



wwPDB EM Map/Model Validation Report ⓘ

Apr 10, 2016 – 02:46 PM BST

PDB ID : 5APO
EMDB ID: : 3151
Title : Structure of the yeast 60S ribosomal subunit in complex with Arx1, Alb1 and C-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, N.
Deposited on : 2015-09-17
Resolution : 3.41 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>

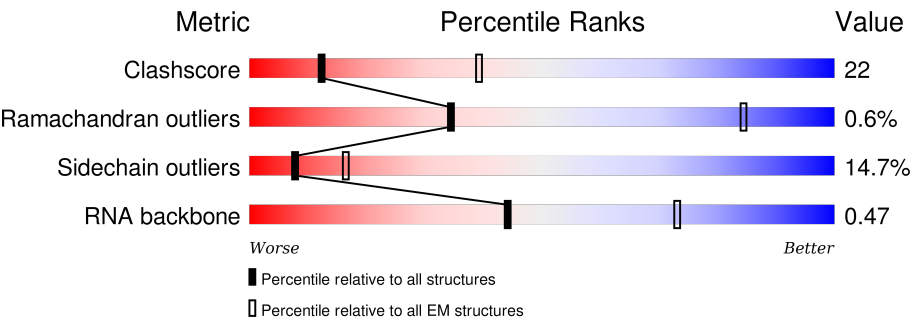
MolProbity : 4.02b-467
Mogul : 1.7.1 (RC1), CSD as537be (2016)
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP) : trunk27241

1 Overall quality at a glance i

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

The reported resolution of this entry is 3.41 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	<div><div>40%</div><div>38%</div><div>12%</div><div>8%</div></div>
2	7	121	<div><div>45%</div><div>49%</div><div>7%</div></div>
3	8	158	<div><div>47%</div><div>35%</div><div>16%</div><div>.</div></div>
4	A	254	<div><div>36%</div><div>38%</div><div>9%</div><div>17%</div></div>
5	B	387	<div><div>50%</div><div>40%</div><div>10%</div></div>
6	C	362	<div><div>49%</div><div>41%</div><div>10%</div><div>.</div></div>
7	D	297	<div><div>53%</div><div>38%</div><div>8%</div><div>.</div></div>
8	E	176	<div><div>55%</div><div>40%</div><div>5%</div><div>.</div></div>

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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	 93% 6%
35	g	121	 83% 10% 7%
36	h	120	 83% 16%
37	i	100	 76% 23%
38	j	88	 86% 13%
39	k	78	 88% 10%
40	l	51	 78% 20%
41	m	128	 35% 5% 59%
42	o	106	 82% 17%
43	p	92	 80% 18%
44	q	312	 33% 6% 62%
45	x	616	 87% 6% 6%
46	y	401	 50% 46%
47	z	95	 89% 11%

2 Entry composition

There are 49 unique types of molecules in this entry. The entry contains 129386 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 ribosomal RNA.

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 ribosomal RNA.

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 ribosomal RNA.

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 EL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	E	175	Total	C	N	O	S	0	0
			1356	878	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	217	Total	C	H	N	O	S	0	0
			1788	1131	3	324	322	8		

- 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	Mg	0
			1	1	
48	B	2	Total	Mg	0
			2	2	
48	C	1	Total	Mg	0
			1	1	
48	V	1	Total	Mg	0
			1	1	
48	7	6	Total	Mg	0
			6	6	
48	N	1	Total	Mg	0
			1	1	
48	5	259	Total	Mg	0
			259	259	
48	8	7	Total	Mg	0
			7	7	
48	R	1	Total	Mg	0
			1	1	
48	y	1	Total	Mg	0
			1	1	

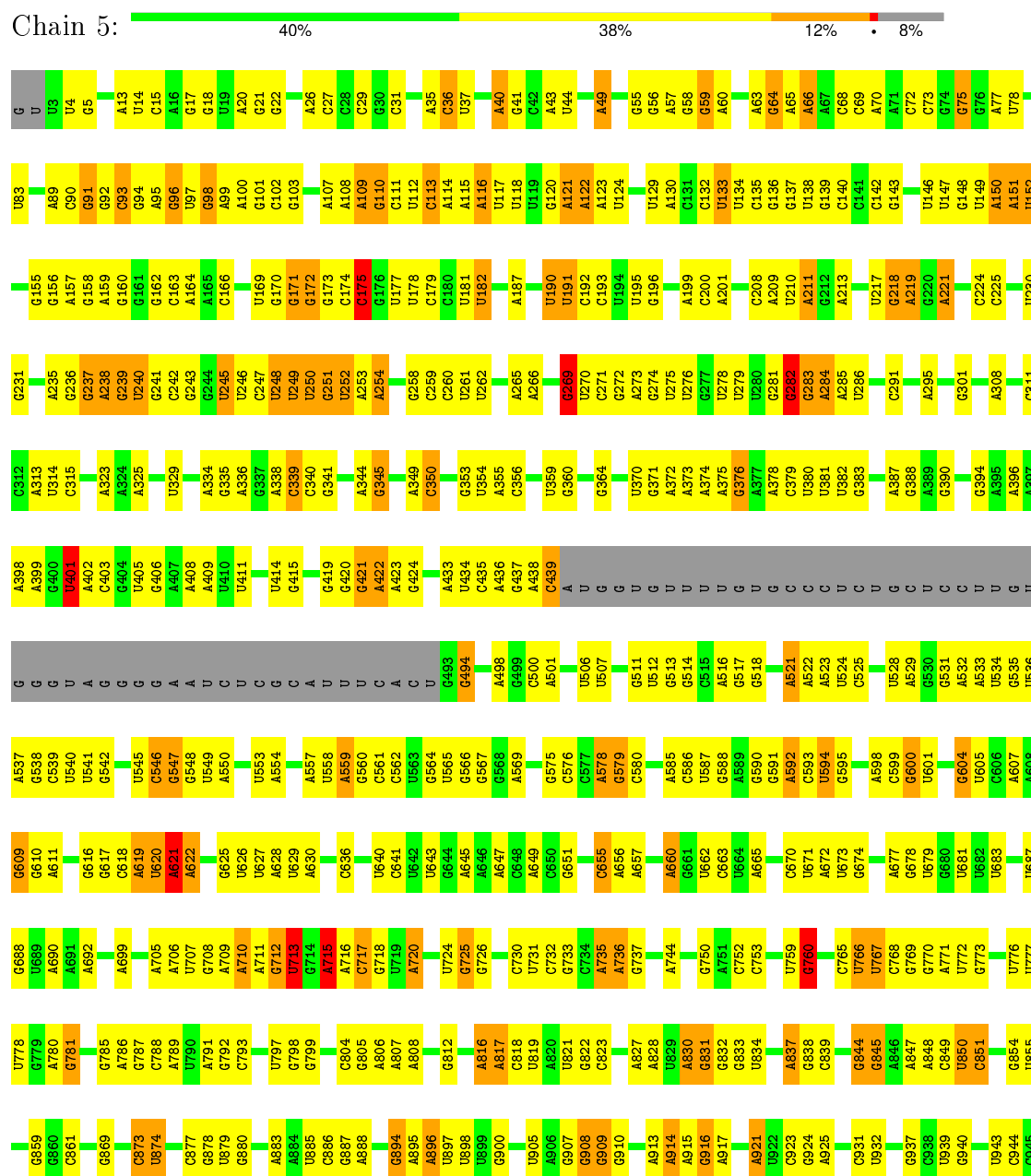
- Molecule 49 is ZINC ION (three-letter code: ZN) (formula: Zn).

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

3 Residue-property plots

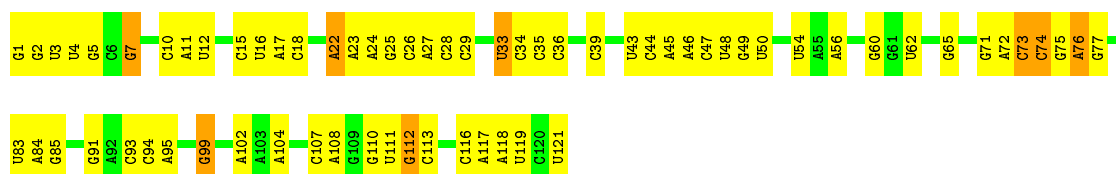
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded according to the number of geometric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

• Molecule 1: 25S ribosomal RNA



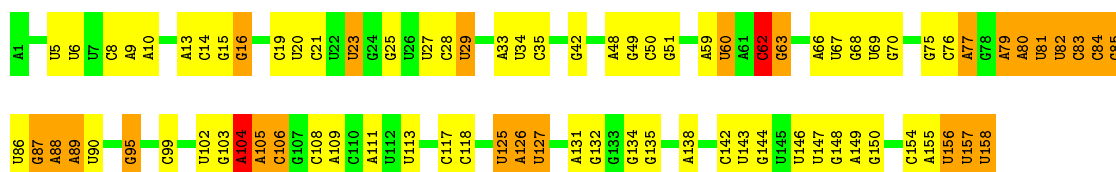
A2164	P5P	A1864	Y5P	C1578	G1493	A1394	U1315	G1243	G1171	G1088	G	U946
A2168	P5P	A1865	Y5P	C1579	U1494	G1395	C1316	A1244	G1172	G1090	G	G947
G2169	P5P	C1866	Y5P	A1580	U1495	G1396	A1317	G1245	U1173	C1091	G	C948
U2175	P5P	C1870	Y5P	C1581	U1496	C1397	A1318	G1246	U1174	C1092	U	C949
U2176	P5P	C1874	Y5P	C1582	U1501	G1398	G1319	U1247	C1175	A1093	C	G950
G2177	P5P	U1875	Y5P	A1583	C1502	A1399	C1320	G1248	A1180	U1094	G	A951
A2178	P5P	U1876	Y5P	U1584	A1503	G1400	G1321	A1251	U1181	U1095	A	A952
C2179	P5P	U1877	Y5P	A1587	A1506	G1408	U1322	A1252	A1182	U1096	A	G953
G2180	P5P	U1878	Y5P	A1588	C1507	U1415	G1323	U1253	C1183	G1097	A	
C2181	P5P	G1794	Y5P	A1589	C1508	G1416	U1324	U1254	A1184	A1098	U	U956
U2185	P5P	U1795	Y5P	A1593	G1510	G1417	C1327	G1257	G1185	G1101	G	C959
G2186	P5P	G1796	Y5P	C1596	G1514	G1418	C1328	A1258	G1186	A1102	A	U960
U2187	P5P	A1797	Y5P	G1598	U1521	A1419	U1329	A1259	C1187	A1103	C	C961
G2190	P5P	A1803	Y5P	A1603	G1522	G1420	A1330	G1260	U1188	G1104	U	
U2191	P5P	A1804	Y5P	U1607	U1523	G1421	C1331	G1261	C1189	U1108	G1035	G968
U2192	P5P	U1807	Y5P	C1608	U1524	G1422	A1332	A1262	A1190	U1109	A1036	C969
G2193	P5P	G1812	Y5P	G1611	A1525	G1426	C1333	G1263	U1191	U1110	A1037	A970
A2198	P5P	A1813	Y5P	U1620	U1526	U1430	A1334	U1265	C1192	U1111	C1038	G971
G2199	P5P	A1814	Y5P	A1621	U1532	G1431	C1342	U1267	C1196	U1039	U1039	A972
U2200	P5P	A1815	Y5P	C1609	U1533	G1432	A1343	G1268	A1197	A1040	A1040	G974
G2201	P5P	G1816	Y5P	G1610	A1534	G1433	G1344	U1269	C1198	A1047	A1047	C977
C2204	P5P	U1817	Y5P	G1611	U1535	G1434	G1345	A1270	C1199	A1048	A1048	G978
U2205	P5P	G1818	Y5P	U1622	U1536	G1435	C1346	A1271	A1200	C1049	C1049	U979
G2209	P5P	U1819	Y5P	U1626	U1537	G1441	U1347	A1272	A1201	U1050	U1050	A980
G2210	P5P	U1720	Y5P	U1629	U1544	U1444	G1349	A1273	A1202	U1051	U1051	A981
U2211	P5P	U1721	Y5P	U1630	C1551	U1445	C1349	A1274	A1203	C982	C982	C982
C2212	P5P	U1722	Y5P	U1631	U1552	U1446	A1350	G1275	A1204	A1052	A1052	A983
A2213	P5P	A1723	Y5P	A1632	U1553	U1447	U1351	U1276	U1210	A1053	A1053	G984
G2214	P5P	C1822	Y5P	U1633	U1554	G1450	G1357	G1282	U1211	A1054	A1054	U985
A2215	P5P	U1823	Y5P	U1635	U1555	U1451	C1358	C1283	A1217	A1057	A1057	U986
G2216	P5P	U1824	Y5P	U1636	C1556	U1452	C1359	G1284	U1220	A1062	A1062	U987
U2219	P5P	G1825	Y5P	A1637	U1557	U1453	C1360	G1285	A1221	A1063	A1063	G991
A2220	P5P	U1830	Y5P	C1638	A1558	U1454	U1361	A1286	A1222	A1065	A1065	A992
G2221	P5P	C1832	Y5P	U1640	U1560	U1470	C1362	A1289	A1223	G1066	G1066	G993
A2222	P5P	U1835	Y5P	U1641	G1561	U1471	A1363	A1290	A1224	G994	G994	G994
C2223	P5P	C1836	Y5P	A1642	U1562	U1472	C1364	A1291	G1225	U995	U995	A996
U2225	P5P	A1836	Y5P	U1643	U1563	G1473	G1377	A1294	C1226	U1070	U1070	A997
C2226	P5P	U1839	Y5P	U1644	U1564	U1474	C1380	G1295	A1227	U1071	U1071	A998
G2227	P5P	A1840	Y5P	A1645	U1565	U1475	A1381	A1301	G1228	G1072	G1072	A999
A2228	P5P	U1841	Y5P	G1646	U1566	U1476	G1382	A1302	U1151	U1073	U1073	G999
C2229	P5P	A1842	Y5P	U1649	U1568	U1477	U1383	A1303	C1152	A1074	A1074	C1000
G2230	P5P	U1843	Y5P	G1650	U1569	U1478	C1385	A1304	A1154	C1076	C1076	A1002
C2231	P5P	G1845	Y5P	U1651	U1570	U1479	A1386	A1305	C1155	U1077	U1077	U1008
A2232	P5P	C1846	Y5P	G1652	A1571	U1480	A1387	U1306	G1156	A1078	A1078	A1009
G2233	P5P	U1849	Y5P	G1653	U1572	U1481	G1388	G1307	A1158	A1080	A1080	G1010
C2234	P5P	C1849	Y5P	A1654	U1573	U1482	U1389	A1308	C1160	U1081	U1081	A1011
G2235	P5P	A1850	Y5P	U1655	C1574	U1483	A1390	U1309	C1161	U1082	U1082	G1012
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	P5P								U1088	U1088	U1088	G

