



Full wwPDB EM Validation Report ⓘ

Mar 8, 2026 – 04:39 PM UTC

PDB ID : 7SS9 / pdb_00007ss9
EMDB ID : EMD-25405
Title : Late translocation intermediate with EF-G partially dissociated (Structure V)
Authors : Carbone, C.E.; Loveland, A.B.; Gamper, H.B.; Hou, Y.; Korostelev, A.A.
Deposited on : 2021-11-10
Resolution : 3.90 Å (reported)
Based on initial models : 5U9F, ?

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.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

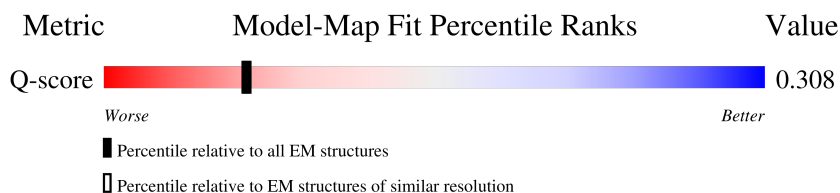
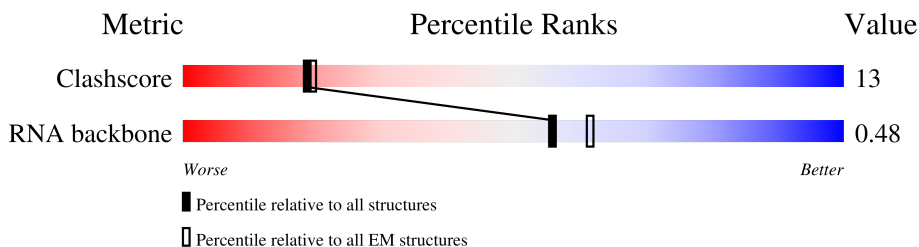
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

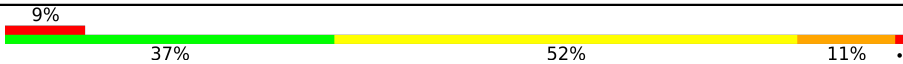
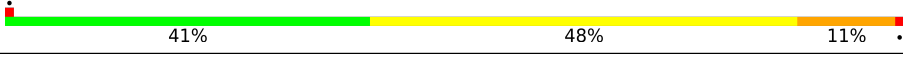
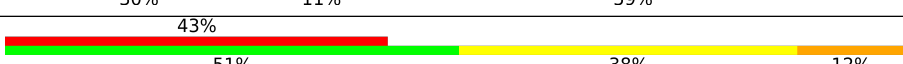
The reported resolution of this entry is 3.90 Å.

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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
RNA backbone	8273	3508	-
Q-score	-	25397	8855 (3.40 - 4.40)

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	3	1539	
2	1	2903	
3	2	120	
4	8	697	
5	6	77	

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Mol	Chain	Length	Quality of chain
6	b	271	
7	c	209	
8	d	201	
9	e	177	
10	f	176	
11	g	149	
12	a	234	
13	i	142	
14	j	142	
15	k	122	
16	l	143	
17	m	136	
18	n	120	
19	o	116	
20	p	114	
21	q	117	
22	r	103	
23	s	110	
24	t	93	
25	u	102	
26	v	94	
27	w	75	
28	x	77	
29	y	63	
30	z	58	

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Mol	Chain	Length	Quality of chain
31	B	56	
32	C	50	
33	D	46	
34	E	64	
35	F	38	
36	4	39	
37	5	77	
38	G	225	
39	H	206	
40	I	205	
41	J	157	
42	K	100	
43	L	151	
44	M	129	
45	N	127	
46	O	98	
47	P	116	
48	Q	123	
49	R	114	
50	S	100	
51	T	88	
52	U	82	
53	V	80	
54	W	65	
55	X	79	

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Mol	Chain	Length	Quality of chain
56	Y	85	62% 38%
57	Z	65	22% 74% 25%

2 Entry composition [i](#)

There are 57 unique types of molecules in this entry. The entry contains 149808 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 RNA chain called 16S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	3	1539	Total	C	N	O	P	0	0
			33012	14725	6052	10697	1538		

- Molecule 2 is a RNA chain called 23S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	1	2903	Total	C	N	O	P	0	0
			62317	27801	11468	20146	2902		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
1	747	C	U	conflict	GB 802133627

- Molecule 3 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	2	120	Total	C	N	O	P	0	0
			2568	1145	471	833	119		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
2	120	A	-	insertion	GB 1266961702

- Molecule 4 is a protein called Elongation factor G.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	8	286	Total	C	N	O	S	0	0
			2213	1401	379	424	9		

- Molecule 5 is a RNA chain called tRNA fMet.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	6	77	Total	C	N	O	P	0	0
			1640	732	297	535	76		

- Molecule 6 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	b	271	Total	C	N	O	S	0	0
			2083	1288	423	365	7		

- Molecule 7 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	c	209	Total	C	N	O	S	0	0
			1565	979	288	294	4		

- Molecule 8 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	d	201	Total	C	N	O	S	0	0
			1552	974	283	290	5		

- Molecule 9 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	e	177	Total	C	N	O	S	0	0
			1411	899	249	257	6		

- Molecule 10 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	f	176	Total	C	N	O	S	0	0
			1323	832	243	246	2		

- Molecule 11 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	g	149	Total	C	N	O	S	0	0
			1111	699	197	214	1		

- Molecule 12 is a protein called 50S ribosomal protein L1.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	a	134	Total	C	N	O	S	0	0
			1026	645	186	193	2		

- Molecule 13 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	i	141	Total	C	N	O	S	0	0
			1032	651	179	196	6		

- Molecule 14 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	j	142	Total	C	N	O	S	0	0
			1129	714	212	199	4		

- Molecule 15 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	k	122	Total	C	N	O	S	0	0
			939	587	180	166	6		

- Molecule 16 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	l	143	Total	C	N	O	S	0	0
			1045	649	206	189	1		

- Molecule 17 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	m	136	Total	C	N	O	S	0	0
			1074	686	205	177	6		

- Molecule 18 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	n	120	Total	C	N	O	S	0	0
			961	593	196	167	5		

- Molecule 19 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				AltConf	Trace
19	o	116	Total	C	N	O	0	0
			892	552	178	162		

- Molecule 20 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	p	114	Total	C	N	O	S	0	0
			917	574	179	163	1		

- Molecule 21 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	q	117	Total	C	N	O	0	0
			947	604	192	151		

- Molecule 22 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	r	103	Total	C	N	O	S	0	0
			816	516	153	145	2		

- Molecule 23 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	s	110	Total	C	N	O	S	0	0
			857	532	166	156	3		

- Molecule 24 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	t	93	Total	C	N	O	S	0	0
			739	466	139	132	2		

- Molecule 25 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
25	u	102	Total	C	N	O	0	0
			780	492	146	142		

- Molecule 26 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	v	94	Total	C	N	O	S	0	0
			753	479	137	134	3		

- Molecule 27 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	w	75	Total	C	N	O	S	0	0
			575	356	116	102	1		

- Molecule 28 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	x	77	Total	C	N	O	S	0	0
			625	388	129	106	2		

- Molecule 29 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	y	63	Total	C	N	O	S	0	0
			509	313	99	95	2		

- Molecule 30 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	z	58	Total	C	N	O	S	0	0
			449	281	87	79	2		

- Molecule 31 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	B	56	Total	C	N	O	S	0	0
			444	269	94	80	1		

- Molecule 32 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
32	C	50	Total	C	N	O	0	0
			410	263	75	72		

- Molecule 33 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	D	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 34 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	E	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 35 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	F	38	Total	C	N	O	S	0	0
			302	185	65	48	4		

- Molecule 36 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	4	20	Total	C	N	O	P	0	0
			436	195	87	134	20		

- Molecule 37 is a RNA chain called tRNA Pro.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	5	77	Total	C	N	O	P	0	0
			1647	733	295	542	77		

- Molecule 38 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	G	218	Total	C	N	O	S	0	0
			1705	1081	305	312	7		

- Molecule 39 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	H	206	Total	C	N	O	S	0	0
			1625	1028	305	289	3		

- Molecule 40 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	I	205	Total	C	N	O	S	0	0
			1643	1026	315	298	4		

- Molecule 41 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	J	157	Total	C	N	O	S	0	0
			1157	719	218	214	6		

- Molecule 42 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	K	100	Total	C	N	O	S	0	0
			818	515	148	149	6		

- Molecule 43 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	L	151	Total	C	N	O	S	0	0
			1182	735	227	216	4		

- Molecule 44 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	M	129	Total	C	N	O	S	0	0
			979	616	173	184	6		

- Molecule 45 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	N	127	Total	C	N	O	S	0	0
			1022	634	206	179	3		

- Molecule 46 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	O	98	Total	C	N	O	S	0	0
			787	493	150	143	1		

- Molecule 47 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	P	116	Total	C	N	O	S	0	0
			870	535	173	159	3		

- Molecule 48 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	Q	123	Total	C	N	O	S	0	0
			955	590	196	165	4		

- Molecule 49 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	R	114	Total	C	N	O	S	0	0
			884	546	178	157	3		

- Molecule 50 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	S	100	Total	C	N	O	S	0	0
			805	499	164	139	3		

- Molecule 51 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	T	88	Total	C	N	O	S	0	0
			714	439	144	130	1		

- Molecule 52 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	U	82	Total	C	N	O	S	0	0
			649	406	128	114	1		

- Molecule 53 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	V	80	Total	C	N	O	S	0	0
			649	411	121	114	3		

- Molecule 54 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	W	65	Total	C	N	O	S	0	0
			536	339	100	96	1		

- Molecule 55 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	X	79	Total	C	N	O	S	0	0
			638	408	120	108	2		

- Molecule 56 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	Y	85	Total	C	N	O	S	0	0
			665	411	137	114	3		

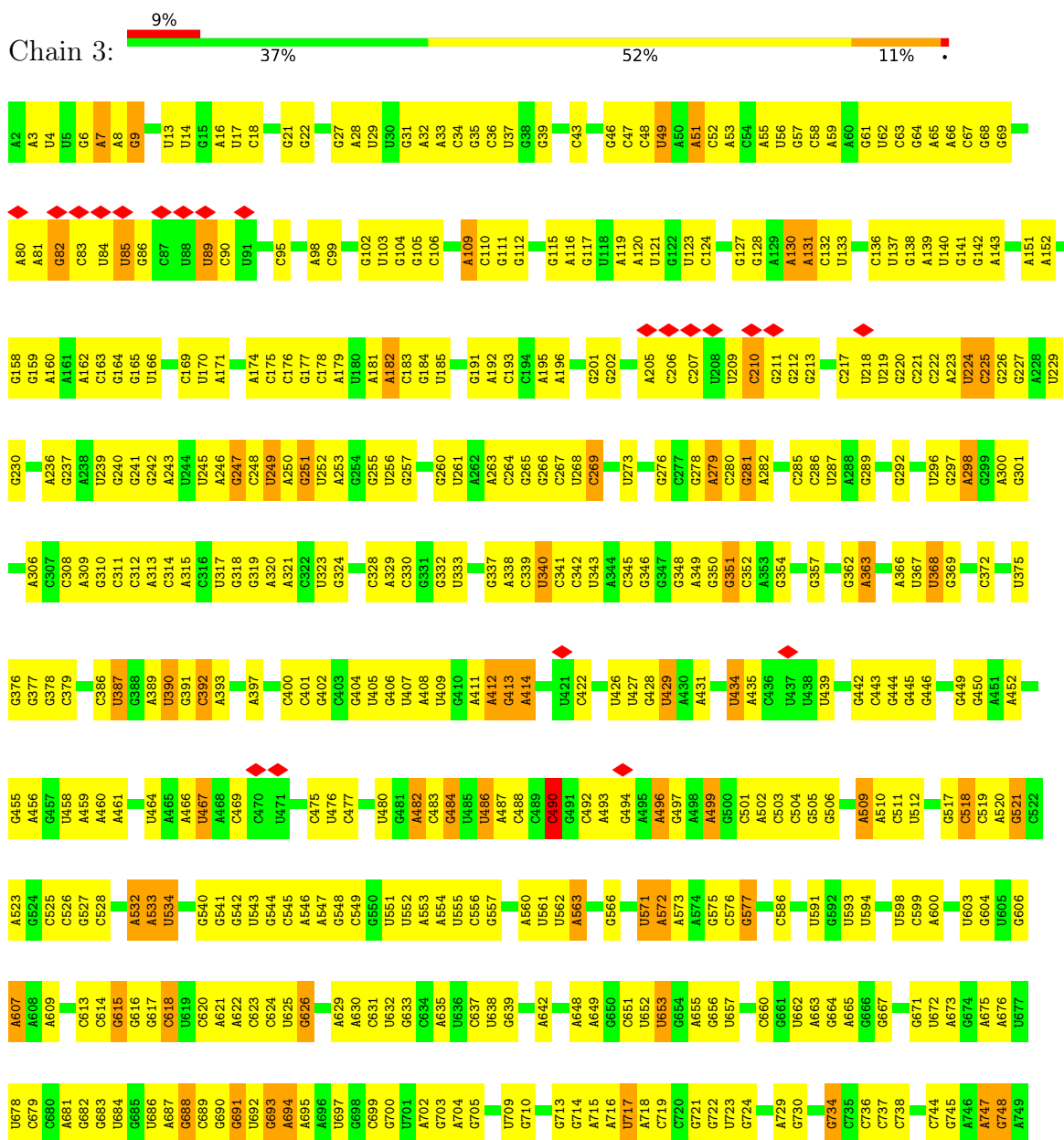
- Molecule 57 is a protein called 30S ribosomal protein S21.

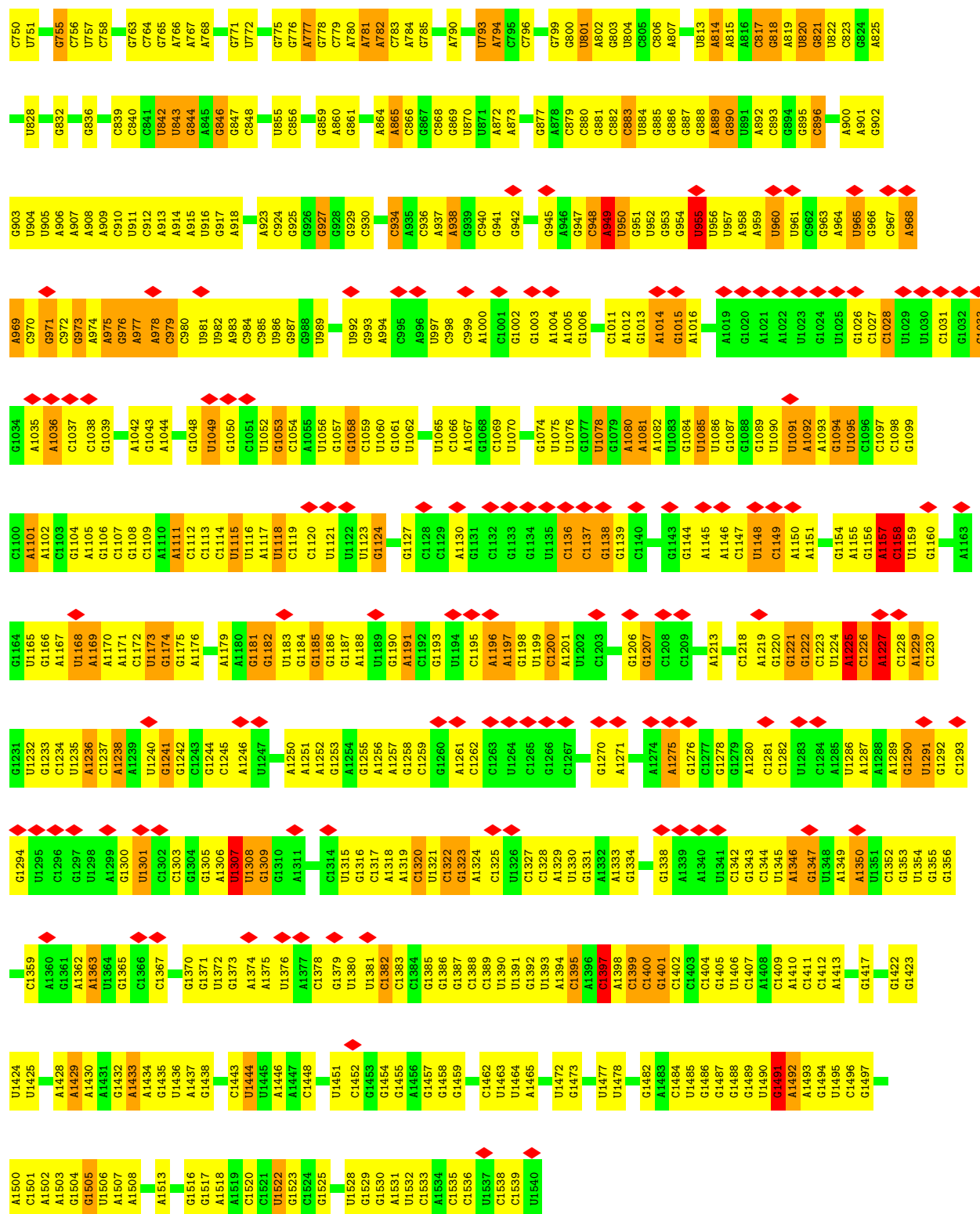
Mol	Chain	Residues	Atoms					AltConf	Trace
57	Z	65	Total	C	N	O	S	0	0
			545	335	117	92	1		

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.

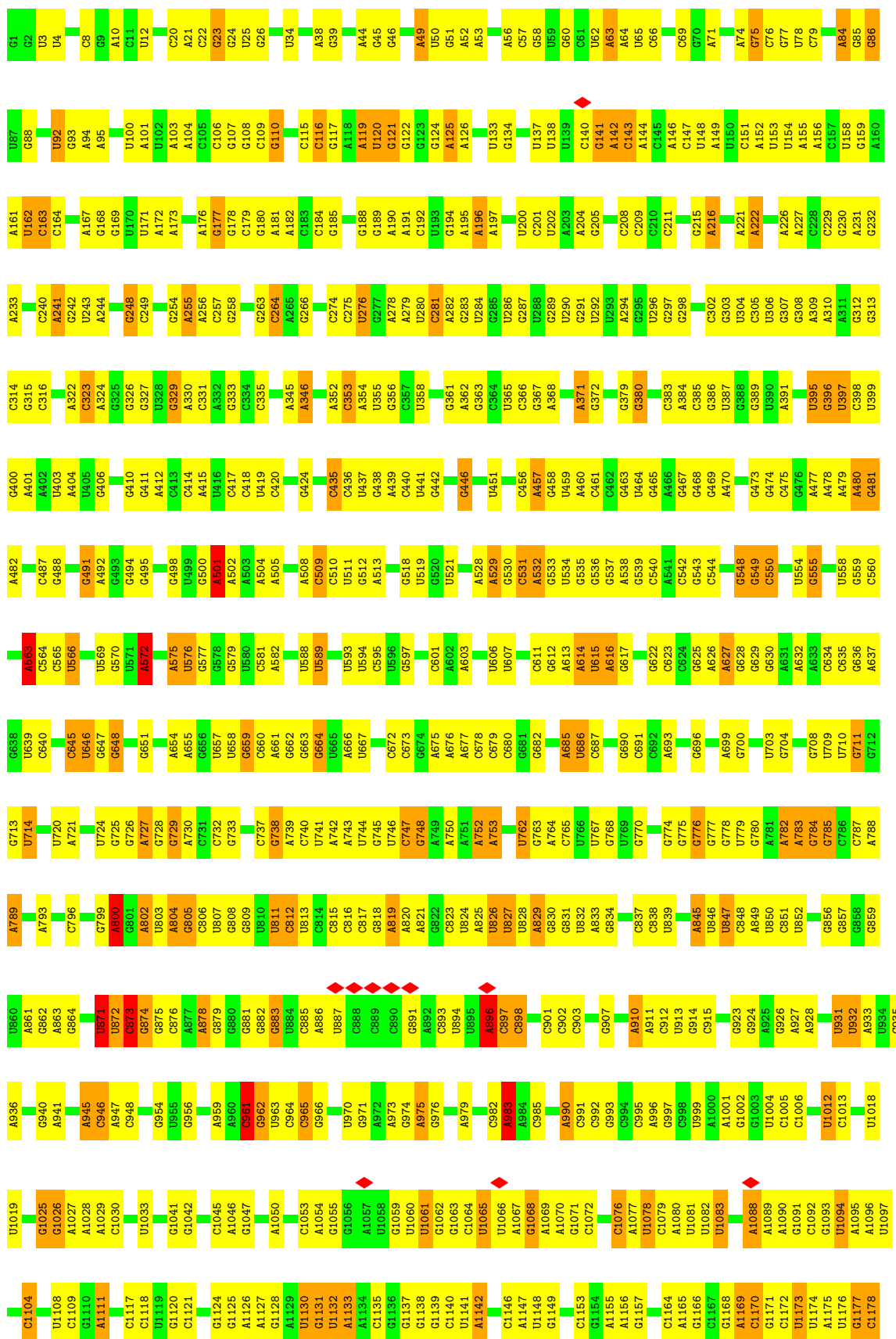
• Molecule 1: 16S rRNA





• Molecule 2: 23S rRNA



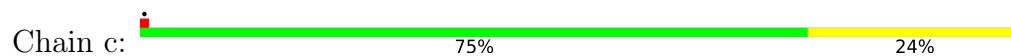


U2194	G1179	G1259	C1345	G1435	G1516	A1593	C1675	A1759	U1827	C1920	A1987	A2059	C2129	U2194
U2197	U1180	A1260	C1349	G1436	G1517	U1594	A1676	C1760	G1828	G1921	G1988	A2060	U2130	U2197
A2198	U1181	C1261	C1350	U1439	C1518	A1597	A1677	C1764	A1830	G1922	G1989	A2061	U2131	A2198
A2199	G1182	A1265	C1351	U1440	G1519	A1598	A1678	U1765	C1833	U1923	C1990	A2062	U2132	A2199
C2200	U1183	G1266	U1352	G1441	G1520	U1599	A1679	G1766	C1833	C1924	U1991	C2063	G2133	C2200
U2203	U1184	U1267	U1352	U1442	G1521	C1600	G1681	G1767	U1834	C1925	U1993	C2064	G2134	U2203
G2204	G1185	A1268	G1355	U1443	U1523	A1603	G1682	C1768	G1835	U1926	C1994	C2065	A2135	G2204
A2205	G1186	A1269	G1356	G1444	U1526	A1608	G1683	U1769	C1838	G1930	U1995	C2066	G2136	A2205
C2206	U1187	G1270	G1360	G1445	C1526	A1609	G1684	G1770	U1839	U1931	C1996	U2068	U2137	C2206
C2207	U1188	C1271	G1361	G1446	C1529	A1610	C1685	C1771	G1842	C1934	A1998	G2070	G2141	C2207
U2210	U1189	A1272	G1364	G1447	G1535	A1611	C1686	A1772	G1843	G1935	U1998	A2071	A2142	U2210
A2211	G1190	G1279	A1365	G1448	A1535	C1612	A1689	A1773	C1844	A1936	G2002	C2072	C2143	A2211
A2212	G1191	G1280	A1366	C1454	G1536	G1613	A1690	U1779	G1845	A1937	U2011	U2075	G2144	A2212
C2213	C1196	G1281	A1367	C1454	G1537	U1614	A1691	U1780	U1846	A1938	G2012	U2076	C2145	C2213
C2214	U1197	A1284	G1368	U1457	U1539	C1615	U1692	U1781	A1847	U1939	U2013	C2078	C2146	C2214
C2215	U1198	A1285	U1369	U1457	U1539	C1615	G1695	A1782	U1847	U1940	A2013	U2079	C2147	C2215
C2216	U1199	A1286	G1370	C1461	G1540	C1616	G1696	A1783	U1851	C1941	A2014	U2083	C2148	C2216
U2220	C1200	A1287	C1371	C1462	G1541	C1617	G1697	A1784	U1852	C1942	A2015	G2083	U2149	U2220
C2222	U1201	G1288	G1372	C1462	U1542	A1618	G1698	A1785	U1853	U1943	A2016	C2084	C2153	C2222
A2225	U1202	C1289	A1373	G1465	A1543	A1626	A1699	A1786	A1854	U1944	U2017	U2085	A2154	A2225
G2228	U1203	G1290	A1373	G1466	A1544	G1627	A1700	U1789	G1857	U1946	G2018	U2086	U2155	G2228
U2231	C1291	C1291	G1377	U1467	A1545	G1628	A1701	C1790	G1880	C1947	A2019	G2087	G2156	U2231
C2232	G1296	C1297	A1378	U1468	G1546	U1631	G1702	A1791	G1881	G1948	A2020	A2088	C2157	C2232
U2233	C1297	C1298	U1379	A1469	C1547	U1632	G1703	G1792	G1882	G1949	C2021	C2089	C2158	U2233
G2234	U1212	G1299	U1381	A1470	A1548	C1633	G1710	C1793	U1883	U1950	U2022	U2090	A2159	G2234
U2235	G1216	G1300	G1382	G1471	C1550	A1635	G1711	A1794	G1883	U1951	C2023	G2093	C2160	U2235
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G2238	G1220	C1302	A1388	U1476	A1552	A1637	G1715	U1797	G1874	C1954	C2025	A2095	G2162	G2238
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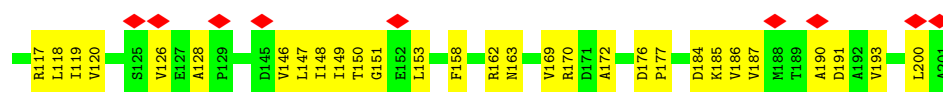
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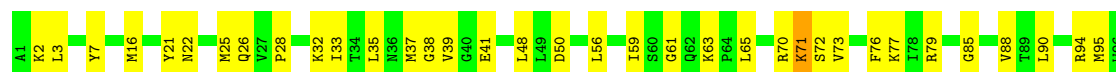
• Molecule 7: 50S ribosomal protein L3



• Molecule 8: 50S ribosomal protein L4



• Molecule 9: 50S ribosomal protein L5



• Molecule 10: 50S ribosomal protein L6

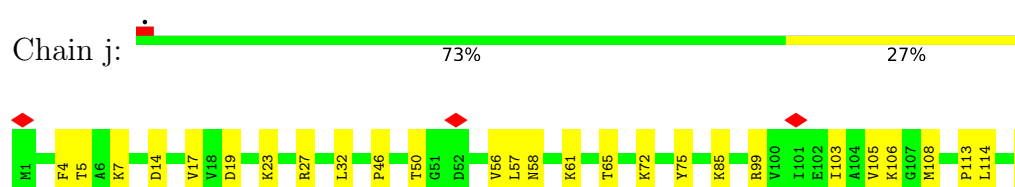


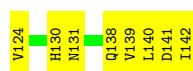
• Molecule 11: 50S ribosomal protein L9

- Molecule 12: 50S ribosomal protein L1

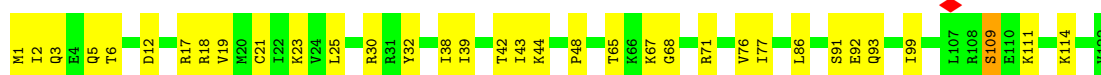
- Molecule 13: 50S ribosomal protein L11

- Molecule 14: 50S ribosomal protein L13

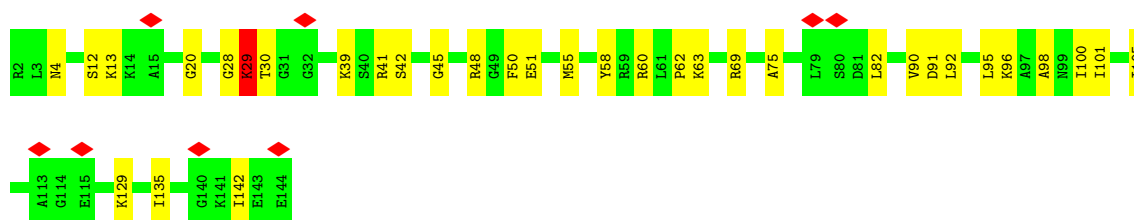
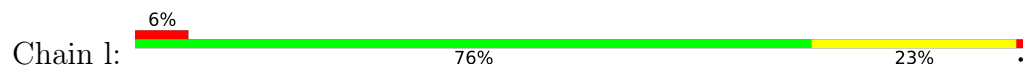




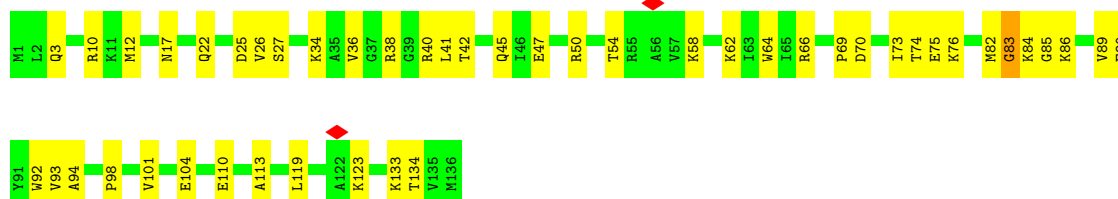
- Molecule 15: 50S ribosomal protein L14



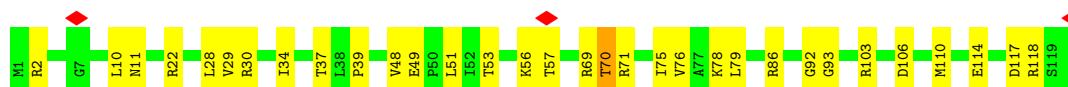
- Molecule 16: 50S ribosomal protein L15



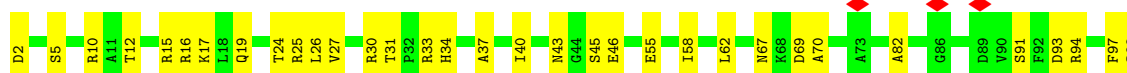
- Molecule 17: 50S ribosomal protein L16



- Molecule 18: 50S ribosomal protein L17

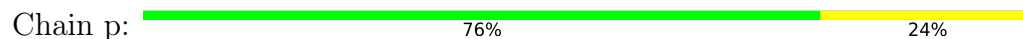


- Molecule 19: 50S ribosomal protein L18

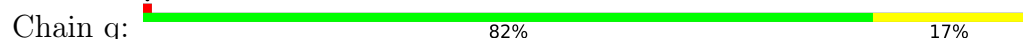




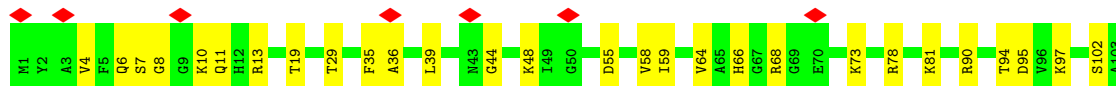
- Molecule 20: 50S ribosomal protein L19



- Molecule 21: 50S ribosomal protein L20



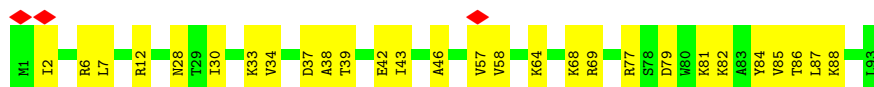
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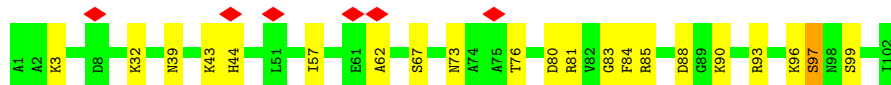
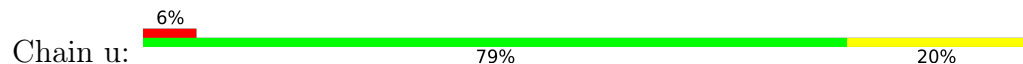
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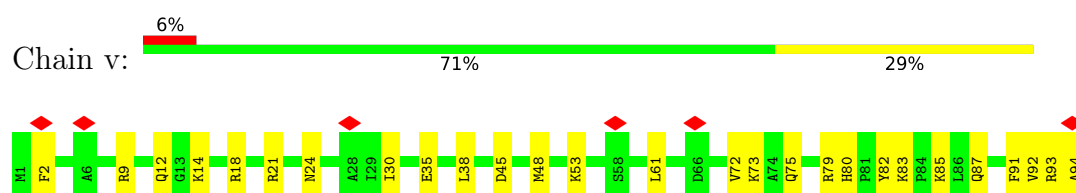
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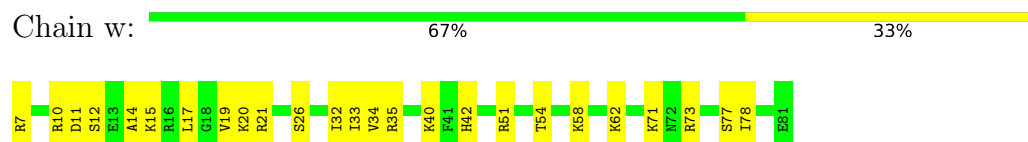
- Molecule 25: 50S ribosomal protein L24



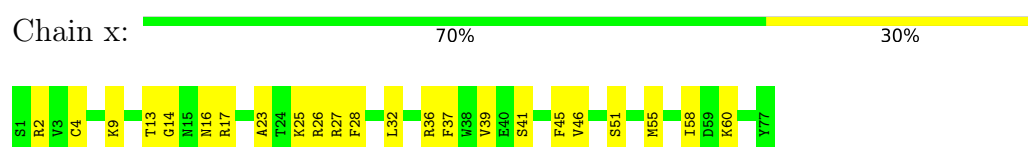
- Molecule 26: 50S ribosomal protein L25



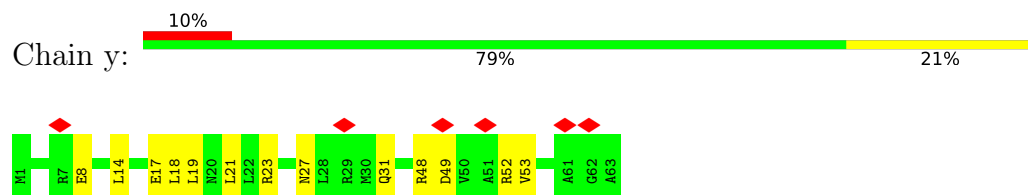
- Molecule 27: 50S ribosomal protein L27



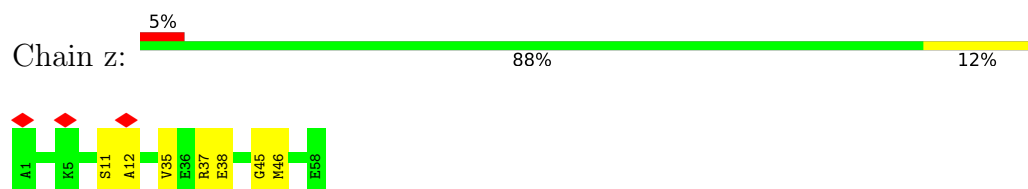
- Molecule 28: 50S ribosomal protein L28



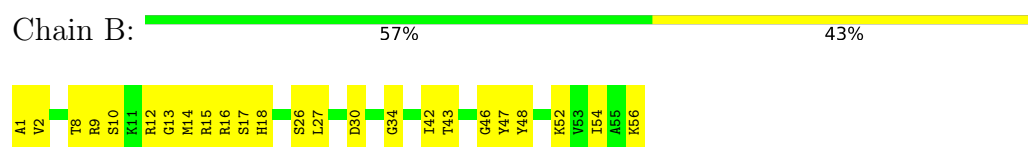
- Molecule 29: 50S ribosomal protein L29



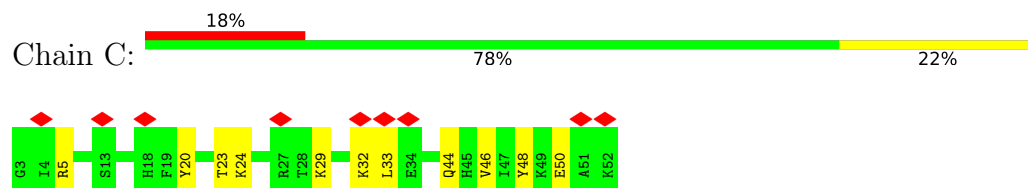
- Molecule 30: 50S ribosomal protein L30



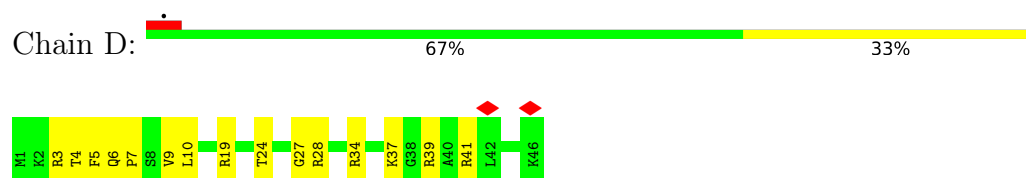
- Molecule 31: 50S ribosomal protein L32



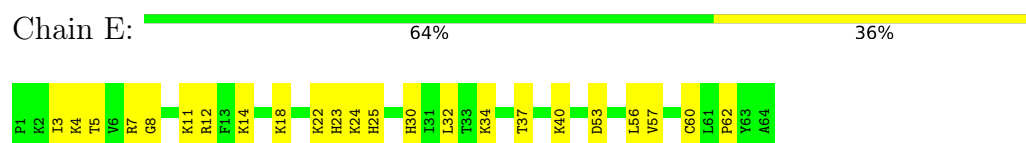
- Molecule 32: 50S ribosomal protein L33



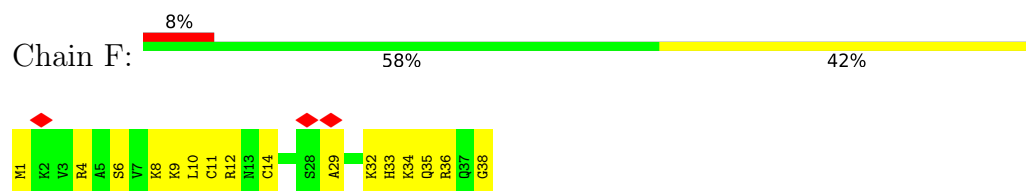
- Molecule 33: 50S ribosomal protein L34



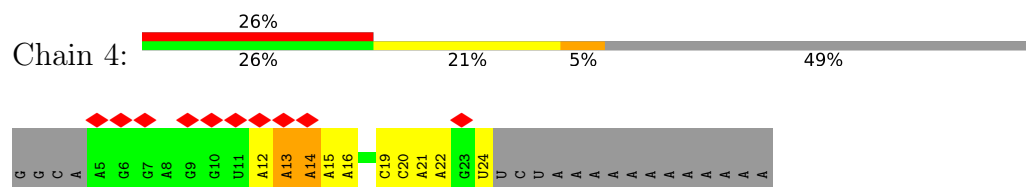
- Molecule 34: 50S ribosomal protein L35



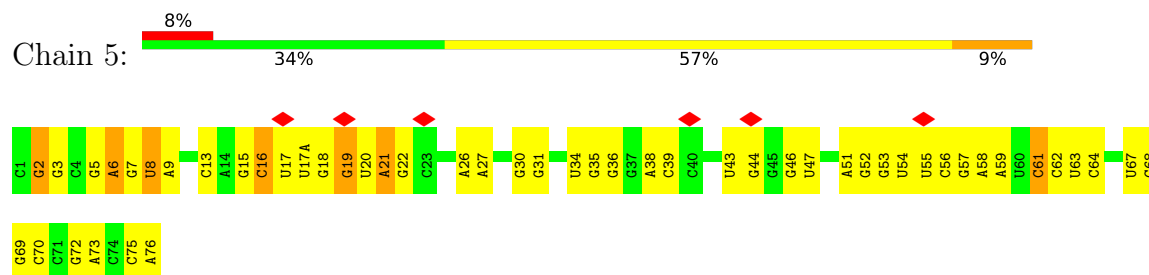
- Molecule 35: 50S ribosomal protein L36



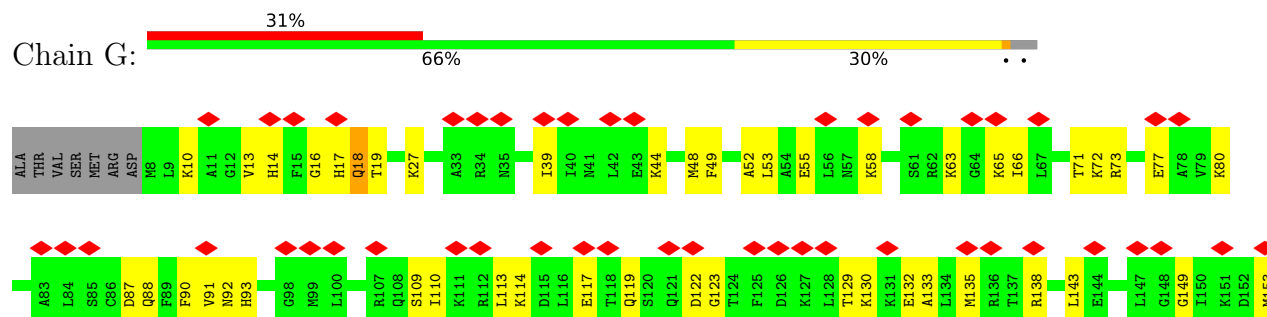
- Molecule 36: mRNA

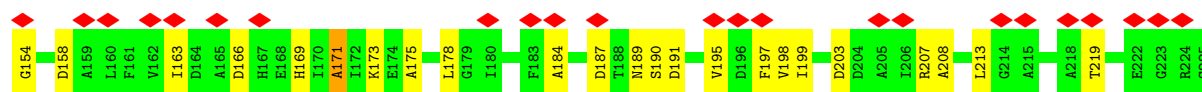


- Molecule 37: tRNA Pro

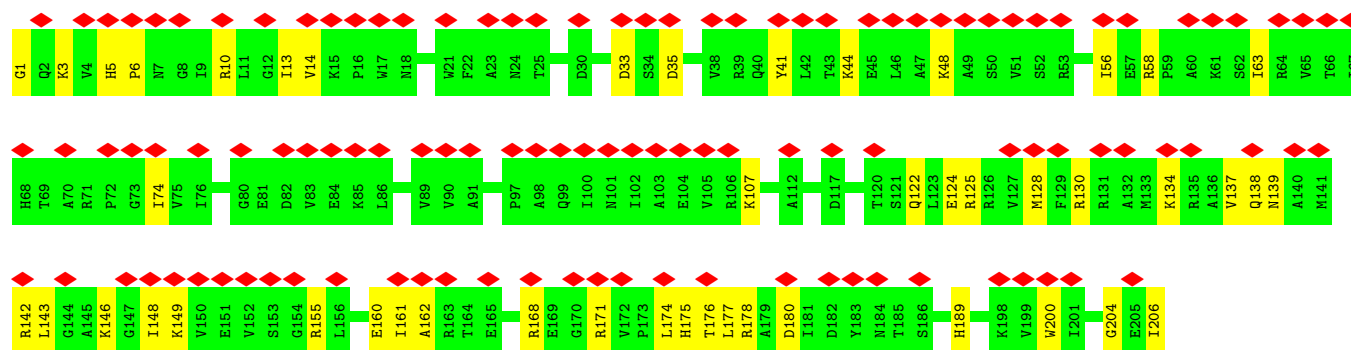
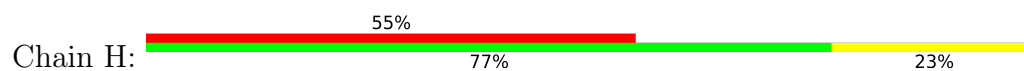


- Molecule 38: 30S ribosomal protein S2

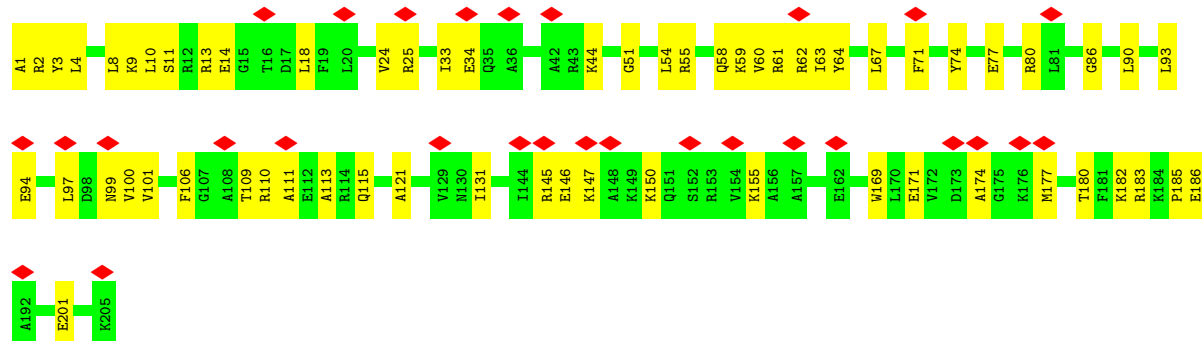




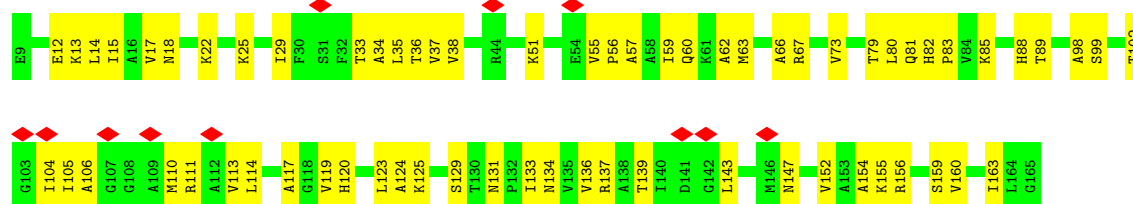
- Molecule 39: 30S ribosomal protein S3



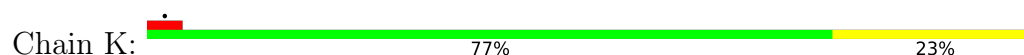
- Molecule 40: 30S ribosomal protein S4



- Molecule 41: 30S ribosomal protein S5

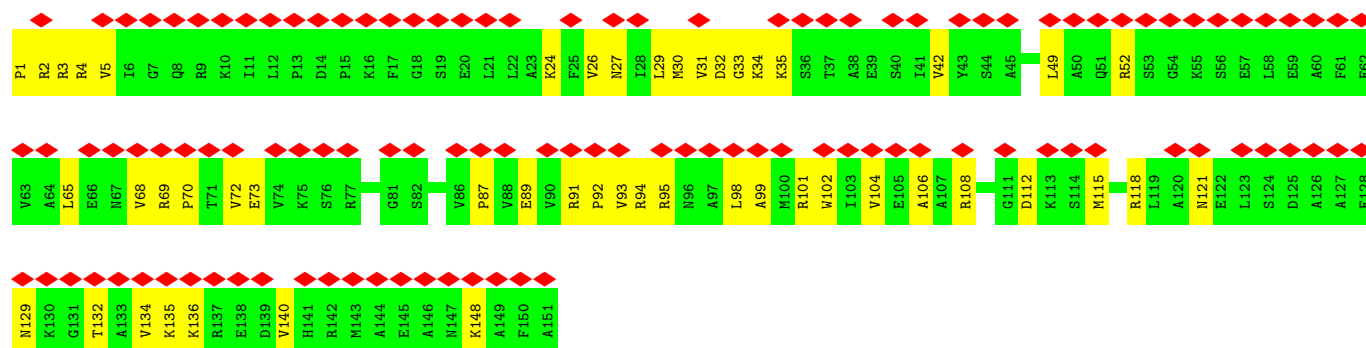
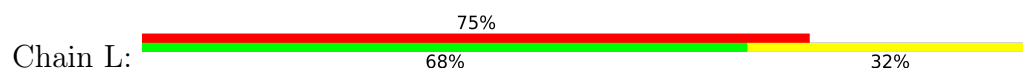


- Molecule 42: 30S ribosomal protein S6

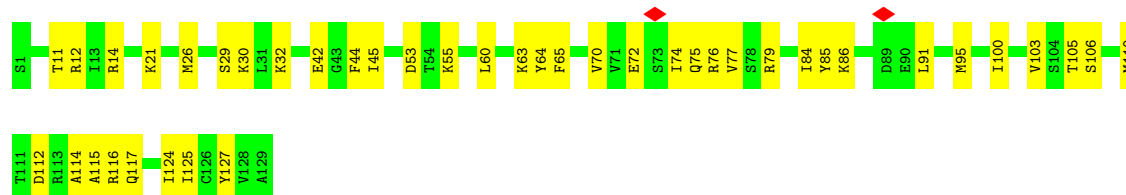




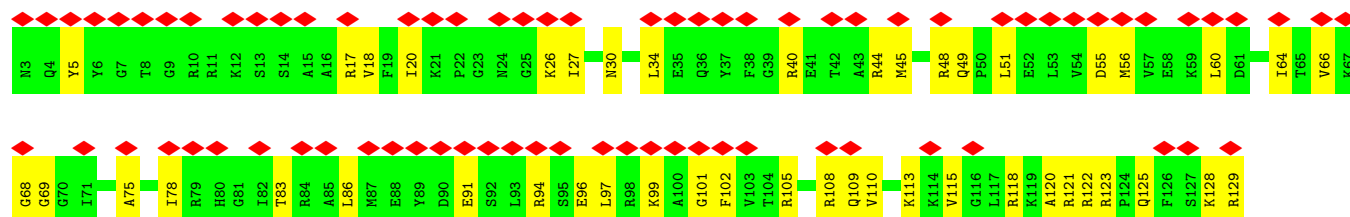
• Molecule 43: 30S ribosomal protein S7



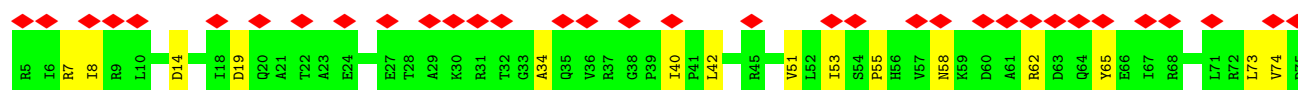
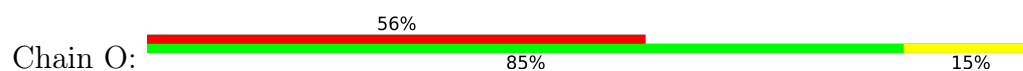
• Molecule 44: 30S ribosomal protein S8

