



Full wwPDB EM Validation Report ⓘ

Feb 13, 2024 – 04:29 PM EST

PDB ID : 3J16
EMDB ID : EMD-2010
Title : Models of ribosome-bound Dom34p and Rli1p and their ribosomal binding partners
Authors : Becker, T.; Franckenberg, S.; Wickles, S.; Shoemaker, C.J.; Anger, A.M.; Armache, J.-P.; Sieber, H.; Ungewickell, C.; Berninghausen, O.; Daberkow, I.; Karcher, A.; Thomm, M.; Hopfner, K.-P.; Green, R.; Beckmann, R.
Deposited on : 2011-12-12
Resolution : 7.20 Å(reported)

This is a Full wwPDB EM 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/EMValidationReportHelp>

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:

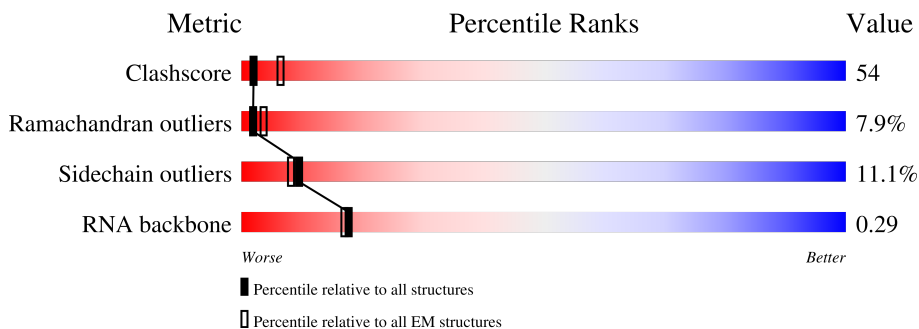
EMDB validation analysis : 0.0.1.dev70
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

1 Overall quality at a glance

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 7.20 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)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the 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 EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	386	
2	B	608	
3	J	233	
4	K	155	
5	L	75	
6	F	191	
7	E	63	

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Mol	Chain	Length	Quality of chain
8	G	312	
9	C	236	
10	H	165	
11	I	137	
12	D	135	

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
13	MG	B	701	-	-	X	-
14	ATP	B	702	-	-	X	-
15	SF4	B	703	-	-	X	-
15	SF4	B	704	-	-	X	-

2 Entry composition [i](#)

There are 16 unique types of molecules in this entry. The entry contains 26208 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Dom34p.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	386	3097	1996	483	603	15	0	0

- Molecule 2 is a protein called Rli1p.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	608	4804	3065	831	884	24	0	0

- Molecule 3 is a RNA chain called 28S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	J	233	4942	2222	899	1598	223	0	0

- Molecule 4 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	K	155	3286	1476	591	1069	150	0	0

- Molecule 5 is a RNA chain called P-site tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
5	L	75	1595	712	280	529	74	0	0

- Molecule 6 is a protein called 60S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	F	191	1519	963	274	278	4	0	0

- Molecule 7 is a protein called 40S ribosomal protein S30E.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	E	55	440	277	90	72	1	0	0

- Molecule 8 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	G	199	1541	986	268	282	5	0	0

- Molecule 9 is a protein called 40S ribosomal protein S6E.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	C	226	1820	1142	350	325	3	0	0

- Molecule 10 is a protein called 60S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	H	138	1037	651	190	194	2	0	0

- Molecule 11 is a protein called 40S ribosomal protein S24E.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	I	136	1004	628	189	180	7	0	0

- Molecule 12 is a protein called 40S ribosomal protein S24-A.

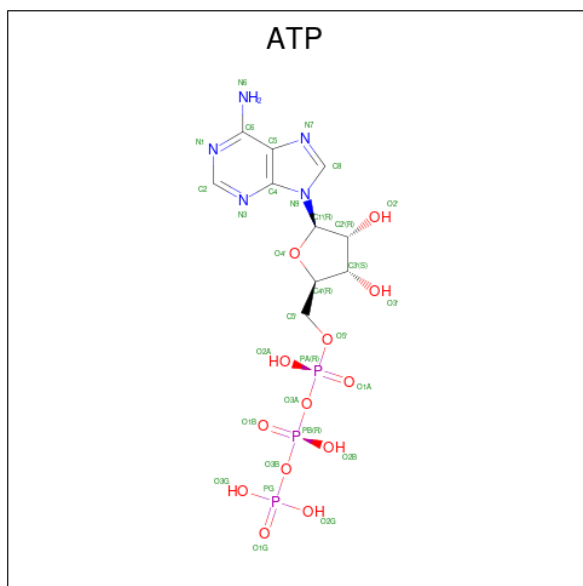
Mol	Chain	Residues	Atoms			AltConf	Trace	
			Total	C	N			O
12	D	134	1074	676	208	190	0	0

- Molecule 13 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
13	B	1	1	1	0

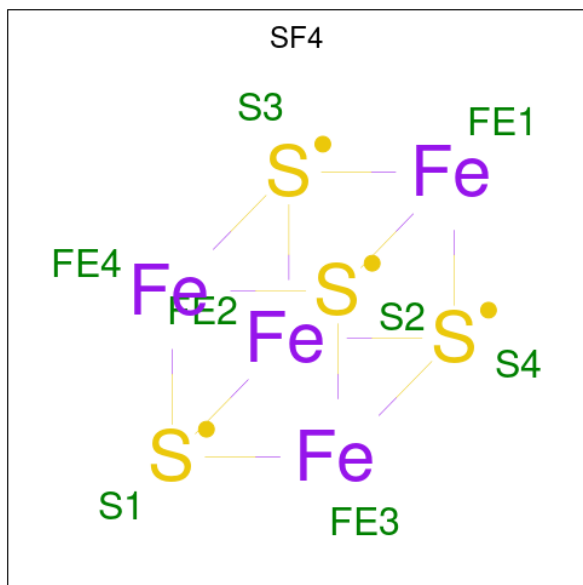
- Molecule 14 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula:

$C_{10}H_{16}N_5O_{13}P_3$).



Mol	Chain	Residues	Atoms				AltConf	
			Total	C	N	O		P
14	B	1	31	10	5	13	3	0

- Molecule 15 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe_4S_4).



Mol	Chain	Residues	Atoms			AltConf
			Total	Fe	S	
15	B	1	8	4	4	0
15	B	1	8	4	4	0

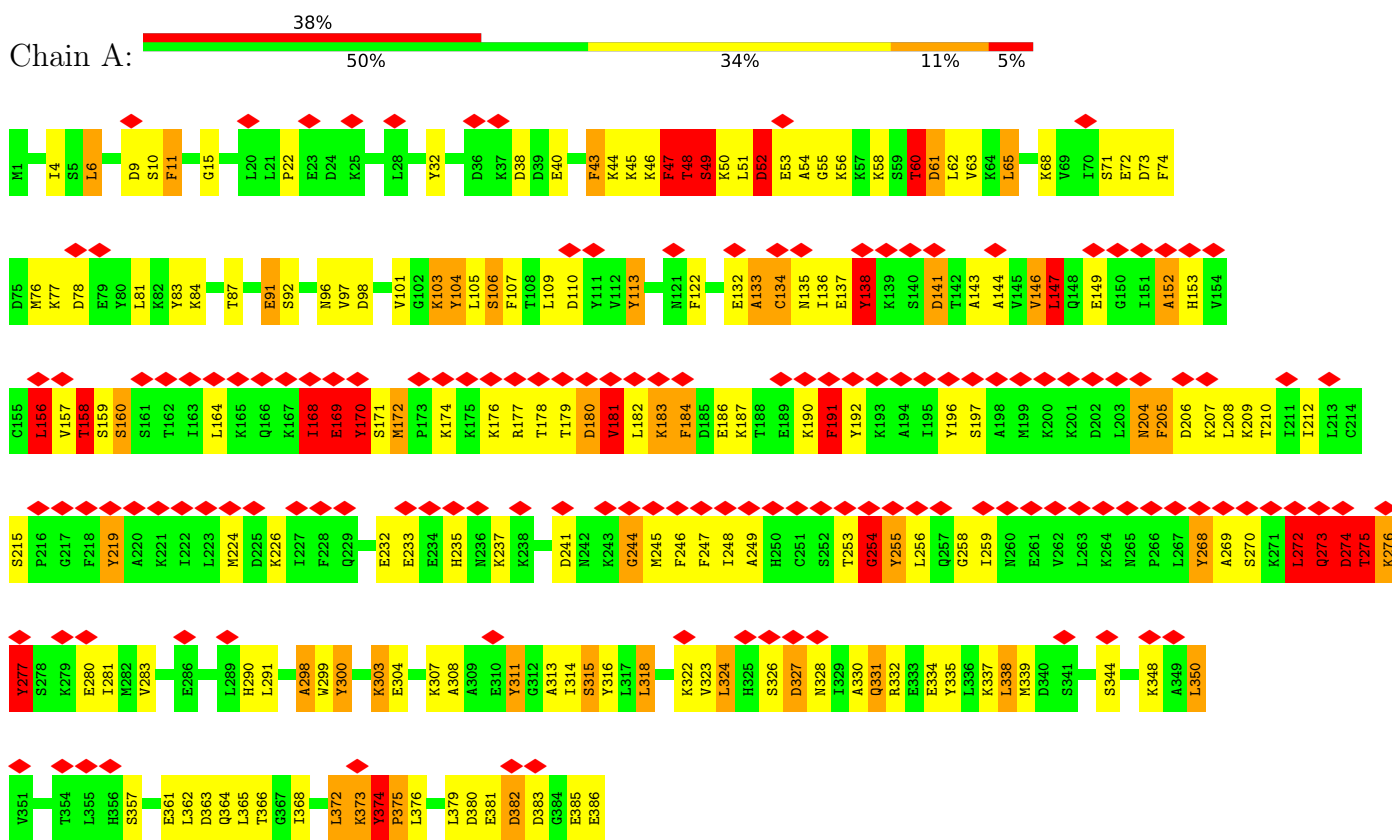
- Molecule 16 is water.

Mol	Chain	Residues	Atoms		AltConf
16	B	1	Total	O	0
			1	1	

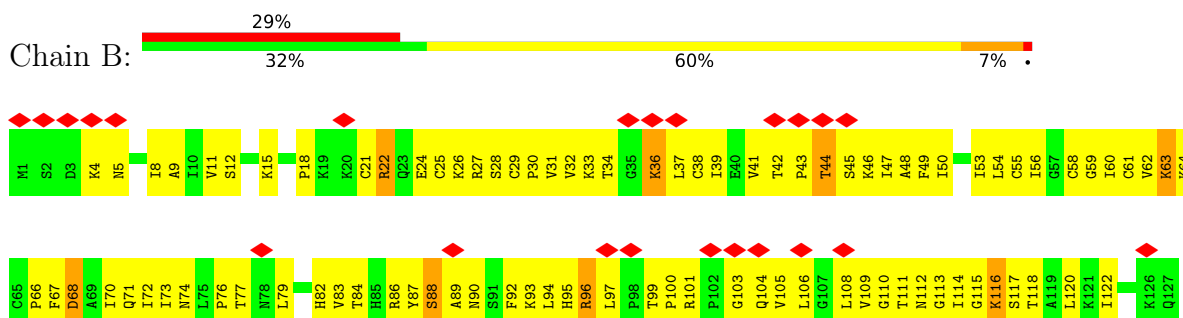
3 Residue-property plots

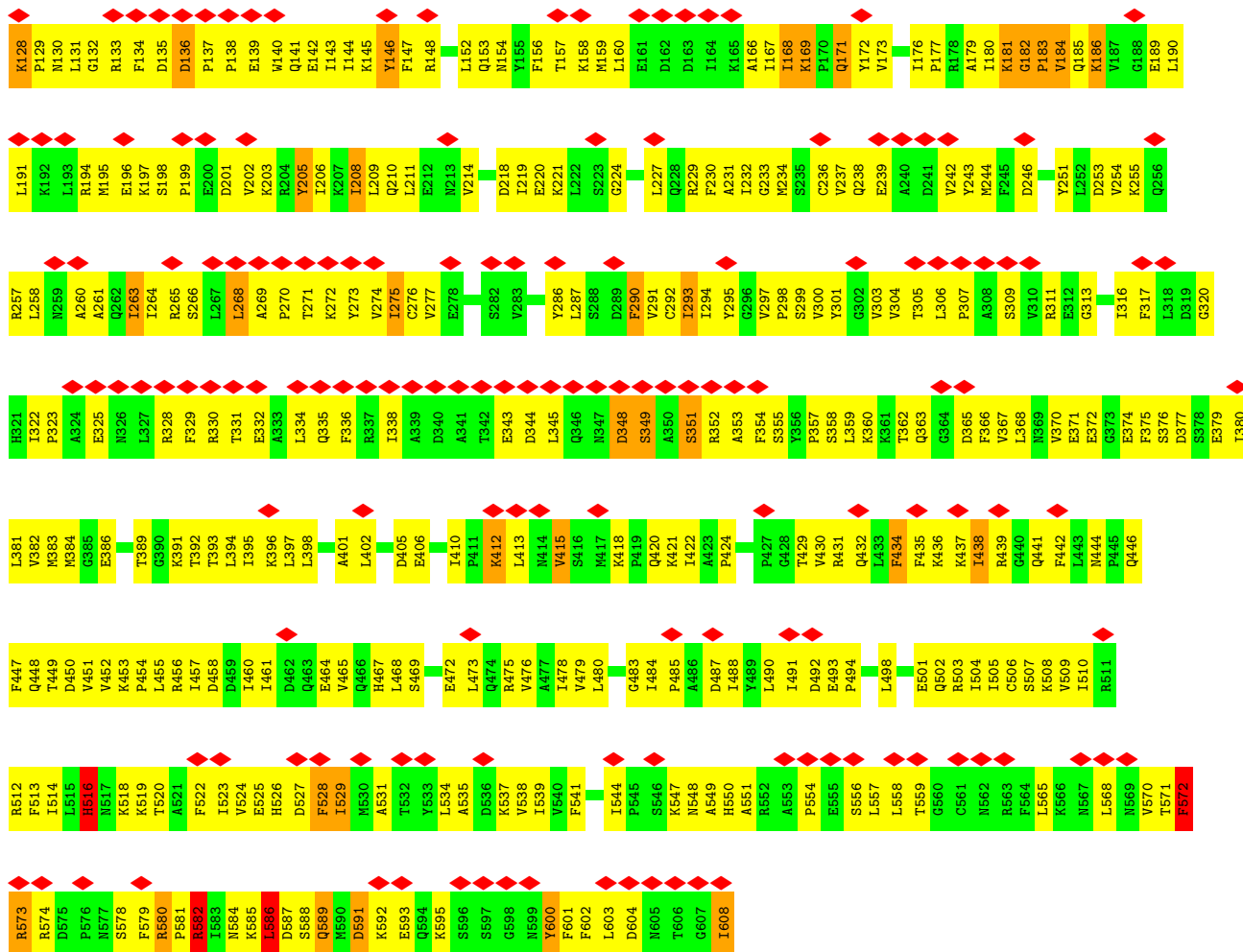
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map 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 diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). 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: Dom34p

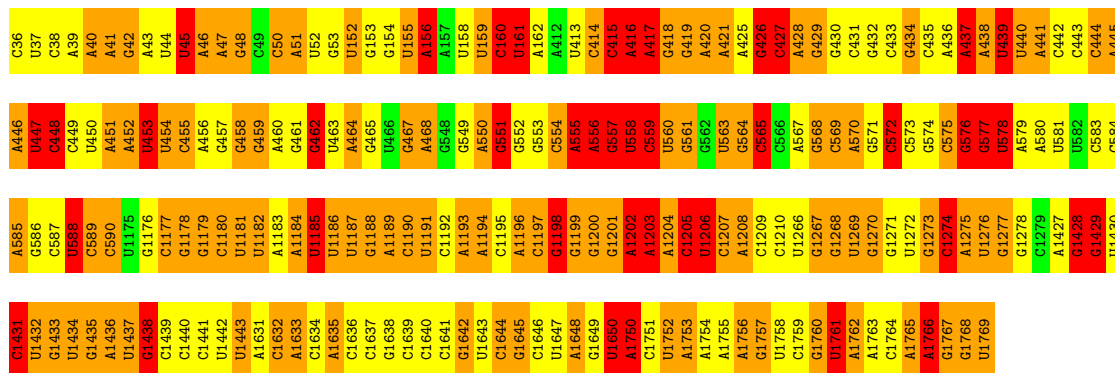


• Molecule 2: Rli1p

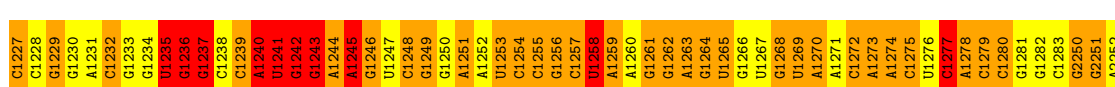


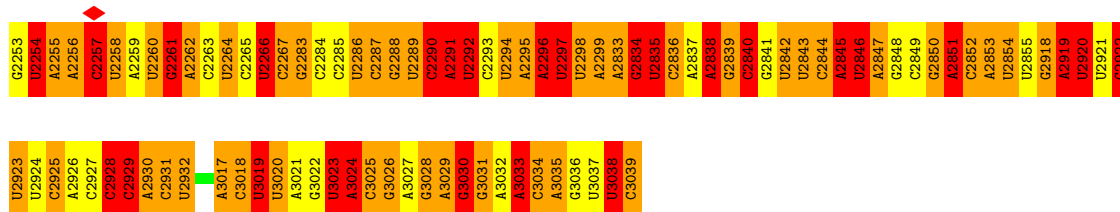


• Molecule 3: 28S ribosomal RNA

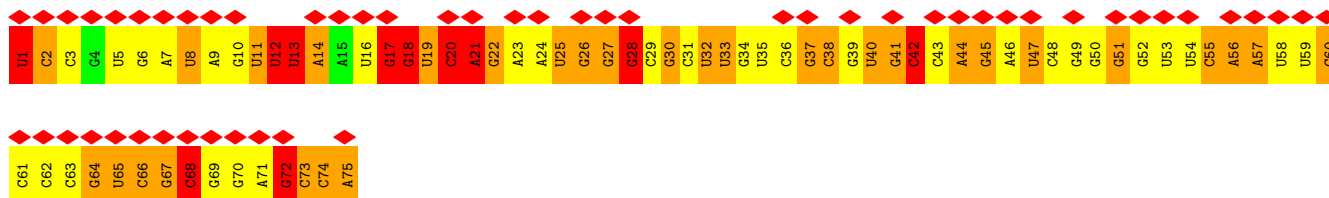
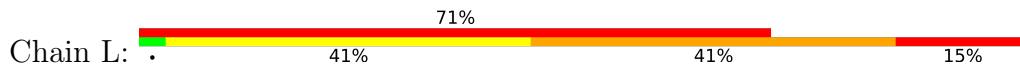


• Molecule 4: 18S ribosomal RNA

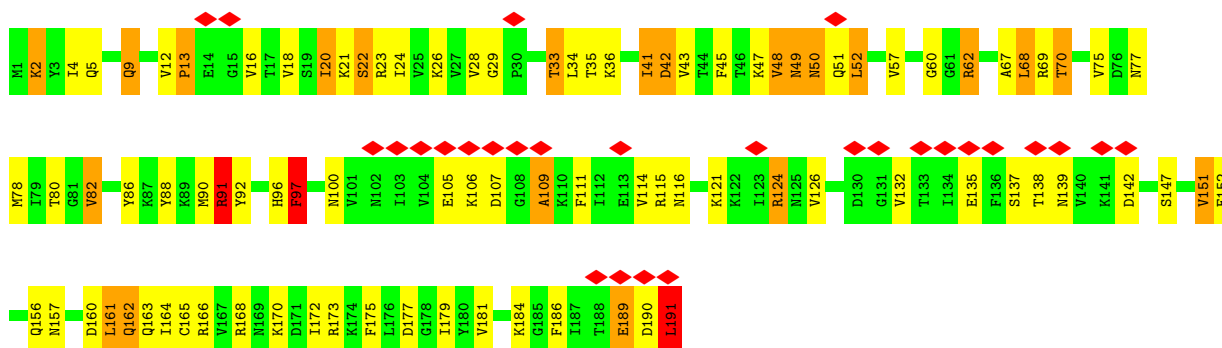




• Molecule 5: P-site tRNA



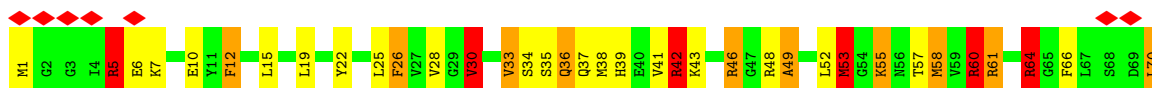
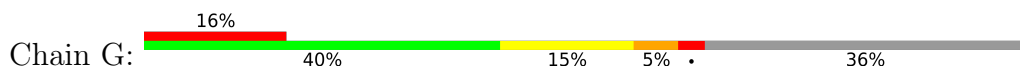
• Molecule 6: 60S ribosomal protein L6

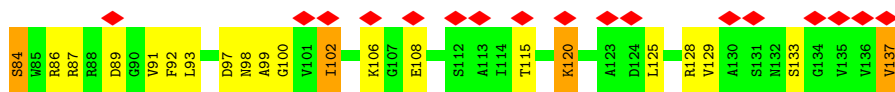


• Molecule 7: 40S ribosomal protein S30E

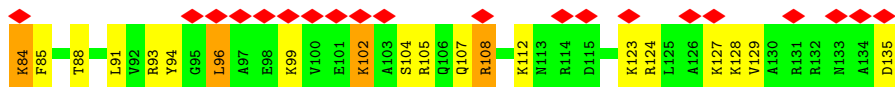
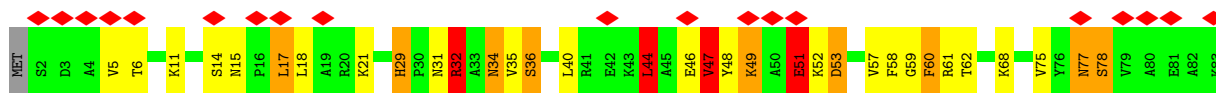


• Molecule 8: 60S ribosomal protein L10





- Molecule 12: 40S ribosomal protein S24-A



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	45700	Depositor
Resolution determination method	Not provided	
CTF correction method	Not provided	
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	25	Depositor
Minimum defocus (nm)	1400	Depositor
Maximum defocus (nm)	4500	Depositor
Magnification	75000	Depositor
Image detector	FEI EAGLE (4k x 4k)	Depositor
Maximum map value	1.731	Depositor
Minimum map value	-0.781	Depositor
Average map value	0.022	Depositor
Map value standard deviation	0.147	Depositor
Recommended contour level	0.32	Depositor
Map size (\AA)	455.4, 455.4, 455.4	wwPDB
Map dimensions	368, 368, 368	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.2375, 1.2375, 1.2375	Depositor

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: ATP, MG, SF4

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	1.68	20/3149 (0.6%)	2.15	114/4230 (2.7%)
2	B	0.99	6/4893 (0.1%)	1.18	19/6603 (0.3%)
3	J	1.80	184/5523 (3.3%)	2.28	379/8591 (4.4%)
4	K	1.79	103/3671 (2.8%)	2.46	282/5709 (4.9%)
5	L	2.52	94/1781 (5.3%)	2.58	165/2775 (5.9%)
6	F	1.03	3/1540 (0.2%)	1.12	9/2073 (0.4%)
7	E	0.95	1/447 (0.2%)	1.29	7/595 (1.2%)
8	G	1.73	17/1568 (1.1%)	2.33	55/2119 (2.6%)
9	C	0.70	2/1844 (0.1%)	0.84	2/2464 (0.1%)
10	H	2.17	9/1048 (0.9%)	2.61	95/1408 (6.7%)
11	I	1.01	2/1019 (0.2%)	1.04	4/1369 (0.3%)
12	D	0.68	1/1088 (0.1%)	0.87	4/1449 (0.3%)
All	All	1.58	442/27571 (1.6%)	1.99	1135/39385 (2.9%)

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
1	A	0	18
2	B	0	4
3	J	0	25
4	K	0	20
5	L	0	5
6	F	0	2
7	E	0	2
8	G	0	13
10	H	0	13
12	D	0	1
All	All	0	103

All (442) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
10	H	88	PRO	CG-CD	50.97	3.18	1.50
5	L	41	G	C2'-C1'	-21.76	1.29	1.53
8	G	5	ARG	C-O	-20.62	0.84	1.23
5	L	22	G	C2'-C1'	-15.84	1.35	1.53
8	G	72	ASP	C-O	-15.71	0.93	1.23
5	L	25	U	C2'-C1'	-15.28	1.36	1.53
5	L	36	C	O4'-C1'	14.39	1.60	1.41
5	L	28	G	C2'-C1'	-13.97	1.38	1.53
5	L	45	G	C2'-C1'	-13.91	1.38	1.53
5	L	36	C	C2'-C1'	-13.66	1.38	1.53
5	L	64	G	C2'-C1'	-13.24	1.38	1.53
5	L	43	C	C2'-C1'	-13.11	1.39	1.53
5	L	23	A	C2'-C1'	-12.79	1.39	1.53
5	L	75	A	C2'-C1'	12.73	1.67	1.53
5	L	61	C	O4'-C1'	12.62	1.58	1.41
5	L	41	G	O4'-C1'	12.61	1.58	1.41
5	L	43	C	O4'-C1'	12.58	1.58	1.41
10	H	89	PRO	CG-CD	12.41	1.91	1.50
3	J	1639	C	N3-C4	12.30	1.42	1.33
3	J	578	U	C4'-O4'	-12.17	1.29	1.45
8	G	199	SER	C-O	-12.07	1.00	1.23
9	C	226	ILE	C-O	-12.06	1.00	1.23
6	F	191	LEU	C-OXT	-12.06	1.00	1.23
11	I	137	VAL	C-O	-12.06	1.00	1.23
2	B	608	ILE	C-OXT	-12.05	1.00	1.23
2	B	608	ILE	C-O	-12.04	1.00	1.23
6	F	191	LEU	C-O	-12.04	1.00	1.23
11	I	137	VAL	C-OXT	-12.03	1.00	1.23
4	K	3024	A	N7-C5	-12.00	1.32	1.39
5	L	2	C	O4'-C1'	11.89	1.57	1.41
5	L	48	C	O4'-C1'	11.81	1.57	1.41
4	K	2845	A	C6-N1	-11.76	1.27	1.35
4	K	3026	G	C6-N1	11.76	1.47	1.39
5	L	26	G	C2'-C1'	-11.62	1.40	1.53
5	L	2	C	C2'-C1'	-11.58	1.40	1.53
5	L	65	U	C2'-C1'	-11.46	1.40	1.53
5	L	57	A	C6-N1	11.43	1.43	1.35
4	K	2264	U	C2-N3	11.41	1.45	1.37
3	J	578	U	C1'-N1	11.26	1.65	1.48
10	H	7	PRO	N-CD	11.09	1.63	1.47
4	K	3026	G	N1-C2	10.98	1.46	1.37
5	L	37	G	C2'-C1'	-10.93	1.41	1.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	L	66	C	O4'-C1'	10.75	1.55	1.41
3	J	1183	A	N9-C4	-10.72	1.31	1.37
5	L	18	G	C2'-C1'	-10.59	1.41	1.53
3	J	1645	G	C2-N3	10.52	1.41	1.32
3	J	417	A	N9-C4	-10.47	1.31	1.37
5	L	45	G	O4'-C1'	10.46	1.55	1.41
5	L	29	C	O4'-C1'	10.14	1.54	1.41
3	J	1648	A	C6-N6	10.12	1.42	1.33
5	L	62	C	O4'-C1'	9.97	1.54	1.41
3	J	1648	A	N3-C4	-9.95	1.28	1.34
3	J	1646	C	N1-C6	9.91	1.43	1.37
5	L	69	G	C2'-C1'	-9.88	1.42	1.53
5	L	73	C	O4'-C1'	9.83	1.54	1.41
5	L	72	G	C2-N3	9.81	1.40	1.32
5	L	63	C	O4'-C1'	9.60	1.54	1.41
4	K	2263	C	N3-C4	9.55	1.40	1.33
3	J	1643	U	C4-O4	9.54	1.31	1.23
3	J	1760	G	C6-N1	9.49	1.46	1.39
4	K	3024	A	N9-C8	-9.38	1.30	1.37
5	L	57	A	N9-C4	9.38	1.43	1.37
5	L	57	A	N3-C4	-9.35	1.29	1.34
5	L	38	C	O4'-C1'	9.35	1.53	1.41
5	L	68	C	O4'-C1'	9.11	1.53	1.41
3	J	1640	C	N3-C4	9.05	1.40	1.33
4	K	3033	A	N7-C5	-9.03	1.33	1.39
5	L	74	C	O4'-C1'	8.98	1.53	1.41
3	J	577	G	N3-C4	8.96	1.41	1.35
4	K	1251	A	C6-N6	8.95	1.41	1.33
4	K	1251	A	N7-C5	-8.88	1.33	1.39
3	J	555	A	O3'-P	-8.85	1.50	1.61
3	J	1757	G	N1-C2	8.83	1.44	1.37
3	J	1649	G	P-O5'	-8.82	1.50	1.59
3	J	160	C	C4'-C3'	8.80	1.62	1.53
4	K	1236	G	N9-C8	8.80	1.44	1.37
3	J	1762	A	N9-C4	-8.76	1.32	1.37
3	J	1644	C	C5'-C4'	8.74	1.61	1.51
3	J	156	A	C6-N1	8.68	1.41	1.35
3	J	1755	A	N9-C4	8.66	1.43	1.37
5	L	65	U	O4'-C1'	8.64	1.52	1.41
5	L	27	G	C2'-C1'	-8.59	1.44	1.53
4	K	1243	G	N1-C2	8.58	1.44	1.37
4	K	2262	A	C8-N7	-8.55	1.25	1.31

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	L	71	A	C6-N1	8.45	1.41	1.35
3	J	578	U	O3'-P	-8.43	1.51	1.61
4	K	3026	G	P-O5'	-8.41	1.51	1.59
3	J	1767	G	C6-N1	8.39	1.45	1.39
4	K	3030	G	C2-N2	8.39	1.43	1.34
3	J	1638	G	P-O5'	-8.37	1.51	1.59
4	K	2254	U	C2-N3	8.34	1.43	1.37
4	K	2258	U	C2-N3	8.30	1.43	1.37
3	J	1648	A	N7-C5	-8.26	1.34	1.39
3	J	1185	U	O3'-P	-8.24	1.51	1.61
4	K	2253	G	N9-C8	8.22	1.43	1.37
3	J	556	A	P-O5'	8.20	1.68	1.59
3	J	1648	A	C6-N1	8.17	1.41	1.35
5	L	67	G	C2'-C1'	-8.09	1.44	1.53
3	J	1753	A	C6-N1	8.07	1.41	1.35
4	K	3024	A	N9-C4	8.06	1.42	1.37
5	L	56	A	C8-N7	-8.06	1.25	1.31
3	J	1639	C	C2-N3	8.04	1.42	1.35
4	K	2255	A	C6-N6	8.02	1.40	1.33
5	L	72	G	C2'-C1'	-8.01	1.44	1.53
3	J	159	U	C2-N3	8.00	1.43	1.37
8	G	72	ASP	N-CA	7.96	1.62	1.46
3	J	1650	U	C2-N3	7.93	1.43	1.37
3	J	1642	G	C6-N1	7.93	1.45	1.39
3	J	1768	G	C2-N3	7.90	1.39	1.32
3	J	458	G	N9-C8	7.87	1.43	1.37
3	J	1631	A	C6-N6	7.86	1.40	1.33
5	L	68	C	C2'-C1'	-7.86	1.44	1.53
5	L	75	A	O4'-C1'	-7.85	1.31	1.41
3	J	457	G	C2'-C1'	-7.83	1.44	1.53
10	H	46	ILE	CA-CB	-7.82	1.36	1.54
4	K	2262	A	C6-N1	7.78	1.41	1.35
4	K	1238	C	N3-C4	7.76	1.39	1.33
4	K	1242	G	C5-C6	-7.75	1.34	1.42
5	L	57	A	C8-N7	-7.74	1.26	1.31
3	J	1750	A	C5-C4	7.72	1.44	1.38
5	L	29	C	C2'-C1'	-7.72	1.44	1.53
4	K	3025	C	C2'-C1'	-7.69	1.44	1.53
5	L	21	A	O4'-C1'	7.66	1.51	1.41
1	A	361	GLU	CD-OE1	7.65	1.34	1.25
3	J	155	U	C4'-C3'	-7.65	1.44	1.53
5	L	72	G	C5'-C4'	7.62	1.60	1.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	L	17	G	O4'-C1'	7.58	1.51	1.41
3	J	1649	G	C8-N7	-7.51	1.26	1.30
5	L	70	G	N9-C4	7.50	1.44	1.38
3	J	459	G	N1-C2	7.49	1.43	1.37
5	L	42	C	O4'-C1'	7.47	1.51	1.41
5	L	63	C	C2'-C1'	-7.47	1.45	1.53
3	J	1636	C	C2'-C1'	-7.41	1.45	1.53
3	J	1762	A	N7-C5	-7.40	1.34	1.39
3	J	1645	G	N1-C2	7.40	1.43	1.37
4	K	1236	G	C5'-C4'	7.38	1.60	1.51
4	K	3023	U	O3'-P	-7.37	1.52	1.61
4	K	3030	G	N9-C4	-7.36	1.32	1.38
3	J	1642	G	N3-C4	-7.34	1.30	1.35
5	L	40	U	C2'-C1'	7.30	1.61	1.53
3	J	1757	G	N9-C4	7.29	1.43	1.38
5	L	16	U	O4'-C1'	7.29	1.51	1.41
4	K	1238	C	C2'-C1'	-7.28	1.45	1.53
5	L	72	G	N1-C2	7.27	1.43	1.37
4	K	3030	G	C2'-C1'	-7.21	1.45	1.53
5	L	72	G	O3'-P	-7.21	1.52	1.61
5	L	61	C	C2'-C1'	-7.19	1.45	1.53
3	J	1763	A	C5-C4	7.18	1.43	1.38
5	L	70	G	N7-C5	-7.17	1.34	1.39
2	B	311	ARG	CD-NE	7.13	1.58	1.46
8	G	5	ARG	CA-CB	-7.10	1.38	1.53
4	K	2256	A	C6-N1	7.10	1.40	1.35
4	K	1242	G	C5-C4	7.06	1.43	1.38
5	L	72	G	N7-C5	7.06	1.43	1.39
3	J	578	U	C2'-C1'	-7.04	1.45	1.53
3	J	158	U	N3-C4	7.02	1.44	1.38
3	J	417	A	P-O5'	-7.02	1.52	1.59
3	J	1768	G	N3-C4	-7.02	1.30	1.35
5	L	56	A	P-O5'	-7.02	1.52	1.59
4	K	2257	C	C4-C5	-7.01	1.37	1.43
3	J	1631	A	N9-C4	7.01	1.42	1.37
3	J	576	G	O3'-P	-7.00	1.52	1.61
3	J	1634	C	C4'-C3'	6.99	1.60	1.53
3	J	1644	C	O3'-P	-6.98	1.52	1.61
4	K	2260	U	N1-C2	6.97	1.44	1.38
5	L	31	C	C2'-C1'	-6.96	1.45	1.53
3	J	1645	G	C5-C6	6.95	1.49	1.42
4	K	2266	U	C2-N3	6.95	1.42	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	J	417	A	N7-C5	-6.93	1.35	1.39
4	K	3035	A	N9-C4	6.92	1.42	1.37
3	J	458	G	C2-N3	6.92	1.38	1.32
3	J	576	G	C2-N3	6.92	1.38	1.32
4	K	2251	G	C5-C6	-6.92	1.35	1.42
3	J	1761	U	C5'-C4'	6.87	1.59	1.51
3	J	1758	U	C2-N3	6.87	1.42	1.37
5	L	49	G	C2'-C1'	-6.86	1.45	1.53
4	K	1238	C	C4-N4	6.85	1.40	1.33
4	K	3034	C	N3-C4	6.84	1.38	1.33
3	J	159	U	O3'-P	-6.84	1.52	1.61
3	J	1757	G	C5-C6	6.81	1.49	1.42
5	L	48	C	C2'-C1'	-6.81	1.45	1.53
4	K	3035	A	C2-N3	6.81	1.39	1.33
4	K	2265	C	C4-N4	6.80	1.40	1.33
3	J	1757	G	C2'-C1'	-6.80	1.45	1.53
3	J	1761	U	C4'-C3'	6.80	1.60	1.53
3	J	1180	C	O3'-P	-6.79	1.53	1.61
8	G	55	LYS	CA-CB	6.78	1.68	1.53
4	K	1241	U	O3'-P	-6.77	1.53	1.61
4	K	3024	A	C5-C4	6.75	1.43	1.38
4	K	2255	A	O3'-P	-6.74	1.53	1.61
4	K	2262	A	N9-C4	6.73	1.41	1.37
1	A	113	TYR	CE1-CZ	6.73	1.47	1.38
3	J	1650	U	C4'-C3'	6.69	1.60	1.53
3	J	1755	A	C6-N6	6.69	1.39	1.33
3	J	1750	A	C6-N6	6.65	1.39	1.33
5	L	64	G	O4'-C1'	6.65	1.50	1.41
3	J	1645	G	N9-C8	6.65	1.42	1.37
4	K	2259	A	C6-N6	6.65	1.39	1.33
4	K	3033	A	C6-N1	6.64	1.40	1.35
3	J	156	A	C6-N6	6.64	1.39	1.33
4	K	1242	G	N3-C4	-6.63	1.30	1.35
4	K	2263	C	N1-C6	6.57	1.41	1.37
5	L	42	C	C2'-C1'	-6.54	1.46	1.53
3	J	1636	C	N3-C4	6.54	1.38	1.33
3	J	154	G	C5-C4	6.53	1.43	1.38
4	K	1236	G	O3'-P	-6.52	1.53	1.61
1	A	326	SER	CA-CB	6.52	1.62	1.52
1	A	171	SER	CA-CB	6.51	1.62	1.52
3	J	1637	C	C4-N4	6.50	1.39	1.33
3	J	156	A	C8-N7	-6.49	1.27	1.31

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	K	2296	A	N3-C4	-6.49	1.30	1.34
1	A	357	SER	CA-CB	6.48	1.62	1.52
3	J	1641	C	C1'-N1	6.47	1.58	1.48
3	J	1181	U	C4'-O4'	-6.43	1.37	1.45
4	K	1236	G	C2'-C1'	-6.41	1.46	1.53
3	J	1650	U	C5'-C4'	6.41	1.59	1.51
3	J	1755	A	N3-C4	-6.40	1.31	1.34
4	K	3024	A	O3'-P	-6.38	1.53	1.61
6	F	173	ARG	CZ-NH2	6.38	1.41	1.33
4	K	1237	G	N7-C5	-6.37	1.35	1.39
3	J	1638	G	N3-C4	-6.37	1.30	1.35
4	K	3025	C	C4-N4	6.35	1.39	1.33
4	K	2296	A	N9-C4	-6.33	1.34	1.37
3	J	559	C	N1-C6	6.33	1.41	1.37
3	J	1642	G	C2-N3	6.32	1.37	1.32
4	K	3025	C	N3-C4	6.32	1.38	1.33
4	K	2253	G	C3'-C2'	-6.30	1.45	1.52
3	J	559	C	C3'-C2'	6.30	1.59	1.52
4	K	2835	U	C4-C5	-6.29	1.37	1.43
3	J	154	G	N1-C2	6.29	1.42	1.37
5	L	54	U	C5'-C4'	6.27	1.58	1.51
7	E	55	ARG	CZ-NH1	6.26	1.41	1.33
3	J	1640	C	C4-C5	6.25	1.48	1.43
3	J	1758	U	C2'-C1'	-6.25	1.46	1.53
4	K	2264	U	P-O5'	-6.25	1.53	1.59
3	J	577	G	C6-N1	6.22	1.44	1.39
3	J	1649	G	C5'-C4'	6.19	1.58	1.51
4	K	2255	A	N9-C8	6.19	1.42	1.37
3	J	1750	A	N3-C4	-6.17	1.31	1.34
3	J	556	A	C6-N6	6.14	1.38	1.33
4	K	1237	G	C3'-C2'	6.13	1.59	1.52
3	J	1638	G	O4'-C1'	6.13	1.49	1.41
2	B	572	PHE	N-CA	-6.12	1.34	1.46
3	J	1645	G	N9-C4	6.12	1.42	1.38
1	A	315	SER	CB-OG	6.12	1.50	1.42
3	J	153	G	P-O5'	-6.11	1.53	1.59
5	L	30	G	C2'-C1'	-6.11	1.46	1.53
8	G	129	GLU	CG-CD	6.10	1.61	1.51
3	J	156	A	N9-C4	-6.08	1.34	1.37
4	K	2260	U	N1-C6	-6.07	1.32	1.38
8	G	102	SER	CA-CB	6.04	1.62	1.52
5	L	38	C	C2'-C1'	-6.04	1.46	1.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	J	1635	A	N9-C8	6.02	1.42	1.37
5	L	55	C	N1-C6	6.01	1.40	1.37
3	J	558	U	C2-N3	6.01	1.42	1.37
3	J	1184	A	C5-C4	-5.98	1.34	1.38
5	L	14	A	O4'-C1'	5.97	1.49	1.41
3	J	1764	C	C5'-C4'	5.97	1.58	1.51
5	L	54	U	C4-C5	-5.95	1.38	1.43
4	K	2262	A	P-O5'	5.93	1.65	1.59
3	J	1633	A	C5-C6	-5.92	1.35	1.41
3	J	1763	A	C5'-C4'	5.91	1.58	1.51
3	J	416	A	C6-N6	5.90	1.38	1.33
3	J	457	G	C6-N1	5.88	1.43	1.39
4	K	3030	G	C6-N1	5.86	1.43	1.39
4	K	2256	A	C6-N6	5.86	1.38	1.33
3	J	1634	C	N1-C6	5.85	1.40	1.37
3	J	1184	A	N3-C4	5.85	1.38	1.34
3	J	1643	U	C2-N3	5.85	1.41	1.37
3	J	1184	A	N7-C5	-5.83	1.35	1.39
3	J	154	G	N7-C5	-5.83	1.35	1.39
5	L	21	A	C2'-C1'	-5.82	1.47	1.53
5	L	53	U	N1-C6	5.81	1.43	1.38
8	G	199	SER	CA-CB	5.81	1.61	1.52
5	L	23	A	O4'-C1'	5.80	1.49	1.41
4	K	2296	A	N7-C5	-5.80	1.35	1.39
5	L	50	G	C2'-C1'	-5.79	1.47	1.53
3	J	1632	C	N3-C4	5.78	1.38	1.33
4	K	2251	G	N1-C2	5.78	1.42	1.37
3	J	458	G	N7-C5	5.78	1.42	1.39
3	J	1635	A	P-O5'	-5.77	1.53	1.59
2	B	516	HIS	CB-CG	-5.77	1.39	1.50
3	J	155	U	N1-C2	5.76	1.43	1.38
3	J	1184	A	N9-C8	-5.76	1.33	1.37
3	J	1637	C	C5'-C4'	5.76	1.58	1.51
4	K	1245	A	N7-C5	-5.75	1.35	1.39
4	K	3026	G	N3-C4	5.75	1.39	1.35
3	J	1647	U	C5'-C4'	5.75	1.58	1.51
4	K	2254	U	N3-C4	5.75	1.43	1.38
5	L	22	G	O4'-C1'	5.73	1.49	1.41
3	J	153	G	C2-N2	5.72	1.40	1.34
4	K	2918	G	N1-C2	-5.71	1.33	1.37
3	J	572	C	N1-C2	5.70	1.45	1.40
3	J	1764	C	C4-C5	5.70	1.47	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	K	2259	A	N3-C4	-5.70	1.31	1.34
3	J	1638	G	C6-O6	5.68	1.29	1.24
3	J	1185	U	C2-N3	5.68	1.41	1.37
3	J	155	U	C4'-O4'	5.68	1.52	1.45
3	J	1646	C	C2-N3	5.68	1.40	1.35
8	G	5	ARG	C-N	5.67	1.47	1.34
8	G	104	ARG	NE-CZ	5.65	1.40	1.33
3	J	1631	A	N3-C4	-5.64	1.31	1.34
10	H	58	VAL	N-CA	-5.63	1.35	1.46
3	J	577	G	C4'-O4'	-5.63	1.38	1.45
4	K	1245	A	O3'-P	-5.62	1.54	1.61
3	J	159	U	C4-C5	5.61	1.48	1.43
1	A	196	TYR	CB-CG	5.61	1.60	1.51
4	K	2261	G	N9-C4	-5.60	1.33	1.38
1	A	132	GLU	CB-CG	5.58	1.62	1.52
3	J	1763	A	N9-C8	5.58	1.42	1.37
5	L	39	G	C2'-C1'	-5.58	1.47	1.53
4	K	2251	G	N7-C5	-5.56	1.35	1.39
3	J	155	U	C3'-O3'	5.56	1.50	1.42
3	J	1754	A	C5-C4	5.55	1.42	1.38
4	K	2251	G	P-O5'	-5.54	1.54	1.59
3	J	588	U	C4-O4	-5.54	1.19	1.23
5	L	1	U	C4-C5	5.53	1.48	1.43
3	J	155	U	N3-C4	5.52	1.43	1.38
4	K	3017	A	C6-N1	-5.52	1.31	1.35
4	K	2257	C	C5'-C4'	5.51	1.57	1.51
3	J	577	G	C2'-C1'	-5.51	1.47	1.53
4	K	2258	U	C5'-C4'	5.50	1.57	1.51
1	A	197	SER	CA-CB	5.50	1.61	1.52
4	K	2294	U	C2-N3	-5.50	1.33	1.37
4	K	2263	C	C4-C5	-5.49	1.38	1.43
5	L	11	U	C2'-C1'	5.49	1.59	1.53
3	J	1642	G	C5'-C4'	5.48	1.57	1.51
3	J	154	G	C2-N3	5.48	1.37	1.32
3	J	1646	C	C4'-C3'	-5.47	1.47	1.52
5	L	72	G	O4'-C1'	-5.47	1.34	1.41
4	K	2253	G	C4'-C3'	5.44	1.59	1.53
4	K	3033	A	C6-N6	5.44	1.38	1.33
3	J	1760	G	N1-C2	5.44	1.42	1.37
3	J	577	G	N9-C4	-5.44	1.33	1.38
3	J	1183	A	N9-C8	5.44	1.42	1.37
5	L	27	G	O4'-C1'	5.43	1.48	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	K	2250	G	N7-C5	-5.43	1.35	1.39
4	K	2919	A	N7-C5	-5.43	1.35	1.39
3	J	1768	G	C5'-C4'	5.42	1.57	1.51
3	J	1635	A	C5'-C4'	5.42	1.57	1.51
3	J	154	G	O3'-P	-5.41	1.54	1.61
3	J	426	G	C6-N1	-5.41	1.35	1.39
5	L	53	U	P-O5'	-5.41	1.54	1.59
3	J	45	U	C5-C6	-5.40	1.29	1.34
4	K	3030	G	C5'-C4'	5.39	1.57	1.51
4	K	3024	A	C5-C6	-5.39	1.36	1.41
5	L	60	C	O4'-C1'	5.39	1.48	1.41
5	L	56	A	N1-C2	-5.38	1.29	1.34
8	G	48	ARG	CZ-NH2	5.38	1.40	1.33
9	C	87	ARG	NE-CZ	5.38	1.40	1.33
2	B	572	PHE	C-N	5.38	1.46	1.34
4	K	3034	C	C5-C6	-5.37	1.30	1.34
3	J	1755	A	C5'-C4'	5.37	1.57	1.51
4	K	3026	G	N9-C8	5.35	1.41	1.37
4	K	3030	G	C2'-O2'	-5.35	1.34	1.41
3	J	1636	C	C2-O2	5.34	1.29	1.24
3	J	1638	G	C4'-C3'	5.34	1.59	1.53
3	J	1642	G	N1-C2	5.34	1.42	1.37
3	J	1631	A	C2'-C1'	-5.33	1.47	1.53
3	J	1648	A	N9-C8	5.32	1.42	1.37
3	J	1641	C	N1-C6	5.30	1.40	1.37
3	J	1642	G	C4'-O4'	5.30	1.52	1.45
5	L	71	A	N7-C5	5.30	1.42	1.39
3	J	1751	C	C4'-C3'	-5.30	1.47	1.52
8	G	5	ARG	N-CA	5.30	1.56	1.46
1	A	71	SER	CA-CB	5.30	1.60	1.52
3	J	1761	U	N3-C4	5.29	1.43	1.38
5	L	24	A	C2'-C1'	5.28	1.59	1.53
5	L	5	U	O4'-C1'	5.28	1.48	1.41
3	J	1638	G	C2-N3	5.28	1.36	1.32
5	L	47	U	C2'-C1'	5.28	1.59	1.53
8	G	73	PHE	N-CA	5.27	1.56	1.46
1	A	51	LEU	N-CA	-5.26	1.35	1.46
3	J	1648	A	O3'-P	-5.26	1.54	1.61
3	J	1643	U	C4-C5	5.25	1.48	1.43
1	A	43	PHE	CG-CD2	5.25	1.46	1.38
3	J	588	U	C2-N3	5.25	1.41	1.37
3	J	1637	C	N3-C4	5.25	1.37	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	J	453	U	P-OP1	-5.23	1.40	1.49
4	K	1245	A	C5-C6	-5.23	1.36	1.41
8	G	91	GLU	CD-OE1	5.23	1.31	1.25
3	J	555	A	N9-C4	5.22	1.41	1.37
3	J	458	G	C4'-C3'	5.22	1.58	1.53
4	K	2265	C	O4'-C1'	5.22	1.48	1.41
3	J	1766	A	N9-C4	-5.22	1.34	1.37
3	J	1753	A	C5-C4	5.21	1.42	1.38
5	L	52	G	C2'-C1'	-5.21	1.47	1.53
3	J	1757	G	C3'-O3'	5.21	1.49	1.42
5	L	53	U	C3'-O3'	5.21	1.49	1.42
4	K	1240	A	O3'-P	5.21	1.67	1.61
4	K	2264	U	C4-C5	5.21	1.48	1.43
10	H	90	ARG	NE-CZ	5.21	1.39	1.33
3	J	1640	C	C2-N3	5.21	1.40	1.35
4	K	1242	G	C2-N3	5.19	1.36	1.32
1	A	74	PHE	CG-CD1	5.19	1.46	1.38
1	A	219	TYR	CZ-OH	5.19	1.46	1.37
5	L	8	U	O4'-C1'	5.18	1.48	1.41
1	A	113	TYR	CZ-OH	5.16	1.46	1.37
4	K	2257	C	C2'-C1'	-5.16	1.47	1.53
8	G	10	GLU	CG-CD	5.16	1.59	1.51
1	A	244	GLY	N-CA	-5.15	1.38	1.46
3	J	1762	A	C4'-C3'	5.14	1.58	1.53
10	H	138	SER	C-O	-5.14	1.13	1.23
3	J	153	G	C8-N7	-5.13	1.27	1.30
3	J	1756	A	C4'-O4'	5.12	1.52	1.45
4	K	3024	A	C8-N7	-5.12	1.27	1.31
5	L	14	A	C2'-C1'	-5.11	1.47	1.53
3	J	1767	G	N9-C8	-5.11	1.34	1.37
10	H	23	GLY	CA-C	-5.11	1.43	1.51
3	J	1753	A	C6-N6	5.10	1.38	1.33
3	J	416	A	N7-C5	-5.10	1.36	1.39
3	J	1765	A	C2'-C1'	-5.09	1.47	1.53
3	J	1768	G	C6-N1	5.09	1.43	1.39
1	A	233	GLU	N-CA	-5.08	1.36	1.46
3	J	1181	U	C2-N3	5.08	1.41	1.37
4	K	1243	G	C5-C4	-5.08	1.34	1.38
5	L	46	A	O4'-C1'	5.08	1.48	1.41
3	J	1641	C	O3'-P	-5.08	1.55	1.61
3	J	1648	A	C4'-C3'	5.07	1.58	1.53
3	J	1184	A	N9-C4	5.07	1.40	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	J	1766	A	N7-C5	-5.07	1.36	1.39
3	J	1632	C	C3'-C2'	5.07	1.58	1.52
3	J	1645	G	C8-N7	-5.07	1.27	1.30
1	A	83	TYR	CE1-CZ	5.06	1.45	1.38
8	G	147	ARG	CZ-NH2	5.06	1.39	1.33
10	H	58	VAL	CA-CB	-5.06	1.44	1.54
3	J	1765	A	N7-C5	-5.06	1.36	1.39
4	K	2250	G	C1'-N9	-5.06	1.39	1.46
4	K	2835	U	C4-O4	-5.06	1.19	1.23
3	J	576	G	C2'-C1'	-5.05	1.47	1.53
1	A	348	LYS	C-N	5.05	1.45	1.34
3	J	1750	A	C2'-C1'	-5.04	1.47	1.53
3	J	1644	C	N1-C2	5.04	1.45	1.40
12	D	108	ARG	NE-CZ	5.04	1.39	1.33
4	K	3026	G	C4'-C3'	5.03	1.58	1.53
3	J	1645	G	N7-C5	-5.03	1.36	1.39
5	L	72	G	C3'-C2'	5.03	1.58	1.52
3	J	1184	A	C5'-C4'	5.02	1.57	1.51
5	L	50	G	O4'-C1'	-5.02	1.35	1.41
4	K	2261	G	C5'-C4'	5.02	1.57	1.51
1	A	177	ARG	NE-CZ	5.01	1.39	1.33
4	K	3030	G	C4'-O4'	-5.01	1.39	1.45

