



wwPDB EM Map/Model Validation Report ⓘ

Apr 10, 2016 – 02:46 PM BST

PDB ID : 5APN
EMDB ID: : 3152
Title : Structure of the yeast 60S ribosomal subunit in complex with Arx1, Alb1 and N-terminally tagged Rei1
Authors : Greber, B.J.; Gerhardy, S.; Leitner, A.; Leibundgut, M.; Salem, M.; Boehringer, D.; Leulliot, N.; Aebersold, R.; Panse, V.G.; Ban, V.
Deposited on : 2015-09-17
Resolution : 3.91 Å(reported)

This is a wwPDB EM Map/Model Validation Report for a publicly released PDB/EMDB entry.
For rigid body fitted models, validation errors reported here could stem from errors in the original structure(s) used in the fitting.

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

A user guide is available at

<http://wwpdb.org/validation/2016/EMValidationReportHelp>

MolProbity : 4.02b-467
Mogul : 1.7.1 (RC1), CSD as537be (2016)
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP) : trunk27241

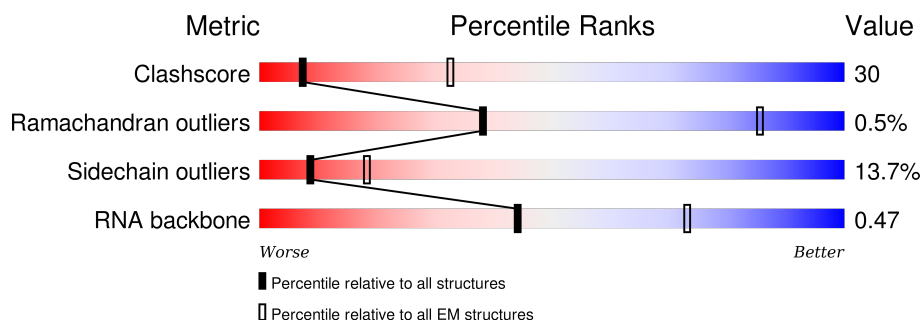
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.91 Å.

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



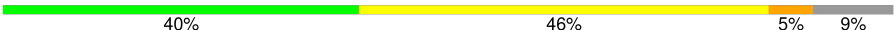

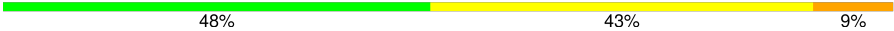








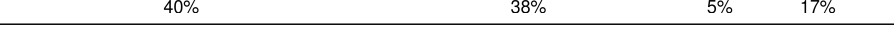







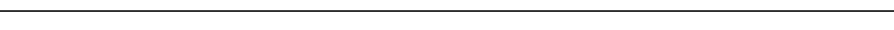

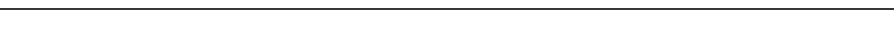
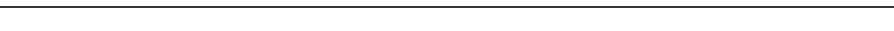


Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	114402	924
Ramachandran outliers	111179	726
Sidechain outliers	111093	686
RNA backbone	3027	244

The table below summarises the geometric issues observed across the polymeric chains. The red, orange, yellow and green segments on the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. 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 $\leq 5\%$

Mol	Chain	Length	Quality of chain
1	5	3396	
2	7	121	
3	8	158	
4	A	254	
5	B	387	
6	C	362	
7	D	297	
8	E	176	





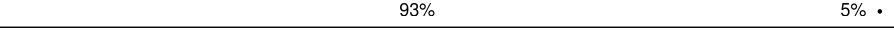

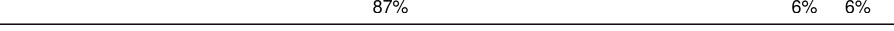
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Mol	Chain	Length	Quality of chain
9	F	244	
10	G	256	
11	H	191	
12	I	221	
13	J	174	
14	L	199	
15	M	138	
16	N	204	
17	O	199	
18	P	184	
19	Q	186	
20	R	189	
21	S	172	
22	T	160	
23	U	121	
24	V	137	
25	W	155	
26	X	142	
27	Y	127	
28	Z	136	
29	a	149	
30	b	59	
31	c	105	
32	d	113	
33	e	130	

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Mol	Chain	Length	Quality of chain
34	f	107	 92% 7% .
35	g	121	 79% 14% 7%
36	h	120	 84% 15% .
37	i	100	 76% 22% ..
38	j	88	 86% 13% .
39	k	78	 83% 15% .
40	l	51	 86% 12% .
41	m	128	 32% 9% 59%
42	o	106	 88% 11% .
43	p	92	 93% 5% .
44	q	312	 34% . 62%
45	x	616	 87% 6% 6%
46	y	414	 48% . 49%
47	z	85	 100%

2 Entry composition

There are 49 unique types of molecules in this entry. The entry contains 129324 atoms, of which 3 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 25S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	5	3112	Total	C	N	O	P	0	0
			66537	29736	11996	21694	3111		

- Molecule 2 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	7	121	Total	C	N	O	P	0	0
			2579	1152	461	845	121		

- Molecule 3 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	8	158	Total	C	N	O	P	0	0
			3353	1500	586	1109	158		

- Molecule 4 is a protein called 60S ribosomal protein L2-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	A	212	Total	C	N	O	S	0	0
			1630	1021	325	283	1		

- Molecule 5 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	B	386	Total	C	N	O	S	0	0
			3075	1950	584	533	8		

- Molecule 6 is a protein called 60S ribosomal protein L4-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	C	361	Total	C	N	O	S	0	0
			2748	1729	522	494	3		

- Molecule 7 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	D	294	Total	C	N	O	S	0	0
			2359	1489	412	456	2		

- Molecule 8 is a protein called 60S ribosomal protein L6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	E	175	Total	C	N	O	S	0	0
			1355	877	242	235	1		

- Molecule 9 is a protein called 60S ribosomal protein L7-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	F	223	Total	C	N	O	S	0	0
			1791	1155	325	310	1		

- Molecule 10 is a protein called 60S ribosomal protein L8-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	G	231	Total	C	N	O	S	0	0
			1763	1130	316	314	3		

- Molecule 11 is a protein called 60S ribosomal protein L9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	H	191	Total	C	N	O	S	0	0
			1518	963	274	277	4		

- Molecule 12 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	I	213	Total	C	N	O	S	0	0
			1722	1094	325	297	6		

- Molecule 13 is a protein called 60S ribosomal protein L11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	J	169	Total	C	N	O	S	0	0
			1353	847	253	249	4		

- Molecule 14 is a protein called 60S ribosomal protein L13-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	L	194	Total	C	N	O	0	0
			1548	965	316	267		

- Molecule 15 is a protein called 60S ribosomal protein L14-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	M	137	Total	C	N	O	S	0	0
			1059	678	200	179	2		

- Molecule 16 is a protein called 60S ribosomal protein L15-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	N	203	Total	C	N	O	S	0	0
			1720	1077	361	281	1		

- Molecule 17 is a protein called 60S ribosomal protein L16-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	O	197	Total	C	N	O	S	0	0
			1555	1003	289	262	1		

- Molecule 18 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
18	P	183	Total	C	N	O	0	0
			1442	896	287	259		

- Molecule 19 is a protein called 60S ribosomal protein L18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	Q	185	Total	C	N	O	S	0	0
			1441	908	290	241	2		

- Molecule 20 is a protein called 60S ribosomal protein L19-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
20	R	156	Total	C	N	O	0	0
			1258	781	265	212		

- Molecule 21 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	S	171	Total	C	N	O	S	0	0
			1437	925	266	243	3		

- Molecule 22 is a protein called 60S ribosomal protein L21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	T	159	Total	C	N	O	S	0	0
			1276	805	246	221	4		

- Molecule 23 is a protein called 60S ribosomal protein L22-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	U	102	Total	C	N	O		0	0
			808	524	132	152			

- Molecule 24 is a protein called 60S ribosomal protein L23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	V	136	Total	C	N	O	S	0	0
			1003	628	189	179	7		

- Molecule 25 is a protein called 60S ribosomal protein L24-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	W	63	Total	C	N	O	S	0	0
			521	336	102	82	1		

- Molecule 26 is a protein called 60S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	X	120	Total	C	N	O	S	0	0
			959	617	168	172	2		

- Molecule 27 is a protein called 60S ribosomal protein L26-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	Y	126	Total	C	N	O		0	0
			993	625	192	176			

- Molecule 28 is a protein called 60S ribosomal protein L27-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	Z	135	Total	C	N	O	0	0
			1092	710	202	180		

- Molecule 29 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	a	148	Total	C	N	O	S	0	0
			1173	749	231	190	3		

- Molecule 30 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms				AltConf	Trace
30	b	58	Total	C	N	O	0	0
			462	289	100	73		

- Molecule 31 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	c	100	Total	C	N	O	S	0	0
			767	492	128	146	1		

- Molecule 32 is a protein called 60S ribosomal protein L31-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	d	109	Total	C	N	O	S	0	0
			883	559	167	156	1		

- Molecule 33 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	e	129	Total	C	N	O	S	0	0
			1034	655	207	171	1		

- Molecule 34 is a protein called 60S ribosomal protein L33-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	f	106	Total	C	N	O	S	0	0
			850	540	165	144	1		

- Molecule 35 is a protein called 60S ribosomal protein L34-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	g	112	Total	C	N	O	S	0	0
			880	545	179	152	4		

- Molecule 36 is a protein called 60S ribosomal protein L35-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	h	119	Total	C	N	O	S	0	0
			965	612	185	167	1		

- Molecule 37 is a protein called 60S ribosomal protein L36-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	i	99	Total	C	N	O	S	0	0
			770	481	156	131	2		

- Molecule 38 is a protein called 60S ribosomal protein L37-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	j	87	Total	C	N	O	S	0	0
			681	414	148	114	5		

- Molecule 39 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms				AltConf	Trace
39	k	77	Total	C	N	O	0	0
			608	388	114	106		

- Molecule 40 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	l	50	Total	C	N	O	S	0	0
			436	272	97	65	2		

- Molecule 41 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	m	52	Total	C	N	O	S	0	0
			417	259	86	67	5		

- Molecule 42 is a protein called 60S ribosomal protein L42-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	o	105	Total	C	N	O	S	0	0
			847	534	170	138	5		

- Molecule 43 is a protein called 60S ribosomal protein L43-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	p	91	Total	C	N	O	S	0	0
			694	429	138	121	6		

- Molecule 44 is a protein called 60S acidic ribosomal protein P0.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	q	120	Total	C	N	O	S	0	0
			962	618	169	172	3		

- Molecule 45 is a protein called Probable metalloprotease ARX1.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	x	579	Total	C	N	O	S	0	0
			4477	2823	772	867	15		

There are 23 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
x	-22	MET	-	initiating methionine	UNP Q03862
x	-21	GLY	-	expression tag	UNP Q03862
x	-20	SER	-	expression tag	UNP Q03862
x	-19	SER	-	expression tag	UNP Q03862
x	-18	HIS	-	expression tag	UNP Q03862
x	-17	HIS	-	expression tag	UNP Q03862
x	-16	HIS	-	expression tag	UNP Q03862
x	-15	HIS	-	expression tag	UNP Q03862
x	-14	HIS	-	expression tag	UNP Q03862
x	-13	HIS	-	expression tag	UNP Q03862
x	-12	SER	-	expression tag	UNP Q03862
x	-11	SER	-	expression tag	UNP Q03862
x	-10	GLY	-	expression tag	UNP Q03862
x	-9	LEU	-	expression tag	UNP Q03862
x	-8	VAL	-	expression tag	UNP Q03862
x	-7	PRO	-	expression tag	UNP Q03862
x	-6	ARG	-	expression tag	UNP Q03862
x	-5	GLY	-	expression tag	UNP Q03862
x	-4	SER	-	expression tag	UNP Q03862

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Chain	Residue	Modelled	Actual	Comment	Reference
x	-3	HIS	-	expression tag	UNP Q03862
x	-2	MET	-	expression tag	UNP Q03862
x	-1	LEU	-	expression tag	UNP Q03862
x	0	GLU	-	expression tag	UNP Q03862

- Molecule 46 is a protein called Cytoplasmic 60S subunit biogenesis factor REI1.

Mol	Chain	Residues	Atoms						AltConf	Trace
46	y	211	Total	C	H	N	O	S	0	0
			1727	1095	3	307	314	8		

There are 21 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
y	-20	HIS	-	expression tag	UNP P38344
y	-19	HIS	-	expression tag	UNP P38344
y	-18	HIS	-	expression tag	UNP P38344
y	-17	HIS	-	expression tag	UNP P38344
y	-16	HIS	-	expression tag	UNP P38344
y	-15	HIS	-	expression tag	UNP P38344
y	-14	ASP	-	expression tag	UNP P38344
y	-13	TYR	-	expression tag	UNP P38344
y	-12	ASP	-	expression tag	UNP P38344
y	-11	ILE	-	expression tag	UNP P38344
y	-10	PRO	-	expression tag	UNP P38344
y	-9	THR	-	expression tag	UNP P38344
y	-8	THR	-	expression tag	UNP P38344
y	-7	GLU	-	expression tag	UNP P38344
y	-6	ASN	-	expression tag	UNP P38344
y	-5	LEU	-	expression tag	UNP P38344
y	-4	TYR	-	expression tag	UNP P38344
y	-3	PHE	-	expression tag	UNP P38344
y	-2	GLN	-	expression tag	UNP P38344
y	-1	GLY	-	expression tag	UNP P38344
y	0	ALA	-	expression tag	UNP P38344

- Molecule 47 is a protein called ALB1.

Mol	Chain	Residues	Atoms				AltConf	Trace
47	z	85	Total	C	N	O	0	0
			510	340	85	85		

- Molecule 48 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

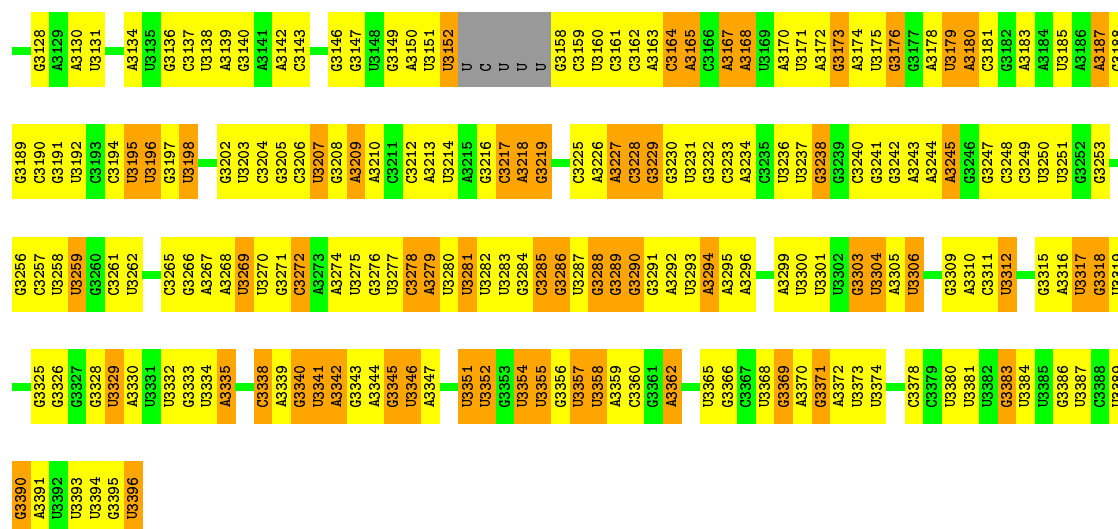
Mol	Chain	Residues	Atoms		AltConf
48	P	1	Total 1	Mg 1	0
48	B	1	Total 1	Mg 1	0
48	C	2	Total 2	Mg 2	0
48	V	1	Total 1	Mg 1	0
48	7	6	Total 6	Mg 6	0
48	a	2	Total 2	Mg 2	0
48	N	1	Total 1	Mg 1	0
48	5	259	Total 259	Mg 259	0
48	8	7	Total 7	Mg 7	0

- Molecule 49 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
49	p	1	Total 1	Zn 1	0
49	o	1	Total 1	Zn 1	0
49	j	1	Total 1	Zn 1	0
49	y	2	Total 2	Zn 2	0
49	m	1	Total 1	Zn 1	0

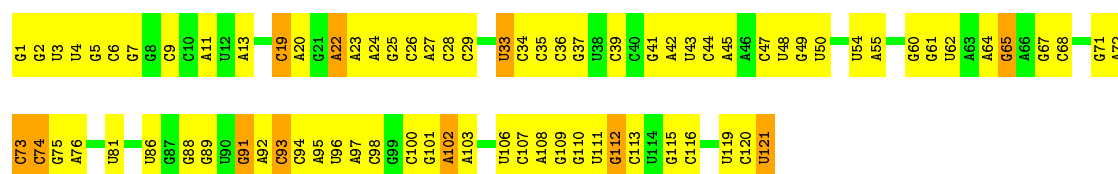
A1946	C1856	G1780	U1702	U1629	G1560	A1477	C1397	C1328	U1258	U1191	C1119	U1051	G984	C918	A848
G1947	C1857	G1781	U1703	U1630	G1561	C1478	U1398	U1329	A1259	C1192	A1120	U1052	G985	C918	C849
G1948	A1858	U1781	C1710	A1631	C1562	U1479	A1399	A1330	A1260	A1193	U1121	A1053	U986	A921	U850
G1949	U1859	U1782	C1711	A1632	C1563	G1480	G1400	U1331	G1261	G1194	U1122	A1054	U987	U922	C851
U1950	G1860	U1783	C1711	C1633	U1564			A1332	A1262	A1195	U1055	U988	U988	G923	U852
C1951	G1861	G1784	G1712	G1634	G1565	U1484	U1405	C1333	A1263	C1196	U1125	U1056	U989	G924	G853
	U1862	U1785	G1713	G1635	A1566		A1406	U1334	G1264		G1126	A1057	U990	A925	
	G1863	U1786	G1714	U1636	U1567		A1407	C1335	U1265		G1127	U1058	G991	A926	G856
	A1864	A1787	A1715	A1637	U1568	A1491	U1417	U1336	G1266	C1201	U1128	A1059	G992	C927	G857
	G1865	G1788	U1716	A1638	U1569	G1492	G1418	A1337			A1129		G993	C928	A858
	C1866	G1789	U1717	C1639	U1570	U1494	A1418	C1338	U1267	A1205	A1130	A1062	G994	C929	A859
		G1790	G1718	G1640	U1571	U1495	A1419	C1339	A1271	G1206	G1132	A1064	A996	U930	G860
		G1719	G1719	U1641	U1572	C1496		C1340	C1272		A1133	A1065	A997		G861
		U1720	U1720	A1642	G1573	C1497	C1423	U1341			G1134		A998	G934	
	U1873	C1793	U1721	A1643	C1574	A1498	C1424						A999		G869
	A1874	G1794	U1722	A1644	A1575	C1499							G999	G937	G870
	G1875	U1795	U1722	G1645	G1576	G1500	U1427	U1346	U1276	G1209	U1138	C1068	G1000	C938	
Y5P	U1876	G1796	A1723	U1645	G1577	U1501	A1428	U1347	C1277	U1210	U1139		G1001	U939	C873
Y5P	U1877	A1797	U1724	G1646	G1578	C1502	G1429	U1348	A1278	A1212	G1140		A1002	G940	U874
Y5P	G1878	A1798	C1725	A1647	C1579	A1503	U1430	U1349	C1279	G1213			A1003	G941	
Y5P	A1879	U1799	G1726	A1648	U1580	A1504	G1431	G1350					U1004	U942	C877
Y5P	U1880	A1800	G1727	U1649	C1581		U1432	U1351	G1281		U1074		G1005	U943	G878
Y5P	A1881	U1801	U1728	G1650	C1582	C1508	A1433	A1352	G1282	C1274	U1075	C1076	A1006	C944	U879
Y5P	G1882	G1729	A1729	U1651	U1583	A1509	G1434	U1353	G1283	C1219	U1077		U1007	C945	G880
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Y5P	A1884			A1654	C1585	U1511	U1436	A1355	G1285	A1221	G1148		A1009	C947	A882
Y5P	U1885			G1655	G1586	U1512	C1437	U1356	A1286		U1149		G1010	C948	A883
Y5P	A1886	G1807	G1736	A1656		U1513	U1438	G1357			A1150		A1011	C949	
Y5P	U1887	A1809	U1737	C1657		G1519	A1439	C1358	A1290		U1014		U1015	A951	C886
Y5P	U1888	G1810	A1741	G1658	A1589	G1520	U1440	U1359	A1291				C	A952	C887
Y5P	A1889	A1811	U1742	U1659	U1590	G1521	G1443	G1360	A1292				U1015	A953	A888
Y5P	U1890	G1812	G1743	G1660	A1593	G1522	U1444	U1361	A1294	C1227	G1157		C	G953	U889
Y5P	A1891	A1813		G1661	A1594	U1521	G1445	G1362	G1295				C	U956	C890
Y5P	G1892	U1814	U1746	G1662	U1595	U1522	U1446	G1363	C1296	G1089	A1158		G	U956	G891
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			G2874	A2801	A2727	U2656	U2586	A	G	C2394		C	U2103	P5P
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				U2803	U2729		U2588	A	A	G2396	U2182	A	C2108	P5P
			G2878	A2804			U2589	U	U	A2397	G2329	U	U2109	P5P
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			C2899	A2820	G2749	A2676	U2604	U2538	G	C2415	A2348	G2276	U2129	P5P
			A2900	C2821	U2750	G2677	G2605	G2539	C	U2416	U2349	C2277	G2130	P5P
			G2901	G2751	U2752	A2680	G2606	A2540	G	U2417	C2350	A2278	A2131	P5P
			A2902	U2753	G2753	U2681	G2607	U2541	C	G2418	U2351	C2279	C2132	P5P
				G2828	G2754	C2682	A2609	U2542	C	A2419	A2352	A2280		P5P
			U2905	G2834	G2754	U2683	U2609	U2543	A	U2420	G2353	A2281	C2136	P5P
			G2908	C2836	U2757	C2684	U2611	G2544	G	C2422	U2354	U2282	U2137	P5P
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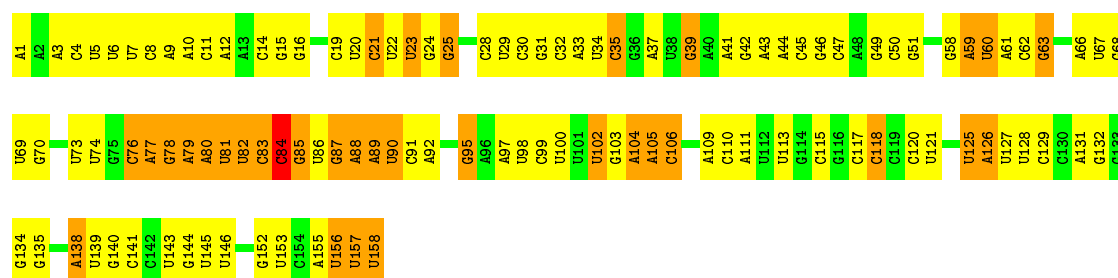
• Molecule 2: 5S rRNA

Chain 7: 35% 56% 9%



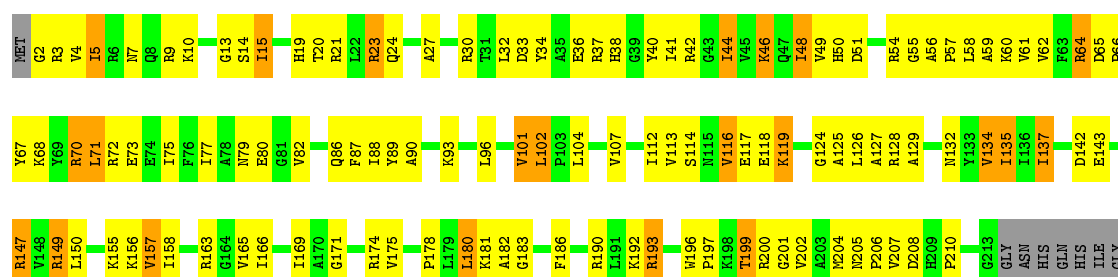
• Molecule 3: 5.8S rRNA

Chain 8: 28% 50% 21%



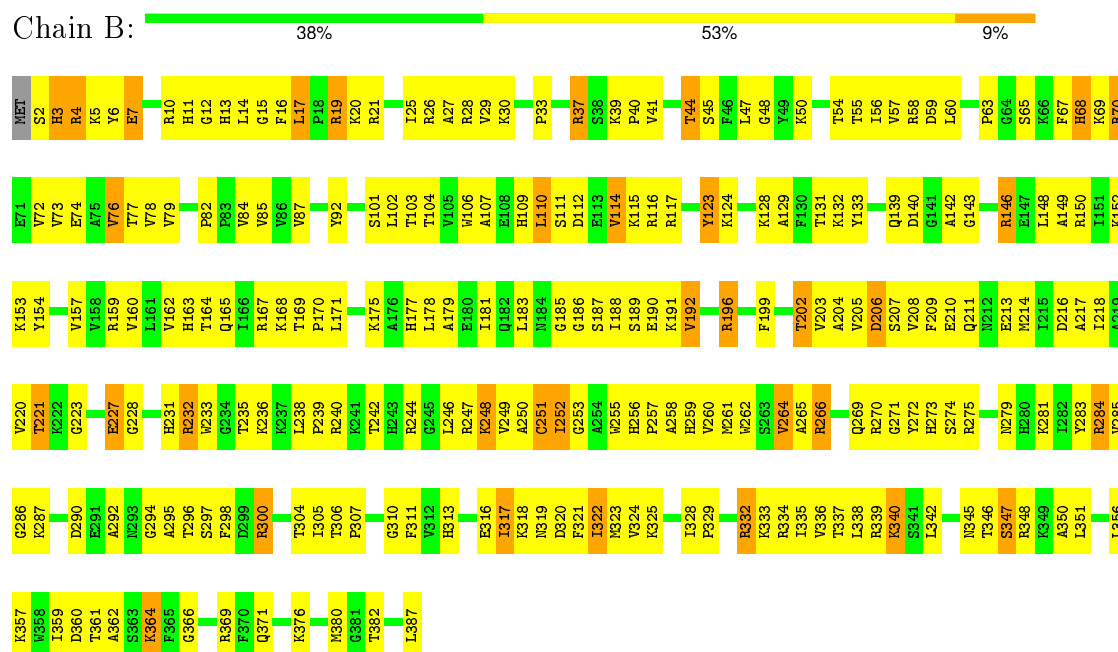
• Molecule 4: 60S ribosomal protein L2-A

Chain A: 36% 39% 9% 17%

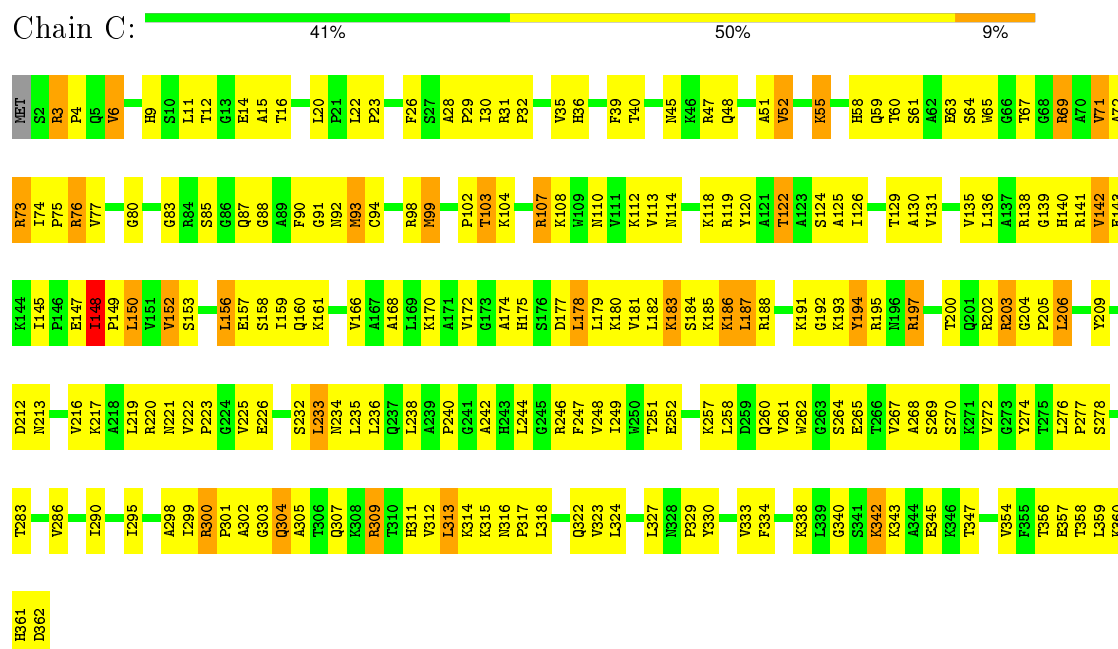


LYS
ALA
SER
THR
R4
H3
ILE
SER
ARG
GLY
VAL
SER
GLY
GLN
LYS
ALA
GLY
LEU
ILE
ALA
ALA
ARG
ARG
THR
GLY
LEU
LEU
ARG
GLY
SER
GLN
LYS
THR
GLN
ASP

• Molecule 5: 60S ribosomal protein L3

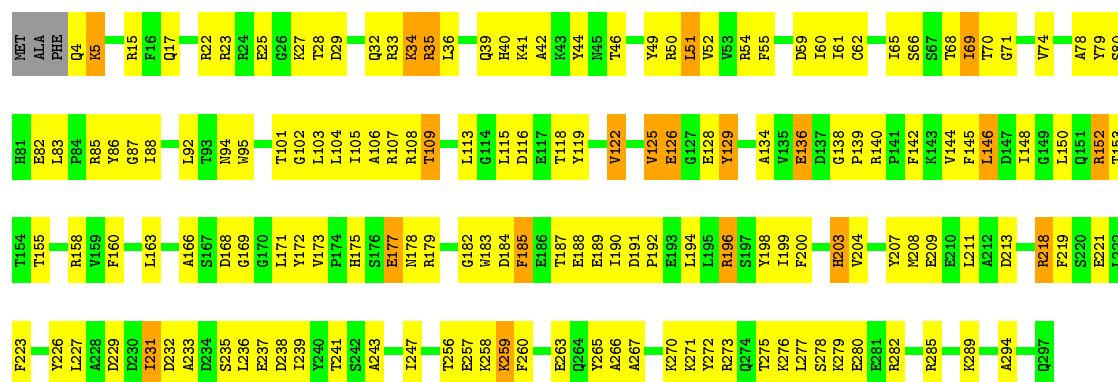


• Molecule 6: 60S ribosomal protein L4-A

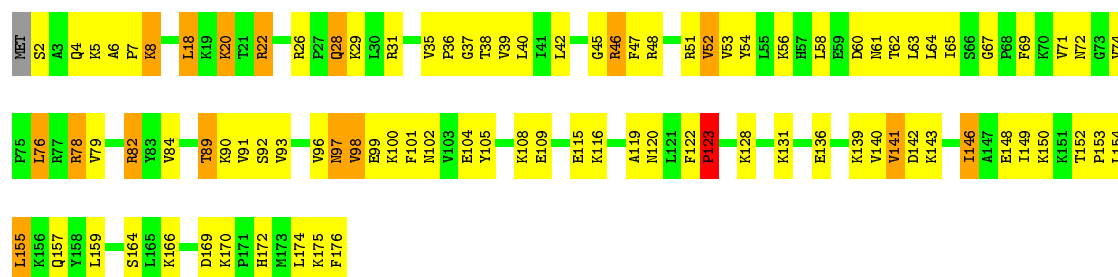


• Molecule 7: 60S ribosomal protein L5

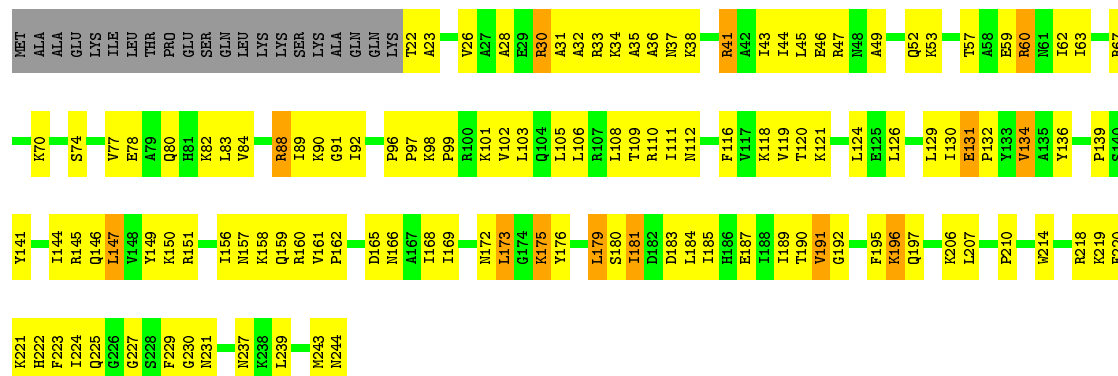




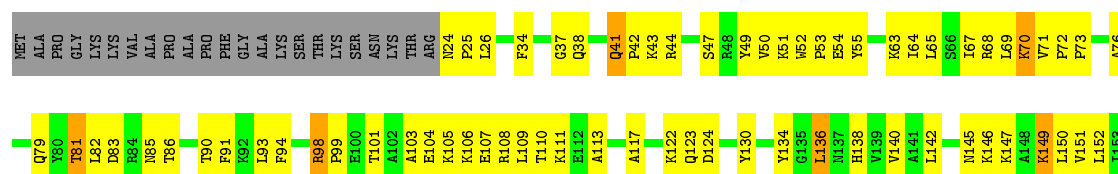
• Molecule 8: 60S ribosomal protein L6-A



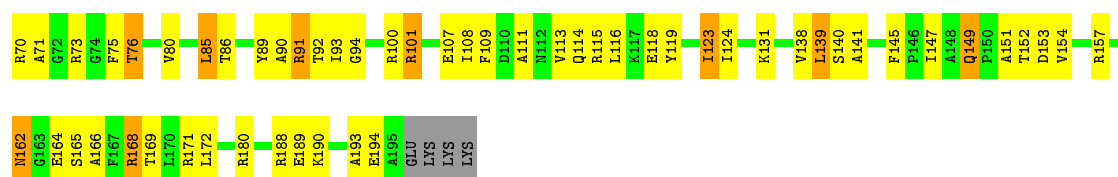
• Molecule 9: 60S ribosomal protein L7-A



• Molecule 10: 60S ribosomal protein L8-A

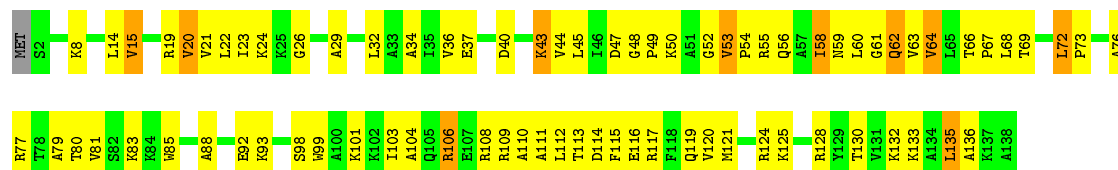






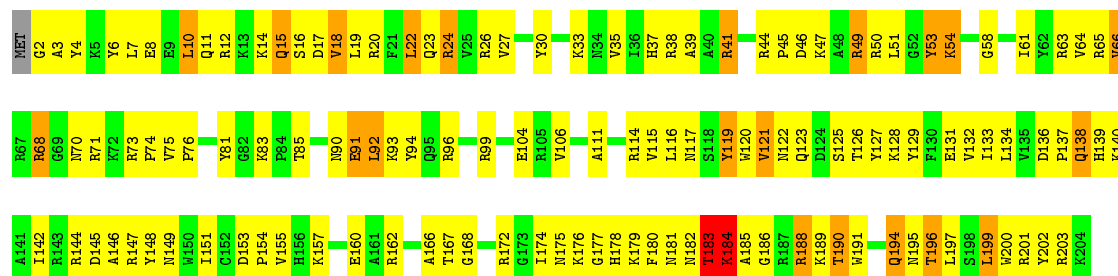
- Molecule 15: 60S ribosomal protein L14-A

Chain M: 43% 49% 7%



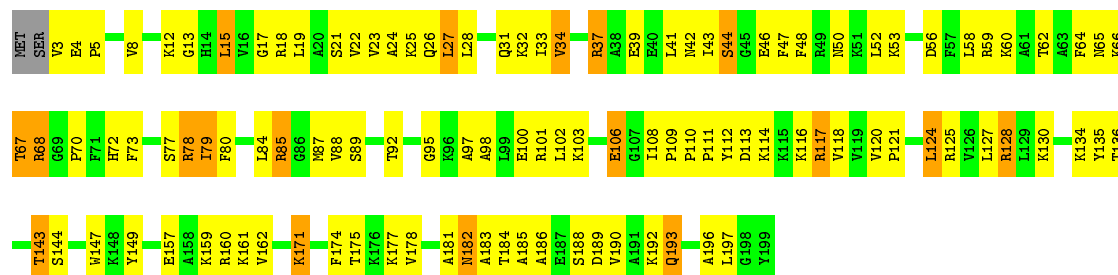
- Molecule 16: 60S ribosomal protein L15-A

Chain N: 36% 52% 10%



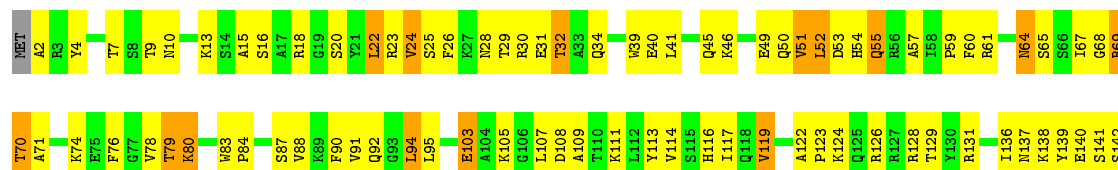
- Molecule 17: 60S ribosomal protein L16-A

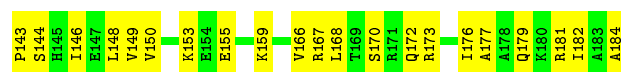
Chain O: 43% 47% 9%



- Molecule 18: 60S ribosomal protein L17-A

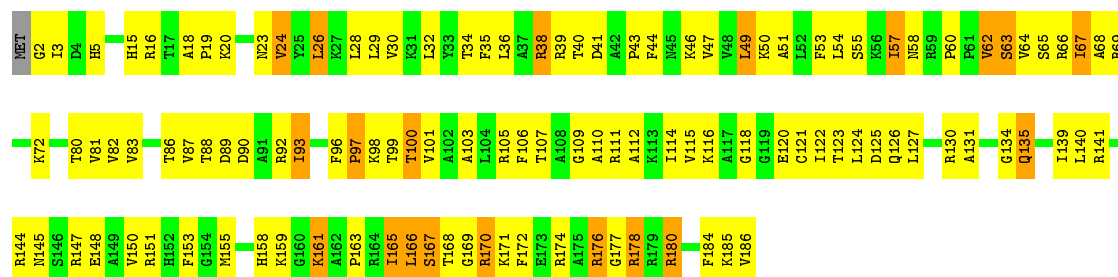
Chain P: 43% 49% 8%





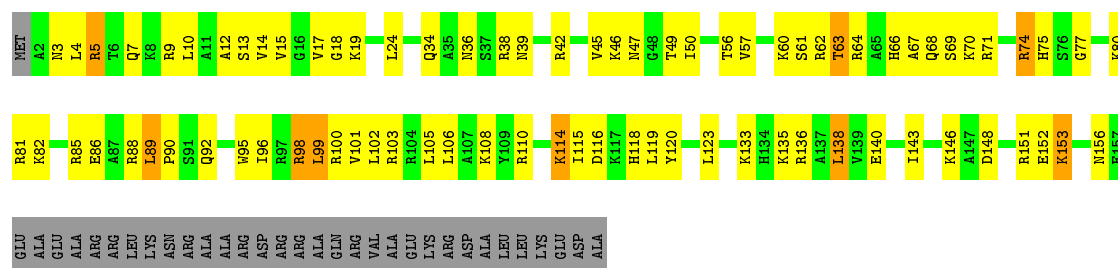
• Molecule 19: 60S ribosomal protein L18-A

Chain Q: 37% 52% 11%



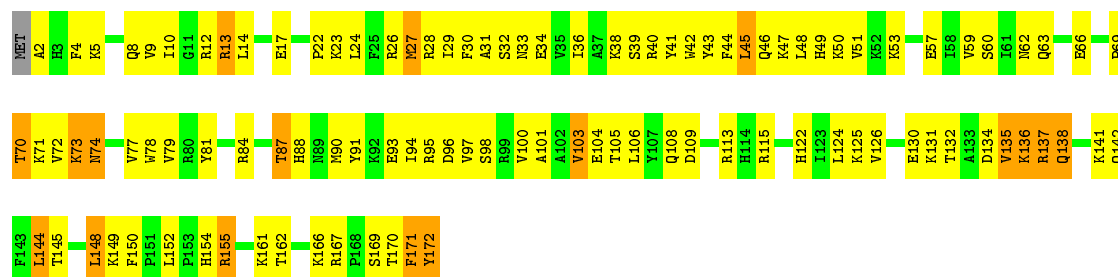
• Molecule 20: 60S ribosomal protein L19-A

Chain R: 40% 38% 5% 17%



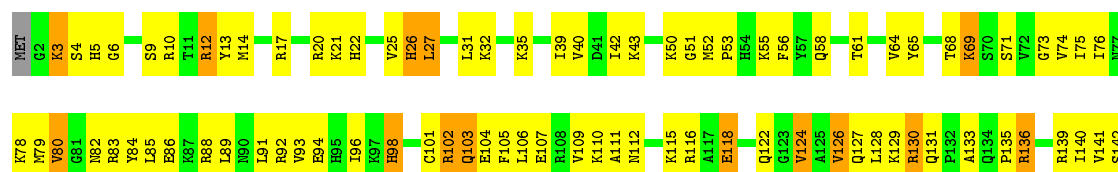
• Molecule 21: 60S ribosomal protein L20-A

Chain S: 38% 51% 10%



• Molecule 22: 60S ribosomal protein L21-A

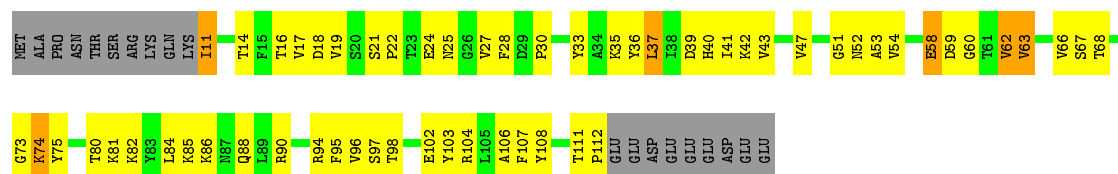
Chain T: 41% 49% 9%





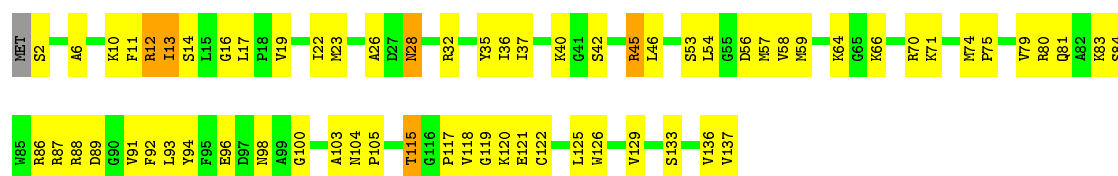
• Molecule 23: 60S ribosomal protein L22-A

Chain U: 36% 44% 5% 16%



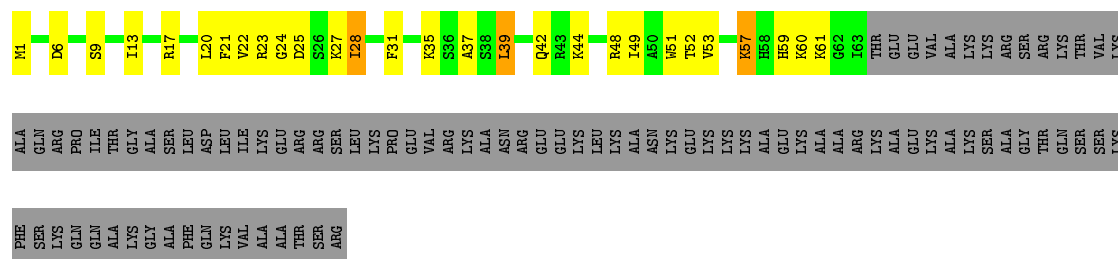
• Molecule 24: 60S ribosomal protein L23-A

Chain V: 51% 45% . .



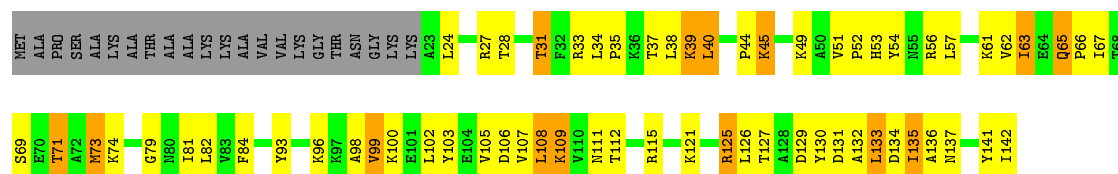
• Molecule 25: 60S ribosomal protein L24-A

Chain W: 23% 16% . 59%



• Molecule 26: 60S ribosomal protein L25

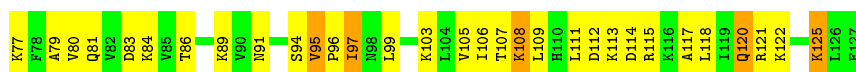
Chain X: 39% 35% 10% 15%



• Molecule 27: 60S ribosomal protein L26-A

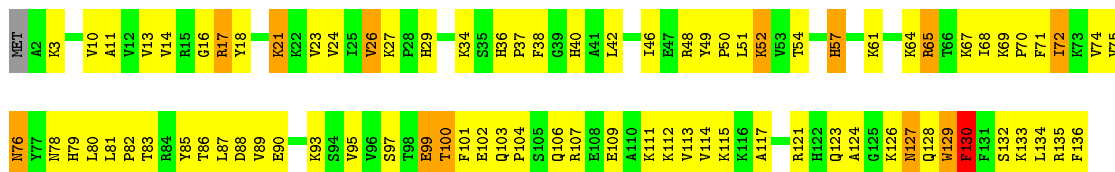
Chain Y: 43% 46% 10% .





- Molecule 28: 60S ribosomal protein L27-A

Chain Z: 38% 51% 9% ..



- Molecule 29: 60S ribosomal protein L28

Chain a: 89% 11% .



- Molecule 30: 60S ribosomal protein L29

Chain b: 85% 14% .



- Molecule 31: 60S ribosomal protein L30

Chain c: 83% 12% 5%



- Molecule 32: 60S ribosomal protein L31-A

Chain d: 84% 12% .



- Molecule 33: 60S ribosomal protein L32

Chain e: 88% 12% .

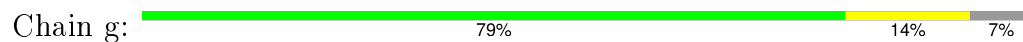


- Molecule 34: 60S ribosomal protein L33-A

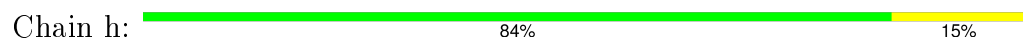
Chain f: 92% 7% .



- Molecule 35: 60S ribosomal protein L34-A



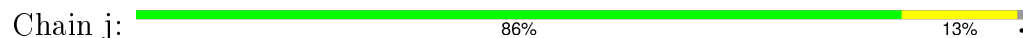
- Molecule 36: 60S ribosomal protein L35-A



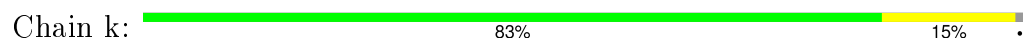
- Molecule 37: 60S ribosomal protein L36-A



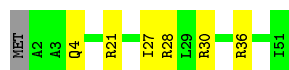
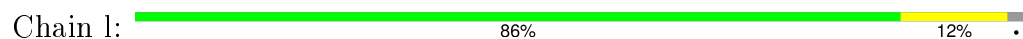
- Molecule 38: 60S ribosomal protein L37-A



- Molecule 39: 60S ribosomal protein L38

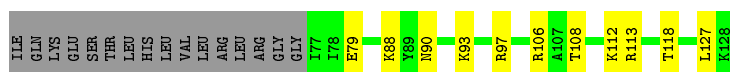


- Molecule 40: 60S ribosomal protein L39



- Molecule 41: Ubiquitin-60S ribosomal protein L40





- Molecule 42: 60S ribosomal protein L42-A

Chain o: 88% 11%



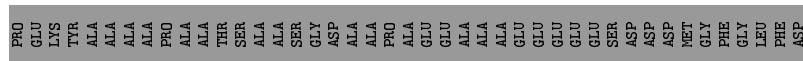
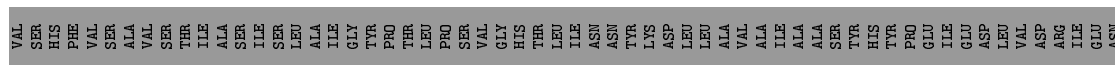
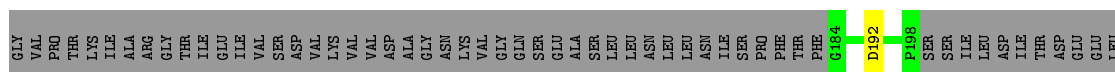
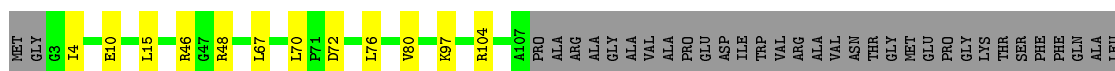
- Molecule 43: 60S ribosomal protein L43-A

Chain p: 93% 5%



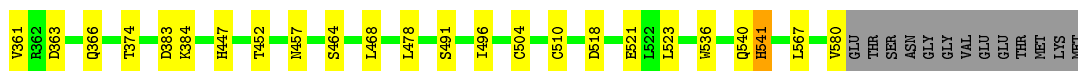
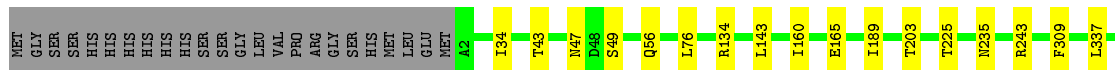
- Molecule 44: 60S acidic ribosomal protein P0

Chain q: 34% 62%



- Molecule 45: Probable metalloprotease ARX1

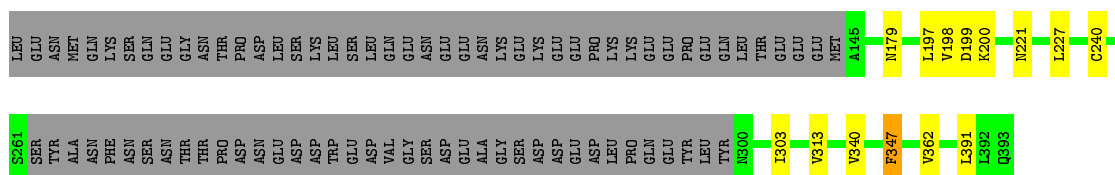
Chain x: 87% 6% 6%



- Molecule 46: Cytoplasmic 60S subunit biogenesis factor REI1

Chain y: 48% 49%





- Molecule 47: ALB1

Chain z:  100%

There are no outlier residues recorded for this chain.

4 Experimental information

Property	Value	Source
Reconstruction method	Not provided	Depositor
Imposed symmetry	POINT, Not provided	Depositor
Number of images	Not provided	Depositor
Resolution determination method	Not provided	Depositor
CTF correction method	PER DETECTOR FRAME	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	Not provided	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	59000	Depositor
Image detector	FEI FALCON II	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: Y5P, ZN, P5P, MG

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	$\# Z > 2$	RMSZ	$\# Z > 2$
1	5	0.45	1/74039 (0.0%)	0.94	44/115426 (0.0%)
10	G	0.34	0/1795	0.55	0/2429
11	H	0.34	0/1539	0.50	0/2073
12	I	0.34	0/1758	0.57	0/2358
13	J	0.33	0/1374	0.54	0/1842
14	L	0.35	0/1573	0.59	0/2113
15	M	0.34	0/1074	0.54	0/1446
16	N	0.43	0/1757	0.57	0/2354
17	O	0.37	0/1585	0.52	0/2128
18	P	0.39	0/1465	0.55	0/1968
19	Q	0.35	0/1465	0.56	0/1965
2	7	0.33	0/2883	0.85	0/4491
20	R	0.34	0/1275	0.48	0/1702
21	S	0.37	0/1473	0.54	0/1980
22	T	0.36	0/1300	0.51	0/1743
23	U	0.34	0/825	0.54	0/1120
24	V	0.33	0/1018	0.52	0/1369
25	W	0.36	0/533	0.47	0/707
26	X	0.35	0/974	0.60	0/1314
27	Y	0.33	0/1004	0.52	0/1341
28	Z	0.36	0/1118	0.59	0/1497
29	a	0.38	0/1204	0.57	0/1612
3	8	0.47	0/3746	0.97	1/5832 (0.0%)
30	b	0.33	0/473	0.53	0/629
31	c	0.35	0/775	0.53	0/1040
32	d	0.38	0/897	0.58	0/1205
33	e	0.37	0/1055	0.54	0/1413
34	f	0.39	0/868	0.55	0/1168
35	g	0.35	0/890	0.57	0/1189
36	h	0.37	0/974	0.55	0/1297
37	i	0.33	0/777	0.53	0/1033
38	j	0.39	0/696	0.58	0/923

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >2	RMSZ	# Z >2
39	k	0.35	0/614	0.58	0/822
4	A	0.34	0/1662	0.55	0/2236
40	l	0.37	0/443	0.53	0/588
41	m	0.33	0/423	0.53	0/562
42	o	0.38	0/860	0.59	0/1136
43	p	0.34	0/701	0.53	0/934
44	q	0.55	0/977	0.63	0/1313
45	x	0.37	0/4557	0.57	0/6189
46	y	0.41	0/1759	0.55	0/2363
5	B	0.36	0/3146	0.55	0/4228
6	C	0.37	0/2800	0.58	0/3790
7	D	0.34	0/2408	0.51	0/3248
8	E	0.34	0/1377	0.58	0/1851
9	F	0.36	0/1828	0.54	0/2461
All	All	0.41	1/137737 (0.0%)	0.82	45/202428 (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
13	J	0	1
16	N	0	2
28	Z	0	1
32	d	0	2
35	g	0	1
45	x	0	2
46	y	0	1
6	C	0	2
All	All	0	12

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	5	1394	A	N9-C4	-5.33	1.34	1.37

All (45) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	2307	G	C4-N9-C1'	-8.80	115.06	126.50
1	5	2307	G	C8-N9-C1'	8.09	137.51	127.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	1555	U	N3-C2-O2	-8.00	116.60	122.20
1	5	1812	G	N3-C4-N9	-7.42	121.55	126.00
1	5	2309	A	C8-N9-C4	-6.81	103.08	105.80
3	8	84	C	C6-N1-C2	6.80	123.02	120.30
1	5	2307	G	N3-C4-N9	-6.52	122.09	126.00
1	5	1232	C	O4'-C1'-N1	6.47	113.38	108.20
1	5	1607	U	P-O3'-C3'	6.47	127.46	119.70
1	5	1555	U	P-O3'-C3'	6.36	127.34	119.70
1	5	2193	U	N1-C2-N3	6.29	118.67	114.90
1	5	2313	A	C8-N9-C4	-6.17	103.33	105.80
1	5	2872	A	P-O3'-C3'	6.16	127.09	119.70
1	5	2307	G	C6-C5-N7	6.08	134.04	130.40
1	5	2808	A	O4'-C1'-N9	6.06	113.05	108.20
1	5	175	C	C2-N1-C1'	5.98	125.38	118.80
1	5	2777	G	N3-C4-C5	5.77	131.49	128.60
1	5	2312	A	N1-C6-N6	5.77	122.06	118.60
1	5	1555	U	C6-N1-C2	-5.75	117.55	121.00
1	5	2313	A	N7-C8-N9	5.73	116.66	113.80
1	5	1559	A	P-O3'-C3'	5.66	126.49	119.70
1	5	29	C	C6-N1-C2	5.62	122.55	120.30
1	5	2584	G	C4-N9-C1'	5.60	133.78	126.50
1	5	767	U	O4'-C1'-N1	5.50	112.60	108.20
1	5	1812	G	N3-C4-C5	5.46	131.33	128.60
1	5	1574	C	C2-N1-C1'	5.45	124.80	118.80
1	5	2314	U	O5'-P-OP2	5.45	117.24	110.70
1	5	1631	C	C6-N1-C1'	5.44	127.33	120.80
1	5	2584	G	C8-N9-C1'	-5.43	119.94	127.00
1	5	2278	C	N1-C2-O2	-5.41	115.66	118.90
1	5	760	G	O4'-C1'-N9	5.38	112.50	108.20
1	5	72	C	C6-N1-C2	5.35	122.44	120.30
1	5	2248	C	C6-N1-C2	-5.34	118.17	120.30
1	5	1555	U	N1-C2-O2	5.27	126.49	122.80
1	5	2137	U	C2-N1-C1'	5.26	124.02	117.70
1	5	2584	G	N3-C4-N9	5.19	129.12	126.00
1	5	2307	G	N3-C4-C5	5.17	131.19	128.60
1	5	1496	C	C6-N1-C2	-5.14	118.24	120.30
1	5	2777	G	N3-C4-N9	-5.13	122.92	126.00
1	5	1172	G	N3-C4-C5	-5.10	126.05	128.60
1	5	1872	C	C6-N1-C2	-5.08	118.27	120.30
1	5	175	C	C6-N1-C1'	-5.04	114.75	120.80
1	5	90	C	C6-N1-C2	-5.04	118.28	120.30
1	5	1222	G	O4'-C1'-N9	5.04	112.23	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
1	5	2193	U	N1-C2-O2	-5.03	119.28	122.80

There are no chirality outliers.

All (12) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
6	C	148	ILE	Peptide
6	C	197	ARG	Peptide
13	J	9	MET	Peptide
16	N	183	THR	Peptide
16	N	184	LYS	Peptide
28	Z	101	PHE	Peptide
32	d	6	ASP	Peptide
32	d	82	GLU	Peptide
35	g	80	ARG	Peptide
45	x	518	ASP	Peptide
45	x	541	HIS	Peptide
46	y	347	PHE	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	5	66537	0	33464	2243	0
2	7	2579	0	1303	103	0
3	8	3353	0	1695	131	0
4	A	1630	0	1682	143	0
5	B	3075	0	3142	281	0
6	C	2748	0	2859	266	0
7	D	2359	0	2311	166	0
8	E	1355	0	1413	111	0
9	F	1791	0	1869	148	0
10	G	1763	0	1819	156	0
11	H	1518	0	1587	118	0
12	I	1722	0	1755	134	0
13	J	1353	0	1383	140	0
14	L	1548	0	1613	138	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
15	M	1059	0	1154	84	0
16	N	1720	0	1779	169	0
17	O	1555	0	1659	126	0
18	P	1442	0	1485	117	0
19	Q	1441	0	1543	133	0
20	R	1258	0	1342	93	0
21	S	1437	0	1475	110	0
22	T	1276	0	1323	99	0
23	U	808	0	822	54	0
24	V	1003	0	1048	86	0
25	W	521	0	551	23	0
26	X	959	0	1023	67	0
27	Y	993	0	1081	79	0
28	Z	1092	0	1155	81	0
29	a	1173	0	1215	0	0
30	b	462	0	491	0	0
31	c	767	0	816	0	0
32	d	883	0	918	0	0
33	e	1034	0	1101	0	0
34	f	850	0	880	0	0
35	g	880	0	945	0	0
36	h	965	0	1067	0	0
37	i	770	0	846	0	0
38	j	681	0	683	0	0
39	k	608	0	671	0	0
40	l	436	0	475	0	0
41	m	417	0	455	0	0
42	o	847	0	914	0	0
43	p	694	0	734	0	0
44	q	962	0	989	0	0
45	x	4477	0	4559	0	0
46	y	1724	3	1681	0	0
47	z	510	0	517	0	0
48	5	259	0	0	0	0
48	7	6	0	0	0	0
48	8	7	0	0	0	0
48	B	1	0	0	0	0
48	C	2	0	0	0	0
48	N	1	0	0	0	0
48	P	1	0	0	0	0
48	V	1	0	0	0	0
48	a	2	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
49	j	1	0	0	0	0
49	m	1	0	0	0	0
49	o	1	0	0	0	0
49	p	1	0	0	0	0
49	y	2	0	0	0	0
All	All	129321	3	95292	4990	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 30.