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U3340	U3340	A3244	U3187	U3100	U3028	U2952	U2952	U2770	U2606	U2606	U2482	U2408	C
U3341	U3341	G3250	A3188	U3101	U3029	U2953	U2953	U2771	U2607	U2607	U2483	U2409	C
U3342	U3342	U3251	C3189	U3102	U3030	U2954	U2954	U2772	U2608	U2608	U2484	U2410	C
U3343	U3343	A3245	U3189	U3103	U3031	U2955	U2955	U2773	U2609	U2609	U2485	U2411	C
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U3345	U3345	C3253	U3191	U3105	U3033	U2957	U2957	U2775	U2611	U2611	U2487	U2413	C
U3346	U3346	A3246	U3192	U3106	U3034	U2958	U2958	U2776	U2612	U2612	U2488	U2414	C
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U3350	U3350	C3256	U3196	U3110	U3038	U2962	U2962	U2780	U2616	U2616	U2492	U2418	C
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U3352	U3352	U3256	C3198	U3112	U3040	U2964	U2964	U2782	U2618	U2618	U2494	U2420	C
U3353	U3353	A3249	U3198	U3113	U3041	U2965	U2965	U2783	U2619	U2619	U2495	U2421	C
U3354	U3354	U3257	A3199	U3114	U3042	U2966	U2966	U2784	U2620	U2620	U2496	U2422	C
U3355	U3355	C32											



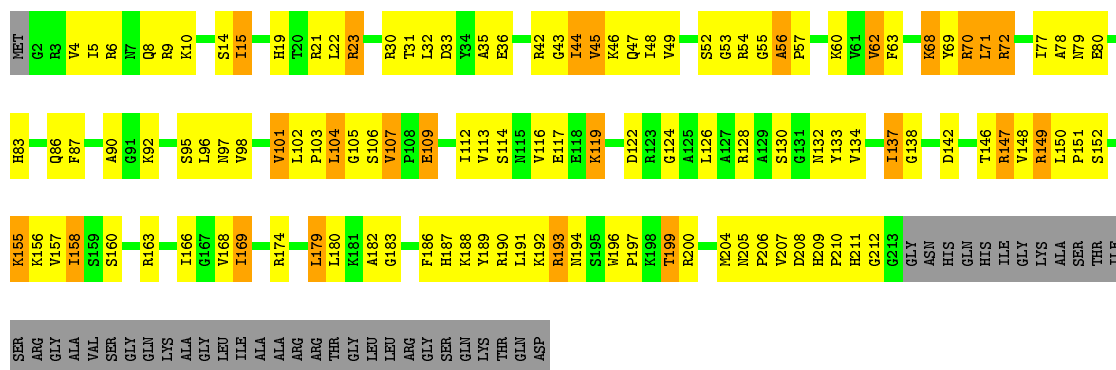
• Molecule 3: 5.8S ribosomal RNA

Chain 8: 47% 35% 16%



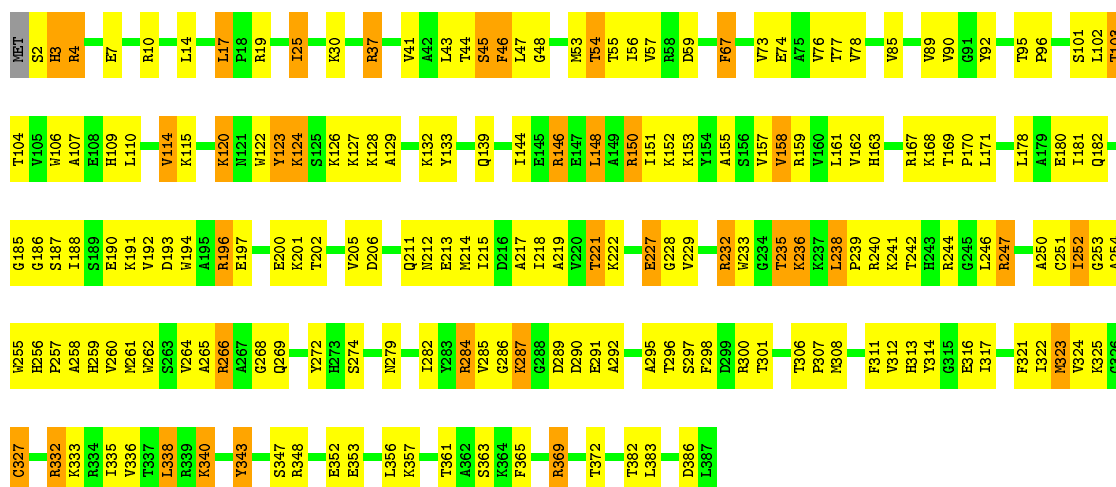
• Molecule 4: 60S ribosomal protein L2-A

Chain A: 36% 38% 9% 17%

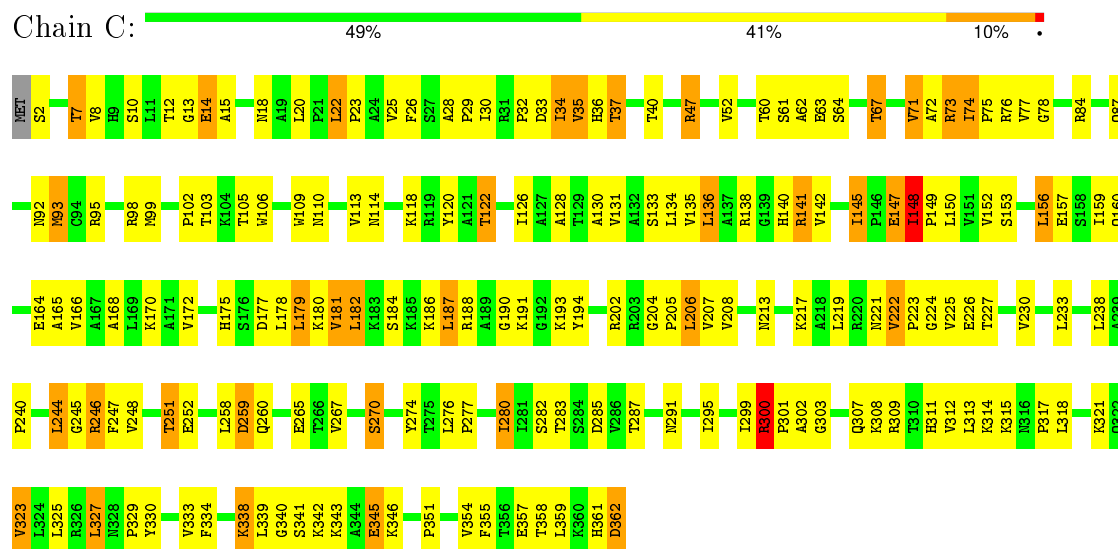


• Molecule 5: 60S ribosomal protein L3

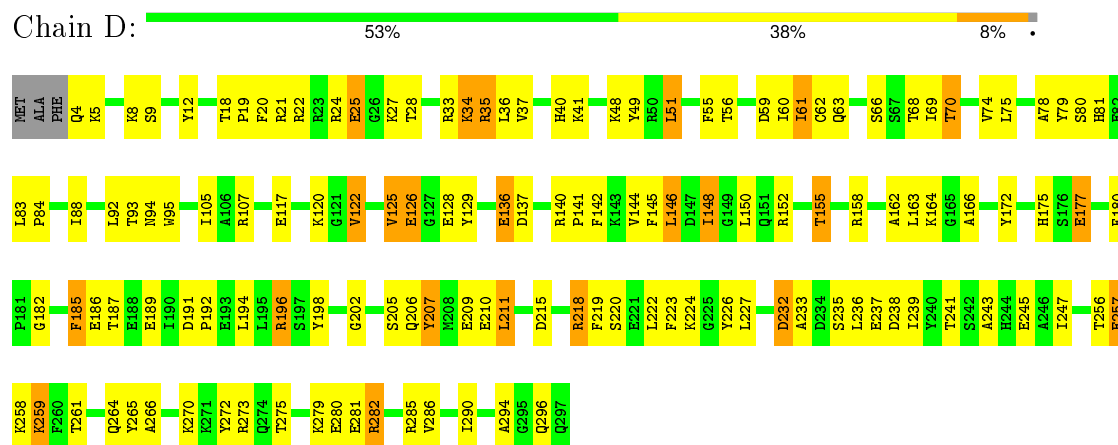
Chain B: 50% 40% 10%



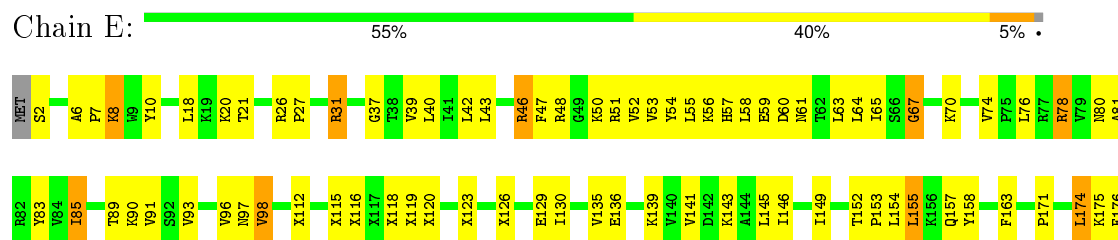
• Molecule 6: 60S ribosomal protein L4-A



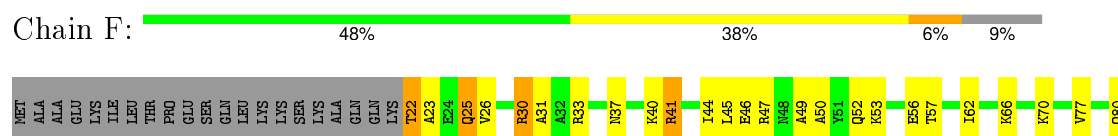
- Molecule 7: 60S ribosomal protein L5

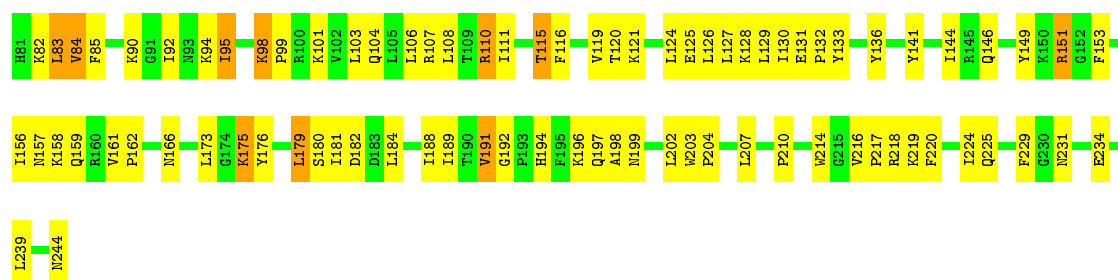


- Molecule 8: 60S RIBOSOMAL PROTEIN EL6



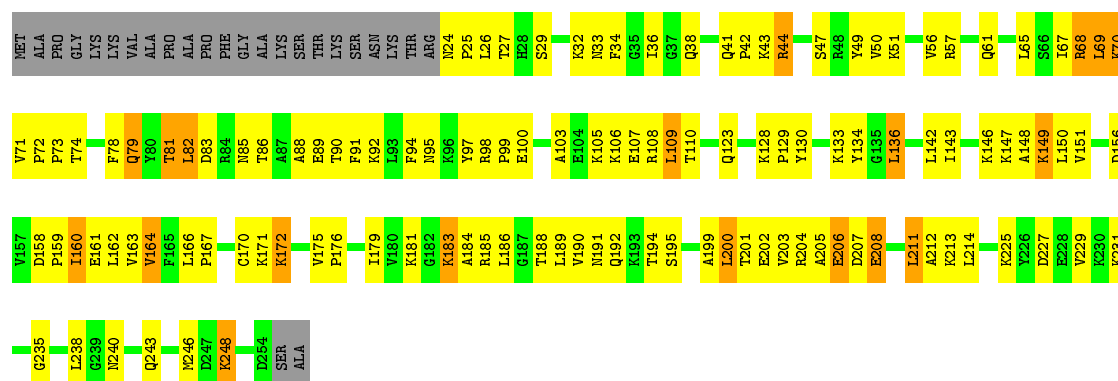
- Molecule 9: 60S ribosomal protein L7-A