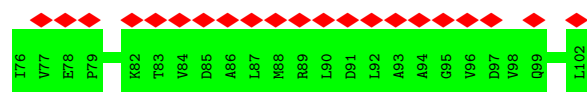


• Molecule 45: 30S ribosomal protein S9

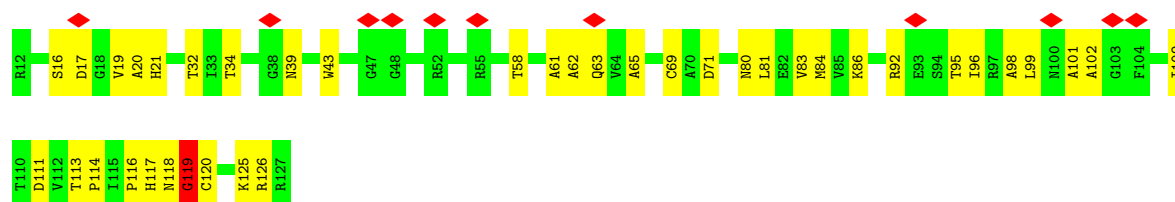


• Molecule 46: 30S ribosomal protein S10

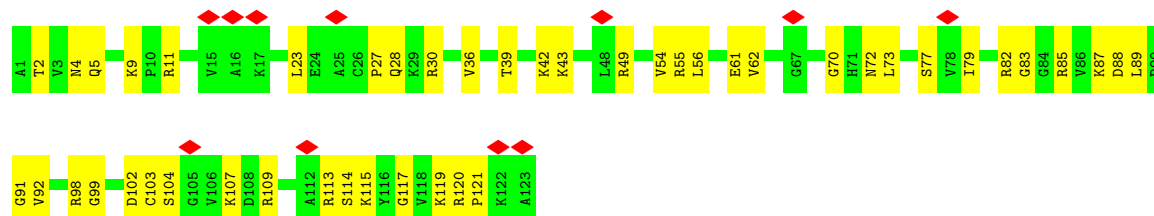




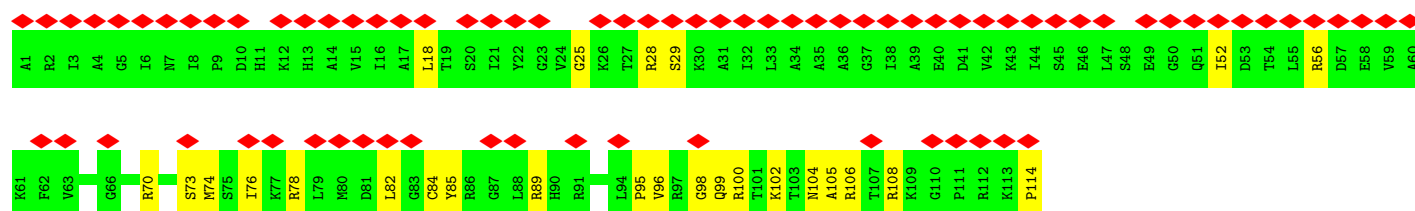
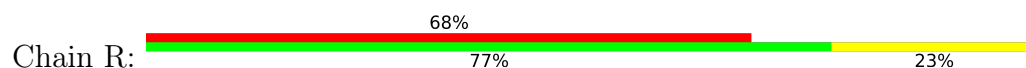
- Molecule 47: 30S ribosomal protein S11



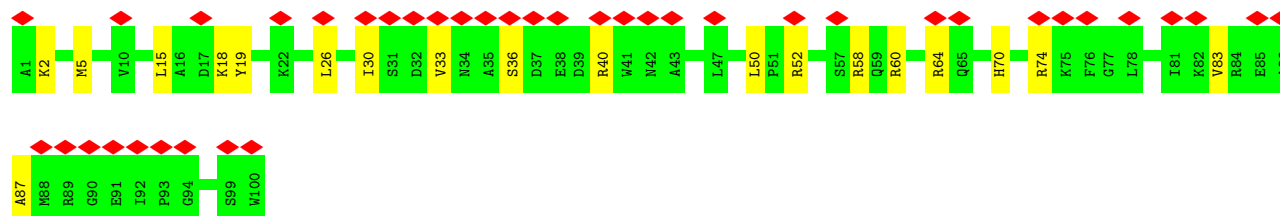
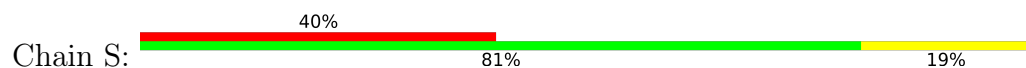
- Molecule 48: 30S ribosomal protein S12



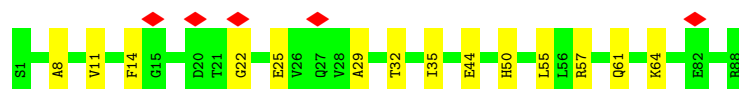
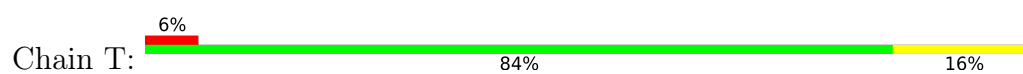
- Molecule 49: 30S ribosomal protein S13



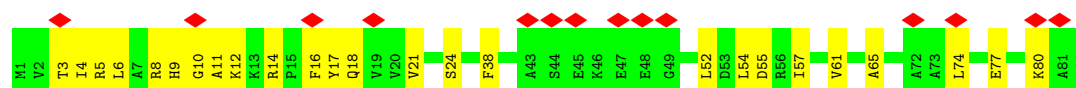
- Molecule 50: 30S ribosomal protein S14



- Molecule 51: 30S ribosomal protein S15



- Molecule 52: 30S ribosomal protein S16



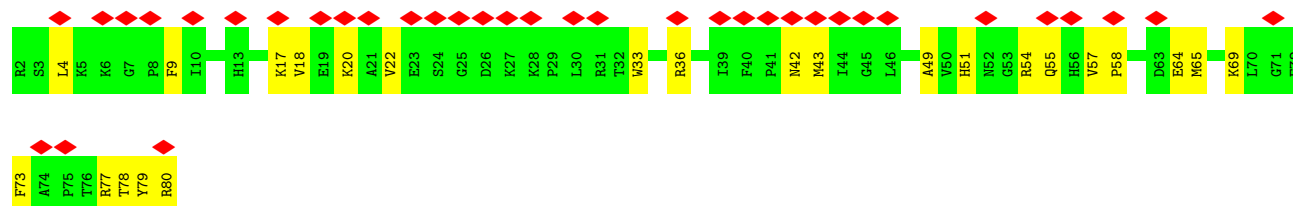
- Molecule 53: 30S ribosomal protein S17



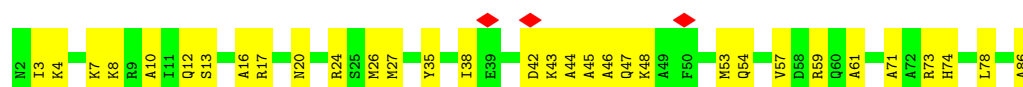
- Molecule 54: 30S ribosomal protein S18



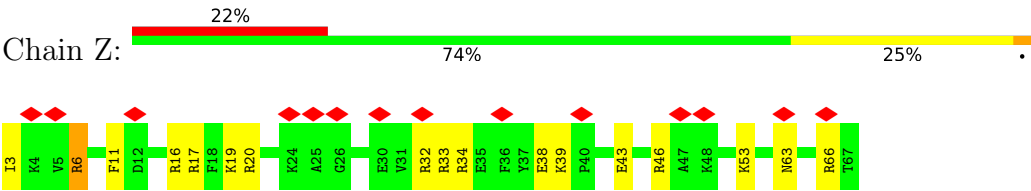
- Molecule 55: 30S ribosomal protein S19



- Molecule 56: 30S ribosomal protein S20



● Molecule 57: 30S ribosomal protein S21



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	1105	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	47.6	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	18.334	Depositor
Minimum map value	-12.168	Depositor
Average map value	0.114	Depositor
Map value standard deviation	0.809	Depositor
Recommended contour level	1.75	Depositor
Map size ($\text{\AA}$)	370.5408, 370.5408, 370.5408	wwPDB
Map dimensions	448, 448, 448	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	0.8271, 0.8271, 0.8271	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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	3	0.63	0/36963	0.64	21/57662 (0.0%)
2	1	0.63	0/69796	0.63	33/108888 (0.0%)
3	2	0.62	0/2872	0.61	0/4479
4	8	0.29	0/2255	0.70	4/3040 (0.1%)
5	6	0.67	0/1832	0.66	2/2855 (0.1%)
6	b	0.54	0/2122	0.87	6/2852 (0.2%)
7	c	0.50	0/1586	0.79	1/2134 (0.0%)
8	d	0.41	0/1571	0.71	0/2113
9	e	0.36	0/1435	0.78	2/1926 (0.1%)
10	f	0.34	0/1343	0.65	0/1816
11	g	0.32	0/1122	0.72	2/1515 (0.1%)
12	a	0.28	0/1033	0.63	0/1387
13	i	0.37	1/1046 (0.1%)	0.71	0/1410
14	j	0.47	0/1152	0.69	0/1551
15	k	0.53	0/948	0.93	0/1268
16	l	0.48	0/1054	0.76	1/1403 (0.1%)
17	m	0.49	0/1093	0.82	2/1460 (0.1%)
18	n	0.56	0/974	0.87	1/1301 (0.1%)
19	o	0.36	0/902	0.72	1/1209 (0.1%)
20	p	0.45	0/929	0.73	0/1242
21	q	0.49	0/960	0.72	1/1278 (0.1%)
22	r	0.40	0/829	0.76	1/1107 (0.1%)
23	s	0.46	0/864	0.76	0/1156
24	t	0.45	0/745	0.75	0/994
25	u	0.39	0/788	0.79	2/1051 (0.2%)
26	v	0.35	0/766	0.67	0/1025
27	w	0.47	0/582	0.80	0/769
28	x	0.49	0/635	0.80	0/848
29	y	0.36	0/510	0.72	0/677
30	z	0.43	0/453	0.74	0/605
31	B	0.47	0/450	0.88	0/599
32	C	0.36	0/417	0.71	0/554
33	D	0.54	0/380	0.84	0/498
34	E	0.51	0/513	0.79	0/676

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	F	0.49	0/303	0.79	0/397
36	4	0.62	0/490	0.66	0/763
37	5	0.68	0/1840	0.64	0/2868
38	G	0.37	0/1736	0.84	7/2338 (0.3%)
39	H	0.29	0/1652	0.64	0/2225
40	I	0.35	0/1665	0.78	0/2227
41	J	0.46	0/1170	1.00	3/1573 (0.2%)
42	K	0.42	0/836	0.84	0/1128
43	L	0.29	0/1196	0.65	0/1602
44	M	0.41	0/989	0.76	0/1326
45	N	0.31	0/1034	0.75	0/1375
46	O	0.36	0/797	0.78	0/1077
47	P	0.36	0/886	0.79	3/1195 (0.3%)
48	Q	0.44	0/969	0.92	2/1300 (0.2%)
49	R	0.30	0/893	0.74	0/1193
50	S	0.32	0/817	0.74	0/1088
51	T	0.37	0/722	0.73	0/964
52	U	0.38	0/659	0.73	0/884
53	V	0.39	0/658	0.73	0/881
54	W	0.39	0/545	0.78	0/731
55	X	0.31	0/653	0.68	0/877
56	Y	0.31	0/671	0.64	0/888
57	Z	0.44	0/551	1.20	3/728 (0.4%)
All	All	0.57	1/162652 (0.0%)	0.68	98/242976 (0.0%)

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	3	0	11
2	1	1	26
4	8	0	1
5	6	0	1
6	b	0	3
7	c	0	1
8	d	0	1
9	e	0	2
10	f	0	1
11	g	0	1
13	i	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
15	k	0	4
16	l	0	1
17	m	0	3
18	n	0	1
23	s	0	1
25	u	0	1
34	E	0	1
35	F	0	1
36	4	1	0
38	G	0	2
40	I	0	1
41	J	0	1
43	L	0	1
46	O	0	1
47	P	0	1
48	Q	0	2
51	T	0	1
54	W	0	1
All	All	2	73

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
13	i	73	PRO	CA-C	-5.61	1.48	1.51

All (98) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	1	2430	A	N9-C1'-C2'	7.61	123.41	112.00
22	r	44	GLY	N-CA-C	-7.47	105.05	113.79
2	1	873	C	N1-C1'-C2'	7.18	124.78	114.00
1	3	1227	A	C3'-C2'-O2'	7.12	121.38	110.70
1	3	1397	C	C3'-C2'-O2'	7.02	121.23	110.70
2	1	1944	U	N1-C1'-C2'	6.96	124.44	114.00
1	3	1307	U	C5'-C4'-C3'	6.66	125.99	116.00
57	Z	38	GLU	N-CA-C	-6.65	105.79	114.04
4	8	490	TYR	CA-C-N	6.63	134.20	121.54
4	8	490	TYR	C-N-CA	6.63	134.20	121.54
6	b	231	HIS	CA-C-N	-6.38	112.33	122.92
6	b	231	HIS	C-N-CA	-6.38	112.33	122.92
2	1	2251	G	N9-C1'-C2'	6.38	121.57	112.00
2	1	1818	U	N1-C1'-C2'	6.32	121.48	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	3	1014	A	C3'-C2'-O2'	6.28	120.13	110.70
2	1	2506	U	N1-C1'-C2'	6.27	121.40	112.00
25	u	97	SER	CA-C-N	6.24	133.46	121.54
25	u	97	SER	C-N-CA	6.24	133.46	121.54
2	1	395	U	N1-C1'-C2'	6.20	121.30	112.00
6	b	146	LYS	N-CA-C	-6.19	101.07	108.25
1	3	1397	C	C4'-C3'-O3'	6.18	122.26	113.00
41	J	81	GLN	CA-C-N	-6.15	109.97	122.45
41	J	81	GLN	C-N-CA	-6.15	109.97	122.45
2	1	501	A	N9-C1'-C2'	6.00	120.99	112.00
48	Q	121	PRO	CA-C-N	6.00	128.59	120.38
48	Q	121	PRO	C-N-CA	6.00	128.59	120.38
1	3	949	A	C3'-C2'-O2'	5.99	119.68	110.70
2	1	871	U	N1-C1'-C2'	5.98	120.97	112.00
16	l	29	LYS	N-CA-C	-5.98	98.07	110.80
2	1	563	A	N9-C1'-C2'	5.96	120.94	112.00
47	P	119	GLY	CA-C-N	5.96	132.92	121.54
47	P	119	GLY	C-N-CA	5.96	132.92	121.54
17	m	69	PRO	CA-C-N	5.94	132.89	121.54
17	m	69	PRO	C-N-CA	5.94	132.89	121.54
38	G	19	THR	CA-C-N	5.94	128.52	120.38
38	G	19	THR	C-N-CA	5.94	128.52	120.38
1	3	1397	C	N1-C1'-C2'	-5.92	103.12	112.00
2	1	572	A	N9-C1'-C2'	5.79	120.68	112.00
2	1	931	U	N1-C1'-C2'	5.76	120.64	112.00
1	3	490	C	N1-C1'-C2'	5.75	120.62	112.00
2	1	747	C	N1-C1'-C2'	5.70	120.56	112.00
1	3	686	U	N1-C1'-C2'	5.67	120.50	112.00
1	3	1225	A	C4'-C3'-O3'	-5.67	104.50	113.00
7	c	135	GLY	N-CA-C	-5.66	106.97	114.95
2	1	62	U	N1-C1'-C2'	5.66	120.49	112.00
1	3	1157	A	C2'-C3'-O3'	5.64	117.95	109.50
2	1	2326	C	C2'-C3'-O3'	5.63	122.15	113.70
18	n	70	THR	N-CA-C	5.63	122.79	110.80
6	b	12	ARG	CA-CB-CG	5.62	125.33	114.10
2	1	1395	A	N9-C1'-C2'	5.61	120.41	112.00
2	1	983	A	N9-C1'-C2'	5.58	120.37	112.00
2	1	896	A	C2'-C3'-O3'	5.57	122.06	113.70
2	1	2516	A	N9-C1'-C2'	5.54	120.31	112.00
1	3	955	U	C3'-C2'-O2'	5.46	118.89	110.70
1	3	1491	G	N9-C1'-C2'	5.44	120.17	112.00
2	1	693	A	N9-C1'-C2'	5.43	120.14	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	g	8	LYS	CA-C-N	5.42	131.73	121.97
11	g	8	LYS	C-N-CA	5.42	131.73	121.97
5	6	42	G	N9-C1'-C2'	5.41	120.11	112.00
1	3	563	A	N9-C1'-C2'	5.40	120.10	112.00
4	8	489	ALA	CA-C-N	5.37	131.80	121.54
4	8	489	ALA	C-N-CA	5.37	131.80	121.54
1	3	1158	C	N1-C1'-C2'	5.36	120.03	112.00
5	6	32	C	N1-C1'-C2'	5.34	120.01	112.00
1	3	950	U	O4'-C4'-C3'	-5.34	98.66	104.00
2	1	682	G	N9-C1'-C2'	5.33	119.99	112.00
38	G	18	GLN	N-CA-C	5.29	122.07	110.80
2	1	1130	U	C2'-C3'-O3'	5.28	121.61	113.70
2	1	2071	A	N9-C1'-C2'	5.26	119.88	112.00
2	1	1834	U	N1-C1'-C2'	5.24	119.85	112.00
1	3	1011	C	N1-C1'-C2'	5.23	119.84	112.00
1	3	883	C	N1-C1'-C2'	5.21	119.82	112.00
1	3	496	A	N9-C1'-C2'	5.21	119.81	112.00
2	1	961	C	N1-C1'-C2'	5.20	119.79	112.00
2	1	826	U	N1-C1'-C2'	5.19	119.79	112.00
2	1	1503	A	N9-C1'-C2'	5.19	119.78	112.00
1	3	260	G	N9-C1'-C2'	5.18	119.77	112.00
19	o	58	ILE	N-CA-C	-5.17	108.47	113.53
21	q	5	ARG	CA-CB-CG	5.16	124.41	114.10
38	G	171	ALA	CA-C-N	5.14	127.23	120.60
38	G	171	ALA	C-N-CA	5.14	127.23	120.60
2	1	1288	G	N9-C1'-C2'	5.14	119.70	112.00
2	1	738	G	N9-C1'-C2'	5.12	119.69	112.00
6	b	5	CYS	CA-C-N	5.12	128.43	120.60
6	b	5	CYS	C-N-CA	5.12	128.43	120.60
57	Z	6	ARG	CA-C-N	5.11	131.31	121.54
57	Z	6	ARG	C-N-CA	5.11	131.31	121.54
2	1	802	A	N9-C1'-C2'	5.11	119.67	112.00
38	G	18	GLN	CA-C-N	-5.09	113.09	121.80
38	G	18	GLN	C-N-CA	-5.09	113.09	121.80
2	1	1551	A	N9-C1'-C2'	5.08	119.62	112.00
9	e	71	LYS	CA-C-N	5.08	131.24	121.54
9	e	71	LYS	C-N-CA	5.08	131.24	121.54
41	J	160	VAL	N-CA-C	5.06	115.28	110.42
2	1	555	G	N9-C1'-C2'	5.03	119.55	112.00
2	1	1419	A	N9-C1'-C2'	5.03	119.55	112.00
1	3	390	U	N1-C1'-C2'	5.02	119.53	112.00
47	P	120	CYS	N-CA-C	-5.00	100.14	110.80

All (2) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
2	1	873	C	C1'
36	4	13	A	C4'

All (73) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	1	1025	G	Sidechain
2	1	1191	G	Sidechain
2	1	1204	A	Sidechain
2	1	1425	G	Sidechain
2	1	1792	G	Sidechain
2	1	1814	G	Sidechain
2	1	1828	G	Sidechain
2	1	1834	U	Sidechain
2	1	1964	G	Sidechain
2	1	1972	G	Sidechain
2	1	2180	U	Sidechain
2	1	222	A	Sidechain
2	1	2273	A	Sidechain
2	1	2344	U	Sidechain
2	1	2582	G	Sidechain
2	1	26	G	Sidechain
2	1	2613	U	Sidechain
2	1	2732	G	Sidechain
2	1	2769	U	Sidechain
2	1	477	A	Sidechain
2	1	501	A	Sidechain
2	1	566	U	Sidechain
2	1	576	U	Sidechain
2	1	727	A	Sidechain
2	1	800	A	Sidechain
2	1	873	C	Sidechain
1	3	1049	U	Sidechain
1	3	1078	U	Sidechain
1	3	1148	U	Sidechain
1	3	1157	A	Sidechain
1	3	1397	C	Sidechain
1	3	1444	U	Sidechain
1	3	159	G	Sidechain
1	3	490	C	Sidechain
1	3	820	U	Sidechain
1	3	896	C	Sidechain

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Mol	Chain	Res	Type	Group
1	3	948	C	Sidechain
5	6	76	A	Sidechain
4	8	490	TYR	Peptide
34	E	30	HIS	Peptide
35	F	36	ARG	Peptide
38	G	17	HIS	Peptide
38	G	18	GLN	Peptide
40	I	77	GLU	Peptide
41	J	159	SER	Peptide
43	L	32	ASP	Peptide
46	O	34	ALA	Peptide
47	P	119	GLY	Peptide
48	Q	2	THR	Peptide
48	Q	92	VAL	Peptide
51	T	44	GLU	Peptide
54	W	19	GLU	Peptide
6	b	242	HIS	Peptide
6	b	45	ASN	Peptide
6	b	86	ARG	Peptide
7	c	159	LYS	Peptide
8	d	83	VAL	Peptide
9	e	174	PHE	Peptide
9	e	175	PRO	Peptide
10	f	174	LYS	Peptide
11	g	8	LYS	Peptide
13	i	9	LYS	Peptide
15	k	109	SER	Peptide
15	k	91	SER	Peptide
15	k	92	GLU	Peptide
15	k	93	GLN	Peptide
16	l	29	LYS	Peptide
17	m	25	ASP	Peptide
17	m	70	ASP	Peptide
17	m	83	GLY	Peptide
18	n	10	LEU	Peptide
23	s	8	ARG	Peptide
25	u	97	SER	Peptide

5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen

atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	3	33012	0	16618	837	0
2	1	62317	0	31346	1314	0
3	2	2568	0	1303	54	0
4	8	2213	0	2225	52	0
5	6	1640	0	837	23	0
6	b	2083	0	2157	76	0
7	c	1565	0	1616	43	0
8	d	1552	0	1619	41	0
9	e	1411	0	1447	47	0
10	f	1323	0	1374	38	0
11	g	1111	0	1148	26	0
12	a	1026	0	1092	25	0
13	i	1032	0	1088	29	0
14	j	1129	0	1162	30	0
15	k	939	0	1012	23	0
16	l	1045	0	1117	33	0
17	m	1074	0	1157	35	0
18	n	961	0	1000	26	0
19	o	892	0	923	26	0
20	p	917	0	965	22	0
21	q	947	0	1022	21	0
22	r	816	0	839	21	0
23	s	857	0	922	25	0
24	t	739	0	807	20	0
25	u	780	0	834	18	0
26	v	753	0	780	20	0
27	w	575	0	592	19	0
28	x	625	0	655	22	0
29	y	509	0	543	9	0
30	z	449	0	491	5	0
31	B	444	0	461	22	0
32	C	410	0	440	9	0
33	D	377	0	418	11	0
34	E	504	0	574	24	0
35	F	302	0	340	11	0
36	4	436	0	218	6	0
37	5	1647	0	832	38	0
38	G	1705	0	1732	41	0
39	H	1625	0	1699	41	0
40	I	1643	0	1710	47	0
41	J	1157	0	1199	56	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
42	K	818	0	808	17	0
43	L	1182	0	1240	36	0
44	M	979	0	1034	34	0
45	N	1022	0	1070	48	0
46	O	787	0	828	13	0
47	P	870	0	878	29	0
48	Q	955	0	1019	37	0
49	R	884	0	944	30	0
50	S	805	0	847	20	0
51	T	714	0	737	11	0
52	U	649	0	666	19	0
53	V	649	0	691	20	0
54	W	536	0	552	18	0
55	X	638	0	665	27	0
56	Y	665	0	714	27	0
57	Z	545	0	579	17	0
All	All	149808	0	101586	3237	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 13.