All (1135) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	K	2845	A	N1-C6-N6	40.71	143.02	118.60
4	K	2845	A	C6-N1-C2	39.69	142.41	118.60
4	K	2845	A	C5-C6-N1	-35.84	99.78	117.70
8	G	5	ARG	O-C-N	-35.31	66.20	122.70
10	H	88	PRO	N-CD-CG	-34.39	51.62	103.20
8	G	72	ASP	O-C-N	-30.47	73.94	122.70
8	G	72	ASP	CA-C-O	-23.47	70.82	120.10
5	L	73	C	P-O3'-C3'	22.77	147.02	119.70
3	J	1757	G	N1-C6-O6	21.97	133.08	119.90
5	L	12	U	P-O3'-C3'	21.91	146.00	119.70
8	G	5	ARG	CA-C-O	-21.82	74.28	120.10
4	K	2845	A	N1-C2-N3	-21.49	118.55	129.30
5	L	75	A	O4'-C1'-N9	20.53	124.63	108.20
3	J	1757	G	C5-C6-O6	-19.85	116.69	128.60
4	K	3033	A	N1-C6-N6	19.82	130.49	118.60
4	K	1251	A	N1-C6-N6	19.72	130.43	118.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	L	67	G	P-O3'-C3'	18.43	141.82	119.70
5	L	72	G	P-O3'-C3'	18.37	141.75	119.70
5	L	27	G	P-O3'-C3'	18.24	141.59	119.70
3	J	1642	G	N1-C6-O6	17.58	130.45	119.90
4	K	1235	U	P-O3'-C3'	17.55	140.76	119.70
1	A	47	PHE	CB-CG-CD1	17.16	132.81	120.80
3	J	458	G	N1-C6-O6	16.93	130.06	119.90
4	K	2254	U	P-O3'-C3'	16.57	139.58	119.70
5	L	13	U	O4'-C1'-N1	16.42	121.34	108.20
4	K	1236	G	C5-C6-O6	-16.19	118.89	128.60
1	A	272	LEU	O-C-N	-16.18	96.81	122.70
3	J	1642	G	C5-C6-O6	-15.96	119.02	128.60
5	L	64	G	P-O3'-C3'	15.73	138.58	119.70
3	J	578	U	P-O3'-C3'	15.68	138.51	119.70
3	J	1631	A	N1-C6-N6	15.52	127.91	118.60
5	L	56	A	C5-C6-N1	-15.47	109.97	117.70
5	L	40	U	P-O3'-C3'	15.28	138.04	119.70
3	J	45	U	C2-N1-C1'	15.21	135.95	117.70
5	L	56	A	C4-C5-C6	14.81	124.41	117.00
4	K	2265	C	N3-C4-N4	14.74	128.32	118.00
4	K	1236	G	N3-C2-N2	14.71	130.20	119.90
3	J	1635	A	N1-C6-N6	14.58	127.35	118.60
1	A	49	SER	CB-CA-C	14.52	137.70	110.10
1	A	47	PHE	CB-CG-CD2	-14.42	110.70	120.80
3	J	559	C	C6-N1-C2	-14.15	114.64	120.30
3	J	1633	A	N1-C6-N6	14.10	127.06	118.60
4	K	2255	A	N1-C6-N6	14.08	127.05	118.60
3	J	156	A	N1-C6-N6	14.04	127.02	118.60
5	L	57	A	N1-C6-N6	14.00	127.00	118.60
3	J	417	A	N1-C6-N6	13.99	126.99	118.60
3	J	458	G	C5-C6-O6	-13.87	120.28	128.60
3	J	416	A	N1-C6-N6	13.76	126.86	118.60
3	J	572	C	N1-C2-O2	13.74	127.14	118.90
10	H	41	LYS	N-CA-CB	-13.72	85.89	110.60
3	J	1756	A	N1-C6-N6	13.62	126.77	118.60
3	J	1756	A	C4-C5-C6	13.55	123.77	117.00
3	J	1766	A	N1-C6-N6	13.51	126.71	118.60
3	J	1437	U	C2-N1-C1'	-13.41	101.61	117.70
4	K	2265	C	N3-C4-C5	-13.36	116.56	121.90
3	J	1632	C	O4'-C1'-N1	13.27	118.82	108.20
3	J	1753	A	N1-C6-N6	13.27	126.56	118.60
4	K	2266	U	P-O3'-C3'	13.26	135.61	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	J	416	A	P-O3'-C3'	13.25	135.60	119.70
3	J	572	C	C2-N1-C1'	13.24	133.37	118.80
3	J	1761	U	P-O3'-C3'	13.04	135.34	119.70
3	J	1763	A	C8-N9-C4	-12.96	100.61	105.80
4	K	2255	A	C5-C6-N1	-12.95	111.23	117.70
4	K	1243	G	N1-C6-O6	12.90	127.64	119.90
4	K	2835	U	C5-C4-O4	-12.82	118.21	125.90
5	L	30	G	P-O3'-C3'	12.82	135.08	119.70
3	J	557	G	P-O3'-C3'	12.81	135.07	119.70
8	G	179	SER	C-N-CD	-12.79	92.46	120.60
10	H	43	GLY	N-CA-C	12.78	145.06	113.10
3	J	1750	A	N1-C6-N6	12.74	126.24	118.60
5	L	57	A	C5-C6-N1	-12.72	111.34	117.70
3	J	45	U	C5-C4-O4	-12.66	118.31	125.90
1	A	11	PHE	CB-CG-CD2	-12.45	112.09	120.80
8	G	42	ARG	NE-CZ-NH1	12.42	126.51	120.30
10	H	40	LYS	C-N-CA	12.39	152.67	121.70
3	J	577	G	P-O3'-C3'	12.31	134.47	119.70
4	K	1251	A	C5-N7-C8	12.22	110.01	103.90
4	K	3023	U	P-O3'-C3'	12.21	134.34	119.70
4	K	3025	C	N3-C4-C5	-12.19	117.03	121.90
3	J	1753	A	C4-C5-C6	12.17	123.09	117.00
5	L	11	U	P-O3'-C3'	12.17	134.30	119.70
3	J	45	U	C6-N1-C1'	-12.13	104.22	121.20
5	L	25	U	P-O3'-C3'	12.11	134.24	119.70
4	K	2267	C	N3-C4-C5	-12.10	117.06	121.90
3	J	160	C	C6-N1-C2	-12.10	115.46	120.30
3	J	1649	G	N1-C6-O6	12.07	127.14	119.90
4	K	3030	G	N1-C2-N3	-12.06	116.66	123.90
4	K	2845	A	C5-C6-N6	-12.03	114.08	123.70
5	L	40	U	O4'-C1'-N1	12.02	117.82	108.20
4	K	1245	A	N1-C6-N6	11.97	125.78	118.60
5	L	37	G	P-O3'-C3'	11.95	134.04	119.70
3	J	1644	C	C5-C4-N4	-11.92	111.85	120.20
3	J	417	A	P-O3'-C3'	11.92	134.00	119.70
4	K	3030	G	O4'-C1'-N9	11.91	117.73	108.20
4	K	2265	C	C2-N3-C4	11.90	125.85	119.90
10	H	42	VAL	C-N-CA	11.79	147.06	122.30
3	J	1751	C	O4'-C1'-N1	11.71	117.57	108.20
3	J	559	C	O4'-C1'-N1	11.62	117.50	108.20
3	J	556	A	N1-C2-N3	11.58	135.09	129.30
4	K	2255	A	C4-C5-C6	11.58	122.79	117.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	572	PHE	CA-C-O	-11.58	95.79	120.10
4	K	1236	G	C4-C5-N7	11.56	115.42	110.80
3	J	437	A	C5-C6-N6	-11.54	114.47	123.70
3	J	1633	A	C5-C6-N6	-11.50	114.50	123.70
5	L	28	G	O4'-C1'-N9	11.42	117.33	108.20
5	L	41	G	N9-C1'-C2'	11.36	128.77	114.00
5	L	13	U	P-O3'-C3'	11.28	133.24	119.70
8	G	61	ARG	NE-CZ-NH1	11.14	125.87	120.30
3	J	1759	C	N3-C4-N4	11.13	125.79	118.00
2	B	311	ARG	NE-CZ-NH1	-11.11	114.75	120.30
3	J	1644	C	N3-C4-N4	11.09	125.76	118.00
4	K	3033	A	C5-C6-N6	-11.07	114.84	123.70
3	J	1640	C	O4'-C1'-N1	11.06	117.05	108.20
5	L	50	G	O4'-C1'-N9	11.05	117.04	108.20
1	A	11	PHE	CB-CG-CD1	11.00	128.50	120.80
3	J	156	A	C4-C5-C6	10.99	122.50	117.00
3	J	437	A	C6-N1-C2	-10.97	112.02	118.60
4	K	1236	G	N1-C6-O6	10.96	126.48	119.90
5	L	36	C	N1-C1'-C2'	10.95	128.23	114.00
8	G	55	LYS	CA-CB-CG	10.91	137.41	113.40
10	H	42	VAL	CA-C-N	10.89	137.98	116.20
3	J	559	C	C5'-C4'-C3'	-10.87	98.60	116.00
5	L	42	C	P-O3'-C3'	10.81	132.68	119.70
3	J	1631	A	C5-C6-N6	-10.77	115.08	123.70
3	J	1753	A	C5-C6-N1	-10.76	112.32	117.70
5	L	58	U	O4'-C1'-N1	10.75	116.80	108.20
4	K	1236	G	N1-C2-N2	-10.70	106.57	116.20
3	J	160	C	P-O3'-C3'	10.69	132.52	119.70
5	L	34	G	N1-C6-O6	10.65	126.29	119.90
3	J	1760	G	N1-C6-O6	10.63	126.28	119.90
3	J	572	C	C5-C6-N1	10.60	126.30	121.00
4	K	2263	C	C6-N1-C2	-10.59	116.06	120.30
5	L	74	C	P-O3'-C3'	10.58	132.40	119.70
10	H	29	ALA	N-CA-C	10.57	139.54	111.00
1	A	276	LYS	C-N-CA	10.56	148.10	121.70
4	K	3025	C	O4'-C1'-N1	10.53	116.63	108.20
4	K	2835	U	C5-C6-N1	10.53	127.96	122.70
4	K	1236	G	P-O3'-C3'	10.52	132.33	119.70
10	H	40	LYS	O-C-N	-10.52	105.86	122.70
10	H	33	GLY	CA-C-N	10.52	146.55	117.10
3	J	1765	A	O4'-C1'-N9	10.48	116.58	108.20
4	K	2265	C	O4'-C1'-N1	10.45	116.56	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	J	1760	G	C5-C6-O6	-10.39	122.36	128.60
4	K	1238	C	N3-C4-C5	-10.38	117.75	121.90
10	H	28	LEU	C-N-CA	10.38	147.65	121.70
8	G	136	PHE	CB-CG-CD2	-10.32	113.57	120.80
3	J	155	U	C4'-C3'-C2'	10.32	112.92	102.60
1	A	255	TYR	CB-CG-CD2	10.30	127.18	121.00
3	J	154	G	N1-C6-O6	10.29	126.08	119.90
5	L	47	U	O4'-C1'-N1	10.29	116.43	108.20
3	J	437	A	N1-C6-N6	10.26	124.76	118.60
3	J	1764	C	P-O3'-C3'	10.26	132.01	119.70
3	J	154	G	C5-C6-O6	-10.25	122.45	128.60
5	L	25	U	O4'-C1'-N1	10.23	116.39	108.20
10	H	18	VAL	CB-CA-C	10.23	130.84	111.40
5	L	55	C	C6-N1-C2	-10.22	116.21	120.30
3	J	1768	G	C5-C6-O6	-10.17	122.50	128.60
8	G	197	PHE	CB-CG-CD1	-10.16	113.69	120.80
5	L	5	U	O4'-C1'-N1	10.15	116.32	108.20
5	L	11	U	O4'-C1'-N1	10.14	116.31	108.20
1	A	335	TYR	CB-CG-CD2	-10.06	114.96	121.00
5	L	43	C	N1-C1'-C2'	10.03	127.04	114.00
1	A	374	TYR	CA-CB-CG	10.02	132.43	113.40
3	J	1647	U	N3-C2-O2	9.99	129.20	122.20
4	K	1237	G	N1-C2-N3	-9.95	117.93	123.90
5	L	32	U	O4'-C1'-N1	9.94	116.15	108.20
3	J	1632	C	C6-N1-C2	-9.93	116.33	120.30
4	K	3024	A	P-O3'-C3'	9.87	131.54	119.70
3	J	1183	A	N1-C6-N6	9.84	124.50	118.60
7	E	9	ALA	CB-CA-C	-9.82	95.37	110.10
5	L	41	G	C1'-O4'-C4'	-9.81	102.05	109.90
4	K	2929	C	C5-C4-N4	-9.80	113.34	120.20
3	J	1759	C	C2-N3-C4	9.78	124.79	119.90
5	L	19	U	O4'-C1'-N1	9.75	116.00	108.20
4	K	2260	U	O4'-C1'-N1	9.75	116.00	108.20
1	A	204	ASN	N-CA-C	-9.75	84.68	111.00
5	L	11	U	N1-C1'-C2'	-9.74	101.29	112.00
3	J	1637	C	O4'-C1'-N1	9.72	115.98	108.20
1	A	172	MET	CG-SD-CE	9.72	115.75	100.20
3	J	578	U	C2-N1-C1'	-9.70	106.06	117.70
4	K	2256	A	O4'-C1'-N9	9.68	115.94	108.20
6	F	91	ARG	NE-CZ-NH2	9.68	125.14	120.30
4	K	3030	G	C2-N3-C4	9.67	116.74	111.90
5	L	44	A	O4'-C1'-N9	9.66	115.93	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	K	2253	G	C4-C5-N7	9.66	114.66	110.80
5	L	7	A	P-O3'-C3'	9.65	131.28	119.70
3	J	1645	G	N1-C6-O6	9.63	125.68	119.90
3	J	1768	G	N1-C6-O6	9.63	125.68	119.90
3	J	578	U	C6-N1-C2	-9.63	115.22	121.00
10	H	29	ALA	CA-C-N	9.62	144.03	117.10
3	J	1752	U	N3-C4-O4	9.61	126.13	119.40
3	J	1640	C	N3-C4-C5	-9.61	118.06	121.90
3	J	1437	U	C6-N1-C1'	9.60	134.63	121.20
5	L	26	G	O4'-C1'-N9	9.57	115.86	108.20
5	L	2	C	N1-C1'-C2'	9.57	126.44	114.00
8	G	180	PRO	CB-CA-C	-9.55	88.13	112.00
3	J	578	U	O4'-C1'-N1	9.52	115.82	108.20
4	K	2254	U	O4'-C1'-N1	9.50	115.80	108.20
3	J	1649	G	C5-C6-O6	-9.49	122.91	128.60
3	J	1755	A	C4-C5-C6	9.48	121.74	117.00
5	L	33	U	O4'-C1'-N1	9.47	115.77	108.20
3	J	156	A	C5-C6-N1	-9.43	112.98	117.70
10	H	40	LYS	N-CA-C	9.42	136.44	111.00
3	J	1645	G	C5-C6-O6	-9.41	122.95	128.60
10	H	28	LEU	CB-CA-C	-9.40	92.34	110.20
10	H	33	GLY	CA-C-O	-9.36	103.75	120.60
3	J	572	C	C6-N1-C2	-9.36	116.56	120.30
3	J	448	C	O4'-C4'-C3'	-9.34	94.66	104.00
3	J	1184	A	N1-C6-N6	9.34	124.20	118.60
3	J	1635	A	C5-C6-N6	-9.31	116.25	123.70
3	J	160	C	C2-N1-C1'	9.31	129.04	118.80
10	H	74	VAL	C-N-CD	-9.29	100.16	120.60
4	K	1251	A	C5-C6-N6	-9.28	116.28	123.70
4	K	2255	A	N1-C2-N3	9.26	133.93	129.30
3	J	457	G	O4'-C1'-N9	9.24	115.59	108.20
1	A	170	TYR	CB-CG-CD1	-9.21	115.47	121.00
8	G	42	ARG	CB-CA-C	9.20	128.79	110.40
10	H	57	LYS	CB-CG-CD	9.19	135.49	111.60
6	F	173	ARG	NE-CZ-NH1	-9.19	115.71	120.30
3	J	160	C	O4'-C1'-N1	9.14	115.52	108.20
5	L	24	A	O4'-C1'-N9	9.11	115.49	108.20
1	A	255	TYR	CB-CG-CD1	-9.10	115.54	121.00
4	K	1241	U	O4'-C1'-N1	9.09	115.47	108.20
5	L	22	G	N9-C1'-C2'	9.09	125.82	114.00
4	K	2919	A	C8-N9-C4	-9.07	102.17	105.80
5	L	56	A	N1-C6-N6	9.07	124.04	118.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
10	H	38	SER	CA-C-O	-9.07	101.06	120.10
3	J	558	U	O4'-C1'-N1	9.06	115.45	108.20
5	L	44	A	P-O3'-C3'	9.04	130.55	119.70
4	K	1251	A	C2-N3-C4	-9.01	106.09	110.60
10	H	29	ALA	O-C-N	-9.01	103.97	121.10
3	J	155	U	P-O3'-C3'	-9.00	108.90	119.70
5	L	34	G	C5-C6-O6	-9.00	123.20	128.60
3	J	155	U	O4'-C1'-N1	8.98	115.38	108.20
4	K	1251	A	C5-C6-N1	-8.97	113.21	117.70
5	L	71	A	P-O3'-C3'	8.97	130.47	119.70
3	J	572	C	C6-N1-C1'	-8.94	110.08	120.80
3	J	1754	A	N1-C6-N6	8.91	123.95	118.60
5	L	57	A	C5-N7-C8	8.91	108.36	103.90
8	G	191	TYR	CB-CG-CD2	-8.91	115.65	121.00
3	J	1765	A	C1'-O4'-C4'	-8.89	102.78	109.90
5	L	61	C	N1-C1'-C2'	8.87	125.53	114.00
3	J	572	C	N3-C2-O2	-8.86	115.70	121.90
5	L	54	U	C6-N1-C2	-8.84	115.70	121.00
3	J	557	G	N1-C6-O6	8.83	125.20	119.90
4	K	1243	G	C3'-C2'-C1'	-8.83	94.44	101.50
8	G	34	SER	N-CA-CB	8.82	123.72	110.50
3	J	589	C	O4'-C1'-N1	8.81	115.25	108.20
10	H	40	LYS	CB-CA-C	-8.81	92.77	110.40
5	L	51	G	O4'-C1'-N9	8.80	115.24	108.20
2	B	311	ARG	NE-CZ-NH2	8.78	124.69	120.30
5	L	59	U	O4'-C1'-N1	8.74	115.19	108.20
3	J	1765	A	N1-C6-N6	8.73	123.84	118.60
4	K	1251	A	C4-C5-C6	8.73	121.36	117.00
3	J	559	C	N3-C4-N4	8.72	124.10	118.00
4	K	1242	G	N3-C2-N2	8.70	125.99	119.90
4	K	2929	C	N3-C4-N4	8.65	124.06	118.00
10	H	41	LYS	CA-CB-CG	8.65	132.43	113.40
1	A	373	LYS	N-CA-CB	8.65	126.16	110.60
5	L	29	C	O3'-P-O5'	-8.64	87.59	104.00
3	J	1198	G	C8-N9-C4	-8.62	102.95	106.40
3	J	1765	A	C5-C6-N6	-8.62	116.80	123.70
3	J	1636	C	N3-C4-N4	8.62	124.03	118.00
4	K	2835	U	C2-N1-C1'	8.60	128.02	117.70
8	G	197	PHE	CB-CG-CD2	8.59	126.81	120.80
3	J	1755	A	C5-N7-C8	8.58	108.19	103.90
4	K	1242	G	O4'-C1'-N9	8.58	115.06	108.20
3	J	1756	A	C4-C5-N7	-8.57	106.41	110.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	J	459	G	C5-C6-O6	-8.56	123.47	128.60
8	G	39	HIS	CB-CA-C	8.55	127.50	110.40
10	H	38	SER	CA-C-N	8.52	140.97	117.10
1	A	327	ASP	N-CA-CB	8.52	125.94	110.60
10	H	41	LYS	N-CA-C	8.51	133.97	111.00
3	J	1648	A	N1-C6-N6	8.51	123.70	118.60
3	J	459	G	O4'-C1'-N9	8.51	115.00	108.20
4	K	2265	C	N1-C2-O2	8.51	124.00	118.90
4	K	2257	C	C2-N1-C1'	8.49	128.14	118.80
1	A	74	PHE	CB-CG-CD2	-8.49	114.86	120.80
4	K	2835	U	N3-C4-O4	8.46	125.33	119.40
4	K	2251	G	C5-C6-O6	-8.46	123.52	128.60
10	H	90	ARG	NE-CZ-NH2	8.45	124.52	120.30
3	J	1185	U	P-O3'-C3'	8.45	129.84	119.70
3	J	1181	U	C4'-C3'-C2'	-8.44	94.16	102.60
4	K	2290	C	N1-C2-O2	-8.43	113.84	118.90
8	G	35	SER	N-CA-CB	8.43	123.14	110.50
5	L	56	A	C6-C5-N7	-8.40	126.42	132.30
5	L	20	C	O4'-C1'-N1	8.40	114.92	108.20
3	J	556	A	C2-N3-C4	-8.39	106.41	110.60
5	L	70	G	N1-C6-O6	8.38	124.93	119.90
3	J	1756	A	C5-C6-N1	-8.38	113.51	117.70
3	J	1766	A	C5-C6-N6	-8.38	117.00	123.70
3	J	577	G	C8-N9-C1'	8.37	137.89	127.00
5	L	72	G	N1-C6-O6	8.37	124.92	119.90
3	J	1640	C	C5-C6-N1	8.33	125.17	121.00
10	H	90	ARG	NE-CZ-NH1	-8.33	116.14	120.30
1	A	205	PHE	CB-CG-CD1	8.32	126.62	120.80
3	J	1755	A	N1-C6-N6	8.32	123.59	118.60
3	J	1187	U	C5-C4-O4	-8.31	120.91	125.90
4	K	3025	C	C5-C6-N1	-8.31	116.84	121.00
4	K	2250	G	N1-C6-O6	8.29	124.87	119.90
3	J	1750	A	N1-C2-N3	8.27	133.44	129.30
3	J	1649	G	C5-N7-C8	8.26	108.43	104.30
4	K	2259	A	N1-C6-N6	8.26	123.55	118.60
3	J	1763	A	N7-C8-N9	8.25	117.92	113.80
5	L	72	G	O4'-C1'-N9	8.25	114.80	108.20
4	K	1243	G	N1-C2-N3	-8.24	118.95	123.90
10	H	41	LYS	CB-CA-C	-8.23	93.95	110.40
5	L	12	U	O4'-C1'-N1	8.22	114.78	108.20
5	L	67	G	O4'-C1'-N9	8.22	114.78	108.20
3	J	415	C	N3-C4-C5	-8.21	118.61	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	K	2846	U	N1-C2-N3	8.21	119.83	114.90
3	J	577	G	N1-C2-N3	-8.19	118.98	123.90
5	L	57	A	C4-C5-C6	8.19	121.10	117.00
1	A	49	SER	C-N-CA	8.19	142.17	121.70
5	L	72	G	N3-C2-N2	8.16	125.61	119.90
4	K	3035	A	N1-C6-N6	8.15	123.49	118.60
1	A	74	PHE	CB-CG-CD1	8.14	126.50	120.80
5	L	70	G	C6-C5-N7	-8.13	125.52	130.40
3	J	160	C	N3-C4-C5	-8.12	118.65	121.90
10	H	58	VAL	CB-CA-C	8.11	126.81	111.40
3	J	154	G	P-O3'-C3'	8.10	129.42	119.70
1	A	335	TYR	CB-CG-CD1	8.10	125.86	121.00
4	K	2255	A	C2-N3-C4	-8.10	106.55	110.60
1	A	205	PHE	CB-CG-CD2	-8.09	115.14	120.80
1	A	324	LEU	CB-CG-CD2	8.08	124.73	111.00
4	K	3024	A	O4'-C1'-N9	8.07	114.66	108.20
5	L	16	U	P-O3'-C3'	8.07	129.38	119.70
3	J	459	G	N1-C6-O6	8.06	124.74	119.90
3	J	1645	G	N9-C4-C5	-8.05	102.18	105.40
3	J	1638	G	N3-C2-N2	8.03	125.52	119.90
1	A	304	GLU	CB-CA-C	8.02	126.44	110.40
3	J	1760	G	O4'-C1'-N9	8.01	114.61	108.20
4	K	1238	C	O4'-C1'-N1	8.01	114.60	108.20
3	J	577	G	C4-N9-C1'	-8.00	116.10	126.50
4	K	1243	G	C6-C5-N7	-7.99	125.61	130.40
4	K	2252	A	C4-C5-C6	7.97	120.99	117.00
4	K	3024	A	N9-C4-C5	-7.95	102.62	105.80
4	K	2254	U	N3-C4-O4	7.94	124.96	119.40
4	K	3033	A	C2-N3-C4	-7.93	106.64	110.60
3	J	1764	C	O4'-C1'-N1	7.93	114.54	108.20
4	K	2289	U	C5-C6-N1	-7.92	118.74	122.70
3	J	1633	A	C5-N7-C8	7.92	107.86	103.90
3	J	1181	U	O4'-C1'-N1	7.89	114.51	108.20
3	J	1755	A	C5-C6-N1	-7.89	113.76	117.70
3	J	1753	A	C6-C5-N7	-7.89	126.78	132.30
5	L	55	C	N3-C4-C5	-7.88	118.75	121.90
3	J	569	C	C6-N1-C2	7.88	123.45	120.30
4	K	2283	G	C2-N3-C4	-7.88	107.96	111.90
3	J	557	G	O4'-C1'-N9	7.88	114.50	108.20
4	K	3030	G	N1-C6-O6	7.87	124.62	119.90
3	J	1638	G	N1-C6-O6	7.87	124.62	119.90
1	A	180	ASP	N-CA-CB	7.87	124.76	110.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	J	45	U	N3-C4-O4	7.86	124.90	119.40
4	K	2845	A	C2-N3-C4	-7.85	106.67	110.60
3	J	1184	A	C4-C5-C6	7.82	120.91	117.00
4	K	2257	C	C6-N1-C1'	-7.82	111.42	120.80
5	L	12	U	C4'-C3'-C2'	-7.77	94.83	102.60
3	J	1638	G	C5-C6-N1	-7.77	107.62	111.50
8	G	36	GLN	CA-CB-CG	7.76	130.48	113.40
4	K	1236	G	C3'-C2'-C1'	-7.76	95.30	101.50
1	A	374	TYR	CB-CG-CD2	-7.75	116.35	121.00
3	J	1762	A	O4'-C1'-N9	7.74	114.39	108.20
3	J	160	C	N3-C4-N4	7.74	123.42	118.00
3	J	1762	A	N1-C6-N6	7.72	123.23	118.60
3	J	154	G	C4-C5-N7	7.71	113.89	110.80
3	J	416	A	C5-C6-N6	-7.71	117.53	123.70
2	B	572	PHE	CA-C-N	7.71	134.16	117.20
3	J	1759	C	O4'-C1'-N1	7.70	114.36	108.20
3	J	1767	G	P-O3'-C3'	7.70	128.94	119.70
4	K	2919	A	N7-C8-N9	7.70	117.65	113.80
5	L	26	G	O4'-C1'-C2'	7.69	114.52	107.60
4	K	2289	U	C2-N3-C4	-7.69	122.39	127.00
8	G	5	ARG	CB-CA-C	7.68	125.75	110.40
3	J	1632	C	N3-C4-N4	7.66	123.36	118.00
3	J	156	A	O4'-C1'-N9	7.65	114.32	108.20
4	K	3026	G	N3-C2-N2	7.65	125.25	119.90
10	H	74	VAL	CA-CB-CG1	7.65	122.37	110.90
4	K	2251	G	C8-N9-C4	-7.63	103.35	106.40
4	K	3025	C	C4-C5-C6	7.62	121.21	117.40
3	J	578	U	O5'-P-OP2	-7.61	98.85	105.70
5	L	75	A	N9-C1'-C2'	-7.60	103.64	112.00
4	K	1245	A	C5-C6-N6	-7.59	117.62	123.70
4	K	1243	G	C5-C6-O6	-7.59	124.05	128.60
4	K	1236	G	N9-C4-C5	-7.58	102.37	105.40
8	G	72	ASP	N-CA-C	-7.57	90.57	111.00
3	J	448	C	C5'-C4'-C3'	7.56	128.10	116.00
3	J	578	U	C1'-O4'-C4'	7.56	115.95	109.90
3	J	1184	A	O4'-C1'-N9	7.56	114.25	108.20
4	K	1242	G	N1-C2-N3	-7.56	119.36	123.90
3	J	1638	G	C8-N9-C4	-7.56	103.38	106.40
5	L	17	G	C3'-C2'-C1'	7.55	107.54	101.50
4	K	2264	U	C6-N1-C2	7.54	125.52	121.00
3	J	417	A	C5-C6-N6	-7.53	117.67	123.70
8	G	22	TYR	CB-CG-CD1	-7.52	116.49	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	133	ALA	N-CA-CB	7.51	120.62	110.10
3	J	1647	U	N1-C2-O2	-7.50	117.55	122.80
3	J	1766	A	P-O3'-C3'	7.49	128.69	119.70
8	G	101	VAL	CG1-CB-CG2	7.49	122.88	110.90
3	J	1641	C	O4'-C1'-N1	7.47	114.18	108.20
3	J	1765	A	P-O5'-C5'	-7.44	108.99	120.90
5	L	68	C	N1-C1'-C2'	7.43	123.66	114.00
4	K	2851	A	N1-C6-N6	-7.43	114.14	118.60
3	J	1759	C	C5-C4-N4	-7.42	115.01	120.20
10	H	40	LYS	CA-C-N	7.42	133.53	117.20
1	A	300	TYR	CZ-CE2-CD2	7.41	126.47	119.80
3	J	578	U	C6-N1-C1'	7.41	131.57	121.20
3	J	1767	G	C5-C6-N1	-7.41	107.80	111.50
3	J	1647	U	O4'-C1'-N1	7.41	114.12	108.20
4	K	2253	G	C6-C5-N7	-7.41	125.96	130.40
3	J	153	G	O4'-C1'-N9	7.40	114.12	108.20
3	J	577	G	C5'-C4'-O4'	7.40	117.97	109.10
3	J	576	G	C4-C5-C6	7.39	123.23	118.80
4	K	2296	A	C8-N9-C4	-7.38	102.85	105.80
4	K	2263	C	N3-C4-N4	7.38	123.16	118.00
4	K	1238	C	N3-C4-N4	7.36	123.15	118.00
8	G	147	ARG	NE-CZ-NH1	7.36	123.98	120.30
7	E	57	ASN	CA-C-N	7.35	137.68	117.10
1	A	38	ASP	CB-CG-OD2	-7.34	111.69	118.30
4	K	2838	A	C8-N9-C4	7.34	108.73	105.80
1	A	147	LEU	CB-CG-CD1	7.33	123.46	111.00
4	K	2251	G	N1-C6-O6	7.33	124.30	119.90
3	J	156	A	C6-C5-N7	-7.32	127.18	132.30
1	A	246	PHE	N-CA-CB	7.30	123.75	110.60
8	G	61	ARG	NE-CZ-NH2	-7.30	116.65	120.30
3	J	1758	U	O4'-C1'-N1	7.29	114.03	108.20
3	J	1763	A	N3-C4-C5	-7.29	121.70	126.80
7	E	57	ASN	N-CA-CB	7.28	123.71	110.60
4	K	2297	U	N3-C2-O2	7.28	127.30	122.20
10	H	95	ASP	N-CA-CB	7.27	123.69	110.60
3	J	427	C	N3-C2-O2	7.27	126.99	121.90
4	K	2265	C	C5-C4-N4	-7.25	115.12	120.20
4	K	3030	G	C5-C6-N1	-7.24	107.88	111.50
3	J	1641	C	N3-C4-N4	7.23	123.06	118.00
3	J	1754	A	O4'-C1'-N9	7.23	113.98	108.20
1	A	249	ALA	CB-CA-C	-7.22	99.27	110.10
3	J	458	G	O4'-C1'-N9	7.21	113.97	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	K	2253	G	O4'-C1'-N9	7.21	113.97	108.20
3	J	1184	A	C5-C6-N1	-7.21	114.09	117.70
4	K	3030	G	C6-N1-C2	7.21	129.43	125.10
3	J	1750	A	C5-C6-N6	-7.20	117.94	123.70
5	L	66	C	P-O3'-C3'	7.20	128.34	119.70
4	K	3033	A	C5-N7-C8	7.20	107.50	103.90
10	H	72	SER	N-CA-CB	7.20	121.30	110.50
3	J	577	G	N9-C4-C5	7.20	108.28	105.40
4	K	2255	A	C6-C5-N7	-7.18	127.28	132.30
1	A	374	TYR	N-CA-CB	-7.17	97.69	110.60
3	J	577	G	N9-C1'-C2'	7.17	123.32	114.00
2	B	183	PRO	N-CA-C	-7.16	93.49	112.10
1	A	141	ASP	N-CA-CB	7.15	123.47	110.60
3	J	415	C	O4'-C1'-N1	7.14	113.92	108.20
4	K	2266	U	C6-N1-C2	-7.14	116.71	121.00
10	H	43	GLY	CA-C-N	7.14	132.91	117.20
3	J	158	U	O4'-C1'-N1	7.14	113.91	108.20
1	A	226	LYS	N-CA-CB	7.14	123.44	110.60
3	J	1760	G	C2-N3-C4	7.13	115.47	111.90
4	K	1243	G	O4'-C1'-N9	7.13	113.91	108.20
1	A	300	TYR	CB-CG-CD1	7.10	125.26	121.00
3	J	154	G	C6-C5-N7	-7.10	126.14	130.40
8	G	58	MET	CG-SD-CE	-7.09	88.85	100.20
4	K	2925	C	C6-N1-C2	-7.09	117.47	120.30
3	J	559	C	C2-N1-C1'	7.08	126.59	118.80
3	J	159	U	N3-C4-O4	7.08	124.35	119.40
10	H	58	VAL	CA-CB-CG2	7.07	121.51	110.90
5	L	72	G	C6-C5-N7	-7.07	126.16	130.40
10	H	16	ARG	N-CA-C	-7.07	91.92	111.00
1	A	83	TYR	CZ-CE2-CD2	7.06	126.16	119.80
10	H	29	ALA	N-CA-CB	-7.06	100.22	110.10
8	G	73	PHE	CB-CG-CD1	-7.06	115.86	120.80
5	L	74	C	O4'-C1'-C2'	-7.06	98.74	105.80
5	L	47	U	N1-C1'-C2'	-7.05	104.24	112.00
7	E	9	ALA	N-CA-C	7.05	130.04	111.00
1	A	158	THR	N-CA-CB	7.05	123.69	110.30
3	J	1185	U	P-O5'-C5'	7.04	132.16	120.90
4	K	3026	G	N9-C4-C5	-7.03	102.59	105.40
3	J	1757	G	C5-N7-C8	7.03	107.81	104.30
1	A	275	THR	CA-CB-CG2	7.02	122.23	112.40
5	L	31	C	O4'-C1'-N1	7.02	113.82	108.20
8	G	180	PRO	CA-N-CD	-7.02	101.68	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	K	2252	A	N1-C6-N6	7.01	122.81	118.60
4	K	2297	U	N1-C2-O2	-7.01	117.89	122.80
4	K	3034	C	C5-C4-N4	-7.01	115.29	120.20
10	H	44	GLU	N-CA-CB	-7.01	97.99	110.60
5	L	53	U	O4'-C1'-N1	7.00	113.80	108.20
4	K	2845	A	C4-C5-C6	6.95	120.47	117.00
3	J	1636	C	C5-C4-N4	-6.94	115.34	120.20
6	F	62	ARG	NE-CZ-NH1	6.94	123.77	120.30
1	A	311	TYR	CB-CG-CD2	-6.94	116.84	121.00
5	L	26	G	C1'-O4'-C4'	-6.92	104.36	109.90
3	J	555	A	P-O3'-C3'	6.92	128.01	119.70
5	L	26	G	C3'-C2'-C1'	-6.92	95.96	101.50
3	J	1184	A	C6-C5-N7	-6.91	127.46	132.30
4	K	1255	C	C6-N1-C2	6.91	123.06	120.30
4	K	2834	G	C5-C6-N1	6.91	114.96	111.50
6	F	91	ARG	NE-CZ-NH1	-6.91	116.85	120.30
8	G	180	PRO	N-CA-C	6.90	130.04	112.10
4	K	1241	U	P-O5'-C5'	6.89	131.93	120.90
3	J	578	U	C5'-C4'-O4'	-6.89	100.83	109.10
2	B	572	PHE	N-CA-C	-6.88	92.43	111.00
5	L	54	U	N1-C2-N3	6.88	119.03	114.90
1	A	224	MET	CG-SD-CE	-6.87	89.21	100.20
5	L	53	U	C5-C4-O4	-6.87	121.78	125.90
1	A	274	ASP	N-CA-CB	6.86	122.95	110.60
3	J	1764	C	N3-C4-N4	6.86	122.80	118.00
1	A	273	GLN	N-CA-C	6.86	129.51	111.00
2	B	183	PRO	C-N-CA	6.85	138.83	121.70
1	A	383	ASP	CB-CG-OD2	-6.85	112.14	118.30
3	J	1645	G	O4'-C1'-N9	6.85	113.68	108.20
10	H	21	GLU	CA-CB-CG	6.85	128.46	113.40
4	K	1238	C	C4'-C3'-C2'	-6.84	95.76	102.60
5	L	22	G	C1'-O4'-C4'	-6.84	104.43	109.90
3	J	1641	C	C2-N3-C4	6.83	123.32	119.90
4	K	3024	A	N7-C8-N9	6.83	117.22	113.80
3	J	1763	A	C2-N3-C4	6.83	114.01	110.60
5	L	75	A	C1'-O4'-C4'	6.82	115.35	109.90
5	L	24	A	P-O3'-C3'	6.81	127.87	119.70
3	J	559	C	C5-C4-N4	-6.80	115.44	120.20
4	K	2254	U	C5-C4-O4	-6.80	121.82	125.90
4	K	2260	U	C2-N3-C4	-6.80	122.92	127.00
5	L	1	U	N3-C4-O4	6.80	124.16	119.40
5	L	55	C	C2-N3-C4	6.79	123.30	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	K	2297	U	C6-N1-C2	6.79	125.07	121.00
4	K	2263	C	C5-C6-N1	6.79	124.39	121.00
1	A	268	TYR	CG-CD2-CE2	6.78	126.72	121.30
4	K	1242	G	N1-C6-O6	6.78	123.97	119.90
5	L	54	U	C2-N3-C4	-6.78	122.94	127.00
3	J	578	U	C5'-C4'-C3'	6.77	126.84	116.00
2	B	528	PHE	CB-CA-C	-6.77	96.86	110.40
10	H	138	SER	C-N-CA	6.77	138.63	121.70
4	K	3035	A	C4-C5-C6	6.77	120.39	117.00
3	J	416	A	N1-C2-N3	6.75	132.68	129.30
4	K	2267	C	P-O5'-C5'	-6.75	110.10	120.90
5	L	12	U	P-O5'-C5'	-6.75	110.10	120.90
8	G	83	ASN	CB-CA-C	6.74	123.88	110.40
4	K	1241	U	C5'-C4'-C3'	-6.74	105.21	116.00
3	J	1759	C	N3-C4-C5	-6.74	119.20	121.90
7	E	9	ALA	CA-C-N	-6.74	102.38	117.20
10	H	33	GLY	N-CA-C	6.74	129.94	113.10
8	G	55	LYS	CB-CA-C	-6.73	96.94	110.40
1	A	208	LEU	CB-CG-CD2	6.72	122.43	111.00
10	H	74	VAL	N-CA-CB	-6.72	96.71	111.50
3	J	1639	C	N3-C4-N4	6.70	122.69	118.00
3	J	414	C	P-O3'-C3'	-6.70	111.66	119.70
3	J	1638	G	N1-C2-N3	-6.68	119.89	123.90
8	G	72	ASP	N-CA-CB	-6.68	98.57	110.60
4	K	2919	A	C4-C5-C6	6.68	120.34	117.00
3	J	1185	U	O4'-C1'-N1	6.67	113.53	108.20
1	A	318	LEU	CB-CA-C	-6.66	97.55	110.20
10	H	45	ASP	CB-CG-OD2	6.65	124.28	118.30
3	J	1635	A	O4'-C1'-N9	6.65	113.52	108.20
10	H	42	VAL	O-C-N	-6.64	111.90	123.20
4	K	2264	U	C3'-C2'-C1'	-6.64	96.19	101.50
4	K	3035	A	N3-C4-N9	6.64	132.71	127.40
3	J	1756	A	N9-C4-C5	6.64	108.46	105.80
4	K	1237	G	C2-N3-C4	6.64	115.22	111.90
3	J	1437	U	N1-C2-O2	-6.63	118.16	122.80
3	J	1198	G	N9-C4-C5	6.63	108.05	105.40
5	L	35	U	O4'-C1'-N1	6.63	113.50	108.20
3	J	565	C	C2-N1-C1'	-6.62	111.52	118.80
5	L	28	G	C4'-C3'-C2'	-6.61	95.99	102.60
5	L	70	G	C8-N9-C4	-6.61	103.76	106.40
3	J	556	A	N9-C4-C5	6.60	108.44	105.80
3	J	448	C	O4'-C1'-N1	6.60	113.48	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	J	45	U	N3-C2-O2	-6.59	117.59	122.20
3	J	1764	C	C3'-C2'-C1'	6.59	106.77	101.50
4	K	2256	A	P-O3'-C3'	6.59	127.61	119.70
3	J	154	G	N9-C4-C5	-6.59	102.77	105.40
3	J	1766	A	N1-C2-N3	6.59	132.59	129.30
3	J	557	G	C5-C6-O6	-6.59	124.65	128.60
4	K	2261	G	N3-C4-C5	-6.59	125.31	128.60
5	L	50	G	O4'-C1'-C2'	6.58	113.52	107.60
4	K	2283	G	N3-C2-N2	-6.58	115.30	119.90
3	J	1639	C	C5-C4-N4	-6.56	115.61	120.20
4	K	3025	C	C2-N3-C4	6.56	123.18	119.90
5	L	22	G	O4'-C1'-C2'	6.56	113.51	107.60
5	L	71	A	N1-C6-N6	6.56	122.54	118.60
5	L	66	C	C3'-C2'-C1'	6.56	106.75	101.50
3	J	1206	U	C5-C6-N1	6.54	125.97	122.70
5	L	9	A	P-O3'-C3'	6.54	127.55	119.70
3	J	559	C	C4'-C3'-C2'	-6.53	96.07	102.60
4	K	3033	A	N7-C8-N9	-6.53	110.53	113.80
1	A	300	TYR	CB-CG-CD2	-6.53	117.08	121.00
4	K	2252	A	O4'-C1'-N9	6.52	113.42	108.20
4	K	2838	A	N7-C8-N9	-6.51	110.55	113.80
10	H	30	PRO	C-N-CA	-6.51	105.43	121.70
5	L	13	U	P-O5'-C5'	-6.51	110.49	120.90
5	L	28	G	C1'-O4'-C4'	-6.50	104.70	109.90
3	J	1759	C	N1-C2-N3	-6.50	114.65	119.20
3	J	557	G	C1'-O4'-C4'	-6.50	104.70	109.90
10	H	44	GLU	N-CA-C	6.50	128.54	111.00
3	J	45	U	C2-N3-C4	-6.50	123.10	127.00
4	K	2283	G	N3-C4-N9	-6.49	122.10	126.00
4	K	2259	A	C4-C5-C6	6.49	120.25	117.00
3	J	1769	U	O4'-C1'-N1	6.49	113.39	108.20
4	K	1251	A	C4-C5-N7	-6.48	107.46	110.70
5	L	1	U	P-O3'-C3'	6.48	127.47	119.70
4	K	2256	A	N1-C6-N6	6.47	122.48	118.60
3	J	1184	A	P-O3'-C3'	6.46	127.45	119.70
1	A	160	SER	CB-CA-C	-6.46	97.83	110.10
4	K	2918	G	C2-N3-C4	6.46	115.13	111.90
1	A	276	LYS	N-CA-CB	-6.45	98.99	110.60
4	K	2920	U	N1-C2-N3	6.45	118.77	114.90
4	K	1237	G	N1-C6-O6	6.44	123.77	119.90
4	K	2928	C	N3-C4-N4	6.44	122.51	118.00
4	K	1227	C	C2-N1-C1'	6.43	125.88	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	J	1760	G	N9-C4-C5	-6.43	102.83	105.40
2	B	434	PHE	CA-CB-CG	-6.42	98.48	113.90
3	J	1638	G	C6-C5-N7	-6.42	126.55	130.40
2	B	582	ARG	NE-CZ-NH1	6.41	123.51	120.30
10	H	22	VAL	CB-CA-C	6.41	123.57	111.40
10	H	88	PRO	N-CA-CB	6.41	110.99	103.30
4	K	2290	C	N3-C2-O2	6.40	126.38	121.90
3	J	1760	G	C4-C5-N7	6.40	113.36	110.80
1	A	170	TYR	CB-CG-CD2	6.40	124.84	121.00
4	K	2253	G	N3-C2-N2	6.39	124.38	119.90
5	L	71	A	N1-C2-N3	6.39	132.49	129.30
4	K	3026	G	C3'-C2'-C1'	-6.38	96.40	101.50
4	K	1243	G	C5-C6-N1	-6.38	108.31	111.50
4	K	2294	U	N3-C2-O2	-6.37	117.74	122.20
4	K	2922	G	C6-C5-N7	-6.37	126.58	130.40
1	A	272	LEU	CA-C-N	-6.37	103.19	117.20
1	A	245	MET	CG-SD-CE	-6.36	90.02	100.20
5	L	14	A	O4'-C1'-N9	6.36	113.29	108.20
4	K	2262	A	N1-C6-N6	6.36	122.41	118.60
4	K	2264	U	C5-C4-O4	-6.36	122.09	125.90
10	H	39	PRO	CA-C-N	6.35	131.18	117.20
3	J	439	U	C2-N1-C1'	6.35	125.32	117.70
2	B	572	PHE	CB-CG-CD2	6.35	125.25	120.80
4	K	1238	C	C1'-O4'-C4'	-6.34	104.83	109.90
3	J	1641	C	C5-C4-N4	-6.33	115.77	120.20
4	K	2283	G	N1-C6-O6	6.33	123.70	119.90
4	K	3026	G	C4-C5-N7	6.32	113.33	110.80
5	L	52	G	O4'-C1'-N9	6.32	113.26	108.20
3	J	556	A	C4-C5-N7	-6.32	107.54	110.70
8	G	66	PHE	CB-CG-CD1	6.32	125.22	120.80
11	I	48	ARG	NE-CZ-NH1	6.30	123.45	120.30
3	J	1633	A	P-O3'-C3'	6.30	127.26	119.70
3	J	1756	A	O4'-C1'-N9	6.30	113.24	108.20
8	G	53	MET	N-CA-CB	-6.30	99.26	110.60
5	L	74	C	C3'-C2'-C1'	6.29	106.53	101.50
2	B	182	GLY	N-CA-C	-6.29	97.37	113.10
1	A	255	TYR	O-C-N	-6.29	112.64	122.70
3	J	152	U	P-O3'-C3'	-6.28	112.17	119.70
3	J	437	A	N1-C2-N3	6.27	132.44	129.30
4	K	2267	C	C2-N3-C4	6.27	123.03	119.90
2	B	205	TYR	CA-CB-CG	-6.27	101.49	113.40
3	J	1760	G	C5-N7-C8	-6.27	101.17	104.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	J	1650	U	O4'-C1'-N1	6.27	113.21	108.20
4	K	3035	A	C5-C6-N6	-6.26	118.69	123.70
5	L	1	U	N3-C4-C5	-6.26	110.84	114.60
4	K	2257	C	C6-N1-C2	-6.25	117.80	120.30
3	J	45	U	N1-C2-O2	6.25	127.18	122.80
3	J	1182	U	O4'-C1'-N1	6.25	113.20	108.20
3	J	1638	G	O4'-C1'-N9	6.25	113.20	108.20
3	J	1646	C	O4'-C1'-N1	6.25	113.20	108.20
3	J	1650	U	N3-C4-C5	-6.24	110.86	114.60
4	K	3034	C	C2-N3-C4	-6.24	116.78	119.90
4	K	2287	C	N1-C2-N3	6.22	123.56	119.20
4	K	3019	U	C2-N3-C4	-6.21	123.27	127.00
5	L	54	U	O4'-C1'-N1	6.21	113.17	108.20
3	J	1431	C	C6-N1-C2	6.21	122.78	120.30
4	K	2845	A	C6-C5-N7	-6.21	127.95	132.30
1	A	157	VAL	CB-CA-C	6.21	123.19	111.40
8	G	73	PHE	CB-CG-CD2	6.20	125.14	120.80
3	J	1757	G	O4'-C1'-N9	6.20	113.16	108.20
1	A	338	LEU	O-C-N	-6.20	112.78	122.70
4	K	2929	C	C6-N1-C2	-6.19	117.82	120.30
8	G	147	ARG	NE-CZ-NH2	-6.19	117.20	120.30
4	K	2287	C	C5-C4-N4	6.18	124.53	120.20
4	K	3018	C	N1-C2-O2	-6.18	115.19	118.90
4	K	1237	G	N1-C2-N2	6.17	121.76	116.20
10	H	34	PRO	N-CA-C	6.17	128.14	112.10
3	J	459	G	N3-C2-N2	6.17	124.22	119.90
10	H	39	PRO	O-C-N	-6.17	112.84	122.70
4	K	1236	G	C5-C6-N1	6.16	114.58	111.50
3	J	588	U	O4'-C1'-N1	6.16	113.13	108.20
4	K	3025	C	P-O5'-C5'	-6.16	111.05	120.90
3	J	1431	C	N3-C4-C5	6.16	124.36	121.90
3	J	158	U	N3-C4-C5	-6.15	110.91	114.60
3	J	437	A	C6-C5-N7	-6.14	128.00	132.30
4	K	3033	A	C5-C6-N1	-6.14	114.63	117.70
4	K	1238	C	C2-N3-C4	6.13	122.97	119.90
3	J	1438	G	C6-C5-N7	-6.13	126.72	130.40
3	J	1750	A	C5-C6-N1	-6.13	114.63	117.70
3	J	1642	G	N1-C2-N3	-6.13	120.22	123.90
10	H	16	ARG	NE-CZ-NH1	-6.13	117.24	120.30
10	H	43	GLY	CA-C-O	-6.12	109.58	120.60
5	L	65	U	O4'-C1'-N1	6.12	113.10	108.20
1	A	383	ASP	CB-CG-OD1	6.12	123.81	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	J	1639	C	O4'-C1'-N1	6.12	113.09	108.20
4	K	2931	C	N1-C2-O2	-6.11	115.23	118.90
8	G	30	VAL	CA-CB-CG1	6.11	120.07	110.90
3	J	1642	G	O4'-C1'-N9	6.11	113.08	108.20
5	L	1	U	O4'-C1'-N1	6.09	113.08	108.20
3	J	427	C	C6-N1-C2	6.09	122.73	120.30
6	F	166	ARG	NE-CZ-NH2	6.09	123.34	120.30
4	K	2834	G	C4-C5-C6	-6.09	115.15	118.80
4	K	3030	G	N1-C2-N2	6.09	121.68	116.20
5	L	64	G	N9-C1'-C2'	6.08	121.91	114.00
5	L	47	U	O4'-C1'-C2'	-6.08	99.72	105.80
3	J	437	A	C5-C6-N1	6.07	120.74	117.70
1	A	270	SER	N-CA-CB	6.07	119.60	110.50
3	J	1750	A	C1'-O4'-C4'	-6.06	105.05	109.90
4	K	2267	C	C5-C4-N4	6.05	124.44	120.20
4	K	3035	A	N3-C4-C5	-6.05	122.56	126.80
11	I	80	ARG	NE-CZ-NH2	-6.05	117.28	120.30
5	L	69	G	O4'-C1'-N9	6.05	113.04	108.20
4	K	3018	C	N3-C4-C5	6.04	124.32	121.90
3	J	1646	C	N1-C2-O2	6.04	122.52	118.90
4	K	2919	A	C4-N9-C1'	6.04	137.17	126.30
3	J	1766	A	C5'-C4'-O4'	6.04	116.34	109.10
5	L	60	C	O4'-C1'-N1	6.03	113.03	108.20
10	H	33	GLY	O-C-N	-6.03	109.64	121.10
4	K	1251	A	C1'-O4'-C4'	-6.03	105.08	109.90
3	J	1760	G	N3-C2-N2	6.03	124.12	119.90
10	H	141	CYS	N-CA-CB	6.03	121.45	110.60
3	J	152	U	O3'-P-O5'	-6.03	92.55	104.00
1	A	276	LYS	N-CA-C	6.02	127.27	111.00
4	K	1227	C	C5-C6-N1	6.02	124.01	121.00
3	J	1631	A	C5-N7-C8	6.02	106.91	103.90
5	L	72	G	C5-C6-O6	-6.02	124.99	128.60
1	A	122	PHE	CB-CG-CD2	-6.02	116.59	120.80
10	H	43	GLY	C-N-CA	-6.02	106.65	121.70
3	J	417	A	N3-C4-C5	-6.01	122.59	126.80
3	J	1645	G	N3-C4-C5	6.01	131.61	128.60
10	H	18	VAL	C-N-CA	6.01	134.92	122.30
4	K	2252	A	C6-C5-N7	-6.01	128.09	132.30
10	H	9	GLU	N-CA-CB	-6.00	99.79	110.60
4	K	3024	A	N3-C4-N9	6.00	132.20	127.40
3	J	559	C	C5-C6-N1	6.00	124.00	121.00
10	H	40	LYS	N-CA-CB	-6.00	99.81	110.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	L	21	A	O4'-C1'-N9	5.99	113.00	108.20
8	G	42	ARG	CD-NE-CZ	-5.99	115.22	123.60
6	F	124	ARG	NE-CZ-NH2	-5.98	117.31	120.30
4	K	3026	G	C6-C5-N7	-5.98	126.81	130.40
4	K	2266	U	N1-C2-N3	5.98	118.49	114.90
3	J	416	A	C4-C5-C6	5.98	119.99	117.00
12	D	44	LEU	CA-CB-CG	5.97	129.04	115.30
4	K	3033	A	C4-C5-C6	5.97	119.99	117.00
10	H	18	VAL	CA-CB-CG1	5.97	119.85	110.90
5	L	25	U	C1'-O4'-C4'	-5.97	105.13	109.90
10	H	70	ALA	O-C-N	-5.96	113.16	122.70
4	K	2292	U	C5-C4-O4	-5.96	122.32	125.90
5	L	13	U	C5'-C4'-C3'	-5.96	106.46	116.00
10	H	7	PRO	N-CA-CB	5.96	110.45	103.30
1	A	47	PHE	CA-CB-CG	5.96	128.20	113.90
4	K	1243	G	P-O3'-C3'	-5.96	112.55	119.70
3	J	1639	C	C5-C6-N1	5.95	123.97	121.00
1	A	153	HIS	N-CA-CB	5.95	121.31	110.60
3	J	1188	G	C5-C6-O6	-5.95	125.03	128.60
4	K	1243	G	C4-C5-N7	5.94	113.18	110.80
1	A	322	LYS	N-CA-CB	5.94	121.29	110.60
4	K	3025	C	C6-N1-C2	5.93	122.67	120.30
4	K	3026	G	O4'-C4'-C3'	-5.93	98.07	104.00
3	J	577	G	N1-C6-O6	-5.93	116.34	119.90
1	A	152	ALA	N-CA-CB	5.93	118.40	110.10
3	J	429	G	C8-N9-C4	-5.93	104.03	106.40
1	A	372	LEU	CB-CG-CD2	5.92	121.07	111.00
3	J	578	U	N1-C2-N3	5.92	118.45	114.90
1	A	6	LEU	N-CA-C	-5.92	95.01	111.00
3	J	1764	C	C5-C4-N4	-5.92	116.06	120.20
10	H	89	PRO	N-CA-CB	5.91	110.39	103.30
10	H	49	ALA	N-CA-CB	5.91	118.37	110.10
4	K	1243	G	C8-N9-C4	-5.90	104.04	106.40
5	L	29	C	O4'-C1'-N1	5.90	112.92	108.20
4	K	2263	C	O4'-C1'-N1	5.89	112.91	108.20
3	J	1635	A	C4-C5-C6	5.88	119.94	117.00
3	J	1642	G	N3-C2-N2	5.88	124.02	119.90
4	K	2283	G	C5-C6-N1	-5.88	108.56	111.50
5	L	10	G	C5'-C4'-C3'	-5.88	106.59	116.00
5	L	6	G	N9-C1'-C2'	5.88	121.64	114.00
3	J	1641	C	N3-C2-O2	5.88	126.01	121.90
4	K	2289	U	C6-N1-C2	5.88	124.53	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	32	TYR	CB-CG-CD2	-5.87	117.48	121.00
1	A	382	ASP	N-CA-CB	5.87	121.16	110.60
3	J	161	U	C5-C6-N1	-5.87	119.77	122.70
4	K	2283	G	C8-N9-C4	-5.87	104.05	106.40
4	K	2255	A	O4'-C1'-N9	5.86	112.89	108.20
10	H	7	PRO	CA-N-CD	-5.86	103.29	111.50
1	A	274	ASP	O-C-N	-5.86	113.33	122.70
2	B	600	TYR	CA-CB-CG	-5.86	102.27	113.40
5	L	13	U	C2'-C3'-O3'	5.85	123.06	113.70
3	J	590	C	C6-N1-C2	-5.85	117.96	120.30
8	G	101	VAL	CA-CB-CG2	-5.84	102.13	110.90
3	J	156	A	N1-C2-N3	5.84	132.22	129.30
5	L	8	U	C1'-O4'-C4'	5.84	114.57	109.90
2	B	582	ARG	NE-CZ-NH2	-5.84	117.38	120.30
4	K	2918	G	N3-C4-C5	-5.84	125.68	128.60
4	K	2854	U	N3-C2-O2	-5.84	118.11	122.20
3	J	1644	C	P-O5'-C5'	5.83	130.23	120.90
3	J	572	C	C2-N3-C4	5.83	122.81	119.90
4	K	1243	G	C6-N1-C2	5.83	128.60	125.10
4	K	2851	A	N9-C4-C5	5.83	108.13	105.80
12	D	105	ARG	NE-CZ-NH2	-5.82	117.39	120.30
3	J	1643	U	O4'-C1'-N1	5.82	112.86	108.20
5	L	71	A	C6-N1-C2	-5.82	115.11	118.60
4	K	2257	C	N3-C4-N4	5.82	122.07	118.00
1	A	157	VAL	CA-CB-CG1	5.81	119.62	110.90
3	J	1769	U	C5-C6-N1	5.81	125.60	122.70
8	G	26	PHE	N-CA-CB	5.80	121.05	110.60
3	J	1274	C	C6-N1-C2	-5.80	117.98	120.30
6	F	97	PHE	N-CA-CB	-5.80	100.17	110.60
3	J	1751	C	N3-C2-O2	-5.79	117.84	121.90
10	H	55	GLY	N-CA-C	5.79	127.58	113.10
5	L	19	U	P-O5'-C5'	5.79	130.16	120.90
1	A	169	GLU	N-CA-CB	5.78	121.01	110.60
3	J	1438	G	C8-N9-C1'	-5.78	119.48	127.00
3	J	576	G	N1-C6-O6	5.78	123.37	119.90
3	J	1648	A	C5'-C4'-C3'	-5.78	106.75	116.00
4	K	1251	A	N7-C8-N9	-5.77	110.91	113.80
1	A	254	GLY	O-C-N	-5.77	113.47	122.70
4	K	3029	A	P-O3'-C3'	5.77	126.62	119.70
4	K	2296	A	N1-C2-N3	5.77	132.18	129.30
4	K	2250	G	C5'-C4'-O4'	5.76	116.02	109.10
1	A	276	LYS	O-C-N	-5.76	113.48	122.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	G	191	TYR	CG-CD1-CE1	-5.75	116.70	121.30
5	L	74	C	C1'-O4'-C4'	5.75	114.50	109.90
3	J	437	A	N3-C4-N9	5.74	132.00	127.40
3	J	1762	A	N7-C8-N9	-5.74	110.93	113.80
3	J	1633	A	C8-N9-C4	5.74	108.09	105.80
8	G	5	ARG	NE-CZ-NH2	-5.74	117.43	120.30
1	A	207	LYS	N-CA-CB	5.73	120.91	110.60
1	A	219	TYR	CB-CG-CD2	-5.72	117.57	121.00
4	K	1237	G	C6-N1-C2	5.72	128.53	125.10
4	K	2254	U	C5-C6-N1	5.72	125.56	122.70
4	K	2287	C	C6-N1-C2	-5.72	118.01	120.30
4	K	2928	C	C5-C4-N4	-5.71	116.20	120.20
3	J	1437	U	C5-C6-N1	-5.71	119.85	122.70
3	J	1756	A	C5'-C4'-O4'	5.71	115.95	109.10
3	J	1755	A	N7-C8-N9	-5.71	110.95	113.80
1	A	40	GLU	N-CA-CB	5.70	120.86	110.60
3	J	417	A	C4-C5-C6	5.70	119.85	117.00
5	L	12	U	C5'-C4'-C3'	-5.70	106.89	116.00
7	E	10	ARG	N-CA-CB	-5.69	100.36	110.60
3	J	427	C	N1-C2-O2	-5.69	115.49	118.90
8	G	22	TYR	CB-CG-CD2	5.69	124.41	121.00
4	K	3028	G	C5-C6-N1	-5.67	108.67	111.50
3	J	565	C	C5-C6-N1	-5.67	118.17	121.00
3	J	1638	G	C6-N1-C2	5.67	128.50	125.10
5	L	8	U	O4'-C1'-N1	5.67	112.73	108.20
10	H	21	GLU	N-CA-CB	-5.67	100.40	110.60
5	L	1	U	C5-C6-N1	5.66	125.53	122.70
5	L	54	U	N1-C2-O2	-5.66	118.84	122.80
3	J	556	A	N1-C6-N6	5.66	122.00	118.60
3	J	557	G	O3'-P-O5'	5.65	114.73	104.00
4	K	1240	A	P-O3'-C3'	-5.65	112.92	119.70
4	K	2262	A	C2-N3-C4	5.65	113.42	110.60
3	J	1437	U	N3-C2-O2	5.64	126.15	122.20
10	H	27	ALA	N-CA-CB	5.64	118.00	110.10
4	K	2260	U	P-O3'-C3'	5.64	126.46	119.70
4	K	2257	C	O4'-C4'-C3'	-5.63	98.37	104.00
10	H	28	LEU	O-C-N	-5.63	113.68	122.70
5	L	55	C	C5-C6-N1	5.62	123.81	121.00
3	J	1642	G	C2-N3-C4	5.61	114.71	111.90
11	I	80	ARG	NE-CZ-NH1	5.61	123.11	120.30
3	J	458	G	C8-N9-C4	-5.61	104.16	106.40
3	J	1755	A	N1-C2-N3	5.61	132.11	129.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	J	1760	G	C6-C5-N7	-5.61	127.03	130.40
3	J	1752	U	N3-C4-C5	-5.61	111.23	114.60
8	G	33	VAL	CB-CA-C	-5.61	100.75	111.40
3	J	1756	A	P-O3'-C3'	5.60	126.42	119.70
4	K	2261	G	N9-C4-C5	5.60	107.64	105.40
5	L	64	G	C1'-O4'-C4'	-5.60	105.42	109.90
1	A	49	SER	N-CA-CB	-5.60	102.11	110.50
3	J	1765	A	C5'-C4'-O4'	5.60	115.82	109.10
1	A	60	THR	C-N-CA	5.59	135.68	121.70
4	K	2265	C	N1-C2-N3	-5.59	115.29	119.20
4	K	2296	A	N7-C8-N9	5.58	116.59	113.80
8	G	28	VAL	C-N-CA	5.58	134.01	122.30
1	A	109	LEU	CB-CG-CD1	5.58	120.48	111.00
3	J	1756	A	N3-C4-C5	-5.58	122.90	126.80
4	K	2918	G	C8-N9-C4	-5.58	104.17	106.40
3	J	1198	G	C5-C6-O6	5.57	131.94	128.60
5	L	49	G	O4'-C1'-N9	5.56	112.65	108.20
4	K	2283	G	N3-C4-C5	5.56	131.38	128.60
3	J	1648	A	C5-C6-N1	-5.56	114.92	117.70
3	J	448	C	N1-C1'-C2'	5.55	121.22	114.00
4	K	1236	G	C8-N9-C4	5.55	108.62	106.40
1	A	87	THR	O-C-N	-5.55	113.82	122.70
1	A	209	LYS	CB-CA-C	5.55	121.50	110.40
3	J	1763	A	N9-C4-C5	5.55	108.02	105.80
4	K	2251	G	P-O5'-C5'	5.55	129.78	120.90
10	H	58	VAL	CG1-CB-CG2	-5.54	102.03	110.90
1	A	181	VAL	C-N-CA	5.54	135.56	121.70
10	H	107	ASP	CB-CG-OD2	-5.54	113.31	118.30
4	K	2264	U	C2-N3-C4	-5.54	123.68	127.00
5	L	27	G	C4'-C3'-C2'	-5.54	97.06	102.60
1	A	11	PHE	CB-CA-C	-5.54	99.33	110.40
3	J	1648	A	C4-C5-N7	5.54	113.47	110.70
4	K	2919	A	N1-C2-N3	5.54	132.07	129.30
10	H	106	LEU	C-N-CA	5.53	135.53	121.70
4	K	2291	A	N1-C6-N6	5.53	121.92	118.60
3	J	1752	U	C2-N3-C4	5.53	130.32	127.00
4	K	2919	A	C6-C5-N7	-5.53	128.43	132.30
5	L	36	C	C1'-O4'-C4'	-5.52	105.48	109.90
4	K	2287	C	N3-C4-N4	-5.52	114.14	118.00
3	J	1205	C	C6-N1-C1'	-5.52	114.18	120.80
5	L	12	U	C3'-C2'-C1'	5.52	105.91	101.50
5	L	47	U	C1'-O4'-C4'	5.52	114.31	109.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	K	1237	G	C5-C6-O6	-5.51	125.29	128.60
5	L	25	U	C4'-C3'-C2'	-5.51	97.09	102.60
3	J	1203	A	N1-C2-N3	5.51	132.06	129.30
3	J	1765	A	C6-N1-C2	-5.50	115.30	118.60
1	A	277	TYR	N-CA-C	5.50	125.84	111.00
3	J	1636	C	C6-N1-C2	-5.50	118.10	120.30
10	H	28	LEU	CB-CG-CD2	5.50	120.34	111.00
10	H	92	ARG	NE-CZ-NH1	5.49	123.05	120.30
3	J	1202	A	N1-C6-N6	-5.48	115.31	118.60
4	K	2853	A	N1-C2-N3	-5.48	126.56	129.30
3	J	565	C	N3-C4-N4	-5.48	114.17	118.00
10	H	42	VAL	CA-CB-CG1	5.48	119.12	110.90
4	K	2846	U	N1-C2-O2	-5.48	118.97	122.80
1	A	186	GLU	CB-CA-C	-5.47	99.45	110.40
3	J	578	U	C4'-C3'-O3'	-5.47	97.91	109.40
3	J	556	A	P-O3'-C3'	-5.47	113.14	119.70
4	K	2296	A	C2-N3-C4	-5.47	107.87	110.60
5	L	45	G	C3'-C2'-C1'	5.47	105.87	101.50
3	J	417	A	O4'-C1'-N9	5.46	112.57	108.20
3	J	458	G	C4-C5-C6	5.46	122.08	118.80
8	G	64	ARG	NE-CZ-NH1	5.46	123.03	120.30
5	L	73	C	C3'-C2'-C1'	5.46	105.86	101.50
3	J	1632	C	C5-C4-N4	-5.45	116.39	120.20
3	J	1438	G	N1-C6-O6	5.45	123.17	119.90
4	K	2252	A	C5-C6-N1	-5.44	114.98	117.70
4	K	2833	A	C8-N9-C4	5.44	107.98	105.80
5	L	70	G	C8-N9-C1'	5.44	134.07	127.00
3	J	1632	C	P-O3'-C3'	5.44	126.23	119.70
12	D	108	ARG	NE-CZ-NH2	-5.44	117.58	120.30
3	J	1752	U	C5-C4-O4	-5.44	122.64	125.90
1	A	76	MET	N-CA-CB	-5.43	100.82	110.60
3	J	1205	C	C2-N1-C1'	5.43	124.77	118.80
2	B	572	PHE	C-N-CA	5.43	135.27	121.70
4	K	3030	G	C4-C5-C6	5.43	122.06	118.80
5	L	19	U	P-O3'-C3'	5.42	126.21	119.70
8	G	55	LYS	N-CA-CB	5.42	120.36	110.60
1	A	334	GLU	CB-CA-C	-5.42	99.57	110.40
4	K	2853	A	C5-C6-N6	-5.41	119.37	123.70
10	H	78	SER	CB-CA-C	5.41	120.38	110.10
4	K	2257	C	C5-C4-N4	-5.41	116.41	120.20
10	H	17	ALA	N-CA-CB	5.41	117.67	110.10
4	K	2262	A	C8-N9-C4	-5.40	103.64	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	J	1645	G	C5-N7-C8	5.40	107.00	104.30
4	K	1277	C	N3-C4-C5	5.40	124.06	121.90
4	K	2256	A	C2-N3-C4	5.40	113.30	110.60
5	L	66	C	O4'-C1'-C2'	-5.40	100.40	105.80
4	K	3026	G	N3-C4-N9	5.40	129.24	126.00
4	K	2250	G	C5-N7-C8	5.40	107.00	104.30
4	K	2263	C	C5-C4-N4	-5.39	116.42	120.20
5	L	54	U	C5-C6-N1	5.39	125.40	122.70
1	A	350	LEU	CB-CA-C	-5.39	99.96	110.20
10	H	46	ILE	CA-CB-CG1	5.39	121.24	111.00
4	K	2253	G	C5'-C4'-O4'	5.38	115.56	109.10
5	L	55	C	C1'-O4'-C4'	-5.38	105.59	109.90
10	H	93	LYS	N-CA-CB	-5.38	100.91	110.60
3	J	588	U	C4-C5-C6	5.38	122.93	119.70
5	L	61	C	C3'-C2'-C1'	5.38	105.80	101.50
4	K	2253	G	N9-C4-C5	-5.38	103.25	105.40
1	A	170	TYR	CG-CD2-CE2	-5.37	117.00	121.30
1	A	219	TYR	CG-CD2-CE2	-5.37	117.00	121.30
1	A	190	LYS	N-CA-CB	5.36	120.25	110.60
8	G	177	ASN	N-CA-CB	5.36	120.25	110.60
9	C	86	PRO	N-CA-CB	5.36	109.73	103.30
3	J	458	G	N9-C4-C5	5.36	107.54	105.40
10	H	63	LYS	N-CA-CB	5.36	120.24	110.60
3	J	1438	G	N9-C4-C5	-5.35	103.26	105.40
5	L	28	G	O3'-P-O5'	5.35	114.17	104.00
10	H	75	PRO	CA-N-CD	-5.35	104.00	111.50
5	L	57	A	O4'-C1'-N9	5.35	112.48	108.20
3	J	1181	U	O4'-C1'-C2'	-5.35	100.45	105.80
10	H	34	PRO	N-CA-CB	-5.35	96.72	102.60
4	K	2250	G	C5-C6-O6	-5.35	125.39	128.60
4	K	2261	G	C6-C5-N7	-5.34	127.19	130.40
4	K	3024	A	C4-N9-C1'	5.34	135.91	126.30
3	J	576	G	O4'-C1'-N9	5.34	112.47	108.20
3	J	1431	C	N1-C2-O2	5.34	122.10	118.90
4	K	1238	C	C5-C6-N1	5.34	123.67	121.00
1	A	106	SER	N-CA-CB	5.33	118.49	110.50
3	J	1754	A	C4-C5-C6	5.33	119.67	117.00
4	K	2920	U	C2-N3-C4	-5.32	123.81	127.00
3	J	1755	A	C6-C5-N7	-5.32	128.57	132.30
4	K	2929	C	C2-N1-C1'	5.32	124.65	118.80
4	K	1227	C	C6-N1-C2	-5.32	118.17	120.30
3	J	578	U	P-O5'-C5'	-5.32	112.39	120.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	J	1633	A	N7-C8-N9	-5.32	111.14	113.80
8	G	77	LEU	N-CA-C	-5.31	96.65	111.00
1	A	362	LEU	O-C-N	-5.31	114.20	122.70
1	A	176	LYS	N-CA-CB	5.31	120.16	110.60
10	H	15	LEU	C-N-CA	5.31	134.98	121.70
1	A	192	TYR	CB-CG-CD1	-5.31	117.81	121.00
3	J	575	C	C6-N1-C2	5.31	122.42	120.30
3	J	1636	C	C5-C6-N1	5.31	123.65	121.00
2	B	608	ILE	CA-C-O	-5.30	108.97	120.10
3	J	158	U	P-O5'-C5'	5.30	129.38	120.90
4	K	2918	G	N9-C4-C5	5.30	107.52	105.40
7	E	57	ASN	O-C-N	-5.30	111.03	121.10
6	F	166	ARG	CG-CD-NE	5.29	122.92	111.80
10	H	77	ALA	O-C-N	-5.29	114.23	122.70
3	J	1645	G	C4'-C3'-C2'	-5.29	97.31	102.60
1	A	273	GLN	C-N-CA	5.29	134.92	121.70
4	K	2259	A	C5-N7-C8	5.29	106.54	103.90
5	L	3	C	O4'-C1'-N1	5.29	112.43	108.20
4	K	3019	U	C5-C4-O4	-5.29	122.73	125.90
5	L	21	A	P-O5'-C5'	5.29	129.36	120.90
8	G	199	SER	CA-C-O	-5.29	109.00	120.10
1	A	375	PRO	N-CD-CG	5.28	111.12	103.20
6	F	191	LEU	CA-C-O	-5.28	109.01	120.10
8	G	12	PHE	CB-CG-CD2	5.28	124.50	120.80
9	C	226	ILE	CA-C-O	-5.28	109.01	120.10
2	B	36	LYS	C-N-CA	5.28	134.90	121.70
4	K	2254	U	C4'-C3'-C2'	-5.28	97.32	102.60
3	J	1756	A	O4'-C4'-C3'	-5.27	98.73	104.00
4	K	2835	U	C6-N1-C1'	-5.27	113.82	121.20
11	I	137	VAL	CA-C-O	-5.27	109.02	120.10
3	J	1429	G	N9-C4-C5	5.27	107.51	105.40
10	H	108	GLU	C-N-CA	-5.27	108.53	121.70
4	K	1258	U	C5-C4-O4	5.26	129.06	125.90
1	A	22	PRO	N-CA-CB	5.26	109.61	103.30
5	L	72	G	C3'-C2'-C1'	5.26	105.71	101.50
1	A	323	VAL	CA-CB-CG1	5.25	118.78	110.90
5	L	57	A	C8-N9-C4	-5.25	103.70	105.80
1	A	92	SER	O-C-N	-5.25	114.28	123.20
3	J	1760	G	N7-C8-N9	5.24	115.72	113.10
1	A	184	PHE	CA-CB-CG	5.24	126.47	113.90
5	L	41	G	P-O3'-C3'	5.24	125.98	119.70
5	L	69	G	C1'-O4'-C4'	-5.24	105.71	109.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	J	159	U	C5-C4-O4	-5.23	122.76	125.90
1	A	184	PHE	CB-CG-CD1	5.22	124.46	120.80
4	K	3018	C	C2-N1-C1'	-5.22	113.05	118.80
3	J	1438	G	C5-C6-O6	-5.22	125.47	128.60
4	K	2834	G	C6-C5-N7	5.22	133.53	130.40
3	J	1765	A	C4-C5-N7	5.22	113.31	110.70
10	H	74	VAL	CB-CA-C	5.22	121.31	111.40
3	J	1438	G	N3-C4-N9	5.21	129.13	126.00
4	K	1242	G	C6-C5-N7	-5.21	127.27	130.40
4	K	2261	G	C8-N9-C4	-5.21	104.32	106.40
3	J	1639	C	P-O5'-C5'	-5.21	112.57	120.90
10	H	95	ASP	CB-CG-OD2	-5.21	113.61	118.30
3	J	1767	G	C4'-C3'-C2'	-5.20	97.40	102.60
3	J	160	C	C6-N1-C1'	-5.20	114.56	120.80
3	J	1635	A	C5-N7-C8	5.20	106.50	103.90
5	L	68	C	P-O5'-C5'	5.19	129.21	120.90
1	A	276	LYS	CA-C-N	5.19	128.62	117.20
5	L	8	U	O4'-C1'-C2'	-5.19	100.61	105.80
10	H	91	ASP	CB-CG-OD2	-5.19	113.63	118.30
12	D	135	ASP	CB-CG-OD1	5.19	122.97	118.30
2	B	146	TYR	CA-CB-CG	-5.19	103.54	113.40
5	L	48	C	C3'-C2'-C1'	5.19	105.65	101.50
3	J	559	C	C5'-C4'-O4'	5.18	115.32	109.10
5	L	72	G	N1-C2-N3	-5.18	120.79	123.90
3	J	1637	C	N3-C4-C5	-5.18	119.83	121.90
8	G	55	LYS	CB-CG-CD	5.18	125.07	111.60
4	K	1232	C	C6-N1-C2	-5.18	118.23	120.30
1	A	156	LEU	CB-CA-C	-5.18	100.37	110.20
4	K	3034	C	N3-C4-N4	5.18	121.62	118.00
4	K	2252	A	P-O5'-C5'	5.17	129.18	120.90
1	A	183	LYS	CB-CA-C	-5.17	100.05	110.40
1	A	337	LYS	CB-CA-C	-5.17	100.06	110.40
3	J	437	A	C4-C5-C6	5.17	119.59	117.00
3	J	160	C	C2'-C3'-O3'	5.17	121.97	113.70
10	H	39	PRO	CA-N-CD	-5.17	104.27	111.50
5	L	56	A	N3-C4-C5	-5.16	123.19	126.80
4	K	1241	U	N1-C2-N3	-5.16	111.81	114.90
3	J	1769	U	C6-N1-C2	-5.16	117.91	121.00
4	K	3033	A	O3'-P-O5'	-5.16	94.20	104.00
4	K	3035	A	C1'-O4'-C4'	5.15	114.02	109.90
10	H	21	GLU	CB-CA-C	-5.15	100.09	110.40
4	K	2846	U	C2-N3-C4	-5.14	123.92	127.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	L	9	A	O4'-C1'-N9	5.14	112.31	108.20
1	A	298	ALA	CB-CA-C	-5.14	102.39	110.10
3	J	578	U	N3-C2-O2	-5.14	118.60	122.20
4	K	3035	A	N7-C8-N9	5.14	116.37	113.80
1	A	277	TYR	CB-CG-CD2	-5.13	117.92	121.00
3	J	577	G	C2'-C3'-O3'	5.13	121.91	113.70
5	L	54	U	C2-N1-C1'	5.13	123.86	117.70
10	H	42	VAL	CG1-CB-CG2	-5.13	102.68	110.90
8	G	124	VAL	CB-CA-C	5.13	121.15	111.40
3	J	556	A	C8-N9-C4	-5.13	103.75	105.80
3	J	160	C	C4'-C3'-C2'	-5.13	97.47	102.60
3	J	439	U	C6-N1-C1'	-5.13	114.02	121.20
3	J	447	U	C3'-C2'-C1'	5.13	105.60	101.50
3	J	551	G	C4-C5-N7	5.13	112.85	110.80
10	H	105	GLN	C-N-CA	5.13	134.52	121.70
3	J	437	A	N3-C4-C5	-5.12	123.22	126.80
3	J	462	G	C4-N9-C1'	-5.11	119.85	126.50
4	K	1243	G	N7-C8-N9	5.11	115.66	113.10
8	G	155	ASP	CB-CG-OD2	-5.11	113.70	118.30
1	A	339	MET	CB-CA-C	-5.11	100.18	110.40
1	A	44	LYS	CB-CA-C	-5.11	100.18	110.40
3	J	417	A	C5-C6-N1	-5.11	115.15	117.70
3	J	578	U	C2-N3-C4	-5.11	123.94	127.00
1	A	331	GLN	O-C-N	-5.10	114.54	122.70
3	J	1756	A	C1'-O4'-C4'	-5.10	105.82	109.90
8	G	86	PHE	CB-CG-CD1	-5.09	117.23	120.80
10	H	91	ASP	CB-CA-C	-5.09	100.22	110.40
3	J	1267	G	C4-C5-N7	-5.09	108.77	110.80
3	J	1641	C	P-O3'-C3'	5.09	125.81	119.70
4	K	2297	U	C5-C6-N1	-5.08	120.16	122.70
3	J	1428	G	C6-C5-N7	-5.08	127.35	130.40
3	J	1277	G	C8-N9-C4	-5.08	104.37	106.40
10	H	78	SER	C-N-CA	5.08	134.39	121.70
4	K	2261	G	C4-C5-C6	5.07	121.84	118.80
5	L	17	G	C5'-C4'-C3'	-5.07	107.89	116.00
4	K	3038	U	C5-C4-O4	-5.06	122.86	125.90
4	K	2840	C	N3-C4-N4	5.06	121.54	118.00
10	H	88	PRO	CB-CG-CD	-5.06	86.77	106.50
4	K	3025	C	C5'-C4'-C3'	-5.06	107.91	116.00
5	L	11	U	C1'-O4'-C4'	5.06	113.95	109.90
3	J	1645	G	C4-C5-N7	5.05	112.82	110.80
5	L	9	A	O4'-C1'-C2'	-5.05	100.75	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	J	576	G	N3-C2-N2	5.05	123.44	119.90
5	L	37	G	C1'-O4'-C4'	-5.05	105.86	109.90
1	A	366	THR	N-CA-CB	5.05	119.89	110.30
4	K	2291	A	C4-C5-N7	5.05	113.22	110.70
3	J	1633	A	C2-N3-C4	-5.04	108.08	110.60
3	J	1177	C	C6-N1-C2	5.04	122.32	120.30
4	K	3038	U	C3'-C2'-C1'	5.04	105.53	101.50
3	J	45	U	C3'-C2'-C1'	5.04	105.53	101.50
4	K	2266	U	N1-C2-O2	-5.04	119.27	122.80
10	H	135	THR	O-C-N	-5.04	114.64	122.70
4	K	1242	G	C4-C5-C6	5.03	121.82	118.80
3	J	420	A	C2-N3-C4	-5.03	108.08	110.60
3	J	1438	G	C4-N9-C1'	5.03	133.04	126.50
5	L	59	U	C1'-O4'-C4'	5.03	113.92	109.90
3	J	1754	A	C5-C6-N1	-5.03	115.19	117.70
4	K	2254	U	N1-C1'-C2'	-5.03	106.47	112.00
3	J	1767	G	C4-C5-C6	5.03	121.81	118.80
5	L	37	G	N9-C1'-C2'	5.03	120.53	114.00
8	G	104	ARG	NE-CZ-NH1	5.02	122.81	120.30
5	L	38	C	O4'-C1'-N1	5.01	112.21	108.20
3	J	1756	A	C5-C6-N6	-5.01	119.69	123.70
1	A	164	LEU	CB-CA-C	5.01	119.72	110.20
3	J	447	U	N1-C2-O2	-5.01	119.29	122.80
4	K	2922	G	C4-C5-N7	5.01	112.80	110.80
10	H	95	ASP	CB-CG-OD1	5.01	122.81	118.30
1	A	338	LEU	CA-C-N	5.00	128.21	117.20
3	J	153	G	C4-C5-C6	5.00	121.80	118.80