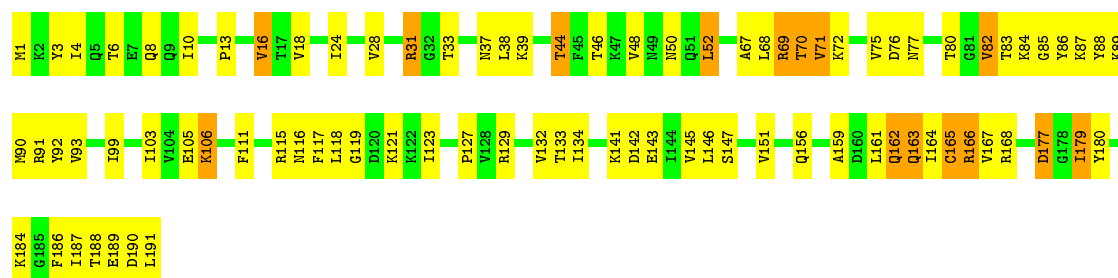
- Molecule 10: 60S ribosomal protein L8-A

Chain G: 43% 40% 7% 10%



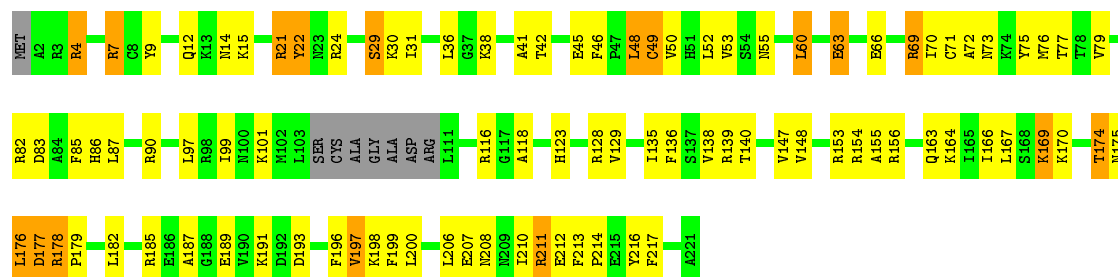
- Molecule 11: 60S ribosomal protein L9-A

Chain H: 54% 38% 8%

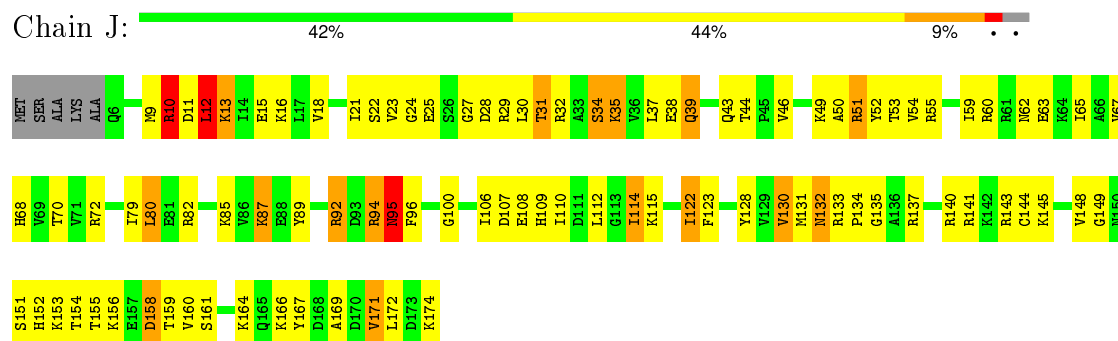


- Molecule 12: 60S ribosomal protein L10

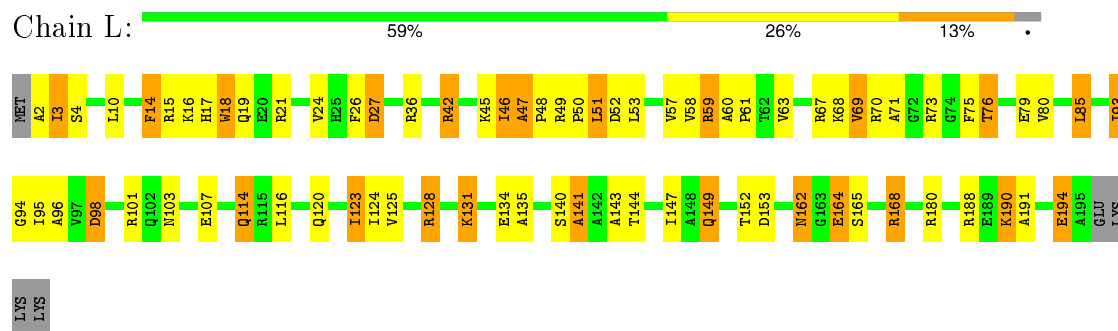
Chain I: 54% 35% 8%



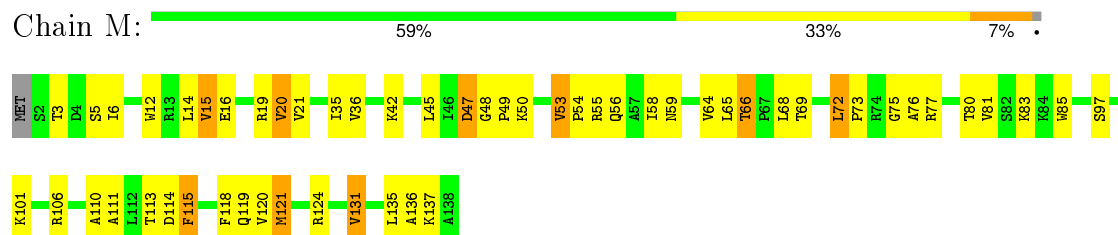
- Molecule 13: 60S ribosomal protein L11-A



- Molecule 14: 60S ribosomal protein L13-A



- Molecule 15: 60S ribosomal protein L14-A

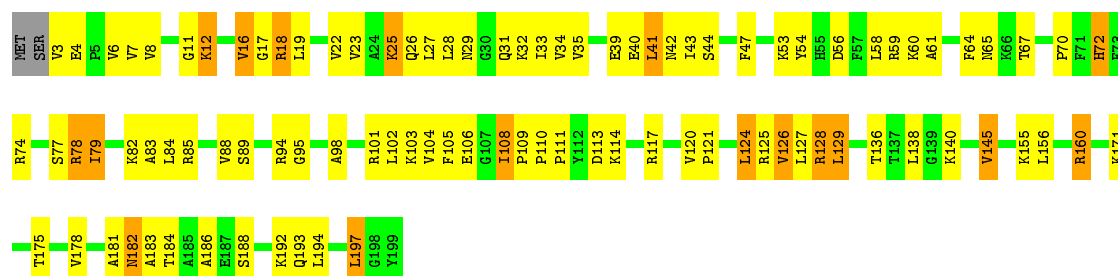


- Molecule 16: 60S ribosomal protein L15-A



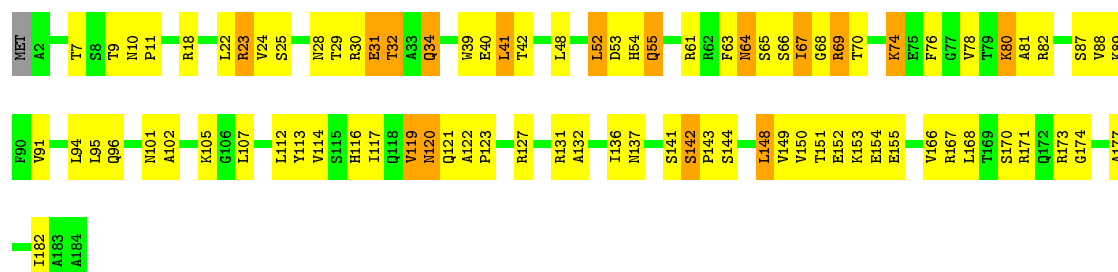
- Molecule 17: 60S ribosomal protein L16-A





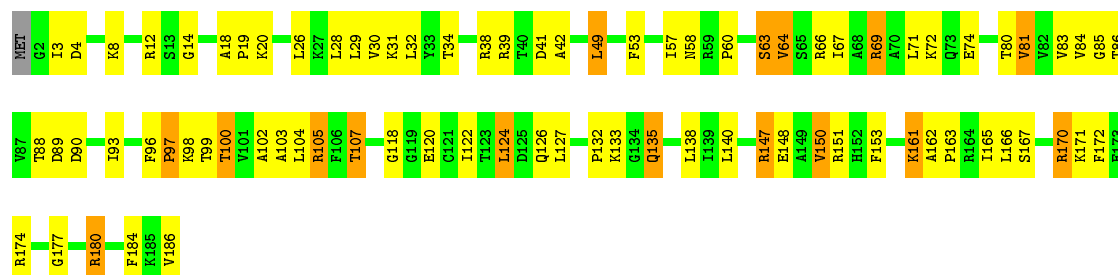
• Molecule 18: 60S ribosomal protein L17-A

Chain P: 53% 38% 9%



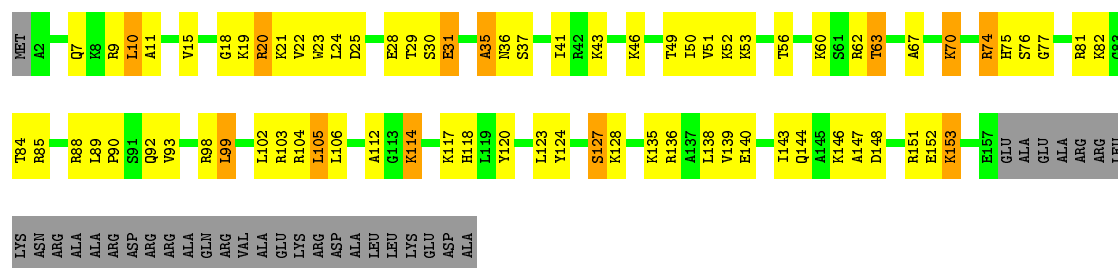
• Molecule 19: 60S ribosomal protein L18-A

Chain Q: 55% 35% 9%



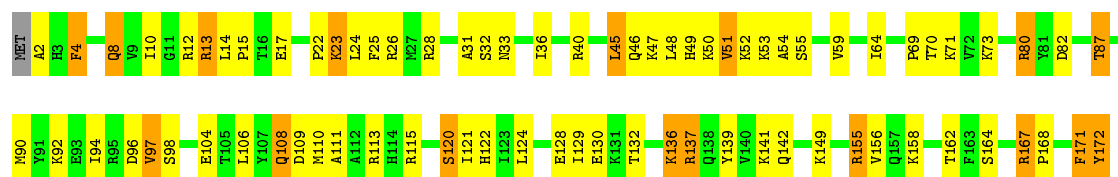
• Molecule 20: 60S ribosomal protein L19-A

Chain R: 42% 34% 6% 17%



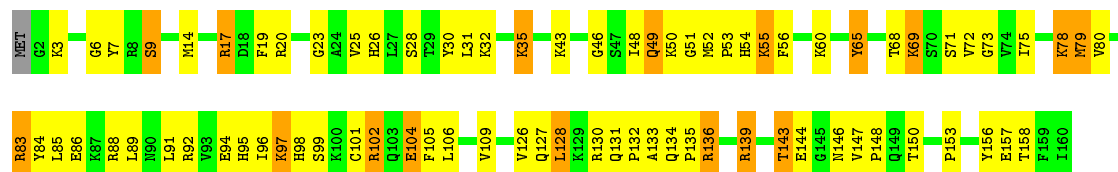
• Molecule 21: 60S ribosomal protein L20-A

Chain S: 55% 35% 10%



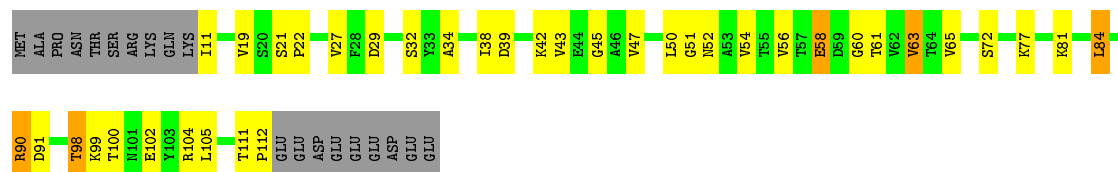
- Molecule 22: 60S ribosomal protein L21-A