All (3237) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:947:G:H5'	49:R:106:ARG:HB2	1.30	1.08
1:3:1345:U:H5''	45:N:121:ARG:NH1	1.67	1.08
1:3:1156:G:H2'	1:3:1157:A:H5''	1.36	1.06
2:1:907:G:H5'	17:m:22:GLN:HB3	1.41	1.00
2:1:964:C:H2'	2:1:965:C:H5''	1.39	1.00
1:3:1379:G:H21	1:3:1382:C:H42	1.10	0.99
5:6:15:G:H3'	5:6:16:C:H5''	1.43	0.98
1:3:673:A:H61	1:3:717:U:H3	1.08	0.97
2:1:1935:G:H3'	2:1:1962:C:H42	1.29	0.97
1:3:1345:U:H5''	45:N:121:ARG:HH12	1.30	0.95
41:J:82:HIS:CE1	44:M:95:MET:HE3	2.01	0.95
3:2:37:C:H42	3:2:49:C:H1'	1.29	0.95
1:3:1329:A:H5''	49:R:25:GLY:N	1.81	0.95
2:1:240:C:H3'	2:1:241:A:H5''	1.49	0.93
1:3:33:A:H61	1:3:551:U:H3	1.10	0.93
2:1:1567:G:H5''	6:b:84:PRO:HB3	1.51	0.92
2:1:2094:A:H2'	2:1:2095:A:H5''	1.51	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1801:A:H2'	6:b:261:ARG:HH22	1.34	0.91
2:1:2093:G:H5'	11:g:22:LYS:HD3	1.51	0.91
2:1:1645:G:H5''	2:1:1646:C:H5'	1.53	0.90
1:3:85:U:H5''	1:3:86:G:H5'	1.52	0.90
2:1:379:G:H3'	2:1:380:G:H5''	1.52	0.89
1:3:1225:A:H4'	55:X:77:ARG:NH1	1.88	0.89
2:1:724:U:H2'	2:1:725:G:H5'	1.52	0.89
2:1:818:G:H21	2:1:1189:A:H62	1.16	0.88
1:3:1322:C:H6	1:3:1322:C:OP1	1.55	0.88
2:1:2574:G:H2'	2:1:2575:C:H6	1.36	0.88
2:1:1597:A:H5''	2:1:1598:A:H5'	1.55	0.86
1:3:1118:U:HO2'	1:3:1119:C:H5	0.88	0.86
2:1:872:U:O2'	2:1:873:C:H5'	1.75	0.86
2:1:1991:U:H2'	2:1:1992:G:H5''	1.57	0.85
2:1:2574:G:H2'	2:1:2575:C:C6	2.12	0.85
2:1:782:A:H4'	2:1:783:A:H5'	1.58	0.85
2:1:280:U:H3'	2:1:281:C:H5''	1.58	0.84
2:1:119:A:H4'	2:1:120:U:H5'	1.58	0.84
2:1:1082:U:H5''	13:i:119:ALA:HB3	1.56	0.84
1:3:1246:A:H2	1:3:1291:U:H3	1.26	0.83
2:1:275:C:H2'	2:1:276:U:H4'	1.60	0.83
2:1:565:C:H5'	2:1:1253:A:N6	1.94	0.83
1:3:888:G:H3'	1:3:889:A:H2'	1.60	0.83
2:1:2791:G:H22	2:1:2806:C:H1'	1.43	0.83
1:3:755:G:H2'	1:3:756:C:C6	2.14	0.83
1:3:977:A:H4'	1:3:982:U:O4	1.79	0.82
2:1:962:G:H21	2:1:2250:G:H22	1.24	0.82
1:3:482:A:H2'	1:3:483:C:H5'	1.60	0.82
2:1:2743:U:H4'	10:f:152:ARG:HH12	1.42	0.82
1:3:1060:U:H5''	46:O:53:ILE:HD12	1.59	0.82
2:1:1697:G:H3'	2:1:1698:A:H5''	1.62	0.82
3:2:65:U:H2'	3:2:66:A:H5'	1.59	0.82
1:3:1170:A:H2'	1:3:1171:A:O4'	1.79	0.82
1:3:1375:A:H2'	1:3:1376:U:C6	2.15	0.82
1:3:907:A:H2'	1:3:908:A:C8	2.16	0.81
2:1:1779:U:H5''	2:1:1780:A:H5''	1.61	0.81
2:1:2088:A:H61	2:1:2231:U:H3	1.26	0.81
2:1:2747:G:H21	2:1:2757:A:H62	1.29	0.81
2:1:2294:G:H5'	19:o:98:GLN:HE22	1.45	0.81
1:3:1237:C:H4'	1:3:1334:G:H21	1.44	0.81
2:1:2593:U:H2'	2:1:2594:C:C6	2.15	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2504:U:H2'	2:1:2505:G:H5'	1.63	0.81
2:1:2586:U:H2'	2:1:2587:A:C8	2.15	0.81
2:1:1081:U:H4'	13:i:123:ALA:HB1	1.63	0.81
1:3:1221:G:H2'	1:3:1222:G:H5''	1.62	0.80
2:1:2345:G:H21	2:1:2381:A:H3'	1.46	0.80
2:1:828:U:H2'	2:1:829:A:C8	2.17	0.80
2:1:2504:U:C2'	2:1:2505:G:H5'	2.11	0.80
2:1:784:G:H5'	2:1:785:G:OP1	1.81	0.80
1:3:614:C:H2'	1:3:615:G:H5''	1.63	0.80
2:1:1177:G:H3'	2:1:1178:C:H5''	1.63	0.80
2:1:1936:A:H2	2:1:1943:U:H3	1.29	0.80
2:1:572:A:H61	2:1:2029:G:H21	1.27	0.80
2:1:531:C:H42	2:1:2018:G:H1	1.30	0.79
1:3:1379:G:N2	1:3:1382:C:H42	1.80	0.79
37:5:61:C:H2'	37:5:62:C:C6	2.18	0.79
1:3:555:U:H2'	1:3:556:C:C6	2.17	0.79
38:G:90:PHE:H	38:G:149:GLY:HA3	1.46	0.79
2:1:964:C:C2'	2:1:965:C:H5''	2.12	0.79
2:1:651:G:H5'	34:E:18:LYS:HG2	1.63	0.79
2:1:511:U:H4'	2:1:1235:G:H4'	1.64	0.78
2:1:2248:C:H2'	2:1:2249:U:H5'	1.65	0.78
1:3:1206:G:H3'	1:3:1207:G:H5'	1.65	0.78
2:1:2235:G:H2'	2:1:2236:U:C6	2.19	0.78
37:5:19:G:H4'	37:5:57:G:H22	1.48	0.78
2:1:962:G:H5'	2:1:963:U:OP2	1.84	0.78
2:1:2050:C:H42	2:1:2618:G:H1	1.29	0.78
1:3:1367:C:H5''	45:N:115:VAL:HG13	1.65	0.78
2:1:257:C:H2'	2:1:258:G:O4'	1.84	0.78
2:1:2645:G:H3'	2:1:2646:C:H5'	1.66	0.78
1:3:1015:G:H5''	1:3:1015:G:C8	2.19	0.78
2:1:2019:A:H2'	2:1:2020:A:H5''	1.67	0.77
2:1:1095:A:N1	13:i:25:PRO:HG2	2.00	0.77
2:1:1395:A:H1'	2:1:1397:U:H3	1.50	0.77
1:3:673:A:N6	1:3:717:U:H3	1.83	0.76
2:1:1655:A:H2	2:1:2049:G:H4'	1.50	0.76
1:3:813:U:H2'	1:3:814:A:H5''	1.65	0.76
2:1:910:A:H62	17:m:12:MET:HA	1.49	0.76
3:2:5:U:H2'	3:2:6:G:C8	2.20	0.76
1:3:405:U:H3'	1:3:406:G:H5'	1.66	0.76
1:3:947:G:H5'	49:R:106:ARG:CB	2.13	0.76
2:1:1807:G:H2'	2:1:1808:A:H5'	1.66	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:1119:C:H42	1:3:1154:G:H1	1.31	0.76
2:1:1795:C:H42	2:1:1824:G:H1	1.30	0.75
2:1:85:G:H3'	2:1:86:G:H5''	1.68	0.75
2:1:1842:G:H1	2:1:1898:U:H3	1.34	0.75
1:3:730:G:N2	1:3:765:G:H5''	2.02	0.75
36:4:13:A:H2'	36:4:14:A:O4'	1.87	0.75
2:1:78:U:H2'	2:1:79:C:C6	2.22	0.75
1:3:936:C:H1'	1:3:1383:C:H41	1.51	0.75
2:1:2419:U:H5''	34:E:32:LEU:HD13	1.69	0.74
1:3:1099:G:H4'	57:Z:66:ARG:HE	1.53	0.74
1:3:1118:U:O2'	1:3:1119:C:H5	1.69	0.74
35:F:11:CYS:N	35:F:14:CYS:SG	2.61	0.74
40:I:86:GLY:H	41:J:102:THR:HG21	1.53	0.74
1:3:1148:U:H2'	1:3:1149:C:O4'	1.88	0.73
2:1:2094:A:C2'	2:1:2095:A:H5''	2.17	0.73
2:1:558:U:H2'	2:1:559:G:H8	1.53	0.73
1:3:884:U:H4'	1:3:885:G:H5''	1.70	0.73
1:3:1097:C:H4'	1:3:1170:A:H4'	1.71	0.73
2:1:191:A:H2'	2:1:192:C:H6	1.51	0.73
1:3:1206:G:H2'	1:3:1207:G:H5''	1.70	0.73
1:3:1156:G:C2'	1:3:1157:A:H5''	2.18	0.73
2:1:690:G:H2'	2:1:691:C:H6	1.52	0.73
1:3:950:U:H3'	49:R:100:ARG:NH1	2.03	0.73
51:T:14:PHE:HB3	51:T:25:GLU:HB3	1.70	0.73
2:1:2086:U:H2'	2:1:2087:G:C8	2.23	0.73
2:1:1320:C:H4'	2:1:1321:A:H5''	1.70	0.72
1:3:577:G:H21	1:3:729:A:H2	1.35	0.72
1:3:956:U:H4'	55:X:80:ARG:HD3	1.68	0.72
1:3:1195:C:H2'	1:3:1197:A:H5'	1.70	0.72
2:1:2036:C:H2'	2:1:2037:A:H8	1.53	0.72
27:w:26:SER:HB2	27:w:62:LYS:HE2	1.71	0.72
1:3:683:G:H21	47:P:39:ASN:HD22	1.38	0.72
1:3:934:C:C5	1:3:1344:C:H2'	2.25	0.72
2:1:1260:A:H2'	2:1:1261:C:C6	2.25	0.72
1:3:1291:U:H2'	1:3:1292:G:C8	2.25	0.72
2:1:1569:A:H5'	6:b:58:LYS:HE2	1.71	0.72
1:3:494:G:H2'	1:3:496:A:H8	1.54	0.72
2:1:1265:A:H61	2:1:2013:A:H5''	1.55	0.72
47:P:116:PRO:HB2	47:P:118:ASN:H	1.54	0.72
1:3:1228:C:H2'	1:3:1229:A:H5''	1.71	0.71
1:3:1251:A:O2'	1:3:1370:G:H5'	1.90	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:1422:G:H5'	15:k:48:PRO:HG3	1.70	0.71
1:3:1457:G:H2'	1:3:1458:G:H8	1.55	0.71
1:3:1059:C:O2'	46:O:55:PRO:HD3	1.90	0.71
2:1:2036:C:H2'	2:1:2037:A:C8	2.26	0.71
40:I:51:GLY:HA2	40:I:54:LEU:HD12	1.72	0.71
2:1:658:U:H2'	2:1:659:G:H5''	1.70	0.71
2:1:1991:U:C2'	2:1:1992:G:H5''	2.20	0.71
2:1:2685:G:H2'	2:1:2686:G:H8	1.55	0.71
1:3:948:C:H2'	1:3:949:A:C8	2.25	0.71
1:3:1107:C:C4'	39:H:168:ARG:HH22	2.03	0.71
1:3:1506:U:O2'	1:3:1507:A:H5'	1.90	0.71
3:2:65:U:C2'	3:2:66:A:H5'	2.20	0.71
2:1:191:A:H2'	2:1:192:C:C6	2.26	0.71
2:1:1190:G:H2'	2:1:1191:G:H8	1.56	0.71
2:1:1316:U:H3	2:1:1336:A:H61	1.37	0.71
45:N:83:THR:HG21	45:N:102:PHE:HB3	1.73	0.71
2:1:1351:C:H2'	2:1:1352:U:C6	2.26	0.70
1:3:552:U:H2'	1:3:553:A:C8	2.25	0.70
1:3:572:A:H5''	1:3:917:G:H4'	1.74	0.70
2:1:1447:C:H2'	2:1:1448:G:C8	2.26	0.70
1:3:967:C:H5'	45:N:128:LYS:O	1.90	0.70
2:1:1546:G:H5''	2:1:1547:C:H5''	1.74	0.70
2:1:2055:C:H2'	2:1:2504:U:H5'	1.74	0.70
2:1:2066:C:O2'	2:1:2067:G:H5'	1.91	0.70
1:3:1401:G:OP2	36:4:21:A:H2'	1.92	0.70
2:1:679:C:H2'	2:1:680:C:C6	2.26	0.70
2:1:961:C:H6	2:1:961:C:H5'	1.57	0.70
21:q:74:SER:H	21:q:77:LYS:HD2	1.57	0.70
16:l:48:ARG:HH12	34:E:5:THR:HA	1.57	0.70
2:1:2625:G:H2'	2:1:2626:C:O4'	1.91	0.70
9:e:39:VAL:HG12	9:e:41:GLU:H	1.57	0.70
1:3:311:C:H2'	1:3:312:C:C6	2.27	0.70
2:1:1170:C:H2'	2:1:1171:G:H8	1.57	0.70
2:1:1771:C:H2'	2:1:1772:A:C8	2.27	0.70
2:1:2345:G:N3	2:1:2381:A:H2'	2.06	0.70
3:2:3:C:H2'	3:2:4:C:O4'	1.92	0.70
38:G:129:THR:HG23	38:G:132:GLU:H	1.56	0.70
1:3:1379:G:O2'	1:3:1380:U:H5'	1.92	0.69
2:1:2645:G:H3'	2:1:2646:C:C5'	2.21	0.69
1:3:782:A:H2'	1:3:783:C:H5'	1.71	0.69
2:1:2297:A:N1	2:1:2321:U:H5	1.91	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:964:A:H4'	1:3:1198:G:H4'	1.74	0.69
2:1:2685:G:H2'	2:1:2686:G:C8	2.28	0.69
2:1:2749:A:H62	2:1:2753:A:H61	1.40	0.69
2:1:275:C:H2'	2:1:276:U:C4'	2.22	0.69
6:b:144:GLU:HB2	6:b:187:CYS:HB3	1.73	0.69
1:3:999:C:H2'	1:3:1000:A:H8	1.57	0.69
2:1:52:A:H2'	2:1:53:A:C8	2.27	0.69
1:3:279:A:H5''	1:3:281:G:O4'	1.92	0.69
1:3:405:U:C5	40:I:4:LEU:HD21	2.28	0.69
2:1:1785:A:H2'	2:1:1786:A:H5''	1.74	0.69
2:1:2327:A:H2'	2:1:2328:A:C8	2.27	0.69
1:3:1190:G:OP1	39:H:3:LYS:HD2	1.93	0.69
2:1:85:G:C3'	2:1:86:G:H5''	2.22	0.69
2:1:414:C:H2'	2:1:415:A:C8	2.28	0.69
2:1:742:A:H5'	2:1:1675:C:O2'	1.93	0.69
37:5:27:A:H61	37:5:43:U:H3	1.39	0.69
1:3:1502:A:H8	1:3:1505:G:H22	1.40	0.69
2:1:529:A:OP2	14:j:113:PRO:HG3	1.92	0.69
2:1:2633:G:H2'	2:1:2634:A:C8	2.28	0.69
1:3:1069:C:H41	1:3:1094:G:H1	1.40	0.68
2:1:1005:C:H2'	2:1:1006:C:C6	2.28	0.68
2:1:2418:A:C2	2:1:2419:U:H1'	2.28	0.68
1:3:1061:G:H4'	46:O:58:ASN:ND2	2.07	0.68
1:3:1160:G:H1	1:3:1176:A:H61	1.41	0.68
1:3:1291:U:H6	1:3:1291:U:H5'	1.58	0.68
1:3:1329:A:H5''	49:R:25:GLY:H	1.57	0.68
2:1:1168:G:H2'	2:1:1169:A:H5''	1.74	0.68
1:3:1057:G:C2'	1:3:1058:G:H5'	2.22	0.68
28:x:26:ARG:NH1	28:x:27:ARG:O	2.27	0.68
2:1:864:G:H5'	3:2:100:G:H21	1.58	0.68
2:1:1334:G:H5''	24:t:69:ARG:NH1	2.08	0.68
2:1:2810:A:H62	2:1:2890:G:H21	1.41	0.68
2:1:380:G:OP1	28:x:17:ARG:HB2	1.92	0.67
2:1:992:C:H2'	2:1:993:G:H8	1.59	0.67
2:1:1504:A:H2'	2:1:1505:A:H8	1.58	0.67
2:1:2309:A:H5'	2:1:2310:C:H5	1.58	0.67
2:1:227:A:H61	2:1:410:G:H21	1.40	0.67
2:1:481:G:H1	2:1:509:C:H42	1.40	0.67
2:1:2243:U:H2'	2:1:2244:U:C6	2.29	0.67
1:3:1075:U:H3	1:3:1082:A:H61	1.39	0.67
1:3:1322:C:OP1	1:3:1322:C:C6	2.44	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1177:G:C3'	2:1:1178:C:H5''	2.24	0.67
1:3:692:U:H2'	1:3:693:G:H5''	1.76	0.67
1:3:934:C:H6	1:3:1345:U:OP2	1.77	0.67
1:3:1397:C:H3'	1:3:1397:C:C6	2.30	0.67
2:1:2087:G:H2'	2:1:2088:A:H8	1.60	0.67
2:1:804:A:H5'	2:1:805:G:OP2	1.95	0.67
44:M:12:ARG:HD2	44:M:26:MET:HE2	1.77	0.67
1:3:860:A:H2'	1:3:861:G:O4'	1.94	0.67
1:3:1301:U:O2	1:3:1301:U:H2'	1.93	0.67
1:3:1423:G:H1	1:3:1477:U:H3	1.42	0.67
5:6:32:C:H5	5:6:38:A:H61	1.43	0.67
1:3:1187:G:H2'	1:3:1188:A:H8	1.60	0.67
1:3:1228:C:C2'	1:3:1229:A:H5''	2.25	0.67
2:1:2667:C:H2'	2:1:2668:G:H5'	1.76	0.67
43:L:26:VAL:HG22	43:L:42:VAL:HG21	1.76	0.67
48:Q:85:ARG:HH22	48:Q:91:GLY:H	1.43	0.67
1:3:902:G:H2'	1:3:903:G:H8	1.60	0.67
2:1:1747:U:H2'	2:1:1748:C:C6	2.28	0.67
3:2:77:U:H3	3:2:99:A:H62	1.43	0.67
1:3:571:U:H2'	1:3:572:A:H5''	1.75	0.66
1:3:802:A:H2'	1:3:803:G:O4'	1.94	0.66
2:1:528:A:C2	2:1:2042:A:H2'	2.30	0.66
2:1:2389:G:H5''	2:1:2390:U:H4'	1.76	0.66
1:3:1444:U:H1'	1:3:1459:G:N2	2.11	0.66
2:1:302:C:H2'	2:1:303:G:C8	2.30	0.66
2:1:1923:U:H2'	2:1:1924:C:C6	2.31	0.66
2:1:2568:U:H2'	2:1:2569:G:C8	2.30	0.66
2:1:2848:G:N2	2:1:2867:G:H1'	2.09	0.66
27:w:33:ILE:HG22	27:w:34:VAL:HG23	1.77	0.66
1:3:553:A:H2'	1:3:554:A:C8	2.31	0.66
1:3:1092:A:H5''	43:L:3:ARG:NH1	2.09	0.66
1:3:1386:G:H2'	1:3:1387:G:C8	2.31	0.66
2:1:1250:G:H4'	21:q:5:ARG:HG3	1.76	0.66
2:1:2119:A:H1'	2:1:2170:A:H2	1.59	0.66
1:3:1229:A:H2'	1:3:1230:C:O4'	1.95	0.66
1:3:1355:G:H2'	1:3:1356:G:H8	1.60	0.66
2:1:1655:A:H2'	2:1:1656:C:H5'	1.78	0.66
2:1:2322:A:H2'	2:1:2323:G:O4'	1.94	0.66
2:1:1190:G:H2'	2:1:1191:G:C8	2.31	0.66
11:g:9:VAL:HG23	11:g:11:ASN:H	1.61	0.66
2:1:2548:U:H2'	2:1:2549:G:O4'	1.95	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:692:U:C2'	1:3:693:G:H5''	2.25	0.66
1:3:1220:G:H2'	1:3:1221:G:C8	2.29	0.66
2:1:2395:C:H2'	2:1:2396:G:C8	2.30	0.66
2:1:2564:A:C2	2:1:2647:U:H4'	2.31	0.66
2:1:2712:C:OP1	2:1:2714:G:H4'	1.95	0.66
1:3:280:C:H5''	1:3:281:G:H5''	1.76	0.66
1:3:1486:G:H2'	1:3:1487:G:C8	2.30	0.66
2:1:172:A:H2'	2:1:173:A:H8	1.59	0.66
2:1:2015:A:C2	31:B:2:VAL:HG23	2.31	0.66
1:3:546:A:H61	40:I:3:TYR:HD1	1.41	0.66
2:1:438:G:H2'	2:1:439:A:C8	2.31	0.66
2:1:673:C:H5''	8:d:76:PRO:HD2	1.78	0.66
2:1:2248:C:C2'	2:1:2249:U:H5'	2.25	0.66
1:3:110:C:H2'	1:3:111:G:O4'	1.96	0.66
1:3:736:C:H2'	1:3:737:C:C6	2.31	0.66
2:1:1054:A:H2'	2:1:1055:G:H8	1.61	0.66
2:1:1064:C:H2'	2:1:1065:U:C6	2.31	0.66
2:1:1789:A:H2'	2:1:1790:C:O4'	1.96	0.66
2:1:2035:G:H5'	2:1:2036:C:H5	1.59	0.66
38:G:187:ASP:H	38:G:190:SER:HB3	1.60	0.66
41:J:156:ARG:HD2	44:M:44:PHE:CZ	2.30	0.66
1:3:1116:U:O2'	1:3:1117:A:H5'	1.96	0.65
1:3:1535:C:H2'	1:3:1536:C:O4'	1.96	0.65
2:1:144:A:H4'	24:t:2:ILE:HG21	1.78	0.65
2:1:1680:U:H2'	2:1:1681:G:O4'	1.95	0.65
28:x:4:CYS:HB3	28:x:9:LYS:H	1.61	0.65
2:1:1635:A:H2'	2:1:1636:U:O4'	1.95	0.65
2:1:1895:C:H2'	2:1:1896:G:C8	2.31	0.65
52:U:3:THR:OG1	52:U:5:ARG:NH1	2.28	0.65
2:1:579:G:H4'	2:1:2018:G:H5''	1.78	0.65
2:1:872:U:C2'	2:1:873:C:H5'	2.27	0.65
11:g:87:GLU:OE2	42:K:14:GLN:NE2	2.29	0.65
2:1:1829:A:H3'	2:1:1830:C:H6	1.60	0.65
2:1:2364:C:H2'	2:1:2365:G:O4'	1.96	0.65
49:R:89:ARG:HD3	49:R:96:VAL:HG22	1.77	0.65
1:3:1307:U:O3'	49:R:99:GLN:NE2	2.29	0.65
2:1:893:C:H2'	2:1:894:U:O4'	1.96	0.65
52:U:3:THR:HG1	52:U:5:ARG:HH11	1.42	0.65
53:V:30:HIS:HB3	53:V:34:GLY:H	1.61	0.65
1:3:1399:C:H4'	1:3:1400:C:H5'	1.79	0.65
2:1:2696:U:H2'	2:1:2697:G:C8	2.32	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:a:175:ILE:HG21	12:a:192:LEU:HD21	1.78	0.65
2:1:1170:C:H2'	2:1:1171:G:C8	2.32	0.65
2:1:1819:A:H5'	6:b:159:THR:HG21	1.79	0.65
9:e:56:LEU:HA	9:e:59:ILE:HD12	1.79	0.65
2:1:2016:U:H2'	2:1:2017:U:C6	2.32	0.65
38:G:53:LEU:HB3	38:G:219:THR:HG21	1.79	0.65
1:3:51:A:H4'	1:3:52:C:H5''	1.79	0.65
1:3:68:G:H2'	1:3:69:G:O4'	1.96	0.65
1:3:1232:U:H5'	45:N:125:GLN:HB3	1.78	0.65
2:1:1082:U:H3'	2:1:1083:U:H5''	1.77	0.65
11:g:1:MET:N	11:g:21:VAL:O	2.30	0.65
1:3:131:A:H2'	1:3:132:C:C6	2.32	0.65
2:1:2691:C:H2'	2:1:2692:G:C8	2.30	0.65
1:3:1343:G:H5''	45:N:123:ARG:HB3	1.77	0.64
2:1:355:U:H2'	2:1:356:G:H8	1.62	0.64
2:1:1504:A:H2'	2:1:1505:A:C8	2.32	0.64
2:1:1829:A:H5''	2:1:1830:C:H5	1.63	0.64
1:3:1227:A:O2'	49:R:114:PRO:CG	2.45	0.64
1:3:1250:A:H5'	45:N:68:GLY:HA2	1.79	0.64
1:3:1343:G:O2'	45:N:122:ARG:HD2	1.97	0.64
3:2:33:G:H1	3:2:49:C:H42	1.44	0.64
1:3:1417:G:H2'	1:3:1482:G:N2	2.13	0.64
2:1:2581:G:H22	2:1:2610:C:H2'	1.61	0.64
6:b:160:TYR:H	6:b:176:ARG:HD3	1.61	0.64
2:1:379:G:C3'	2:1:380:G:H5''	2.25	0.64
2:1:2078:C:H2'	2:1:2079:U:C6	2.32	0.64
2:1:2568:U:H2'	2:1:2569:G:H8	1.61	0.64
2:1:2591:C:OP1	6:b:237:ARG:HD2	1.97	0.64
37:5:34:U:H2'	37:5:35:G:C8	2.33	0.64
53:V:36:PHE:O	53:V:38:LYS:NZ	2.31	0.64
1:3:652:U:H2'	1:3:653:U:H5''	1.79	0.64
1:3:923:A:H2'	1:3:924:C:O4'	1.96	0.64
2:1:613:A:H4'	2:1:614:A:C8	2.31	0.64
2:1:629:G:H2'	2:1:630:G:O4'	1.98	0.64
2:1:2015:A:H2'	2:1:2016:U:H5'	1.80	0.64
2:1:2694:G:H2'	2:1:2695:U:O4'	1.97	0.64
6:b:208:GLY:O	6:b:212:TRP:N	2.31	0.64
2:1:1919:A:H2'	2:1:1920:C:H5'	1.79	0.64
31:B:9:ARG:HG2	31:B:12:ARG:HH21	1.62	0.64
1:3:133:U:H3	1:3:229:U:H3	1.45	0.64
1:3:434:U:H2'	1:3:435:A:H8	1.61	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:1387:G:H2'	1:3:1388:C:C6	2.33	0.64
38:G:184:ALA:HB3	38:G:198:VAL:HG23	1.78	0.64
48:Q:85:ARG:NH2	48:Q:89:LEU:O	2.31	0.64
1:3:624:C:H4'	52:U:10:GLY:HA2	1.78	0.64
7:c:13:ARG:NH1	20:p:54:LEU:O	2.30	0.64
1:3:268:U:H2'	1:3:269:C:C6	2.32	0.64
1:3:737:C:H2'	1:3:738:C:H6	1.63	0.64
1:3:973:G:H8	1:3:973:G:OP2	1.81	0.64
2:1:133:U:H2'	2:1:134:G:C8	2.33	0.64
2:1:686:U:H2'	2:1:788:A:N1	2.13	0.64
2:1:1901:A:H2'	2:1:1902:C:H6	1.63	0.64
2:1:2462:C:H2'	2:1:2463:C:C6	2.33	0.64
36:4:22:A:N3	36:4:22:A:H2'	2.13	0.64
2:1:724:U:C2'	2:1:725:G:H5'	2.27	0.64
2:1:2023:C:H2'	2:1:2024:G:C8	2.32	0.64
2:1:84:A:H4'	2:1:85:G:O5'	1.98	0.63
2:1:1270:C:H5''	2:1:1271:G:H5'	1.79	0.63
2:1:1539:U:H2'	2:1:1540:G:H8	1.62	0.63
2:1:1561:C:H2'	2:1:1562:U:C6	2.33	0.63
41:J:147:ASN:ND2	44:M:72:GLU:OE2	2.31	0.63
1:3:613:C:H2'	1:3:614:C:C6	2.34	0.63
2:1:1164:C:H2'	2:1:1165:A:C8	2.32	0.63
12:a:165:ASN:HA	12:a:171:ILE:HG22	1.81	0.63
1:3:1049:U:C4	50:S:2:LYS:HE3	2.33	0.63
2:1:2498:C:H2'	2:1:2499:C:H5''	1.81	0.63
15:k:76:VAL:H	20:p:72:VAL:HG12	1.63	0.63
54:W:36:GLY:O	54:W:62:ARG:NH2	2.31	0.63
1:3:948:C:H2'	1:3:949:A:H8	1.63	0.63
1:3:1379:G:H21	1:3:1382:C:N4	1.91	0.63
2:1:1309:G:OP1	33:D:9:VAL:HG12	1.98	0.63
9:e:33:ILE:HB	9:e:90:LEU:HB2	1.80	0.63
20:p:52:ARG:HB2	20:p:55:HIS:HB2	1.78	0.63
37:5:75:C:H2'	37:5:76:A:O4'	1.99	0.63
1:3:475:C:H2'	1:3:476:U:C6	2.34	0.63
2:1:1127:A:H2'	2:1:1128:G:H5''	1.80	0.63
2:1:2576:G:OP1	2:1:2576:G:H3'	1.98	0.63
1:3:139:A:H61	1:3:224:U:H3	1.47	0.63
1:3:1052:U:H2'	1:3:1200:C:N4	2.14	0.63
2:1:115:C:H2'	2:1:116:C:H5''	1.81	0.63
2:1:1736:U:H2'	2:1:1737:G:C8	2.33	0.63
2:1:1805:A:H5''	6:b:247:TRP:CE2	2.33	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:L:98:LEU:HA	43:L:101:ARG:HB3	1.81	0.63
1:3:1146:A:H2'	1:3:1147:C:H5'	1.81	0.63
1:3:1184:G:H3'	1:3:1185:G:C5'	2.29	0.63
2:1:1567:G:C5'	6:b:84:PRO:HB3	2.27	0.63
2:1:1898:U:H2'	2:1:1899:A:H5'	1.81	0.63
41:J:156:ARG:CD	44:M:44:PHE:CZ	2.82	0.63
1:3:823:C:H42	1:3:877:G:H1	1.46	0.63
1:3:1238:A:C8	1:3:1303:C:H1'	2.34	0.63
2:1:92:U:H2'	2:1:93:G:O4'	1.99	0.63
2:1:2888:C:H2'	2:1:2889:C:C6	2.34	0.63
38:G:91:VAL:HG22	38:G:93:HIS:H	1.64	0.63
48:Q:99:GLY:H	48:Q:103:CYS:HB3	1.64	0.63
54:W:25:ILE:HA	54:W:28:LEU:HD12	1.81	0.63
1:3:137:U:H2'	1:3:138:G:O4'	1.99	0.63
2:1:713:G:H3'	2:1:714:U:H5''	1.79	0.63
2:1:1953:A:H2'	2:1:1954:G:H5'	1.80	0.63
3:2:5:U:H2'	3:2:6:G:H8	1.64	0.63
4:8:675:LYS:O	4:8:677:ARG:NH2	2.32	0.63
35:F:10:LEU:O	35:F:12:ARG:NH1	2.31	0.63
43:L:73:GLU:HG2	43:L:140:VAL:HG21	1.81	0.63
1:3:951:G:H2'	1:3:952:U:C6	2.33	0.62
1:3:1409:C:H4'	2:1:1914:C:H41	1.64	0.62
2:1:435:C:H2'	2:1:436:C:H5'	1.81	0.62
2:1:634:C:H2'	2:1:635:C:C6	2.34	0.62
2:1:1164:C:H2'	2:1:1165:A:H8	1.64	0.62
2:1:1198:U:H4'	21:q:8:ILE:HD11	1.79	0.62
8:d:147:LEU:HB3	8:d:186:VAL:HG12	1.79	0.62
1:3:386:C:H3'	1:3:387:U:H5''	1.81	0.62
2:1:593:U:H2'	2:1:594:U:C6	2.34	0.62
3:2:18:G:H1	3:2:65:U:H3	1.47	0.62
17:m:38:ARG:HB2	17:m:98:PRO:HG3	1.80	0.62
21:q:67:ALA:O	21:q:71:ASN:ND2	2.32	0.62
40:I:2:ARG:HH21	40:I:111:ALA:HB1	1.64	0.62
48:Q:55:ARG:HA	48:Q:61:GLU:HA	1.81	0.62
1:3:747:A:C3'	1:3:748:G:H5''	2.29	0.62
2:1:2282:G:H4'	2:1:2389:G:O2'	1.99	0.62
2:1:2360:G:H1'	16:l:60:ARG:HD2	1.81	0.62
20:p:111:GLU:HB3	20:p:113:LEU:HD23	1.82	0.62
27:w:71:LYS:HD2	27:w:73:ARG:HH21	1.64	0.62
1:3:1060:U:H3	1:3:1197:A:H61	1.46	0.62
1:3:1206:G:C3'	1:3:1207:G:H5'	2.29	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:383:C:H5''	2:1:385:C:OP2	1.98	0.62
2:1:1138:G:H2'	2:1:1139:G:O4'	1.99	0.62
2:1:2373:G:H2'	2:1:2374:C:C6	2.34	0.62
2:1:2399:G:H1	2:1:2417:C:H42	1.46	0.62
8:d:146:VAL:HG22	8:d:185:LYS:HB2	1.80	0.62
27:w:15:LYS:HB2	27:w:17:LEU:HD21	1.82	0.62
1:3:700:G:H4'	1:3:704:A:H1'	1.80	0.62
1:3:999:C:H2'	1:3:1000:A:C8	2.34	0.62
2:1:875:G:H2'	2:1:876:C:O4'	1.99	0.62
2:1:1957:C:H2'	2:1:1958:C:C6	2.34	0.62
40:I:86:GLY:N	41:J:102:THR:HG21	2.14	0.62
1:3:409:U:H5''	40:I:24:VAL:HB	1.81	0.62
2:1:1519:G:C2	2:1:1520:U:H1'	2.35	0.62
34:E:57:VAL:HA	34:E:60:CYS:HB2	1.82	0.62
2:1:1381:G:H21	2:1:1572:A:H2	1.48	0.62
2:1:1664:A:H61	2:1:1996:C:H42	1.46	0.62
6:b:179:GLU:HB2	6:b:270:ARG:HB3	1.81	0.62
2:1:954:G:H21	2:1:2274:A:H2	1.47	0.62
2:1:1334:G:H5''	24:t:69:ARG:CZ	2.30	0.62
2:1:1857:G:H1'	2:1:1885:A:H61	1.65	0.62
2:1:2839:G:H4'	18:n:49:GLU:OE1	1.99	0.62
1:3:246:A:N3	1:3:247:G:H1'	2.14	0.62
2:1:2896:C:H2'	2:1:2897:U:C6	2.34	0.62
2:1:478:A:H4'	25:u:32:LYS:NZ	2.15	0.62
2:1:1547:C:H2'	2:1:1548:A:C8	2.35	0.62
2:1:2746:U:H4'	10:f:137:LYS:HG2	1.81	0.62
13:i:4:VAL:HG23	13:i:7:TYR:HB3	1.80	0.62
18:n:37:THR:HG23	18:n:103:ARG:HH21	1.65	0.62
38:G:171:ALA:O	38:G:175:ALA:N	2.33	0.62
1:3:1049:U:O4	50:S:2:LYS:HE3	2.00	0.61
2:1:2531:A:H61	2:1:2662:A:H61	1.46	0.61
2:1:2584:U:H2'	2:1:2585:U:H5'	1.81	0.61
2:1:2658:C:H5''	10:f:157:LYS:HE2	1.82	0.61
5:6:46:G:H5'	5:6:47:U:OP2	2.00	0.61
43:L:30:MET:SD	43:L:35:LYS:NZ	2.69	0.61
2:1:1637:A:H5'	2:1:1760:C:O2'	1.99	0.61
34:E:8:GLY:O	34:E:12:ARG:NH2	2.33	0.61
45:N:27:ILE:HD12	45:N:34:LEU:HD13	1.83	0.61
1:3:981:U:H5''	50:S:5:MET:HE3	1.82	0.61
1:3:1240:U:N3	43:L:31:VAL:HB	2.15	0.61
2:1:302:C:H2'	2:1:303:G:H8	1.63	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:G:65:LYS:HE2	38:G:158:ASP:HB2	1.82	0.61
15:k:19:VAL:HG12	15:k:43:ILE:HA	1.83	0.61
28:x:17:ARG:HE	28:x:23:ALA:HB2	1.65	0.61
53:V:61:ARG:NH1	53:V:62:GLU:O	2.34	0.61
54:W:52:ARG:O	54:W:56:ARG:NH1	2.33	0.61
1:3:247:G:H2'	1:3:248:C:C6	2.34	0.61
1:3:1105:A:H2'	1:3:1106:G:H8	1.65	0.61
2:1:1655:A:C2	2:1:2049:G:H4'	2.35	0.61
2:1:1901:A:H2'	2:1:1902:C:C6	2.35	0.61
2:1:2134:A:H62	2:1:2157:G:H5''	1.65	0.61
28:x:16:ASN:HD21	28:x:26:ARG:HE	1.47	0.61
2:1:588:U:H2'	2:1:589:U:C6	2.36	0.61
2:1:737:C:H2'	2:1:738:G:O4'	2.01	0.61
2:1:2309:A:H5'	2:1:2310:C:C5	2.35	0.61
31:B:54:ILE:HG23	31:B:56:LYS:H	1.65	0.61
49:R:78:ARG:NH1	55:X:64:GLU:OE2	2.33	0.61
1:3:178:C:H2'	1:3:179:A:H8	1.66	0.61
1:3:553:A:H2'	1:3:554:A:H8	1.65	0.61
2:1:305:C:H42	2:1:312:G:H1	1.49	0.61
2:1:996:A:H2'	2:1:997:G:H8	1.65	0.61
17:m:17:ASN:O	17:m:38:ARG:NH1	2.34	0.61
1:3:577:G:N2	1:3:729:A:H2	1.98	0.61
1:3:1347:G:C5'	45:N:108:ARG:HB3	2.30	0.61
2:1:827:U:H4'	2:1:828:U:C6	2.36	0.61
2:1:2682:A:H5'	7:c:11:MET:O	2.01	0.61
56:Y:17:ARG:HA	56:Y:20:ASN:HB2	1.83	0.61
1:3:593:U:H2'	1:3:594:U:H6	1.66	0.61
2:1:676:A:H1'	2:1:2443:C:H1'	1.83	0.61
2:1:2683:C:H5''	20:p:50:ARG:HH22	1.66	0.61
38:G:166:ASP:OD1	38:G:189:ASN:ND2	2.33	0.61
1:3:140:U:H2'	1:3:141:G:C8	2.36	0.61
2:1:805:G:H5'	2:1:806:C:C6	2.35	0.61
2:1:996:A:H2'	2:1:997:G:C8	2.36	0.61
2:1:2023:C:H2'	2:1:2024:G:H8	1.66	0.61
2:1:811:U:O2	2:1:1250:G:H2'	1.99	0.60
2:1:1148:U:H2'	2:1:1149:G:C8	2.35	0.60
6:b:42:ARG:HE	6:b:48:ILE:HB	1.66	0.60
8:d:18:THR:HA	8:d:106:LYS:HG2	1.82	0.60
19:o:31:THR:HG22	19:o:33:ARG:H	1.65	0.60
1:3:964:A:H2'	1:3:965:U:H5'	1.83	0.60
1:3:1015:G:H2'	1:3:1016:A:O4'	2.00	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:1227:A:O2'	49:R:114:PRO:HG2	2.02	0.60
1:3:1233:G:H2'	1:3:1234:C:C6	2.35	0.60
2:1:1041:G:H2'	2:1:1042:G:H8	1.66	0.60
6:b:159:THR:HA	6:b:176:ARG:HE	1.65	0.60
6:b:208:GLY:HA2	6:b:211:ARG:HB3	1.83	0.60
37:5:69:G:H2'	37:5:70:C:O4'	2.01	0.60
43:L:30:MET:HE3	43:L:33:GLY:HA2	1.83	0.60
1:3:412:A:N6	1:3:431:A:H61	1.99	0.60
1:3:662:U:H2'	1:3:663:A:C8	2.36	0.60
1:3:737:C:H2'	1:3:738:C:C6	2.36	0.60
1:3:1060:U:H5''	46:O:53:ILE:CD1	2.30	0.60
1:3:1221:G:C2'	1:3:1222:G:H5''	2.31	0.60
2:1:2389:G:H5''	2:1:2390:U:C4'	2.31	0.60
37:5:51:A:H2'	37:5:52:G:O4'	2.01	0.60
1:3:9:G:OP2	41:J:125:LYS:HG3	2.01	0.60
1:3:332:G:H2'	1:3:333:U:C6	2.37	0.60
41:J:83:PRO:O	41:J:85:LYS:NZ	2.34	0.60
43:L:65:LEU:HB3	43:L:69:ARG:HH21	1.66	0.60
2:1:1141:U:H2'	14:j:65:THR:HG21	1.83	0.60
2:1:1199:U:H2'	2:1:1200:C:C6	2.37	0.60
47:P:125:LYS:HG3	47:P:126:ARG:HG2	1.83	0.60
1:3:747:A:H2'	1:3:748:G:H5''	1.82	0.60
1:3:1490:U:C2	1:3:1491:G:H1'	2.37	0.60
7:c:13:ARG:NH2	20:p:74:GLN:OE1	2.34	0.60
38:G:87:ASP:OD1	38:G:87:ASP:N	2.34	0.60
39:H:128:MET:SD	39:H:130:ARG:NH1	2.75	0.60
51:T:57:ARG:NH2	51:T:61:GLN:OE1	2.34	0.60
1:3:1107:C:H5'	39:H:168:ARG:HH22	1.65	0.60
1:3:1347:G:O5'	45:N:108:ARG:HB3	2.00	0.60
2:1:106:C:H2'	2:1:107:G:H8	1.66	0.60
2:1:457:A:N1	2:1:470:A:H5''	2.16	0.60
2:1:1220:G:H2'	2:1:1221:C:C6	2.36	0.60
4:8:512:ARG:HG3	36:4:21:A:H1'	1.84	0.60
1:3:413:G:N3	1:3:413:G:H2'	2.16	0.60
1:3:614:C:C2'	1:3:615:G:H5''	2.32	0.60
1:3:620:C:H1'	40:I:131:ILE:HG21	1.82	0.60
2:1:558:U:H2'	2:1:559:G:C8	2.34	0.60
2:1:902:C:H2'	2:1:903:C:C6	2.37	0.60
2:1:2714:G:H2'	2:1:2715:C:C6	2.36	0.60
6:b:138:SER:OG	6:b:139:THR:N	2.32	0.60
1:3:181:A:H2'	1:3:182:A:C8	2.36	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:6:15:G:H3'	5:6:16:C:C5'	2.27	0.60
8:d:191:ASP:OD1	8:d:191:ASP:N	2.34	0.60
1:3:412:A:H61	1:3:431:A:H61	1.49	0.60
2:1:878:A:H5'	2:1:879:G:OP2	2.02	0.60
2:1:1201:U:H2'	2:1:1202:G:C8	2.37	0.60
2:1:2888:C:H2'	2:1:2889:C:H6	1.67	0.60
4:8:514:GLN:NE2	4:8:589:SER:OG	2.35	0.60
17:m:75:GLU:HB2	17:m:90:GLU:HG3	1.83	0.60
23:s:100:THR:OG1	23:s:101:SER:N	2.34	0.60
2:1:1785:A:C2'	2:1:1786:A:H5''	2.32	0.59
2:1:2134:A:C5	2:1:2158:A:H4'	2.37	0.59
39:H:122:GLN:HG3	39:H:125:ARG:HD3	1.83	0.59
43:L:70:PRO:HG3	43:L:98:LEU:HD11	1.84	0.59
2:1:2821:A:N6	18:n:2:ARG:HH21	2.00	0.59
17:m:42:THR:HA	17:m:93:VAL:HA	1.83	0.59
1:3:35:G:H21	48:Q:114:SER:HB2	1.67	0.59
40:I:183:ARG:NH2	40:I:186:GLU:OE2	2.34	0.59
2:1:371:A:H1'	28:x:60:LYS:NZ	2.17	0.59
2:1:1127:A:C2'	2:1:1128:G:H5''	2.33	0.59
2:1:1657:U:OP2	7:c:141:ARG:HB2	2.02	0.59
31:B:26:SER:OG	31:B:27:LEU:N	2.33	0.59
2:1:539:G:H2'	2:1:540:C:C6	2.37	0.59
2:1:1029:A:H2'	2:1:1030:C:O4'	2.02	0.59
2:1:2818:U:H2'	2:1:2819:G:H8	1.67	0.59
9:e:2:LYS:NZ	9:e:97:GLU:OE1	2.35	0.59
9:e:70:ARG:HH11	9:e:71:LYS:HB2	1.68	0.59
37:5:46:G:H2'	37:5:47:U:H4'	1.83	0.59
1:3:400:C:H2'	1:3:401:C:O4'	2.03	0.59
1:3:505:G:H2'	1:3:506:G:C8	2.38	0.59
2:1:280:U:C3'	2:1:281:C:H5''	2.31	0.59
5:6:36:U:H2'	5:6:37:A:C8	2.37	0.59
8:d:46:GLN:HB2	8:d:86:ALA:HB1	1.84	0.59
8:d:52:VAL:HG23	8:d:74:LYS:HD2	1.83	0.59
8:d:117:ARG:NE	8:d:184:ASP:O	2.32	0.59
1:3:350:G:H2'	1:3:351:G:C8	2.37	0.59
1:3:945:G:H21	1:3:1334:G:H4'	1.67	0.59
6:b:128:THR:HA	6:b:190:THR:HA	1.84	0.59
44:M:75:GLN:HB3	44:M:127:TYR:HB2	1.85	0.59
2:1:21:A:H2'	2:1:22:C:C6	2.37	0.59
24:t:38:ALA:O	24:t:81:LYS:NZ	2.35	0.59
1:3:757:U:O2'	1:3:879:C:H1'	2.03	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1388:G:O2'	2:1:1526:C:H5'	2.03	0.59
2:1:1651:G:H4'	18:n:39:PRO:HG2	1.83	0.59
1:3:33:A:H2'	1:3:34:C:O4'	2.03	0.59
1:3:1097:C:H2'	1:3:1098:C:C6	2.38	0.59
16:l:96:LYS:HG2	16:l:101:ILE:HD11	1.83	0.59
19:o:37:ALA:HB2	19:o:106:LEU:HD21	1.85	0.59
44:M:76:ARG:NH1	44:M:125:ILE:O	2.36	0.59
1:3:1250:A:H4'	45:N:69:GLY:H	1.68	0.58
2:1:687:C:O5'	2:1:687:C:H6	1.86	0.58
6:b:141:HIS:ND1	6:b:192:GLY:O	2.31	0.58
1:3:1196:A:C2	39:H:161:ILE:HD12	2.38	0.58
2:1:352:A:H2'	2:1:353:C:C6	2.38	0.58
2:1:806:C:H5''	2:1:830:G:H21	1.65	0.58
2:1:1326:U:H3	2:1:1648:U:HO2'	1.51	0.58
2:1:1820:U:C4	6:b:158:GLY:HA3	2.38	0.58
2:1:2896:C:H2'	2:1:2897:U:H6	1.68	0.58
8:d:62:GLN:HG3	8:d:63:LYS:HG3	1.84	0.58
12:a:41:SER:HA	12:a:177:LYS:HA	1.86	0.58
24:t:58:VAL:HG23	24:t:85:VAL:HG22	1.85	0.58
40:I:171:GLU:HB2	40:I:180:THR:HG22	1.85	0.58
1:3:983:A:H5'	1:3:984:C:OP2	2.03	0.58
2:1:2235:G:H2'	2:1:2236:U:H6	1.67	0.58
43:L:24:LYS:HA	43:L:27:ASN:HB2	1.84	0.58
1:3:542:G:H2'	1:3:543:U:C6	2.39	0.58
1:3:1094:G:N3	1:3:1094:G:H2'	2.17	0.58
2:1:109:C:H2'	2:1:110:G:H5''	1.85	0.58
2:1:240:C:C3'	2:1:241:A:H5''	2.29	0.58
2:1:438:G:H2'	2:1:439:A:H8	1.68	0.58
2:1:2439:A:H1'	2:1:2587:A:H5'	1.85	0.58
2:1:2628:C:H3'	2:1:2629:U:H5'	1.85	0.58
3:2:12:C:O2'	3:2:13:G:H5'	2.02	0.58
6:b:206:LYS:HB2	6:b:209:ALA:H	1.67	0.58
13:i:23:VAL:HG13	13:i:26:ALA:HB3	1.85	0.58
1:3:1235:U:H3'	1:3:1236:A:H5''	1.86	0.58
2:1:881:G:H2'	2:1:882:G:H8	1.69	0.58
6:b:27:LYS:HE3	6:b:28:PRO:HD2	1.84	0.58
7:c:39:ASP:OD1	7:c:39:ASP:N	2.35	0.58
11:g:104:THR:HG22	11:g:109:GLU:HA	1.85	0.58
18:n:76:VAL:HA	18:n:79:LEU:HB2	1.86	0.58
1:3:542:G:H2'	1:3:543:U:H6	1.67	0.58
1:3:617:G:C3'	1:3:618:C:H5''	2.34	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:973:G:H5''	1:3:974:A:H2'	1.85	0.58
1:3:1149:C:C6	1:3:1149:C:OP2	2.56	0.58
1:3:1391:U:H2'	1:3:1392:G:C8	2.38	0.58
2:1:2094:A:H5'	11:g:25:TYR:HB2	1.86	0.58
2:1:2270:A:H2'	2:1:2271:G:O4'	2.04	0.58
49:R:105:ALA:HB1	49:R:108:ARG:HB2	1.85	0.58
2:1:1467:U:H3'	2:1:1468:U:H5''	1.85	0.58
2:1:2137:U:H3	2:1:2154:A:H61	1.52	0.58
25:u:80:ASP:OD2	25:u:96:LYS:N	2.34	0.58
41:J:106:ALA:O	41:J:111:ARG:NH2	2.36	0.58
45:N:51:LEU:HD22	45:N:56:MET:HA	1.86	0.58
55:X:17:LYS:HA	55:X:20:LYS:HE2	1.85	0.58
1:3:109:A:H3'	1:3:109:A:OP2	2.04	0.58
1:3:407:U:H3	1:3:435:A:H61	1.52	0.58
1:3:409:U:C5'	40:I:24:VAL:HB	2.34	0.58
1:3:629:A:H2'	1:3:630:A:O4'	2.04	0.58
1:3:964:A:C3'	1:3:965:U:H5'	2.34	0.58
1:3:1308:U:H6	1:3:1308:U:H5''	1.69	0.58
2:1:1365:A:OP1	28:x:2:ARG:HD2	2.04	0.58
11:g:135:HIS:NE2	11:g:137:GLU:OE1	2.36	0.58
17:m:47:GLU:OE2	17:m:50:ARG:NH1	2.35	0.58
1:3:1107:C:C5'	39:H:168:ARG:HH22	2.16	0.58
2:1:1096:A:N6	13:i:29:GLN:HG3	2.18	0.58
3:2:114:C:H2'	3:2:115:A:H8	1.69	0.58
43:L:112:ASP:OD2	43:L:121:ASN:ND2	2.36	0.58
57:Z:39:LYS:HE3	57:Z:43:GLU:HB3	1.85	0.58
1:3:185:U:H3	1:3:192:A:H61	1.49	0.58
1:3:744:C:H2'	1:3:745:G:C8	2.39	0.58
1:3:1107:C:H5'	39:H:168:ARG:NH2	2.19	0.58
2:1:75:G:H4'	29:y:48:ARG:NH2	2.19	0.58
2:1:896:A:O2'	2:1:897:C:H5''	2.03	0.58
2:1:2241:A:H2'	2:1:2242:G:C8	2.39	0.58
2:1:2298:A:H2'	2:1:2299:U:O4'	2.04	0.58
2:1:2619:C:H5''	7:c:157:LYS:HA	1.86	0.58
23:s:4:ILE:HG13	23:s:106:VAL:HB	1.85	0.58
37:5:26:A:N6	37:5:44:G:H1	2.01	0.58
43:L:115:MET:HA	43:L:118:ARG:HB2	1.86	0.58
2:1:872:U:H2'	2:1:873:C:O4'	2.04	0.57
2:1:1203:U:H3'	2:1:1204:A:H5''	1.86	0.57
2:1:1476:U:H2'	2:1:1477:A:H8	1.67	0.57
2:1:2284:A:OP2	32:C:5:ARG:HB3	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2558:C:H2'	2:1:2559:C:C6	2.38	0.57
37:5:19:G:H4'	37:5:57:G:N2	2.18	0.57
41:J:80:LEU:HD23	41:J:119:VAL:HG11	1.86	0.57
1:3:1291:U:H2'	1:3:1292:G:H8	1.67	0.57
2:1:460:A:H2'	2:1:461:C:O4'	2.04	0.57
2:1:778:G:H5''	6:b:47:ARG:HD3	1.86	0.57
2:1:1096:A:H61	13:i:29:GLN:HG3	1.69	0.57
1:3:617:G:H2'	1:3:618:C:H5''	1.85	0.57
1:3:1241:G:OP1	43:L:34:LYS:NZ	2.32	0.57
2:1:161:A:H3'	2:1:162:U:H5''	1.85	0.57
2:1:1064:C:H3'	2:1:1065:U:H5''	1.87	0.57
2:1:1117:C:H2'	2:1:1118:C:C6	2.40	0.57
2:1:1488:C:H42	2:1:1501:G:H1	1.51	0.57
2:1:2784:U:H2'	2:1:2785:C:C6	2.39	0.57
6:b:62:ARG:NH2	6:b:81:GLU:OE2	2.37	0.57
14:j:4:PHE:O	21:q:63:ARG:NH2	2.35	0.57
16:l:48:ARG:NH2	34:E:4:LYS:O	2.37	0.57
42:K:29:ILE:HG13	42:K:34:GLY:HA3	1.87	0.57
1:3:323:U:H5'	56:Y:17:ARG:HB3	1.86	0.57
1:3:405:U:C3'	1:3:406:G:H5'	2.34	0.57
1:3:1464:U:H2'	1:3:1465:A:H8	1.69	0.57
2:1:1138:G:H21	14:j:108:MET:HE2	1.69	0.57
2:1:1516:G:H2'	2:1:1517:G:H8	1.70	0.57
2:1:1721:G:H2'	2:1:1738:G:N2	2.19	0.57
2:1:2099:U:H2'	2:1:2100:G:C8	2.38	0.57
2:1:2360:G:H1'	16:l:60:ARG:HH21	1.68	0.57
19:o:62:LEU:HD13	19:o:70:ALA:HA	1.87	0.57
1:3:977:A:H3'	1:3:977:A:H8	1.69	0.57
2:1:1254:A:H3'	2:1:1255:U:H5''	1.85	0.57
2:1:2114:A:H3'	2:1:2115:G:C5'	2.34	0.57
3:2:23:G:H2'	3:2:24:G:N7	2.19	0.57
16:l:63:LYS:HE3	34:E:11:LYS:HD3	1.86	0.57
17:m:3:GLN:OE1	17:m:92:TRP:NE1	2.37	0.57
24:t:7:LEU:HD13	24:t:46:ALA:HA	1.86	0.57
44:M:114:ALA:O	44:M:117:GLN:NE2	2.34	0.57
50:S:15:LEU:HA	50:S:18:LYS:HB3	1.86	0.57
1:3:31:G:N7	1:3:306:A:H1'	2.18	0.57
1:3:1206:G:H2'	1:3:1207:G:C5'	2.34	0.57
2:1:533:G:H2'	2:1:534:U:C6	2.39	0.57
2:1:1201:U:H2'	2:1:1202:G:H8	1.68	0.57
2:1:2818:U:H2'	2:1:2819:G:C8	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:907:A:H2'	1:3:908:A:H8	1.66	0.57
2:1:1874:C:H2'	2:1:1875:G:O4'	2.05	0.57
2:1:2609:U:O2'	2:1:2610:C:H5'	2.03	0.57
2:1:2788:C:H2'	2:1:2789:C:C6	2.40	0.57
34:E:3:ILE:HG21	34:E:62:PRO:HG2	1.87	0.57
41:J:156:ARG:HH12	41:J:163:ILE:HB	1.69	0.57
1:3:781:A:H62	1:3:801:U:H3	1.51	0.57
2:1:1257:C:H2'	2:1:1258:U:C6	2.40	0.57
2:1:1548:A:H2'	2:1:1549:A:C8	2.40	0.57
2:1:1685:C:H2'	2:1:1686:C:H6	1.69	0.57
2:1:1997:C:H2'	2:1:1998:A:C8	2.40	0.57
6:b:143:VAL:HB	6:b:153:LEU:HB2	1.87	0.57
8:d:118:LEU:HA	8:d:186:VAL:HG23	1.85	0.57
12:a:7:ARG:NH1	12:a:40:GLU:OE2	2.38	0.57
43:L:68:VAL:HG23	43:L:99:ALA:HB1	1.86	0.57
54:W:38:ILE:HG13	54:W:58:ILE:HD13	1.86	0.57
1:3:744:C:H2'	1:3:745:G:H8	1.69	0.57
2:1:639:U:H2'	2:1:640:C:C6	2.40	0.57
2:1:767:U:H2'	2:1:768:G:H8	1.69	0.57
2:1:1487:U:H2'	2:1:1488:C:C6	2.39	0.57
2:1:1549:A:H2'	2:1:1550:C:C6	2.40	0.57
7:c:148:GLN:HB2	7:c:152:PRO:HG2	1.85	0.57
38:G:16:GLY:HA3	38:G:39:ILE:HA	1.87	0.57
38:G:135:MET:HA	38:G:138:ARG:HB2	1.85	0.57
1:3:34:C:H2'	1:3:35:G:H8	1.68	0.57
1:3:501:C:H2'	1:3:502:A:H8	1.69	0.57
1:3:675:A:H61	1:3:715:A:H61	1.51	0.57
1:3:793:U:H3'	1:3:794:A:C5'	2.35	0.57
1:3:1488:G:H2'	1:3:1489:G:O4'	2.05	0.57
2:1:335:C:H5''	25:u:81:ARG:HD3	1.87	0.57
2:1:675:A:H2'	2:1:2443:C:O2'	2.05	0.57
2:1:708:G:H2'	2:1:709:U:C6	2.40	0.57
2:1:1120:G:H2'	2:1:1121:C:C6	2.40	0.57
2:1:1685:C:H2'	2:1:1686:C:C6	2.40	0.57
2:1:2056:G:H21	31:B:1:ALA:N	2.03	0.57
2:1:2243:U:H2'	2:1:2244:U:H6	1.66	0.57
16:l:55:MET:O	16:l:60:ARG:NH1	2.37	0.57
22:r:66:HIS:CE1	22:r:94:THR:HG1	2.23	0.57
41:J:152:VAL:HG12	41:J:155:LYS:HE3	1.87	0.57
1:3:953:G:H2'	1:3:954:G:C8	2.40	0.56
1:3:1150:A:H2'	1:3:1151:A:C8	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:1347:G:H5''	45:N:108:ARG:HB3	1.86	0.56
1:3:1349:A:H1'	1:3:1374:A:N6	2.20	0.56
2:1:554:U:H2'	2:1:555:G:O4'	2.05	0.56
2:1:805:G:H5'	2:1:806:C:C5	2.40	0.56
2:1:910:A:H2'	2:1:911:A:H8	1.70	0.56
2:1:1141:U:H4'	2:1:1142:A:O4'	2.05	0.56
2:1:1943:U:O4'	2:1:1945:G:H5'	2.05	0.56
12:a:164:ARG:NH1	12:a:166:ASP:OD1	2.38	0.56
13:i:60:VAL:HG22	13:i:66:PHE:HB3	1.86	0.56
44:M:63:LYS:NZ	44:M:64:TYR:O	2.38	0.56
2:1:803:U:H2'	2:1:804:A:O4'	2.04	0.56
2:1:823:C:H2'	2:1:824:U:C6	2.40	0.56
2:1:856:G:H2'	2:1:857:G:C8	2.40	0.56
2:1:1432:G:H2'	2:1:1433:A:C8	2.40	0.56
2:1:2341:G:H2'	2:1:2342:C:C6	2.40	0.56
3:2:99:A:H2'	3:2:100:G:O4'	2.05	0.56
7:c:25:THR:OG1	7:c:189:VAL:O	2.23	0.56
19:o:2:ASP:N	19:o:5:SER:HG	2.02	0.56
25:u:85:ARG:NH2	25:u:99:SER:OG	2.36	0.56
47:P:125:LYS:O	57:Z:34:ARG:NE	2.36	0.56
1:3:3:A:H4'	1:3:613:C:O4'	2.05	0.56
1:3:517:G:H22	1:3:532:A:H2'	1.70	0.56
1:3:603:U:H3	1:3:635:A:H61	1.53	0.56
1:3:766:A:H2'	1:3:767:A:O4'	2.06	0.56
1:3:1042:A:H2'	1:3:1043:G:O4'	2.05	0.56
1:3:1117:A:H5''	45:N:105:ARG:NH2	2.19	0.56
1:3:1531:A:C2'	1:3:1532:U:H5'	2.35	0.56
2:1:862:G:H2'	2:1:863:A:C8	2.41	0.56
2:1:1844:C:OP1	6:b:254:LYS:HD3	2.05	0.56
2:1:2093:G:H2'	2:1:2094:A:C8	2.40	0.56
2:1:2156:G:H2'	2:1:2157:G:H5'	1.85	0.56
2:1:2597:G:C5'	6:b:240:GLY:HA3	2.35	0.56
2:1:2880:C:O2	18:n:93:GLY:HA3	2.06	0.56
4:8:634:ASP:OD2	4:8:638:ARG:NH2	2.38	0.56
6:b:211:ARG:HH12	6:b:216:ARG:HG2	1.70	0.56
10:f:126:THR:HG23	10:f:128:THR:H	1.71	0.56
16:l:58:TYR:O	34:E:12:ARG:NH2	2.38	0.56
19:o:43:ASN:ND2	19:o:45:SER:OG	2.38	0.56
43:L:29:LEU:O	43:L:108:ARG:NH2	2.38	0.56
53:V:26:ARG:NH2	53:V:40:THR:O	2.37	0.56
1:3:392:C:H2'	1:3:393:A:C8	2.41	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:884:U:H4'	1:3:885:G:C5'	2.34	0.56
1:3:1320:C:N4	55:X:36:ARG:HA	2.20	0.56
2:1:1355:G:H2'	2:1:1356:G:H8	1.71	0.56
2:1:1561:C:H2'	2:1:1562:U:H6	1.69	0.56
2:1:2626:C:H2'	2:1:2627:G:C8	2.41	0.56
11:g:24:GLY:O	11:g:28:ASN:ND2	2.38	0.56
18:n:30:ARG:O	18:n:78:LYS:NZ	2.39	0.56
42:K:88:MET:HB3	54:W:63:TYR:HE2	1.71	0.56
1:3:46:G:H2'	1:3:366:A:N6	2.20	0.56
2:1:745:G:H2'	2:1:746:U:O4'	2.06	0.56
2:1:830:G:H5'	2:1:945:A:H5''	1.88	0.56