All (4990) 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)
17:O:128:ARG:HG3	17:O:128:ARG:HH11	1.11	1.14
10:G:162:LEU:HD23	16:N:7:LEU:HD11	1.30	1.13
14:L:91:ARG:HH11	14:L:91:ARG:HG3	1.15	1.11
1:5:2158:A:H4'	1:5:2159:U:H5''	1.27	1.11
11:H:87:LYS:HD3	11:H:191:LEU:HD21	1.33	1.09
7:D:277:LEU:HD11	7:D:285:ARG:HH11	1.13	1.09
5:B:221:THR:HG22	5:B:273:HIS:H	1.10	1.08
1:5:1098:A:OP2	22:T:130:ARG:NH1	1.85	1.08
21:S:13:ARG:HG3	21:S:13:ARG:HH11	0.93	1.08
7:D:152:ARG:HG3	7:D:152:ARG:HH11	0.91	1.07
1:5:2227:C:H2'	1:5:2228:A:H5''	1.36	1.07
6:C:148:ILE:HG23	6:C:149:PRO:HD3	1.31	1.07
27:Y:86:THR:HA	27:Y:97:ILE:HD13	1.36	1.07
10:G:98:ARG:HH11	10:G:98:ARG:HG3	1.08	1.06
24:V:32:ARG:HB2	24:V:64:LYS:HB3	1.30	1.06
1:5:247:C:H2'	1:5:248:U:H1'	1.36	1.06
8:E:78:ARG:HG3	8:E:78:ARG:HH11	1.16	1.05
1:5:2640:A:OP2	22:T:10:ARG:NH1	1.89	1.05
1:5:2112:U:H4'	1:5:2113:A:H5'	1.35	1.05
6:C:11:LEU:HD22	6:C:168:ALA:HB1	1.36	1.04
26:X:105:VAL:HG11	26:X:126:LEU:HD13	1.38	1.04
1:5:1764:U:H3'	1:5:1765:U:H2'	1.40	1.04
14:L:71:ALA:HB2	14:L:147:ILE:HD11	1.41	1.02
1:5:1346:G:H1'	6:C:307:GLN:HE22	1.25	1.01
1:5:1581:C:H41	1:5:2522:G:H4'	1.25	1.01
5:B:188:ILE:H	5:B:188:ILE:HD12	1.26	1.01
5:B:58:ARG:HH12	5:B:60:LEU:HA	1.25	1.01
9:F:35:ALA:HA	9:F:38:LYS:HB2	1.41	1.00

