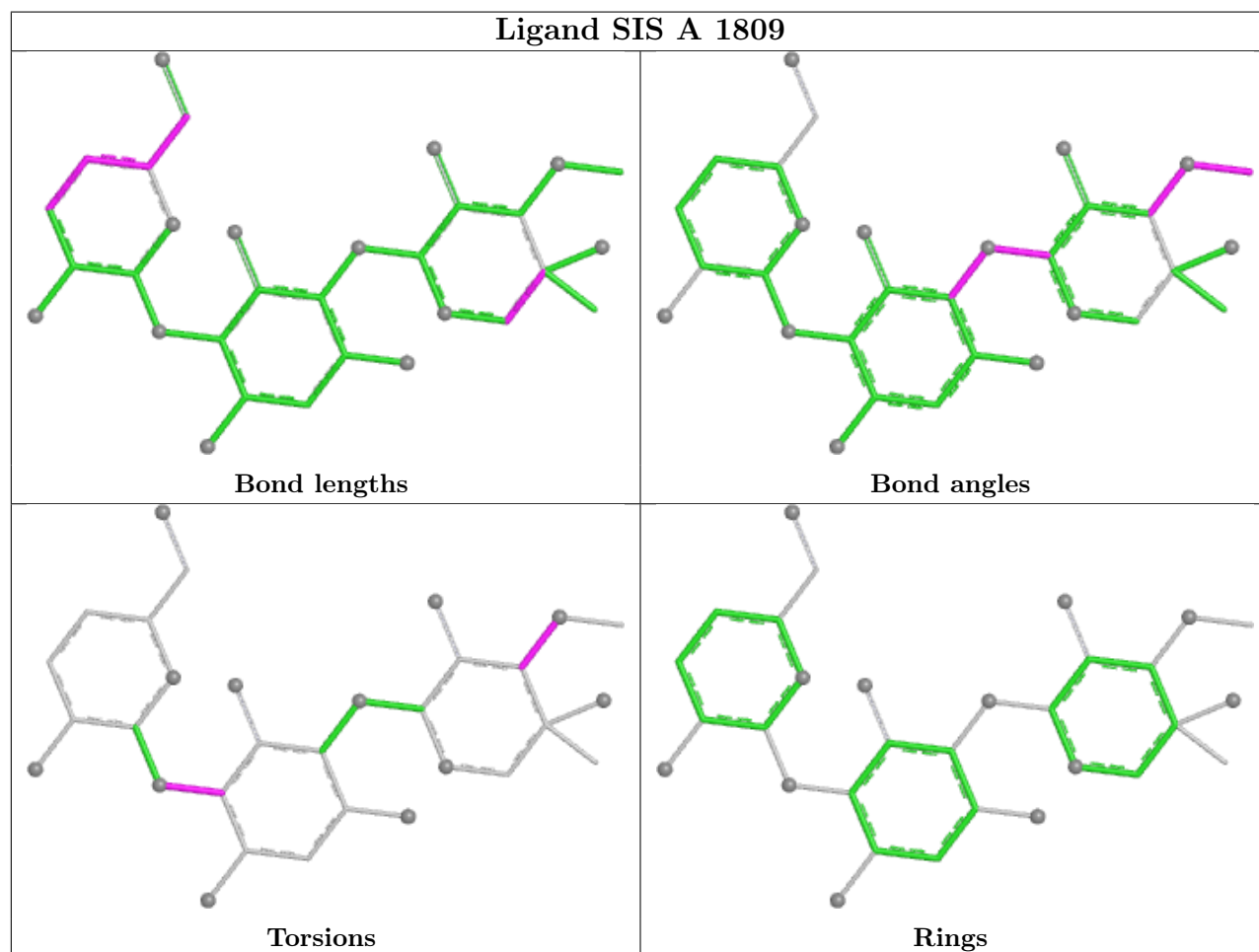
Mol	Chain	Res	Type	Atoms
25	A	1809	SIS	C23-C33-N33-C93
25	A	1809	SIS	C52-C42-O11-C11

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 than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

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

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

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	1497/1517 (98%)	-0.33	13 (0%) 81 73	29, 82, 168, 310	4 (0%)
2	B	234/255 (91%)	0.15	10 (4%) 40 35	68, 109, 179, 214	0
3	C	206/238 (86%)	0.29	4 (1%) 66 57	83, 128, 176, 190	0
4	D	208/208 (100%)	0.16	9 (4%) 40 35	55, 98, 149, 205	0
5	E	150/161 (93%)	-0.39	0 100 100	40, 67, 101, 166	0
6	F	101/101 (100%)	-0.10	2 (1%) 64 55	61, 94, 140, 175	0
7	G	155/155 (100%)	-0.05	2 (1%) 74 66	67, 97, 166, 204	0
8	H	138/138 (100%)	-0.66	0 100 100	37, 56, 85, 132	0
9	I	127/127 (100%)	0.40	7 (5%) 32 29	79, 121, 162, 195	0
10	J	98/104 (94%)	1.15	21 (21%) 3 5	88, 158, 233, 294	0
11	K	116/128 (90%)	-0.24	0 100 100	56, 76, 110, 157	0
12	L	123/131 (93%)	0.05	6 (4%) 36 31	46, 84, 135, 190	0
13	M	118/125 (94%)	0.24	7 (5%) 29 28	74, 101, 147, 226	0
14	N	60/60 (100%)	0.48	5 (8%) 19 20	86, 111, 150, 202	0
15	O	87/88 (98%)	-0.24	0 100 100	44, 76, 119, 160	0
16	P	83/88 (94%)	-0.24	0 100 100	56, 77, 111, 190	0
17	Q	99/104 (95%)	-0.38	0 100 100	43, 62, 98, 140	0
18	R	70/87 (80%)	-0.23	0 100 100	50, 81, 135, 168	0
19	S	80/92 (86%)	0.83	8 (10%) 14 16	94, 128, 185, 245	0
20	T	99/105 (94%)	-0.06	4 (4%) 43 37	56, 79, 134, 181	0
21	U	24/26 (92%)	1.43	9 (37%) 1 1	91, 123, 151, 154	0
22	Y	6/6 (100%)	1.13	1 (16%) 5 7	103, 112, 178, 209	0
23	W	15/15 (100%)	0.28	0 100 100	89, 126, 196, 199	0
All	All	3894/4059 (95%)	-0.09	108 (2%) 55 47	29, 89, 169, 310	4 (0%)

All (108) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
19	S	3	ARG	11.1
19	S	2	PRO	6.9
1	A	1129	C	6.8
1	A	532	A	5.0
3	C	178	LEU	4.9
3	C	2	GLY	4.8
13	M	7	VAL	4.6
4	D	21	LEU	4.3
1	A	1539	C	4.2
10	J	100	THR	4.2
1	A	1003(A)	G	4.0
13	M	8	GLU	3.8
12	L	47	LYS	3.8
20	T	73	HIS	3.8
12	L	89	ARG	3.6
9	I	66	ARG	3.5
9	I	30	GLY	3.5
12	L	28	LYS	3.4
21	U	6	ARG	3.4
19	S	37	ARG	3.3
19	S	35	SER	3.3
4	D	3	ARG	3.3