2:1:1697:G:H3'	2:1:1698:A:C5'	2.35	0.56
2:1:1701:A:H2'	2:1:1702:G:H5'	1.87	0.56
24:t:34:VAL:HG11	24:t:43:ILE:HG12	1.87	0.56
33:D:3:ARG:O	33:D:6:GLN:NE2	2.30	0.56
1:3:938:A:H8	1:3:938:A:O5'	1.89	0.56
1:3:964:A:N1	1:3:969:A:H1'	2.21	0.56
1:3:1095:U:O5'	1:3:1095:U:H6	1.89	0.56
2:1:2552:U:C4	2:1:2554:U:H5''	2.40	0.56
14:j:56:VAL:HB	14:j:124:VAL:HG12	1.86	0.56
14:j:117:ALA:HA	14:j:120:ARG:HE	1.70	0.56
19:o:12:THR:HA	19:o:15:ARG:HB2	1.87	0.56
49:R:89:ARG:NE	49:R:95:PRO:O	2.39	0.56
1:3:362:G:H2'	1:3:363:A:H5''	1.88	0.56
1:3:1345:U:C5'	45:N:121:ARG:HH12	2.13	0.56
1:3:1495:U:H2'	1:3:1496:C:C6	2.41	0.56
2:1:923:G:H2'	2:1:924:G:H8	1.70	0.56
2:1:2014:A:H2'	2:1:2015:A:C8	2.40	0.56
2:1:2463:C:H2'	2:1:2464:G:H8	1.71	0.56
2:1:2820:A:C4	7:c:196:ALA:HB1	2.41	0.56
2:1:2840:C:H5''	18:n:53:THR:HG21	1.87	0.56
17:m:40:ARG:HH12	17:m:73:ILE:HG13	1.69	0.56
24:t:30:ILE:HG12	24:t:87:LEU:HD11	1.86	0.56
1:3:309:A:H2'	1:3:310:G:H8	1.70	0.56
1:3:414:A:H5'	1:3:428:G:H22	1.71	0.56
1:3:1397:C:C6	1:3:1397:C:C3'	2.88	0.56
1:3:1404:C:H2'	1:3:1405:G:C8	2.41	0.56
2:1:1279:G:H1	2:1:1291:C:H42	1.53	0.56
2:1:2050:C:N4	2:1:2051:A:N1	2.53	0.56
2:1:2852:G:H2'	2:1:2853:C:O4'	2.06	0.56
9:e:79:ARG:NH1	37:5:19:G:H1	2.03	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:g:8:LYS:HA	11:g:15:LEU:HB2	1.86	0.56
44:M:14:ARG:NH2	44:M:74:ILE:O	2.38	0.56
57:Z:3:ILE:O	57:Z:16:ARG:NH1	2.38	0.56
1:3:160:A:C2	1:3:343:U:H1'	2.41	0.56
2:1:1985:C:O2'	2:1:1986:C:H5'	2.06	0.56
2:1:2304:G:H2'	2:1:2305:U:H5'	1.87	0.56
2:1:2680:U:H5''	7:c:194:PRO:HA	1.88	0.56
17:m:10:ARG:NH1	37:5:64:C:H4'	2.20	0.56
20:p:90:ALA:HB2	20:p:112:ARG:HA	1.87	0.56
26:v:9:ARG:NH1	26:v:12:GLN:OE1	2.39	0.56
44:M:103:VAL:HG22	44:M:124:ILE:HG22	1.86	0.56
55:X:4:LEU:HD13	55:X:9:PHE:HB2	1.86	0.56
1:3:405:U:H3	1:3:499:A:H8	1.52	0.56
1:3:1225:A:OP1	49:R:102:LYS:HB2	2.05	0.56
2:1:658:U:C2'	2:1:659:G:H5''	2.35	0.56
2:1:1232:G:H2'	2:1:1233:C:C6	2.40	0.56
2:1:1506:U:H2'	2:1:1507:C:C6	2.41	0.56
2:1:1860:G:H4'	12:a:205:LYS:HB2	1.88	0.56
2:1:2197:U:O2'	2:1:2198:A:H5''	2.06	0.56
10:f:26:LYS:HA	10:f:31:GLU:HA	1.88	0.56
35:F:8:LYS:H	35:F:35:GLN:HE22	1.53	0.56
54:W:26:ALA:O	54:W:29:LYS:NZ	2.39	0.56
56:Y:35:TYR:HA	56:Y:38:ILE:HD12	1.88	0.56
2:1:536:G:H4'	21:q:56:PHE:CZ	2.40	0.55
2:1:2743:U:H2'	2:1:2744:G:O4'	2.05	0.55
18:n:56:LYS:HD2	18:n:57:THR:HG23	1.88	0.55
18:n:86:ARG:NH1	18:n:117:ASP:OD2	2.38	0.55
37:5:56:C:C4	37:5:57:G:N7	2.74	0.55
40:I:55:ARG:O	40:I:59:LYS:N	2.38	0.55
1:3:1111:A:N1	39:H:176:THR:HG23	2.21	0.55
2:1:534:U:H2'	2:1:535:G:H8	1.71	0.55
2:1:1061:U:H5	13:i:74:PRO:HG2	1.71	0.55
2:1:1539:U:H2'	2:1:1540:G:C8	2.41	0.55
2:1:2012:G:H4'	23:s:96:ILE:HD12	1.88	0.55
2:1:2162:G:H2'	2:1:2163:A:O4'	2.05	0.55
2:1:2690:U:O2'	2:1:2691:C:H5'	2.06	0.55
2:1:2849:U:H4'	2:1:2868:A:C2	2.41	0.55
11:g:26:ALA:HA	11:g:30:LEU:HD12	1.88	0.55
13:i:109:ALA:HA	13:i:112:LYS:HG3	1.89	0.55
19:o:94:ARG:NH2	19:o:97:PHE:O	2.40	0.55
22:r:68:ARG:O	22:r:90:ARG:NH2	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:M:77:VAL:HB	44:M:84:ILE:HD12	1.87	0.55
47:P:16:SER:OG	47:P:80:ASN:ND2	2.39	0.55
1:3:1026:G:H1	1:3:1036:A:H2	1.52	0.55
2:1:308:G:C8	2:1:501:A:H1'	2.41	0.55
2:1:821:A:H2'	2:1:946:C:H6	1.70	0.55
2:1:1026:G:H2'	2:1:1027:A:H8	1.71	0.55
2:1:1197:G:H2'	2:1:1198:U:C6	2.41	0.55
2:1:1245:G:OP1	16:l:13:LYS:HD2	2.06	0.55
2:1:1419:A:H1'	2:1:1579:A:N6	2.22	0.55
2:1:2547:A:H2'	2:1:2548:U:C6	2.42	0.55
2:1:2626:C:H2'	2:1:2627:G:H8	1.69	0.55
5:6:73:A:H2'	5:6:74:C:H5'	1.87	0.55
10:f:19:ASN:OD1	10:f:19:ASN:N	2.33	0.55
43:L:106:ALA:HB1	43:L:132:THR:HG23	1.89	0.55
53:V:66:LEU:HD22	53:V:70:LYS:HE2	1.88	0.55
1:3:978:A:H61	1:3:1316:G:H21	1.51	0.55
1:3:1373:G:O3'	43:L:35:LYS:HD2	2.06	0.55
2:1:3:U:H2'	2:1:4:U:C6	2.41	0.55
2:1:437:U:H2'	2:1:438:G:H8	1.70	0.55
2:1:495:G:OP1	23:s:6:LYS:HE2	2.06	0.55
2:1:1521:G:H3'	2:1:1522:A:C5'	2.36	0.55
2:1:2771:C:H2'	2:1:2772:C:H6	1.71	0.55
8:d:90:GLN:OE1	8:d:92:HIS:NE2	2.36	0.55
46:O:51:VAL:HG22	46:O:65:TYR:HE2	1.72	0.55
1:3:501:C:H2'	1:3:502:A:C8	2.42	0.55
1:3:1225:A:H2'	1:3:1225:A:N3	2.22	0.55
2:1:1231:U:H2'	2:1:1232:G:H8	1.71	0.55
2:1:1921:G:O2'	2:1:1922:G:H5'	2.07	0.55
2:1:2802:G:H2'	2:1:2803:G:H5'	1.87	0.55
8:d:148:ILE:HB	8:d:169:VAL:HG12	1.88	0.55
45:N:55:ASP:OD2	45:N:55:ASP:N	2.39	0.55
57:Z:32:ARG:NH1	57:Z:33:ARG:O	2.40	0.55
1:3:169:C:H2'	1:3:170:U:C5	2.41	0.55
1:3:407:U:H4'	40:I:115:GLN:HG3	1.88	0.55
1:3:624:C:H2'	1:3:625:U:O4'	2.06	0.55
1:3:747:A:H3'	1:3:748:G:H5''	1.89	0.55
1:3:1315:U:H2'	1:3:1316:G:O4'	2.06	0.55
2:1:818:G:C2'	2:1:819:A:H5''	2.37	0.55
2:1:828:U:H2'	2:1:829:A:N7	2.21	0.55
2:1:2552:U:C5	2:1:2554:U:H5''	2.42	0.55
3:2:42:C:H5''	9:e:65:LEU:HD13	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:6:32:C:H5	5:6:38:A:N6	2.05	0.55
29:y:18:LEU:HD23	29:y:23:ARG:HH22	1.72	0.55
1:3:292:G:H1	1:3:308:C:H42	1.53	0.55
1:3:1227:A:O2'	49:R:114:PRO:HG3	2.06	0.55
2:1:675:A:H1'	2:1:2444:G:H5'	1.89	0.55
2:1:2803:G:H2'	2:1:2804:U:C6	2.41	0.55
2:1:2821:A:H62	18:n:2:ARG:HH21	1.54	0.55
1:3:621:A:H2'	1:3:622:A:C8	2.42	0.55
1:3:1349:A:C2'	1:3:1350:A:H5'	2.37	0.55
2:1:847:U:O2	2:1:847:U:H2'	2.06	0.55
2:1:1801:A:C2'	6:b:261:ARG:HH22	2.13	0.55
18:n:75:ILE:O	18:n:79:LEU:N	2.37	0.55
34:E:53:ASP:OD1	34:E:53:ASP:N	2.39	0.55
38:G:55:GLU:HA	38:G:58:LYS:HG2	1.89	0.55
40:I:63:ILE:O	40:I:110:ARG:NE	2.40	0.55
1:3:426:U:H2'	1:3:427:U:C6	2.42	0.55
1:3:505:G:H4'	1:3:534:U:C4	2.42	0.55
1:3:977:A:H3'	1:3:977:A:C8	2.42	0.55
1:3:1060:U:H2'	1:3:1061:G:H8	1.72	0.55
2:1:577:G:OP1	2:1:2502:G:H2'	2.07	0.55
2:1:2193:G:H2'	2:1:2194:U:C6	2.42	0.55
8:d:153:LEU:HD21	8:d:158:PHE:HB2	1.88	0.55
1:3:782:A:C2'	1:3:783:C:H5'	2.36	0.55
1:3:1538:C:H2'	1:3:1539:C:C6	2.42	0.55
2:1:626:A:H3'	2:1:627:A:C5'	2.38	0.55
2:1:1789:A:P	6:b:220:ARG:HE	2.30	0.55
2:1:1805:A:H4'	6:b:247:TRP:CZ2	2.42	0.55
2:1:2561:U:H1'	15:k:23:LYS:HE3	1.87	0.55
4:8:418:ILE:O	4:8:458:ILE:N	2.40	0.55
15:k:17:ARG:HG3	15:k:18:ARG:HG3	1.88	0.55
24:t:39:THR:HG23	24:t:42:GLU:H	1.72	0.55
37:5:17:U:H2'	37:5:17(A):U:C6	2.41	0.55
45:N:75:ALA:HA	45:N:78:ILE:HD12	1.89	0.55
1:3:802:A:C4	1:3:803:G:H1'	2.42	0.54
1:3:940:C:H2'	1:3:941:G:H8	1.71	0.54
1:3:1346:A:N6	1:3:1374:A:H5''	2.21	0.54
1:3:1485:U:H2'	1:3:1486:G:H8	1.72	0.54
2:1:1254:A:H3'	2:1:1255:U:C5'	2.36	0.54
2:1:2720:U:H5''	20:p:52:ARG:NH2	2.22	0.54
2:1:2742:G:H1	2:1:2762:C:H42	1.56	0.54
25:u:3:LYS:O	25:u:93:ARG:NH2	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:195:A:H2'	1:3:196:A:C8	2.43	0.54
1:3:1538:C:H2'	1:3:1539:C:H6	1.72	0.54
2:1:254:G:O2'	2:1:255:A:H5''	2.07	0.54
2:1:615:U:H5''	2:1:616:A:OP2	2.06	0.54
2:1:2597:G:H5''	6:b:240:GLY:HA3	1.90	0.54
9:e:72:SER:OG	37:5:56:C:H4'	2.07	0.54
20:p:88:ARG:HH11	20:p:113:LEU:HA	1.72	0.54
21:q:91:ARG:HA	21:q:94:LEU:HB2	1.89	0.54
23:s:10:ALA:N	23:s:100:THR:OG1	2.41	0.54
26:v:48:MET:HE1	26:v:85:LYS:HA	1.88	0.54
1:3:104:G:H2'	1:3:105:G:C8	2.43	0.54
1:3:1167:A:H2'	1:3:1169:A:C8	2.41	0.54
2:1:185:G:H1	2:1:211:C:H42	1.54	0.54
2:1:371:A:H61	2:1:401:A:H3'	1.71	0.54
2:1:397:U:H2'	2:1:398:C:C6	2.43	0.54
2:1:2057:G:O2'	2:1:2058:A:H5'	2.08	0.54
1:3:1226:C:H4'	55:X:79:TYR:CE1	2.43	0.54
1:3:1399:C:H4'	1:3:1400:C:C5'	2.37	0.54
2:1:2747:G:H2'	2:1:2748:A:H5''	1.87	0.54
3:2:55:U:O2'	3:2:56:G:H5'	2.07	0.54
39:H:130:ARG:H	39:H:130:ARG:HE	1.56	0.54
1:3:229:U:H2'	1:3:230:G:C8	2.43	0.54
1:3:429:U:H3'	40:I:8:LEU:HD12	1.89	0.54
1:3:959:A:H2'	1:3:960:U:O4'	2.07	0.54
1:3:1015:G:H5''	1:3:1015:G:H8	1.68	0.54
1:3:1093:A:N3	1:3:1109:C:H1'	2.22	0.54
1:3:1405:G:H1	1:3:1496:C:H42	1.54	0.54
2:1:106:C:H2'	2:1:107:G:C8	2.42	0.54
2:1:750:A:C2	2:1:753:A:H1'	2.42	0.54
2:1:2447:G:H2'	2:1:2500:U:H5''	1.89	0.54
2:1:2504:U:O2'	2:1:2505:G:H5'	2.07	0.54
22:r:7:SER:OG	22:r:8:GLY:N	2.38	0.54
45:N:83:THR:HA	45:N:86:LEU:HG	1.89	0.54
52:U:9:HIS:HB2	52:U:16:PHE:HB3	1.90	0.54
1:3:523:A:N6	48:Q:88:ASP:HB3	2.22	0.54
2:1:22:C:H3'	2:1:23:G:H5''	1.88	0.54
2:1:137:U:O2	2:1:142:A:C2	2.60	0.54
2:1:1631:G:H21	2:1:1635:A:H62	1.55	0.54
2:1:1923:U:H2'	2:1:1924:C:H6	1.72	0.54
2:1:2015:A:N1	31:B:2:VAL:HG23	2.21	0.54
2:1:2534:A:H3'	2:1:2535:G:H5''	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:H:146:LYS:HG2	39:H:171:ARG:HB3	1.89	0.54
1:3:1175:G:H2'	1:3:1176:A:C8	2.43	0.54
2:1:326:G:H2'	2:1:327:G:C8	2.43	0.54
2:1:871:U:H6	2:1:871:U:H5''	1.73	0.54
2:1:901:C:H2'	2:1:902:C:O4'	2.08	0.54
6:b:107:LYS:HE3	6:b:197:ALA:HB2	1.89	0.54
10:f:97:VAL:HG21	10:f:123:GLU:HA	1.89	0.54
10:f:116:LEU:HD12	10:f:117:PRO:HD2	1.90	0.54
31:B:42:ILE:HG22	31:B:48:TYR:HB2	1.88	0.54
40:I:109:THR:HG22	40:I:111:ALA:H	1.73	0.54
1:3:184:G:H4'	1:3:225:C:OP1	2.07	0.54
1:3:492:C:H2'	1:3:493:A:O4'	2.08	0.54
1:3:527:G:H2'	1:3:528:C:C6	2.43	0.54
1:3:1409:C:H2'	1:3:1410:A:C8	2.43	0.54
1:3:1485:U:H2'	1:3:1486:G:C8	2.43	0.54
2:1:478:A:H4'	25:u:32:LYS:HZ1	1.71	0.54
4:8:535:GLU:HG3	4:8:537:ILE:HG12	1.90	0.54
5:6:10:G:N2	5:6:26:G:H1'	2.22	0.54
41:J:62:ALA:O	41:J:66:ALA:N	2.40	0.54
45:N:18:VAL:HG12	45:N:64:ILE:HG23	1.88	0.54
53:V:67:SER:HB2	53:V:70:LYS:HD3	1.90	0.54
1:3:55:A:H2'	1:3:56:U:H5'	1.90	0.54
1:3:923:A:OP1	41:J:25:LYS:HE3	2.08	0.54
1:3:1181:G:H4'	1:3:1182:G:OP1	2.06	0.54
2:1:274:C:H2'	2:1:275:C:O4'	2.08	0.54
2:1:806:C:H41	16:l:41:ARG:HD2	1.72	0.54
2:1:1005:C:H2'	2:1:1006:C:H6	1.71	0.54
2:1:2371:G:H4'	32:C:44:GLN:HE22	1.73	0.54
2:1:2708:G:H2'	2:1:2709:G:H8	1.71	0.54
25:u:73:ASN:HD22	25:u:76:THR:H	1.55	0.54
38:G:73:ARG:NH2	38:G:77:GLU:OE2	2.39	0.54
41:J:104:ILE:HD12	41:J:114:LEU:HB3	1.90	0.54
41:J:154:ALA:HB1	44:M:65:PHE:CE1	2.43	0.54
1:3:548:G:H2'	1:3:549:C:C6	2.43	0.54
1:3:556:C:H2'	1:3:557:G:C8	2.43	0.54
1:3:593:U:H2'	1:3:594:U:C6	2.43	0.54
1:3:1049:U:C4	50:S:2:LYS:CE	2.91	0.54
2:1:2355:G:C2'	2:1:2356:U:H5'	2.38	0.54
6:b:106:PRO:HA	6:b:194:VAL:HA	1.89	0.54
35:F:11:CYS:SG	35:F:14:CYS:N	2.81	0.54
38:G:71:THR:OG1	38:G:72:LYS:N	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:V:11:VAL:HB	53:V:56:ASP:H	1.72	0.54
1:3:747:A:C2'	1:3:748:G:H5''	2.38	0.53
1:3:865:A:H2'	1:3:866:C:C6	2.43	0.53
1:3:1237:C:H4'	1:3:1334:G:N2	2.18	0.53
1:3:1531:A:H2'	1:3:1532:U:H5'	1.90	0.53
2:1:208:C:O2'	2:1:209:C:H5'	2.08	0.53
2:1:770:G:H5''	33:D:10:LEU:HD23	1.90	0.53
2:1:2639:A:H2'	2:1:2640:G:O4'	2.08	0.53
3:2:17:C:H2'	3:2:18:G:O4'	2.08	0.53
21:q:56:PHE:O	21:q:60:TRP:N	2.38	0.53
24:t:28:ASN:ND2	24:t:88:LYS:O	2.40	0.53
1:3:319:G:H2'	1:3:320:A:O4'	2.07	0.53
1:3:449:G:H2'	1:3:450:G:O4'	2.07	0.53
2:1:457:A:H61	2:1:470:A:H3'	1.72	0.53
2:1:833:A:H2'	2:1:834:G:H8	1.73	0.53
2:1:2128:G:H21	2:1:2173:A:H1'	1.74	0.53
8:d:6:LYS:HE3	8:d:119:ILE:HG23	1.90	0.53
27:w:35:ARG:HG3	27:w:54:THR:HG22	1.90	0.53
38:G:119:GLN:HB3	38:G:123:GLY:HA3	1.88	0.53
39:H:107:LYS:NZ	39:H:143:LEU:O	2.41	0.53
45:N:91:GLU:HA	45:N:94:ARG:HB3	1.89	0.53
52:U:11:ALA:HB3	52:U:14:ARG:HB3	1.91	0.53
1:3:138:G:N2	1:3:225:C:H42	2.06	0.53
1:3:1053:G:O2'	1:3:1199:U:H5	1.90	0.53
2:1:837:C:O2'	2:1:838:C:H5'	2.09	0.53
2:1:1054:A:H2'	2:1:1055:G:C8	2.43	0.53
2:1:1060:U:H1'	2:1:1062:G:H5''	1.89	0.53
2:1:2105:U:H3	2:1:2184:A:H61	1.56	0.53
2:1:2452:C:H42	2:1:2504:U:H3	1.56	0.53
23:s:26:GLY:H	23:s:71:VAL:HB	1.72	0.53
44:M:105:THR:OG1	44:M:110:MET:SD	2.65	0.53
1:3:340:U:H3	1:3:349:A:H61	1.55	0.53
1:3:1270:G:H2'	1:3:1271:A:C8	2.43	0.53
2:1:263:G:H2'	2:1:264:C:C4'	2.39	0.53
3:2:106:G:H2'	3:2:107:G:O4'	2.09	0.53
4:8:433:LEU:HD21	48:Q:77:SER:HA	1.91	0.53
33:D:4:THR:OG1	33:D:5:PHE:N	2.32	0.53
52:U:4:ILE:HG12	52:U:21:VAL:HG13	1.89	0.53
1:3:1060:U:H2'	1:3:1061:G:C8	2.43	0.53
1:3:1293:C:H2'	1:3:1294:G:C8	2.43	0.53
1:3:1495:U:H2'	1:3:1496:C:H6	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:121:G:H2'	2:1:122:G:H8	1.74	0.53
2:1:1812:U:O2'	6:b:43:ASN:HB2	2.09	0.53
2:1:1935:G:H3'	2:1:1962:C:N4	2.11	0.53
8:d:105:LEU:HB3	8:d:200:LEU:HD21	1.91	0.53
40:I:182:LYS:HG2	40:I:183:ARG:H	1.72	0.53
47:P:63:GLN:HG3	47:P:98:ALA:HB2	1.90	0.53
48:Q:54:VAL:N	48:Q:62:VAL:O	2.40	0.53
1:3:986:U:H2'	1:3:987:G:C8	2.43	0.53
2:1:1721:G:N2	2:1:1738:G:H2'	2.24	0.53
2:1:2480:C:H2'	2:1:2481:G:O4'	2.08	0.53
3:2:50:A:OP2	19:o:67:ASN:HA	2.08	0.53
4:8:500:ASP:OD1	4:8:500:ASP:N	2.41	0.53
23:s:13:SER:OG	23:s:15:GLN:OE1	2.27	0.53
43:L:89:GLU:OE2	43:L:95:ARG:NH1	2.41	0.53
45:N:113:LYS:HG3	45:N:120:ALA:HB2	1.90	0.53
56:Y:42:ASP:HB2	56:Y:45:ALA:HB3	1.90	0.53
1:3:81:A:H2'	1:3:82:G:H5''	1.89	0.53
1:3:1057:G:H2'	1:3:1058:G:H5'	1.89	0.53
1:3:1127:G:H1	1:3:1145:A:H2	1.56	0.53
2:1:1807:G:H5'	6:b:47:ARG:HH12	1.72	0.53
5:6:26:G:C2	5:6:27:U:H1'	2.43	0.53
47:P:58:THR:HG23	47:P:61:ALA:H	1.72	0.53
1:3:1423:G:H2'	1:3:1424:U:C6	2.43	0.53
2:1:534:U:H2'	2:1:535:G:C8	2.44	0.53
2:1:833:A:H4'	16:l:50:PHE:O	2.09	0.53
2:1:871:U:H2'	2:1:872:U:C6	2.44	0.53
2:1:1041:G:H2'	2:1:1042:G:C8	2.43	0.53
2:1:2193:G:H2'	2:1:2194:U:H6	1.74	0.53
2:1:2593:U:H2'	2:1:2594:C:H6	1.69	0.53
2:1:2861:U:H2'	2:1:2862:G:C8	2.44	0.53
3:2:87:U:H5''	3:2:88:C:C5	2.44	0.53
16:l:91:ASP:N	16:l:91:ASP:OD1	2.42	0.53
26:v:21:ARG:NH2	26:v:87:GLN:O	2.35	0.53
41:J:33:THR:HG22	41:J:51:LYS:HB3	1.89	0.53
45:N:115:VAL:HG11	46:O:62:ARG:HD2	1.91	0.53
49:R:73:SER:HA	49:R:76:ILE:HD12	1.91	0.53
1:3:868:C:H2'	1:3:869:G:O4'	2.09	0.53
1:3:956:U:H4'	55:X:80:ARG:HB3	1.91	0.53
1:3:1225:A:C4'	55:X:77:ARG:NH1	2.69	0.53
2:1:690:G:O2'	2:1:691:C:H5'	2.09	0.53
2:1:1137:G:H2'	2:1:1138:G:H8	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1443:U:H2'	2:1:1444:G:H8	1.74	0.53
2:1:1649:G:H21	18:n:106:ASP:HB2	1.72	0.53
2:1:2861:U:H2'	2:1:2862:G:H8	1.74	0.53
4:8:589:SER:HG	4:8:591:LEU:H	1.57	0.53
56:Y:42:ASP:O	56:Y:46:ALA:N	2.34	0.53
1:3:111:G:H2'	1:3:112:G:O4'	2.09	0.53
1:3:123:U:H2'	1:3:124:C:C6	2.44	0.53
1:3:464:U:H2'	1:3:466:A:OP2	2.09	0.53
1:3:642:A:C8	44:M:106:SER:HA	2.44	0.53
1:3:1522:U:H2'	1:3:1523:G:H8	1.74	0.53
2:1:194:G:N2	2:1:202:U:H1'	2.24	0.53
2:1:518:G:H4'	23:s:18:ARG:NH1	2.24	0.53
2:1:537:G:H5''	14:j:5:THR:HG21	1.89	0.53
2:1:999:U:H3	2:1:1155:A:H62	1.56	0.53
2:1:1025:G:H3'	2:1:1026:G:C5'	2.40	0.53
2:1:1599:U:H2'	2:1:1600:C:H6	1.74	0.53
2:1:1974:C:H2'	2:1:1975:G:C8	2.44	0.53
15:k:65:THR:HG23	15:k:68:GLY:H	1.74	0.53
35:F:11:CYS:HB3	35:F:33:HIS:CE1	2.44	0.53
40:I:174:ALA:HA	40:I:177:MET:HA	1.91	0.53
42:K:71:ILE:HD12	42:K:74:LEU:HD12	1.90	0.53
1:3:956:U:H2'	1:3:957:U:O4'	2.09	0.52
1:3:974:A:H5''	1:3:975:A:H3'	1.91	0.52
2:1:180:G:N2	2:1:182:A:H62	2.06	0.52
2:1:2015:A:C2'	2:1:2016:U:H5'	2.38	0.52
2:1:2056:G:H21	31:B:1:ALA:H3	1.57	0.52
10:f:95:ALA:HB1	10:f:130:ILE:HD11	1.90	0.52
12:a:191:ALA:HA	12:a:194:VAL:HG12	1.90	0.52
49:R:84:CYS:HA	55:X:73:PHE:HA	1.91	0.52
1:3:36:C:H5''	48:Q:119:LYS:HG2	1.91	0.52
1:3:222:C:H2'	1:3:223:A:C8	2.44	0.52
1:3:687:A:N3	1:3:688:G:H1'	2.23	0.52
1:3:1342:C:O2'	45:N:125:GLN:HA	2.10	0.52
2:1:1092:C:H2'	2:1:1093:G:O4'	2.09	0.52
9:e:50:ASP:N	9:e:50:ASP:OD1	2.41	0.52
36:4:19:C:H2'	36:4:20:C:C6	2.44	0.52
37:5:34:U:H2'	37:5:35:G:H8	1.72	0.52
1:3:323:U:H2'	1:3:324:G:O4'	2.09	0.52
1:3:1015:G:C8	1:3:1015:G:H3'	2.44	0.52
1:3:1118:U:H1'	1:3:1119:C:C5	2.45	0.52
1:3:1462:C:H2'	1:3:1463:U:C6	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:354:A:H2'	2:1:355:U:O4'	2.10	0.52
2:1:703:U:H2'	2:1:704:G:O4'	2.09	0.52
2:1:727:A:H2'	2:1:728:G:O4'	2.10	0.52
2:1:845:A:H61	2:1:932:U:H3	1.57	0.52
2:1:1656:C:H2'	2:1:1657:U:C6	2.44	0.52
2:1:2189:U:H2'	2:1:2190:G:C8	2.45	0.52
3:2:114:C:H2'	3:2:115:A:C8	2.45	0.52
18:n:114:GLU:OE1	18:n:118:ARG:NH2	2.43	0.52
45:N:27:ILE:HB	45:N:34:LEU:HB3	1.91	0.52
48:Q:36:VAL:HG11	48:Q:73:LEU:HB3	1.92	0.52
53:V:64:ARG:NH1	53:V:65:PRO:O	2.41	0.52
1:3:13:U:O2'	1:3:14:U:H5'	2.10	0.52
1:3:617:G:H3'	1:3:618:C:H5''	1.91	0.52
1:3:1160:G:H4'	38:G:130:LYS:HE2	1.91	0.52
1:3:1206:G:C3'	1:3:1207:G:C5'	2.88	0.52
1:3:1386:G:H2'	1:3:1387:G:H8	1.72	0.52
2:1:255:A:N3	2:1:256:A:H1'	2.25	0.52
2:1:601:C:H4'	8:d:99:LYS:NZ	2.25	0.52
2:1:617:G:H5''	8:d:102:ARG:HH11	1.74	0.52
2:1:713:G:H2'	2:1:714:U:H4'	1.91	0.52
2:1:2475:C:H42	2:1:2529:G:H22	1.56	0.52
3:2:111:U:H2'	3:2:112:G:H8	1.75	0.52
4:8:496:GLN:HE21	4:8:608:ALA:HA	1.74	0.52
7:c:33:ARG:HA	7:c:95:SER:HA	1.90	0.52
7:c:106:LYS:HE3	7:c:209:ALA:HA	1.91	0.52
9:e:116:LEU:O	9:e:177:ARG:N	2.42	0.52
14:j:114:LEU:O	14:j:118:MET:N	2.41	0.52
1:3:1373:G:H4'	43:L:35:LYS:HG3	1.92	0.52
2:1:24:G:H2'	2:1:25:U:C6	2.44	0.52
2:1:65:U:H2'	2:1:66:C:C6	2.45	0.52
2:1:581:C:H2'	2:1:582:A:H8	1.74	0.52
2:1:626:A:H3'	2:1:627:A:H5'	1.92	0.52
2:1:907:G:C5'	17:m:22:GLN:HB3	2.26	0.52
2:1:1790:C:H2'	2:1:1791:A:N7	2.25	0.52
2:1:1813:G:H2'	2:1:1814:G:H5'	1.90	0.52
2:1:2295:C:OP2	19:o:10:ARG:HD2	2.09	0.52
2:1:2543:G:H2'	2:1:2544:G:C8	2.45	0.52
18:n:29:VAL:HB	18:n:75:ILE:HD12	1.91	0.52
39:H:139:ASN:HD22	39:H:142:ARG:HE	1.58	0.52
40:I:61:ARG:HH21	40:I:67:LEU:HA	1.74	0.52
1:3:1218:C:H2'	1:3:1219:A:C8	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:1443:C:H2'	1:3:1444:U:O4'	2.10	0.52
2:1:355:U:H2'	2:1:356:G:C8	2.43	0.52
2:1:538:A:H2'	2:1:539:G:O4'	2.10	0.52
2:1:611:C:H2'	2:1:612:G:H5'	1.92	0.52
2:1:699:A:H2'	2:1:700:G:O4'	2.08	0.52
2:1:788:A:H4'	2:1:789:A:H5'	1.92	0.52
2:1:2024:G:H2'	2:1:2025:C:O4'	2.09	0.52
2:1:2484:G:H1'	17:m:123:LYS:HD2	1.90	0.52
2:1:2771:C:H2'	2:1:2772:C:C6	2.45	0.52
6:b:266:ILE:HD11	6:b:269:ARG:HA	1.91	0.52
7:c:104:VAL:HG23	7:c:177:VAL:HG11	1.92	0.52
43:L:91:ARG:HE	43:L:93:VAL:HB	1.75	0.52
1:3:603:U:H2'	1:3:604:G:C8	2.45	0.52
1:3:715:A:H2'	1:3:716:A:C8	2.44	0.52
2:1:946:C:H2'	2:1:947:A:H8	1.75	0.52
2:1:1548:A:H2'	2:1:1549:A:H8	1.75	0.52
2:1:1582:C:H2'	2:1:1585:C:H42	1.75	0.52
2:1:2247:A:H2'	2:1:2248:C:C6	2.45	0.52
2:1:2485:G:C2'	2:1:2486:C:H5'	2.39	0.52
2:1:2607:G:N2	2:1:2608:G:H1'	2.25	0.52
2:1:2801:G:H2'	2:1:2802:G:C8	2.44	0.52
4:8:638:ARG:HB3	4:8:662:GLU:HG3	1.92	0.52
7:c:15:PHE:H	20:p:11:GLN:HE22	1.58	0.52
9:e:16:MET:HG3	9:e:21:TYR:HB2	1.91	0.52
41:J:129:SER:O	41:J:129:SER:OG	2.28	0.52
48:Q:72:ASN:ND2	48:Q:102:ASP:O	2.40	0.52
50:S:26:LEU:HD13	50:S:30:ILE:HD12	1.92	0.52
1:3:813:U:C2'	1:3:814:A:H5''	2.37	0.52
1:3:981:U:H5''	50:S:5:MET:CE	2.39	0.52
1:3:1048:G:H2'	1:3:1050:G:H8	1.75	0.52
1:3:1149:C:OP2	1:3:1149:C:H6	1.91	0.52
2:1:125:A:C2	33:D:10:LEU:HD13	2.45	0.52
2:1:738:G:H2'	2:1:739:A:C8	2.44	0.52
2:1:1369:G:H2'	2:1:1370:C:C6	2.45	0.52
2:1:1891:G:H2'	2:1:1892:C:C6	2.44	0.52
2:1:2528:U:O2'	2:1:2529:G:H3'	2.09	0.52
2:1:2731:G:H2'	2:1:2732:G:C8	2.45	0.52
9:e:33:ILE:O	9:e:90:LEU:N	2.37	0.52
26:v:73:LYS:HG2	26:v:94:ALA:HB2	1.92	0.52
27:w:77:SER:OG	27:w:78:ILE:N	2.42	0.52
41:J:155:LYS:HB3	44:M:65:PHE:HB2	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:P:114:PRO:HA	54:W:72:ARG:HH22	1.74	0.52
1:3:35:G:H21	48:Q:114:SER:CB	2.23	0.52
2:1:2089:C:H2'	2:1:2090:A:C8	2.44	0.52
2:1:2089:C:H2'	2:1:2090:A:H8	1.74	0.52
2:1:2188:U:O5'	2:1:2188:U:H6	1.93	0.52
14:j:19:ASP:OD1	14:j:58:ASN:ND2	2.42	0.52
48:Q:85:ARG:HH21	48:Q:87:LYS:HA	1.74	0.52
1:3:892:A:H2'	1:3:893:C:C6	2.45	0.52
1:3:1306:A:H2'	1:3:1307:U:O4'	2.10	0.52
2:1:799:G:C3'	2:1:800:A:H5''	2.40	0.52
2:1:1287:A:H3'	2:1:1288:G:H21	1.75	0.52
2:1:2066:C:C2'	2:1:2067:G:H5'	2.40	0.52
2:1:2516:A:C6	2:1:2517:C:N4	2.78	0.52
3:2:23:G:H2'	3:2:24:G:C8	2.44	0.52
11:g:61:VAL:O	11:g:65:ALA:N	2.43	0.52
17:m:12:MET:O	17:m:86:LYS:NZ	2.37	0.52
32:C:33:LEU:N	32:C:50:GLU:OE1	2.43	0.52
41:J:18:ASN:O	41:J:33:THR:OG1	2.28	0.52
41:J:139:THR:O	41:J:143:LEU:N	2.42	0.52
1:3:1241:G:H2'	1:3:1242:G:H8	1.75	0.51
1:3:1308:U:P	49:R:99:GLN:HE22	2.32	0.51
2:1:38:A:H2'	2:1:39:G:O4'	2.10	0.51
2:1:121:G:H2'	2:1:122:G:C8	2.45	0.51
2:1:147:C:O2'	2:1:148:U:H5'	2.10	0.51
2:1:666:A:H4'	16:l:48:ARG:HD3	1.93	0.51
2:1:1131:G:C8	2:1:2025:C:H4'	2.45	0.51
2:1:1166:G:N2	2:1:1184:U:H1'	2.25	0.51
2:1:1682:G:H2'	2:1:1683:U:C6	2.45	0.51
3:2:99:A:O2'	3:2:100:G:H5'	2.09	0.51
28:x:26:ARG:HG2	28:x:27:ARG:H	1.74	0.51
41:J:14:LEU:HA	41:J:36:THR:HA	1.92	0.51
41:J:79:THR:OG1	41:J:80:LEU:N	2.42	0.51
48:Q:98:ARG:NH2	48:Q:104:SER:O	2.43	0.51
50:S:52:ARG:O	50:S:58:ARG:NH1	2.43	0.51
1:3:312:C:H2'	1:3:313:A:C8	2.44	0.51
1:3:956:U:C4'	55:X:80:ARG:HD3	2.37	0.51
1:3:1120:C:H2'	1:3:1121:U:C6	2.45	0.51
1:3:1250:A:C5'	45:N:68:GLY:HA2	2.39	0.51
2:1:932:U:H4'	2:1:933:A:O5'	2.10	0.51
2:1:1853:A:H2'	2:1:1854:A:C8	2.44	0.51
2:1:1979:U:O2'	2:1:1980:G:H5'	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2130:U:H5''	2:1:2159:G:H22	1.75	0.51
2:1:2514:U:H2'	2:1:2515:C:C6	2.45	0.51
3:2:22:U:H2'	3:2:23:G:C8	2.45	0.51
3:2:32:U:H3	3:2:50:A:H61	1.57	0.51
3:2:60:C:H2'	3:2:61:G:C8	2.45	0.51
17:m:76:LYS:HZ1	17:m:83:GLY:H	1.58	0.51
22:r:66:HIS:ND1	22:r:94:THR:OG1	2.39	0.51
46:O:7:ARG:HD2	46:O:73:LEU:HD21	1.92	0.51
1:3:637:C:H2'	1:3:638:U:C6	2.45	0.51
1:3:959:A:H2	1:3:1221:G:H21	1.58	0.51
1:3:1244:G:H2'	1:3:1245:C:C6	2.45	0.51
1:3:1355:G:H2'	1:3:1356:G:C8	2.44	0.51
1:3:1516:G:H2'	1:3:1518:A:OP2	2.10	0.51
2:1:79:C:O2'	2:1:346:A:H1'	2.09	0.51
2:1:191:A:O2'	2:1:192:C:H5'	2.11	0.51
2:1:289:G:H2'	2:1:290:U:O4'	2.11	0.51
2:1:365:U:H2'	2:1:366:C:C6	2.45	0.51
2:1:1795:C:H1'	2:1:1901:A:OP2	2.11	0.51
2:1:2326:C:H42	2:1:2389:G:H1	1.59	0.51
2:1:2584:U:C2'	2:1:2585:U:H5'	2.38	0.51
4:8:522:MET:HA	4:8:576:ILE:HA	1.92	0.51
18:n:106:ASP:N	18:n:106:ASP:OD1	2.42	0.51
29:y:27:ASN:O	29:y:31:GLN:N	2.38	0.51
1:3:3:A:C1'	1:3:613:C:H1'	2.40	0.51
1:3:34:C:H2'	1:3:35:G:C8	2.45	0.51
1:3:64:G:H5''	1:3:65:A:H2'	1.91	0.51
1:3:970:C:H5''	1:3:972:C:H5''	1.93	0.51
1:3:1372:U:H2'	1:3:1373:G:O4'	2.09	0.51
2:1:611:C:C2'	2:1:612:G:H5'	2.41	0.51
2:1:970:U:O2'	2:1:971:G:H5'	2.10	0.51
2:1:1028:A:N6	2:1:1125:G:H2'	2.26	0.51
2:1:1370:C:H2'	2:1:1371:G:O4'	2.11	0.51
2:1:1570:A:H2'	2:1:1571:A:C8	2.45	0.51
2:1:2679:A:OP1	7:c:170:VAL:HG11	2.10	0.51
12:a:58:ASN:HD21	12:a:60:ARG:HE	1.57	0.51
13:i:58:ILE:HD11	13:i:66:PHE:HB2	1.91	0.51
1:3:253:A:H61	1:3:273:U:H3	1.58	0.51
1:3:376:G:O2'	1:3:377:G:H5'	2.11	0.51
1:3:716:A:N3	47:P:119:GLY:HA3	2.25	0.51
2:1:133:U:H2'	2:1:134:G:H8	1.74	0.51
2:1:500:G:H2'	2:1:501:A:H5''	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1805:A:H2'	2:1:1806:C:C6	2.45	0.51
2:1:2025:C:H2'	2:1:2026:U:C6	2.45	0.51
2:1:2849:U:H5'	2:1:2868:A:C6	2.46	0.51
4:8:509:SER:OG	4:8:510:GLY:N	2.43	0.51
10:f:125:PRO:HD3	10:f:131:VAL:HG12	1.92	0.51
26:v:35:GLU:HB3	26:v:93:ARG:HH12	1.74	0.51
31:B:43:THR:OG1	31:B:46:GLY:N	2.33	0.51
48:Q:82:ARG:NH1	48:Q:83:GLY:O	2.44	0.51
55:X:18:VAL:HG11	55:X:43:MET:HG2	1.92	0.51
1:3:626:G:H5'	1:3:626:G:H8	1.76	0.51
1:3:880:C:H2'	1:3:881:G:H8	1.76	0.51
1:3:1301:U:O2	1:3:1301:U:C2'	2.58	0.51
1:3:1343:G:H4'	45:N:123:ARG:O	2.11	0.51
2:1:20:C:H2'	2:1:21:A:C8	2.46	0.51
2:1:464:U:H2'	2:1:465:G:O4'	2.11	0.51
2:1:1457:U:H3	2:1:2702:G:H1	1.58	0.51
2:1:1823:G:H2'	2:1:1824:G:C8	2.45	0.51
3:2:41:G:H3'	9:e:65:LEU:HD13	1.93	0.51
3:2:98:G:N2	26:v:14:LYS:HD2	2.26	0.51
11:g:66:ASN:HD21	11:g:134:VAL:HG22	1.76	0.51
42:K:38:ARG:NE	42:K:39:LEU:H	2.08	0.51
48:Q:5:GLN:O	48:Q:9:LYS:NZ	2.40	0.51
1:3:27:G:H2'	1:3:28:A:O4'	2.10	0.51
1:3:502:A:H2'	1:3:503:C:O4'	2.11	0.51
1:3:1057:G:H2'	1:3:1058:G:O4'	2.10	0.51
1:3:1136:C:H2'	1:3:1138:G:O6	2.11	0.51
2:1:296:U:H2'	2:1:297:G:C8	2.46	0.51
2:1:1082:U:H3'	2:1:1083:U:C5'	2.41	0.51
2:1:1789:A:H8	2:1:1789:A:O5'	1.94	0.51
2:1:1843:C:H5''	6:b:254:LYS:HE2	1.93	0.51
2:1:2130:U:H5'	2:1:2159:G:H1	1.76	0.51
2:1:2463:C:H2'	2:1:2464:G:C8	2.46	0.51
31:B:13:GLY:HA2	31:B:16:ARG:HB2	1.91	0.51
50:S:83:VAL:O	50:S:87:ALA:N	2.41	0.51
1:3:49:U:H3	1:3:362:G:H1'	1.76	0.51
1:3:226:G:H2'	1:3:227:G:C8	2.46	0.51
1:3:332:G:H2'	1:3:333:U:H6	1.76	0.51
1:3:713:G:H2'	1:3:714:G:C8	2.46	0.51
1:3:964:A:C2'	1:3:965:U:H5'	2.40	0.51
1:3:1307:U:O2	1:3:1307:U:C2'	2.59	0.51
2:1:724:U:H2'	2:1:725:G:C5'	2.36	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:799:G:H5''	2:1:800:A:H2'	1.93	0.51
2:1:1516:G:H2'	2:1:1517:G:C8	2.45	0.51
2:1:1974:C:H2'	2:1:1975:G:H8	1.76	0.51
2:1:2584:U:H2'	2:1:2585:U:H2'	1.92	0.51
3:2:13:G:N3	3:2:13:G:H2'	2.26	0.51
17:m:36:VAL:HG13	26:v:82:TYR:HB2	1.93	0.51
18:n:103:ARG:HG2	18:n:110:MET:HE2	1.92	0.51
20:p:1:SER:OG	20:p:2:ASN:N	2.42	0.51
45:N:20:ILE:HD12	45:N:60:LEU:HD11	1.93	0.51
45:N:96:GLU:HA	45:N:99:LYS:HB2	1.92	0.51
47:P:98:ALA:O	47:P:102:ALA:N	2.43	0.51
51:T:29:ALA:O	51:T:32:THR:OG1	2.28	0.51
1:3:314:C:O2'	1:3:315:A:H5'	2.11	0.51
1:3:912:C:H5''	48:Q:42:LYS:NZ	2.26	0.51
1:3:1425:U:O5'	1:3:1425:U:H6	1.94	0.51
2:1:109:C:C3'	2:1:110:G:H5''	2.40	0.51
2:1:1518:C:H2'	2:1:1519:G:H8	1.76	0.51
2:1:1576:U:O2'	2:1:1577:C:H5'	2.11	0.51
10:f:169:ARG:NH2	35:F:29:ALA:O	2.44	0.51
20:p:70:GLU:OE1	20:p:100:ARG:NE	2.41	0.51
22:r:36:ALA:HA	22:r:58:VAL:HA	1.92	0.51
32:C:5:ARG:NE	32:C:23:THR:OG1	2.38	0.51
38:G:113:LEU:HD12	38:G:143:LEU:HG	1.92	0.51
1:3:276:G:H5'	53:V:16:MET:SD	2.51	0.51
1:3:1330:U:H2'	1:3:1331:G:O4'	2.11	0.51
2:1:297:G:H2'	2:1:298:G:H5'	1.92	0.51
2:1:1992:G:H4'	2:1:1993:U:H5	1.76	0.51
2:1:2118:U:C5	2:1:2149:U:H1'	2.46	0.51
2:1:2294:G:H5'	19:o:98:GLN:NE2	2.21	0.51
2:1:2393:U:H2'	2:1:2394:C:O4'	2.11	0.51
2:1:2498:C:H2'	2:1:2499:C:C5'	2.41	0.51
4:8:625:GLU:HG2	13:i:31:GLY:HA2	1.93	0.51
32:C:32:LYS:HE3	32:C:50:GLU:H	1.76	0.51
39:H:138:GLN:OE1	39:H:139:ASN:ND2	2.43	0.51
55:X:49:ALA:HA	55:X:58:PRO:HA	1.93	0.51
1:3:116:A:O2'	1:3:117:G:H5'	2.11	0.50
1:3:484:G:H1'	1:3:486:U:OP2	2.11	0.50
1:3:1052:U:H2'	1:3:1200:C:H41	1.75	0.50
1:3:1398:A:H5''	1:3:1401:G:H4'	1.93	0.50
2:1:779:U:OP2	6:b:48:ILE:HG22	2.11	0.50
2:1:812:C:H2'	2:1:813:U:C6	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1826:G:H2'	2:1:1827:U:C6	2.46	0.50
5:6:10:G:C2	5:6:26:G:H1'	2.46	0.50
10:f:83:THR:HA	10:f:133:LYS:HA	1.92	0.50
14:j:141:ASP:N	14:j:141:ASP:OD1	2.42	0.50
17:m:134:THR:HG21	26:v:79:ARG:HH12	1.76	0.50
19:o:24:THR:O	19:o:91:SER:N	2.44	0.50
22:r:35:PHE:HB2	22:r:59:ILE:HB	1.92	0.50
38:G:49:PHE:HD1	38:G:199:ILE:HD13	1.76	0.50
42:K:2:ARG:HG2	42:K:91:ARG:HH21	1.76	0.50
1:3:967:C:H4'	45:N:128:LYS:HA	1.94	0.50
1:3:1234:C:O5'	1:3:1234:C:H6	1.93	0.50
2:1:107:G:H2'	2:1:108:G:H8	1.76	0.50
2:1:528:A:H2	2:1:2042:A:H2'	1.72	0.50
2:1:1395:A:H1'	2:1:1397:U:N3	2.23	0.50
2:1:2816:G:H2'	2:1:2817:U:C6	2.46	0.50
53:V:50:ASN:N	53:V:50:ASN:OD1	2.43	0.50
1:3:341:C:H2'	1:3:342:C:C6	2.46	0.50
1:3:621:A:H2'	1:3:622:A:H8	1.76	0.50
1:3:756:C:H4'	1:3:823:C:O2'	2.12	0.50
1:3:771:G:H2'	1:3:772:U:C6	2.45	0.50
1:3:790:A:C4'	37:5:39:C:H5'	2.41	0.50
1:3:967:C:H3'	1:3:968:A:H2'	1.92	0.50
2:1:2714:G:H2'	2:1:2715:C:H6	1.75	0.50
5:6:27:U:H2'	5:6:28:C:C5	2.46	0.50
1:3:648:A:C2'	1:3:649:A:H5'	2.41	0.50
1:3:1014:A:H5'	55:X:33:TRP:CE3	2.46	0.50
1:3:1172:C:H2'	1:3:1173:U:H5'	1.93	0.50
2:1:396:G:H3'	2:1:397:U:C5	2.47	0.50
2:1:825:A:H2'	2:1:826:U:O4'	2.11	0.50
2:1:881:G:H2'	2:1:882:G:C8	2.46	0.50
2:1:1612:C:H5'	33:D:7:PRO:HG3	1.93	0.50
2:1:2878:U:C2'	2:1:2879:A:H5'	2.41	0.50
4:8:630:ASP:OD2	10:f:175:LYS:NZ	2.44	0.50
4:8:692:SER:HA	4:8:695:ALA:HB3	1.93	0.50
17:m:27:SER:OG	17:m:66:ARG:NH1	2.43	0.50
41:J:156:ARG:NH2	44:M:42:GLU:O	2.45	0.50
49:R:25:GLY:H	49:R:28:ARG:HB3	1.75	0.50
53:V:40:THR:OG1	53:V:41:THR:N	2.45	0.50
1:3:1173:U:H2'	1:3:1174:G:O5'	2.11	0.50
1:3:1226:C:H5'	55:X:79:TYR:CD1	2.46	0.50
1:3:1235:U:O2'	1:3:1305:G:H5'	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:231:A:H2'	2:1:232:G:O4'	2.10	0.50
2:1:371:A:H1'	28:x:60:LYS:HZ1	1.76	0.50
2:1:1792:G:H5''	6:b:203:VAL:HG12	1.94	0.50
46:O:42:LEU:HD11	46:O:73:LEU:HD22	1.91	0.50
2:1:240:C:H3'	2:1:241:A:C5'	2.34	0.50
2:1:286:U:H2'	2:1:287:G:C8	2.46	0.50
2:1:2355:G:H2'	2:1:2356:U:H5'	1.93	0.50
40:I:14:GLU:OE2	40:I:62:ARG:NH1	2.45	0.50
1:3:17:U:H1'	1:3:1080:A:C8	2.46	0.50
1:3:452:A:H61	1:3:480:U:H3	1.58	0.50
1:3:1437:A:H2'	1:3:1438:G:H8	1.75	0.50
2:1:1795:C:O2'	2:1:1796:U:H5'	2.11	0.50
2:1:2554:U:H2'	2:1:2555:U:H6	1.76	0.50
2:1:2830:C:H5''	7:c:56:LYS:NZ	2.27	0.50
8:d:106:LYS:HG3	8:d:200:LEU:HD23	1.92	0.50
15:k:71:ARG:HH11	15:k:77:ILE:HD11	1.76	0.50
17:m:42:THR:N	17:m:45:GLN:OE1	2.44	0.50
42:K:26:THR:HA	42:K:29:ILE:HG22	1.94	0.50
1:3:206:C:H2'	1:3:207:C:H5'	1.94	0.50
1:3:252:U:O2	1:3:252:U:H2'	2.11	0.50
1:3:880:C:O2'	1:3:881:G:H5'	2.12	0.50
1:3:1015:G:C8	1:3:1015:G:C3'	2.95	0.50
2:1:76:C:H2'	2:1:77:G:H8	1.77	0.50
2:1:315:G:H2'	2:1:316:C:C6	2.47	0.50
2:1:480:A:O3'	25:u:43:LYS:HG2	2.11	0.50
2:1:549:G:H2'	2:1:550:C:C6	2.47	0.50
2:1:833:A:O2'	16:l:51:GLU:HG2	2.11	0.50
2:1:1062:G:N3	13:i:135:MET:HE1	2.27	0.50
2:1:1297:C:H2'	2:1:1298:C:C6	2.46	0.50
2:1:2361:G:P	34:E:25:HIS:HD1	2.35	0.50
19:o:82:ALA:HB3	19:o:115:LEU:HD21	1.94	0.50
40:I:150:LYS:HD3	40:I:155:LYS:HE2	1.93	0.50
56:Y:43:LYS:O	56:Y:47:GLN:N	2.43	0.50
1:3:250:A:H4'	1:3:251:G:O5'	2.12	0.50
1:3:882:C:O2'	1:3:883:C:H5'	2.11	0.50
1:3:1026:G:N1	1:3:1036:A:H2	2.08	0.50
1:3:1056:U:H4'	39:H:162:ALA:HB2	1.91	0.50
1:3:1084:G:H5''	1:3:1085:U:OP2	2.12	0.50
1:3:1086:U:H2'	1:3:1087:G:H8	1.77	0.50
2:1:830:G:C5'	2:1:945:A:H5''	2.42	0.50
2:1:1584:U:H2'	2:1:1585:C:H5'	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2302:U:H3	2:1:2314:A:H61	1.60	0.50
2:1:2545:G:H2'	2:1:2546:U:O4'	2.12	0.50
4:8:449:THR:HG22	4:8:456:THR:HG22	1.94	0.50
13:i:112:LYS:HE2	13:i:128:ILE:HD11	1.94	0.50
18:n:69:ARG:O	18:n:71:ARG:N	2.45	0.50
19:o:69:ASP:OD1	19:o:69:ASP:N	2.32	0.50
40:I:101:VAL:HG23	40:I:106:PHE:HD2	1.75	0.50
50:S:36:SER:HA	50:S:40:ARG:HE	1.76	0.50
1:3:375:U:H4'	52:U:6:LEU:HD12	1.93	0.49
1:3:617:G:C2'	1:3:618:C:H5''	2.42	0.49
1:3:1319:A:P	1:3:1319:A:H2'	2.52	0.49
2:1:2635:A:H4'	7:c:79:LEU:HB2	1.94	0.49
2:1:2812:G:H2'	2:1:2813:A:O4'	2.12	0.49
9:e:28:PRO:HB2	9:e:168:LEU:HD22	1.93	0.49
9:e:109:ARG:HD3	9:e:138:PRO:HG3	1.94	0.49
10:f:7:PRO:HB3	10:f:50:THR:HG22	1.93	0.49
39:H:48:LYS:NZ	39:H:74:ILE:O	2.45	0.49
43:L:92:PRO:HA	43:L:95:ARG:HD3	1.93	0.49
1:3:825:A:H2	44:M:11:THR:HG21	1.75	0.49
1:3:1191:A:H2'	1:3:1191:A:N3	2.28	0.49
1:3:1233:G:H5'	45:N:118:ARG:HH11	1.77	0.49
1:3:1349:A:H1'	1:3:1374:A:C6	2.47	0.49
1:3:1349:A:H2'	1:3:1350:A:O4'	2.12	0.49
2:1:100:U:H2'	25:u:90:LYS:HZ3	1.77	0.49
2:1:474:G:H3'	2:1:475:C:H5'	1.94	0.49
2:1:542:C:H2'	2:1:543:G:C8	2.47	0.49
2:1:1061:U:H2'	2:1:1063:G:OP2	2.12	0.49
2:1:1265:A:H5'	2:1:1267:U:H1'	1.93	0.49
2:1:1626:A:H5''	2:1:1627:G:OP1	2.11	0.49
2:1:2403:C:O2'	2:1:2404:U:H5'	2.11	0.49
41:J:35:LEU:HD11	41:J:136:VAL:HG21	1.93	0.49
1:3:177:G:OP1	56:Y:59:ARG:NH1	2.46	0.49
1:3:193:C:H1'	56:Y:54:GLN:HE22	1.77	0.49
1:3:1095:U:P	1:3:1108:G:H1	2.36	0.49
1:3:1290:G:H3'	1:3:1291:U:H5'	1.94	0.49
2:1:196:A:O2'	2:1:197:A:H5'	2.11	0.49
2:1:947:A:H2'	2:1:948:C:C6	2.47	0.49
2:1:1842:G:H2'	2:1:1843:C:C6	2.47	0.49
2:1:2802:G:C2'	2:1:2803:G:H5'	2.42	0.49
3:2:30:C:H1'	3:2:57:A:H61	1.77	0.49
12:a:53:ARG:HD3	12:a:54:LYS:HG2	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:a:63:THR:HG23	12:a:163:TYR:HE1	1.76	0.49
24:t:68:LYS:HG3	24:t:77:ARG:HH21	1.77	0.49
25:u:88:ASP:OD1	25:u:88:ASP:N	2.40	0.49
40:I:64:TYR:HA	40:I:110:ARG:HD2	1.93	0.49
1:3:779:C:H2'	1:3:780:A:O4'	2.11	0.49
1:3:1057:G:O2'	1:3:1058:G:H5'	2.12	0.49
1:3:1081:A:H5'	41:J:22:LYS:HD2	1.94	0.49
1:3:1222:G:H5'	1:3:1222:G:H8	1.78	0.49
2:1:190:A:OP2	28:x:25:LYS:HE2	2.12	0.49
2:1:241:A:H62	2:1:256:A:H8	1.58	0.49
2:1:254:G:C2'	2:1:255:A:H5''	2.42	0.49
2:1:1823:G:H2'	2:1:1824:G:H8	1.75	0.49
2:1:2044:C:H2'	2:1:2045:C:C6	2.47	0.49
2:1:2453:A:O2'	2:1:2454:G:H5'	2.12	0.49
7:c:8:LYS:O	7:c:198:GLY:N	2.45	0.49
15:k:12:ASP:HA	15:k:99:ILE:HA	1.94	0.49
27:w:7:ARG:O	27:w:10:ARG:NH2	2.42	0.49
56:Y:42:ASP:OD1	56:Y:42:ASP:N	2.38	0.49
1:3:317:U:H2'	1:3:318:G:C8	2.48	0.49
1:3:1002:G:H2'	1:3:1003:G:O4'	2.12	0.49
2:1:312:G:H4'	2:1:331:C:N3	2.27	0.49
2:1:732:C:H2'	2:1:733:G:O4'	2.12	0.49
2:1:1001:A:H2'	2:1:1002:G:O4'	2.13	0.49
2:1:1183:U:O2'	2:1:1184:U:H5'	2.12	0.49
2:1:1719:G:H2'	2:1:1720:U:O4'	2.12	0.49
2:1:2063:C:H2'	2:1:2064:C:C6	2.47	0.49
2:1:2083:G:H2'	2:1:2084:C:C6	2.47	0.49
2:1:2646:C:O5'	2:1:2646:C:H6	1.95	0.49
7:c:48:ILE:HG23	7:c:84:LEU:HD21	1.95	0.49
44:M:112:ASP:O	44:M:116:ARG:N	2.44	0.49
47:P:65:ALA:O	47:P:69:CYS:N	2.46	0.49
48:Q:39:THR:O	48:Q:49:ARG:N	2.39	0.49
1:3:981:U:OP1	50:S:5:MET:HE3	2.12	0.49
1:3:982:U:H5''	50:S:5:MET:HE1	1.95	0.49
1:3:1290:G:H2'	1:3:1290:G:N3	2.28	0.49
2:1:167:A:H2'	2:1:168:G:O4'	2.13	0.49
2:1:215:G:H4'	2:1:216:A:H4'	1.94	0.49
2:1:323:C:H2'	2:1:1205:A:C6	2.47	0.49
2:1:740:C:H5'	2:1:1784:A:H2'	1.94	0.49
2:1:1318:U:H2'	2:1:1319:C:C6	2.48	0.49
2:1:1569:A:H5'	6:b:58:LYS:CE	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:l:20:GLY:HA2	16:l:28:GLY:HA2	1.94	0.49
19:o:31:THR:HG22	19:o:34:HIS:H	1.78	0.49
39:H:137:VAL:HG13	39:H:148:ILE:HG21	1.94	0.49
56:Y:44:ALA:O	56:Y:48:LYS:N	2.45	0.49
1:3:683:G:N2	47:P:39:ASN:HD22	2.10	0.49
1:3:972:C:H2'	1:3:973:G:C8	2.48	0.49
1:3:1233:G:H5'	45:N:118:ARG:NH1	2.28	0.49
2:1:297:G:O3'	25:u:84:PHE:HB2	2.13	0.49
2:1:630:G:H4'	2:1:640:C:H1'	1.95	0.49
2:1:645:C:O2'	2:1:646:U:H5'	2.13	0.49
2:1:1019:U:H3	2:1:1142:A:H62	1.59	0.49
9:e:73:VAL:HG12	9:e:76:PHE:H	1.77	0.49
10:f:27:GLY:HA3	10:f:78:VAL:HB	1.95	0.49
21:q:73:ILE:HB	21:q:113:LYS:HD2	1.94	0.49
56:Y:43:LYS:HB3	56:Y:86:ALA:HB2	1.94	0.49
1:3:311:C:H2'	1:3:312:C:C5	2.47	0.49
1:3:609:A:H8	1:3:609:A:O5'	1.96	0.49
1:3:885:G:H2'	1:3:886:G:H8	1.76	0.49
1:3:957:U:O2'	1:3:959:A:N7	2.36	0.49
1:3:1379:G:N2	1:3:1382:C:N4	2.54	0.49
2:1:647:G:H5'	2:1:648:G:OP2	2.12	0.49
2:1:784:G:OP1	2:1:2588:G:H5''	2.13	0.49
2:1:992:C:H2'	2:1:993:G:C8	2.43	0.49
2:1:1521:G:H3'	2:1:1522:A:H5''	1.93	0.49
2:1:1669:A:H2'	2:1:1670:C:H5'	1.94	0.49
2:1:1843:C:H5'	6:b:250:GLN:OE1	2.11	0.49
2:1:2811:G:H2'	2:1:2812:G:C8	2.48	0.49
4:8:617:MET:HE2	4:8:684:PHE:HB2	1.95	0.49
4:8:665:GLY:O	4:8:669:GLN:NE2	2.46	0.49
9:e:33:ILE:HG13	9:e:95:MET:HG3	1.95	0.49
52:U:61:VAL:HA	52:U:65:ALA:H	1.77	0.49
1:3:296:U:H2'	1:3:297:G:C8	2.48	0.49
1:3:443:C:H2'	1:3:444:G:C8	2.48	0.49
1:3:1255:G:O2'	1:3:1258:G:N3	2.44	0.49
2:1:141:G:H5''	2:1:142:A:H8	1.78	0.49
2:1:935:C:H2'	2:1:936:A:H8	1.78	0.49
2:1:1093:G:H2'	2:1:1094:U:H5'	1.94	0.49
2:1:1108:U:H2'	2:1:1109:C:C6	2.48	0.49
2:1:1270:C:H5''	2:1:1271:G:C5'	2.43	0.49
2:1:1640:A:H2'	2:1:1641:A:O4'	2.13	0.49
2:1:1695:G:H2'	2:1:1696:G:O4'	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1991:U:H2'	2:1:1992:G:C5'	2.36	0.49