There are no chirality outliers.

All (103) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	104	TYR	Sidechain
1	A	113	TYR	Sidechain
1	A	158	THR	Peptide
1	A	170	TYR	Sidechain
1	A	191	PHE	Sidechain
1	A	215	SER	Peptide
1	A	241	ASP	Peptide
1	A	244	GLY	Peptide
1	A	253	THR	Peptide
1	A	254	GLY	Peptide

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Mol	Chain	Res	Type	Group
1	A	268	TYR	Sidechain
1	A	272	LEU	Mainchain
1	A	274	ASP	Peptide
1	A	276	LYS	Peptide
1	A	277	TYR	Mainchain
1	A	311	TYR	Sidechain
1	A	374	TYR	Sidechain
1	A	48	THR	Peptide
2	B	516	HIS	Sidechain
2	B	572	PHE	Mainchain
2	B	580	ARG	Sidechain
2	B	582	ARG	Sidechain
12	D	108	ARG	Sidechain
7	E	10	ARG	Mainchain
7	E	8	LEU	Peptide
6	F	21	LYS	Peptide
6	F	97	PHE	Sidechain
8	G	26	PHE	Sidechain
8	G	30	VAL	Peptide
8	G	42	ARG	Sidechain
8	G	46	ARG	Sidechain
8	G	49	ALA	Peptide
8	G	5	ARG	Mainchain,Peptide
8	G	52	LEU	Peptide
8	G	55	LYS	Peptide
8	G	60	ARG	Sidechain
8	G	64	ARG	Sidechain
8	G	72	ASP	Mainchain,Peptide
10	H	12	TYR	Sidechain
10	H	16	ARG	Sidechain,Peptide
10	H	28	LEU	Peptide
10	H	29	ALA	Peptide
10	H	30	PRO	Peptide
10	H	33	GLY	Peptide
10	H	39	PRO	Mainchain
10	H	40	LYS	Peptide
10	H	42	VAL	Peptide
10	H	43	GLY	Peptide
10	H	71	ALA	Peptide
10	H	77	ALA	Peptide
3	J	1181	U	Sidechain
3	J	1182	U	Sidechain

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Mol	Chain	Res	Type	Group
3	J	1184	A	Sidechain
3	J	1185	U	Sidechain
3	J	156	A	Sidechain
3	J	1632	C	Sidechain
3	J	1633	A	Sidechain
3	J	1635	A	Sidechain
3	J	1642	G	Sidechain
3	J	1644	C	Sidechain
3	J	1650	U	Sidechain
3	J	1750	A	Sidechain
3	J	1752	U	Sidechain
3	J	1760	G	Sidechain
3	J	1761	U	Sidechain
3	J	1766	A	Sidechain
3	J	415	C	Sidechain
3	J	416	A	Sidechain
3	J	417	A	Sidechain
3	J	556	A	Sidechain
3	J	559	C	Sidechain
3	J	576	G	Sidechain
3	J	577	G	Sidechain
3	J	578	U	Sidechain
3	J	588	U	Sidechain
4	K	1236	G	Sidechain
4	K	1237	G	Sidechain
4	K	1242	G	Sidechain
4	K	1243	G	Sidechain
4	K	1245	A	Sidechain
4	K	2250	G	Sidechain
4	K	2251	G	Sidechain
4	K	2254	U	Sidechain
4	K	2257	C	Sidechain
4	K	2258	U	Sidechain
4	K	2260	U	Sidechain
4	K	2261	G	Sidechain
4	K	2262	A	Sidechain
4	K	2264	U	Sidechain
4	K	2266	U	Sidechain
4	K	3024	A	Sidechain
4	K	3026	G	Sidechain
4	K	3030	G	Sidechain
4	K	3033	A	Sidechain

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Mol	Chain	Res	Type	Group
4	K	3034	C	Sidechain
5	L	1	U	Sidechain
5	L	55	C	Sidechain
5	L	56	A	Sidechain
5	L	57	A	Sidechain
5	L	72	G	Sidechain

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	3097	0	3156	158	0
2	B	4804	0	4938	988	0
3	J	4942	0	2531	522	0
4	K	3286	0	1680	563	0
5	L	1595	0	808	24	0
6	F	1519	0	1587	73	0
7	E	440	0	488	18	0
8	G	1541	0	1584	83	0
9	C	1820	0	1916	115	0
10	H	1037	0	1107	283	0
11	I	1004	0	1048	93	0
12	D	1074	0	1132	22	0
13	B	1	0	0	2	0
14	B	31	0	12	40	0
15	B	16	0	0	24	0
16	B	1	0	0	0	0
All	All	26208	0	21987	2612	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 54.

All (2612) 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)
10:H:85:LEU:CD2	10:H:87:GLU:H	1.02	1.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:56:ILE:HG12	15:B:703:SF4:S3	1.41	1.60
8:G:43:LYS:HG2	10:H:121:PHE:CD1	1.31	1.58
8:G:107:ALA:HB3	8:G:183:PHE:CE2	1.36	1.57
10:H:85:LEU:CD2	10:H:86:LYS:H	1.10	1.56
2:B:518:LYS:NZ	6:F:115:ARG:CD	1.69	1.52
1:A:386:GLU:HG2	2:B:27:ARG:CD	1.32	1.51
4:K:2932:U:H5''	11:I:41:GLY:CA	1.42	1.50
4:K:3032:A:C4	6:F:170:LYS:HE2	1.47	1.50
1:A:187:LYS:CE	5:L:66:C:OP1	1.63	1.45
1:A:386:GLU:CD	2:B:27:ARG:HG3	1.32	1.44
10:H:109:ILE:CD1	10:H:129:THR:OG1	1.66	1.43
10:H:125:LEU:CG	10:H:129:THR:HG21	1.48	1.43
8:G:46:ARG:HD3	10:H:121:PHE:CZ	1.50	1.42
10:H:89:PRO:CG	10:H:89:PRO:CD	1.91	1.42
10:H:101:SER:OG	10:H:140:GLY:CA	1.64	1.42
10:H:125:LEU:CA	10:H:129:THR:HG22	1.46	1.42
4:K:2932:U:C5'	11:I:41:GLY:HA2	1.50	1.40
10:H:85:LEU:CD2	10:H:87:GLU:N	1.80	1.39
2:B:116:LYS:CE	14:B:702:ATP:PG	2.12	1.37
10:H:85:LEU:HD21	10:H:87:GLU:N	1.35	1.37
2:B:116:LYS:CE	14:B:702:ATP:O3G	1.71	1.37
10:H:125:LEU:C	10:H:129:THR:HG22	1.45	1.37
2:B:518:LYS:NZ	6:F:115:ARG:HD3	1.04	1.36
4:K:2295:A:N3	11:I:37:ILE:HD12	1.42	1.34
10:H:85:LEU:HD23	10:H:86:LYS:N	1.03	1.34
10:H:125:LEU:CA	10:H:129:THR:CG2	2.06	1.33
2:B:589:GLN:NE2	9:C:58:LYS:CB	1.82	1.32
4:K:3032:A:N3	6:F:170:LYS:HE2	1.41	1.32
3:J:418:G:O2'	9:C:72:ARG:NH2	1.60	1.31
1:A:386:GLU:CG	2:B:27:ARG:CD	2.09	1.30
1:A:187:LYS:HE2	5:L:66:C:P	1.72	1.29
4:K:1239:C:H1'	10:H:97:ASN:ND2	1.47	1.29
10:H:125:LEU:HA	10:H:129:THR:CG2	1.61	1.27
4:K:1234:G:H1'	10:H:131:GLU:OE1	1.27	1.26
2:B:116:LYS:HE2	14:B:702:ATP:PG	1.62	1.26
8:G:107:ALA:HB3	8:G:183:PHE:CD2	1.71	1.25
2:B:116:LYS:NZ	14:B:702:ATP:O3G	1.68	1.24
1:A:237:LYS:HE3	4:K:2839:G:O2'	1.10	1.24
10:H:80:LEU:O	10:H:80:LEU:HD23	1.32	1.24
1:A:386:GLU:CD	2:B:27:ARG:CG	2.03	1.24
4:K:3032:A:C4	6:F:170:LYS:CE	2.21	1.24

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:K:1279:C:H5'	8:G:1:MET:SD	1.78	1.23
1:A:386:GLU:OE1	2:B:28:SER:OG	1.56	1.22
3:J:420:A:OP2	9:C:74:LYS:HE2	1.14	1.22
8:G:46:ARG:CD	10:H:121:PHE:CZ	2.23	1.22
8:G:46:ARG:CD	10:H:121:PHE:HZ	1.50	1.22
3:J:420:A:P	9:C:96:SER:OG	1.99	1.21
10:H:120:SER:OG	10:H:128:VAL:CG2	1.88	1.21
3:J:1201:G:H3'	3:J:1201:G:N3	1.55	1.20
10:H:109:ILE:HD12	10:H:129:THR:OG1	1.07	1.20
3:J:152:U:O4'	9:C:13:GLN:HG3	1.42	1.20
10:H:109:ILE:CD1	10:H:129:THR:CB	2.19	1.20
2:B:115:GLY:HA2	14:B:702:ATP:O2A	1.39	1.19
4:K:2295:A:C8	11:I:37:ILE:HG21	1.77	1.19
2:B:67:PHE:HE1	15:B:704:SF4:S1	1.64	1.19
10:H:101:SER:OG	10:H:140:GLY:HA3	1.09	1.19
2:B:571:THR:HG23	2:B:584:ASN:OD1	1.44	1.17
10:H:132:ILE:O	10:H:135:THR:HG22	1.40	1.17
10:H:125:LEU:O	10:H:129:THR:HG22	1.41	1.17
2:B:37:LEU:HB2	2:B:54:LEU:HD12	1.17	1.17
2:B:574:ARG:HD3	2:B:602:PHE:CB	1.75	1.17
2:B:574:ARG:NH2	2:B:601:PHE:CE2	2.12	1.16
3:J:584:C:O2'	7:E:18:THR:HG21	1.41	1.16
4:K:1279:C:O5'	8:G:1:MET:CE	1.93	1.16
8:G:37:GLN:HG2	8:G:105:VAL:HG11	1.27	1.16
10:H:109:ILE:CG1	10:H:129:THR:OG1	1.93	1.16
10:H:120:SER:OG	10:H:128:VAL:HG22	1.03	1.16
2:B:67:PHE:CE1	15:B:704:SF4:S1	2.39	1.15
8:G:43:LYS:HA	10:H:121:PHE:HE1	1.02	1.15
2:B:396:LYS:HB3	2:B:402:LEU:HD13	1.18	1.15
8:G:43:LYS:CG	10:H:121:PHE:CD1	2.28	1.15
3:J:1273:G:C4'	3:J:1274:C:H5'	1.77	1.14
4:K:1234:G:C1'	10:H:131:GLU:OE1	1.95	1.14
4:K:1279:C:O5'	8:G:1:MET:HE3	1.47	1.14
8:G:107:ALA:CB	8:G:183:PHE:CE2	2.28	1.14
2:B:589:GLN:NE2	9:C:58:LYS:HB3	0.88	1.14
3:J:1201:G:H2'	3:J:1202:A:H4'	1.18	1.14
4:K:1239:C:O2'	10:H:97:ASN:HA	1.43	1.14
2:B:571:THR:CG2	2:B:584:ASN:HB2	1.77	1.14
3:J:418:G:C8	9:C:59:GLN:HG2	1.82	1.14
4:K:3027:A:H2'	4:K:3028:G:C8	1.83	1.13
2:B:56:ILE:CG1	15:B:703:SF4:S3	2.36	1.12

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:152:U:O4'	9:C:13:GLN:CG	1.96	1.12
8:G:43:LYS:CG	10:H:121:PHE:HD1	1.63	1.11
4:K:2930:A:O2'	11:I:38:ALA:CB	1.99	1.11
2:B:574:ARG:HD3	2:B:602:PHE:HB2	1.16	1.10
2:B:574:ARG:CD	2:B:602:PHE:HB2	1.80	1.10
3:J:1204:A:H3'	3:J:1205:C:H5''	1.20	1.10
4:K:1239:C:C1'	10:H:97:ASN:ND2	2.14	1.10
2:B:227:LEU:HD12	2:B:230:PHE:HE2	1.13	1.09
1:A:84:LYS:NZ	3:J:564:G:OP2	1.82	1.09
10:H:125:LEU:O	10:H:129:THR:CG2	1.99	1.09
2:B:92:PHE:HB3	14:B:702:ATP:H1'	1.26	1.09
4:K:1239:C:HO2'	10:H:97:ASN:HA	1.05	1.09
1:A:237:LYS:CE	4:K:2839:G:O2'	2.00	1.09
4:K:2295:A:C4	11:I:37:ILE:CD1	2.36	1.09
10:H:110:ILE:HG13	10:H:114:ARG:HD2	1.30	1.09
2:B:451:VAL:HG11	2:B:479:VAL:HG21	1.32	1.08
2:B:31:VAL:HG21	2:B:38:CYS:HB3	1.35	1.08
3:J:419:G:O2'	9:C:61:PHE:HZ	1.32	1.08
4:K:3032:A:N3	6:F:170:LYS:CE	2.14	1.08
10:H:109:ILE:HG13	10:H:129:THR:CB	1.83	1.08
2:B:460:ILE:HD11	2:B:468:LEU:HD11	1.34	1.08
3:J:1273:G:H4'	3:J:1274:C:C5'	1.83	1.08
10:H:117:ARG:HG2	10:H:118:ASP:H	1.11	1.07
10:H:125:LEU:CB	10:H:129:THR:HG21	1.83	1.07
2:B:66:PRO:HD2	15:B:704:SF4:S4	1.93	1.07
4:K:2295:A:C2	11:I:37:ILE:HD12	1.91	1.06
1:A:386:GLU:OE1	2:B:27:ARG:HG3	1.54	1.06
4:K:2932:U:C5'	11:I:41:GLY:CA	2.21	1.06
2:B:453:LYS:HG3	2:B:454:PRO:HD3	1.31	1.05
4:K:1239:C:O2'	10:H:97:ASN:CA	2.03	1.05
4:K:2295:A:C4	11:I:37:ILE:HD12	1.91	1.05
1:A:386:GLU:CG	2:B:27:ARG:HD3	1.78	1.05
2:B:574:ARG:CZ	2:B:602:PHE:O	2.04	1.05
2:B:431:ARG:HB2	2:B:461:ILE:HG23	1.34	1.05
2:B:382:VAL:HG23	2:B:535:ALA:HB2	1.33	1.05
2:B:392:THR:HG22	2:B:396:LYS:HE2	1.37	1.05
2:B:544:ILE:HG13	2:B:547:LYS:HB2	1.35	1.05
10:H:125:LEU:C	10:H:129:THR:CG2	2.15	1.05
10:H:85:LEU:CD2	10:H:86:LYS:N	1.84	1.04
2:B:449:THR:HA	2:B:453:LYS:HE2	1.38	1.03
3:J:420:A:OP2	9:C:74:LYS:CE	2.05	1.03