19	S	5	LEU	3.1
2	B	132	LYS	3.0
2	B	203	GLY	3.0
10	J	5	ARG	3.0
19	S	32	LYS	3.0
4	D	24	GLU	2.9
7	G	83	ALA	2.9
2	B	16	HIS	2.9
9	I	15	ALA	2.9
10	J	90	LEU	2.9
10	J	7	LYS	2.9
13	M	9	ILE	2.8
4	D	22	LYS	2.8
1	A	1030(B)	C	2.7
1	A	1125	U	2.7
9	I	67	GLY	2.7
9	I	13	ALA	2.7
2	B	76	GLN	2.7
4	D	42	GLN	2.7
10	J	33	GLN	2.7

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Mol	Chain	Res	Type	RSRZ
14	N	4	LYS	2.7
12	L	27	LEU	2.7
21	U	16	GLY	2.6
4	D	37	PRO	2.6
1	A	202	U	2.6
21	U	24	ARG	2.6
21	U	25	LYS	2.6
2	B	165	VAL	2.6
10	J	19	SER	2.6
4	D	2	GLY	2.5
1	A	1124	G	2.5
22	Y	6	U	2.5
10	J	55	LYS	2.5
1	A	1038	C	2.5
10	J	6	ILE	2.5
1	A	1126	U	2.5
10	J	35	SER	2.4
13	M	106	ASN	2.4
20	T	101	GLY	2.4
20	T	9	ASN	2.4
9	I	64	THR	2.4
19	S	8	GLY	2.4
19	S	34	TRP	2.4
3	C	207	VAL	2.4
21	U	18	TYR	2.4
10	J	17	ASP	2.4
2	B	140	HIS	2.4
14	N	31	ARG	2.4
10	J	38	ILE	2.3
14	N	11	LYS	2.3
10	J	18	ALA	2.3
3	C	60	ALA	2.3
10	J	99	LYS	2.3
21	U	10	ARG	2.3
14	N	2	ALA	2.3
10	J	88	LEU	2.3
2	B	13	ALA	2.3
10	J	44	VAL	2.3
9	I	125	TYR	2.2
1	A	1037	C	2.2
10	J	4	ILE	2.2
21	U	7	ARG	2.2

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Mol	Chain	Res	Type	RSRZ
20	T	74	LYS	2.2
10	J	72	VAL	2.2
7	G	5	ARG	2.2
12	L	128	ALA	2.2
14	N	10	ALA	2.2
4	D	9	CYS	2.1
4	D	31	CYS	2.1
13	M	4	ILE	2.1
10	J	45	ARG	2.1
1	A	1024	G	2.1
12	L	103	GLY	2.1
21	U	9	ARG	2.1
2	B	227	GLY	2.1
10	J	43	ARG	2.1
2	B	239	VAL	2.1
2	B	10	LEU	2.1
13	M	35	GLU	2.1
10	J	74	ILE	2.0
1	A	372	C	2.0
13	M	10	PRO	2.0
6	F	47	ARG	2.0
21	U	5	ASP	2.0
6	F	46	ARG	2.0
10	J	3	LYS	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, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
1	PSU	A	1540	20/21	0.85	0.23	217,234,249,254	0
1	PSU	A	1541	20/21	0.90	0.21	218,237,269,281	0
1	MA6	A	1518[A]	24/25	0.94	0.12	60,62,62,62	24
1	MA6	A	1518[B]	24/25	0.94	0.12	59,61,62,62	24
1	PSU	A	516	20/21	0.94	0.10	101,114,117,118	0
1	2MG	A	1207	24/25	0.94	0.11	103,112,118,122	0
12	0TD	L	92	10/11	0.95	0.11	74,79,85,86	0
1	5MC	A	967	21/22	0.96	0.10	74,79,84,87	0
1	G7M	A	527	24/25	0.96	0.09	60,73,83,89	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
1	5MC	A	1407	21/22	0.96	0.10	64,67,69,73	0
1	M2G	A	966	25/26	0.96	0.12	72,88,97,99	0