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2277:C:H4'	1:5:2317:A:H4'	1.42	1.00
20:R:74:ARG:HE	20:R:74:ARG:HA	1.22	1.00
8:E:8:LYS:NZ	8:E:8:LYS:HA	1.76	0.99
27:Y:60:ARG:HG3	27:Y:60:ARG:HH11	1.26	0.99
20:R:81:ARG:HG2	20:R:88:ARG:HH12	1.23	0.99
18:P:7:THR:HB	18:P:9:THR:HG22	1.42	0.99
7:D:152:ARG:HG3	7:D:152:ARG:NH1	1.70	0.98
1:5:717:C:H2'	1:5:718:G:H5'	1.44	0.98
1:5:1385:C:HO2'	8:E:2:SER:N	1.59	0.98
1:5:2421:U:H2'	1:5:2422:C:H5''	1.46	0.97
10:G:70:LYS:HA	10:G:235:GLY:HA3	1.42	0.97
1:5:2898:G:N7	15:M:125:LYS:NZ	99.83	0.97
1:5:439:C:O2	1:5:494:G:N2	1.98	0.97
14:L:46:ILE:HG22	14:L:49:ARG:HB2	1.45	0.97
5:B:364:LYS:HA	5:B:364:LYS:HE3	1.46	0.97
6:C:299:ILE:HG23	19:Q:39:ARG:HB3	1.48	0.96
13:J:15:GLU:HB3	13:J:130:VAL:HG23	1.46	0.96
1:5:619:A:H5'	1:5:620:U:C5	2.01	0.96
12:I:43:VAL:HG21	12:I:197:VAL:HG23	1.46	0.95
17:O:78:ARG:HG3	17:O:78:ARG:HH11	1.31	0.95
1:5:845:G:N2	1:5:848:A:OP2	1.99	0.95
8:E:18:LEU:H	8:E:18:LEU:HD12	1.31	0.95
21:S:13:ARG:HD3	21:S:51:VAL:HG13	1.47	0.95
13:J:50:ALA:HB2	13:J:65:ILE:HD11	1.45	0.95
16:N:114:ARG:HB2	16:N:151:ILE:HD11	1.46	0.95
1:5:2282:U:O4'	1:5:2960:C:O2'	1.83	0.95
28:Z:10:VAL:HG22	28:Z:24:VAL:HG13	1.49	0.95
11:H:75:VAL:HA	11:H:78:MET:HE2	1.45	0.94
15:M:48:GLY:HA3	15:M:53:VAL:HG13	1.47	0.94
19:Q:34:THR:HG22	19:Q:49:LEU:HD11	1.47	0.94
21:S:13:ARG:NH1	21:S:13:ARG:HG3	1.70	0.94
1:5:269:G:H5''	16:N:14:LYS:NZ	1.82	0.94
15:M:22:LEU:HD12	15:M:23:ILE:H	1.33	0.93
6:C:300:ARG:HH11	6:C:300:ARG:HG2	1.33	0.93
1:5:900:G:H1'	1:5:1589:A:N6	1.84	0.93
1:5:1580:A:H4'	1:5:1581:C:OP2	1.68	0.93
1:5:2276:G:O6	1:5:2311:G:C2	2.22	0.92
9:F:98:LYS:HB3	9:F:99:PRO:HD3	1.50	0.92
16:N:120:TRP:HZ2	16:N:123:GLN:HG2	1.34	0.92
6:C:112:LYS:NZ	16:N:203:ARG:O	2.02	0.92
5:B:56:ILE:HD11	5:B:359:ILE:HG12	1.49	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:148:ILE:HG23	6:C:149:PRO:CD	1.99	0.92
14:L:46:ILE:CG2	14:L:49:ARG:HB2	2.00	0.92
1:5:1567:U:H3'	1:5:1568:U:H5''	1.52	0.92
1:5:253:A:O2'	1:5:254:A:O5'	1.87	0.92
15:M:72:LEU:HD23	15:M:73:PRO:HD2	1.50	0.91
22:T:17:ARG:HH11	22:T:17:ARG:HG2	1.35	0.91
1:5:173:G:H1	1:5:245:U:H3	1.14	0.91
13:J:51:ARG:CG	13:J:51:ARG:HH11	1.83	0.91
16:N:140:LYS:HB3	16:N:144:ARG:NH1	1.85	0.91
1:5:1630:U:OP1	28:Z:67:LYS:NZ	2.02	0.91
1:5:2276:G:N2	1:5:2316:G:O2'	2.02	0.91
11:H:106:LYS:HA	11:H:106:LYS:HE3	1.52	0.91
1:5:2511:A:H2'	1:5:2512:C:H5'	1.53	0.91
1:5:247:C:H2'	1:5:248:U:C1'	2.00	0.91
1:5:1575:A:H3'	1:5:1576:G:H5''	1.53	0.91
1:5:2875:U:H3	1:5:2952:G:H1	1.13	0.90
1:5:2915:U:C5	5:B:7:GLU:HG2	2.04	0.90
1:5:58:G:OP1	16:N:157:LYS:NZ	2.04	0.90
6:C:206:LEU:HB2	6:C:246:ARG:HD3	1.52	0.90
1:5:2437:G:H2'	1:5:2438:A:H5''	1.52	0.90
16:N:58:GLY:HA3	16:N:142:ILE:HD11	1.53	0.90
1:5:781:G:OP1	19:Q:151:ARG:NH1	2.02	0.90
20:R:9:ARG:HA	20:R:19:LYS:HE2	1.51	0.90
1:5:1555:U:O2'	1:5:1556:C:H5'	1.70	0.90
1:5:1346:G:H1'	6:C:307:GLN:NE2	1.85	0.90
1:5:541:U:H2'	1:5:542:G:H8	1.35	0.90
1:5:1133:A:H2'	1:5:1134:G:H5'	1.52	0.90
1:5:2675:C:H42	13:J:22:SER:HB2	1.37	0.90
21:S:71:LYS:O	21:S:73:LYS:NZ	2.04	0.90
21:S:13:ARG:CG	21:S:13:ARG:HH11	1.84	0.90
1:5:1064:A:H4'	1:5:1065:A:O5'	1.69	0.90
12:I:156:ARG:HG2	12:I:163:GLN:HG3	1.54	0.90
1:5:1129:A:OP1	12:I:13:LYS:NZ	2.04	0.90
6:C:150:LEU:HD13	6:C:249:ILE:HG12	1.54	0.89
8:E:46:ARG:HH11	8:E:46:ARG:CG	1.85	0.89
12:I:4:ARG:HH21	12:I:99:ILE:HG22	1.36	0.89
1:5:1671:C:H5''	20:R:60:LYS:NZ	1.88	0.89
17:O:27:LEU:HD11	17:O:102:LEU:HB2	1.52	0.89
9:F:47:ARG:HH11	9:F:179:LEU:HD21	1.38	0.89
1:5:2751:G:OP1	22:T:50:LYS:NZ	2.05	0.89
1:5:3317:U:H4'	1:5:3318:G:O5'	1.71	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:326:U:OP1	14:L:31:LYS:NZ	2.06	0.89
1:5:316:U:O2'	12:I:30:LYS:NZ	121.53	0.88
20:R:114:LYS:O	20:R:146:LYS:NZ	2.06	0.88
1:5:3287:U:H2'	1:5:3288:G:H5'	1.55	0.88
11:H:87:LYS:NZ	11:H:191:LEU:HD11	1.88	0.88
10:G:98:ARG:HH11	10:G:98:ARG:CG	1.87	0.88
15:M:88:ALA:O	15:M:93:LYS:NZ	2.07	0.88
16:N:114:ARG:HG3	16:N:114:ARG:HH11	1.39	0.88
1:5:1049:C:H2'	1:5:1050:U:H6	1.38	0.88
1:5:2248:C:O2'	1:5:2249:G:OP2	1.89	0.88
11:H:166:ARG:HD2	11:H:168:ARG:HH12	1.35	0.88
1:5:2745:G:N2	1:5:2748:A:OP2	2.05	0.88
14:L:21:ARG:HH11	14:L:21:ARG:HG3	1.39	0.88
8:E:152:THR:HG21	8:E:155:LEU:HD12	1.52	0.87
1:5:2684:C:OP1	13:J:16:LYS:NZ	2.06	0.87
27:Y:109:LEU:HD22	27:Y:115:ARG:NH1	1.90	0.87
20:R:115:ILE:HG22	20:R:146:LYS:NZ	1.89	0.87
1:5:2270:A:H2'	1:5:2271:A:C8	2.09	0.87
20:R:81:ARG:CG	20:R:88:ARG:HH12	1.88	0.87
1:5:1654:A:H2'	1:5:1655:G:H5'	1.55	0.87
1:5:3207:U:H3'	1:5:3209:A:H2	1.38	0.87
18:P:41:LEU:HD21	18:P:95:LEU:HD22	1.56	0.87
1:5:2307:G:H4'	1:5:2308:C:OP2	1.73	0.86
1:5:1819:U:O2'	1:5:1820:U:OP1	1.91	0.86
1:5:2392:C:O2'	5:B:266:ARG:NH2	2.09	0.86
1:5:1493:G:O6	14:L:2:ALA:N	68.43	0.86
9:F:131:GLU:HB3	9:F:132:PRO:HD3	1.57	0.86
1:5:3289:G:H2'	1:5:3290:G:H8	1.39	0.86
11:H:84:LYS:HA	11:H:188:THR:HB	1.55	0.86
8:E:46:ARG:HG3	8:E:46:ARG:HH11	1.40	0.86
7:D:277:LEU:HD11	7:D:285:ARG:NH1	1.89	0.86
19:Q:62:VAL:HG21	19:Q:83:VAL:HG21	1.56	0.86
27:Y:60:ARG:CG	27:Y:60:ARG:HH11	1.88	0.86
15:M:55:ARG:NH2	15:M:76:ALA:O	2.08	0.86
5:B:214:MET:HE3	5:B:279:ASN:HA	1.57	0.85
10:G:24:ASN:HB2	10:G:25:PRO:HD3	1.58	0.85
1:5:44:U:H5''	16:N:85:THR:CG2	2.06	0.85
1:5:953:G:N2	1:5:1115:G:OP1	2.08	0.85
4:A:135:ILE:HD12	4:A:149:ARG:HG2	1.58	0.85
1:5:3291:G:H2'	1:5:3292:A:C8	2.12	0.85
1:5:717:C:C2'	1:5:718:G:H5'	2.05	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:M:55:ARG:HD3	21:S:70:THR:HB	1.58	0.85
1:5:939:U:H2'	1:5:940:G:H8	1.40	0.85
1:5:3291:G:H2'	1:5:3292:A:H8	1.39	0.85
13:J:94:ARG:O	13:J:96:PHE:N	2.09	0.85
21:S:8:GLN:HG3	21:S:26:ARG:HE	1.41	0.85
4:A:204:MET:HB3	4:A:208:ASP:HB2	1.59	0.85
14:L:91:ARG:HG3	14:L:91:ARG:NH1	1.91	0.84
1:5:268:A:H5''	16:N:47:LYS:NZ	1.90	0.84
5:B:183:LEU:O	5:B:191:LYS:NZ	2.09	0.84
1:5:1133:A:C2'	1:5:1134:G:H5'	2.06	0.84
1:5:3110:C:H2'	1:5:3111:U:C6	2.11	0.84
1:5:269:G:H5''	16:N:14:LYS:HZ1	1.40	0.84
1:5:2572:C:O2'	1:5:2573:G:OP2	1.93	0.84
5:B:148:LEU:HD21	5:B:196:ARG:HD3	1.58	0.84
15:M:106:ARG:NH1	15:M:106:ARG:HB2	5.52	0.84
1:5:1240:A:H2	1:5:1248:C:H41	1.26	0.84
1:5:2536:A:H2'	1:5:2537:U:O4'	1.78	0.84
1:5:2144:A:H1'	1:5:2281:A:H61	1.41	0.84
1:5:591:G:C2	8:E:18:LEU:HB3	2.12	0.84
9:F:103:LEU:HG	9:F:130:ILE:HD11	1.60	0.84
13:J:92:ARG:CG	13:J:92:ARG:HH11	1.89	0.84
1:5:2434:U:H4'	1:5:2435:G:O5'	1.76	0.84
2:7:44:C:OP2	13:J:137:ARG:NH2	2.10	0.84
1:5:1671:C:H5''	20:R:60:LYS:HZ3	1.43	0.84
13:J:92:ARG:HG2	13:J:92:ARG:HH11	1.42	0.84
1:5:1495:U:H2'	1:5:1842:A:C2	2.13	0.84
16:N:73:ARG:HB2	16:N:92:LEU:HD23	1.60	0.84
1:5:1201:C:H42	1:5:2857:C:H5''	1.42	0.84
1:5:1238:C:O2'	1:5:1239:C:OP1	1.95	0.83
24:V:45:ARG:CG	24:V:45:ARG:HH11	1.91	0.83
12:I:149:VAL:HG13	12:I:165:ILE:HG21	1.58	0.83
26:X:131:ASP:HB3	26:X:134:ASP:HB2	1.59	0.83
1:5:2144:A:H1'	1:5:2281:A:N6	1.93	0.83
6:C:74:ILE:HD12	6:C:75:PRO:HD2	1.59	0.83
27:Y:81:GLN:HG2	27:Y:96:PRO:HB2	1.59	0.83
1:5:249:U:H3'	1:5:249:U:OP2	1.78	0.83
1:5:1761:C:H1'	1:5:1765:U:H5	1.42	0.83
1:5:273:A:H2'	1:5:274:G:C8	2.13	0.83
17:O:128:ARG:HG3	17:O:128:ARG:NH1	1.88	0.83
5:B:221:THR:HG22	5:B:273:HIS:N	1.94	0.82
5:B:232:ARG:NH1	5:B:269:GLN:O	2.11	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:P:30:ARG:HA	18:P:119:VAL:HG11	1.61	0.82
12:I:36:LEU:HD11	12:I:69:ARG:HG2	1.61	0.82
1:5:1208:U:H6	1:5:3115:C:H42	1.23	0.82
11:H:111:PHE:HD1	11:H:127:PRO:HA	1.44	0.82
1:5:2227:C:C2'	1:5:2228:A:H5''	2.09	0.82
1:5:3272:C:OP2	8:E:78:ARG:NH1	2.11	0.82
19:Q:122:ILE:CG2	19:Q:126:GLN:HB2	2.08	0.82
18:P:64:ASN:O	18:P:67:ILE:HG12	1.79	0.82
1:5:63:A:OP1	16:N:172:ARG:NH2	2.12	0.82
6:C:136:LEU:HD23	6:C:142:VAL:HG23	1.60	0.82
1:5:3195:U:H1'	1:5:3196:U:OP1	1.79	0.82
1:5:1348:U:OP2	19:Q:38:ARG:NH2	2.13	0.82
5:B:211:GLN:NE2	5:B:284:ARG:HA	1.94	0.82
1:5:2809:C:H1'	1:5:2810:C:C5	2.14	0.82
8:E:8:LYS:HZ2	8:E:8:LYS:HA	1.45	0.82
19:Q:100:THR:HG22	19:Q:120:GLU:HB3	1.62	0.82
1:5:2674:A:H5''	13:J:105:GLY:HA3	1.59	0.82
1:5:860:G:OP2	4:A:181:LYS:NZ	2.12	0.82
1:5:2107:A:O2'	1:5:3344:A:O2'	1.97	0.81
1:5:2582:C:O2'	1:5:2583:C:H5'	1.80	0.81
7:D:152:ARG:HH11	7:D:152:ARG:CG	1.84	0.81
5:B:58:ARG:NH2	5:B:60:LEU:HD12	1.95	0.81
1:5:1290:A:H2'	1:5:1291:A:C8	2.15	0.81
1:5:1874:A:H5''	20:R:18:GLY:HA3	1.62	0.81
1:5:1614:C:H2'	1:5:1615:C:H6	1.45	0.81
10:G:94:PHE:HB3	10:G:189:LEU:HD21	1.61	0.81
10:G:98:ARG:HG3	10:G:98:ARG:NH1	1.79	0.81
1:5:2776:C:H5''	1:5:2777:G:H5'	1.60	0.81
1:5:3227:A:O2'	15:M:133:LYS:NZ	2.12	0.81
14:L:188:ARG:NH1	14:L:189:GLU:OE2	2.13	0.81
10:G:217:THR:O	10:G:221:ASN:ND2	2.14	0.81
27:Y:3:LYS:HD2	27:Y:8:VAL:HG23	1.63	0.81
19:Q:63:SER:HG	19:Q:65:SER:HG	1.29	0.81
7:D:52:VAL:HG13	7:D:54:ARG:NH1	1.96	0.81
27:Y:35:LEU:CD2	27:Y:106:ILE:HD12	2.11	0.81
16:N:121:VAL:HG11	16:N:131:GLU:HG3	1.63	0.81
28:Z:109:GLU:HA	28:Z:112:LYS:HD2	1.61	0.81
27:Y:5:SER:HB3	27:Y:8:VAL:HG22	1.62	0.81
4:A:70:ARG:HD2	4:A:72:ARG:HE	1.46	0.81
8:E:146:ILE:HG23	8:E:150:LYS:HE3	1.63	0.81
1:5:3150:A:H5'	5:B:129:ALA:O	1.80	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:41:GLN:HE21	10:G:44:ARG:HH22	1.29	0.81
4:A:2:GLY:HA2	4:A:207:VAL:HG12	1.63	0.81
1:5:873:C:H5''	1:5:874:U:H4'	1.63	0.81
13:J:85:LYS:NZ	13:J:85:LYS:HB3	1.95	0.81
1:5:1364:C:OP1	9:F:110:ARG:NH2	2.14	0.81
12:I:87:LEU:HD13	12:I:138:VAL:HG22	1.63	0.81
16:N:73:ARG:HG2	16:N:74:PRO:HD2	1.61	0.80
1:5:118:U:O2	1:5:121:A:H5'	1.81	0.80
27:Y:35:LEU:HD22	27:Y:106:ILE:HD12	1.61	0.80
1:5:2537:U:O2	1:5:2543:U:N3	2.14	0.80
6:C:342:LYS:O	6:C:342:LYS:HG3	1.81	0.80
22:T:79:MET:HB2	22:T:84:TYR:CE2	2.16	0.80
22:T:122:GLN:HB2	22:T:124:VAL:CG2	2.10	0.80
1:5:537:A:N6	1:5:554:A:O2'	2.14	0.80
1:5:2537:U:O2'	1:5:2538:U:O4'	1.98	0.80
17:O:24:ALA:O	17:O:28:LEU:HD12	1.82	0.80
1:5:1575:A:H2'	1:5:1576:G:C8	2.15	0.80
1:5:3163:A:O2'	1:5:3164:C:H5'	1.80	0.80
5:B:296:THR:HG22	5:B:298:PHE:H	1.45	0.80
1:5:619:A:H5'	1:5:620:U:C6	2.17	0.80
2:7:7:G:OP1	7:D:33:ARG:NH1	2.14	0.80
5:B:106:TRP:HB2	5:B:133:TYR:CE2	2.17	0.80
5:B:41:VAL:HA	5:B:185:GLY:HA3	1.63	0.80
1:5:44:U:H5''	16:N:85:THR:HG21	1.64	0.80
15:M:19:ARG:HA	15:M:69:THR:HG22	1.62	0.80
27:Y:57:LEU:HD23	27:Y:67:GLU:HG2	1.65	0.79
1:5:2341:A:OP2	5:B:247:ARG:NH2	2.15	0.79
4:A:126:LEU:HD13	4:A:150:LEU:CD2	2.12	0.79
27:Y:3:LYS:NZ	27:Y:5:SER:O	2.14	0.79
1:5:1397:C:C2'	1:5:1398:U:H5'	2.11	0.79
1:5:2137:U:OP2	1:5:2142:A:N6	2.15	0.79
12:I:76:MET:CE	12:I:148:VAL:HA	2.13	0.79
1:5:1048:A:H2'	12:I:22:TYR:CZ	2.17	0.79
6:C:30:ILE:HG22	6:C:32:PRO:HD3	1.63	0.79
12:I:26:VAL:HB	12:I:27:PRO:HD2	1.65	0.79
5:B:115:LYS:HE2	5:B:129:ALA:HB3	1.63	0.79
1:5:3206:C:H2'	15:M:99:TRP:CZ2	2.18	0.79
7:D:5:LYS:HA	7:D:5:LYS:HE3	1.65	0.79
9:F:169:ILE:HD13	9:F:184:LEU:HD12	1.64	0.79
1:5:13:A:H4'	26:X:39:LYS:HG3	1.65	0.79
4:A:126:LEU:HD13	4:A:150:LEU:HD21	1.65	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:N:172:ARG:HB3	16:N:174:ILE:HD13	1.64	0.79
15:M:22:LEU:HD12	15:M:23:ILE:N	1.97	0.79
5:B:14:LEU:HA	5:B:17:LEU:HD22	1.65	0.79
1:5:3195:U:O2'	1:5:3196:U:H5'	1.83	0.79
1:5:501:A:H2'	1:5:502:U:C6	2.18	0.79
1:5:109:A:H4'	1:5:110:G:OP1	1.82	0.79
1:5:1284:C:O2'	1:5:1285:G:OP1	2.00	0.79
12:I:76:MET:HE1	12:I:148:VAL:HA	1.65	0.79
16:N:197:LEU:HG	16:N:199:LEU:HD21	1.65	0.79
1:5:3279:A:O2'	1:5:3280:U:H5'	1.82	0.79
3:8:80:A:C2'	3:8:81:U:H5'	2.13	0.79
1:5:900:G:H1'	1:5:1589:A:H62	1.48	0.78
13:J:92:ARG:NH2	13:J:94:ARG:HD2	1.97	0.78
1:5:3068:U:OP2	20:R:62:ARG:NH2	2.15	0.78
6:C:299:ILE:CG2	19:Q:39:ARG:HD2	2.14	0.78
13:J:94:ARG:HG2	13:J:94:ARG:HH11	1.45	0.78
1:5:1236:G:N2	1:5:1244:A:OP1	2.15	0.78
1:5:3115:C:O2	1:5:3117:C:N4	2.16	0.78
1:5:88:A:OP2	19:Q:171:LYS:NZ	2.13	0.78
1:5:1176:C:H2'	1:5:1177:G:H21	1.49	0.78
1:5:3358:U:H2'	1:5:3359:A:H8	1.45	0.78
8:E:56:LYS:HB3	8:E:98:VAL:HG11	1.66	0.78
19:Q:18:ALA:HA	19:Q:53:PHE:CE1	2.18	0.78
12:I:36:LEU:HD12	12:I:87:LEU:HD23	1.65	0.78
7:D:277:LEU:CD1	7:D:285:ARG:HH11	1.92	0.78
3:8:156:U:O2'	3:8:157:U:OP1	2.00	0.78
6:C:204:GLY:O	6:C:246:ARG:NH1	2.17	0.78
1:5:1323:G:C2'	1:5:1324:U:H5'	2.13	0.78
17:O:128:ARG:HH11	17:O:128:ARG:CG	1.95	0.78
1:5:720:A:C2	1:5:784:A:H5'	2.19	0.78
1:5:1539:A:H2'	1:5:1540:U:H5'	1.66	0.78
21:S:23:LYS:HA	22:T:146:ASN:HD21	1.48	0.78
1:5:2276:G:O6	1:5:2311:G:N2	2.17	0.78
1:5:2312:A:O2'	1:5:2315:G:H1'	1.84	0.78
14:L:21:ARG:HG3	14:L:21:ARG:NH1	1.97	0.78
27:Y:37:LYS:HE2	27:Y:37:LYS:H	1.49	0.78
8:E:89:THR:HG21	15:M:115:PHE:HB2	1.64	0.78
1:5:2707:C:H2'	1:5:2708:C:C6	2.19	0.78
1:5:1682:U:O2	23:U:82:LYS:NZ	2.16	0.77
6:C:31:ARG:HG3	6:C:120:TYR:CE1	2.18	0.77
5:B:117:ARG:HH21	5:B:177:HIS:HA	1.49	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:D:182:GLY:CA	7:D:194:LEU:HD23	2.12	0.77
1:5:3261:C:O2'	1:5:3262:U:H5'	1.83	0.77
1:5:1662:G:N2	1:5:1722:U:O4	2.16	0.77
23:U:81:LYS:HG2	23:U:90:ARG:NH1	1.99	0.77
24:V:136:VAL:HG12	24:V:137:VAL:HG23	1.64	0.77
1:5:1386:A:H5''	6:C:141:ARG:HH21	1.49	0.77
1:5:1430:U:H2'	4:A:9:ARG:HH22	66.80	0.77
5:B:205:VAL:HG21	5:B:322:ILE:HD11	1.64	0.77
1:5:2112:U:C4'	1:5:2113:A:H5'	2.14	0.77
16:N:68:ARG:HD3	16:N:128:LYS:HG3	1.67	0.77
1:5:1386:A:H5''	6:C:141:ARG:NH2	1.99	0.77
2:7:86:U:O2'	9:F:218:ARG:NH1	2.17	0.77
13:J:16:LYS:HD3	13:J:72:ARG:NH2	1.99	0.77
1:5:1134:G:O2'	1:5:2642:A:N3	2.18	0.77
1:5:2537:U:O2'	1:5:2538:U:O5'	2.03	0.77
1:5:1290:A:H2'	1:5:1291:A:H8	1.48	0.77
1:5:501:A:H2'	1:5:502:U:H6	1.48	0.77
1:5:1084:A:H2'	1:5:1085:A:C8	2.19	0.77
1:5:541:U:H2'	1:5:542:G:C8	2.19	0.77
9:F:33:ARG:HA	9:F:36:ALA:HB3	1.67	0.77
17:O:12:LYS:O	21:S:167:ARG:NH2	2.18	0.77
17:O:27:LEU:O	17:O:101:ARG:NH1	2.17	0.77
1:5:2150:G:C2'	1:5:2151:C:H5'	2.15	0.77
1:5:1226:G:H2'	1:5:1227:C:C6	2.18	0.77
3:8:70:G:H5''	27:Y:28:ARG:NH2	1.99	0.77
6:C:300:ARG:HH11	6:C:300:ARG:CG	1.98	0.77
1:5:75:G:H5'	14:L:58:VAL:CG1	2.15	0.77
20:R:101:VAL:HG12	20:R:102:LEU:HD23	1.64	0.77
1:5:655:C:H2'	1:5:656:A:C8	2.21	0.77
24:V:26:ALA:O	24:V:115:THR:HG22	1.83	0.77
7:D:126:GLU:HB2	7:D:196:ARG:HB2	1.66	0.77
7:D:51:LEU:HB2	7:D:144:VAL:CG1	2.14	0.76
6:C:93:MET:H	6:C:93:MET:HE2	1.49	0.76
6:C:217:LYS:HG3	6:C:220:ARG:NH2	1.99	0.76
1:5:90:C:C2'	1:5:91:G:H5'	2.15	0.76
1:5:2421:U:C2'	1:5:2422:C:H5''	2.14	0.76
5:B:58:ARG:NH1	5:B:60:LEU:HA	2.00	0.76
1:5:3106:A:H2'	1:5:3107:U:H5'	1.67	0.76
1:5:769:G:O2'	1:5:770:G:H5'	1.84	0.76
10:G:150:LEU:HD22	10:G:151:VAL:H	1.49	0.76
1:5:2981:U:OP2	5:B:244:ARG:NH2	2.14	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:227:GLU:HG3	5:B:270:ARG:HB3	1.65	0.76
11:H:57:VAL:HG23	11:H:68:LEU:HG	1.68	0.76
9:F:132:PRO:HA	9:F:229:PHE:CD1	2.20	0.76
1:5:2778:G:H2'	1:5:2779:A:H5'	1.67	0.76
10:G:140:VAL:HG21	16:N:3:ALA:HB2	1.67	0.76
2:7:110:G:O2'	2:7:111:U:H5'	1.85	0.76
2:7:88:G:C2'	2:7:89:G:H5'	2.14	0.76
1:5:2712:U:O2'	1:5:2743:A:O2'	2.03	0.76
1:5:1125:U:OP1	12:I:15:LYS:NZ	2.16	0.76
14:L:36:ARG:HH11	14:L:36:ARG:HA	4.76	0.76
24:V:45:ARG:HG2	24:V:45:ARG:HH11	1.51	0.76
1:5:90:C:H2'	1:5:91:G:H5'	1.67	0.76
1:5:3271:G:O6	8:E:128:LYS:NZ	2.19	0.76
12:I:26:VAL:HG12	12:I:122:PRO:HG2	1.67	0.76
1:5:2198:A:C8	1:5:2270:A:H1'	2.19	0.76
24:V:10:LYS:NZ	24:V:56:ASP:OD1	2.18	0.76
15:M:24:LYS:NZ	15:M:61:GLY:O	2.19	0.76
19:Q:64:VAL:HG23	19:Q:67:ILE:HD12	1.68	0.76
18:P:131:ARG:NH1	18:P:137:ASN:OD1	2.19	0.76
1:5:2568:C:O2'	1:5:2569:A:O5'	2.04	0.76
1:5:2511:A:C2'	1:5:2512:C:H5'	2.16	0.76
2:7:48:U:C2'	2:7:49:G:H5'	2.16	0.76
28:Z:10:VAL:HG13	28:Z:23:VAL:O	1.86	0.76
10:G:67:ILE:O	10:G:235:GLY:HA2	1.85	0.76
1:5:173:G:N2	1:5:245:U:O2	2.14	0.76
1:5:1245:A:N7	1:5:1271:A:O2'	2.18	0.76
1:5:2736:A:OP1	22:T:92:ARG:NH1	2.19	0.76
1:5:1621:A:H2'	1:5:1622:U:C6	2.21	0.76
1:5:2796:G:H3'	17:O:60:LYS:NZ	71.54	0.75
1:5:3067:C:OP2	20:R:62:ARG:NH1	2.20	0.75
7:D:259:LYS:HD3	7:D:259:LYS:H	1.51	0.75
26:X:137:ASN:HB3	26:X:142:ILE:HD12	1.68	0.75
26:X:34:LEU:HD12	26:X:35:PRO:HD2	1.65	0.75
1:5:2304:C:H2'	1:5:2305:G:H5'	1.67	0.75
5:B:56:ILE:HD12	5:B:359:ILE:HA	1.68	0.75
1:5:1654:A:C2'	1:5:1655:G:H5'	2.17	0.75
27:Y:57:LEU:HD23	27:Y:67:GLU:CG	2.16	0.75
13:J:92:ARG:HB3	13:J:92:ARG:HH11	1.52	0.75
1:5:2150:G:H2'	1:5:2151:C:H5'	1.67	0.75
21:S:131:LYS:O	21:S:134:ASP:HB2	1.87	0.75
1:5:1388:U:O4	6:C:186:LYS:NZ	2.20	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:915:A:C2'	1:5:916:G:H5'	2.15	0.75
1:5:2112:U:H4'	1:5:2113:A:C5'	2.16	0.75
24:V:79:VAL:HB	24:V:118:VAL:HG13	1.67	0.75
1:5:248:U:H3'	1:5:249:U:H5'	1.69	0.75
20:R:74:ARG:NE	20:R:74:ARG:HA	2.00	0.75
6:C:31:ARG:HG3	6:C:120:TYR:HE1	1.49	0.75
1:5:1863:G:N1	1:5:1866:C:OP2	2.19	0.75
22:T:14:MET:HE1	22:T:55:LYS:HB2	1.66	0.75
1:5:307:A:H2'	1:5:308:A:C8	2.20	0.75
1:5:1392:G:H1'	1:5:1417:G:N2	2.02	0.75
1:5:2609:A:H2'	1:5:2610:G:H5''	1.66	0.75
1:5:3269:U:H1'	8:E:128:LYS:HD2	1.68	0.75
8:E:139:LYS:O	8:E:143:LYS:HG3	1.86	0.75
9:F:47:ARG:HH11	9:F:179:LEU:CD2	2.00	0.75
3:8:80:A:H2'	3:8:81:U:H5'	1.69	0.75
22:T:39:ILE:HG13	22:T:102:ARG:HD2	1.69	0.75
5:B:115:LYS:CE	5:B:129:ALA:HB3	2.16	0.75
1:5:3354:U:H4'	1:5:3355:U:H5''	1.68	0.75
3:8:157:U:O2'	3:8:158:U:H5'	1.86	0.74
13:J:50:ALA:HB2	13:J:65:ILE:CD1	2.15	0.74
8:E:152:THR:CG2	8:E:155:LEU:HD12	2.16	0.74
4:A:204:MET:HB3	4:A:208:ASP:CB	2.16	0.74
5:B:44:THR:HA	5:B:340:LYS:HD3	1.68	0.74
1:5:594:U:H5''	1:5:609:G:O6	1.87	0.74
1:5:1323:G:H2'	1:5:1324:U:H5'	1.69	0.74
17:O:58:LEU:HA	17:O:72:HIS:CE1	2.22	0.74
1:5:1284:C:O2'	1:5:1285:G:H5'	1.86	0.74
1:5:3393:U:H2'	1:5:3394:U:C6	2.22	0.74
1:5:3383:G:H2'	1:5:3384:U:H6	1.53	0.74
13:J:98:ALA:HA	13:J:156:LYS:HB2	1.69	0.74
1:5:924:G:H3'	1:5:925:A:H5'	1.69	0.74
4:A:79:ASN:ND2	4:A:166:ILE:O	2.21	0.74
13:J:82:ARG:HD2	13:J:112:LEU:HB2	1.68	0.74
14:L:85:LEU:H	14:L:85:LEU:HD23	1.53	0.74
1:5:640:U:OP1	4:A:21:ARG:NH2	81.19	0.74
1:5:103:G:OP1	14:L:70:ARG:NH2	2.21	0.74
4:A:3:ARG:HG2	4:A:4:VAL:H	1.51	0.74
4:A:3:ARG:HG2	4:A:4:VAL:N	2.03	0.74
2:7:91:G:H2'	2:7:92:A:H8	1.51	0.74
2:7:68:C:H5''	22:T:20:ARG:HH12	1.51	0.74
1:5:784:A:H2'	19:Q:69:ARG:HH21	1.52	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:E:56:LYS:NZ	8:E:101:PHE:O	2.20	0.74
1:5:1110:U:H2'	1:5:1111:U:C6	2.22	0.74
1:5:514:G:N2	6:C:340:GLY:O	2.19	0.74
1:5:2945:G:O2'	1:5:2948:C:OP2	2.06	0.74
19:Q:23:ASN:ND2	19:Q:26:LEU:HB2	2.02	0.74
26:X:100:LYS:NZ	26:X:106:ASP:HA	2.02	0.74
10:G:50:VAL:HG22	10:G:52:TRP:NE1	2.02	0.74
11:H:106:LYS:HE3	11:H:106:LYS:CA	2.17	0.74
1:5:1786:G:H2'	1:5:1787:A:C8	2.23	0.74
23:U:80:THR:HG21	23:U:95:PHE:CD1	2.22	0.74
4:A:36:GLU:OE1	4:A:163:ARG:NH1	2.19	0.74
1:5:385:A:H2'	1:5:386:A:C8	2.23	0.74
1:5:3344:A:H5''	1:5:3345:G:OP2	1.88	0.74
22:T:17:ARG:NH1	22:T:17:ARG:HG2	2.03	0.74
7:D:29:ASP:HB2	7:D:150:LEU:HD21	1.70	0.74
1:5:2366:C:H5'	5:B:259:HIS:CE1	2.23	0.74
27:Y:36:SER:HB2	27:Y:37:LYS:HE2	1.67	0.73
14:L:76:THR:HG22	14:L:101:ARG:NH1	2.03	0.73
1:5:46:U:O4	16:N:83:LYS:NZ	2.18	0.73
6:C:329:PRO:O	6:C:330:TYR:HB3	1.88	0.73
9:F:112:ASN:O	9:F:207:LEU:HB2	1.89	0.73
1:5:3369:G:OP2	25:W:61:LYS:HD2	1.88	0.73
1:5:1679:A:OP1	23:U:94:ARG:NH1	2.22	0.73
1:5:1359:C:H2'	1:5:1360:C:H6	1.53	0.73
1:5:1818:U:H2'	1:5:1819:U:C6	2.23	0.73
1:5:195:U:H2'	1:5:196:G:O4'	1.88	0.73
1:5:240:U:O2'	1:5:241:G:O5'	2.05	0.73
1:5:2436:U:H4'	10:G:70:LYS:HD2	1.68	0.73
15:M:14:LEU:H	15:M:19:ARG:NH1	1.86	0.73
10:G:130:TYR:HD1	10:G:202:GLU:HB3	1.53	0.73
10:G:130:TYR:CD1	10:G:202:GLU:HB3	2.23	0.73
8:E:51:ARG:NH1	15:M:114:ASP:OD2	2.22	0.73
1:5:996:A:C2	1:5:997:A:H1'	2.24	0.73
1:5:1223:A:OP2	1:5:1285:G:N2	2.22	0.73
1:5:405:U:O2'	1:5:1395:G:N2	2.22	0.73
1:5:1891:A:C2'	1:5:1892:G:H5'	2.18	0.73
15:M:128:ARG:HG2	15:M:132:LYS:HD2	1.70	0.73
1:5:1896:A:H61	1:5:2339:C:H42	1.37	0.73
1:5:3110:C:H2'	1:5:3111:U:H6	1.51	0.73
13:J:92:ARG:HB3	13:J:92:ARG:NH1	2.03	0.73
1:5:2734:A:O2'	1:5:2735:U:H5'	1.89	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:74:ILE:CD1	6:C:75:PRO:HD2	2.18	0.73
1:5:2608:G:H2'	1:5:2609:A:C8	2.24	0.73
1:5:2520:A:H2'	1:5:2521:U:C6	2.24	0.73
1:5:1556:C:H5''	1:5:1556:C:H6	1.54	0.72
4:A:174:ARG:HH11	4:A:174:ARG:HG2	1.54	0.72
1:5:1772:U:H5''	1:5:1773:C:H5'	1.71	0.72
1:5:1204:A:C2'	1:5:1205:A:H5'	2.19	0.72
1:5:3151:U:H5'	1:5:3152:U:OP1	1.90	0.72
20:R:62:ARG:HH11	20:R:62:ARG:HB3	1.54	0.72
6:C:145:ILE:O	6:C:147:GLU:N	2.21	0.72
1:5:685:G:P	14:L:35:ARG:HH12	2.11	0.72
1:5:748:U:O2'	1:5:749:C:H5'	1.88	0.72
11:H:177:ASP:OD1	11:H:177:ASP:N	2.21	0.72
1:5:2836:C:H4'	12:I:157:TYR:CD1	2.24	0.72
7:D:78:ALA:HB3	7:D:105:ILE:HG23	1.71	0.72
1:5:2636:A:H5''	1:5:2637:A:H5''	1.72	0.72
1:5:2204:C:H4'	1:5:2205:U:OP1	1.87	0.72
20:R:115:ILE:HG22	20:R:146:LYS:HZ2	1.55	0.72
14:L:21:ARG:O	16:N:196:THR:HG22	1.89	0.72
1:5:1115:G:H5''	1:5:1116:G:C5'	2.20	0.72
13:J:92:ARG:CB	13:J:92:ARG:HH11	2.01	0.72
24:V:45:ARG:HG2	24:V:45:ARG:NH1	2.02	0.72
1:5:273:A:H2'	1:5:274:G:H8	1.51	0.72
5:B:26:ARG:HG2	5:B:26:ARG:HH11	1.54	0.72
1:5:798:G:O2'	14:L:14:PHE:O	2.08	0.72
1:5:3278:C:H3'	1:5:3279:A:H5'	1.72	0.72
12:I:174:THR:HG23	12:I:175:ASN:H	1.55	0.72
17:O:183:ALA:HA	17:O:186:ALA:HB2	1.72	0.72
1:5:2397:A:C2	1:5:2873:U:H5''	2.25	0.72
8:E:8:LYS:HZ3	8:E:8:LYS:HA	1.54	0.72
7:D:183:TRP:HB2	7:D:190:ILE:HD13	1.70	0.72
23:U:14:THR:HG23	23:U:66:VAL:HG22	1.70	0.72
1:5:100:A:O2'	1:5:101:G:H5'	1.90	0.72
1:5:1761:C:H1'	1:5:1765:U:C5	2.25	0.72
1:5:2530:G:H2'	1:5:2531:C:H5''	1.71	0.72
1:5:2631:U:H2'	1:5:2632:G:H8	1.54	0.72
11:H:103:ILE:HD11	11:H:134:ILE:HD12	1.71	0.72
6:C:71:VAL:HG22	6:C:72:ALA:H	1.55	0.72
2:7:71:G:H2'	2:7:72:A:C8	2.25	0.72
8:E:78:ARG:HG3	8:E:78:ARG:NH1	1.95	0.71
9:F:103:LEU:CG	9:F:130:ILE:HD11	2.20	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:L:36:ARG:HA	14:L:36:ARG:NH1	5.00	0.71
5:B:26:ARG:HG2	5:B:26:ARG:NH1	2.05	0.71
5:B:300:ARG:HA	5:B:300:ARG:HH11	1.55	0.71
1:5:117:U:H3	10:G:147:LYS:NZ	1.88	0.71
1:5:706:A:H2'	1:5:707:U:O4'	1.88	0.71
1:5:1580:A:H61	26:X:33:ARG:HD3	1.54	0.71
1:5:2312:A:HO2'	1:5:2315:G:H1'	1.56	0.71
1:5:1360:C:C2'	1:5:1361:U:H5'	2.19	0.71
2:7:36:C:H5''	7:D:155:THR:HG23	1.72	0.71
5:B:29:VAL:HG21	5:B:337:THR:HG21	1.72	0.71
20:R:62:ARG:HH11	20:R:62:ARG:CB	2.03	0.71
10:G:150:LEU:HD13	10:G:151:VAL:N	2.05	0.71
1:5:2532:U:H2'	1:5:2533:G:C8	2.25	0.71
1:5:1534:A:H62	1:5:1586:G:H2'	1.53	0.71
3:8:155:A:H5'	10:G:185:ARG:HD2	1.71	0.71
1:5:992:A:H5''	22:T:43:LYS:HD2	1.71	0.71
1:5:2101:C:O2'	1:5:2102:U:OP1	2.08	0.71
1:5:2277:C:C4'	1:5:2317:A:H4'	2.19	0.71
5:B:284:ARG:HB3	5:B:323:MET:HB3	1.73	0.71
16:N:153:ASP:CG	16:N:154:PRO:HD2	2.10	0.71
1:5:692:A:OP1	16:N:201:ARG:NH2	2.24	0.71
21:S:33:ASN:OD1	21:S:36:ILE:N	2.19	0.71
28:Z:68:ILE:O	28:Z:115:LYS:HE2	1.91	0.71
13:J:51:ARG:HG3	13:J:51:ARG:HH11	1.55	0.71
10:G:154:ALA:HB1	10:G:183:LYS:HB3	1.73	0.71
1:5:1355:A:H1'	1:5:1356:U:OP2	1.90	0.71
1:5:2509:U:H2'	1:5:2510:U:H5'	1.72	0.71
14:L:47:ALA:HB1	14:L:48:PRO:HD2	1.71	0.71
3:8:105:A:H4'	3:8:106:C:OP1	1.90	0.71
1:5:3358:U:H2'	1:5:3359:A:C8	2.26	0.71
5:B:305:ILE:HG23	5:B:317:ILE:HD12	1.72	0.71
28:Z:48:ARG:NH1	28:Z:48:ARG:HB2	2.06	0.71
9:F:132:PRO:HA	9:F:229:PHE:CE1	2.26	0.71
2:7:42:A:H1'	13:J:72:ARG:NH1	2.06	0.70
1:5:2573:G:H2'	1:5:2574:G:O4'	1.90	0.70
11:H:4:ILE:HD11	21:S:150:PHE:HB3	1.73	0.70
1:5:1659:U:H2'	1:5:1660:C:C6	2.25	0.70
7:D:125:VAL:HG12	7:D:126:GLU:H	1.55	0.70
13:J:171:VAL:O	13:J:172:LEU:HD23	1.91	0.70
5:B:146:ARG:HA	5:B:146:ARG:NE	2.05	0.70
1:5:1036:A:H2'	1:5:1037:C:O4'	1.90	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:P:46:LYS:O	18:P:50:GLN:HG3	1.90	0.70
1:5:1942:U:OP2	20:R:74:ARG:NH1	2.23	0.70
2:7:71:G:H2'	2:7:72:A:H8	1.54	0.70
8:E:97:ASN:O	8:E:99:GLU:HG3	1.91	0.70
1:5:3042:U:OP2	1:5:3092:C:N4	2.24	0.70
1:5:597:G:OP1	9:F:37:ASN:HB3	1.91	0.70
1:5:3285:C:H2'	1:5:3286:G:H5''	1.73	0.70
1:5:138:U:H2'	1:5:139:G:H8	1.56	0.70
3:8:73:U:H2'	3:8:74:U:H5'	1.71	0.70
12:I:36:LEU:HD11	12:I:69:ARG:CG	2.20	0.70
24:V:120:LYS:NZ	24:V:120:LYS:HB2	2.06	0.70
1:5:2291:A:H2'	1:5:2292:U:C6	2.25	0.70
1:5:2936:A:H2'	1:5:2937:G:H8	1.56	0.70
14:L:91:ARG:HH11	14:L:91:ARG:CG	1.99	0.70
17:O:78:ARG:CG	17:O:78:ARG:HH11	2.02	0.70
20:R:119:LEU:HD23	20:R:146:LYS:HE3	1.73	0.70
1:5:2532:U:H2'	1:5:2533:G:H8	1.55	0.70
6:C:28:ALA:HB1	6:C:29:PRO:HD2	1.73	0.70
13:J:51:ARG:HG2	13:J:51:ARG:HH11	1.53	0.70
1:5:939:U:H2'	1:5:940:G:C8	2.26	0.70
5:B:58:ARG:HH22	5:B:60:LEU:HD12	1.52	0.70
14:L:23:LYS:HE3	14:L:25:HIS:CE1	2.27	0.70
22:T:53:PRO:HB3	22:T:91:LEU:HD11	1.72	0.70
1:5:1252:A:H2'	1:5:1253:U:H5'	1.73	0.70
6:C:45:ASN:HA	6:C:110:ASN:HD22	1.57	0.70
5:B:14:LEU:HD22	5:B:17:LEU:HD21	1.74	0.70
1:5:536:U:C2'	1:5:537:A:H5'	2.21	0.70
1:5:1560:G:H2'	1:5:1561:G:O4'	1.92	0.70
2:7:96:U:H2'	2:7:97:A:H8	1.57	0.70
9:F:31:ALA:HA	9:F:34:LYS:HB2	1.74	0.70
1:5:621:A:H5'	1:5:622:A:C8	2.27	0.70
1:5:1052:U:C2'	1:5:1053:A:H5'	2.22	0.70
10:G:24:ASN:O	10:G:26:LEU:N	2.24	0.70
27:Y:86:THR:HA	27:Y:97:ILE:CD1	2.19	0.70
13:J:133:ARG:HB2	13:J:152:HIS:NE2	2.06	0.70
4:A:44:ILE:CD1	4:A:62:VAL:HG13	2.21	0.70
1:5:208:C:C2'	1:5:209:A:H5'	2.22	0.70
1:5:1127:G:N2	1:5:1130:A:OP2	2.21	0.70
8:E:149:ILE:HD13	8:E:159:LEU:CD1	2.22	0.70
21:S:77:VAL:HG13	21:S:126:VAL:HG22	1.72	0.70
1:5:2604:U:O2'	1:5:2605:G:OP1	2.09	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:169:THR:HG22	5:B:171:LEU:HG	1.72	0.70
28:Z:114:VAL:HA	28:Z:117:ALA:HB3	1.71	0.69
18:P:69:ARG:HG2	18:P:79:THR:CG2	2.22	0.69
18:P:69:ARG:HG2	18:P:79:THR:HG23	1.74	0.69
23:U:111:THR:HG23	23:U:112:PRO:HD2	1.73	0.69
15:M:66:THR:HB	15:M:67:PRO:HD2	1.74	0.69
1:5:1645:U:H2'	1:5:1646:G:H5'	1.72	0.69
13:J:15:GLU:HB2	13:J:132:ASN:ND2	2.07	0.69
1:5:981:U:H1'	1:5:982:C:OP1	1.92	0.69
4:A:127:ALA:O	4:A:169:ILE:HD12	1.92	0.69
1:5:1213:G:H4'	21:S:90:MET:HG3	1.74	0.69
1:5:2817:A:H4'	1:5:2818:U:OP2	1.92	0.69
24:V:70:ARG:NH1	24:V:71:LYS:HG3	2.07	0.69
3:8:84:C:C2	27:Y:112:ASP:HA	2.27	0.69
18:P:59:PRO:HG3	18:P:76:PHE:CD1	2.28	0.69
17:O:65:ASN:HD21	17:O:67:THR:HG22	1.57	0.69
4:A:205:ASN:HB3	4:A:206:PRO:CD	2.23	0.69
2:7:88:G:H2'	2:7:89:G:H5'	1.72	0.69
1:5:2567:C:H2'	1:5:2568:C:H5'	1.73	0.69
13:J:12:LEU:HD13	13:J:13:LYS:H	1.57	0.69
1:5:1635:G:N2	1:5:1638:A:OP2	2.22	0.69
7:D:39:GLN:OE1	7:D:40:HIS:N	2.25	0.69
1:5:2526:C:H2'	1:5:2527:G:C8	2.28	0.69
6:C:262:TRP:O	6:C:276:LEU:HD11	1.92	0.69
1:5:3055:U:H1'	1:5:3057:U:OP2	1.92	0.69
9:F:30:ARG:O	9:F:34:LYS:HG2	1.92	0.69
1:5:3163:A:H2'	1:5:3164:C:C6	2.27	0.69
7:D:29:ASP:HB2	7:D:150:LEU:CD2	2.23	0.69
3:8:81:U:O2'	3:8:82:U:OP2	2.11	0.69
24:V:120:LYS:HZ2	24:V:120:LYS:HB2	1.57	0.69
6:C:286:VAL:O	6:C:290:ILE:HG12	1.92	0.69
1:5:679:U:O2'	1:5:788:C:O2	2.10	0.69
1:5:248:U:C3'	1:5:249:U:H5'	2.23	0.69
9:F:31:ALA:HA	9:F:34:LYS:CG	2.21	0.69
16:N:120:TRP:CZ2	16:N:123:GLN:HG2	2.23	0.69
1:5:536:U:O2'	1:5:537:A:H5'	1.93	0.69
1:5:2232:A:O2'	1:5:2429:G:H5'	1.91	0.69
14:L:58:VAL:HG12	14:L:60:ALA:H	1.56	0.69
12:I:193:ASP:OD1	12:I:198:LYS:HE3	1.93	0.69
17:O:65:ASN:ND2	17:O:67:THR:HG22	2.08	0.69
24:V:45:ARG:HD2	24:V:46:LEU:H	1.58	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2728:G:O6	22:T:78:LYS:HE3	1.93	0.69
1:5:116:A:OP2	16:N:2:GLY:HA3	1.92	0.69
1:5:1148:G:O2'	1:5:1149:G:H5'	1.91	0.69
1:5:1348:U:C6	1:5:1348:U:H3'	2.28	0.69
15:M:37:GLU:HG2	21:S:72:VAL:HG21	1.74	0.69
1:5:1651:U:C5'	4:A:71:LEU:HD22	2.23	0.69
1:5:1687:U:H5''	1:5:1688:U:H5'	1.72	0.69
12:I:74:LYS:O	12:I:78:THR:HG23	1.92	0.69
1:5:2994:A:C2'	1:5:2995:A:H5'	2.22	0.69
13:J:30:LEU:HD21	13:J:65:ILE:O	1.93	0.69
1:5:2309:A:N3	1:5:2961:G:O2'	2.17	0.69
4:A:205:ASN:HB2	4:A:208:ASP:OD1	1.92	0.69
1:5:2809:C:H1'	1:5:2810:C:H5	1.58	0.69
1:5:371:G:N1	1:5:374:A:OP2	2.26	0.69
1:5:148:G:OP2	16:N:4:TYR:OH	2.11	0.69
1:5:1498:A:H2'	1:5:1499:C:C6	2.28	0.69
1:5:250:U:OP1	1:5:250:U:H4'	1.92	0.69
1:5:656:A:H2'	1:5:657:A:C8	2.27	0.69
1:5:696:C:OP1	6:C:272:VAL:HG23	1.93	0.69
4:A:192:LYS:HE2	4:A:193:ARG:HH22	1.58	0.69
3:8:59:A:O3'	26:X:61:LYS:NZ	2.26	0.68
1:5:655:C:H2'	1:5:656:A:H8	1.55	0.68
3:8:88:A:H3'	3:8:89:A:C8	2.29	0.68
20:R:63:THR:O	20:R:67:ALA:N	2.26	0.68
3:8:78:G:N2	3:8:79:A:H1'	2.07	0.68
1:5:1329:U:O2'	1:5:1330:A:OP1	2.11	0.68
21:S:10:ILE:HG22	21:S:59:VAL:HB	1.74	0.68
1:5:1949:G:OP2	20:R:135:LYS:NZ	2.25	0.68
7:D:270:LYS:HG2	7:D:273:ARG:HH21	1.58	0.68
5:B:39:LYS:HB2	5:B:40:PRO:HD2	1.76	0.68
11:H:77:ASN:HA	11:H:80:THR:HG22	1.74	0.68
1:5:1397:C:O2'	1:5:1398:U:H5'	1.93	0.68
1:5:915:A:H2'	1:5:916:G:H5'	1.75	0.68
1:5:787:G:H2'	1:5:788:C:H6	1.58	0.68
1:5:882:A:H2'	1:5:883:A:H5''	1.75	0.68
11:H:69:ARG:HH11	11:H:72:LYS:HD3	1.57	0.68
4:A:79:ASN:HB3	4:A:82:VAL:CG1	2.23	0.68
2:7:36:C:O2'	2:7:37:G:H5'	1.94	0.68
10:G:113:ALA:O	10:G:117:ALA:HB3	1.94	0.68
26:X:131:ASP:O	26:X:135:ILE:HG22	1.93	0.68
6:C:83:GLY:O	6:C:87:GLN:NE2	2.27	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:248:U:H2'	1:5:249:U:C5'	2.23	0.68
1:5:2641:U:OP2	22:T:10:ARG:NH2	2.22	0.68
6:C:206:LEU:HD23	6:C:226:GLU:O	1.94	0.68
9:F:80:GLN:HG3	22:T:136:ARG:CB	2.24	0.68
1:5:3170:A:O2'	1:5:3171:U:H5'	1.93	0.68
1:5:1176:C:H2'	1:5:1177:G:N2	2.08	0.68
19:Q:44:PHE:CE1	19:Q:139:ILE:HD11	2.28	0.68
1:5:2569:A:H4'	1:5:2570:U:H5'	1.76	0.68
13:J:40:LEU:HD13	13:J:114:ILE:HD11	1.74	0.68
1:5:1037:C:H2'	1:5:1038:C:C6	2.28	0.68
9:F:37:ASN:O	9:F:41:ARG:HB2	1.94	0.68
1:5:3242:G:O6	5:B:150:ARG:NH1	2.25	0.68
1:5:745:C:OP1	19:Q:145:ASN:HB2	1.93	0.68
7:D:226:TYR:HA	7:D:231:ILE:HD12	1.74	0.68
6:C:11:LEU:HD13	6:C:168:ALA:HB2	1.74	0.68
1:5:2611:U:O2'	1:5:2803:A:N1	2.24	0.68
1:5:2593:A:H4'	1:5:2594:C:O5'	1.94	0.68
4:A:116:VAL:HG11	4:A:134:VAL:HG11	1.73	0.68
1:5:2872:A:O2'	1:5:2873:U:OP1	2.10	0.68
28:Z:48:ARG:HB2	28:Z:48:ARG:HH11	1.59	0.68
5:B:148:LEU:HD21	5:B:196:ARG:CD	2.24	0.68
21:S:131:LYS:HB2	21:S:134:ASP:OD2	1.94	0.68
7:D:129:TYR:CZ	7:D:177:GLU:HG3	2.29	0.68
26:X:105:VAL:HG13	26:X:130:TYR:CD2	2.29	0.68
27:Y:97:ILE:HG22	27:Y:99:LEU:HG	1.75	0.68
1:5:2422:C:H2'	1:5:2423:U:O4'	1.94	0.68
1:5:516:A:O3'	9:F:60:ARG:NH2	2.24	0.68
1:5:173:G:H2'	1:5:174:C:O4'	1.93	0.68
1:5:1555:U:O2	1:5:1555:U:H2'	1.94	0.68
1:5:2271:A:C2'	1:5:2272:G:H5'	2.24	0.68
1:5:2936:A:H2'	1:5:2937:G:C8	2.28	0.68
24:V:117:PRO:HD3	25:W:25:ASP:O	1.94	0.68
20:R:69:SER:O	20:R:74:ARG:HB2	1.93	0.68
1:5:2796:G:H3'	17:O:60:LYS:HZ1	70.99	0.68
5:B:56:ILE:HD11	5:B:359:ILE:CG1	2.24	0.68
21:S:96:ASP:OD1	21:S:97:VAL:N	2.24	0.68
11:H:166:ARG:HB3	11:H:168:ARG:NH1	2.09	0.68
27:Y:39:LEU:HD12	27:Y:43:TYR:HE2	1.59	0.68
1:5:2233:A:H4'	1:5:2428:U:H4'	1.75	0.68
1:5:2430:A:H2'	1:5:2431:C:C6	2.29	0.68
1:5:2939:G:OP2	5:B:3:HIS:HB3	1.94	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2686:A:H2'	1:5:2687:G:O4'	1.94	0.67
1:5:2193:U:H1'	1:5:2275:A:H1'	1.76	0.67
1:5:1097:G:C8	22:T:128:LEU:HD13	2.29	0.67
10:G:178:ALA:HB2	10:G:218:ILE:HG21	1.76	0.67
1:5:1891:A:H2'	1:5:1892:G:H5'	1.74	0.67
1:5:2213:A:H2'	1:5:2214:A:H8	1.59	0.67
7:D:51:LEU:HB2	7:D:144:VAL:HG13	1.77	0.67
11:H:88:TYR:CE2	11:H:184:LYS:HE2	2.29	0.67
1:5:992:A:O2'	1:5:993:G:H5'	1.93	0.67
1:5:2871:G:H3'	1:5:2872:A:H5''	1.76	0.67
16:N:61:ILE:CD1	16:N:133:ILE:HG12	2.25	0.67
5:B:13:HIS:CE1	5:B:15:GLY:HA3	2.29	0.67
2:7:97:A:H4'	9:F:224:ILE:HG21	1.76	0.67
1:5:210:U:OP2	6:C:161:LYS:HD3	1.95	0.67
13:J:93:ASP:HB2	13:J:172:LEU:O	1.93	0.67
1:5:1381:A:H2'	1:5:1382:G:C8	2.29	0.67
6:C:170:LYS:HG2	6:C:175:HIS:HB2	1.74	0.67
11:H:87:LYS:HZ3	11:H:191:LEU:HD11	1.58	0.67
19:Q:46:LYS:O	19:Q:50:LYS:HG2	1.95	0.67
1:5:3386:G:H2'	1:5:3387:U:C6	2.30	0.67
1:5:2436:U:H2'	1:5:2437:G:H5'	1.75	0.67
1:5:2828:G:O2'	12:I:4:ARG:NH1	2.27	0.67
6:C:120:TYR:CE2	6:C:277:PRO:HB3	2.29	0.67
24:V:13:ILE:CD1	24:V:53:SER:HB2	2.24	0.67
1:5:2897:A:H2'	1:5:2899:C:H5''	1.77	0.67
1:5:1568:U:O2'	1:5:1569:U:O5'	2.10	0.67
11:H:163:GLN:O	11:H:166:ARG:NH1	2.27	0.67
9:F:181:ILE:O	9:F:184:LEU:HB2	1.94	0.67
24:V:13:ILE:HD13	24:V:53:SER:HB2	1.76	0.67
15:M:58:ILE:HG12	15:M:59:ASN:N	2.10	0.67
1:5:1522:U:OP2	26:X:121:LYS:NZ	2.28	0.67
7:D:61:ILE:HG23	7:D:79:TYR:CE1	2.29	0.67
5:B:283:TYR:HB3	5:B:356:LEU:HD21	1.76	0.67
1:5:3228:C:H4'	1:5:3229:G:O5'	1.95	0.67
1:5:3279:A:C2'	1:5:3280:U:H5'	2.25	0.67
1:5:2836:C:O2'	1:5:2837:A:H5'	1.94	0.67
1:5:1146:C:H4'	1:5:1331:U:C5	2.30	0.67
1:5:268:A:H5''	16:N:47:LYS:HZ2	1.58	0.67
12:I:4:ARG:NH2	12:I:99:ILE:HG22	2.09	0.67
14:L:23:LYS:HE3	14:L:25:HIS:ND1	2.09	0.67
1:5:3163:A:N6	1:5:3288:G:O6	2.28	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:D:182:GLY:HA2	7:D:194:LEU:HD23	1.75	0.67
3:8:73:U:C2'	3:8:74:U:H5'	2.25	0.67
6:C:35:VAL:HG11	6:C:244:LEU:HD21	1.77	0.67
11:H:117:PHE:CZ	11:H:165:CYS:HB2	2.30	0.67
1:5:2276:G:N2	1:5:2316:G:HO2'	1.93	0.67
13:J:51:ARG:CG	13:J:51:ARG:NH1	2.52	0.67
14:L:28:GLN:HB3	16:N:201:ARG:HH11	1.59	0.67
2:7:48:U:H2'	2:7:49:G:H5'	1.77	0.67
1:5:1037:C:H2'	1:5:1038:C:H6	1.58	0.67
1:5:2996:U:H2'	1:5:2996:U:O2	1.95	0.67
1:5:59:G:H2'	3:8:33:A:O2'	1.95	0.67
24:V:23:MET:HE3	24:V:100:GLY:HA3	1.77	0.67
1:5:1795:U:H4'	1:5:1796:G:O5'	1.95	0.67
10:G:34:PHE:CE1	10:G:42:PRO:HG3	2.29	0.67
1:5:1260:A:O2'	1:5:1261:G:O4'	2.10	0.66
1:5:974:G:H5'	19:Q:16:ARG:HG3	1.77	0.66
4:A:79:ASN:HB3	4:A:82:VAL:HG13	1.77	0.66
1:5:2584:G:H5'	1:5:2585:G:OP2	1.95	0.66
1:5:1245:A:H3'	1:5:1246:G:H5''	1.76	0.66
1:5:1051:U:H2'	1:5:1052:U:H5'	1.78	0.66
1:5:2222:A:H2'	1:5:2223:A:C8	2.30	0.66
5:B:188:ILE:H	5:B:188:ILE:CD1	2.03	0.66
1:5:3214:U:C4	15:M:121:MET:HG3	2.30	0.66
20:R:62:ARG:NH1	20:R:62:ARG:CB	2.58	0.66
1:5:1204:A:H2'	1:5:1205:A:H5'	1.76	0.66
1:5:2852:C:N3	12:I:158:LYS:NZ	2.43	0.66
6:C:361:HIS:O	21:S:28:ARG:NH2	2.29	0.66
1:5:927:C:H2'	1:5:928:C:H6	1.59	0.66
1:5:1767:C:O2'	1:5:1768:U:H5'	1.94	0.66
23:U:111:THR:CG2	23:U:112:PRO:HD2	2.25	0.66
1:5:1473:G:O2'	1:5:1474:A:H5'	1.95	0.66
1:5:943:U:H3'	4:A:13:GLY:HA2	71.64	0.66
25:W:53:VAL:HG13	25:W:57:LYS:HE2	1.77	0.66
1:5:2158:A:H4'	1:5:2159:U:C5'	2.15	0.66
3:8:157:U:H2'	3:8:158:U:C6	2.30	0.66
27:Y:86:THR:HB	27:Y:95:VAL:O	1.96	0.66
1:5:1614:C:H2'	1:5:1615:C:C6	2.31	0.66
1:5:1888:U:OP1	5:B:247:ARG:HD3	1.96	0.66
16:N:51:LEU:HD13	16:N:117:ASN:HB3	1.78	0.66
18:P:105:LYS:HB3	18:P:107:LEU:HD13	1.78	0.66
1:5:2676:A:H4'	1:5:2677:G:O5'	1.96	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:Z:83:THR:HG23	28:Z:85:TYR:H	1.60	0.66
1:5:914:A:C2	4:A:204:MET:HG2	2.30	0.66
5:B:305:ILE:CG2	5:B:317:ILE:HD12	2.25	0.66
6:C:193:LYS:HB2	6:C:193:LYS:NZ	2.08	0.66
1:5:2908:G:O2'	1:5:2909:U:H5'	1.95	0.66
26:X:53:HIS:CE1	26:X:56:ARG:HD3	2.30	0.66
1:5:1728:G:H4'	1:5:1729:A:H5''	1.77	0.66
1:5:2555:G:H5'	1:5:2556:C:OP2	1.95	0.66
18:P:129:THR:HG22	18:P:137:ASN:O	1.95	0.66
14:L:28:GLN:OE1	16:N:201:ARG:NH1	2.29	0.66
1:5:413:U:H5''	18:P:34:GLN:NE2	2.11	0.66
18:P:29:THR:HA	18:P:32:THR:CG2	2.24	0.66
1:5:1772:U:C5'	1:5:1773:C:H5'	2.26	0.66
1:5:1949:G:H2'	1:5:1950:U:C6	2.30	0.66
24:V:11:PHE:HB2	24:V:88:ARG:NH1	2.10	0.66
1:5:2925:C:H2'	1:5:2926:A:H5'	1.77	0.66
16:N:175:ASN:HB2	16:N:180:PHE:CE1	2.30	0.66
6:C:202:ARG:NE	6:C:202:ARG:HA	2.11	0.66
23:U:37:LEU:O	23:U:41:ILE:HG13	1.96	0.66
1:5:3121:U:H4'	1:5:3122:A:OP1	1.96	0.66
12:I:50:VAL:HG22	12:I:167:LEU:HD13	1.76	0.66
5:B:347:SER:O	5:B:348:ARG:HB3	1.95	0.66
6:C:295:ILE:O	6:C:299:ILE:HG12	1.94	0.66
1:5:2436:U:C2'	1:5:2437:G:H5'	2.25	0.66
1:5:2853:A:OP1	12:I:30:LYS:NZ	2.25	0.66
5:B:14:LEU:HA	5:B:17:LEU:CD2	2.26	0.66
20:R:62:ARG:NH1	20:R:62:ARG:HB2	2.11	0.66
1:5:2994:A:H2'	1:5:2995:A:H5'	1.78	0.66
1:5:2234:G:O2'	1:5:2603:G:O2'	1.85	0.66
22:T:94:GLU:OE1	22:T:94:GLU:N	2.25	0.66
1:5:132:C:H2'	1:5:133:U:H5''	1.76	0.66
14:L:168:ARG:NH1	14:L:172:LEU:HD21	2.10	0.66
1:5:2917:G:N2	1:5:2918:G:H1'	2.10	0.66
14:L:54:LEU:HD22	14:L:55:ARG:N	2.11	0.66
28:Z:97:SER:HB3	28:Z:99:GLU:OE2	1.95	0.66
13:J:85:LYS:HB3	13:J:85:LYS:HZ3	1.61	0.66
1:5:1392:G:H1'	1:5:1417:G:H22	1.59	0.66
1:5:1466:G:H22	1:5:1510:G:H5''	1.61	0.66
20:R:96:ILE:HG22	20:R:100:ARG:NH1	2.10	0.66
1:5:183:G:H2'	1:5:184:U:H6	1.60	0.66
1:5:2436:U:H3	1:5:2511:A:H62	1.44	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:221:ASN:HA	10:G:225:LYS:HE3	1.78	0.66
1:5:1661:G:N2	1:5:1789:G:H1'	2.11	0.66
7:D:238:ASP:HA	7:D:241:THR:HB	1.78	0.66
1:5:2418:G:O2'	1:5:2419:A:O5'	2.12	0.66
22:T:80:VAL:HG13	22:T:85:LEU:HG	1.77	0.66
1:5:1882:G:C2'	1:5:1883:A:H5'	2.26	0.66
1:5:2768:U:H2'	1:5:2769:A:C8	2.30	0.66
27:Y:59:VAL:HG22	27:Y:103:LYS:O	1.96	0.66
1:5:1616:U:O2	1:5:1829:G:N2	2.29	0.65
1:5:656:A:H2'	1:5:657:A:H8	1.59	0.65
13:J:9:MET:HG2	13:J:10:ARG:H	1.60	0.65
1:5:1148:G:C2'	1:5:1149:G:H5'	2.26	0.65
23:U:11:ILE:HD12	23:U:11:ILE:N	2.11	0.65
8:E:46:ARG:HG3	8:E:46:ARG:NH1	2.11	0.65
16:N:53:TYR:HB2	16:N:133:ILE:HD13	1.78	0.65
5:B:362:ALA:HB2	5:B:371:GLN:NE2	2.12	0.65
1:5:999:G:H2'	1:5:1000:C:C6	2.31	0.65
1:5:2971:A:H5''	1:5:2972:G:C5'	2.25	0.65
1:5:881:C:H1'	1:5:1850:A:C8	2.30	0.65
11:H:37:ASN:OD1	11:H:39:LYS:HB2	1.95	0.65
10:G:71:VAL:HG23	10:G:72:PRO:O	1.96	0.65
9:F:46:GLU:O	9:F:49:ALA:HB3	1.96	0.65
1:5:1054:A:N3	1:5:1054:A:H2'	2.11	0.65
19:Q:36:LEU:O	19:Q:40:THR:OG1	2.14	0.65
18:P:141:SER:C	18:P:143:PRO:HD3	2.16	0.65
17:O:18:ARG:O	17:O:22:VAL:HG13	1.96	0.65
1:5:824:C:H2'	1:5:825:U:H6	1.60	0.65
1:5:800:G:O6	6:C:104:LYS:NZ	2.26	0.65
1:5:2550:U:C6	10:G:37:GLY:HA3	2.31	0.65
24:V:45:ARG:HD2	24:V:46:LEU:N	2.12	0.65
1:5:3139:A:OP2	5:B:30:LYS:NZ	2.24	0.65
9:F:89:ILE:HB	9:F:219:LYS:HE3	1.78	0.65
1:5:2815:G:H3'	1:5:2816:G:H5''	1.78	0.65
1:5:1838:G:H5''	1:5:1839:A:OP1	1.96	0.65
19:Q:51:ALA:HA	19:Q:54:LEU:HD12	1.78	0.65
1:5:2190:U:H2'	1:5:2191:U:C6	2.32	0.65
4:A:129:ALA:HB3	4:A:132:ASN:HD22	1.61	0.65
13:J:82:ARG:HB3	13:J:112:LEU:HD12	1.77	0.65
1:5:335:G:OP1	27:Y:9:SER:HB2	1.96	0.65
1:5:1887:A:H2'	1:5:1888:U:H5'	1.78	0.65
1:5:1361:U:H2'	1:5:1362:G:C8	2.32	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:J:9:MET:HG2	13:J:10:ARG:N	2.12	0.65
9:F:161:VAL:HG13	9:F:162:PRO:HD2	1.77	0.65
7:D:118:THR:HG21	7:D:139:PRO:HD2	1.79	0.65
27:Y:3:LYS:HD3	27:Y:10:SER:OG	1.97	0.65
9:F:80:GLN:HG3	22:T:136:ARG:HB2	1.79	0.65
1:5:238:A:O2'	1:5:239:G:OP1	2.15	0.65
5:B:169:THR:CG2	5:B:171:LEU:HG	2.27	0.65
5:B:328:ILE:HD11	5:B:336:VAL:HG11	1.78	0.65
14:L:93:ILE:HG22	14:L:94:GLY:H	1.61	0.65
1:5:1072:G:H2'	1:5:1073:U:C6	2.32	0.65
1:5:31:C:H4'	16:N:96:ARG:HD3	1.79	0.65
1:5:2437:G:H2'	1:5:2438:A:C5'	2.26	0.65
16:N:114:ARG:HG3	16:N:114:ARG:NH1	2.08	0.65
5:B:78:VAL:HG22	5:B:323:MET:HG3	1.78	0.65
6:C:203:ARG:HG3	6:C:246:ARG:HH22	1.60	0.65
20:R:106:LEU:HD21	20:R:123:LEU:CB	2.26	0.65
1:5:3310:A:OP1	18:P:74:LYS:NZ	2.24	0.65
21:S:33:ASN:HD21	21:S:36:ILE:HG13	1.62	0.65
1:5:2179:C:O2	4:A:175:VAL:HG22	1.97	0.65
1:5:1429:G:N2	6:C:99:MET:HB2	2.11	0.65
1:5:75:G:H5'	14:L:58:VAL:HG11	1.78	0.65
10:G:106:LYS:O	10:G:110:THR:HG23	1.96	0.65
1:5:1949:G:H2'	1:5:1950:U:H6	1.60	0.65
5:B:13:HIS:HE1	5:B:15:GLY:HA3	1.61	0.65
3:8:32:C:O2'	3:8:33:A:H5'	1.97	0.65
1:5:1313:G:H2'	1:5:1314:C:H6	1.62	0.65
1:5:1261:G:H4'	1:5:1278:A:N1	2.11	0.65
19:Q:16:ARG:HH21	19:Q:20:LYS:CB	2.10	0.65
5:B:84:VAL:HG11	5:B:162:VAL:HB	1.78	0.65
19:Q:18:ALA:HB1	19:Q:19:PRO:HD2	1.79	0.64
1:5:591:G:N2	8:E:18:LEU:HB3	2.11	0.64
12:I:60:LEU:N	12:I:60:LEU:HD13	4.84	0.64
9:F:47:ARG:NH1	9:F:179:LEU:HD11	2.11	0.64
21:S:8:GLN:HG3	21:S:26:ARG:NE	2.12	0.64
6:C:99:MET:CE	6:C:102:PRO:HA	2.27	0.64
1:5:1064:A:H4'	1:5:1065:A:C5'	2.28	0.64
18:P:131:ARG:HG3	18:P:137:ASN:OD1	1.97	0.64
7:D:106:ALA:HA	7:D:171:LEU:CD1	2.27	0.64
24:V:121:GLU:N	24:V:121:GLU:OE1	2.29	0.64
3:8:109:A:H2'	3:8:110:C:H5'	1.79	0.64
1:5:1183:C:H2'	1:5:1184:A:H5'	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:E:47:PHE:CD1	8:E:74:VAL:HG22	2.32	0.64
1:5:3113:A:H4'	11:H:69:ARG:HD2	1.77	0.64
1:5:1097:G:H8	22:T:128:LEU:HD13	1.62	0.64
1:5:2270:A:H2'	1:5:2271:A:H8	1.59	0.64
5:B:205:VAL:HG21	5:B:322:ILE:CD1	2.27	0.64
22:T:40:VAL:HG21	22:T:96:ILE:HD12	1.78	0.64
1:5:120:G:N2	10:G:123:GLN:O	2.30	0.64
9:F:157:ASN:O	9:F:158:LYS:HB3	1.98	0.64
1:5:2344:U:H1'	1:5:3079:U:O4	1.96	0.64
5:B:168:LYS:HB3	5:B:319:ASN:OD1	1.97	0.64
1:5:2975:U:H2'	1:5:2976:A:C8	2.32	0.64
1:5:1993:Y5P:H4A	1:5:1994:Y5P:H4	1.79	0.64
1:5:251:G:H1'	1:5:253:A:C5	2.32	0.64
16:N:58:GLY:HA3	16:N:142:ILE:CD1	2.26	0.64
1:5:3289:G:H2'	1:5:3290:G:C8	2.27	0.64
5:B:306:THR:CG2	5:B:310:GLY:HA2	2.28	0.64
28:Z:72:ILE:HD11	28:Z:111:LYS:HE3	1.79	0.64
1:5:129:U:H2'	1:5:130:A:C8	2.32	0.64
1:5:110:G:H5'	14:L:91:ARG:HE	1.62	0.64
19:Q:88:THR:HG22	19:Q:107:THR:HG21	1.79	0.64
12:I:90:ARG:HB3	12:I:90:ARG:NH1	2.13	0.64
1:5:1063:G:O2'	1:5:1097:G:N2	2.30	0.64
13:J:19:LEU:HB2	13:J:69:VAL:HG12	1.79	0.64
1:5:2703:A:OP2	7:D:23:ARG:NH2	2.30	0.64
5:B:37:ARG:NH2	5:B:188:ILE:HD11	2.13	0.64
26:X:129:ASP:HB2	26:X:130:TYR:CD1	2.33	0.64
20:R:115:ILE:HA	20:R:146:LYS:HZ1	1.63	0.64
4:A:30:ARG:HB2	4:A:36:GLU:OE2	1.97	0.64
16:N:73:ARG:HD2	16:N:75:VAL:HG13	1.79	0.64
1:5:1621:A:H2'	1:5:1622:U:H6	1.61	0.64
1:5:2971:A:H5''	1:5:2972:G:O5'	1.97	0.64
1:5:2723:U:H2'	1:5:2724:U:H6	1.61	0.64
1:5:1816:A:O2'	1:5:1817:G:OP1	2.15	0.64
7:D:88:ILE:HD12	7:D:239:ILE:HG22	1.80	0.64
1:5:2609:A:C2'	1:5:2610:G:H5''	2.27	0.64
2:7:91:G:H2'	2:7:92:A:C8	2.32	0.64
5:B:307:PRO:HD3	5:B:311:PHE:CE2	2.33	0.64
10:G:107:GLU:O	10:G:110:THR:OG1	2.14	0.64
1:5:2995:A:HO2'	1:5:2996:U:C5'	2.10	0.64
1:5:3198:U:O4	11:H:26:LYS:HB2	1.98	0.64
7:D:122:VAL:HG21	7:D:168:ASP:CG	2.18	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1524:A:H5'	26:X:111:ASN:ND2	2.12	0.64
4:A:56:ALA:HB2	4:A:171:GLY:HA3	1.78	0.64
1:5:1723:A:H5''	1:5:1724:U:OP2	1.98	0.64
1:5:1939:G:OP1	20:R:77:GLY:HA3	1.97	0.64
1:5:1315:U:OP1	17:O:18:ARG:NH1	2.31	0.64
14:L:71:ALA:HB2	14:L:147:ILE:CD1	2.24	0.64
1:5:2796:G:H4'	1:5:2798:C:C6	2.33	0.64
1:5:2808:A:O2'	1:5:2809:C:O5'	2.16	0.64
5:B:84:VAL:HG22	5:B:164:THR:HA	1.79	0.64
5:B:48:GLY:O	5:B:335:ILE:HD12	1.97	0.64
7:D:65:ILE:HG22	7:D:66:SER:O	1.98	0.64
15:M:120:VAL:O	15:M:124:ARG:HG3	1.98	0.64
5:B:29:VAL:CG2	5:B:337:THR:HG21	2.28	0.64
16:N:6:TYR:O	16:N:10:LEU:HB2	1.97	0.64
1:5:1206:G:N2	1:5:1298:C:O2	2.30	0.64
27:Y:41:ALA:O	27:Y:125:LYS:NZ	2.29	0.64
15:M:50:LYS:HD3	15:M:85:TRP:CD1	2.33	0.64
6:C:99:MET:HE2	6:C:102:PRO:HA	1.79	0.64
1:5:364:G:OP1	6:C:60:THR:HG23	1.98	0.64
1:5:1146:C:H4'	1:5:1331:U:C4	2.32	0.64
15:M:34:ALA:HB2	15:M:85:TRP:HZ3	1.62	0.64
20:R:68:GLN:O	20:R:71:ARG:HG2	1.98	0.64
1:5:2883:U:O2'	1:5:2884:C:H5'	1.97	0.64
1:5:112:U:O2'	1:5:113:C:OP2	2.16	0.64
11:H:87:LYS:HZ1	11:H:191:LEU:HD11	1.61	0.63
1:5:11:A:H1'	1:5:1558:A:N6	2.13	0.63
10:G:71:VAL:CG2	10:G:76:ALA:HB2	2.28	0.63
28:Z:27:LYS:HE3	28:Z:29:HIS:CD2	2.34	0.63
1:5:3149:G:O2'	5:B:129:ALA:O	2.12	0.63
1:5:1226:G:H2'	1:5:1227:C:H6	1.63	0.63
6:C:181:VAL:HG11	6:C:223:PRO:O	1.97	0.63
1:5:2186:U:O2'	1:5:2313:A:N3	2.30	0.63
1:5:213:A:C2'	1:5:214:G:H5'	2.29	0.63
1:5:824:C:H2'	1:5:825:U:C6	2.32	0.63
1:5:992:A:C2'	1:5:993:G:H5'	2.28	0.63
5:B:14:LEU:HD13	5:B:262:TRP:CH2	2.32	0.63
1:5:1397:C:H2'	1:5:1398:U:H5'	1.80	0.63
26:X:67:ILE:CD1	26:X:121:LYS:HG3	2.28	0.63
1:5:1781:C:H2'	1:5:1782:U:C6	2.33	0.63
5:B:92:TYR:CE2	5:B:101:SER:HB3	2.33	0.63
14:L:42:ARG:HH21	14:L:51:LEU:HD23	1.63	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2631:U:H2'	1:5:2632:G:C8	2.33	0.63
14:L:76:THR:O	14:L:80:VAL:HG23	1.99	0.63
5:B:307:PRO:HA	5:B:361:THR:O	1.99	0.63
1:5:1466:G:N2	1:5:1510:G:H5"	2.12	0.63
18:P:31:GLU:HG2	18:P:60:PHE:CD2	2.33	0.63
20:R:4:LEU:HD22	20:R:7:GLN:HG3	1.79	0.63
6:C:147:GLU:HG2	6:C:148:ILE:O	1.99	0.63
14:L:115:ARG:NH2	14:L:145:PHE:O	2.30	0.63
12:I:90:ARG:HH11	12:I:90:ARG:HB3	1.63	0.63
4:A:44:ILE:HD13	4:A:62:VAL:HG13	1.80	0.63
18:P:69:ARG:HB3	18:P:79:THR:HG23	1.80	0.63
1:5:2573:G:OP1	28:Z:61:LYS:HE3	1.98	0.63
8:E:52:VAL:HG22	8:E:67:GLY:HA2	1.79	0.63
8:E:56:LYS:HB3	8:E:98:VAL:CG1	2.28	0.63
28:Z:72:ILE:N	28:Z:72:ILE:HD13	2.13	0.63
16:N:186:GLY:O	16:N:190:THR:HG22	1.98	0.63
10:G:161:GLU:O	10:G:164:VAL:HG22	1.99	0.63
1:5:3243:A:OP1	17:O:159:LYS:NZ	2.31	0.63
1:5:251:G:O2'	1:5:252:U:O4'	2.16	0.63
12:I:72:ALA:O	12:I:76:MET:HG3	1.99	0.63
1:5:1863:G:O3'	20:R:82:LYS:HB2	1.98	0.63
3:8:104:A:H3'	3:8:105:A:H5"	1.81	0.63
10:G:34:PHE:CZ	10:G:42:PRO:HB3	2.34	0.63
1:5:149:U:OP2	16:N:49:ARG:NH1	2.32	0.63
25:W:6:ASP:CA	25:W:13:ILE:HD11	2.28	0.63
1:5:27:C:H2'	1:5:28:C:H5'	1.81	0.63
1:5:2510:U:O2'	1:5:2511:A:H5"	1.99	0.63
1:5:618:C:H2'	1:5:619:A:O4'	1.99	0.63
16:N:154:PRO:O	16:N:157:LYS:HG3	1.98	0.63
6:C:55:LYS:HG2	6:C:59:GLN:CG	2.28	0.63
1:5:924:G:C3'	1:5:925:A:H5'	2.28	0.63
21:S:33:ASN:ND2	21:S:36:ILE:HG13	2.13	0.63
1:5:1807:G:OP1	28:Z:133:LYS:HE3	1.99	0.63
6:C:103:THR:HG22	6:C:107:ARG:NH2	2.13	0.63
1:5:13:A:H4'	26:X:39:LYS:CG	2.28	0.63
1:5:2283:G:N1	1:5:2307:G:H5'	2.13	0.63
5:B:14:LEU:CA	5:B:17:LEU:HD22	2.28	0.63
6:C:55:LYS:HG2	6:C:59:GLN:HG2	1.81	0.63
1:5:1193:A:H3'	1:5:1194:G:C8	2.34	0.63
1:5:1649:U:H2'	1:5:1650:G:H8	1.64	0.63
1:5:3305:A:C2'	1:5:3306:U:H5'	2.28	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:725:G:H2'	1:5:726:G:H5'	1.80	0.63
1:5:3059:G:H2'	1:5:3060:C:C6	2.33	0.63
19:Q:122:ILE:HG23	19:Q:126:GLN:HB2	1.80	0.63
4:A:70:ARG:HG3	4:A:71:LEU:N	2.14	0.63
8:E:128:LYS:HB2	18:P:181:ARG:NH2	2.14	0.63
1:5:3092:C:O2'	1:5:3094:A:OP2	2.14	0.63
11:H:157:ASN:HA	11:H:160:ASP:OD2	1.98	0.63
9:F:168:ILE:O	9:F:172:ASN:ND2	2.32	0.63
21:S:44:PHE:CD1	22:T:153:PRO:HG3	2.33	0.63
3:8:135:G:H5''	26:X:49:LYS:HE3	1.80	0.63
5:B:256:HIS:HA	5:B:257:PRO:C	2.19	0.63
1:5:362:U:O2'	1:5:363:G:H5'	1.98	0.63
20:R:69:SER:HB2	20:R:74:ARG:HG2	1.80	0.63
1:5:2785:A:O2'	1:5:2786:G:H5'	1.98	0.63
15:M:54:PRO:HG2	15:M:56:GLN:NE2	2.14	0.63
18:P:28:ASN:O	18:P:32:THR:HG22	1.99	0.63
7:D:194:LEU:HD11	7:D:198:TYR:HE2	1.64	0.63
2:7:71:G:O2'	2:7:72:A:H5'	1.98	0.63
2:7:36:C:H4'	7:D:155:THR:HG23	1.81	0.63
13:J:20:ASN:OD1	13:J:68:HIS:HB3	1.99	0.63
22:T:80:VAL:HG11	22:T:85:LEU:HD12	1.81	0.63
1:5:1882:G:H2'	1:5:1883:A:H5'	1.79	0.63
6:C:192:GLY:HA3	6:C:197:ARG:NH1	2.14	0.63
16:N:18:VAL:HG22	16:N:19:LEU:CD1	2.29	0.62
1:5:3316:A:H5''	1:5:3318:G:H21	1.63	0.62
1:5:1887:A:C2'	1:5:1888:U:H5'	2.28	0.62
8:E:38:THR:OG1	8:E:90:LYS:HE2	1.99	0.62
1:5:839:C:H4'	1:5:1724:U:O2'	1.98	0.62
19:Q:32:LEU:HD13	19:Q:32:LEU:C	2.20	0.62
4:A:183:GLY:O	4:A:186:PHE:HB3	1.98	0.62
5:B:47:LEU:HD21	5:B:179:ALA:HB3	1.80	0.62
11:H:67:ALA:O	11:H:70:THR:HG23	1.99	0.62
11:H:36:LYS:HE2	11:H:78:MET:SD	2.39	0.62
1:5:914:A:C8	4:A:199:THR:HG21	2.34	0.62
1:5:2707:C:H2'	1:5:2708:C:H6	1.64	0.62
1:5:1168:U:O2'	1:5:1169:A:H5'	1.98	0.62
1:5:1392:G:O2'	1:5:1417:G:N2	2.31	0.62
13:J:164:LYS:HE3	13:J:171:VAL:HB	1.80	0.62
3:8:97:A:O2'	3:8:98:U:H5'	1.99	0.62
14:L:165:SER:HB3	14:L:168:ARG:HB3	1.81	0.62
1:5:2772:C:H1'	1:5:2773:C:OP2	1.99	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:833:G:OP1	20:R:86:GLU:HB3	1.98	0.62
11:H:86:TYR:CZ	11:H:151:VAL:HG13	2.34	0.62
11:H:111:PHE:CD1	11:H:127:PRO:HA	2.30	0.62
19:Q:81:VAL:HG13	19:Q:101:VAL:HG13	1.80	0.62
1:5:251:G:P	1:5:251:G:H3'	2.39	0.62
1:5:715:A:H4'	1:5:716:A:OP1	1.99	0.62
27:Y:57:LEU:HB3	27:Y:105:VAL:HG13	1.81	0.62
1:5:3041:U:H2'	1:5:3042:U:C6	2.33	0.62
22:T:80:VAL:CG1	22:T:85:LEU:HG	2.29	0.62
25:W:6:ASP:HA	25:W:13:ILE:HD11	1.81	0.62
1:5:2954:U:H4'	1:5:2955:U:OP1	1.99	0.62
8:E:170:LYS:HB3	8:E:172:HIS:CE1	2.34	0.62
1:5:3380:U:O2'	1:5:3381:U:H5'	1.98	0.62
27:Y:37:LYS:CE	27:Y:37:LYS:H	2.11	0.62
1:5:236:G:H5''	1:5:237:G:OP2	1.99	0.62
14:L:54:LEU:HD22	14:L:55:ARG:H	1.64	0.62
19:Q:147:ARG:O	19:Q:150:VAL:HG22	1.99	0.62
16:N:41:ARG:CZ	16:N:41:ARG:HB3	2.29	0.62
20:R:24:LEU:HD23	20:R:50:ILE:HG12	1.82	0.62
2:7:112:G:H2'	2:7:113:C:C6	2.33	0.62
5:B:153:LYS:NZ	5:B:154:TYR:OH	2.32	0.62
19:Q:153:PHE:O	19:Q:161:LYS:HG2	1.99	0.62
10:G:24:ASN:CB	10:G:25:PRO:HD3	2.28	0.62
20:R:81:ARG:HG2	20:R:88:ARG:NH1	2.06	0.62
6:C:203:ARG:HH11	6:C:246:ARG:NH2	1.97	0.62
16:N:73:ARG:HG2	16:N:74:PRO:CD	2.30	0.62
22:T:51:GLY:HA3	22:T:92:ARG:HG3	1.79	0.62
1:5:2871:G:H3'	1:5:2872:A:C5'	2.29	0.62
2:7:36:C:C5'	7:D:155:THR:HG23	2.29	0.62
25:W:53:VAL:CG1	25:W:57:LYS:HE2	2.29	0.62
1:5:3086:A:H2'	1:5:3086:A:N3	2.13	0.62
14:L:119:TYR:O	14:L:123:ILE:HG23	1.99	0.62
8:E:92:SER:HB3	8:E:148:GLU:OE2	1.99	0.62
9:F:121:LYS:HB2	22:T:133:ALA:HB3	1.81	0.62
17:O:188:SER:O	17:O:192:LYS:HG2	1.98	0.62
1:5:2781:U:H2'	1:5:2782:U:C6	2.33	0.62
17:O:189:ASP:O	17:O:193:GLN:NE2	2.29	0.62
1:5:2275:A:H2'	1:5:2276:G:O4'	1.99	0.62
5:B:211:GLN:HE22	5:B:284:ARG:HA	1.64	0.62
6:C:192:GLY:HA3	6:C:197:ARG:HH12	1.63	0.62
6:C:143:GLU:OE1	6:C:143:GLU:HA	1.98	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:3008:A:O2'	1:5:3009:G:H5'	1.99	0.62
1:5:2663:G:H2'	1:5:2664:C:O4'	1.99	0.62
6:C:148:ILE:CG2	6:C:149:PRO:HD3	2.20	0.62
14:L:47:ALA:O	14:L:49:ARG:N	2.32	0.62
11:H:163:GLN:HB3	11:H:166:ARG:HH11	1.64	0.62
1:5:941:G:O2'	1:5:942:U:H5'	2.00	0.62
1:5:578:A:H2'	6:C:334:PHE:HD2	1.65	0.62
3:8:10:A:H2'	3:8:11:C:C6	2.34	0.62
5:B:204:ALA:O	5:B:207:SER:OG	2.16	0.62
1:5:3001:C:O2'	1:5:3002:C:H5'	2.00	0.62
1:5:507:U:OP2	9:F:150:LYS:NZ	2.33	0.62
6:C:11:LEU:HD11	6:C:156:LEU:HD23	1.82	0.62
1:5:3287:U:C2'	1:5:3288:G:H5'	2.29	0.62
15:M:24:LYS:HD2	15:M:64:VAL:HG12	1.81	0.62
1:5:2213:A:H2'	1:5:2214:A:C8	2.34	0.62
4:A:90:ALA:CB	4:A:101:VAL:HG13	2.29	0.62
24:V:86:ARG:HB2	24:V:92:PHE:CE1	2.35	0.62
26:X:106:ASP:O	26:X:127:THR:HG23	2.00	0.62
20:R:119:LEU:HD23	20:R:146:LYS:CE	2.30	0.62
10:G:150:LEU:O	10:G:199:ALA:HB1	2.00	0.62
7:D:106:ALA:HA	7:D:171:LEU:HD11	1.82	0.62
1:5:2995:A:H4'	1:5:2996:U:OP1	2.00	0.62
14:L:114:GLN:O	14:L:118:GLU:HB3	1.98	0.62
5:B:286:GLY:HA3	5:B:321:PHE:CE2	2.35	0.62
8:E:157:GLN:OE1	8:E:157:GLN:N	2.33	0.62
5:B:382:THR:OG1	5:B:387:LEU:HD12	2.00	0.62
1:5:1138:U:O2'	1:5:1139:G:H5'	1.99	0.62
15:M:40:ASP:OD1	15:M:43:LYS:HB2	2.00	0.62
9:F:62:ILE:HD13	9:F:78:GLU:OE2	2.00	0.62
26:X:105:VAL:CG1	26:X:126:LEU:HD13	2.24	0.61
3:8:155:A:H2'	3:8:156:U:H5''	1.82	0.61
13:J:15:GLU:HB3	13:J:130:VAL:CG2	2.26	0.61
9:F:101:LYS:O	9:F:105:LEU:HG	2.00	0.61
18:P:32:THR:HG21	18:P:87:SER:HB3	1.82	0.61
1:5:2541:U:H4'	1:5:2542:U:OP1	2.00	0.61
1:5:69:C:OP1	16:N:178:HIS:ND1	2.31	0.61
1:5:2548:C:H5''	1:5:2549:G:OP1	1.99	0.61
1:5:1798:A:H2'	1:5:1799:A:C8	2.35	0.61
1:5:158:G:H2'	1:5:159:A:H8	1.65	0.61
1:5:3236:U:O2'	1:5:3237:U:H5'	1.99	0.61
17:O:58:LEU:HA	17:O:72:HIS:ND1	2.16	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:Z:88:ASP:OD2	28:Z:121:ARG:NH2	2.32	0.61
1:5:1581:C:N4	1:5:2522:G:H4'	2.08	0.61
15:M:128:ARG:CD	15:M:132:LYS:HD2	2.30	0.61
14:L:42:ARG:NH2	14:L:51:LEU:HD23	2.14	0.61
1:5:121:A:N3	10:G:108:ARG:NH1	2.48	0.61
1:5:238:A:H2'	1:5:239:G:O4'	1.99	0.61
23:U:98:THR:CG2	23:U:104:ARG:HE	2.13	0.61
11:H:12:VAL:CG1	11:H:16:VAL:HG23	2.29	0.61
1:5:1159:A:O2'	1:5:1160:C:H5'	2.00	0.61
6:C:11:LEU:CD2	6:C:168:ALA:HB1	2.22	0.61
1:5:1081:U:HO2'	1:5:1082:U:C5'	2.13	0.61
1:5:595:G:H1	1:5:609:G:H5''	1.65	0.61
1:5:304:G:H2'	1:5:304:G:N3	2.15	0.61
1:5:2389:C:H42	1:5:2990:G:H1	1.46	0.61
1:5:2806:U:C2'	1:5:2807:U:H5'	2.29	0.61
1:5:959:C:H5'	1:5:960:U:OP1	2.00	0.61
6:C:22:LEU:HD21	6:C:26:PHE:HB2	1.82	0.61
1:5:2309:A:O4'	1:5:2962:U:H5'	2.00	0.61
1:5:1307:G:C5'	17:O:60:LYS:HE2	2.31	0.61
13:J:51:ARG:HG3	13:J:51:ARG:NH1	2.15	0.61
15:M:106:ARG:HB2	15:M:106:ARG:CZ	4.83	0.61
9:F:165:ASP:OD2	9:F:166:ASN:N	2.34	0.61
1:5:3106:A:C2'	1:5:3107:U:H5'	2.30	0.61
1:5:307:A:H2'	1:5:308:A:H8	1.64	0.61
1:5:2339:C:H3'	5:B:236:LYS:HZ3	1.63	0.61
10:G:154:ALA:CB	10:G:183:LYS:HB3	2.29	0.61
1:5:1795:U:H5''	1:5:1796:G:H5'	1.83	0.61
1:5:3008:A:C2'	1:5:3009:G:H5'	2.31	0.61
6:C:9:HIS:CE1	6:C:15:ALA:HB2	2.36	0.61
1:5:1860:G:O2'	1:5:1861:G:H5'	1.99	0.61
1:5:1512:U:O3'	20:R:5:ARG:NH2	2.32	0.61
13:J:80:LEU:O	13:J:84:LEU:HG	2.00	0.61
1:5:1632:A:H2'	1:5:1633:C:O4'	2.00	0.61
28:Z:10:VAL:O	28:Z:83:THR:HG22	2.00	0.61
1:5:2612:U:H2'	1:5:2613:U:O4'	2.00	0.61
1:5:2960:C:H2'	1:5:2961:G:H8	1.65	0.61
1:5:1671:C:H42	1:5:1776:G:H1	1.48	0.61
1:5:1003:A:N1	1:5:1049:C:O2'	2.31	0.61
1:5:502:U:O2'	8:E:26:ARG:NH1	2.31	0.61
13:J:25:GLU:HG3	13:J:63:GLU:OE1	1.99	0.61
1:5:27:C:C2'	1:5:28:C:H5'	2.31	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:E:136:GLU:O	8:E:140:VAL:HG23	2.00	0.61
9:F:221:LYS:O	9:F:227:GLY:HA3	2.00	0.61
1:5:3351:U:H5'	1:5:3352:U:OP2	2.00	0.61
19:Q:72:LYS:NZ	19:Q:72:LYS:HB3	2.16	0.61
28:Z:46:ILE:HD11	28:Z:49:TYR:CZ	2.35	0.61
9:F:35:ALA:HA	9:F:38:LYS:CB	2.24	0.61
1:5:2283:G:H1'	1:5:2285:C:N4	2.16	0.61
5:B:205:VAL:CG2	5:B:322:ILE:HD11	2.31	0.61
1:5:2530:G:C2'	1:5:2531:C:H5''	2.30	0.61
7:D:40:HIS:ND1	22:T:69:LYS:HG3	2.15	0.61
7:D:267:ALA:O	7:D:271:LYS:HE2	2.01	0.61
1:5:183:G:H2'	1:5:184:U:C6	2.35	0.61
14:L:153:ASP:OD2	14:L:154:VAL:N	2.32	0.61
3:8:125:U:O2'	3:8:126:A:H5'	2.00	0.61
16:N:184:LYS:HG2	16:N:184:LYS:O	1.99	0.61
10:G:70:LYS:CA	10:G:235:GLY:HA3	2.23	0.61
10:G:70:LYS:HA	10:G:235:GLY:CA	2.26	0.61
1:5:2961:G:H2'	1:5:2962:U:C6	2.36	0.61
11:H:69:ARG:NH1	11:H:72:LYS:HD3	2.15	0.61
8:E:56:LYS:HD2	8:E:98:VAL:HG12	1.83	0.61
2:7:119:U:O2'	2:7:120:C:H5'	1.99	0.61
19:Q:62:VAL:HG21	19:Q:83:VAL:CG2	2.29	0.61
24:V:32:ARG:HB2	24:V:64:LYS:CB	2.20	0.61
1:5:2276:G:H21	1:5:2316:G:HO2'	1.45	0.61
6:C:150:LEU:HD13	6:C:249:ILE:CG1	2.27	0.61
5:B:84:VAL:CG1	5:B:162:VAL:HB	2.31	0.61
27:Y:36:SER:OG	27:Y:39:LEU:HD23	2.00	0.61
1:5:76:G:O2'	14:L:100:ARG:NH1	2.31	0.61
5:B:311:PHE:HE2	5:B:317:ILE:HD11	1.66	0.61
1:5:695:C:O2'	1:5:696:C:H5'	2.01	0.61
1:5:3242:G:H5''	1:5:3245:A:H8	1.65	0.61
28:Z:13:VAL:HG22	28:Z:80:LEU:CD2	2.30	0.61
1:5:1671:C:C5'	20:R:60:LYS:NZ	2.62	0.61
23:U:80:THR:O	23:U:84:LEU:HG	2.01	0.61
20:R:98:ARG:HD3	20:R:133:LYS:O	2.00	0.61
8:E:20:LYS:HE3	8:E:20:LYS:HA	1.83	0.61
17:O:84:LEU:HD23	17:O:84:LEU:C	2.19	0.61
1:5:3272:C:H5'	8:E:78:ARG:HB2	1.83	0.61
1:5:620:U:O2'	18:P:167:ARG:NE	2.34	0.61
1:5:1575:A:O2'	1:5:1576:G:O4'	2.11	0.61
1:5:684:G:H2'	1:5:685:G:H8	1.66	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:3343:G:H21	1:5:3362:A:H2	1.47	0.61
28:Z:129:TRP:O	28:Z:132:SER:N	2.29	0.61
3:8:30:C:O2'	3:8:31:G:H5'	2.01	0.61
16:N:70:ASN:HD21	16:N:93:LYS:NZ	1.99	0.61
2:7:73:C:O2	21:S:13:ARG:NH2	2.34	0.60
1:5:394:G:N1	1:5:397:A:OP2	2.34	0.60
1:5:632:G:H2'	1:5:633:C:C6	2.35	0.60
1:5:2610:G:O2'	1:5:2611:U:H5'	2.01	0.60
1:5:2193:U:H1'	1:5:2275:A:O2'	2.00	0.60
1:5:1096:U:H4'	1:5:1097:G:O5'	2.01	0.60
1:5:1235:U:H4'	1:5:1236:G:C5'	2.31	0.60
24:V:136:VAL:CG1	24:V:137:VAL:HG23	2.31	0.60
10:G:101:THR:HG23	10:G:104:GLU:OE2	2.01	0.60
13:J:165:GLN:HG3	13:J:166:LYS:N	2.16	0.60
4:A:38:HIS:O	4:A:93:LYS:HG2	2.00	0.60
1:5:1257:C:H2'	1:5:1258:U:O4'	2.02	0.60
19:Q:81:VAL:CG1	19:Q:101:VAL:HG13	2.31	0.60
1:5:2898:G:H5''	1:5:2899:C:C5'	2.31	0.60
17:O:77:SER:N	17:O:106:GLU:OE1	2.30	0.60
1:5:1307:G:H5''	17:O:60:LYS:HE2	1.83	0.60
12:I:7:ARG:HB3	12:I:7:ARG:HH11	1.66	0.60
1:5:1052:U:H2'	1:5:1053:A:H5'	1.83	0.60
1:5:3136:G:H4'	5:B:342:LEU:HD12	1.82	0.60
2:7:27:A:H2'	2:7:28:C:C6	2.37	0.60
16:N:148:TYR:O	16:N:151:ILE:HG22	2.01	0.60
1:5:2536:A:C2'	1:5:2537:U:O4'	2.48	0.60
1:5:2925:C:C2'	1:5:2926:A:H5'	2.30	0.60
1:5:123:A:H61	1:5:149:U:H3	1.48	0.60
9:F:185:ILE:O	9:F:189:ILE:HG22	2.01	0.60
7:D:219:PHE:CE1	7:D:227:LEU:HD11	2.36	0.60
14:L:28:GLN:HB3	16:N:201:ARG:NH1	2.16	0.60
5:B:233:TRP:CD1	5:B:265:ALA:HB1	2.36	0.60
1:5:1238:C:C3'	1:5:1239:C:H5''	2.31	0.60
3:8:80:A:O2'	3:8:81:U:OP1	2.16	0.60
13:J:38:GLU:HG3	13:J:43:GLN:O	2.01	0.60
19:Q:60:PRO:HG3	19:Q:144:ARG:HB3	1.82	0.60
1:5:1235:U:C4'	1:5:1236:G:H5'	2.31	0.60
16:N:172:ARG:HG2	16:N:174:ILE:HD11	1.83	0.60
4:A:70:ARG:HD2	4:A:72:ARG:NE	2.14	0.60
1:5:537:A:H1'	1:5:557:A:O2'	2.01	0.60
24:V:13:ILE:HD11	24:V:81:GLN:NE2	2.15	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:H:86:TYR:CE2	11:H:151:VAL:HG13	2.35	0.60
16:N:182:ASN:O	16:N:183:THR:HG22	2.02	0.60
1:5:1684:U:OP1	23:U:86:LYS:NZ	2.29	0.60
5:B:332:ARG:O	5:B:333:LYS:HB2	2.00	0.60
10:G:70:LYS:HB3	10:G:234:GLY:O	2.01	0.60
17:O:27:LEU:CD1	17:O:102:LEU:HB2	2.31	0.60
17:O:56:ASP:O	17:O:60:LYS:HE3	2.01	0.60
1:5:2141:U:H5''	1:5:2142:A:OP2	2.01	0.60
5:B:227:GLU:HG3	5:B:270:ARG:CB	2.31	0.60
22:T:135:PRO:O	22:T:136:ARG:HB2	2.01	0.60
1:5:2102:U:H2'	1:5:2103:U:C6	2.37	0.60
9:F:120:THR:O	9:F:124:LEU:HB2	2.00	0.60
1:5:1055:A:N3	2:7:81:U:O2'	2.34	0.60
9:F:31:ALA:HA	9:F:34:LYS:CB	2.32	0.60
4:A:112:ILE:HG22	4:A:135:ILE:HG23	1.83	0.60
1:5:3299:A:H4'	18:P:55:GLN:NE2	2.16	0.60
1:5:2586:G:O2'	10:G:241:LYS:HE2	2.00	0.60
5:B:287:LYS:HB3	5:B:287:LYS:NZ	2.16	0.60
17:O:48:PHE:HE1	17:O:52:LEU:HD11	1.66	0.60
4:A:104:LEU:O	4:A:107:VAL:HG22	2.01	0.60
1:5:2523:A:H4'	1:5:2524:A:OP2	2.02	0.60
8:E:89:THR:HG21	15:M:115:PHE:CB	2.31	0.60
24:V:87:ARG:HD2	24:V:93:LEU:CD2	2.31	0.60
10:G:162:LEU:CD2	16:N:7:LEU:HD21	2.32	0.60
1:5:1235:U:H4'	1:5:1236:G:H5'	1.83	0.60
1:5:408:A:N3	1:5:655:C:O2'	2.32	0.60
1:5:1355:A:H4'	1:5:1356:U:O5'	2.02	0.60
23:U:19:VAL:HG21	23:U:30:PRO:HG3	1.82	0.60
1:5:644:G:H2'	1:5:2372:A:H62	1.66	0.60
10:G:72:PRO:HG2	16:N:18:VAL:HA	1.84	0.60
1:5:622:A:H1'	9:F:60:ARG:HH21	67.97	0.60
1:5:1556:C:H5''	1:5:1556:C:C6	2.37	0.60
9:F:47:ARG:NH1	9:F:179:LEU:HD21	2.14	0.60
1:5:3261:C:C2'	1:5:3262:U:H5'	2.32	0.60
3:8:15:G:C6	3:8:16:G:N1	2.70	0.60
1:5:3202:G:H2'	1:5:3203:U:C6	2.37	0.60
12:I:89:VAL:HG22	12:I:136:PHE:CE1	2.36	0.60
10:G:53:PRO:HB2	10:G:55:TYR:CD2	2.36	0.59
1:5:1079:A:H4'	7:D:140:ARG:O	2.02	0.59
1:5:249:U:O2'	1:5:250:U:O4'	2.16	0.59
14:L:42:ARG:O	14:L:46:ILE:HG12	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:44:ILE:O	4:A:61:VAL:HG23	2.02	0.59
4:A:112:ILE:CG2	4:A:135:ILE:HG23	2.32	0.59
1:5:121:A:C4	10:G:108:ARG:NH1	2.70	0.59
1:5:1225:A:C2'	1:5:1226:G:H5'	2.32	0.59
22:T:101:CYS:SG	22:T:102:ARG:N	2.75	0.59
1:5:1109:U:H2'	1:5:1110:U:C6	2.37	0.59
1:5:2987:A:O2'	5:B:259:HIS:HB3	2.02	0.59
6:C:178:LEU:O	6:C:182:LEU:HD23	2.02	0.59
2:7:25:G:H2'	2:7:26:C:H6	1.67	0.59
2:7:76:A:H1'	21:S:50:LYS:NZ	2.16	0.59
1:5:3334:U:H4'	1:5:3335:A:H5'	1.84	0.59
1:5:1669:C:C2'	1:5:1670:C:H5'	2.32	0.59
10:G:149:LYS:N	10:G:149:LYS:HD2	2.17	0.59
1:5:1222:G:H2'	1:5:1222:G:OP2	2.01	0.59
1:5:2228:A:H2'	1:5:2229:A:C8	2.37	0.59
9:F:31:ALA:O	9:F:34:LYS:HB2	2.01	0.59
1:5:2961:G:H2'	1:5:2962:U:H6	1.67	0.59
16:N:18:VAL:HG22	16:N:19:LEU:N	2.16	0.59
1:5:1423:C:C2'	1:5:1424:C:H5'	2.33	0.59
14:L:70:ARG:HG2	14:L:71:ALA:H	1.68	0.59
14:L:35:ARG:O	14:L:39:ARG:HG3	2.02	0.59
1:5:3207:U:H3'	1:5:3209:A:C2	2.29	0.59
1:5:996:A:H2'	1:5:997:A:O4'	2.02	0.59
9:F:84:VAL:HG13	9:F:119:VAL:CG2	2.32	0.59
1:5:1991:Y5P:H2'	1:5:1992:Y5P:H6	1.84	0.59
1:5:1543:G:OP1	16:N:35:VAL:HG23	2.02	0.59
19:Q:18:ALA:HA	19:Q:53:PHE:CZ	2.36	0.59
9:F:98:LYS:HB3	9:F:99:PRO:CD	2.27	0.59
1:5:1128:U:OP1	12:I:4:ARG:NH2	2.35	0.59
20:R:106:LEU:HD21	20:R:123:LEU:HB2	1.84	0.59
1:5:1819:U:HO2'	1:5:1820:U:P	2.20	0.59
1:5:44:U:H5''	16:N:85:THR:HG23	1.85	0.59
11:H:10:ILE:O	11:H:52:LEU:HD23	2.03	0.59
1:5:1889:G:N3	1:5:1889:G:H2'	2.17	0.59
6:C:264:SER:OG	6:C:267:VAL:HG12	2.03	0.59
1:5:3159:C:H2'	1:5:3160:U:H6	1.67	0.59
12:I:124:GLY:C	12:I:125:LEU:HD23	2.22	0.59
1:5:3328:G:C2'	1:5:3329:U:H5'	2.33	0.59
1:5:1383:G:H1	1:5:1423:C:H42	1.51	0.59
1:5:2747:A:H5'	7:D:175:HIS:HA	1.84	0.59
1:5:1729:A:OP1	6:C:88:GLY:N	101.87	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:O:157:GLU:O	17:O:161:LYS:HG3	2.03	0.59
1:5:3159:C:H2'	1:5:3160:U:C6	2.38	0.59
1:5:2297:U:H2'	1:5:2299:A:N7	2.17	0.59
1:5:12:A:H2'	1:5:13:A:C8	2.37	0.59
11:H:25:VAL:HG11	11:H:78:MET:CE	2.32	0.59
1:5:2675:C:H42	13:J:22:SER:CB	2.13	0.59
1:5:3209:A:C6	15:M:106:ARG:NH1	2.71	0.59
15:M:106:ARG:HB2	15:M:106:ARG:HH11	5.25	0.59
1:5:1818:U:O2'	1:5:1819:U:O4'	2.20	0.59
24:V:11:PHE:CD1	24:V:88:ARG:HD2	2.38	0.59
6:C:192:GLY:CA	6:C:197:ARG:HH12	2.16	0.59
5:B:313:HIS:O	5:B:333:LYS:HE3	2.01	0.59
21:S:106:LEU:HD13	21:S:106:LEU:C	2.23	0.59
1:5:1563:C:H2'	1:5:1564:U:C6	2.38	0.59
1:5:627:U:H2'	1:5:628:A:C8	2.37	0.59
14:L:52:ASP:C	14:L:53:LEU:HD23	2.23	0.59
7:D:208:MET:HB2	7:D:233:ALA:HB2	1.84	0.59
15:M:128:ARG:CG	15:M:132:LYS:HD2	2.32	0.59
18:P:39:TRP:O	18:P:113:TYR:HB2	2.02	0.59
16:N:73:ARG:CG	16:N:74:PRO:HD2	2.32	0.59
22:T:122:GLN:OE1	22:T:124:VAL:HG21	2.02	0.59
1:5:2939:G:O2'	1:5:2940:A:H5'	2.03	0.59
1:5:708:G:H5'	1:5:709:A:OP2	2.03	0.59
10:G:245:LYS:HG2	10:G:245:LYS:O	2.02	0.59
1:5:3013:U:H2'	1:5:3014:U:H6	1.68	0.59
16:N:120:TRP:NE1	16:N:123:GLN:OE1	2.35	0.59
1:5:2952:G:H2'	1:5:2953:U:O4'	2.01	0.59
1:5:2536:A:H2	1:5:2544:U:N3	2.01	0.59
1:5:3228:C:H1'	1:5:3229:G:OP2	2.03	0.59
8:E:64:LEU:O	8:E:65:ILE:HD13	2.02	0.59
1:5:1427:U:H2'	1:5:1428:A:C8	2.37	0.59
1:5:1585:C:O2'	1:5:1586:G:H5'	2.02	0.59
1:5:2939:G:C2'	1:5:2940:A:H5'	2.33	0.59
16:N:185:ALA:HB3	16:N:190:THR:HB	1.84	0.59
12:I:89:VAL:HG22	12:I:136:PHE:HE1	1.68	0.59
7:D:208:MET:CB	7:D:233:ALA:HB2	2.33	0.59
19:Q:44:PHE:HE1	19:Q:139:ILE:HD11	1.68	0.59
5:B:57:VAL:HG22	5:B:73:VAL:HB	1.84	0.59
6:C:110:ASN:HB2	16:N:201:ARG:O	2.03	0.59
23:U:94:ARG:CZ	23:U:96:VAL:HG22	2.33	0.59
1:5:237:G:H2'	1:5:238:A:H5'	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:3092:C:H2'	24:V:12:ARG:NH2	2.18	0.59
6:C:222:VAL:HG23	6:C:223:PRO:HD2	1.84	0.59
23:U:17:VAL:HG22	23:U:103:TYR:HB2	1.84	0.59
1:5:1946:A:O2'	1:5:1947:G:H5'	2.03	0.59
17:O:22:VAL:HG21	17:O:120:VAL:HG11	1.84	0.59
1:5:2556:C:O2'	1:5:2557:A:H5'	2.03	0.59
14:L:50:PRO:HA	14:L:138:VAL:O	2.03	0.59
1:5:2276:G:O6	1:5:2311:G:N3	2.35	0.59
1:5:1798:A:H2'	1:5:1799:A:H8	1.68	0.59
1:5:242:C:H2'	1:5:243:G:H8	1.68	0.59
26:X:141:TYR:O	26:X:142:ILE:HB	2.02	0.58
1:5:1083:G:H2'	1:5:1084:A:H8	1.68	0.58
14:L:46:ILE:O	14:L:49:ARG:HG3	2.03	0.58
12:I:178:ARG:N	12:I:179:PRO:HD2	2.18	0.58
24:V:45:ARG:CG	24:V:45:ARG:NH1	2.56	0.58
27:Y:45:ILE:HD11	27:Y:122:LYS:HB2	1.85	0.58
22:T:118:GLU:O	22:T:122:GLN:HG3	2.03	0.58
1:5:2681:U:O2'	1:5:2682:C:H5'	2.03	0.58
1:5:400:G:H4'	1:5:401:U:O5'	2.03	0.58
24:V:23:MET:HB2	24:V:98:ASN:O	2.03	0.58
3:8:109:A:C2'	3:8:110:C:H5'	2.33	0.58
5:B:82:PRO:HB3	5:B:319:ASN:HB3	1.85	0.58
19:Q:109:GLY:O	19:Q:112:ALA:HB3	2.02	0.58
8:E:60:ASP:O	8:E:61:ASN:HB2	2.02	0.58
1:5:546:C:H4'	1:5:547:G:O5'	2.02	0.58
16:N:18:VAL:HG22	16:N:19:LEU:HD12	1.84	0.58
15:M:128:ARG:HD3	15:M:132:LYS:HD2	1.86	0.58
1:5:1238:C:H2'	1:5:1239:C:H5''	1.84	0.58
19:Q:122:ILE:HG22	19:Q:126:GLN:HB2	1.85	0.58
1:5:2291:A:H2'	1:5:2292:U:H6	1.66	0.58
1:5:2709:C:H2'	1:5:2710:C:H6	1.69	0.58
1:5:167:U:O2'	1:5:168:U:H5'	2.02	0.58
28:Z:83:THR:HG23	28:Z:85:TYR:N	2.18	0.58
1:5:3060:C:H4'	1:5:3371:G:H22	1.67	0.58
6:C:203:ARG:HG3	6:C:246:ARG:NH2	2.18	0.58
18:P:95:LEU:CD2	18:P:148:LEU:HD21	2.34	0.58
21:S:8:GLN:CG	21:S:26:ARG:HE	2.13	0.58
1:5:138:U:H2'	1:5:139:G:C8	2.37	0.58
1:5:3202:G:H2'	1:5:3203:U:H6	1.68	0.58
1:5:2297:U:O2'	1:5:2920:U:H4'	2.03	0.58
10:G:205:ALA:HA	10:G:208:GLU:OE2	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:H:124:ARG:HB3	11:H:164:ILE:CG1	2.33	0.58
1:5:75:G:OP1	14:L:58:VAL:HG13	2.03	0.58
17:O:27:LEU:HD21	17:O:33:ILE:HG12	1.85	0.58
15:M:55:ARG:HD3	21:S:70:THR:CB	2.32	0.58
1:5:1785:U:H2'	1:5:1786:G:H8	1.67	0.58
27:Y:3:LYS:HD2	27:Y:8:VAL:CG2	2.34	0.58
5:B:227:GLU:OE1	5:B:231:HIS:HB3	2.03	0.58
13:J:26:SER:CB	13:J:29:ARG:HD2	2.33	0.58
16:N:61:ILE:HD11	16:N:133:ILE:HG12	1.84	0.58
12:I:187:ALA:CB	12:I:189:GLU:HG3	2.33	0.58
12:I:206:LEU:O	12:I:210:ILE:HG23	2.04	0.58
6:C:209:TYR:HA	6:C:251:THR:OG1	2.03	0.58
25:W:42:GLN:HB3	25:W:44:LYS:HE2	1.86	0.58
1:5:1265:U:O2	1:5:1277:C:H1'	2.03	0.58
26:X:79:GLY:O	26:X:81:ILE:HD12	2.04	0.58
13:J:53:THR:HG23	13:J:60:ARG:HA	1.84	0.58
12:I:7:ARG:NH1	12:I:7:ARG:HB3	2.17	0.58
15:M:116:GLU:O	15:M:120:VAL:HG23	2.02	0.58
1:5:1330:A:N1	1:5:1332:A:H1'	2.19	0.58
1:5:2821:C:N4	1:5:2869:U:H3	2.01	0.58
5:B:48:GLY:O	5:B:336:VAL:N	2.26	0.58
1:5:242:C:H2'	1:5:243:G:C8	2.39	0.58
18:P:15:ALA:HB3	18:P:150:VAL:HG23	1.84	0.58
1:5:1083:G:H2'	1:5:1084:A:C8	2.38	0.58
6:C:6:VAL:HG12	6:C:147:GLU:OE2	2.03	0.58
22:T:9:SER:OG	22:T:10:ARG:HG3	2.03	0.58
14:L:51:LEU:O	14:L:51:LEU:HD23	2.04	0.58
6:C:246:ARG:HG2	6:C:247:PHE:N	2.19	0.58
1:5:2093:A:H3'	1:5:2093:A:N3	2.19	0.58
1:5:505:G:H2'	1:5:506:U:H6	1.68	0.58
1:5:524:U:OP1	15:M:77:ARG:NH2	2.35	0.58
18:P:179:GLN:O	18:P:184:ALA:HB2	2.02	0.58
7:D:278:SER:HB2	7:D:280:GLU:OE1	2.03	0.58
1:5:1605:A:O2'	1:5:1607:U:OP2	2.19	0.58
6:C:300:ARG:NH1	6:C:300:ARG:CG	2.63	0.58
12:I:85:PHE:HA	12:I:140:THR:HG22	1.86	0.58
5:B:111:SER:O	5:B:115:LYS:HG3	2.02	0.58
15:M:24:LYS:CD	15:M:64:VAL:HG12	2.33	0.58
1:5:1359:C:H2'	1:5:1360:C:C6	2.38	0.58
5:B:311:PHE:CE2	5:B:317:ILE:HD11	2.38	0.58
1:5:1183:C:C2'	1:5:1184:A:H5'	2.33	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2890:A:H61	1:5:2913:C:H42	1.52	0.58
1:5:1443:G:OP1	18:P:124:LYS:NZ	2.36	0.58
24:V:16:GLY:O	24:V:17:LEU:HD23	2.03	0.58
1:5:550:A:H2'	1:5:551:A:C8	2.39	0.58
5:B:37:ARG:CA	5:B:186:GLY:HA3	2.33	0.58
19:Q:34:THR:CG2	19:Q:49:LEU:HD11	2.29	0.58
1:5:2198:A:C2	1:5:2199:G:C8	2.91	0.58
1:5:2271:A:O2'	1:5:2272:G:H5'	2.03	0.58
1:5:2279:A:H2	1:5:2305:G:N7	2.01	0.58
1:5:1359:C:O2'	1:5:1360:C:H5'	2.03	0.58
1:5:1329:U:O2'	1:5:1330:A:H5''	2.02	0.58
10:G:34:PHE:CE2	10:G:42:PRO:HD3	2.39	0.58
14:L:54:LEU:HD13	14:L:54:LEU:C	2.24	0.58
1:5:362:U:C2'	1:5:363:G:H5'	2.33	0.58
1:5:3013:U:H2'	1:5:3014:U:C6	2.39	0.58
5:B:45:SER:OG	5:B:181:ILE:HD13	2.04	0.58
1:5:2402:A:H5''	6:C:67:THR:OG1	2.04	0.58
1:5:248:U:H2'	1:5:249:U:H5'	1.85	0.58
1:5:722:G:H2'	1:5:723:U:C6	2.39	0.58
1:5:769:G:C2'	1:5:770:G:H5'	2.32	0.58
1:5:1678:G:H2'	1:5:1679:A:C8	2.39	0.58
6:C:122:THR:O	6:C:126:ILE:HG13	2.04	0.58
13:J:47:GLN:OE1	13:J:64:LYS:HD3	2.03	0.58
1:5:2909:U:H2'	1:5:2910:A:O4'	2.02	0.58
23:U:54:VAL:HG22	23:U:67:SER:OG	2.03	0.58
1:5:2697:A:N6	1:5:2698:G:O6	2.37	0.58
6:C:93:MET:H	6:C:93:MET:CE	2.16	0.58
1:5:269:G:H5''	16:N:14:LYS:HZ3	1.68	0.58
4:A:68:LYS:HD3	4:A:70:ARG:HH21	1.68	0.58
8:E:56:LYS:HD3	8:E:64:LEU:HD12	1.85	0.58
1:5:238:A:HO2'	1:5:239:G:P	2.27	0.58
1:5:2917:G:C2	1:5:2918:G:H1'	2.39	0.58
5:B:217:ALA:CB	5:B:328:ILE:HG13	2.34	0.58
26:X:100:LYS:HZ2	26:X:106:ASP:HA	1.67	0.57
1:5:916:G:H4'	1:5:917:A:O5'	2.04	0.57
1:5:3092:C:H2'	24:V:12:ARG:HH22	1.68	0.57
1:5:31:C:H2'	1:5:32:U:H6	1.68	0.57
1:5:2885:C:O2'	1:5:2886:U:H5'	2.04	0.57
1:5:605:U:O2'	1:5:606:C:H5'	2.04	0.57
28:Z:46:ILE:HG22	28:Z:68:ILE:HG21	1.85	0.57
18:P:4:TYR:HE1	18:P:16:SER:HB2	1.68	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:205:ASN:HB3	4:A:206:PRO:HD2	1.85	0.57
9:F:33:ARG:HA	9:F:36:ALA:CB	2.33	0.57
1:5:3383:G:H2'	1:5:3384:U:C6	2.37	0.57
1:5:2363:A:H2'	1:5:2364:G:C8	2.39	0.57
6:C:71:VAL:HG22	6:C:72:ALA:N	2.18	0.57
1:5:2101:C:HO2'	1:5:2102:U:P	2.27	0.57
1:5:2655:U:H4'	1:5:2656:A:O5'	2.03	0.57
1:5:1703:U:H1'	1:5:1743:G:N2	2.19	0.57
1:5:2400:G:H5'	1:5:2401:A:OP2	2.05	0.57
1:5:1847:A:O2'	1:5:1848:G:H5''	2.05	0.57
6:C:142:VAL:HG12	6:C:145:ILE:CD1	2.34	0.57
1:5:190:U:O2'	1:5:191:U:OP2	2.19	0.57
12:I:48:LEU:HD22	12:I:49:CYS:H	1.69	0.57
1:5:2282:U:O2	1:5:2961:G:H5'	2.03	0.57
1:5:1576:G:H2'	1:5:1577:G:O4'	2.03	0.57
1:5:1629:U:O4	28:Z:111:LYS:HD2	2.04	0.57
2:7:33:U:O2'	2:7:34:C:H5'	2.04	0.57
1:5:515:C:O3'	6:C:343:LYS:HA	2.05	0.57
1:5:3304:U:O3'	5:B:334:ARG:NH2	2.37	0.57
1:5:1222:G:H3'	1:5:1222:G:P	2.45	0.57
19:Q:81:VAL:CG1	19:Q:101:VAL:HA	2.35	0.57
10:G:44:ARG:O	26:X:28:THR:HG22	2.04	0.57
14:L:21:ARG:HH11	14:L:21:ARG:CG	2.13	0.57
1:5:873:C:H4'	1:5:874:U:OP2	2.03	0.57
1:5:2152:A:O2'	1:5:2153:U:H5'	2.05	0.57
1:5:2778:G:C2'	1:5:2779:A:H5'	2.32	0.57
1:5:70:A:H2	1:5:72:C:N4	2.01	0.57
1:5:928:C:H2'	1:5:929:A:C8	2.39	0.57
3:8:138:A:O2'	3:8:139:U:H5'	2.04	0.57
1:5:1160:C:C5	1:5:1366:A:H1'	2.39	0.57
5:B:152:LYS:HE3	5:B:192:VAL:CG2	2.35	0.57
24:V:125:LEU:HB3	24:V:126:TRP:CD1	2.40	0.57
28:Z:46:ILE:HD12	28:Z:46:ILE:O	2.03	0.57
1:5:248:U:O2	1:5:248:U:H2'	2.04	0.57
1:5:248:U:C2'	1:5:249:U:H5'	2.34	0.57
5:B:14:LEU:CD2	5:B:17:LEU:HD21	2.35	0.57
5:B:148:LEU:CD2	5:B:196:ARG:HD3	2.32	0.57
1:5:2585:G:N3	1:5:2585:G:H2'	2.18	0.57
8:E:52:VAL:HG22	8:E:67:GLY:CA	2.34	0.57
5:B:26:ARG:CG	5:B:26:ARG:HH11	2.18	0.57
2:7:95:A:O2'	2:7:96:U:H5'	2.05	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1649:U:H2'	1:5:1650:G:C8	2.39	0.57
1:5:3329:U:P	5:B:376:LYS:HZ2	2.28	0.57
1:5:1152:G:N2	1:5:1200:A:H61	2.03	0.57
9:F:28:ALA:O	9:F:32:ALA:HB2	2.05	0.57
12:I:168:SER:HB2	22:T:160:ILE:O	2.05	0.57
28:Z:11:ALA:O	28:Z:23:VAL:HG22	2.04	0.57
28:Z:64:LYS:O	28:Z:67:LYS:HG2	2.05	0.57
6:C:30:ILE:CG2	6:C:32:PRO:HD3	2.34	0.57
1:5:2991:A:OP2	5:B:20:LYS:HE2	2.05	0.57
12:I:87:LEU:CD1	12:I:138:VAL:HG22	2.32	0.57
19:Q:126:GLN:O	19:Q:130:ARG:HG3	2.04	0.57
1:5:1324:U:H5''	21:S:2:ALA:HA	1.86	0.57
7:D:166:ALA:O	7:D:171:LEU:HB2	2.05	0.57
3:8:88:A:H3'	3:8:89:A:H8	1.69	0.57
1:5:787:G:H2'	1:5:788:C:C6	2.40	0.57
23:U:104:ARG:NH1	23:U:106:ALA:HB2	2.18	0.57
1:5:2714:G:N3	1:5:2714:G:H5''	2.20	0.57
1:5:2667:A:O2'	1:5:2691:A:OP1	2.21	0.57
1:5:599:C:H2'	1:5:600:G:O4'	2.04	0.57
1:5:1336:U:H2'	1:5:1337:A:H8	1.68	0.57
1:5:823:C:H5'	4:A:19:HIS:CE1	2.39	0.57
1:5:531:G:H1	1:5:561:C:H42	1.52	0.57
19:Q:81:VAL:HG12	19:Q:100:THR:O	2.05	0.57
14:L:46:ILE:O	14:L:47:ALA:HB3	2.05	0.57
5:B:284:ARG:HB2	5:B:323:MET:HE1	1.86	0.57
1:5:1447:G:OP1	18:P:65:SER:OG	2.15	0.57
5:B:214:MET:CE	5:B:279:ASN:HA	2.34	0.57
3:8:79:A:O2'	3:8:80:A:OP1	2.17	0.57
10:G:103:ALA:O	10:G:107:GLU:HG3	2.05	0.57
1:5:370:U:C2'	1:5:371:G:H5'	2.35	0.57
1:5:1193:A:H3'	1:5:1194:G:H8	1.70	0.57
20:R:3:ASN:HD21	20:R:5:ARG:HH21	1.51	0.57
1:5:579:G:O2'	1:5:580:C:H5'	2.04	0.57
1:5:2838:A:N6	1:5:2850:G:O2'	2.36	0.57
5:B:220:VAL:HG13	5:B:273:HIS:O	2.04	0.57
1:5:253:A:O2'	1:5:254:A:H8	1.88	0.57
15:M:36:VAL:HG11	15:M:55:ARG:NH2	2.20	0.57
12:I:86:HIS:ND1	12:I:139:ARG:NH1	2.53	0.57
4:A:137:ILE:HG23	4:A:147:ARG:O	2.04	0.57
4:A:114:SER:OG	4:A:169:ILE:HG13	2.05	0.57
1:5:2793:G:H5''	17:O:66:LYS:HG3	91.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:J:94:ARG:NH1	13:J:94:ARG:HG2	2.18	0.57
28:Z:14:VAL:HG12	28:Z:79:HIS:HA	1.86	0.57
1:5:1364:C:H4'	19:Q:5:HIS:HE1	1.69	0.57
1:5:208:C:O2'	1:5:209:A:H5'	2.04	0.57
4:A:64:ARG:HH22	10:G:38:GLN:HA	1.69	0.57
10:G:211:LEU:HD22	10:G:211:LEU:O	2.04	0.57
1:5:796:U:H2'	1:5:797:U:H6	1.69	0.57
6:C:74:ILE:HD12	6:C:75:PRO:CD	2.31	0.57
1:5:2609:A:C3'	1:5:2610:G:H5''	2.35	0.57
9:F:179:LEU:N	9:F:179:LEU:HD13	2.20	0.57
1:5:1234:G:OP2	1:5:1235:U:H3'	2.04	0.57
19:Q:64:VAL:O	19:Q:67:ILE:HG13	2.05	0.57
24:V:23:MET:CE	24:V:100:GLY:HA3	2.33	0.57
14:L:123:ILE:HG12	14:L:124:ILE:N	2.17	0.57
1:5:3180:A:C6	17:O:114:LYS:HD3	2.40	0.57
1:5:698:U:H2'	1:5:699:A:O4'	2.04	0.57
1:5:504:A:H4'	6:C:315:LYS:NZ	2.20	0.57
26:X:100:LYS:HZ1	26:X:106:ASP:HA	1.68	0.57
6:C:11:LEU:HD13	6:C:168:ALA:CB	2.34	0.57
6:C:30:ILE:HA	6:C:124:SER:OG	2.04	0.57
6:C:64:SER:HA	6:C:75:PRO:HA	1.86	0.57
1:5:899:U:O2'	1:5:900:G:H5'	2.03	0.57
9:F:130:ILE:O	9:F:134:VAL:HG13	2.05	0.57
1:5:357:A:C2'	1:5:358:G:H5'	2.34	0.57
1:5:283:G:O6	1:5:304:G:H1'	2.05	0.57
18:P:87:SER:O	18:P:91:VAL:HG23	2.05	0.57
7:D:62:CYS:HB3	7:D:105:ILE:HD13	1.87	0.57
1:5:3369:G:H5'	1:5:3370:A:OP1	2.05	0.57
1:5:2339:C:H3'	5:B:236:LYS:NZ	2.19	0.57
6:C:119:ARG:HA	6:C:122:THR:CG2	2.35	0.57
1:5:2768:U:H2'	1:5:2769:A:H8	1.70	0.57
23:U:104:ARG:HH11	23:U:106:ALA:HB2	1.69	0.57
1:5:1578:C:H2'	1:5:1579:C:O4'	2.05	0.57
1:5:232:G:O2'	1:5:233:C:H5'	2.04	0.57
1:5:674:G:OP2	19:Q:105:ARG:NH1	2.37	0.57
24:V:75:PRO:HB2	24:V:103:ALA:O	2.05	0.57
1:5:3371:G:H2'	1:5:3372:A:C8	2.40	0.56
9:F:103:LEU:HG	9:F:130:ILE:CD1	2.32	0.56
1:5:173:G:H2'	1:5:174:C:C6	2.41	0.56
12:I:156:ARG:HG2	12:I:163:GLN:CG	2.32	0.56
1:5:2748:A:C2	7:D:35:ARG:HB2	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:3195:U:C1'	1:5:3196:U:OP1	2.51	0.56
4:A:5:ILE:HG21	4:A:210:PRO:HD3	1.87	0.56
1:5:2636:A:H5''	1:5:2637:A:C5'	2.34	0.56
7:D:229:ASP:HB3	7:D:231:ILE:CG1	2.35	0.56
24:V:84:SER:HB3	24:V:94:TYR:HB3	1.87	0.56
1:5:2404:A:N3	1:5:2404:A:H2'	2.20	0.56
1:5:1449:A:H4'	1:5:2983:C:C6	2.40	0.56
1:5:1128:U:H2'	1:5:1129:A:O4'	2.05	0.56
9:F:131:GLU:CB	9:F:132:PRO:HD3	2.32	0.56
9:F:111:ILE:O	9:F:112:ASN:HB2	2.06	0.56