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:116:LYS:HE3	14:B:702:ATP:PG	1.92	1.03
2:B:437:LYS:HE2	2:B:480:LEU:HD21	1.40	1.03
1:A:385:GLU:CD	2:B:27:ARG:HH12	1.61	1.03
8:G:43:LYS:HA	10:H:121:PHE:CE1	1.93	1.03
2:B:435:PHE:CE2	8:G:145:ILE:CD1	2.42	1.02
2:B:115:GLY:N	14:B:702:ATP:O2B	1.91	1.02
3:J:1197:C:H4'	3:J:1197:C:OP1	1.59	1.02
6:F:91:ARG:HH21	6:F:91:ARG:HG3	1.22	1.02
2:B:50:ILE:HD11	15:B:703:SF4:S4	1.99	1.02
2:B:571:THR:HG22	2:B:584:ASN:HB2	1.40	1.02
3:J:1273:G:H4'	3:J:1274:C:H5'	1.02	1.02
4:K:1279:C:C5'	8:G:1:MET:CE	2.37	1.02
4:K:2295:A:O5'	11:I:61:THR:HG21	1.60	1.02
2:B:58:CYS:SG	15:B:703:SF4:FE4	1.52	1.01
10:H:125:LEU:HG	10:H:129:THR:HG21	1.08	1.01
2:B:29:CYS:SG	15:B:703:SF4:FE1	1.52	1.01
2:B:360:LYS:HB3	2:B:406:GLU:HG2	1.43	1.01
2:B:430:VAL:HG11	2:B:460:ILE:HG23	1.38	1.01
2:B:299:SER:HA	14:B:702:ATP:O3'	1.59	1.01
3:J:1204:A:H3'	3:J:1205:C:C5'	1.89	1.01
10:H:109:ILE:CG1	10:H:129:THR:CB	2.38	1.01
3:J:420:A:OP1	9:C:96:SER:N	1.92	1.01
3:J:418:G:H8	9:C:59:GLN:HG2	1.20	1.01
2:B:518:LYS:NZ	6:F:115:ARG:HD2	1.70	1.00
4:K:2295:A:N3	11:I:37:ILE:CD1	2.22	1.00
4:K:3032:A:C2	6:F:170:LYS:HD2	1.96	1.00
2:B:435:PHE:CD2	8:G:145:ILE:HD12	1.95	1.00
4:K:2295:A:C6	11:I:37:ILE:HB	1.96	1.00
4:K:3022:G:O2'	4:K:3023:U:OP2	1.78	1.00
4:K:2295:A:C5	11:I:37:ILE:HB	1.96	1.00
10:H:125:LEU:HA	10:H:129:THR:HG22	1.12	1.00
2:B:448:GLN:HA	2:B:452:VAL:HG12	1.44	0.99
1:A:232:GLU:HB3	4:K:2851:A:O3'	1.62	0.99
10:H:125:LEU:CG	10:H:129:THR:CG2	2.39	0.99
3:J:420:A:OP1	9:C:96:SER:CB	2.11	0.99
2:B:434:PHE:HE2	2:B:480:LEU:HB2	1.26	0.99
2:B:589:GLN:O	2:B:593:GLU:HG3	1.63	0.98
3:J:1200:G:H4'	3:J:1201:G:OP2	1.61	0.98
1:A:237:LYS:HE3	4:K:2839:G:HO2'	1.20	0.98
1:A:385:GLU:OE1	2:B:27:ARG:NH1	1.96	0.98
2:B:92:PHE:CB	14:B:702:ATP:H1'	1.93	0.98