2:1:2874:C:H2'	2:1:2875:C:C6	2.48	0.49
41:J:106:ALA:HB2	41:J:124:ALA:HB3	1.95	0.49
1:3:540:G:H2'	1:3:541:G:C8	2.48	0.49
1:3:895:G:H2'	1:3:896:C:C6	2.48	0.49
2:1:304:U:O5'	2:1:304:U:H6	1.95	0.49
2:1:833:A:H2'	2:1:834:G:C8	2.48	0.49
2:1:2575:C:H5'	7:c:149:ASN:HB2	1.95	0.49
3:2:77:U:O2'	3:2:78:A:H5'	2.12	0.49
8:d:97:ASN:HB2	8:d:100:MET:HB2	1.95	0.49
22:r:95:ASP:OD1	22:r:95:ASP:N	2.34	0.49
23:s:25:ARG:O	23:s:27:LYS:NZ	2.45	0.49
23:s:67:ASP:OD1	23:s:67:ASP:N	2.46	0.49
40:I:94:GLU:HA	40:I:99:ASN:HD22	1.78	0.49
41:J:131:ASN:HD22	41:J:134:ASN:HD21	1.61	0.49
1:3:346:G:H3'	1:3:346:G:N3	2.27	0.48
1:3:613:C:OP1	40:I:80:ARG:HG2	2.13	0.48
1:3:1148:U:C4'	45:N:17:ARG:HD3	2.43	0.48
2:1:397:U:H5'	2:1:2231:U:H4'	1.95	0.48
2:1:1796:U:H2'	2:1:1797:G:H8	1.78	0.48
2:1:1834:U:O2	2:1:1834:U:H3'	2.12	0.48
2:1:2710:C:H2'	2:1:2711:A:C8	2.47	0.48
3:2:98:G:N1	26:v:14:LYS:HB2	2.28	0.48
9:e:130:GLY:HA2	9:e:152:ASP:HA	1.95	0.48
13:i:112:LYS:HZ3	13:i:124:MET:HG3	1.78	0.48
29:y:14:LEU:O	29:y:18:LEU:N	2.42	0.48
39:H:122:GLN:HA	39:H:125:ARG:HB2	1.94	0.48
48:Q:70:GLY:O	48:Q:98:ARG:NH1	2.39	0.48
1:3:7:A:O3'	41:J:125:LYS:NZ	2.46	0.48
1:3:261:U:C5	56:Y:73:ARG:CZ	2.97	0.48
1:3:523:A:H62	48:Q:88:ASP:HB3	1.78	0.48
1:3:1048:G:H2'	1:3:1050:G:C8	2.47	0.48
2:1:565:C:H2'	2:1:566:U:C6	2.49	0.48
2:1:923:G:H2'	2:1:924:G:C8	2.48	0.48
2:1:1381:G:H8	2:1:1381:G:O5'	1.96	0.48
2:1:1614:A:H2'	2:1:1615:C:H5'	1.94	0.48
4:8:442:ASP:OD1	4:8:444:SER:OG	2.30	0.48
7:c:14:ILE:HG12	7:c:24:VAL:HG11	1.94	0.48
16:l:82:LEU:HD11	16:l:90:VAL:HG11	1.94	0.48
24:t:64:LYS:HD3	24:t:79:ASP:HB3	1.96	0.48
40:I:60:VAL:HA	40:I:63:ILE:HD12	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:I:90:LEU:HA	40:I:93:LEU:HD12	1.96	0.48
40:I:121:ALA:O	40:I:145:ARG:N	2.39	0.48
1:3:389:A:C6	1:3:390:U:H1'	2.48	0.48
1:3:434:U:H2'	1:3:435:A:C8	2.45	0.48
1:3:482:A:H3'	1:3:482:A:OP2	2.12	0.48
1:3:984:C:H2'	1:3:985:C:C6	2.48	0.48
2:1:661:A:H2'	2:1:662:G:O4'	2.13	0.48
2:1:720:U:H2'	2:1:721:A:C8	2.47	0.48
2:1:1012:U:N3	14:j:27:ARG:HD3	2.28	0.48
2:1:2142:A:N3	2:1:2142:A:H2'	2.29	0.48
3:2:57:A:C5	9:e:25:MET:HB3	2.48	0.48
3:2:57:A:N1	9:e:25:MET:HE2	2.28	0.48
8:d:98:LYS:HB3	8:d:102:ARG:HH22	1.78	0.48
14:j:17:VAL:HG12	14:j:139:VAL:HA	1.94	0.48
16:l:135:ILE:HB	16:l:142:ILE:HD11	1.94	0.48
1:3:950:U:OP2	49:R:100:ARG:HD2	2.14	0.48
1:3:1464:U:H2'	1:3:1465:A:C8	2.49	0.48
2:1:419:U:H2'	2:1:420:C:H6	1.78	0.48
2:1:1482:G:H2'	2:1:1483:G:C8	2.49	0.48
2:1:2630:G:H2'	2:1:2631:G:H8	1.78	0.48
2:1:2878:U:H2'	2:1:2879:A:H5'	1.95	0.48
4:8:537:ILE:HB	4:8:577:ARG:HG2	1.96	0.48
8:d:126:VAL:HG22	8:d:128:ALA:H	1.79	0.48
8:d:149:ILE:HD11	8:d:172:ALA:HA	1.95	0.48
10:f:1:SER:O	10:f:5:LYS:N	2.45	0.48
10:f:18:ILE:HG13	10:f:44:HIS:HB2	1.95	0.48
13:i:126:ARG:HA	13:i:129:GLU:HG2	1.94	0.48
16:l:39:LYS:HA	16:l:45:GLY:H	1.78	0.48
18:n:48:VAL:HA	18:n:51:LEU:HD12	1.95	0.48
48:Q:54:VAL:HG21	48:Q:79:ILE:HD11	1.95	0.48
1:3:1187:G:H2'	1:3:1188:A:C8	2.46	0.48
1:3:1308:U:C2	1:3:1309:G:C8	3.02	0.48
1:3:1354:U:H2'	1:3:1355:G:C8	2.48	0.48
2:1:1487:U:H2'	2:1:1488:C:H6	1.78	0.48
2:1:1993:U:H4'	7:c:133:THR:HG22	1.96	0.48
2:1:2596:U:H2'	2:1:2597:G:O4'	2.13	0.48
4:8:498:VAL:HG21	4:8:607:LYS:HD3	1.95	0.48
22:r:19:THR:HA	22:r:97:LYS:HA	1.95	0.48
38:G:132:GLU:HA	38:G:135:MET:HB3	1.94	0.48
1:3:8:A:H5''	41:J:125:LYS:HE3	1.95	0.48
1:3:689:C:H2'	1:3:690:G:O4'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:677:A:H2'	2:1:678:C:H6	1.78	0.48
2:1:799:G:C5'	2:1:800:A:H5''	2.44	0.48
2:1:1146:C:O2'	2:1:1147:A:H5'	2.14	0.48
2:1:1972:G:C2	2:1:1973:G:N7	2.81	0.48
2:1:2052:A:O2'	2:1:2053:G:H5'	2.14	0.48
2:1:2070:A:H2'	2:1:2071:A:C8	2.48	0.48
2:1:2141:G:O2'	2:1:2142:A:H5'	2.13	0.48
2:1:2624:G:N3	31:B:18:HIS:HE1	2.12	0.48
4:8:494:ILE:HA	4:8:610:PRO:HB3	1.96	0.48
7:c:61:THR:HG23	7:c:64:GLU:H	1.78	0.48
34:E:37:THR:HA	34:E:40:LYS:HE3	1.95	0.48
1:3:405:U:OP1	1:3:406:G:H4'	2.14	0.48
1:3:1111:A:H2'	1:3:1112:C:O4'	2.13	0.48
2:1:767:U:H2'	2:1:768:G:C8	2.48	0.48
2:1:1111:A:H2'	2:1:1111:A:N3	2.29	0.48
2:1:1124:G:H1'	35:F:38:GLY:HA2	1.95	0.48
2:1:1240:U:O2'	2:1:1241:A:H5'	2.13	0.48
2:1:1470:A:H2'	2:1:1471:G:O4'	2.13	0.48
2:1:2122:U:H2'	2:1:2123:G:O4'	2.13	0.48
2:1:2189:U:H2'	2:1:2190:G:H8	1.78	0.48
2:1:2514:U:H2'	2:1:2515:C:H6	1.79	0.48
2:1:2649:C:H2'	2:1:2650:U:C6	2.49	0.48
17:m:54:THR:O	17:m:58:LYS:N	2.47	0.48
25:u:44:HIS:HD2	25:u:57:ILE:HG12	1.78	0.48
26:v:80:HIS:HD2	26:v:82:TYR:H	1.61	0.48
29:y:49:ASP:OD2	29:y:52:ARG:NH2	2.46	0.48
42:K:92:THR:OG1	42:K:93:LYS:N	2.32	0.48
1:3:591:U:OP2	44:M:30:LYS:HD3	2.14	0.48
1:3:1206:G:N2	39:H:155:ARG:HH12	2.11	0.48
2:1:124:G:H3'	33:D:19:ARG:HH11	1.78	0.48
2:1:226:A:H2	2:1:230:G:O6	1.97	0.48
2:1:2680:U:C5'	7:c:194:PRO:HA	2.44	0.48
4:8:414:PRO:O	4:8:446:ARG:NH1	2.47	0.48
28:x:14:GLY:HA3	28:x:28:PHE:HE1	1.79	0.48
38:G:63:LYS:HD3	38:G:63:LYS:HA	1.74	0.48
38:G:169:HIS:HB2	38:G:173:LYS:HG3	1.96	0.48
39:H:3:LYS:NZ	39:H:174:LEU:O	2.37	0.48
40:I:201:GLU:HA	41:J:105:ILE:HD11	1.96	0.48
48:Q:109:ARG:HA	48:Q:109:ARG:HD2	1.63	0.48
1:3:52:C:H2'	1:3:53:A:H8	1.78	0.48
1:3:357:G:H4'	1:3:368:U:O2'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:950:U:H4'	1:3:971:G:C6	2.49	0.48
2:1:776:G:H4'	2:1:777:G:O5'	2.14	0.48
2:1:1076:C:O2'	13:i:92:PRO:HD2	2.14	0.48
2:1:2087:G:H2'	2:1:2088:A:C8	2.45	0.48
2:1:2440:C:H5''	2:1:2587:A:H4'	1.96	0.48
8:d:87:ALA:O	8:d:88:ARG:NH2	2.39	0.48
9:e:116:LEU:HD23	9:e:175:PRO:HD2	1.95	0.48
22:r:35:PHE:O	22:r:59:ILE:N	2.41	0.48
26:v:75:GLN:HB2	26:v:92:VAL:HG22	1.96	0.48
52:U:54:LEU:HD21	52:U:80:LYS:HG3	1.96	0.48
1:3:699:C:H2'	1:3:700:G:C8	2.49	0.48
1:3:952:U:O2'	1:3:953:G:H5'	2.13	0.48
1:3:1245:C:H2'	1:3:1246:A:O4'	2.14	0.48
2:1:163:C:H2'	2:1:164:C:H5'	1.94	0.48
2:1:276:U:H2'	2:1:278:A:H62	1.79	0.48
2:1:397:U:H5'	2:1:2231:U:C4'	2.43	0.48
2:1:816:C:H2'	2:1:817:C:C6	2.49	0.48
2:1:1408:G:H1	2:1:1594:U:H3	1.61	0.48
2:1:1799:G:H4'	2:1:1800:C:C6	2.48	0.48
2:1:1989:G:H2'	2:1:1990:C:O4'	2.14	0.48
2:1:2468:A:H4'	17:m:119:LEU:HD23	1.96	0.48
13:i:35:MET:HG3	13:i:36:GLU:HG3	1.96	0.48
16:l:29:LYS:HG3	16:l:30:THR:HG22	1.94	0.48
19:o:16:ARG:NH2	19:o:19:GLN:OE1	2.47	0.48
20:p:59:THR:O	20:p:59:THR:OG1	2.32	0.48
23:s:86:MET:HB2	23:s:96:ILE:HG23	1.94	0.48
1:3:201:G:H21	1:3:469:C:H1'	1.78	0.47
1:3:631:C:H3'	1:3:632:U:H5'	1.96	0.47
1:3:1303:C:H42	1:3:1334:G:H1	1.61	0.47
2:1:22:C:C3'	2:1:23:G:H5''	2.44	0.47
2:1:244:A:O2'	16:l:69:ARG:NH1	2.47	0.47
2:1:664:G:H1'	2:1:940:G:H5''	1.96	0.47
2:1:817:C:O2	2:1:839:U:H5''	2.14	0.47
2:1:1250:G:C5'	21:q:5:ARG:HG3	2.44	0.47
2:1:1739:A:H2'	2:1:1740:G:O4'	2.13	0.47
2:1:1791:A:N6	2:1:1828:G:O2'	2.46	0.47
2:1:2295:C:O2'	2:1:2296:U:H5'	2.13	0.47
6:b:209:ALA:O	6:b:213:ARG:NH2	2.46	0.47
16:l:75:ALA:HB2	16:l:105:ILE:HD13	1.96	0.47
1:3:337:G:H2'	1:3:338:A:H8	1.79	0.47
1:3:945:G:H2'	1:3:945:G:N3	2.28	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:957:U:H4'	55:X:78:THR:CG2	2.44	0.47
1:3:1108:G:OP1	39:H:175:HIS:HB2	2.14	0.47
1:3:1226:C:OP2	1:3:1226:C:H2'	2.14	0.47
2:1:326:G:H2'	2:1:327:G:H8	1.79	0.47
2:1:1447:C:H2'	2:1:1448:G:H8	1.74	0.47
2:1:1470:A:H3'	2:1:1471:G:H8	1.79	0.47
2:1:1818:U:H5'	6:b:156:SER:HB3	1.96	0.47
2:1:1919:A:C2'	2:1:1920:C:H5'	2.43	0.47
2:1:2759:G:H2'	2:1:2760:C:C6	2.49	0.47
8:d:1:MET:HE3	8:d:20:GLY:HA3	1.95	0.47
11:g:8:LYS:HD3	11:g:9:VAL:H	1.79	0.47
11:g:72:ILE:HG13	11:g:108:VAL:HG22	1.95	0.47
38:G:190:SER:OG	38:G:191:ASP:N	2.46	0.47
39:H:33:ASP:HB2	50:S:64:ARG:HH11	1.78	0.47
44:M:112:ASP:HA	44:M:115:ALA:HB3	1.96	0.47
49:R:85:TYR:CZ	49:R:89:ARG:HD2	2.49	0.47
56:Y:27:MET:HG2	56:Y:57:VAL:HG12	1.96	0.47
1:3:888:G:H2'	1:3:889:A:C8	2.49	0.47
2:1:155:A:H2'	2:1:156:A:O4'	2.14	0.47
2:1:725:G:H3'	2:1:726:G:C8	2.49	0.47
2:1:729:G:H4'	2:1:763:G:H5'	1.96	0.47
2:1:871:U:O2'	2:1:872:U:H5'	2.14	0.47
2:1:910:A:H62	17:m:12:MET:CA	2.24	0.47
2:1:1028:A:H2'	2:1:1029:A:C8	2.49	0.47
2:1:1251:C:C5	21:q:5:ARG:NH1	2.82	0.47
2:1:1485:U:H2'	2:1:1486:U:C6	2.50	0.47
2:1:2314:A:H2'	2:1:2315:G:O4'	2.14	0.47
2:1:2713:U:H2'	2:1:2715:C:OP2	2.14	0.47
10:f:71:LEU:HA	10:f:74:MET:HB3	1.96	0.47
22:r:4:VAL:O	22:r:39:LEU:N	2.36	0.47
24:t:34:VAL:HG21	24:t:43:ILE:HD11	1.96	0.47
38:G:52:ALA:HB2	38:G:197:PHE:HB3	1.96	0.47
38:G:153:MET:HE3	38:G:154:GLY:H	1.79	0.47
41:J:13:LYS:N	41:J:37:VAL:O	2.44	0.47
42:K:5:GLU:HB3	42:K:90:MET:HB3	1.96	0.47
44:M:29:SER:H	44:M:32:LYS:HB2	1.78	0.47
47:P:62:ALA:HB1	47:P:95:THR:HB	1.95	0.47
54:W:40:PRO:HG2	54:W:43:ILE:HG12	1.95	0.47
1:3:445:G:C2	1:3:446:G:H1'	2.50	0.47
1:3:482:A:C2'	1:3:483:C:H5'	2.38	0.47
2:1:309:A:H1'	2:1:329:G:O2'	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:657:U:H6	2:1:657:U:O5'	1.98	0.47
2:1:678:C:H42	2:1:799:G:H1	1.63	0.47
2:1:965:C:O2'	2:1:966:G:H5'	2.14	0.47
2:1:1641:A:H2'	2:1:1642:G:O4'	2.14	0.47
2:1:2045:C:H5'	31:B:14:MET:SD	2.54	0.47
1:3:237:G:H5''	53:V:26:ARG:CZ	2.44	0.47
1:3:518:C:H4'	1:3:519:C:H5'	1.97	0.47
2:1:281:C:H2'	2:1:282:A:C8	2.49	0.47
2:1:720:U:H2'	2:1:721:A:H8	1.79	0.47
2:1:812:C:H2'	2:1:813:U:H6	1.80	0.47
2:1:2462:C:H2'	2:1:2463:C:H6	1.79	0.47
9:e:77:LYS:NZ	37:5:19:G:H21	2.12	0.47
10:f:89:VAL:HG21	10:f:162:ARG:HE	1.79	0.47
14:j:17:VAL:N	14:j:138:GLN:O	2.41	0.47
17:m:84:LYS:HA	17:m:84:LYS:HD3	1.71	0.47
37:5:21:A:N6	37:5:47:U:O2'	2.47	0.47
1:3:255:G:H2'	1:3:256:U:C6	2.50	0.47
1:3:476:U:H2'	1:3:477:C:C6	2.49	0.47
1:3:1454:G:H2'	1:3:1455:G:H8	1.80	0.47
2:1:180:G:H2'	2:1:180:G:N3	2.29	0.47
2:1:690:G:H2'	2:1:691:C:C6	2.40	0.47
2:1:1320:C:H4'	2:1:1321:A:C5'	2.43	0.47
2:1:1324:G:H2'	2:1:1326:U:OP1	2.14	0.47
2:1:1949:G:H2'	2:1:1950:G:O4'	2.14	0.47
2:1:2094:A:C3'	2:1:2095:A:H5''	2.45	0.47
2:1:2419:U:OP2	34:E:32:LEU:HD22	2.14	0.47
2:1:2650:U:H2'	2:1:2651:C:C6	2.50	0.47
2:1:2880:C:H1'	18:n:92:GLY:O	2.14	0.47
19:o:27:VAL:HA	19:o:93:ASP:HB3	1.96	0.47
41:J:63:MET:O	41:J:67:ARG:N	2.48	0.47
46:O:19:ASP:OD1	46:O:19:ASP:N	2.47	0.47
49:R:52:ILE:HG13	49:R:56:ARG:HH12	1.79	0.47
1:3:6:G:O2'	1:3:298:A:H1'	2.14	0.47
1:3:140:U:H2'	1:3:141:G:H8	1.78	0.47
1:3:165:G:H2'	1:3:166:U:C6	2.49	0.47
1:3:362:G:C2'	1:3:363:A:H5''	2.44	0.47
1:3:598:U:HO2'	44:M:85:TYR:HB3	1.80	0.47
1:3:756:C:OP2	51:T:64:LYS:NZ	2.48	0.47
1:3:796:C:H4'	47:P:126:ARG:NH1	2.30	0.47
1:3:956:U:C5'	55:X:80:ARG:HD3	2.45	0.47
1:3:960:U:H6	1:3:1222:G:O2'	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:977:A:C8	1:3:977:A:C3'	2.98	0.47
1:3:1095:U:H5'	1:3:1109:C:N3	2.30	0.47
1:3:1275:A:H2'	1:3:1276:G:H5'	1.96	0.47
1:3:1390:U:C4	1:3:1391:U:C4	3.03	0.47
2:1:750:A:H2'	2:1:752:A:OP1	2.15	0.47
2:1:817:C:H2'	2:1:818:G:O4'	2.14	0.47
2:1:871:U:H6	2:1:871:U:C5'	2.28	0.47
2:1:1308:A:H2'	2:1:1309:G:O4'	2.15	0.47
2:1:1461:C:H2'	2:1:1462:C:C6	2.50	0.47
2:1:1764:C:H2'	2:1:1765:U:C6	2.50	0.47
2:1:2028:U:H2'	2:1:2029:G:H5'	1.97	0.47
2:1:2450:A:H2'	2:1:2450:A:N3	2.28	0.47
2:1:2508:G:H1	2:1:2580:U:H3	1.63	0.47
2:1:2695:U:H2'	2:1:2696:U:C6	2.49	0.47
2:1:2822:G:H2'	2:1:2823:A:H5''	1.96	0.47
4:8:674:THR:HG23	4:8:677:ARG:H	1.79	0.47
8:d:170:ARG:NH2	8:d:176:ASP:OD1	2.48	0.47
15:k:12:ASP:HB3	15:k:99:ILE:HG12	1.96	0.47
16:l:90:VAL:HG13	16:l:95:LEU:HD11	1.97	0.47
26:v:73:LYS:HB2	26:v:92:VAL:HG23	1.96	0.47
33:D:34:ARG:NH2	33:D:41:ARG:O	2.48	0.47
42:K:26:THR:O	42:K:30:THR:OG1	2.19	0.47
48:Q:98:ARG:NE	48:Q:103:CYS:SG	2.87	0.47
51:T:61:GLN:HA	51:T:64:LYS:HB2	1.96	0.47
52:U:3:THR:HG23	52:U:24:SER:HB3	1.97	0.47
54:W:65:SER:O	54:W:65:SER:OG	2.33	0.47
1:3:332:G:OP2	56:Y:3:ILE:HG23	2.15	0.47
1:3:363:A:P	48:Q:30:ARG:HB3	2.55	0.47
1:3:671:G:H2'	1:3:672:U:C6	2.50	0.47
1:3:758:C:O2	1:3:758:C:O4'	2.33	0.47
1:3:950:U:H3'	49:R:100:ARG:CZ	2.45	0.47
2:1:103:A:H2'	2:1:104:A:C8	2.50	0.47
2:1:581:C:H2'	2:1:582:A:C8	2.49	0.47
2:1:956:G:H4'	17:m:82:MET:SD	2.55	0.47
2:1:2019:A:C2'	2:1:2020:A:H5''	2.40	0.47
2:1:2390:U:H2'	2:1:2391:G:H8	1.79	0.47
23:s:108:SER:OG	23:s:109:ASP:N	2.48	0.47
54:W:33:THR:OG1	54:W:34:GLU:OE1	2.32	0.47
1:3:278:G:H4'	1:3:282:A:O4'	2.14	0.47
1:3:323:U:H5'	56:Y:17:ARG:CB	2.45	0.47
1:3:648:A:H2'	1:3:649:A:H5'	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:964:A:C2	1:3:969:A:H1'	2.49	0.47
1:3:1370:G:H2'	1:3:1371:G:H8	1.79	0.47
2:1:141:G:H5''	2:1:142:A:C8	2.49	0.47
2:1:243:U:OP2	34:E:7:ARG:HD3	2.14	0.47
2:1:874:G:OP1	17:m:62:LYS:NZ	2.42	0.47
2:1:897:C:H5'	2:1:898:C:OP1	2.14	0.47
2:1:1736:U:H2'	2:1:1737:G:H8	1.77	0.47
2:1:2096:C:H2'	2:1:2097:A:C8	2.50	0.47
2:1:2367:G:H2'	2:1:2368:C:H6	1.79	0.47
2:1:2768:U:OP1	14:j:85:LYS:HD2	2.14	0.47
1:3:442:G:H1	1:3:492:C:H42	1.62	0.47
1:3:704:A:H2'	1:3:705:G:O4'	2.15	0.47
1:3:803:G:H5'	1:3:804:U:OP2	2.15	0.47
2:1:419:U:H2'	2:1:420:C:C6	2.50	0.47
2:1:1542:U:H2'	2:1:1543:G:O4'	2.14	0.47
2:1:2114:A:H3'	2:1:2115:G:H5''	1.97	0.47
2:1:2444:G:H2'	2:1:2445:G:O4'	2.15	0.47
3:2:42:C:H2'	3:2:43:C:O4'	2.15	0.47
9:e:61:GLY:O	9:e:94:ARG:NH2	2.48	0.47
9:e:141:ASP:OD1	9:e:141:ASP:N	2.38	0.47
10:f:89:VAL:O	10:f:160:GLY:N	2.43	0.47
45:N:97:LEU:O	45:N:101:GLY:N	2.48	0.47
56:Y:8:LYS:NZ	56:Y:12:GLN:OE1	2.32	0.47
56:Y:57:VAL:O	56:Y:61:ALA:N	2.48	0.47
1:3:1031:C:H4'	1:3:1033:G:H21	1.79	0.46
2:1:63:A:H2'	2:1:64:A:H8	1.81	0.46
2:1:383:C:H6	2:1:385:C:OP2	1.99	0.46
2:1:658:U:C3'	2:1:659:G:H5''	2.46	0.46
2:1:799:G:H3'	2:1:800:A:H5''	1.97	0.46
2:1:991:C:OP2	2:1:1186:G:OP2	2.33	0.46
2:1:1799:G:H4'	2:1:1800:C:H6	1.80	0.46
2:1:1805:A:C5'	6:b:247:TRP:CE2	2.98	0.46
2:1:2875:C:H2'	2:1:2876:G:C8	2.51	0.46
3:2:100:G:H2'	3:2:100:G:N3	2.30	0.46
4:8:622:GLU:HG3	4:8:653:LYS:HG2	1.98	0.46
12:a:33:LEU:HD23	12:a:219:GLY:HA3	1.97	0.46
1:3:460:A:H2'	1:3:461:A:H8	1.80	0.46
1:3:957:U:H4'	55:X:78:THR:HG23	1.97	0.46
1:3:1157:A:O2'	1:3:1158:C:P	2.73	0.46
1:3:1359:C:OP2	50:S:74:ARG:HG3	2.14	0.46
2:1:463:G:C2	2:1:467:G:C6	3.03	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:636:G:OP1	16:l:129:LYS:HG3	2.15	0.46
2:1:1059:G:H1	2:1:1079:C:H42	1.62	0.46
4:8:514:GLN:HE22	4:8:589:SER:HG	1.61	0.46
6:b:43:ASN:OD1	6:b:46:GLY:N	2.48	0.46
17:m:41:LEU:O	17:m:94:ALA:N	2.41	0.46
18:n:28:LEU:HD23	18:n:48:VAL:HG21	1.96	0.46
20:p:30:TRP:NE1	20:p:81:ASP:OD1	2.43	0.46
25:u:83:GLY:HA3	25:u:96:LYS:HE3	1.97	0.46
27:w:19:VAL:HG12	27:w:34:VAL:HG22	1.96	0.46
37:5:6:A:C3'	37:5:7:G:H5''	2.45	0.46
40:I:33:ILE:HG23	40:I:34:GLU:HG3	1.97	0.46
47:P:17:ASP:HA	47:P:80:ASN:HB2	1.97	0.46
49:R:82:LEU:HD22	55:X:65:MET:HE2	1.96	0.46
1:3:263:A:H2'	1:3:264:C:C5	2.51	0.46
1:3:560:A:H4'	1:3:561:U:H5''	1.97	0.46
1:3:1329:A:H5''	49:R:25:GLY:CA	2.45	0.46
1:3:1347:G:N2	1:3:1373:G:H2'	2.30	0.46
1:3:1532:U:O4	57:Z:46:ARG:HG3	2.16	0.46
2:1:309:A:N3	2:1:329:G:O2'	2.48	0.46
2:1:1077:A:H2'	2:1:1078:U:H4'	1.98	0.46
2:1:2450:A:OP1	2:1:2497:A:H2'	2.15	0.46
2:1:2485:G:O2'	2:1:2486:C:H5'	2.15	0.46
2:1:2498:C:C2'	2:1:2499:C:H5''	2.45	0.46
2:1:2536:G:H2'	2:1:2537:U:C6	2.50	0.46
5:6:19:G:H5''	5:6:20:U:H5	1.81	0.46
14:j:140:LEU:HG	14:j:142:ILE:HB	1.98	0.46
38:G:66:ILE:HB	38:G:88:GLN:HG2	1.98	0.46
38:G:110:ILE:HD12	38:G:113:LEU:HB3	1.96	0.46
38:G:195:VAL:HB	38:G:198:VAL:HB	1.97	0.46
42:K:68:GLN:NE2	42:K:69:GLU:OE1	2.46	0.46
1:3:104:G:H5''	1:3:174:A:O2'	2.15	0.46
1:3:519:C:O2'	1:3:520:A:H5'	2.15	0.46
1:3:521:G:H5''	48:Q:49:ARG:HH12	1.80	0.46
1:3:1387:G:H2'	1:3:1388:C:H6	1.80	0.46
2:1:109:C:H3'	2:1:110:G:H5''	1.98	0.46
2:1:153:U:H3	2:1:173:A:H61	1.62	0.46
2:1:973:A:H5''	22:r:81:LYS:HD2	1.96	0.46
2:1:1197:G:H2'	2:1:1198:U:H6	1.79	0.46
2:1:1326:U:H1'	2:1:2010:G:H21	1.81	0.46
2:1:1415:U:H2'	2:1:1416:G:H4'	1.98	0.46
2:1:1720:U:H2'	2:1:1721:G:O4'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1752:C:H2'	2:1:1753:G:C8	2.51	0.46
2:1:2348:U:H5'	32:C:20:TYR:OH	2.16	0.46
2:1:2593:U:H3	2:1:2600:A:H61	1.64	0.46
17:m:64:TRP:HB2	17:m:104:GLU:HB2	1.97	0.46
37:5:69:G:H3'	37:5:70:C:C6	2.51	0.46
41:J:57:ALA:HA	41:J:60:GLN:HB2	1.97	0.46
41:J:99:SER:O	41:J:99:SER:OG	2.33	0.46
41:J:113:VAL:O	41:J:117:ALA:N	2.46	0.46
56:Y:4:LYS:HD2	56:Y:4:LYS:HA	1.72	0.46
56:Y:20:ASN:HB3	56:Y:24:ARG:HH22	1.79	0.46
1:3:46:G:H2'	1:3:366:A:H62	1.80	0.46
1:3:80:A:O2'	1:3:81:A:H5'	2.15	0.46
1:3:1373:G:H5''	43:L:35:LYS:CD	2.46	0.46
2:1:3:U:H2'	2:1:4:U:C5	2.50	0.46
2:1:137:U:O2	2:1:142:A:H2	1.99	0.46
2:1:601:C:H4'	8:d:99:LYS:HD3	1.98	0.46
2:1:743:A:OP1	7:c:135:GLY:HA2	2.15	0.46
2:1:1364:G:H5'	2:1:1809:A:H1'	1.97	0.46
2:1:1695:G:H8	6:b:7:PRO:HB2	1.81	0.46
2:1:1812:U:H2'	2:1:1813:G:C8	2.51	0.46
2:1:2317:A:H2'	2:1:2318:G:O4'	2.16	0.46
2:1:2344:U:O5'	2:1:2344:U:H6	1.98	0.46
3:2:117:G:H2'	3:2:118:C:O4'	2.16	0.46
6:b:49:THR:OG1	6:b:50:THR:N	2.48	0.46
19:o:25:ARG:HE	19:o:40:ILE:HD11	1.81	0.46
21:q:96:ASP:OD2	22:r:13:ARG:NE	2.37	0.46
35:F:4:ARG:HB3	35:F:6:SER:H	1.81	0.46
43:L:135:LYS:HA	43:L:135:LYS:HD3	1.83	0.46
47:P:20:ALA:HB3	47:P:83:VAL:HA	1.97	0.46
49:R:74:MET:O	49:R:78:ARG:N	2.48	0.46
53:V:58:VAL:HG13	53:V:77:VAL:HA	1.97	0.46
56:Y:53:MET:HE3	56:Y:53:MET:HB3	1.81	0.46
1:3:136:C:H2'	1:3:137:U:C6	2.51	0.46
1:3:563:A:H2	48:Q:11:ARG:HH12	1.64	0.46
1:3:1108:G:O5'	39:H:175:HIS:HB2	2.14	0.46
1:3:1289:A:C5	1:3:1290:G:H1'	2.50	0.46
2:1:741:U:H2'	2:1:742:A:C8	2.50	0.46
2:1:1721:G:H2'	2:1:1738:G:H21	1.79	0.46
2:1:1829:A:H3'	2:1:1830:C:C6	2.45	0.46
2:1:2044:C:H2'	2:1:2045:C:H6	1.79	0.46
2:1:2572:A:OP1	2:1:2574:G:H4'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2786:U:H2'	2:1:2787:C:C6	2.51	0.46
29:y:17:GLU:HB2	29:y:53:VAL:HG11	1.96	0.46
29:y:19:LEU:HA	29:y:23:ARG:HH21	1.81	0.46
38:G:109:SER:O	38:G:113:LEU:N	2.48	0.46
43:L:49:LEU:HA	43:L:52:ARG:HD3	1.98	0.46
43:L:94:ARG:HG2	43:L:98:LEU:HD23	1.96	0.46
53:V:78:VAL:HG23	53:V:79:GLU:HG2	1.98	0.46
56:Y:26:MET:HE3	56:Y:26:MET:HB3	1.82	0.46
1:3:67:C:O2'	1:3:171:A:H2	1.99	0.46
1:3:775:G:H2'	1:3:776:G:O4'	2.15	0.46
1:3:843:U:OP1	1:3:846:G:H1'	2.15	0.46
1:3:981:U:O2'	50:S:60:ARG:HD3	2.15	0.46
2:1:44:A:O2'	2:1:45:G:H5'	2.15	0.46
2:1:142:A:H2'	2:1:143:C:C6	2.51	0.46
2:1:1221:C:H42	2:1:1228:G:H1	1.63	0.46
2:1:1977:A:H2'	2:1:1978:A:O4'	2.16	0.46
2:1:2119:A:H1'	2:1:2170:A:C2	2.47	0.46
6:b:9:SER:OG	6:b:10:PRO:O	2.34	0.46
6:b:18:VAL:HG21	6:b:196:ASN:HD21	1.81	0.46
6:b:207:ALA:O	6:b:211:ARG:N	2.48	0.46
9:e:32:LYS:N	9:e:156:THR:OG1	2.39	0.46
11:g:71:LYS:HD3	11:g:71:LYS:HA	1.75	0.46
14:j:14:ASP:N	14:j:14:ASP:OD1	2.44	0.46
32:C:46:VAL:HB	32:C:48:TYR:HE2	1.81	0.46
39:H:5:HIS:HD2	39:H:6:PRO:HD2	1.80	0.46
41:J:35:LEU:HD13	41:J:133:ILE:HG22	1.97	0.46
43:L:72:VAL:HG12	43:L:89:GLU:HA	1.98	0.46
47:P:32:THR:HA	47:P:43:TRP:HA	1.98	0.46
51:T:57:ARG:NH1	51:T:57:ARG:O	2.48	0.46
1:3:460:A:H2'	1:3:461:A:C8	2.51	0.46
1:3:934:C:O2'	1:3:1344:C:OP2	2.34	0.46
2:1:44:A:H2'	2:1:45:G:O4'	2.15	0.46
2:1:255:A:C2	2:1:256:A:H1'	2.51	0.46
2:1:539:G:H2'	2:1:540:C:H6	1.81	0.46
2:1:830:G:O4'	2:1:2448:A:C2	2.69	0.46
2:1:1599:U:H2'	2:1:1600:C:C6	2.51	0.46
2:1:1779:U:OP2	2:1:1784:A:N6	2.45	0.46
2:1:2543:G:H2'	2:1:2544:G:H8	1.80	0.46
2:1:2580:U:H5'	7:c:136:ASN:HA	1.98	0.46
2:1:2842:G:H2'	2:1:2843:G:O4'	2.16	0.46
17:m:10:ARG:HH12	37:5:64:C:H4'	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:m:34:LYS:HA	17:m:101:VAL:HA	1.97	0.46
39:H:10:ARG:NH2	39:H:176:THR:O	2.46	0.46
41:J:67:ARG:HD3	41:J:67:ARG:HA	1.74	0.46
47:P:86:LYS:HG2	47:P:113:THR:HA	1.98	0.46
1:3:493:A:H2'	1:3:494:G:C8	2.51	0.46
1:3:1090:U:O2	1:3:1090:U:H2'	2.16	0.46
1:3:1092:A:H5''	43:L:3:ARG:HH12	1.81	0.46
2:1:184:C:H2'	2:1:185:G:C8	2.50	0.46
2:1:530:G:H4'	2:1:532:A:H62	1.80	0.46
2:1:935:C:H2'	2:1:936:A:C8	2.50	0.46
2:1:1189:A:H2'	2:1:1190:G:H5'	1.98	0.46
2:1:1664:A:H61	2:1:1996:C:N4	2.13	0.46
2:1:1835:G:H1'	2:1:1931:U:O2	2.14	0.46
2:1:2075:U:H4'	2:1:2596:U:O2	2.16	0.46
2:1:2350:C:H2'	2:1:2351:G:C8	2.51	0.46
2:1:2639:A:H2'	2:1:2640:G:H5'	1.98	0.46
2:1:2639:A:C2'	2:1:2640:G:H5'	2.46	0.46
2:1:2733:A:N1	7:c:208:LYS:HG2	2.31	0.46
2:1:2744:G:H2'	2:1:2745:C:C6	2.51	0.46
15:k:25:LEU:HD22	15:k:38:ILE:HD12	1.96	0.46
27:w:42:HIS:CD2	27:w:73:ARG:HD3	2.50	0.46
40:I:14:GLU:HA	40:I:55:ARG:HH21	1.80	0.46
2:1:818:G:H2'	2:1:819:A:H5''	1.98	0.46
2:1:862:G:H2'	2:1:863:A:H8	1.79	0.46
2:1:2248:C:OP2	2:1:2249:U:H5	1.98	0.46
2:1:2319:G:H4'	2:1:2321:U:O4	2.17	0.46
2:1:2642:G:C2'	2:1:2643:G:H5'	2.46	0.46
2:1:2748:A:H2'	2:1:2749:A:O4'	2.16	0.46
7:c:22:ILE:HG23	7:c:190:LYS:HE3	1.97	0.46
22:r:29:THR:OG1	22:r:64:VAL:O	2.34	0.46
42:K:90:MET:HG2	42:K:91:ARG:H	1.80	0.46
1:3:220:G:H2'	1:3:221:C:O4'	2.16	0.45
1:3:444:G:H2'	1:3:445:G:H8	1.81	0.45
1:3:883:C:H2'	1:3:884:U:C6	2.51	0.45
1:3:1101:A:H4'	1:3:1102:A:O5'	2.15	0.45
1:3:1167:A:N6	57:Z:66:ARG:O	2.49	0.45
2:1:215:G:C4'	2:1:216:A:H4'	2.46	0.45
2:1:861:A:H2'	2:1:862:G:O4'	2.16	0.45
2:1:1324:G:H3'	2:1:1325:U:H4'	1.98	0.45
2:1:1664:A:N6	2:1:1996:C:H42	2.14	0.45
2:1:1768:C:H2'	2:1:1769:U:O4'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2010:G:H5''	23:s:42:LYS:HB2	1.97	0.45
2:1:2063:C:H2'	2:1:2064:C:H6	1.81	0.45
3:2:12:C:C2'	3:2:13:G:H5'	2.46	0.45
40:I:147:LYS:HE2	40:I:147:LYS:HB3	1.72	0.45
43:L:91:ARG:CZ	43:L:94:ARG:HB2	2.46	0.45
45:N:45:MET:HE3	45:N:45:MET:HB3	1.85	0.45
50:S:33:VAL:HG13	50:S:36:SER:HB2	1.98	0.45
54:W:71:ASP:OD1	54:W:71:ASP:N	2.45	0.45
57:Z:6:ARG:HG2	57:Z:11:PHE:HZ	1.80	0.45
1:3:102:G:H2'	1:3:103:U:C6	2.51	0.45
1:3:455:G:H2'	1:3:456:A:C8	2.51	0.45
1:3:655:A:H4'	1:3:755:G:H4'	1.98	0.45
1:3:914:A:H2'	1:3:915:A:O4'	2.16	0.45
1:3:1089:G:C2	1:3:1090:U:H1'	2.51	0.45
1:3:1306:A:O2'	1:3:1307:U:H5'	2.16	0.45
1:3:1321:U:H5'	1:3:1322:C:H5''	1.96	0.45
1:3:1395:C:H6	1:3:1395:C:H5'	1.81	0.45
2:1:20:C:H2'	2:1:21:A:H8	1.81	0.45
2:1:1229:C:H2'	2:1:1230:A:C8	2.51	0.45
2:1:1352:U:H1'	2:1:1570:A:H2	1.80	0.45
2:1:1770:G:H4'	2:1:1938:A:OP1	2.16	0.45
9:e:22:ASN:N	9:e:26:GLN:OE1	2.49	0.45
9:e:79:ARG:NH1	37:5:19:G:N1	2.64	0.45
10:f:32:LEU:HD23	10:f:74:MET:HG3	1.99	0.45
28:x:37:PHE:HB2	28:x:46:VAL:HG13	1.98	0.45
41:J:110:MET:HB3	41:J:114:LEU:HD23	1.98	0.45
52:U:6:LEU:HD22	52:U:17:TYR:HB3	1.98	0.45
1:3:511:C:H2'	1:3:512:U:C6	2.51	0.45
1:3:750:C:H2'	1:3:751:U:C6	2.51	0.45
1:3:864:A:H5''	41:J:89:THR:HG22	1.99	0.45
1:3:953:G:H2'	1:3:954:G:H8	1.80	0.45
1:3:1038:C:H2'	1:3:1039:G:H8	1.81	0.45
2:1:85:G:C2'	2:1:86:G:H5''	2.47	0.45
2:1:645:C:H2'	2:1:647:G:C8	2.51	0.45
2:1:964:C:O2'	2:1:2273:A:H1'	2.16	0.45
2:1:1549:A:H2'	2:1:1550:C:H6	1.81	0.45
2:1:2162:G:C8	2:1:2162:G:H5'	2.51	0.45
2:1:2393:U:O2'	2:1:2394:C:H5'	2.15	0.45
2:1:2692:G:H2'	2:1:2693:G:H8	1.82	0.45
2:1:2849:U:OP2	20:p:92:ARG:NE	2.48	0.45
15:k:21:CYS:HB2	15:k:39:ILE:HD12	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:k:30:ARG:NE	15:k:32:TYR:O	2.33	0.45
31:B:13:GLY:O	31:B:17:SER:N	2.50	0.45
41:J:22:LYS:N	41:J:29:ILE:O	2.50	0.45
47:P:116:PRO:O	47:P:117:HIS:ND1	2.49	0.45
52:U:8:ARG:NH1	52:U:17:TYR:OH	2.49	0.45
1:3:59:A:H2'	1:3:59:A:N3	2.31	0.45
1:3:225:C:H6	1:3:225:C:H5'	1.81	0.45
1:3:476:U:O2'	1:3:477:C:H5'	2.17	0.45
1:3:971:G:H2'	1:3:1365:G:O2'	2.17	0.45
1:3:1157:A:O2'	1:3:1158:C:OP2	2.32	0.45
2:1:63:A:O2'	2:1:64:A:H5'	2.16	0.45
2:1:163:C:H2'	2:1:164:C:C5'	2.46	0.45
2:1:304:U:H2'	2:1:305:C:C6	2.52	0.45
2:1:548:G:H3'	2:1:549:G:C5'	2.47	0.45
2:1:1137:G:H2'	2:1:1138:G:C8	2.52	0.45
2:1:1168:G:C2'	2:1:1169:A:H5''	2.43	0.45
2:1:1287:A:H3'	2:1:1288:G:N2	2.31	0.45
2:1:2428:G:H21	16:l:60:ARG:CZ	2.28	0.45
4:8:606:LYS:H	4:8:606:LYS:HG2	1.51	0.45
7:c:14:ILE:HD13	7:c:14:ILE:HA	1.78	0.45
16:l:42:SER:O	16:l:42:SER:OG	2.30	0.45
37:5:9:A:C6	37:5:46:G:C2	3.04	0.45
44:M:45:ILE:HG21	44:M:60:LEU:HD13	1.99	0.45
46:O:14:ASP:OD1	46:O:14:ASP:N	2.45	0.45
55:X:51:HIS:ND1	55:X:55:GLN:O	2.45	0.45
1:3:175:C:H2'	1:3:176:C:C6	2.52	0.45
1:3:606:G:O5'	1:3:607:A:H5'	2.16	0.45
2:1:195:A:H3'	2:1:196:A:H4'	1.98	0.45
2:1:282:A:H61	2:1:358:U:H3	1.65	0.45
2:1:482:A:H1'	2:1:498:G:N2	2.32	0.45
2:1:513:A:H5'	2:1:1216:G:O2'	2.16	0.45
2:1:710:U:H2'	2:1:711:G:C8	2.52	0.45
2:1:927:A:H3'	2:1:928:A:C8	2.52	0.45
2:1:1287:A:H5'	18:n:103:ARG:HH11	1.80	0.45
2:1:1861:G:O2'	2:1:1862:G:H5'	2.16	0.45
2:1:2720:U:H5''	20:p:52:ARG:HH21	1.82	0.45
2:1:2810:A:H4'	7:c:62:LYS:HE2	1.99	0.45
2:1:2814:A:H2'	2:1:2815:C:C6	2.51	0.45
2:1:2895:G:H2'	2:1:2896:C:C6	2.51	0.45
14:j:99:ARG:HA	14:j:99:ARG:HD2	1.63	0.45
38:G:203:ASP:OD1	38:G:203:ASP:N	2.42	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:I:25:ARG:HA	40:I:25:ARG:HD2	1.69	0.45
40:I:109:THR:O	40:I:113:ALA:N	2.48	0.45
53:V:30:HIS:HD2	53:V:32:ILE:H	1.63	0.45
1:3:407:U:C4'	40:I:115:GLN:HG3	2.46	0.45
1:3:1392:G:H2'	1:3:1393:U:C6	2.52	0.45
2:1:44:A:C2'	2:1:45:G:H5'	2.47	0.45
2:1:743:A:O2'	2:1:744:U:H5'	2.16	0.45
2:1:744:U:C2'	2:1:745:G:H5'	2.46	0.45
2:1:1395:A:O2'	2:1:1396:U:H3'	2.17	0.45
2:1:1430:G:H2'	2:1:1431:A:C8	2.51	0.45
2:1:1483:G:H1'	2:1:1509:A:H2	1.81	0.45
2:1:1860:G:H5''	12:a:205:LYS:O	2.16	0.45
2:1:2145:C:H5'	2:1:2145:C:H6	1.82	0.45
2:1:2314:A:O2'	9:e:126:ASN:ND2	2.48	0.45
2:1:2366:A:H2'	2:1:2367:G:O4'	2.16	0.45
3:2:28:C:OP1	19:o:31:THR:HG21	2.16	0.45
6:b:156:SER:O	6:b:159:THR:OG1	2.27	0.45
10:f:26:LYS:NZ	10:f:27:GLY:O	2.37	0.45
12:a:7:ARG:NE	12:a:218:MET:SD	2.90	0.45
12:a:43:ASP:O	12:a:215:SER:N	2.45	0.45
19:o:43:ASN:HD22	19:o:46:GLU:HG2	1.82	0.45
27:w:11:ASP:HB3	27:w:12:SER:H	1.66	0.45
39:H:35:ASP:OD1	39:H:58:ARG:NH2	2.49	0.45
41:J:15:ILE:HD13	41:J:35:LEU:HG	1.99	0.45
1:3:458:U:H2'	1:3:459:A:C8	2.52	0.45
1:3:909:A:H5''	1:3:910:C:C5	2.52	0.45
2:1:100:U:H2'	25:u:90:LYS:NZ	2.31	0.45
2:1:371:A:N6	2:1:401:A:H3'	2.32	0.45
2:1:828:U:OP2	2:1:2068:U:C5	2.70	0.45
2:1:1764:C:H2'	2:1:1765:U:H6	1.81	0.45
2:1:1942:C:H5''	2:1:1943:U:H2'	1.98	0.45
2:1:2057:G:H2'	2:1:2058:A:O4'	2.16	0.45
2:1:2630:G:H2'	2:1:2631:G:C8	2.52	0.45
3:2:111:U:H2'	3:2:112:G:C8	2.51	0.45
4:8:512:ARG:NH2	36:4:22:A:OP2	2.50	0.45
8:d:150:THR:OG1	8:d:151:GLY:N	2.49	0.45
9:e:110:ILE:HB	9:e:113:PHE:HB2	1.98	0.45
40:I:145:ARG:HE	40:I:146:GLU:H	1.65	0.45
47:P:21:HIS:CD2	47:P:84:MET:HB2	2.51	0.45
54:W:61:ALA:HB1	54:W:66:LEU:HB2	1.98	0.45
57:Z:17:ARG:HA	57:Z:20:ARG:HD3	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:205:A:H2'	1:3:206:C:H5'	1.99	0.45
1:3:414:A:H5'	1:3:428:G:N2	2.31	0.45
1:3:719:C:O2'	54:W:37:LYS:HB3	2.16	0.45
1:3:777:A:H2'	1:3:778:G:O4'	2.17	0.45
1:3:929:G:H2'	1:3:930:C:C6	2.51	0.45
1:3:950:U:H5''	1:3:977:A:H61	1.82	0.45
1:3:1078:U:H4'	41:J:137:ARG:NH1	2.31	0.45
1:3:1137:C:H4'	1:3:1138:G:N2	2.32	0.45
1:3:1220:G:H2'	1:3:1221:G:H8	1.78	0.45
1:3:1522:U:O2'	1:3:1523:G:H5'	2.16	0.45
2:1:248:G:O5'	2:1:249:C:H5''	2.17	0.45
2:1:263:G:H3'	2:1:264:C:H5''	1.99	0.45
2:1:1766:G:C2	2:1:1987:A:C2	3.04	0.45
2:1:1925:C:O2'	2:1:1926:U:H5'	2.16	0.45
2:1:2336:A:N3	2:1:2385:C:H1'	2.32	0.45
2:1:2473:U:H3	4:8:633:GLY:HA2	1.82	0.45
2:1:2619:C:H2'	2:1:2620:C:C5	2.52	0.45
2:1:2809:A:H2'	2:1:2810:A:C8	2.52	0.45
2:1:2874:C:H2'	2:1:2875:C:H6	1.81	0.45
9:e:38:GLY:HA2	9:e:85:GLY:HA3	1.99	0.45
25:u:39:ASN:O	25:u:62:ALA:N	2.45	0.45
37:5:19:G:O4'	37:5:57:G:N1	2.48	0.45
41:J:55:VAL:HG23	41:J:56:PRO:HD3	1.98	0.45
41:J:156:ARG:HD3	44:M:44:PHE:CZ	2.52	0.45
1:3:428:G:OP2	40:I:9:LYS:NZ	2.50	0.45
1:3:790:A:H4'	37:5:39:C:H5'	1.98	0.45
1:3:1227:A:C2'	49:R:114:PRO:HG2	2.47	0.45
2:1:279:A:C2	2:1:362:A:H4'	2.52	0.45
2:1:926:G:H2'	2:1:927:A:O4'	2.17	0.45
2:1:2098:U:H2'	2:1:2099:U:O4'	2.17	0.45
2:1:2361:G:H2'	2:1:2362:C:C6	2.52	0.45
2:1:2590:A:H2'	2:1:2591:C:C6	2.52	0.45
6:b:153:LEU:HD23	6:b:153:LEU:HA	1.75	0.45
10:f:94:ARG:N	10:f:105:SER:OG	2.46	0.45
23:s:18:ARG:NH1	23:s:76:VAL:O	2.50	0.45
30:z:11:SER:OG	30:z:12:ALA:N	2.47	0.45
47:P:96:ILE:HA	47:P:99:LEU:HG	1.98	0.45
1:3:55:A:H2'	1:3:55:A:N3	2.32	0.45
1:3:105:G:H2'	1:3:106:C:O4'	2.17	0.45
1:3:750:C:O2	51:T:22:GLY:HA3	2.16	0.45
1:3:892:A:N7	1:3:906:A:H2	2.14	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:1060:U:C5	39:H:1:GLY:HA3	2.52	0.45
1:3:1412:C:H2'	1:3:1413:A:C8	2.51	0.45
2:1:189:G:H2'	2:1:205:G:N2	2.32	0.45
2:1:414:C:O2	2:1:1864:U:H4'	2.17	0.45
2:1:575:A:O2'	2:1:576:U:H5'	2.17	0.45
2:1:666:A:H2'	2:1:667:U:C6	2.51	0.45
2:1:1195:G:O2'	2:1:1196:C:H5'	2.17	0.45
2:1:1349:C:H42	2:1:1382:G:H1	1.65	0.45
2:1:1819:A:H1'	2:1:1821:A:C6	2.52	0.45
2:1:2093:G:H4'	11:g:24:GLY:HA3	1.98	0.45
2:1:2206:C:H2'	2:1:2207:C:C6	2.51	0.45
2:1:2511:U:O2'	2:1:2512:C:H5'	2.17	0.45
4:8:421:GLU:OE1	4:8:455:GLN:NE2	2.50	0.45
4:8:669:GLN:O	4:8:672:SER:OG	2.31	0.45
5:6:5:G:H2'	5:6:6:G:C8	2.51	0.45
6:b:244:VAL:HA	6:b:250:GLN:HA	1.98	0.45
18:n:22:ARG:HD3	18:n:70:THR:HA	1.98	0.45
24:t:6:ARG:NH2	24:t:37:ASP:OD2	2.47	0.45
30:z:35:VAL:HG12	30:z:37:ARG:HG2	1.98	0.45
48:Q:114:SER:OG	48:Q:115:LYS:N	2.49	0.45
1:3:763:G:H2'	1:3:764:C:O4'	2.17	0.44
1:3:936:C:H2'	1:3:937:A:O4'	2.17	0.44
1:3:1258:G:H2'	1:3:1259:C:H6	1.82	0.44
1:3:1346:A:H61	1:3:1374:A:H5''	1.82	0.44
2:1:176:A:H2'	2:1:177:G:O4'	2.17	0.44
2:1:278:A:H2	2:1:361:G:C2	2.35	0.44
2:1:487:C:H2'	2:1:488:G:O4'	2.17	0.44
2:1:1265:A:N6	2:1:2013:A:H5''	2.28	0.44
2:1:1911:U:O4	2:1:1918:A:H2'	2.16	0.44
2:1:2021:C:OP1	31:B:8:THR:HG21	2.17	0.44
2:1:2228:G:H8	2:1:2228:G:O5'	1.98	0.44
2:1:2420:C:O5'	2:1:2420:C:H6	1.98	0.44
2:1:2459:A:H61	2:1:2493:U:H3	1.63	0.44
6:b:62:ARG:HH12	6:b:84:PRO:HD2	1.82	0.44
20:p:88:ARG:NH1	20:p:114:ASN:OD1	2.49	0.44
41:J:63:MET:HE2	41:J:63:MET:HB3	1.79	0.44
1:3:202:G:H21	1:3:466:A:N6	2.15	0.44
1:3:337:G:H2'	1:3:338:A:C8	2.52	0.44
2:1:49:A:N6	2:1:177:G:H2'	2.32	0.44
2:1:675:A:C2	2:1:2444:G:O4'	2.70	0.44
2:1:832:U:OP1	16:l:39:LYS:HG3	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1588:G:H2'	2:1:1589:U:C6	2.52	0.44
2:1:2093:G:H2'	2:1:2094:A:H8	1.82	0.44
2:1:2806:C:H2'	2:1:2807:U:O4'	2.18	0.44
9:e:143:ASP:N	9:e:143:ASP:OD2	2.48	0.44
13:i:103:ALA:O	13:i:106:GLN:NE2	2.39	0.44
51:T:35:ILE:HG23	51:T:55:LEU:HD11	1.99	0.44
1:3:17:U:H1'	1:3:1080:A:H8	1.82	0.44
1:3:151:A:H2'	1:3:152:A:O4'	2.17	0.44
1:3:697:U:H3	1:3:785:G:H21	1.65	0.44
1:3:1227:A:H5'	1:3:1228:C:OP2	2.17	0.44
1:3:1462:C:H2'	1:3:1463:U:H6	1.80	0.44
1:3:1500:A:H5''	1:3:1508:A:H5''	1.98	0.44
2:1:109:C:C2'	2:1:110:G:H5''	2.45	0.44
2:1:177:G:H3'	2:1:178:G:H8	1.83	0.44
2:1:195:A:C8	2:1:197:A:OP2	2.70	0.44
2:1:313:G:H2'	2:1:314:C:C6	2.52	0.44
2:1:663:G:H2'	2:1:664:G:O4'	2.17	0.44
2:1:1678:A:H2'	2:1:1679:A:O4'	2.17	0.44
2:1:2106:U:H5''	12:a:3:LYS:NZ	2.32	0.44
2:1:2176:A:H2'	2:1:2177:C:C6	2.53	0.44
2:1:2363:G:O2'	27:w:35:ARG:NH2	2.50	0.44
2:1:2478:A:H5'	35:F:32:LYS:HE3	1.99	0.44
2:1:2510:C:H42	2:1:2578:G:H1	1.64	0.44
5:6:21:A:H61	5:6:46:G:H2'	1.83	0.44
13:i:106:GLN:HA	13:i:109:ALA:HB3	1.98	0.44
25:u:67:SER:O	25:u:67:SER:OG	2.29	0.44
45:N:26:LYS:HA	45:N:26:LYS:HD2	1.80	0.44
1:3:241:G:H1	1:3:285:C:H42	1.65	0.44
1:3:571:U:H2'	1:3:572:A:C5'	2.47	0.44
1:3:651:C:H2'	1:3:652:U:C6	2.52	0.44
1:3:745:G:H1'	1:3:836:G:O2'	2.17	0.44
1:3:1061:G:H2'	1:3:1062:U:O4'	2.17	0.44
1:3:1075:U:O2'	1:3:1076:U:H5'	2.17	0.44
2:1:283:G:C2	2:1:284:U:H1'	2.53	0.44
2:1:1794:A:H4'	2:1:1900:A:C6	2.53	0.44
2:1:1898:U:C2'	2:1:1899:A:H5'	2.47	0.44
2:1:2520:C:O2'	2:1:2521:C:H5'	2.17	0.44
2:1:2820:A:N3	7:c:196:ALA:HB1	2.32	0.44
3:2:42:C:H4'	9:e:63:LYS:O	2.18	0.44
3:2:74:U:H2'	3:2:75:G:C8	2.52	0.44
3:2:78:A:OP2	26:v:18:ARG:NH2	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:8:584:HIS:HB2	4:8:587:ASP:HB2	1.98	0.44
5:6:14:A:H2'	5:6:15:G:O4'	2.18	0.44
6:b:140:VAL:HG12	6:b:191:LEU:HA	2.00	0.44
8:d:148:ILE:HD13	8:d:187:VAL:HB	1.99	0.44
8:d:190:ALA:HA	8:d:193:VAL:HG12	1.99	0.44
21:q:19:GLN:OE1	22:r:73:LYS:NZ	2.48	0.44
21:q:57:ARG:HH22	21:q:91:ARG:NH2	2.15	0.44
22:r:55:ASP:OD1	22:r:55:ASP:N	2.50	0.44
23:s:84:ARG:HD3	23:s:84:ARG:HA	1.67	0.44
28:x:37:PHE:HE1	28:x:58:ILE:HG21	1.82	0.44
1:3:123:U:OP1	1:3:312:C:H5'	2.17	0.44
1:3:333:U:OP1	56:Y:3:ILE:HD11	2.18	0.44
1:3:1432:G:H5''	1:3:1433:A:OP1	2.17	0.44
2:1:1417:C:H2'	2:1:1418:G:C8	2.53	0.44
2:1:1443:U:H2'	2:1:1444:G:C8	2.51	0.44
2:1:1691:C:H2'	2:1:1692:U:O4'	2.17	0.44
2:1:1846:G:C2'	2:1:1847:A:H5'	2.48	0.44
2:1:2056:G:N2	31:B:1:ALA:N	2.65	0.44
2:1:2114:A:H2'	2:1:2114:A:N3	2.31	0.44
4:8:595:LEU:HD12	4:8:595:LEU:HA	1.83	0.44
11:g:78:VAL:HG23	11:g:144:VAL:HG13	1.99	0.44
15:k:2:ILE:HD12	15:k:6:THR:HG21	1.99	0.44
54:W:47:ARG:O	54:W:51:GLN:N	2.48	0.44
57:Z:16:ARG:HE	57:Z:19:LYS:HD3	1.83	0.44
1:3:51:A:H4'	1:3:52:C:C5'	2.46	0.44
1:3:98:A:H2'	1:3:99:C:C6	2.52	0.44
1:3:560:A:H5'	1:3:566:G:N2	2.32	0.44
1:3:653:U:N3	44:M:55:LYS:HG2	2.33	0.44
1:3:655:A:H2'	1:3:656:G:O4'	2.18	0.44
1:3:934:C:H2'	1:3:1345:U:OP2	2.17	0.44
1:3:976:G:N1	1:3:1362:A:H2'	2.33	0.44
1:3:1261:A:H2'	1:3:1262:C:H5'	2.00	0.44
1:3:1428:A:H2'	1:3:1429:A:H5''	1.99	0.44
2:1:282:A:H2'	2:1:283:G:C8	2.52	0.44
2:1:282:A:H2'	2:1:283:G:H8	1.82	0.44
2:1:851:C:H2'	2:1:852:U:C6	2.53	0.44
2:1:852:U:H5'	30:z:45:GLY:HA3	2.00	0.44
2:1:1251:C:O2'	2:1:1252:G:H3'	2.18	0.44
2:1:1674:G:H21	2:1:1677:A:H61	1.64	0.44
2:1:2046:G:H5'	31:B:15:ARG:HG3	1.99	0.44
2:1:2380:C:H5'	19:o:17:LYS:HE2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2733:A:C6	7:c:208:LYS:HG2	2.53	0.44
17:m:26:VAL:HG11	17:m:133:LYS:HA	2.00	0.44
21:q:107:ALA:O	22:r:48:LYS:NZ	2.39	0.44
22:r:68:ARG:HB2	22:r:90:ARG:HE	1.83	0.44
1:3:217:C:H2'	1:3:218:U:C6	2.53	0.44
1:3:242:G:H2'	1:3:243:A:H5'	1.99	0.44
1:3:476:U:H2'	1:3:477:C:H6	1.82	0.44
1:3:1015:G:H8	1:3:1015:G:H3'	1.82	0.44
1:3:1258:G:H2'	1:3:1259:C:C6	2.53	0.44
2:1:848:C:H2'	2:1:849:A:H8	1.83	0.44
2:1:1018:U:O2'	2:1:1019:U:H5'	2.17	0.44
2:1:2350:C:H2'	2:1:2351:G:O4'	2.18	0.44
2:1:2597:G:H5'	6:b:240:GLY:HA3	1.98	0.44
2:1:2679:A:H61	2:1:2728:U:H3	1.64	0.44
3:2:116:G:OP1	19:o:55:GLU:HG3	2.18	0.44
9:e:115:GLY:HA3	9:e:177:ARG:HA	2.00	0.44
22:r:8:GLY:O	22:r:10:LYS:NZ	2.51	0.44
25:u:39:ASN:HB3	25:u:62:ALA:HB3	1.99	0.44
45:N:5:TYR:HB2	45:N:20:ILE:HD11	2.00	0.44
53:V:8:GLN:HG2	53:V:59:GLU:HG3	1.99	0.44
54:W:56:ARG:O	54:W:60:ARG:N	2.51	0.44
1:3:28:A:H2'	1:3:29:U:O4'	2.18	0.44
1:3:210:C:H4'	1:3:211:G:N2	2.32	0.44
1:3:664:G:H5''	54:W:52:ARG:HE	1.82	0.44
1:3:806:C:H2'	1:3:807:A:H8	1.82	0.44
1:3:1113:C:H2'	1:3:1114:C:H5'	1.99	0.44
2:1:538:A:H4'	14:j:7:LYS:HG2	2.00	0.44
2:1:597:G:H21	16:l:12:SER:HA	1.83	0.44
2:1:1829:A:H2'	2:1:1829:A:N3	2.33	0.44
2:1:2692:G:H2'	2:1:2693:G:C8	2.53	0.44
4:8:470:VAL:HG12	4:8:474:LYS:HE3	2.00	0.44
10:f:90:GLY:HA2	10:f:159:LYS:HG2	2.00	0.44
12:a:7:ARG:HH22	12:a:35:THR:C	2.26	0.44
32:C:24:LYS:NZ	32:C:29:LYS:O	2.34	0.44