1	MA6	A	1519[B]	24/25	0.97	0.10	57,59,60,60	24
1	5MC	A	1400	21/22	0.97	0.10	58,66,88,93	0
1	UR3	A	1498	21/22	0.97	0.10	59,62,65,78	0
1	MA6	A	1519[A]	24/25	0.97	0.10	58,59,60,60	24
1	5MC	A	1404	21/22	0.98	0.07	59,60,63,73	0
1	4OC	A	1402	22/23	0.98	0.08	63,67,78,82	0

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
24	MG	A	1790	1/1	0.30	0.32	189,189,189,189	0
24	MG	A	1758	1/1	0.42	0.36	115,115,115,115	0
24	MG	A	1602	1/1	0.46	0.42	201,201,201,201	0
24	MG	A	1703	1/1	0.47	0.41	214,214,214,214	0
24	MG	A	1700	1/1	0.49	0.84	261,261,261,261	0
24	MG	A	1806	1/1	0.57	0.38	201,201,201,201	0
24	MG	A	1710	1/1	0.58	0.69	255,255,255,255	0
24	MG	C	303	1/1	0.58	0.20	137,137,137,137	0
24	MG	A	1695	1/1	0.61	0.33	211,211,211,211	0
24	MG	A	1789	1/1	0.63	0.50	247,247,247,247	0
24	MG	A	1731	1/1	0.64	0.28	112,112,112,112	0
24	MG	A	1765	1/1	0.67	0.29	89,89,89,89	0
24	MG	A	1717	1/1	0.68	0.20	161,161,161,161	0
24	MG	A	1713	1/1	0.69	0.17	53,53,53,53	0
24	MG	A	1701	1/1	0.71	0.28	145,145,145,145	0
24	MG	A	1665	1/1	0.71	0.21	68,68,68,68	0
24	MG	A	1818	1/1	0.72	0.22	101,101,101,101	0
24	MG	A	1734	1/1	0.75	0.18	66,66,66,66	0
24	MG	A	1633	1/1	0.75	0.57	207,207,207,207	0
24	MG	A	1764	1/1	0.75	0.12	93,93,93,93	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
24	MG	A	1632	1/1	0.76	0.33	180,180,180,180	0
24	MG	A	1826	1/1	0.76	0.27	110,110,110,110	0
24	MG	A	1753	1/1	0.76	0.17	73,73,73,73	0
24	MG	P	103	1/1	0.76	0.06	60,60,60,60	0
24	MG	A	1627	1/1	0.77	0.16	111,111,111,111	0
24	MG	A	1693	1/1	0.77	0.22	91,91,91,91	0
24	MG	A	1696	1/1	0.78	0.34	112,112,112,112	0
24	MG	A	1638	1/1	0.79	0.31	159,159,159,159	0
24	MG	A	1612	1/1	0.79	0.28	182,182,182,182	0
24	MG	A	1779	1/1	0.80	0.14	54,54,54,54	0
24	MG	A	1667	1/1	0.80	0.27	197,197,197,197	0
24	MG	A	1678	1/1	0.80	0.15	78,78,78,78	0
24	MG	A	1690	1/1	0.80	0.29	143,143,143,143	0
24	MG	A	1681	1/1	0.82	0.21	104,104,104,104	0
24	MG	A	1808	1/1	0.82	0.18	76,76,76,76	0
24	MG	I	301	1/1	0.82	0.15	89,89,89,89	0
24	MG	A	1661	1/1	0.82	0.35	153,153,153,153	0
24	MG	A	1716	1/1	0.83	0.18	61,61,61,61	0
24	MG	A	1846	1/1	0.83	0.12	76,76,76,76	0
24	MG	A	1610	1/1	0.83	0.36	139,139,139,139	0