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:H:85:LEU:HD23	10:H:86:LYS:CA	1.93	0.98
2:B:435:PHE:CE2	8:G:145:ILE:HD11	1.99	0.98
1:A:386:GLU:CG	2:B:27:ARG:CG	2.42	0.97
2:B:435:PHE:HE1	2:B:439:ARG:HD3	1.29	0.97
3:J:40:A:H2'	3:J:41:A:H8	1.29	0.97
10:H:132:ILE:O	10:H:135:THR:CG2	2.12	0.97
4:K:1279:C:C5'	8:G:1:MET:SD	2.52	0.97
4:K:3037:U:O2'	4:K:3038:U:H5'	1.63	0.97
2:B:334:LEU:HG	2:B:504:ILE:HD12	1.46	0.97
2:B:106:LEU:HD22	2:B:290:PHE:HD2	1.27	0.96
10:H:125:LEU:HG	10:H:129:THR:CG2	1.95	0.96
2:B:49:PHE:HE1	2:B:89:ALA:HB1	1.31	0.96
3:J:452:A:H2'	3:J:453:U:H5''	1.44	0.96
3:J:44:U:H5'	3:J:45:U:C5	2.01	0.96
2:B:518:LYS:HG3	6:F:100:ASN:HD22	1.30	0.96
1:A:187:LYS:HE2	5:L:66:C:OP1	0.78	0.95
4:K:1274:A:H2'	4:K:1275:C:H5''	1.47	0.95
4:K:2847:A:H5'	4:K:2848:G:OP2	1.65	0.95
2:B:144:ILE:HG23	2:B:153:GLN:HG3	1.46	0.95
2:B:529:ILE:HD13	2:B:529:ILE:H	1.27	0.95
1:A:386:GLU:CG	2:B:27:ARG:HG3	1.96	0.95
2:B:191:LEU:HD13	2:B:206:ILE:HD11	1.45	0.95
4:K:1264:G:H2'	4:K:1264:G:OP2	1.67	0.95
1:A:101:VAL:HG21	3:J:1272:U:O3'	1.67	0.95
3:J:419:G:O2'	9:C:61:PHE:CZ	2.12	0.95
2:B:31:VAL:HG21	2:B:38:CYS:CB	1.97	0.94
10:H:109:ILE:HG13	10:H:129:THR:HB	1.49	0.94
2:B:434:PHE:HB3	2:B:442:PHE:HZ	1.31	0.94
2:B:261:ALA:HA	2:B:287:LEU:HD21	1.46	0.94
4:K:2285:C:H5	4:K:2286:U:C2	1.85	0.94
4:K:3032:A:C2	6:F:170:LYS:CD	2.51	0.94
4:K:1239:C:O2'	10:H:97:ASN:O	1.84	0.93
4:K:1279:C:H5''	8:G:1:MET:CE	1.98	0.93
2:B:434:PHE:HB3	2:B:442:PHE:CZ	2.01	0.93
4:K:2287:C:O2	4:K:2298:U:O4'	1.85	0.93
2:B:574:ARG:CZ	2:B:601:PHE:CE2	2.52	0.93
2:B:106:LEU:HB3	2:B:290:PHE:CE2	2.03	0.93
4:K:2293:C:H5	4:K:2294:U:H5	1.14	0.93
4:K:1239:C:H1'	10:H:97:ASN:HD21	1.27	0.93
10:H:101:SER:OG	10:H:140:GLY:N	2.01	0.93
2:B:396:LYS:CB	2:B:402:LEU:HD13	1.99	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:447:PHE:CE1	2:B:479:VAL:HG13	2.03	0.92
2:B:227:LEU:HD12	2:B:230:PHE:CE2	2.03	0.92
3:J:1435:G:H4'	3:J:1436:A:OP2	1.70	0.92
4:K:3027:A:H2'	4:K:3028:G:H8	1.24	0.92
4:K:3032:A:N9	6:F:170:LYS:HE2	1.84	0.92
1:A:187:LYS:CE	5:L:66:C:H5''	1.99	0.92
3:J:418:G:C2'	9:C:72:ARG:NH2	2.31	0.92
3:J:40:A:H2'	3:J:41:A:C8	2.04	0.92
4:K:2850:G:H4'	4:K:2850:G:OP1	1.66	0.92
8:G:43:LYS:HG2	10:H:121:PHE:CE1	2.04	0.92
2:B:148:ARG:HH22	3:J:439:U:C3'	1.84	0.91
2:B:334:LEU:HG	2:B:504:ILE:CD1	2.00	0.91
2:B:574:ARG:NE	2:B:602:PHE:O	2.01	0.91
4:K:1278:A:O2'	4:K:1279:C:H6	1.51	0.91
4:K:2833:A:H2'	4:K:2834:G:H5'	1.52	0.91
10:H:120:SER:CB	10:H:128:VAL:HG22	1.99	0.91
2:B:112:ASN:HB3	14:B:702:ATP:O1G	1.71	0.91
1:A:375:PRO:HD2	4:K:1270:A:O4'	1.71	0.91
2:B:468:LEU:HG	2:B:469:SER:H	1.35	0.91
3:J:1196:A:H4'	3:J:1197:C:H5''	1.49	0.91
4:K:1272:C:H2'	4:K:1273:A:O4'	1.71	0.91
10:H:124:THR:HG23	10:H:125:LEU:H	1.36	0.91
1:A:385:GLU:HA	2:B:27:ARG:NH1	1.86	0.91
2:B:18:PRO:HA	15:B:704:SF4:S3	2.10	0.91
1:A:52:ASP:OD2	3:J:575:C:OP1	1.89	0.90
4:K:2295:A:C4	11:I:37:ILE:HD13	2.05	0.90
2:B:117:SER:OG	13:B:701:MG:MG	1.12	0.90
2:B:381:LEU:HD21	2:B:539:ILE:HG13	1.53	0.90
3:J:1198:G:H3'	3:J:1199:G:C5'	2.00	0.90
3:J:427:C:H6	3:J:427:C:C5'	1.83	0.90
10:H:120:SER:CB	10:H:128:VAL:CG2	2.49	0.90
1:A:187:LYS:HE3	5:L:66:C:H5''	1.53	0.90
1:A:386:GLU:CG	2:B:27:ARG:HD2	1.99	0.90
4:K:1239:C:O2'	10:H:97:ASN:ND2	2.04	0.90
4:K:2918:G:C2	4:K:2919:A:N7	2.40	0.90
3:J:1190:C:H4'	3:J:1191:U:OP1	1.71	0.90
2:B:242:VAL:HG23	2:B:273:TYR:CD2	2.07	0.90
2:B:435:PHE:CE2	8:G:145:ILE:HD12	2.06	0.90
3:J:152:U:C4'	9:C:13:GLN:HG3	2.02	0.90
6:F:49:ASN:O	6:F:51:GLN:N	2.03	0.90
1:A:364:GLN:OE1	2:B:58:CYS:HA	1.70	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:K:1273:A:C8	4:K:1274:A:C8	2.60	0.90
4:K:2851:A:H2'	4:K:2852:C:O4'	1.71	0.90
2:B:258:LEU:HD11	2:B:568:LEU:HD11	1.52	0.89
2:B:603:LEU:HG	2:B:604:ASP:H	1.35	0.89
4:K:2295:A:N7	11:I:37:ILE:CG2	2.35	0.89
3:J:1197:C:H5'	3:J:1198:G:OP2	1.71	0.89
4:K:3032:A:N3	6:F:170:LYS:CD	2.35	0.89
2:B:58:CYS:HG	15:B:703:SF4:FE4	0.87	0.89
3:J:1274:C:H6	3:J:1427:A:H62	1.19	0.89
2:B:37:LEU:CB	2:B:54:LEU:HD12	2.00	0.89
3:J:450:U:H2'	3:J:451:A:C8	2.08	0.89
2:B:451:VAL:CG1	2:B:479:VAL:HG21	2.02	0.89
3:J:1271:G:H2'	3:J:1272:U:C6	2.08	0.89
1:A:386:GLU:HG2	2:B:27:ARG:CG	2.01	0.89
3:J:418:G:H1'	9:C:59:GLN:HE21	1.35	0.89
3:J:419:G:O3'	9:C:96:SER:OG	1.89	0.89
2:B:434:PHE:CE2	2:B:480:LEU:HB2	2.08	0.89
2:B:431:ARG:CB	2:B:461:ILE:HG23	2.03	0.88
4:K:2834:G:HO2'	4:K:2835:U:H6	0.93	0.88
8:G:46:ARG:HD3	10:H:121:PHE:HZ	0.72	0.88
3:J:43:A:C2'	3:J:44:U:H5''	2.02	0.88
4:K:1257:C:O2	4:K:1257:C:H2'	1.73	0.88
4:K:2293:C:C5	4:K:2294:U:H5	1.91	0.88
4:K:3028:G:N2	4:K:3029:A:N3	2.22	0.88
10:H:80:LEU:HD23	10:H:83:THR:CG2	2.03	0.87
3:J:452:A:H2'	3:J:453:U:C5'	2.04	0.87
4:K:2931:C:OP1	11:I:40:LYS:NZ	2.06	0.87
2:B:92:PHE:HB2	14:B:702:ATP:O2'	1.75	0.87
2:B:173:VAL:HB	2:B:251:TYR:HE2	1.39	0.87
2:B:571:THR:CG2	2:B:584:ASN:OD1	2.22	0.87
4:K:1239:C:O2'	10:H:97:ASN:C	2.12	0.87
2:B:28:SER:HB3	2:B:64:LYS:HZ2	1.38	0.87
3:J:1434:U:O3'	3:J:1435:G:H3'	1.72	0.86
2:B:413:LEU:HD12	2:B:487:ASP:CB	2.05	0.86
10:H:110:ILE:CG1	10:H:114:ARG:HD2	2.04	0.86
2:B:182:GLY:HA2	2:B:186:LYS:H	1.40	0.86
2:B:86:ARG:HB3	2:B:93:LYS:HG2	1.58	0.86
3:J:152:U:H1'	9:C:13:GLN:OE1	1.74	0.86
2:B:86:ARG:CB	2:B:93:LYS:HG2	2.06	0.86
2:B:95:HIS:HB2	2:B:303:VAL:HG22	1.57	0.86
10:H:109:ILE:HD12	10:H:129:THR:CB	1.96	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:142:GLU:HA	2:B:145:LYS:HE3	1.57	0.86
10:H:109:ILE:CG1	10:H:129:THR:HB	2.05	0.86
2:B:29:CYS:SG	2:B:31:VAL:HG22	2.16	0.86
2:B:571:THR:CG2	2:B:584:ASN:CB	2.53	0.86
1:A:91:GLU:HB3	3:J:1272:U:OP1	1.76	0.86
2:B:574:ARG:NH2	2:B:601:PHE:HE2	1.69	0.86
4:K:2834:G:C4	4:K:2835:U:C5	2.63	0.86
1:A:375:PRO:HD2	4:K:1270:A:C1'	2.06	0.85
2:B:49:PHE:CE1	2:B:89:ALA:HB1	2.11	0.85
2:B:415:VAL:HG23	2:B:488:ILE:HG23	1.56	0.85
3:J:1204:A:OP1	3:J:1204:A:H4'	1.74	0.85
10:H:80:LEU:O	10:H:80:LEU:CD2	2.23	0.85
2:B:133:ARG:HG2	2:B:134:PHE:H	1.41	0.85
2:B:114:ILE:HB	2:B:294:ILE:HG21	1.57	0.85
2:B:488:ILE:HD11	2:B:522:PHE:CE1	2.12	0.85
3:J:1274:C:OP2	3:J:1428:G:P	2.34	0.85
2:B:166:ALA:HA	2:B:242:VAL:HG13	1.59	0.85
2:B:568:LEU:HD22	2:B:570:VAL:HG22	1.58	0.85
3:J:418:G:H1'	9:C:59:GLN:NE2	1.92	0.85
4:K:2295:A:C8	11:I:37:ILE:CG2	2.58	0.85
2:B:92:PHE:CD2	14:B:702:ATP:O4'	2.30	0.85
2:B:268:LEU:HD13	2:B:269:ALA:N	1.92	0.85
1:A:374:TYR:HB2	4:K:1270:A:H1'	1.57	0.84
2:B:205:TYR:CE2	2:B:233:GLY:HA2	2.11	0.84
2:B:394:LEU:HD13	2:B:398:LEU:HD23	1.59	0.84
4:K:2930:A:O2'	11:I:38:ALA:HB1	1.77	0.84
2:B:242:VAL:HG23	2:B:273:TYR:CE2	2.12	0.84
9:C:57:ASP:HA	9:C:106:LEU:HA	1.58	0.84
10:H:85:LEU:HD11	10:H:87:GLU:O	1.78	0.84
1:A:386:GLU:CD	2:B:27:ARG:CD	2.42	0.84
2:B:86:ARG:CZ	2:B:93:LYS:HD2	2.08	0.84
2:B:434:PHE:CE2	2:B:480:LEU:HD12	2.11	0.84
3:J:555:A:H3'	3:J:555:A:OP2	1.77	0.84
4:K:2930:A:O2'	11:I:38:ALA:HB2	1.78	0.84
4:K:1279:C:C5'	8:G:1:MET:HE1	2.05	0.84
2:B:26:LYS:O	2:B:32:VAL:HG11	1.78	0.83
2:B:574:ARG:NH1	2:B:601:PHE:CE2	2.46	0.83
3:J:444:C:H42	3:J:460:A:H62	1.22	0.83
3:J:1195:C:OP1	3:J:1197:C:H1'	1.78	0.83
2:B:412:LYS:HA	2:B:412:LYS:HE2	1.58	0.83
10:H:117:ARG:HG2	10:H:118:ASP:N	1.93	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:380:ILE:CG2	2:B:535:ALA:HA	2.08	0.83
2:B:457:ILE:O	2:B:460:ILE:HG22	1.77	0.83
3:J:44:U:C5'	3:J:45:U:H5	1.91	0.83
2:B:168:ILE:H	2:B:168:ILE:HD13	1.43	0.83
10:H:109:ILE:HG23	10:H:110:ILE:H	1.43	0.83
1:A:65:LEU:HD23	1:A:65:LEU:H	1.44	0.83
1:A:386:GLU:OE1	2:B:28:SER:N	2.12	0.83
2:B:608:ILE:HG22	2:B:608:ILE:OXT	1.78	0.83
2:B:114:ILE:HB	2:B:294:ILE:CG2	2.09	0.83
2:B:380:ILE:HG21	2:B:534:LEU:O	1.79	0.83
10:H:125:LEU:HD23	10:H:129:THR:CG2	2.08	0.83
4:K:2295:A:N6	4:K:2296:A:N6	2.27	0.83
2:B:389:THR:CG2	2:B:391:LYS:HG3	2.08	0.83
1:A:375:PRO:HG2	4:K:1270:A:C8	2.14	0.83
2:B:128:LYS:H	2:B:128:LYS:HD2	1.44	0.83
2:B:176:ILE:HG13	2:B:227:LEU:HD21	1.61	0.82
2:B:502:GLN:O	2:B:505:ILE:HG22	1.77	0.82
4:K:1278:A:HO2'	4:K:1279:C:H6	0.85	0.82
4:K:2847:A:H3'	4:K:2848:G:H8	1.42	0.82
2:B:448:GLN:O	2:B:453:LYS:HG2	1.79	0.82
2:B:59:GLY:O	2:B:62:VAL:HG12	1.77	0.82
2:B:194:ARG:HD2	2:B:234:MET:CE	2.09	0.82
2:B:505:ILE:O	2:B:509:VAL:HG23	1.79	0.82
2:B:397:LEU:HD23	2:B:402:LEU:HB2	1.61	0.82
2:B:571:THR:HG23	2:B:584:ASN:CG	1.98	0.82
3:J:1274:C:OP2	3:J:1428:G:OP1	1.96	0.82
4:K:2918:G:N2	4:K:2919:A:N7	2.27	0.82
2:B:449:THR:HA	2:B:453:LYS:CE	2.08	0.82
4:K:2293:C:C5	4:K:2294:U:C5	2.66	0.82
10:H:53:PHE:O	10:H:53:PHE:CD2	2.33	0.82
10:H:85:LEU:HD21	10:H:87:GLU:CA	2.09	0.82
2:B:148:ARG:NH2	3:J:429:G:H5''	1.94	0.82
2:B:334:LEU:HD23	2:B:335:GLN:N	1.95	0.82
3:J:1429:G:H2'	3:J:1430:U:H6	1.45	0.82
2:B:38:CYS:SG	15:B:703:SF4:S4	2.78	0.82
3:J:1275:A:OP1	3:J:1275:A:C8	2.33	0.82
10:H:97:ASN:ND2	10:H:97:ASN:O	2.13	0.82
1:A:104:TYR:CD2	3:J:578:U:C6	2.68	0.82
2:B:275:ILE:HD13	2:B:276:CYS:N	1.95	0.82
1:A:386:GLU:HG2	2:B:27:ARG:HD3	0.82	0.81
2:B:29:CYS:HG	15:B:703:SF4:FE1	0.84	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:457:ILE:O	2:B:461:ILE:HG13	1.79	0.81
3:J:43:A:H2'	3:J:44:U:H5''	1.60	0.81
2:B:50:ILE:CD1	15:B:703:SF4:S4	2.67	0.81
2:B:94:LEU:HD13	2:B:95:HIS:N	1.95	0.81
2:B:106:LEU:HD22	2:B:290:PHE:CD2	2.14	0.81
2:B:290:PHE:HE1	2:B:307:PRO:HA	1.45	0.81
2:B:293:ILE:HD13	2:B:293:ILE:H	1.46	0.81
2:B:381:LEU:HD21	2:B:539:ILE:CD1	2.11	0.81
3:J:44:U:C5'	3:J:45:U:C5	2.63	0.81
10:H:109:ILE:HD11	10:H:129:THR:CB	2.10	0.81
10:H:125:LEU:HD23	10:H:129:THR:HG23	1.63	0.81
1:A:364:GLN:OE1	2:B:58:CYS:CB	2.29	0.81
3:J:1198:G:H3'	3:J:1199:G:H5'	1.60	0.81
3:J:1204:A:C3'	3:J:1205:C:H5''	2.06	0.81
4:K:2932:U:P	11:I:41:GLY:H	2.03	0.81
1:A:187:LYS:CD	5:L:66:C:OP1	2.27	0.81
4:K:3037:U:H2'	4:K:3038:U:H6	1.45	0.81
2:B:244:MET:HA	2:B:275:ILE:HG22	1.63	0.81
2:B:154:ASN:O	2:B:157:THR:HG22	1.80	0.81
2:B:518:LYS:HG3	6:F:100:ASN:ND2	1.95	0.81
3:J:420:A:OP1	9:C:96:SER:OG	1.99	0.81
2:B:363:GLN:HG3	2:B:365:ASP:H	1.44	0.80
11:I:137:VAL:OXT	11:I:137:VAL:CG1	2.28	0.80
1:A:78:ASP:HB3	7:E:9:ALA:HB2	1.63	0.80
2:B:448:GLN:HA	2:B:452:VAL:CG1	2.10	0.80
4:K:2285:C:C5	4:K:2286:U:C2	2.69	0.80
4:K:2294:U:O2	4:K:2296:A:H2'	1.80	0.80
4:K:1279:C:O5'	8:G:1:MET:HE1	1.80	0.80
10:H:18:VAL:HG12	10:H:20:GLY:H	1.45	0.80
2:B:343:GLU:HG2	2:B:345:LEU:HD21	1.64	0.80
4:K:3029:A:H3'	4:K:3030:G:H5''	1.64	0.80
2:B:589:GLN:HE22	9:C:58:LYS:HB3	1.00	0.80
3:J:1201:G:N3	3:J:1201:G:C3'	2.42	0.80
2:B:453:LYS:CG	2:B:454:PRO:HD3	2.11	0.80
2:B:382:VAL:HG23	2:B:535:ALA:CB	2.09	0.80
2:B:380:ILE:HG23	2:B:535:ALA:HA	1.62	0.80
4:K:2295:A:C6	4:K:2296:A:N6	2.49	0.80
11:I:137:VAL:OXT	11:I:137:VAL:HG12	1.81	0.80
2:B:116:LYS:HE2	14:B:702:ATP:O3G	1.52	0.79
2:B:176:ILE:HG13	2:B:177:PRO:HD3	1.62	0.79
2:B:9:ALA:HB3	2:B:50:ILE:HG21	1.64	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:K:1229:G:H2'	4:K:1230:G:C8	2.17	0.79
4:K:2287:C:C2	4:K:2298:U:O2	2.36	0.79
4:K:2928:C:H2'	4:K:2929:C:H5'	1.63	0.79
2:B:108:LEU:HD23	2:B:109:VAL:N	1.96	0.79
2:B:380:ILE:HD13	2:B:534:LEU:O	1.82	0.79
3:J:1201:G:H2'	3:J:1202:A:C4'	2.06	0.79
10:H:123:ARG:HD3	10:H:126:ALA:CB	2.13	0.79
2:B:460:ILE:HD11	2:B:468:LEU:CD1	2.10	0.79
2:B:491:ILE:CG2	2:B:523:ILE:HG13	2.11	0.79
4:K:2295:A:N7	11:I:37:ILE:HG21	1.95	0.79
2:B:306:LEU:HB3	2:B:307:PRO:HD2	1.63	0.79
4:K:2294:U:H5'	4:K:2295:A:OP2	1.81	0.79
2:B:380:ILE:CD1	2:B:534:LEU:HB3	2.11	0.79
10:H:109:ILE:CD1	10:H:125:LEU:HG	2.13	0.79
4:K:1239:C:HO2'	10:H:97:ASN:CA	1.88	0.79
10:H:125:LEU:CA	10:H:129:THR:HG21	1.94	0.79
2:B:95:HIS:CE1	2:B:301:TYR:HB2	2.17	0.79
4:K:2284:C:H2'	4:K:2285:C:O2	1.82	0.79
4:K:2295:A:C5	11:I:37:ILE:CB	2.65	0.79
10:H:108:GLU:C	10:H:112:ILE:HG23	2.04	0.79
2:B:255:LYS:HB3	2:B:386:GLU:HG3	1.63	0.79
3:J:1274:C:C6	3:J:1427:A:N7	2.50	0.79
4:K:1230:G:C6	4:K:1231:A:N7	2.51	0.79
4:K:2837:A:H2'	4:K:2845:A:N1	1.97	0.79
2:B:29:CYS:SG	15:B:703:SF4:S2	2.81	0.78
2:B:108:LEU:CD2	2:B:294:ILE:HD13	2.13	0.78
3:J:1274:C:O2	3:J:1274:C:H2'	1.83	0.78
4:K:2853:A:C6	4:K:2854:U:N3	2.51	0.78
2:B:182:GLY:HA3	2:B:184:VAL:C	2.03	0.78
2:B:381:LEU:HD21	2:B:539:ILE:CG1	2.13	0.78
8:G:46:ARG:HD2	10:H:121:PHE:CZ	2.19	0.78
4:K:2286:U:C4	4:K:2288:G:H1'	2.17	0.78
10:H:110:ILE:HA	10:H:114:ARG:HB2	1.64	0.78
4:K:1263:A:H61	10:H:135:THR:HA	1.48	0.78
2:B:60:ILE:HD12	2:B:61:CYS:N	1.99	0.78
3:J:152:U:O2'	9:C:4:ASN:OD1	2.00	0.78
4:K:1278:A:O2'	4:K:1279:C:C6	2.29	0.78
8:G:107:ALA:HB3	8:G:183:PHE:CZ	2.15	0.78
9:C:153:VAL:O	9:C:155:ASP:N	2.16	0.78
1:A:386:GLU:OE1	2:B:28:SER:CB	2.32	0.78
4:K:1271:A:N3	4:K:1271:A:H2'	1.98	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:H:125:LEU:CD2	10:H:129:THR:CG2	2.62	0.78
1:A:187:LYS:CE	5:L:66:C:C5'	2.61	0.78
2:B:42:THR:HG22	2:B:47:ILE:O	1.82	0.78
2:B:116:LYS:N	14:B:702:ATP:O2B	2.15	0.78
2:B:140:TRP:CG	2:B:160:LEU:HD22	2.19	0.78
2:B:457:ILE:HG23	2:B:460:ILE:CG2	2.14	0.78
2:B:95:HIS:HE1	2:B:301:TYR:HB2	1.48	0.78
4:K:1278:A:O2'	4:K:1279:C:H5'	1.83	0.78
4:K:2932:U:O2	4:K:2932:U:H2'	1.83	0.78
6:F:22:SER:OG	6:F:23:ARG:N	2.16	0.78
3:J:44:U:H5'	3:J:45:U:C4	2.19	0.78
4:K:2295:A:C5	11:I:37:ILE:CG2	2.67	0.78
2:B:480:LEU:HD23	2:B:480:LEU:O	1.85	0.77
2:B:514:ILE:HG23	2:B:519:LYS:O	1.84	0.77
3:J:569:C:H1'	3:J:583:C:H5'	1.65	0.77
8:G:107:ALA:CB	8:G:183:PHE:CD2	2.61	0.77
2:B:29:CYS:O	2:B:32:VAL:HG12	1.83	0.77
3:J:44:U:H3'	3:J:45:U:H5'	1.65	0.77
4:K:1277:C:H2'	4:K:1277:C:OP2	1.84	0.77
10:H:57:LYS:HG3	10:H:58:VAL:N	1.98	0.77
4:K:2932:U:H5''	11:I:41:GLY:C	2.03	0.77
2:B:197:LYS:HB3	2:B:201:ASP:OD2	1.83	0.77
2:B:258:LEU:CD1	2:B:568:LEU:HD11	2.13	0.77
2:B:195:MET:HE3	2:B:202:VAL:CG1	2.14	0.77
3:J:1269:U:H4'	3:J:1270:G:O5'	1.84	0.77
2:B:199:PRO:O	2:B:202:VAL:HG22	1.85	0.77
2:B:435:PHE:CD2	8:G:145:ILE:CD1	2.67	0.77
4:K:1239:C:C1'	10:H:97:ASN:HD21	1.87	0.77
4:K:1269:U:H3	4:K:1271:A:N6	1.81	0.77
2:B:173:VAL:HB	2:B:251:TYR:CE2	2.20	0.77
4:K:2838:A:C2	4:K:2851:A:C4	2.72	0.77
6:F:48:VAL:HG13	6:F:52:LEU:HB3	1.67	0.77
2:B:176:ILE:CG1	2:B:177:PRO:HD3	2.15	0.77
8:G:37:GLN:CG	8:G:105:VAL:HG11	2.10	0.77
2:B:114:ILE:HD12	2:B:294:ILE:CB	2.14	0.76
3:J:440:U:H3'	3:J:441:A:H5'	1.67	0.76
3:J:445:A:H2'	3:J:446:A:H8	1.50	0.76
3:J:1193:A:H4'	3:J:1194:A:OP2	1.83	0.76
1:A:364:GLN:OE1	2:B:58:CYS:CA	2.32	0.76
2:B:9:ALA:CB	2:B:50:ILE:HG21	2.15	0.76
2:B:322:ILE:HG13	2:B:325:GLU:HB2	1.67	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:344:ASP:C	2:B:345:LEU:HD22	2.06	0.76
3:J:44:U:O5'	3:J:45:U:H5	1.67	0.76
2:B:37:LEU:HB2	2:B:54:LEU:CD1	2.09	0.76
4:K:2289:U:C2	4:K:2290:C:C5	2.74	0.76
2:B:434:PHE:CZ	2:B:476:VAL:HG12	2.20	0.76
2:B:435:PHE:CE1	2:B:439:ARG:HB2	2.20	0.76
4:K:2923:U:C2	4:K:2924:U:H5	2.04	0.76
10:H:109:ILE:CD1	10:H:129:THR:HB	2.10	0.76
10:H:85:LEU:HD21	10:H:87:GLU:H	0.59	0.76
3:J:420:A:P	9:C:74:LYS:HE2	2.24	0.76
2:B:202:VAL:O	2:B:206:ILE:HD13	1.86	0.76
4:K:1229:G:H2'	4:K:1230:G:H8	1.51	0.76
10:H:125:LEU:O	10:H:129:THR:HG23	1.85	0.76
2:B:79:LEU:O	2:B:79:LEU:HD23	1.84	0.75
2:B:105:VAL:C	2:B:106:LEU:HD23	2.07	0.75
2:B:261:ALA:CA	2:B:287:LEU:HD21	2.15	0.75
3:J:1196:A:H4'	3:J:1197:C:C5'	2.16	0.75
1:A:48:THR:HG21	1:A:60:THR:CA	2.17	0.75
2:B:571:THR:HG23	2:B:584:ASN:HB2	1.66	0.75
3:J:439:U:H1'	3:J:440:U:OP1	1.85	0.75
4:K:1239:C:C2'	10:H:97:ASN:HD22	1.99	0.75
8:G:46:ARG:HD2	10:H:121:PHE:CE1	2.21	0.75
2:B:176:ILE:CG1	2:B:227:LEU:HD21	2.17	0.75
2:B:244:MET:HG2	2:B:275:ILE:HG21	1.69	0.75
4:K:2834:G:N3	4:K:2835:U:C6	2.54	0.75
10:H:23:GLY:CA	10:H:46:ILE:HD11	2.17	0.75
2:B:39:ILE:HD13	2:B:50:ILE:HG13	1.69	0.75
2:B:114:ILE:HD12	2:B:294:ILE:HB	1.67	0.75
2:B:208:ILE:O	2:B:208:ILE:HD13	1.85	0.75
2:B:273:TYR:OH	2:B:275:ILE:HB	1.86	0.75
2:B:544:ILE:CG1	2:B:547:LYS:HB2	2.15	0.75
3:J:1200:G:H5'	3:J:1201:G:C8	2.22	0.74
4:K:1246:G:C6	4:K:1264:G:N2	2.55	0.74
10:H:125:LEU:CD2	10:H:129:THR:HG21	2.15	0.74
3:J:1197:C:O2	3:J:1197:C:H2'	1.87	0.74
2:B:140:TRP:HB3	2:B:160:LEU:CD2	2.16	0.74
2:B:166:ALA:HA	2:B:242:VAL:CG1	2.17	0.74
2:B:437:LYS:CE	2:B:480:LEU:HD21	2.17	0.74
4:K:2295:A:C5	4:K:2296:A:N6	2.55	0.74
2:B:9:ALA:HB3	2:B:50:ILE:CG2	2.17	0.74
2:B:571:THR:HG23	2:B:584:ASN:CB	2.16	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:K:1268:G:H5'	4:K:1269:U:OP2	1.87	0.74
4:K:2834:G:O2'	4:K:2835:U:O5'	2.05	0.74
4:K:2842:U:O2	4:K:2842:U:H2'	1.84	0.74
3:J:1274:C:OP2	3:J:1428:G:O5'	2.05	0.74
4:K:2839:G:C5	4:K:2850:G:N2	2.56	0.74
2:B:263:ILE:O	2:B:263:ILE:HD13	1.86	0.74
4:K:2295:A:O4'	11:I:61:THR:HG21	1.88	0.74
4:K:3027:A:C2'	4:K:3028:G:C8	2.69	0.74
4:K:3028:G:C2	4:K:3029:A:N3	2.56	0.74
2:B:358:SER:N	2:B:372:GLU:HG3	2.01	0.74
2:B:574:ARG:HD3	2:B:602:PHE:C	2.09	0.73
3:J:427:C:H6	3:J:427:C:H5'	1.52	0.73
4:K:1258:U:H2'	4:K:1259:A:O5'	1.88	0.73
1:A:385:GLU:HB3	2:B:27:ARG:HH11	1.51	0.73
2:B:363:GLN:HG2	2:B:366:PHE:H	1.52	0.73
3:J:418:G:C1'	9:C:59:GLN:HE21	2.00	0.73
10:H:120:SER:HG	10:H:128:VAL:CG2	1.80	0.73
1:A:48:THR:HG21	1:A:60:THR:HA	1.71	0.73
2:B:140:TRP:O	2:B:143:ILE:HG12	1.87	0.73
3:J:1199:G:C5	3:J:1200:G:H1'	2.23	0.73
4:K:2293:C:H5	4:K:2294:U:C5	2.00	0.73
4:K:2834:G:O2'	4:K:2835:U:H6	1.70	0.73
2:B:136:ASP:H	2:B:137:PRO:HD2	1.54	0.73
2:B:491:ILE:CD1	2:B:494:PRO:HG3	2.18	0.73
4:K:1232:C:C2	4:K:1261:G:C6	2.77	0.73
3:J:152:U:O4'	9:C:13:GLN:CD	2.25	0.73
10:H:80:LEU:HD23	10:H:83:THR:HG21	1.69	0.73
10:H:85:LEU:HD21	10:H:87:GLU:O	1.88	0.73
2:B:34:THR:OG1	2:B:36:LYS:HD3	1.88	0.73
2:B:76:PRO:O	2:B:77:THR:HG22	1.89	0.73
2:B:194:ARG:HD2	2:B:234:MET:HE3	1.69	0.73
10:H:85:LEU:CG	10:H:86:LYS:H	2.01	0.73
1:A:78:ASP:CB	7:E:9:ALA:HB2	2.18	0.73
2:B:114:ILE:CG1	2:B:116:LYS:HD2	2.18	0.73
3:J:569:C:O4'	3:J:583:C:H4'	1.88	0.73
2:B:343:GLU:CG	2:B:345:LEU:HD21	2.19	0.73
3:J:1201:G:C4	3:J:1202:A:O4'	2.42	0.73
4:K:2285:C:H5	4:K:2286:U:N3	1.86	0.73
8:G:104:ARG:CB	8:G:182:THR:HB	2.19	0.73
8:G:104:ARG:HB2	8:G:182:THR:HB	1.69	0.73
10:H:117:ARG:CG	10:H:118:ASP:H	1.92	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:67:PHE:CD1	15:B:704:SF4:S1	2.81	0.73
2:B:114:ILE:HD12	2:B:294:ILE:CG2	2.19	0.73
2:B:117:SER:HG	13:B:701:MG:MG	0.92	0.73
2:B:588:SER:HB3	2:B:591:ASP:HB3	1.70	0.73
4:K:1259:A:H5''	4:K:1260:A:OP2	1.88	0.72
2:B:195:MET:HE3	2:B:202:VAL:CA	2.20	0.72
3:J:553:G:H3'	3:J:554:C:H5''	1.71	0.72
3:J:1186:U:H2'	3:J:1187:U:O4'	1.88	0.72
2:B:60:ILE:HG13	15:B:703:SF4:S2	2.30	0.72
2:B:176:ILE:HD11	2:B:227:LEU:HG	1.71	0.72
2:B:108:LEU:HG	2:B:294:ILE:HD11	1.72	0.72
3:J:560:U:H2'	3:J:561:G:H8	1.55	0.72
4:K:2290:C:O2'	4:K:2291:A:O4'	2.06	0.72
4:K:2854:U:O2'	4:K:2855:U:H5'	1.89	0.72
2:B:182:GLY:HA3	2:B:185:GLN:CA	2.20	0.72
3:J:551:G:C2	3:J:552:G:C5	2.77	0.72
4:K:1234:G:H3'	4:K:1235:U:H2'	1.72	0.72
4:K:2928:C:C2'	4:K:2929:C:H5'	2.18	0.72
2:B:53:ILE:HG13	2:B:54:LEU:N	2.05	0.72
2:B:60:ILE:HD11	15:B:703:SF4:S2	2.30	0.72
2:B:180:ILE:HG21	2:B:183:PRO:HA	1.72	0.72
2:B:173:VAL:CB	2:B:251:TYR:HE2	2.03	0.72
2:B:568:LEU:HD22	2:B:570:VAL:HG13	1.71	0.72
4:K:1263:A:N6	10:H:135:THR:HA	2.04	0.72
4:K:1264:G:H4'	4:K:1265:U:OP1	1.89	0.72
4:K:3032:A:C4	6:F:170:LYS:NZ	2.58	0.72
2:B:464:GLU:HB2	2:B:467:HIS:ND1	2.04	0.72
4:K:2287:C:N3	4:K:2298:U:O2	2.23	0.72
9:C:24:ILE:O	9:C:26:VAL:N	2.23	0.72
2:B:376:SER:HB2	2:B:379:GLU:OE2	1.90	0.71
3:J:1269:U:O2	3:J:1269:U:O4'	2.07	0.71
3:J:1274:C:H6	3:J:1427:A:N6	1.87	0.71
10:H:85:LEU:HD22	10:H:87:GLU:N	1.98	0.71
3:J:36:C:H2'	3:J:37:U:C6	2.25	0.71
2:B:424:PRO:CG	2:B:465:VAL:HG12	2.20	0.71
10:H:85:LEU:CD2	10:H:86:LYS:C	2.58	0.71
2:B:392:THR:O	2:B:395:ILE:HG22	1.89	0.71
3:J:1188:G:H2'	3:J:1189:A:H8	1.55	0.71
2:B:56:ILE:CD1	2:B:58:CYS:HB3	2.20	0.71
3:J:467:G:H5''	3:J:468:A:OP2	1.91	0.71
2:B:537:LYS:HD3	2:B:554:PRO:HB2	1.72	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:56:ILE:HD11	2:B:58:CYS:SG	2.30	0.71
2:B:266:SER:O	2:B:270:PRO:HD2	1.90	0.71
2:B:455:LEU:HD11	2:B:475:ARG:NH1	2.06	0.71
4:K:2846:U:O2	4:K:2850:G:O6	2.09	0.71
10:H:104:ILE:HG12	10:H:105:GLN:H	1.54	0.71
1:A:65:LEU:H	1:A:65:LEU:CD2	2.04	0.71
2:B:195:MET:HE3	2:B:202:VAL:HA	1.71	0.71
2:B:343:GLU:HG2	2:B:345:LEU:CD2	2.21	0.71
4:K:3028:G:O2'	4:K:3029:A:O4'	2.08	0.71
1:A:106:SER:HB2	3:J:565:C:OP1	1.91	0.70
2:B:544:ILE:CD1	2:B:547:LYS:HG3	2.20	0.70
3:J:1272:U:H5''	3:J:1273:G:OP2	1.91	0.70
2:B:106:LEU:CD2	2:B:290:PHE:HD2	2.02	0.70
2:B:182:GLY:HA2	2:B:186:LYS:N	2.06	0.70
2:B:234:MET:HA	2:B:237:VAL:CG2	2.20	0.70
2:B:255:LYS:HB3	2:B:386:GLU:CG	2.20	0.70
3:J:551:G:H5''	3:J:552:G:OP2	1.90	0.70
1:A:385:GLU:CB	2:B:27:ARG:NH1	2.54	0.70
2:B:148:ARG:NH2	3:J:439:U:H3'	2.06	0.70
2:B:182:GLY:HA3	2:B:185:GLN:HA	1.72	0.70
6:F:49:ASN:O	6:F:49:ASN:ND2	2.23	0.70
11:I:32:ARG:HB3	11:I:64:LYS:HB3	1.73	0.70
2:B:58:CYS:SG	15:B:703:SF4:S2	2.90	0.70
2:B:156:PHE:O	2:B:160:LEU:HG	1.91	0.70
4:K:2294:U:C5'	4:K:2295:A:OP2	2.40	0.70
10:H:132:ILE:C	10:H:135:THR:HG22	2.11	0.70
2:B:322:ILE:HD12	2:B:325:GLU:OE1	1.92	0.70
3:J:553:G:H3'	3:J:554:C:C5'	2.20	0.70
4:K:2932:U:OP1	11:I:40:LYS:HB3	1.92	0.70
1:A:232:GLU:OE1	4:K:2851:A:O4'	2.10	0.70
2:B:205:TYR:HE1	2:B:263:ILE:CD1	2.03	0.70
4:K:2295:A:N7	11:I:37:ILE:HG22	2.05	0.70
3:J:438:A:O2'	3:J:439:U:H5''	1.91	0.70
1:A:318:LEU:HD13	1:A:350:LEU:HD22	1.72	0.70
2:B:290:PHE:CE1	2:B:307:PRO:HA	2.27	0.70
3:J:450:U:H5''	3:J:451:A:OP2	1.92	0.70
3:J:560:U:H2'	3:J:561:G:C8	2.26	0.70
3:J:1429:G:C4	3:J:1430:U:C5	2.79	0.70
4:K:2930:A:HO2'	11:I:38:ALA:CB	2.04	0.70
4:K:1239:C:H2'	4:K:1240:A:C8	2.26	0.69
8:G:104:ARG:HD3	8:G:182:THR:O	1.92	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:H:38:SER:H	10:H:68:GLN:HA	1.57	0.69
11:I:79:VAL:HG13	11:I:100:GLY:HA2	1.74	0.69
2:B:133:ARG:HG2	2:B:134:PHE:CD2	2.27	0.69
4:K:3019:U:C5	4:K:3020:U:C5	2.80	0.69
10:H:88:PRO:HD2	10:H:89:PRO:N	2.08	0.69
1:A:52:ASP:CG	3:J:575:C:OP1	2.29	0.69
2:B:87:TYR:CB	14:B:702:ATP:C2	2.75	0.69
3:J:437:A:H5''	3:J:438:A:OP1	1.92	0.69
4:K:1239:C:C2'	10:H:97:ASN:ND2	2.55	0.69
4:K:2299:A:H8	4:K:2299:A:H5'	1.56	0.69
2:B:79:LEU:HD21	2:B:95:HIS:NE2	2.06	0.69
2:B:148:ARG:HH21	3:J:429:G:H5''	1.56	0.69
2:B:269:ALA:HB3	2:B:270:PRO:HD3	1.75	0.69
2:B:380:ILE:HD11	2:B:534:LEU:HB3	1.74	0.69
4:K:2289:U:C2'	4:K:2290:C:H5'	2.22	0.69
4:K:2296:A:O2'	4:K:2297:U:H5'	1.92	0.69
2:B:114:ILE:HD12	2:B:294:ILE:HG21	1.73	0.69
3:J:1199:G:C6	3:J:1200:G:H1'	2.28	0.69
4:K:3032:A:C1'	6:F:170:LYS:HE2	2.22	0.69
2:B:389:THR:HG21	2:B:391:LYS:HG3	1.75	0.69
10:H:125:LEU:C	10:H:125:LEU:HD23	2.13	0.69
2:B:39:ILE:HD11	2:B:50:ILE:HD12	1.74	0.69
2:B:106:LEU:HB3	2:B:290:PHE:CD2	2.28	0.69
4:K:2287:C:O2	4:K:2298:U:O2	2.11	0.69
4:K:2932:U:H5''	11:I:41:GLY:HA2	0.70	0.69
1:A:237:LYS:NZ	4:K:2839:G:H4'	2.07	0.69
2:B:120:LEU:CD2	2:B:246:ASP:HB2	2.23	0.69
2:B:180:ILE:HG23	2:B:183:PRO:O	1.92	0.69
3:J:446:A:C5	3:J:447:U:C5	2.81	0.69
4:K:1256:G:C4	4:K:1257:C:C6	2.81	0.69
4:K:2295:A:O4'	11:I:61:THR:CG2	2.40	0.69
9:C:164:LYS:HB3	9:C:167:LYS:HB3	1.75	0.69
2:B:24:GLU:HA	2:B:27:ARG:HG2	1.75	0.69
2:B:179:ALA:CB	2:B:180:ILE:HD12	2.22	0.69
2:B:380:ILE:HD13	2:B:534:LEU:C	2.13	0.69
6:F:57:VAL:HG23	6:F:68:LEU:HG	1.75	0.69
10:H:46:ILE:HD12	10:H:71:ALA:CB	2.22	0.69
2:B:458:ASP:HA	2:B:461:ILE:CD1	2.23	0.69
4:K:1256:G:C4	4:K:1257:C:H6	2.11	0.69
4:K:2295:A:N9	11:I:37:ILE:HD13	2.08	0.69
2:B:56:ILE:HG13	2:B:58:CYS:H	1.58	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:1203:A:H4'	3:J:1204:A:OP2	1.92	0.68
4:K:2289:U:H2'	4:K:2290:C:H5'	1.75	0.68
1:A:283:VAL:HB	1:A:350:LEU:HD21	1.74	0.68
2:B:42:THR:HG21	2:B:47:ILE:HG22	1.73	0.68
2:B:205:TYR:CE1	2:B:263:ILE:HG13	2.28	0.68
2:B:544:ILE:HD12	2:B:547:LYS:HG3	1.74	0.68
3:J:420:A:P	9:C:96:SER:CB	2.80	0.68
10:H:87:GLU:HG2	10:H:89:PRO:HD3	1.75	0.68
10:H:120:SER:HG	10:H:128:VAL:HG22	0.85	0.68
1:A:91:GLU:OE1	3:J:1272:U:OP1	2.10	0.68
2:B:255:LYS:HD3	2:B:386:GLU:HG2	1.75	0.68
2:B:574:ARG:HD3	2:B:602:PHE:CA	2.22	0.68
3:J:152:U:C1'	9:C:13:GLN:OE1	2.42	0.68
4:K:2833:A:C6	4:K:2834:G:C8	2.82	0.68
4:K:2847:A:H2'	4:K:2847:A:N3	2.08	0.68
3:J:1274:C:O2'	3:J:1275:A:OP2	2.11	0.68
4:K:2931:C:C4	4:K:2932:U:C5	2.81	0.68
6:F:13:PRO:HD2	6:F:16:VAL:HG22	1.74	0.68
2:B:106:LEU:HB3	2:B:290:PHE:HE2	1.56	0.68
2:B:574:ARG:NH2	2:B:601:PHE:CZ	2.48	0.68
3:J:420:A:OP1	9:C:96:SER:CA	2.42	0.68
9:C:67:VAL:HG21	9:C:99:GLY:HA2	1.76	0.68
10:H:109:ILE:HG13	10:H:129:THR:OG1	1.85	0.68
3:J:44:U:H3'	3:J:45:U:C5'	2.24	0.68
3:J:1431:C:C4'	3:J:1432:U:H5'	2.24	0.68
1:A:386:GLU:OE2	2:B:27:ARG:CG	2.41	0.68
3:J:461:G:H2'	3:J:462:G:H8	1.59	0.68
4:K:1248:C:H2'	4:K:1249:G:H5'	1.76	0.68
4:K:1252:A:H2'	4:K:1253:U:H5'	1.74	0.68
4:K:2918:G:C2	4:K:2919:A:C8	2.81	0.68
11:I:108:GLU:HG2	11:I:128:ARG:HH11	1.58	0.68
2:B:87:TYR:HB3	14:B:702:ATP:C2	2.28	0.68
3:J:587:C:O5'	3:J:587:C:H6	1.77	0.68
2:B:114:ILE:HG12	2:B:116:LYS:HD2	1.76	0.67
2:B:148:ARG:HH22	3:J:439:U:H3'	1.57	0.67
4:K:2288:G:C4	4:K:2289:U:C5	2.82	0.67
2:B:31:VAL:CG2	2:B:38:CYS:HB3	2.21	0.67
2:B:115:GLY:CA	14:B:702:ATP:O2A	2.31	0.67
3:J:427:C:C5'	3:J:427:C:C6	2.72	0.67
4:K:2919:A:H3'	4:K:2920:U:H5'	1.76	0.67
2:B:9:ALA:HB2	2:B:72:ILE:CD1	2.25	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:92:PHE:CB	14:B:702:ATP:C1'	2.72	0.67
2:B:305:THR:HG22	2:B:306:LEU:H	1.58	0.67
2:B:382:VAL:CG2	2:B:535:ALA:HB2	2.18	0.67
2:B:441:GLN:HE21	2:B:447:PHE:HE2	1.41	0.67
2:B:589:GLN:CG	9:C:107:ALA:HB2	2.24	0.67
3:J:436:A:H5''	3:J:437:A:OP2	1.95	0.67
4:K:2836:C:O2	4:K:2836:C:C2'	2.42	0.67
4:K:2932:U:C5'	11:I:41:GLY:N	2.57	0.67
3:J:1209:C:H2'	3:J:1210:C:H6	1.59	0.67
1:A:84:LYS:HZ1	3:J:564:G:P	2.13	0.67
2:B:475:ARG:O	2:B:479:VAL:HG23	1.95	0.67
2:B:608:ILE:OXT	2:B:608:ILE:CG2	2.38	0.67
3:J:426:G:H2'	3:J:427:C:H5''	1.75	0.67
3:J:564:G:O2'	3:J:577:G:H4'	1.94	0.67
4:K:1257:C:H3'	4:K:1258:U:H6	1.59	0.67
11:I:81:GLN:O	11:I:98:ASN:ND2	2.28	0.67
3:J:44:U:H5'	3:J:45:U:O4	1.93	0.67
3:J:445:A:H2'	3:J:446:A:C8	2.29	0.67
2:B:95:HIS:CB	2:B:303:VAL:HG22	2.24	0.67
2:B:148:ARG:NH2	3:J:439:U:C3'	2.57	0.67
2:B:415:VAL:HG23	2:B:488:ILE:CG2	2.25	0.67
4:K:3022:G:HO2'	4:K:3023:U:P	2.11	0.67
4:K:3037:U:H2'	4:K:3038:U:C6	2.27	0.67
2:B:450:ASP:OD2	2:B:509:VAL:HG22	1.95	0.67
3:J:1431:C:C3'	3:J:1432:U:H5'	2.25	0.67
2:B:574:ARG:NH1	2:B:601:PHE:CD2	2.63	0.67
3:J:429:G:H5''	3:J:439:U:H3'	1.75	0.67
4:K:1256:G:C2	4:K:1257:C:H1'	2.30	0.67
4:K:1260:A:H1'	4:K:1280:C:H1'	1.77	0.67
4:K:3021:A:C4	4:K:3023:U:O4	2.48	0.67
2:B:103:GLY:O	2:B:268:LEU:HD23	1.96	0.66
2:B:395:ILE:HD11	2:B:490:LEU:HB3	1.77	0.66
4:K:1248:C:C5	4:K:1249:G:C8	2.82	0.66
10:H:120:SER:HB3	10:H:128:VAL:HG21	1.77	0.66
2:B:265:ARG:O	2:B:268:LEU:HD12	1.94	0.66
2:B:568:LEU:HD22	2:B:570:VAL:CG2	2.26	0.66
2:B:568:LEU:O	2:B:568:LEU:HD23	1.96	0.66
2:B:72:ILE:C	2:B:73:ILE:HD12	2.15	0.66
11:I:33:ASN:HD22	11:I:33:ASN:C	1.98	0.66
3:J:1429:G:H2'	3:J:1430:U:C6	2.29	0.66
10:H:112:ILE:HG12	10:H:112:ILE:O	1.95	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:H:125:LEU:HA	10:H:129:THR:CB	2.25	0.66
11:I:68:GLU:OE1	11:I:68:GLU:N	2.23	0.66
2:B:179:ALA:HB3	2:B:180:ILE:HD12	1.78	0.66
2:B:320:GLY:HA2	2:B:329:PHE:CZ	2.30	0.66
2:B:568:LEU:CD2	2:B:570:VAL:HG13	2.26	0.66
3:J:427:C:H6	3:J:427:C:H5''	1.58	0.66
3:J:564:G:N7	3:J:578:U:C6	2.63	0.66
2:B:501:GLU:O	2:B:504:ILE:HG22	1.96	0.66
3:J:446:A:C4	3:J:447:U:C5	2.84	0.66
4:K:1269:U:H3	4:K:1272:C:N4	1.92	0.66
2:B:148:ARG:NH2	3:J:439:U:O3'	2.20	0.66
2:B:588:SER:O	2:B:592:LYS:HB3	1.96	0.66
3:J:1269:U:N3	3:J:1432:U:O4'	2.29	0.66
4:K:2837:A:C8	4:K:2845:A:C2	2.83	0.66
4:K:2841:G:C6	4:K:2844:C:C4	2.84	0.66
2:B:332:GLU:OE2	4:K:3022:G:H5'	1.95	0.66
3:J:553:G:C6	3:J:554:C:N3	2.63	0.66
4:K:2923:U:C2	4:K:2924:U:C5	2.84	0.66
10:H:16:ARG:HD2	10:H:60:VAL:HG23	1.78	0.66
2:B:112:ASN:CB	14:B:702:ATP:O1G	2.42	0.65
2:B:568:LEU:HD13	2:B:570:VAL:CG2	2.26	0.65
10:H:85:LEU:HD21	10:H:87:GLU:C	2.16	0.65
1:A:49:SER:HB3	3:J:565:C:N4	2.10	0.65
2:B:437:LYS:HG3	2:B:480:LEU:HD21	1.78	0.65
4:K:1240:A:H3'	4:K:1241:U:H5''	1.78	0.65
4:K:1262:G:OP2	4:K:1262:G:C8	2.49	0.65
4:K:2853:A:N6	4:K:2854:U:H3	1.92	0.65
1:A:104:TYR:CD2	3:J:578:U:H6	2.15	0.65
2:B:313:GLY:O	2:B:316:ILE:HG22	1.96	0.65
2:B:475:ARG:CZ	2:B:502:GLN:HG2	2.26	0.65
4:K:1254:C:H5	4:K:1263:A:OP1	1.79	0.65
3:J:1196:A:H5''	3:J:1196:A:N3	2.12	0.65
4:K:2285:C:C5	4:K:2286:U:N3	2.65	0.65
4:K:2932:U:OP1	11:I:40:LYS:HE3	1.96	0.65
2:B:86:ARG:HB2	2:B:93:LYS:HG2	1.77	0.65
4:K:1257:C:H3'	4:K:1258:U:C6	2.32	0.65
4:K:1277:C:OP2	4:K:1277:C:H6	1.80	0.65
4:K:3032:A:N9	6:F:170:LYS:CE	2.51	0.65
1:A:300:TYR:OH	2:B:64:LYS:HE2	1.96	0.65
2:B:176:ILE:CD1	2:B:227:LEU:HG	2.27	0.65
2:B:305:THR:HG22	2:B:306:LEU:N	2.11	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:447:PHE:O	2:B:451:VAL:HG22	1.97	0.65
8:G:12:PHE:CZ	8:G:57:THR:HG22	2.32	0.65
2:B:108:LEU:HG	2:B:294:ILE:CD1	2.26	0.65
2:B:437:LYS:HG3	2:B:480:LEU:CD2	2.26	0.65
4:K:2836:C:O2	4:K:2836:C:H3'	1.97	0.65
4:K:2288:G:H2'	4:K:2289:U:C6	2.32	0.65
2:B:343:GLU:OE2	6:F:121:LYS:HA	1.97	0.65
3:J:46:A:N6	3:J:433:C:H4'	2.12	0.65
4:K:1236:G:C5	10:H:57:LYS:HE2	2.32	0.65
10:H:108:GLU:C	10:H:112:ILE:CG2	2.65	0.65
1:A:313:ALA:O	1:A:372:LEU:HD22	1.97	0.64
2:B:244:MET:HA	2:B:275:ILE:CG2	2.27	0.64
2:B:260:ALA:O	2:B:263:ILE:HG22	1.97	0.64
1:A:385:GLU:CA	2:B:27:ARG:NH1	2.58	0.64
2:B:460:ILE:CD1	2:B:468:LEU:HD11	2.19	0.64
6:F:28:VAL:HG22	6:F:33:THR:HB	1.78	0.64
10:H:133:LEU:C	10:H:133:LEU:HD23	2.18	0.64
2:B:413:LEU:HD12	2:B:487:ASP:HB2	1.79	0.64
2:B:444:ASN:OD1	2:B:447:PHE:HB2	1.97	0.64
3:J:48:G:C6	3:J:432:G:N2	2.64	0.64
10:H:120:SER:CB	10:H:128:VAL:HG21	2.27	0.64
1:A:385:GLU:HB3	2:B:27:ARG:NH1	2.13	0.64
3:J:450:U:C2	3:J:451:A:N7	2.65	0.64
4:K:2932:U:O2	4:K:2932:U:C2'	2.45	0.64
10:H:110:ILE:HG13	10:H:114:ARG:CD	2.20	0.64
2:B:516:HIS:CE1	6:F:116:ASN:HB3	2.33	0.64
3:J:420:A:OP1	9:C:96:SER:HB2	1.95	0.64
4:K:1232:C:N3	4:K:1261:G:C2	2.66	0.64
1:A:386:GLU:OE1	2:B:28:SER:CA	2.44	0.64
2:B:86:ARG:NH1	2:B:93:LYS:HD2	2.12	0.64
2:B:176:ILE:HD11	2:B:227:LEU:CD2	2.27	0.64
2:B:380:ILE:HD13	2:B:534:LEU:HB3	1.80	0.64
4:K:1232:C:C4	4:K:1261:G:C2	2.85	0.64
4:K:2289:U:O2'	4:K:2290:C:H5'	1.98	0.64
2:B:28:SER:HB3	2:B:64:LYS:NZ	2.12	0.64
2:B:557:LEU:O	2:B:557:LEU:HD23	1.98	0.64
2:B:603:LEU:HG	2:B:604:ASP:N	2.09	0.64
3:J:572:C:H5''	3:J:573:C:OP2	1.98	0.64
4:K:1279:C:O2'	4:K:1280:C:O5'	2.16	0.64
10:H:136:ALA:HB1	10:H:139:VAL:HB	1.79	0.64
2:B:194:ARG:HD2	2:B:234:MET:HE2	1.78	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:442:C:O2'	3:J:443:C:H5'	1.98	0.64
6:F:9:GLN:HG2	6:F:52:LEU:HD21	1.78	0.64
12:D:91:LEU:HA	12:D:96:LEU:HD12	1.80	0.64
1:A:187:LYS:NZ	5:L:66:C:H5'	2.12	0.64
2:B:195:MET:HE3	2:B:202:VAL:HG12	1.78	0.64
2:B:435:PHE:CE1	2:B:439:ARG:HD3	2.22	0.64
2:B:468:LEU:HG	2:B:469:SER:N	2.12	0.64
4:K:2847:A:C4	4:K:2848:G:C8	2.86	0.64
2:B:182:GLY:HA3	2:B:185:GLN:N	2.12	0.64
2:B:183:PRO:HD2	2:B:185:GLN:C	2.17	0.64
2:B:368:LEU:HD22	2:B:393:THR:OG1	1.98	0.64
2:B:386:GLU:O	2:B:391:LYS:HE2	1.98	0.64
10:H:120:SER:HB3	10:H:128:VAL:CG2	2.27	0.64
2:B:104:GLN:OE1	2:B:106:LEU:HD21	1.97	0.63
7:E:14:VAL:O	7:E:18:THR:HG23	1.97	0.63
2:B:140:TRP:HE3	2:B:143:ILE:CD1	2.11	0.63
4:K:2294:U:O2	4:K:2294:U:H2'	1.98	0.63
4:K:2931:C:C4	4:K:2932:U:H5	2.15	0.63
8:G:106:ALA:O	8:G:107:ALA:HB2	1.99	0.63
2:B:392:THR:CG2	2:B:396:LYS:HE2	2.22	0.63
2:B:430:VAL:O	2:B:434:PHE:HD1	1.82	0.63
3:J:1179:G:C6	3:J:1180:C:C2	2.86	0.63
2:B:42:THR:CG2	2:B:47:ILE:HG22	2.28	0.63
2:B:101:ARG:O	2:B:273:TYR:HD1	1.81	0.63
2:B:142:GLU:HA	2:B:145:LYS:CE	2.27	0.63
3:J:418:G:H8	9:C:59:GLN:CG	2.05	0.63
4:K:3028:G:C2	4:K:3029:A:C2	2.86	0.63
10:H:109:ILE:HD12	10:H:125:LEU:HG	1.81	0.63
2:B:60:ILE:CD1	15:B:703:SF4:S2	2.87	0.63
2:B:338:ILE:HA	2:B:603:LEU:HD21	1.81	0.63
3:J:1273:G:H4'	3:J:1274:C:C4'	2.28	0.63
4:K:2295:A:OP1	11:I:63:LYS:NZ	2.20	0.63
2:B:58:CYS:SG	2:B:60:ILE:HG13	2.39	0.63
3:J:161:U:OP2	9:C:85:ARG:N	2.31	0.63
11:I:17:LEU:HD21	11:I:98:ASN:ND2	2.13	0.63
2:B:8:ILE:HD13	2:B:79:LEU:HD13	1.80	0.62
2:B:144:ILE:HG23	2:B:153:GLN:CG	2.27	0.62
2:B:448:GLN:CA	2:B:452:VAL:HG12	2.26	0.62
4:K:2834:G:N3	4:K:2835:U:C5	2.66	0.62
10:H:18:VAL:HG12	10:H:20:GLY:N	2.14	0.62
10:H:80:LEU:CD2	10:H:83:THR:HG21	2.29	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:360:LYS:HE3	2:B:367:VAL:HG11	1.80	0.62
3:J:1435:G:C4'	3:J:1436:A:OP2	2.46	0.62
4:K:2921:U:H3'	4:K:2923:U:OP2	1.99	0.62
10:H:59:THR:HG22	10:H:74:VAL:O	1.97	0.62
2:B:357:PRO:O	2:B:359:LEU:HD22	1.98	0.62
2:B:451:VAL:HG23	2:B:452:VAL:N	2.15	0.62
4:K:1234:G:O3'	10:H:116:MET:HE1	1.99	0.62
4:K:2295:A:C5	11:I:37:ILE:HG21	2.33	0.62
4:K:2852:C:C5	4:K:2853:A:C4	2.86	0.62
1:A:386:GLU:OE2	2:B:27:ARG:HD2	1.99	0.62
2:B:143:ILE:O	2:B:147:PHE:HD2	1.82	0.62
2:B:457:ILE:HG23	2:B:460:ILE:HG21	1.81	0.62
2:B:491:ILE:HG23	2:B:523:ILE:HG13	1.79	0.62
4:K:2294:U:C6	4:K:2297:U:H5	2.17	0.62
4:K:2836:C:H5	4:K:2853:A:N1	1.98	0.62
8:G:37:GLN:HG2	8:G:105:VAL:CG1	2.18	0.62
1:A:84:LYS:NZ	3:J:564:G:P	2.70	0.62
2:B:140:TRP:HB3	2:B:160:LEU:HD22	1.81	0.62
2:B:244:MET:HG2	2:B:275:ILE:CG2	2.30	0.62
2:B:450:ASP:OD1	2:B:505:ILE:HD11	2.00	0.62
3:J:1273:G:C5'	3:J:1274:C:H5'	2.30	0.62
10:H:109:ILE:CD1	10:H:129:THR:CG2	2.77	0.62
2:B:120:LEU:HD22	2:B:246:ASP:HB2	1.80	0.62
2:B:194:ARG:HG2	2:B:234:MET:HG3	1.81	0.62
2:B:236:CYS:SG	2:B:263:ILE:HD12	2.40	0.62
2:B:322:ILE:CD1	2:B:325:GLU:HB2	2.29	0.62
3:J:39:A:C5	3:J:467:G:N2	2.67	0.62
3:J:1196:A:O2'	3:J:1197:C:OP2	2.14	0.62
4:K:1273:A:C8	4:K:1274:A:N7	2.68	0.62
4:K:1279:C:C2	4:K:1280:C:C5	2.88	0.62
10:H:123:ARG:HD3	10:H:126:ALA:HB3	1.80	0.62
1:A:386:GLU:CD	2:B:27:ARG:HD2	2.15	0.62
3:J:584:C:O2'	7:E:18:THR:CG2	2.33	0.62
4:K:1240:A:H3'	4:K:1241:U:C5'	2.27	0.62
4:K:2833:A:N1	4:K:2834:G:C8	2.68	0.62
1:A:52:ASP:OD1	3:J:575:C:OP1	2.17	0.62
2:B:242:VAL:HG23	2:B:273:TYR:HD2	1.62	0.62
3:J:1200:G:H8	3:J:1200:G:H5''	1.65	0.62
2:B:104:GLN:HG3	2:B:106:LEU:HD21	1.82	0.62
2:B:268:LEU:O	2:B:268:LEU:HD22	2.00	0.62
2:B:452:VAL:HG13	2:B:453:LYS:N	2.15	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:445:A:N3	3:J:446:A:C8	2.68	0.62
2:B:173:VAL:CG2	2:B:251:TYR:HE2	2.13	0.61
4:K:2919:A:C3'	4:K:2920:U:H5'	2.30	0.61
9:C:114:VAL:HG12	9:C:115:LYS:HD3	1.81	0.61
4:K:1234:G:O4'	10:H:131:GLU:OE1	2.18	0.61
4:K:1282:G:H2'	4:K:1283:C:O4'	1.99	0.61
4:K:2290:C:H2'	4:K:2291:A:H8	1.64	0.61
4:K:2297:U:O2	4:K:2299:A:C5	2.53	0.61
4:K:2849:C:O2	4:K:2849:C:H2'	2.00	0.61
2:B:37:LEU:HD22	2:B:37:LEU:N	2.15	0.61
2:B:293:ILE:HD13	2:B:293:ILE:N	2.14	0.61
2:B:568:LEU:HD13	2:B:570:VAL:HG22	1.80	0.61
4:K:1272:C:H2'	4:K:1273:A:C4'	2.31	0.61
4:K:2847:A:C2	4:K:2848:G:H1'	2.35	0.61
2:B:135:ASP:OD1	2:B:139:GLU:HB2	2.00	0.61
3:J:448:C:H2'	3:J:449:C:C6	2.35	0.61
4:K:1255:C:O2'	10:H:131:GLU:HA	2.01	0.61
4:K:1256:G:N2	4:K:1257:C:H1'	2.14	0.61
4:K:3019:U:C4	4:K:3020:U:C5	2.88	0.61
2:B:568:LEU:CD2	2:B:570:VAL:HG22	2.28	0.61
10:H:101:SER:OG	10:H:140:GLY:C	2.37	0.61
2:B:116:LYS:H	2:B:116:LYS:HD3	1.64	0.61
3:J:461:G:H2'	3:J:462:G:C8	2.34	0.61
4:K:2931:C:H2'	4:K:2932:U:H6	1.66	0.61
2:B:363:GLN:CG	2:B:366:PHE:H	2.14	0.61
3:J:452:A:C2	3:J:454:U:O5'	2.54	0.61
3:J:1204:A:H2'	3:J:1204:A:N3	2.15	0.61
4:K:2295:A:N9	11:I:37:ILE:HG21	2.16	0.61
10:H:10:VAL:HG12	10:H:11:LYS:N	2.15	0.61
4:K:2851:A:H3'	4:K:2852:C:H5''	1.82	0.61
10:H:80:LEU:HD23	10:H:80:LEU:C	2.16	0.61
2:B:73:ILE:HD12	2:B:73:ILE:N	2.15	0.61
2:B:131:LEU:CD1	2:B:142:GLU:HG2	2.31	0.61
2:B:360:LYS:CB	2:B:406:GLU:HG2	2.26	0.61
2:B:529:ILE:H	2:B:529:ILE:CD1	2.08	0.61
3:J:554:C:O3'	3:J:555:A:H2'	2.01	0.61
3:J:586:G:H2'	3:J:587:C:C6	2.35	0.61
3:J:553:G:N2	3:J:572:C:N3	2.49	0.61
3:J:568:G:C2'	3:J:569:C:H5'	2.30	0.61
4:K:2931:C:C5	4:K:2932:U:H5	2.19	0.60
1:A:187:LYS:CE	5:L:66:C:P	2.66	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:110:GLY:HA3	2:B:114:ILE:HD13	1.82	0.60
2:B:322:ILE:CG1	2:B:325:GLU:HB2	2.30	0.60
2:B:357:PRO:C	2:B:372:GLU:HG3	2.22	0.60
2:B:591:ASP:C	2:B:591:ASP:OD1	2.40	0.60
3:J:152:U:H4'	9:C:13:GLN:C	2.21	0.60
4:K:2850:G:H5''	4:K:2850:G:C8	2.35	0.60
4:K:2925:C:H2'	4:K:2926:A:O4'	2.00	0.60
8:G:180:PRO:HD2	8:G:181:PHE:H	1.66	0.60
1:A:237:LYS:HZ1	4:K:2839:G:C3'	2.13	0.60
2:B:116:LYS:HE3	14:B:702:ATP:O2G	2.00	0.60
2:B:458:ASP:HA	2:B:461:ILE:HD11	1.81	0.60
3:J:1433:G:N2	3:J:1434:U:C4	2.68	0.60
4:K:3032:A:H2'	6:F:170:LYS:NZ	2.16	0.60
10:H:40:LYS:N	10:H:68:GLN:HG2	2.16	0.60
1:A:187:LYS:NZ	5:L:66:C:C5'	2.65	0.60
2:B:328:ARG:O	2:B:328:ARG:HG3	2.00	0.60
4:K:2931:C:O2'	4:K:2932:U:H5'	2.00	0.60
2:B:194:ARG:HA	2:B:194:ARG:HE	1.66	0.60
2:B:202:VAL:HG23	2:B:203:LYS:N	2.17	0.60
2:B:491:ILE:HG12	2:B:494:PRO:HG3	1.82	0.60
10:H:46:ILE:HD12	10:H:71:ALA:HB3	1.82	0.60
2:B:28:SER:HB3	2:B:64:LYS:CD	2.31	0.60
2:B:111:THR:O	2:B:114:ILE:HG23	2.01	0.60
2:B:195:MET:CE	2:B:202:VAL:HA	2.32	0.60
2:B:558:LEU:H	2:B:558:LEU:HD12	1.66	0.60
3:J:418:G:H2'	9:C:72:ARG:NH2	2.16	0.60
3:J:463:U:H2'	3:J:464:A:O4'	2.01	0.60
3:J:1189:A:H2'	3:J:1189:A:N3	2.15	0.60
4:K:1277:C:OP2	4:K:1277:C:C6	2.54	0.60
2:B:300:VAL:HG12	2:B:301:TYR:HD1	1.64	0.60
2:B:435:PHE:CD1	2:B:439:ARG:HB2	2.37	0.60
3:J:38:C:C3'	3:J:39:A:H5''	2.32	0.60
4:K:2833:A:C2'	4:K:2834:G:H5'	2.31	0.60
1:A:158:THR:HB	1:A:160:SER:H	1.67	0.60
1:A:315:SER:HB3	1:A:373:LYS:HG2	1.82	0.60
2:B:30:PRO:HG2	2:B:56:ILE:CD1	2.32	0.60
2:B:234:MET:HA	2:B:237:VAL:HG22	1.82	0.60
3:J:426:G:N1	3:J:427:C:C4	2.70	0.60
2:B:135:ASP:CG	2:B:139:GLU:HB2	2.22	0.60
4:K:1256:G:C5	4:K:1257:C:C6	2.90	0.60
2:B:130:ASN:HA	2:B:135:ASP:HB3	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:424:PRO:HB3	2:B:465:VAL:CG1	2.32	0.60
3:J:550:A:H5''	3:J:551:G:OP1	2.01	0.60
3:J:1428:G:H2'	3:J:1428:G:N3	2.16	0.60
4:K:3032:A:C1'	6:F:170:LYS:CE	2.80	0.60
9:C:219:ARG:O	9:C:223:LYS:HB2	2.01	0.60
2:B:31:VAL:HG23	2:B:32:VAL:N	2.16	0.59
2:B:167:ILE:HD12	2:B:238:GLN:CB	2.32	0.59
2:B:338:ILE:HD12	2:B:338:ILE:N	2.17	0.59
3:J:1196:A:C4'	3:J:1197:C:H5''	2.29	0.59
4:K:1232:C:H41	4:K:1261:G:H3'	1.67	0.59
4:K:2918:G:N2	4:K:2919:A:C8	2.70	0.59
4:K:3019:U:C4	4:K:3020:U:C4	2.90	0.59
1:A:386:GLU:CD	2:B:28:SER:OG	2.39	0.59
4:K:2290:C:O2'	4:K:2291:A:O5'	2.20	0.59
2:B:87:TYR:CD2	14:B:702:ATP:C6	2.90	0.59
2:B:94:LEU:HD13	2:B:95:HIS:H	1.66	0.59
2:B:558:LEU:HD12	2:B:558:LEU:N	2.17	0.59
3:J:425:A:H8	3:J:425:A:H5'	1.68	0.59
4:K:1249:G:H2'	4:K:1250:G:C8	2.37	0.59
4:K:1274:A:C6	4:K:1275:C:C5	2.91	0.59
4:K:1279:C:P	8:G:1:MET:CE	2.90	0.59
4:K:3018:C:C4	4:K:3019:U:C5	2.90	0.59
9:C:8:PRO:HG3	9:C:112:VAL:HG13	1.84	0.59
9:C:135:PRO:HB2	9:C:141:ILE:HG12	1.84	0.59
10:H:101:SER:HA	10:H:138:SER:O	2.02	0.59
11:I:129:VAL:O	11:I:133:SER:OG	2.17	0.59
1:A:237:LYS:HZ2	4:K:2839:G:H4'	1.65	0.59
2:B:25:CYS:SG	2:B:70:ILE:HD11	2.42	0.59
2:B:60:ILE:CG1	15:B:703:SF4:S2	2.89	0.59
2:B:116:LYS:O	2:B:120:LEU:HD13	2.02	0.59
2:B:196:GLU:HG3	2:B:239:GLU:HG2	1.83	0.59
6:F:86:TYR:CD1	6:F:151:VAL:HG13	2.37	0.59
10:H:109:ILE:CB	10:H:129:THR:OG1	2.50	0.59
1:A:187:LYS:CG	5:L:66:C:OP1	2.51	0.59
2:B:140:TRP:CB	2:B:160:LEU:HD22	2.32	0.59
2:B:186:LYS:HG3	2:B:218:ASP:OD1	2.02	0.59
3:J:426:G:C6	3:J:427:C:N4	2.71	0.59
4:K:3032:A:N9	6:F:170:LYS:NZ	2.49	0.59
4:K:3032:A:H2'	6:F:170:LYS:HZ1	1.68	0.59
2:B:140:TRP:HB3	2:B:160:LEU:CD1	2.32	0.59
2:B:588:SER:O	2:B:592:LYS:CB	2.50	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:567:A:H1'	7:E:14:VAL:HG23	1.85	0.59
3:J:1275:A:N6	3:J:1431:C:N3	2.51	0.59
1:A:364:GLN:OE1	2:B:58:CYS:HB3	2.03	0.59
3:J:152:U:C1'	9:C:13:GLN:CD	2.71	0.59
4:K:1270:A:C8	4:K:1271:A:C8	2.90	0.59
2:B:510:ILE:HG22	2:B:514:ILE:HD12	1.83	0.59
3:J:44:U:O5'	3:J:45:U:C5	2.54	0.59
3:J:450:U:H2'	3:J:451:A:H8	1.64	0.59
4:K:2289:U:N3	4:K:2290:C:C5	2.71	0.59
2:B:140:TRP:CB	2:B:160:LEU:HD13	2.33	0.59
2:B:420:GLN:HG3	2:B:421:LYS:N	2.18	0.59
4:K:1277:C:O2'	4:K:1278:A:P	2.61	0.59
8:G:43:LYS:CA	10:H:121:PHE:HE1	1.95	0.59
10:H:67:ARG:HG2	10:H:67:ARG:O	2.02	0.59
2:B:62:VAL:HG23	2:B:70:ILE:O	2.03	0.59
2:B:180:ILE:HD12	2:B:180:ILE:N	2.17	0.59
3:J:1199:G:N2	3:J:1201:G:OP2	2.36	0.59
4:K:2833:A:C6	4:K:2834:G:N7	2.71	0.59
4:K:3021:A:C4	4:K:3023:U:C4	2.91	0.59
10:H:109:ILE:HD11	10:H:129:THR:HB	1.78	0.59
2:B:360:LYS:HE3	2:B:367:VAL:CG1	2.33	0.58
4:K:1229:G:H2'	4:K:1230:G:O4'	2.03	0.58
4:K:1258:U:H2'	4:K:1258:U:O2	2.02	0.58
4:K:1270:A:H5'	4:K:1271:A:OP2	2.03	0.58
10:H:23:GLY:HA2	10:H:46:ILE:HD11	1.85	0.58
1:A:47:PHE:HA	3:J:577:G:C6	2.37	0.58
2:B:397:LEU:HD23	2:B:402:LEU:CB	2.31	0.58
4:K:2295:A:H1'	11:I:37:ILE:HD13	1.84	0.58
12:D:104:SER:HB3	12:D:107:GLN:HB2	1.85	0.58
2:B:143:ILE:HD12	2:B:156:PHE:CD1	2.37	0.58
2:B:509:VAL:O	2:B:513:PHE:HD2	1.86	0.58
3:J:426:G:C2	3:J:427:C:C5	2.92	0.58
4:K:1252:A:H2'	4:K:1253:U:C5'	2.33	0.58
4:K:2931:C:H4'	11:I:39:VAL:O	2.03	0.58
1:A:143:ALA:HA	1:A:156:LEU:HA	1.86	0.58
2:B:140:TRP:HB2	2:B:160:LEU:HD13	1.83	0.58
2:B:424:PRO:CB	2:B:465:VAL:HG12	2.33	0.58
3:J:1433:G:N2	3:J:1434:U:C5	2.67	0.58
4:K:1271:A:N6	4:K:1272:C:N4	2.52	0.58
4:K:2919:A:C3'	4:K:2920:U:C5'	2.81	0.58
2:B:8:ILE:CD1	2:B:79:LEU:HD13	2.33	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:100:PRO:HB3	2:B:273:TYR:CZ	2.37	0.58
2:B:156:PHE:CD1	2:B:159:MET:HE2	2.39	0.58
2:B:133:ARG:HG2	2:B:134:PHE:HD2	1.67	0.58
2:B:136:ASP:HB3	2:B:137:PRO:HD3	1.85	0.58
2:B:589:GLN:NE2	2:B:589:GLN:H	2.01	0.58
3:J:45:U:H5'	3:J:45:U:C6	2.39	0.58
3:J:1431:C:H3'	3:J:1432:U:C5'	2.34	0.58
8:G:15:LEU:HD21	8:G:53:MET:H	1.68	0.58
2:B:195:MET:CE	2:B:237:VAL:HG12	2.34	0.58
2:B:275:ILE:HD13	2:B:276:CYS:H	1.67	0.58
2:B:424:PRO:HB3	2:B:465:VAL:HG12	1.85	0.58
2:B:491:ILE:HG21	2:B:523:ILE:HG13	1.86	0.58
4:K:1279:C:P	8:G:1:MET:HE1	2.44	0.58
4:K:2839:G:C6	4:K:2850:G:C2	2.91	0.58
2:B:180:ILE:HG21	2:B:219:ILE:HD12	1.84	0.58
3:J:1199:G:C5	3:J:1200:G:C1'	2.86	0.58
3:J:1199:G:N1	3:J:1201:G:OP1	2.37	0.58
6:F:91:ARG:HG3	6:F:91:ARG:NH2	1.99	0.58
9:C:186:ARG:O	9:C:190:GLN:HG2	2.04	0.58
10:H:85:LEU:CD2	10:H:86:LYS:CA	2.66	0.58
2:B:176:ILE:HD11	2:B:227:LEU:CG	2.34	0.58
2:B:294:ILE:N	2:B:294:ILE:HD12	2.19	0.58
4:K:2833:A:H2'	4:K:2833:A:N3	2.18	0.58
9:C:142:ARG:HA	9:C:147:LEU:HD12	1.85	0.58
2:B:491:ILE:HD13	2:B:494:PRO:HG3	1.85	0.57
4:K:2853:A:N6	4:K:2854:U:N3	2.51	0.57
2:B:488:ILE:HG13	2:B:520:THR:HG23	1.85	0.57
3:J:1200:G:H5''	3:J:1200:G:C8	2.39	0.57
4:K:1246:G:C2	4:K:1247:U:O2	2.56	0.57
2:B:117:SER:HB2	14:B:702:ATP:O1A	2.04	0.57
2:B:271:THR:O	2:B:271:THR:HG22	2.03	0.57
2:B:444:ASN:HD21	2:B:447:PHE:HD2	1.53	0.57
1:A:299:TRP:CD1	1:A:379:LEU:HD12	2.39	0.57
4:K:2295:A:O2'	11:I:73:VAL:HG11	2.04	0.57
4:K:2836:C:O2	4:K:2836:C:H2'	2.04	0.57
3:J:1177:C:H2'	3:J:1178:G:O4'	2.04	0.57
4:K:1269:U:C4	4:K:1271:A:C5	2.92	0.57
4:K:2850:G:H5''	4:K:2850:G:H8	1.70	0.57
10:H:40:LYS:HB2	10:H:68:GLN:HB3	1.85	0.57
2:B:160:LEU:HD23	2:B:160:LEU:N	2.19	0.57
2:B:234:MET:CA	2:B:237:VAL:HG22	2.35	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:463:U:H2'	3:J:464:A:C8	2.39	0.57
3:J:1437:U:O2	3:J:1437:U:C2'	2.40	0.57
4:K:3027:A:C5	4:K:3028:G:C5	2.92	0.57
2:B:31:VAL:CG1	2:B:56:ILE:HG23	2.35	0.57
2:B:194:ARG:CG	2:B:237:VAL:HG23	2.35	0.57
2:B:491:ILE:CG1	2:B:494:PRO:HG3	2.34	0.57
4:K:1248:C:C5	4:K:1249:G:H8	2.22	0.57
4:K:1274:A:C2'	4:K:1275:C:H5''	2.30	0.57
4:K:2295:A:C6	4:K:2296:A:C6	2.92	0.57
10:H:80:LEU:CG	10:H:83:THR:HG21	2.34	0.57
2:B:29:CYS:HA	2:B:60:ILE:HD11	1.85	0.57
2:B:114:ILE:CD1	2:B:294:ILE:HB	2.34	0.57
2:B:410:ILE:HG23	2:B:410:ILE:O	2.05	0.57
2:B:574:ARG:CD	2:B:602:PHE:O	2.53	0.57
3:J:1438:G:H2'	3:J:1439:C:O4'	2.05	0.57
4:K:2285:C:C5	4:K:2286:U:C4	2.93	0.57
1:A:374:TYR:CE2	4:K:1242:G:C2	2.93	0.57
2:B:488:ILE:HD11	2:B:522:PHE:HE1	1.65	0.57
3:J:440:U:O2'	3:J:441:A:OP1	2.22	0.57
4:K:1269:U:H2'	4:K:1270:A:H5''	1.85	0.57
4:K:2297:U:C2	4:K:2299:A:C6	2.93	0.57
10:H:109:ILE:HD11	10:H:125:LEU:HG	1.87	0.57
12:D:51:GLU:OE2	12:D:53:ASP:N	2.33	0.57
1:A:237:LYS:NZ	4:K:2839:G:O3'	2.25	0.57
2:B:79:LEU:HG	2:B:95:HIS:CE1	2.40	0.57
2:B:97:LEU:HB2	2:B:152:LEU:CD1	2.34	0.57
2:B:527:ASP:OD2	2:B:529:ILE:HG12	2.05	0.57
3:J:48:G:C5	3:J:432:G:N2	2.72	0.57
4:K:2288:G:N3	4:K:2289:U:C5	2.73	0.57
10:H:109:ILE:HD11	10:H:129:THR:CG2	2.34	0.57
2:B:31:VAL:HG21	2:B:38:CYS:HB2	1.86	0.56
2:B:42:THR:HG23	2:B:42:THR:O	2.05	0.56
2:B:77:THR:HG23	2:B:77:THR:O	2.05	0.56
2:B:363:GLN:HG3	2:B:365:ASP:N	2.19	0.56
2:B:568:LEU:HD22	2:B:570:VAL:CG1	2.35	0.56
4:K:1269:U:H3	4:K:1271:A:H62	1.53	0.56
4:K:2931:C:O3'	11:I:41:GLY:N	2.31	0.56
8:G:107:ALA:CB	8:G:183:PHE:CZ	2.80	0.56
12:D:77:ASN:O	12:D:78:SER:HB3	2.05	0.56
1:A:308:ALA:HA	1:A:379:LEU:HD13	1.87	0.56
2:B:105:VAL:O	2:B:106:LEU:HD23	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:168:ILE:HD13	2:B:168:ILE:N	2.19	0.56
2:B:345:LEU:HD22	2:B:345:LEU:N	2.18	0.56
3:J:155:U:H1'	9:C:60:GLY:HA3	1.87	0.56
3:J:553:G:C5	3:J:554:C:C4	2.93	0.56
2:B:12:SER:OG	2:B:15:LYS:HD2	2.05	0.56
2:B:205:TYR:OH	2:B:232:ILE:HG22	2.05	0.56
2:B:338:ILE:HD12	2:B:338:ILE:H	1.69	0.56
2:B:424:PRO:HG3	2:B:465:VAL:HG12	1.87	0.56
2:B:444:ASN:ND2	2:B:447:PHE:HD2	2.02	0.56
2:B:508:LYS:CE	2:B:512:ARG:HD2	2.34	0.56
2:B:572:PHE:O	2:B:573:ARG:O	2.23	0.56
3:J:427:C:H5'	3:J:427:C:C6	2.37	0.56
3:J:438:A:H8	3:J:438:A:O5'	1.88	0.56
3:J:445:A:N6	3:J:461:G:N2	2.52	0.56
3:J:450:U:H2'	3:J:450:U:O2	2.05	0.56
4:K:1265:U:O4	4:K:1277:C:C4	2.58	0.56
4:K:2931:C:H2'	4:K:2932:U:O4'	2.05	0.56
4:K:3020:U:H2'	4:K:3021:A:H8	1.70	0.56
4:K:3038:U:C2'	4:K:3039:C:O5'	2.52	0.56
10:H:23:GLY:O	10:H:27:ALA:HB3	2.05	0.56
2:B:133:ARG:HG2	2:B:134:PHE:N	2.18	0.56
2:B:234:MET:HA	2:B:237:VAL:HG21	1.88	0.56
4:K:1239:C:H2'	4:K:1240:A:O4'	2.04	0.56
4:K:1258:U:C2'	4:K:1259:A:O5'	2.50	0.56
4:K:2836:C:O2	4:K:2837:A:C8	2.59	0.56
4:K:3020:U:H2'	4:K:3021:A:C8	2.40	0.56
8:G:37:GLN:O	8:G:41:VAL:HG23	2.05	0.56
10:H:125:LEU:CB	10:H:129:THR:CG2	2.56	0.56
2:B:73:ILE:HG22	2:B:74:ASN:N	2.20	0.56
2:B:293:ILE:HD11	2:B:305:THR:CB	2.36	0.56
3:J:432:G:O2'	3:J:433:C:H5'	2.06	0.56
3:J:575:C:N4	3:J:576:G:C6	2.74	0.56
4:K:3030:G:H2'	4:K:3031:G:O4'	2.05	0.56
1:A:78:ASP:CG	7:E:9:ALA:HA	2.26	0.56
2:B:28:SER:OG	2:B:64:LYS:HD3	2.06	0.56
2:B:112:ASN:HA	14:B:702:ATP:O3G	2.05	0.56
2:B:573:ARG:HG2	2:B:574:ARG:H	1.69	0.56
3:J:571:G:H2'	3:J:571:G:N3	2.21	0.56
3:J:1205:C:C6	3:J:1206:U:O2	2.59	0.56
4:K:2834:G:C4	4:K:2835:U:H5	2.19	0.56
9:C:78:THR:HG23	9:C:92:ARG:HG2	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:313:ALA:HB1	1:A:372:LEU:HD13	1.87	0.56
2:B:38:CYS:SG	2:B:55:CYS:HA	2.45	0.56
2:B:243:TYR:CE2	2:B:272:LYS:HD3	2.41	0.56
2:B:375:PHE:CZ	2:B:381:LEU:HB2	2.41	0.56
3:J:152:U:O4'	9:C:13:GLN:CB	2.54	0.56
3:J:418:G:C2'	9:C:72:ARG:HH21	2.12	0.56
3:J:1198:G:C3'	3:J:1199:G:H5'	2.31	0.56
11:I:33:ASN:HD21	11:I:63:LYS:H	1.54	0.56
2:B:224:GLY:HA3	2:B:251:TYR:CD1	2.41	0.56
3:J:428:A:H2	3:J:440:U:O2	1.88	0.56
3:J:586:G:C4'	7:E:21:VAL:HG22	2.35	0.56
4:K:2296:A:C2	4:K:2919:A:H1'	2.41	0.56
2:B:180:ILE:CG2	2:B:219:ILE:HD12	2.36	0.56
2:B:349:SER:OG	2:B:377:ASP:HB3	2.05	0.56
2:B:589:GLN:HG3	9:C:107:ALA:HB2	1.87	0.56
10:H:43:GLY:HA2	10:H:46:ILE:CG2	2.36	0.56
1:A:149:GLU:O	1:A:174:LYS:HA	2.06	0.55
3:J:38:C:H3'	3:J:39:A:H5''	1.88	0.55
3:J:40:A:H2'	3:J:41:A:O4'	2.06	0.55
4:K:1257:C:N3	4:K:1258:U:C4	2.74	0.55
4:K:1279:C:H5''	8:G:1:MET:HE1	1.72	0.55
4:K:2295:A:H62	4:K:2296:A:N6	2.00	0.55
4:K:2836:C:O2	4:K:2836:C:C3'	2.54	0.55
4:K:2842:U:C6	4:K:2842:U:O5'	2.59	0.55
4:K:2918:G:N3	4:K:2919:A:C8	2.74	0.55
4:K:2932:U:O5'	11:I:41:GLY:HA2	2.04	0.55
8:G:15:LEU:HB3	8:G:64:ARG:HH21	1.71	0.55
10:H:109:ILE:O	10:H:113:ALA:N	2.39	0.55
2:B:375:PHE:CE1	2:B:522:PHE:CE2	2.95	0.55
2:B:518:LYS:HE3	6:F:116:ASN:HD22	1.72	0.55
2:B:556:SER:OG	2:B:559:THR:HG23	2.06	0.55
3:J:452:A:N1	3:J:454:U:C6	2.74	0.55
3:J:581:U:O2	3:J:581:U:H2'	2.05	0.55
3:J:1272:U:O4	3:J:1431:C:O2	2.23	0.55
5:L:67:G:H2'	5:L:68:C:H5''	1.88	0.55
10:H:85:LEU:HD22	10:H:86:LYS:N	2.08	0.55
10:H:109:ILE:HD11	10:H:129:THR:HG21	1.88	0.55
4:K:2931:C:C2	4:K:2932:U:C6	2.94	0.55
2:B:99:THR:O	2:B:106:LEU:HD12	2.06	0.55
2:B:108:LEU:HD23	2:B:294:ILE:HD13	1.85	0.55
2:B:195:MET:CE	2:B:202:VAL:HG12	2.37	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:551:G:N1	3:J:552:G:C5	2.75	0.55
3:J:587:C:H2'	3:J:588:U:O4'	2.07	0.55
4:K:3035:A:H1'	6:F:121:LYS:HB2	1.87	0.55
6:F:13:PRO:HD2	6:F:16:VAL:CG2	2.37	0.55
6:F:86:TYR:CE2	6:F:151:VAL:HG22	2.41	0.55
6:F:162:GLN:HG3	6:F:163:GLN:N	2.21	0.55
10:H:108:GLU:HA	10:H:112:ILE:CG2	2.36	0.55
11:I:86:ARG:HG3	11:I:92:PHE:CE2	2.42	0.55
2:B:179:ALA:C	2:B:180:ILE:HD12	2.26	0.55
2:B:205:TYR:CE2	2:B:209:LEU:HD12	2.42	0.55
3:J:454:U:O2'	3:J:455:C:O4'	2.20	0.55
3:J:568:G:O2'	3:J:569:C:H5'	2.06	0.55
3:J:1275:A:OP1	3:J:1275:A:H8	1.85	0.55
4:K:3021:A:C5	4:K:3023:U:O4	2.59	0.55
1:A:101:VAL:HG21	3:J:1272:U:C3'	2.36	0.55
2:B:49:PHE:HE1	2:B:89:ALA:CB	2.13	0.55
2:B:108:LEU:HD13	2:B:277:VAL:HG22	1.89	0.55
2:B:413:LEU:HD22	2:B:413:LEU:N	2.20	0.55
3:J:434:G:N2	3:J:437:A:H2	2.05	0.55
4:K:2295:A:C1'	11:I:37:ILE:HD13	2.37	0.55
10:H:123:ARG:CD	10:H:126:ALA:CB	2.84	0.55
2:B:195:MET:HG2	2:B:202:VAL:HG13	1.88	0.55
2:B:331:THR:HG23	2:B:332:GLU:N	2.22	0.55
3:J:557:G:H3'	3:J:558:U:H4'	1.87	0.55
3:J:1277:G:O6	3:J:1278:G:C2	2.59	0.55
4:K:1232:C:C4	4:K:1261:G:N3	2.75	0.55
2:B:156:PHE:HD1	2:B:159:MET:HE2	1.72	0.55
2:B:234:MET:C	2:B:237:VAL:HG22	2.27	0.55
4:K:2286:U:C4	4:K:2288:G:C1'	2.89	0.55
6:F:77:ASN:HB3	6:F:151:VAL:HG21	1.89	0.55
9:C:109:LEU:HD13	9:C:111:LEU:HD21	1.87	0.55
2:B:380:ILE:HG21	2:B:535:ALA:HA	1.87	0.55
2:B:430:VAL:HG12	2:B:461:ILE:HA	1.89	0.55
3:J:47:A:O5'	3:J:48:G:H5''	2.07	0.55
4:K:2841:G:H3'	4:K:2842:U:H5'	1.88	0.55
4:K:2847:A:N3	4:K:2848:G:C8	2.75	0.55
2:B:39:ILE:HD13	2:B:50:ILE:CG1	2.35	0.55
2:B:92:PHE:CD2	14:B:702:ATP:C4'	2.90	0.55
2:B:380:ILE:HG23	2:B:380:ILE:O	2.06	0.55
3:J:52:U:H6	3:J:52:U:O5'	1.89	0.55
1:A:290:HIS:HB2	1:A:298:ALA:HB2	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:136:ASP:N	2:B:137:PRO:HD2	2.20	0.54
2:B:435:PHE:CZ	8:G:145:ILE:HD11	2.40	0.54
3:J:551:G:C2	3:J:552:G:N7	2.75	0.54
3:J:1206:U:H5'	3:J:1207:C:OP2	2.07	0.54
10:H:21:GLU:CA	10:H:50:THR:HG22	2.37	0.54
3:J:1431:C:H5'	3:J:1432:U:H5'	1.90	0.54
4:K:1269:U:C4	4:K:1271:A:N7	2.75	0.54
6:F:29:GLY:HA3	6:F:82:VAL:HG13	1.89	0.54
10:H:16:ARG:HB2	10:H:60:VAL:HB	1.89	0.54
2:B:140:TRP:HE3	2:B:143:ILE:HD13	1.72	0.54
2:B:362:THR:OG1	2:B:367:VAL:HG22	2.08	0.54
3:J:39:A:C4	3:J:467:G:N2	2.75	0.54
3:J:47:A:H4'	3:J:48:G:H5'	1.89	0.54
3:J:448:C:H2'	3:J:449:C:H6	1.70	0.54
3:J:451:A:C2	3:J:454:U:O4	2.61	0.54
4:K:1276:U:N3	4:K:1277:C:C5	2.75	0.54
4:K:2295:A:N6	4:K:2296:A:H61	2.03	0.54
12:D:94:TYR:HD2	12:D:96:LEU:HD11	1.72	0.54
3:J:446:A:C2'	3:J:447:U:H5'	2.37	0.54
3:J:551:G:N3	3:J:552:G:C8	2.75	0.54
2:B:457:ILE:HG23	2:B:460:ILE:HG22	1.87	0.54
2:B:468:LEU:CG	2:B:469:SER:H	2.16	0.54
3:J:432:G:H2'	3:J:433:C:O4'	2.07	0.54
3:J:567:A:N6	3:J:568:G:C4	2.75	0.54
3:J:1209:C:H2'	3:J:1210:C:C6	2.42	0.54
4:K:2290:C:C2	4:K:2291:A:C8	2.95	0.54
2:B:195:MET:HE3	2:B:202:VAL:N	2.23	0.54
2:B:268:LEU:HD22	2:B:268:LEU:C	2.27	0.54
2:B:413:LEU:HD12	2:B:487:ASP:HB3	1.89	0.54
3:J:45:U:C3'	3:J:45:U:H6	2.20	0.54
3:J:1194:A:H2'	3:J:1195:C:H5'	1.89	0.54
4:K:1244:A:OP1	10:H:18:VAL:HA	2.08	0.54
4:K:2847:A:C2	4:K:2848:G:C1'	2.90	0.54
2:B:136:ASP:HB3	2:B:137:PRO:CD	2.36	0.54
3:J:44:U:OP2	3:J:45:U:O4	2.25	0.54
3:J:419:G:O3'	9:C:96:SER:CB	2.56	0.54
3:J:1429:G:C5	3:J:1430:U:C5	2.95	0.54
4:K:3027:A:C2'	4:K:3028:G:H8	2.07	0.54
4:K:3032:A:C2	6:F:170:LYS:HD3	2.41	0.54
10:H:108:GLU:HA	10:H:112:ILE:HG21	1.88	0.54
1:A:101:VAL:HG23	3:J:1272:U:O2'	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:362:THR:HG22	2:B:405:ASP:OD2	2.08	0.54
3:J:47:A:C8	3:J:425:A:C5	2.96	0.54
3:J:449:C:O2	3:J:449:C:H2'	2.08	0.54
3:J:1431:C:H3'	3:J:1432:U:H5'	1.90	0.54
4:K:2848:G:C6	4:K:2849:C:C5	2.96	0.54
1:A:170:TYR:CG	1:A:191:PHE:HB2	2.42	0.54
2:B:468:LEU:HD23	2:B:473:LEU:HB2	1.88	0.54
3:J:569:C:H1'	3:J:583:C:C5'	2.37	0.54
4:K:2298:U:O4'	4:K:2298:U:O2	2.23	0.54
6:F:156:GLN:NE2	6:F:160:ASP:OD1	2.38	0.54
2:B:182:GLY:HA3	2:B:184:VAL:O	2.07	0.53
3:J:42:G:O4'	3:J:437:A:C8	2.61	0.53
2:B:183:PRO:CD	2:B:184:VAL:H	2.13	0.53
2:B:293:ILE:CD1	2:B:305:THR:HB	2.38	0.53
3:J:1277:G:O2'	3:J:1278:G:H5'	2.08	0.53
12:D:36:SER:O	12:D:40:LEU:HG	2.08	0.53
1:A:49:SER:HB3	3:J:565:C:C4	2.44	0.53
2:B:11:VAL:HG22	2:B:90:ASN:HB3	1.89	0.53
3:J:52:U:O2'	3:J:53:G:H5'	2.09	0.53
10:H:123:ARG:O	10:H:124:THR:O	2.26	0.53
1:A:104:TYR:CE2	3:J:578:U:C6	2.96	0.53
2:B:183:PRO:HD3	2:B:186:LYS:O	2.08	0.53
2:B:334:LEU:CG	2:B:504:ILE:HD12	2.31	0.53
2:B:394:LEU:HD13	2:B:394:LEU:C	2.28	0.53
2:B:429:THR:HG22	2:B:432:GLN:HG3	1.91	0.53
3:J:445:A:C2	3:J:446:A:C5	2.97	0.53
3:J:1196:A:C4'	3:J:1197:C:C5'	2.86	0.53
3:J:1209:C:C2	3:J:1210:C:C5	2.96	0.53
4:K:1278:A:H1'	4:K:1279:C:H5'	1.90	0.53
6:F:96:HIS:CE1	6:F:97:PHE:CE1	2.96	0.53
10:H:22:VAL:HG13	10:H:28:LEU:HD12	1.90	0.53
10:H:120:SER:O	10:H:121:PHE:HB3	2.09	0.53
2:B:140:TRP:CE3	2:B:143:ILE:HD13	2.42	0.53
2:B:422:ILE:HD13	2:B:473:LEU:HG	1.90	0.53
3:J:454:U:O2'	3:J:455:C:P	2.66	0.53
4:K:1269:U:N3	4:K:1271:A:N6	2.56	0.53