37:5:67:U:H2'	37:5:68:C:C6	2.53	0.44
43:L:87:PRO:HG3	43:L:148:LYS:HA	2.00	0.44
1:3:391:G:H2'	1:3:392:C:O4'	2.17	0.44
1:3:502:A:OP1	48:Q:113:ARG:N	2.51	0.44
1:3:793:U:H3'	1:3:794:A:H5''	2.00	0.44
1:3:1289:A:N7	1:3:1290:G:H1'	2.32	0.44
1:3:1484:C:H2'	1:3:1485:U:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:530:G:H4'	2:1:532:A:N6	2.33	0.44
2:1:983:A:H2'	2:1:983:A:N3	2.33	0.44
2:1:2215:C:H2'	2:1:2216:G:C8	2.53	0.44
2:1:2259:U:H1'	2:1:2427:C:H2'	1.99	0.44
2:1:2333:A:C6	2:1:2335:A:C6	3.05	0.44
2:1:2642:G:H2'	2:1:2643:G:O4'	2.18	0.44
2:1:2675:A:H2'	2:1:2676:C:C6	2.53	0.44
9:e:3:LEU:HG	9:e:100:GLU:HB2	2.00	0.44
10:f:23:ILE:HD11	10:f:42:VAL:HG11	2.00	0.44
20:p:64:SER:O	20:p:66:GLY:N	2.51	0.44
20:p:92:ARG:HD2	20:p:92:ARG:HA	1.86	0.44
24:t:12:ARG:HA	24:t:12:ARG:HD3	1.75	0.44
37:5:15:G:H5''	37:5:16:C:C5	2.53	0.44
38:G:114:LYS:HA	38:G:117:GLU:HG2	1.99	0.44
1:3:89:U:H2'	1:3:90:C:H4'	1.99	0.43
1:3:236:A:H2'	1:3:237:G:C8	2.52	0.43
1:3:520:A:H61	1:3:533:A:H61	1.65	0.43
1:3:683:G:H21	47:P:39:ASN:ND2	2.12	0.43
1:3:964:A:H5''	1:3:965:U:C5	2.53	0.43
1:3:964:A:H5''	1:3:965:U:C6	2.53	0.43
2:1:94:A:H2'	2:1:95:A:C8	2.53	0.43
2:1:367:G:H2'	2:1:368:A:O4'	2.18	0.43
2:1:457:A:H5'	2:1:459:U:O4'	2.18	0.43
2:1:1822:C:O2'	2:1:1823:G:H5'	2.18	0.43
2:1:1826:G:H2'	2:1:1827:U:H6	1.83	0.43
2:1:2184:A:O2'	2:1:2185:U:H5'	2.17	0.43
2:1:2348:U:C2'	2:1:2349:G:H5'	2.48	0.43
4:8:489:ALA:HB3	4:8:491:ARG:HH22	1.83	0.43
10:f:85:LYS:HD3	10:f:131:VAL:HB	1.99	0.43
12:a:24:ASN:HD21	12:a:186:LYS:HD3	1.83	0.43
39:H:122:GLN:HE21	39:H:125:ARG:HH11	1.65	0.43
39:H:124:GLU:OE1	39:H:189:HIS:N	2.51	0.43
42:K:11:HIS:CE1	42:K:13:ASP:HB2	2.53	0.43
54:W:24:ASP:O	54:W:27:THR:OG1	2.36	0.43
1:3:502:A:O2'	1:3:503:C:H5'	2.18	0.43
1:3:955:U:O2'	55:X:80:ARG:NH1	2.51	0.43
1:3:967:C:C4'	45:N:128:LYS:HA	2.48	0.43
1:3:1002:G:H1	1:3:1038:C:H42	1.65	0.43
1:3:1184:G:N3	1:3:1184:G:H2'	2.32	0.43
2:1:69:C:H4'	2:1:75:G:N7	2.33	0.43
2:1:622:G:H2'	2:1:623:C:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:635:C:O2'	2:1:636:G:H5'	2.18	0.43
2:1:818:G:O2'	2:1:819:A:H5''	2.18	0.43
2:1:1232:G:H2'	2:1:1233:C:H6	1.82	0.43
2:1:1653:G:H1	18:n:11:ASN:ND2	2.16	0.43
2:1:2345:G:N2	2:1:2381:A:H3'	2.23	0.43
2:1:2680:U:H1'	7:c:192:ALA:HB1	2.00	0.43
5:6:33:U:H3'	45:N:129:ARG:NH2	2.33	0.43
33:D:24:THR:O	33:D:28:ARG:NH1	2.51	0.43
41:J:17:VAL:HG12	41:J:34:ALA:HA	2.01	0.43
1:3:363:A:OP2	48:Q:30:ARG:NE	2.50	0.43
1:3:1323:G:H2'	1:3:1324:A:C8	2.53	0.43
2:1:146:A:H2'	2:1:147:C:C6	2.53	0.43
2:1:158:U:H2'	2:1:159:G:H5'	2.00	0.43
2:1:168:G:H2'	2:1:169:G:H8	1.83	0.43
2:1:291:G:O2'	2:1:292:U:H5'	2.17	0.43
2:1:440:C:H2'	2:1:441:U:C6	2.53	0.43
2:1:1666:G:H1	2:1:1994:C:H42	1.65	0.43
2:1:1922:G:H2'	2:1:1923:U:O4'	2.19	0.43
2:1:1934:C:H42	2:1:1964:G:H1	1.67	0.43
2:1:1979:U:H2'	2:1:1980:G:C8	2.53	0.43
2:1:2015:A:C6	31:B:2:VAL:HG23	2.54	0.43
2:1:2652:C:H2'	2:1:2653:U:O4'	2.19	0.43
2:1:2721:A:H2'	2:1:2722:G:O4'	2.18	0.43
2:1:2730:C:O3'	7:c:174:SER:HB2	2.17	0.43
2:1:2747:G:C3'	2:1:2748:A:H5''	2.47	0.43
5:6:36:U:H2'	5:6:37:A:H8	1.83	0.43
6:b:103:ILE:HD11	6:b:115:ILE:HD12	1.99	0.43
9:e:33:ILE:HG23	9:e:155:ILE:HG12	2.01	0.43
9:e:33:ILE:HG12	9:e:155:ILE:HG23	2.01	0.43
14:j:103:ILE:HA	14:j:106:LYS:HG2	2.00	0.43
19:o:26:LEU:N	19:o:91:SER:O	2.51	0.43
24:t:82:LYS:HE3	24:t:84:TYR:HE2	1.83	0.43
50:S:58:ARG:HE	50:S:58:ARG:HB3	1.58	0.43
1:3:386:C:H2'	1:3:387:U:H4'	2.00	0.43
1:3:1089:G:N1	1:3:1090:U:H1'	2.34	0.43
1:3:1093:A:C2	1:3:1109:C:H1'	2.54	0.43
1:3:1307:U:O2	1:3:1307:U:H2'	2.17	0.43
1:3:1363:A:H2'	1:3:1365:G:C8	2.53	0.43
2:1:178:G:O2'	2:1:179:C:H5'	2.18	0.43
2:1:1172:C:H3'	2:1:1173:U:O4'	2.18	0.43
2:1:1322:A:OP1	23:s:11:ARG:HD2	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1469:A:H2'	2:1:1470:A:C8	2.53	0.43
2:1:2056:G:N2	31:B:1:ALA:H1	2.16	0.43
2:1:2107:G:H2'	2:1:2108:A:O4'	2.18	0.43
2:1:2271:G:H5''	27:w:14:ALA:HB3	2.00	0.43
2:1:2307:G:H5'	2:1:2308:G:C4	2.53	0.43
2:1:2486:C:H2'	2:1:2487:G:C8	2.53	0.43
3:2:53:A:H2'	3:2:54:G:O4'	2.18	0.43
9:e:109:ARG:HH12	9:e:135:ILE:HG23	1.83	0.43
11:g:75:LEU:HD12	11:g:77:THR:H	1.83	0.43
23:s:98:LYS:HE3	23:s:98:LYS:HB3	1.79	0.43
43:L:102:TRP:CD1	43:L:136:LYS:HD3	2.54	0.43
45:N:30:ASN:HD21	45:N:66:VAL:H	1.65	0.43
45:N:34:LEU:O	45:N:44:ARG:NH2	2.51	0.43
47:P:71:ASP:OD1	47:P:71:ASP:N	2.51	0.43
57:Z:63:ASN:OD1	57:Z:63:ASN:N	2.51	0.43
1:3:218:U:H2'	1:3:219:U:O4'	2.17	0.43
1:3:715:A:H1'	1:3:777:A:N1	2.33	0.43
1:3:784:A:O2'	1:3:785:G:H5'	2.17	0.43
1:3:1049:U:C4	50:S:2:LYS:NZ	2.83	0.43
2:1:634:C:H2'	2:1:635:C:H6	1.79	0.43
2:1:1068:G:N2	4:8:632:ILE:HG12	2.33	0.43
2:1:2060:A:N7	8:d:69:ARG:NH2	2.66	0.43
2:1:2220:U:H5''	11:g:112:LYS:NZ	2.33	0.43
2:1:2276:G:O3'	17:m:85:GLY:HA2	2.19	0.43
2:1:2352:A:H2'	2:1:2353:G:O4'	2.18	0.43
2:1:2791:G:H2'	2:1:2792:A:O4'	2.19	0.43
12:a:212:VAL:HB	12:a:224:VAL:HG23	2.01	0.43
17:m:134:THR:OG1	26:v:79:ARG:NH2	2.49	0.43
20:p:1:SER:OG	20:p:3:ILE:N	2.51	0.43
31:B:30:ASP:HB3	31:B:34:GLY:H	1.83	0.43
1:3:820:U:H3'	1:3:821:G:C5'	2.48	0.43
1:3:1108:G:P	39:H:175:HIS:HB2	2.58	0.43
2:1:548:G:H2'	2:1:549:G:H4'	1.99	0.43
2:1:752:A:N3	2:1:752:A:H2'	2.34	0.43
2:1:780:G:C2	2:1:782:A:C2	3.07	0.43
2:1:1189:A:C2'	2:1:1190:G:H5'	2.48	0.43
2:1:1922:G:H2'	2:1:1923:U:C6	2.54	0.43
2:1:2029:G:H2'	2:1:2031:A:H5'	2.01	0.43
2:1:2285:C:OP2	32:C:5:ARG:HB2	2.19	0.43
2:1:2307:G:H4'	2:1:2308:G:C8	2.53	0.43
2:1:2545:G:C2'	2:1:2546:U:H5'	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2676:C:H42	2:1:2731:G:H1	1.66	0.43
9:e:35:LEU:N	9:e:88:VAL:O	2.34	0.43
14:j:105:VAL:HG21	14:j:122:LEU:HD11	2.00	0.43
15:k:23:LYS:HE2	15:k:23:LYS:HB2	1.82	0.43
23:s:109:ASP:N	23:s:109:ASP:OD1	2.32	0.43
38:G:122:ASP:OD1	38:G:122:ASP:N	2.49	0.43
39:H:134:LYS:HB2	39:H:134:LYS:HE3	1.74	0.43
43:L:1:PRO:HB2	43:L:2:ARG:H	1.67	0.43
45:N:109:GLN:HG3	45:N:110:VAL:H	1.83	0.43
1:3:35:G:O2'	48:Q:117:GLY:HA2	2.18	0.43
1:3:37:U:OP1	48:Q:120:ARG:HB2	2.19	0.43
1:3:487:A:H2'	1:3:488:C:H5'	2.01	0.43
1:3:822:U:H2'	1:3:823:C:O4'	2.18	0.43
1:3:1098:C:H2'	1:3:1099:G:O4'	2.19	0.43
1:3:1438:G:H1	1:3:1463:U:H3	1.66	0.43
2:1:384:A:H2'	2:1:385:C:H5'	2.01	0.43
2:1:1079:C:H2'	2:1:1080:A:O4'	2.19	0.43
2:1:1435:G:H2'	2:1:1436:G:C8	2.54	0.43
2:1:1441:G:O2'	2:1:1628:G:H5''	2.18	0.43
9:e:173:ASP:OD1	9:e:173:ASP:N	2.49	0.43
14:j:57:LEU:HD21	14:j:130:HIS:HB3	1.99	0.43
22:r:78:ARG:HB3	22:r:81:LYS:HB2	1.99	0.43
28:x:55:MET:HE2	28:x:55:MET:HB3	1.85	0.43
35:F:1:MET:HG2	35:F:34:LYS:HE3	2.00	0.43
39:H:56:ILE:HD13	39:H:63:ILE:HD11	1.99	0.43
42:K:88:MET:HE3	42:K:88:MET:HB2	1.82	0.43
55:X:57:VAL:HA	55:X:58:PRO:HD3	1.89	0.43
1:3:56:U:H2'	1:3:57:G:C8	2.53	0.43
1:3:123:U:H2'	1:3:124:C:H6	1.83	0.43
1:3:1061:G:H1	1:3:1195:C:H42	1.67	0.43
1:3:1115:U:H3	1:3:1186:G:H22	1.66	0.43
1:3:1429:A:H2'	1:3:1430:A:C8	2.54	0.43
2:1:163:C:C2'	2:1:164:C:H5'	2.49	0.43
2:1:384:A:O5'	2:1:384:A:H8	2.01	0.43
2:1:396:G:H3'	2:1:397:U:C6	2.54	0.43
2:1:611:C:H2'	2:1:612:G:C5'	2.47	0.43
2:1:819:A:H2'	2:1:820:A:C8	2.54	0.43
2:1:863:A:H2'	2:1:864:G:C8	2.53	0.43
2:1:1079:C:H1'	13:i:130:GLY:HA3	2.01	0.43
2:1:1697:G:OP2	2:1:1698:A:H3'	2.19	0.43
2:1:1938:A:C2	2:1:2590:A:H1'	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2581:G:N2	2:1:2610:C:H2'	2.32	0.43
28:x:32:LEU:HD23	28:x:32:LEU:HA	1.89	0.43
34:E:23:HIS:ND1	34:E:24:LYS:O	2.52	0.43
41:J:155:LYS:HB2	44:M:70:VAL:HG13	2.01	0.43
47:P:111:ASP:OD2	57:Z:16:ARG:NH2	2.42	0.43
52:U:55:ASP:OD1	52:U:55:ASP:N	2.51	0.43
1:3:285:C:H2'	1:3:286:C:C6	2.54	0.43
1:3:690:G:H2'	1:3:691:G:O4'	2.19	0.43
1:3:910:C:H2'	1:3:911:U:C6	2.54	0.43
1:3:1270:G:H2'	1:3:1271:A:H8	1.82	0.43
2:1:286:U:H2'	2:1:287:G:H8	1.83	0.43
2:1:569:U:H2'	2:1:570:G:O4'	2.18	0.43
2:1:729:G:OP2	6:b:206:LYS:HE2	2.18	0.43
2:1:821:A:H2'	2:1:946:C:C6	2.51	0.43
2:1:1077:A:O4'	13:i:92:PRO:HG2	2.19	0.43
2:1:1355:G:H2'	2:1:1356:G:C8	2.53	0.43
2:1:2118:U:H5	2:1:2149:U:H1'	1.83	0.43
2:1:2309:A:N3	2:1:2309:A:H2'	2.34	0.43
4:8:557:ILE:HD13	4:8:557:ILE:HA	1.93	0.43
4:8:562:LYS:H	4:8:562:LYS:HG2	1.61	0.43
6:b:222:THR:O	6:b:222:THR:OG1	2.33	0.43
9:e:107:VAL:HG11	9:e:174:PHE:HE2	1.84	0.43
11:g:30:LEU:O	11:g:34:GLY:N	2.51	0.43
12:a:163:TYR:HB3	12:a:173:THR:HG23	2.01	0.43
15:k:2:ILE:HA	15:k:2:ILE:HD13	1.81	0.43
23:s:41:LYS:HE3	23:s:41:LYS:HB3	1.71	0.43
33:D:37:LYS:HE2	33:D:39:ARG:HE	1.84	0.43
39:H:178:ARG:HH11	39:H:206:ILE:HG13	1.84	0.43
1:3:709:U:H2'	1:3:710:G:H8	1.84	0.43
1:3:963:G:H2'	1:3:964:A:O5'	2.18	0.43
1:3:1401:G:C2	1:3:1402:C:H1'	2.54	0.43
2:1:85:G:H2'	2:1:86:G:H5''	2.00	0.43
2:1:975:A:C2	2:1:990:A:C4	3.07	0.43
2:1:1088:A:H61	13:i:131:THR:HA	1.84	0.43
2:1:1127:A:H61	2:1:2488:G:H21	1.67	0.43
2:1:1199:U:H2'	2:1:1200:C:H6	1.84	0.43
2:1:2822:G:OP1	2:1:2822:G:H4'	2.18	0.43
6:b:204:LEU:O	6:b:206:LYS:N	2.52	0.43
7:c:71:ALA:HB3	7:c:73:VAL:HG22	2.01	0.43
8:d:3:LEU:HD23	8:d:120:VAL:HG21	2.00	0.43
11:g:73:ASN:OD1	11:g:73:ASN:N	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:t:7:LEU:HD22	24:t:46:ALA:HB2	1.99	0.43
25:u:44:HIS:CD2	25:u:57:ILE:HG12	2.53	0.43
29:y:21:LEU:HD23	29:y:21:LEU:HA	1.89	0.43
31:B:8:THR:OG1	31:B:10:SER:N	2.52	0.43
37:5:8:U:H2'	37:5:13:C:H41	1.84	0.43
47:P:98:ALA:HA	47:P:101:ALA:HB3	1.99	0.43
49:R:18:LEU:HD12	49:R:29:SER:HB3	2.01	0.43
51:T:8:ALA:HA	51:T:11:VAL:HG22	2.01	0.43
1:3:158:G:H1	1:3:163:C:H42	1.65	0.42
1:3:525:C:H2'	1:3:526:C:C6	2.54	0.42
1:3:960:U:H6	1:3:1222:G:HO2'	1.66	0.42
1:3:1080:A:H5'	1:3:1081:A:OP2	2.19	0.42
1:3:1492:A:H4'	1:3:1492:A:OP1	2.18	0.42
2:1:845:A:N6	2:1:932:U:H3	2.17	0.42
2:1:1727:C:H2'	2:1:1728:C:H4'	2.00	0.42
2:1:2200:C:O5'	2:1:2200:C:H6	2.02	0.42
2:1:2355:G:O2'	2:1:2356:U:H5'	2.19	0.42
2:1:2435:A:H2'	2:1:2436:G:O4'	2.18	0.42
2:1:2619:C:H2'	2:1:2620:C:C6	2.53	0.42
5:6:5:G:H2'	5:6:6:G:H8	1.84	0.42
7:c:5:VAL:H	7:c:32:ASN:ND2	2.17	0.42
12:a:41:SER:OG	12:a:176:GLY:O	2.26	0.42
15:k:42:THR:HG23	15:k:44:LYS:HE2	1.99	0.42
1:3:338:A:H2'	1:3:339:C:O4'	2.18	0.42
1:3:839:C:H2'	1:3:840:C:O4'	2.19	0.42
1:3:846:G:H2'	1:3:847:G:C8	2.54	0.42
1:3:1105:A:H2'	1:3:1106:G:C8	2.50	0.42
1:3:1154:G:H2'	1:3:1155:A:O4'	2.19	0.42
1:3:1246:A:H2	1:3:1291:U:N3	2.05	0.42
1:3:1457:G:H2'	1:3:1458:G:C8	2.45	0.42
2:1:1104:C:H6	2:1:1104:C:H5''	1.84	0.42
2:1:1133:A:C8	2:1:2026:U:H4'	2.54	0.42
2:1:1360:G:H2'	2:1:1361:G:H5'	2.01	0.42
2:1:1408:G:H2'	2:1:1409:U:C6	2.54	0.42
2:1:1710:G:O2'	2:1:1711:A:H5'	2.19	0.42
4:8:505:HIS:HE1	4:8:514:GLN:HG3	1.84	0.42
8:d:105:LEU:HD21	8:d:177:PRO:HG3	2.01	0.42
9:e:48:LEU:HD11	9:e:147:ARG:HH12	1.83	0.42
13:i:46:ASP:N	13:i:46:ASP:OD1	2.51	0.42
14:j:23:LYS:NZ	14:j:142:ILE:OXT	2.50	0.42
14:j:131:ASN:OD1	14:j:131:ASN:N	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:m:74:THR:HG22	17:m:89:VAL:HA	2.00	0.42
46:O:40:ILE:HD13	46:O:73:LEU:HD23	2.01	0.42
53:V:18:LYS:HA	53:V:50:ASN:HB3	2.02	0.42
1:3:119:A:H4'	1:3:120:A:C8	2.54	0.42
1:3:817:C:H4'	1:3:818:G:H5''	2.00	0.42
1:3:880:C:OP2	48:Q:4:ASN:HB3	2.18	0.42
1:3:892:A:H2'	1:3:893:C:H6	1.83	0.42
1:3:1333:A:H3'	1:3:1334:G:C8	2.54	0.42
1:3:1409:C:H2'	1:3:1410:A:H8	1.81	0.42
1:3:1472:U:H2'	1:3:1473:G:C8	2.54	0.42
2:1:151:C:O2'	2:1:152:A:H5'	2.19	0.42
2:1:611:C:H2'	2:1:612:G:C4'	2.49	0.42
2:1:1203:U:C3'	2:1:1204:A:H5''	2.50	0.42
2:1:1995:U:O2	15:k:3:GLN:NE2	2.48	0.42
2:1:2276:G:O2'	2:1:2277:G:H5'	2.19	0.42
2:1:2286:G:H5''	2:1:2287:A:O5'	2.19	0.42
2:1:2578:G:H2'	2:1:2579:C:C6	2.54	0.42
2:1:2639:A:C2	2:1:2778:A:O4'	2.73	0.42
2:1:2745:C:O2	10:f:138:GLN:NE2	2.52	0.42
2:1:2789:C:H2'	2:1:2790:U:H5'	2.02	0.42
4:8:497:LYS:HB3	4:8:524:PRO:HD3	2.02	0.42
6:b:266:ILE:HG12	6:b:269:ARG:HD2	2.01	0.42
10:f:28:LYS:HE3	10:f:28:LYS:HB3	1.84	0.42
12:a:5:THR:OG1	12:a:6:LYS:N	2.51	0.42
17:m:110:GLU:HA	17:m:113:ALA:HB3	2.00	0.42
28:x:39:VAL:HG22	28:x:41:SER:H	1.85	0.42
41:J:73:VAL:HG11	41:J:143:LEU:HD23	2.00	0.42
44:M:86:LYS:HD3	44:M:86:LYS:HA	1.77	0.42
1:3:62:U:H2'	1:3:63:C:O4'	2.20	0.42
1:3:247:G:H2'	1:3:248:C:H6	1.81	0.42
1:3:455:G:H1	1:3:477:C:H42	1.67	0.42
1:3:543:U:H2'	1:3:544:G:H8	1.84	0.42
1:3:889:A:H4'	1:3:890:G:OP1	2.18	0.42
1:3:1107:C:H2'	1:3:1108:G:O4'	2.19	0.42
1:3:1154:G:O2'	1:3:1155:A:H5'	2.19	0.42
1:3:1343:G:H2'	1:3:1344:C:C6	2.54	0.42
1:3:1535:C:H3'	1:3:1536:C:C6	2.54	0.42
2:1:57:C:H2'	2:1:58:G:C8	2.54	0.42
2:1:473:G:O2'	2:1:474:G:H5'	2.19	0.42
2:1:519:U:O2'	23:s:73:LYS:HE3	2.20	0.42
2:1:594:U:H2'	2:1:595:C:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:815:C:H2'	2:1:816:C:C6	2.54	0.42
2:1:976:G:H5'	2:1:1156:A:N6	2.34	0.42
2:1:1171:G:C2	2:1:1172:C:H1'	2.54	0.42
2:1:1365:A:OP2	28:x:2:ARG:HB2	2.19	0.42
2:1:1372:U:H2'	2:1:1373:A:H8	1.84	0.42
2:1:1766:G:C2	2:1:1987:A:N1	2.87	0.42
2:1:2233:U:H2'	2:1:2234:G:C8	2.54	0.42
2:1:2392:A:C6	2:1:2393:U:C4	3.07	0.42
2:1:2747:G:C2'	2:1:2748:A:H5''	2.48	0.42
4:8:466:LEU:HA	4:8:469:ILE:HD12	2.02	0.42
4:8:552:ALA:HA	4:8:555:LYS:HB2	2.02	0.42
8:d:1:MET:HE2	8:d:16:GLU:HG2	2.01	0.42
13:i:44:LYS:HA	13:i:44:LYS:HD3	1.92	0.42
21:q:94:LEU:HD23	21:q:94:LEU:HA	1.84	0.42
24:t:79:ASP:OD1	24:t:79:ASP:N	2.49	0.42
26:v:2:PHE:HZ	26:v:53:LYS:HE2	1.84	0.42
27:w:58:LYS:HE3	27:w:58:LYS:HB2	1.90	0.42
35:F:9:LYS:NZ	35:F:14:CYS:O	2.35	0.42
40:I:71:PHE:HA	40:I:74:TYR:HB2	2.01	0.42
41:J:56:PRO:HA	41:J:59:ILE:HD13	2.01	0.42
43:L:34:LYS:HE3	43:L:34:LYS:HB2	1.81	0.42
1:3:400:C:O2'	1:3:401:C:H5'	2.20	0.42
1:3:543:U:H2'	1:3:544:G:C8	2.55	0.42
1:3:675:A:H2'	1:3:676:A:O4'	2.20	0.42
1:3:678:U:H2'	1:3:679:C:C6	2.53	0.42
1:3:1422:G:H4'	15:k:48:PRO:HB3	2.01	0.42
2:1:226:A:H2	2:1:230:G:C6	2.38	0.42
2:1:306:U:H2'	2:1:307:G:O4'	2.19	0.42
2:1:379:G:H1'	2:1:2232:C:H5''	2.01	0.42
2:1:1801:A:C8	6:b:261:ARG:NH1	2.87	0.42
2:1:1825:U:H2'	2:1:1826:G:C8	2.53	0.42
2:1:2221:G:H2'	2:1:2222:C:H6	1.83	0.42
2:1:2708:G:H2'	2:1:2709:G:C8	2.53	0.42
7:c:49:GLN:HE21	7:c:79:LEU:HD22	1.84	0.42
12:a:31:LYS:NZ	12:a:179:ASP:OD1	2.38	0.42
26:v:30:ILE:HG12	26:v:91:PHE:HB2	2.02	0.42
26:v:38:LEU:HD12	26:v:38:LEU:HA	1.93	0.42
27:w:40:LYS:HE3	27:w:40:LYS:HB2	1.83	0.42
34:E:22:LYS:HD2	34:E:22:LYS:HA	1.84	0.42
40:I:10:LEU:HB3	40:I:62:ARG:HD3	2.01	0.42
41:J:12:GLU:HA	41:J:38:VAL:HA	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:J:104:ILE:HG12	41:J:120:HIS:HA	2.01	0.42
56:Y:78:LEU:HD13	56:Y:78:LEU:HA	1.85	0.42
57:Z:53:LYS:HE3	57:Z:53:LYS:HB3	1.86	0.42
1:3:828:U:H1'	38:G:27:LYS:NZ	2.33	0.42
1:3:855:U:H2'	1:3:856:C:C6	2.54	0.42
1:3:902:G:H2'	1:3:903:G:C8	2.46	0.42
1:3:1292:G:H5'	45:N:40:ARG:HD3	2.02	0.42
2:1:417:C:H2'	2:1:418:C:C6	2.54	0.42
2:1:774:G:OP1	2:1:774:G:H3'	2.20	0.42
2:1:1060:U:O4'	13:i:74:PRO:HB3	2.20	0.42
2:1:1352:U:H1'	2:1:1570:A:C2	2.54	0.42
2:1:1434:A:H2'	2:1:1435:G:C8	2.55	0.42
2:1:1815:A:O4'	2:1:1817:G:H1'	2.20	0.42
2:1:2440:C:H2'	2:1:2441:U:H4'	2.01	0.42
2:1:2667:C:C2'	2:1:2668:G:H5'	2.47	0.42
2:1:2671:G:H2'	2:1:2672:U:C6	2.54	0.42
4:8:593:PHE:O	4:8:597:ALA:N	2.43	0.42
11:g:55:GLU:HA	11:g:58:LEU:HG	2.02	0.42
12:a:201:PRO:HG2	12:a:204:ALA:HB2	2.00	0.42
23:s:7:HIS:HE1	23:s:46:LEU:HD11	1.84	0.42
24:t:33:LYS:HB2	24:t:33:LYS:HE3	1.73	0.42
26:v:24:ASN:ND2	26:v:45:ASP:OD2	2.48	0.42
34:E:40:LYS:HE3	34:E:40:LYS:HB2	1.86	0.42
37:5:57:G:H2'	37:5:58:A:H5'	2.00	0.42
39:H:149:LYS:HB2	39:H:200:TRP:HB2	2.00	0.42
40:I:177:MET:N	40:I:177:MET:SD	2.92	0.42
54:W:35:SER:HB3	57:Z:3:ILE:HD13	2.01	0.42
1:3:128:G:H22	1:3:130:A:N6	2.17	0.42
1:3:571:U:O2	1:3:918:A:H5'	2.19	0.42
1:3:997:U:H2'	1:3:998:C:C6	2.54	0.42
2:1:304:U:H2'	2:1:305:C:C5	2.54	0.42
2:1:1139:G:P	14:j:72:LYS:HZ1	2.42	0.42
2:1:1445:G:H2'	2:1:1446:C:C6	2.54	0.42
2:1:1792:G:H5''	6:b:203:VAL:CG1	2.48	0.42
2:1:2262:U:H2'	2:1:2263:C:C6	2.55	0.42
2:1:2305:U:H4'	9:e:132:ARG:NH1	2.35	0.42
5:6:37:A:H2'	5:6:38:A:O4'	2.19	0.42
19:o:30:ARG:H	19:o:97:PHE:HE2	1.67	0.42
27:w:21:ARG:HB2	27:w:33:ILE:HA	2.02	0.42
28:x:16:ASN:ND2	28:x:26:ARG:HE	2.16	0.42
29:y:8:GLU:N	29:y:8:GLU:OE1	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:5:30:G:H2'	37:5:31:G:H8	1.84	0.42
41:J:88:HIS:CD2	41:J:89:THR:H	2.38	0.42
43:L:29:LEU:HA	43:L:104:VAL:HG11	2.02	0.42
43:L:129:ASN:HA	43:L:134:VAL:HG21	2.01	0.42
53:V:45:VAL:HG22	53:V:72:TRP:HB2	2.02	0.42
1:3:375:U:O3'	52:U:6:LEU:HB2	2.19	0.42
1:3:979:C:H2'	1:3:980:C:C6	2.55	0.42
1:3:1436:U:H3	1:3:1465:A:H61	1.66	0.42
2:1:882:G:H2'	2:1:883:G:O4'	2.20	0.42
2:1:2746:U:H2'	2:1:2747:G:O4'	2.20	0.42
8:d:45:ALA:HB2	8:d:89:PRO:HD3	2.02	0.42
16:l:62:PRO:HD2	34:E:24:LYS:HB3	2.02	0.42
34:E:56:LEU:O	34:E:60:CYS:N	2.52	0.42
42:K:53:LYS:HE3	42:K:53:LYS:HB2	1.94	0.42
45:N:49:GLN:HG2	45:N:102:PHE:HZ	1.85	0.42
52:U:18:GLN:HA	52:U:38:PHE:HA	2.00	0.42
1:3:257:G:H1	1:3:269:C:H42	1.67	0.42
1:3:681:A:H2'	1:3:682:G:C8	2.55	0.42
1:3:847:G:H2'	1:3:848:C:O4'	2.19	0.42
1:3:1066:C:O2'	1:3:1067:A:H5'	2.20	0.42
1:3:1098:C:O5'	1:3:1098:C:H6	2.02	0.42
2:1:49:A:H61	2:1:177:G:H2'	1.84	0.42
2:1:1592:C:H2'	2:1:1593:A:C8	2.54	0.42
2:1:1745:A:O2'	2:1:1746:A:H5'	2.20	0.42
2:1:2559:C:O2'	2:1:2560:A:H5'	2.19	0.42
4:8:617:MET:HG2	4:8:684:PHE:HB2	2.01	0.42
6:b:1:ALA:N	6:b:198:GLU:OE2	2.53	0.42
7:c:16:THR:OG1	7:c:18:ASP:OD1	2.27	0.42
9:e:98:PHE:HD1	9:e:101:ARG:HH11	1.68	0.42
10:f:59:ASP:HB2	10:f:62:ALA:HB3	2.02	0.42
11:g:96:THR:HG22	11:g:117:LEU:HD13	2.01	0.42
1:3:43:C:OP1	52:U:12:LYS:HD2	2.20	0.42
1:3:599:C:O2'	1:3:600:A:H5'	2.19	0.42
1:3:799:G:C2	1:3:800:G:H1'	2.55	0.42
1:3:936:C:H42	1:3:1379:G:H1	1.67	0.42
1:3:1222:G:H2'	1:3:1223:C:O4'	2.19	0.42
2:1:22:C:H2'	2:1:23:G:C4'	2.50	0.42
2:1:279:A:N1	2:1:362:A:H4'	2.35	0.42
2:1:625:G:O2'	2:1:626:A:H5'	2.19	0.42
2:1:807:U:H3'	2:1:808:G:H8	1.84	0.42
2:1:1792:G:O2'	2:1:1793:C:H5'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2498:C:H6	2:1:2498:C:H5'	1.85	0.42
11:g:97:ARG:HB2	11:g:112:LYS:HD2	2.02	0.42
12:a:20:GLN:HA	12:a:223:ALA:HB3	2.01	0.42
16:l:92:LEU:HD12	16:l:92:LEU:HA	1.86	0.42
19:o:12:THR:O	19:o:16:ARG:N	2.36	0.42
26:v:61:LEU:N	26:v:72:VAL:O	2.51	0.42
40:I:44:LYS:HA	40:I:44:LYS:HD3	1.79	0.42
40:I:97:LEU:HA	40:I:100:VAL:HG22	2.02	0.42
57:Z:6:ARG:HG2	57:Z:11:PHE:CZ	2.55	0.42
1:3:504:C:H4'	1:3:510:A:N7	2.35	0.41
1:3:615:G:H2'	1:3:616:G:O4'	2.20	0.41
1:3:675:A:N6	1:3:715:A:H61	2.16	0.41
1:3:896:C:H42	1:3:903:G:H1	1.68	0.41
1:3:984:C:H2'	1:3:985:C:O4'	2.20	0.41
1:3:1144:G:C2'	1:3:1145:A:H5'	2.50	0.41
1:3:1166:G:C6	1:3:1168:U:H5''	2.54	0.41
1:3:1320:C:H42	55:X:36:ARG:HA	1.83	0.41
2:1:171:U:H2'	2:1:172:A:C8	2.55	0.41
2:1:383:C:C6	2:1:385:C:OP2	2.73	0.41
2:1:446:G:OP2	21:q:2:ARG:HB3	2.20	0.41
2:1:458:G:N2	2:1:469:G:H2'	2.34	0.41
2:1:634:C:O5'	2:1:634:C:H6	2.03	0.41
2:1:745:G:O2'	2:1:748:G:H1'	2.19	0.41
2:1:1153:C:OP1	21:q:91:ARG:NH2	2.49	0.41
2:1:1261:C:OP2	23:s:83:LYS:NZ	2.51	0.41
2:1:1373:A:H5'	2:1:2212:A:O4'	2.20	0.41
2:1:2303:G:H2'	2:1:2304:G:C8	2.55	0.41
2:1:2365:G:OP2	27:w:51:ARG:HB2	2.20	0.41
2:1:2606:C:H2'	2:1:2607:G:H8	1.85	0.41
8:d:40:ARG:HD3	8:d:92:HIS:ND1	2.35	0.41
10:f:36:LEU:HD13	10:f:40:VAL:HG21	2.02	0.41
10:f:98:LYS:HD2	10:f:98:LYS:HA	1.89	0.41
15:k:109:SER:O	15:k:111:LYS:N	2.53	0.41
38:G:10:LYS:H	38:G:14:HIS:CE1	2.37	0.41
38:G:44:LYS:HD2	38:G:48:MET:HE3	2.02	0.41
42:K:3:HIS:HB2	42:K:92:THR:HA	2.02	0.41
1:3:261:U:H2'	1:3:263:A:OP2	2.20	0.41
1:3:378:G:H2'	1:3:379:C:O4'	2.19	0.41
1:3:941:G:C2	1:3:942:G:H1'	2.55	0.41
1:3:1015:G:C8	1:3:1015:G:C5'	2.97	0.41
1:3:1323:G:OP1	49:R:98:GLY:HA3	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:1422:G:H1	1:3:1478:U:H3	1.67	0.41
1:3:1434:A:H2'	1:3:1435:G:O4'	2.20	0.41
2:1:397:U:H2'	2:1:398:C:C5	2.55	0.41
2:1:441:U:O2'	2:1:442:G:H5'	2.20	0.41
2:1:467:G:HO2'	2:1:796:C:HO2'	1.68	0.41
2:1:654:A:H61	34:E:18:LYS:HE3	1.85	0.41
2:1:777:G:O2'	2:1:778:G:H5'	2.20	0.41
2:1:979:A:H2'	2:1:982:C:H42	1.85	0.41
2:1:1091:G:H2'	2:1:1092:C:O4'	2.20	0.41
2:1:1377:G:O5'	2:1:1377:G:H8	2.03	0.41
2:1:1825:U:H2'	2:1:1826:G:H8	1.85	0.41
2:1:2028:U:H3'	2:1:2029:G:H8	1.85	0.41
2:1:2365:G:P	27:w:51:ARG:H	2.43	0.41
2:1:2784:U:H4'	7:c:43:ASP:OD1	2.20	0.41
5:6:19:G:C5'	5:6:20:U:H5	2.33	0.41
6:b:74:PRO:HA	6:b:116:GLN:HG3	2.02	0.41
12:a:50:ILE:HG22	12:a:57:GLN:HE21	1.85	0.41
16:l:12:SER:O	16:l:12:SER:OG	2.28	0.41
17:m:10:ARG:H	17:m:10:ARG:HG3	1.63	0.41
38:G:163:ILE:HD11	38:G:213:LEU:HD21	2.02	0.41
41:J:154:ALA:CB	44:M:65:PHE:CE1	3.03	0.41
46:O:8:ILE:HB	46:O:74:VAL:HG22	2.01	0.41
47:P:96:ILE:HG21	47:P:109:ILE:HD11	2.03	0.41
1:3:162:A:H2'	1:3:163:C:H5'	2.03	0.41
1:3:426:U:H2'	1:3:427:U:H6	1.85	0.41
1:3:842:U:H2'	1:3:844:G:H5'	2.01	0.41
1:3:877:G:O3'	44:M:79:ARG:HB2	2.20	0.41
1:3:925:G:N3	1:3:927:G:C8	2.88	0.41
1:3:1352:C:O2	1:3:1371:G:C2	2.74	0.41
2:1:322:A:OP1	8:d:162:ARG:HB3	2.20	0.41
2:1:606:U:H2'	2:1:607:U:O4'	2.20	0.41
2:1:744:U:H2'	2:1:745:G:H5'	2.01	0.41
2:1:2266:A:H5'	2:1:2267:A:C5	2.56	0.41
2:1:2354:C:O2'	27:w:32:ILE:HG13	2.20	0.41
2:1:2581:G:H2'	2:1:2581:G:N3	2.35	0.41
2:1:2599:G:C8	6:b:234:GLY:HA2	2.55	0.41
2:1:2628:C:H3'	2:1:2629:U:C5'	2.49	0.41
2:1:2684:U:O5'	2:1:2684:U:H6	2.04	0.41
3:2:61:G:H2'	3:2:62:C:C6	2.55	0.41
4:8:621:VAL:HG22	4:8:680:TYR:HB2	2.01	0.41
6:b:136:VAL:HG23	6:b:163:ILE:HG22	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:e:142:TYR:HB3	49:R:70:ARG:HH22	1.85	0.41
14:j:50:THR:O	14:j:50:THR:OG1	2.36	0.41
31:B:47:TYR:CE1	31:B:52:LYS:HD3	2.55	0.41
37:5:75:C:C4	37:5:76:A:C2	3.07	0.41
38:G:13:VAL:HG13	38:G:208:ALA:HB2	2.03	0.41
40:I:13:ARG:O	40:I:55:ARG:NH2	2.53	0.41
40:I:58:GLN:HE21	40:I:62:ARG:NH2	2.19	0.41
41:J:98:ALA:HB2	41:J:123:LEU:HD23	2.02	0.41
55:X:9:PHE:HB3	55:X:69:LYS:HZ1	1.86	0.41
56:Y:16:ALA:O	56:Y:20:ASN:N	2.43	0.41
1:3:249:U:O2'	1:3:252:U:H1'	2.20	0.41
1:3:300:A:H2'	1:3:301:G:O4'	2.20	0.41
1:3:503:C:O5'	1:3:503:C:H6	2.03	0.41
1:3:721:G:H4'	1:3:722:G:O4'	2.19	0.41
1:3:1108:G:H5'	39:H:175:HIS:CG	2.54	0.41
1:3:1227:A:OP1	55:X:79:TYR:CZ	2.73	0.41
1:3:1412:C:H2'	1:3:1413:A:H8	1.84	0.41
2:1:188:G:H5'	28:x:13:THR:CG2	2.49	0.41
2:1:531:C:N4	2:1:2018:G:H1	2.08	0.41
2:1:685:A:C2	2:1:787:C:H1'	2.55	0.41
2:1:802:A:H2'	2:1:803:U:C6	2.55	0.41
2:1:973:A:H5'	2:1:1188:U:H1'	2.01	0.41
2:1:1482:G:H2'	2:1:1483:G:H8	1.85	0.41
2:1:2393:U:H5''	16:l:62:PRO:HG3	2.03	0.41
2:1:2703:C:H2'	2:1:2704:C:H6	1.86	0.41
2:1:2710:C:H2'	2:1:2711:A:H8	1.85	0.41
4:8:422:PRO:HB2	4:8:427:ASP:HB3	2.02	0.41
4:8:617:MET:HE3	4:8:660:LEU:HB2	2.02	0.41
5:6:1:C:H2'	5:6:2:G:C8	2.55	0.41
5:6:24:U:H2'	5:6:25:C:H6	1.85	0.41
9:e:21:TYR:HE2	9:e:28:PRO:HD3	1.86	0.41
13:i:10:LEU:HD12	13:i:10:LEU:HA	1.75	0.41
38:G:129:THR:O	38:G:133:ALA:N	2.35	0.41
38:G:207:ARG:HD2	38:G:207:ARG:HA	1.77	0.41
43:L:69:ARG:HG2	43:L:95:ARG:HB3	2.02	0.41
48:Q:23:LEU:HD12	48:Q:23:LEU:HA	1.77	0.41
1:3:286:C:H2'	1:3:287:U:O4'	2.19	0.41
1:3:466:A:HO2'	1:3:467:U:H6	1.68	0.41
1:3:613:C:H2'	1:3:614:C:H6	1.82	0.41
1:3:974:A:OP1	50:S:70:HIS:HB3	2.21	0.41
1:3:1235:U:H2'	1:3:1236:A:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:1240:U:OP2	1:3:1241:G:N7	2.53	0.41
2:1:226:A:H3'	2:1:227:A:H8	1.86	0.41
2:1:242:G:H2'	34:E:3:ILE:O	2.21	0.41
2:1:491:G:H2'	2:1:492:A:C8	2.55	0.41
2:1:678:C:O2	2:1:678:C:H2'	2.19	0.41
2:1:946:C:O2'	2:1:947:A:H5'	2.20	0.41
2:1:992:C:O2'	2:1:993:G:H5'	2.19	0.41
2:1:1980:G:H3'	2:1:1981:A:H5''	2.03	0.41
2:1:2028:U:H3	2:1:2033:A:H62	1.69	0.41
2:1:2250:G:C2	17:m:82:MET:HB3	2.55	0.41
2:1:2445:G:H2'	2:1:2445:G:N3	2.35	0.41
11:g:6:LEU:HD11	11:g:37:VAL:HG13	2.02	0.41
19:o:16:ARG:HA	19:o:19:GLN:HG2	2.01	0.41
26:v:80:HIS:CD2	26:v:83:LYS:H	2.38	0.41
1:3:390:U:H2'	1:3:391:G:C8	2.56	0.41
1:3:821:G:P	1:3:821:G:H8	2.43	0.41
1:3:975:A:C6	46:O:62:ARG:NH2	2.89	0.41
1:3:980:C:H2'	1:3:981:U:H5'	2.02	0.41
1:3:1081:A:H2'	1:3:1082:A:H8	1.85	0.41
2:1:399:U:C4	2:1:400:G:C6	3.09	0.41
2:1:616:A:H2'	2:1:617:G:O4'	2.20	0.41
2:1:660:C:OP1	8:d:95:LYS:HG2	2.20	0.41
2:1:679:C:H2'	2:1:680:C:C5	2.56	0.41
2:1:818:G:N2	2:1:1189:A:H62	1.99	0.41
2:1:1139:G:O2'	2:1:1140:C:H5'	2.21	0.41
2:1:1279:G:OP1	18:n:34:ILE:HA	2.21	0.41
2:1:1379:U:OP2	2:1:1380:G:OP2	2.38	0.41
2:1:1476:U:H2'	2:1:1477:A:C8	2.53	0.41
2:1:2070:A:H2'	2:1:2071:A:H8	1.86	0.41
2:1:2221:G:P	11:g:112:LYS:HZ3	2.43	0.41
2:1:2359:C:O2'	2:1:2360:G:H5'	2.20	0.41
2:1:2661:G:O2'	2:1:2662:A:H5'	2.20	0.41
4:8:519:VAL:N	4:8:580:PHE:O	2.54	0.41
4:8:617:MET:HA	4:8:684:PHE:HA	2.01	0.41
4:8:619:VAL:HB	4:8:656:ALA:H	1.86	0.41
6:b:208:GLY:C	6:b:211:ARG:H	2.28	0.41
7:c:61:THR:O	7:c:65:ALA:N	2.39	0.41
7:c:177:VAL:HA	7:c:189:VAL:HG23	2.01	0.41
8:d:20:GLY:HA2	8:d:114:ARG:HH12	1.86	0.41
37:5:54:U:C2'	37:5:55:U:H5'	2.50	0.41
37:5:54:U:H2'	37:5:55:U:O4'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:J:63:MET:HA	41:J:66:ALA:HB3	2.01	0.41
1:3:61:G:O2'	1:3:62:U:H5'	2.21	0.41
1:3:348:G:H2'	1:3:349:A:O4'	2.21	0.41
1:3:509:A:H3'	1:3:509:A:OP2	2.21	0.41
1:3:540:G:H2'	1:3:541:G:H8	1.84	0.41
1:3:667:G:H4'	51:T:50:HIS:ND1	2.36	0.41
1:3:914:A:H2'	1:3:915:A:C1'	2.51	0.41
1:3:1118:U:N3	1:3:1155:A:C2	2.84	0.41
2:1:371:A:N1	2:1:401:A:H5''	2.36	0.41
2:1:534:U:H5'	21:q:41:ALA:HB1	2.01	0.41
2:1:850:U:O2'	30:z:46:MET:HE3	2.20	0.41
2:1:1132:U:H1'	14:j:75:TYR:CD2	2.56	0.41
2:1:1148:U:H2'	2:1:1149:G:H8	1.85	0.41
2:1:1168:G:H2'	2:1:1169:A:C5'	2.45	0.41
2:1:1254:A:H2'	2:1:1256:G:O4'	2.19	0.41
2:1:1689:A:N6	2:1:1697:G:H2'	2.35	0.41
2:1:1814:G:H2'	2:1:1815:A:C8	2.56	0.41
2:1:1833:C:H2'	2:1:1969:A:N1	2.35	0.41
2:1:2052:A:C2	2:1:2053:G:C8	3.08	0.41
2:1:2182:U:H2'	2:1:2183:A:C5	2.55	0.41
2:1:2461:A:H2'	2:1:2462:C:C6	2.55	0.41
3:2:99:A:C2'	3:2:100:G:H5'	2.51	0.41
6:b:74:PRO:HB3	6:b:114:GLN:HE21	1.85	0.41
6:b:130:PRO:HA	6:b:188:ARG:HA	2.01	0.41
10:f:159:LYS:HE2	10:f:159:LYS:HB3	1.79	0.41
39:H:13:ILE:HG22	39:H:14:VAL:HG23	2.02	0.41
43:L:4:ARG:NH1	43:L:5:VAL:O	2.53	0.41
44:M:42:GLU:HG3	44:M:100:ILE:HD13	2.03	0.41
47:P:81:LEU:HD23	47:P:81:LEU:HA	1.83	0.41
48:Q:27:PRO:HB2	48:Q:28:GLN:NE2	2.36	0.41
56:Y:10:ALA:O	56:Y:13:SER:OG	2.31	0.41
1:3:393:A:H5'	1:3:483:C:O2'	2.21	0.41
1:3:1027:C:C5	1:3:1028:C:H1'	2.55	0.41
1:3:1324:A:H2'	1:3:1325:C:C6	2.55	0.41
1:3:1428:A:C3'	1:3:1429:A:H5''	2.51	0.41
2:1:100:U:H4'	2:1:101:A:O4'	2.20	0.41
2:1:107:G:H2'	2:1:108:G:C8	2.55	0.41
2:1:774:G:P	2:1:774:G:H2'	2.61	0.41
2:1:1944:U:O2'	2:1:1945:G:H5''	2.21	0.41
2:1:2345:G:C2	2:1:2381:A:H2'	2.56	0.41
4:8:525:LEU:HD23	4:8:533:GLY:HA2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:f:43:LYS:HD3	10:f:43:LYS:HA	1.88	0.41
15:k:5:GLN:N	15:k:21:CYS:O	2.44	0.41
28:x:4:CYS:HB2	28:x:51:SER:HB3	2.02	0.41
34:E:18:LYS:HA	34:E:18:LYS:HD2	1.88	0.41
37:5:38:A:H2'	37:5:39:C:C6	2.56	0.41
40:I:11:SER:HA	40:I:18:LEU:HD13	2.02	0.41
49:R:104:ASN:HB3	49:R:105:ALA:H	1.59	0.41
53:V:12:VAL:HB	53:V:21:VAL:HG23	2.02	0.41
1:3:137:U:H3	1:3:226:G:H1	1.68	0.41
1:3:142:G:O2'	1:3:143:A:H5'	2.21	0.41
1:3:683:G:H2'	1:3:684:U:C6	2.55	0.41
1:3:925:G:C2	1:3:927:G:C8	3.09	0.41
1:3:973:G:OP2	1:3:973:G:C8	2.69	0.41
1:3:1013:G:H21	1:3:1016:A:H8	1.68	0.41
1:3:1056:U:H4'	39:H:162:ALA:CB	2.50	0.41
1:3:1091:U:O5'	1:3:1093:A:OP2	2.38	0.41
1:3:1168:U:H3'	1:3:1168:U:O2	2.20	0.41
1:3:1252:A:H2'	1:3:1253:G:O4'	2.20	0.41
1:3:1349:A:H2'	1:3:1350:A:H5'	2.02	0.41
1:3:1392:G:H5'	1:3:1531:A:H5''	2.03	0.41
2:1:274:C:H42	2:1:363:G:H1	1.69	0.41
2:1:396:G:O2'	28:x:28:PHE:HB3	2.20	0.41
2:1:467:G:O2'	2:1:468:G:H5'	2.20	0.41
2:1:613:A:H5'	2:1:614:A:C4	2.56	0.41
2:1:672:C:C2	2:1:809:G:N2	2.89	0.41
2:1:752:A:N6	2:1:2609:U:N3	2.69	0.41
2:1:762:U:H4'	2:1:763:G:O4'	2.21	0.41
2:1:779:U:H2'	2:1:780:G:O4'	2.21	0.41
2:1:783:A:H2'	2:1:784:G:H4'	2.02	0.41
2:1:828:U:OP2	2:1:2068:U:C6	2.74	0.41
2:1:829:A:C8	2:1:2248:C:H5'	2.55	0.41
2:1:1060:U:H5'	13:i:74:PRO:HG3	2.02	0.41
2:1:1178:C:H2'	2:1:1179:G:C8	2.56	0.41
2:1:1721:G:C2	2:1:1738:G:H2'	2.56	0.41
2:1:1797:G:H2'	2:1:1798:U:C6	2.56	0.41
2:1:1951:U:O2	2:1:1953:A:H8	2.03	0.41
2:1:2012:G:OP1	23:s:98:LYS:HG2	2.21	0.41
2:1:2221:G:O2'	2:1:2222:C:H5'	2.20	0.41
2:1:2300:C:H42	2:1:2316:G:H1	1.68	0.41
2:1:2717:C:H1'	20:p:93:LYS:NZ	2.36	0.41
2:1:2736:A:H2'	2:1:2737:G:H8	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2855:C:H2'	2:1:2856:A:H8	1.86	0.41
3:2:74:U:H2'	3:2:75:G:H8	1.85	0.41
5:6:57:A:O2'	5:6:58:A:H5'	2.21	0.41
8:d:112:LEU:HD13	8:d:186:VAL:HG21	2.03	0.41
10:f:155:PRO:O	10:f:171:LYS:N	2.51	0.41
13:i:8:VAL:HG21	13:i:10:LEU:HD22	2.03	0.41
14:j:61:LYS:HE3	14:j:61:LYS:HB2	1.68	0.41
15:k:86:LEU:HA	15:k:86:LEU:HD23	1.91	0.41
16:l:98:ALA:HB3	16:l:100:ILE:HG12	2.02	0.41
24:t:57:VAL:O	24:t:86:THR:OG1	2.32	0.41
33:D:24:THR:HG23	33:D:27:GLY:H	1.85	0.41
34:E:14:LYS:HD3	34:E:14:LYS:HA	1.92	0.41
37:5:63:U:H2'	37:5:64:C:C6	2.56	0.41
38:G:80:LYS:HB2	38:G:92:ASN:HD21	1.86	0.41
39:H:155:ARG:HE	39:H:160:GLU:HA	1.84	0.41
40:I:169:TRP:NE1	40:I:185:PRO:HG3	2.35	0.41
42:K:11:HIS:HD2	42:K:12:PRO:HD2	1.86	0.41
44:M:91:LEU:O	44:M:116:ARG:NH2	2.54	0.41
45:N:44:ARG:HG3	45:N:48:ARG:HH12	1.85	0.41
48:Q:43:LYS:HD2	48:Q:43:LYS:HA	1.71	0.41
50:S:19:TYR:HB3	50:S:50:LEU:HD11	2.02	0.41
51:T:57:ARG:HH12	51:T:61:GLN:HB2	1.85	0.41
52:U:74:LEU:HA	52:U:77:GLU:HG2	2.01	0.41
53:V:43:LEU:HD23	53:V:43:LEU:HA	1.87	0.41
55:X:22:VAL:HG21	55:X:42:ASN:HD21	1.86	0.41
56:Y:7:LYS:HB3	56:Y:7:LYS:HE2	1.85	0.41
1:3:1005:A:H2'	1:3:1006:G:O4'	2.20	0.41
2:1:323:C:H5''	8:d:163:ASN:HD21	1.85	0.41
2:1:729:G:C4'	2:1:763:G:H5'	2.51	0.41
2:1:1203:U:O2'	16:l:4:ASN:ND2	2.54	0.41
2:1:1654:A:C2	7:c:118:PHE:HD2	2.39	0.41
2:1:1664:A:H2'	2:1:1665:A:H5'	2.03	0.41
2:1:2695:U:H2'	2:1:2696:U:H6	1.85	0.41
2:1:2850:A:H2'	2:1:2851:A:O4'	2.21	0.41
10:f:15:ASP:HB3	10:f:26:LYS:HB3	2.03	0.41
10:f:24:THR:HG23	10:f:33:THR:HB	2.03	0.41
15:k:114:LYS:HE3	15:k:114:LYS:HB3	1.75	0.41
21:q:15:LYS:HE2	21:q:15:LYS:HB3	1.87	0.41
22:r:58:VAL:N	22:r:102:SER:OG	2.46	0.41
34:E:34:LYS:HE2	34:E:34:LYS:HB3	1.95	0.41
37:5:6:A:H2'	37:5:7:G:H5''	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:H:180:ASP:HB2	39:H:204:GLY:H	1.86	0.41
44:M:21:LYS:HD3	44:M:21:LYS:HA	1.75	0.41
52:U:80:LYS:HE2	52:U:80:LYS:HB2	1.94	0.41
1:3:776:G:H5''	1:3:777:A:OP1	2.21	0.40
1:3:870:U:H6	1:3:870:U:O5'	2.04	0.40
1:3:908:A:H2'	1:3:909:A:O4'	2.20	0.40
1:3:1109:C:H6	1:3:1109:C:H3'	1.86	0.40
2:1:240:C:H4'	2:1:623:C:OP1	2.22	0.40
2:1:403:U:H6	2:1:403:U:O5'	2.04	0.40
2:1:468:G:H2'	2:1:469:G:H5'	2.01	0.40
2:1:563:A:C2	2:1:564:C:C2	3.10	0.40
2:1:729:G:H3'	2:1:729:G:N3	2.36	0.40
2:1:1465:G:N3	2:1:1545:A:H2	2.19	0.40
2:1:1901:A:O2'	2:1:1902:C:H5'	2.22	0.40
3:2:34:A:H2	3:2:38:C:H42	1.68	0.40
6:b:70:LYS:HD2	6:b:73:ILE:HD12	2.03	0.40
15:k:1:MET:H3	15:k:67:LYS:HB3	1.84	0.40
20:p:24:THR:HG1	20:p:87:ARG:H	1.65	0.40
23:s:14:ALA:O	23:s:18:ARG:N	2.46	0.40
37:5:2:G:C2	37:5:72:G:O6	2.74	0.40
38:G:178:LEU:HA	38:G:178:LEU:HD23	1.86	0.40
44:M:53:ASP:OD1	44:M:53:ASP:N	2.50	0.40
48:Q:56:LEU:HD23	48:Q:56:LEU:HA	1.85	0.40
48:Q:107:LYS:HA	48:Q:107:LYS:HD2	1.80	0.40
1:3:17:U:H2'	1:3:18:C:C6	2.56	0.40
1:3:521:G:H1	1:3:528:C:N4	2.19	0.40
1:3:586:C:H42	1:3:755:G:H1	1.69	0.40
1:3:779:C:H2'	1:3:780:A:C8	2.56	0.40
1:3:784:A:H2'	1:3:785:G:O4'	2.21	0.40
1:3:986:U:H1'	55:X:54:ARG:HA	2.02	0.40
1:3:1104:G:H2'	1:3:1105:A:O4'	2.21	0.40
2:1:115:C:C2'	2:1:116:C:H5''	2.50	0.40
2:1:153:U:H2'	2:1:154:U:C6	2.56	0.40
2:1:226:A:H3'	2:1:227:A:C8	2.56	0.40
2:1:622:G:H2'	2:1:623:C:O4'	2.20	0.40
2:1:1439:A:N7	2:1:1552:A:H2	2.19	0.40
2:1:1689:A:H2'	2:1:1690:A:C8	2.56	0.40
2:1:1807:G:C2'	2:1:1808:A:H5'	2.45	0.40
2:1:2291:U:H2'	2:1:2292:U:C6	2.56	0.40
2:1:2678:C:H2'	2:1:2679:A:O4'	2.22	0.40
3:2:55:U:C2'	3:2:56:G:H5'	2.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:b:71:ASP:OD1	6:b:71:ASP:N	2.49	0.40
52:U:52:LEU:HD23	52:U:57:ILE:HD11	2.03	0.40
1:3:225:C:H5'	1:3:225:C:C6	2.56	0.40
1:3:900:A:H2'	1:3:901:A:C8	2.56	0.40
2:1:391:A:H2'	2:1:391:A:N3	2.36	0.40
2:1:699:A:C2'	2:1:700:G:H5'	2.52	0.40
2:1:2019:A:H2'	2:1:2020:A:C5'	2.44	0.40
2:1:2238:G:H2'	2:1:2238:G:N3	2.36	0.40
14:j:114:LEU:HB3	14:j:118:MET:HE2	2.04	0.40
22:r:6:GLN:HB3	22:r:11:GLN:HG3	2.04	0.40
31:B:56:LYS:HB2	31:B:56:LYS:HE3	1.91	0.40
47:P:19:VAL:N	47:P:34:THR:O	2.51	0.40
56:Y:71:ALA:HA	56:Y:74:HIS:CD2	2.56	0.40
1:3:212:G:H2'	1:3:213:G:H8	1.86	0.40
1:3:404:G:N7	40:I:1:ALA:N	2.68	0.40
1:3:904:U:H2'	1:3:905:U:C6	2.56	0.40
1:3:1123:U:H2'	1:3:1124:G:O4'	2.21	0.40
1:3:1148:U:O4'	45:N:17:ARG:HD3	2.21	0.40
1:3:1167:A:C6	57:Z:66:ARG:O	2.75	0.40
1:3:1290:G:C3'	1:3:1291:U:H5'	2.52	0.40
1:3:1406:U:H2'	1:3:1407:C:O4'	2.21	0.40
2:1:189:G:H2'	2:1:205:G:H22	1.85	0.40
2:1:494:G:H4'	23:s:6:LYS:HB2	2.03	0.40
2:1:548:G:H3'	2:1:549:G:H5''	2.04	0.40
2:1:928:A:H4'	30:z:38:GLU:OE2	2.22	0.40
2:1:1298:C:H2'	2:1:1299:G:O4'	2.22	0.40
2:1:1675:C:H2'	2:1:1676:A:H5'	2.03	0.40
2:1:2183:A:H2'	2:1:2184:A:H8	1.86	0.40
2:1:2562:U:O2	2:1:2562:U:H2'	2.22	0.40
3:2:66:A:H62	3:2:107:G:H2'	1.86	0.40
3:2:100:G:C2	3:2:101:A:H1'	2.56	0.40
6:b:34:GLU:N	6:b:61:TYR:O	2.40	0.40
6:b:69:ASN:OD1	6:b:101:ARG:NH2	2.55	0.40
6:b:109:LEU:HD12	6:b:109:LEU:HA	1.83	0.40
6:b:182:LYS:HB2	6:b:182:LYS:HE3	1.77	0.40
8:d:21:ARG:CZ	8:d:107:SER:HB2	2.51	0.40
9:e:3:LEU:O	9:e:7:TYR:N	2.52	0.40
10:f:36:LEU:HD23	10:f:36:LEU:HA	1.90	0.40
14:j:32:LEU:HD11	14:j:122:LEU:HD21	2.03	0.40
27:w:20:LYS:N	27:w:33:ILE:O	2.48	0.40
39:H:177:LEU:HD23	39:H:177:LEU:HA	1.89	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:N:20:ILE:HB	45:N:60:LEU:HD11	2.04	0.40
47:P:92:ARG:HH22	57:Z:16:ARG:HH21	1.70	0.40
1:3:672:U:H3	1:3:734:G:H1	1.69	0.40
1:3:694:A:H2'	1:3:695:A:O4'	2.22	0.40
1:3:1147:C:C2'	1:3:1148:U:H5'	2.52	0.40
1:3:1173:U:C2'	1:3:1174:G:O5'	2.68	0.40
1:3:1327:C:H2'	1:3:1328:C:H6	1.87	0.40
2:1:784:G:C5'	2:1:785:G:OP1	2.61	0.40
2:1:964:C:C3'	2:1:965:C:H5''	2.52	0.40
2:1:1246:A:H2'	2:1:1247:A:O4'	2.21	0.40
2:1:1564:C:O2'	2:1:1565:C:H5'	2.22	0.40
2:1:1857:G:H1'	2:1:1885:A:N6	2.33	0.40
2:1:2232:C:O2'	2:1:2233:U:H5'	2.21	0.40
3:2:30:C:H2'	3:2:31:C:H5'	2.02	0.40
6:b:54:GLY:HA3	6:b:216:ARG:HG3	2.03	0.40
7:c:121:THR:HG21	7:c:143:PRO:HG3	2.04	0.40
9:e:37:MET:HE2	9:e:151:LEU:HD22	2.03	0.40
10:f:141:GLY:O	10:f:145:ALA:N	2.38	0.40
14:j:46:PRO:HD3	21:q:59:LEU:HD13	2.03	0.40
18:n:30:ARG:H	18:n:30:ARG:HG2	1.57	0.40
28:x:36:ARG:HB3	28:x:45:PHE:CD1	2.57	0.40
39:H:41:TYR:HA	39:H:44:LYS:HE3	2.04	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