24	MG	A	1756	1/1	0.83	0.31	74,74,74,74	0
24	MG	A	1659	1/1	0.83	0.25	135,135,135,135	0
24	MG	A	1603	1/1	0.84	0.13	84,84,84,84	0
24	MG	A	1810	1/1	0.84	0.17	122,122,122,122	0
24	MG	A	1624	1/1	0.84	0.15	56,56,56,56	0
24	MG	A	1697	1/1	0.84	0.31	176,176,176,176	0
24	MG	A	1793	1/1	0.85	0.15	81,81,81,81	0
24	MG	A	1845	1/1	0.85	0.52	110,110,110,110	0
24	MG	A	1645	1/1	0.85	0.15	67,67,67,67	0
24	MG	A	1705	1/1	0.85	0.17	62,62,62,62	0
24	MG	A	1606	1/1	0.85	0.14	54,54,54,54	0
24	MG	A	1692	1/1	0.85	0.32	184,184,184,184	0
24	MG	A	1682	1/1	0.86	0.09	53,53,53,53	0
24	MG	A	1853	1/1	0.86	0.18	59,59,59,59	0
24	MG	B	301	1/1	0.86	0.07	74,74,74,74	0
24	MG	A	1776	1/1	0.86	0.25	63,63,63,63	0
24	MG	C	305	1/1	0.86	0.06	36,36,36,36	0
24	MG	A	1736	1/1	0.86	0.11	81,81,81,81	0
24	MG	A	1680	1/1	0.86	0.21	92,92,92,92	0
24	MG	A	1641	1/1	0.87	0.24	112,112,112,112	0
24	MG	A	1619	1/1	0.87	0.23	71,71,71,71	0
24	MG	A	1657	1/1	0.87	0.17	80,80,80,80	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
24	MG	A	1854	1/1	0.87	0.09	65,65,65,65	0
24	MG	A	1616	1/1	0.87	0.10	62,62,62,62	0
24	MG	A	1752	1/1	0.87	0.10	60,60,60,60	0
24	MG	A	1660	1/1	0.87	0.33	124,124,124,124	0
24	MG	A	1780	1/1	0.87	0.10	67,67,67,67	0
24	MG	K	202	1/1	0.87	0.05	72,72,72,72	0
24	MG	A	1783	1/1	0.87	0.20	58,58,58,58	0
24	MG	A	1787	1/1	0.88	0.15	169,169,169,169	0
24	MG	A	1796	1/1	0.88	0.12	87,87,87,87	0
24	MG	A	1800	1/1	0.88	0.20	99,99,99,99	0
24	MG	A	1639	1/1	0.89	0.31	115,115,115,115	0
24	MG	A	1613	1/1	0.89	0.18	118,118,118,118	0
24	MG	A	1611	1/1	0.89	0.20	132,132,132,132	0
24	MG	A	1857	1/1	0.89	0.38	103,103,103,103	0
24	MG	A	1668	1/1	0.89	0.10	53,53,53,53	0
24	MG	B	302	1/1	0.89	0.06	56,56,56,56	0
24	MG	A	1685	1/1	0.89	0.14	82,82,82,82	0
24	MG	A	1825	1/1	0.89	0.18	86,86,86,86	0
24	MG	D	303	1/1	0.89	0.17	78,78,78,78	0
24	MG	A	1738	1/1	0.89	0.11	60,60,60,60	0
24	MG	A	1833	1/1	0.89	0.36	97,97,97,97	0
24	MG	A	1687	1/1	0.89	0.24	132,132,132,132	0
24	MG	A	1802	1/1	0.90	0.15	67,67,67,67	0
24	MG	A	1804	1/1	0.90	0.13	60,60,60,60	0
24	MG	A	1689	1/1	0.90	0.07	105,105,105,105	0
24	MG	A	1663	1/1	0.90	0.14	80,80,80,80	0
24	MG	A	1759	1/1	0.90	0.15	66,66,66,66	0
24	MG	A	1623	1/1	0.90	0.12	72,72,72,72	0