Chain T: 50% 39% 11%



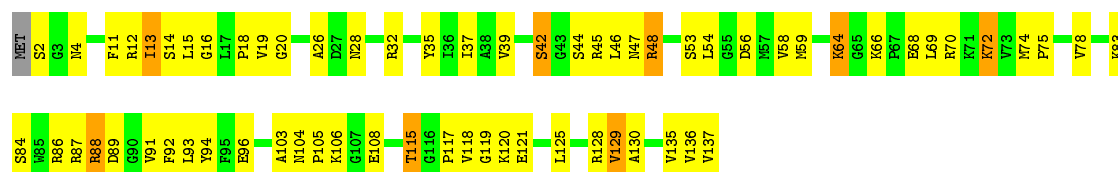
- Molecule 23: 60S ribosomal protein L22-A

Chain U: 53% 27% 16%



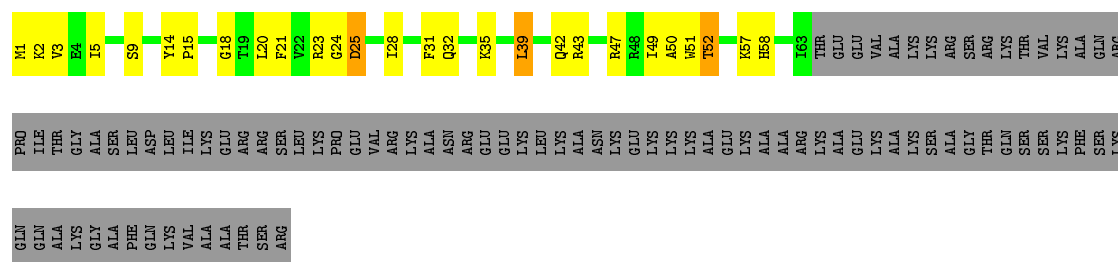
- Molecule 24: 60S ribosomal protein L23-A

Chain V: 51% 42% 6%



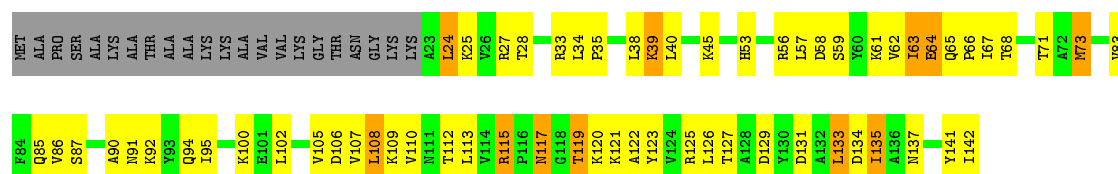
- Molecule 25: 60S ribosomal protein L24-A

Chain W: 23% 15% 59%

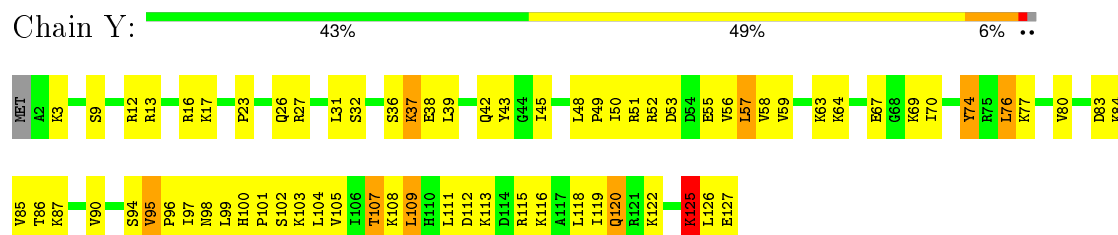


- Molecule 26: 60S ribosomal protein L25

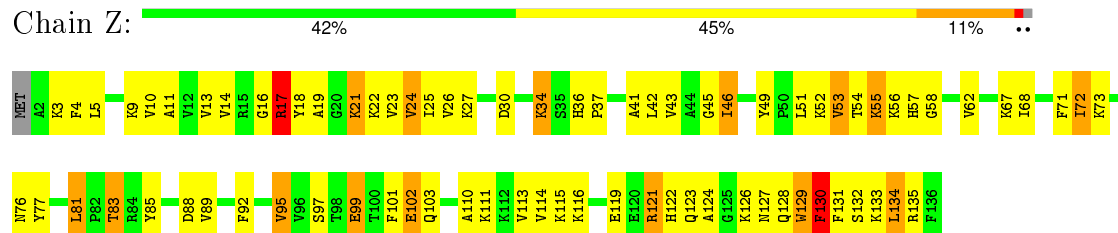
Chain X: 40% 37% 8% 15%



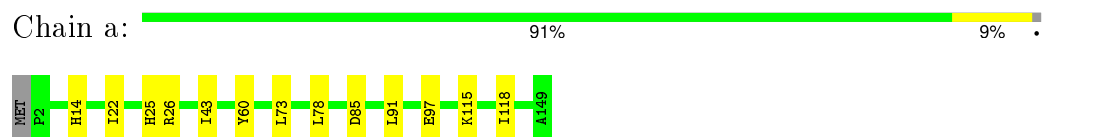
- Molecule 27: 60S ribosomal protein L26-A



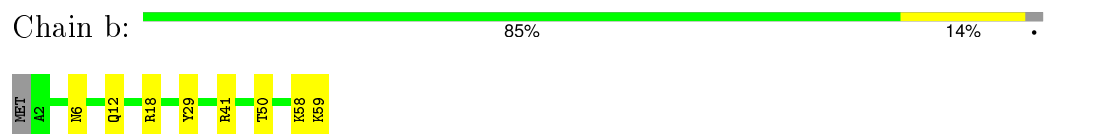
- Molecule 28: 60S ribosomal protein L27-A



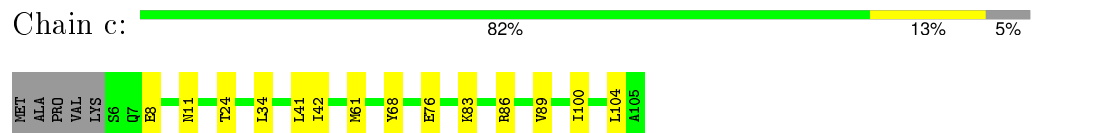
- Molecule 29: 60S ribosomal protein L28



- Molecule 30: 60S ribosomal protein L29



- Molecule 31: 60S ribosomal protein L30



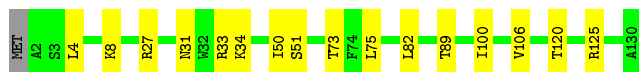
- Molecule 32: 60S ribosomal protein L31-A





- Molecule 33: 60S ribosomal protein L32

Chain e: 87% 12%



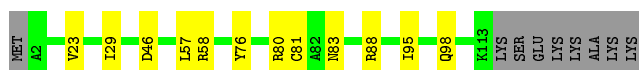
- Molecule 34: 60S ribosomal protein L33-A

Chain f: 93% 6%



- Molecule 35: 60S ribosomal protein L34-A

Chain g: 83% 10% 7%



- Molecule 36: 60S ribosomal protein L35-A

Chain h: 83% 16%



- Molecule 37: 60S ribosomal protein L36-A

Chain i: 76% 23%



- Molecule 38: 60S ribosomal protein L37-A

Chain j: 86% 13%

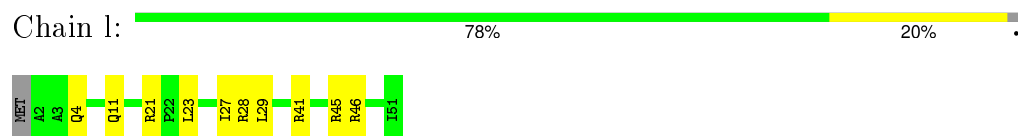


- Molecule 39: 60S ribosomal protein L38

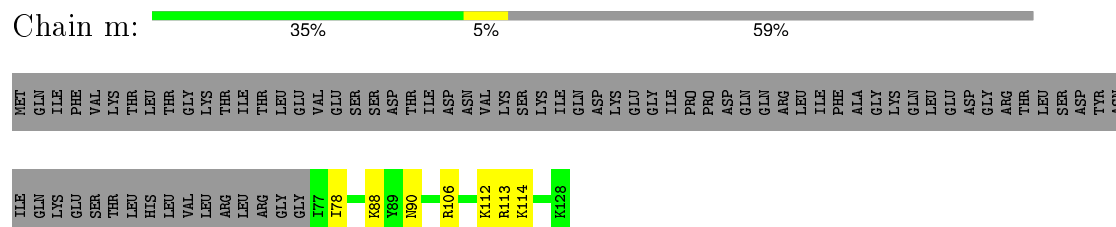
Chain k: 88% 10%



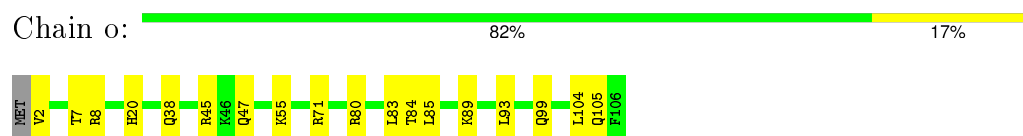
- Molecule 40: 60S ribosomal protein L39



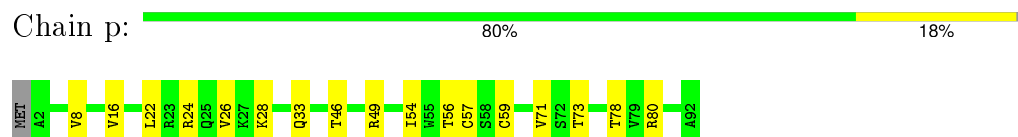
- Molecule 41: Ubiquitin-60S ribosomal protein L40



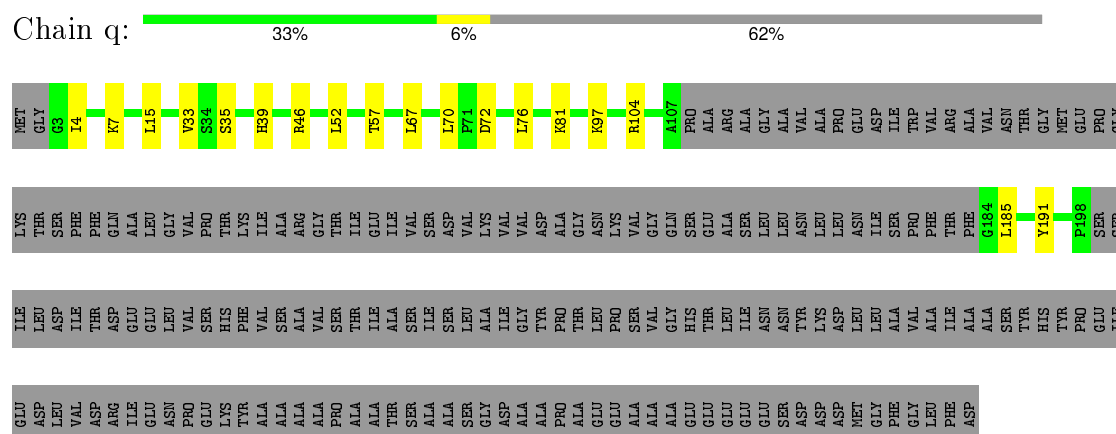
- Molecule 42: 60S ribosomal protein L42-A



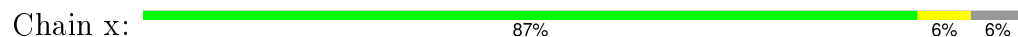
- Molecule 43: 60S ribosomal protein L43-A