4:K:2836:C:C5	4:K:2853:A:C2	2.97	0.53
8:G:42:ARG:HB2	8:G:46:ARG:CZ	2.39	0.53
10:H:85:LEU:HD23	10:H:86:LYS:C	2.24	0.53
12:D:49:LYS:HD3	12:D:49:LYS:N	2.24	0.53
1:A:49:SER:CB	3:J:565:C:N4	2.71	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:374:TYR:CB	4:K:1270:A:H1'	2.32	0.53
2:B:53:ILE:HG13	2:B:54:LEU:H	1.72	0.53
2:B:214:VAL:O	2:B:214:VAL:HG12	2.09	0.53
3:J:1197:C:O2	3:J:1197:C:C2'	2.56	0.53
4:K:1244:A:C6	4:K:1248:C:N3	2.76	0.53
4:K:2285:C:H5	4:K:2286:U:C4	2.25	0.53
10:H:82:ILE:C	10:H:84:ALA:N	2.62	0.53
2:B:28:SER:CB	2:B:64:LYS:HD3	2.39	0.53
2:B:393:THR:HA	2:B:396:LYS:HD2	1.90	0.53
2:B:430:VAL:HG11	2:B:460:ILE:CG2	2.27	0.53
2:B:437:LYS:HG3	2:B:480:LEU:HG	1.90	0.53
2:B:510:ILE:HG22	2:B:514:ILE:CD1	2.38	0.53
3:J:1192:C:C6	3:J:1193:A:C8	2.97	0.53
3:J:1204:A:H5'	3:J:1205:C:H5''	1.89	0.53
6:F:75:VAL:HA	6:F:78:MET:HE2	1.89	0.53
10:H:116:MET:O	10:H:116:MET:HG2	2.07	0.53
2:B:87:TYR:O	2:B:88:SER:HB2	2.09	0.53
4:K:1262:G:N7	4:K:1264:G:C4	2.76	0.53
4:K:2834:G:O2'	4:K:2835:U:C6	2.53	0.53
4:K:2847:A:C5'	4:K:2848:G:OP2	2.47	0.53
4:K:2929:C:H3'	4:K:2929:C:C6	2.44	0.53
11:I:86:ARG:HA	11:I:91:VAL:O	2.08	0.53
2:B:58:CYS:SG	15:B:703:SF4:S1	3.06	0.53
2:B:182:GLY:O	2:B:219:ILE:HD12	2.09	0.53
2:B:492:ASP:OD1	2:B:493:GLU:HG3	2.09	0.53
3:J:430:G:H2'	3:J:431:C:H6	1.74	0.53
3:J:1200:G:H5'	3:J:1201:G:H8	1.73	0.53
4:K:1259:A:H2'	4:K:1280:C:O2'	2.09	0.53
11:I:23:MET:HB2	11:I:99:ALA:HA	1.90	0.53
11:I:108:GLU:HG2	11:I:128:ARG:NH1	2.24	0.53
2:B:295:TYR:HE1	2:B:305:THR:HG1	1.57	0.53
2:B:394:LEU:O	2:B:398:LEU:HD23	2.09	0.53
2:B:565:LEU:CD1	2:B:600:TYR:HB3	2.39	0.53
3:J:553:G:C6	3:J:554:C:C4	2.96	0.53
4:K:2925:C:C6	4:K:2926:A:C8	2.97	0.53
2:B:291:VAL:HG12	2:B:309:SER:O	2.09	0.52
3:J:418:G:N2	3:J:419:G:C4	2.78	0.52
5:L:17:G:H3'	5:L:18:G:H5''	1.91	0.52
10:H:16:ARG:HB3	10:H:57:LYS:HD2	1.91	0.52
2:B:103:GLY:HA2	2:B:271:THR:HA	1.91	0.52
2:B:422:ILE:HG23	2:B:422:ILE:O	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:508:LYS:HE3	2:B:512:ARG:HD2	1.91	0.52
4:K:1239:C:H2'	4:K:1240:A:H8	1.74	0.52
4:K:2294:U:C6	4:K:2297:U:C5	2.97	0.52
9:C:139:ASN:HA	9:C:142:ARG:HB2	1.91	0.52
3:J:1198:G:H5''	3:J:1199:G:H8	1.74	0.52
4:K:2299:A:H8	4:K:2299:A:C5'	2.20	0.52
8:G:42:ARG:CB	8:G:46:ARG:CZ	2.88	0.52
10:H:10:VAL:HG12	10:H:11:LYS:H	1.73	0.52
3:J:427:C:C6	3:J:427:C:H5''	2.41	0.52
3:J:1201:G:C5	3:J:1202:A:O4'	2.63	0.52
3:J:1203:A:C4'	3:J:1204:A:OP2	2.58	0.52
4:K:1235:U:O4	10:H:135:THR:OG1	2.16	0.52
9:C:67:VAL:O	9:C:68:LEU:HB2	2.10	0.52
2:B:167:ILE:HG21	2:B:243:TYR:CD1	2.45	0.52
2:B:180:ILE:CG2	2:B:183:PRO:HA	2.37	0.52
2:B:242:VAL:HG13	2:B:242:VAL:O	2.08	0.52
2:B:435:PHE:HE1	2:B:439:ARG:CD	2.13	0.52
2:B:493:GLU:N	2:B:494:PRO:HD3	2.24	0.52
3:J:426:G:C6	3:J:427:C:C4	2.98	0.52
3:J:1271:G:H2'	3:J:1272:U:H6	1.66	0.52
3:J:1435:G:H4'	3:J:1436:A:H5'	1.91	0.52
4:K:1265:U:O4	4:K:1277:C:C5	2.62	0.52
4:K:2932:U:C5'	11:I:41:GLY:H	2.22	0.52
10:H:17:ALA:H	10:H:57:LYS:HD3	1.73	0.52
2:B:143:ILE:HG13	2:B:144:ILE:HD12	1.92	0.52
2:B:195:MET:SD	2:B:237:VAL:HG12	2.50	0.52
2:B:290:PHE:HZ	2:B:292:CYS:HG	1.55	0.52
2:B:352:ARG:HG2	2:B:353:ALA:N	2.24	0.52
2:B:395:ILE:HG23	2:B:396:LYS:N	2.24	0.52
2:B:437:LYS:HG3	2:B:480:LEU:CG	2.40	0.52
3:J:156:A:H5'	3:J:416:A:C8	2.45	0.52
4:K:2922:G:H2'	4:K:2923:U:O4'	2.09	0.52
10:H:109:ILE:CD1	10:H:129:THR:HG21	2.39	0.52
2:B:67:PHE:O	2:B:68:ASP:HB2	2.10	0.52
2:B:101:ARG:HB2	2:B:104:GLN:CG	2.40	0.52
2:B:148:ARG:HH12	3:J:440:U:P	2.31	0.52
2:B:381:LEU:HD13	2:B:554:PRO:HB3	1.92	0.52
2:B:392:THR:O	2:B:396:LYS:HG3	2.10	0.52
4:K:1279:C:P	8:G:1:MET:HE3	2.50	0.52
4:K:3038:U:C2	4:K:3039:C:C6	2.97	0.52
10:H:112:ILE:O	10:H:132:ILE:HD12	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:114:ILE:HB	2:B:294:ILE:HG22	1.90	0.52
3:J:452:A:N1	3:J:454:U:OP2	2.43	0.52
2:B:47:ILE:HG13	2:B:48:ALA:N	2.25	0.52
2:B:100:PRO:HD2	2:B:152:LEU:HD23	1.92	0.52
3:J:39:A:N7	3:J:467:G:N1	2.57	0.52
3:J:563:U:C5'	3:J:564:G:OP2	2.58	0.52
3:J:1176:G:C6	3:J:1177:C:C4	2.98	0.52
3:J:1268:G:O2'	3:J:1269:U:H3'	2.09	0.52
4:K:1236:G:H1	10:H:17:ALA:HA	1.73	0.52
4:K:2290:C:C2'	4:K:2291:A:O5'	2.58	0.52
4:K:3019:U:C5	4:K:3020:U:C4	2.97	0.52
9:C:57:ASP:OD1	9:C:72:ARG:NH1	2.42	0.52
10:H:111:GLU:O	10:H:111:GLU:HG2	2.09	0.52
2:B:491:ILE:HG22	2:B:523:ILE:HA	1.91	0.52
3:J:1210:C:O2	3:J:1210:C:H2'	2.08	0.52
3:J:1429:G:C6	3:J:1430:U:C4	2.98	0.52
4:K:1229:G:C4	4:K:1230:G:C8	2.98	0.52
10:H:46:ILE:C	10:H:48:LYS:H	2.12	0.52
2:B:472:GLU:O	2:B:476:VAL:HG23	2.09	0.51
3:J:452:A:H2	3:J:454:U:O5'	1.94	0.51
4:K:1236:G:C6	10:H:57:LYS:HE2	2.45	0.51
4:K:1273:A:H3'	4:K:1274:A:H8	1.75	0.51
10:H:88:PRO:HD2	10:H:89:PRO:CD	2.40	0.51
10:H:109:ILE:HG23	10:H:110:ILE:N	2.20	0.51
1:A:152:ALA:H	1:A:172:MET:CE	2.23	0.51
1:A:385:GLU:HA	2:B:27:ARG:HH12	1.72	0.51
2:B:140:TRP:CZ3	2:B:159:MET:HE1	2.45	0.51
2:B:205:TYR:CE2	2:B:209:LEU:CD1	2.94	0.51
2:B:510:ILE:CG2	2:B:514:ILE:HD11	2.40	0.51
3:J:1204:A:N3	3:J:1204:A:C2'	2.73	0.51
4:K:2841:G:C4	4:K:2844:C:N4	2.79	0.51
10:H:23:GLY:HA3	10:H:46:ILE:HD11	1.93	0.51
10:H:87:GLU:HG2	10:H:89:PRO:CD	2.40	0.51
10:H:125:LEU:C	10:H:125:LEU:CD2	2.78	0.51
11:I:33:ASN:HD21	11:I:63:LYS:N	2.08	0.51
11:I:87:ARG:HH22	11:I:137:VAL:HG22	1.74	0.51
1:A:385:GLU:CD	2:B:27:ARG:NH1	2.44	0.51
2:B:60:ILE:O	2:B:63:LYS:HG2	2.10	0.51
2:B:570:VAL:HG23	2:B:570:VAL:O	2.09	0.51
3:J:555:A:H2'	3:J:555:A:P	2.50	0.51
4:K:1236:G:H22	10:H:18:VAL:H	1.59	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:K:1260:A:H2'	4:K:1261:G:O4'	2.10	0.51
4:K:2288:G:C6	4:K:2289:U:O4	2.62	0.51
4:K:2925:C:C5	4:K:2926:A:C5	2.98	0.51
10:H:104:ILE:CG1	10:H:105:GLN:H	2.22	0.51
3:J:41:A:H2'	3:J:438:A:H62	1.75	0.51
3:J:445:A:H61	3:J:461:G:N2	2.09	0.51
3:J:555:A:OP2	3:J:555:A:C3'	2.55	0.51
3:J:1205:C:C5	3:J:1206:U:O2	2.63	0.51
4:K:1230:G:C5	4:K:1231:A:N7	2.78	0.51
4:K:3028:G:N2	4:K:3029:A:C2	2.78	0.51
10:H:124:THR:HG23	10:H:125:LEU:N	2.17	0.51
2:B:106:LEU:HD23	2:B:106:LEU:N	2.24	0.51
2:B:205:TYR:HE2	2:B:209:LEU:HD12	1.73	0.51
2:B:434:PHE:CZ	2:B:476:VAL:CG1	2.94	0.51
3:J:561:G:C6	3:J:585:A:N1	2.78	0.51
10:H:42:VAL:HG21	10:H:69:ALA:HB3	1.92	0.51
2:B:144:ILE:CD1	2:B:160:LEU:HD11	2.40	0.51
2:B:518:LYS:NZ	6:F:115:ARG:CB	2.74	0.51
2:B:565:LEU:HD13	2:B:600:TYR:HB3	1.93	0.51
3:J:564:G:C6	3:J:578:U:O4'	2.64	0.51
3:J:1179:G:H3'	3:J:1180:C:H6	1.75	0.51
4:K:2834:G:C2	4:K:2835:U:C5	2.99	0.51
5:L:30:G:H1	5:L:40:U:H3	1.58	0.51
10:H:109:ILE:N	10:H:112:ILE:CG2	2.74	0.51
2:B:144:ILE:HD11	2:B:160:LEU:HD11	1.92	0.51
3:J:446:A:H2'	3:J:447:U:H6	1.76	0.51
4:K:2297:U:N3	4:K:2299:A:C6	2.78	0.51
4:K:2850:G:OP1	4:K:2850:G:C4'	2.49	0.51
4:K:3020:U:C2'	4:K:3021:A:OP1	2.58	0.51
4:K:3032:A:H1'	6:F:170:LYS:HE2	1.93	0.51
5:L:20:C:H3'	5:L:21:A:H5'	1.93	0.51
10:H:57:LYS:C	10:H:58:VAL:HG22	2.31	0.51
10:H:88:PRO:CD	10:H:89:PRO:CD	2.89	0.51
10:H:109:ILE:HG13	10:H:129:THR:CA	2.39	0.51
2:B:144:ILE:CG2	2:B:153:GLN:HG3	2.31	0.51
2:B:183:PRO:HB3	2:B:190:LEU:HB2	1.92	0.51
3:J:44:U:OP1	3:J:47:A:OP2	2.29	0.51
3:J:152:U:C4'	9:C:13:GLN:CG	2.79	0.51
3:J:439:U:C5	3:J:465:G:N2	2.79	0.51
3:J:463:U:C2	3:J:464:A:C8	2.99	0.51
3:J:1274:C:OP2	3:J:1427:A:H3'	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:1431:C:C3'	3:J:1432:U:C5'	2.89	0.51
4:K:2837:A:C8	4:K:2845:A:N1	2.79	0.51
1:A:4:ILE:H	1:A:4:ILE:HD12	1.76	0.51
2:B:100:PRO:HA	2:B:273:TYR:CE1	2.46	0.51
2:B:455:LEU:O	2:B:456:ARG:HB2	2.11	0.51
2:B:574:ARG:CD	2:B:602:PHE:C	2.78	0.51
3:J:418:G:O2'	9:C:59:GLN:NE2	2.43	0.51
4:K:2295:A:C4	11:I:37:ILE:HG21	2.45	0.51
6:F:12:VAL:HB	6:F:51:GLN:HA	1.92	0.51
1:A:65:LEU:HD12	1:A:105:LEU:HB3	1.93	0.51
2:B:303:VAL:HG12	2:B:304:VAL:N	2.25	0.51
3:J:40:A:C8	3:J:41:A:N7	2.79	0.51
3:J:41:A:C2	3:J:438:A:C5	2.99	0.51
5:L:27:G:H2'	5:L:28:G:H8	1.76	0.51
8:G:43:LYS:CG	10:H:121:PHE:CE1	2.81	0.51
2:B:66:PRO:CD	15:B:704:SF4:S4	2.84	0.50
2:B:118:THR:O	2:B:122:ILE:HD13	2.11	0.50
3:J:549:G:C2	3:J:550:A:C8	2.99	0.50
3:J:586:G:C5	3:J:587:C:C4	2.99	0.50
4:K:1232:C:C2	4:K:1261:G:N1	2.79	0.50
8:G:70:LEU:CB	8:G:71:PRO:HD3	2.41	0.50
1:A:101:VAL:HG21	3:J:1272:U:H4'	1.93	0.50
1:A:101:VAL:CG2	3:J:1272:U:O3'	2.52	0.50
2:B:95:HIS:HE1	2:B:301:TYR:CB	2.21	0.50
2:B:295:TYR:HE1	2:B:305:THR:OG1	1.95	0.50
2:B:334:LEU:HD21	2:B:336:PHE:CZ	2.46	0.50
2:B:538:VAL:HG12	2:B:539:ILE:N	2.26	0.50
3:J:1192:C:H3'	3:J:1193:A:H2'	1.93	0.50
4:K:1239:C:H4'	10:H:97:ASN:O	2.12	0.50
4:K:1270:A:H3'	4:K:1271:A:H8	1.75	0.50
4:K:2294:U:H3'	4:K:2295:A:H5''	1.93	0.50
4:K:3037:U:C2	4:K:3038:U:C5	2.99	0.50
2:B:50:ILE:HG23	2:B:50:ILE:O	2.11	0.50
2:B:140:TRP:CZ3	2:B:159:MET:CE	2.95	0.50
2:B:359:LEU:HD23	2:B:370:VAL:HG11	1.94	0.50
3:J:449:C:H2'	3:J:450:U:C6	2.46	0.50
3:J:586:G:H4'	7:E:21:VAL:HG22	1.92	0.50
4:K:1269:U:N3	4:K:1272:C:N4	2.58	0.50
4:K:2289:U:C2'	4:K:2290:C:C5'	2.89	0.50
4:K:2834:G:C2	4:K:2835:U:C6	3.00	0.50
10:H:109:ILE:HD12	10:H:129:THR:CG2	2.39	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:183:PRO:HA	2:B:219:ILE:HD12	1.93	0.50
2:B:480:LEU:HD23	2:B:480:LEU:C	2.32	0.50
4:K:2837:A:H2'	4:K:2845:A:C2	2.45	0.50
4:K:2931:C:C2'	4:K:2932:U:H5'	2.42	0.50
10:H:23:GLY:H	10:H:46:ILE:HG12	1.77	0.50
10:H:46:ILE:HA	10:H:49:ALA:H	1.77	0.50
10:H:66:ASN:C	10:H:66:ASN:HD22	2.15	0.50
10:H:128:VAL:O	10:H:131:GLU:HB3	2.11	0.50
1:A:280:GLU:HA	1:A:350:LEU:HD23	1.94	0.50
2:B:9:ALA:HB2	2:B:72:ILE:HD13	1.94	0.50
2:B:41:VAL:HG13	2:B:43:PRO:HD3	1.92	0.50
2:B:133:ARG:CG	2:B:134:PHE:H	2.09	0.50
3:J:38:C:H2'	3:J:39:A:H5''	1.92	0.50
3:J:152:U:C5'	9:C:13:GLN:HG3	2.40	0.50
3:J:572:C:N4	3:J:573:C:N4	2.58	0.50
3:J:1199:G:C4	3:J:1200:G:O4'	2.65	0.50
4:K:1254:C:C2	4:K:1263:A:N1	2.79	0.50
4:K:1279:C:H4'	8:G:1:MET:SD	2.52	0.50
4:K:2285:C:H5	4:K:2286:U:N1	2.09	0.50
4:K:2932:U:P	11:I:41:GLY:N	2.80	0.50
11:I:15:LEU:HD23	11:I:53:SER:HB3	1.93	0.50
12:D:31:ASN:O	12:D:32:ARG:HB2	2.11	0.50
2:B:589:GLN:NE2	9:C:58:LYS:CG	2.54	0.50
3:J:428:A:C2	3:J:440:U:O2	2.64	0.50
4:K:1229:G:C2	4:K:1230:G:C4	2.99	0.50
4:K:2841:G:C5	4:K:2844:C:N4	2.80	0.50
4:K:3037:U:HO2'	4:K:3038:U:H5'	1.75	0.50
2:B:30:PRO:HD2	15:B:703:SF4:S2	2.52	0.50
2:B:457:ILE:CG2	2:B:460:ILE:HG22	2.42	0.50
3:J:439:U:C4	3:J:465:G:C2	3.00	0.50
3:J:1188:G:H2'	3:J:1189:A:C8	2.42	0.50
9:C:28:PHE:CE1	9:C:104:PRO:HG3	2.46	0.50
2:B:348:ASP:O	2:B:349:SER:HB2	2.11	0.50
2:B:418:LYS:HD3	2:B:478:ILE:HA	1.94	0.50
2:B:488:ILE:HG13	2:B:520:THR:CG2	2.41	0.50
3:J:553:G:N2	3:J:571:G:N2	2.60	0.50
4:K:2293:C:OP2	11:I:71:LYS:HE3	2.12	0.50
4:K:2836:C:H5	4:K:2853:A:C2	2.28	0.50
9:C:141:ILE:HG21	9:C:153:VAL:HG13	1.94	0.50
10:H:88:PRO:CD	10:H:89:PRO:N	2.73	0.50
10:H:138:SER:C	10:H:140:GLY:H	2.14	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:I:120:LYS:HB3	11:I:137:VAL:HG21	1.94	0.50
2:B:30:PRO:HG2	2:B:56:ILE:HD13	1.93	0.50
2:B:79:LEU:HD23	2:B:79:LEU:C	2.32	0.50
2:B:87:TYR:CD2	14:B:702:ATP:C5	2.99	0.50
3:J:439:U:C1'	3:J:440:U:OP1	2.57	0.50
9:C:58:LYS:C	9:C:60:GLY:H	2.15	0.50
9:C:70:PRO:C	9:C:98:ARG:HH11	2.14	0.50
2:B:21:CYS:SG	2:B:66:PRO:HG2	2.52	0.49
2:B:143:ILE:CD1	2:B:156:PHE:CD1	2.94	0.49
2:B:263:ILE:HG23	2:B:264:ILE:N	2.27	0.49
2:B:382:VAL:HG12	2:B:383:MET:N	2.26	0.49
2:B:439:ARG:NH1	2:B:439:ARG:HB3	2.26	0.49
3:J:48:G:C6	3:J:432:G:C2	2.99	0.49
3:J:583:C:C2	3:J:584:C:C6	2.99	0.49
3:J:1267:G:O2'	3:J:1268:G:H5'	2.12	0.49
4:K:1236:G:C2	10:H:57:LYS:CB	2.94	0.49
4:K:2833:A:C2	4:K:2834:G:C8	3.00	0.49
8:G:43:LYS:HG2	10:H:121:PHE:HD1	0.79	0.49
8:G:105:VAL:O	8:G:106:ALA:O	2.30	0.49
2:B:194:ARG:HG3	2:B:237:VAL:HG23	1.92	0.49
3:J:454:U:O2'	3:J:455:C:O5'	2.30	0.49
4:K:1236:G:H3'	4:K:1237:G:C5'	2.42	0.49
4:K:1258:U:O2	4:K:1258:U:C2'	2.58	0.49
8:G:91:GLU:HB2	8:G:96:ILE:HD11	1.93	0.49
1:A:53:GLU:HG3	1:A:54:ALA:H	1.76	0.49
2:B:129:PRO:HG2	2:B:143:ILE:HG21	1.94	0.49
2:B:571:THR:CG2	2:B:584:ASN:CG	2.69	0.49
3:J:418:G:C2'	9:C:59:GLN:HE21	2.25	0.49
3:J:568:G:C2	3:J:569:C:C6	3.00	0.49
4:K:1234:G:C5'	4:K:1235:U:OP2	2.60	0.49
4:K:1245:A:C5	4:K:1272:C:OP1	2.65	0.49
1:A:300:TYR:OH	2:B:64:LYS:CE	2.60	0.49
2:B:239:GLU:HG3	2:B:239:GLU:O	2.12	0.49
2:B:438:ILE:HG21	2:B:483:GLY:O	2.12	0.49
2:B:523:ILE:HG23	2:B:523:ILE:O	2.13	0.49
4:K:1257:C:O2	4:K:1257:C:C2'	2.48	0.49
4:K:1257:C:C4	4:K:1258:U:C4	3.01	0.49
10:H:87:GLU:CG	10:H:89:PRO:HD3	2.41	0.49
12:D:15:ASN:OD1	12:D:17:LEU:HD12	2.12	0.49
3:J:160:C:H2'	3:J:161:U:O4'	2.13	0.49
3:J:1202:A:OP1	3:J:1203:A:OP2	2.31	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:G:70:LEU:HB2	8:G:71:PRO:HD3	1.94	0.49
2:B:30:PRO:HG2	2:B:56:ILE:HD11	1.94	0.49
2:B:208:ILE:HG23	2:B:209:LEU:N	2.27	0.49
2:B:568:LEU:CD1	2:B:570:VAL:HG22	2.42	0.49
3:J:1186:U:O2'	3:J:1187:U:H5'	2.12	0.49
3:J:1431:C:C5'	3:J:1432:U:H5'	2.42	0.49
11:I:74:MET:HE3	11:I:102:ILE:HB	1.93	0.49
2:B:106:LEU:CB	2:B:290:PHE:CD2	2.94	0.49
2:B:254:VAL:HG22	2:B:526:HIS:O	2.13	0.49
3:J:1204:A:C5	3:J:1205:C:N3	2.80	0.49
4:K:1237:G:N1	4:K:1252:A:C2	2.80	0.49
4:K:1245:A:C4	4:K:1272:C:OP1	2.66	0.49
9:C:67:VAL:HG23	9:C:68:LEU:O	2.13	0.49
10:H:45:ASP:HA	10:H:48:LYS:HB3	1.95	0.49
10:H:103:ASN:H	10:H:141:CYS:HB3	1.77	0.49
2:B:362:THR:HG23	2:B:362:THR:O	2.11	0.49
2:B:363:GLN:CG	2:B:365:ASP:H	2.21	0.49
3:J:1206:U:C6	3:J:1207:C:C6	3.01	0.49
3:J:1428:G:O5'	3:J:1429:G:OP2	2.31	0.49
4:K:1271:A:N3	4:K:1271:A:C2'	2.74	0.49
4:K:1275:C:N4	4:K:1276:U:C4	2.81	0.49
2:B:375:PHE:CD1	2:B:522:PHE:CZ	3.01	0.49
2:B:455:LEU:HD12	2:B:472:GLU:HG2	1.94	0.49
2:B:558:LEU:H	2:B:558:LEU:CD1	2.26	0.49
3:J:44:U:C3'	3:J:45:U:H5'	2.38	0.49
4:K:1257:C:C4	4:K:1261:G:N2	2.81	0.49
4:K:2295:A:O5'	11:I:61:THR:CG2	2.47	0.49
10:H:38:SER:H	10:H:68:GLN:CA	2.25	0.49
11:I:89:ASP:OD1	11:I:91:VAL:HG13	2.12	0.49
2:B:290:PHE:HZ	2:B:292:CYS:SG	2.34	0.49
2:B:418:LYS:HE2	2:B:478:ILE:HG12	1.94	0.49
3:J:1275:A:C8	3:J:1438:G:N2	2.81	0.49
3:J:1437:U:H2'	3:J:1438:G:H5'	1.95	0.49
4:K:1246:G:C5	4:K:1264:G:C2	3.01	0.49
4:K:1274:A:C2	4:K:1275:C:C6	3.01	0.49
4:K:2297:U:OP2	4:K:2297:U:H6	1.96	0.49
11:I:46:LEU:HG	11:I:47:ASN:OD1	2.13	0.49
2:B:137:PRO:O	2:B:139:GLU:HG3	2.13	0.48
2:B:194:ARG:HG2	2:B:234:MET:CG	2.43	0.48
2:B:194:ARG:CD	2:B:234:MET:HE2	2.43	0.48
2:B:334:LEU:CD2	2:B:336:PHE:CZ	2.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:1199:G:C6	3:J:1200:G:C1'	2.96	0.48
4:K:1236:G:C6	4:K:1245:A:C2	3.01	0.48
9:C:126:ASP:OD2	9:C:127:THR:HG22	2.13	0.48
10:H:123:ARG:CD	10:H:126:ALA:HB3	2.42	0.48
2:B:131:LEU:HD12	2:B:142:GLU:OE1	2.13	0.48
2:B:140:TRP:HE3	2:B:143:ILE:HD11	1.78	0.48
2:B:140:TRP:CE3	2:B:143:ILE:CD1	2.95	0.48
2:B:334:LEU:HG	2:B:504:ILE:HD11	1.89	0.48
2:B:503:ARG:O	2:B:506:CYS:HB2	2.13	0.48
3:J:551:G:C2	3:J:552:G:C8	3.01	0.48
3:J:1176:G:C6	3:J:1177:C:N4	2.81	0.48
4:K:1275:C:H2'	4:K:1276:U:O4'	2.13	0.48
4:K:3019:U:O2	4:K:3019:U:H2'	2.11	0.48
7:E:53:LYS:HG3	7:E:54:ARG:H	1.79	0.48
3:J:581:U:O2	3:J:581:U:C2'	2.61	0.48
3:J:1432:U:OP2	3:J:1432:U:H4'	2.12	0.48
4:K:2929:C:C6	4:K:2929:C:C3'	2.97	0.48
12:D:59:GLY:O	12:D:60:PHE:HB2	2.14	0.48
1:A:43:PHE:CZ	1:A:107:PHE:HB2	2.48	0.48
1:A:47:PHE:CE1	3:J:577:G:C8	3.02	0.48
2:B:484:ILE:HG13	2:B:485:PRO:HD2	1.94	0.48
3:J:454:U:O4	3:J:456:A:C4	2.67	0.48
4:K:2841:G:C5	4:K:2844:C:C4	3.01	0.48
6:F:186:PHE:HD1	6:F:191:LEU:OXT	1.97	0.48
10:H:112:ILE:HG12	10:H:132:ILE:CD1	2.43	0.48
1:A:247:PHE:CE1	1:A:273:GLN:O	2.65	0.48
1:A:248:ILE:N	1:A:248:ILE:HD12	2.28	0.48
1:A:291:LEU:HB2	1:A:298:ALA:HB3	1.96	0.48
2:B:92:PHE:CE2	14:B:702:ATP:H4'	2.49	0.48
2:B:269:ALA:HB3	2:B:270:PRO:CD	2.40	0.48
2:B:475:ARG:NH2	2:B:502:GLN:HG2	2.28	0.48
3:J:549:G:N1	3:J:550:A:C5	2.81	0.48
3:J:1204:A:C3'	3:J:1205:C:C5'	2.77	0.48
4:K:2929:C:H3'	4:K:2929:C:H6	1.79	0.48
9:C:45:PHE:HA	9:C:48:TYR:HD2	1.79	0.48
10:H:43:GLY:HA2	10:H:46:ILE:HG22	1.95	0.48
2:B:268:LEU:HD13	2:B:269:ALA:H	1.72	0.48
2:B:375:PHE:CE1	2:B:381:LEU:HB2	2.48	0.48
2:B:438:ILE:HG23	2:B:438:ILE:O	2.13	0.48
3:J:1186:U:C2'	3:J:1187:U:H5'	2.44	0.48
3:J:1196:A:C4'	3:J:1197:C:O5'	2.62	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:K:1232:C:C4	4:K:1261:G:C4	3.02	0.48
4:K:3032:A:H4'	4:K:3032:A:OP1	2.12	0.48
11:I:80:ARG:NE	11:I:97:ASP:OD2	2.39	0.48
2:B:56:ILE:HD12	2:B:58:CYS:HB3	1.95	0.48
2:B:100:PRO:HA	2:B:106:LEU:HD12	1.94	0.48
2:B:269:ALA:CB	2:B:270:PRO:HD3	2.43	0.48
2:B:523:ILE:HD13	2:B:534:LEU:CD1	2.43	0.48
4:K:2838:A:C2	4:K:2851:A:N9	2.82	0.48
10:H:100:HIS:O	10:H:138:SER:O	2.31	0.48
1:A:4:ILE:HD12	1:A:4:ILE:N	2.28	0.48
2:B:238:GLN:HG3	2:B:239:GLU:N	2.29	0.48
2:B:394:LEU:HD13	2:B:394:LEU:O	2.14	0.48
3:J:1438:G:H5'	3:J:1438:G:H8	1.78	0.48
4:K:2294:U:C2	4:K:2296:A:OP2	2.67	0.48
4:K:2924:U:C4	4:K:2925:C:O2	2.66	0.48
8:G:33:VAL:CG2	8:G:184:GLY:O	2.62	0.48
8:G:43:LYS:CA	10:H:121:PHE:CE1	2.82	0.48
10:H:131:GLU:O	10:H:132:ILE:C	2.52	0.48
2:B:56:ILE:HD11	2:B:58:CYS:CB	2.44	0.48
2:B:56:ILE:HD11	2:B:58:CYS:HB3	1.93	0.48
2:B:106:LEU:HD22	2:B:290:PHE:HB3	1.96	0.48
2:B:205:TYR:O	2:B:208:ILE:HG22	2.14	0.48
2:B:274:VAL:HG12	2:B:275:ILE:N	2.29	0.48
2:B:444:ASN:OD1	2:B:447:PHE:HD2	1.97	0.48
2:B:574:ARG:NH1	2:B:602:PHE:H	2.11	0.48
3:J:551:G:N1	3:J:552:G:C6	2.82	0.48
4:K:1245:A:C2	4:K:1272:C:O4'	2.67	0.48
8:G:46:ARG:CD	10:H:121:PHE:CE1	2.78	0.48
10:H:21:GLU:N	10:H:50:THR:HG21	2.29	0.48
11:I:79:VAL:HG23	11:I:80:ARG:HG3	1.96	0.48
1:A:144:ALA:CB	1:A:259:ILE:HD12	2.44	0.48
3:J:551:G:O4'	3:J:581:U:O2	2.32	0.48
3:J:1192:C:C4	3:J:1193:A:C5	3.02	0.48
3:J:1439:C:O5'	3:J:1439:C:H6	1.97	0.48
4:K:1246:G:N3	4:K:1264:G:O2'	2.39	0.48
4:K:1254:C:C4	4:K:1255:C:C5	3.01	0.48
4:K:2833:A:C2	4:K:2834:G:O4'	2.67	0.48
8:G:33:VAL:HG21	8:G:184:GLY:O	2.14	0.48
10:H:23:GLY:CA	10:H:46:ILE:CD1	2.89	0.48
10:H:88:PRO:CD	10:H:89:PRO:HD3	2.44	0.48
2:B:316:ILE:HG23	2:B:317:PHE:N	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:K:3017:A:O2'	4:K:3018:C:H5'	2.14	0.47
8:G:37:GLN:HB3	8:G:105:VAL:HB	1.95	0.47
9:C:215:ARG:HD3	9:C:215:ARG:HA	1.57	0.47
11:I:48:ARG:HG3	11:I:48:ARG:HH11	1.79	0.47
2:B:42:THR:HG21	2:B:47:ILE:CG2	2.42	0.47
2:B:205:TYR:HE1	2:B:263:ILE:CG1	2.26	0.47
3:J:418:G:N2	3:J:419:G:C5	2.82	0.47
3:J:587:C:H2'	3:J:588:U:C6	2.49	0.47
4:K:1232:C:C5	4:K:1261:G:C4	3.02	0.47
4:K:1266:G:N1	4:K:1276:U:C2	2.81	0.47
2:B:92:PHE:CD2	14:B:702:ATP:H4'	2.50	0.47
2:B:167:ILE:HG23	2:B:167:ILE:O	2.13	0.47
2:B:437:LYS:HE2	2:B:480:LEU:CD2	2.29	0.47
2:B:455:LEU:HD11	2:B:475:ARG:HH11	1.78	0.47
3:J:446:A:N6	3:J:461:G:H21	2.12	0.47
4:K:1233:G:C2	4:K:1234:G:C8	3.02	0.47
4:K:1246:G:C6	4:K:1264:G:C2	3.01	0.47
4:K:1260:A:H1'	4:K:1280:C:C1'	2.42	0.47
4:K:2296:A:N3	4:K:2919:A:H1'	2.30	0.47
9:C:63:MET:HG2	9:C:99:GLY:O	2.14	0.47
10:H:23:GLY:C	10:H:25:SER:H	2.18	0.47
10:H:109:ILE:HB	10:H:129:THR:OG1	2.13	0.47
2:B:295:TYR:N	2:B:295:TYR:CD1	2.83	0.47
2:B:446:GLN:CD	6:F:96:HIS:CD2	2.88	0.47
2:B:524:VAL:O	2:B:525:GLU:HG2	2.14	0.47
3:J:436:A:H5''	3:J:437:A:P	2.55	0.47
3:J:550:A:O4'	3:J:556:A:C2	2.68	0.47
3:J:1196:A:N3	3:J:1196:A:O4'	2.48	0.47
6:F:170:LYS:HB3	6:F:175:PHE:CD2	2.50	0.47
1:A:235:HIS:CE1	1:A:237:LYS:HD3	2.49	0.47
2:B:108:LEU:HD21	2:B:294:ILE:HD13	1.96	0.47
2:B:116:LYS:H	2:B:116:LYS:CD	2.26	0.47
2:B:290:PHE:CE1	2:B:307:PRO:CA	2.97	0.47
3:J:563:U:C4	3:J:564:G:C6	3.02	0.47
4:K:1232:C:N3	4:K:1261:G:N1	2.63	0.47
4:K:2287:C:O2	4:K:2298:U:C4'	2.62	0.47
4:K:2294:U:N1	4:K:2297:U:H5	2.13	0.47
4:K:2296:A:C2	4:K:2919:A:C1'	2.96	0.47
4:K:3037:U:O2'	4:K:3038:U:C5'	2.50	0.47
8:G:72:ASP:O	8:G:74:GLU:N	2.45	0.47
2:B:179:ALA:HB3	2:B:180:ILE:CD1	2.43	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:290:PHE:CD1	2:B:291:VAL:N	2.82	0.47
2:B:381:LEU:HD11	2:B:538:VAL:C	2.35	0.47
3:J:450:U:O2	3:J:450:U:C2'	2.62	0.47
3:J:450:U:N3	3:J:451:A:N6	2.63	0.47
3:J:551:G:N3	3:J:551:G:H2'	2.30	0.47
4:K:1240:A:O3'	10:H:94:LYS:HA	2.15	0.47
4:K:1265:U:C4	4:K:1277:C:C2	3.02	0.47
4:K:2288:G:C2	4:K:2289:U:C4	3.03	0.47
8:G:38:MET:CE	8:G:185:LEU:HG	2.44	0.47
8:G:124:VAL:CG1	8:G:125:ASN:H	2.28	0.47
10:H:108:GLU:CA	10:H:112:ILE:CG2	2.92	0.47
10:H:133:LEU:C	10:H:133:LEU:CD2	2.83	0.47
2:B:39:ILE:CD1	2:B:50:ILE:HG13	2.40	0.47
2:B:171:GLN:HB3	2:B:246:ASP:OD2	2.15	0.47
2:B:206:ILE:HG23	2:B:211:LEU:HB2	1.97	0.47
2:B:293:ILE:C	2:B:294:ILE:HD12	2.35	0.47
2:B:334:LEU:HD21	2:B:336:PHE:CE1	2.50	0.47
2:B:412:LYS:HE2	2:B:412:LYS:CA	2.39	0.47
2:B:589:GLN:HG3	9:C:107:ALA:CB	2.44	0.47
3:J:38:C:C2'	3:J:39:A:H5''	2.44	0.47
3:J:415:C:O2	3:J:419:G:C2	2.67	0.47
3:J:451:A:H2'	3:J:451:A:N3	2.29	0.47
3:J:564:G:O6	3:J:578:U:C1'	2.62	0.47
3:J:1198:G:C5'	3:J:1199:G:H8	2.27	0.47
3:J:1269:U:H4'	3:J:1270:G:C5'	2.45	0.47
4:K:1256:G:C6	4:K:1261:G:N2	2.83	0.47
4:K:1264:G:H2'	4:K:1264:G:P	2.55	0.47
4:K:2289:U:H2'	4:K:2289:U:O2	2.14	0.47
6:F:26:LYS:HA	6:F:35:THR:HG22	1.97	0.47
6:F:47:LYS:HE3	6:F:50:ASN:H	1.80	0.47
6:F:88:TYR:CE2	6:F:184:LYS:HG2	2.50	0.47
10:H:37:LEU:HB3	10:H:64:ILE:HG12	1.95	0.47
10:H:80:LEU:HG	10:H:83:THR:HG21	1.96	0.47
2:B:11:VAL:HG22	2:B:90:ASN:CB	2.44	0.47
2:B:60:ILE:HD12	2:B:60:ILE:C	2.35	0.47
2:B:437:LYS:CG	2:B:480:LEU:HD21	2.43	0.47
3:J:446:A:O2'	3:J:447:U:H5'	2.15	0.47
4:K:1276:U:C2	4:K:1277:C:C5	3.03	0.47
4:K:2299:A:H5'	4:K:2299:A:C8	2.44	0.47
6:F:41:ILE:O	6:F:42:ASP:HB2	2.15	0.47
6:F:67:ALA:HA	6:F:70:THR:HG23	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:C:78:THR:HG22	9:C:79:LYS:H	1.80	0.47
10:H:16:ARG:HB3	10:H:57:LYS:CD	2.44	0.47
1:A:232:GLU:OE1	4:K:2851:A:C1'	2.63	0.47
2:B:435:PHE:CE1	2:B:439:ARG:CB	2.95	0.47
2:B:572:PHE:C	2:B:573:ARG:O	2.52	0.47
3:J:40:A:C8	3:J:41:A:C8	3.02	0.47
3:J:552:G:N1	3:J:553:G:C2	2.83	0.47
3:J:565:C:C6	3:J:577:G:C6	3.02	0.47
3:J:1200:G:O3'	3:J:1201:G:O4'	2.33	0.47
4:K:1279:C:C4'	8:G:1:MET:SD	3.02	0.47
12:D:84:LYS:HD2	12:D:85:PHE:CE1	2.50	0.47
1:A:386:GLU:OE2	2:B:27:ARG:CD	2.57	0.46
2:B:352:ARG:HD2	2:B:374:GLU:HB2	1.96	0.46
2:B:363:GLN:HG2	2:B:366:PHE:N	2.24	0.46
2:B:430:VAL:CG1	2:B:461:ILE:HA	2.45	0.46
2:B:432:GLN:O	2:B:436:LYS:HG3	2.16	0.46
4:K:1271:A:N6	4:K:1272:C:H42	2.13	0.46
4:K:3018:C:N4	4:K:3019:U:O4	2.49	0.46
6:F:105:GLU:HA	6:F:109:ALA:HB3	1.96	0.46
12:D:102:LYS:H	12:D:102:LYS:HD2	1.79	0.46
2:B:84:THR:O	2:B:131:LEU:HA	2.15	0.46
2:B:582:ARG:HG3	3:J:416:A:H2	1.80	0.46
3:J:1437:U:O2'	3:J:1438:G:H5''	2.15	0.46
2:B:182:GLY:CA	2:B:185:GLN:HA	2.41	0.46
3:J:1274:C:O2'	3:J:1275:A:P	2.74	0.46
4:K:2847:A:H3'	4:K:2848:G:C8	2.33	0.46
4:K:3038:U:O2'	4:K:3039:C:P	2.74	0.46
9:C:137:ARG:HD3	9:C:177:ARG:HE	1.81	0.46
10:H:21:GLU:HA	10:H:50:THR:HG22	1.96	0.46
2:B:574:ARG:NH1	2:B:601:PHE:CZ	2.75	0.46
3:J:44:U:C3'	3:J:45:U:C5'	2.93	0.46
3:J:1270:G:C6	3:J:1271:G:N7	2.84	0.46
4:K:1278:A:O2'	4:K:1279:C:C5'	2.61	0.46
4:K:2283:G:H1'	4:K:2284:C:H5	1.79	0.46
4:K:2285:C:H41	4:K:2286:U:H3	1.61	0.46
4:K:2839:G:O6	4:K:2845:A:O2'	2.29	0.46
10:H:48:LYS:HG2	10:H:48:LYS:O	2.14	0.46
1:A:385:GLU:CB	2:B:27:ARG:HH11	2.17	0.46
2:B:115:GLY:HA2	14:B:702:ATP:PA	2.48	0.46
2:B:167:ILE:HD12	2:B:238:GLN:HG2	1.96	0.46
2:B:194:ARG:CG	2:B:237:VAL:CG2	2.94	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:290:PHE:CZ	2:B:292:CYS:SG	3.06	0.46
2:B:293:ILE:HD13	2:B:305:THR:HB	1.98	0.46
2:B:300:VAL:CG1	2:B:301:TYR:HD1	2.27	0.46
3:J:450:U:H2'	3:J:451:A:N7	2.30	0.46
3:J:1273:G:C3'	3:J:1274:C:H5'	2.42	0.46
4:K:2295:A:H62	4:K:2296:A:H61	1.60	0.46
4:K:2298:U:C3'	4:K:2299:A:H5''	2.46	0.46
8:G:61:ARG:HA	8:G:64:ARG:HH11	1.80	0.46
9:C:70:PRO:O	9:C:98:ARG:NH1	2.42	0.46
1:A:313:ALA:CB	1:A:372:LEU:HD13	2.46	0.46
2:B:100:PRO:HD2	2:B:152:LEU:CD2	2.45	0.46
2:B:332:GLU:OE2	4:K:3022:G:C5'	2.63	0.46
2:B:523:ILE:HD13	2:B:534:LEU:HD12	1.97	0.46
3:J:435:C:H2'	3:J:436:A:O4'	2.15	0.46
3:J:1201:G:OP2	3:J:1201:G:C4	2.68	0.46
3:J:1274:C:P	3:J:1428:G:OP1	2.73	0.46
4:K:3032:A:C8	4:K:3032:A:H3'	2.51	0.46
2:B:141:GLN:OE1	2:B:141:GLN:HA	2.16	0.46
2:B:195:MET:HA	2:B:237:VAL:HB	1.98	0.46
2:B:242:VAL:HG23	2:B:273:TYR:HE2	1.75	0.46
2:B:488:ILE:CD1	2:B:522:PHE:HE1	2.28	0.46
2:B:541:PHE:CE2	2:B:551:ALA:HB2	2.50	0.46
3:J:568:G:H2'	3:J:569:C:H5'	1.98	0.46
3:J:1186:U:H2'	3:J:1187:U:C5'	2.46	0.46
4:K:1255:C:O2	4:K:1255:C:H2'	2.14	0.46
10:H:21:GLU:CA	10:H:50:THR:CG2	2.94	0.46
10:H:131:GLU:O	10:H:133:LEU:N	2.49	0.46
11:I:120:LYS:HB3	11:I:137:VAL:CG2	2.45	0.46
1:A:373:LYS:HG3	4:K:1242:G:H1	1.80	0.46
3:J:42:G:C8	3:J:437:A:H3'	2.50	0.46
4:K:1242:G:C8	4:K:1242:G:OP1	2.68	0.46
9:C:211:LEU:O	9:C:215:ARG:HB2	2.16	0.46
10:H:32:ILE:HA	10:H:37:LEU:CD2	2.46	0.46
1:A:256:LEU:H	1:A:256:LEU:HD22	1.81	0.46
2:B:322:ILE:HD12	2:B:325:GLU:CG	2.45	0.46
3:J:446:A:C5	3:J:447:U:H5	2.28	0.46
3:J:1274:C:HO2'	3:J:1275:A:P	2.34	0.46
3:J:1276:U:O2'	3:J:1277:G:H5'	2.16	0.46
4:K:1262:G:O6	4:K:1264:G:C2	2.69	0.46
4:K:3020:U:H2'	4:K:3021:A:OP1	2.16	0.46
6:F:92:TYR:HB2	6:F:142:ASP:HB3	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:C:73:ILE:HD12	9:C:75:LEU:HD21	1.98	0.46
10:H:22:VAL:HG13	10:H:28:LEU:CD1	2.46	0.46
10:H:53:PHE:O	10:H:53:PHE:CG	2.69	0.46
1:A:65:LEU:CD2	1:A:65:LEU:N	2.78	0.46
2:B:260:ALA:O	2:B:264:ILE:HG13	2.16	0.46
2:B:322:ILE:CD1	2:B:325:GLU:CB	2.94	0.46
2:B:591:ASP:OD1	2:B:592:LYS:N	2.48	0.46
3:J:450:U:C2'	3:J:451:A:C8	2.91	0.46
3:J:1201:G:N7	3:J:1202:A:N3	2.64	0.46
3:J:1207:C:C4	3:J:1208:A:N6	2.84	0.46
3:J:1440:C:O2'	3:J:1441:C:H5'	2.15	0.46
4:K:1277:C:O2'	4:K:1278:A:OP2	2.30	0.46
4:K:2837:A:H2'	4:K:2845:A:C6	2.48	0.46
10:H:123:ARG:O	10:H:127:SER:HB3	2.16	0.46
11:I:33:ASN:ND2	11:I:63:LYS:H	2.14	0.46
2:B:28:SER:CB	2:B:64:LYS:CD	2.94	0.45
2:B:447:PHE:HE1	2:B:479:VAL:HG13	1.73	0.45
3:J:152:U:C4'	9:C:13:GLN:HB2	2.45	0.45
3:J:439:U:O2'	3:J:440:U:H4'	2.17	0.45
3:J:571:G:N3	3:J:571:G:C2'	2.78	0.45
3:J:1272:U:O4	3:J:1431:C:C2	2.69	0.45
3:J:1428:G:C2	3:J:1429:G:N7	2.83	0.45
4:K:1278:A:C2'	4:K:1279:C:H5'	2.45	0.45
4:K:2853:A:C6	4:K:2854:U:C2	3.04	0.45
4:K:3028:G:N1	4:K:3029:A:C2	2.84	0.45
10:H:28:LEU:HA	10:H:42:VAL:HG12	1.98	0.45
10:H:80:LEU:CD2	10:H:80:LEU:C	2.80	0.45
1:A:47:PHE:CD1	3:J:577:G:C8	3.04	0.45
2:B:194:ARG:HG2	2:B:237:VAL:CG2	2.46	0.45
3:J:152:U:H5'	9:C:13:GLN:HG3	1.98	0.45
3:J:429:G:H5''	3:J:439:U:C3'	2.45	0.45
3:J:1201:G:H3'	3:J:1201:G:C4	2.42	0.45
4:K:2834:G:C5	4:K:2835:U:C5	3.04	0.45
7:E:9:ALA:HB3	7:E:10:ARG:HG3	1.99	0.45
10:H:8:ASN:HD22	10:H:8:ASN:C	2.20	0.45
10:H:46:ILE:HD13	10:H:46:ILE:HG21	1.72	0.45
2:B:42:THR:CG2	2:B:47:ILE:CG2	2.95	0.45
2:B:70:ILE:HG22	2:B:71:GLN:N	2.30	0.45
2:B:87:TYR:CE2	14:B:702:ATP:C5	3.04	0.45
2:B:157:THR:HG23	2:B:158:LYS:N	2.29	0.45
2:B:173:VAL:CG2	2:B:251:TYR:CE2	2.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:233:GLY:O	2:B:237:VAL:HG13	2.16	0.45
3:J:430:G:C5	3:J:431:C:C5	3.04	0.45
3:J:1198:G:OP2	3:J:1199:G:N7	2.50	0.45
4:K:1259:A:N3	4:K:1280:C:O2'	2.39	0.45
4:K:2839:G:C6	4:K:2850:G:N2	2.84	0.45
4:K:3029:A:H3'	4:K:3030:G:C5'	2.42	0.45
4:K:3036:G:C2'	4:K:3037:U:O5'	2.64	0.45
9:C:4:ASN:HA	9:C:15:THR:HG22	1.98	0.45
9:C:153:VAL:HG12	9:C:154:ARG:N	2.31	0.45
12:D:29:HIS:CE1	12:D:68:LYS:N	2.85	0.45
1:A:47:PHE:HB3	1:A:63:VAL:CG2	2.46	0.45
2:B:24:GLU:HG3	2:B:27:ARG:HD2	1.99	0.45
2:B:94:LEU:CD2	2:B:115:GLY:HA3	2.46	0.45
2:B:291:VAL:HG11	2:B:313:GLY:HA3	1.99	0.45
2:B:380:ILE:HG23	2:B:535:ALA:CA	2.40	0.45
2:B:510:ILE:CG2	2:B:514:ILE:CD1	2.95	0.45
3:J:450:U:C2'	3:J:451:A:H8	2.29	0.45
3:J:567:A:N1	3:J:583:C:H1'	2.31	0.45
3:J:1433:G:O2'	3:J:1434:U:H6	1.98	0.45
3:J:1437:U:O2	3:J:1437:U:H2'	2.16	0.45
4:K:1275:C:C4	4:K:1276:U:C5	3.05	0.45
4:K:2853:A:C5	4:K:2854:U:C4	3.04	0.45
5:L:12:U:H2'	5:L:13:U:C6	2.51	0.45
10:H:37:LEU:HD23	10:H:37:LEU:C	2.36	0.45
10:H:37:LEU:HB2	10:H:68:GLN:C	2.37	0.45
12:D:35:VAL:O	12:D:36:SER:HB3	2.16	0.45
2:B:92:PHE:CG	14:B:702:ATP:C1'	2.98	0.45
2:B:176:ILE:CD1	2:B:227:LEU:CD2	2.95	0.45
2:B:255:LYS:CB	2:B:386:GLU:CG	2.93	0.45
2:B:381:LEU:HD12	2:B:537:LYS:C	2.36	0.45
2:B:394:LEU:HD13	2:B:398:LEU:CD2	2.38	0.45
3:J:551:G:C4	3:J:552:G:N7	2.84	0.45
3:J:569:C:C2'	3:J:570:A:O5'	2.65	0.45
4:K:1243:G:O3'	10:H:18:VAL:HG13	2.16	0.45
4:K:2843:U:H3'	4:K:2843:U:OP2	2.17	0.45
4:K:3021:A:O4'	4:K:3023:U:C2	2.69	0.45
2:B:130:ASN:O	2:B:131:LEU:HB2	2.16	0.45
2:B:189:GLU:OE1	2:B:189:GLU:HA	2.17	0.45
2:B:507:SER:HA	2:B:534:LEU:HD21	1.97	0.45
2:B:537:LYS:HD3	2:B:554:PRO:CB	2.43	0.45
3:J:451:A:N6	3:J:456:A:N6	2.65	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:1277:G:C2'	3:J:1278:G:H5'	2.47	0.45
4:K:1234:G:H4'	10:H:116:MET:HE2	1.99	0.45
4:K:3027:A:C8	4:K:3028:G:N7	2.85	0.45
6:F:109:ALA:HB1	6:F:111:PHE:CE2	2.52	0.45
3:J:571:G:H2'	3:J:572:C:C6	2.51	0.45
4:K:1258:U:N3	4:K:1260:A:OP2	2.50	0.45
10:H:28:LEU:HG	10:H:42:VAL:O	2.17	0.45
10:H:101:SER:CA	10:H:138:SER:O	2.65	0.45
2:B:4:LYS:HE3	2:B:5:ASN:O	2.16	0.45
2:B:86:ARG:HG2	2:B:132:GLY:HA2	1.98	0.45
2:B:293:ILE:CD1	2:B:305:THR:CB	2.94	0.45
11:I:40:LYS:HD3	11:I:59:MET:HE2	1.98	0.45
2:B:39:ILE:CD1	2:B:50:ILE:CG1	2.94	0.45
2:B:578:SER:O	2:B:579:PHE:HB2	2.16	0.45
3:J:445:A:C2	3:J:446:A:C8	3.04	0.45
3:J:1270:G:C2	3:J:1271:G:C8	3.05	0.45
3:J:1274:C:C5	3:J:1427:A:N7	2.83	0.45
3:J:1277:G:C6	3:J:1278:G:C2	3.05	0.45
9:C:72:ARG:HG2	9:C:98:ARG:HA	1.99	0.45
1:A:47:PHE:CE2	3:J:577:G:H1'	2.52	0.45
1:A:47:PHE:CG	3:J:577:G:C4	3.05	0.45
2:B:353:ALA:H	2:B:376:SER:HA	1.82	0.45
2:B:434:PHE:CZ	2:B:480:LEU:HD12	2.50	0.45
4:K:2289:U:H2'	4:K:2290:C:C5'	2.44	0.45
4:K:3021:A:C8	4:K:3023:U:N3	2.85	0.45
5:L:27:G:H2'	5:L:28:G:C8	2.51	0.45
9:C:31:ARG:H	9:C:34:GLN:HG3	1.82	0.45
10:H:101:SER:CB	10:H:138:SER:O	2.65	0.45
10:H:109:ILE:N	10:H:112:ILE:HG22	2.31	0.45
11:I:38:ALA:HB3	11:I:59:MET:HB2	1.98	0.45
1:A:152:ALA:H	1:A:172:MET:HE2	1.82	0.44
2:B:24:GLU:CA	2:B:27:ARG:HG2	2.47	0.44
3:J:426:G:C2	3:J:427:C:C6	3.05	0.44
3:J:451:A:H61	3:J:456:A:N6	2.15	0.44
3:J:1201:G:C3'	3:J:1201:G:C4	3.00	0.44
5:L:41:G:C3'	5:L:42:C:H5''	2.47	0.44
1:A:277:TYR:O	1:A:281:ILE:HG13	2.17	0.44
2:B:41:VAL:HG13	2:B:41:VAL:O	2.15	0.44
3:J:1186:U:C1'	3:J:1208:A:C2	2.99	0.44
3:J:1186:U:O4'	3:J:1208:A:C2	2.70	0.44
3:J:1428:G:C2	3:J:1429:G:C5	3.04	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:1431:C:C2	3:J:1437:U:O4	2.70	0.44
8:G:43:LYS:HA	8:G:46:ARG:HD2	1.99	0.44
8:G:104:ARG:HD2	8:G:182:THR:OG1	2.17	0.44
2:B:509:VAL:HG13	2:B:513:PHE:CE2	2.53	0.44
3:J:553:G:C5	3:J:554:C:N3	2.84	0.44
3:J:1441:C:H2'	3:J:1442:U:C6	2.52	0.44
4:K:1279:C:HO2'	4:K:1280:C:P	2.38	0.44
4:K:2843:U:H3'	4:K:2843:U:P	2.57	0.44
8:G:19:LEU:HD22	8:G:25:LEU:HD22	1.99	0.44
8:G:37:GLN:CG	8:G:105:VAL:CG1	2.87	0.44
9:C:173:PRO:HB2	9:C:174:LYS:H	1.55	0.44
1:A:386:GLU:N	2:B:27:ARG:HD3	2.31	0.44
2:B:96:ARG:O	2:B:97:LEU:HD23	2.18	0.44
2:B:166:ALA:HB2	2:B:242:VAL:HG11	1.99	0.44
2:B:263:ILE:HD13	2:B:263:ILE:C	2.38	0.44
2:B:565:LEU:HD12	2:B:600:TYR:HB2	1.98	0.44
3:J:413:U:O2'	3:J:414:C:H5'	2.17	0.44
3:J:413:U:C2	3:J:421:A:C2	3.06	0.44
3:J:438:A:O5'	3:J:438:A:C8	2.69	0.44
3:J:555:A:C2	3:J:556:A:C2	3.06	0.44
3:J:589:C:C2	3:J:590:C:C5	3.06	0.44
3:J:1179:G:C2	3:J:1180:C:H1'	2.53	0.44
4:K:1253:U:O4	4:K:1264:G:OP1	2.36	0.44
4:K:1273:A:N7	4:K:1274:A:C8	2.85	0.44
4:K:2288:G:H2'	4:K:2289:U:H6	1.79	0.44
8:G:111:ALA:HB1	8:G:167:GLN:HA	2.00	0.44
10:H:110:ILE:O	10:H:110:ILE:HG12	2.17	0.44
10:H:132:ILE:O	10:H:135:THR:HG23	2.12	0.44
2:B:39:ILE:HD11	2:B:50:ILE:CD1	2.45	0.44
3:J:44:U:C5'	3:J:45:U:O4	2.64	0.44
4:K:2297:U:N3	4:K:2299:A:N6	2.66	0.44
6:F:92:TYR:N	6:F:92:TYR:CD1	2.85	0.44
6:F:189:GLU:C	6:F:191:LEU:H	2.21	0.44
10:H:88:PRO:O	10:H:90:ARG:N	2.51	0.44
2:B:451:VAL:HG23	2:B:452:VAL:H	1.83	0.44
2:B:544:ILE:HD11	2:B:547:LYS:HG3	1.97	0.44
2:B:574:ARG:HB2	2:B:602:PHE:HB2	1.99	0.44
3:J:1431:C:H4'	3:J:1432:U:H5'	2.00	0.44
4:K:1245:A:C8	4:K:1272:C:OP1	2.71	0.44
4:K:1276:U:O2'	4:K:1277:C:H5'	2.17	0.44
9:C:163:THR:HA	9:C:168:THR:HA	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:H:26:ALA:C	10:H:28:LEU:H	2.21	0.44
2:B:108:LEU:HD23	2:B:108:LEU:C	2.37	0.44
2:B:113:GLY:H	14:B:702:ATP:PG	2.40	0.44
2:B:171:GLN:HE21	2:B:171:GLN:HB2	1.44	0.44
2:B:194:ARG:CG	2:B:234:MET:HG3	2.46	0.44
2:B:338:ILE:H	2:B:338:ILE:CD1	2.28	0.44
4:K:1236:G:C2	10:H:57:LYS:HB3	2.53	0.44
4:K:2834:G:C4	4:K:2835:U:C6	3.02	0.44
4:K:2923:U:H2'	4:K:2924:U:H6	1.83	0.44
9:C:63:MET:HE2	9:C:106:LEU:HD22	1.99	0.44
11:I:83:LYS:HE2	11:I:84:SER:H	1.82	0.44
1:A:78:ASP:CB	7:E:9:ALA:CB	2.93	0.44
2:B:437:LYS:CD	2:B:480:LEU:HD21	2.47	0.44
2:B:457:ILE:O	2:B:457:ILE:HG22	2.18	0.44
3:J:464:A:H2'	3:J:464:A:N3	2.33	0.44
3:J:568:G:N1	3:J:569:C:C4	2.86	0.44
3:J:1205:C:H6	3:J:1206:U:O2	2.01	0.44
4:K:1235:U:OP2	4:K:1235:U:H3'	2.18	0.44
4:K:2835:U:O2	4:K:2835:U:H2'	2.16	0.44
5:L:12:U:H2'	5:L:13:U:O4'	2.18	0.44
9:C:211:LEU:HD11	9:C:215:ARG:NH2	2.32	0.44
1:A:168:ILE:HG22	1:A:169:GLU:H	1.83	0.44
1:A:272:LEU:O	1:A:274:ASP:N	2.48	0.44
2:B:44:THR:HB	2:B:45:SER:H	1.51	0.44
2:B:348:ASP:HB3	2:B:351:SER:HA	1.98	0.44
2:B:384:MET:CE	2:B:531:ALA:CB	2.96	0.44
3:J:437:A:C5'	3:J:438:A:OP1	2.65	0.44
3:J:1274:C:O2	3:J:1274:C:C2'	2.59	0.44
4:K:1263:A:H4'	4:K:1264:G:O5'	2.18	0.44
10:H:40:LYS:CG	10:H:40:LYS:O	2.66	0.44
10:H:125:LEU:HA	10:H:129:THR:HB	2.00	0.44
10:H:125:LEU:CD2	10:H:129:THR:HG23	2.34	0.44
11:I:40:LYS:HG3	11:I:57:MET:HG2	2.00	0.44
1:A:187:LYS:HG2	5:L:66:C:OP1	2.18	0.43
2:B:38:CYS:SG	2:B:55:CYS:HB2	2.58	0.43
2:B:330:ARG:HD2	2:B:501:GLU:OE1	2.18	0.43
2:B:573:ARG:CG	2:B:574:ARG:H	2.28	0.43
3:J:449:C:C2	3:J:450:U:C5	3.06	0.43
3:J:585:A:H2'	3:J:586:G:C8	2.52	0.43
3:J:1266:U:H5''	3:J:1267:G:OP2	2.18	0.43
4:K:1257:C:N3	4:K:1261:G:N2	2.66	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:88:TYR:CZ	6:F:184:LYS:HG2	2.53	0.43
7:E:39:LEU:HD12	7:E:43:ARG:NH2	2.33	0.43
7:E:47:VAL:HG22	7:E:48:THR:H	1.82	0.43
11:I:5:GLY:HA3	11:I:106:LYS:O	2.18	0.43
11:I:33:ASN:C	11:I:33:ASN:ND2	2.68	0.43
2:B:322:ILE:HD12	2:B:325:GLU:CD	2.38	0.43
3:J:586:G:H2'	3:J:587:C:O5'	2.17	0.43
4:K:1276:U:C2'	4:K:1277:C:H5'	2.48	0.43
4:K:2286:U:O4	4:K:2288:G:H1'	2.17	0.43
9:C:98:ARG:HD3	9:C:99:GLY:O	2.17	0.43
9:C:132:ARG:HH11	9:C:132:ARG:HG2	1.83	0.43
10:H:123:ARG:O	10:H:124:THR:C	2.55	0.43
1:A:48:THR:HG21	1:A:60:THR:N	2.32	0.43
1:A:338:LEU:HD23	1:A:368:ILE:HD11	1.99	0.43
2:B:114:ILE:CD1	2:B:294:ILE:HG21	2.45	0.43
2:B:358:SER:HB2	2:B:372:GLU:OE1	2.19	0.43
2:B:391:LYS:HE3	2:B:391:LYS:HB2	1.81	0.43
2:B:396:LYS:HD3	2:B:402:LEU:CD1	2.49	0.43
2:B:444:ASN:CG	2:B:447:PHE:HD2	2.22	0.43
2:B:568:LEU:CD1	2:B:570:VAL:CG2	2.96	0.43
3:J:452:A:C2'	3:J:453:U:C5'	2.87	0.43
3:J:565:C:H2'	3:J:577:G:C2	2.53	0.43
3:J:1198:G:OP1	3:J:1200:G:N2	2.51	0.43
3:J:1277:G:H2'	3:J:1278:G:O4'	2.18	0.43
4:K:1255:C:O3'	10:H:130:LYS:HE2	2.19	0.43
4:K:1275:C:C5'	4:K:1275:C:H6	2.31	0.43
4:K:1277:C:OP2	4:K:1277:C:C2'	2.61	0.43
4:K:2289:U:C2'	4:K:2289:U:O2	2.66	0.43
4:K:2289:U:O2'	4:K:2290:C:C5'	2.65	0.43
9:C:63:MET:HA	9:C:98:ARG:O	2.18	0.43
9:C:64:LYS:O	9:C:67:VAL:HG22	2.17	0.43
2:B:205:TYR:CE2	2:B:233:GLY:CA	2.94	0.43
2:B:573:ARG:HA	2:B:602:PHE:CE1	2.53	0.43
3:J:430:G:O2'	3:J:431:C:H5'	2.18	0.43
4:K:1234:G:H4'	10:H:116:MET:CE	2.49	0.43
4:K:2922:G:C2	4:K:2923:U:O2	2.72	0.43
4:K:3023:U:H2'	4:K:3024:A:C8	2.53	0.43
6:F:2:LYS:HA	6:F:60:GLY:O	2.18	0.43
6:F:41:ILE:HG23	6:F:43:VAL:HG13	2.00	0.43
8:G:30:VAL:O	8:G:33:VAL:HG23	2.19	0.43
10:H:57:LYS:C	10:H:58:VAL:CG2	2.86	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:H:124:THR:CG2	10:H:125:LEU:H	2.14	0.43
1:A:303:LYS:HD2	2:B:33:LYS:HE3	2.00	0.43
2:B:4:LYS:HG3	2:B:5:ASN:N	2.34	0.43
2:B:322:ILE:HA	2:B:323:PRO:HD2	1.86	0.43
2:B:568:LEU:CD2	2:B:570:VAL:CG1	2.95	0.43
3:J:450:U:C4	3:J:451:A:N6	2.81	0.43
3:J:565:C:C5	3:J:577:G:N7	2.87	0.43
3:J:1205:C:H6	3:J:1206:U:C2	2.36	0.43
4:K:2842:U:O2	4:K:2842:U:C2'	2.53	0.43
4:K:3038:U:O2'	4:K:3039:C:O5'	2.35	0.43
9:C:55:GLY:C	9:C:63:MET:HE3	2.39	0.43
2:B:194:ARG:HA	2:B:194:ARG:NE	2.33	0.43
3:J:460:A:H2'	3:J:460:A:N3	2.34	0.43
3:J:565:C:C5	3:J:577:G:C5	3.05	0.43
3:J:1429:G:N3	3:J:1430:U:C6	2.87	0.43
4:K:1266:G:C2	4:K:1267:U:C6	3.06	0.43
4:K:2833:A:H2'	4:K:2834:G:C5'	2.37	0.43
4:K:2853:A:C5	4:K:2854:U:N3	2.86	0.43
4:K:2930:A:C6	4:K:2931:C:C4	3.06	0.43
8:G:124:VAL:HG13	8:G:125:ASN:H	1.83	0.43
8:G:183:PHE:CD2	8:G:183:PHE:N	2.87	0.43
9:C:67:VAL:HG23	9:C:100:ALA:H	1.83	0.43
2:B:92:PHE:CZ	14:B:702:ATP:H4'	2.53	0.43
2:B:100:PRO:CA	2:B:273:TYR:CE1	3.02	0.43
2:B:507:SER:O	2:B:534:LEU:HD21	2.18	0.43
2:B:529:ILE:HD13	2:B:529:ILE:N	2.11	0.43
3:J:43:A:O2'	3:J:44:U:H5''	2.18	0.43
3:J:1442:U:N3	3:J:1443:U:O4	2.52	0.43
3:J:1648:A:C4	3:J:1753:A:C2	3.06	0.43
4:K:2284:C:H2'	4:K:2285:C:C2	2.53	0.43
10:H:109:ILE:N	10:H:112:ILE:HG23	2.34	0.43
1:A:376:LEU:HD21	4:K:1270:A:N1	2.33	0.43
2:B:37:LEU:HD23	2:B:54:LEU:HD11	2.00	0.43
2:B:509:VAL:HG13	2:B:513:PHE:HE2	1.84	0.43
2:B:565:LEU:HD12	2:B:600:TYR:CB	2.48	0.43
3:J:155:U:H4'	9:C:60:GLY:N	2.33	0.43
3:J:1428:G:C2	3:J:1429:G:C8	3.07	0.43
3:J:1442:U:H2'	3:J:1443:U:C5	2.54	0.43
4:K:2295:A:O2'	11:I:73:VAL:CG1	2.66	0.43
1:A:324:LEU:HD22	1:A:332:ARG:HB3	2.00	0.43
2:B:62:VAL:HG13	2:B:63:LYS:N	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:305:THR:CG2	2:B:306:LEU:H	2.30	0.43
2:B:336:PHE:HE1	2:B:529:ILE:HB	1.83	0.43
2:B:413:LEU:CD2	2:B:413:LEU:H	2.32	0.43
2:B:457:ILE:C	2:B:460:ILE:HG22	2.39	0.43
2:B:457:ILE:CA	2:B:460:ILE:HG22	2.49	0.43
2:B:589:GLN:C	9:C:58:LYS:HZ3	2.22	0.43
3:J:1645:G:C6	3:J:1757:G:C6	3.07	0.43
4:K:1231:A:N6	4:K:1279:C:N4	2.67	0.43
4:K:1265:U:O4	4:K:1276:U:C2	2.72	0.43
4:K:2289:U:O2	4:K:2290:C:C6	2.72	0.43
4:K:2854:U:C2'	4:K:2855:U:H5'	2.48	0.43
10:H:19:GLY:O	10:H:50:THR:HG21	2.18	0.43
10:H:35:LEU:HB3	10:H:36:GLY:H	1.71	0.43
1:A:210:THR:HG23	1:A:275:THR:H	1.83	0.43
3:J:47:A:H4'	3:J:48:G:C5'	2.48	0.43
3:J:161:U:OP2	9:C:85:ARG:HB3	2.18	0.43
3:J:578:U:H4'	3:J:578:U:OP1	2.19	0.43
4:K:1254:C:C2	4:K:1263:A:C2	3.07	0.43
4:K:2287:C:O2	4:K:2298:U:H5''	2.19	0.43
11:I:74:MET:HG3	11:I:102:ILE:HD13	2.01	0.43
2:B:62:VAL:CG1	2:B:63:LYS:N	2.82	0.42
2:B:92:PHE:CG	14:B:702:ATP:C4'	3.02	0.42
2:B:94:LEU:HD23	2:B:115:GLY:HA3	2.01	0.42
2:B:117:SER:HB2	14:B:702:ATP:PA	2.59	0.42
2:B:195:MET:SD	2:B:201:ASP:HB2	2.59	0.42
2:B:195:MET:SD	2:B:201:ASP:CB	3.07	0.42
2:B:352:ARG:CG	2:B:353:ALA:N	2.82	0.42
3:J:454:U:O2'	3:J:455:C:C6	2.71	0.42
3:J:568:G:C2	3:J:569:C:C5	3.07	0.42
3:J:1201:G:N3	3:J:1201:G:O5'	2.52	0.42
4:K:1271:A:H61	4:K:1272:C:H42	1.66	0.42
4:K:3019:U:O2	4:K:3019:U:C2'	2.67	0.42
11:I:40:LYS:HB3	11:I:40:LYS:HE3	1.89	0.42
12:D:14:SER:CB	12:D:21:LYS:HE3	2.49	0.42
2:B:37:LEU:HD23	2:B:54:LEU:CD1	2.49	0.42
2:B:291:VAL:CG1	2:B:313:GLY:HA3	2.50	0.42
2:B:334:LEU:HD23	2:B:334:LEU:C	2.39	0.42
3:J:43:A:C3'	3:J:44:U:H5''	2.50	0.42
3:J:433:C:N4	3:J:434:G:C6	2.88	0.42
4:K:1256:G:C5	4:K:1257:C:C5	3.07	0.42
4:K:2836:C:H2'	4:K:2837:A:O4'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:K:3032:A:H3'	4:K:3032:A:H8	1.83	0.42
8:G:188:VAL:O	8:G:188:VAL:HG12	2.20	0.42
1:A:47:PHE:HB3	1:A:63:VAL:HG21	2.01	0.42
2:B:31:VAL:CG2	2:B:32:VAL:N	2.82	0.42
2:B:73:ILE:CG2	2:B:74:ASN:N	2.82	0.42
2:B:140:TRP:CD2	2:B:160:LEU:HD22	2.54	0.42
2:B:263:ILE:CG2	2:B:264:ILE:N	2.82	0.42
2:B:338:ILE:O	2:B:603:LEU:HD23	2.18	0.42
2:B:505:ILE:CG2	2:B:506:CYS:N	2.82	0.42
3:J:152:U:C4'	9:C:13:GLN:CB	2.97	0.42
3:J:551:G:C4'	3:J:581:U:O2	2.67	0.42
3:J:576:G:H5''	3:J:577:G:OP2	2.19	0.42
4:K:2291:A:C2	4:K:2292:U:C2	3.07	0.42
4:K:2919:A:H3'	4:K:2920:U:C5'	2.45	0.42
4:K:3024:A:H2'	6:F:175:PHE:CE1	2.53	0.42
6:F:20:ILE:HD12	6:F:45:PHE:CD1	2.54	0.42
8:G:5:ARG:HB3	8:G:7:LYS:HA	2.00	0.42
8:G:93:LEU:HD13	8:G:190:VAL:HG11	2.00	0.42
10:H:18:VAL:CG1	10:H:19:GLY:H	2.32	0.42
2:B:99:THR:HG22	2:B:290:PHE:CZ	2.54	0.42
2:B:176:ILE:HG12	2:B:177:PRO:HD3	1.97	0.42
2:B:181:LYS:HB2	2:B:181:LYS:NZ	2.34	0.42
2:B:243:TYR:HE2	2:B:272:LYS:HD3	1.81	0.42
2:B:413:LEU:N	2:B:413:LEU:CD2	2.82	0.42
2:B:451:VAL:CG2	2:B:452:VAL:N	2.82	0.42
2:B:491:ILE:CG2	2:B:523:ILE:HA	2.49	0.42
2:B:538:VAL:CG1	2:B:539:ILE:N	2.82	0.42
3:J:446:A:C6	3:J:447:U:C4	3.07	0.42
3:J:1196:A:O4'	3:J:1197:C:O5'	2.36	0.42
4:K:2288:G:C2	4:K:2289:U:C5	3.07	0.42
4:K:2849:C:O2	4:K:2849:C:C2'	2.66	0.42
9:C:63:MET:HE2	9:C:106:LEU:CD2	2.49	0.42
10:H:60:VAL:HG22	10:H:73:VAL:HG22	2.01	0.42
10:H:139:VAL:O	10:H:139:VAL:HG12	2.19	0.42
11:I:33:ASN:HD21	11:I:64:LYS:H	1.66	0.42
2:B:38:CYS:SG	2:B:55:CYS:CA	3.07	0.42
2:B:82:HIS:CD2	2:B:96:ARG:HG3	2.54	0.42
2:B:99:THR:HG23	2:B:106:LEU:HD13	2.00	0.42
2:B:166:ALA:CA	2:B:242:VAL:HG13	2.39	0.42
2:B:202:VAL:CG2	2:B:203:LYS:N	2.82	0.42
2:B:253:ASP:CB	2:B:526:HIS:CE1	3.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:430:VAL:HG13	2:B:431:ARG:N	2.35	0.42
2:B:434:PHE:CE2	2:B:476:VAL:HG12	2.54	0.42
2:B:589:GLN:HB2	9:C:58:LYS:HZ2	1.71	0.42
3:J:448:C:C2	3:J:449:C:C5	3.08	0.42
4:K:1248:C:C3'	4:K:1248:C:C6	3.03	0.42
9:C:148:SER:C	9:C:150:GLU:H	2.22	0.42
11:I:79:VAL:HG22	11:I:99:ALA:O	2.20	0.42
2:B:92:PHE:CD2	14:B:702:ATP:C1'	3.02	0.42
2:B:100:PRO:CB	2:B:273:TYR:CZ	3.02	0.42
2:B:104:GLN:CG	2:B:106:LEU:HD21	2.49	0.42
2:B:167:ILE:HD12	2:B:238:GLN:CG	2.49	0.42
2:B:198:SER:O	2:B:201:ASP:HB2	2.19	0.42
2:B:371:GLU:HG2	2:B:550:HIS:NE2	2.35	0.42
3:J:152:U:O4'	9:C:13:GLN:HB2	2.19	0.42
3:J:565:C:HO2'	3:J:577:G:H1	1.66	0.42
3:J:571:G:H3'	3:J:572:C:H6	1.85	0.42
3:J:586:G:H5'	7:E:21:VAL:O	2.20	0.42
4:K:2295:A:C5	4:K:2296:A:C6	3.07	0.42
1:A:60:THR:HG23	1:A:61:ASP:H	1.83	0.42
1:A:283:VAL:CB	1:A:350:LEU:HD21	2.47	0.42
2:B:381:LEU:HD21	2:B:539:ILE:HD12	1.98	0.42
2:B:402:LEU:N	2:B:402:LEU:HD12	2.34	0.42
2:B:498:LEU:HB3	2:B:502:GLN:HB2	2.00	0.42
2:B:510:ILE:HG23	2:B:514:ILE:HD11	2.01	0.42
2:B:570:VAL:HG23	2:B:572:PHE:CE1	2.54	0.42
3:J:434:G:N2	3:J:437:A:C2	2.87	0.42
4:K:1239:C:OP2	4:K:1239:C:H6	2.02	0.42
4:K:1246:G:O2'	4:K:1247:U:H5'	2.19	0.42
4:K:1269:U:O4	4:K:1272:C:C5	2.72	0.42
4:K:1277:C:O2'	4:K:1278:A:H8	2.03	0.42
4:K:2838:A:N1	4:K:2851:A:C8	2.87	0.42
8:G:33:VAL:HG12	8:G:37:GLN:HB2	2.02	0.42
8:G:72:ASP:HB3	8:G:73:PHE:HB2	2.01	0.42
8:G:124:VAL:CG1	8:G:125:ASN:N	2.83	0.42
10:H:88:PRO:HD2	10:H:89:PRO:HD3	2.02	0.42
12:D:35:VAL:HG11	12:D:40:LEU:HD11	2.00	0.42
2:B:106:LEU:HD13	2:B:290:PHE:CE2	2.54	0.42
2:B:166:ALA:CA	2:B:242:VAL:CG1	2.95	0.42
2:B:305:THR:CG2	2:B:306:LEU:N	2.80	0.42
2:B:331:THR:CG2	2:B:332:GLU:N	2.83	0.42
2:B:544:ILE:HG12	2:B:548:ASN:OD1	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:557:LEU:HD23	2:B:557:LEU:C	2.39	0.42
2:B:589:GLN:HE22	9:C:58:LYS:CB	1.89	0.42
3:J:1275:A:C6	3:J:1438:G:C6	3.08	0.42
4:K:3024:A:C8	4:K:3032:A:C6	3.08	0.42
9:C:76:LEU:HD22	9:C:92:ARG:HB3	2.01	0.42
9:C:79:LYS:O	9:C:80:ASN:HB2	2.19	0.42
10:H:62:LEU:HG	10:H:69:ALA:HB1	2.01	0.42
11:I:62:VAL:HG23	11:I:74:MET:HE2	2.01	0.42
1:A:137:GLU:HB3	1:A:324:LEU:HD13	2.01	0.42
1:A:237:LYS:HZ1	4:K:2839:G:H4'	1.84	0.42
2:B:167:ILE:HD12	2:B:238:GLN:HB2	2.01	0.42
2:B:194:ARG:HG2	2:B:237:VAL:HG23	2.01	0.42
2:B:205:TYR:CE1	2:B:236:CYS:SG	3.09	0.42
2:B:338:ILE:N	2:B:338:ILE:CD1	2.83	0.42
2:B:375:PHE:HE2	2:B:520:THR:OG1	2.02	0.42
2:B:382:VAL:CG1	2:B:383:MET:N	2.82	0.42
2:B:389:THR:O	2:B:549:ALA:CB	2.68	0.42
2:B:452:VAL:CG1	2:B:453:LYS:N	2.82	0.42
3:J:1195:C:H5''	3:J:1197:C:C6	2.55	0.42
3:J:1201:G:OP2	3:J:1201:G:C5	2.72	0.42
4:K:1262:G:O6	4:K:1264:G:N2	2.52	0.42
4:K:2291:A:N1	4:K:2292:U:C2	2.88	0.42
4:K:2846:U:H2'	4:K:2847:A:OP2	2.20	0.42
8:G:30:VAL:HG13	8:G:38:MET:HG3	2.01	0.42
9:C:2:LYS:HB3	9:C:108:VAL:HG22	2.02	0.42
2:B:395:ILE:CG2	2:B:396:LYS:N	2.83	0.42
2:B:434:PHE:CD1	2:B:434:PHE:N	2.88	0.42
2:B:585:LYS:C	2:B:586:LEU:O	2.56	0.42
3:J:446:A:C6	3:J:447:U:C5	3.08	0.42
3:J:1267:G:C2'	3:J:1268:G:H5'	2.50	0.42
3:J:1275:A:C8	3:J:1438:G:C2	3.08	0.42
4:K:1259:A:N6	4:K:1260:A:N1	2.68	0.42
4:K:2919:A:H2'	4:K:2920:U:H5'	2.02	0.42
1:A:77:LYS:HG3	1:A:78:ASP:N	2.35	0.41
2:B:210:GLN:HE22	2:B:255:LYS:HE2	1.84	0.41
2:B:220:GLU:HG3	2:B:221:LYS:N	2.34	0.41
2:B:294:ILE:CD1	2:B:294:ILE:N	2.83	0.41
2:B:368:LEU:HD22	2:B:393:THR:HG1	1.84	0.41
2:B:383:MET:CE	2:B:524:VAL:HG22	2.50	0.41
2:B:574:ARG:HD2	2:B:602:PHE:HB2	1.90	0.41
3:J:549:G:N3	3:J:550:A:C8	2.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:J:1209:C:N3	3:J:1210:C:C5	2.88	0.41
3:J:1277:G:C6	3:J:1278:G:N3	2.88	0.41
4:K:1248:C:OP2	4:K:1268:G:O6	2.37	0.41
4:K:2925:C:C5	4:K:2926:A:N7	2.88	0.41
10:H:132:ILE:CA	10:H:135:THR:HG22	2.50	0.41
12:D:14:SER:HB3	12:D:21:LYS:HE3	2.02	0.41
12:D:47:VAL:HG23	12:D:48:TYR:HD2	1.84	0.41
1:A:134:CYS:SG	1:A:134:CYS:O	2.78	0.41
1:A:363:ASP:C	1:A:365:LEU:H	2.24	0.41
2:B:58:CYS:SG	15:B:703:SF4:S3	3.17	0.41
2:B:100:PRO:CB	2:B:273:TYR:CE1	3.02	0.41
2:B:117:SER:N	14:B:702:ATP:O1B	2.46	0.41
2:B:157:THR:CG2	2:B:158:LYS:N	2.82	0.41
2:B:182:GLY:CA	2:B:185:GLN:CA	2.94	0.41
2:B:382:VAL:HB	2:B:538:VAL:HG22	2.03	0.41
4:K:2840:C:N4	4:K:2841:G:C5	2.88	0.41
4:K:2851:A:C8	4:K:2851:A:H5''	2.55	0.41
4:K:2927:C:H2'	4:K:2928:C:O4'	2.21	0.41
7:E:34:ALA:O	7:E:37:ARG:HB3	2.20	0.41
10:H:21:GLU:CB	10:H:50:THR:CG2	2.98	0.41
1:A:283:VAL:HG11	1:A:316:TYR:HB3	2.02	0.41
2:B:73:ILE:N	2:B:73:ILE:CD1	2.82	0.41
2:B:168:ILE:N	2:B:168:ILE:CD1	2.82	0.41
2:B:183:PRO:HD2	2:B:185:GLN:N	2.35	0.41
2:B:227:LEU:O	2:B:230:PHE:CE2	2.73	0.41
2:B:544:ILE:CD1	2:B:547:LYS:CG	2.95	0.41
4:K:1227:C:O2	4:K:1227:C:H2'	2.20	0.41
4:K:1279:C:O2'	4:K:1280:C:P	2.78	0.41
4:K:3035:A:H1'	6:F:121:LYS:CB	2.50	0.41
9:C:119:GLN:HG3	9:C:120:GLU:N	2.35	0.41
10:H:21:GLU:HG2	10:H:22:VAL:H	1.86	0.41
10:H:66:ASN:C	10:H:66:ASN:ND2	2.73	0.41
1:A:147:LEU:HD21	1:A:219:TYR:HB3	2.02	0.41
1:A:300:TYR:OH	2:B:64:LYS:NZ	2.52	0.41
2:B:106:LEU:CG	2:B:290:PHE:HD2	2.32	0.41
2:B:114:ILE:HG13	14:B:702:ATP:O2B	2.21	0.41
2:B:176:ILE:CD1	2:B:227:LEU:CG	2.95	0.41
2:B:176:ILE:CD1	2:B:227:LEU:HD21	2.50	0.41
3:J:413:U:N3	3:J:421:A:C2	2.88	0.41
3:J:586:G:C2'	3:J:587:C:O5'	2.68	0.41
3:J:1179:G:C6	3:J:1180:C:N3	2.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:K:1266:G:C6	4:K:1267:U:C5	3.08	0.41
4:K:1281:G:C2	4:K:1282:G:N7	2.89	0.41
11:I:18:PRO:HA	11:I:51:ALA:HA	2.02	0.41
1:A:170:TYR:CE1	1:A:172:MET:HA	2.55	0.41
1:A:307:LYS:HD2	1:A:307:LYS:HA	1.96	0.41
2:B:83:VAL:O	2:B:146:TYR:CZ	2.74	0.41
2:B:171:GLN:OE1	2:B:172:TYR:CZ	2.74	0.41
2:B:229:ARG:HA	2:B:232:ILE:HD12	2.03	0.41
2:B:303:VAL:CG1	2:B:304:VAL:N	2.83	0.41
3:J:572:C:C5'	3:J:573:C:OP2	2.66	0.41
3:J:1267:G:C2	3:J:1268:G:C4	3.08	0.41
10:H:28:LEU:HA	10:H:42:VAL:O	2.20	0.41
10:H:123:ARG:CD	10:H:126:ALA:HB2	2.48	0.41
1:A:146:VAL:HG11	1:A:258:GLY:HA3	2.02	0.41
1:A:381:GLU:OE1	2:B:22:ARG:NH1	2.53	0.41
2:B:295:TYR:CZ	2:B:325:GLU:HG2	2.55	0.41
2:B:389:THR:HG23	2:B:391:LYS:HG3	1.97	0.41
3:J:428:A:O3'	3:J:439:U:H2'	2.20	0.41
3:J:1433:G:HO2'	3:J:1434:U:H6	1.68	0.41
4:K:1257:C:C2	4:K:1258:U:C6	3.08	0.41
10:H:57:LYS:O	10:H:58:VAL:HG22	2.20	0.41
11:I:93:LEU:HD23	11:I:93:LEU:H	1.86	0.41
11:I:93:LEU:HD23	11:I:93:LEU:N	2.35	0.41
12:D:18:LEU:HD23	12:D:18:LEU:HA	1.89	0.41
12:D:44:LEU:HA	12:D:47:VAL:CG2	2.51	0.41
2:B:116:LYS:N	2:B:116:LYS:HD3	2.35	0.41
2:B:208:ILE:CG2	2:B:209:LEU:N	2.84	0.41
2:B:254:VAL:HA	2:B:257:ARG:CD	2.51	0.41
2:B:320:GLY:HA2	2:B:329:PHE:CE2	2.55	0.41
2:B:349:SER:CB	2:B:377:ASP:HB3	2.51	0.41
2:B:401:ALA:C	2:B:402:LEU:HD12	2.41	0.41
2:B:572:PHE:HB3	2:B:581:PRO:CB	2.51	0.41
3:J:445:A:C2	3:J:446:A:N7	2.88	0.41
3:J:1187:U:O5'	3:J:1187:U:H6	2.04	0.41
4:K:1269:U:O4	4:K:1271:A:C5	2.74	0.41
5:L:66:C:H2'	5:L:67:G:C8	2.55	0.41
6:F:165:CYS:SG	6:F:179:ILE:HD12	2.61	0.41
11:I:40:LYS:HD3	11:I:57:MET:HE2	2.02	0.41
2:B:205:TYR:CD2	2:B:233:GLY:HA2	2.55	0.41
2:B:218:ASP:H	2:B:221:LYS:HD2	1.84	0.41
2:B:230:PHE:CD1	2:B:230:PHE:C	2.94	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:510:ILE:HB	2:B:534:LEU:HD22	2.02	0.41
3:J:50:C:O2	3:J:50:C:H2'	2.21	0.41
3:J:552:G:C6	3:J:553:G:N1	2.89	0.41
3:J:1190:C:N3	3:J:1194:A:C2	2.89	0.41
4:K:2295:A:OP1	11:I:61:THR:OG1	2.31	0.41
4:K:3032:A:C8	4:K:3032:A:C3'	3.04	0.41
9:C:32:ILE:HD12	9:C:100:ALA:HB1	2.02	0.41
9:C:39:GLU:HB2	9:C:46:LYS:HG3	2.03	0.41
1:A:135:ASN:HB3	1:A:138:TYR:H	1.85	0.41
1:A:144:ALA:HB3	1:A:259:ILE:HD12	2.02	0.41
1:A:232:GLU:O	4:K:2851:A:O2'	2.39	0.41
2:B:112:ASN:HA	14:B:702:ATP:PG	2.60	0.41
2:B:265:ARG:HD2	2:B:286:TYR:O	2.21	0.41
2:B:345:LEU:CD2	2:B:345:LEU:N	2.84	0.41
2:B:420:GLN:CG	2:B:421:LYS:N	2.84	0.41
2:B:430:VAL:CG1	2:B:431:ARG:N	2.83	0.41
2:B:431:ARG:HB3	2:B:461:ILE:HG23	1.98	0.41
2:B:580:ARG:HH12	2:B:582:ARG:HH11	1.69	0.41
3:J:51:A:C6	3:J:52:U:C2	3.09	0.41
3:J:425:A:C2'	3:J:426:G:OP2	2.68	0.41
3:J:461:G:O2'	3:J:462:G:O5'	2.32	0.41
3:J:461:G:C2	3:J:462:G:C5	3.09	0.41
3:J:1429:G:C4	3:J:1430:U:C6	3.09	0.41
4:K:2834:G:O2'	4:K:2835:U:P	2.78	0.41
4:K:2852:C:H5	4:K:2853:A:C4	2.36	0.41
4:K:3036:G:H2'	4:K:3037:U:O5'	2.21	0.41
5:L:67:G:C2'	5:L:68:C:H5''	2.51	0.41
9:C:28:PHE:CZ	9:C:104:PRO:HG3	2.56	0.41
9:C:109:LEU:HD23	9:C:109:LEU:HA	1.85	0.41
10:H:23:GLY:N	10:H:46:ILE:CD1	2.83	0.41
10:H:46:ILE:C	10:H:49:ALA:H	2.25	0.41
10:H:70:ALA:O	10:H:72:SER:N	2.54	0.41
10:H:82:ILE:C	10:H:84:ALA:H	2.23	0.41
11:I:33:ASN:ND2	11:I:64:LYS:H	2.19	0.41
12:D:94:TYR:CD2	12:D:96:LEU:HD11	2.55	0.41
2:B:46:LYS:HG3	2:B:46:LYS:O	2.21	0.41
2:B:112:ASN:OD1	14:B:702:ATP:O3G	2.39	0.41
2:B:168:ILE:O	2:B:168:ILE:HG12	2.19	0.41
2:B:354:PHE:CE2	2:B:355:SER:O	2.74	0.41
2:B:441:GLN:NE2	2:B:447:PHE:HE2	2.14	0.41
2:B:528:PHE:HE2	2:B:572:PHE:CE1	2.39	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:544:ILE:CD1	2:B:547:LYS:CB	2.99	0.41
3:J:461:G:C2	3:J:462:G:C4	3.09	0.41
4:K:1254:C:N3	4:K:1255:C:C5	2.89	0.41
4:K:1262:G:H5''	4:K:1263:A:OP2	2.21	0.41
4:K:2852:C:H5	4:K:2853:A:C5	2.39	0.41
6:F:106:LYS:H	6:F:109:ALA:CB	2.33	0.41
9:C:58:LYS:HB2	9:C:59:GLN:OE1	2.21	0.41
9:C:69:LEU:HD12	9:C:69:LEU:HA	1.82	0.41
2:B:169:LYS:HG2	2:B:231:ALA:HB1	2.03	0.40
2:B:211:LEU:HD21	2:B:229:ARG:HB3	2.03	0.40
2:B:293:ILE:N	2:B:293:ILE:CD1	2.83	0.40
2:B:366:PHE:CD1	2:B:547:LYS:O	2.75	0.40
2:B:518:LYS:NZ	6:F:115:ARG:HB3	2.37	0.40
3:J:567:A:C6	3:J:568:G:C4	3.09	0.40
3:J:586:G:H4'	7:E:21:VAL:CG2	2.51	0.40
5:L:1:U:H2'	5:L:2:C:C6	2.56	0.40
6:F:34:LEU:HA	6:F:34:LEU:HD23	1.91	0.40
6:F:90:MET:HG2	6:F:181:VAL:HG22	2.03	0.40
7:E:38:LEU:O	7:E:42:ARG:HB2	2.21	0.40
2:B:29:CYS:HA	2:B:30:PRO:HD2	1.88	0.40
2:B:108:LEU:CD2	2:B:294:ILE:CD1	2.95	0.40
2:B:140:TRP:CB	2:B:160:LEU:CD1	2.94	0.40
2:B:253:ASP:HA	2:B:526:HIS:CE1	2.57	0.40
2:B:297:VAL:HG12	2:B:298:PRO:N	2.36	0.40
2:B:498:LEU:HD22	2:B:502:GLN:OE1	2.21	0.40
3:J:155:U:C1'	9:C:60:GLY:HA3	2.50	0.40
4:K:1229:G:C6	4:K:1230:G:C5	3.10	0.40
10:H:91:ASP:OD2	10:H:95:ASP:HB3	2.21	0.40
11:I:81:GLN:O	11:I:82:ALA:HB3	2.22	0.40
1:A:204:ASN:C	1:A:206:ASP:H	2.25	0.40
2:B:37:LEU:N	2:B:37:LEU:CD2	2.83	0.40
2:B:180:ILE:HG22	2:B:181:LYS:N	2.37	0.40
2:B:183:PRO:HD3	2:B:186:LYS:C	2.41	0.40
2:B:197:LYS:HB3	2:B:198:SER:H	1.54	0.40
2:B:209:LEU:HD23	2:B:209:LEU:HA	1.79	0.40
2:B:236:CYS:SG	2:B:263:ILE:CD1	3.07	0.40
2:B:304:VAL:HG12	2:B:305:THR:O	2.21	0.40
2:B:573:ARG:HG2	2:B:574:ARG:N	2.36	0.40
3:J:1269:U:C2	3:J:1432:U:O4'	2.74	0.40
4:K:1246:G:N2	4:K:1247:U:O2	2.55	0.40
4:K:1248:C:C6	4:K:1248:C:H3'	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:K:2919:A:C2'	4:K:2920:U:C5'	2.99	0.40
10:H:61:GLN:HB3	10:H:72:SER:HB3	2.04	0.40
1:A:101:VAL:HG21	3:J:1272:U:C4'	2.52	0.40
2:B:21:CYS:O	2:B:22:ARG:HG3	2.22	0.40
2:B:173:VAL:HG21	2:B:251:TYR:CE2	2.57	0.40
2:B:180:ILE:N	2:B:180:ILE:CD1	2.83	0.40
2:B:452:VAL:HG13	2:B:453:LYS:H	1.86	0.40
2:B:457:ILE:HA	2:B:460:ILE:CG2	2.51	0.40
2:B:501:GLU:OE1	2:B:501:GLU:HA	2.21	0.40
2:B:589:GLN:C	9:C:58:LYS:NZ	2.74	0.40
3:J:561:G:C2	3:J:585:A:C2	3.09	0.40
4:K:2931:C:N3	4:K:2932:U:C5	2.89	0.40
6:F:126:VAL:HG21	6:F:161:LEU:HA	2.03	0.40
10:H:42:VAL:HG12	10:H:42:VAL:O	2.22	0.40
10:H:46:ILE:HA	10:H:49:ALA:N	2.36	0.40
10:H:101:SER:HB2	10:H:138:SER:O	2.21	0.40
12:D:47:VAL:O	12:D:49:LYS:NZ	2.49	0.40
2:B:146:TYR:O	2:B:146:TYR:CD2	2.75	0.40
2:B:273:TYR:HH	2:B:275:ILE:HB	1.84	0.40
2:B:371:GLU:HA	2:B:371:GLU:OE1	2.21	0.40
2:B:505:ILE:HG23	2:B:506:CYS:N	2.37	0.40
3:J:438:A:C1'	3:J:439:U:OP1	2.69	0.40
4:K:1234:G:O5'	4:K:1235:U:OP2	2.39	0.40
4:K:1257:C:C2	4:K:1261:G:N2	2.89	0.40
6:F:114:VAL:HB	6:F:124:ARG:HB2	2.04	0.40
9:C:28:PHE:C	9:C:30:LYS:H	2.25	0.40
10:H:87:GLU:HA	10:H:88:PRO:HD3	1.91	0.40
10:H:97:ASN:O	10:H:98:VAL:C	2.60	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 PDB entries followed by that with respect to all EM entries.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	384/386 (100%)	289 (75%)	50 (13%)	45 (12%)	0	6
2	B	606/608 (100%)	561 (93%)	29 (5%)	16 (3%)	5	31
6	F	189/191 (99%)	167 (88%)	16 (8%)	6 (3%)	4	26
7	E	53/63 (84%)	42 (79%)	7 (13%)	4 (8%)	1	13
8	G	197/312 (63%)	170 (86%)	15 (8%)	12 (6%)	1	17
9	C	224/236 (95%)	190 (85%)	22 (10%)	12 (5%)	2	19
10	H	136/165 (82%)	47 (35%)	35 (26%)	54 (40%)	0	0
11	I	134/137 (98%)	124 (92%)	9 (7%)	1 (1%)	22	63
12	D	132/135 (98%)	106 (80%)	13 (10%)	13 (10%)	0	9
All	All	2055/2233 (92%)	1696 (82%)	196 (10%)	163 (8%)	2	12