There are no protein backbone outliers to report in this entry.

5.3.2 Protein sidechains [i](#)

There are no protein residues with a non-rotameric sidechain to report in this entry.

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	3	1538/1539 (99%)	297 (19%)	6 (0%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	1	2902/2903 (99%)	570 (19%)	8 (0%)
3	2	119/120 (99%)	17 (14%)	0
36	4	19/39 (48%)	6 (31%)	1 (5%)
37	5	76/77 (98%)	16 (21%)	0
5	6	76/77 (98%)	17 (22%)	0
All	All	4730/4755 (99%)	923 (19%)	15 (0%)

All (923) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	3	4	U
1	3	7	A
1	3	9	G
1	3	16	A
1	3	21	G
1	3	22	G
1	3	32	A
1	3	39	G
1	3	47	C
1	3	48	C
1	3	49	U
1	3	51	A
1	3	58	C
1	3	66	A
1	3	82	G
1	3	83	C
1	3	84	U
1	3	85	U
1	3	89	U
1	3	95	C
1	3	109	A
1	3	115	G
1	3	121	U
1	3	127	G
1	3	130	A
1	3	131	A
1	3	164	G
1	3	182	A
1	3	183	C
1	3	191	G
1	3	209	U
1	3	210	C

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Mol	Chain	Res	Type
1	3	224	U
1	3	225	C
1	3	239	U
1	3	240	G
1	3	245	U
1	3	247	G
1	3	249	U
1	3	251	G
1	3	265	G
1	3	266	G
1	3	267	C
1	3	269	C
1	3	279	A
1	3	281	G
1	3	289	G
1	3	298	A
1	3	321	A
1	3	328	C
1	3	329	A
1	3	330	C
1	3	340	U
1	3	345	C
1	3	351	G
1	3	352	C
1	3	354	G
1	3	363	A
1	3	367	U
1	3	368	U
1	3	369	G
1	3	372	C
1	3	387	U
1	3	392	C
1	3	397	A
1	3	402	G
1	3	408	A
1	3	411	A
1	3	412	A
1	3	413	G
1	3	414	A
1	3	422	C
1	3	429	U
1	3	434	U

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Mol	Chain	Res	Type
1	3	439	U
1	3	467	U
1	3	482	A
1	3	484	G
1	3	486	U
1	3	490	C
1	3	497	G
1	3	499	A
1	3	509	A
1	3	518	C
1	3	521	G
1	3	532	A
1	3	533	A
1	3	534	U
1	3	545	C
1	3	547	A
1	3	562	U
1	3	571	U
1	3	572	A
1	3	573	A
1	3	575	G
1	3	576	C
1	3	577	G
1	3	607	A
1	3	615	G
1	3	618	C
1	3	623	C
1	3	626	G
1	3	633	G
1	3	639	G
1	3	653	U
1	3	657	U
1	3	660	C
1	3	665	A
1	3	688	G
1	3	691	G
1	3	693	G
1	3	694	A
1	3	702	A
1	3	703	G
1	3	717	U
1	3	718	A

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Mol	Chain	Res	Type
1	3	723	U
1	3	724	G
1	3	734	G
1	3	747	A
1	3	748	G
1	3	755	G
1	3	768	A
1	3	777	A
1	3	781	A
1	3	782	A
1	3	793	U
1	3	794	A
1	3	801	U
1	3	814	A
1	3	815	A
1	3	817	C
1	3	818	G
1	3	819	A
1	3	821	G
1	3	832	G
1	3	842	U
1	3	843	U
1	3	844	G
1	3	846	G
1	3	859	G
1	3	865	A
1	3	872	A
1	3	873	A
1	3	887	G
1	3	890	G
1	3	913	A
1	3	916	U
1	3	927	G
1	3	934	C
1	3	938	A
1	3	949	A
1	3	955	U
1	3	958	A
1	3	960	U
1	3	961	U
1	3	965	U
1	3	966	G

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Mol	Chain	Res	Type
1	3	968	A
1	3	969	A
1	3	971	G
1	3	973	G
1	3	975	A
1	3	976	G
1	3	977	A
1	3	978	A
1	3	979	C
1	3	989	U
1	3	992	U
1	3	993	G
1	3	994	A
1	3	1004	A
1	3	1012	A
1	3	1015	G
1	3	1028	C
1	3	1033	G
1	3	1035	A
1	3	1036	A
1	3	1037	C
1	3	1044	A
1	3	1053	G
1	3	1054	C
1	3	1058	G
1	3	1065	U
1	3	1070	U
1	3	1074	G
1	3	1080	A
1	3	1081	A
1	3	1085	U
1	3	1091	U
1	3	1092	A
1	3	1094	G
1	3	1095	U
1	3	1101	A
1	3	1111	A
1	3	1115	U
1	3	1118	U
1	3	1124	G
1	3	1130	A
1	3	1136	C

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Mol	Chain	Res	Type
1	3	1137	C
1	3	1138	G
1	3	1139	G
1	3	1149	C
1	3	1157	A
1	3	1158	C
1	3	1159	U
1	3	1165	U
1	3	1168	U
1	3	1169	A
1	3	1173	U
1	3	1174	G
1	3	1179	A
1	3	1181	G
1	3	1182	G
1	3	1183	U
1	3	1185	G
1	3	1191	A
1	3	1193	G
1	3	1196	A
1	3	1197	A
1	3	1200	C
1	3	1201	A
1	3	1207	G
1	3	1213	A
1	3	1221	G
1	3	1222	G
1	3	1224	U
1	3	1225	A
1	3	1226	C
1	3	1227	A
1	3	1229	A
1	3	1236	A
1	3	1238	A
1	3	1241	G
1	3	1256	A
1	3	1257	A
1	3	1275	A
1	3	1278	G
1	3	1280	A
1	3	1281	C
1	3	1282	C

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Mol	Chain	Res	Type
1	3	1286	U
1	3	1287	A
1	3	1290	G
1	3	1291	U
1	3	1300	G
1	3	1301	U
1	3	1307	U
1	3	1308	U
1	3	1309	G
1	3	1317	C
1	3	1318	A
1	3	1320	C
1	3	1322	C
1	3	1323	G
1	3	1338	G
1	3	1346	A
1	3	1347	G
1	3	1350	A
1	3	1353	G
1	3	1363	A
1	3	1378	C
1	3	1381	U
1	3	1382	C
1	3	1385	G
1	3	1389	C
1	3	1394	A
1	3	1395	C
1	3	1397	C
1	3	1399	C
1	3	1400	C
1	3	1401	G
1	3	1411	C
1	3	1429	A
1	3	1433	A
1	3	1446	A
1	3	1448	C
1	3	1451	U
1	3	1452	C
1	3	1491	G
1	3	1492	A
1	3	1493	A
1	3	1494	G

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Mol	Chain	Res	Type
1	3	1497	G
1	3	1503	A
1	3	1504	G
1	3	1505	G
1	3	1513	A
1	3	1517	G
1	3	1520	C
1	3	1522	U
1	3	1525	G
1	3	1528	U
1	3	1529	G
1	3	1530	G
1	3	1533	C
2	1	8	C
2	1	10	A
2	1	12	U
2	1	23	G
2	1	34	U
2	1	46	G
2	1	49	A
2	1	50	U
2	1	51	G
2	1	56	A
2	1	60	G
2	1	63	A
2	1	71	A
2	1	74	A
2	1	75	G
2	1	84	A
2	1	86	G
2	1	88	G
2	1	92	U
2	1	110	G
2	1	116	C
2	1	117	G
2	1	119	A
2	1	120	U
2	1	121	G
2	1	125	A
2	1	126	A
2	1	138	U
2	1	140	C

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Mol	Chain	Res	Type
2	1	141	G
2	1	142	A
2	1	143	C
2	1	149	A
2	1	162	U
2	1	163	C
2	1	177	G
2	1	181	A
2	1	196	A
2	1	200	U
2	1	201	C
2	1	204	A
2	1	216	A
2	1	221	A
2	1	222	A
2	1	229	C
2	1	233	A
2	1	241	A
2	1	248	G
2	1	255	A
2	1	264	C
2	1	266	G
2	1	276	U
2	1	281	C
2	1	294	A
2	1	310	A
2	1	323	C
2	1	324	A
2	1	329	G
2	1	330	A
2	1	333	G
2	1	345	A
2	1	346	A
2	1	353	C
2	1	371	A
2	1	372	G
2	1	380	G
2	1	386	G
2	1	387	U
2	1	389	G
2	1	395	U
2	1	396	G

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Mol	Chain	Res	Type
2	1	397	U
2	1	404	A
2	1	406	G
2	1	411	G
2	1	412	A
2	1	424	G
2	1	435	C
2	1	446	G
2	1	451	U
2	1	456	C
2	1	457	A
2	1	479	A
2	1	480	A
2	1	481	G
2	1	491	G
2	1	501	A
2	1	502	A
2	1	504	A
2	1	505	A
2	1	508	A
2	1	509	C
2	1	510	C
2	1	512	G
2	1	521	U
2	1	529	A
2	1	531	C
2	1	532	A
2	1	544	C
2	1	548	G
2	1	549	G
2	1	550	C
2	1	560	C
2	1	563	A
2	1	572	A
2	1	575	A
2	1	589	U
2	1	603	A
2	1	614	A
2	1	615	U
2	1	616	A
2	1	627	A
2	1	628	G

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Mol	Chain	Res	Type
2	1	632	A
2	1	637	A
2	1	645	C
2	1	646	U
2	1	648	G
2	1	655	A
2	1	659	G
2	1	664	G
2	1	685	A
2	1	686	U
2	1	696	G
2	1	711	G
2	1	714	U
2	1	729	G
2	1	730	A
2	1	747	C
2	1	748	G
2	1	752	A
2	1	753	A
2	1	762	U
2	1	764	A
2	1	765	C
2	1	775	G
2	1	776	G
2	1	782	A
2	1	783	A
2	1	784	G
2	1	785	G
2	1	789	A
2	1	793	A
2	1	800	A
2	1	804	A
2	1	805	G
2	1	811	U
2	1	812	C
2	1	819	A
2	1	827	U
2	1	829	A
2	1	831	G
2	1	845	A
2	1	846	U
2	1	847	U

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Mol	Chain	Res	Type
2	1	859	G
2	1	871	U
2	1	872	U
2	1	873	C
2	1	874	G
2	1	878	A
2	1	883	G
2	1	885	C
2	1	886	A
2	1	887	U
2	1	891	G
2	1	897	C
2	1	898	C
2	1	910	A
2	1	912	C
2	1	913	U
2	1	914	G
2	1	915	C
2	1	931	U
2	1	932	U
2	1	941	A
2	1	945	A
2	1	946	C
2	1	959	A
2	1	961	C
2	1	962	G
2	1	965	C
2	1	974	G
2	1	975	A
2	1	983	A
2	1	985	C
2	1	990	A
2	1	995	C
2	1	1004	U
2	1	1012	U
2	1	1013	C
2	1	1026	G
2	1	1033	U
2	1	1045	C
2	1	1046	A
2	1	1047	G
2	1	1050	A

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Mol	Chain	Res	Type
2	1	1053	C
2	1	1061	U
2	1	1065	U
2	1	1066	U
2	1	1067	A
2	1	1068	G
2	1	1069	A
2	1	1070	A
2	1	1071	G
2	1	1072	C
2	1	1076	C
2	1	1078	U
2	1	1083	U
2	1	1088	A
2	1	1089	A
2	1	1090	A
2	1	1094	U
2	1	1097	U
2	1	1104	C
2	1	1111	A
2	1	1126	A
2	1	1130	U
2	1	1131	G
2	1	1132	U
2	1	1133	A
2	1	1135	C
2	1	1142	A
2	1	1157	G
2	1	1169	A
2	1	1170	C
2	1	1173	U
2	1	1174	U
2	1	1175	A
2	1	1176	U
2	1	1177	G
2	1	1178	C
2	1	1180	U
2	1	1181	U
2	1	1204	A
2	1	1205	A
2	1	1206	G
2	1	1212	G

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Mol	Chain	Res	Type
2	1	1221	C
2	1	1247	A
2	1	1248	G
2	1	1250	G
2	1	1251	C
2	1	1252	G
2	1	1253	A
2	1	1255	U
2	1	1256	G
2	1	1265	A
2	1	1267	U
2	1	1268	A
2	1	1269	A
2	1	1271	G
2	1	1272	A
2	1	1280	G
2	1	1284	A
2	1	1285	A
2	1	1286	A
2	1	1289	C
2	1	1296	G
2	1	1300	G
2	1	1301	A
2	1	1303	G
2	1	1313	U
2	1	1314	C
2	1	1326	U
2	1	1329	U
2	1	1341	G
2	1	1345	C
2	1	1365	A
2	1	1367	A
2	1	1378	A
2	1	1379	U
2	1	1383	A
2	1	1394	U
2	1	1396	U
2	1	1403	A
2	1	1416	G
2	1	1419	A
2	1	1420	A
2	1	1428	C