1:5:3197:G:H2'	1:5:3198:U:H5''	1.88	0.56
12:I:145:LYS:NZ	12:I:167:LEU:HG	2.20	0.56
14:L:151:ALA:O	14:L:152:THR:OG1	2.17	0.56
21:S:142:GLN:O	21:S:145:THR:HG23	2.05	0.56
1:5:2673:A:O2'	13:J:104:PHE:O	2.21	0.56
7:D:200:PHE:HB3	7:D:237:GLU:HG3	1.86	0.56
14:L:190:LYS:O	14:L:193:ALA:HB3	2.05	0.56
6:C:130:ALA:HA	6:C:149:PRO:HG3	1.87	0.56
6:C:65:TRP:CE3	6:C:69:ARG:NH1	2.73	0.56
4:A:113:VAL:HG12	4:A:166:ILE:HD13	1.87	0.56
4:A:27:ALA:HB3	4:A:128:ARG:HH12	1.70	0.56
4:A:147:ARG:HA	4:A:157:VAL:HA	1.86	0.56
4:A:44:ILE:HD12	4:A:62:VAL:HG13	1.86	0.56
6:C:55:LYS:HB2	6:C:55:LYS:NZ	2.19	0.56
16:N:73:ARG:HB2	16:N:92:LEU:CD2	2.32	0.56
1:5:1661:G:H2'	1:5:1662:G:C8	2.40	0.56
6:C:184:SER:HB2	6:C:202:ARG:HG2	1.87	0.56
6:C:330:TYR:HB2	9:F:45:LEU:HD22	1.88	0.56
17:O:183:ALA:O	17:O:186:ALA:HB3	2.05	0.56
6:C:187:LEU:CD1	6:C:193:LYS:HE3	2.35	0.56
1:5:2232:A:H1'	1:5:2429:G:C4'	2.36	0.56
1:5:1729:A:H4'	1:5:1730:G:OP2	2.04	0.56
1:5:3303:G:O2'	1:5:3305:A:N6	2.33	0.56
1:5:3180:A:OP1	17:O:171:LYS:NZ	2.38	0.56
1:5:1477:A:OP1	1:5:3075:G:O2'	2.22	0.56
1:5:1754:G:H2'	1:5:1755:C:H6	1.70	0.56
18:P:168:LEU:HD13	18:P:176:ILE:HD11	1.87	0.56
24:V:28:ASN:OD1	24:V:28:ASN:N	2.26	0.56
21:S:148:LEU:HD22	21:S:149:LYS:N	2.21	0.56
1:5:758:C:OP1	17:O:18:ARG:NH2	111.62	0.56
1:5:75:G:H5'	14:L:58:VAL:HG13	1.85	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:Y:60:ARG:NH1	27:Y:60:ARG:CG	2.56	0.56
16:N:140:LYS:HD2	16:N:144:ARG:CZ	2.35	0.56
20:R:119:LEU:O	20:R:123:LEU:HG	2.04	0.56
19:Q:170:ARG:HE	19:Q:171:LYS:HG2	1.70	0.56
1:5:3278:C:C3'	1:5:3279:A:H5'	2.34	0.56
15:M:44:VAL:CG1	15:M:60:LEU:HD21	2.36	0.56
23:U:28:PHE:HZ	23:U:33:TYR:CD1	2.23	0.56
1:5:1883:A:H2'	1:5:1884:A:O4'	2.05	0.56
26:X:44:PRO:O	26:X:45:LYS:HG2	2.06	0.56
3:8:126:A:OP2	3:8:126:A:H2'	2.04	0.56
1:5:1275:C:H2'	1:5:1276:U:H5'	1.87	0.56
27:Y:118:LEU:HD13	27:Y:121:ARG:NH1	2.20	0.56
4:A:143:GLU:HG3	4:A:143:GLU:O	2.06	0.56
1:5:2997:G:H1'	1:5:3396:U:H5'	1.87	0.56
1:5:824:C:H5''	4:A:21:ARG:HD3	1.88	0.56
6:C:22:LEU:HD21	6:C:26:PHE:CG	2.40	0.56
12:I:48:LEU:HD22	12:I:49:CYS:N	2.21	0.56
1:5:850:U:H2'	1:5:851:C:H6	1.70	0.56
9:F:96:PRO:O	9:F:99:PRO:HD2	2.05	0.56
1:5:1447:G:O2'	1:5:2355:G:O6	2.21	0.56
27:Y:35:LEU:HD23	27:Y:106:ILE:HD12	1.88	0.56
1:5:3187:A:OP1	11:H:22:SER:HA	2.05	0.56
1:5:3009:G:C2'	1:5:3010:U:H5'	2.36	0.56
23:U:98:THR:HG22	23:U:104:ARG:HE	1.70	0.56
5:B:139:GLN:OE1	5:B:142:ALA:HB3	2.06	0.56
21:S:40:ARG:O	21:S:43:TYR:HB3	2.05	0.56
1:5:3371:G:H2'	1:5:3372:A:H8	1.71	0.56
22:T:122:GLN:HB2	22:T:124:VAL:HG22	1.85	0.56
8:E:56:LYS:CB	8:E:98:VAL:HG11	2.35	0.56
1:5:405:U:H2'	1:5:406:G:H5'	1.88	0.56
17:O:183:ALA:HA	17:O:186:ALA:CB	2.35	0.56
24:V:70:ARG:CZ	24:V:70:ARG:HB3	2.35	0.56
1:5:1299:U:H2'	1:5:1300:G:H5'	1.88	0.56
18:P:20:SER:N	18:P:22:LEU:HD21	2.20	0.56
10:G:237:ILE:O	10:G:237:ILE:HG22	2.05	0.56
10:G:213:LYS:O	10:G:216:SER:OG	2.23	0.56
1:5:3137:C:H2'	1:5:3138:U:H6	1.68	0.56
13:J:97:SER:HB3	13:J:101:ASN:HB2	1.88	0.56
1:5:991:G:C6	1:5:992:A:C6	2.94	0.56
1:5:1555:U:O2'	1:5:1556:C:OP1	2.22	0.56
1:5:2567:C:C2'	1:5:2568:C:H5'	2.36	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:J:9:MET:O	13:J:11:ASP:N	2.39	0.56
12:I:145:LYS:HZ2	12:I:167:LEU:HD11	1.71	0.56
1:5:2344:U:H2'	1:5:2345:A:H8	1.70	0.56
1:5:504:A:H4'	6:C:315:LYS:HZ3	1.71	0.56
1:5:1103:A:H3'	1:5:1104:G:H5'	1.88	0.56
1:5:3176:G:N2	1:5:3212:C:O2	2.37	0.56
1:5:687:U:O2'	1:5:688:G:H5'	2.05	0.56
1:5:887:G:H2'	1:5:888:A:C8	2.41	0.56
7:D:119:TYR:OH	7:D:134:ALA:HA	2.04	0.56
22:T:27:LEU:O	22:T:31:LEU:HG	2.06	0.56
11:H:46:THR:HG22	11:H:47:LYS:N	2.20	0.56
1:5:2196:C:HO2'	1:5:2270:A:HO2'	1.53	0.56
4:A:149:ARG:NH1	4:A:149:ARG:HB2	2.21	0.56
9:F:63:ILE:O	9:F:67:ARG:HG3	2.05	0.56
18:P:25:SER:HB3	18:P:28:ASN:HB2	1.88	0.56
1:5:1246:G:N2	1:5:1264:G:O2'	2.38	0.56
8:E:39:VAL:O	8:E:40:LEU:HD23	2.05	0.56
21:S:31:ALA:HB1	21:S:36:ILE:CG2	2.36	0.56
6:C:276:LEU:N	6:C:276:LEU:HD12	2.21	0.56
6:C:290:ILE:HG23	19:Q:35:PHE:CE2	2.41	0.56
16:N:38:ARG:HG3	16:N:39:ALA:N	2.21	0.56
24:V:13:ILE:HG12	24:V:14:SER:N	2.21	0.56
1:5:3000:A:H2'	1:5:3001:C:H6	1.71	0.56
1:5:2931:C:O2'	1:5:2932:U:H5'	2.05	0.56
1:5:172:G:N3	1:5:172:G:H2'	2.20	0.56
18:P:126:ARG:NH2	18:P:138:LYS:HB3	2.20	0.56
19:Q:98:LYS:HG2	19:Q:99:THR:N	2.19	0.56
3:8:59:A:N1	3:8:100:U:H1'	2.21	0.56
28:Z:26:VAL:HG12	28:Z:89:VAL:HG23	1.88	0.56
6:C:142:VAL:O	6:C:145:ILE:HG12	2.05	0.56
16:N:151:ILE:O	16:N:151:ILE:HG12	2.04	0.56
1:5:2538:U:H2'	1:5:2539:C:H5''	1.88	0.56
1:5:1201:C:N4	1:5:2857:C:H5''	2.19	0.56
19:Q:123:THR:OG1	19:Q:125:ASP:OD2	2.21	0.56
2:7:48:U:O2'	2:7:49:G:H5'	2.06	0.56
1:5:3325:G:H1'	1:5:3383:G:N2	2.21	0.56
1:5:2407:C:H1'	1:5:2818:U:O2	2.05	0.56
1:5:1815:U:O2'	1:5:1816:A:OP2	2.21	0.56
1:5:823:C:O2'	1:5:1535:A:O2'	2.16	0.56
3:8:145:U:H2'	3:8:146:U:C6	2.40	0.56
17:O:39:GLU:OE1	17:O:39:GLU:N	2.32	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:H:122:LYS:HG2	11:H:123:ILE:N	2.20	0.56
18:P:116:HIS:HB3	18:P:149:VAL:HB	1.88	0.56
21:S:29:ILE:HG22	21:S:30:PHE:N	2.21	0.56
1:5:3087:A:H2'	1:5:3088:G:O4'	2.05	0.56
21:S:166:LYS:HG3	21:S:167:ARG:N	2.20	0.56
1:5:2685:C:O2'	1:5:2686:A:H5'	2.06	0.56
1:5:685:G:P	14:L:35:ARG:NH1	2.79	0.56
1:5:1539:A:C2'	1:5:1540:U:H5'	2.35	0.56
1:5:2292:U:H2'	1:5:2293:C:C6	2.41	0.56
1:5:2526:C:H2'	1:5:2527:G:H8	1.68	0.56
25:W:25:ASP:N	25:W:25:ASP:OD2	2.36	0.56
26:X:67:ILE:HD13	26:X:115:ARG:HH21	1.71	0.56
7:D:88:ILE:CD1	7:D:239:ILE:HG22	2.36	0.56
1:5:2373:A:H2'	1:5:2373:A:OP2	2.06	0.56
1:5:972:A:H2'	1:5:973:A:H8	1.71	0.56
1:5:948:C:O2'	1:5:949:C:H5'	2.06	0.56
1:5:630:A:H2'	1:5:631:U:C6	2.40	0.56
1:5:974:G:H2'	1:5:975:C:H6	1.72	0.55
19:Q:81:VAL:HG13	19:Q:101:VAL:HA	1.87	0.55
5:B:57:VAL:HG13	5:B:72:VAL:O	2.06	0.55
4:A:125:ALA:O	4:A:128:ARG:HD2	2.06	0.55
1:5:1208:U:H6	1:5:3115:C:N4	2.00	0.55
9:F:219:LYS:HB2	9:F:220:PHE:CD1	2.41	0.55
1:5:1562:C:H2'	1:5:1563:C:C6	2.41	0.55
1:5:2591:A:H2'	1:5:2592:G:O4'	2.05	0.55
1:5:2277:C:H2'	1:5:2278:C:C6	2.41	0.55
7:D:68:THR:HB	7:D:71:GLY:O	2.06	0.55
11:H:75:VAL:HA	11:H:78:MET:CE	2.30	0.55
20:R:106:LEU:HD21	20:R:123:LEU:HB3	1.87	0.55
8:E:152:THR:HG23	8:E:155:LEU:HB2	1.87	0.55
1:5:2807:U:O2'	1:5:2808:A:H2'	2.05	0.55
11:H:93:VAL:O	11:H:177:ASP:HA	2.06	0.55
11:H:103:ILE:CD1	11:H:134:ILE:HD12	2.36	0.55
2:7:25:G:H2'	2:7:26:C:C6	2.41	0.55
2:7:101:G:C2'	2:7:102:A:H5''	2.37	0.55
1:5:2880:U:O2	5:B:250:ALA:HB3	2.06	0.55
5:B:238:LEU:HB3	5:B:239:PRO:HD2	1.89	0.55
19:Q:16:ARG:HH21	19:Q:20:LYS:HB3	1.70	0.55
19:Q:125:ASP:OD2	19:Q:126:GLN:HG3	2.06	0.55
6:C:180:LYS:O	6:C:184:SER:HB3	2.05	0.55
1:5:213:A:H2'	1:5:214:G:H5'	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:F:160:ARG:NH2	9:F:206:LYS:HD2	2.21	0.55
10:G:64:ILE:O	10:G:68:ARG:HG2	2.07	0.55
11:H:89:LYS:HG2	11:H:145:VAL:HG22	1.89	0.55
1:5:3116:G:H5'	1:5:3117:C:C5	2.42	0.55
10:G:221:ASN:O	10:G:225:LYS:HE3	2.07	0.55
13:J:82:ARG:CB	13:J:112:LEU:HD12	2.35	0.55
9:F:80:GLN:HG3	22:T:136:ARG:HB3	1.88	0.55
1:5:1204:A:H2'	1:5:1205:A:O4'	2.07	0.55
13:J:40:LEU:HD13	13:J:114:ILE:CD1	2.37	0.55
19:Q:90:ASP:OD2	19:Q:92:ARG:HB2	2.06	0.55
11:H:166:ARG:HD2	11:H:168:ARG:NH1	2.14	0.55
1:5:2806:U:O2'	1:5:2807:U:H5'	2.07	0.55
1:5:1651:U:H5'	4:A:71:LEU:HD22	1.89	0.55
1:5:2878:G:H5''	5:B:5:LYS:HE3	1.88	0.55
1:5:381:U:H2'	1:5:382:U:C6	2.42	0.55
1:5:665:A:C2'	1:5:666:A:H5'	2.36	0.55
1:5:2424:A:N6	1:5:2605:G:O2'	2.38	0.55
1:5:1668:G:C2'	1:5:1669:C:H5'	2.37	0.55
1:5:1669:C:O2'	1:5:1670:C:H5'	2.06	0.55
1:5:546:C:H2'	1:5:546:C:O2	2.04	0.55
1:5:1463:U:H2'	1:5:1464:G:O4'	2.07	0.55
1:5:2017:P5P:H2'	1:5:2018:P5P:H8	1.89	0.55
6:C:191:LYS:HG3	6:C:194:TYR:OH	2.07	0.55
1:5:1557:A:H5''	10:G:54:GLU:OE1	2.06	0.55
1:5:2093:A:N6	20:R:114:LYS:HD3	2.21	0.55
18:P:41:LEU:CD2	18:P:95:LEU:HD22	2.33	0.55
1:5:1048:A:H2'	12:I:22:TYR:CE1	2.41	0.55
1:5:208:C:H2'	1:5:209:A:H5'	1.87	0.55
10:G:151:VAL:HG22	10:G:199:ALA:HB2	1.88	0.55
1:5:1245:A:C3'	1:5:1246:G:H5''	2.36	0.55
2:7:121:U:H5''	7:D:265:TYR:HE2	1.71	0.55
7:D:129:TYR:CE2	7:D:177:GLU:HG3	2.41	0.55
1:5:2769:A:C2'	1:5:2770:G:H5'	2.37	0.55
1:5:31:C:OP2	16:N:188:ARG:NH2	2.39	0.55
7:D:236:LEU:O	7:D:239:ILE:HB	2.07	0.55
4:A:200:ARG:HB3	4:A:202:VAL:HG12	1.89	0.55
5:B:70:ARG:HB3	5:B:70:ARG:HH11	1.71	0.55
6:C:317:PRO:O	6:C:324:LEU:HB2	2.07	0.55
21:S:9:VAL:O	21:S:26:ARG:HA	2.07	0.55
1:5:3259:U:H5''	1:5:3261:C:H5	1.72	0.55
1:5:2847:A:H2'	1:5:2848:G:O4'	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2363:A:C6	1:5:2364:G:C6	2.95	0.55
7:D:61:ILE:HD12	7:D:79:TYR:CD1	2.42	0.55
1:5:3250:U:H2'	1:5:3251:U:C6	2.42	0.55
7:D:188:GLU:C	7:D:189:GLU:HG3	2.27	0.55
1:5:1897:G:C1'	24:V:83:LYS:HB2	2.37	0.55
19:Q:83:VAL:O	19:Q:103:ALA:HA	2.07	0.55
1:5:2853:A:H5'	12:I:63:GLU:HB2	1.89	0.55
1:5:991:G:H2'	1:5:992:A:C8	2.42	0.55
1:5:1687:U:P	23:U:42:LYS:NZ	2.80	0.55
23:U:36:TYR:OH	23:U:82:LYS:HG2	2.07	0.55
15:M:77:ARG:O	15:M:81:VAL:HG23	2.07	0.55
1:5:3137:C:H2'	1:5:3138:U:C6	2.42	0.55
1:5:3283:U:H2'	1:5:3284:G:C8	2.42	0.55
19:Q:82:VAL:HB	19:Q:139:ILE:HG12	1.88	0.55
1:5:2556:C:H5'	28:Z:136:PHE:O	2.07	0.55
16:N:127:TYR:HB2	16:N:129:TYR:HE2	1.72	0.55
1:5:3340:G:H4'	1:5:3341:U:OP1	2.07	0.55
1:5:173:G:H2'	1:5:174:C:H6	1.72	0.55
1:5:1003:A:O4'	7:D:15:ARG:NE	2.40	0.55
1:5:1049:C:H2'	1:5:1050:U:C6	2.30	0.55
3:8:82:U:H2'	3:8:85:G:OP1	2.07	0.55
1:5:765:C:H4'	1:5:766:U:OP2	2.05	0.55
1:5:384:A:H2'	1:5:385:A:O4'	2.06	0.55
13:J:19:LEU:O	13:J:68:HIS:HA	2.07	0.55
12:I:145:LYS:NZ	12:I:167:LEU:CD1	2.70	0.55
10:G:161:GLU:N	10:G:161:GLU:OE2	2.38	0.55
24:V:37:ILE:HG12	24:V:59:MET:O	2.07	0.55
1:5:972:A:H2'	1:5:973:A:C8	2.41	0.55
1:5:2332:A:H2'	1:5:2333:C:O4'	2.07	0.55
1:5:2914:G:O2'	1:5:2933:A:N6	2.40	0.55
1:5:261:U:H2'	1:5:262:U:C6	2.41	0.55
11:H:87:LYS:CD	11:H:191:LEU:HD21	2.23	0.55
26:X:96:LYS:HG3	26:X:107:VAL:HG11	1.89	0.55
14:L:57:VAL:HG23	14:L:115:ARG:HD2	1.88	0.55
9:F:35:ALA:CA	9:F:38:LYS:HB2	2.28	0.55
12:I:73:ASN:O	12:I:77:THR:OG1	2.14	0.55
1:5:873:C:H5''	1:5:874:U:C4'	2.35	0.55
3:8:78:G:N3	3:8:78:G:H2'	2.22	0.55
1:5:768:C:O2'	1:5:769:G:H5'	2.07	0.55
9:F:88:ARG:HD2	9:F:111:ILE:HA	1.88	0.55
18:P:141:SER:O	18:P:143:PRO:HD3	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:552:G:H2'	1:5:553:U:C6	2.41	0.55
20:R:13:SER:OG	20:R:38:ARG:NH1	2.34	0.55
10:G:190:VAL:HG12	10:G:190:VAL:O	2.05	0.55
19:Q:89:ASP:HB2	19:Q:110:ALA:N	2.22	0.54
1:5:3386:G:H2'	1:5:3387:U:H6	1.70	0.54
1:5:3341:U:H5''	1:5:3342:A:OP2	2.07	0.54
1:5:435:C:N4	1:5:621:A:N7	2.55	0.54
17:O:78:ARG:HG3	17:O:78:ARG:NH1	2.12	0.54
6:C:110:ASN:OD1	16:N:201:ARG:HG2	2.06	0.54
1:5:3209:A:OP2	21:S:161:LYS:HD2	2.07	0.54
1:5:3289:G:H4'	1:5:3290:G:OP1	2.07	0.54
21:S:41:TYR:CE2	21:S:45:LEU:HD23	2.42	0.54
27:Y:39:LEU:HD21	27:Y:107:THR:O	2.08	0.54
3:8:85:G:H22	27:Y:113:LYS:HD2	1.70	0.54
1:5:1392:G:C2'	1:5:1417:G:H22	2.20	0.54
1:5:513:G:O2'	1:5:514:G:H5'	2.06	0.54
5:B:304:THR:OG1	5:B:305:ILE:N	2.40	0.54
24:V:13:ILE:HD11	24:V:81:GLN:HE22	1.72	0.54
17:O:128:ARG:NH1	17:O:128:ARG:CG	2.58	0.54
18:P:4:TYR:CE1	18:P:16:SER:HB2	2.42	0.54
12:I:177:ASP:OD2	12:I:177:ASP:N	2.39	0.54
12:I:75:TYR:CE1	12:I:150:GLU:HG3	2.43	0.54
7:D:155:THR:N	7:D:179:ARG:HH11	2.06	0.54
12:I:187:ALA:HB3	12:I:189:GLU:HG3	1.89	0.54
1:5:1607:U:H5'	1:5:1607:U:H6	1.72	0.54
11:H:40:HIS:CD2	11:H:40:HIS:H	2.26	0.54
8:E:28:GLN:HG2	8:E:29:LYS:N	2.21	0.54
6:C:157:GLU:O	6:C:213:ASN:HB2	2.07	0.54
1:5:2098:C:O2'	1:5:2099:A:H5'	2.08	0.54
3:8:59:A:O2'	26:X:61:LYS:NZ	2.39	0.54
9:F:23:ALA:O	9:F:26:VAL:HG22	2.07	0.54
5:B:364:LYS:HA	5:B:364:LYS:CE	2.29	0.54
1:5:793:C:C4	1:5:794:U:C4	2.95	0.54
3:8:66:A:H2'	3:8:67:U:C6	2.41	0.54
22:T:14:MET:HE1	22:T:55:LYS:CB	2.35	0.54
1:5:69:C:H2'	1:5:70:A:O4'	2.07	0.54
7:D:266:ALA:O	7:D:270:LYS:HG3	2.08	0.54
16:N:70:ASN:ND2	16:N:93:LYS:NZ	2.54	0.54
1:5:3217:C:N4	18:P:182:ILE:HG23	2.21	0.54
6:C:301:PRO:O	6:C:302:ALA:HB2	2.08	0.54
1:5:3028:G:H2'	1:5:3029:A:C8	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:900:G:H2'	1:5:901:G:O4'	2.07	0.54
4:A:80:GLU:O	4:A:80:GLU:HG3	2.06	0.54
1:5:308:A:O2'	1:5:309:U:H5'	2.06	0.54
7:D:103:LEU:O	7:D:106:ALA:HB3	2.08	0.54
1:5:2526:C:H1'	1:5:2588:U:H5''	1.89	0.54
1:5:1939:G:H1'	1:5:2114:C:O2	2.08	0.54
5:B:54:THR:O	5:B:76:VAL:HG13	2.08	0.54
2:7:64:A:H5'	2:7:65:G:H5''	1.89	0.54
12:I:193:ASP:CG	12:I:198:LYS:HE3	2.27	0.54
12:I:191:LYS:HB2	12:I:213:PHE:HE2	1.72	0.54
12:I:4:ARG:HB2	12:I:5:PRO:HD2	1.90	0.54
4:A:87:PHE:O	4:A:88:ILE:HD13	2.06	0.54
1:5:2536:A:C2	1:5:2544:U:N3	2.76	0.54
1:5:1392:G:C1'	1:5:1417:G:H22	2.20	0.54
9:F:88:ARG:O	9:F:88:ARG:HG3	2.07	0.54
8:E:174:LEU:HD22	15:M:117:ARG:CZ	2.38	0.54
1:5:137:G:H2'	1:5:138:U:H6	1.73	0.54
1:5:1713:G:N2	1:5:1730:G:H1'	2.22	0.54
23:U:33:TYR:O	23:U:37:LEU:HD22	2.07	0.54
1:5:2211:U:H5	1:5:2234:G:H1	1.56	0.54
1:5:2723:U:H2'	1:5:2724:U:C6	2.41	0.54
16:N:191:TRP:O	16:N:195:ASN:ND2	2.25	0.54
1:5:3065:G:H2'	1:5:3066:U:O4'	2.06	0.54
14:L:152:THR:O	14:L:153:ASP:HB2	2.08	0.54
1:5:1371:G:H2'	1:5:1372:C:C6	2.43	0.54
21:S:138:GLN:HG2	21:S:138:GLN:O	2.06	0.54
9:F:74:SER:HB3	22:T:141:VAL:O	2.07	0.54
20:R:42:ARG:HH11	20:R:42:ARG:HG3	1.72	0.54
8:E:4:GLN:HG2	8:E:5:LYS:H	1.73	0.54
11:H:7:GLU:OE2	11:H:54:LYS:HB3	2.08	0.54
1:5:268:A:H5''	16:N:47:LYS:HZ3	1.68	0.54
16:N:66:VAL:HG23	16:N:128:LYS:HB2	1.90	0.54
4:A:102:LEU:HD12	4:A:102:LEU:N	2.23	0.54
5:B:261:MET:HB2	5:B:264:VAL:HG12	1.88	0.54
1:5:1340:G:H1'	1:5:1365:G:H22	1.71	0.54
1:5:2141:U:H1'	1:5:2956:A:N6	2.23	0.54
23:U:85:LYS:HB2	23:U:90:ARG:HG3	1.89	0.54
10:G:154:ALA:HB3	10:G:157:VAL:HG23	1.90	0.54
1:5:3380:U:C2'	1:5:3381:U:H5'	2.37	0.54
1:5:2660:G:O3'	1:5:2749:G:N2	2.41	0.54
2:7:28:C:H2'	2:7:29:C:H5'	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:S:4:PHE:HE1	21:S:104:GLU:HA	1.73	0.54
1:5:2709:C:H2'	1:5:2710:C:C6	2.43	0.54
1:5:3257:C:O2'	1:5:3258:U:H5'	2.08	0.54
1:5:2633:U:O2'	1:5:2634:U:H5'	2.07	0.54
7:D:128:GLU:OE2	7:D:192:PRO:HA	2.07	0.54
11:H:7:GLU:HB2	11:H:55:VAL:O	2.08	0.54
1:5:1671:C:C5'	20:R:60:LYS:HZ3	2.18	0.54
4:A:135:ILE:HD12	4:A:149:ARG:CG	2.35	0.54
2:7:47:C:OP2	7:D:158:ARG:HD2	2.07	0.54
18:P:105:LYS:HB3	18:P:107:LEU:CD1	2.36	0.54
14:L:53:LEU:HD23	14:L:53:LEU:N	2.23	0.54
21:S:48:LEU:N	21:S:48:LEU:HD23	2.23	0.54
1:5:2129:U:H2'	1:5:2130:G:C8	2.43	0.54
1:5:68:C:O3'	16:N:177:GLY:HA2	2.08	0.54
10:G:179:ILE:HB	10:G:222:PHE:CE1	2.41	0.54
5:B:210:GLU:HG2	5:B:213:GLU:OE2	2.08	0.54
1:5:639:G:H4'	1:5:1434:G:C6	2.43	0.54
1:5:1317:A:H4'	1:5:1318:A:OP1	2.06	0.54
1:5:2686:A:C2	1:5:2687:G:H1'	2.43	0.54
17:O:78:ARG:HD2	17:O:78:ARG:N	2.20	0.54
13:J:61:ARG:HE	13:J:62:ASN:HD21	1.55	0.54
12:I:56:GLU:HB2	12:I:58:GLU:OE1	2.08	0.54
11:H:163:GLN:OE1	11:H:166:ARG:NH1	2.40	0.54
18:P:177:ALA:O	18:P:181:ARG:HG3	2.07	0.54
1:5:387:A:C2'	1:5:388:G:H5'	2.38	0.54
1:5:1127:G:H5'	12:I:118:ALA:O	2.08	0.54
4:A:14:SER:OG	4:A:15:ILE:N	2.40	0.54
23:U:17:VAL:HA	23:U:103:TYR:O	2.06	0.54
23:U:21:SER:HB2	23:U:22:PRO:HD3	1.89	0.54
5:B:238:LEU:HB3	5:B:242:THR:HG21	1.89	0.54
1:5:1363:A:OP1	9:F:160:ARG:HD3	2.08	0.54
1:5:523:A:O2'	21:S:69:PRO:HD2	2.08	0.54
3:8:47:C:O2'	3:8:61:A:H2'	2.08	0.54
1:5:1348:U:C3'	1:5:1348:U:C6	2.90	0.54
6:C:30:ILE:C	6:C:32:PRO:HD3	2.29	0.54
1:5:632:G:H2'	1:5:633:C:H6	1.73	0.54
1:5:1556:C:H2'	1:5:2169:G:N1	2.23	0.54
1:5:3162:C:C2	1:5:3163:A:N7	2.76	0.54
1:5:1662:G:H2'	1:5:1663:C:H6	1.73	0.54
1:5:759:U:C2'	1:5:760:G:H5'	2.38	0.54
6:C:324:LEU:HD12	6:C:324:LEU:O	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:M:98:SER:O	15:M:101:LYS:HB2	2.07	0.54
26:X:62:VAL:HG12	26:X:63:ILE:N	2.23	0.54
10:G:94:PHE:CB	10:G:189:LEU:HD21	2.36	0.54
1:5:1631:C:OP2	28:Z:48:ARG:NH2	2.40	0.54
9:F:31:ALA:CA	9:F:34:LYS:HB2	2.37	0.54
17:O:27:LEU:CD2	17:O:33:ILE:HG12	2.38	0.54
15:M:47:ASP:OD1	15:M:55:ARG:HB2	2.07	0.54
1:5:1671:C:H5"	20:R:60:LYS:HZ1	1.68	0.54
13:J:92:ARG:CB	13:J:92:ARG:NH1	2.66	0.54
4:A:2:GLY:HA2	4:A:207:VAL:CG1	2.36	0.54
27:Y:37:LYS:CD	27:Y:37:LYS:H	2.21	0.54
2:7:92:A:H5"	2:7:93:C:OP2	2.08	0.54
1:5:194:U:O2'	1:5:195:U:H5'	2.07	0.54
1:5:1891:A:H2'	1:5:1892:G:C5'	2.37	0.54
1:5:137:G:H2'	1:5:138:U:C6	2.43	0.54
6:C:187:LEU:HD22	6:C:188:ARG:H	1.73	0.54
1:5:3240:C:C2'	1:5:3241:G:H5'	2.38	0.54
1:5:3121:U:H1'	1:5:3122:A:H5"	1.88	0.54
10:G:238:LEU:N	10:G:238:LEU:HD12	2.23	0.54
19:Q:155:MET:CE	19:Q:163:PRO:HB3	2.38	0.54
19:Q:19:PRO:HD3	19:Q:53:PHE:CE1	2.43	0.53
1:5:2523:A:OP1	26:X:31:THR:OG1	2.19	0.53
1:5:2309:A:C6	1:5:2962:U:H1'	2.44	0.53
1:5:2271:A:H2'	1:5:2272:G:H5'	1.90	0.53
4:A:201:GLY:HA2	4:A:204:MET:SD	2.48	0.53
7:D:177:GLU:N	7:D:177:GLU:OE2	2.40	0.53
1:5:3309:G:H2'	1:5:3310:A:H5'	1.90	0.53
1:5:1491:A:O2'	1:5:1492:G:H5'	2.07	0.53
11:H:86:TYR:CE1	11:H:151:VAL:HG13	2.43	0.53
12:I:168:SER:HB2	22:T:160:ILE:C	2.29	0.53
1:5:531:G:H2'	1:5:532:A:C8	2.43	0.53
1:5:197:G:O2'	1:5:218:G:N2	2.41	0.53
26:X:51:VAL:HG12	26:X:52:PRO:O	2.08	0.53
1:5:2550:U:H2'	4:A:40:TYR:OH	2.08	0.53
6:C:80:GLY:HA2	6:C:85:SER:CB	2.37	0.53
3:8:81:U:HO2'	3:8:82:U:P	2.30	0.53
1:5:1897:G:H1'	24:V:83:LYS:HB2	1.90	0.53
1:5:423:A:H2'	1:5:424:G:O4'	2.08	0.53
1:5:1582:C:H4'	1:5:1583:A:OP1	2.09	0.53
1:5:2525:G:H4'	10:G:49:TYR:OH	2.08	0.53
1:5:2609:A:H3'	1:5:2610:G:H5"	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:3359:A:H2'	1:5:3360:C:C6	2.44	0.53
23:U:22:PRO:HA	23:U:107:PHE:HZ	1.72	0.53
1:5:172:G:H1	1:5:246:U:H3	1.55	0.53
1:5:743:C:O2	19:Q:141:ARG:HD3	2.09	0.53
9:F:175:LYS:HG2	9:F:176:TYR:CD2	2.43	0.53
28:Z:36:HIS:N	28:Z:37:PRO:HD3	2.23	0.53
19:Q:24:VAL:O	19:Q:28:LEU:HG	2.09	0.53
1:5:1558:A:OP2	10:G:54:GLU:HG3	2.08	0.53
1:5:3214:U:OP2	15:M:128:ARG:NH2	2.42	0.53
7:D:29:ASP:CG	7:D:32:GLN:HB3	2.29	0.53
4:A:128:ARG:HA	4:A:169:ILE:CD1	2.38	0.53
1:5:1686:U:O2	1:5:1688:U:H1'	2.09	0.53
1:5:1225:A:O2'	1:5:1226:G:H5'	2.07	0.53
1:5:313:A:H2'	1:5:314:U:H6	1.74	0.53
1:5:880:G:N3	1:5:882:A:N6	2.56	0.53
1:5:506:U:H2'	1:5:507:U:H5'	1.91	0.53
26:X:69:SER:OG	26:X:71:THR:HG23	2.09	0.53
1:5:3180:A:N6	17:O:114:LYS:HD3	2.22	0.53
1:5:3249:C:O2'	1:5:3250:U:H5'	2.09	0.53
6:C:269:SER:O	6:C:270:SER:OG	2.26	0.53
1:5:83:U:H2'	1:5:84:U:O4'	2.08	0.53
2:7:4:U:H2'	2:7:5:G:C8	2.43	0.53
9:F:191:VAL:HG12	9:F:192:GLY:N	2.24	0.53
21:S:42:TRP:O	21:S:46:GLN:HG3	2.08	0.53
1:5:1639:C:O2'	1:5:1640:G:H5'	2.08	0.53
12:I:9:TYR:O	12:I:59:GLN:NE2	2.40	0.53
1:5:2355:G:H5'	18:P:139:TYR:CE1	2.43	0.53
18:P:54:HIS:HA	18:P:83:TRP:CD1	2.44	0.53
7:D:126:GLU:HB2	7:D:196:ARG:CB	2.35	0.53
14:L:80:VAL:HG12	14:L:85:LEU:O	2.08	0.53
1:5:1360:C:H2'	1:5:1361:U:H5'	1.90	0.53
9:F:84:VAL:HG13	9:F:119:VAL:HG21	1.90	0.53
1:5:822:G:H2'	1:5:823:C:O4'	2.08	0.53
1:5:1011:A:H5'	12:I:194:GLY:HA3	1.89	0.53
9:F:136:TYR:CZ	9:F:231:ASN:HB2	2.43	0.53
24:V:104:ASN:HB2	24:V:105:PRO:HD2	1.91	0.53
10:G:172:LYS:HA	10:G:172:LYS:NZ	2.24	0.53
26:X:63:ILE:HD11	26:X:84:PHE:CD1	2.44	0.53
6:C:26:PHE:HD2	6:C:130:ALA:HB2	1.73	0.53
13:J:16:LYS:HB3	13:J:72:ARG:NE	2.23	0.53
1:5:2642:A:P	22:T:3:LYS:NZ	2.82	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:536:U:H2'	1:5:537:A:H5'	1.91	0.53
24:V:79:VAL:HG12	24:V:122:CYS:SG	2.47	0.53
1:5:760:G:HO2'	1:5:761:A:P	2.31	0.53
1:5:2304:C:C2'	1:5:2305:G:H5'	2.38	0.53
3:8:104:A:H5'	3:8:105:A:H8	1.74	0.53
1:5:506:U:C2'	1:5:507:U:H5'	2.39	0.53
9:F:222:HIS:O	9:F:225:GLN:N	2.39	0.53
1:5:2328:U:H2'	1:5:2329:C:H6	1.73	0.53
1:5:2597:U:H2'	1:5:2598:G:C8	2.43	0.53
6:C:179:LEU:HD13	6:C:183:LYS:HG3	1.90	0.53
6:C:338:LYS:HD3	6:C:338:LYS:N	2.23	0.53
1:5:1179:A:HO2'	1:5:1327:C:HO2'	1.45	0.53
28:Z:16:GLY:O	28:Z:18:TYR:N	2.33	0.53
3:8:49:G:H2'	3:8:50:C:C6	2.42	0.53
12:I:42:THR:CG2	12:I:45:GLU:HG3	2.39	0.53
5:B:37:ARG:CB	5:B:186:GLY:HA3	2.38	0.53
26:X:133:LEU:HD22	26:X:133:LEU:O	2.09	0.53
6:C:156:LEU:HD22	6:C:156:LEU:O	2.09	0.53
12:I:26:VAL:HG12	12:I:122:PRO:CG	2.37	0.53
6:C:203:ARG:NH1	6:C:246:ARG:HH21	2.06	0.53
1:5:1238:C:C2'	1:5:1239:C:H5''	2.39	0.53
1:5:388:G:H4'	18:P:18:ARG:O	2.08	0.53
1:5:1015:U:O4	1:5:1035:G:O6	2.27	0.53
1:5:3198:U:C4	11:H:26:LYS:HE3	2.44	0.53
5:B:217:ALA:HB1	5:B:328:ILE:HG13	1.90	0.53
1:5:2114:C:H6	1:5:2114:C:H3'	1.73	0.53
1:5:2781:U:H2'	1:5:2782:U:H6	1.74	0.53
1:5:2931:C:H2'	1:5:2932:U:O4'	2.08	0.53
8:E:164:SER:OG	8:E:166:LYS:HE2	2.09	0.53
1:5:2166:A:H5'	16:N:76:PRO:O	2.08	0.53
1:5:758:C:H5'	17:O:18:ARG:HH22	112.31	0.53
19:Q:158:HIS:H	19:Q:186:VAL:HG11	1.73	0.53
19:Q:16:ARG:HH21	19:Q:20:LYS:HB2	1.73	0.53
3:8:156:U:HO2'	3:8:157:U:P	2.30	0.53
1:5:1108:U:H2'	1:5:1109:U:C6	2.44	0.53
23:U:84:LEU:O	23:U:88:GLN:N	2.41	0.53
1:5:313:A:H2'	1:5:314:U:C6	2.44	0.53
1:5:2233:A:C4'	1:5:2428:U:H4'	2.37	0.53
1:5:2995:A:O2'	1:5:2996:U:O5'	2.23	0.53
1:5:2178:A:H4'	1:5:2179:C:H5''	1.89	0.53
1:5:725:G:C2'	1:5:726:G:H5'	2.39	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:E:92:SER:O	8:E:148:GLU:HG2	2.09	0.53
2:7:119:U:OP1	7:D:256:THR:HG23	2.09	0.53
23:U:22:PRO:HA	23:U:107:PHE:CZ	2.43	0.53
10:G:172:LYS:HZ2	10:G:172:LYS:HB2	1.74	0.53
16:N:33:LYS:HD3	16:N:37:HIS:CE1	2.43	0.53
1:5:525:C:H5'	15:M:79:ALA:HB2	1.91	0.53
5:B:63:PRO:HA	5:B:68:HIS:CD2	2.44	0.53
14:L:162:ASN:OD1	14:L:162:ASN:N	2.36	0.53
17:O:125:ARG:HD2	17:O:135:TYR:CD2	2.43	0.53
7:D:25:GLU:O	13:J:144:CYS:HA	2.08	0.53
16:N:46:ASP:OD1	16:N:50:ARG:NH2	2.41	0.53
1:5:1458:U:H2'	1:5:1459:C:C6	2.44	0.53
5:B:59:ASP:HB2	5:B:357:LYS:HD2	1.90	0.53
3:8:157:U:H2'	3:8:158:U:H6	1.72	0.53
1:5:2642:A:OP2	22:T:3:LYS:NZ	2.39	0.53
1:5:715:A:H3'	1:5:715:A:H8	1.73	0.53
13:J:164:LYS:NZ	13:J:171:VAL:HG12	2.23	0.53
6:C:193:LYS:HB2	6:C:193:LYS:HZ2	1.73	0.53
1:5:1645:U:C2'	1:5:1646:G:H5'	2.39	0.53
6:C:126:ILE:HD11	6:C:233:LEU:HD12	1.91	0.53
11:H:129:ARG:HG3	11:H:157:ASN:OD1	2.08	0.53
1:5:1144:U:C5	1:5:1366:A:C2	2.96	0.53
1:5:1668:G:O2'	1:5:1669:C:H5'	2.09	0.53
27:Y:76:LEU:O	27:Y:77:LYS:HB2	2.08	0.53
1:5:3016:A:H2'	1:5:3017:A:H8	1.74	0.53
5:B:39:LYS:HB2	5:B:40:PRO:CD	2.39	0.53
19:Q:96:PHE:CD2	19:Q:97:PRO:HD2	2.44	0.53
12:I:191:LYS:O	12:I:197:VAL:HG13	2.08	0.53
1:5:291:C:O4'	1:5:2599:U:H4'	2.09	0.53
14:L:6:ASN:C	14:L:7:LEU:HG	2.27	0.53
6:C:178:LEU:HD21	6:C:225:VAL:CG2	2.39	0.53
2:7:27:A:H2'	2:7:28:C:H6	1.73	0.53
7:D:219:PHE:CE1	7:D:227:LEU:HD21	2.45	0.53
1:5:1275:C:C2'	1:5:1276:U:H5'	2.38	0.53
1:5:796:U:H2'	1:5:797:U:C6	2.44	0.53
19:Q:140:LEU:O	19:Q:141:ARG:HG3	2.09	0.53
3:8:49:G:H1	3:8:76:C:H42	1.57	0.53
5:B:68:HIS:ND1	5:B:69:LYS:HG3	2.22	0.53
11:H:51:GLN:N	11:H:51:GLN:OE1	2.42	0.53
1:5:2148:U:O2'	4:A:182:ALA:HB2	2.09	0.53
1:5:2819:A:OP1	1:5:2866:U:O2'	2.20	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:O:58:LEU:HD12	17:O:72:HIS:ND1	2.24	0.52
5:B:37:ARG:HB3	5:B:186:GLY:HA3	1.91	0.52
1:5:595:G:OP1	9:F:30:ARG:NH1	2.42	0.52
17:O:32:LYS:HG2	17:O:101:ARG:HB3	1.90	0.52
4:A:42:ARG:HG3	4:A:89:TYR:CE1	2.44	0.52
1:5:1786:G:H2'	1:5:1787:A:H8	1.69	0.52
1:5:722:G:H2'	1:5:723:U:H6	1.72	0.52
16:N:39:ALA:HB3	16:N:61:ILE:HG22	1.90	0.52
26:X:67:ILE:HD12	26:X:121:LYS:HG3	1.90	0.52
13:J:63:GLU:HG2	13:J:64:LYS:N	2.24	0.52
16:N:49:ARG:HH21	16:N:49:ARG:CG	2.22	0.52
27:Y:118:LEU:CD1	27:Y:121:ARG:NH1	2.72	0.52
1:5:414:U:O2'	1:5:415:G:H5'	2.08	0.52
26:X:103:TYR:O	26:X:105:VAL:HG23	2.09	0.52
1:5:3:U:H3	3:8:156:U:H3	1.55	0.52
8:E:78:ARG:CG	8:E:78:ARG:HH11	2.01	0.52
1:5:73:C:N3	14:L:59:ARG:NH1	2.56	0.52
1:5:2609:A:H3'	1:5:2610:G:C5'	2.40	0.52
16:N:121:VAL:HG23	16:N:122:ASN:HB2	1.91	0.52
13:J:92:ARG:HG2	13:J:92:ARG:NH1	2.15	0.52
1:5:1246:G:N2	1:5:1264:G:HO2'	2.07	0.52
1:5:917:A:C5	1:5:918:C:C4	2.97	0.52
5:B:44:THR:O	5:B:340:LYS:HG2	2.09	0.52
1:5:1716:U:O2'	1:5:1717:U:H4'	2.09	0.52
6:C:233:LEU:HD11	6:C:238:LEU:HD11	1.92	0.52
1:5:3086:A:H4'	5:B:366:GLY:HA2	1.91	0.52
1:5:2662:G:H2'	1:5:2663:G:H8	1.74	0.52
24:V:87:ARG:HD2	24:V:93:LEU:HD21	1.90	0.52
1:5:1265:U:C2	1:5:1277:C:H1'	2.43	0.52
1:5:2931:C:HO2'	24:V:42:SER:HG	1.50	0.52
24:V:54:LEU:HD21	24:V:119:GLY:HA3	1.91	0.52
22:T:12:ARG:HD2	22:T:13:TYR:CE2	2.43	0.52
10:G:47:SER:O	10:G:50:VAL:HG13	2.08	0.52
17:O:102:LEU:HD12	17:O:103:LYS:H	1.73	0.52
1:5:1651:U:H5''	4:A:71:LEU:HD22	1.91	0.52
4:A:68:LYS:CD	4:A:70:ARG:HH21	2.22	0.52
1:5:1692:U:O5'	1:5:1692:U:H6	1.92	0.52
1:5:746:A:OP1	19:Q:145:ASN:ND2	2.42	0.52
15:M:58:ILE:HG12	15:M:59:ASN:H	1.75	0.52
1:5:1182:A:H2'	1:5:1183:C:H6	1.74	0.52
1:5:2372:A:H5''	1:5:2373:A:H5'	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:U:53:ALA:O	23:U:67:SER:HA	2.08	0.52
20:R:13:SER:CB	20:R:38:ARG:HH12	2.22	0.52
2:7:74:C:H2'	2:7:75:G:C8	2.44	0.52
9:F:126:LEU:HA	9:F:129:LEU:HD12	1.92	0.52
1:5:1358:C:O5'	1:5:1358:C:H6	1.91	0.52
1:5:632:G:OP1	17:O:92:THR:HB	2.09	0.52
1:5:1765:U:H4'	1:5:1766:G:O5'	2.08	0.52
1:5:2785:A:C2'	1:5:2786:G:H5'	2.39	0.52
9:F:179:LEU:HD22	9:F:183:ASP:OD2	2.09	0.52
1:5:2352:A:H5''	18:P:83:TRP:O	2.09	0.52
1:5:1840:U:H4'	1:5:1841:A:H5'	1.92	0.52
16:N:73:ARG:CD	16:N:75:VAL:HG13	2.39	0.52
13:J:85:LYS:HB3	13:J:85:LYS:HZ2	1.72	0.52
9:F:90:LYS:HG3	9:F:91:GLY:N	2.24	0.52
24:V:2:SER:O	24:V:40:LYS:HB3	2.09	0.52
1:5:748:U:C2'	1:5:749:C:H5'	2.39	0.52
1:5:2530:G:C3'	1:5:2531:C:H5''	2.39	0.52
6:C:178:LEU:O	6:C:181:VAL:HB	2.09	0.52
1:5:339:C:H3'	6:C:195:ARG:HH12	1.73	0.52
1:5:904:A:H2'	1:5:905:U:C6	2.44	0.52
9:F:144:ILE:CG2	9:F:185:ILE:HG23	2.39	0.52
21:S:135:VAL:O	21:S:141:LYS:HD2	2.09	0.52
27:Y:18:ALA:O	27:Y:22:ALA:HB2	2.08	0.52
1:5:826:G:OP1	1:5:1590:G:O2'	2.24	0.52
1:5:2433:U:H1'	16:N:125:SER:HB3	1.92	0.52
16:N:17:ASP:HA	16:N:20:ARG:HG3	1.90	0.52
1:5:621:A:H5'	1:5:622:A:N7	2.24	0.52
17:O:31:GLN:HG3	17:O:33:ILE:HD11	1.91	0.52
1:5:2952:G:C2'	1:5:2953:U:H5'	2.40	0.52
18:P:53:ASP:O	18:P:54:HIS:HB2	2.08	0.52
27:Y:57:LEU:HB3	27:Y:105:VAL:CG1	2.40	0.52
8:E:96:VAL:HG12	8:E:98:VAL:HG23	1.90	0.52
1:5:1360:C:O2'	1:5:1361:U:H5'	2.09	0.52
3:8:3:A:H4'	18:P:61:ARG:HE	1.73	0.52
7:D:41:LYS:NZ	22:T:93:VAL:HG11	2.25	0.52
1:5:1815:U:O2'	1:5:1816:A:P	2.66	0.52
1:5:213:A:H2'	1:5:214:G:O4'	2.09	0.52
28:Z:13:VAL:HG22	28:Z:80:LEU:HD23	1.91	0.52
7:D:208:MET:HB2	7:D:233:ALA:CB	2.40	0.52
14:L:91:ARG:CG	14:L:91:ARG:NH1	2.62	0.52
1:5:784:A:C2'	19:Q:69:ARG:HH21	2.20	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1580:A:H61	26:X:33:ARG:CD	2.20	0.52
13:J:132:ASN:HA	13:J:154:THR:HG21	1.91	0.52
1:5:662:U:H2'	1:5:663:C:C6	2.44	0.52
9:F:47:ARG:NH1	9:F:179:LEU:CD1	2.73	0.52
1:5:2748:A:H8	1:5:2748:A:O5'	1.92	0.52
4:A:126:LEU:HD13	4:A:150:LEU:HD22	1.90	0.52
5:B:84:VAL:HG13	5:B:163:HIS:O	2.09	0.52
1:5:2203:U:O2'	1:5:2204:C:H5'	2.10	0.52
1:5:2429:G:H2'	1:5:2430:A:H8	1.75	0.52
5:B:67:PHE:CZ	24:V:88:ARG:HB2	2.45	0.52
21:S:5:LYS:HB3	21:S:63:GLN:HE21	1.74	0.52
5:B:290:ASP:OD1	5:B:292:ALA:HB3	2.10	0.52
1:5:3266:G:O2'	1:5:3267:A:H5'	2.10	0.52
5:B:324:VAL:CG1	5:B:325:LYS:N	2.73	0.52
28:Z:46:ILE:HG22	28:Z:68:ILE:CG2	2.40	0.52
6:C:22:LEU:CD2	6:C:26:PHE:HB2	2.40	0.52
1:5:358:G:N2	1:5:361:A:OP2	2.43	0.52
1:5:1132:C:O2'	1:5:1133:A:H5'	2.10	0.52
5:B:123:TYR:CD2	5:B:124:LYS:N	2.78	0.52
1:5:2538:U:H3'	1:5:2539:C:H5''	1.92	0.52
19:Q:170:ARG:C	19:Q:170:ARG:HD2	2.30	0.52
1:5:3393:U:H2'	1:5:3394:U:H6	1.69	0.52
21:S:10:ILE:HB	21:S:60:SER:HB3	1.91	0.52
1:5:3044:G:O2'	1:5:3045:G:H5'	2.10	0.52
1:5:281:G:O6	16:N:181:ASN:ND2	2.37	0.52
3:8:140:G:O2'	3:8:141:C:H5'	2.10	0.52
1:5:3167:A:HO2'	1:5:3168:A:P	2.32	0.52
6:C:39:PHE:CE1	6:C:236:LEU:HD23	2.45	0.52
1:5:1210:U:H3	1:5:1295:G:H1	1.57	0.52
22:T:42:ILE:HD11	22:T:74:VAL:HG11	1.91	0.52
22:T:65:TYR:CD2	22:T:75:ILE:HG13	2.45	0.52
1:5:411:U:H2'	1:5:412:G:H8	1.74	0.52
22:T:106:LEU:O	22:T:110:LYS:HG3	2.10	0.52
1:5:2669:G:O2'	1:5:2670:G:H5'	2.10	0.52
1:5:1269:U:H1'	1:5:1272:C:H5	1.75	0.52
19:Q:68:ALA:HB2	19:Q:96:PHE:CD2	2.45	0.52
10:G:83:ASP:OD2	10:G:85:ASN:HB2	2.10	0.52
17:O:78:ARG:CG	17:O:78:ARG:NH1	2.67	0.52
11:H:9:GLN:O	11:H:72:LYS:NZ	2.43	0.52
5:B:261:MET:O	5:B:264:VAL:HG13	2.10	0.52
1:5:924:G:O2'	1:5:2810:C:O4'	2.27	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1658:G:H2'	1:5:1659:U:C6	2.44	0.52
23:U:98:THR:HG23	23:U:104:ARG:HB3	1.91	0.52
10:G:172:LYS:HA	10:G:172:LYS:CE	2.40	0.52
21:S:5:LYS:HB3	21:S:63:GLN:NE2	2.25	0.52
23:U:35:LYS:O	23:U:35:LYS:HD2	2.10	0.52
6:C:156:LEU:CD2	6:C:159:ILE:HD12	2.40	0.52
1:5:1423:C:H2'	1:5:1424:C:H5'	1.92	0.52
8:E:4:GLN:HG2	8:E:5:LYS:N	2.25	0.52
14:L:59:ARG:HH21	14:L:69:VAL:HG23	1.74	0.52
16:N:11:GLN:HG2	16:N:44:ARG:NH2	2.25	0.52
1:5:291:C:OP1	16:N:68:ARG:HD2	2.09	0.52
11:H:163:GLN:CB	11:H:166:ARG:HH11	2.23	0.52
1:5:2747:A:H2'	1:5:2748:A:C8	2.45	0.52
1:5:2956:A:N6	1:5:2977:G:H1'	2.25	0.52
1:5:787:G:OP1	19:Q:148:GLU:HB2	2.09	0.52
1:5:374:A:HO2'	1:5:376:G:H8	1.57	0.52
1:5:1381:A:H2'	1:5:1382:G:H8	1.75	0.52
12:I:145:LYS:NZ	12:I:167:LEU:HD11	2.24	0.52
5:B:92:TYR:CE1	5:B:159:ARG:NH1	2.78	0.52
11:H:86:TYR:CD2	11:H:151:VAL:HG13	2.44	0.52
10:G:149:LYS:HB2	10:G:200:LEU:O	2.09	0.52
1:5:1192:C:H41	1:5:1302:A:P	2.33	0.52
1:5:379:C:H42	1:5:390:G:H1	1.58	0.52
2:7:11:A:N1	2:7:67:G:O2'	2.35	0.52
6:C:138:ARG:HE	6:C:240:PRO:HD2	1.73	0.52
10:G:50:VAL:HG22	10:G:52:TRP:CE2	2.44	0.52
9:F:31:ALA:HA	9:F:34:LYS:HG2	1.92	0.52
1:5:1636:U:H4'	28:Z:74:VAL:O	2.09	0.52
5:B:211:GLN:HG2	5:B:285:VAL:HG23	1.92	0.52
5:B:56:ILE:HD13	5:B:359:ILE:HG23	1.91	0.52
1:5:964:G:H2'	1:5:965:A:C8	2.44	0.52
24:V:120:LYS:NZ	24:V:120:LYS:CB	2.72	0.52
1:5:1170:A:OP1	9:F:218:ARG:HA	2.09	0.52
11:H:103:ILE:HD11	11:H:134:ILE:HG21	1.92	0.52
22:T:52:MET:HG3	22:T:53:PRO:HD2	1.90	0.52
1:5:3305:A:O2'	1:5:3306:U:H5'	2.10	0.52
6:C:257:LYS:O	6:C:261:VAL:HG23	2.10	0.52
1:5:151:A:P	16:N:147:ARG:HH22	2.32	0.52
1:5:2357:A:H2'	1:5:2358:A:C8	2.44	0.52
5:B:345:ASN:ND2	5:B:350:ALA:HB2	2.25	0.52
1:5:2278:C:H1'	1:5:2280:A:C2	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2511:A:C3'	1:5:2512:C:H5'	2.40	0.51
7:D:29:ASP:OD1	7:D:32:GLN:HB3	2.10	0.51
18:P:69:ARG:CG	18:P:79:THR:HG23	2.39	0.51
1:5:3150:A:H2'	1:5:3151:U:O4'	2.09	0.51
27:Y:57:LEU:HD22	27:Y:58:VAL:H	1.75	0.51
1:5:1682:U:H1'	1:5:1685:C:H41	1.74	0.51
1:5:2382:G:O2'	17:O:70:PRO:HG3	2.10	0.51
11:H:117:PHE:CE1	11:H:165:CYS:HB2	2.46	0.51
1:5:1314:C:H5'	17:O:17:GLY:HA3	1.92	0.51
7:D:22:ARG:HD3	7:D:28:THR:OG1	2.10	0.51
11:H:86:TYR:CE2	11:H:151:VAL:HG22	2.44	0.51
1:5:1159:A:N3	1:5:1159:A:H3'	2.26	0.51
2:7:76:A:H1'	21:S:50:LYS:HZ1	1.74	0.51
1:5:1164:G:H2'	1:5:1165:A:C8	2.45	0.51
1:5:658:G:H2'	1:5:659:G:H5'	1.91	0.51
2:7:23:A:H2'	2:7:24:A:C8	2.45	0.51
22:T:105:PHE:O	22:T:109:VAL:HG23	2.10	0.51
1:5:1942:U:H1'	1:5:3344:A:C2	2.46	0.51
1:5:2423:U:H1'	1:5:2608:G:N2	2.24	0.51
11:H:76:ASP:O	11:H:80:THR:HG22	2.10	0.51
1:5:715:A:C8	1:5:715:A:H3'	2.45	0.51
4:A:66:PRO:HB2	4:A:67:TYR:CE2	2.46	0.51
1:5:210:U:HO2'	1:5:229:G:HO2'	1.50	0.51
1:5:1816:A:O2'	1:5:1817:G:P	2.69	0.51
4:A:7:ASN:HA	4:A:10:LYS:HG3	1.93	0.51
11:H:124:ARG:HB3	11:H:164:ILE:HG13	1.92	0.51
1:5:3015:G:H2'	1:5:3016:A:H8	1.75	0.51
1:5:3338:C:O2'	1:5:3339:A:H5'	2.10	0.51
28:Z:42:LEU:HD12	28:Z:42:LEU:N	2.25	0.51
1:5:1689:U:H5''	20:R:61:SER:HB3	1.91	0.51
15:M:26:GLY:O	15:M:29:ALA:HB2	2.10	0.51
6:C:22:LEU:HD21	6:C:26:PHE:CB	2.41	0.51
2:7:44:C:H2'	2:7:45:A:H5'	1.91	0.51
16:N:140:LYS:CB	16:N:144:ARG:NH1	2.68	0.51
1:5:2675:C:N4	13:J:22:SER:HB2	2.17	0.51
1:5:2988:C:H2'	1:5:2989:U:H6	1.75	0.51
15:M:108:ARG:O	15:M:111:ALA:HB3	2.09	0.51
22:T:14:MET:HE1	22:T:55:LYS:CA	2.40	0.51
1:5:387:A:H2'	1:5:388:G:H5'	1.91	0.51
17:O:182:ASN:O	17:O:186:ALA:N	2.43	0.51
1:5:1781:C:H2'	1:5:1782:U:H6	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:218:ILE:N	5:B:218:ILE:HD12	2.26	0.51
1:5:2358:A:H3'	1:5:2359:C:H6	1.76	0.51
1:5:2860:U:H2'	1:5:2861:U:H5'	1.91	0.51
17:O:121:PRO:HA	17:O:124:LEU:CD2	2.40	0.51
10:G:53:PRO:HB2	10:G:55:TYR:CE2	2.45	0.51
7:D:152:ARG:NH1	7:D:152:ARG:CG	2.53	0.51
14:L:69:VAL:N	14:L:149:GLN:OE1	2.33	0.51
1:5:621:A:H1'	1:5:622:A:OP2	2.11	0.51
5:B:56:ILE:CD1	5:B:359:ILE:HG23	2.40	0.51
1:5:1575:A:C3'	1:5:1576:G:H5''	2.34	0.51
1:5:3292:A:O2'	1:5:3293:U:H5'	2.11	0.51
1:5:513:G:C2'	1:5:514:G:H5'	2.39	0.51
1:5:177:U:H3	1:5:241:G:H1	1.59	0.51
2:7:36:C:H5''	7:D:155:THR:CG2	2.41	0.51
1:5:2940:A:N7	5:B:2:SER:HA	2.26	0.51
14:L:75:PHE:CE1	14:L:116:LEU:HD21	2.46	0.51
9:F:144:ILE:HG22	9:F:185:ILE:HG23	1.93	0.51
6:C:158:SER:HA	6:C:213:ASN:CB	2.41	0.51
1:5:1354:G:C6	1:5:1358:C:H5'	2.44	0.51
21:S:79:VAL:HG13	21:S:122:HIS:O	2.09	0.51
1:5:1352:A:H3'	1:5:1352:A:OP1	2.10	0.51
9:F:31:ALA:C	9:F:34:LYS:HB2	2.31	0.51
1:5:2898:G:H5''	1:5:2899:C:O5'	2.10	0.51
1:5:2176:U:C2'	1:5:2177:G:H5'	2.40	0.51
1:5:1240:A:H2'	1:5:1241:U:H5'	1.91	0.51
1:5:2583:C:O2'	1:5:2584:G:OP1	2.24	0.51
7:D:82:GLU:O	7:D:85:ARG:HB3	2.10	0.51
1:5:2388:U:O2'	18:P:80:LYS:HE2	2.11	0.51
3:8:97:A:C2'	3:8:98:U:H5'	2.40	0.51
1:5:2883:U:C2'	1:5:2884:C:H5'	2.41	0.51
23:U:21:SER:HB2	23:U:22:PRO:CD	2.40	0.51
5:B:27:ALA:HB1	5:B:218:ILE:HG22	1.93	0.51
10:G:172:LYS:HA	10:G:172:LYS:HZ1	1.76	0.51
1:5:3004:C:H2'	1:5:3005:A:H5'	1.92	0.51
1:5:946:U:O2	1:5:1374:G:N2	2.43	0.51
1:5:2560:C:N4	1:5:2575:G:OP2	2.43	0.51
6:C:234:ASN:OD1	6:C:235:LEU:N	2.43	0.51
1:5:727:G:H2'	1:5:728:G:O4'	2.11	0.51
1:5:1633:C:OP2	28:Z:69:LYS:NZ	2.33	0.51
10:G:26:LEU:HD21	28:Z:123:GLN:OE1	2.10	0.51
1:5:2988:C:H2'	1:5:2989:U:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:17:LEU:N	5:B:17:LEU:HD13	2.25	0.51
7:D:194:LEU:HD11	7:D:198:TYR:CE2	2.46	0.51
23:U:94:ARG:HB3	23:U:108:TYR:CZ	2.46	0.51
16:N:39:ALA:HB3	16:N:61:ILE:CG2	2.41	0.51
1:5:2964:G:N2	1:5:2967:A:OP2	2.34	0.51
11:H:12:VAL:HG13	11:H:16:VAL:HG23	1.91	0.51
1:5:550:A:H2'	1:5:551:A:H8	1.74	0.51
21:S:101:ALA:O	21:S:105:THR:HG23	2.11	0.51
12:I:31:ILE:O	12:I:32:ARG:HD3	2.11	0.51
24:V:96:GLU:OE1	25:W:24:GLY:N	2.44	0.51
10:G:122:LYS:C	10:G:124:ASP:H	2.14	0.51
1:5:585:A:H2'	1:5:586:C:H6	1.75	0.51
1:5:1078:U:H1'	1:5:1082:U:O2	2.11	0.51
1:5:2898:G:H5''	1:5:2899:C:H5'	1.92	0.51
15:M:47:ASP:C	15:M:49:PRO:HD3	2.30	0.51
1:5:2989:U:H2'	1:5:2990:G:C8	2.46	0.51
1:5:1240:A:N6	1:5:1241:U:O4	2.44	0.51
24:V:40:LYS:HB2	24:V:57:MET:HG2	1.93	0.51
1:5:915:A:C5	1:5:917:A:H1'	2.45	0.51
5:B:5:LYS:HG2	5:B:6:TYR:CE1	2.45	0.51
1:5:1361:U:H2'	1:5:1362:G:H8	1.75	0.51
1:5:238:A:O2'	1:5:239:G:P	2.68	0.51
13:J:11:ASP:O	13:J:12:LEU:HB2	2.11	0.51
1:5:2770:G:O2'	1:5:2771:U:H5'	2.11	0.51
18:P:122:ALA:HB3	18:P:143:PRO:HB2	1.92	0.51
1:5:2724:U:OP2	1:5:2726:C:N4	2.43	0.51
1:5:858:A:O2'	1:5:859:G:H5'	2.10	0.51
27:Y:120:GLN:CA	27:Y:120:GLN:HE21	2.24	0.51
1:5:771:A:C2'	1:5:772:U:H5'	2.40	0.51
1:5:109:A:O2'	1:5:323:A:N6	2.44	0.51
28:Z:27:LYS:HE3	28:Z:29:HIS:HD2	1.76	0.51
6:C:136:LEU:CD2	6:C:142:VAL:HG23	2.34	0.51
1:5:2435:G:H1'	16:N:24:ARG:HH22	1.76	0.51
1:5:849:C:H2'	1:5:850:U:C6	2.45	0.51
4:A:46:LYS:HD3	4:A:62:VAL:HG11	1.92	0.51
10:G:86:THR:O	10:G:90:THR:HG23	2.10	0.51
1:5:70:A:C2	1:5:72:C:N4	2.79	0.51
1:5:1742:U:H2'	1:5:1743:G:O4'	2.10	0.51
6:C:235:LEU:O	6:C:235:LEU:HD12	2.11	0.51
7:D:153:THR:HG23	7:D:160:PHE:CZ	2.46	0.51
1:5:2221:G:N2	1:5:2224:A:OP2	2.33	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:37:ARG:HH21	5:B:188:ILE:HD11	1.74	0.51
1:5:2312:A:OP1	1:5:2312:A:H4'	2.10	0.51
1:5:1307:G:H1'	1:5:1308:A:OP2	2.10	0.51
22:T:78:LYS:HG3	22:T:79:MET:N	2.24	0.51
7:D:126:GLU:CB	7:D:196:ARG:HB2	2.37	0.51
1:5:3041:U:H2'	1:5:3042:U:H6	1.76	0.51
1:5:2818:U:H6	1:5:2818:U:H5'	1.76	0.51
13:J:12:LEU:CD1	13:J:13:LYS:H	2.22	0.51
1:5:1314:C:H2'	1:5:1314:C:O2	2.10	0.51
23:U:39:ASP:O	23:U:47:VAL:HB	2.11	0.51
6:C:209:TYR:HA	6:C:251:THR:HG1	1.75	0.51
1:5:3179:U:O2'	17:O:116:LYS:HD2	2.10	0.51
5:B:128:LYS:O	5:B:131:THR:HG23	2.11	0.51
1:5:701:G:H2'	1:5:702:C:C6	2.46	0.51
1:5:3049:A:N3	5:B:55:THR:OG1	2.44	0.51
1:5:1220:U:H4'	1:5:1221:A:H5''	1.93	0.51
19:Q:16:ARG:NH2	19:Q:20:LYS:HB3	2.25	0.51
1:5:608:A:H5''	1:5:609:G:OP2	2.11	0.51
1:5:2611:U:H2'	1:5:2612:U:C6	2.45	0.51
2:7:44:C:C2'	2:7:45:A:H5'	2.41	0.51
12:I:85:PHE:HB2	12:I:140:THR:CG2	2.40	0.51
9:F:98:LYS:O	9:F:102:VAL:HG23	2.11	0.51
1:5:2584:G:H2'	10:G:240:ASN:ND2	2.26	0.51
2:7:49:G:H4'	2:7:50:U:O5'	2.11	0.51
3:8:77:A:H2'	3:8:78:G:O4'	2.11	0.51
15:M:24:LYS:HD2	15:M:64:VAL:CG1	2.41	0.51
9:F:80:GLN:OE1	22:T:136:ARG:NE	2.44	0.51
4:A:174:ARG:HG2	4:A:174:ARG:NH1	2.22	0.51
1:5:2872:A:H5'	1:5:2872:A:N3	2.26	0.51
10:G:154:ALA:HB3	10:G:157:VAL:CG2	2.41	0.51
1:5:2424:A:H5''	16:N:90:ASN:HD21	1.75	0.51
1:5:2409:G:H4'	1:5:2410:U:OP2	2.11	0.51
1:5:1767:C:C2'	1:5:1768:U:H5'	2.41	0.51
22:T:80:VAL:HG11	22:T:85:LEU:CD1	2.41	0.51
1:5:1725:C:H2'	1:5:1726:C:H6	1.76	0.51
1:5:941:G:C2'	1:5:942:U:H5'	2.41	0.51
11:H:3:TYR:HA	21:S:142:GLN:OE1	2.10	0.51
20:R:89:LEU:HD12	20:R:89:LEU:C	2.30	0.51
13:J:143:ARG:HG3	13:J:143:ARG:HH11	1.76	0.51
9:F:118:LYS:HB2	9:F:195:PHE:CE1	2.46	0.51
1:5:735:A:O2'	1:5:736:A:OP1	2.28	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:162:LEU:HD21	16:N:7:LEU:HD21	1.93	0.50
2:7:42:A:H1'	13:J:72:ARG:HH12	1.75	0.50
1:5:622:A:C1'	9:F:60:ARG:HH21	68.12	0.50
1:5:3279:A:H2'	1:5:3280:U:H5'	1.92	0.50
17:O:178:VAL:O	17:O:182:ASN:HB3	2.11	0.50
7:D:61:ILE:HG23	7:D:79:TYR:HE1	1.76	0.50
1:5:2426:U:H3	1:5:2603:G:H1	1.59	0.50
11:H:124:ARG:HB3	11:H:164:ILE:HG12	1.92	0.50
12:I:207:GLU:O	12:I:210:ILE:HG12	2.11	0.50
5:B:189:SER:O	5:B:192:VAL:HG13	2.10	0.50
16:N:155:VAL:O	16:N:162:ARG:NH2	2.36	0.50
1:5:1219:C:O3'	1:5:1222:G:H5''	2.10	0.50
1:5:1284:C:O2'	1:5:1285:G:P	2.69	0.50
28:Z:134:LEU:HD13	28:Z:134:LEU:O	2.11	0.50
6:C:91:GLY:HA3	6:C:93:MET:CE	2.42	0.50
27:Y:109:LEU:HD22	27:Y:115:ARG:HH12	1.73	0.50
5:B:205:VAL:HG23	5:B:206:ASP:N	2.25	0.50
1:5:1225:A:C4	1:5:1226:G:C8	2.99	0.50
7:D:102:GLY:O	7:D:106:ALA:HB2	2.12	0.50
13:J:82:ARG:HB3	13:J:112:LEU:CD1	2.42	0.50
1:5:2604:U:HO2'	1:5:2605:G:P	2.33	0.50
7:D:40:HIS:CD2	7:D:42:ALA:HB3	2.45	0.50
7:D:229:ASP:HB3	7:D:231:ILE:HD11	1.93	0.50
12:I:145:LYS:HZ3	12:I:167:LEU:CD1	2.24	0.50
10:G:101:THR:OG1	10:G:104:GLU:HG3	2.12	0.50
1:5:3328:G:H2'	1:5:3329:U:O4'	2.11	0.50
1:5:2902:A:H8	1:5:2902:A:O5'	1.94	0.50
1:5:2545:C:C2'	1:5:2546:C:H5'	2.41	0.50
7:D:203:HIS:CE1	7:D:204:VAL:HG23	2.46	0.50
1:5:3232:G:C6	1:5:3256:G:C6	3.00	0.50
26:X:105:VAL:HG11	26:X:126:LEU:CD1	2.27	0.50
28:Z:87:LEU:HD13	28:Z:127:ASN:OD1	2.11	0.50
1:5:620:U:H4'	1:5:621:A:C5'	2.42	0.50
1:5:2915:U:C6	5:B:7:GLU:HG2	2.46	0.50
1:5:3292:A:H4'	5:B:132:LYS:HZ3	1.77	0.50
13:J:94:ARG:NH1	13:J:94:ARG:CG	2.74	0.50
1:5:2857:C:C2'	1:5:2858:U:H5'	2.41	0.50
1:5:2582:C:C2'	1:5:2583:C:H5'	2.40	0.50
27:Y:36:SER:HB3	27:Y:105:VAL:HG21	1.92	0.50
1:5:3204:C:O2'	1:5:3205:G:H5'	2.11	0.50
1:5:696:C:O2'	1:5:697:A:O5'	2.29	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:172:G:N2	1:5:246:U:O2	2.40	0.50
1:5:986:U:H1'	9:F:126:LEU:HD21	1.93	0.50
1:5:411:U:H2'	1:5:412:G:C8	2.46	0.50
1:5:1479:U:C3'	1:5:1480:G:H5'	2.41	0.50
21:S:155:ARG:HB3	21:S:155:ARG:HH21	1.76	0.50
7:D:257:GLU:H	7:D:257:GLU:CD	2.15	0.50
1:5:2347:U:H3'	1:5:2348:A:C8	2.46	0.50
5:B:37:ARG:HA	5:B:186:GLY:HA3	1.93	0.50
1:5:1567:U:C3'	1:5:1568:U:H5''	2.34	0.50
9:F:179:LEU:H	9:F:179:LEU:HD22	1.76	0.50
1:5:2353:G:H2'	1:5:2354:C:H6	1.75	0.50
1:5:873:C:H3'	1:5:874:U:H4'	1.94	0.50
1:5:1169:A:N6	1:5:1170:A:N1	2.60	0.50
1:5:209:A:OP1	6:C:161:LYS:NZ	2.34	0.50
8:E:40:LEU:O	8:E:51:ARG:HA	2.10	0.50
6:C:125:ALA:HB1	6:C:238:LEU:HB3	1.92	0.50
1:5:3007:U:OP1	17:O:73:PHE:HA	2.11	0.50
1:5:1583:A:H5'	1:5:1584:U:OP2	2.11	0.50
28:Z:51:LEU:HD23	28:Z:52:LYS:HE3	1.94	0.50
20:R:45:VAL:HG12	20:R:46:LYS:N	2.26	0.50
13:J:83:GLY:O	13:J:86:VAL:HB	2.12	0.50
22:T:116:ARG:HG3	22:T:126:VAL:HG11	1.94	0.50
1:5:784:A:C6	19:Q:93:ILE:HG23	2.46	0.50
27:Y:60:ARG:NH1	27:Y:60:ARG:HG3	2.07	0.50
1:5:2899:C:N3	11:H:173:ARG:NH1	2.58	0.50
12:I:170:LYS:HA	12:I:177:ASP:HA	1.93	0.50
11:H:25:VAL:HG23	11:H:38:LEU:HD12	1.93	0.50
1:5:1574:C:O2'	1:5:1575:A:OP1	2.22	0.50
21:S:9:VAL:HG11	21:S:41:TYR:CG	2.47	0.50
1:5:3357:U:O2'	1:5:3358:U:OP1	2.29	0.50
8:E:65:ILE:O	8:E:76:LEU:HA	2.11	0.50
24:V:26:ALA:HA	24:V:115:THR:CG2	2.42	0.50
24:V:70:ARG:CZ	24:V:71:LYS:HG3	2.41	0.50
6:C:361:HIS:CG	6:C:362:ASP:H	2.29	0.50
24:V:87:ARG:HB2	24:V:89:ASP:OD1	2.11	0.50
1:5:1299:U:C2'	1:5:1300:G:H5'	2.42	0.50
1:5:886:C:O2'	1:5:887:G:H5'	2.12	0.50
1:5:1604:G:H3'	1:5:1604:G:N3	2.27	0.50
1:5:519:A:N3	1:5:519:A:H2'	2.25	0.50
1:5:1809:A:H2'	1:5:1810:A:O4'	2.11	0.50
26:X:81:ILE:HG13	26:X:125:ARG:HA	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:I:191:LYS:HB2	12:I:213:PHE:CE2	2.46	0.50
14:L:166:ALA:O	14:L:169:THR:HB	2.12	0.50
1:5:768:C:H2'	1:5:769:G:C8	2.46	0.50
1:5:928:C:H2'	1:5:929:A:H8	1.76	0.50
3:8:98:U:H2'	3:8:99:C:O4'	2.11	0.50
1:5:2417:U:O5'	1:5:2417:U:H6	1.93	0.50
1:5:2849:C:C2'	1:5:2850:G:H5'	2.42	0.50
1:5:2398:A:N3	1:5:2398:A:H2'	2.27	0.50
1:5:934:G:H2'	1:5:934:G:N3	2.26	0.50
1:5:29:C:OP1	16:N:189:LYS:HB2	2.11	0.50
5:B:165:GLN:OE1	5:B:167:ARG:NH2	2.44	0.50
28:Z:46:ILE:HD12	28:Z:46:ILE:C	2.32	0.50
8:E:46:ARG:HG2	8:E:46:ARG:HH11	1.74	0.50
1:5:3299:A:C2'	1:5:3300:U:H5'	2.41	0.50
1:5:90:C:C3'	1:5:91:G:H5'	2.42	0.50
11:H:49:ASN:OD1	11:H:52:LEU:N	2.45	0.50
1:5:132:C:C2'	1:5:133:U:H5''	2.42	0.50
1:5:2821:C:H41	1:5:2869:U:H3	1.58	0.50
11:H:92:TYR:HB2	11:H:142:ASP:HB3	1.92	0.50
1:5:2660:G:N3	1:5:2744:U:O2'	2.44	0.50
1:5:2997:G:H1'	1:5:3396:U:C5'	2.42	0.50
21:S:48:LEU:O	21:S:49:HIS:ND1	2.45	0.50
1:5:2931:C:C2'	1:5:2932:U:H5'	2.41	0.50
7:D:25:GLU:HG3	7:D:27:LYS:HG3	1.94	0.50
1:5:151:A:O2'	1:5:152:U:OP1	2.30	0.50
9:F:151:ARG:NH1	9:F:244:ASN:O	2.44	0.50
21:S:124:LEU:HD11	22:T:155:PRO:HA	1.94	0.50
1:5:1423:C:H1'	8:E:5:LYS:NZ	2.27	0.50
11:H:88:TYR:HE2	11:H:184:LYS:HE2	1.75	0.50
16:N:146:ALA:C	16:N:148:TYR:H	2.15	0.50
1:5:898:U:H2'	1:5:899:U:C6	2.46	0.50
12:I:156:ARG:HD2	12:I:163:GLN:HG2	1.92	0.50
1:5:2094:C:H2'	1:5:2094:C:O2	2.11	0.50
4:A:116:VAL:HA	4:A:163:ARG:O	2.12	0.50
18:P:95:LEU:HD23	18:P:148:LEU:HD21	1.94	0.50
1:5:210:U:O2'	1:5:229:G:O2'	2.23	0.50
1:5:514:G:H21	6:C:340:GLY:C	2.14	0.50
10:G:157:VAL:HB	10:G:163:VAL:HG21	1.92	0.50
1:5:1277:C:O2	1:5:1277:C:H2'	2.11	0.50
26:X:71:THR:O	26:X:74:LYS:HB2	2.11	0.50
18:P:126:ARG:HD2	18:P:140:GLU:OE2	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1062:A:H4'	22:T:105:PHE:CE2	2.47	0.50
11:H:167:VAL:O	11:H:167:VAL:HG12	2.11	0.50
1:5:338:A:OP1	6:C:47:ARG:HA	2.11	0.50
5:B:160:VAL:HG13	5:B:183:LEU:CD1	2.41	0.50
1:5:2228:A:H2'	1:5:2229:A:H8	1.76	0.50
1:5:2796:G:H3'	17:O:60:LYS:HZ3	71.24	0.50
1:5:2175:U:C5	4:A:20:THR:HB	2.47	0.50
5:B:262:TRP:HB3	17:O:64:PHE:O	2.10	0.50
1:5:1395:G:H2'	1:5:1396:C:H6	1.76	0.50
6:C:217:LYS:HG3	6:C:220:ARG:HH22	1.76	0.50
7:D:101:THR:O	7:D:104:LEU:HB3	2.12	0.50
1:5:117:U:H3	10:G:147:LYS:HZ3	1.47	0.50
13:J:93:ASP:HA	13:J:171:VAL:CG2	2.42	0.50
8:E:175:LYS:NZ	15:M:110:ALA:O	2.23	0.50
1:5:2815:G:C3'	1:5:2816:G:H5''	2.42	0.50
10:G:101:THR:HG23	10:G:104:GLU:CD	2.32	0.50
1:5:515:C:H5'	6:C:343:LYS:HG2	1.93	0.50
7:D:153:THR:HG23	7:D:160:PHE:HZ	1.76	0.50
14:L:109:PHE:O	14:L:113:VAL:HG23	2.11	0.50
1:5:2699:G:O2'	1:5:2700:G:H5'	2.12	0.50
1:5:2699:G:C2'	1:5:2700:G:H5'	2.42	0.50
1:5:1987:Y5P:H2'	1:5:1988:Y5P:H6	1.94	0.50
5:B:255:TRP:O	5:B:258:ALA:HB2	2.11	0.50
14:L:58:VAL:CG1	14:L:60:ALA:H	2.24	0.49
13:J:71:VAL:CG1	13:J:75:LYS:HE3	2.42	0.49
15:M:45:LEU:HD12	15:M:56:GLN:O	2.12	0.49
4:A:156:LYS:HG2	4:A:157:VAL:N	2.27	0.49
4:A:180:LEU:O	4:A:180:LEU:HD13	2.11	0.49
19:Q:167:SER:HB2	19:Q:172:PHE:CE2	2.47	0.49
27:Y:57:LEU:O	27:Y:105:VAL:HG12	2.12	0.49
27:Y:37:LYS:N	27:Y:37:LYS:HE2	2.25	0.49
11:H:103:ILE:HD11	11:H:134:ILE:CB	2.41	0.49
1:5:967:A:H2'	1:5:968:G:H5'	1.94	0.49
1:5:888:A:H2'	1:5:889:U:H6	1.77	0.49
1:5:1897:G:C2'	1:5:1898:G:H5'	2.42	0.49
12:I:42:THR:HG23	12:I:45:GLU:HG3	1.93	0.49
1:5:1295:G:OP1	21:S:84:ARG:HG3	2.12	0.49
15:M:135:LEU:O	15:M:136:ALA:HB3	2.11	0.49
16:N:136:ASP:OD1	16:N:139:HIS:HB2	2.12	0.49
5:B:251:CYS:SG	5:B:253:GLY:N	2.85	0.49
1:5:671:U:H2'	1:5:672:A:H8	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:73:C:O2'	14:L:59:ARG:HG2	2.12	0.49
14:L:50:PRO:O	14:L:139:LEU:HA	2.12	0.49
12:I:47:PRO:HB2	12:I:178:ARG:CZ	2.42	0.49
12:I:47:PRO:HB2	12:I:178:ARG:NH2	2.26	0.49
3:8:67:U:H5''	13:J:85:LYS:HB2	184.60	0.49
5:B:300:ARG:HA	5:B:300:ARG:NH1	2.27	0.49
1:5:1534:A:N6	1:5:1586:G:H2'	2.25	0.49
1:5:3045:G:H2'	1:5:3046:A:O4'	2.12	0.49
25:W:35:LYS:HE2	25:W:51:TRP:CZ2	2.47	0.49
25:W:31:PHE:CD2	25:W:37:ALA:HA	2.47	0.49
28:Z:70:PRO:HG3	28:Z:115:LYS:HB2	1.94	0.49
1:5:2421:U:C3'	1:5:2422:C:H5''	2.42	0.49
1:5:2628:A:H1'	1:5:2798:C:C2	2.47	0.49
5:B:56:ILE:CD1	5:B:359:ILE:HA	2.40	0.49
3:8:43:A:H2'	3:8:44:A:H8	1.77	0.49
1:5:2793:G:H5''	17:O:66:LYS:CG	92.38	0.49
8:E:52:VAL:HG13	8:E:53:VAL:N	2.27	0.49
1:5:1660:C:O2'	1:5:1661:G:H5'	2.12	0.49
20:R:99:LEU:HD22	20:R:103:ARG:CZ	2.42	0.49
6:C:139:GLY:O	6:C:141:ARG:NH1	2.44	0.49
1:5:308:A:C2'	1:5:309:U:H5'	2.42	0.49
14:L:85:LEU:H	14:L:85:LEU:CD2	2.24	0.49
1:5:2100:A:H2'	1:5:2101:C:C1'	2.42	0.49
3:8:21:C:N4	3:8:22:U:O4	2.45	0.49
1:5:2882:U:H2'	1:5:2883:U:C6	2.47	0.49
1:5:3243:A:N6	17:O:157:GLU:OE2	2.45	0.49
1:5:341:G:N7	6:C:195:ARG:NH2	2.60	0.49
1:5:3237:U:H2'	1:5:3238:G:O4'	2.12	0.49
9:F:189:ILE:HG23	9:F:190:THR:N	2.28	0.49
18:P:20:SER:O	18:P:22:LEU:HD23	2.12	0.49
6:C:260:GLN:O	6:C:270:SER:OG	2.27	0.49
16:N:137:PRO:HG2	16:N:138:GLN:NE2	2.28	0.49
1:5:3178:A:O5'	17:O:5:PRO:HG3	2.11	0.49
1:5:944:C:O2'	1:5:945:C:H5'	2.12	0.49
1:5:2294:U:O2'	1:5:2296:A:N7	2.34	0.49
10:G:162:LEU:HD23	16:N:7:LEU:CD1	2.21	0.49
5:B:223:GLY:HA2	5:B:271:GLY:HA3	1.93	0.49
10:G:52:TRP:HH2	26:X:27:ARG:HH12	1.59	0.49
1:5:326:U:P	14:L:31:LYS:HZ3	2.27	0.49
7:D:34:LYS:O	7:D:34:LYS:HE2	2.12	0.49
4:A:44:ILE:HD12	4:A:44:ILE:H	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:3117:C:H2'	1:5:3118:C:O4'	2.11	0.49
19:Q:122:ILE:HG23	19:Q:126:GLN:OE1	2.12	0.49
1:5:860:G:O2'	1:5:895:A:H4'	2.12	0.49
1:5:3152:U:C5	1:5:3395:G:C6	3.00	0.49
1:5:1364:C:O2'	1:5:1365:G:H5'	2.12	0.49
7:D:163:LEU:O	7:D:166:ALA:HB3	2.12	0.49
1:5:1782:U:H2'	1:5:1783:U:O4'	2.11	0.49
1:5:505:G:H2'	1:5:506:U:C6	2.46	0.49
1:5:1276:U:H2'	1:5:1277:C:O4'	2.11	0.49
1:5:3016:A:H2'	1:5:3017:A:C8	2.47	0.49
1:5:753:C:H2'	1:5:754:G:H8	1.77	0.49
3:8:24:G:OP2	27:Y:13:ARG:HD3	2.12	0.49
26:X:135:ILE:HD13	26:X:135:ILE:C	2.33	0.49
13:J:133:ARG:HB2	13:J:152:HIS:CE1	2.48	0.49
9:F:103:LEU:CD2	9:F:130:ILE:HD11	2.43	0.49
12:I:99:ILE:HG13	12:I:123:HIS:HB2	1.94	0.49
6:C:150:LEU:HD13	6:C:249:ILE:CD1	2.43	0.49
1:5:2176:U:O2'	1:5:2177:G:H5'	2.13	0.49
1:5:413:U:H5''	18:P:34:GLN:HE22	1.76	0.49
16:N:172:ARG:HG2	16:N:174:ILE:CD1	2.41	0.49
1:5:536:U:H2'	1:5:537:A:C5'	2.42	0.49
1:5:3357:U:O2'	1:5:3358:U:P	2.70	0.49
1:5:408:A:O2'	1:5:409:A:H5'	2.12	0.49
24:V:26:ALA:C	24:V:115:THR:HG22	2.32	0.49
1:5:2428:U:H2'	1:5:2429:G:H8	1.78	0.49
12:I:210:ILE:HG13	12:I:211:ARG:N	2.26	0.49
24:V:59:MET:CE	24:V:75:PRO:HG3	2.43	0.49
5:B:238:LEU:HB3	5:B:239:PRO:CD	2.43	0.49
6:C:63:GLU:O	6:C:76:ARG:N	2.45	0.49
1:5:639:G:H4'	1:5:1434:G:O6	2.11	0.49
1:5:378:A:N3	1:5:378:A:H2'	2.27	0.49
1:5:3004:C:C2'	1:5:3005:A:H5'	2.42	0.49
1:5:575:G:O2'	1:5:576:C:H5'	2.12	0.49
1:5:255:A:H2'	1:5:256:G:H8	1.78	0.49
19:Q:127:LEU:O	19:Q:127:LEU:HD13	2.12	0.49
1:5:1076:C:H2'	1:5:1076:C:O2	2.13	0.49
5:B:47:LEU:HD21	5:B:179:ALA:CB	2.41	0.49
5:B:221:THR:O	5:B:272:TYR:HA	2.13	0.49
19:Q:93:ILE:HD12	19:Q:93:ILE:H	1.76	0.49
1:5:3059:G:H2'	1:5:3060:C:H6	1.74	0.49
1:5:2438:A:C2'	1:5:2439:A:OP1	2.61	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2509:U:H2'	1:5:2510:U:C5'	2.41	0.49
11:H:71:VAL:O	11:H:75:VAL:HG23	2.13	0.49
1:5:1575:A:H2'	1:5:1576:G:H8	1.73	0.49
1:5:2674:A:O2'	1:5:2675:C:H5'	2.13	0.49
1:5:2249:G:H8	1:5:2272:G:HO2'	1.59	0.49
4:A:116:VAL:HG13	4:A:126:LEU:HB2	1.94	0.49
5:B:14:LEU:HD22	5:B:17:LEU:CD2	2.42	0.49
13:J:96:PHE:HB2	13:J:156:LYS:HE3	1.94	0.49
18:P:26:PHE:HA	18:P:144:SER:OG	2.12	0.49
3:8:85:G:N3	3:8:85:G:H3'	2.27	0.49
23:U:85:LYS:N	23:U:90:ARG:HG2	2.28	0.49
7:D:107:ARG:NH1	7:D:116:ASP:OD1	2.44	0.49
11:H:103:ILE:HD11	11:H:134:ILE:CD1	2.39	0.49
2:7:37:G:N2	2:7:41:G:N3	2.60	0.49
2:7:26:C:H2'	2:7:27:A:O4'	2.13	0.49
2:7:4:U:H2'	2:7:5:G:H8	1.78	0.49
9:F:191:VAL:HG12	9:F:192:GLY:H	1.77	0.49
1:5:2921:U:H2'	1:5:2923:U:OP2	2.12	0.49
11:H:109:ALA:HB1	11:H:111:PHE:CZ	2.47	0.49
11:H:83:THR:OG1	11:H:84:LYS:N	2.45	0.49
1:5:1566:A:H2'	1:5:1567:U:O4'	2.12	0.49
13:J:45:PRO:HB2	13:J:67:VAL:CG2	2.43	0.49
1:5:3067:C:H3'	20:R:62:ARG:NH2	2.27	0.49
1:5:385:A:H2'	1:5:386:A:H8	1.76	0.49
23:U:14:THR:CG2	23:U:66:VAL:HG22	2.38	0.49
2:7:35:C:C2'	2:7:36:C:H5'	2.42	0.49
12:I:38:LYS:HB2	12:I:83:ASP:OD1	2.12	0.49
1:5:2616:C:C2'	1:5:2617:U:H5'	2.42	0.49
7:D:122:VAL:HG21	7:D:168:ASP:OD1	2.12	0.49
3:8:11:C:H2'	3:8:12:A:H8	1.77	0.49
9:F:139:PRO:HA	9:F:237:ASN:OD1	2.13	0.49
1:5:421:G:N3	1:5:421:G:H3'	2.27	0.49
1:5:977:C:O2'	1:5:978:G:H5'	2.12	0.49
11:H:176:LEU:HD11	15:M:83:LYS:HZ2	83.35	0.49
1:5:974:G:H2'	1:5:975:C:C6	2.48	0.49
11:H:171:ASP:OD1	11:H:173:ARG:N	2.46	0.49
4:A:41:ILE:O	4:A:89:TYR:HA	2.12	0.49
5:B:296:THR:HG22	5:B:297:SER:N	2.27	0.49
19:Q:64:VAL:HA	19:Q:67:ILE:CD1	2.42	0.49
2:7:91:G:C4	2:7:92:A:C8	3.00	0.49
4:A:33:ASP:O	4:A:37:ARG:HB2	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:J:26:SER:OG	13:J:29:ARG:HD2	2.13	0.49
7:D:267:ALA:HA	7:D:270:LYS:HD2	1.95	0.49
1:5:1713:G:H22	1:5:1730:G:H1'	1.78	0.49
6:C:219:LEU:HD22	6:C:222:VAL:HG11	1.93	0.49
1:5:630:A:H2'	1:5:631:U:H6	1.75	0.49
1:5:658:G:H1	1:5:1437:C:H42	1.60	0.49
28:Z:54:THR:HG22	28:Z:57:HIS:CG	2.47	0.49
5:B:202:THR:HG23	5:B:203:VAL:N	2.27	0.49
1:5:582:G:O2'	1:5:583:G:H5'	2.12	0.49
19:Q:185:LYS:HG3	19:Q:186:VAL:HG23	1.94	0.49
1:5:2557:A:H4'	1:5:2558:U:OP2	2.11	0.49
28:Z:11:ALA:HB2	28:Z:82:PRO:HA	1.95	0.49
12:I:48:LEU:HB2	12:I:142:ASP:OD1	2.12	0.49
1:5:2798:C:H5''	1:5:2799:A:OP1	2.12	0.49
16:N:140:LYS:HB3	16:N:144:ARG:HH12	1.76	0.49
21:S:9:VAL:HG11	21:S:41:TYR:HB2	1.95	0.49
21:S:26:ARG:O	22:T:150:THR:HA	2.12	0.49
1:5:1240:A:N1	1:5:1244:A:O2'	2.42	0.49
27:Y:39:LEU:HD21	27:Y:107:THR:C	2.33	0.49
22:T:14:MET:HE1	22:T:55:LYS:HA	1.94	0.49
10:G:158:ASP:OD1	10:G:159:PRO:HA	2.13	0.49
13:J:26:SER:HB2	13:J:29:ARG:HD2	1.94	0.49
1:5:1473:G:C2'	1:5:1474:A:H5'	2.43	0.49
1:5:123:A:N6	1:5:149:U:H3	2.11	0.49
1:5:3334:U:H4'	1:5:3335:A:C5'	2.42	0.49
1:5:436:A:O5'	1:5:436:A:H8	1.96	0.49
19:Q:90:ASP:HB3	19:Q:93:ILE:HD11	1.95	0.49
6:C:156:LEU:HD23	6:C:159:ILE:HD12	1.95	0.49
10:G:43:LYS:HD2	26:X:28:THR:HB	1.95	0.49
1:5:353:G:O2'	1:5:364:G:O6	2.22	0.49
1:5:1580:A:H5''	1:5:2522:G:N2	2.27	0.49
1:5:621:A:N3	1:5:621:A:H2'	2.28	0.49
1:5:2196:C:H2'	1:5:2242:A:H61	1.78	0.49
11:H:152:GLU:O	11:H:156:GLN:HB2	2.13	0.49
1:5:1540:U:O2'	1:5:1541:G:H5'	2.12	0.49
1:5:759:U:H2'	1:5:760:G:H5'	1.94	0.49
3:8:89:A:C2	3:8:91:C:C2	3.01	0.49
2:7:35:C:H2'	2:7:36:C:H5'	1.94	0.49
14:L:168:ARG:O	14:L:172:LEU:HG	2.13	0.49
1:5:2971:A:H4'	1:5:2972:G:OP2	2.13	0.49
1:5:1072:G:H2'	1:5:1073:U:H6	1.74	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:205:PRO:HD2	6:C:225:VAL:HG22	1.94	0.49
18:P:31:GLU:CG	18:P:60:PHE:HA	2.43	0.49
1:5:1354:G:O6	1:5:1358:C:H5'	2.12	0.49
2:7:19:C:H2'	2:7:20:A:C8	2.47	0.49
1:5:1316:C:C2	17:O:130:LYS:HD3	2.47	0.49
1:5:856:G:C6	1:5:857:G:N1	2.81	0.49
5:B:107:ALA:HA	5:B:199:PHE:CD2	2.48	0.49
16:N:142:ILE:N	16:N:142:ILE:HD12	2.27	0.48
1:5:540:U:H2'	1:5:541:U:O4'	2.13	0.48
1:5:2642:A:O5'	22:T:3:LYS:NZ	2.43	0.48
1:5:2248:C:C2'	1:5:2249:G:OP2	2.60	0.48
1:5:2354:C:N4	1:5:2355:G:C6	2.80	0.48
9:F:219:LYS:HB2	9:F:220:PHE:CE1	2.48	0.48
1:5:409:A:H61	3:8:15:G:H1'	1.78	0.48
9:F:45:LEU:N	9:F:45:LEU:HD23	4.00	0.48
1:5:2338:C:H2'	1:5:2339:C:C5	2.48	0.48
2:7:94:C:H2'	2:7:95:A:C8	2.48	0.48
13:J:17:LEU:HD12	13:J:18:VAL:H	1.78	0.48
1:5:2662:G:H2'	1:5:2663:G:C8	2.48	0.48
28:Z:13:VAL:HG22	28:Z:80:LEU:HD21	1.94	0.48
1:5:949:C:H2'	1:5:950:G:C8	2.48	0.48
1:5:3249:C:C2'	1:5:3250:U:H5'	2.43	0.48
1:5:1326:A:H2'	1:5:1327:C:O4'	2.12	0.48
1:5:585:A:H2'	1:5:586:C:C6	2.48	0.48
1:5:1461:A:O2'	1:5:1462:A:H5'	2.12	0.48
1:5:1229:G:H2'	1:5:1230:G:C8	2.48	0.48
12:I:212:GLU:O	12:I:214:PRO:HD3	2.13	0.48
1:5:908:G:H3'	16:N:81:TYR:OH	2.13	0.48
6:C:299:ILE:HG22	19:Q:39:ARG:HD2	1.91	0.48
26:X:108:LEU:HD13	26:X:125:ARG:HD3	1.94	0.48
10:G:98:ARG:CD	10:G:99:PRO:HD2	2.43	0.48
5:B:56:ILE:HG12	5:B:356:LEU:HD22	1.94	0.48
20:R:9:ARG:CA	20:R:19:LYS:HE2	2.35	0.48
1:5:3163:A:C2'	1:5:3164:C:H5'	2.43	0.48
5:B:14:LEU:O	5:B:17:LEU:HD22	2.13	0.48
10:G:218:ILE:HA	10:G:221:ASN:HD22	1.77	0.48
22:T:56:PHE:CZ	22:T:78:LYS:HD3	2.47	0.48
3:8:83:C:N4	27:Y:113:LYS:HZ1	2.10	0.48
1:5:2981:U:O2'	1:5:2982:A:H5'	2.13	0.48
1:5:2943:G:H2'	1:5:2944:U:O4'	2.13	0.48
17:O:193:GLN:O	17:O:196:ALA:HB3	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1754:G:H2'	1:5:1755:C:C6	2.47	0.48
10:G:186:LEU:O	10:G:190:VAL:HG23	2.13	0.48
1:5:754:G:H2'	1:5:755:A:H8	1.78	0.48
14:L:86:THR:O	14:L:90:ALA:HB2	2.12	0.48
6:C:322:GLN:HA	6:C:322:GLN:NE2	2.27	0.48
19:Q:98:LYS:HE3	19:Q:118:GLY:O	2.13	0.48
6:C:60:THR:HG22	6:C:61:SER:N	2.28	0.48
1:5:609:G:O2'	6:C:312:VAL:HG22	2.12	0.48
18:P:7:THR:HB	18:P:9:THR:CG2	2.30	0.48
1:5:2308:C:H2'	1:5:2309:A:C8	2.48	0.48
1:5:3162:C:O2	1:5:3163:A:C8	2.66	0.48
1:5:3109:G:H21	11:H:156:GLN:HE22	1.61	0.48
1:5:924:G:H1	1:5:2808:A:N6	2.11	0.48
5:B:340:LYS:NZ	5:B:340:LYS:HB3	2.27	0.48
7:D:78:ALA:CB	7:D:105:ILE:HG23	2.40	0.48
1:5:1678:G:H2'	1:5:1679:A:H8	1.77	0.48
1:5:147:U:C4	10:G:157:VAL:HG13	2.48	0.48
1:5:1037:C:C2	1:5:1038:C:C5	3.02	0.48
18:P:31:GLU:HG2	18:P:60:PHE:HA	1.96	0.48
1:5:1940:G:N2	1:5:3362:A:H8	2.12	0.48
24:V:84:SER:HB2	24:V:93:LEU:O	2.13	0.48
1:5:1152:G:H22	1:5:1200:A:H61	1.61	0.48
11:H:46:THR:CG2	11:H:47:LYS:N	2.76	0.48
21:S:155:ARG:CB	21:S:155:ARG:HH21	2.25	0.48
1:5:1229:G:H2'	1:5:1230:G:H8	1.78	0.48
6:C:131:VAL:O	6:C:135:VAL:HG23	2.13	0.48
21:S:13:ARG:HD3	21:S:51:VAL:CG1	2.32	0.48
26:X:129:ASP:HB2	26:X:130:TYR:HD1	1.76	0.48
10:G:72:PRO:CG	16:N:18:VAL:HA	2.42	0.48
14:L:58:VAL:N	14:L:70:ARG:O	2.43	0.48
13:J:45:PRO:HB2	13:J:67:VAL:HG23	1.95	0.48
1:5:951:A:C4	1:5:1369:A:C2	3.01	0.48
18:P:40:GLU:HA	18:P:113:TYR:HB2	1.95	0.48
1:5:1687:U:OP1	23:U:42:LYS:NZ	2.39	0.48
1:5:1328:C:H2'	1:5:1329:U:C6	2.48	0.48
1:5:1724:U:H4'	1:5:1725:C:O5'	2.13	0.48
1:5:3136:G:H4'	5:B:342:LEU:CD1	2.43	0.48
1:5:2667:A:H2'	1:5:2668:U:O4'	2.13	0.48
1:5:1877:U:H5''	1:5:1878:G:O4'	2.14	0.48
27:Y:33:ALA:HB1	27:Y:34:PRO:HD2	1.96	0.48
1:5:2393:G:H4'	5:B:252:ILE:HD13	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:Z:23:VAL:HG12	28:Z:71:PHE:HZ	1.78	0.48
10:G:98:ARG:HD3	10:G:99:PRO:HD2	1.94	0.48
1:5:2509:U:C2'	1:5:2510:U:H5'	2.42	0.48
2:7:42:A:C5	2:7:43:U:C5	3.02	0.48
11:H:77:ASN:HA	11:H:80:THR:CG2	2.40	0.48
1:5:540:U:H2'	1:5:541:U:C6	2.49	0.48
18:P:41:LEU:HD13	18:P:45:GLN:HG3	1.95	0.48
1:5:924:G:H2'	1:5:924:G:OP1	2.13	0.48
2:7:48:U:OP2	7:D:94:ASN:HB3	2.13	0.48
5:B:227:GLU:HG3	5:B:270:ARG:HD3	1.96	0.48
3:8:4:C:H5''	18:P:61:ARG:O	2.12	0.48
8:E:115:GLU:O	8:E:119:ALA:HB3	2.14	0.48
1:5:1710:C:H2'	1:5:1711:C:H6	1.79	0.48
1:5:2772:C:H4'	1:5:2773:C:O5'	2.14	0.48
1:5:1159:A:OP1	19:Q:2:GLY:N	2.45	0.48
5:B:287:LYS:HA	5:B:320:ASP:OD1	2.13	0.48
1:5:1151:U:C5	1:5:1152:G:C6	3.02	0.48
1:5:1468:A:O2'	1:5:1469:C:H5'	2.12	0.48
23:U:58:GLU:HB2	23:U:62:VAL:O	2.14	0.48
13:J:109:HIS:CD2	13:J:123:PHE:H	2.32	0.48
5:B:240:ARG:O	5:B:240:ARG:HG2	2.13	0.48
2:7:107:C:H2'	2:7:108:A:H8	1.79	0.48
18:P:108:ASP:HB3	18:P:111:LYS:HG3	1.95	0.48
17:O:79:ILE:HG22	17:O:80:PHE:N	2.28	0.48
13:J:16:LYS:HD3	13:J:72:ARG:CZ	2.43	0.48
12:I:191:LYS:HG2	12:I:192:ASP:N	2.29	0.48
4:A:147:ARG:CZ	4:A:147:ARG:HB2	2.44	0.48
1:5:764:U:O2'	1:5:765:C:H2'	2.13	0.48
1:5:2397:A:N1	1:5:2873:U:H5''	2.27	0.48
1:5:1038:C:O2'	1:5:1039:U:H5'	2.14	0.48
1:5:2939:G:H2'	1:5:2940:A:H5'	1.95	0.48
1:5:836:A:H1'	1:5:858:A:C2	2.49	0.48
18:P:22:LEU:CD1	18:P:146:ILE:HD12	2.44	0.48
1:5:1438:U:H6	1:5:1438:U:O5'	1.96	0.48
20:R:148:ASP:HA	20:R:151:ARG:HB2	1.94	0.48
3:8:60:U:OP1	26:X:54:TYR:OH	2.31	0.48
1:5:1317:A:N3	1:5:1317:A:H2'	2.29	0.48
1:5:1223:A:C8	1:5:1286:A:N1	2.81	0.48
11:H:163:GLN:HB3	11:H:166:ARG:NH1	2.28	0.48
1:5:2350:C:H5''	18:P:68:GLY:HA3	1.96	0.48
4:A:117:GLU:OE1	4:A:163:ARG:NH2	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2572:C:O2'	1:5:2573:G:P	2.72	0.48
7:D:59:ASP:OD2	7:D:80:SER:OG	2.28	0.48
8:E:64:LEU:HD22	8:E:76:LEU:CD2	2.44	0.48
6:C:185:LYS:HA	6:C:200:THR:O	2.14	0.48
1:5:76:G:O6	14:L:101:ARG:HA	2.13	0.48
14:L:76:THR:HG22	14:L:101:ARG:HH12	1.78	0.48
23:U:80:THR:HG21	23:U:95:PHE:HD1	1.76	0.48
1:5:3241:G:H2'	1:5:3245:A:C8	2.49	0.48
1:5:2415:C:O2'	1:5:2967:A:O2'	2.24	0.48
6:C:179:LEU:HD13	6:C:179:LEU:O	2.13	0.48
5:B:252:ILE:HG21	5:B:260:VAL:HG22	1.96	0.48
1:5:2225:U:H2'	1:5:2226:U:H6	1.77	0.48
27:Y:89:LYS:HE3	27:Y:91:ASN:HD21	1.79	0.48
16:N:115:VAL:HG22	16:N:134:LEU:HD21	1.96	0.48
1:5:1792:C:H5''	1:5:1793:C:OP1	2.13	0.48
16:N:145:ASP:O	16:N:149:ASN:HB3	2.13	0.48
1:5:517:G:O2'	1:5:518:G:H5'	2.14	0.48
1:5:433:A:N3	1:5:433:A:H2'	2.29	0.48
6:C:36:HIS:O	6:C:40:THR:HG23	2.13	0.48
13:J:133:ARG:NH1	13:J:154:THR:HG22	2.28	0.48
13:J:53:THR:OG1	13:J:61:ARG:N	2.36	0.48
1:5:174:C:H2'	1:5:175:C:H5''	1.96	0.48
1:5:1133:A:H1'	1:5:2618:G:O6	2.13	0.48
20:R:115:ILE:HG22	20:R:146:LYS:CE	2.43	0.48
4:A:66:PRO:HB2	4:A:67:TYR:CD2	2.49	0.48
5:B:87:VAL:HG13	5:B:163:HIS:HD2	1.77	0.48
3:8:79:A:H3'	3:8:80:A:C8	2.48	0.48
1:5:2286:U:C4'	1:5:2287:C:H3'	2.44	0.48
1:5:2286:U:H4'	1:5:2287:C:H3'	1.96	0.48
13:J:38:GLU:HA	13:J:43:GLN:O	2.14	0.48
8:E:176:PHE:O	15:M:113:THR:HG23	2.13	0.48
7:D:41:LYS:HZ3	22:T:93:VAL:HG11	1.79	0.48
1:5:2243:A:N3	1:5:2313:A:H2'	2.28	0.48
1:5:149:U:P	16:N:49:ARG:NH1	2.86	0.48
6:C:138:ARG:HH21	6:C:240:PRO:HB2	1.78	0.48
1:5:3191:G:H2'	1:5:3192:U:C6	2.48	0.48
1:5:3038:U:H2'	1:5:3039:C:O4'	2.13	0.48
7:D:209:GLU:O	7:D:213:ASP:HB2	2.14	0.48
1:5:2841:G:H22	1:5:2846:U:H5''	1.79	0.48
5:B:185:GLY:O	5:B:191:LYS:HE2	2.14	0.48
14:L:70:ARG:HD2	14:L:71:ALA:O	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2960:C:H2'	1:5:2961:G:C8	2.47	0.48
1:5:1555:U:C2'	1:5:1555:U:O2	2.61	0.48
15:M:37:GLU:HB3	15:M:45:LEU:HD23	1.96	0.48
12:I:35:ASP:O	12:I:36:LEU:HD23	2.14	0.48
19:Q:165:ILE:HD12	19:Q:167:SER:H	1.79	0.48
16:N:197:LEU:HG	16:N:199:LEU:CD2	2.41	0.48
13:J:34:SER:O	13:J:38:GLU:HB2	2.14	0.48
6:C:187:LEU:HD13	6:C:193:LYS:HE3	1.95	0.48
1:5:943:U:C2	1:5:1432:C:C5	3.01	0.48
7:D:235:SER:O	7:D:239:ILE:HG12	2.14	0.48
2:7:112:G:H2'	2:7:113:C:H6	1.78	0.48
3:8:6:U:O2'	3:8:7:U:H5'	2.14	0.48
5:B:152:LYS:HE3	5:B:192:VAL:HG22	1.96	0.48
5:B:274:SER:O	5:B:275:ARG:HD3	2.14	0.48
1:5:2947:G:C2	5:B:250:ALA:HB1	2.49	0.48
22:T:126:VAL:HG23	22:T:127:GLN:H	1.78	0.48
1:5:2225:U:H2'	1:5:2226:U:C6	2.49	0.48
1:5:1100:U:OP1	9:F:196:LYS:HG3	2.14	0.48
1:5:938:C:O2	1:5:2813:A:O2'	2.31	0.48
5:B:316:GLU:H	5:B:316:GLU:HG2	1.26	0.48
1:5:3124:G:C2'	1:5:3125:U:H5'	2.44	0.48
1:5:1445:U:H5''	1:5:1446:A:OP2	2.14	0.48
8:E:71:VAL:HG12	8:E:72:ASN:N	2.28	0.48
26:X:79:GLY:C	26:X:81:ILE:HD12	2.34	0.48
11:H:9:GLN:NE2	11:H:54:LYS:HE2	2.29	0.48
5:B:56:ILE:HD12	5:B:56:ILE:HA	1.75	0.48
13:J:37:LEU:HD12	13:J:67:VAL:HG22	1.96	0.48
1:5:3268:A:H5''	8:E:46:ARG:HH21	1.78	0.48
1:5:1050:U:O2	1:5:1050:U:H2'	2.13	0.48
1:5:3292:A:H4'	5:B:132:LYS:NZ	2.29	0.48
7:D:80:SER:O	7:D:92:LEU:HD13	2.13	0.48
8:E:102:ASN:OD1	8:E:104:GLU:HB3	2.13	0.48
1:5:386:A:C5	1:5:387:A:H1'	2.48	0.48
1:5:1148:G:H2'	1:5:1149:G:H5'	1.94	0.48
1:5:3240:C:O2'	1:5:3241:G:H5'	2.13	0.48
5:B:11:HIS:H	5:B:11:HIS:CD2	2.30	0.48
1:5:1882:G:O2'	1:5:1883:A:H5'	2.14	0.48
28:Z:72:ILE:H	28:Z:72:ILE:HD13	1.77	0.48
26:X:45:LYS:HE2	26:X:45:LYS:HB3	1.44	0.48
1:5:1799:A:H2'	1:5:1800:A:C8	2.49	0.48
1:5:2328:U:H2'	1:5:2329:C:C6	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2347:U:H3'	1:5:2348:A:H8	1.79	0.48
1:5:1469:C:N4	1:5:1509:A:H1'	2.29	0.48
20:R:34:GLN:HA	20:R:34:GLN:OE1	2.14	0.48
1:5:247:C:H2'	1:5:248:U:O4'	2.13	0.47
14:L:59:ARG:HE	14:L:69:VAL:HG23	1.79	0.47
11:H:69:ARG:HH12	11:H:72:LYS:HE2	1.79	0.47
1:5:2093:A:O2'	1:5:2094:C:O4'	2.29	0.47
1:5:1238:C:H3'	1:5:1239:C:H5''	1.95	0.47
1:5:3115:C:H4'	1:5:3116:G:OP1	2.10	0.47
1:5:1829:G:H5'	26:X:93:TYR:OH	2.14	0.47
1:5:1340:G:H2'	1:5:1341:U:C6	2.48	0.47
5:B:117:ARG:HA	5:B:175:LYS:HD3	1.96	0.47
12:I:174:THR:HG23	12:I:175:ASN:N	2.24	0.47
1:5:1645:U:H2'	1:5:1646:G:C5'	2.43	0.47
1:5:1190:A:C8	1:5:1193:A:H1'	2.49	0.47
6:C:311:HIS:CD2	9:F:162:PRO:HG3	2.49	0.47
2:7:3:U:H2'	2:7:4:U:H6	1.78	0.47
1:5:2124:G:O2'	1:5:2125:A:H5'	2.14	0.47
13:J:7:ASN:OD1	13:J:7:ASN:N	2.47	0.47
1:5:1282:G:C5	1:5:1283:C:C5	3.02	0.47
18:P:52:LEU:HA	18:P:52:LEU:HD12	1.65	0.47
26:X:40:LEU:H	26:X:40:LEU:HD22	1.78	0.47
1:5:3390:G:H21	1:5:3391:A:H1'	1.78	0.47
1:5:1532:C:H2'	1:5:1533:U:C6	2.49	0.47
1:5:533:A:H4'	1:5:534:U:OP1	2.13	0.47
16:N:64:VAL:HG22	16:N:65:ARG:N	2.28	0.47
19:Q:68:ALA:O	19:Q:72:LYS:HG3	2.13	0.47
2:7:43:U:C2	2:7:44:C:C6	3.02	0.47
11:H:25:VAL:HG11	11:H:78:MET:HE3	1.96	0.47
1:5:357:A:H2'	1:5:358:G:H5'	1.96	0.47
6:C:150:LEU:CD1	6:C:249:ILE:HG12	2.33	0.47
1:5:326:U:P	14:L:31:LYS:NZ	2.87	0.47
1:5:3162:C:N3	1:5:3163:A:N7	2.62	0.47
18:P:131:ARG:HG3	18:P:131:ARG:HH11	1.79	0.47
1:5:1819:U:H2'	1:5:1820:U:H5'	1.96	0.47
1:5:2858:U:O2'	1:5:2859:U:H5'	2.14	0.47
1:5:3269:U:H3'	1:5:3269:U:OP2	2.14	0.47
14:L:10:LEU:HD23	19:Q:166:LEU:CD2	2.44	0.47
14:L:8:PRO:HB2	19:Q:166:LEU:HD22	1.97	0.47
5:B:92:TYR:HB2	5:B:157:VAL:HG23	1.95	0.47
1:5:1946:A:H2'	1:5:1947:G:O4'	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:218:G:O4'	1:5:372:A:H1'	2.14	0.47
5:B:281:LYS:NZ	5:B:350:ALA:O	2.47	0.47
1:5:204:A:O2'	1:5:205:C:H5'	2.13	0.47
3:8:46:G:N2	3:8:58:G:C4	2.82	0.47
1:5:2379:U:H2'	1:5:2380:U:C6	2.48	0.47
7:D:218:ARG:HH21	7:D:221:GLU:CB	2.27	0.47
16:N:167:THR:HG23	16:N:168:GLY:N	2.28	0.47
8:E:109:GLU:OE2	8:E:131:LYS:HE3	2.15	0.47
14:L:138:VAL:HG12	14:L:140:SER:H	1.79	0.47
1:5:542:G:N3	1:5:542:G:H2'	2.29	0.47
1:5:2199:G:H2'	1:5:2200:U:C6	2.50	0.47
4:A:116:VAL:CG1	4:A:134:VAL:HG11	2.42	0.47
1:5:1239:C:H2'	1:5:1240:A:O4'	2.14	0.47
2:7:91:G:C2'	2:7:92:A:H8	2.22	0.47
1:5:1678:G:H5'	1:5:1756:C:H4'	1.97	0.47
3:8:19:C:H2'	3:8:20:U:O4'	2.15	0.47
1:5:1182:A:H2'	1:5:1183:C:C6	2.49	0.47
5:B:82:PRO:HB3	5:B:319:ASN:CB	2.43	0.47
1:5:1503:A:C4	1:5:1504:A:C8	3.03	0.47
1:5:1562:C:H2'	1:5:1562:C:O2	2.15	0.47
11:H:62:ARG:HH11	11:H:62:ARG:HG3	1.79	0.47
1:5:3015:G:O2'	1:5:3016:A:H5'	2.13	0.47
1:5:558:U:H4'	1:5:559:A:OP2	2.14	0.47
1:5:3191:G:H2'	1:5:3192:U:H6	1.78	0.47
1:5:3390:G:N2	1:5:3391:A:H1'	2.30	0.47
1:5:1919:G:O2'	1:5:1920:U:H5'	2.14	0.47
1:5:651:G:C2'	1:5:652:G:H5'	2.45	0.47
1:5:1171:G:H2'	1:5:1172:G:O4'	2.14	0.47
20:R:110:ARG:HD3	20:R:120:TYR:CD1	2.50	0.47
14:L:108:ILE:O	14:L:111:ALA:HB3	2.13	0.47
1:5:1078:U:H2'	1:5:1080:A:OP2	2.15	0.47
14:L:70:ARG:HG2	14:L:71:ALA:N	2.29	0.47
1:5:2795:U:H4'	17:O:60:LYS:CB	77.56	0.47
18:P:29:THR:O	18:P:32:THR:HG23	2.13	0.47
24:V:10:LYS:HE2	24:V:10:LYS:HB3	1.70	0.47
14:L:14:PHE:N	14:L:14:PHE:CD1	2.82	0.47
2:7:37:G:C2	2:7:41:G:C2	3.03	0.47
6:C:119:ARG:O	6:C:122:THR:HG23	2.15	0.47
6:C:361:HIS:CG	6:C:362:ASP:N	2.83	0.47
1:5:967:A:C2'	1:5:968:G:H5'	2.44	0.47
16:N:183:THR:O	16:N:183:THR:HG23	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:S:94:ILE:CD1	21:S:106:LEU:HB2	2.45	0.47
4:A:19:HIS:O	4:A:23:ARG:NH1	2.47	0.47
1:5:188:U:O2'	1:5:207:U:O2	2.32	0.47
9:F:83:LEU:HD11	9:F:116:PHE:CD1	2.49	0.47
21:S:74:ASN:OD1	21:S:95:ARG:NH1	2.48	0.47
1:5:1263:A:N3	1:5:1263:A:H2'	2.29	0.47
28:Z:34:LYS:HD2	28:Z:34:LYS:HA	1.72	0.47
10:G:111:LYS:HB2	10:G:111:LYS:HE3	1.50	0.47
1:5:67:A:C5	1:5:317:A:H1'	2.50	0.47
2:7:9:C:OP1	22:T:26:HIS:HB2	2.14	0.47
1:5:1074:U:O3'	1:5:1075:A:H8	1.97	0.47
17:O:120:VAL:O	17:O:124:LEU:HD22	2.13	0.47
5:B:37:ARG:HA	5:B:186:GLY:CA	2.45	0.47
10:G:81:THR:HG23	10:G:82:LEU:H	1.79	0.47
12:I:43:VAL:HG21	12:I:197:VAL:CG2	2.31	0.47
11:H:25:VAL:HG11	11:H:78:MET:HE1	1.96	0.47
11:H:67:ALA:HA	11:H:70:THR:CG2	2.44	0.47
1:5:269:G:OP2	16:N:44:ARG:NH1	2.44	0.47
1:5:2572:C:C2'	1:5:2572:C:O2	2.62	0.47
22:T:79:MET:HB2	22:T:84:TYR:CD2	2.49	0.47
3:8:80:A:O2'	3:8:81:U:H5'	2.13	0.47
3:8:83:C:N4	27:Y:113:LYS:NZ	2.63	0.47
1:5:1540:U:C2'	1:5:1541:G:H5'	2.44	0.47
23:U:81:LYS:HG2	23:U:90:ARG:HH12	1.74	0.47
1:5:176:G:H2'	1:5:177:U:O4'	2.14	0.47
1:5:2531:C:O4'	1:5:2531:C:O2	2.30	0.47
14:L:89:TYR:O	14:L:92:THR:OG1	2.31	0.47
6:C:219:LEU:HD13	6:C:225:VAL:HG11	1.95	0.47
1:5:123:A:OP1	10:G:105:LYS:NZ	2.26	0.47
1:5:1305:U:HO2'	1:5:1306:G:H8	1.62	0.47
1:5:1861:G:O2'	1:5:3066:U:OP1	2.28	0.47
10:G:237:ILE:HD12	10:G:237:ILE:N	2.29	0.47
1:5:2147:A:H2'	1:5:2148:U:O4'	2.15	0.47
1:5:1479:U:H2'	1:5:1480:G:H5'	1.95	0.47
17:O:181:ALA:O	17:O:184:THR:HG22	2.14	0.47
1:5:215:G:H2'	1:5:216:G:O4'	2.13	0.47
1:5:3101:G:C2	1:5:3134:A:C2	3.03	0.47
21:S:13:ARG:CD	21:S:51:VAL:HG13	2.32	0.47
1:5:2554:A:H4'	1:5:2555:G:OP1	2.14	0.47
6:C:22:LEU:HD23	6:C:23:PRO:N	2.29	0.47
14:L:59:ARG:NH2	14:L:69:VAL:HG23	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:Z:76:ASN:OD1	28:Z:78:ASN:HB2	2.15	0.47
3:8:44:A:C2'	3:8:45:C:H5'	2.45	0.47
14:L:25:HIS:HA	14:L:27:ASP:OD2	2.14	0.47
18:P:69:ARG:CB	18:P:79:THR:HG23	2.44	0.47
28:Z:65:ARG:HB3	28:Z:65:ARG:HH11	1.80	0.47
1:5:2586:G:C8	10:G:241:LYS:HE3	2.50	0.47
1:5:3067:C:O2'	1:5:3068:U:H5'	2.14	0.47
21:S:14:LEU:HD21	22:T:136:ARG:NH2	2.29	0.47
10:G:163:VAL:HG12	10:G:163:VAL:O	2.15	0.47
5:B:146:ARG:CZ	5:B:146:ARG:HA	2.44	0.47
1:5:3094:A:H2'	1:5:3095:U:H6	1.79	0.47
1:5:1950:U:H2'	1:5:1951:C:H6	1.78	0.47
1:5:2214:A:O4'	1:5:2601:A:O2'	2.31	0.47
1:5:3051:U:H1'	24:V:92:PHE:CE2	2.49	0.47
1:5:1266:G:C2	1:5:1276:U:H1'	2.49	0.47
1:5:694:C:H4'	6:C:232:SER:O	2.15	0.47
1:5:776:U:H5	1:5:2719:U:O2	1.98	0.47
17:O:124:LEU:HB2	17:O:127:LEU:HD12	1.96	0.47
5:B:37:ARG:CG	5:B:37:ARG:HH11	2.27	0.47
1:5:1284:C:H3'	1:5:1285:G:C8	2.50	0.47
1:5:1223:A:P	1:5:1285:G:H22	2.37	0.47
1:5:248:U:H2'	1:5:249:U:H5''	1.97	0.47
1:5:2640:A:P	22:T:10:ARG:NH1	2.85	0.47
22:T:6:GLY:H	22:T:9:SER:HB2	1.79	0.47
13:J:61:ARG:O	13:J:62:ASN:HB2	2.14	0.47
1:5:1307:G:O2'	1:5:1308:A:OP2	2.22	0.47
3:8:44:A:O2'	3:8:45:C:H5'	2.14	0.47
18:P:129:THR:HB	18:P:139:TYR:CD2	2.50	0.47
1:5:2538:U:H4'	1:5:2541:U:H3	1.79	0.47
23:U:24:GLU:HG3	23:U:25:ASN:OD1	2.14	0.47
1:5:3227:A:H2'	1:5:3228:C:C5'	2.45	0.47
1:5:3227:A:H2'	1:5:3228:C:H5'	1.96	0.47
3:8:66:A:H2'	3:8:67:U:H6	1.79	0.47
6:C:342:LYS:O	6:C:342:LYS:CG	2.60	0.47
1:5:3359:A:H2'	1:5:3360:C:H6	1.78	0.47
7:D:163:LEU:HD13	7:D:173:VAL:HG11	1.96	0.47
21:S:57:GLU:HB3	22:T:136:ARG:HH22	1.79	0.47
1:5:235:A:H2'	1:5:236:G:C8	2.50	0.47
18:P:61:ARG:NH1	18:P:78:VAL:HG21	2.29	0.47
1:5:2429:G:H2'	1:5:2430:A:C8	2.49	0.47
1:5:3198:U:C4	11:H:26:LYS:HB2	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1472:U:O2'	1:5:1473:G:H5'	2.15	0.47
1:5:1313:G:O2'	1:5:1314:C:H5'	2.15	0.47
1:5:1882:G:H2'	1:5:1883:A:C5'	2.45	0.47
1:5:2816:G:N7	1:5:2869:U:H2'	2.29	0.47
10:G:160:ILE:HG21	16:N:22:LEU:HD11	1.96	0.47
17:O:190:VAL:HA	17:O:193:GLN:NE2	2.30	0.47
1:5:1513:G:P	20:R:5:ARG:HH22	2.37	0.47
14:L:154:VAL:CG2	14:L:157:ARG:HG2	2.44	0.47
2:7:28:C:C2'	2:7:29:C:H5'	2.44	0.47
18:P:15:ALA:HB3	18:P:150:VAL:CG2	2.45	0.47
18:P:172:GLN:O	18:P:176:ILE:HG13	2.15	0.47
1:5:1103:A:N3	1:5:1104:G:H5'	2.28	0.47
11:H:122:LYS:O	11:H:123:ILE:HD13	2.15	0.47
1:5:3248:C:H2'	1:5:3249:C:C6	2.50	0.47
6:C:269:SER:HB2	6:C:274:TYR:O	2.14	0.47
6:C:257:LYS:HG2	6:C:257:LYS:O	2.14	0.47
1:5:658:G:C2'	1:5:659:G:H5'	2.45	0.47
1:5:1689:U:H2'	1:5:1690:C:H6	1.78	0.47
1:5:2370:G:C2'	1:5:2371:G:H5'	2.44	0.47
21:S:78:TRP:CH2	21:S:91:TYR:HE2	2.33	0.47
17:O:85:ARG:O	17:O:85:ARG:HG2	2.14	0.47
22:T:21:LYS:NZ	22:T:21:LYS:HB2	2.28	0.47
10:G:171:LYS:HA	10:G:171:LYS:HD2	1.62	0.47
1:5:3047:U:O2'	1:5:3048:A:H5'	2.14	0.47
8:E:141:VAL:HG12	8:E:142:ASP:N	2.29	0.47
3:8:35:C:O5'	3:8:35:C:H6	1.98	0.47
10:G:231:LYS:HE3	10:G:231:LYS:HB2	1.53	0.47
7:D:17:GLN:HE22	22:T:22:HIS:H	1.63	0.47
10:G:91:PHE:HE2	10:G:185:ARG:HB3	1.79	0.47
1:5:1558:A:H5'	10:G:53:PRO:HA	1.97	0.47
17:O:102:LEU:HD12	17:O:103:LYS:N	2.30	0.47
14:L:21:ARG:HB3	16:N:196:THR:HA	1.96	0.47
1:5:1819:U:O2'	1:5:1820:U:P	2.72	0.47
5:B:261:MET:SD	17:O:64:PHE:HA	2.55	0.47
4:A:48:ILE:C	4:A:48:ILE:HD12	2.35	0.47
5:B:29:VAL:CG1	5:B:339:ARG:HD3	2.45	0.47
1:5:1395:G:H2'	1:5:1396:C:C6	2.49	0.47
1:5:1111:U:H2'	1:5:1112:A:H8	1.80	0.47
21:S:57:GLU:HB3	22:T:136:ARG:NH2	2.30	0.47
1:5:2836:C:H5	1:5:2852:C:N4	2.12	0.47
1:5:2101:C:O2'	1:5:2102:U:P	2.71	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:169:THR:HG22	5:B:171:LEU:H	1.78	0.47
1:5:1503:A:H2'	1:5:1504:A:H8	1.80	0.47
10:G:169:LEU:O	10:G:172:LYS:HB3	2.15	0.47
1:5:436:A:H2'	1:5:437:G:O4'	2.15	0.47
3:8:143:U:H2'	3:8:144:G:O4'	2.14	0.47
1:5:2864:A:C2'	1:5:2865:U:H5'	2.45	0.47
1:5:853:G:N7	18:P:2:ALA:HB2	114.00	0.47
1:5:1232:C:C5	1:5:1261:G:H2'	2.49	0.47
1:5:250:U:H2'	1:5:251:G:H5'	1.97	0.47
1:5:1764:U:OP1	1:5:1764:U:O4'	2.33	0.47
12:I:49:CYS:SG	12:I:51:HIS:NE2	2.85	0.47
13:J:71:VAL:HG13	13:J:75:LYS:HE3	1.96	0.47
1:5:621:A:H4'	1:5:622:A:O5'	2.15	0.47
17:O:77:SER:OG	17:O:78:ARG:HD2	2.15	0.47
11:H:25:VAL:CG2	11:H:38:LEU:HD12	2.45	0.47
12:I:85:PHE:CB	12:I:140:THR:HG22	2.44	0.47
1:5:1567:U:H2'	1:5:1570:U:H5	1.80	0.47
15:M:37:GLU:OE1	21:S:72:VAL:HB	2.15	0.47
14:L:27:ASP:HB2	14:L:31:LYS:HG3	1.97	0.47
1:5:1241:U:C4'	1:5:1242:G:OP1	2.63	0.47
14:L:188:ARG:O	14:L:188:ARG:HG2	2.14	0.47
15:M:68:LEU:O	15:M:69:THR:HG23	2.15	0.47
1:5:406:G:H1'	3:8:16:G:N2	2.30	0.47
13:J:79:ILE:HG23	13:J:112:LEU:HD11	1.96	0.47
9:F:224:ILE:HD11	21:S:39:SER:HB2	1.96	0.47
13:J:10:ARG:O	13:J:10:ARG:HD3	2.14	0.47
1:5:927:C:H2'	1:5:928:C:C6	2.45	0.47
1:5:3122:A:O2'	11:H:63:LYS:HD2	2.15	0.47
22:T:40:VAL:HB	22:T:96:ILE:HG23	1.97	0.47
1:5:3009:G:O2'	1:5:3010:U:H5'	2.15	0.47
1:5:578:A:H2'	6:C:334:PHE:CD2	2.46	0.47
8:E:154:LEU:HA	8:E:157:GLN:OE1	2.14	0.47
24:V:87:ARG:HD2	24:V:93:LEU:HD22	1.97	0.47
6:C:39:PHE:CD2	6:C:242:ALA:HB2	2.49	0.47
1:5:2759:U:H6	1:5:2759:U:H3'	1.80	0.47
1:5:1081:U:O2'	1:5:1082:U:O5'	2.29	0.47
1:5:251:G:H1'	1:5:253:A:C6	2.50	0.47
1:5:850:U:H4'	1:5:851:C:OP1	2.14	0.47
1:5:1064:A:H5''	1:5:1066:G:O4'	2.15	0.47
4:A:82:VAL:HA	4:A:86:GLN:OE1	2.14	0.47
12:I:36:LEU:CD1	12:I:69:ARG:HG2	2.39	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:193:LYS:CB	6:C:193:LYS:NZ	2.77	0.47
14:L:154:VAL:HG23	14:L:157:ARG:HG2	1.96	0.47
21:S:103:VAL:O	21:S:106:LEU:HB3	2.15	0.47
14:L:52:ASP:N	14:L:52:ASP:OD1	2.48	0.47
8:E:166:LYS:N	8:E:169:ASP:OD2	2.45	0.47
1:5:735:A:HO2'	1:5:736:A:P	2.38	0.47
1:5:1475:A:O2'	1:5:1476:G:H5'	2.15	0.47
13:J:14:ILE:HD12	13:J:14:ILE:N	2.29	0.47
1:5:1873:U:OP1	20:R:56:THR:HG22	2.15	0.47
19:Q:106:PHE:HB2	19:Q:111:ARG:NH2	2.29	0.47
10:G:152:LEU:HB3	10:G:180:VAL:HG11	1.96	0.47
1:5:3225:C:C2	1:5:3226:A:C8	3.03	0.47
1:5:1348:U:OP1	19:Q:39:ARG:NH2	2.44	0.46
21:S:23:LYS:HA	22:T:146:ASN:ND2	2.23	0.46
1:5:2513:U:H3	1:5:2593:A:H62	1.61	0.46
9:F:43:ILE:O	9:F:47:ARG:HG3	2.13	0.46
1:5:3116:G:H5'	1:5:3117:C:H5	1.80	0.46
8:E:42:LEU:HD23	8:E:84:VAL:HG13	1.97	0.46
1:5:1692:U:C2'	1:5:1693:C:H5'	2.44	0.46
1:5:665:A:O2'	1:5:666:A:H5'	2.15	0.46
6:C:187:LEU:HD23	6:C:187:LEU:HA	1.74	0.46
6:C:238:LEU:HD23	6:C:238:LEU:HA	1.72	0.46
25:W:53:VAL:O	25:W:57:LYS:HD2	2.14	0.46
1:5:345:G:H2'	3:8:25:G:O2'	2.14	0.46
7:D:187:THR:HG22	7:D:189:GLU:CD	2.36	0.46
1:5:216:G:N3	1:5:216:G:H2'	2.30	0.46
22:T:86:GLU:OE2	22:T:88:ARG:NH1	2.48	0.46
1:5:2666:C:N3	1:5:2689:A:H8	2.13	0.46
22:T:111:ALA:O	22:T:115:LYS:HG3	2.16	0.46
20:R:116:ASP:OD2	20:R:118:HIS:HB2	2.16	0.46
4:A:49:VAL:HG22	4:A:50:HIS:O	2.15	0.46
6:C:300:ARG:CZ	6:C:300:ARG:HB3	2.45	0.46
11:H:84:LYS:HA	11:H:188:THR:CB	2.38	0.46
13:J:132:ASN:HA	13:J:154:THR:CG2	2.45	0.46
12:I:46:PHE:HB3	12:I:140:THR:N	2.30	0.46
9:F:47:ARG:HH12	9:F:179:LEU:HD11	1.77	0.46