24	MG	A	1719	1/1	0.90	0.21	55,55,55,55	0
24	MG	A	1768	1/1	0.90	0.08	43,43,43,43	0
24	MG	A	1770	1/1	0.90	0.15	61,61,61,61	0
24	MG	A	1775	1/1	0.90	0.22	81,81,81,81	0
24	MG	L	201	1/1	0.90	0.21	83,83,83,83	0
24	MG	A	1677	1/1	0.90	0.20	76,76,76,76	0
24	MG	A	1844	1/1	0.91	0.26	75,75,75,75	0
24	MG	A	1794	1/1	0.91	0.11	64,64,64,64	0
24	MG	A	1706	1/1	0.91	0.29	91,91,91,91	0
24	MG	A	1622	1/1	0.91	0.09	103,103,103,103	0
24	MG	A	1801	1/1	0.91	0.10	74,74,74,74	0
24	MG	A	1673	1/1	0.91	0.08	51,51,51,51	0
24	MG	A	1745	1/1	0.91	0.11	64,64,64,64	0
24	MG	A	1714	1/1	0.91	0.12	68,68,68,68	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
24	MG	A	1715	1/1	0.91	0.11	75,75,75,75	0
24	MG	A	1658	1/1	0.91	0.40	94,94,94,94	0
24	MG	A	1813	1/1	0.91	0.09	100,100,100,100	0
24	MG	A	1601	1/1	0.91	0.24	70,70,70,70	0
24	MG	A	1704	1/1	0.91	0.07	61,61,61,61	0
24	MG	A	1725	1/1	0.91	0.17	67,67,67,67	0
24	MG	P	102	1/1	0.91	0.12	93,93,93,93	0
24	MG	A	1648	1/1	0.91	0.11	64,64,64,64	0
24	MG	S	101	1/1	0.91	0.12	79,79,79,79	0
24	MG	A	1763	1/1	0.92	0.06	40,40,40,40	0
24	MG	A	1834	1/1	0.92	0.14	96,96,96,96	0
24	MG	A	1839	1/1	0.92	0.21	57,57,57,57	0
24	MG	A	1609	1/1	0.92	0.11	52,52,52,52	0
24	MG	A	1792	1/1	0.92	0.20	73,73,73,73	0
24	MG	A	1666	1/1	0.92	0.10	41,41,41,41	0
24	MG	A	1767	1/1	0.92	0.27	63,63,63,63	0
24	MG	A	1742	1/1	0.92	0.21	40,40,40,40	0
24	MG	A	1799	1/1	0.92	0.25	51,51,51,51	0
24	MG	A	1858	1/1	0.92	0.28	66,66,66,66	0
24	MG	A	1769	1/1	0.92	0.10	63,63,63,63	0
24	MG	A	1720	1/1	0.92	0.08	43,43,43,43	0
24	MG	C	301	1/1	0.92	0.12	44,44,44,44	0
24	MG	A	1746	1/1	0.92	0.08	35,35,35,35	0
24	MG	A	1721	1/1	0.92	0.11	59,59,59,59	0
24	MG	A	1778	1/1	0.92	0.10	67,67,67,67	0
24	MG	A	1631	1/1	0.92	0.13	54,54,54,54	0
24	MG	A	1730	1/1	0.92	0.16	67,67,67,67	0
24	MG	A	1781	1/1	0.92	0.08	74,74,74,74	0
24	MG	A	1699	1/1	0.92	0.18	79,79,79,79	0
24	MG	A	1785	1/1	0.92	0.09	82,82,82,82	0
24	MG	A	1604	1/1	0.92	0.14	48,48,48,48	0
24	MG	A	1617	1/1	0.93	0.33	179,179,179,179	0
24	MG	A	1605	1/1	0.93	0.26	115,115,115,115	0
24	MG	A	1740	1/1	0.93	0.07	55,55,55,55	0
24	MG	A	1707	1/1	0.93	0.10	50,50,50,50	0
24	MG	A	1847	1/1	0.93	0.07	47,47,47,47	0
24	MG	A	1851	1/1	0.93	0.23	56,56,56,56	0