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Mol	Chain	Res	Type
2	1	1429	G
2	1	1443	U
2	1	1453	A
2	1	1454	C
2	1	1461	C
2	1	1468	U
2	1	1475	G
2	1	1482	G
2	1	1488	C
2	1	1490	A
2	1	1491	G
2	1	1493	C
2	1	1498	C
2	1	1503	A
2	1	1515	A
2	1	1522	A
2	1	1523	U
2	1	1529	G
2	1	1535	A
2	1	1536	C
2	1	1537	G
2	1	1542	U
2	1	1547	C
2	1	1552	A
2	1	1553	A
2	1	1563	U
2	1	1567	G
2	1	1569	A
2	1	1572	A
2	1	1583	A
2	1	1584	U
2	1	1585	C
2	1	1593	A
2	1	1599	U
2	1	1603	A
2	1	1608	A
2	1	1610	A
2	1	1616	A
2	1	1617	C
2	1	1618	A
2	1	1627	G
2	1	1635	A

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Mol	Chain	Res	Type
2	1	1647	U
2	1	1648	U
2	1	1649	G
2	1	1653	G
2	1	1654	A
2	1	1657	U
2	1	1662	U
2	1	1665	A
2	1	1674	G
2	1	1698	A
2	1	1699	G
2	1	1700	A
2	1	1703	G
2	1	1715	G
2	1	1729	U
2	1	1730	C
2	1	1731	G
2	1	1732	C
2	1	1733	G
2	1	1758	U
2	1	1759	A
2	1	1764	C
2	1	1766	G
2	1	1772	A
2	1	1773	A
2	1	1782	U
2	1	1784	A
2	1	1786	A
2	1	1800	C
2	1	1801	A
2	1	1802	A
2	1	1808	A
2	1	1809	A
2	1	1810	A
2	1	1811	G
2	1	1813	G
2	1	1816	C
2	1	1819	A
2	1	1829	A
2	1	1833	C
2	1	1834	U
2	1	1838	C

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Mol	Chain	Res	Type
2	1	1851	U
2	1	1882	U
2	1	1891	G
2	1	1896	G
2	1	1901	A
2	1	1906	G
2	1	1912	A
2	1	1913	A
2	1	1914	C
2	1	1915	U
2	1	1918	A
2	1	1919	A
2	1	1930	G
2	1	1935	G
2	1	1937	A
2	1	1939	U
2	1	1940	U
2	1	1945	G
2	1	1947	C
2	1	1955	U
2	1	1963	U
2	1	1964	G
2	1	1967	C
2	1	1969	A
2	1	1970	A
2	1	1971	U
2	1	1972	G
2	1	1978	A
2	1	1982	U
2	1	1987	A
2	1	1991	U
2	1	1993	U
2	1	1997	C
2	1	2002	G
2	1	2020	A
2	1	2022	U
2	1	2023	C
2	1	2030	A
2	1	2031	A
2	1	2032	G
2	1	2034	U
2	1	2035	G

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Mol	Chain	Res	Type
2	1	2036	C
2	1	2043	C
2	1	2046	G
2	1	2049	G
2	1	2055	C
2	1	2056	G
2	1	2060	A
2	1	2061	G
2	1	2062	A
2	1	2063	C
2	1	2069	G
2	1	2072	C
2	1	2095	A
2	1	2100	G
2	1	2110	G
2	1	2111	U
2	1	2112	G
2	1	2115	G
2	1	2118	U
2	1	2119	A
2	1	2126	A
2	1	2131	U
2	1	2132	U
2	1	2133	G
2	1	2134	A
2	1	2137	U
2	1	2143	C
2	1	2144	G
2	1	2145	C
2	1	2158	A
2	1	2159	G
2	1	2162	G
2	1	2164	C
2	1	2166	U
2	1	2172	U
2	1	2173	A
2	1	2174	C
2	1	2181	U
2	1	2182	U
2	1	2186	G
2	1	2197	U
2	1	2198	A

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Mol	Chain	Res	Type
2	1	2203	U
2	1	2204	G
2	1	2210	U
2	1	2211	A
2	1	2212	A
2	1	2213	U
2	1	2225	A
2	1	2238	G
2	1	2251	G
2	1	2252	G
2	1	2253	G
2	1	2258	C
2	1	2259	U
2	1	2268	A
2	1	2269	G
2	1	2279	G
2	1	2283	C
2	1	2287	A
2	1	2288	A
2	1	2300	C
2	1	2305	U
2	1	2309	A
2	1	2310	C
2	1	2325	G
2	1	2327	A
2	1	2333	A
2	1	2347	C
2	1	2382	G
2	1	2383	G
2	1	2385	C
2	1	2390	U
2	1	2391	G
2	1	2406	A
2	1	2417	C
2	1	2422	C
2	1	2423	U
2	1	2425	A
2	1	2427	C
2	1	2428	G
2	1	2429	G
2	1	2434	A
2	1	2436	G

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Mol	Chain	Res	Type
2	1	2441	U
2	1	2444	G
2	1	2445	G
2	1	2448	A
2	1	2476	A
2	1	2487	G
2	1	2497	A
2	1	2498	C
2	1	2499	C
2	1	2500	U
2	1	2502	G
2	1	2504	U
2	1	2505	G
2	1	2513	A
2	1	2518	A
2	1	2520	C
2	1	2529	G
2	1	2535	G
2	1	2547	A
2	1	2549	G
2	1	2554	U
2	1	2556	C
2	1	2566	A
2	1	2567	G
2	1	2572	A
2	1	2574	G
2	1	2577	A
2	1	2602	A
2	1	2603	G
2	1	2609	U
2	1	2613	U
2	1	2621	G
2	1	2623	G
2	1	2629	U
2	1	2634	A
2	1	2645	G
2	1	2646	C
2	1	2649	C
2	1	2658	C
2	1	2681	C
2	1	2682	A
2	1	2684	U

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Mol	Chain	Res	Type
2	1	2689	U
2	1	2690	U
2	1	2712	C
2	1	2713	U
2	1	2714	G
2	1	2727	A
2	1	2732	G
2	1	2733	A
2	1	2744	G
2	1	2748	A
2	1	2751	G
2	1	2765	A
2	1	2771	C
2	1	2778	A
2	1	2779	U
2	1	2791	G
2	1	2794	C
2	1	2797	U
2	1	2799	A
2	1	2800	A
2	1	2801	G
2	1	2808	G
2	1	2820	A
2	1	2821	A
2	1	2822	G
2	1	2833	U
2	1	2848	G
2	1	2849	U
2	1	2866	U
2	1	2867	G
2	1	2868	A
2	1	2872	A
2	1	2880	C
2	1	2884	U
2	1	2893	A
2	1	2894	G
2	1	2899	A
3	2	15	A
3	2	16	G
3	2	24	G
3	2	35	C
3	2	36	C

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Mol	Chain	Res	Type
3	2	37	C
3	2	40	U
3	2	41	G
3	2	42	C
3	2	44	G
3	2	70	C
3	2	88	C
3	2	89	U
3	2	90	C
3	2	97	C
3	2	105	G
3	2	109	A
5	6	4	G
5	6	7	G
5	6	8	U
5	6	9	G
5	6	10	G
5	6	14	A
5	6	16	C
5	6	17(A)	U
5	6	19	G
5	6	20	U
5	6	21	A
5	6	22	G
5	6	35	A
5	6	43	A
5	6	47	U
5	6	59	A
5	6	76	A
36	4	12	A
36	4	13	A
36	4	14	A
36	4	15	A
36	4	16	A
36	4	24	U
37	5	2	G
37	5	3	G
37	5	5	G
37	5	6	A
37	5	8	U
37	5	16	C
37	5	18	G

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Mol	Chain	Res	Type
37	5	19	G
37	5	20	U
37	5	21	A
37	5	22	G
37	5	36	G
37	5	53	G
37	5	59	A
37	5	61	C
37	5	73	A

All (15) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	3	781	A
1	3	889	A
1	3	1157	A
1	3	1307	U
1	3	1397	C
1	3	1501	C
2	1	784	G
2	1	871	U
2	1	873	C
2	1	896	A
2	1	961	C
2	1	1130	U
2	1	1730	C
2	1	2326	C
36	4	13	A

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

There are no ligands in this entry.

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.

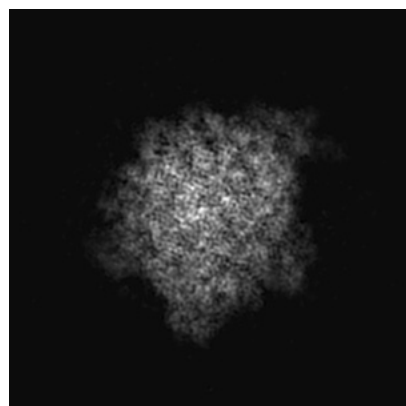
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-25405. These allow visual inspection of the internal detail of the map and identification of artifacts.

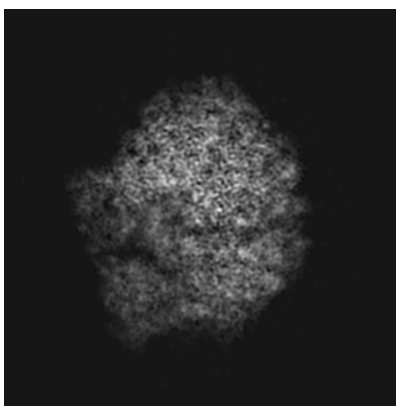
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

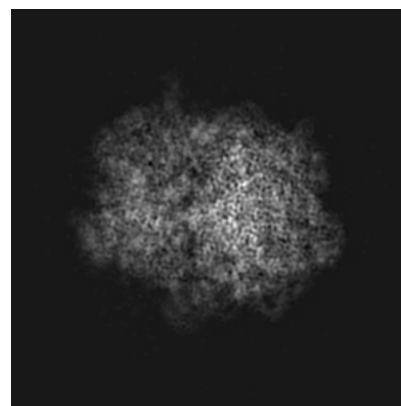
6.1.1 Primary map



X

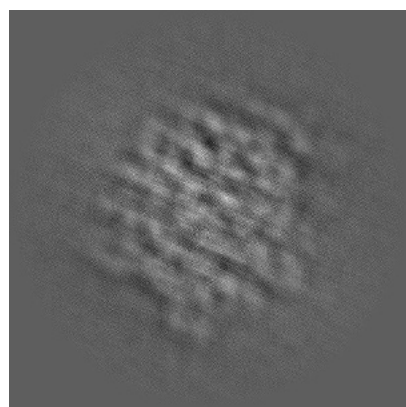


Y

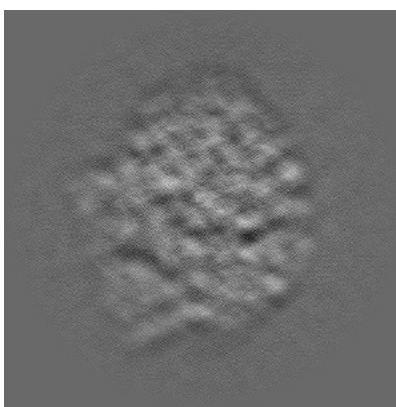


Z

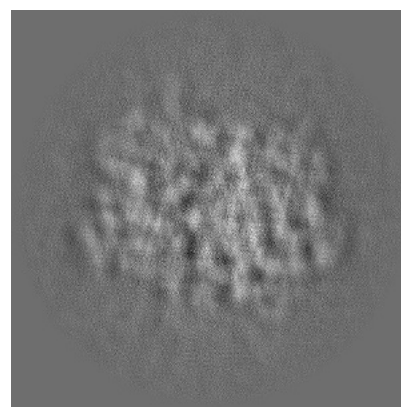
6.1.2 Raw map



X



Y

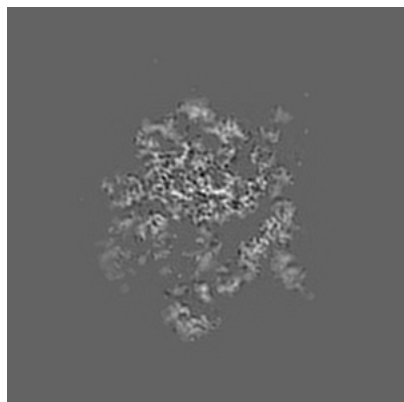


Z

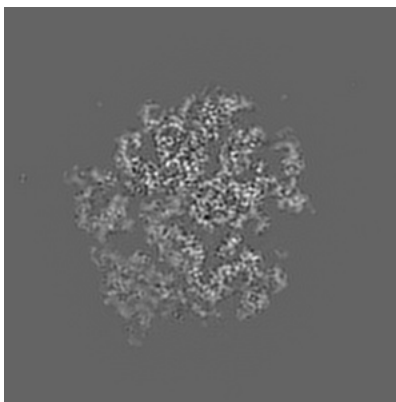
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

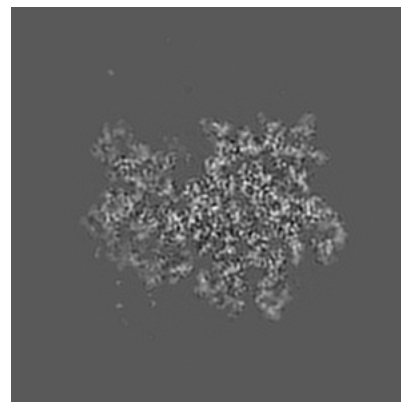
6.2.1 Primary map



X Index: 224

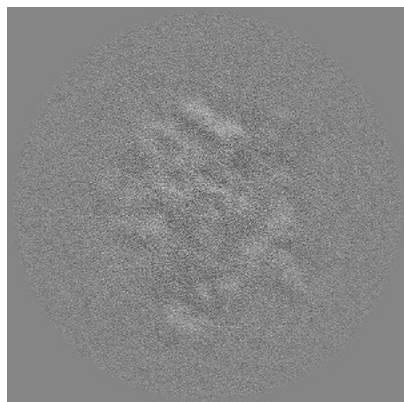


Y Index: 224

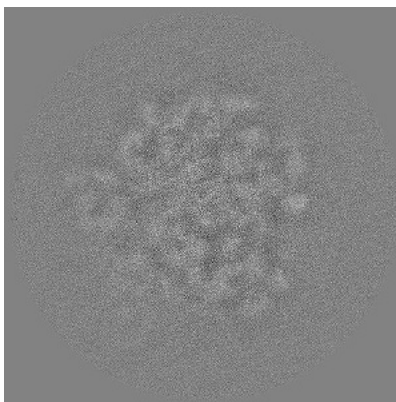


Z Index: 224

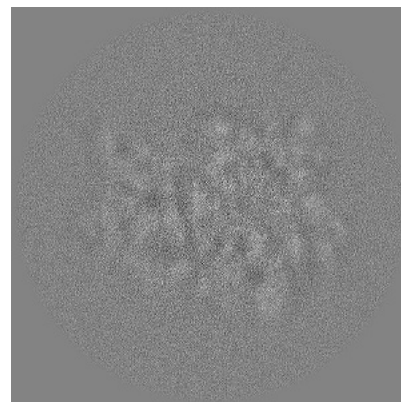
6.2.2 Raw map



X Index: 224



Y Index: 224

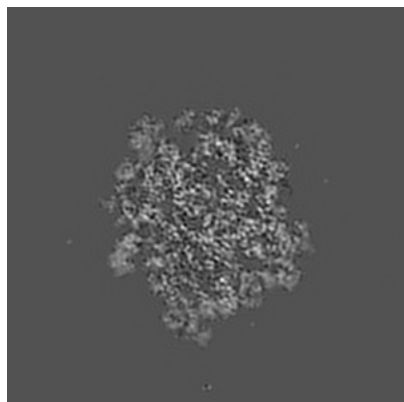


Z Index: 224

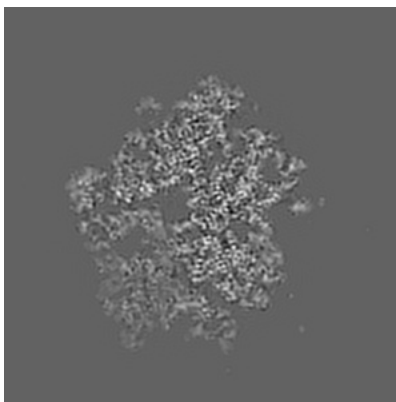
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

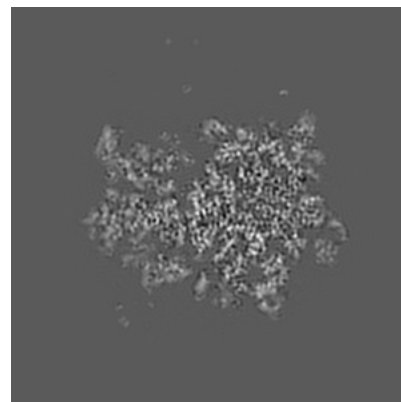
6.3.1 Primary map



X Index: 255

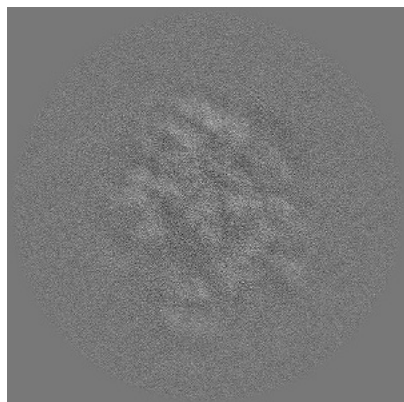


Y Index: 209

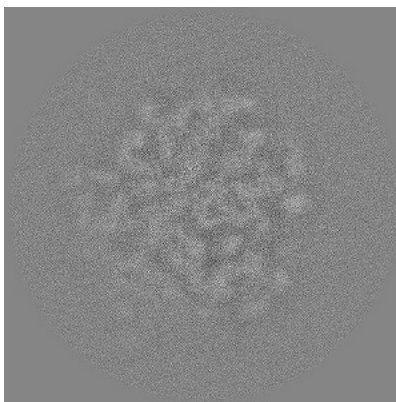


Z Index: 220

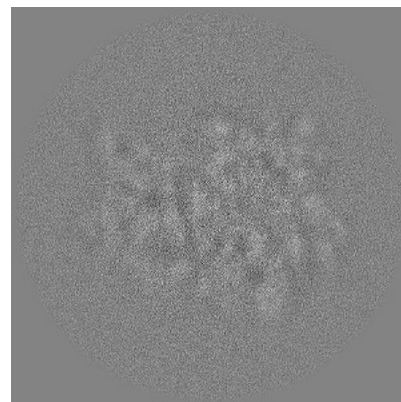
6.3.2 Raw map



X Index: 230



Y Index: 223

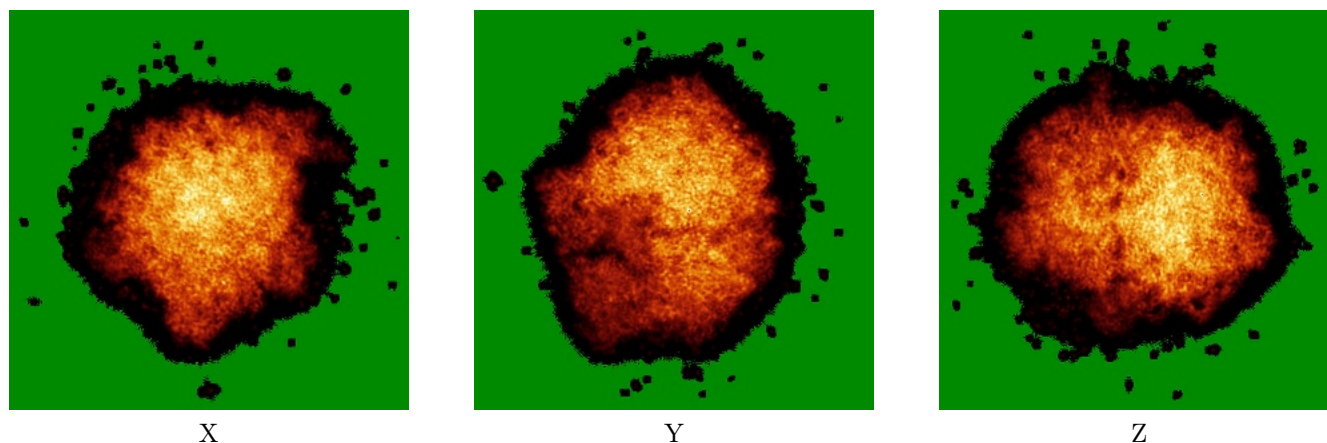


Z Index: 224

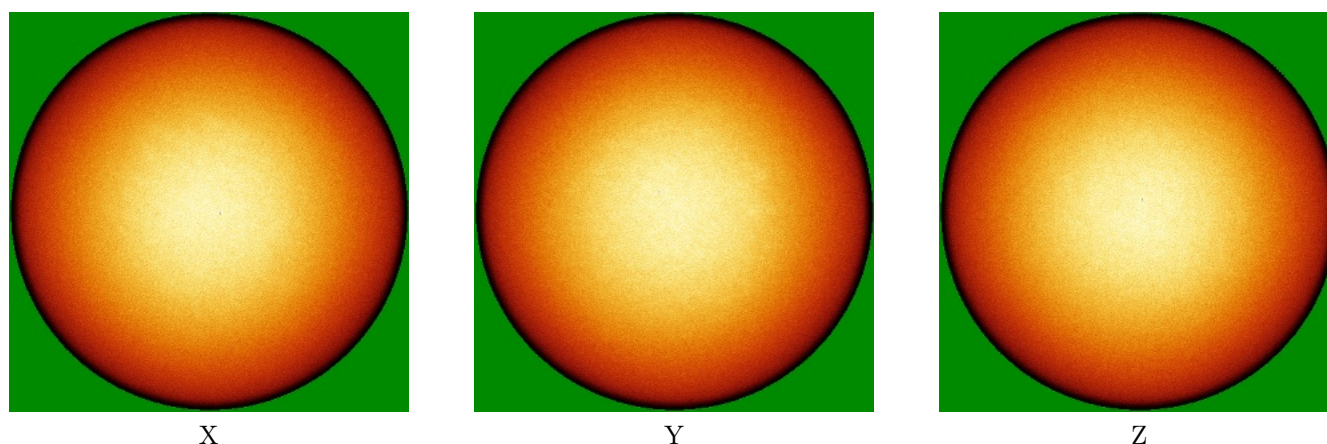
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map



6.4.2 Raw map



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](#)

This section was not generated.

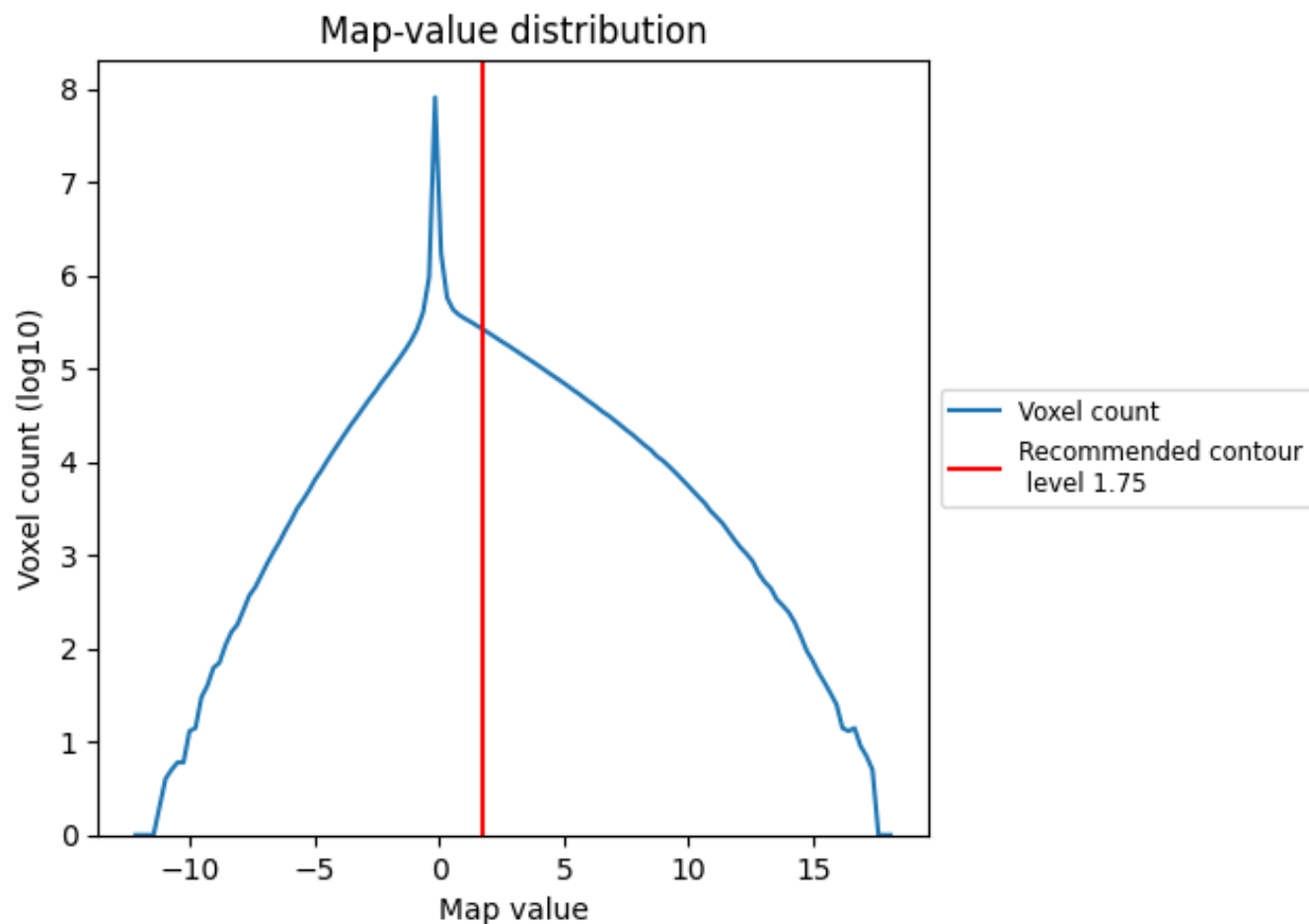
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

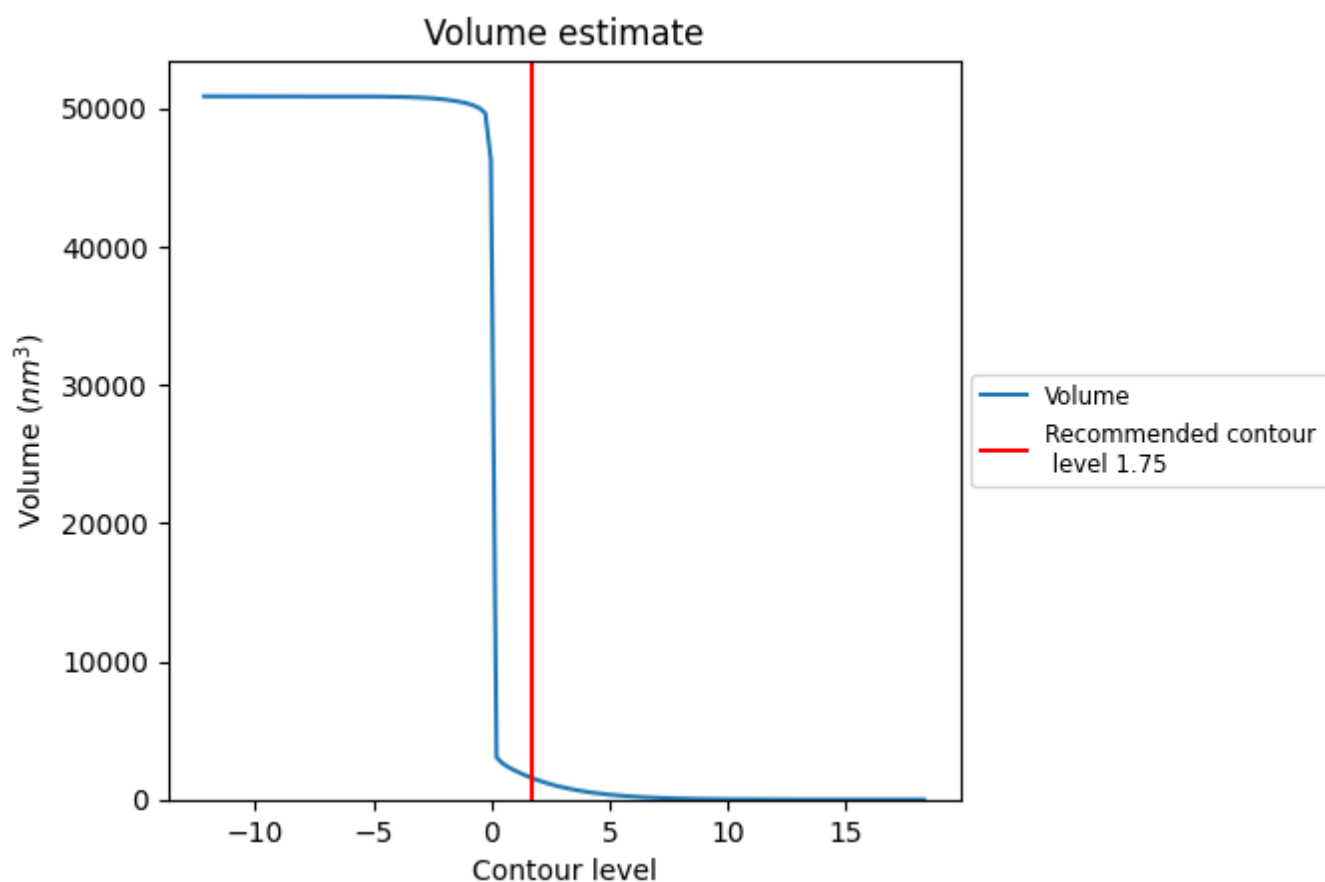
This section contains the results of statistical analysis of the map.

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.

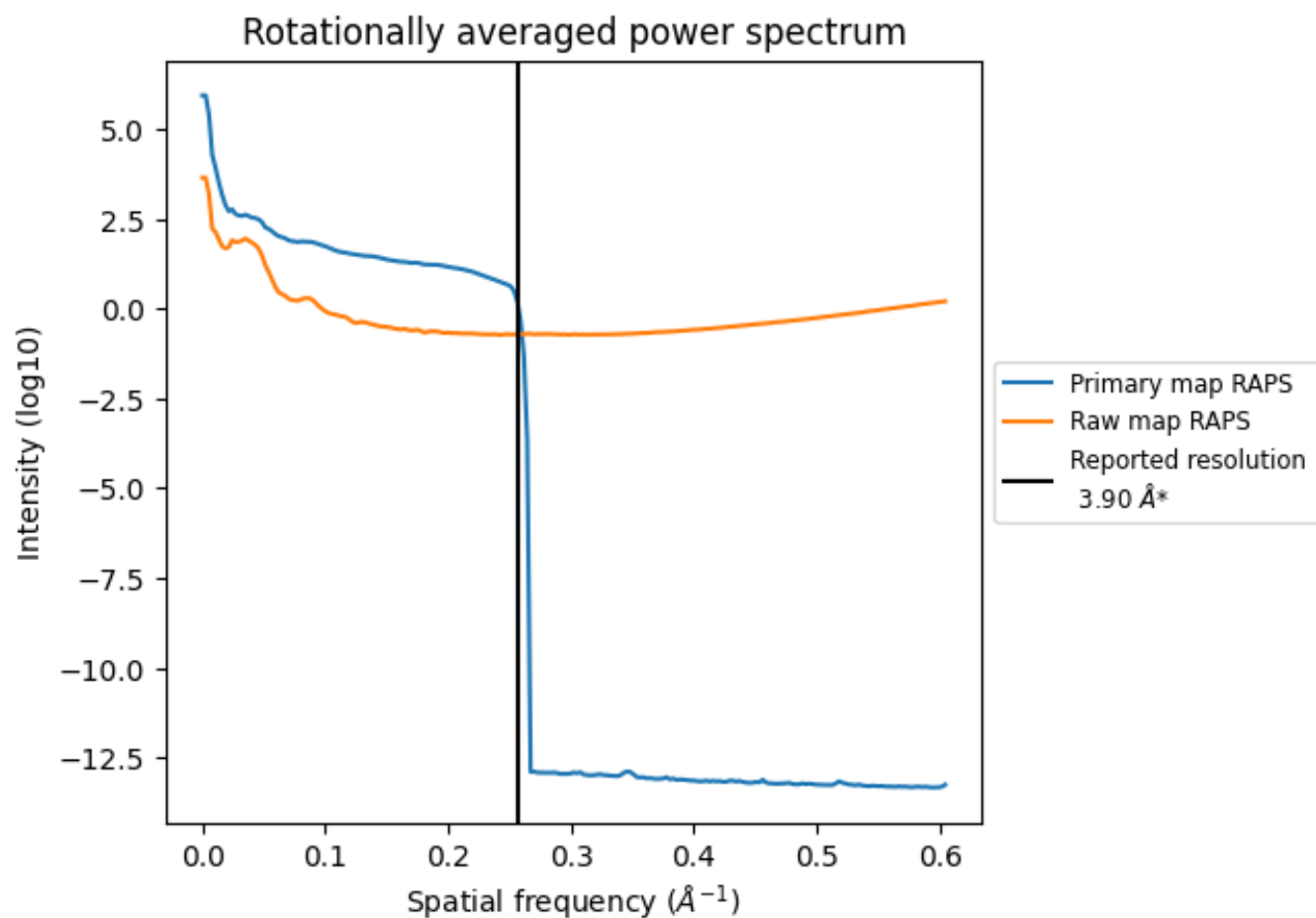
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1540 nm³; this corresponds to an approximate mass of 1391 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 ⓘ

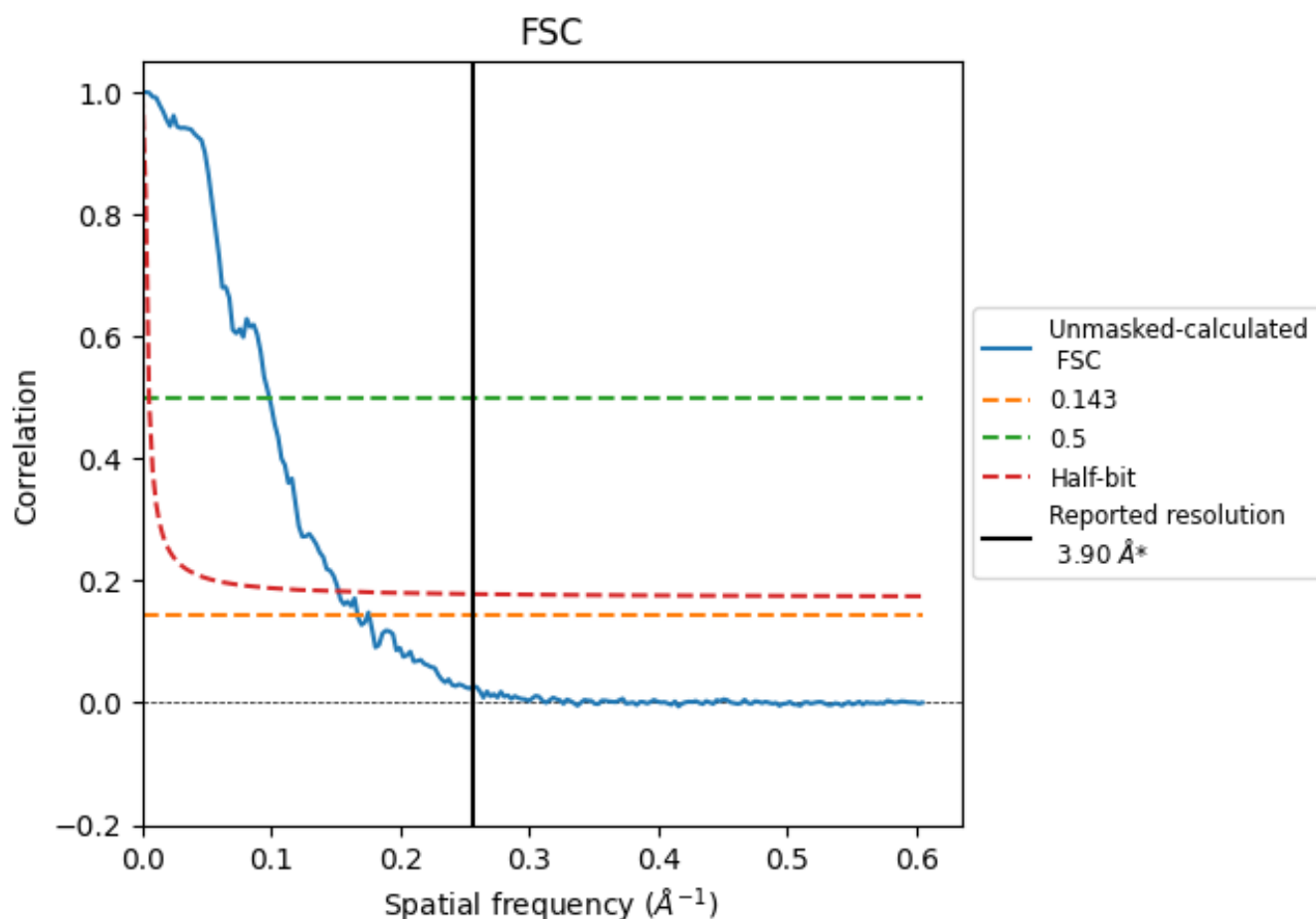


*Reported resolution corresponds to spatial frequency of 0.256 Å⁻¹

8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.256 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

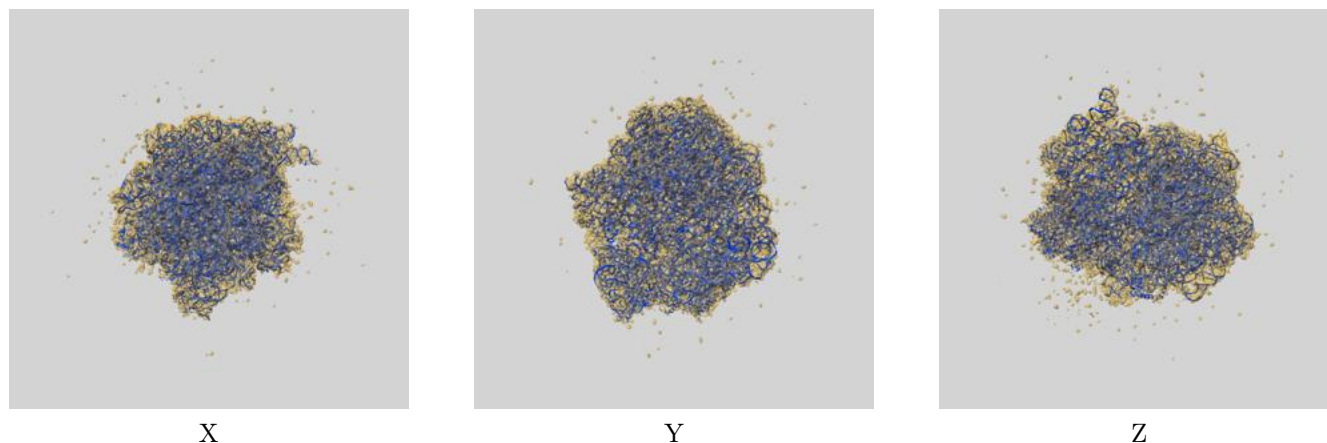
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.90	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	5.99	10.16	6.57

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 5.99 differs from the reported value 3.9 by more than 10 %

9 Map-model fit [i](#)

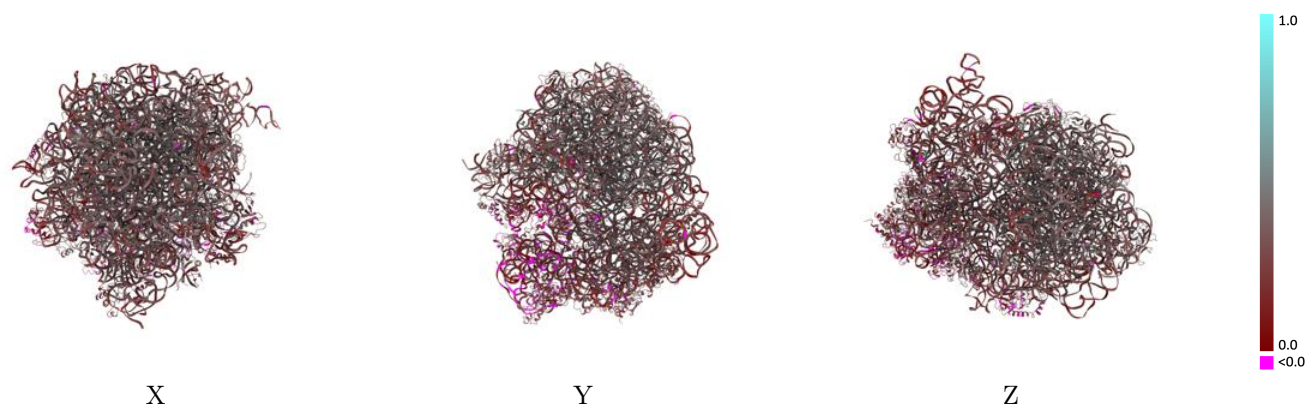
This section contains information regarding the fit between EMDB map EMD-25405 and PDB model 7SS9. Per-residue inclusion information can be found in section 3 on page 15.

9.1 Map-model overlay [i](#)



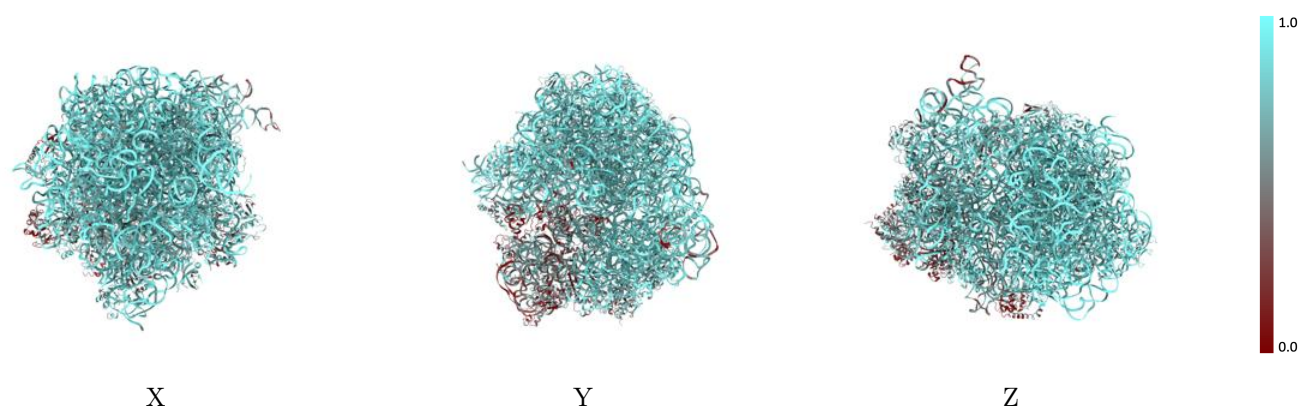
The images above show the 3D surface view of the map at the recommended contour level 1.75 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



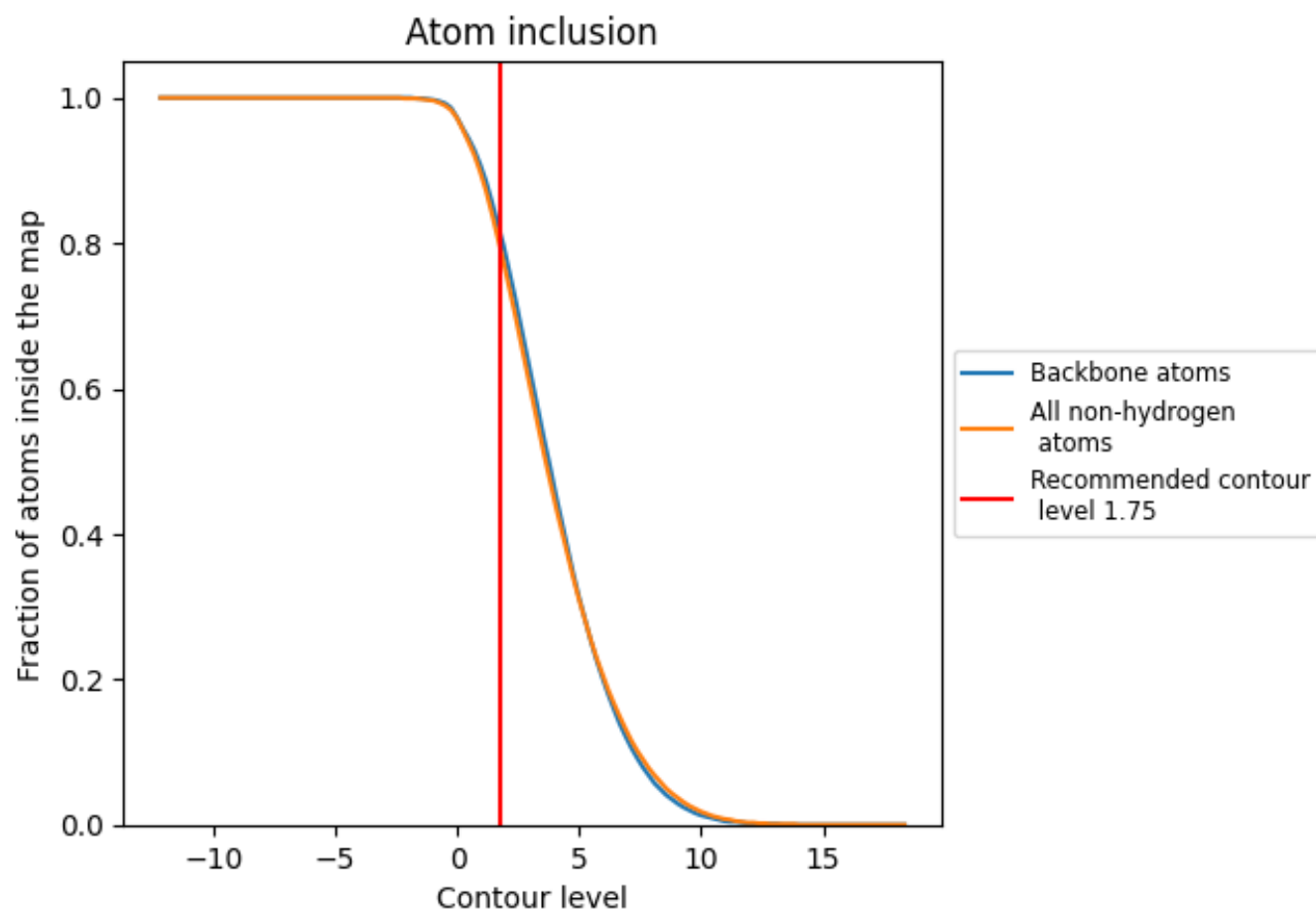
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (1.75).

9.4 Atom inclusion [i](#)



At the recommended contour level, 82% of all backbone atoms, 80% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (1.75) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7950	 0.3080
1	 0.9080	 0.3500
2	 0.8900	 0.3120
3	 0.7730	 0.2510
4	 0.4930	 0.1330
5	 0.7160	 0.1690
6	 0.4670	 0.1300
8	 0.4500	 0.2220
B	 0.8320	 0.3680
C	 0.6220	 0.3180
D	 0.8820	 0.4190
E	 0.8620	 0.4320
F	 0.7470	 0.3670
G	 0.5660	 0.2790
H	 0.3830	 0.2000
I	 0.6960	 0.2720
J	 0.7640	 0.3480
K	 0.7990	 0.3140
L	 0.2180	 0.1360
M	 0.8000	 0.3380
N	 0.3760	 0.1750
O	 0.3730	 0.2200
P	 0.7710	 0.3210
Q	 0.7880	 0.3170
R	 0.2920	 0.1480
S	 0.4930	 0.1790
T	 0.7870	 0.3150
U	 0.7240	 0.3160
V	 0.7440	 0.3070
W	 0.7280	 0.3140
X	 0.4690	 0.1930
Y	 0.7610	 0.3070
Z	 0.6450	 0.2800
a	 0.1850	 0.1220
b	 0.8560	 0.4090



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Chain	Atom inclusion	Q-score
c	 0.8260	 0.4000
d	 0.7720	 0.3560
e	 0.7000	 0.2510
f	 0.7230	 0.2820
g	 0.4430	 0.2200
i	 0.2570	 0.1370
j	 0.8240	 0.3850
k	 0.8320	 0.3960
l	 0.7960	 0.3950
m	 0.8460	 0.4070
n	 0.8210	 0.4000
o	 0.7740	 0.3180
p	 0.8460	 0.3850
q	 0.8520	 0.3900
r	 0.7990	 0.3590
s	 0.8280	 0.3960
t	 0.7860	 0.3750
u	 0.7830	 0.3360
v	 0.7940	 0.3320
w	 0.8440	 0.4070
x	 0.8540	 0.3910
y	 0.7910	 0.3200
z	 0.7990	 0.3590