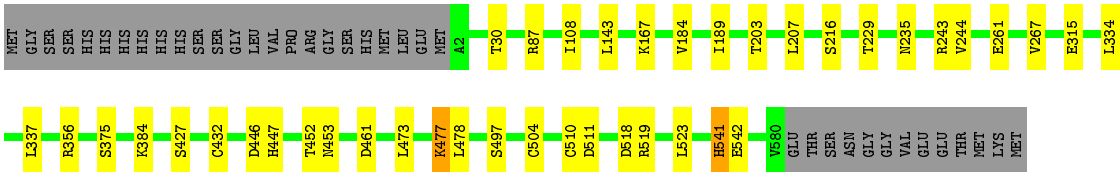


- Molecule 44: 60S acidic ribosomal protein P0

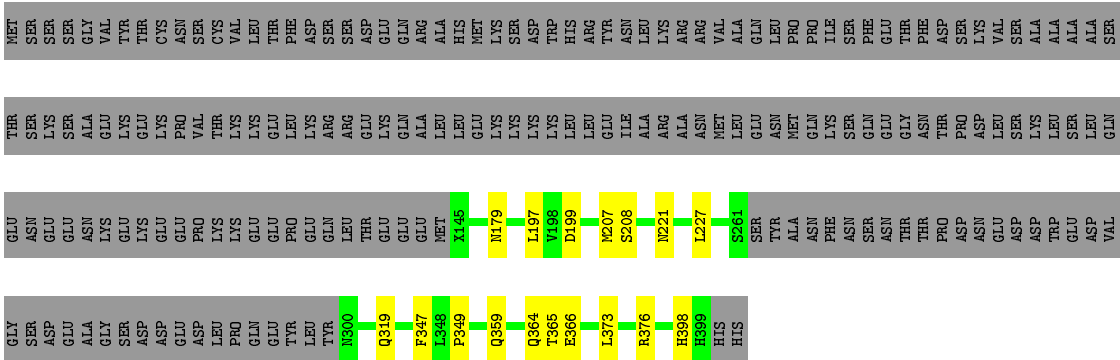


- Molecule 45: Probable metalloprotease ARX1

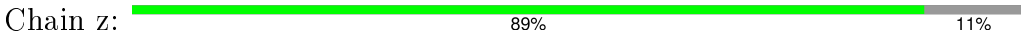




● Molecule 46: CYTOPLASMIC 60S SUBUNIT BIOGENESIS FACTOR REI1



● Molecule 47: ALB1



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 ($e^-/\text{\AA}^2$)	20	Depositor
Minimum defocus (nm)	800.00	Depositor
Maximum defocus (nm)	3000.00	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	0.66	12/74039 (0.0%)	1.09	121/115426 (0.1%)
10	G	0.38	0/1795	0.58	0/2429
11	H	0.40	0/1539	0.54	0/2073
12	I	0.36	0/1758	0.57	0/2358
13	J	0.34	0/1374	0.55	0/1842
14	L	0.46	0/1573	0.61	0/2113
15	M	0.38	0/1074	0.55	0/1446
16	N	0.52	0/1757	0.65	0/2354
17	O	0.48	0/1585	0.63	1/2128 (0.0%)
18	P	0.50	0/1465	0.60	0/1968
19	Q	0.42	0/1465	0.61	0/1965
2	7	0.41	0/2883	0.90	1/4491 (0.0%)
20	R	0.39	0/1275	0.52	0/1702
21	S	0.45	0/1473	0.59	0/1980
22	T	0.42	0/1300	0.56	0/1743
23	U	0.36	0/825	0.56	0/1120
24	V	0.43	0/1018	0.60	0/1369
25	W	0.40	0/533	0.53	0/707
26	X	0.42	0/974	0.62	0/1314
27	Y	0.43	0/1004	0.62	0/1341
28	Z	0.38	0/1118	0.62	0/1497
29	a	0.47	0/1204	0.64	0/1612
3	8	0.69	0/3746	1.12	8/5832 (0.1%)
30	b	0.39	0/473	0.53	0/629
31	c	0.35	0/775	0.52	0/1040
32	d	0.46	0/897	0.62	0/1205
33	e	0.52	0/1055	0.63	0/1413
34	f	0.52	0/868	0.67	0/1168
35	g	0.43	0/890	0.63	0/1189
36	h	0.42	0/974	0.58	0/1297
37	i	0.35	0/777	0.55	0/1033
38	j	0.51	0/696	0.65	0/923

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >2	RMSZ	# Z >2
39	k	0.34	0/614	0.53	0/822
4	A	0.41	0/1662	0.60	0/2236
40	l	0.46	0/443	0.57	0/588
41	m	0.40	0/423	0.55	0/562
42	o	0.41	0/860	0.56	0/1136
43	p	0.46	0/701	0.62	0/934
44	q	0.58	0/977	0.61	0/1313
45	x	0.37	0/4557	0.57	0/6189
46	y	0.39	0/1746	0.54	0/2346
5	B	0.46	0/3146	0.59	0/4228
6	C	0.47	0/2800	0.67	1/3790 (0.0%)
7	D	0.34	0/2408	0.50	0/3248
8	E	0.39	0/1269	0.58	0/1705
9	F	0.46	0/1828	0.58	0/2461
All	All	0.57	12/137616 (0.0%)	0.93	132/202265 (0.1%)

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
14	L	0	1
16	N	0	1
27	Y	0	1
28	Z	0	1
32	d	0	3
37	i	0	1
45	x	0	3
46	y	0	1
6	C	0	3
8	E	0	1
All	All	0	16

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	5	1152	G	N9-C4	-7.14	1.32	1.38
1	5	2368	A	N9-C4	-6.55	1.33	1.37
1	5	336	A	N9-C4	-6.44	1.33	1.37
1	5	2392	C	N1-C6	-6.25	1.33	1.37
1	5	1446	A	N9-C4	-6.19	1.34	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	5	1886	A	N9-C4	-5.73	1.34	1.37
1	5	660	A	N9-C4	-5.60	1.34	1.37
1	5	1723	A	N9-C4	-5.55	1.34	1.37
1	5	1197	A	N9-C4	-5.41	1.34	1.37
1	5	1842	A	N9-C4	-5.32	1.34	1.37
1	5	2368	A	N3-C4	-5.19	1.31	1.34
1	5	408	A	C6-N1	-5.03	1.32	1.35

All (132) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	1152	G	N3-C4-C5	10.03	133.61	128.60
1	5	408	A	N1-C6-N6	-8.94	113.24	118.60
1	5	1232	C	O4'-C1'-N1	8.59	115.07	108.20
1	5	2193	U	N1-C2-N3	8.32	119.89	114.90
3	8	62	C	C6-N1-C2	8.32	123.63	120.30
1	5	2307	G	C4-N9-C1'	-8.29	115.72	126.50
1	5	1152	G	N3-C4-N9	-8.06	121.16	126.00
3	8	27	U	C5-C6-N1	-7.88	118.76	122.70
1	5	64	G	N3-C4-N9	7.87	130.72	126.00
1	5	2307	G	C8-N9-C1'	7.73	137.05	127.00
1	5	1555	U	N3-C2-O2	-7.54	116.92	122.20
1	5	1812	G	N3-C4-N9	-7.10	121.74	126.00
1	5	1836	C	C6-N1-C2	-6.94	117.52	120.30
1	5	1607	U	P-O3'-C3'	6.82	127.89	119.70
1	5	1522	U	C5-C6-N1	-6.72	119.34	122.70
1	5	1631	C	C2-N1-C1'	-6.71	111.42	118.80
1	5	2808	A	O4'-C1'-N9	6.71	113.56	108.20
1	5	339	C	N1-C2-O2	-6.59	114.94	118.90
1	5	982	C	C6-N1-C2	-6.59	117.67	120.30
1	5	643	U	C5-C6-N1	-6.54	119.43	122.70
1	5	982	C	N3-C2-O2	-6.54	117.33	121.90
1	5	621	A	C8-N9-C4	-6.53	103.19	105.80
1	5	894	G	C8-N9-C4	6.50	109.00	106.40
1	5	894	G	N3-C4-C5	6.48	131.84	128.60
1	5	753	C	C6-N1-C2	-6.28	117.79	120.30
1	5	767	U	O4'-C1'-N1	6.28	113.22	108.20
1	5	1332	A	C8-N9-C4	-6.28	103.29	105.80
1	5	821	U	N1-C2-O2	-6.22	118.44	122.80
1	5	953	G	N1-C6-O6	-6.20	116.18	119.90
1	5	821	U	C2-N1-C1'	-6.15	110.32	117.70
1	5	35	A	N1-C2-N3	6.10	132.35	129.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	1172	G	N3-C4-C5	-6.07	125.57	128.60
1	5	1631	C	C6-N1-C1'	6.06	128.08	120.80
1	5	931	C	N1-C2-O2	-6.04	115.27	118.90
1	5	408	A	N9-C4-C5	6.04	108.22	105.80
1	5	1151	U	C4-C5-C6	6.03	123.32	119.70
1	5	1555	U	P-O3'-C3'	6.02	126.92	119.70
1	5	99	A	N1-C2-N3	6.00	132.30	129.30
2	7	85	G	C8-N9-C4	5.93	108.77	106.40
1	5	645	A	C2-N3-C4	5.92	113.56	110.60
1	5	1175	C	C5-C6-N1	-5.91	118.05	121.00
1	5	2949	U	C5-C6-N1	-5.91	119.75	122.70
1	5	2307	G	N3-C4-N9	-5.90	122.46	126.00
1	5	360	G	N3-C4-C5	-5.89	125.66	128.60
1	5	645	A	N3-C4-C5	-5.88	122.68	126.80
1	5	64	G	N3-C4-C5	-5.87	125.66	128.60
1	5	3335	A	C8-N9-C4	-5.83	103.47	105.80
1	5	2379	U	C5-C6-N1	-5.79	119.80	122.70
1	5	72	C	C5-C6-N1	-5.78	118.11	121.00
1	5	1174	G	C4-N9-C1'	5.71	133.93	126.50
1	5	2193	U	C2-N3-C4	-5.71	123.57	127.00
1	5	2659	G	C8-N9-C4	5.71	108.69	106.40
1	5	3373	U	C5-C6-N1	-5.71	119.84	122.70
3	8	99	C	C6-N1-C2	5.67	122.57	120.30
1	5	66	A	C8-N9-C4	5.65	108.06	105.80
1	5	943	U	C5-C6-N1	-5.64	119.88	122.70
1	5	1723	A	C2-N3-C4	-5.56	107.82	110.60
1	5	2380	U	C5-C6-N1	-5.55	119.92	122.70
1	5	1151	U	N1-C2-N3	5.55	118.23	114.90
1	5	3089	C	C6-N1-C2	5.54	122.52	120.30
1	5	282	G	N3-C4-C5	-5.54	125.83	128.60
1	5	1555	U	N1-C2-O2	5.53	126.67	122.80
1	5	1348	U	N1-C1'-C2'	-5.51	105.93	112.00
1	5	1172	G	C4-N9-C1'	5.50	133.65	126.50
1	5	645	A	C6-N1-C2	-5.47	115.32	118.60
1	5	339	C	N1-C2-N3	5.43	123.00	119.20
1	5	1199	C	C6-N1-C2	5.43	122.47	120.30
1	5	1832	C	C6-N1-C2	5.41	122.46	120.30
1	5	816	A	C4-C5-C6	5.39	119.69	117.00
1	5	760	G	O4'-C1'-N9	5.38	112.51	108.20
1	5	931	C	C5-C6-N1	-5.38	118.31	121.00
1	5	1836	C	N3-C2-O2	-5.37	118.14	121.90
1	5	2231	C	C6-N1-C2	-5.34	118.16	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	3047	U	C5-C6-N1	-5.34	120.03	122.70
1	5	2584	G	C4-N9-C1'	5.34	133.44	126.50
1	5	1812	G	N3-C4-C5	5.34	131.27	128.60
1	5	2288	G	C4-N9-C1'	5.34	133.44	126.50
1	5	1348	U	C3'-C2'-C1'	-5.33	97.24	101.50
1	5	655	C	N1-C2-O2	-5.33	115.70	118.90
1	5	713	U	N3-C2-O2	-5.31	118.48	122.20
1	5	2307	G	C6-C5-N7	5.31	133.59	130.40
1	5	1174	G	N3-C4-C5	-5.31	125.95	128.60
1	5	1478	C	C6-N1-C2	5.31	122.42	120.30
1	5	175	C	C2-N1-C1'	5.29	124.61	118.80
1	5	93	C	C6-N1-C2	5.27	122.41	120.30
1	5	1152	G	C4-N9-C1'	-5.24	119.68	126.50
3	8	16	G	N9-C4-C5	-5.24	103.31	105.40
1	5	1418	A	C8-N9-C4	5.23	107.89	105.80
3	8	19	C	N3-C4-C5	5.22	123.99	121.90
1	5	72	C	C6-N1-C2	5.21	122.39	120.30
1	5	2390	A	C2-N3-C4	-5.21	108.00	110.60
1	5	621	A	N7-C8-N9	5.20	116.40	113.80
17	O	27	LEU	CA-CB-CG	-5.20	103.34	115.30
1	5	3140	G	C4-N9-C1'	5.19	133.24	126.50
1	5	2659	G	N9-C4-C5	-5.18	103.33	105.40
1	5	2388	U	C2-N3-C4	-5.18	123.89	127.00
1	5	715	A	P-O3'-C3'	5.17	125.91	119.70
1	5	64	G	C8-N9-C1'	-5.17	120.28	127.00
1	5	2307	G	N3-C4-C5	5.17	131.19	128.60
1	5	1716	U	P-O3'-C3'	5.16	125.90	119.70
1	5	401	U	C5-C6-N1	-5.16	120.12	122.70
6	C	244	LEU	CA-CB-CG	-5.16	103.44	115.30
1	5	2572	C	N1-C2-O2	5.16	121.99	118.90
1	5	1172	G	N3-C4-N9	5.15	129.09	126.00
1	5	831	G	C8-N9-C4	-5.15	104.34	106.40
1	5	2376	G	C4-C5-N7	5.14	112.86	110.80
1	5	1770	G	C4-N9-C1'	5.14	133.19	126.50
1	5	645	A	C5-C6-N1	5.14	120.27	117.70
1	5	804	C	C4-C5-C6	5.14	119.97	117.40
1	5	3282	U	C2-N1-C1'	5.14	123.86	117.70
1	5	821	U	C5-C6-N1	-5.13	120.13	122.70
1	5	1535	A	N1-C6-N6	-5.13	115.52	118.60
1	5	35	A	C6-N1-C2	-5.13	115.52	118.60
1	5	1152	G	C2-N3-C4	-5.12	109.34	111.90
1	5	27	C	C6-N1-C2	5.11	122.34	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	2568	C	O4'-C1'-N1	5.10	112.28	108.20
1	5	36	C	C2-N3-C4	-5.10	117.35	119.90
1	5	2660	G	N9-C4-C5	-5.10	103.36	105.40
1	5	269	G	C8-N9-C4	5.09	108.44	106.40
1	5	345	G	C4-C5-C6	5.08	121.85	118.80
1	5	360	G	N3-C4-N9	5.08	129.05	126.00
1	5	1887	A	C8-N9-C4	5.08	107.83	105.80
1	5	1417	G	C8-N9-C4	5.07	108.43	106.40
3	8	104	A	C8-N9-C4	5.07	107.83	105.80
1	5	221	A	N1-C6-N6	-5.07	115.56	118.60
1	5	2337	C	N1-C2-O2	-5.06	115.86	118.90
1	5	3022	G	O4'-C1'-N9	5.05	112.24	108.20
3	8	29	U	C5-C6-N1	-5.04	120.18	122.70
1	5	3093	C	C6-N1-C2	5.02	122.31	120.30
3	8	104	A	C6-N1-C2	-5.02	115.59	118.60
1	5	859	G	C8-N9-C4	-5.01	104.40	106.40
1	5	2193	U	C6-N1-C1'	5.00	128.20	121.20

There are no chirality outliers.