24	MG	A	1691	1/1	0.93	0.21	59,59,59,59	0
24	MG	A	1722	1/1	0.93	0.14	59,59,59,59	0
24	MG	A	1749	1/1	0.93	0.09	45,45,45,45	0
24	MG	A	1654	1/1	0.93	0.08	57,57,57,57	0
24	MG	A	1859	1/1	0.93	0.06	45,45,45,45	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
24	MG	A	1726	1/1	0.93	0.18	40,40,40,40	0
24	MG	A	1727	1/1	0.93	0.07	53,53,53,53	0
24	MG	A	1757	1/1	0.93	0.07	45,45,45,45	0
24	MG	C	302	1/1	0.93	0.06	69,69,69,69	0
24	MG	A	1729	1/1	0.93	0.09	29,29,29,29	0
24	MG	A	1786	1/1	0.93	0.10	80,80,80,80	0
24	MG	D	302	1/1	0.93	0.06	52,52,52,52	0
24	MG	A	1823	1/1	0.93	0.10	101,101,101,101	0
24	MG	A	1686	1/1	0.93	0.18	67,67,67,67	0
24	MG	A	1694	1/1	0.93	0.14	71,71,71,71	0
24	MG	A	1827	1/1	0.93	0.08	140,140,140,140	0
24	MG	A	1829	1/1	0.93	0.10	69,69,69,69	0
24	MG	A	1732	1/1	0.93	0.06	28,28,28,28	0
24	MG	A	1664	1/1	0.93	0.16	64,64,64,64	0
24	MG	A	1803	1/1	0.94	0.18	29,29,29,29	0
24	MG	A	1744	1/1	0.94	0.06	46,46,46,46	0
24	MG	A	1784	1/1	0.94	0.10	63,63,63,63	0
24	MG	A	1807	1/1	0.94	0.07	47,47,47,47	0
24	MG	A	1646	1/1	0.94	0.15	91,91,91,91	0
24	MG	A	1718	1/1	0.94	0.18	54,54,54,54	0
24	MG	A	1748	1/1	0.94	0.26	63,63,63,63	0
24	MG	A	1816	1/1	0.94	0.09	77,77,77,77	0
24	MG	A	1709	1/1	0.94	0.14	57,57,57,57	0
24	MG	A	1751	1/1	0.94	0.09	25,25,25,25	0
24	MG	A	1791	1/1	0.94	0.12	93,93,93,93	0
24	MG	A	1625	1/1	0.94	0.13	117,117,117,117	0
24	MG	A	1773	1/1	0.94	0.10	64,64,64,64	0
24	MG	A	1712	1/1	0.94	0.16	67,67,67,67	0
24	MG	A	1642	1/1	0.94	0.08	51,51,51,51	0
24	MG	A	1656	1/1	0.94	0.09	37,37,37,37	0
24	MG	A	1836	1/1	0.94	0.08	36,36,36,36	0
24	MG	A	1662	1/1	0.94	0.13	61,61,61,61	0
24	MG	A	1840	1/1	0.94	0.17	52,52,52,52	0
24	MG	A	1842	1/1	0.94	0.10	59,59,59,59	0
24	MG	A	1634	1/1	0.94	0.08	42,42,42,42	0
24	MG	A	1760	1/1	0.94	0.08	35,35,35,35	0
24	MG	A	1621	1/1	0.95	0.12	48,48,48,48	0
24	MG	A	1647	1/1	0.95	0.06	36,36,36,36	0
24	MG	A	1728	1/1	0.95	0.31	78,78,78,78	0
24	MG	A	1711	1/1	0.95	0.08	37,37,37,37	0
24	MG	A	1848	1/1	0.95	0.21	79,79,79,79	0
24	MG	A	1755	1/1	0.95	0.09	44,44,44,44	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
24	MG	A	1607	1/1	0.95	0.16	108,108,108,108	0
24	MG	A	1684	1/1	0.95	0.13	66,66,66,66	0