1:5:2196:C:O4'	1:5:2271:A:H1'	2.14	0.46
4:A:137:ILE:HG23	4:A:147:ARG:HG3	1.97	0.46
1:5:685:G:OP1	14:L:39:ARG:NH2	2.48	0.46
14:L:37:ASN:O	14:L:41:THR:HG23	2.14	0.46
5:B:228:GLY:O	5:B:232:ARG:HB2	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:P:30:ARG:HA	18:P:119:VAL:CG1	2.39	0.46
7:D:83:LEU:O	7:D:86:TYR:N	2.48	0.46
7:D:229:ASP:HB3	7:D:231:ILE:HG13	1.97	0.46
1:5:2616:C:H2'	1:5:2617:U:H5'	1.97	0.46
1:5:1164:G:H2'	1:5:1165:A:H8	1.80	0.46
17:O:21:SER:HA	17:O:87:MET:SD	2.55	0.46
1:5:1006:A:O2'	1:5:1007:U:H5'	2.15	0.46
20:R:14:VAL:HG12	20:R:15:VAL:N	2.30	0.46
1:5:2739:A:H2'	1:5:2740:A:O4'	2.15	0.46
1:5:1089:G:O2'	1:5:1090:G:H5'	2.15	0.46
16:N:119:TYR:CD1	16:N:119:TYR:N	2.84	0.46
1:5:850:U:O2'	1:5:851:C:P	2.74	0.46
17:O:31:GLN:HG3	17:O:33:ILE:CD1	2.46	0.46
6:C:203:ARG:HH11	6:C:203:ARG:CG	2.29	0.46
1:5:3161:C:H2'	1:5:3162:C:C6	2.51	0.46
12:I:66:GLU:O	12:I:70:ILE:HG13	2.16	0.46
1:5:1722:U:OP2	20:R:103:ARG:NH1	2.47	0.46
7:D:183:TRP:HB2	7:D:190:ILE:CD1	2.43	0.46
6:C:276:LEU:H	6:C:276:LEU:HD12	1.81	0.46
1:5:1147:G:N2	1:5:1148:G:H1'	2.30	0.46
1:5:370:U:H2'	1:5:371:G:H5'	1.96	0.46
15:M:58:ILE:HD11	15:M:62:GLN:HG3	1.97	0.46
1:5:1780:G:H2'	1:5:1781:C:H6	1.80	0.46
8:E:154:LEU:HD23	8:E:154:LEU:N	2.31	0.46
1:5:1746:U:O2'	1:5:1747:G:H5'	2.15	0.46
16:N:33:LYS:HD3	16:N:37:HIS:NE2	2.30	0.46
3:8:37:A:H5''	3:8:39:G:O4'	2.15	0.46
1:5:1406:A:O2'	1:5:1407:A:H5'	2.15	0.46
1:5:646:A:C2	1:5:2375:G:C2	3.04	0.46
1:5:528:U:H2'	1:5:529:A:H8	1.80	0.46
21:S:81:TYR:CE1	21:S:88:HIS:HB2	2.51	0.46
11:H:101:VAL:HG22	11:H:114:VAL:HG22	1.97	0.46
1:5:728:G:H5''	19:Q:43:PRO:HB2	1.96	0.46
19:Q:185:LYS:CG	19:Q:186:VAL:HG23	2.45	0.46
19:Q:72:LYS:HZ2	19:Q:72:LYS:HB3	1.80	0.46
10:G:24:ASN:CB	10:G:25:PRO:CD	2.90	0.46
16:N:114:ARG:CB	16:N:151:ILE:HD11	2.33	0.46
1:5:1057:A:OP1	9:F:98:LYS:HE2	2.16	0.46
1:5:3161:C:H2'	1:5:3162:C:H6	1.81	0.46
4:A:42:ARG:HD2	4:A:87:PHE:CD2	2.50	0.46
4:A:46:LYS:HD3	4:A:62:VAL:CG1	2.45	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:J:95:ASN:HB3	13:J:96:PHE:CD2	2.51	0.46
1:5:2573:G:H2'	1:5:2574:G:H5''	1.98	0.46
5:B:114:VAL:HG13	5:B:163:HIS:CG	2.50	0.46
6:C:174:ALA:O	6:C:177:ASP:HB3	2.16	0.46
5:B:79:VAL:CG1	5:B:322:ILE:HB	2.45	0.46
1:5:1111:U:H5''	14:L:5:LYS:CE	2.44	0.46
1:5:1773:C:H2'	1:5:1774:C:C6	2.51	0.46
13:J:110:ILE:HG22	13:J:114:ILE:O	2.16	0.46
23:U:39:ASP:HB2	23:U:40:HIS:HD2	1.80	0.46
13:J:80:LEU:HD22	13:J:84:LEU:HG	1.96	0.46
1:5:887:G:C6	1:5:888:A:C6	3.04	0.46
9:F:136:TYR:CE2	9:F:231:ASN:HB2	2.51	0.46
1:5:3167:A:O2'	1:5:3168:A:OP1	2.31	0.46
1:5:2369:G:C6	1:5:2370:G:C6	3.04	0.46
25:W:49:ILE:HD13	25:W:49:ILE:N	2.30	0.46
3:8:117:C:H2'	3:8:118:C:C6	2.51	0.46
1:5:676:G:OP2	19:Q:107:THR:HA	2.16	0.46
19:Q:176:ARG:HE	19:Q:184:PHE:HE1	1.64	0.46
6:C:92:ASN:HA	6:C:98:ARG:O	2.16	0.46
1:5:3371:G:H2'	1:5:3372:A:O4'	2.16	0.46
15:M:125:LYS:CD	15:M:128:ARG:HH22	2.28	0.46
12:I:197:VAL:HG12	12:I:198:LYS:N	2.30	0.46
12:I:156:ARG:CD	12:I:163:GLN:HG2	2.46	0.46
1:5:2828:G:C1'	12:I:4:ARG:HH11	2.29	0.46
1:5:2538:U:H2'	1:5:2539:C:C5'	2.45	0.46
1:5:2857:C:O2'	1:5:2858:U:H5'	2.15	0.46
28:Z:14:VAL:CG1	28:Z:79:HIS:HA	2.46	0.46
1:5:1161:G:C8	1:5:1365:G:C5	3.04	0.46
1:5:1685:C:H2'	1:5:1686:U:H6	1.80	0.46
7:D:125:VAL:HG12	7:D:199:ILE:HD13	1.97	0.46
7:D:106:ALA:HB1	7:D:169:GLY:HA3	1.98	0.46
1:5:1891:A:O2'	1:5:1892:G:H5'	2.14	0.46
1:5:1693:C:O2'	1:5:1772:U:O2'	2.11	0.46
1:5:374:A:O2'	1:5:376:G:H8	1.99	0.46
1:5:1710:C:H2'	1:5:1711:C:C6	2.50	0.46
3:8:134:G:OP1	26:X:56:ARG:HG2	2.16	0.46
1:5:2770:G:C2'	1:5:2771:U:H5'	2.46	0.46
1:5:2816:G:C8	1:5:2869:U:H3'	2.50	0.46
15:M:34:ALA:HB2	15:M:85:TRP:CZ3	2.48	0.46
1:5:1470:U:O2'	1:5:1512:U:H4'	2.16	0.46
17:O:113:ASP:OD2	17:O:114:LYS:N	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:O:184:THR:HG23	17:O:185:ALA:N	2.31	0.46
1:5:2206:G:H8	1:5:2206:G:OP2	1.98	0.46
1:5:1079:A:C2	7:D:113:LEU:HG	2.51	0.46
16:N:16:SER:O	16:N:20:ARG:HG2	2.16	0.46
6:C:206:LEU:HB3	6:C:248:VAL:HG22	1.98	0.46
3:8:44:A:H2'	3:8:45:C:H6	1.80	0.46
21:S:71:LYS:O	21:S:97:VAL:HG23	2.16	0.46
20:R:105:LEU:HD12	20:R:138:LEU:HD13	1.98	0.46
13:J:94:ARG:C	13:J:96:PHE:H	2.17	0.46
1:5:2537:U:C2'	1:5:2538:U:O4'	2.63	0.46
1:5:1520:G:O2'	1:5:1521:G:H5'	2.15	0.46
3:8:81:U:OP1	3:8:87:G:H4'	2.15	0.46
1:5:1662:G:H2'	1:5:1663:C:C6	2.49	0.46
1:5:1427:U:H2'	1:5:1428:A:H8	1.79	0.46
1:5:929:A:H2'	1:5:930:U:H6	1.80	0.46
1:5:833:G:N2	1:5:834:U:H1'	2.31	0.46
1:5:1103:A:H3'	1:5:1103:A:N3	2.30	0.46
1:5:949:C:H2'	1:5:950:G:H8	1.81	0.46
1:5:2844:C:H5''	1:5:2845:A:OP2	2.16	0.46
3:8:28:C:H2'	3:8:29:U:H6	1.81	0.46
6:C:14:GLU:O	6:C:14:GLU:HG3	2.16	0.46
1:5:1081:U:O2'	1:5:1082:U:P	2.73	0.46
1:5:850:U:H2'	1:5:851:C:C6	2.51	0.46
1:5:3183:A:OP2	17:O:37:ARG:NH2	2.41	0.46
1:5:2856:G:H2'	1:5:2857:C:H6	1.81	0.46
28:Z:14:VAL:HG12	28:Z:79:HIS:C	2.36	0.46
3:8:81:U:O3'	3:8:82:U:C4'	2.63	0.46
5:B:44:THR:CA	5:B:340:LYS:HD3	2.41	0.46
1:5:1330:A:C2	1:5:1332:A:H1'	2.51	0.46
13:J:48:SER:N	13:J:66:ALA:O	2.42	0.46
21:S:27:MET:HE1	22:T:153:PRO:HD3	1.97	0.46
1:5:159:A:O2'	1:5:160:G:H5'	2.15	0.46
9:F:223:PHE:HA	9:F:227:GLY:O	2.16	0.46
2:7:119:U:H3'	7:D:258:LYS:NZ	2.30	0.46
1:5:2947:G:H4'	1:5:2947:G:OP2	2.15	0.46
2:7:3:U:H2'	2:7:4:U:C6	2.50	0.46
1:5:1191:U:H4'	1:5:1192:C:O5'	2.16	0.46
1:5:378:A:C2	1:5:379:C:H1'	2.51	0.46
12:I:212:GLU:C	12:I:214:PRO:HD3	2.36	0.46
1:5:99:A:H5'	16:N:194:GLN:OE1	2.16	0.46
16:N:116:LEU:HA	16:N:116:LEU:HD12	1.77	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:W:20:LEU:HD21	25:W:28:ILE:HD13	1.97	0.46
26:X:100:LYS:HG3	26:X:105:VAL:O	2.16	0.46
1:5:1631:C:H5''	1:5:1632:A:H5''	1.96	0.46
1:5:1439:U:H5'	6:C:87:GLN:HG2	1.96	0.46
1:5:2308:C:H2'	1:5:2309:A:N7	2.31	0.46
1:5:3164:C:O2'	1:5:3165:A:H8	1.99	0.46
4:A:180:LEU:HD22	4:A:180:LEU:HA	1.70	0.46
1:5:2540:A:O2'	1:5:2541:U:H2'	2.15	0.46
2:7:98:C:O5'	2:7:98:C:H6	1.99	0.46
1:5:1130:A:H5''	1:5:1131:G:P	2.56	0.46
1:5:1331:U:H4'	1:5:1332:A:OP2	2.15	0.46
1:5:376:G:C4	1:5:401:U:C5	3.03	0.46
1:5:1472:U:H2'	1:5:1473:G:H8	1.81	0.46
4:A:56:ALA:HB1	4:A:57:PRO:HD2	1.98	0.46
17:O:188:SER:H	17:O:192:LYS:HZ2	1.64	0.46
1:5:506:U:OP1	6:C:316:ASN:HB2	2.15	0.46
1:5:1940:G:H21	1:5:3362:A:H8	1.62	0.46
28:Z:128:GLN:O	28:Z:129:TRP:C	2.54	0.46
1:5:3329:U:OP1	5:B:376:LYS:NZ	2.40	0.46
1:5:2096:A:H2'	1:5:2097:U:C6	2.51	0.46
20:R:39:ASN:O	20:R:42:ARG:HB2	2.14	0.46
1:5:267:G:H1'	16:N:50:ARG:HD2	1.98	0.46
1:5:2185:G:O2'	1:5:2314:U:OP2	2.33	0.46
12:I:98:ARG:NE	12:I:98:ARG:HA	4.86	0.46
1:5:1875:G:H2'	1:5:1876:U:O4'	2.15	0.46
8:E:45:GLY:O	8:E:48:ARG:HD3	2.16	0.46
10:G:197:VAL:O	10:G:198:ALA:HB2	2.15	0.46
19:Q:88:THR:HG22	19:Q:107:THR:CG2	2.45	0.46
3:8:59:A:N3	3:8:59:A:H2'	2.30	0.46
6:C:30:ILE:O	6:C:32:PRO:HD3	2.15	0.46
1:5:982:C:O2'	1:5:983:A:OP1	2.32	0.46
12:I:66:GLU:O	12:I:66:GLU:HG2	4.14	0.46
13:J:85:LYS:HA	13:J:89:TYR:CE2	2.50	0.46
10:G:150:LEU:HD23	10:G:176:PRO:HB2	1.98	0.46
18:P:46:LYS:HE3	18:P:46:LYS:HB2	1.51	0.46
1:5:1349:G:C8	1:5:1349:G:H3'	2.51	0.46
25:W:9:SER:O	25:W:53:VAL:HG23	2.16	0.46
6:C:181:VAL:HG11	6:C:223:PRO:C	2.36	0.46
9:F:222:HIS:CE1	9:F:230:GLY:HA3	2.51	0.46
13:J:166:LYS:C	13:J:168:ASP:H	2.18	0.46
4:A:104:LEU:CD2	4:A:158:ILE:HD11	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1166:G:N2	1:5:1334:U:C2	2.84	0.46
1:5:1334:U:H5''	9:F:206:LYS:HB3	1.97	0.46
5:B:210:GLU:HG3	5:B:213:GLU:HB2	1.97	0.46
19:Q:155:MET:HE2	19:Q:163:PRO:HB3	1.97	0.46
5:B:208:VAL:HG12	5:B:209:PHE:CD1	2.51	0.46
1:5:1126:G:H5''	12:I:119:TRP:HZ3	1.81	0.46
11:H:101:VAL:CG2	11:H:114:VAL:HG22	2.46	0.46
1:5:1223:A:C5	1:5:1224:C:C5	3.04	0.46
19:Q:44:PHE:O	19:Q:47:VAL:HB	2.16	0.46
28:Z:123:GLN:O	28:Z:124:ALA:HB3	2.16	0.46
6:C:309:ARG:HG3	6:C:309:ARG:H	1.52	0.46
1:5:190:U:C4	27:Y:60:ARG:NH1	2.84	0.46
1:5:2512:C:O2'	1:5:2513:U:H5'	2.15	0.46
1:5:3163:A:H2'	1:5:3164:C:H6	1.78	0.46
4:A:79:ASN:O	4:A:80:GLU:HB3	2.16	0.46
16:N:172:ARG:O	16:N:174:ILE:HD12	2.15	0.46
1:5:860:G:P	4:A:181:LYS:NZ	2.89	0.46
7:D:259:LYS:H	7:D:259:LYS:CD	2.23	0.46
1:5:1035:G:H2'	1:5:1036:A:C8	2.51	0.46
21:S:171:PHE:CG	21:S:172:TYR:N	2.84	0.46
1:5:1838:G:H5''	1:5:1839:A:P	2.56	0.46
9:F:158:LYS:HD3	9:F:158:LYS:C	2.36	0.46
5:B:287:LYS:HZ2	5:B:287:LYS:HB3	1.81	0.46
1:5:626:U:H2'	1:5:627:U:O4'	2.15	0.46
1:5:627:U:H2'	1:5:628:A:H8	1.79	0.46
6:C:158:SER:HA	6:C:213:ASN:HB3	1.98	0.46
2:7:22:A:H2'	2:7:22:A:N3	2.30	0.46
1:5:586:C:C2'	1:5:587:U:H5'	2.46	0.46
17:O:4:GLU:HG2	17:O:5:PRO:HD3	1.97	0.46
1:5:816:A:H1'	1:5:819:U:O4	2.16	0.46
21:S:13:ARG:O	21:S:22:PRO:HG3	2.15	0.45
28:Z:26:VAL:HG23	28:Z:27:LYS:H	1.81	0.45
18:P:10:ASN:ND2	18:P:13:LYS:HG3	2.31	0.45
1:5:434:U:H2'	1:5:435:C:C6	2.52	0.45
1:5:269:G:OP1	16:N:47:LYS:HE2	2.16	0.45
1:5:663:C:H2'	1:5:664:U:H6	1.81	0.45
20:R:102:LEU:HD22	20:R:138:LEU:HD12	1.98	0.45
1:5:1496:C:C2	1:5:1521:G:N2	2.84	0.45
19:Q:170:ARG:HD2	19:Q:171:LYS:N	2.31	0.45
1:5:2151:C:O2'	1:5:2152:A:H5'	2.17	0.45
11:H:112:ILE:CD1	11:H:161:LEU:HG	2.47	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2734:A:H2'	1:5:2735:U:H6	1.81	0.45
1:5:1772:U:C3'	1:5:1773:C:H5'	2.45	0.45
15:M:44:VAL:HG13	15:M:60:LEU:HD21	1.98	0.45
7:D:61:ILE:HD12	7:D:79:TYR:HD1	1.81	0.45
2:7:28:C:H2'	2:7:29:C:C5'	2.46	0.45
1:5:1677:G:N7	23:U:74:LYS:HE3	2.31	0.45
13:J:104:PHE:CE1	13:J:127:PHE:HB2	2.50	0.45
3:8:145:U:H2'	3:8:146:U:O4'	2.16	0.45
1:5:1100:U:OP2	9:F:196:LYS:NZ	2.48	0.45
13:J:106:ILE:HD13	13:J:125:MET:O	2.15	0.45
26:X:99:VAL:HG12	26:X:100:LYS:N	2.31	0.45
1:5:2557:A:C5'	28:Z:135:ARG:HH22	2.28	0.45
1:5:2538:U:C3'	1:5:2539:C:H5''	2.45	0.45
1:5:3218:A:H5''	1:5:3219:G:C4	2.50	0.45
19:Q:64:VAL:CG2	19:Q:67:ILE:HD12	2.40	0.45
3:8:63:G:OP2	3:8:90:U:H4'	2.16	0.45
1:5:2605:G:H2'	1:5:2607:G:O6	2.16	0.45
6:C:122:THR:CG2	6:C:262:TRP:HH2	2.29	0.45
1:5:3187:A:C2	21:S:171:PHE:HB3	2.51	0.45
1:5:1473:G:H2'	1:5:1474:A:O4'	2.15	0.45
11:H:86:TYR:CD1	11:H:151:VAL:HG13	2.52	0.45
16:N:70:ASN:ND2	16:N:93:LYS:HZ3	2.13	0.45
1:5:586:C:O2'	1:5:587:U:H5'	2.16	0.45
27:Y:54:ASP:O	27:Y:70:ILE:HD13	2.15	0.45
24:V:22:ILE:HG12	24:V:35:TYR:HD1	1.80	0.45
1:5:1893:A:O2'	1:5:1894:U:H5'	2.16	0.45
17:O:147:TRP:NE1	17:O:149:TYR:HB2	2.31	0.45
7:D:136:GLU:C	7:D:138:GLY:H	2.20	0.45
9:F:141:TYR:OH	9:F:145:ARG:HD2	2.16	0.45
3:8:68:G:O2'	3:8:69:U:H5'	2.16	0.45
17:O:128:ARG:HA	17:O:128:ARG:HD2	1.59	0.45
26:X:65:GLN:HA	26:X:66:PRO:HD3	1.84	0.45
6:C:142:VAL:HG12	6:C:145:ILE:HD13	1.99	0.45
1:5:1764:U:H4'	1:5:1765:U:OP2	2.16	0.45
1:5:73:C:C4	12:I:15:LYS:HE3	92.24	0.45
16:N:126:THR:HB	16:N:127:TYR:CD2	2.51	0.45
3:8:95:G:OP2	13:J:72:ARG:NH1	152.78	0.45
17:O:27:LEU:HD21	17:O:33:ILE:CG1	2.46	0.45
15:M:55:ARG:HG2	21:S:70:THR:HG22	1.97	0.45
28:Z:75:VAL:HG22	28:Z:76:ASN:O	2.16	0.45
9:F:103:LEU:HA	9:F:130:ILE:HD11	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:173:G:C2'	1:5:174:C:O4'	2.63	0.45
1:5:1002:A:N1	1:5:1050:U:O2'	2.46	0.45
20:R:17:VAL:HG22	20:R:18:GLY:H	1.82	0.45
1:5:3279:A:H2'	1:5:3280:U:C5'	2.46	0.45
1:5:71:A:C2	1:5:2778:G:H1'	2.51	0.45
1:5:100:A:C6	1:5:101:G:C6	3.04	0.45
11:H:103:ILE:HD11	11:H:134:ILE:HB	1.98	0.45
6:C:126:ILE:O	6:C:129:THR:OG1	2.28	0.45
1:5:1329:U:C2'	1:5:1330:A:H5''	2.46	0.45
1:5:59:G:H4'	1:5:60:A:H4'	1.98	0.45
1:5:839:C:O2'	1:5:840:C:H5'	2.16	0.45
1:5:644:G:H2'	1:5:2372:A:N6	2.29	0.45
5:B:274:SER:C	5:B:275:ARG:HD3	2.37	0.45
8:E:166:LYS:HD3	8:E:166:LYS:N	2.31	0.45
1:5:379:C:N4	1:5:390:G:H1	2.14	0.45
1:5:150:A:H2'	1:5:151:A:H5'	1.99	0.45
4:A:49:VAL:HG22	4:A:50:HIS:N	2.31	0.45
14:L:180:ARG:NH1	14:L:180:ARG:HB3	2.32	0.45
1:5:565:U:O2'	1:5:566:G:H5'	2.16	0.45
18:P:170:SER:CB	18:P:173:ARG:HH21	2.29	0.45
12:I:200:LEU:HG	12:I:201:SER:N	2.30	0.45
17:O:124:LEU:CB	17:O:127:LEU:HD12	2.47	0.45
1:5:1261:G:H4'	1:5:1278:A:C2	2.51	0.45
4:A:24:GLN:HG2	4:A:51:ASP:OD1	2.17	0.45
6:C:65:TRP:CZ3	6:C:69:ARG:NH1	2.84	0.45
1:5:249:U:H1'	1:5:250:U:O4'	2.16	0.45
1:5:253:A:HO2'	1:5:254:A:P	2.36	0.45
15:M:48:GLY:N	15:M:49:PRO:HD3	2.31	0.45
1:5:1307:G:H5'	17:O:60:LYS:HE2	1.99	0.45
1:5:2828:G:H2'	1:5:2828:G:N3	2.32	0.45
1:5:3315:G:H2'	5:B:123:TYR:CD1	2.52	0.45
20:R:106:LEU:HD13	20:R:138:LEU:HD11	1.97	0.45
6:C:55:LYS:CG	6:C:59:GLN:HG2	2.44	0.45
28:Z:14:VAL:O	28:Z:14:VAL:HG22	2.17	0.45
8:E:100:LYS:HE2	8:E:105:TYR:HE1	1.82	0.45
8:E:52:VAL:CG1	8:E:65:ILE:HG23	2.47	0.45
1:5:1682:U:C1'	1:5:1685:C:H41	2.29	0.45
21:S:136:LYS:HG2	21:S:136:LYS:H	1.60	0.45
7:D:62:CYS:HB3	7:D:105:ILE:CD1	2.46	0.45
24:V:70:ARG:HH12	24:V:71:LYS:HG3	1.80	0.45
1:5:787:G:C4	1:5:788:C:C5	3.04	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1728:G:H5''	1:5:1730:G:O4'	2.16	0.45
1:5:1799:A:H2'	1:5:1800:A:H8	1.81	0.45
1:5:2812:C:O2'	1:5:2813:A:H5'	2.16	0.45
1:5:2370:G:H2'	1:5:2371:G:H5'	1.97	0.45
1:5:373:A:C6	1:5:375:A:C6	3.04	0.45
9:F:187:GLU:HA	9:F:187:GLU:OE2	2.16	0.45
1:5:1195:A:C2	1:5:1309:U:N3	2.85	0.45
6:C:166:VAL:HG12	6:C:166:VAL:O	2.15	0.45
22:T:68:THR:HG22	22:T:71:SER:O	2.16	0.45
3:8:120:C:H2'	3:8:121:U:O4'	2.17	0.45
28:Z:89:VAL:HG22	28:Z:93:LYS:HG2	1.98	0.45
1:5:843:A:C2	1:5:844:G:H1'	2.51	0.45
1:5:2312:A:O2'	1:5:2315:G:C1'	2.62	0.45
14:L:27:ASP:O	14:L:31:LYS:HG3	2.16	0.45
6:C:45:ASN:HA	6:C:110:ASN:ND2	2.29	0.45
22:T:82:ASN:OD1	22:T:82:ASN:N	2.37	0.45
24:V:45:ARG:HH11	24:V:45:ARG:HG3	1.77	0.45
7:D:55:PHE:CE1	7:D:60:ILE:HG12	2.51	0.45
5:B:117:ARG:NH1	5:B:175:LYS:CD	2.79	0.45
20:R:95:TRP:NE1	20:R:99:LEU:HD12	2.32	0.45
1:5:665:A:C2	1:5:798:G:C2	3.05	0.45
1:5:2428:U:H2'	1:5:2429:G:C8	2.52	0.45
4:A:192:LYS:HE2	4:A:193:ARG:NH2	2.28	0.45
1:5:1989:Y5P:H4A	1:5:1990:Y5P:H4	1.99	0.45
1:5:2885:C:N4	1:5:2886:U:O4	2.50	0.45
1:5:1600:U:OP1	20:R:42:ARG:NH2	2.47	0.45
27:Y:120:GLN:HA	27:Y:120:GLN:HE21	1.81	0.45
2:7:19:C:H2'	2:7:20:A:H8	1.81	0.45
7:D:243:ALA:O	7:D:247:ILE:HG13	2.17	0.45
21:S:144:LEU:N	21:S:144:LEU:HD23	2.31	0.45
27:Y:83:ASP:O	27:Y:84:LYS:HB2	2.17	0.45
2:7:115:G:H2'	2:7:116:C:C6	2.52	0.45
6:C:152:VAL:HG13	6:C:153:SER:N	2.32	0.45
6:C:51:ALA:HB1	6:C:103:THR:O	2.17	0.45
8:E:62:THR:HB	8:E:79:VAL:O	2.17	0.45
1:5:1864:A:H5'	20:R:88:ARG:CD	2.47	0.45
14:L:43:ALA:HB2	14:L:51:LEU:CD1	2.47	0.45
14:L:47:ALA:HB1	14:L:48:PRO:CD	2.42	0.45
13:J:133:ARG:HB3	13:J:134:PRO:CD	2.46	0.45
12:I:60:LEU:HD22	12:I:159:PHE:CD1	2.51	0.45
9:F:47:ARG:NH1	9:F:179:LEU:CD2	2.76	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:P:59:PRO:CG	18:P:76:PHE:CD1	3.00	0.45
15:M:14:LEU:HD22	21:S:150:PHE:C	2.37	0.45
9:F:149:TYR:CD2	9:F:181:ILE:HD11	2.51	0.45
6:C:330:TYR:OH	9:F:52:GLN:HG2	2.17	0.45
1:5:707:U:OP1	1:5:780:A:O2'	2.28	0.45
16:N:53:TYR:C	16:N:53:TYR:CD2	2.90	0.45
3:8:97:A:H2'	3:8:98:U:O4'	2.17	0.45
14:L:165:SER:O	14:L:168:ARG:HB3	2.17	0.45
1:5:119:U:H4'	1:5:120:G:H3'	1.98	0.45
10:G:160:ILE:O	10:G:164:VAL:HG13	2.16	0.45
1:5:3351:U:H3'	1:5:3351:U:O2	2.16	0.45
21:S:43:TYR:CZ	21:S:47:LYS:HE2	2.52	0.45
1:5:576:C:H2'	1:5:577:C:H6	1.81	0.45
5:B:187:SER:O	5:B:190:GLU:N	2.49	0.45
1:5:2121:G:H2'	1:5:2122:G:H4'	1.98	0.45
9:F:77:VAL:O	9:F:77:VAL:HG13	2.17	0.45
1:5:2900:A:C2'	1:5:2901:G:H5'	2.47	0.45
1:5:910:G:H5"	1:5:911:C:OP2	2.17	0.45
1:5:1647:A:C2'	1:5:1648:A:H5'	2.46	0.45
19:Q:43:PRO:O	19:Q:47:VAL:HG23	2.17	0.45
26:X:73:MET:HE1	26:X:141:TYR:HE1	1.81	0.45
10:G:91:PHE:HA	10:G:94:PHE:HB2	1.99	0.45
1:5:249:U:O3'	1:5:250:U:C4'	2.65	0.45
28:Z:40:HIS:HA	28:Z:76:ASN:HA	1.97	0.45
12:I:85:PHE:CA	12:I:140:THR:HG22	2.47	0.45
5:B:56:ILE:HG23	5:B:57:VAL:N	2.30	0.45
1:5:1671:C:C5'	20:R:60:LYS:HZ1	2.28	0.45
1:5:3164:C:O2'	1:5:3165:A:O5'	2.31	0.45
1:5:2175:U:H4'	1:5:2176:U:OP2	2.16	0.45
17:O:88:VAL:HG12	17:O:89:SER:N	2.32	0.45
1:5:1115:G:H5"	1:5:1116:G:H5"	1.98	0.45
1:5:346:C:C2	1:5:348:A:N7	2.85	0.45
19:Q:170:ARG:HA	19:Q:174:ARG:HD2	1.98	0.45
1:5:406:G:N2	3:8:16:G:C4	2.85	0.45
15:M:109:ARG:HA	15:M:112:LEU:HG	1.98	0.45
1:5:999:G:O2'	1:5:1000:C:H5'	2.17	0.45
5:B:328:ILE:CD1	5:B:336:VAL:HG11	2.46	0.45
1:5:1296:C:H2'	1:5:1297:C:O4'	2.17	0.45
1:5:1945:A:O2'	1:5:1946:A:H5'	2.17	0.45
1:5:1741:A:C6	1:5:1742:U:C2	3.05	0.45
12:I:42:THR:HG22	12:I:45:GLU:OE2	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:E:93:VAL:HG13	8:E:93:VAL:O	2.17	0.45
21:S:78:TRP:CZ3	21:S:125:LYS:HE3	2.52	0.45
10:G:171:LYS:HG2	10:G:226:TYR:CD2	2.52	0.45
1:5:3295:A:H2'	1:5:3296:A:C8	2.51	0.45
1:5:2267:C:O2'	1:5:2268:U:H5'	2.16	0.45
1:5:419:G:H3'	1:5:420:G:OP1	2.17	0.45
18:P:70:THR:OG1	18:P:71:ALA:N	2.49	0.45
1:5:3230:G:H2'	1:5:3231:U:C6	2.51	0.45
2:7:62:U:H4'	7:D:285:ARG:HH12	1.82	0.45
5:B:19:ARG:HB3	5:B:273:HIS:NE2	2.32	0.45
26:X:98:ALA:O	26:X:102:LEU:HG	2.17	0.45
10:G:50:VAL:HG22	10:G:52:TRP:CD1	2.51	0.45
1:5:2594:C:H3'	1:5:2595:A:H8	1.82	0.45
11:H:48:VAL:HG21	11:H:54:LYS:HE3	1.98	0.45
12:I:9:TYR:CD2	12:I:97:LEU:HD22	2.51	0.45
1:5:1133:A:H2'	1:5:1134:G:C5'	2.36	0.45
5:B:214:MET:HE3	5:B:279:ASN:CA	2.38	0.45
27:Y:36:SER:HB3	27:Y:105:VAL:CG2	2.47	0.45
1:5:405:U:C2'	1:5:406:G:H5'	2.45	0.45
6:C:185:LYS:O	6:C:186:LYS:HD2	2.17	0.45
3:8:89:A:H5''	3:8:90:U:P	2.57	0.45
18:P:78:VAL:HG12	18:P:80:LYS:H	1.81	0.45
1:5:2606:G:H4'	1:5:2607:G:C8	2.52	0.45
16:N:49:ARG:CG	16:N:49:ARG:NH2	2.78	0.45
5:B:149:ALA:HA	5:B:152:LYS:HG3	1.99	0.45
5:B:292:ALA:O	5:B:295:ALA:HB3	2.15	0.45
16:N:136:ASP:HA	16:N:137:PRO:HD2	1.81	0.45
19:Q:124:LEU:HD23	19:Q:124:LEU:N	2.31	0.45
1:5:1698:C:O5'	1:5:1698:C:H6	1.98	0.45
5:B:318:LYS:HB2	5:B:318:LYS:HE3	1.62	0.45
20:R:108:LYS:HE2	20:R:108:LYS:HB3	1.48	0.45
8:E:108:LYS:HG2	8:E:109:GLU:N	2.31	0.45
1:5:2609:A:H8	1:5:2609:A:OP2	2.00	0.45
1:5:621:A:C5'	1:5:622:A:C8	2.99	0.45
1:5:2282:U:H5'	1:5:2960:C:H1'	1.99	0.45
6:C:112:LYS:HD3	16:N:202:TYR:HB3	1.99	0.45
1:5:2748:A:H1'	7:D:36:LEU:HD23	1.99	0.45
1:5:2573:G:C3'	1:5:2574:G:H5''	2.47	0.45
2:7:88:G:O2'	2:7:89:G:H5'	2.16	0.45
1:5:1052:U:O2'	1:5:1053:A:H5'	2.17	0.45
1:5:2418:G:H1'	1:5:2420:C:OP2	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:328:ILE:CG1	5:B:329:PRO:HD2	2.47	0.45
1:5:1800:A:H2'	1:5:1801:U:O4'	2.17	0.45
2:7:5:G:H2'	2:7:6:C:O4'	2.17	0.45
1:5:3232:G:O2'	1:5:3233:C:H5'	2.17	0.45
1:5:1279:C:H2'	1:5:1280:C:C6	2.52	0.45
13:J:157:GLU:HG3	13:J:158:ASP:N	2.32	0.45
18:P:49:GLU:HA	18:P:49:GLU:OE2	2.16	0.45
1:5:2164:A:C2'	1:5:2165:G:H5'	2.46	0.45
27:Y:23:PRO:HD2	27:Y:26:GLN:NE2	2.32	0.45
26:X:133:LEU:O	26:X:136:ALA:HB3	2.17	0.45
1:5:249:U:H1'	1:5:250:U:C1'	2.47	0.45
14:L:50:PRO:O	14:L:51:LEU:CB	2.65	0.45
1:5:2309:A:H1'	1:5:2961:G:O2'	2.17	0.45
1:5:684:G:OP2	14:L:28:GLN:NE2	2.49	0.45
20:R:17:VAL:HG22	20:R:18:GLY:N	2.32	0.45
7:D:55:PHE:CD1	7:D:158:ARG:NH1	2.85	0.45
7:D:55:PHE:CD1	7:D:60:ILE:HG12	2.52	0.45
8:E:52:VAL:HG11	8:E:65:ILE:CG2	2.47	0.45
15:M:115:PHE:O	15:M:119:GLN:HG3	2.17	0.45
1:5:2151:C:H2'	1:5:2152:A:O4'	2.17	0.45
1:5:211:A:OP1	6:C:220:ARG:HD2	2.17	0.45
1:5:2424:A:H5''	16:N:90:ASN:ND2	2.32	0.45
7:D:40:HIS:CD2	7:D:42:ALA:H	2.35	0.45
1:5:1146:C:H2'	1:5:1147:G:H8	1.82	0.45
11:H:34:LEU:HD11	11:H:149:ASN:O	2.17	0.45
1:5:2723:U:C2	1:5:2724:U:C5	3.05	0.45
1:5:600:G:H5'	1:5:601:U:OP2	2.17	0.45
27:Y:118:LEU:O	27:Y:121:ARG:N	2.50	0.45
1:5:3283:U:H2'	1:5:3284:G:H8	1.81	0.45
1:5:3217:C:H42	18:P:182:ILE:HG23	1.82	0.45
3:8:140:G:H2'	3:8:141:C:O4'	2.17	0.45
1:5:2395:G:H5''	5:B:255:TRP:NE1	2.32	0.45
18:P:108:ASP:OD1	18:P:111:LYS:HG3	2.16	0.45
1:5:55:G:H2'	1:5:56:G:H5'	1.99	0.45
28:Z:103:GLN:OE1	28:Z:103:GLN:HA	2.16	0.45
7:D:207:TYR:CD1	7:D:223:PHE:HZ	2.35	0.45
7:D:285:ARG:O	7:D:289:LYS:HB2	2.17	0.44
19:Q:177:GLY:HA2	19:Q:184:PHE:CE2	2.52	0.44
26:X:131:ASP:OD2	26:X:133:LEU:HB3	2.17	0.44
10:G:41:GLN:NE2	10:G:44:ARG:HH22	2.06	0.44
15:M:48:GLY:O	15:M:52:GLY:N	2.49	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2353:G:H2'	1:5:2354:C:C6	2.52	0.44
1:5:715:A:C8	1:5:715:A:C3'	3.01	0.44
13:J:92:ARG:CZ	13:J:94:ARG:HD2	2.47	0.44
8:E:146:ILE:CG2	8:E:150:LYS:HE3	2.43	0.44
19:Q:170:ARG:HE	19:Q:171:LYS:CG	2.29	0.44
15:M:20:VAL:CG1	15:M:68:LEU:HB2	2.47	0.44
9:F:169:ILE:CD1	9:F:181:ILE:HA	2.47	0.44
1:5:1111:U:H5''	14:L:5:LYS:HE3	1.99	0.44
11:H:112:ILE:HD12	11:H:161:LEU:HG	1.99	0.44
16:N:179:LYS:HB2	16:N:180:PHE:CD2	2.53	0.44
5:B:348:ARG:HA	5:B:351:LEU:HB2	1.99	0.44
14:L:153:ASP:OD2	14:L:157:ARG:HD3	2.17	0.44
1:5:673:U:O2'	1:5:674:G:H5'	2.17	0.44
1:5:3212:C:H2'	1:5:3213:A:O4'	2.16	0.44
17:O:8:VAL:O	17:O:118:VAL:HG22	2.17	0.44
1:5:192:C:H2'	1:5:193:C:H6	1.82	0.44
17:O:13:GLY:HA2	17:O:42:ASN:OD1	2.16	0.44
1:5:1255:C:H2'	1:5:1256:G:H8	1.81	0.44
1:5:2110:G:O2'	1:5:2111:G:H5''	2.17	0.44
16:N:18:VAL:HG22	16:N:19:LEU:HD13	1.97	0.44
1:5:1078:U:H4'	7:D:46:THR:HG21	2.00	0.44
6:C:22:LEU:HD23	6:C:23:PRO:HD2	1.99	0.44
1:5:1554:U:O2'	1:5:1555:U:H5''	2.17	0.44
20:R:119:LEU:HD12	20:R:119:LEU:O	2.18	0.44
1:5:2992:U:H1'	18:P:69:ARG:NH2	2.32	0.44
1:5:1520:G:H2'	1:5:1521:G:O4'	2.17	0.44
1:5:860:G:N3	1:5:860:G:H3'	2.32	0.44
5:B:111:SER:O	5:B:114:VAL:HG23	2.17	0.44
15:M:20:VAL:HG11	15:M:68:LEU:HB2	1.99	0.44
7:D:60:ILE:N	7:D:80:SER:OG	2.47	0.44
7:D:106:ALA:HA	7:D:171:LEU:HD12	2.00	0.44
1:5:3332:U:C5	1:5:3333:G:C6	3.05	0.44
8:E:40:LEU:HB3	8:E:84:VAL:CG1	2.46	0.44
2:7:36:C:C4'	7:D:155:THR:HG23	2.46	0.44
5:B:306:THR:HA	5:B:307:PRO:HD3	1.86	0.44
3:8:21:C:OP1	6:C:193:LYS:HD2	2.17	0.44
1:5:2213:A:H1'	1:5:2602:G:O4'	2.17	0.44
13:J:25:GLU:HG3	13:J:63:GLU:CD	2.38	0.44
1:5:2243:A:O4'	1:5:2313:A:H3'	2.17	0.44
4:A:49:VAL:CG2	4:A:50:HIS:N	2.80	0.44
12:I:182:LEU:CD2	12:I:185:ARG:NH1	2.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:T:143:THR:O	22:T:143:THR:HG23	2.16	0.44
3:8:8:C:H2'	3:8:9:A:C8	2.53	0.44
7:D:142:PHE:O	7:D:172:TYR:HB3	2.16	0.44
19:Q:87:VAL:HG12	19:Q:88:THR:N	2.32	0.44
28:Z:104:PRO:O	28:Z:107:ARG:HB2	2.17	0.44
6:C:58:HIS:CD2	6:C:90:PHE:HD1	2.35	0.44
1:5:902:G:O2'	1:5:903:U:H5'	2.16	0.44
14:L:32:LYS:HA	14:L:35:ARG:NH2	2.33	0.44
1:5:2991:A:H5''	5:B:21:ARG:NH2	2.32	0.44
1:5:3299:A:H2'	1:5:3300:U:H5'	1.99	0.44
12:I:87:LEU:HD12	12:I:88:ARG:H	1.81	0.44
1:5:2586:G:C8	10:G:241:LYS:CE	3.00	0.44
27:Y:35:LEU:HD11	27:Y:45:ILE:HG22	1.99	0.44
8:E:56:LYS:CD	8:E:98:VAL:HG12	2.46	0.44
5:B:169:THR:HG23	5:B:170:PRO:HD2	1.99	0.44
3:8:84:C:O2	27:Y:112:ASP:HA	2.17	0.44
1:5:2181:C:OP1	4:A:192:LYS:NZ	2.35	0.44
1:5:1949:G:C4	1:5:1950:U:C5	3.05	0.44
1:5:877:C:O2'	1:5:880:G:H1'	2.18	0.44
1:5:2929:C:O2'	1:5:2930:A:H5'	2.17	0.44
28:Z:72:ILE:HD12	28:Z:111:LYS:HG2	1.98	0.44
1:5:2183:A:OP1	4:A:7:ASN:HB2	2.16	0.44
1:5:549:U:H2'	1:5:550:A:C8	2.53	0.44
18:P:22:LEU:HD13	18:P:90:PHE:HD2	1.82	0.44
1:5:1192:C:N4	1:5:1301:A:O3'	2.51	0.44
28:Z:51:LEU:HA	28:Z:51:LEU:HD23	1.87	0.44
23:U:18:ASP:OD1	23:U:62:VAL:HG23	2.17	0.44
16:N:132:VAL:O	16:N:134:LEU:HD12	2.16	0.44
21:S:91:TYR:O	21:S:137:ARG:NH1	2.50	0.44
27:Y:70:ILE:HG13	27:Y:80:VAL:CG1	2.47	0.44
10:G:230:LYS:HB2	10:G:230:LYS:HE3	1.46	0.44
19:Q:30:VAL:HG12	19:Q:30:VAL:O	2.56	0.44
21:S:53:LYS:HE3	21:S:53:LYS:HB2	1.56	0.44
1:5:92:G:H8	1:5:92:G:H3'	1.81	0.44
1:5:621:A:C4'	1:5:622:A:H8	2.31	0.44
12:I:156:ARG:HD3	12:I:163:GLN:O	2.17	0.44
20:R:105:LEU:HD13	20:R:105:LEU:C	2.37	0.44
4:A:117:GLU:HG2	4:A:124:GLY:H	1.82	0.44
5:B:265:ALA:C	5:B:266:ARG:HG2	2.36	0.44
5:B:162:VAL:O	5:B:178:LEU:HD12	2.17	0.44
4:A:58:LEU:HD13	4:A:75:ILE:HG21	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:H:4:ILE:HD11	21:S:150:PHE:CB	2.45	0.44
6:C:141:ARG:HH12	6:C:180:LYS:HD2	1.81	0.44
23:U:96:VAL:HG12	23:U:97:SER:N	2.32	0.44
1:5:2943:G:C8	5:B:2:SER:N	2.86	0.44
5:B:3:HIS:CG	5:B:3:HIS:O	2.69	0.44
1:5:1989:Y5P:H2'	1:5:1990:Y5P:H6	1.99	0.44
9:F:151:ARG:HG3	9:F:151:ARG:HH11	1.83	0.44
27:Y:11:ASP:OD2	27:Y:13:ARG:N	2.49	0.44
18:P:153:LYS:HE3	18:P:155:GLU:HB2	2.00	0.44
17:O:174:PHE:O	17:O:177:LYS:HB2	2.17	0.44
1:5:1571:A:H4'	1:5:1572:U:OP2	2.16	0.44
17:O:47:PHE:HD2	17:O:136:THR:HG23	1.83	0.44
10:G:162:LEU:HD21	16:N:45:PRO:HG2	2.00	0.44
1:5:1222:G:H1'	1:5:1223:A:OP2	2.17	0.44
1:5:1765:U:O2	1:5:1765:U:O4'	2.35	0.44
1:5:2538:U:C2'	1:5:2539:C:H5''	2.47	0.44
8:E:146:ILE:HG23	8:E:150:LYS:CE	2.43	0.44
1:5:88:A:H2'	1:5:89:A:O4'	2.17	0.44
6:C:298:ALA:O	19:Q:40:THR:HG22	2.18	0.44
16:N:49:ARG:HG3	16:N:49:ARG:NH2	2.32	0.44
1:5:158:G:H2'	1:5:159:A:C8	2.49	0.44
11:H:164:ILE:HD12	11:H:164:ILE:HA	1.89	0.44
5:B:149:ALA:O	5:B:152:LYS:HB2	2.17	0.44
21:S:47:LYS:C	21:S:48:LEU:HD23	2.38	0.44
1:5:1334:U:H2'	1:5:1335:C:C6	2.53	0.44
18:P:128:ARG:HH21	18:P:136:ILE:CD1	2.31	0.44
1:5:1897:G:H2'	1:5:1898:G:H5'	2.00	0.44
9:F:74:SER:OG	22:T:142:SER:HA	2.17	0.44
1:5:3257:C:H2'	1:5:3258:U:O4'	2.17	0.44
1:5:437:G:H8	1:5:437:G:O5'	2.00	0.44
1:5:1009:A:H2'	1:5:1010:G:O4'	2.17	0.44
1:5:1501:U:H6	1:5:1501:U:O5'	2.00	0.44
26:X:129:ASP:HB2	26:X:130:TYR:CE1	2.53	0.44
3:8:155:A:C2'	3:8:156:U:H5''	2.47	0.44
10:G:182:GLY:O	10:G:185:ARG:N	2.49	0.44
1:5:609:G:H3'	1:5:609:G:N3	2.33	0.44
5:B:284:ARG:CB	5:B:323:MET:HE1	2.47	0.44
3:8:43:A:H2'	3:8:44:A:C8	2.52	0.44
15:M:103:ILE:HG22	15:M:104:ALA:N	2.31	0.44
4:A:149:ARG:CZ	4:A:149:ARG:HB2	2.47	0.44
12:I:36:LEU:CD1	12:I:69:ARG:HD3	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:D:52:VAL:HG12	7:D:54:ARG:HG2	2.00	0.44
20:R:92:GLN:O	20:R:95:TRP:HB3	2.17	0.44
1:5:767:U:HO2'	1:5:768:C:H6	1.58	0.44
2:7:68:C:H5''	22:T:20:ARG:NH1	2.27	0.44
6:C:187:LEU:HD22	6:C:188:ARG:N	2.32	0.44
1:5:1349:G:O5'	6:C:290:ILE:HG21	2.18	0.44
1:5:1190:A:C5	1:5:1193:A:H1'	2.53	0.44
19:Q:131:ALA:HB1	19:Q:134:GLY:HA2	2.00	0.44
13:J:35:LYS:HE3	13:J:35:LYS:HB2	1.64	0.44
15:M:128:ARG:O	15:M:132:LYS:HG3	2.17	0.44
19:Q:49:LEU:HD23	19:Q:49:LEU:HA	1.79	0.44
27:Y:39:LEU:HD12	27:Y:43:TYR:CE2	2.47	0.44
1:5:208:C:H2'	1:5:209:A:C5'	2.48	0.44
7:D:183:TRP:CZ3	7:D:185:PHE:HA	2.52	0.44
1:5:100:A:C2'	1:5:101:G:H5'	2.48	0.44
1:5:1051:U:C2'	1:5:1052:U:H5'	2.46	0.44
6:C:118:LYS:O	6:C:122:THR:HG22	2.18	0.44
13:J:48:SER:O	13:J:64:LYS:HA	2.17	0.44
5:B:50:LYS:HD3	5:B:328:ILE:CG2	2.48	0.44
1:5:1183:C:H2'	1:5:1184:A:C5'	2.45	0.44
1:5:1815:U:HO2'	1:5:1816:A:P	2.34	0.44
1:5:549:U:H2'	1:5:550:A:H8	1.82	0.44
1:5:3096:C:O3'	5:B:325:LYS:NZ	2.41	0.44
13:J:143:ARG:HG3	13:J:143:ARG:NH1	2.32	0.44
16:N:54:LYS:HA	16:N:54:LYS:HD2	1.73	0.44
1:5:1058:U:O2'	1:5:1059:G:H5'	2.17	0.44
1:5:3311:C:C2'	1:5:3312:U:H5'	2.48	0.44
4:A:196:TRP:CE3	4:A:197:PRO:HG3	2.53	0.44
1:5:1081:U:H4'	1:5:1082:U:O5'	2.17	0.44
1:5:248:U:C2'	1:5:249:U:C5'	2.93	0.44
13:J:16:LYS:H	13:J:130:VAL:HG22	1.83	0.44
1:5:1671:C:N4	1:5:1776:G:H1	2.14	0.44
9:F:47:ARG:HH12	9:F:179:LEU:CD1	2.30	0.44
4:A:114:SER:HB2	4:A:169:ILE:HD12	1.99	0.44
1:5:860:G:N7	4:A:181:LYS:HB2	2.32	0.44
6:C:177:ASP:O	6:C:180:LYS:HB3	2.18	0.44
1:5:408:A:H2'	1:5:409:A:O4'	2.18	0.44
7:D:179:ARG:HD3	7:D:179:ARG:HA	1.71	0.44
6:C:187:LEU:HD11	6:C:193:LYS:HE3	2.00	0.44
1:5:2995:A:H5''	3:8:1:A:C2	2.53	0.44
6:C:170:LYS:HG2	6:C:175:HIS:CB	2.44	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2926:A:C2'	1:5:2927:C:H5'	2.47	0.44
1:5:2769:A:H2'	1:5:2770:G:H5'	2.00	0.44
6:C:192:GLY:CA	6:C:197:ARG:NH1	2.79	0.44
13:J:166:LYS:O	13:J:167:TYR:HB2	2.17	0.44
10:G:200:LEU:HD12	10:G:200:LEU:H	1.83	0.44
17:O:113:ASP:OD2	17:O:114:LYS:HG3	2.17	0.44
18:P:94:LEU:HD12	18:P:94:LEU:HA	1.84	0.44
10:G:172:LYS:HA	10:G:172:LYS:HE3	1.99	0.44
1:5:1458:U:H2'	1:5:1459:C:H6	1.82	0.44
1:5:390:G:H2'	1:5:391:A:O4'	2.17	0.44
1:5:2759:U:C6	1:5:2759:U:H3'	2.53	0.44
1:5:92:G:C8	1:5:92:G:H3'	2.52	0.44
1:5:1929:G:H4'	1:5:2321:A:H5''	2.00	0.44
12:I:93:PRO:HA	12:I:127:ALA:HB2	2.00	0.44
13:J:147:THR:HG22	13:J:148:VAL:O	2.18	0.44
6:C:103:THR:HG22	6:C:107:ARG:HH22	1.82	0.44
27:Y:94:SER:O	27:Y:95:VAL:HG23	2.18	0.44
1:5:2640:A:P	22:T:10:ARG:HH12	2.41	0.44
1:5:1580:A:N1	26:X:33:ARG:NE	2.65	0.44
15:M:21:VAL:HB	15:M:63:VAL:HG13	1.99	0.44
6:C:206:LEU:HD23	6:C:206:LEU:HA	1.82	0.44
1:5:349:A:H4'	1:5:350:C:OP2	2.17	0.44
19:Q:172:PHE:O	19:Q:174:ARG:HG3	2.18	0.44
1:5:2631:U:OP1	1:5:2757:U:O2'	2.30	0.44
24:V:120:LYS:H	24:V:137:VAL:CG2	2.30	0.44
8:E:128:LYS:HB2	18:P:181:ARG:HH22	1.82	0.44
7:D:177:GLU:OE1	7:D:183:TRP:NE1	2.50	0.44
1:5:297:G:H2'	1:5:297:G:N3	2.32	0.44
1:5:1491:A:C2	1:5:1492:G:C4	3.06	0.44
13:J:13:LYS:O	13:J:131:MET:HE3	2.18	0.44
1:5:1950:U:O2'	1:5:1951:C:H5'	2.18	0.44
18:P:107:LEU:HD12	18:P:107:LEU:N	2.33	0.44
8:E:175:LYS:O	8:E:176:PHE:HB2	2.18	0.44
1:5:645:A:C6	1:5:2372:A:C2	3.06	0.44
24:V:104:ASN:HB2	24:V:105:PRO:CD	2.47	0.44
28:Z:18:TYR:O	28:Z:21:LYS:HD2	2.18	0.44
1:5:1281:G:C2	1:5:1282:G:C8	3.06	0.44
9:F:83:LEU:HD11	9:F:116:PHE:HD1	1.83	0.44
1:5:1851:G:H8	1:5:1851:G:O5'	2.00	0.44
1:5:3158:G:H4'	1:5:3158:G:OP2	2.18	0.44
1:5:1548:C:H3'	1:5:1549:U:O4'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:O:121:PRO:HA	17:O:124:LEU:HD22	1.99	0.43
1:5:249:U:O2'	1:5:250:U:H5''	2.17	0.43
9:F:102:VAL:HA	9:F:105:LEU:HB2	2.00	0.43
15:M:54:PRO:HG2	15:M:56:GLN:HE22	1.82	0.43
1:5:3268:A:H5''	8:E:46:ARG:NH2	2.33	0.43
20:R:105:LEU:HD12	20:R:106:LEU:CD1	2.48	0.43
1:5:860:G:C5	4:A:181:LYS:HB2	2.53	0.43
1:5:3259:U:H5''	1:5:3261:C:C5	2.53	0.43
1:5:1225:A:C6	1:5:1226:G:C5	3.05	0.43
1:5:2366:C:C2	1:5:2382:G:N2	2.86	0.43
5:B:235:THR:CG2	5:B:236:LYS:N	2.81	0.43
21:S:31:ALA:HB1	21:S:36:ILE:HG21	1.99	0.43
13:J:164:LYS:HZ1	13:J:171:VAL:HG12	1.83	0.43
1:5:139:G:H2'	1:5:140:C:H6	1.83	0.43
2:7:1:G:H4'	7:D:273:ARG:CZ	2.48	0.43
1:5:999:G:C6	1:5:1000:C:N4	2.86	0.43
1:5:968:G:H2'	1:5:969:C:C6	2.53	0.43
1:5:3328:G:O2'	1:5:3329:U:H5'	2.18	0.43
2:7:101:G:H2'	2:7:102:A:H5''	2.00	0.43
17:O:125:ARG:O	17:O:125:ARG:HG2	2.17	0.43
1:5:2545:C:H2'	1:5:2546:C:H5'	2.00	0.43
1:5:2393:G:OP2	5:B:248:LYS:NZ	2.48	0.43
1:5:910:G:H3'	1:5:911:C:C6	2.53	0.43
16:N:160:GLU:N	16:N:160:GLU:OE1	2.36	0.43
20:R:85:ARG:HH11	20:R:85:ARG:HG3	1.83	0.43
1:5:869:G:C2'	1:5:870:G:H5'	2.48	0.43
1:5:2888:U:C6	1:5:2911:A:N6	2.86	0.43
1:5:2766:U:H2'	1:5:2767:U:O4'	2.18	0.43
16:N:122:ASN:O	16:N:129:TYR:HB2	2.18	0.43
15:M:125:LYS:HD2	15:M:128:ARG:HH22	1.83	0.43
5:B:264:VAL:HG23	5:B:265:ALA:N	2.33	0.43
1:5:1785:U:H2'	1:5:1786:G:C8	2.51	0.43
9:F:166:ASN:OD1	9:F:181:ILE:HG22	2.18	0.43
1:5:767:U:C2	1:5:768:C:C5	3.06	0.43
1:5:1427:U:O2'	1:5:1428:A:H5'	2.18	0.43
1:5:370:U:O2'	1:5:371:G:H5'	2.18	0.43
9:F:161:VAL:CG1	9:F:162:PRO:HD2	2.44	0.43
1:5:213:A:H2'	1:5:214:G:C5'	2.48	0.43
1:5:515:C:H5'	6:C:343:LYS:HE3	2.00	0.43
1:5:674:G:C2	1:5:789:A:C2	3.06	0.43
5:B:27:ALA:CB	5:B:218:ILE:HG22	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:S:66:GLU:HG2	21:S:69:PRO:HA	1.99	0.43
1:5:2328:U:H2'	1:5:2329:C:O4'	2.17	0.43
1:5:3038:U:H4'	5:B:65:SER:HA	2.00	0.43
18:P:117:ILE:O	18:P:117:ILE:HG23	2.17	0.43
17:O:15:LEU:HD22	17:O:15:LEU:HA	1.79	0.43
14:L:67:ARG:HD3	14:L:67:ARG:C	2.38	0.43
1:5:2023:P5P:H2'	1:5:2024:P5P:H8	1.99	0.43
1:5:1736:G:N2	1:5:1737:U:C2	2.87	0.43
1:5:1315:U:H5'	1:5:1317:A:O4'	2.18	0.43
19:Q:93:ILE:N	19:Q:93:ILE:HD12	2.33	0.43
10:G:189:LEU:O	10:G:189:LEU:HD12	2.19	0.43
10:G:72:PRO:HA	10:G:73:PRO:HD3	1.91	0.43
27:Y:97:ILE:CG2	27:Y:99:LEU:HG	2.46	0.43
1:5:981:U:H1'	1:5:982:C:P	2.59	0.43
18:P:40:GLU:HA	18:P:113:TYR:CB	2.48	0.43
1:5:1495:U:H5''	1:5:1496:C:H5	1.83	0.43
1:5:2584:G:C2'	10:G:240:ASN:ND2	2.82	0.43
1:5:3333:G:N2	1:5:3369:G:H1'	2.33	0.43
1:5:1678:G:C4'	1:5:1756:C:H4'	2.48	0.43
3:8:102:U:C4	3:8:103:G:C6	3.06	0.43
13:J:26:SER:HB2	13:J:29:ARG:CD	2.49	0.43
2:7:97:A:H2'	2:7:98:C:C6	2.53	0.43
1:5:1332:A:N3	1:5:1332:A:H2'	2.33	0.43
12:I:145:LYS:NZ	12:I:167:LEU:CG	2.81	0.43
7:D:23:ARG:O	7:D:23:ARG:HD2	2.17	0.43
12:I:125:LEU:HD23	12:I:125:LEU:N	2.33	0.43
11:H:28:VAL:HG22	11:H:33:THR:HB	2.00	0.43
1:5:2819:A:O2'	1:5:2820:A:H5'	2.18	0.43
1:5:1689:U:H2'	1:5:1690:C:C6	2.54	0.43
1:5:1479:U:C2'	1:5:1480:G:H5'	2.49	0.43
4:A:54:ARG:HG2	4:A:55:GLY:O	2.18	0.43
1:5:3346:U:H2'	1:5:3347:A:C8	2.54	0.43
7:D:276:LYS:H	7:D:276:LYS:HG2	1.67	0.43
4:A:190:ARG:NH1	4:A:190:ARG:HB3	2.34	0.43
12:I:183:LYS:HE3	12:I:183:LYS:HB3	1.37	0.43
1:5:2624:G:O2'	1:5:2625:C:H5'	2.18	0.43
1:5:429:U:O2'	1:5:430:U:H5'	2.18	0.43
11:H:109:ALA:CB	11:H:111:PHE:CZ	3.01	0.43
19:Q:26:LEU:O	19:Q:29:LEU:HB2	2.18	0.43
1:5:1864:A:OP1	20:R:88:ARG:HD3	2.18	0.43
12:I:177:ASP:C	12:I:179:PRO:HD2	2.37	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:13:A:C4'	26:X:39:LYS:HG3	2.43	0.43
15:M:23:ILE:HG12	15:M:63:VAL:HG22	1.99	0.43
4:A:44:ILE:N	4:A:44:ILE:HD12	2.33	0.43
8:E:152:THR:HA	8:E:153:PRO:HD3	1.89	0.43
1:5:1784:G:H2'	1:5:1785:U:O4'	2.18	0.43
8:E:146:ILE:CG2	8:E:150:LYS:NZ	2.80	0.43
1:5:210:U:C2	1:5:230:U:H4'	2.53	0.43
1:5:1715:A:H4'	1:5:1716:U:H3'	1.99	0.43
13:J:17:LEU:HD13	13:J:129:VAL:HG12	2.00	0.43
1:5:3305:A:H2'	1:5:3306:U:O4'	2.18	0.43
16:N:64:VAL:CG2	16:N:65:ARG:N	2.82	0.43
19:Q:178:ARG:HA	19:Q:178:ARG:HD2	1.46	0.43
1:5:730:C:H2'	1:5:731:U:H6	1.83	0.43
6:C:309:ARG:CZ	6:C:312:VAL:HG11	2.47	0.43
1:5:73:C:O2	14:L:59:ARG:HD3	2.18	0.43
1:5:843:A:N3	1:5:844:G:H1'	2.33	0.43
1:5:1097:G:H2'	1:5:1097:G:N3	2.32	0.43
4:A:79:ASN:HB3	4:A:82:VAL:HG11	1.99	0.43
24:V:45:ARG:CD	24:V:46:LEU:N	2.80	0.43
1:5:3106:A:H2'	1:5:3107:U:C5'	2.40	0.43
1:5:1111:U:O2'	1:5:1112:A:H5'	2.18	0.43
1:5:2836:C:H4'	12:I:157:TYR:CE1	2.53	0.43
3:8:103:G:OP2	3:8:105:A:O2'	2.36	0.43
8:E:149:ILE:HD13	8:E:159:LEU:HD11	1.95	0.43
14:L:54:LEU:HD13	14:L:75:PHE:HE1	1.84	0.43
5:B:168:LYS:O	5:B:319:ASN:ND2	2.51	0.43
6:C:222:VAL:HA	6:C:223:PRO:HD3	1.82	0.43
1:5:2660:G:H2'	1:5:2661:G:C8	2.53	0.43
1:5:2997:G:O4'	1:5:3396:U:H5''	2.18	0.43
2:7:22:A:H1'	7:D:272:TYR:CZ	2.53	0.43
1:5:432:G:C4	1:5:433:A:C8	3.06	0.43
10:G:138:HIS:O	10:G:142:LEU:HG	2.18	0.43
1:5:226:C:C2	1:5:227:G:H1'	2.53	0.43
21:S:87:THR:HG23	22:T:156:TYR:CZ	2.54	0.43
21:S:34:GLU:O	21:S:38:LYS:HG3	2.17	0.43
8:E:122:PHE:CG	8:E:123:PRO:N	2.87	0.43
5:B:188:ILE:HA	5:B:191:LYS:HD2	1.99	0.43
21:S:23:LYS:CA	22:T:146:ASN:HD21	2.25	0.43
1:5:2557:A:H5'	28:Z:135:ARG:HH22	1.84	0.43
3:8:155:A:H2'	3:8:156:U:O4'	2.18	0.43
3:8:155:A:C5'	10:G:185:ARG:HD2	2.43	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:Z:124:ALA:O	28:Z:126:LYS:N	2.52	0.43
6:C:60:THR:CG2	6:C:61:SER:N	2.81	0.43
1:5:425:G:N2	1:5:635:G:H1'	2.34	0.43
14:L:46:ILE:HA	14:L:46:ILE:HD13	1.73	0.43
14:L:47:ALA:C	14:L:49:ARG:H	2.19	0.43
2:7:42:A:C1'	13:J:72:ARG:NH1	2.80	0.43
5:B:214:MET:CE	5:B:279:ASN:CA	2.96	0.43
4:A:178:PRO:HB2	4:A:180:LEU:HD23	2.01	0.43
18:P:30:ARG:HD3	18:P:30:ARG:C	2.39	0.43
1:5:1615:C:O2'	1:5:1616:U:H5'	2.19	0.43
19:Q:165:ILE:HA	19:Q:165:ILE:HD13	1.71	0.43
15:M:15:VAL:HG11	21:S:152:LEU:HD11	2.01	0.43
9:F:169:ILE:HD13	9:F:184:LEU:CD1	2.42	0.43
1:5:1392:G:N3	1:5:1417:G:C2	2.87	0.43
5:B:235:THR:HG22	5:B:236:LYS:N	2.33	0.43
1:5:705:A:H4'	1:5:706:A:OP1	2.19	0.43
13:J:164:LYS:HE2	13:J:171:VAL:H	1.82	0.43
2:7:96:U:H2'	2:7:97:A:C8	2.45	0.43
5:B:13:HIS:CE1	5:B:15:GLY:CA	2.99	0.43
10:G:161:GLU:CD	16:N:26:ARG:HH22	2.22	0.43
1:5:2660:G:H2'	1:5:2661:G:H8	1.84	0.43
27:Y:76:LEU:O	27:Y:77:LYS:CB	2.66	0.43
8:E:35:VAL:O	8:E:54:TYR:HD1	2.02	0.43
13:J:106:ILE:HD11	13:J:125:MET:CG	2.49	0.43
27:Y:25:SER:OG	27:Y:26:GLN:N	2.52	0.43
6:C:20:LEU:HD11	6:C:252:GLU:HG3	2.00	0.43
8:E:116:LYS:O	8:E:120:ASN:HB3	2.17	0.43
19:Q:81:VAL:CG1	19:Q:101:VAL:HG22	2.48	0.43
28:Z:114:VAL:HA	28:Z:117:ALA:CB	2.44	0.43
28:Z:90:GLU:O	28:Z:93:LYS:HB2	2.19	0.43
8:E:62:THR:O	8:E:63:LEU:HD23	2.18	0.43
1:5:2309:A:C8	1:5:2962:U:H4'	2.53	0.43
12:I:139:ARG:O	12:I:140:THR:HG23	2.19	0.43
1:5:2951:G:C2'	1:5:2952:G:H5'	2.48	0.43
6:C:55:LYS:NZ	6:C:55:LYS:CB	2.77	0.43
1:5:346:C:OP1	6:C:52:VAL:HG22	2.18	0.43
10:G:221:ASN:HA	10:G:225:LYS:CE	2.47	0.43
15:M:20:VAL:HG13	15:M:68:LEU:O	2.18	0.43
1:5:240:U:O2'	1:5:241:G:C5'	2.67	0.43
4:A:34:TYR:HA	4:A:37:ARG:NH1	2.34	0.43
11:H:103:ILE:HD11	11:H:134:ILE:CG2	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:122:THR:HG21	6:C:262:TRP:HH2	1.82	0.43
17:O:95:GLY:O	17:O:98:ALA:HB3	2.18	0.43
16:N:175:ASN:HB2	16:N:180:PHE:CD1	2.54	0.43
23:U:33:TYR:CE2	23:U:37:LEU:HD21	2.53	0.43
14:L:55:ARG:HB3	14:L:56:PRO:HD2	2.00	0.43
6:C:191:LYS:HB2	6:C:191:LYS:NZ	2.33	0.43
3:8:14:C:OP1	18:P:123:PRO:HD3	2.18	0.43
1:5:1597:C:H2'	1:5:1598:G:C8	2.53	0.43
1:5:1348:U:H6	1:5:1348:U:H3'	1.80	0.43
6:C:299:ILE:CG2	19:Q:39:ARG:HB3	2.34	0.43
24:V:32:ARG:HA	24:V:32:ARG:HD3	1.89	0.43
3:8:41:A:H2'	3:8:42:G:H5'	1.99	0.43
1:5:2988:C:OP1	17:O:68:ARG:NH1	2.52	0.43
16:N:174:ILE:HD12	16:N:174:ILE:N	2.33	0.43
10:G:240:ASN:OD1	10:G:241:LYS:N	2.51	0.43
1:5:721:G:C2'	1:5:722:G:H5'	2.48	0.43
6:C:220:ARG:HG3	6:C:221:ASN:N	2.34	0.43
1:5:1890:U:H2'	1:5:1891:A:H8	1.83	0.43
7:D:83:LEU:O	7:D:87:GLY:N	2.52	0.43
1:5:2396:G:OP1	1:5:2397:A:H4'	2.18	0.43
13:J:171:VAL:HG22	13:J:172:LEU:H	1.84	0.43
6:C:119:ARG:HA	6:C:122:THR:HG22	2.00	0.43
1:5:1119:C:C2	1:5:1140:G:N2	2.86	0.43
1:5:1897:G:O4'	24:V:83:LYS:HB2	2.18	0.43
1:5:2096:A:H2'	1:5:2097:U:O4'	2.18	0.43
14:L:108:ILE:HA	14:L:108:ILE:HD13	1.88	0.43
1:5:1005:G:C6	1:5:1006:A:N7	2.87	0.43
1:5:2376:G:C6	1:5:2377:G:C6	3.07	0.43
9:F:210:PRO:HG3	9:F:214:TRP:CD2	2.53	0.43
2:7:39:C:O2	2:7:39:C:H2'	2.19	0.43
6:C:108:LYS:HE2	6:C:108:LYS:HB3	1.49	0.43
10:G:145:ASN:O	10:G:146:LYS:HB2	2.18	0.43
1:5:1856:C:H2'	1:5:1857:C:C6	2.53	0.43
21:S:166:LYS:CG	21:S:167:ARG:N	2.80	0.43
1:5:1580:A:N1	26:X:33:ARG:CZ	2.81	0.43
9:F:60:ARG:HH11	18:P:167:ARG:CB	77.42	0.43
1:5:844:G:C3'	1:5:845:G:H5'	2.49	0.43
28:Z:38:PHE:CE2	28:Z:76:ASN:HB2	2.54	0.43
12:I:85:PHE:CB	12:I:140:THR:CG2	2.96	0.43
28:Z:109:GLU:O	28:Z:113:VAL:HG23	2.19	0.43
1:5:1651:U:H5''	4:A:71:LEU:CD2	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:536:U:C2'	1:5:537:A:C5'	2.95	0.43
1:5:1048:A:O2'	1:5:2632:G:O2'	2.17	0.43
24:V:118:VAL:O	24:V:136:VAL:HG13	2.19	0.43
1:5:177:U:C2	1:5:178:U:C6	3.07	0.43
23:U:14:THR:HG23	23:U:66:VAL:CG2	2.46	0.43
7:D:40:HIS:HD1	22:T:69:LYS:HG3	1.83	0.43
24:V:53:SER:HA	24:V:81:GLN:OE1	2.19	0.43
1:5:1312:C:N4	1:5:1313:G:C2	2.87	0.43
1:5:1312:C:N4	1:5:1313:G:N3	2.67	0.43
1:5:2417:U:O2'	1:5:2418:G:H5'	2.19	0.43
1:5:3243:A:O2'	17:O:110:PRO:HG2	2.19	0.43
1:5:3051:U:C2	1:5:3052:G:C8	3.07	0.43
13:J:80:LEU:HD22	13:J:80:LEU:O	2.18	0.43
16:N:182:ASN:O	16:N:183:THR:CG2	2.67	0.43
1:5:255:A:H2'	1:5:256:G:C8	2.54	0.43
25:W:49:ILE:HB	25:W:52:THR:HG23	2.01	0.43
1:5:869:G:H1'	1:5:891:G:N2	2.34	0.43
1:5:127:G:H2'	1:5:128:G:H8	1.83	0.43
16:N:30:TYR:CD1	16:N:63:ARG:HD3	2.53	0.43
6:C:99:MET:HE3	6:C:102:PRO:HA	2.01	0.43
5:B:284:ARG:NH1	5:B:356:LEU:HD12	2.34	0.43
5:B:12:GLY:HA3	5:B:233:TRP:CE3	2.53	0.43
1:5:3205:G:H2'	1:5:3206:C:C4	2.54	0.43
2:7:121:U:OP1	7:D:259:LYS:HE2	2.18	0.43
1:5:147:U:O2	10:G:159:PRO:HD2	2.19	0.43
1:5:3092:C:O3'	1:5:3093:C:H3'	2.18	0.43
6:C:113:VAL:CG1	6:C:118:LYS:HG3	2.49	0.43
2:7:1:G:C2	2:7:2:G:C8	3.07	0.43
5:B:11:HIS:N	5:B:11:HIS:CD2	2.87	0.43
1:5:1305:U:C5	5:B:256:HIS:HB3	2.53	0.43
11:H:86:TYR:CG	11:H:151:VAL:HG13	2.54	0.43
1:5:506:U:H2'	1:5:507:U:C5'	2.49	0.43
3:8:5:U:H2'	3:8:6:U:C6	2.54	0.43
28:Z:129:TRP:HB3	28:Z:130:PHE:H	1.53	0.43
24:V:104:ASN:CB	24:V:105:PRO:CD	2.96	0.43
1:5:267:G:C6	1:5:319:A:N7	2.87	0.43
5:B:208:VAL:HG12	5:B:209:PHE:N	2.33	0.43
1:5:1857:C:N4	1:5:1858:A:N6	2.66	0.43
16:N:71:ARG:HD3	16:N:94:TYR:HB2	2.01	0.43
6:C:318:LEU:HD11	9:F:146:GLN:HA	2.01	0.43
1:5:975:C:OP2	19:Q:15:HIS:HA	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:11:LEU:CD1	6:C:159:ILE:HD11	2.49	0.42
7:D:51:LEU:HB2	7:D:144:VAL:HG11	1.96	0.42
1:5:3371:G:O2'	1:5:3372:A:H5'	2.18	0.42
13:J:16:LYS:HB3	13:J:72:ARG:CD	2.48	0.42
1:5:591:G:N3	8:E:18:LEU:HB3	2.32	0.42
12:I:60:LEU:N	12:I:60:LEU:CD1	4.29	0.42
1:5:982:C:H2'	1:5:983:A:C8	2.54	0.42
4:A:117:GLU:HG2	4:A:124:GLY:N	2.34	0.42
1:5:3208:G:O2'	21:S:161:LYS:NZ	2.42	0.42
5:B:21:ARG:HG2	5:B:269:GLN:HE21	1.84	0.42
4:A:48:ILE:HA	4:A:59:ALA:HA	2.01	0.42
4:A:67:TYR:CD2	4:A:67:TYR:N	2.87	0.42
2:7:47:C:OP1	7:D:95:TRP:N	2.51	0.42
1:5:209:A:O2'	1:5:211:A:OP2	2.30	0.42
1:5:760:G:N2	1:5:770:G:H1'	2.34	0.42
1:5:1204:A:H2'	1:5:1205:A:C5'	2.48	0.42
1:5:2364:G:H22	1:5:2396:G:H1'	1.84	0.42
16:N:180:PHE:CD2	16:N:180:PHE:N	2.87	0.42
3:8:97:A:C2	3:8:98:U:C2	3.07	0.42
1:5:3243:A:N1	17:O:108:ILE:N	2.67	0.42
1:5:2860:U:C2'	1:5:2861:U:H5'	2.48	0.42
13:J:23:VAL:HG12	13:J:24:GLY:H	1.82	0.42
21:S:109:ASP:O	21:S:113:ARG:HG3	2.19	0.42
9:F:173:LEU:HA	9:F:173:LEU:HD12	1.67	0.42
17:O:50:ASN:HD22	17:O:53:LYS:HD2	1.83	0.42
1:5:1618:G:H4'	3:8:129:C:H1'	2.01	0.42
5:B:360:ASP:OD2	5:B:364:LYS:NZ	2.52	0.42
17:O:32:LYS:O	17:O:32:LYS:HG2	4.90	0.42
17:O:32:LYS:O	17:O:33:ILE:HD13	2.19	0.42
5:B:294:GLY:O	5:B:359:ILE:HD12	2.19	0.42
22:T:112:ASN:HA	22:T:128:LEU:CD2	2.49	0.42
1:5:3109:G:H1'	11:H:163:GLN:NE2	2.34	0.42
18:P:41:LEU:HD11	18:P:45:GLN:NE2	2.34	0.42
1:5:1819:U:C2'	1:5:1820:U:H5'	2.49	0.42
27:Y:3:LYS:HB2	27:Y:8:VAL:CG2	2.49	0.42
4:A:65:ASP:HB3	4:A:68:LYS:O	2.19	0.42
1:5:3140:G:N7	5:B:28:ARG:NH2	2.67	0.42
8:E:102:ASN:O	8:E:105:TYR:HB3	2.18	0.42
1:5:1109:U:H2'	1:5:1110:U:H6	1.83	0.42
1:5:139:G:H2'	1:5:140:C:C6	2.54	0.42
1:5:1313:G:H2'	1:5:1314:C:C6	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:195:ARG:HD2	6:C:197:ARG:HH22	1.83	0.42
24:V:84:SER:CB	24:V:94:TYR:HB3	2.49	0.42
1:5:644:G:H2'	1:5:2372:A:N7	2.34	0.42
27:Y:117:ALA:O	27:Y:120:GLN:HB2	2.19	0.42
1:5:1546:A:O4'	16:N:94:TYR:CZ	2.71	0.42
1:5:2867:C:O2'	1:5:2868:U:H5'	2.18	0.42
24:V:66:LYS:HE3	24:V:66:LYS:HB2	1.74	0.42
1:5:508:U:H2'	1:5:509:U:C6	2.54	0.42
1:5:3099:C:O2'	1:5:3100:U:H5'	2.19	0.42
7:D:294:ALA:HB1	12:I:217:PHE:O	2.18	0.42
25:W:60:LYS:HA	25:W:60:LYS:HD3	1.75	0.42
21:S:22:PRO:O	22:T:146:ASN:ND2	2.52	0.42
7:D:49:TYR:O	7:D:144:VAL:HA	2.19	0.42
14:L:57:VAL:HG12	14:L:58:VAL:N	2.34	0.42
1:5:2422:C:O2'	1:5:2423:U:P	2.77	0.42
1:5:2433:U:H3'	1:5:2434:U:O2	2.19	0.42
1:5:2437:G:C2'	1:5:2438:A:H5''	2.37	0.42
1:5:692:A:C2'	1:5:693:A:H5'	2.49	0.42
3:8:78:G:H21	3:8:79:A:H1'	1.82	0.42
5:B:117:ARG:NH1	5:B:175:LYS:HD2	2.34	0.42
1:5:766:U:H4'	1:5:767:U:O5'	2.19	0.42
1:5:134:U:H4'	1:5:135:C:OP1	2.19	0.42
1:5:117:U:N3	10:G:147:LYS:NZ	2.58	0.42
21:S:171:PHE:CD1	21:S:172:TYR:N	2.86	0.42
14:L:89:TYR:CE1	14:L:93:ILE:HD11	2.55	0.42
1:5:2372:A:H3'	1:5:2373:A:C5'	2.49	0.42
1:5:115:A:N6	1:5:154:U:N3	2.68	0.42
1:5:2131:A:H2'	1:5:2132:C:O4'	2.19	0.42
1:5:1879:A:H2'	1:5:1879:A:N3	2.34	0.42
17:O:124:LEU:O	17:O:128:ARG:HB2	2.19	0.42
10:G:162:LEU:HA	16:N:7:LEU:HD11	2.00	0.42
1:5:1348:U:O2'	1:5:1350:A:OP2	2.20	0.42
19:Q:29:LEU:HA	19:Q:29:LEU:HD23	1.66	0.42
1:5:728:G:H4'	19:Q:47:VAL:HG21	2.01	0.42
1:5:2523:A:C8	10:G:51:LYS:HB2	2.54	0.42
26:X:27:ARG:HG3	26:X:27:ARG:NH1	2.34	0.42
8:E:78:ARG:CG	8:E:78:ARG:NH1	2.65	0.42
1:5:1941:C:H42	1:5:2107:A:H61	1.68	0.42
1:5:3371:G:C4	1:5:3372:A:C8	3.07	0.42
13:J:72:ARG:O	13:J:75:LYS:HB3	3.67	0.42
1:5:848:A:H8	1:5:848:A:O5'	2.03	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1568:U:H4'	1:5:1569:U:OP1	2.20	0.42
1:5:2177:G:OP2	4:A:128:ARG:HD3	2.19	0.42
1:5:3289:G:O2'	1:5:3290:G:P	2.78	0.42
1:5:1364:C:C2'	1:5:1365:G:H5'	2.49	0.42
4:A:58:LEU:HD13	4:A:75:ILE:CG2	2.49	0.42
21:S:134:ASP:O	21:S:136:LYS:HE3	2.19	0.42
1:5:830:A:HO2'	1:5:1866:C:H6	1.68	0.42
6:C:233:LEU:CD1	6:C:238:LEU:HD11	2.49	0.42
11:H:90:MET:HA	11:H:180:TYR:O	2.19	0.42
1:5:1277:C:O2	1:5:1277:C:C2'	2.66	0.42
12:I:45:GLU:O	12:I:141:LYS:HE3	2.19	0.42
1:5:2347:U:H2'	1:5:2348:A:O4'	2.19	0.42
13:J:33:ALA:HB2	13:J:123:PHE:CE1	2.54	0.42
9:F:53:LYS:O	9:F:57:THR:HG23	2.18	0.42
20:R:80:LYS:HD3	20:R:80:LYS:HA	1.79	0.42
22:T:61:THR:O	22:T:76:ILE:HD13	2.20	0.42
1:5:988:U:C2'	1:5:989:A:H5'	2.50	0.42
5:B:160:VAL:HG13	5:B:183:LEU:HD13	2.01	0.42
1:5:394:G:N2	1:5:397:A:C8	2.87	0.42
6:C:30:ILE:HG22	6:C:30:ILE:O	2.19	0.42
9:F:26:VAL:O	9:F:30:ARG:HB2	2.19	0.42
14:L:58:VAL:CG1	14:L:59:ARG:N	2.82	0.42
16:N:125:SER:OG	16:N:126:THR:N	2.52	0.42
16:N:20:ARG:O	16:N:24:ARG:HB2	2.18	0.42
1:5:620:U:O2'	18:P:167:ARG:CZ	2.67	0.42
13:J:61:ARG:NE	13:J:62:ASN:HD21	2.17	0.42
1:5:2309:A:C4	1:5:2962:U:O4'	2.72	0.42
1:5:2282:U:C4'	1:5:2960:C:HO2'	2.20	0.42
14:L:25:HIS:CG	16:N:200:TRP:CZ3	3.08	0.42
1:5:63:A:O2'	1:5:64:G:H5'	2.20	0.42
1:5:3259:U:H4'	1:5:3261:C:OP2	2.20	0.42
8:E:52:VAL:HG11	8:E:65:ILE:HG21	2.02	0.42
8:E:98:VAL:O	8:E:98:VAL:HG12	2.19	0.42
5:B:205:VAL:CB	5:B:322:ILE:HD11	2.49	0.42
9:F:207:LEU:HB3	9:F:243:MET:HE2	2.01	0.42
6:C:311:HIS:CE1	6:C:314:LYS:HA	2.54	0.42
1:5:1118:C:H2'	1:5:1119:C:H6	1.85	0.42
7:D:188:GLU:O	7:D:189:GLU:HG3	2.19	0.42
6:C:158:SER:HA	6:C:213:ASN:HB2	2.02	0.42
19:Q:155:MET:HE1	19:Q:163:PRO:HB3	2.00	0.42
1:5:3004:C:N4	1:5:3005:A:N1	2.67	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1720:U:OP2	20:R:110:ARG:NH1	2.50	0.42
1:5:1006:A:H2'	1:5:1007:U:C6	2.54	0.42
1:5:1008:U:O5'	1:5:1008:U:H6	2.03	0.42
1:5:2215:A:C4	1:5:2216:G:C8	3.07	0.42
1:5:841:A:H2'	1:5:842:G:C8	2.55	0.42
1:5:310:U:H2'	1:5:311:C:O4'	2.19	0.42
1:5:200:C:C6	1:5:221:A:N7	2.88	0.42
1:5:1676:A:P	23:U:73:GLY:H	2.40	0.42
17:O:22:VAL:O	17:O:26:GLN:HG2	2.19	0.42
1:5:1805:C:H2'	1:5:1806:A:C8	2.55	0.42
1:5:2556:C:C2'	1:5:2557:A:H5'	2.49	0.42
1:5:843:A:C2	1:5:851:C:C2	3.08	0.42
9:F:102:VAL:O	9:F:105:LEU:N	2.52	0.42
4:A:119:LYS:HB2	4:A:119:LYS:HE3	1.82	0.42
27:Y:109:LEU:HA	27:Y:109:LEU:HD23	1.82	0.42
1:5:3279:A:C2'	1:5:3280:U:C5'	2.95	0.42
24:V:2:SER:HB2	24:V:56:ASP:HA	2.01	0.42
6:C:330:TYR:HB2	9:F:45:LEU:CD2	2.48	0.42
7:D:82:GLU:OE1	7:D:108:ARG:NH2	2.48	0.42
7:D:229:ASP:HB3	7:D:231:ILE:CD1	2.50	0.42
5:B:217:ALA:HB1	5:B:328:ILE:CG1	2.50	0.42
1:5:1807:G:C6	1:5:1808:G:N1	2.88	0.42
3:8:10:A:C5	3:8:11:C:C4	3.08	0.42
1:5:505:G:O2'	1:5:506:U:H5'	2.20	0.42
24:V:86:ARG:HB2	24:V:92:PHE:CZ	2.54	0.42
16:N:91:GLU:O	16:N:93:LYS:HE2	2.19	0.42
24:V:17:LEU:HD13	24:V:36:ILE:CD1	2.50	0.42
20:R:89:LEU:HA	20:R:90:PRO:HD2	1.91	0.42
16:N:115:VAL:HG22	16:N:134:LEU:CD2	2.48	0.42
1:5:1347:U:OP1	6:C:303:GLY:N	2.52	0.42
1:5:2780:A:H4'	14:L:180:ARG:HH22	1.84	0.42
1:5:55:G:C2'	1:5:56:G:H5'	2.50	0.42
1:5:3346:U:H2'	1:5:3347:A:H8	1.85	0.42
1:5:278:U:H2'	1:5:279:U:O4'	2.19	0.42
6:C:354:VAL:O	6:C:358:THR:HG22	2.19	0.42
3:8:23:U:H6	3:8:23:U:O5'	2.02	0.42
8:E:58:LEU:HD23	8:E:58:LEU:N	2.33	0.42
1:5:3185:U:O2	21:S:169:SER:HA	2.19	0.42
10:G:214:LEU:HD12	10:G:214:LEU:HA	1.78	0.42
1:5:2650:U:O2'	1:5:2651:G:H5'	2.19	0.42
1:5:634:C:C2'	1:5:635:G:H5'	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:E:6:ALA:HA	8:E:7:PRO:HD3	1.80	0.42
7:D:68:THR:HG22	7:D:69:ILE:N	2.35	0.42
12:I:77:THR:HG22	12:I:82:ARG:HA	2.02	0.42
9:F:96:PRO:HA	9:F:97:PRO:HD3	1.90	0.42
1:5:366:A:H2'	1:5:367:A:O4'	2.19	0.42
7:D:259:LYS:HG2	7:D:260:PHE:CD2	2.54	0.42
1:5:240:U:HO2'	1:5:241:G:C5'	2.29	0.42
3:8:104:A:H3'	3:8:105:A:C5'	2.48	0.42
1:5:1149:G:H3'	1:5:1150:A:C5'	2.50	0.42
1:5:183:G:C2'	1:5:184:U:O5'	2.67	0.42
1:5:3007:U:O2'	1:5:3008:A:H5'	2.19	0.42
5:B:33:PRO:HA	5:B:342:LEU:CD2	2.50	0.42
1:5:2220:A:H2'	1:5:2221:G:O4'	2.19	0.42
2:7:106:U:H2'	2:7:107:C:C6	2.54	0.42
18:P:108:ASP:CG	18:P:111:LYS:HG3	2.40	0.42
1:5:51:A:H2'	1:5:52:A:H8	1.84	0.42
1:5:3373:U:O2'	1:5:3374:U:H5'	2.20	0.42
19:Q:55:SER:O	19:Q:58:ASN:N	2.44	0.42
26:X:82:LEU:HD12	26:X:126:LEU:HD11	2.01	0.42
1:5:1079:A:H2'	1:5:1080:A:O4'	2.19	0.42
17:O:33:ILE:HG22	17:O:34:VAL:N	2.35	0.42
1:5:350:C:C5	1:5:367:A:C6	3.08	0.42
5:B:232:ARG:HG2	5:B:233:TRP:NE1	2.35	0.42
1:5:1236:G:H3'	1:5:1237:G:C5'	2.50	0.42
16:N:172:ARG:CB	16:N:174:ILE:HD13	2.43	0.42
3:8:81:U:O3'	3:8:82:U:H4'	2.19	0.42
1:5:2243:A:C4	1:5:2313:A:H2'	2.55	0.42
17:O:188:SER:N	17:O:192:LYS:NZ	2.67	0.42
16:N:70:ASN:HD21	16:N:93:LYS:HZ2	1.67	0.42
7:D:208:MET:HB3	7:D:233:ALA:HB2	2.01	0.42
22:T:27:LEU:HA	22:T:27:LEU:HD22	1.89	0.42
10:G:238:LEU:H	10:G:238:LEU:HD12	1.84	0.42
1:5:2633:U:C2'	1:5:2634:U:H5'	2.50	0.42
23:U:58:GLU:HG2	23:U:60:GLY:H	1.85	0.42
2:7:108:A:H2'	2:7:109:G:H8	1.85	0.42
1:5:3190:C:H2'	1:5:3191:G:H8	1.85	0.42
1:5:2901:G:O2'	1:5:3024:A:N1	2.52	0.42
19:Q:135:GLN:CD	19:Q:135:GLN:H	2.22	0.42
5:B:102:LEU:H	5:B:102:LEU:HD23	1.85	0.42
1:5:1284:C:HO2'	1:5:1285:G:P	2.31	0.42
6:C:300:ARG:NH1	6:C:300:ARG:HB3	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:Q:57:ILE:HG22	19:Q:58:ASN:N	2.35	0.42
8:E:69:PHE:HA	8:E:74:VAL:O	2.20	0.42
13:J:53:THR:HG23	13:J:59:ILE:O	2.20	0.42
12:I:86:HIS:HB3	12:I:139:ARG:HG3	2.01	0.42
9:F:105:LEU:HA	9:F:105:LEU:HD23	1.69	0.42
11:H:106:LYS:HE3	11:H:107:ASP:N	2.35	0.42
20:R:9:ARG:HA	20:R:19:LYS:CE	2.34	0.42
4:A:77:ILE:HD11	4:A:128:ARG:CZ	2.50	0.42
27:Y:51:ARG:HG2	27:Y:115:ARG:NH2	2.35	0.42
18:P:51:VAL:HG22	18:P:57:ALA:HA	2.02	0.42
28:Z:14:VAL:HG12	28:Z:79:HIS:CA	2.49	0.42
1:5:2808:A:H1'	1:5:2809:C:H5'	2.01	0.42
5:B:296:THR:HG22	5:B:298:PHE:N	2.25	0.42
1:5:656:A:N6	1:5:1440:G:O6	2.53	0.42
22:T:14:MET:CE	22:T:55:LYS:HA	2.50	0.42
18:P:61:ARG:CG	18:P:61:ARG:HH11	2.32	0.42
13:J:91:LEU:HD12	13:J:163:PHE:CZ	2.55	0.42
24:V:11:PHE:CG	24:V:88:ARG:HD2	2.53	0.42
5:B:335:ILE:O	5:B:335:ILE:HG23	2.20	0.42
6:C:222:VAL:HG23	6:C:223:PRO:CD	2.48	0.42
1:5:20:A:H1'	16:N:111:ALA:HB3	2.02	0.42
24:V:17:LEU:HA	24:V:17:LEU:HD23	1.84	0.42
18:P:94:LEU:HD23	18:P:146:ILE:HG22	2.01	0.42
1:5:151:A:HO2'	1:5:152:U:P	2.42	0.42
1:5:2370:G:H2'	1:5:2371:G:C5'	2.50	0.42
1:5:51:A:C4	1:5:52:A:C8	3.08	0.42
12:I:19:LYS:HA	12:I:23:ASN:HD22	1.85	0.42
1:5:1830:G:N2	3:8:115:C:OP1	2.53	0.42
22:T:103:GLN:O	22:T:107:GLU:HG3	2.19	0.42
25:W:21:PHE:CD1	25:W:22:VAL:N	2.88	0.42
1:5:510:G:C2'	1:5:511:G:H5'	2.49	0.42
27:Y:32:SER:HB2	27:Y:48:LEU:O	2.19	0.42
1:5:802:C:O2'	1:5:803:C:H5'	2.19	0.42
1:5:2561:A:O2'	1:5:2562:A:H8	2.02	0.42
16:N:99:ARG:HH21	16:N:166:ALA:HB3	1.84	0.42
19:Q:68:ALA:HB2	19:Q:96:PHE:HD2	1.84	0.42
28:Z:49:TYR:HB3	28:Z:50:PRO:HD2	2.01	0.42
14:L:140:SER:O	14:L:141:ALA:HB3	2.20	0.42
12:I:97:LEU:O	12:I:122:PRO:HA	2.19	0.42
1:5:2675:C:N4	13:J:22:SER:CB	2.79	0.42
1:5:1064:A:H3'	1:5:1064:A:OP2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:E:46:ARG:NH1	8:E:46:ARG:CG	2.56	0.42
1:5:2200:U:C2	1:5:2201:G:C8	3.07	0.42
1:5:121:A:C2	10:G:108:ARG:NH1	2.88	0.42
9:F:169:ILE:HD12	9:F:181:ILE:HA	2.02	0.42
6:C:202:ARG:HE	6:C:202:ARG:HA	1.81	0.42
1:5:3197:G:H2'	1:5:3198:U:H3'	2.01	0.42
12:I:187:ALA:HB1	12:I:189:GLU:HG3	2.00	0.42
18:P:22:LEU:HD23	18:P:22:LEU:N	2.46	0.42
1:5:2590:A:C2'	1:5:2591:A:H5'	2.49	0.42
1:5:3257:C:H2'	1:5:3258:U:C6	2.55	0.42
2:7:3:U:O2'	2:7:4:U:H5'	2.19	0.42
10:G:172:LYS:CA	10:G:172:LYS:NZ	2.83	0.42
25:W:23:ARG:HG2	25:W:24:GLY:H	1.84	0.42
1:5:2164:A:H2'	1:5:2165:G:H5'	2.02	0.42
1:5:1008:U:H2'	1:5:1009:A:H8	1.85	0.42
1:5:1928:G:H2'	1:5:1929:G:O4'	2.19	0.42
1:5:3188:G:C2	1:5:3189:G:C8	3.08	0.42
7:D:148:ILE:HA	7:D:148:ILE:HD12	1.88	0.42
18:P:159:LYS:HG3	18:P:159:LYS:O	2.19	0.42
9:F:70:LYS:HE2	9:F:70:LYS:HB3	3.80	0.42
22:T:64:VAL:HG13	22:T:73:GLY:O	2.20	0.42
17:O:111:PRO:HG2	17:O:112:TYR:CD2	2.54	0.42
1:5:595:G:H2'	1:5:596:C:C6	2.55	0.41
13:J:133:ARG:HH12	13:J:154:THR:HA	1.85	0.41
1:5:3173:G:OP2	17:O:101:ARG:HD3	2.20	0.41
4:A:112:ILE:HA	4:A:112:ILE:HD13	4.70	0.41
1:5:2541:U:O2	1:5:2543:U:H5	2.02	0.41
15:M:15:VAL:HG13	21:S:150:PHE:O	2.19	0.41
24:V:26:ALA:O	24:V:115:THR:N	2.44	0.41
1:5:2519:A:O2'	1:5:2520:A:H5'	2.21	0.41
1:5:1773:C:H2'	1:5:1774:C:H6	1.85	0.41
1:5:2836:C:H5	1:5:2852:C:H42	1.67	0.41
1:5:137:G:C4	1:5:138:U:C5	3.08	0.41
1:5:1844:C:O5'	1:5:1844:C:H6	2.04	0.41
1:5:1498:A:C2	1:5:1519:G:C2	3.08	0.41
16:N:190:THR:HG23	16:N:191:TRP:N	2.35	0.41
1:5:904:A:H2	4:A:15:ILE:HD11	1.85	0.41
11:H:13:PRO:O	11:H:16:VAL:HG22	2.19	0.41
20:R:133:LYS:HB3	20:R:133:LYS:NZ	2.35	0.41
5:B:287:LYS:NZ	5:B:287:LYS:CB	2.83	0.41
1:5:795:G:O2'	1:5:796:U:H5'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:P:22:LEU:HD12	18:P:146:ILE:HD12	2.02	0.41
1:5:1898:G:O2'	1:5:1899:G:H5'	2.20	0.41
1:5:2689:A:N3	1:5:2689:A:H2'	2.34	0.41
1:5:2375:G:N2	1:5:2377:G:C8	2.84	0.41
1:5:3365:U:H2'	1:5:3366:G:H8	1.85	0.41
1:5:2630:C:C5	22:T:4:SER:HB2	2.54	0.41
1:5:1067:U:H2'	1:5:1068:C:C6	2.55	0.41
1:5:2645:G:C6	1:5:2646:C:C4	3.08	0.41
1:5:36:C:H2'	1:5:37:U:H5'	2.02	0.41
1:5:640:U:OP2	8:E:37:GLY:HA2	80.24	0.41
1:5:1631:C:H5''	1:5:1632:A:C5'	2.50	0.41
28:Z:100:THR:HA	28:Z:106:GLN:HE21	1.84	0.41
14:L:59:ARG:NE	14:L:69:VAL:HG23	2.35	0.41
1:5:2513:U:C4'	1:5:2514:U:OP1	2.68	0.41
13:J:46:VAL:O	13:J:67:VAL:HA	2.20	0.41
1:5:2247:G:N2	1:5:2271:A:C2	2.84	0.41
1:5:2177:G:OP2	4:A:128:ARG:NH1	2.54	0.41
3:8:66:A:C4	3:8:67:U:C5	3.08	0.41
1:5:2727:A:OP2	1:5:2728:G:N2	2.46	0.41
12:I:76:MET:HE3	12:I:148:VAL:HA	1.98	0.41
1:5:768:C:H2'	1:5:769:G:H8	1.85	0.41
3:8:89:A:H5''	3:8:90:U:OP2	2.19	0.41
5:B:306:THR:HG23	5:B:310:GLY:HA2	2.00	0.41
13:J:91:LEU:O	13:J:172:LEU:HG	2.20	0.41
1:5:2407:C:H2'	1:5:2408:U:C6	2.56	0.41
7:D:270:LYS:CG	7:D:273:ARG:HH21	2.30	0.41
24:V:80:ARG:O	24:V:98:ASN:HA	2.20	0.41
1:5:2770:G:N2	1:5:2789:U:C2	2.88	0.41
1:5:1626:U:H3	1:5:1817:G:H1	1.68	0.41
1:5:859:G:C6	1:5:861:C:C4	3.09	0.41
11:H:12:VAL:HG12	11:H:16:VAL:HG23	2.01	0.41
5:B:139:GLN:HE22	5:B:143:GLY:HA3	1.85	0.41
1:5:947:G:H2'	1:5:948:C:C6	2.55	0.41
18:P:182:ILE:HG22	18:P:182:ILE:O	2.20	0.41
19:Q:124:LEU:O	19:Q:127:LEU:HB3	2.20	0.41
1:5:1467:A:H4'	1:5:1468:A:OP1	2.19	0.41
25:W:48:ARG:C	25:W:49:ILE:HD13	2.40	0.41
1:5:3294:A:H2'	1:5:3295:A:O4'	2.20	0.41
4:A:196:TRP:CZ3	4:A:197:PRO:HG3	2.55	0.41
17:O:43:ILE:HG22	17:O:44:SER:N	2.35	0.41
22:T:32:LYS:NZ	22:T:98:HIS:H	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:Q:101:VAL:HG21	19:Q:114:ILE:HD13	2.01	0.41
6:C:140:HIS:HB2	6:C:142:VAL:HG22	2.01	0.41
12:I:16:PRO:HA	12:I:95:HIS:ND1	2.35	0.41
1:5:2276:G:C6	1:5:2311:G:N2	2.86	0.41
16:N:154:PRO:CA	16:N:157:LYS:HE3	2.50	0.41
12:I:99:ILE:HD12	12:I:99:ILE:O	2.21	0.41
1:5:2176:U:H2'	1:5:2177:G:H5'	2.01	0.41
1:5:964:G:C2	1:5:965:A:C4	3.08	0.41
4:A:118:GLU:OE2	4:A:126:LEU:HD21	2.20	0.41
1:5:1240:A:C2'	1:5:1241:U:H5'	2.50	0.41
1:5:1614:C:O2'	1:5:1615:C:H5'	2.20	0.41
23:U:81:LYS:HB2	23:U:81:LYS:HE3	1.88	0.41
1:5:177:U:C4	1:5:178:U:C4	3.08	0.41
4:A:32:LEU:HD23	4:A:33:ASP:N	2.35	0.41
2:7:98:C:H5'	9:F:224:ILE:HD12	2.01	0.41
20:R:64:ARG:HA	20:R:67:ALA:HB3	2.02	0.41
3:8:19:C:O2'	3:8:20:U:H5'	2.20	0.41
11:H:92:TYR:CD1	11:H:142:ASP:HB3	2.55	0.41
3:8:5:U:H2'	3:8:6:U:H6	1.84	0.41
5:B:286:GLY:HA3	5:B:321:PHE:CD2	2.55	0.41
1:5:628:A:H2'	1:5:629:U:O4'	2.20	0.41
1:5:970:A:C2	1:5:971:G:C4	3.09	0.41
1:5:2097:U:H2'	1:5:2098:C:C6	2.54	0.41
6:C:179:LEU:CD1	6:C:183:LYS:HG3	2.49	0.41
1:5:1475:A:C2'	1:5:1476:G:H5'	2.50	0.41
1:5:1718:G:OP1	20:R:118:HIS:ND1	2.44	0.41
20:R:153:LYS:NZ	20:R:153:LYS:HB2	2.35	0.41
1:5:3119:U:H6	1:5:3119:U:O5'	2.02	0.41
1:5:1121:U:C4	1:5:1122:U:C4	3.08	0.41
1:5:259:C:C2	1:5:260:C:C5	3.08	0.41
28:Z:11:ALA:CB	28:Z:82:PRO:HA	2.50	0.41
1:5:1084:A:H4'	7:D:44:TYR:CE1	2.55	0.41
1:5:607:A:H4'	1:5:608:A:OP2	2.20	0.41
9:F:34:LYS:HD3	9:F:34:LYS:HA	1.57	0.41
1:5:2283:G:C2	1:5:2307:G:H5'	2.55	0.41
1:5:2157:G:C5	4:A:150:LEU:HD13	2.55	0.41
4:A:90:ALA:HB1	4:A:101:VAL:HG13	2.00	0.41
1:5:2584:G:C5'	1:5:2585:G:OP2	2.68	0.41
1:5:3139:A:C2'	1:5:3140:G:H5'	2.50	0.41
1:5:501:A:O2'	1:5:502:U:H5'	2.21	0.41
1:5:117:U:H3	10:G:147:LYS:HZ1	1.66	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:7:95:A:C2'	2:7:96:U:H5'	2.50	0.41
6:C:313:LEU:HD23	6:C:314:LYS:N	2.35	0.41
7:D:122:VAL:CG2	7:D:168:ASP:HA	2.50	0.41
17:O:193:GLN:O	17:O:197:LEU:HD12	2.20	0.41
10:G:101:THR:HG1	10:G:104:GLU:HG3	1.83	0.41
1:5:232:G:C2'	1:5:233:C:H5'	2.51	0.41
1:5:805:G:O2'	6:C:73:ARG:HD2	2.20	0.41
5:B:324:VAL:HG12	5:B:325:LYS:N	2.35	0.41
6:C:138:ARG:HH21	6:C:240:PRO:HG2	1.85	0.41
1:5:2369:G:N2	1:5:2379:U:C2	2.89	0.41
1:5:636:C:O2	1:5:646:A:H1'	2.20	0.41
1:5:92:G:H5'	1:5:93:C:H5''	2.02	0.41
1:5:803:C:O2'	1:5:804:C:H5'	2.19	0.41
26:X:109:LYS:HB2	26:X:109:LYS:NZ	2.35	0.41
7:D:146:LEU:HA	7:D:146:LEU:HD23	1.66	0.41
20:R:136:ARG:O	20:R:140:GLU:HG3	2.20	0.41
1:5:81:C:H2'	1:5:82:C:C6	2.56	0.41
1:5:1259:A:O2'	1:5:1260:A:H5'	2.20	0.41
19:Q:62:VAL:CG2	19:Q:83:VAL:HG11	2.50	0.41
19:Q:96:PHE:HA	19:Q:97:PRO:HD2	1.89	0.41
11:H:69:ARG:NH1	11:H:72:LYS:CD	2.82	0.41
1:5:1556:C:H2'	1:5:2169:G:H1	1.84	0.41
3:8:83:C:H41	27:Y:113:LYS:NZ	2.18	0.41
2:7:92:A:N3	2:7:92:A:H2'	2.34	0.41
2:7:97:A:H4'	9:F:224:ILE:CG2	2.47	0.41
6:C:178:LEU:HD21	6:C:225:VAL:HG21	2.02	0.41
1:5:340:C:N4	1:5:341:G:O6	2.53	0.41
1:5:670:C:OP1	19:Q:147:ARG:NH2	2.54	0.41
1:5:2661:G:O2'	1:5:2662:G:H5'	2.20	0.41
1:5:625:G:C2	1:5:626:U:C2	3.09	0.41
18:P:94:LEU:HD23	18:P:146:ILE:CG2	2.50	0.41
16:N:33:LYS:HB2	16:N:37:HIS:CE1	2.56	0.41
25:W:23:ARG:HB3	25:W:27:LYS:HB3	2.01	0.41
1:5:279:U:O2'	1:5:280:U:H5'	2.20	0.41
9:F:197:GLN:CD	9:F:197:GLN:H	2.24	0.41
1:5:906:A:H3'	1:5:906:A:OP1	2.20	0.41
1:5:2528:G:H2'	1:5:2529:A:O4'	2.19	0.41
6:C:212:ASP:OD1	6:C:216:VAL:HG23	2.21	0.41
1:5:155:G:O4'	1:5:157:A:H1'	2.21	0.41
6:C:130:ALA:CB	6:C:149:PRO:HG3	2.51	0.41
6:C:22:LEU:HD23	6:C:23:PRO:CD	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:N:23:GLN:HG2	16:N:122:ASN:OD1	2.21	0.41
12:I:57:LEU:HD23	12:I:130:ASP:OD1	2.21	0.41
3:8:44:A:H2'	3:8:45:C:C6	2.56	0.41
1:5:2248:C:O2'	1:5:2272:G:H1'	2.21	0.41
1:5:283:G:H3'	1:5:283:G:N3	2.35	0.41
1:5:692:A:O2'	1:5:693:A:H5'	2.20	0.41
17:O:66:LYS:HE3	17:O:66:LYS:HB2	4.29	0.41
1:5:1841:A:O2'	1:5:1842:A:H5''	2.19	0.41
5:B:296:THR:HG22	5:B:298:PHE:HD2	1.86	0.41
7:D:105:ILE:O	7:D:109:THR:OG1	2.37	0.41
1:5:3040:A:OP1	24:V:12:ARG:HB3	2.19	0.41
1:5:3285:C:C2'	1:5:3286:G:H5''	2.46	0.41
1:5:3242:G:H5''	1:5:3245:A:C8	2.50	0.41
15:M:59:ASN:OD1	15:M:60:LEU:N	2.54	0.41
7:D:279:LYS:HG2	7:D:280:GLU:OE2	2.21	0.41
24:V:125:LEU:HA	24:V:125:LEU:HD12	1.75	0.41
10:G:134:TYR:CG	10:G:190:VAL:HG11	2.56	0.41
1:5:3015:G:H2'	1:5:3016:A:C8	2.54	0.41
1:5:1192:C:N4	1:5:1302:A:P	2.93	0.41
1:5:3124:G:H2'	1:5:3125:U:O4'	2.20	0.41
3:8:46:G:N2	3:8:58:G:C5	2.89	0.41
27:Y:23:PRO:O	27:Y:27:ARG:HG3	2.21	0.41
10:G:93:LEU:HD22	10:G:214:LEU:HD23	2.02	0.41
5:B:109:HIS:O	5:B:110:LEU:HD12	2.20	0.41
5:B:271:GLY:H	5:B:273:HIS:CE1	2.39	0.41
1:5:11:A:H1'	1:5:1558:A:C6	2.54	0.41
3:8:155:A:H5''	10:G:185:ARG:NH1	2.35	0.41
1:5:3111:U:OP1	11:H:184:LYS:NZ	2.54	0.41
16:N:15:GLN:HA	16:N:20:ARG:HD3	2.03	0.41
1:5:3341:U:H4'	1:5:3342:A:OP1	2.17	0.41
1:5:620:U:H4'	1:5:621:A:O5'	2.21	0.41
1:5:2952:G:O2'	1:5:2953:U:H5'	2.21	0.41
1:5:2391:G:N2	1:5:2989:U:C2	2.89	0.41
5:B:87:VAL:CG1	5:B:163:HIS:HD2	2.34	0.41
4:A:60:LYS:HG2	4:A:75:ILE:HG12	2.02	0.41
9:F:184:LEU:HD23	9:F:184:LEU:HA	1.84	0.41
6:C:141:ARG:NH1	6:C:180:LYS:HD2	2.35	0.41
1:5:2531:C:H2'	1:5:2532:U:H5'	2.01	0.41
1:5:2407:C:H1'	1:5:2818:U:C2	2.56	0.41
1:5:183:G:O2'	1:5:184:U:P	2.79	0.41
1:5:1139:G:C2	1:5:1140:G:C4	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:F:222:HIS:ND1	9:F:223:PHE:N	2.69	0.41
16:N:183:THR:O	16:N:184:LYS:HB3	2.19	0.41
17:O:113:ASP:O	17:O:117:ARG:NH1	2.45	0.41
1:5:171:G:H5'	1:5:172:G:OP2	2.21	0.41
1:5:2128:C:C5	1:5:2129:U:C4	3.09	0.41
5:B:281:LYS:HB2	5:B:281:LYS:HE2	1.94	0.41
1:5:527:A:H2'	1:5:528:U:O4'	2.21	0.41
1:5:1572:U:O2	1:5:1573:G:N7	2.54	0.41
1:5:3147:G:H4'	5:B:102:LEU:O	2.19	0.41
25:W:39:LEU:HA	25:W:39:LEU:HD12	1.66	0.41
24:V:129:VAL:O	24:V:133:SER:OG	2.36	0.41
21:S:166:LYS:HG3	21:S:167:ARG:H	1.83	0.41
6:C:300:ARG:NH1	6:C:300:ARG:HG2	2.14	0.41
6:C:300:ARG:NH1	6:C:300:ARG:CB	2.84	0.41
3:8:59:A:C2	3:8:100:U:H1'	2.56	0.41
10:G:182:GLY:C	10:G:184:ALA:N	2.74	0.41
28:Z:48:ARG:NH1	28:Z:48:ARG:CB	2.81	0.41
1:5:1580:A:H2'	1:5:1580:A:N3	2.36	0.41
1:5:3316:A:OP2	5:B:123:TYR:HB2	2.20	0.41
4:A:90:ALA:HB2	4:A:101:VAL:HG13	2.02	0.41
1:5:3209:A:H2'	1:5:3209:A:N3	2.36	0.41
1:5:895:A:C2	1:5:897:U:C2	3.08	0.41
1:5:3216:G:O6	1:5:3259:U:H2'	2.21	0.41
1:5:1661:G:C2	1:5:1789:G:N3	2.89	0.41
24:V:79:VAL:CB	24:V:118:VAL:HG13	2.43	0.41
1:5:656:A:C6	1:5:1440:G:C6	3.09	0.41
1:5:767:U:H1'	1:5:768:C:C6	2.56	0.41
5:B:13:HIS:ND1	5:B:16:PHE:HD1	2.19	0.41
10:G:164:VAL:HG23	10:G:165:PHE:N	2.36	0.41
3:8:11:C:H2'	3:8:12:A:C8	2.55	0.41
21:S:104:GLU:O	21:S:108:GLN:HG2	2.20	0.41
18:P:182:ILE:CG2	18:P:182:ILE:O	2.69	0.41
1:5:2219:A:O2'	1:5:2220:A:H5'	2.21	0.41
1:5:3178:A:P	17:O:5:PRO:HG3	2.60	0.41
8:E:141:VAL:HG12	8:E:142:ASP:OD1	2.20	0.41
1:5:428:A:H2'	1:5:429:U:C6	2.56	0.41
9:F:147:LEU:HA	9:F:147:LEU:HD23	1.73	0.41
17:O:143:THR:HG22	17:O:144:SER:N	2.36	0.41
19:Q:81:VAL:HG11	19:Q:101:VAL:HG22	2.03	0.41
1:5:1811:G:C6	1:5:1812:G:C6	3.09	0.41
27:Y:79:ALA:HA	27:Y:99:LEU:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2107:A:H2'	1:5:2108:C:C6	2.55	0.41
18:P:23:ARG:O	18:P:24:VAL:HG13	2.21	0.41
1:5:2610:G:H4'	1:5:2610:G:OP1	2.21	0.41
14:L:49:ARG:HA	14:L:50:PRO:HD2	1.83	0.41
9:F:60:ARG:HH11	18:P:167:ARG:HB2	76.98	0.41
1:5:902:G:C5	1:5:903:U:C5	3.09	0.41
16:N:114:ARG:CG	16:N:114:ARG:NH1	2.76	0.41
11:H:48:VAL:CG2	11:H:54:LYS:HE3	2.51	0.41
21:S:71:LYS:HG3	21:S:72:VAL:N	2.36	0.41
4:A:128:ARG:HA	4:A:169:ILE:HD13	2.03	0.41
6:C:55:LYS:HB2	6:C:55:LYS:HZ3	1.85	0.41
21:S:9:VAL:HG11	21:S:41:TYR:CB	2.51	0.41
1:5:912:G:C6	1:5:914:A:N1	2.88	0.41
1:5:2536:A:C2	1:5:2544:U:C4	3.09	0.41
1:5:2584:G:O3'	1:5:2585:G:H4'	2.21	0.41
7:D:5:LYS:CE	7:D:5:LYS:HA	2.44	0.41
1:5:3280:U:O2'	1:5:3281:U:P	2.79	0.41
3:8:78:G:H5''	3:8:79:A:OP2	2.21	0.41
1:5:3067:C:H3'	20:R:62:ARG:HH21	1.86	0.41
1:5:1687:U:P	23:U:42:LYS:HZ1	2.41	0.41
1:5:3325:G:O2'	1:5:3326:G:H5'	2.21	0.41
1:5:3369:G:N2	5:B:380:MET:O	2.54	0.41
1:5:2340:U:OP2	5:B:236:LYS:HD3	2.21	0.41
1:5:69:C:O2'	1:5:101:G:O2'	2.20	0.41
3:8:103:G:C6	3:8:105:A:C6	3.09	0.41
10:G:34:PHE:HZ	10:G:42:PRO:HB3	1.84	0.41
1:5:929:A:H2'	1:5:930:U:C6	2.56	0.41
6:C:357:GLU:O	6:C:361:HIS:HB2	2.21	0.41
1:5:2114:C:C6	1:5:2114:C:H3'	2.56	0.41
1:5:1296:C:O2'	1:5:1297:C:H5'	2.21	0.41
1:5:832:G:N2	1:5:833:G:H1'	2.36	0.41
17:O:84:LEU:O	17:O:84:LEU:HD23	2.21	0.41
6:C:267:VAL:HG22	6:C:268:ALA:O	2.21	0.41
21:S:103:VAL:HG12	21:S:104:GLU:N	2.36	0.41
1:5:626:U:C4	1:5:627:U:C4	3.08	0.41
1:5:2295:A:C2	24:V:37:ILE:HD12	2.56	0.41
14:L:190:LYS:HE3	14:L:190:LYS:HB3	1.68	0.41
1:5:1165:A:O2'	1:5:1166:G:H5'	2.20	0.41
11:H:145:VAL:C	11:H:146:LEU:HD12	2.41	0.41
1:5:986:U:H2'	1:5:987:U:H6	1.86	0.41
23:U:62:VAL:HG13	23:U:63:VAL:N	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:8:68:G:C2	3:8:92:A:C2	3.09	0.41
2:7:60:G:H2'	2:7:61:G:H8	1.86	0.41
19:Q:168:THR:HG22	19:Q:169:GLY:N	2.36	0.41
9:F:106:LEU:HA	9:F:106:LEU:HD23	1.82	0.41
1:5:2720:G:OP2	19:Q:180:ARG:NH2	2.54	0.41
1:5:2746:A:H5'	7:D:178:ASN:HD21	1.85	0.41
1:5:2741:C:H2'	1:5:2742:C:O4'	2.21	0.41
19:Q:115:VAL:HG12	19:Q:116:LYS:N	2.36	0.41
3:8:131:A:H2'	3:8:132:G:H8	1.85	0.41
1:5:828:A:H2'	1:5:829:U:C6	2.56	0.41
1:5:110:G:OP2	14:L:73:ARG:NH1	2.49	0.41
6:C:299:ILE:HG22	6:C:300:ARG:N	2.36	0.41
10:G:184:ALA:HA	10:G:194:THR:HG22	2.03	0.41
6:C:145:ILE:HD12	6:C:147:GLU:O	2.21	0.41
12:I:15:LYS:HE2	12:I:15:LYS:HB2	3.93	0.41
2:7:42:A:C2	2:7:43:U:C6	3.09	0.41
13:J:133:ARG:HB3	13:J:134:PRO:HD2	2.03	0.41
1:5:983:A:O3'	9:F:101:LYS:NZ	2.48	0.41
1:5:992:A:O2'	22:T:58:GLN:HG3	2.20	0.41
9:F:102:VAL:O	9:F:105:LEU:HB2	2.21	0.41
14:L:27:ASP:N	14:L:27:ASP:OD2	2.26	0.41
4:A:44:ILE:HD13	4:A:62:VAL:CG1	2.47	0.41
17:O:67:THR:CG2	17:O:68:ARG:N	2.82	0.41
28:Z:61:LYS:O	28:Z:65:ARG:HG2	2.21	0.41
1:5:2542:U:HO2'	1:5:2543:U:P	2.44	0.41
22:T:51:GLY:HA3	22:T:92:ARG:CG	2.48	0.41
11:H:112:ILE:HG13	11:H:126:VAL:O	2.21	0.41
2:7:55:A:H1'	13:J:10:ARG:HB3	2.03	0.41
7:D:263:GLU:HA	7:D:266:ALA:HB3	2.02	0.41
1:5:1713:G:C2	1:5:1730:G:N3	2.88	0.41
1:5:1297:C:H2'	1:5:1298:C:H6	1.86	0.41
1:5:1799:A:C2	1:5:1800:A:C5	3.09	0.41
5:B:334:ARG:HE	5:B:334:ARG:HB2	1.74	0.41
1:5:1151:U:H5''	1:5:1152:G:OP2	2.21	0.41
18:P:126:ARG:CZ	18:P:138:LYS:HB3	2.50	0.41
2:7:22:A:H3'	2:7:23:A:H8	1.86	0.41
12:I:32:ARG:HA	12:I:32:ARG:HD2	1.91	0.41
1:5:204:A:H2'	1:5:205:C:O4'	2.20	0.41
1:5:3069:G:C2	1:5:3070:A:C8	3.09	0.41
12:I:164:LYS:HE2	12:I:164:LYS:HB3	1.84	0.41
17:O:124:LEU:HD23	17:O:127:LEU:HD12	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:Q:99:THR:HB	19:Q:100:THR:H	1.46	0.40
9:F:103:LEU:HD23	9:F:130:ILE:HD11	2.03	0.40
1:5:2795:U:H4'	17:O:60:LYS:HB3	76.80	0.40
1:5:2748:A:H4'	7:D:145:PHE:CD1	2.56	0.40
7:D:34:LYS:HD3	7:D:35:ARG:HE	1.86	0.40
1:5:2355:G:H4'	18:P:139:TYR:CZ	2.56	0.40
18:P:67:ILE:HG22	18:P:68:GLY:N	2.36	0.40
1:5:2806:U:H2'	1:5:2807:U:H5'	2.02	0.40
1:5:1340:G:N3	1:5:1365:G:C2	2.89	0.40
3:8:15:G:C6	3:8:16:G:C6	3.09	0.40
1:5:229:G:H2'	1:5:230:U:H6	1.85	0.40
1:5:915:A:H8	1:5:2136:C:O2'	2.03	0.40
1:5:787:G:OP1	19:Q:148:GLU:N	2.45	0.40
1:5:2233:A:H1'	1:5:2428:U:H1'	2.02	0.40
4:A:15:ILE:HD12	4:A:15:ILE:HA	1.60	0.40
1:5:604:G:H2'	1:5:605:U:C6	2.56	0.40
1:5:1477:A:H2'	1:5:1478:C:H6	1.86	0.40
1:5:971:G:C2'	1:5:972:A:H5'	2.52	0.40
21:S:93:GLU:OE1	21:S:135:VAL:HG12	2.21	0.40
22:T:116:ARG:HG3	22:T:126:VAL:CG1	2.51	0.40
1:5:2845:A:H3'	1:5:2846:U:C6	2.56	0.40
12:I:182:LEU:HD23	12:I:182:LEU:HA	1.73	0.40
12:I:182:LEU:HD21	12:I:185:ARG:HH11	1.86	0.40
1:5:1008:U:H2'	1:5:1009:A:C8	2.56	0.40
17:O:46:GLU:HB3	17:O:134:LYS:HD3	2.02	0.40
23:U:51:GLY:O	23:U:52:ASN:HB2	2.21	0.40
1:5:258:G:H2'	1:5:259:C:H6	1.86	0.40
1:5:6:A:C5	1:5:7:C:C5	3.09	0.40
1:5:3072:C:H2'	1:5:3073:A:O4'	2.21	0.40
5:B:4:ARG:HG3	5:B:4:ARG:HH11	1.86	0.40
18:P:103:GLU:OE1	18:P:109:ALA:HB2	2.21	0.40
1:5:3105:U:OP2	1:5:3128:G:N1	2.43	0.40
21:S:12:ARG:HD3	21:S:24:LEU:CD2	2.51	0.40
1:5:710:A:O2'	1:5:711:A:H5'	2.21	0.40
1:5:1813:A:C3'	1:5:1814:A:H5''	2.51	0.40
1:5:1176:C:OP1	17:O:25:LYS:HE3	2.22	0.40
1:5:975:C:O2'	1:5:976:U:H5'	2.21	0.40
26:X:132:ALA:O	26:X:136:ALA:HB2	2.20	0.40
1:5:1079:A:O2'	1:5:1080:A:H5'	2.20	0.40
1:5:2512:C:H2'	1:5:2513:U:C6	2.56	0.40
1:5:2834:G:C5	1:5:2835:U:C5	3.10	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:I:26:VAL:HB	12:I:27:PRO:CD	2.44	0.40
21:S:97:VAL:HG22	21:S:97:VAL:O	2.22	0.40
1:5:1049:C:C2	1:5:1050:U:C5	3.09	0.40
1:5:684:G:O3'	14:L:35:ARG:NH1	2.54	0.40
1:5:2990:G:C2	1:5:2991:A:C8	3.09	0.40
1:5:1496:C:H6	1:5:1496:C:O5'	2.04	0.40
28:Z:14:VAL:HG12	28:Z:79:HIS:O	2.21	0.40
1:5:535:G:C4	1:5:554:A:N6	2.90	0.40
1:5:1397:C:H2'	1:5:1398:U:C5'	2.51	0.40
1:5:1658:G:O2'	1:5:1659:U:H5'	2.21	0.40
1:5:2836:C:C2'	1:5:2837:A:H5'	2.50	0.40
1:5:2682:C:O4'	13:J:20:ASN:ND2	2.54	0.40
1:5:2408:U:O2'	1:5:2409:G:H5'	2.22	0.40
1:5:2918:G:N2	1:5:2929:C:C2	2.89	0.40
17:O:108:ILE:HG12	17:O:108:ILE:O	2.21	0.40
1:5:836:A:H2'	1:5:836:A:N3	2.35	0.40
24:V:6:ALA:HB2	24:V:126:TRP:CH2	2.56	0.40
1:5:986:U:H2'	1:5:987:U:C6	2.55	0.40
1:5:772:U:H2'	1:5:773:G:O4'	2.21	0.40
1:5:92:G:C3'	1:5:92:G:C8	3.03	0.40
1:5:2562:A:C4	1:5:2563:G:C8	3.09	0.40
6:C:3:ARG:HA	6:C:4:PRO:HD3	1.82	0.40
1:5:1657:C:C5	1:5:1797:A:H5''	2.56	0.40
1:5:2916:U:C4	1:5:2935:U:C2	3.09	0.40
20:R:66:HIS:O	20:R:70:LYS:HG2	2.20	0.40
27:Y:108:LYS:HD3	27:Y:108:LYS:HA	1.59	0.40
1:5:1610:G:P	26:X:125:ARG:NH1	2.95	0.40
16:N:119:TYR:OH	16:N:131:GLU:OE1	2.31	0.40
1:5:3113:A:O2'	11:H:69:ARG:HB3	2.21	0.40
1:5:296:A:H8	1:5:296:A:O5'	2.03	0.40
1:5:2093:A:H61	20:R:114:LYS:HD3	1.84	0.40
4:A:129:ALA:O	4:A:132:ASN:HB2	2.21	0.40
8:E:152:THR:HG23	8:E:155:LEU:CB	2.52	0.40
18:P:84:PRO:HB2	18:P:87:SER:HB2	2.03	0.40
14:L:4:SER:O	14:L:7:LEU:HD12	2.20	0.40
20:R:12:ALA:HB1	20:R:17:VAL:O	2.20	0.40
8:E:100:LYS:HE2	8:E:105:TYR:CE1	2.56	0.40
5:B:340:LYS:CB	5:B:340:LYS:NZ	2.85	0.40
7:D:78:ALA:HB1	7:D:104:LEU:HD23	2.04	0.40
1:5:213:A:OP1	27:Y:2:ALA:N	2.55	0.40
1:5:1306:G:O6	17:O:62:THR:HG23	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2356:A:H2'	1:5:2356:A:N3	2.37	0.40
1:5:3138:U:H5''	5:B:274:SER:O	2.21	0.40
2:7:100:C:H2'	2:7:101:G:O4'	2.21	0.40
3:8:49:G:H1	3:8:76:C:N4	2.18	0.40
8:E:35:VAL:CG1	8:E:36:PRO:HD2	2.51	0.40
8:E:35:VAL:HG13	8:E:36:PRO:HD2	2.02	0.40
1:5:3233:C:H2'	1:5:3234:A:C8	2.57	0.40
19:Q:106:PHE:HB2	19:Q:111:ARG:CZ	2.51	0.40
6:C:152:VAL:CG1	6:C:153:SER:N	2.84	0.40
1:5:1596:C:H2'	1:5:1597:C:C6	2.56	0.40
10:G:136:LEU:HD23	10:G:136:LEU:HA	1.66	0.40
14:L:15:ARG:HA	14:L:15:ARG:HD3	1.78	0.40
7:D:115:LEU:HD23	7:D:115:LEU:HA	1.71	0.40
6:C:258:LEU:HD12	6:C:258:LEU:HA	1.62	0.40
21:S:154:HIS:HA	21:S:170:THR:HB	2.04	0.40
6:C:304:GLN:O	6:C:305:ALA:HB3	2.21	0.40
18:P:88:VAL:O	18:P:92:GLN:HG3	2.22	0.40
1:5:1095:U:O2	22:T:129:LYS:HG2	2.22	0.40
1:5:110:G:C5'	14:L:91:ARG:HE	2.31	0.40
1:5:671:U:OP2	19:Q:57:ILE:HD12	2.22	0.40
1:5:2684:C:H2'	1:5:2685:C:H6	1.86	0.40
1:5:315:C:N4	1:5:316:U:O4	2.55	0.40
1:5:663:C:H6	1:5:663:C:O5'	2.04	0.40
1:5:2093:A:O2'	1:5:2094:C:O5'	2.39	0.40
1:5:1241:U:H4'	1:5:1242:G:OP1	2.21	0.40
1:5:1161:G:N2	1:5:1162:U:C2	2.89	0.40
15:M:119:GLN:HG3	15:M:119:GLN:H	1.72	0.40
1:5:408:A:H2'	1:5:409:A:C8	2.57	0.40
1:5:1692:U:O2'	1:5:1693:C:H5'	2.22	0.40
1:5:70:A:N1	1:5:313:A:O2'	2.54	0.40
1:5:2606:G:H4'	1:5:2607:G:N7	2.37	0.40
1:5:359:U:H4'	1:5:817:A:N6	2.36	0.40
6:C:113:VAL:CG1	6:C:114:ASN:N	2.85	0.40
15:M:62:GLN:H	15:M:62:GLN:HG2	1.56	0.40
12:I:50:VAL:HG12	12:I:152:LEU:HD12	2.03	0.40
1:5:1144:U:H5	1:5:1366:A:C2	2.39	0.40
1:5:673:U:H2'	1:5:674:G:C8	2.56	0.40
1:5:3257:C:H2'	1:5:3258:U:H6	1.87	0.40
5:B:128:LYS:C	5:B:131:THR:HG23	2.41	0.40
1:5:3048:A:N3	1:5:3048:A:H2'	2.37	0.40
1:5:564:G:O2'	1:5:565:U:H5'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:W:59:HIS:O	25:W:60:LYS:HB2	2.21	0.40
1:5:35:A:O2'	1:5:36:C:H5'	2.21	0.40
27:Y:55:GLU:HB2	27:Y:108:LYS:HB2	2.03	0.40
3:8:153:U:OP1	10:G:63:LYS:HE2	2.21	0.40
1:5:3097:C:H3'	1:5:3097:C:C6	2.56	0.40
14:L:16:LYS:H	14:L:16:LYS:HG2	1.68	0.40
1:5:1593:A:H2'	1:5:1594:A:C8	2.56	0.40
1:5:892:U:H2'	1:5:893:C:C6	2.57	0.40
17:O:97:ALA:HA	17:O:100:GLU:OE2	2.20	0.40
10:G:98:ARG:HA	10:G:99:PRO:HD3	1.83	0.40
1:5:1383:G:H1	1:5:1423:C:N4	2.16	0.40
1:5:609:G:H5'	8:E:22:ARG:HH12	1.86	0.40
1:5:982:C:H4'	1:5:983:A:OP1	2.21	0.40
16:N:68:ARG:NH2	16:N:123:GLN:HE21	2.19	0.40
1:5:2978:U:O2'	1:5:2979:U:H5''	2.21	0.40
4:A:101:VAL:C	4:A:102:LEU:HD12	2.42	0.40
18:P:67:ILE:HG22	18:P:68:GLY:H	1.87	0.40
1:5:1233:G:O2'	1:5:1234:G:H5'	2.21	0.40
1:5:791:A:H2'	1:5:792:G:H8	1.87	0.40
13:J:112:LEU:O	13:J:112:LEU:HD23	2.22	0.40
1:5:76:G:O2'	14:L:100:ARG:HD2	2.22	0.40
15:M:114:ASP:O	15:M:117:ARG:HB3	2.22	0.40
1:5:2340:U:P	5:B:236:LYS:HD3	2.62	0.40
1:5:2290:C:C2	1:5:2291:A:C8	3.09	0.40
1:5:999:G:H2'	1:5:1000:C:H6	1.83	0.40
1:5:2971:A:N3	1:5:2971:A:H3'	2.36	0.40
1:5:3078:U:H4'	1:5:3079:U:O5'	2.20	0.40
17:O:109:PRO:HA	17:O:110:PRO:HD3	1.82	0.40
16:N:183:THR:O	16:N:184:LYS:CB	2.69	0.40
1:5:1449:A:C2	1:5:2356:A:C4	3.09	0.40
10:G:68:ARG:NH1	10:G:238:LEU:O	2.54	0.40
7:D:191:ASP:HA	7:D:192:PRO:HD2	1.93	0.40
1:5:500:C:H5''	8:E:82:ARG:HG3	2.04	0.40
2:7:13:A:OP2	2:7:67:G:N2	2.51	0.40
1:5:736:A:H2'	1:5:737:G:O4'	2.22	0.40
1:5:2294:U:O2	1:5:2296:A:H8	2.04	0.40
10:G:196:ALA:C	10:G:197:VAL:HG22	2.42	0.40
1:5:1595:U:C2	1:5:1596:C:C5	3.09	0.40
17:O:19:LEU:O	17:O:23:VAL:HG23	2.20	0.40
9:F:156:ILE:O	9:F:159:GLN:HB2	2.21	0.40
1:5:1338:C:H2'	1:5:1339:C:H6	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:166:LEU:N	10:G:167:PRO:CD	2.84	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	A	210/254 (83%)	193 (92%)	17 (8%)	0	100	100
5	B	384/387 (99%)	359 (94%)	25 (6%)	0	100	100
6	C	359/362 (99%)	330 (92%)	27 (8%)	2 (1%)	30	73
7	D	292/297 (98%)	283 (97%)	7 (2%)	2 (1%)	26	71
8	E	173/176 (98%)	160 (92%)	10 (6%)	3 (2%)	11	55
9	F	221/244 (91%)	211 (96%)	9 (4%)	1 (0%)	34	77
10	G	229/256 (90%)	201 (88%)	26 (11%)	2 (1%)	21	66
11	H	189/191 (99%)	178 (94%)	10 (5%)	1 (0%)	34	77
12	I	209/221 (95%)	193 (92%)	16 (8%)	0	100	100
13	J	167/174 (96%)	143 (86%)	19 (11%)	5 (3%)	5	44
14	L	192/199 (96%)	169 (88%)	21 (11%)	2 (1%)	19	65
15	M	135/138 (98%)	131 (97%)	4 (3%)	0	100	100
16	N	201/204 (98%)	189 (94%)	10 (5%)	2 (1%)	19	65
17	O	195/199 (98%)	190 (97%)	5 (3%)	0	100	100
18	P	181/184 (98%)	176 (97%)	5 (3%)	0	100	100
19	Q	183/186 (98%)	173 (94%)	9 (5%)	1 (0%)	34	77
20	R	154/189 (82%)	148 (96%)	6 (4%)	0	100	100
21	S	169/172 (98%)	161 (95%)	8 (5%)	0	100	100
22	T	157/160 (98%)	153 (98%)	2 (1%)	2 (1%)	15	60