All (163) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	9	ASP
1	A	15	GLY
1	A	46	LYS
1	A	48	THR
1	A	56	LYS
1	A	60	THR
1	A	61	ASP
1	A	62	LEU
1	A	103	LYS
1	A	133	ALA
1	A	141	ASP
1	A	156	LEU
1	A	159	SER
1	A	180	ASP
1	A	181	VAL
1	A	255	TYR
1	A	273	GLN
1	A	274	ASP
1	A	275	THR
1	A	327	ASP
1	A	328	ASN
1	A	330	ALA
1	A	331	GLN
1	A	382	ASP
2	B	44	THR
2	B	68	ASP

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Mol	Chain	Res	Type
2	B	186	LYS
2	B	573	ARG
6	F	50	ASN
6	F	109	ALA
7	E	47	VAL
7	E	57	ASN
8	G	60	ARG
8	G	70	LEU
8	G	71	PRO
8	G	73	PHE
8	G	83	ASN
8	G	106	ALA
8	G	124	VAL
8	G	179	SER
8	G	180	PRO
9	C	20	ASP
9	C	25	ARG
9	C	154	ARG
9	C	173	PRO
9	C	174	LYS
10	H	10	VAL
10	H	17	ALA
10	H	18	VAL
10	H	25	SER
10	H	38	SER
10	H	39	PRO
10	H	49	ALA
10	H	56	ILE
10	H	58	VAL
10	H	75	PRO
10	H	77	ALA
10	H	78	SER
10	H	88	PRO
10	H	90	ARG
10	H	104	ILE
10	H	106	LEU
10	H	109	ILE
10	H	112	ILE
10	H	113	ALA
10	H	124	THR
10	H	141	CYS
12	D	32	ARG