24	MG	A	1811	1/1	0.95	0.07	76,76,76,76	0
24	MG	A	1812	1/1	0.95	0.07	98,98,98,98	0
24	MG	A	1698	1/1	0.95	0.10	56,56,56,56	0
24	MG	A	1653	1/1	0.95	0.38	64,64,64,64	0
24	MG	A	1669	1/1	0.95	0.19	81,81,81,81	0
24	MG	A	1737	1/1	0.95	0.07	52,52,52,52	0
24	MG	A	1672	1/1	0.95	0.10	65,65,65,65	0
24	MG	A	1702	1/1	0.95	0.25	252,252,252,252	0
24	MG	C	304	1/1	0.95	0.11	77,77,77,77	0
24	MG	A	1620	1/1	0.95	0.07	16,16,16,16	0
24	MG	A	1743	1/1	0.95	0.10	65,65,65,65	0
24	MG	A	1832	1/1	0.95	0.11	38,38,38,38	0
24	MG	D	304	1/1	0.95	0.09	61,61,61,61	0
24	MG	E	201	1/1	0.95	0.09	70,70,70,70	0
24	MG	A	1675	1/1	0.95	0.08	94,94,94,94	0
24	MG	A	1676	1/1	0.95	0.06	49,49,49,49	0
24	MG	A	1797	1/1	0.95	0.07	48,48,48,48	0
24	MG	A	1628	1/1	0.95	0.16	72,72,72,72	0
24	MG	A	1774	1/1	0.95	0.08	51,51,51,51	0
24	MG	A	1635	1/1	0.95	0.10	46,46,46,46	0
24	MG	A	1856	1/1	0.96	0.06	58,58,58,58	0
24	MG	A	1618	1/1	0.96	0.14	64,64,64,64	0
24	MG	A	1637	1/1	0.96	0.12	63,63,63,63	0
24	MG	A	1835	1/1	0.96	0.07	36,36,36,36	0
24	MG	A	1629	1/1	0.96	0.22	66,66,66,66	0
24	MG	A	1674	1/1	0.96	0.06	45,45,45,45	0
24	MG	A	1814	1/1	0.96	0.07	100,100,100,100	0
24	MG	A	1841	1/1	0.96	0.07	58,58,58,58	0
24	MG	A	1708	1/1	0.96	0.12	58,58,58,58	0
24	MG	A	1843	1/1	0.96	0.14	48,48,48,48	0
24	MG	A	1723	1/1	0.96	0.13	74,74,74,74	0
24	MG	C	306	1/1	0.96	0.04	41,41,41,41	0
24	MG	A	1820	1/1	0.96	0.07	107,107,107,107	0
24	MG	A	1733	1/1	0.96	0.05	34,34,34,34	0
24	MG	A	1724	1/1	0.96	0.05	29,29,29,29	0
24	MG	A	1805	1/1	0.96	0.19	73,73,73,73	0
24	MG	F	201	1/1	0.96	0.06	52,52,52,52	0
24	MG	A	1849	1/1	0.96	0.15	77,77,77,77	0
24	MG	A	1735	1/1	0.96	0.05	28,28,28,28	0
24	MG	A	1852	1/1	0.96	0.12	58,58,58,58	0

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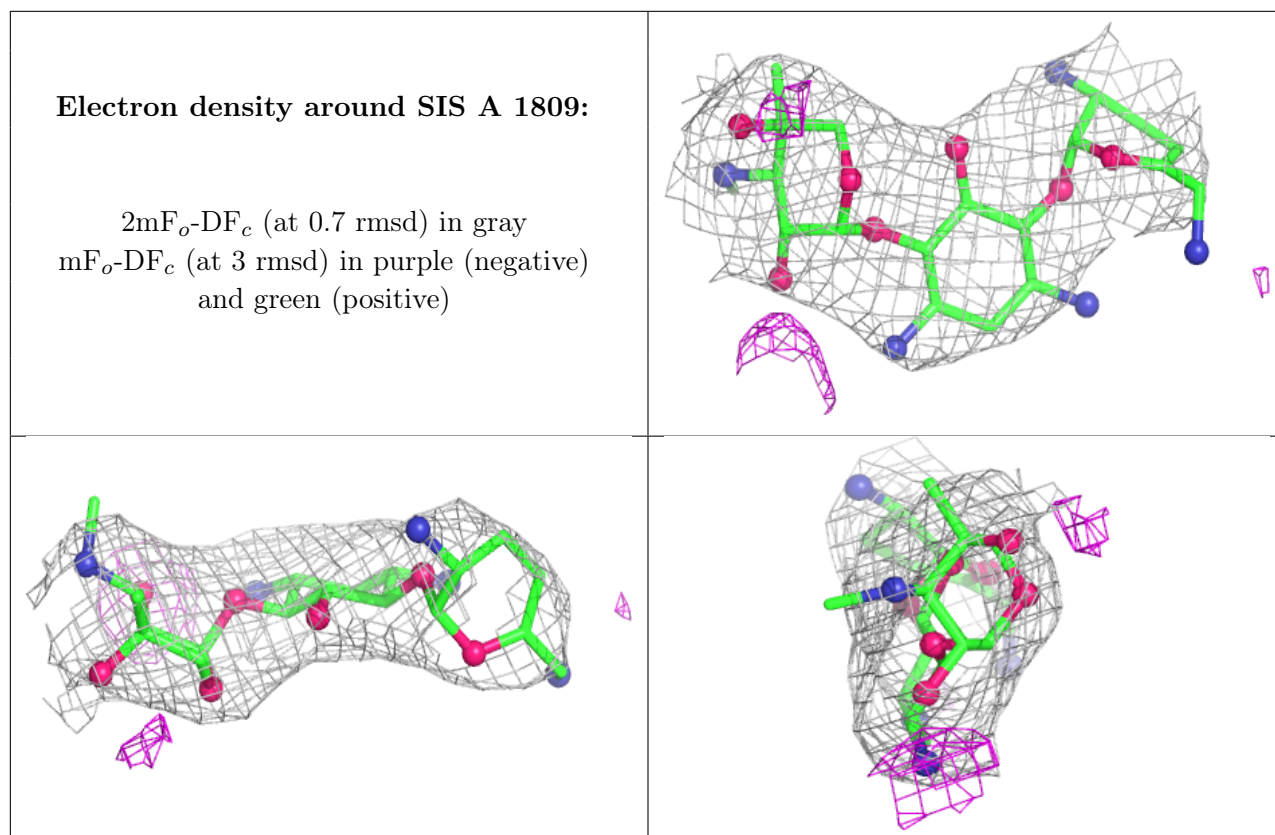
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
24	MG	A	1643	1/1	0.96	0.15	96,96,96,96	0
24	MG	A	1650	1/1	0.96	0.10	80,80,80,80	0
24	MG	Q	201	1/1	0.96	0.05	50,50,50,50	0
24	MG	A	1855	1/1	0.96	0.12	26,26,26,26	0
25	SIS	A	1809	31/31	0.96	0.08	32,57,79,80	0
24	MG	A	1795	1/1	0.97	0.17	60,60,60,60	0
24	MG	A	1750	1/1	0.97	0.05	34,34,34,34	0
24	MG	A	1683	1/1	0.97	0.07	37,37,37,37	0