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
23	U	100/121 (83%)	95 (95%)	5 (5%)	0	100	100
24	V	134/137 (98%)	130 (97%)	4 (3%)	0	100	100
25	W	61/155 (39%)	57 (93%)	4 (7%)	0	100	100
26	X	118/142 (83%)	108 (92%)	10 (8%)	0	100	100
27	Y	124/127 (98%)	118 (95%)	5 (4%)	1 (1%)	24	69
28	Z	133/136 (98%)	114 (86%)	16 (12%)	3 (2%)	8	50
29	a	146/149 (98%)	131 (90%)	14 (10%)	1 (1%)	26	71
30	b	56/59 (95%)	52 (93%)	4 (7%)	0	100	100
31	c	98/105 (93%)	91 (93%)	7 (7%)	0	100	100
32	d	107/113 (95%)	97 (91%)	9 (8%)	1 (1%)	21	66
33	e	127/130 (98%)	119 (94%)	7 (6%)	1 (1%)	24	69
34	f	104/107 (97%)	98 (94%)	6 (6%)	0	100	100
35	g	110/121 (91%)	100 (91%)	8 (7%)	2 (2%)	11	54
36	h	117/120 (98%)	113 (97%)	4 (3%)	0	100	100
37	i	97/100 (97%)	87 (90%)	7 (7%)	3 (3%)	5	44
38	j	85/88 (97%)	78 (92%)	7 (8%)	0	100	100
39	k	75/78 (96%)	68 (91%)	6 (8%)	1 (1%)	15	60
40	l	48/51 (94%)	46 (96%)	2 (4%)	0	100	100
41	m	50/128 (39%)	46 (92%)	4 (8%)	0	100	100
42	o	103/106 (97%)	96 (93%)	7 (7%)	0	100	100
43	p	89/92 (97%)	83 (93%)	6 (7%)	0	100	100
44	q	116/312 (37%)	109 (94%)	7 (6%)	0	100	100
45	x	577/616 (94%)	540 (94%)	37 (6%)	0	100	100
46	y	207/414 (50%)	192 (93%)	15 (7%)	0	100	100
All	All	6982/7900 (88%)	6509 (93%)	437 (6%)	36 (0%)	38	77