All (16) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
6	C	145	ILE	Peptide
6	C	148	ILE	Peptide
6	C	300	ARG	Peptide
8	E	67	GLY	Peptide
14	L	141	ALA	Peptide
16	N	184	LYS	Peptide
27	Y	125	LYS	Peptide
28	Z	101	PHE	Peptide
32	d	6	ASP	Peptide
32	d	82	GLU	Peptide
32	d	89	LEU	Peptide
37	i	32	ALA	Peptide
45	x	473	LEU	Peptide
45	x	477	LYS	Peptide
45	x	541	HIS	Peptide
46	y	349	PRO	Peptide

5.2 Too-close contacts ⓘ

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	5	66537	0	33466	1532	0
2	7	2579	0	1304	66	0
3	8	3353	0	1695	81	0
4	A	1630	0	1682	124	0
5	B	3075	0	3142	185	0
6	C	2748	0	2859	171	0
7	D	2359	0	2311	131	0
8	E	1356	0	1448	98	0
9	F	1791	0	1869	114	0
10	G	1763	0	1819	117	0
11	H	1518	0	1587	77	0
12	I	1722	0	1755	101	0
13	J	1353	0	1383	89	0
14	L	1548	0	1613	91	0
15	M	1059	0	1154	55	0
16	N	1720	0	1779	90	0
17	O	1555	0	1659	96	0
18	P	1442	0	1485	72	0
19	Q	1441	0	1543	77	0
20	R	1258	0	1342	70	0
21	S	1437	0	1475	77	0
22	T	1276	0	1323	87	0
23	U	808	0	822	24	0
24	V	1003	0	1048	71	0
25	W	521	0	551	26	0
26	X	959	0	1023	64	0
27	Y	993	0	1081	81	0
28	Z	1092	0	1155	73	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

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
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	1785	3	1755	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	2	0	0	0	0
48	C	1	0	0	0	0
48	N	1	0	0	0	0
48	P	1	0	0	0	0
48	R	1	0	0	0	0
48	V	1	0	0	0	0
48	y	1	0	0	0	0
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	129383	3	95404	3549	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 22.

All (3549) 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)
15:M:48:GLY:HA3	15:M:53:VAL:HG13	1.25	1.18
4:A:149:ARG:HH12	4:A:155:LYS:HE3	1.06	1.18
8:E:78:ARG:HG3	8:E:78:ARG:HH11	1.03	1.14
5:B:4:ARG:HG3	5:B:4:ARG:HH11	1.03	1.12
10:G:44:ARG:HH11	10:G:44:ARG:HG3	1.15	1.11
6:C:148:ILE:HG23	6:C:149:PRO:HD3	1.31	1.09
10:G:24:ASN:HB3	10:G:25:PRO:HD3	1.14	1.08
17:O:128:ARG:HH11	17:O:128:ARG:HB3	1.13	1.08