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Mol	Chain	Res	Type
12	D	36	SER
12	D	78	SER
1	A	55	GLY
1	A	168	ILE
1	A	169	GLU
1	A	178	THR
1	A	179	THR
1	A	205	PHE
1	A	269	ALA
2	B	22	ARG
2	B	349	SER
2	B	586	LEU
2	B	587	ASP
8	G	49	ALA
9	C	24	ILE
9	C	146	GLY
9	C	152	ASP
9	C	153	VAL
10	H	14	TYR
10	H	21	GLU
10	H	55	GLY
10	H	60	VAL
10	H	66	ASN
10	H	70	ALA
10	H	91	ASP
10	H	107	ASP
10	H	117	ARG
10	H	127	SER
10	H	140	GLY
11	I	82	ALA
12	D	5	VAL
12	D	11	LYS
1	A	52	ASP
1	A	98	ASP
1	A	136	ILE
1	A	182	LEU
1	A	183	LYS
1	A	344	SER
2	B	96	ARG
2	B	136	ASP
2	B	138	PRO
2	B	348	ASP

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Mol	Chain	Res	Type
2	B	351	SER
6	F	42	ASP
8	G	6	GLU
10	H	15	LEU
10	H	69	ALA
10	H	71	ALA
10	H	86	LYS
10	H	131	GLU
12	D	34	ASN
12	D	51	GLU
12	D	53	ASP
1	A	6	LEU
1	A	50	LYS
1	A	96	ASN
6	F	13	PRO
7	E	50	VAL
7	E	58	PRO
9	C	69	LEU
10	H	54	LYS
10	H	89	PRO
10	H	92	ARG
10	H	95	ASP
10	H	120	SER
10	H	128	VAL
12	D	60	PHE
1	A	134	CYS
1	A	138	TYR
1	A	314	ILE
2	B	88	SER
6	F	2	LYS
6	F	107	ASP
10	H	29	ALA
10	H	41	LYS
10	H	103	ASN
10	H	108	GLU
10	H	121	PHE
12	D	6	THR
12	D	47	VAL
1	A	254	GLY
8	G	107	ALA
9	C	132	ARG
10	H	85	LEU

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Mol	Chain	Res	Type
10	H	98	VAL
12	D	58	PHE
12	D	77	ASN
2	B	438	ILE
10	H	132	ILE
1	A	97	VAL
10	H	102	GLY
9	C	70	PRO
10	H	23	GLY
10	H	36	GLY
2	B	184	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 PDB entries followed by that with respect to all EM entries.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	348/348 (100%)	318 (91%)	30 (9%)	10	32
2	B	537/537 (100%)	517 (96%)	20 (4%)	34	58
6	F	171/171 (100%)	133 (78%)	38 (22%)	1	6
7	E	48/54 (89%)	40 (83%)	8 (17%)	2	12
8	G	167/254 (66%)	161 (96%)	6 (4%)	35	59
9	C	193/201 (96%)	154 (80%)	39 (20%)	1	7
10	H	112/136 (82%)	96 (86%)	16 (14%)	3	16
11	I	104/105 (99%)	88 (85%)	16 (15%)	2	14
12	D	112/113 (99%)	86 (77%)	26 (23%)	1	4
All	All	1792/1919 (93%)	1593 (89%)	199 (11%)	9	22

All (199) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	10	SER
1	A	11	PHE
1	A	45	LYS

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Mol	Chain	Res	Type
1	A	47	PHE
1	A	49	SER
1	A	52	ASP
1	A	58	LYS
1	A	65	LEU
1	A	68	LYS
1	A	72	GLU
1	A	73	ASP
1	A	81	LEU
1	A	91	GLU
1	A	103	LYS
1	A	110	ASP
1	A	138	TYR
1	A	146	VAL
1	A	147	LEU
1	A	156	LEU
1	A	158	THR
1	A	168	ILE
1	A	181	VAL
1	A	184	PHE
1	A	191	PHE
1	A	212	ILE
1	A	275	THR
1	A	277	TYR
1	A	303	LYS
1	A	374	TYR
1	A	380	ASP
2	B	63	LYS
2	B	116	LYS
2	B	128	LYS
2	B	168	ILE
2	B	169	LYS
2	B	171	GLN
2	B	181	LYS
2	B	208	ILE
2	B	263	ILE
2	B	268	LEU
2	B	275	ILE
2	B	290	PHE
2	B	293	ILE
2	B	412	LYS
2	B	415	VAL

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Mol	Chain	Res	Type
2	B	529	ILE
2	B	586	LEU
2	B	589	GLN
2	B	591	ASP
2	B	595	LYS
6	F	4	ILE
6	F	5	GLN
6	F	9	GLN
6	F	18	VAL
6	F	20	ILE
6	F	22	SER
6	F	24	ILE
6	F	33	THR
6	F	36	LYS
6	F	41	ILE
6	F	48	VAL
6	F	49	ASN
6	F	52	LEU
6	F	62	ARG
6	F	68	LEU
6	F	69	ARG
6	F	70	THR
6	F	80	THR
6	F	82	VAL
6	F	91	ARG
6	F	132	VAL
6	F	135	GLU
6	F	137	SER
6	F	138	THR
6	F	139	ASN
6	F	147	SER
6	F	151	VAL
6	F	152	GLU
6	F	157	ASN
6	F	161	LEU
6	F	162	GLN
6	F	164	ILE
6	F	168	ARG
6	F	172	ILE
6	F	177	ASP
6	F	189	GLU
6	F	190	ASP

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Mol	Chain	Res	Type
6	F	191	LEU
7	E	20	LYS
7	E	25	GLU
7	E	26	LYS
7	E	28	LYS
7	E	29	LYS
7	E	42	ARG
7	E	48	THR
7	E	50	VAL
8	G	36	GLN
8	G	53	MET
8	G	58	MET
8	G	60	ARG
8	G	73	PHE
8	G	89	THR
9	C	21	GLU
9	C	25	ARG
9	C	45	PHE
9	C	58	LYS
9	C	59	GLN
9	C	69	LEU
9	C	70	PRO
9	C	71	THR
9	C	76	LEU
9	C	78	THR
9	C	79	LYS
9	C	82	SER
9	C	98	ARG
9	C	105	ASP
9	C	109	LEU
9	C	115	LYS
9	C	120	GLU
9	C	124	LEU
9	C	126	ASP
9	C	127	THR
9	C	129	VAL
9	C	132	ARG
9	C	133	LEU
9	C	137	ARG
9	C	143	LYS
9	C	150	GLU
9	C	151	ASP

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Mol	Chain	Res	Type
9	C	154	ARG
9	C	155	ASP
9	C	162	VAL
9	C	170	THR
9	C	175	ILE
9	C	176	GLN
9	C	177	ARG
9	C	179	VAL
9	C	211	LEU
9	C	212	LEU
9	C	217	SER
9	C	223	LYS
10	H	8	ASN
10	H	15	LEU
10	H	31	LYS
10	H	35	LEU
10	H	37	LEU
10	H	56	ILE
10	H	58	VAL
10	H	64	ILE
10	H	66	ASN
10	H	68	GLN
10	H	75	PRO
10	H	78	SER
10	H	97	ASN
10	H	103	ASN
10	H	104	ILE
10	H	108	GLU
11	I	13	ILE
11	I	32	ARG
11	I	33	ASN
11	I	45	ARG
11	I	48	ARG
11	I	63	LYS
11	I	64	LYS
11	I	69	LEU
11	I	73	VAL
11	I	74	MET
11	I	83	LYS
11	I	84	SER
11	I	102	ILE
11	I	115	THR

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Mol	Chain	Res	Type
11	I	120	LYS
11	I	125	LEU
12	D	17	LEU
12	D	29	HIS
12	D	32	ARG
12	D	34	ASN
12	D	44	LEU
12	D	46	GLU
12	D	47	VAL
12	D	49	LYS
12	D	51	GLU
12	D	52	LYS
12	D	57	VAL
12	D	61	ARG
12	D	62	THR
12	D	75	VAL
12	D	84	LYS
12	D	88	THR
12	D	93	ARG
12	D	96	LEU
12	D	99	LYS
12	D	102	LYS
12	D	112	LYS
12	D	123	LYS
12	D	124	ARG
12	D	127	LYS
12	D	128	LYS
12	D	129	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (36) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	148	GLN
1	A	235	HIS
1	A	345	ASN
2	B	74	ASN
2	B	78	ASN
2	B	82	HIS
2	B	95	HIS
2	B	112	ASN
2	B	171	GLN
2	B	210	GLN

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Mol	Chain	Res	Type
2	B	213	ASN
2	B	256	GLN
2	B	262	GLN
2	B	279	HIS
2	B	387	ASN
2	B	448	GLN
2	B	463	GLN
2	B	474	GLN
2	B	589	GLN
6	F	50	ASN
6	F	96	HIS
6	F	100	ASN
6	F	116	ASN
8	G	189	GLN
9	C	22	HIS
10	H	8	ASN
10	H	61	GLN
10	H	65	GLN
10	H	66	ASN
10	H	68	GLN
10	H	97	ASN
10	H	100	HIS
10	H	115	GLN
10	H	137	GLN
11	I	33	ASN
11	I	98	ASN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
3	J	224/233 (96%)	113 (50%)	26 (11%)
4	K	149/155 (96%)	86 (57%)	13 (8%)
5	L	74/75 (98%)	26 (35%)	10 (13%)
All	All	447/463 (96%)	225 (50%)	49 (10%)

All (225) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
3	J	40	A
3	J	41	A
3	J	42	G

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Mol	Chain	Res	Type
3	J	45	U
3	J	46	A
3	J	47	A
3	J	48	G
3	J	50	C
3	J	51	A
3	J	156	A
3	J	159	U
3	J	160	C
3	J	161	U
3	J	162	A
3	J	415	C
3	J	416	A
3	J	417	A
3	J	418	G
3	J	419	G
3	J	421	A
3	J	426	G
3	J	427	C
3	J	428	A
3	J	434	G
3	J	437	A
3	J	438	A
3	J	439	U
3	J	440	U
3	J	441	A
3	J	444	C
3	J	445	A
3	J	446	A
3	J	447	U
3	J	448	C
3	J	451	A
3	J	452	A
3	J	453	U
3	J	454	U
3	J	455	C
3	J	458	G
3	J	459	G
3	J	462	G
3	J	464	A
3	J	467	G
3	J	468	A

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Mol	Chain	Res	Type
3	J	550	A
3	J	551	G
3	J	554	C
3	J	555	A
3	J	556	A
3	J	557	G
3	J	558	U
3	J	559	C
3	J	560	U
3	J	561	G
3	J	563	U
3	J	564	G
3	J	565	C
3	J	568	G
3	J	570	A
3	J	572	C
3	J	574	G
3	J	577	G
3	J	578	U
3	J	579	A
3	J	580	A
3	J	585	A
3	J	1178	G
3	J	1179	G
3	J	1185	U
3	J	1186	U
3	J	1189	A
3	J	1190	C
3	J	1191	U
3	J	1193	A
3	J	1194	A
3	J	1196	A
3	J	1197	C
3	J	1198	G
3	J	1199	G
3	J	1200	G
3	J	1201	G
3	J	1202	A
3	J	1203	A
3	J	1204	A
3	J	1205	C
3	J	1206	U

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Mol	Chain	Res	Type
3	J	1207	C
3	J	1208	A
3	J	1268	G
3	J	1270	G
3	J	1273	G
3	J	1274	C
3	J	1275	A
3	J	1276	U
3	J	1428	G
3	J	1429	G
3	J	1431	C
3	J	1432	U
3	J	1433	G
3	J	1434	U
3	J	1435	G
3	J	1436	A
3	J	1438	G
3	J	1443	U
3	J	1650	U
3	J	1761	U
3	J	1762	A
3	J	1765	A
3	J	1766	A
3	J	1767	G
3	J	1768	G
3	J	1769	U
4	K	1228	C
4	K	1229	G
4	K	1235	U
4	K	1236	G
4	K	1237	G
4	K	1239	C
4	K	1240	A
4	K	1241	U
4	K	1242	G
4	K	1244	A
4	K	1245	A
4	K	1246	G
4	K	1248	C
4	K	1249	G
4	K	1251	A
4	K	1253	U

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Mol	Chain	Res	Type
4	K	1254	C
4	K	1256	G
4	K	1257	C
4	K	1258	U
4	K	1259	A
4	K	1261	G
4	K	1262	G
4	K	1263	A
4	K	1264	G
4	K	1265	U
4	K	1268	G
4	K	1269	U
4	K	1270	A
4	K	1272	C
4	K	1273	A
4	K	1274	A
4	K	1275	C
4	K	1277	C
4	K	1278	A
4	K	1279	C
4	K	1280	C
4	K	2255	A
4	K	2256	A
4	K	2257	C
4	K	2261	G
4	K	2266	U
4	K	2267	C
4	K	2286	U
4	K	2288	G
4	K	2290	C
4	K	2291	A
4	K	2292	U
4	K	2295	A
4	K	2296	A
4	K	2297	U
4	K	2298	U
4	K	2299	A
4	K	2834	G
4	K	2835	U
4	K	2836	C
4	K	2838	A
4	K	2839	G

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Mol	Chain	Res	Type
4	K	2840	C
4	K	2842	U
4	K	2843	U
4	K	2844	C
4	K	2845	A
4	K	2846	U
4	K	2847	A
4	K	2850	G
4	K	2851	A
4	K	2852	C
4	K	2919	A
4	K	2920	U
4	K	2922	G
4	K	2923	U
4	K	2928	C
4	K	2929	C
4	K	2930	A
4	K	2932	U
4	K	3019	U
4	K	3020	U
4	K	3023	U
4	K	3024	A
4	K	3025	C
4	K	3030	G
4	K	3031	G
4	K	3033	A
4	K	3038	U
4	K	3039	C
5	L	8	U
5	L	12	U
5	L	13	U
5	L	14	A
5	L	17	G
5	L	18	G
5	L	19	U
5	L	20	C
5	L	21	A
5	L	22	G
5	L	26	G
5	L	28	G
5	L	32	U
5	L	33	U

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Mol	Chain	Res	Type
5	L	37	G
5	L	38	C
5	L	42	C
5	L	45	G
5	L	47	U
5	L	51	G
5	L	60	C
5	L	65	U
5	L	68	C
5	L	73	C
5	L	74	C
5	L	75	A

All (49) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
3	J	40	A
3	J	45	U
3	J	160	C
3	J	416	A
3	J	417	A
3	J	427	C
3	J	438	A
3	J	439	U
3	J	447	U
3	J	557	G
3	J	1185	U
3	J	1190	C
3	J	1196	A
3	J	1200	G
3	J	1202	A
3	J	1203	A
3	J	1204	A
3	J	1207	C
3	J	1269	U
3	J	1274	C
3	J	1435	G
3	J	1750	A
3	J	1756	A
3	J	1761	U
3	J	1765	A
3	J	1767	G

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Mol	Chain	Res	Type
4	K	1235	U
4	K	1264	G
4	K	1272	C
4	K	2254	U
4	K	2266	U
4	K	2290	C
4	K	2297	U
4	K	2834	G
4	K	2850	G
4	K	2851	A
4	K	3023	U
4	K	3030	G
4	K	3038	U
5	L	11	U
5	L	12	U
5	L	13	U
5	L	25	U
5	L	32	U
5	L	37	G
5	L	44	A
5	L	64	G
5	L	72	G
5	L	73	C

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 4 ligands modelled in this entry, 1 is monoatomic - leaving 3 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
15	SF4	B	704	2	0,12,12	-	-	-		
14	ATP	B	702	13	26,33,33	2.17	8 (30%)	31,52,52	3.29	11 (35%)
15	SF4	B	703	2	0,12,12	-	-	-		

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
15	SF4	B	704	2	-	-	0/6/5/5
14	ATP	B	702	13	-	2/18/38/38	0/3/3/3
15	SF4	B	703	2	-	-	0/6/5/5

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
14	B	702	ATP	C4-N3	6.03	1.44	1.35
14	B	702	ATP	O5'-C5'	-4.55	1.27	1.44
14	B	702	ATP	O4'-C1'	3.92	1.46	1.41
14	B	702	ATP	PA-O5'	-2.97	1.47	1.59
14	B	702	ATP	PB-O2B	-2.54	1.43	1.55
14	B	702	ATP	C8-N7	-2.24	1.30	1.34
14	B	702	ATP	C3'-C4'	-2.20	1.47	1.53
14	B	702	ATP	C2-N3	2.18	1.35	1.32

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
14	B	702	ATP	O5'-C5'-C4'	12.29	151.30	108.99
14	B	702	ATP	O5'-PA-O1A	-6.50	83.69	109.07
14	B	702	ATP	PA-O5'-C5'	5.65	154.82	121.68
14	B	702	ATP	C5'-C4'-C3'	-5.23	95.59	115.18
14	B	702	ATP	O4'-C4'-C3'	4.70	114.42	105.11
14	B	702	ATP	C3'-C2'-C1'	3.58	106.36	100.98
14	B	702	ATP	C4-C5-N7	2.68	112.19	109.40
14	B	702	ATP	O2G-PG-O3B	2.44	112.83	104.64
14	B	702	ATP	O2A-PA-O1A	2.19	123.08	112.24
14	B	702	ATP	O2A-PA-O5'	-2.15	97.77	107.75

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
14	B	702	ATP	O2B-PB-O1B	2.02	122.21	112.24

There are no chirality outliers.

All (2) torsion outliers are listed below:

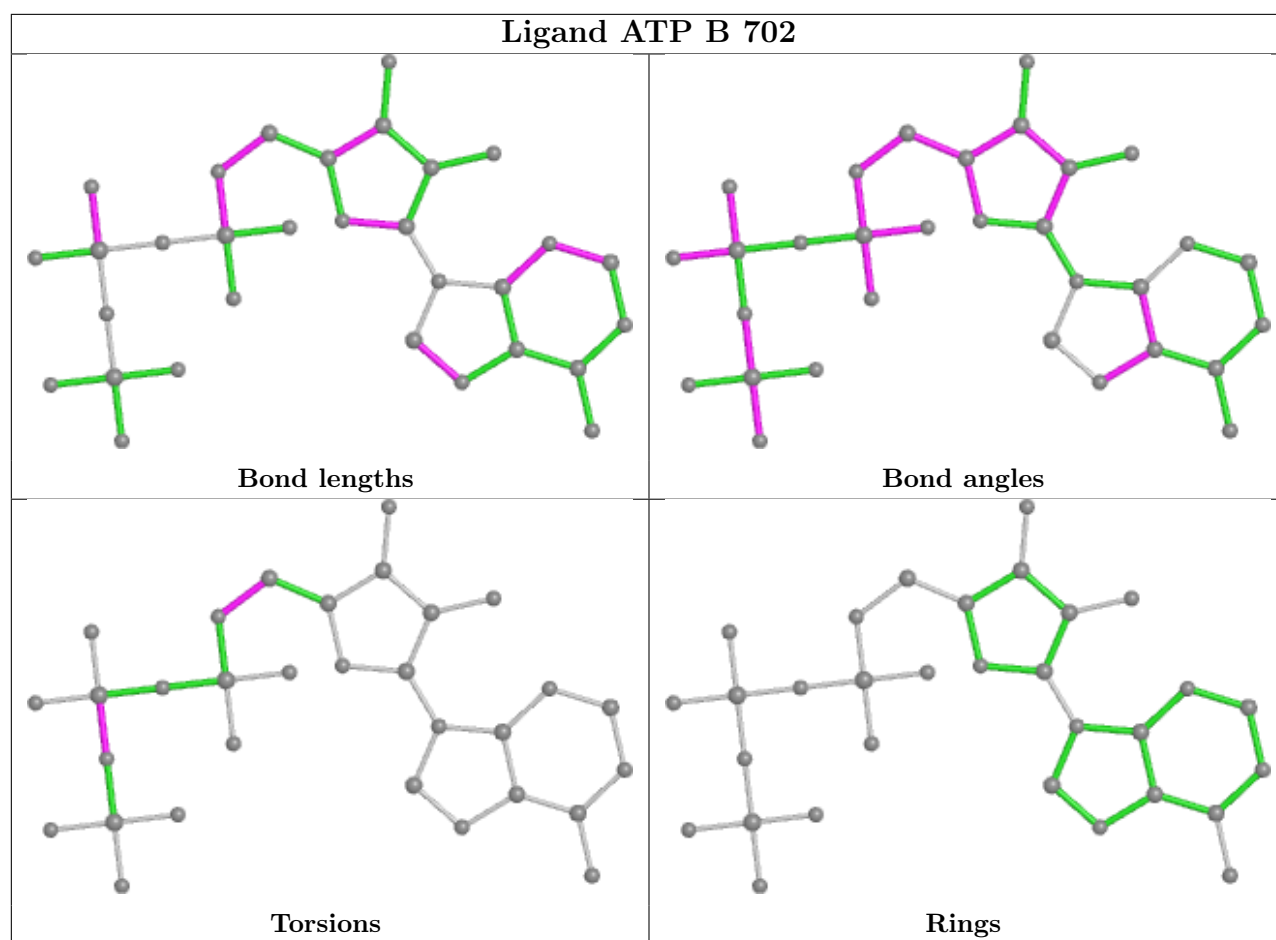
Mol	Chain	Res	Type	Atoms
14	B	702	ATP	C4'-C5'-O5'-PA
14	B	702	ATP	PG-O3B-PB-O1B

There are no ring outliers.

3 monomers are involved in 64 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
15	B	704	SF4	6	0
14	B	702	ATP	40	0
15	B	703	SF4	18	0

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



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

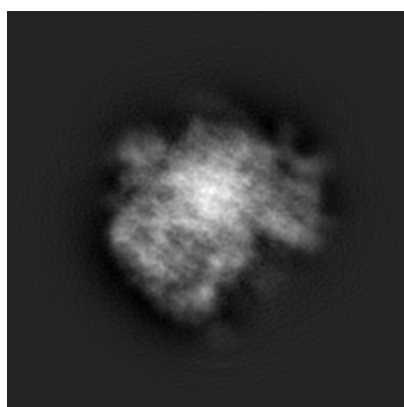
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-2010. These allow visual inspection of the internal detail of the map and identification of artifacts.

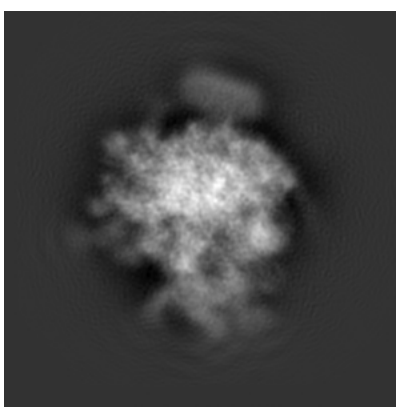
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

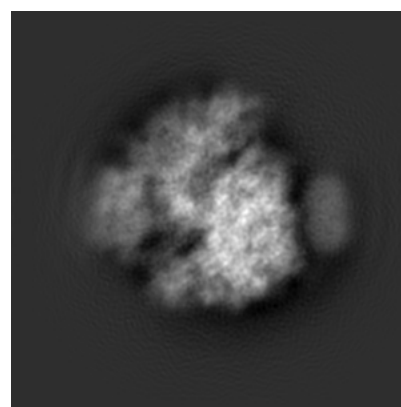
6.1.1 Primary map



X



Y

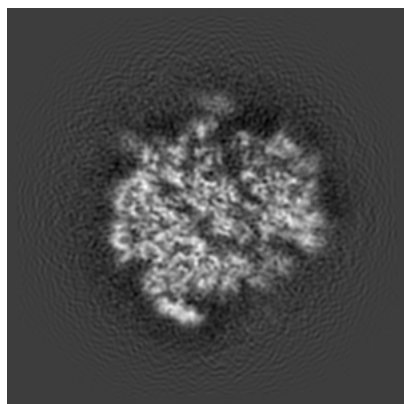


Z

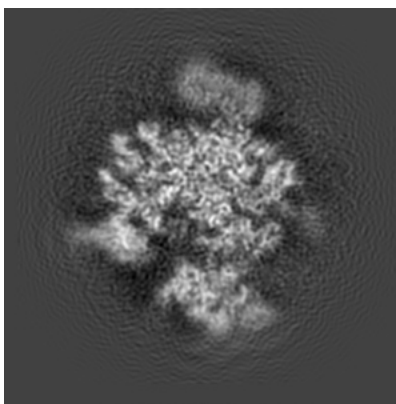
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

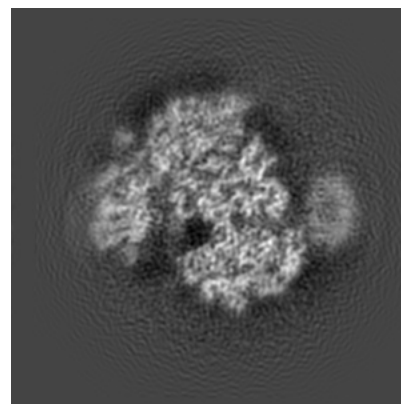
6.2.1 Primary map



X Index: 184



Y Index: 184

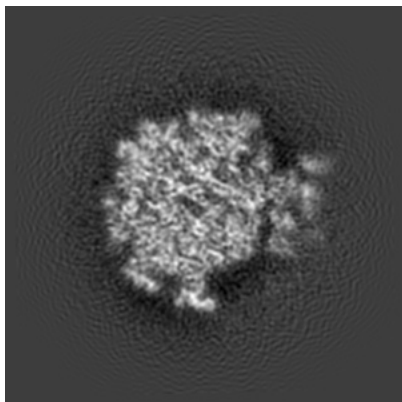


Z Index: 184

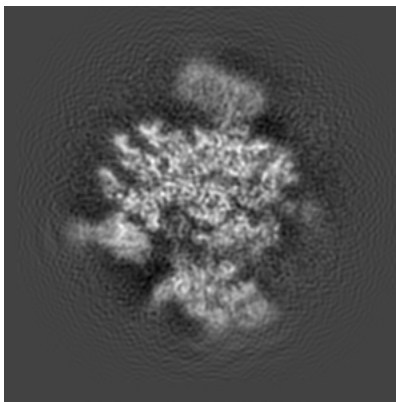
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

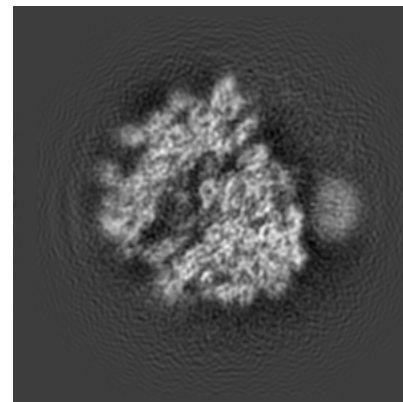
6.3.1 Primary map



X Index: 213



Y Index: 187

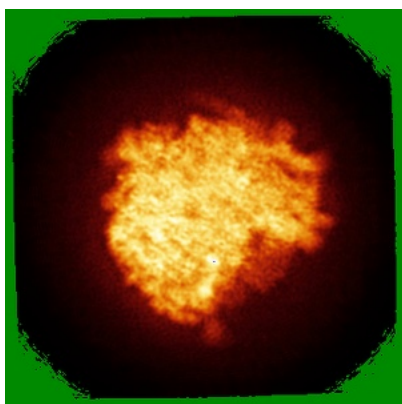


Z Index: 173

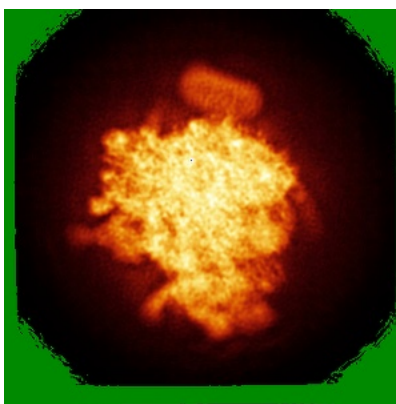
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

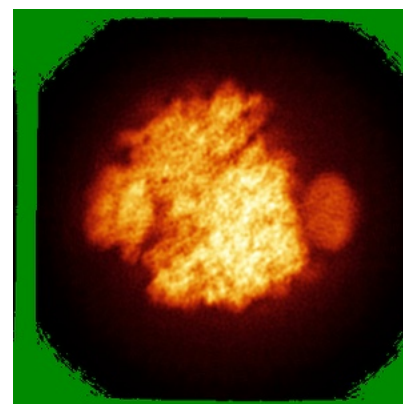
6.4.1 Primary map



X



Y

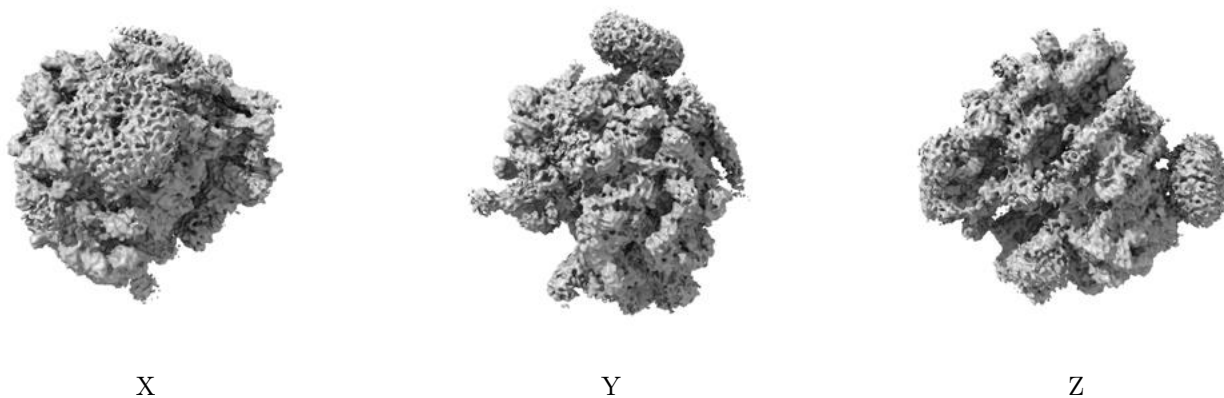


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.32. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

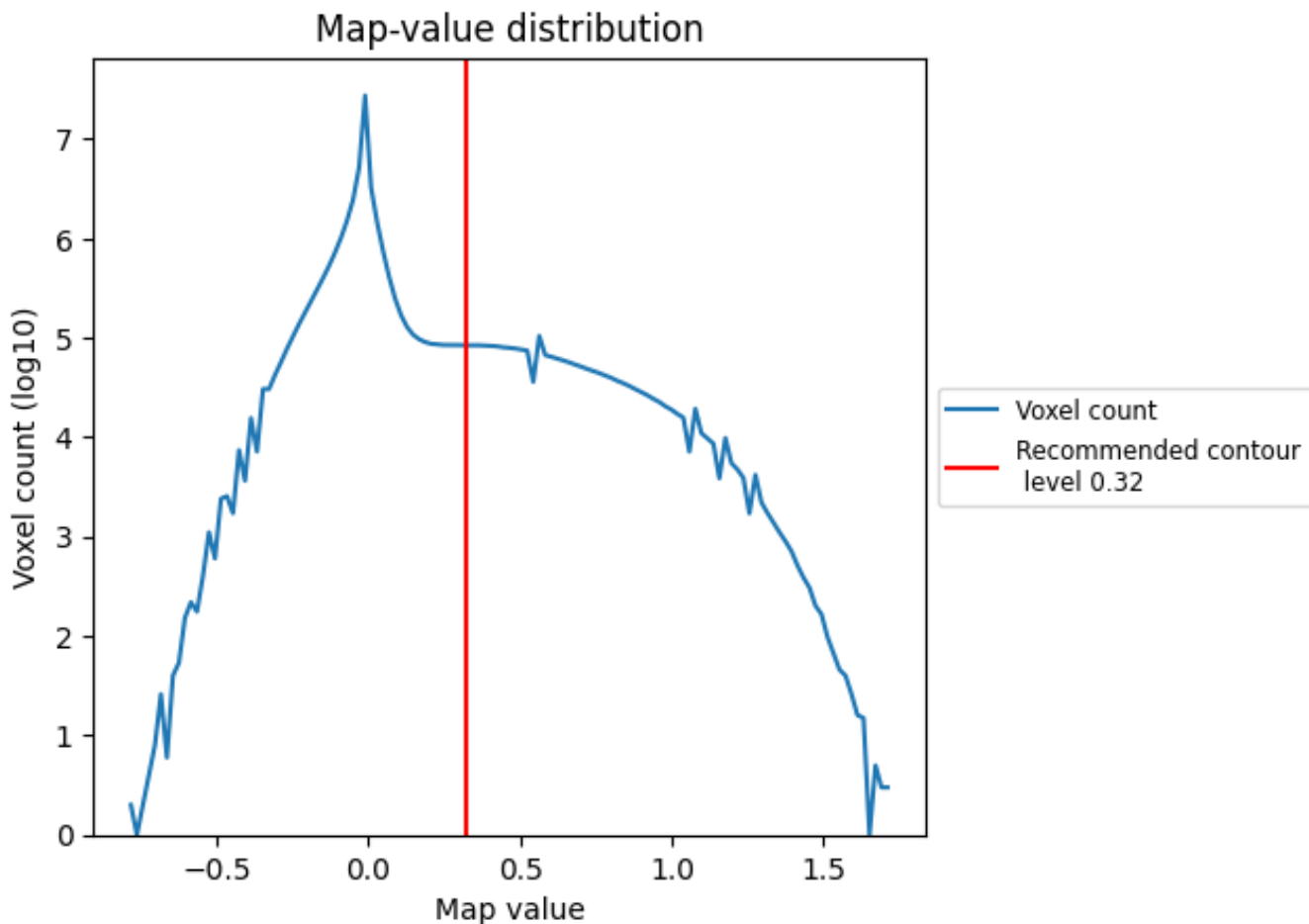
6.6 Mask visualisation [i](#)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis [i](#)

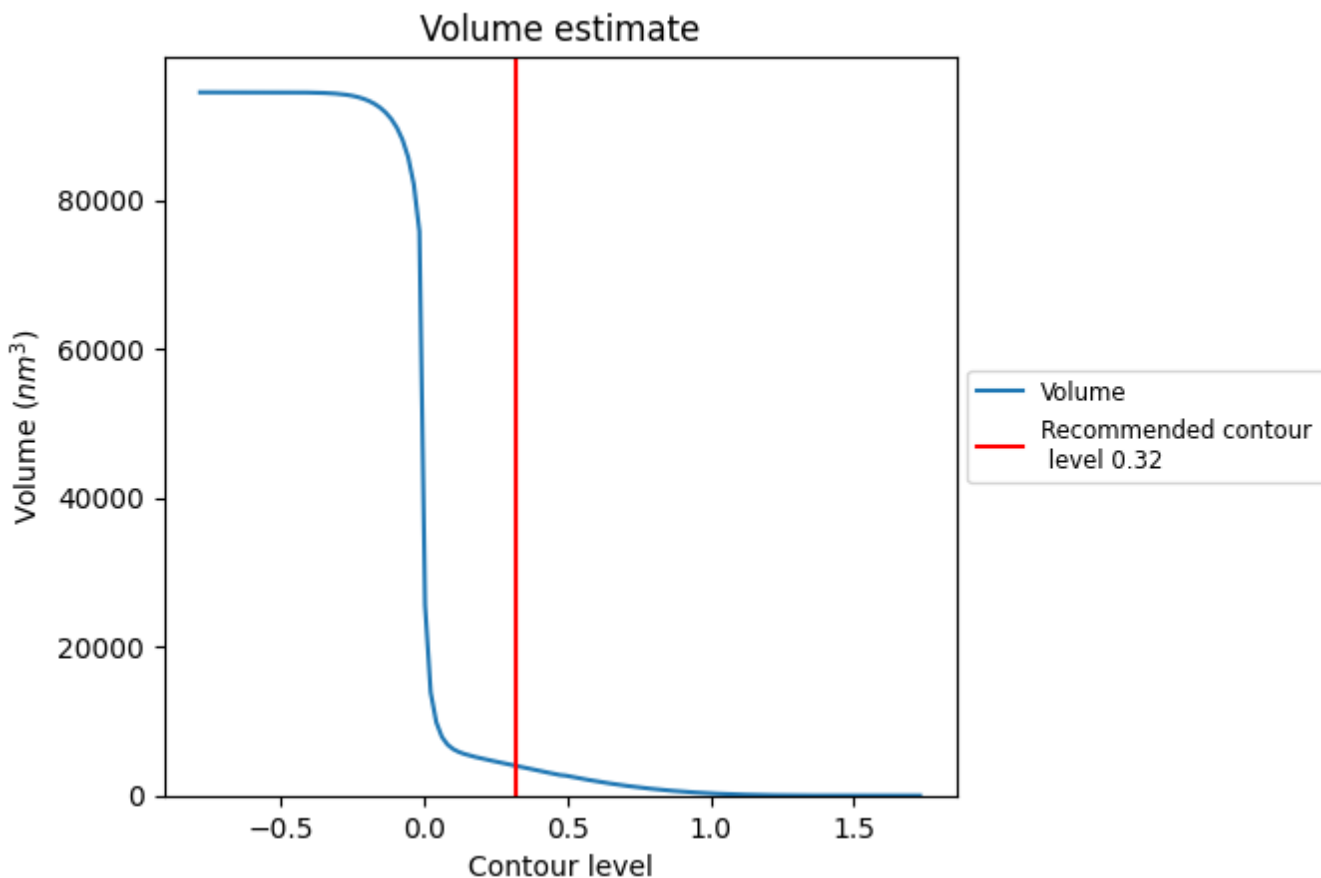
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

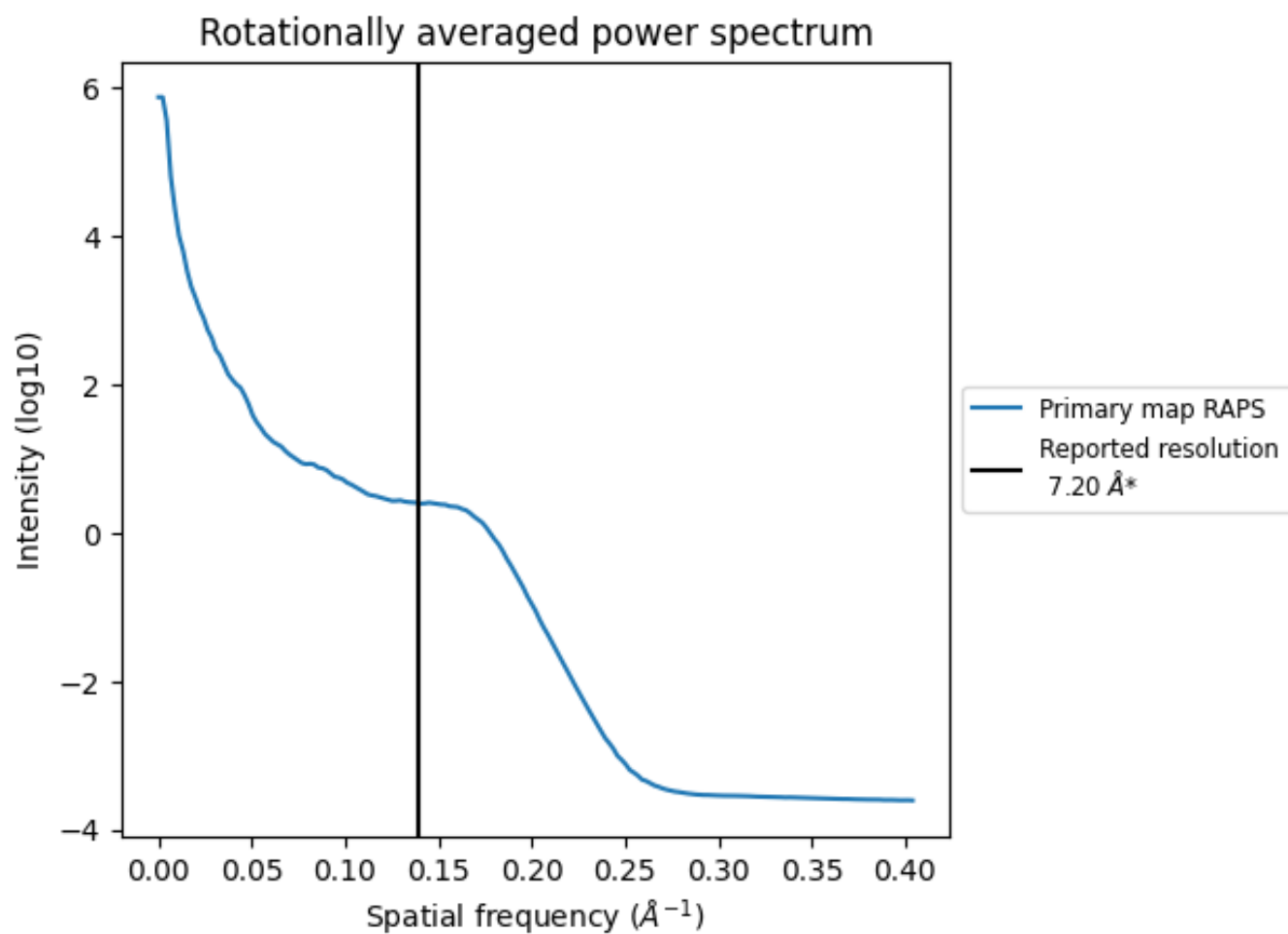
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 3997 nm^3 ; this corresponds to an approximate mass of 3610 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum [i](#)



*Reported resolution corresponds to spatial frequency of 0.139\AA^{-1}

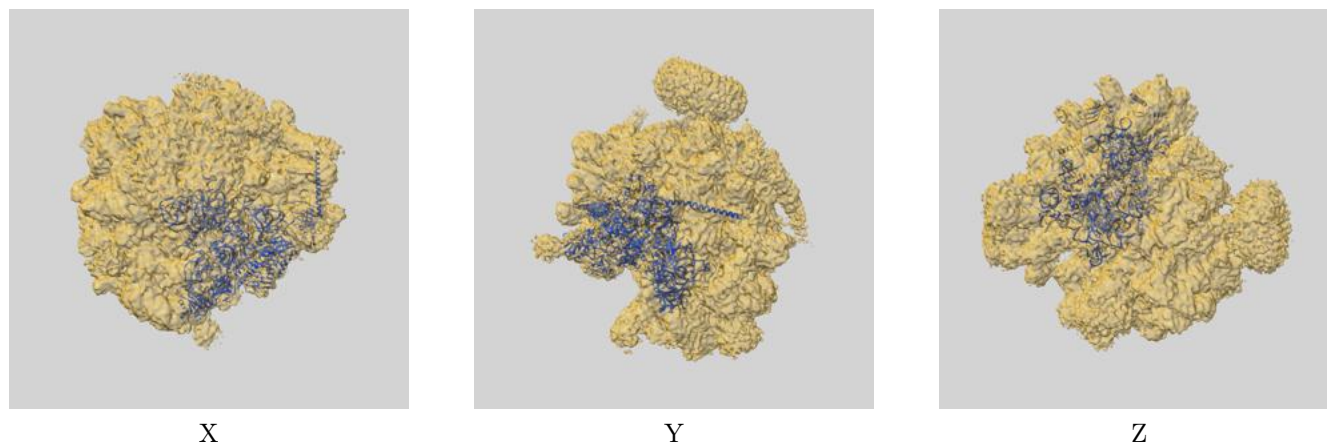
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit [i](#)

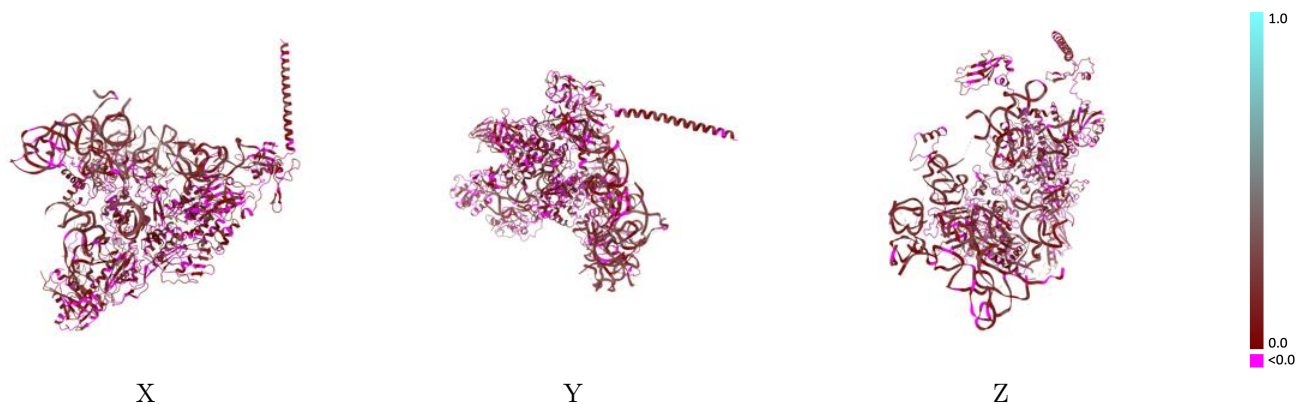
This section contains information regarding the fit between EMDB map EMD-2010 and PDB model 3J16. Per-residue inclusion information can be found in section 3 on page 8.

9.1 Map-model overlay [i](#)



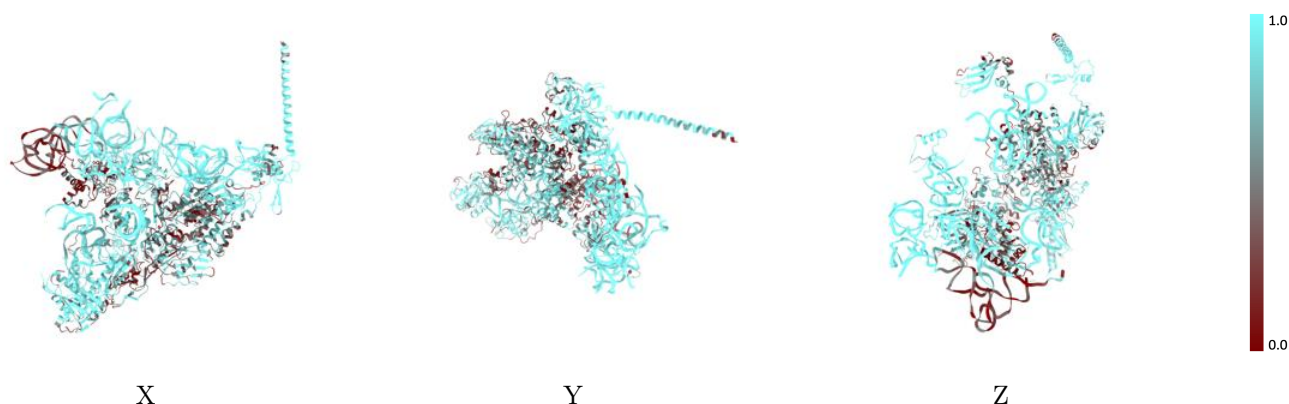
The images above show the 3D surface view of the map at the recommended contour level 0.32 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [\(i\)](#)



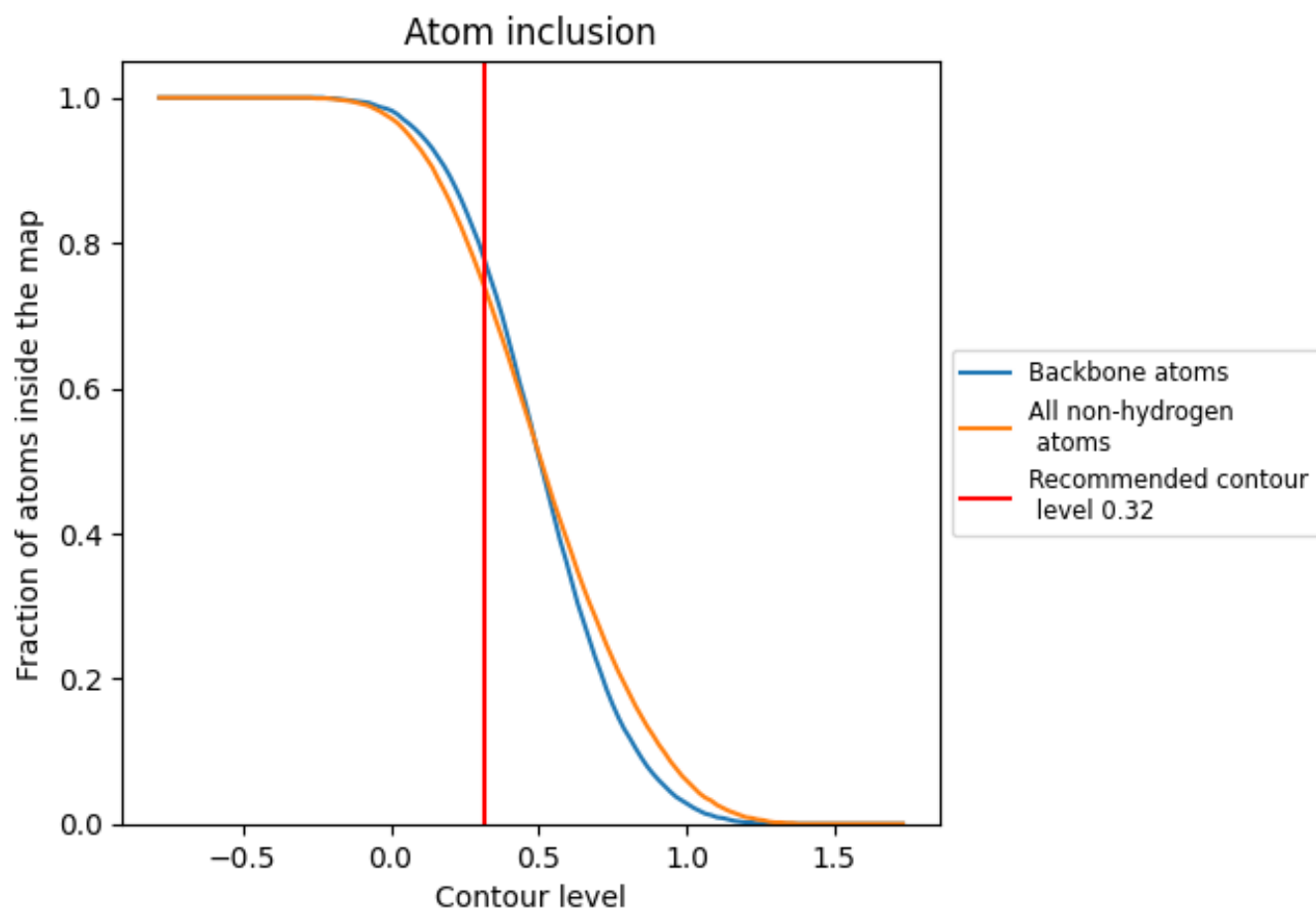
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

9.3 Atom inclusion mapped to coordinate model [\(i\)](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.32).



























9.4 Atom inclusion [i](#)



At the recommended contour level, 77% of all backbone atoms, 74% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary [i](#)

The table lists the average atom inclusion at the recommended contour level (0.32) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7360	 0.1180
A	 0.5330	 0.0930
B	 0.5870	 0.0900
C	 0.8300	 0.1020
D	 0.7000	 0.0830
E	 0.8660	 0.1320
F	 0.7730	 0.1020
G	 0.6770	 0.0570
H	 0.7150	 0.1050
I	 0.7300	 0.1050
J	 0.9860	 0.1790
K	 0.9490	 0.1680
L	 0.3030	 0.0930