All (36) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
8	E	98	VAL
13	J	10	ARG
13	J	95	ASN
16	N	184	LYS
13	J	115	LYS

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Mol	Chain	Res	Type
14	L	18	TRP
28	Z	17	ARG
28	Z	130	PHE
37	i	63	ASN
8	E	123	PRO
27	Y	125	LYS
28	Z	129	TRP
35	g	83	ASN
37	i	34	SER
8	E	97	ASN
9	F	191	VAL
16	N	183	THR
22	T	69	LYS
22	T	136	ARG
29	a	78	LEU
39	k	17	ARG
6	C	71	VAL
6	C	148	ILE
13	J	12	LEU
32	d	7	VAL
35	g	82	ALA
37	i	64	SER
14	L	47	ALA
7	D	125	VAL
10	G	203	VAL
13	J	114	ILE
7	D	122	VAL
10	G	237	ILE
11	H	167	VAL
19	Q	97	PRO
33	e	6	HIS

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	A	166/196 (85%)	139 (84%)	27 (16%)	3	21
5	B	319/323 (99%)	269 (84%)	50 (16%)	3	23
6	C	288/289 (100%)	240 (83%)	48 (17%)	3	20
7	D	243/245 (99%)	216 (89%)	27 (11%)	8	38
8	E	136/153 (89%)	119 (88%)	17 (12%)	6	32
9	F	187/205 (91%)	166 (89%)	21 (11%)	7	37
10	G	177/208 (85%)	154 (87%)	23 (13%)	5	31
11	H	171/171 (100%)	144 (84%)	27 (16%)	3	23
12	I	179/187 (96%)	157 (88%)	22 (12%)	6	32
13	J	147/150 (98%)	122 (83%)	25 (17%)	2	20
14	L	154/159 (97%)	136 (88%)	18 (12%)	7	35
15	M	108/109 (99%)	93 (86%)	15 (14%)	4	29
16	N	175/176 (99%)	147 (84%)	28 (16%)	3	22
17	O	160/162 (99%)	136 (85%)	24 (15%)	3	25
18	P	145/146 (99%)	128 (88%)	17 (12%)	7	35
19	Q	150/151 (99%)	124 (83%)	26 (17%)	2	18
20	R	129/154 (84%)	111 (86%)	18 (14%)	4	28
21	S	155/156 (99%)	129 (83%)	26 (17%)	2	20
22	T	136/137 (99%)	112 (82%)	24 (18%)	2	18
23	U	89/107 (83%)	76 (85%)	13 (15%)	4	26
24	V	104/105 (99%)	95 (91%)	9 (9%)	13	49
25	W	55/129 (43%)	50 (91%)	5 (9%)	12	47
26	X	104/118 (88%)	85 (82%)	19 (18%)	2	16
27	Y	109/110 (99%)	90 (83%)	19 (17%)	2	18
28	Z	115/116 (99%)	98 (85%)	17 (15%)	4	26
29	a	118/119 (99%)	103 (87%)	15 (13%)	5	31
30	b	46/47 (98%)	38 (83%)	8 (17%)	2	18
31	c	84/88 (96%)	71 (84%)	13 (16%)	3	24
32	d	94/97 (97%)	83 (88%)	11 (12%)	7	35
33	e	110/111 (99%)	96 (87%)	14 (13%)	5	31