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:O:78:ARG:HG3	17:O:78:ARG:HH11	0.95	1.06
27:Y:45:ILE:HD11	27:Y:122:LYS:HE3	1.36	1.06
22:T:17:ARG:HH11	22:T:17:ARG:HG2	1.08	1.05
1:5:1324:U:H5''	21:S:2:ALA:HA	1.36	1.05
1:5:1133:A:H2'	1:5:1134:G:H5'	1.37	1.04
19:Q:86:THR:HG22	19:Q:105:ARG:HB3	1.39	1.04
13:J:51:ARG:HG3	13:J:51:ARG:HH11	0.96	1.04
10:G:70:LYS:HA	10:G:235:GLY:HA3	1.41	1.03
1:5:1764:U:H3'	1:5:1765:U:H2'	1.37	1.02
1:5:1581:C:H41	1:5:2522:G:H4'	1.19	1.02
24:V:48:ARG:HG3	24:V:48:ARG:HH11	1.25	1.02
19:Q:69:ARG:HH11	19:Q:69:ARG:HG3	1.16	1.01
1:5:1347:U:H5'	6:C:303:GLY:HA3	1.38	1.01
14:L:165:SER:HB3	14:L:168:ARG:HB3	1.43	0.99
1:5:375:A:H1'	27:Y:87:LYS:NZ	1.76	0.99
6:C:74:ILE:HD12	6:C:75:PRO:HD2	1.41	0.99
5:B:211:GLN:HE22	5:B:284:ARG:HA	1.28	0.98
10:G:24:ASN:HB3	10:G:25:PRO:CD	1.93	0.98
28:Z:83:THR:HG23	28:Z:85:TYR:H	1.29	0.98
15:M:72:LEU:HD23	15:M:73:PRO:HD2	1.45	0.98
21:S:155:ARG:HG2	21:S:155:ARG:HH21	1.27	0.97
9:F:131:GLU:HB3	9:F:132:PRO:HD3	1.45	0.97
21:S:13:ARG:HG3	21:S:13:ARG:HH11	1.30	0.97
19:Q:133:LYS:HB2	19:Q:135:GLN:HE22	1.27	0.97
1:5:375:A:H1'	27:Y:87:LYS:HZ2	1.25	0.97
7:D:22:ARG:NH1	7:D:28:THR:OG1	1.98	0.97
1:5:2277:C:H4'	1:5:2317:A:H4'	1.47	0.97
16:N:18:VAL:HG22	16:N:19:LEU:HD12	1.45	0.97
14:L:114:GLN:HA	14:L:114:GLN:HE21	1.30	0.97
17:O:108:ILE:HD11	17:O:113:ASP:HA	1.45	0.96
21:S:26:ARG:HH11	22:T:150:THR:HG21	1.29	0.96
15:M:106:ARG:NH1	15:M:106:ARG:HB2	4.46	0.96
26:X:115:ARG:HH11	26:X:115:ARG:HG3	1.30	0.96
23:U:50:LEU:HD22	23:U:54:VAL:HB	1.45	0.96
12:I:36:LEU:HD11	12:I:69:ARG:HD3	1.46	0.96
11:H:28:VAL:HG13	11:H:33:THR:HG22	1.47	0.96
1:5:2270:A:H2'	1:5:2271:A:C8	2.01	0.96
16:N:172:ARG:HB3	16:N:174:ILE:HD13	1.48	0.96
24:V:136:VAL:HG12	24:V:137:VAL:HG23	1.48	0.95
16:N:99:ARG:HG2	16:N:130:PHE:CE2	2.03	0.94
4:A:149:ARG:NH1	4:A:155:LYS:HE3	1.81	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1567:U:H3'	1:5:1568:U:H5''	1.48	0.94
5:B:185:GLY:O	5:B:191:LYS:NZ	2.00	0.94
1:5:247:C:H2'	1:5:248:U:H1'	1.50	0.94
1:5:1578:C:OP1	10:G:43:LYS:NZ	2.00	0.94
1:5:2338:C:OP1	5:B:236:LYS:NZ	2.00	0.94
19:Q:71:LEU:HD13	19:Q:99:THR:HG21	1.49	0.93
5:B:53:MET:HE1	5:B:327:CYS:HB3	1.46	0.93
1:5:619:A:H5'	1:5:620:U:C5	2.04	0.93
21:S:26:ARG:HH11	22:T:150:THR:CG2	1.80	0.93
1:5:2569:A:H4'	1:5:2570:U:H5'	1.49	0.93
1:5:2304:C:H2'	1:5:2305:G:H5'	1.51	0.93
17:O:183:ALA:HA	17:O:186:ALA:HB2	1.51	0.93
17:O:121:PRO:HA	17:O:124:LEU:HD23	1.47	0.93
1:5:1133:A:C2'	1:5:1134:G:H5'	1.99	0.92
3:8:95:G:OP2	13:J:72:ARG:NH1	152.91	0.92
9:F:41:ARG:HG3	9:F:41:ARG:HH11	1.34	0.92
17:O:128:ARG:CB	17:O:128:ARG:HH11	1.81	0.92
5:B:4:ARG:HG3	5:B:4:ARG:NH1	1.77	0.92
5:B:150:ARG:HH11	5:B:150:ARG:HG2	1.33	0.92
11:H:86:TYR:CE2	11:H:151:VAL:HG22	2.03	0.92
1:5:1724:U:OP2	20:R:128:LYS:NZ	2.03	0.92
13:J:92:ARG:HG2	13:J:92:ARG:HH11	1.32	0.92
9:F:41:ARG:HH11	9:F:41:ARG:CG	1.83	0.91
8:E:115:UNK:HA	8:E:118:UNK:HG3	1.52	0.91
1:5:253:A:O2'	1:5:254:A:O5'	1.88	0.91
27:Y:86:THR:HG22	27:Y:96:PRO:HA	1.53	0.91
1:5:149:U:OP2	16:N:49:ARG:NH2	2.04	0.90
1:5:2572:C:O2'	1:5:2573:G:OP2	1.88	0.90
18:P:64:ASN:HB2	18:P:80:LYS:HE3	1.52	0.90
13:J:94:ARG:O	13:J:96:PHE:N	2.04	0.90
16:N:172:ARG:HB3	16:N:174:ILE:CD1	2.02	0.90
1:5:2276:G:O6	1:5:2311:G:C2	2.25	0.90
1:5:2748:A:O2'	7:D:48:LYS:NZ	2.05	0.90
1:5:2276:G:N2	1:5:2316:G:O2'	2.03	0.90
18:P:32:THR:HG21	18:P:87:SER:HB3	1.54	0.90
1:5:1575:A:O2'	1:5:1576:G:O4'	1.91	0.89
5:B:188:ILE:H	5:B:188:ILE:HD12	1.35	0.89
9:F:22:THR:HA	9:F:25:GLN:HG2	1.53	0.89
16:N:183:THR:O	16:N:184:LYS:HB3	1.72	0.89
12:I:187:ALA:HB1	12:I:189:GLU:HG3	1.54	0.89
6:C:204:GLY:O	6:C:246:ARG:NH1	2.06	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:O:78:ARG:CG	17:O:78:ARG:HH11	1.84	0.89
15:M:106:ARG:HB2	15:M:106:ARG:HH11	4.54	0.89
2:7:44:C:OP2	13:J:137:ARG:NH2	2.04	0.89
8:E:96:VAL:HG12	8:E:98:VAL:HG23	1.55	0.88
1:5:2954:U:H4'	1:5:2955:U:OP1	1.72	0.88
19:Q:84:VAL:HG22	19:Q:124:LEU:HD11	1.53	0.88
13:J:51:ARG:CG	13:J:51:ARG:HH11	1.84	0.88
6:C:22:LEU:HD23	6:C:23:PRO:HD2	1.56	0.88
1:5:2925:C:H2'	1:5:2926:A:H5'	1.54	0.88
1:5:75:G:H5'	14:L:58:VAL:CG1	2.03	0.88
4:A:174:ARG:HH11	4:A:174:ARG:HG2	1.36	0.88
8:E:8:LYS:NZ	8:E:8:LYS:HB3	4.23	0.87
6:C:300:ARG:HH11	6:C:300:ARG:CG	1.85	0.87
25:W:20:LEU:HD21	25:W:28:ILE:HG23	1.54	0.87
6:C:148:ILE:HG23	6:C:149:PRO:CD	2.04	0.87
1:5:2890:A:H61	1:5:2913:C:H42	1.19	0.87
7:D:125:VAL:HG12	7:D:126:GLU:H	1.39	0.87
20:R:74:ARG:HE	20:R:74:ARG:HA	1.39	0.87
19:Q:133:LYS:HB2	19:Q:135:GLN:NE2	1.89	0.86
1:5:2511:A:H2'	1:5:2512:C:H5'	1.56	0.86
1:5:2144:A:H1'	1:5:2281:A:N6	1.90	0.86
14:L:85:LEU:HD22	14:L:120:GLN:HE22	1.40	0.86
28:Z:23:VAL:HG12	28:Z:45:GLY:HA3	1.58	0.86
14:L:131:LYS:HD3	14:L:131:LYS:H	1.38	0.86
20:R:105:LEU:HD23	20:R:135:LYS:HE3	1.58	0.86
8:E:78:ARG:HG3	8:E:78:ARG:NH1	1.84	0.86
6:C:299:ILE:HG21	19:Q:39:ARG:NH1	1.91	0.86
21:S:13:ARG:NH1	21:S:13:ARG:HG3	1.86	0.85
1:5:2307:G:H4'	1:5:2308:C:OP2	1.75	0.85
1:5:1761:C:H1'	1:5:1765:U:C5	2.10	0.85
6:C:283:THR:HG22	6:C:285:ASP:H	1.41	0.85
1:5:2806:U:H2'	1:5:2807:U:H5'	1.58	0.85
13:J:109:HIS:HD2	13:J:123:PHE:H	1.23	0.85
22:T:94:GLU:OE1	22:T:94:GLU:N	2.09	0.85
1:5:1761:C:H1'	1:5:1765:U:H5	1.41	0.85
1:5:1238:C:O2'	1:5:1239:C:OP1	1.95	0.85
5:B:232:ARG:NH1	5:B:269:GLN:O	2.09	0.85
19:Q:100:THR:HG22	19:Q:120:GLU:HB3	1.58	0.85
1:5:177:U:O4	1:5:239:G:N2	2.08	0.85
1:5:769:G:O2'	1:5:770:G:H5'	1.76	0.85
6:C:156:LEU:HD23	6:C:159:ILE:HD12	1.58	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2227:C:H2'	1:5:2228:A:H5''	1.57	0.85
1:5:2537:U:O2'	1:5:2538:U:O4'	1.94	0.85
1:5:2532:U:H2'	1:5:2533:G:H8	1.39	0.84
17:O:78:ARG:HG3	17:O:78:ARG:NH1	1.72	0.84
1:5:2248:C:O2'	1:5:2249:G:OP2	1.96	0.84
13:J:51:ARG:HG3	13:J:51:ARG:NH1	1.73	0.84
1:5:439:C:O2	1:5:494:G:N2	2.09	0.84
5:B:41:VAL:HA	5:B:185:GLY:HA3	1.59	0.84
1:5:1580:A:H4'	1:5:1581:C:OP2	1.75	0.84
1:5:248:U:H3'	1:5:249:U:H5'	1.59	0.84
1:5:75:G:H5'	14:L:58:VAL:HG11	1.59	0.84
1:5:2186:U:C2'	1:5:2187:G:H5'	2.08	0.84
19:Q:69:ARG:NH1	19:Q:69:ARG:HG3	1.83	0.84
26:X:34:LEU:HD12	26:X:35:PRO:HD2	1.60	0.83
16:N:42:PRO:HG3	16:N:61:ILE:HG13	1.60	0.83
3:8:80:A:O3'	3:8:81:U:H3'	1.78	0.83
1:5:1575:A:H2'	1:5:1576:G:C8	2.13	0.83
1:5:3289:G:H2'	1:5:3290:G:H8	1.42	0.83
26:X:115:ARG:NH1	26:X:115:ARG:HG3	1.90	0.83
11:H:106:LYS:HA	11:H:106:LYS:HE3	1.59	0.83
8:E:89:THR:HG21	15:M:115:PHE:HB2	1.58	0.83
1:5:3068:U:OP2	20:R:62:ARG:NH2	2.10	0.83
15:M:55:ARG:NH2	15:M:76:ALA:O	2.11	0.83
5:B:150:ARG:HG2	5:B:150:ARG:NH1	1.90	0.83
24:V:13:ILE:HD11	24:V:53:SER:HB2	1.61	0.83
18:P:170:SER:HA	18:P:173:ARG:HH21	1.42	0.83
1:5:132:C:H2'	1:5:133:U:H5''	1.60	0.83
6:C:299:ILE:HG23	19:Q:39:ARG:HB3	1.60	0.83
1:5:2609:A:H2'	1:5:2610:G:H5''	1.60	0.83
12:I:38:LYS:HG2	12:I:41:ALA:HB2	1.61	0.83
16:N:94:TYR:HE2	16:N:96:ARG:HB2	1.43	0.82
1:5:36:C:H2'	1:5:37:U:H5'	1.61	0.82
1:5:1221:A:O2'	19:Q:8:LYS:NZ	97.49	0.82
17:O:128:ARG:HB3	17:O:128:ARG:NH1	1.93	0.82
9:F:33:ARG:HG3	9:F:33:ARG:HH11	1.45	0.82
5:B:4:ARG:CG	5:B:4:ARG:HH11	1.90	0.81
1:5:2144:A:H1'	1:5:2281:A:H61	1.46	0.81
1:5:2213:A:H2'	1:5:2214:A:H8	1.45	0.81
1:5:2568:C:O2'	1:5:2569:A:O5'	1.96	0.81
12:I:85:PHE:HA	12:I:140:THR:HG22	1.60	0.81
10:G:44:ARG:HG3	10:G:44:ARG:NH1	1.94	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1324:U:C5'	21:S:2:ALA:HA	2.09	0.81
22:T:79:MET:HB2	22:T:84:TYR:CE2	2.16	0.81
6:C:145:ILE:O	6:C:147:GLU:N	2.14	0.81
8:E:18:LEU:H	8:E:18:LEU:HD12	1.45	0.81
1:5:2509:U:H2'	1:5:2510:U:H5'	1.62	0.81
4:A:149:ARG:NH1	4:A:149:ARG:HB2	1.95	0.81
20:R:114:LYS:O	20:R:146:LYS:NZ	2.13	0.81
22:T:17:ARG:NH1	22:T:17:ARG:HG2	1.87	0.80
11:H:91:ARG:HD2	11:H:143:GLU:HG3	1.64	0.80
21:S:26:ARG:NH1	22:T:150:THR:HG21	1.95	0.80
1:5:249:U:H3'	1:5:249:U:OP2	1.80	0.80
1:5:619:A:H5'	1:5:620:U:C6	2.16	0.80
27:Y:51:ARG:HG2	27:Y:115:ARG:NH2	1.97	0.80
6:C:342:LYS:O	6:C:342:LYS:HG3	1.81	0.80
1:5:2112:U:H4'	1:5:2113:A:H5'	1.63	0.80
26:X:137:ASN:HB3	26:X:142:ILE:HD12	1.62	0.80
5:B:53:MET:CE	5:B:327:CYS:HB3	2.11	0.80
1:5:2796:G:H3'	17:O:60:LYS:HZ3	71.05	0.80
5:B:238:LEU:HD12	5:B:239:PRO:HD3	1.61	0.80
16:N:99:ARG:HG2	16:N:130:PHE:HE2	1.47	0.80
19:Q:72:LYS:NZ	19:Q:72:LYS:HB3	1.97	0.80
27:Y:86:THR:HA	27:Y:97:ILE:HD13	1.64	0.80
26:X:24:LEU:HD22	26:X:25:LYS:H	1.46	0.80
1:5:1307:G:C5'	17:O:60:LYS:HE2	2.13	0.80
10:G:161:GLU:OE1	10:G:161:GLU:N	2.15	0.80
1:5:900:G:H1'	1:5:1589:A:N6	1.97	0.80
1:5:541:U:H2'	1:5:542:G:H8	1.45	0.79
9:F:103:LEU:HG	9:F:130:ILE:HD11	1.64	0.79
1:5:2925:C:C2'	1:5:2926:A:H5'	2.12	0.79
6:C:299:ILE:HG21	19:Q:39:ARG:HH11	1.43	0.79
9:F:98:LYS:HB3	9:F:99:PRO:HD3	1.65	0.79
1:5:2312:A:O2'	1:5:2315:G:O2'	1.95	0.79
8:E:78:ARG:CG	8:E:78:ARG:HH11	1.92	0.79
1:5:3163:A:O2'	1:5:3164:C:H5'	1.82	0.79
17:O:108:ILE:CD1	17:O:113:ASP:HA	2.12	0.79
28:Z:88:ASP:HB3	28:Z:121:ARG:NH2	1.98	0.79
22:T:53:PRO:HB3	22:T:91:LEU:HD21	1.63	0.79
1:5:3226:A:H2'	1:5:3227:A:H5''	1.64	0.79
1:5:2954:U:H1'	1:5:2955:U:H5''	1.64	0.79
1:5:2530:G:H2'	1:5:2531:C:H5''	1.63	0.79
1:5:383:G:H5'	18:P:96:GLN:HE22	1.47	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:O:54:TYR:CD2	17:O:145:VAL:HG11	2.18	0.79
1:5:2532:U:H2'	1:5:2533:G:C8	2.18	0.78
5:B:169:THR:HG23	5:B:170:PRO:HD2	1.65	0.78
10:G:150:LEU:HD22	10:G:151:VAL:H	1.47	0.78
1:5:2275:A:H2'	1:5:2276:G:O4'	1.83	0.78
1:5:2193:U:H1'	1:5:2275:A:O2'	1.83	0.78
1:5:1049:C:H2'	1:5:1050:U:H6	1.47	0.78
1:5:2661:G:C2'	1:5:2662:G:H5'	2.14	0.78