24	MG	A	1741	1/1	0.97	0.21	32,32,32,32	0
24	MG	A	1766	1/1	0.97	0.07	23,23,23,23	0
24	MG	A	1636	1/1	0.97	0.11	68,68,68,68	0
24	MG	A	1824	1/1	0.97	0.07	83,83,83,83	0
24	MG	A	1754	1/1	0.97	0.06	39,39,39,39	0
24	MG	A	1651	1/1	0.97	0.08	48,48,48,48	0
24	MG	A	1652	1/1	0.97	0.15	52,52,52,52	0
24	MG	A	1828	1/1	0.97	0.04	43,43,43,43	0
24	MG	A	1788	1/1	0.97	0.06	80,80,80,80	0
24	MG	A	1831	1/1	0.97	0.11	48,48,48,48	0
24	MG	K	201	1/1	0.97	0.04	36,36,36,36	0
24	MG	A	1644	1/1	0.97	0.11	38,38,38,38	0
24	MG	A	1688	1/1	0.97	0.07	29,29,29,29	0
24	MG	L	202	1/1	0.97	0.08	67,67,67,67	0
24	MG	L	203	1/1	0.97	0.08	45,45,45,45	0
24	MG	A	1615	1/1	0.97	0.08	44,44,44,44	0
24	MG	A	1655	1/1	0.97	0.07	55,55,55,55	0
24	MG	A	1777	1/1	0.97	0.04	46,46,46,46	0
24	MG	A	1837	1/1	0.97	0.11	66,66,66,66	0
24	MG	A	1761	1/1	0.97	0.09	34,34,34,34	0
24	MG	A	1640	1/1	0.98	0.07	59,59,59,59	0
24	MG	A	1649	1/1	0.98	0.15	75,75,75,75	0
24	MG	A	1815	1/1	0.98	0.09	88,88,88,88	0
24	MG	A	1670	1/1	0.98	0.10	60,60,60,60	0
24	MG	A	1817	1/1	0.98	0.15	73,73,73,73	0
24	MG	A	1671	1/1	0.98	0.04	76,76,76,76	0
24	MG	A	1838	1/1	0.98	0.03	39,39,39,39	0
24	MG	A	1679	1/1	0.98	0.06	54,54,54,54	0
24	MG	A	1626	1/1	0.98	0.14	48,48,48,48	0
24	MG	A	1614	1/1	0.98	0.21	78,78,78,78	0
24	MG	A	1747	1/1	0.98	0.05	26,26,26,26	0
24	MG	A	1630	1/1	0.98	0.13	61,61,61,61	0
24	MG	P	101	1/1	0.98	0.04	9,9,9,9	0
24	MG	A	1739	1/1	0.98	0.03	48,48,48,48	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
24	MG	A	1771	1/1	0.98	0.10	39,39,39,39	0
24	MG	A	1772	1/1	0.98	0.04	40,40,40,40	0
24	MG	A	1830	1/1	0.98	0.05	36,36,36,36	0
24	MG	A	1798	1/1	0.98	0.12	70,70,70,70	0
24	MG	A	1819	1/1	0.99	0.03	62,62,62,62	0
24	MG	A	1850	1/1	0.99	0.03	30,30,30,30	0
24	MG	A	1782	1/1	0.99	0.03	34,34,34,34	0
24	MG	A	1821	1/1	0.99	0.05	86,86,86,86	0
24	MG	J	201	1/1	0.99	0.11	36,36,36,36	0
24	MG	A	1822	1/1	0.99	0.10	64,64,64,64	0
24	MG	A	1762	1/1	0.99	0.03	22,22,22,22	0
24	MG	A	1608	1/1	0.99	0.05	38,38,38,38	0
26	ZN	D	301	1/1	0.99	0.10	83,83,83,83	0
26	ZN	N	101	1/1	0.99	0.02	112,112,112,112	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.



6.5 Other polymers [i](#)

There are no such residues in this entry.