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
34	f	90/91 (99%)	82 (91%)	8 (9%)	12	48
35	g	95/103 (92%)	81 (85%)	14 (15%)	4	26
36	h	103/105 (98%)	85 (82%)	18 (18%)	2	18
37	i	80/82 (98%)	59 (74%)	21 (26%)	0	6
38	j	70/71 (99%)	59 (84%)	11 (16%)	3	23
39	k	67/69 (97%)	56 (84%)	11 (16%)	3	21
40	l	45/46 (98%)	39 (87%)	6 (13%)	5	30
41	m	47/116 (40%)	36 (77%)	11 (23%)	1	8
42	o	90/91 (99%)	78 (87%)	12 (13%)	5	30
43	p	71/72 (99%)	66 (93%)	5 (7%)	19	58
44	q	105/254 (41%)	92 (88%)	13 (12%)	6	32
45	x	508/540 (94%)	468 (92%)	40 (8%)	15	54
46	y	182/378 (48%)	168 (92%)	14 (8%)	16	55
All	All	5906/6642 (89%)	5096 (86%)	810 (14%)	9	29

All (810) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	A	5	ILE
4	A	15	ILE
4	A	23	ARG
4	A	44	ILE
4	A	46	LYS
4	A	48	ILE
4	A	64	ARG
4	A	70	ARG
4	A	71	LEU
4	A	73	GLU
4	A	96	LEU
4	A	101	VAL
4	A	102	LEU
4	A	116	VAL
4	A	119	LYS
4	A	134	VAL
4	A	135	ILE
4	A	137	ILE
4	A	142	ASP

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Mol	Chain	Res	Type
4	A	147	ARG
4	A	149	ARG
4	A	155	LYS
4	A	157	VAL
4	A	165	VAL
4	A	180	LEU
4	A	193	ARG
4	A	199	THR
5	B	3	HIS
5	B	4	ARG
5	B	7	GLU
5	B	10	ARG
5	B	17	LEU
5	B	19	ARG
5	B	25	ILE
5	B	37	ARG
5	B	44	THR
5	B	68	HIS
5	B	70	ARG
5	B	74	GLU
5	B	76	VAL
5	B	77	THR
5	B	85	VAL
5	B	103	THR
5	B	104	THR
5	B	110	LEU
5	B	112	ASP
5	B	114	VAL
5	B	116	ARG
5	B	123	TYR
5	B	140	ASP
5	B	146	ARG
5	B	192	VAL
5	B	196	ARG
5	B	202	THR
5	B	206	ASP
5	B	216	ASP
5	B	221	THR
5	B	227	GLU
5	B	232	ARG
5	B	246	LEU
5	B	248	LYS

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Mol	Chain	Res	Type
5	B	249	VAL
5	B	251	CYS
5	B	252	ILE
5	B	264	VAL
5	B	266	ARG
5	B	284	ARG
5	B	300	ARG
5	B	317	ILE
5	B	322	ILE
5	B	332	ARG
5	B	338	LEU
5	B	340	LYS
5	B	346	THR
5	B	347	SER
5	B	364	LYS
5	B	369	ARG
6	C	3	ARG
6	C	6	VAL
6	C	12	THR
6	C	16	THR
6	C	48	GLN
6	C	52	VAL
6	C	55	LYS
6	C	69	ARG
6	C	73	ARG
6	C	76	ARG
6	C	77	VAL
6	C	93	MET
6	C	94	CYS
6	C	99	MET
6	C	103	THR
6	C	107	ARG
6	C	122	THR
6	C	142	VAL
6	C	148	ILE
6	C	150	LEU
6	C	152	VAL
6	C	156	LEU
6	C	160	GLN
6	C	172	VAL
6	C	178	LEU
6	C	183	LYS

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Mol	Chain	Res	Type
6	C	186	LYS
6	C	187	LEU
6	C	194	TYR
6	C	203	ARG
6	C	206	LEU
6	C	233	LEU
6	C	265	GLU
6	C	278	SER
6	C	283	THR
6	C	300	ARG
6	C	304	GLN
6	C	309	ARG
6	C	313	LEU
6	C	323	VAL
6	C	327	LEU
6	C	333	VAL
6	C	342	LYS
6	C	345	GLU
6	C	347	THR
6	C	356	THR
6	C	359	LEU
6	C	360	LYS
7	D	4	GLN
7	D	5	LYS
7	D	34	LYS
7	D	35	ARG
7	D	50	ARG
7	D	51	LEU
7	D	69	ILE
7	D	70	THR
7	D	74	VAL
7	D	109	THR
7	D	126	GLU
7	D	129	TYR
7	D	136	GLU
7	D	146	LEU
7	D	152	ARG
7	D	177	GLU
7	D	184	ASP
7	D	185	PHE
7	D	196	ARG
7	D	203	HIS

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Mol	Chain	Res	Type
7	D	211	LEU
7	D	218	ARG
7	D	231	ILE
7	D	232	ASP
7	D	259	LYS
7	D	275	THR
7	D	282	ARG
8	E	8	LYS
8	E	18	LEU
8	E	20	LYS
8	E	22	ARG
8	E	28	GLN
8	E	31	ARG
8	E	46	ARG
8	E	52	VAL
8	E	76	LEU
8	E	78	ARG
8	E	82	ARG
8	E	89	THR
8	E	91	VAL
8	E	123	PRO
8	E	141	VAL
8	E	146	ILE
8	E	155	LEU
9	F	22	THR
9	F	30	ARG
9	F	41	ARG
9	F	44	ILE
9	F	59	GLU
9	F	60	ARG
9	F	82	LYS
9	F	88	ARG
9	F	92	ILE
9	F	108	LEU
9	F	109	THR
9	F	131	GLU
9	F	134	VAL
9	F	147	LEU
9	F	173	LEU
9	F	175	LYS
9	F	179	LEU
9	F	180	SER

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Mol	Chain	Res	Type
9	F	181	ILE
9	F	196	LYS
9	F	239	LEU
10	G	41	GLN
10	G	65	LEU
10	G	69	LEU
10	G	70	LYS
10	G	79	GLN
10	G	81	THR
10	G	98	ARG
10	G	109	LEU
10	G	136	LEU
10	G	149	LYS
10	G	160	ILE
10	G	169	LEU
10	G	172	LYS
10	G	197	VAL
10	G	200	LEU
10	G	206	GLU
10	G	208	GLU
10	G	213	LYS
10	G	214	LEU
10	G	241	LYS
10	G	245	LYS
10	G	246	MET
10	G	248	LYS
11	H	1	MET
11	H	4	ILE
11	H	7	GLU
11	H	18	VAL
11	H	33	THR
11	H	41	ILE
11	H	44	THR
11	H	55	VAL
11	H	62	ARG
11	H	68	LEU
11	H	69	ARG
11	H	70	THR
11	H	82	VAL
11	H	100	ASN
11	H	106	LYS
11	H	112	ILE

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Mol	Chain	Res	Type
11	H	135	GLU
11	H	147	SER
11	H	151	VAL
11	H	152	GLU
11	H	157	ASN
11	H	160	ASP
11	H	161	LEU
11	H	162	GLN
11	H	165	CYS
11	H	177	ASP
11	H	190	ASP
12	I	3	ARG
12	I	12	GLN
12	I	21	ARG
12	I	24	ARG
12	I	33	ILE
12	I	36	LEU
12	I	55	ASN
12	I	63	GLU
12	I	65	LEU
12	I	71	CYS
12	I	83	ASP
12	I	91	VAL
12	I	139	ARG
12	I	145	LYS
12	I	163	GLN
12	I	169	LYS
12	I	170	LYS
12	I	174	THR
12	I	177	ASP
12	I	183	LYS
12	I	186	GLU
12	I	193	ASP
13	J	10	ARG
13	J	12	LEU
13	J	22	SER
13	J	31	THR
13	J	35	LYS
13	J	44	THR
13	J	46	VAL
13	J	51	ARG
13	J	54	VAL

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Mol	Chain	Res	Type
13	J	67	VAL
13	J	80	LEU
13	J	85	LYS
13	J	92	ARG
13	J	94	ARG
13	J	95	ASN
13	J	106	ILE
13	J	107	ASP
13	J	112	LEU
13	J	119	SER
13	J	132	ASN
13	J	137	ARG
13	J	161	SER
13	J	165	GLN
13	J	166	LYS
13	J	174	LYS
14	L	27	ASP
14	L	52	ASP
14	L	63	VAL
14	L	67	ARG
14	L	76	THR
14	L	85	LEU
14	L	91	ARG
14	L	101	ARG
14	L	107	GLU
14	L	123	ILE
14	L	131	LYS
14	L	139	LEU
14	L	149	GLN
14	L	162	ASN
14	L	164	GLU
14	L	168	ARG
14	L	171	ARG
14	L	194	GLU
15	M	8	LYS
15	M	15	VAL
15	M	20	VAL
15	M	32	LEU
15	M	43	LYS
15	M	53	VAL
15	M	58	ILE
15	M	62	GLN

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Mol	Chain	Res	Type
15	M	64	VAL
15	M	72	LEU
15	M	80	THR
15	M	92	GLU
15	M	106	ARG
15	M	130	THR
15	M	135	LEU
16	N	8	GLU
16	N	10	LEU
16	N	12	ARG
16	N	15	GLN
16	N	18	VAL
16	N	22	LEU
16	N	24	ARG
16	N	27	VAL
16	N	41	ARG
16	N	49	ARG
16	N	53	TYR
16	N	54	LYS
16	N	66	VAL
16	N	68	ARG
16	N	91	GLU
16	N	92	LEU
16	N	104	GLU
16	N	106	VAL
16	N	119	TYR
16	N	121	VAL
16	N	138	GLN
16	N	176	LYS
16	N	184	LYS
16	N	188	ARG
16	N	190	THR
16	N	194	GLN
16	N	196	THR
16	N	199	LEU
17	O	3	VAL
17	O	15	LEU
17	O	27	LEU
17	O	34	VAL
17	O	37	ARG
17	O	41	LEU
17	O	44	SER

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Mol	Chain	Res	Type
17	O	59	ARG
17	O	67	THR
17	O	68	ARG
17	O	78	ARG
17	O	79	ILE
17	O	85	ARG
17	O	106	GLU
17	O	117	ARG
17	O	124	LEU
17	O	128	ARG
17	O	143	THR
17	O	160	ARG
17	O	162	VAL
17	O	171	LYS
17	O	175	THR
17	O	182	ASN
17	O	193	GLN
18	P	22	LEU
18	P	24	VAL
18	P	32	THR
18	P	51	VAL
18	P	52	LEU
18	P	55	GLN
18	P	64	ASN
18	P	69	ARG
18	P	70	THR
18	P	79	THR
18	P	80	LYS
18	P	94	LEU
18	P	103	GLU
18	P	114	VAL
18	P	119	VAL
18	P	142	SER
18	P	166	VAL
19	Q	3	ILE
19	Q	24	VAL
19	Q	26	LEU
19	Q	38	ARG
19	Q	41	ASP
19	Q	49	LEU
19	Q	57	ILE
19	Q	62	VAL

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Mol	Chain	Res	Type
19	Q	63	SER
19	Q	66	ARG
19	Q	67	ILE
19	Q	80	THR
19	Q	86	THR
19	Q	93	ILE
19	Q	100	THR
19	Q	121	CYS
19	Q	135	GLN
19	Q	159	LYS
19	Q	161	LYS
19	Q	165	ILE
19	Q	166	LEU
19	Q	167	SER
19	Q	170	ARG
19	Q	176	ARG
19	Q	178	ARG
19	Q	180	ARG
20	R	5	ARG
20	R	10	LEU
20	R	36	ASN
20	R	47	ASN
20	R	49	THR
20	R	57	VAL
20	R	63	THR
20	R	74	ARG
20	R	75	HIS
20	R	89	LEU
20	R	98	ARG
20	R	99	LEU
20	R	114	LYS
20	R	138	LEU
20	R	143	ILE
20	R	152	GLU
20	R	153	LYS
20	R	156	ASN
21	S	13	ARG
21	S	17	GLU
21	S	27	MET
21	S	32	SER
21	S	45	LEU
21	S	62	ASN

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Mol	Chain	Res	Type
21	S	70	THR
21	S	73	LYS
21	S	74	ASN
21	S	87	THR
21	S	98	SER
21	S	100	VAL
21	S	103	VAL
21	S	115	ARG
21	S	130	GLU
21	S	132	THR
21	S	135	VAL
21	S	136	LYS
21	S	137	ARG
21	S	138	GLN
21	S	144	LEU
21	S	148	LEU
21	S	155	ARG
21	S	162	THR
21	S	171	PHE
21	S	172	TYR
22	T	3	LYS
22	T	5	HIS
22	T	12	ARG
22	T	25	VAL
22	T	26	HIS
22	T	27	LEU
22	T	35	LYS
22	T	80	VAL
22	T	83	ARG
22	T	89	LEU
22	T	98	HIS
22	T	102	ARG
22	T	103	GLN
22	T	104	GLU
22	T	118	GLU
22	T	124	VAL
22	T	126	VAL
22	T	130	ARG
22	T	131	GLN
22	T	139	ARG
22	T	140	ILE
22	T	143	THR

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Mol	Chain	Res	Type
22	T	154	VAL
22	T	157	GLU
23	U	11	ILE
23	U	16	THR
23	U	27	VAL
23	U	37	LEU
23	U	43	VAL
23	U	58	GLU
23	U	59	ASP
23	U	62	VAL
23	U	63	VAL
23	U	68	THR
23	U	74	LYS
23	U	75	TYR
23	U	102	GLU
24	V	12	ARG
24	V	13	ILE
24	V	19	VAL
24	V	28	ASN
24	V	45	ARG
24	V	58	VAL
24	V	74	MET
24	V	91	VAL
24	V	115	THR
25	W	1	MET
25	W	17	ARG
25	W	28	ILE
25	W	39	LEU
25	W	57	LYS
26	X	24	LEU
26	X	31	THR
26	X	37	THR
26	X	38	LEU
26	X	39	LYS
26	X	40	LEU
26	X	45	LYS
26	X	57	LEU
26	X	63	ILE
26	X	65	GLN
26	X	71	THR
26	X	73	MET
26	X	99	VAL

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Mol	Chain	Res	Type
26	X	108	LEU
26	X	109	LYS
26	X	112	THR
26	X	125	ARG
26	X	133	LEU
26	X	135	ILE
27	Y	12	ARG
27	Y	13	ARG
27	Y	14	LYS
27	Y	35	LEU
27	Y	37	LYS
27	Y	45	ILE
27	Y	50	ILE
27	Y	51	ARG
27	Y	52	ARG
27	Y	59	VAL
27	Y	60	ARG
27	Y	74	TYR
27	Y	76	LEU
27	Y	95	VAL
27	Y	97	ILE
27	Y	108	LYS
27	Y	111	LEU
27	Y	114	ASP
27	Y	120	GLN
28	Z	3	LYS
28	Z	17	ARG
28	Z	21	LYS
28	Z	26	VAL
28	Z	52	LYS
28	Z	57	HIS
28	Z	65	ARG
28	Z	72	ILE
28	Z	76	ASN
28	Z	81	LEU
28	Z	86	THR
28	Z	95	VAL
28	Z	99	GLU
28	Z	100	THR
28	Z	102	GLU
28	Z	127	ASN
28	Z	130	PHE

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Mol	Chain	Res	Type
29	a	4	ARG
29	a	8	THR
29	a	44	ASN
29	a	45	MET
29	a	60	TYR
29	a	64	GLN
29	a	65	GLN
29	a	85	ASP
29	a	91	LEU
29	a	97	GLU
29	a	128	ARG
29	a	131	SER
29	a	132	LYS
29	a	133	LEU
29	a	139	ARG
30	b	3	LYS
30	b	14	ARG
30	b	32	LEU
30	b	33	LYS
30	b	50	THR
30	b	52	LYS
30	b	58	LYS
30	b	59	LYS
31	c	7	GLN
31	c	11	ASN
31	c	19	LYS
31	c	40	LYS
31	c	61	MET
31	c	68	TYR
31	c	71	GLN
31	c	86	ARG
31	c	87	VAL
31	c	91	SER
31	c	97	ASP
31	c	99	ASP
31	c	104	LEU
32	d	8	VAL
32	d	14	ILE
32	d	16	LEU
32	d	35	GLU
32	d	55	LEU
32	d	76	SER

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Mol	Chain	Res	Type
32	d	96	VAL
32	d	98	VAL
32	d	102	LYS
32	d	104	LEU
32	d	110	GLU
33	e	9	ILE
33	e	19	ARG
33	e	34	LYS
33	e	43	ARG
33	e	81	ASP
33	e	82	LEU
33	e	83	GLU
33	e	87	MET
33	e	89	THR
33	e	98	HIS
33	e	106	VAL
33	e	107	VAL
33	e	109	LEU
33	e	125	ARG
34	f	5	HIS
34	f	48	ARG
34	f	58	GLU
34	f	70	LYS
34	f	74	THR
34	f	81	VAL
34	f	89	LEU
34	f	98	VAL
35	g	14	ASN
35	g	15	THR
35	g	16	ARG
35	g	20	ILE
35	g	29	ILE
35	g	46	ASP
35	g	47	CYS
35	g	57	LEU
35	g	58	ARG
35	g	71	THR
35	g	79	SER
35	g	81	CYS
35	g	98	GLN
35	g	104	VAL
36	h	20	GLN

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Mol	Chain	Res	Type
36	h	23	ASP
36	h	27	GLU
36	h	36	LEU
36	h	41	LEU
36	h	57	VAL
36	h	62	GLN
36	h	64	GLU
36	h	66	VAL
36	h	68	GLN
36	h	69	LEU
36	h	81	ARG
36	h	89	ARG
36	h	92	LEU
36	h	107	LYS
36	h	113	GLN
36	h	114	ARG
36	h	119	LYS
37	i	3	VAL
37	i	9	ILE
37	i	17	VAL
37	i	18	THR
37	i	34	SER
37	i	36	ARG
37	i	45	ARG
37	i	53	TYR
37	i	57	LEU
37	i	58	ILE
37	i	60	LEU
37	i	61	ILE
37	i	62	ARG
37	i	68	ARG
37	i	74	LYS
37	i	75	LYS
37	i	76	ARG
37	i	81	THR
37	i	88	GLU
37	i	94	ILE
37	i	98	ARG
38	j	12	HIS
38	j	17	THR
38	j	24	ARG
38	j	45	ARG

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Mol	Chain	Res	Type
38	j	55	ARG
38	j	65	ARG
38	j	67	LEU
38	j	68	LYS
38	j	70	VAL
38	j	73	ARG
38	j	80	THR
39	k	6	THR
39	k	12	LEU
39	k	14	LEU
39	k	24	THR
39	k	31	LEU
39	k	40	GLN
39	k	41	THR
39	k	46	ARG
39	k	53	THR
39	k	61	LYS
39	k	64	LYS
40	l	4	GLN
40	l	21	ARG
40	l	27	ILE
40	l	28	ARG
40	l	30	ARG
40	l	36	ARG
41	m	79	GLU
41	m	88	LYS
41	m	90	ASN
41	m	93	LYS
41	m	97	ARG
41	m	106	ARG
41	m	108	THR
41	m	112	LYS
41	m	113	ARG
41	m	118	THR
41	m	127	LEU
42	o	7	THR
42	o	8	ARG
42	o	20	HIS
42	o	27	GLN
42	o	38	GLN
42	o	54	THR
42	o	55	LYS

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Mol	Chain	Res	Type
42	o	75	VAL
42	o	84	THR
42	o	85	LEU
42	o	93	LEU
42	o	104	LEU
43	p	17	ARG
43	p	24	ARG
43	p	54	ILE
43	p	57	CYS
43	p	80	ARG
44	q	4	ILE
44	q	10	GLU
44	q	15	LEU
44	q	46	ARG
44	q	48	ARG
44	q	67	LEU
44	q	70	LEU
44	q	72	ASP
44	q	76	LEU
44	q	80	VAL
44	q	97	LYS
44	q	104	ARG
44	q	192	ASP
45	x	34	ILE
45	x	43	THR
45	x	47	ASN
45	x	49	SER
45	x	56	GLN
45	x	76	LEU
45	x	134	ARG
45	x	143	LEU
45	x	160	ILE
45	x	165	GLU
45	x	189	ILE
45	x	203	THR
45	x	225	THR
45	x	235	ASN
45	x	243	ARG
45	x	309	PHE
45	x	337	LEU
45	x	361	VAL
45	x	363	ASP

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Mol	Chain	Res	Type
45	x	366	GLN
45	x	374	THR
45	x	383	ASP
45	x	384	LYS
45	x	447	HIS
45	x	452	THR
45	x	457	ASN
45	x	464	SER
45	x	468	LEU
45	x	478	LEU
45	x	491	SER
45	x	496	ILE
45	x	504	CYS
45	x	510	CYS
45	x	521	GLU
45	x	523	LEU
45	x	536	TRP
45	x	540	GLN
45	x	541	HIS
45	x	567	LEU
45	x	580	VAL
46	y	179	ASN
46	y	197	LEU
46	y	198	VAL
46	y	199	ASP
46	y	200	LYS
46	y	221	ASN
46	y	227	LEU
46	y	240	CYS
46	y	303	ILE
46	y	313	VAL
46	y	340	VAL
46	y	347	PHE
46	y	362	VAL
46	y	391	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (98) such sidechains are listed below:

Mol	Chain	Res	Type
4	A	19	HIS
4	A	132	ASN
4	A	205	ASN

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Mol	Chain	Res	Type
5	B	11	HIS
5	B	243	HIS
5	B	269	GLN
6	C	5	GLN
6	C	9	HIS
6	C	110	ASN
6	C	114	ASN
6	C	213	ASN
6	C	221	ASN
6	C	260	GLN
6	C	307	GLN
6	C	311	HIS
7	D	32	GLN
7	D	40	HIS
8	E	28	GLN
10	G	41	GLN
10	G	221	ASN
10	G	240	ASN
11	H	58	HIS
11	H	100	ASN
11	H	125	ASN
11	H	156	GLN
11	H	169	ASN
12	I	23	ASN
12	I	100	ASN
12	I	144	ASN
13	J	43	GLN
13	J	62	ASN
13	J	90	GLN
13	J	132	ASN
14	L	13	HIS
14	L	102	GLN
16	N	70	ASN
16	N	90	ASN
16	N	123	GLN
17	O	31	GLN
17	O	50	ASN
17	O	65	ASN
18	P	34	GLN
18	P	45	GLN
18	P	50	GLN
18	P	64	ASN

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Mol	Chain	Res	Type
18	P	125	GLN
19	Q	5	HIS
19	Q	73	GLN
20	R	36	ASN
20	R	47	ASN
21	S	63	GLN
21	S	138	GLN
22	T	49	GLN
22	T	95	HIS
22	T	131	GLN
22	T	146	ASN
23	U	40	HIS
26	X	137	ASN
27	Y	26	GLN
27	Y	100	HIS
27	Y	120	GLN
28	Z	29	HIS
28	Z	36	HIS
28	Z	106	GLN
29	a	28	HIS
29	a	44	ASN
30	b	10	HIS
30	b	11	ASN
30	b	17	HIS
30	b	19	ASN
31	c	47	ASN
31	c	75	ASN
32	d	57	GLN
33	e	13	HIS
34	f	77	ASN
35	g	52	GLN
35	g	98	GLN
36	h	62	GLN
36	h	68	GLN
39	k	40	GLN
44	q	36	GLN
44	q	37	GLN
44	q	39	HIS
45	x	18	ASN
45	x	36	GLN
45	x	146	HIS
45	x	156	HIS

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Mol	Chain	Res	Type
45	x	235	ASN
45	x	254	GLN
45	x	273	HIS
45	x	429	ASN
45	x	447	HIS
45	x	453	ASN
45	x	471	HIS
45	x	505	ASN
46	y	182	HIS
46	y	357	GLN
46	y	386	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	5	3084/3396 (90%)	666 (21%)	79 (2%)
2	7	120/121 (99%)	13 (10%)	0
3	8	157/158 (99%)	42 (26%)	6 (3%)
All	All	3361/3675 (91%)	721 (21%)	85 (2%)

All (721) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	5	14	U
1	5	15	C
1	5	21	G
1	5	22	G
1	5	26	A
1	5	40	A
1	5	43	A
1	5	49	A
1	5	59	G
1	5	60	A
1	5	65	A
1	5	66	A
1	5	75	G
1	5	83	U
1	5	89	A
1	5	91	G
1	5	92	G
1	5	96	G

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Mol	Chain	Res	Type
1	5	110	G
1	5	111	C
1	5	113	C
1	5	116	A
1	5	117	U
1	5	121	A
1	5	122	A
1	5	123	A
1	5	133	U
1	5	134	U
1	5	135	C
1	5	136	G
1	5	143	G
1	5	146	U
1	5	148	G
1	5	152	U
1	5	156	G
1	5	157	A
1	5	165	A
1	5	166	C
1	5	170	G
1	5	171	G
1	5	172	G
1	5	173	G
1	5	175	C
1	5	182	U
1	5	183	G
1	5	184	U
1	5	187	A
1	5	190	U
1	5	191	U
1	5	206	G
1	5	210	U
1	5	213	A
1	5	218	G
1	5	219	A
1	5	221	A
1	5	222	A
1	5	237	G
1	5	239	G
1	5	240	U
1	5	241	G

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Mol	Chain	Res	Type
1	5	244	G
1	5	245	U
1	5	246	U
1	5	248	U
1	5	249	U
1	5	250	U
1	5	251	G
1	5	252	U
1	5	254	A
1	5	269	G
1	5	270	U
1	5	277	G
1	5	282	G
1	5	283	G
1	5	284	A
1	5	286	U
1	5	295	A
1	5	305	U
1	5	315	C
1	5	316	U
1	5	323	A
1	5	329	U
1	5	339	C
1	5	343	U
1	5	346	C
1	5	350	C
1	5	351	A
1	5	370	U
1	5	376	G
1	5	398	A
1	5	399	A
1	5	401	U
1	5	402	A
1	5	403	C
1	5	421	G
1	5	422	A
1	5	429	U
1	5	433	A
1	5	438	A
1	5	439	C
1	5	494	G
1	5	520	U

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Mol	Chain	Res	Type
1	5	521	A
1	5	530	G
1	5	535	G
1	5	546	C
1	5	547	G
1	5	548	G
1	5	552	G
1	5	553	U
1	5	555	U
1	5	557	A
1	5	559	A
1	5	578	A
1	5	579	G
1	5	581	U
1	5	592	A
1	5	594	U
1	5	600	G
1	5	604	G
1	5	609	G
1	5	611	A
1	5	619	A
1	5	620	U
1	5	621	A
1	5	622	A
1	5	623	U
1	5	636	C
1	5	649	A
1	5	660	A
1	5	677	A
1	5	681	U
1	5	685	G
1	5	691	A
1	5	692	A
1	5	697	A
1	5	705	A
1	5	707	U
1	5	708	G
1	5	712	G
1	5	715	A
1	5	716	A
1	5	720	A
1	5	725	G

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Mol	Chain	Res	Type
1	5	736	A
1	5	749	C
1	5	766	U
1	5	767	U
1	5	776	U
1	5	777	U
1	5	780	A
1	5	781	G
1	5	784	A
1	5	785	G
1	5	786	A
1	5	806	A
1	5	808	A
1	5	817	A
1	5	830	A
1	5	844	G
1	5	845	G
1	5	846	A
1	5	851	C
1	5	861	C
1	5	869	G
1	5	873	C
1	5	874	U
1	5	879	U
1	5	907	G
1	5	908	G
1	5	914	A
1	5	916	G
1	5	917	A
1	5	921	A
1	5	923	C
1	5	924	G
1	5	925	A
1	5	934	G
1	5	937	G
1	5	944	C
1	5	946	U
1	5	953	G
1	5	956	U
1	5	959	C
1	5	960	U
1	5	962	A

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Mol	Chain	Res	Type
1	5	974	G
1	5	979	U
1	5	982	C
1	5	983	A
1	5	984	G
1	5	986	U
1	5	993	G
1	5	995	U
1	5	1000	C
1	5	1001	G
1	5	1002	A
1	5	1003	A
1	5	1010	G
1	5	1014	U
1	5	1015	U
1	5	1047	A
1	5	1049	C
1	5	1064	A
1	5	1065	A
1	5	1072	G
1	5	1081	U
1	5	1082	U
1	5	1085	A
1	5	1086	C
1	5	1093	A
1	5	1094	U
1	5	1095	U
1	5	1097	G
1	5	1098	A
1	5	1104	G
1	5	1105	A
1	5	1117	G
1	5	1131	G
1	5	1143	A
1	5	1151	U
1	5	1153	A
1	5	1157	G
1	5	1159	A
1	5	1160	C
1	5	1178	G
1	5	1180	A
1	5	1181	U

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Mol	Chain	Res	Type
1	5	1190	A
1	5	1191	U
1	5	1192	C
1	5	1193	A
1	5	1196	C
1	5	1201	C
1	5	1209	G
1	5	1212	A
1	5	1217	A
1	5	1222	G
1	5	1223	A
1	5	1235	U
1	5	1236	G
1	5	1237	G
1	5	1239	C
1	5	1241	U
1	5	1242	G
1	5	1245	A
1	5	1246	G
1	5	1248	C
1	5	1253	U
1	5	1258	U
1	5	1259	A
1	5	1262	G
1	5	1263	A
1	5	1264	G
1	5	1265	U
1	5	1266	G
1	5	1272	C
1	5	1285	G
1	5	1294	A
1	5	1305	U
1	5	1307	G
1	5	1308	A
1	5	1309	U
1	5	1313	G
1	5	1330	A
1	5	1345	G
1	5	1349	G
1	5	1350	A
1	5	1351	U
1	5	1352	A

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Mol	Chain	Res	Type
1	5	1353	U
1	5	1355	A
1	5	1356	U
1	5	1357	G
1	5	1370	G
1	5	1380	G
1	5	1385	C
1	5	1386	A
1	5	1392	G
1	5	1399	A
1	5	1400	G
1	5	1405	U
1	5	1419	A
1	5	1432	C
1	5	1434	G
1	5	1435	A
1	5	1437	C
1	5	1446	A
1	5	1452	A
1	5	1484	U
1	5	1508	C
1	5	1533	U
1	5	1536	G
1	5	1553	U
1	5	1554	U
1	5	1555	U
1	5	1556	C
1	5	1557	A
1	5	1559	A
1	5	1560	G
1	5	1561	G
1	5	1563	C
1	5	1564	U
1	5	1568	U
1	5	1569	U
1	5	1570	U
1	5	1571	A
1	5	1572	U
1	5	1573	G
1	5	1575	A
1	5	1576	G
1	5	1578	C

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Mol	Chain	Res	Type
1	5	1579	C
1	5	1580	A
1	5	1581	C
1	5	1582	C
1	5	1583	A
1	5	1589	A
1	5	1593	A
1	5	1607	U
1	5	1608	C
1	5	1620	U
1	5	1629	U
1	5	1633	C
1	5	1639	C
1	5	1642	A
1	5	1643	A
1	5	1644	C
1	5	1645	U
1	5	1655	G
1	5	1657	C
1	5	1702	U
1	5	1715	A
1	5	1716	U
1	5	1717	U
1	5	1718	G
1	5	1725	C
1	5	1741	A
1	5	1750	A
1	5	1751	G
1	5	1756	C
1	5	1759	C
1	5	1760	A
1	5	1763	U
1	5	1764	U
1	5	1765	U
1	5	1770	G
1	5	1772	U
1	5	1773	C
1	5	1780	G
1	5	1797	A
1	5	1812	G
1	5	1814	A
1	5	1815	U

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Mol	Chain	Res	Type
1	5	1816	A
1	5	1817	G
1	5	1818	U
1	5	1820	U
1	5	1821	U
1	5	1838	G
1	5	1839	A
1	5	1841	A
1	5	1842	A
1	5	1846	C
1	5	1849	C
1	5	1850	A
1	5	1855	U
1	5	1863	G
1	5	1874	A
1	5	1876	U
1	5	1878	G
1	5	1879	A
1	5	1880	U
1	5	1886	A
1	5	1906	G
1	5	1909	A
1	5	1935	G
1	5	1943	C
1	5	2101	C
1	5	2102	U
1	5	2111	G
1	5	2112	U
1	5	2113	A
1	5	2114	C
1	5	2117	A
1	5	2121	G
1	5	2122	G
1	5	2131	A
1	5	2144	A
1	5	2149	A
1	5	2158	A
1	5	2159	U
1	5	2160	G
1	5	2169	G
1	5	2170	U
1	5	2171	G

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Mol	Chain	Res	Type
1	5	2193	U
1	5	2205	U
1	5	2223	A
1	5	2225	U
1	5	2228	A
1	5	2229	A
1	5	2244	A
1	5	2249	G
1	5	2270	A
1	5	2273	G
1	5	2279	A
1	5	2285	C
1	5	2288	G
1	5	2298	U
1	5	2307	G
1	5	2308	C
1	5	2309	A
1	5	2310	U
1	5	2313	A
1	5	2314	U
1	5	2315	G
1	5	2334	U
1	5	2335	G
1	5	2336	U
1	5	2337	C
1	5	2373	A
1	5	2374	C
1	5	2375	G
1	5	2385	G
1	5	2388	U
1	5	2393	G
1	5	2397	A
1	5	2401	A
1	5	2402	A
1	5	2403	G
1	5	2410	U
1	5	2411	U
1	5	2412	G
1	5	2418	G
1	5	2419	A
1	5	2422	C
1	5	2423	U

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Mol	Chain	Res	Type
1	5	2433	U
1	5	2435	G
1	5	2436	U
1	5	2437	G
1	5	2438	A
1	5	2439	A
1	5	2510	U
1	5	2511	A
1	5	2512	C
1	5	2514	U
1	5	2515	A
1	5	2522	G
1	5	2523	A
1	5	2524	A
1	5	2525	G
1	5	2526	C
1	5	2530	G
1	5	2531	C
1	5	2532	U
1	5	2537	U
1	5	2538	U
1	5	2539	C
1	5	2540	A
1	5	2543	U
1	5	2552	C
1	5	2555	G
1	5	2566	C
1	5	2567	C
1	5	2568	C
1	5	2569	A
1	5	2570	U
1	5	2571	U
1	5	2572	C
1	5	2573	G
1	5	2574	G
1	5	2584	G
1	5	2585	G
1	5	2589	G
1	5	2593	A
1	5	2594	C
1	5	2604	U
1	5	2605	G

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Mol	Chain	Res	Type
1	5	2606	G
1	5	2607	G
1	5	2609	A
1	5	2610	G
1	5	2614	G
1	5	2637	A
1	5	2638	C
1	5	2652	U
1	5	2656	A
1	5	2663	G
1	5	2674	A
1	5	2677	G
1	5	2680	A
1	5	2683	U
1	5	2689	A
1	5	2690	G
1	5	2691	A
1	5	2694	A
1	5	2714	G
1	5	2719	U
1	5	2728	G
1	5	2729	U
1	5	2737	C
1	5	2740	A
1	5	2742	C
1	5	2752	U
1	5	2753	G
1	5	2754	G
1	5	2771	U
1	5	2772	C
1	5	2773	C
1	5	2777	G
1	5	2779	A
1	5	2782	U
1	5	2794	G
1	5	2796	G
1	5	2799	A
1	5	2800	G
1	5	2801	A
1	5	2802	A
1	5	2803	A
1	5	2804	A

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Mol	Chain	Res	Type
1	5	2807	U
1	5	2808	A
1	5	2809	C
1	5	2810	C
1	5	2812	C
1	5	2814	G
1	5	2816	G
1	5	2817	A
1	5	2818	U
1	5	2819	A
1	5	2845	A
1	5	2847	A
1	5	2853	A
1	5	2859	U
1	5	2860	U
1	5	2871	G
1	5	2872	A
1	5	2873	U
1	5	2875	U
1	5	2887	A
1	5	2889	C
1	5	2899	C
1	5	2905	U
1	5	2916	U
1	5	2918	G
1	5	2923	U
1	5	2935	U
1	5	2936	A
1	5	2945	G
1	5	2947	G
1	5	2953	U
1	5	2954	U
1	5	2955	U
1	5	2956	A
1	5	2957	G
1	5	2958	A
1	5	2972	G
1	5	2979	U
1	5	2982	A
1	5	2983	C
1	5	2990	G
1	5	2992	U

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Mol	Chain	Res	Type
1	5	2995	A
1	5	2996	U
1	5	2997	G
1	5	3011	A
1	5	3012	A
1	5	3050	U
1	5	3056	U
1	5	3059	G
1	5	3078	U
1	5	3079	U
1	5	3086	A
1	5	3092	C
1	5	3094	A
1	5	3116	G
1	5	3117	C
1	5	3122	A
1	5	3130	A
1	5	3131	U
1	5	3142	A
1	5	3143	C
1	5	3146	G
1	5	3152	U
1	5	3164	C
1	5	3165	A
1	5	3168	A
1	5	3172	A
1	5	3173	G
1	5	3174	A
1	5	3175	U
1	5	3176	G
1	5	3179	U
1	5	3180	A
1	5	3181	C
1	5	3187	A
1	5	3194	C
1	5	3195	U
1	5	3196	U
1	5	3198	U
1	5	3207	U
1	5	3209	A
1	5	3210	A
1	5	3217	C

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Mol	Chain	Res	Type
1	5	3218	A
1	5	3219	G
1	5	3227	A
1	5	3228	C
1	5	3229	G
1	5	3238	G
1	5	3244	A
1	5	3245	A
1	5	3247	G
1	5	3253	G
1	5	3259	U
1	5	3265	C
1	5	3269	U
1	5	3270	U
1	5	3272	C
1	5	3274	A
1	5	3275	U
1	5	3276	G
1	5	3277	U
1	5	3278	C
1	5	3279	A
1	5	3281	U
1	5	3282	U
1	5	3285	C
1	5	3286	G
1	5	3288	G
1	5	3289	G
1	5	3290	G
1	5	3294	A
1	5	3301	U
1	5	3304	U
1	5	3306	U
1	5	3312	U
1	5	3317	U
1	5	3318	G
1	5	3319	U
1	5	3329	U
1	5	3330	A
1	5	3335	A
1	5	3338	C
1	5	3341	U
1	5	3342	A

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Mol	Chain	Res	Type
1	5	3345	G
1	5	3346	U
1	5	3351	U
1	5	3352	U
1	5	3354	U
1	5	3355	U
1	5	3356	G
1	5	3357	U
1	5	3358	U
1	5	3362	A
1	5	3368	U
1	5	3369	G
1	5	3371	G
1	5	3378	C
1	5	3383	G
1	5	3389	U
1	5	3390	G
1	5	3396	U
2	7	19	C
2	7	22	A
2	7	33	U
2	7	54	U
2	7	65	G
2	7	73	C
2	7	74	C
2	7	91	G
2	7	93	C
2	7	102	A
2	7	103	A
2	7	112	G
2	7	121	U
3	8	21	C
3	8	23	U
3	8	25	G
3	8	34	U
3	8	35	C
3	8	39	G
3	8	51	G
3	8	59	A
3	8	60	U
3	8	62	C
3	8	63	G

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Mol	Chain	Res	Type
3	8	76	C
3	8	77	A
3	8	78	G
3	8	79	A
3	8	80	A
3	8	81	U
3	8	82	U
3	8	83	C
3	8	84	C
3	8	85	G
3	8	86	U
3	8	87	G
3	8	88	A
3	8	90	U
3	8	95	G
3	8	102	U
3	8	104	A
3	8	105	A
3	8	106	C
3	8	111	A
3	8	113	U
3	8	118	C
3	8	125	U
3	8	126	A
3	8	127	U
3	8	128	U
3	8	138	A
3	8	152	G
3	8	156	U
3	8	157	U
3	8	158	U

All (85) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	5	109	A
1	5	151	A
1	5	183	G
1	5	238	A
1	5	240	U
1	5	282	G
1	5	438	A

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Mol	Chain	Res	Type
1	5	546	C
1	5	619	A
1	5	620	U
1	5	621	A
1	5	696	C
1	5	715	A
1	5	735	A
1	5	765	C
1	5	850	U
1	5	873	C
1	5	916	G
1	5	981	U
1	5	982	C
1	5	1064	A
1	5	1081	U
1	5	1222	G
1	5	1238	C
1	5	1241	U
1	5	1284	C
1	5	1307	G
1	5	1329	U
1	5	1352	A
1	5	1355	A
1	5	1555	U
1	5	1559	A
1	5	1568	U
1	5	1571	A
1	5	1580	A
1	5	1605	A
1	5	1607	U
1	5	1716	U
1	5	1724	U
1	5	1816	A
1	5	1819	U
1	5	1838	G
1	5	2101	C
1	5	2112	U
1	5	2204	C
1	5	2248	C
1	5	2307	G
1	5	2418	G
1	5	2422	C

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Mol	Chain	Res	Type
1	5	2438	A
1	5	2513	U
1	5	2523	A
1	5	2539	C
1	5	2583	C
1	5	2584	G
1	5	2593	A
1	5	2604	U
1	5	2662	G
1	5	2682	C
1	5	2772	C
1	5	2807	U
1	5	2872	A
1	5	2954	U
1	5	2971	A
1	5	2995	A
1	5	3078	U
1	5	3115	C
1	5	3121	U
1	5	3167	A
1	5	3195	U
1	5	3218	A
1	5	3228	C
1	5	3269	U
1	5	3289	G
1	5	3303	G
1	5	3317	U
1	5	3340	G
1	5	3341	U
1	5	3357	U
3	8	79	A
3	8	80	A
3	8	89	A
3	8	111	A
3	8	126	A
3	8	156	U

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

20 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and

the number of bonds (or angles) that are defined in the chemical component dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
1	Y5P	5	1986	1	14,19,20	3.19	2 (14%)	18,26,29	3.03	2 (11%)
1	Y5P	5	1987	1	14,19,20	3.25	2 (14%)	18,26,29	2.88	2 (11%)
1	Y5P	5	1988	1	14,19,20	3.21	2 (14%)	18,26,29	2.97	2 (11%)
1	Y5P	5	1989	1	14,19,20	3.25	2 (14%)	18,26,29	2.86	2 (11%)
1	Y5P	5	1990	1	14,19,20	3.22	2 (14%)	18,26,29	3.01	2 (11%)
1	Y5P	5	1991	1	14,19,20	3.30	2 (14%)	18,26,29	2.82	2 (11%)
1	Y5P	5	1992	1	14,19,20	3.20	2 (14%)	18,26,29	3.02	2 (11%)
1	Y5P	5	1993	1	14,19,20	3.33	2 (14%)	18,26,29	2.89	2 (11%)
1	Y5P	5	1994	1	14,19,20	3.26	2 (14%)	18,26,29	3.05	2 (11%)
1	Y5P	5	1995	1	14,19,20	3.23	2 (14%)	18,26,29	2.87	2 (11%)
1	P5P	5	2016	1	16,23,24	0.72	0	15,33,36	0.78	0
1	P5P	5	2017	1	16,23,24	0.71	0	15,33,36	0.75	0
1	P5P	5	2018	1	16,23,24	0.72	0	15,33,36	0.80	0
1	P5P	5	2019	1	16,23,24	0.73	0	15,33,36	0.81	0
1	P5P	5	2020	1	16,23,24	0.72	0	15,33,36	0.81	0
1	P5P	5	2021	1	16,23,24	0.71	0	15,33,36	0.72	0
1	P5P	5	2022	1	16,23,24	0.73	0	15,33,36	0.81	0
1	P5P	5	2023	1	16,23,24	0.73	0	15,33,36	0.83	0
1	P5P	5	2024	1	16,23,24	0.72	0	15,33,36	0.78	0
1	P5P	5	2025	1	16,23,24	0.71	0	15,33,36	0.73	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	Y5P	5	1986	1	-	0/7/33/34	0/2/2/2
1	Y5P	5	1987	1	-	0/7/33/34	0/2/2/2
1	Y5P	5	1988	1	-	0/7/33/34	0/2/2/2
1	Y5P	5	1989	1	-	0/7/33/34	0/2/2/2
1	Y5P	5	1990	1	-	0/7/33/34	0/2/2/2
1	Y5P	5	1991	1	-	0/7/33/34	0/2/2/2
1	Y5P	5	1992	1	-	0/7/33/34	0/2/2/2
1	Y5P	5	1993	1	-	0/7/33/34	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	Y5P	5	1994	1	-	0/7/33/34	0/2/2/2
1	Y5P	5	1995	1	-	0/7/33/34	0/2/2/2
1	P5P	5	2016	1	-	0/3/25/26	0/3/3/3
1	P5P	5	2017	1	-	0/3/25/26	0/3/3/3
1	P5P	5	2018	1	-	0/3/25/26	0/3/3/3
1	P5P	5	2019	1	-	0/3/25/26	0/3/3/3
1	P5P	5	2020	1	-	0/3/25/26	0/3/3/3
1	P5P	5	2021	1	-	0/3/25/26	0/3/3/3
1	P5P	5	2022	1	-	0/3/25/26	0/3/3/3
1	P5P	5	2023	1	-	0/3/25/26	0/3/3/3
1	P5P	5	2024	1	-	0/3/25/26	0/3/3/3
1	P5P	5	2025	1	-	0/3/25/26	0/3/3/3

All (20) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	5	1991	Y5P	C4-N3	-11.55	1.38	1.46
1	5	1993	Y5P	C4-N3	-11.54	1.38	1.46
1	5	1987	Y5P	C4-N3	-11.38	1.38	1.46
1	5	1989	Y5P	C4-N3	-11.36	1.38	1.46
1	5	1994	Y5P	C4-N3	-11.32	1.38	1.46
1	5	1995	Y5P	C4-N3	-11.26	1.38	1.46
1	5	1990	Y5P	C4-N3	-11.18	1.38	1.46
1	5	1988	Y5P	C4-N3	-11.11	1.38	1.46
1	5	1986	Y5P	C4-N3	-11.02	1.38	1.46
1	5	1992	Y5P	C4-N3	-10.98	1.38	1.46
1	5	1987	Y5P	C2-N3	3.89	1.37	1.29
1	5	1991	Y5P	C2-N3	3.93	1.37	1.29
1	5	1989	Y5P	C2-N3	3.96	1.37	1.29
1	5	1995	Y5P	C2-N3	3.98	1.37	1.29
1	5	1990	Y5P	C2-N3	4.16	1.38	1.29
1	5	1994	Y5P	C2-N3	4.18	1.38	1.29
1	5	1993	Y5P	C2-N3	4.21	1.38	1.29
1	5	1988	Y5P	C2-N3	4.21	1.38	1.29
1	5	1986	Y5P	C2-N3	4.24	1.38	1.29
1	5	1992	Y5P	C2-N3	4.38	1.38	1.29

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	1994	Y5P	N1-C2-N3	-12.10	114.34	125.85
1	5	1986	Y5P	N1-C2-N3	-12.06	114.38	125.85

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	1992	Y5P	N1-C2-N3	-11.97	114.47	125.85
1	5	1990	Y5P	N1-C2-N3	-11.91	114.52	125.85
1	5	1988	Y5P	N1-C2-N3	-11.76	114.67	125.85
1	5	1993	Y5P	N1-C2-N3	-11.44	114.97	125.85
1	5	1989	Y5P	N1-C2-N3	-11.36	115.04	125.85
1	5	1995	Y5P	N1-C2-N3	-11.33	115.07	125.85
1	5	1987	Y5P	N1-C2-N3	-11.31	115.09	125.85
1	5	1991	Y5P	N1-C2-N3	-11.07	115.32	125.85
1	5	1993	Y5P	C4-N3-C2	3.83	126.87	117.71
1	5	1989	Y5P	C4-N3-C2	3.89	127.00	117.71
1	5	1991	Y5P	C4-N3-C2	3.92	127.08	117.71
1	5	1988	Y5P	C4-N3-C2	3.93	127.10	117.71
1	5	1990	Y5P	C4-N3-C2	3.95	127.14	117.71
1	5	1992	Y5P	C4-N3-C2	3.99	127.24	117.71
1	5	1995	Y5P	C4-N3-C2	3.99	127.25	117.71
1	5	1987	Y5P	C4-N3-C2	3.99	127.25	117.71
1	5	1994	Y5P	C4-N3-C2	4.01	127.30	117.71
1	5	1986	Y5P	C4-N3-C2	4.04	127.35	117.71

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

12 monomers are involved in 7 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	5	1987	Y5P	1	0
1	5	1988	Y5P	1	0
1	5	1989	Y5P	2	0
1	5	1990	Y5P	2	0
1	5	1991	Y5P	1	0
1	5	1992	Y5P	1	0
1	5	1993	Y5P	1	0
1	5	1994	Y5P	1	0
1	5	2017	P5P	1	0
1	5	2018	P5P	1	0
1	5	2023	P5P	1	0
1	5	2024	P5P	1	0

5.5 Carbohydrates ⓘ

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

Of 286 ligands modelled in this entry, 286 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
47	z	2
1	5	2

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	5	1953:G	O3'	1986:Y5P	P	107.33
1	5	2025:P5P	O3'	2093:A	P	105.65
1	z	107:UNK	C	115:UNK	N	20.22
1	z	127:UNK	C	131:UNK	N	9.70