17:O:61:ALA:HA	17:O:70:PRO:HD2	1.64	0.78
1:5:1040:A:O2'	12:I:198:LYS:NZ	2.17	0.78
6:C:182:LEU:HD11	6:C:223:PRO:HG2	1.64	0.78
19:Q:69:ARG:CG	19:Q:69:ARG:HH11	1.96	0.78
1:5:3055:U:H1'	1:5:3057:U:OP2	1.83	0.78
1:5:1348:U:OP1	19:Q:39:ARG:NH2	2.16	0.78
3:8:157:U:O2'	3:8:158:U:H5'	1.83	0.78
26:X:108:LEU:HD23	26:X:127:THR:HA	1.66	0.78
1:5:2304:C:C2'	1:5:2305:G:H5'	2.13	0.77
1:5:2604:U:O2'	1:5:2605:G:OP1	2.02	0.77
1:5:2952:G:H2'	1:5:2953:U:H5'	1.65	0.77
1:5:2312:A:O2'	1:5:2315:G:H1'	1.84	0.77
9:F:216:VAL:HB	9:F:217:PRO:HD2	1.67	0.77
5:B:109:HIS:N	5:B:200:GLU:OE2	2.17	0.77
17:O:12:LYS:HB3	21:S:167:ARG:HH22	1.48	0.77
1:5:2814:G:OP1	6:C:73:ARG:NH2	2.18	0.77
24:V:48:ARG:HH11	24:V:48:ARG:CG	1.96	0.77
1:5:1772:U:H5''	1:5:1773:C:H5'	1.66	0.77
1:5:914:A:C2	4:A:204:MET:HG2	2.20	0.77
1:5:2567:C:H2'	1:5:2568:C:H5'	1.67	0.77
1:5:2661:G:H2'	1:5:2662:G:H5'	1.65	0.77
1:5:1621:A:H2'	1:5:1622:U:C6	2.20	0.77
6:C:299:ILE:CG2	19:Q:39:ARG:HH11	1.98	0.76
8:E:46:ARG:HH11	8:E:46:ARG:CG	1.98	0.76
1:5:1307:G:H5''	17:O:60:LYS:HE2	1.67	0.76
1:5:2186:U:H2'	1:5:2187:G:H5'	1.65	0.76
1:5:1807:G:H5''	28:Z:135:ARG:NH1	2.00	0.76
1:5:3279:A:O2'	1:5:3280:U:H5'	1.84	0.76
1:5:2964:G:N2	1:5:2967:A:OP2	2.12	0.76
1:5:2204:C:H4'	1:5:2205:U:OP1	1.84	0.76
7:D:34:LYS:HE3	22:T:30:TYR:CE1	2.20	0.76
1:5:148:G:OP2	16:N:4:TYR:OH	2.03	0.76
27:Y:23:PRO:HG2	27:Y:26:GLN:HG3	1.68	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:J:18:VAL:HG22	13:J:70:THR:HG23	1.66	0.76
1:5:3358:U:H2'	1:5:3359:A:H8	1.47	0.76
1:5:2276:G:O6	1:5:2311:G:N2	2.19	0.76
1:5:1816:A:O2'	1:5:1817:G:OP1	2.02	0.76
1:5:844:G:H2'	1:5:845:G:H5'	1.67	0.76
1:5:1644:C:H5'	1:5:1645:U:H5''	1.67	0.76
1:5:1819:U:O2'	1:5:1820:U:OP1	2.01	0.76
13:J:100:GLY:O	13:J:159:THR:HG21	1.85	0.76
1:5:640:U:OP1	4:A:21:ARG:NH2	80.85	0.76
19:Q:30:VAL:O	19:Q:34:THR:HG22	1.85	0.75
1:5:2309:A:C8	1:5:2962:U:H4'	2.22	0.75
1:5:190:U:O2'	1:5:191:U:OP2	2.02	0.75
16:N:182:ASN:O	16:N:183:THR:HG22	1.87	0.75
1:5:2282:U:O4'	1:5:2960:C:O2'	2.02	0.75
12:I:12:GLN:NE2	12:I:128:ARG:HB3	2.00	0.75
21:S:155:ARG:NH2	21:S:155:ARG:HG2	1.95	0.75
1:5:2796:G:H3'	17:O:60:LYS:NZ	71.40	0.75
1:5:1235:U:H4'	1:5:1236:G:H5'	1.68	0.75
1:5:2997:G:H1'	1:5:3396:U:H5'	1.67	0.75
1:5:3310:A:OP1	18:P:74:LYS:NZ	2.18	0.75
3:8:81:U:O3'	3:8:82:U:H4'	1.86	0.75
1:5:2213:A:H2'	1:5:2214:A:C8	2.21	0.75
10:G:183:LYS:HD2	10:G:194:THR:HB	1.68	0.75
24:V:104:ASN:HD21	24:V:108:GLU:HB2	1.52	0.75
1:5:915:A:C2'	1:5:916:G:H5'	2.17	0.75
28:Z:102:GLU:OE1	28:Z:103:GLN:N	2.19	0.75
1:5:2778:G:H2'	1:5:2779:A:H5'	1.69	0.74
1:5:248:U:C3'	1:5:249:U:H5'	2.16	0.74
1:5:3163:A:C2'	1:5:3164:C:H5'	2.16	0.74
1:5:2437:G:H2'	1:5:2438:A:H5''	1.67	0.74
6:C:299:ILE:HG22	6:C:300:ARG:O	1.86	0.74
1:5:2270:A:H2'	1:5:2271:A:H8	1.52	0.74
1:5:924:G:O6	1:5:2808:A:N6	2.20	0.74
1:5:2093:A:N6	20:R:114:LYS:HD3	2.02	0.74
1:5:2339:C:OP2	24:V:48:ARG:NH1	2.20	0.74
26:X:34:LEU:HD12	26:X:35:PRO:CD	2.17	0.74
27:Y:37:LYS:HE2	27:Y:37:LYS:H	1.52	0.74
7:D:270:LYS:HG2	7:D:273:ARG:HH21	1.52	0.74
1:5:844:G:C2'	1:5:845:G:H5'	2.18	0.74
1:5:3083:G:H4'	25:W:42:GLN:HE22	1.52	0.74
1:5:1555:U:O2	1:5:1555:U:H2'	1.87	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1575:A:H3'	1:5:1576:G:H5''	1.70	0.74
1:5:2817:A:H4'	1:5:2818:U:OP2	1.88	0.74
7:D:51:LEU:HD13	7:D:146:LEU:HD21	1.68	0.74
9:F:136:TYR:CZ	9:F:231:ASN:HB2	2.23	0.74
14:L:46:ILE:HG22	14:L:49:ARG:HB2	1.70	0.74
26:X:38:LEU:HD22	26:X:40:LEU:HD22	1.68	0.74
1:5:2271:A:C2'	1:5:2272:G:H5'	2.17	0.74
1:5:247:C:H2'	1:5:248:U:C1'	2.18	0.74
6:C:329:PRO:O	6:C:330:TYR:HB3	1.88	0.74
12:I:14:ASN:O	12:I:128:ARG:NH2	2.21	0.73
1:5:670:C:OP1	19:Q:147:ARG:NH2	2.21	0.73
4:A:68:LYS:HG3	4:A:69:TYR:N	2.02	0.73
1:5:1095:U:H3	22:T:127:GLN:HG3	1.53	0.73
1:5:798:G:O2'	14:L:14:PHE:O	2.05	0.73
1:5:159:A:O2'	1:5:160:G:H5'	1.86	0.73
1:5:109:A:H4'	1:5:110:G:OP1	1.88	0.73
6:C:136:LEU:HD22	6:C:142:VAL:HG22	1.68	0.73
12:I:42:THR:CG2	12:I:45:GLU:HG3	2.18	0.73
1:5:1645:U:H2'	1:5:1646:G:H5'	1.70	0.73
1:5:90:C:C2'	1:5:91:G:H5'	2.19	0.73
1:5:1362:G:H1'	9:F:159:GLN:NE2	2.04	0.73
2:7:73:C:O2	21:S:13:ARG:NH2	2.20	0.73
6:C:142:VAL:HB	6:C:145:ILE:HD11	1.71	0.73
1:5:3291:G:H2'	1:5:3292:A:C8	2.22	0.73
11:H:77:ASN:HB3	11:H:151:VAL:HG21	1.70	0.73
16:N:184:LYS:H	16:N:186:GLY:H	1.34	0.73
1:5:2584:G:H5'	1:5:2585:G:OP2	1.88	0.73
3:8:154:C:H5''	10:G:181:LYS:HD3	1.70	0.73
15:M:48:GLY:CA	15:M:53:VAL:HG13	2.14	0.73
1:5:541:U:H2'	1:5:542:G:C8	2.23	0.73
2:7:36:C:H4'	7:D:155:THR:HG23	1.71	0.73
1:5:2436:U:H3	1:5:2511:A:H62	1.34	0.73
6:C:354:VAL:HG11	22:T:143:THR:HG21	1.68	0.73
13:J:50:ALA:HB2	13:J:65:ILE:HD11	1.68	0.73
7:D:51:LEU:HB3	7:D:146:LEU:HD23	1.69	0.73
7:D:107:ARG:HH22	7:D:120:LYS:HA	1.52	0.73
1:5:2309:A:O4'	1:5:2962:U:H5'	1.89	0.73
12:I:4:ARG:NH1	12:I:99:ILE:HG22	2.04	0.73
17:O:12:LYS:O	21:S:167:ARG:NH2	2.22	0.72
1:5:1555:U:O2'	1:5:1556:C:OP1	2.07	0.72
1:5:1098:A:OP2	22:T:130:ARG:HD3	1.89	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:3343:G:H21	1:5:3362:A:H2	1.37	0.72
4:A:54:ARG:HG2	4:A:55:GLY:O	1.89	0.72
4:A:114:SER:HB2	4:A:169:ILE:HD13	1.69	0.72
12:I:191:LYS:HB2	12:I:213:PHE:HE1	1.52	0.72
6:C:190:GLY:O	6:C:193:LYS:NZ	2.22	0.72
14:L:45:LYS:HG3	14:L:46:ILE:HD13	1.70	0.72
1:5:2946:A:H5''	1:5:2947:G:H5'	1.70	0.72
1:5:2584:G:O2'	10:G:240:ASN:ND2	2.22	0.72
3:8:82:U:H2'	3:8:85:G:OP1	1.90	0.72
10:G:24:ASN:O	10:G:26:LEU:N	2.22	0.72
20:R:74:ARG:NE	20:R:74:ARG:HA	2.05	0.72
1:5:90:C:H2'	1:5:91:G:H5'	1.71	0.72
12:I:169:LYS:H	12:I:169:LYS:HE2	1.55	0.72
1:5:275:U:H2'	1:5:276:U:H6	1.54	0.72
22:T:91:LEU:HD13	22:T:96:ILE:HD11	1.71	0.72
1:5:2898:G:H5''	1:5:2899:C:H5'	1.72	0.72
4:A:44:ILE:HD12	4:A:44:ILE:H	1.55	0.72
6:C:13:GLY:C	6:C:14:GLU:HG3	2.09	0.72
8:E:46:ARG:HG3	8:E:46:ARG:HH11	1.53	0.72
12:I:42:THR:HG22	12:I:45:GLU:HG3	1.71	0.72
7:D:182:GLY:HA2	7:D:194:LEU:HD23	1.70	0.72
27:Y:45:ILE:CD1	27:Y:122:LYS:HE3	2.17	0.72
1:5:2806:U:C2'	1:5:2807:U:H5'	2.19	0.72
17:O:19:LEU:O	17:O:23:VAL:HG23	1.90	0.72
1:5:2675:C:H42	13:J:22:SER:HB2	1.55	0.72
17:O:126:VAL:HG22	17:O:127:LEU:HD23	1.71	0.71
19:Q:86:THR:HG22	19:Q:105:ARG:CB	2.18	0.71
26:X:115:ARG:HH11	26:X:115:ARG:CG	2.02	0.71
1:5:2421:U:H2'	1:5:2422:C:H5''	1.71	0.71
26:X:59:SER:HB3	26:X:102:LEU:HD21	1.70	0.71
20:R:20:ARG:HH11	20:R:21:LYS:HZ2	1.34	0.71
1:5:2511:A:C2'	1:5:2512:C:H5'	2.20	0.71
1:5:2332:A:H2'	1:5:2333:C:O4'	1.90	0.71
1:5:2392:C:O2'	5:B:266:ARG:NH2	2.22	0.71
6:C:300:ARG:HH11	6:C:300:ARG:HG3	1.53	0.71
16:N:94:TYR:CE2	16:N:96:ARG:HB2	2.26	0.71
1:5:715:A:HO2'	1:5:752:C:HO2'	1.33	0.71
11:H:177:ASP:OD1	11:H:177:ASP:N	2.24	0.71
1:5:59:G:H2'	3:8:33:A:O2'	1.90	0.71
18:P:67:ILE:HD12	18:P:82:ARG:NH2	2.06	0.71
1:5:2102:U:H2'	1:5:2103:U:H6	1.56	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:169:THR:HG22	5:B:171:LEU:H	1.53	0.71
1:5:1098:A:OP2	22:T:130:ARG:NH1	2.17	0.71
10:G:83:ASP:OD2	10:G:86:THR:N	2.21	0.71
8:E:56:LYS:HB2	8:E:98:VAL:HG11	1.71	0.71
1:5:1556:C:H2'	1:5:2169:G:N1	2.05	0.71
21:S:96:ASP:OD1	21:S:97:VAL:N	2.19	0.71
8:E:8:LYS:HZ2	8:E:8:LYS:HB3	3.91	0.71
1:5:767:U:H1'	1:5:768:C:C6	2.26	0.71
1:5:3252:G:H2'	1:5:3253:G:C8	2.25	0.71
1:5:3139:A:C2'	1:5:3140:G:H5'	2.21	0.71
9:F:121:LYS:HB2	22:T:133:ALA:HB3	1.72	0.70
11:H:8:GLN:NE2	11:H:69:ARG:HG2	2.05	0.70
9:F:218:ARG:HH11	9:F:218:ARG:HG2	1.56	0.70
1:5:2433:U:H1'	16:N:125:SER:HB3	1.72	0.70
1:5:1051:U:H2'	1:5:1052:U:H5'	1.72	0.70
4:A:149:ARG:HH11	4:A:149:ARG:HB2	1.56	0.70
6:C:74:ILE:CD1	6:C:75:PRO:HD2	2.18	0.70
3:8:134:G:O2'	3:8:135:G:H5'	1.91	0.70
10:G:44:ARG:HH11	10:G:44:ARG:CG	1.98	0.70
14:L:123:ILE:HG12	14:L:124:ILE:N	2.05	0.70
12:I:48:LEU:HD22	12:I:49:CYS:H	1.56	0.70
4:A:174:ARG:HG2	4:A:174:ARG:NH1	2.05	0.70
5:B:369:ARG:HH11	5:B:369:ARG:HG2	1.57	0.70
28:Z:13:VAL:HG12	28:Z:19:ALA:HA	1.72	0.70
22:T:32:LYS:HE2	22:T:98:HIS:HD2	1.57	0.70
1:5:3170:A:O2'	1:5:3171:U:H5'	1.92	0.70
14:L:149:GLN:HE21	14:L:149:GLN:H	1.39	0.70
1:5:2178:A:H5''	4:A:132:ASN:HD21	1.57	0.70
1:5:2276:G:N2	1:5:2316:G:HO2'	1.90	0.70
25:W:35:LYS:HE2	25:W:51:TRP:CZ2	2.27	0.70
6:C:60:THR:HG22	6:C:62:ALA:H	1.55	0.70
5:B:150:ARG:HH11	5:B:150:ARG:CG	2.05	0.70
1:5:121:A:C4	10:G:108:ARG:NH1	2.60	0.70
6:C:20:LEU:HD11	6:C:252:GLU:HG3	1.74	0.70
10:G:172:LYS:NZ	10:G:172:LYS:HB2	2.06	0.70
1:5:173:G:H1	1:5:245:U:H3	1.39	0.70
8:E:171:PRO:HA	8:E:174:LEU:HD12	1.72	0.70
1:5:3228:C:H1'	1:5:3229:G:OP2	1.91	0.69
19:Q:122:ILE:CG2	19:Q:126:GLN:HB2	2.22	0.69
11:H:87:LYS:NZ	11:H:191:LEU:HD21	2.07	0.69
1:5:1348:U:C6	1:5:1348:U:H3'	2.28	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:3261:C:O2'	1:5:3262:U:H5'	1.92	0.69
3:8:60:U:OP2	26:X:61:LYS:NZ	2.25	0.69
1:5:1236:G:N2	1:5:1244:A:OP1	2.24	0.69
1:5:981:U:H1'	1:5:982:C:OP1	1.91	0.69
1:5:2971:A:H5''	1:5:2972:G:C5'	2.22	0.69
2:7:71:G:O2'	2:7:72:A:H5'	1.90	0.69
21:S:12:ARG:HB3	21:S:24:LEU:HD23	1.75	0.69
1:5:1355:A:H1'	1:5:1356:U:OP2	1.92	0.69
19:Q:19:PRO:HD3	19:Q:53:PHE:CE1	2.27	0.69
1:5:2593:A:H4'	1:5:2594:C:O5'	1.92	0.69
13:J:15:GLU:HB3	13:J:130:VAL:HG22	1.73	0.69
12:I:187:ALA:CB	12:I:189:GLU:HG3	2.21	0.69
1:5:2423:U:H3'	1:5:2605:G:H22	1.56	0.69
1:5:3278:C:H3'	1:5:3279:A:H5'	1.74	0.69
5:B:106:TRP:HB2	5:B:133:TYR:CE2	2.28	0.69
1:5:1430:U:H2'	4:A:9:ARG:HH22	66.77	0.69
1:5:1083:G:H2'	1:5:1084:A:C8	2.28	0.69
1:5:1083:G:H2'	1:5:1084:A:H8	1.58	0.69
1:5:2422:C:H2'	1:5:2423:U:O4'	1.93	0.69
4:A:44:ILE:CD1	4:A:62:VAL:HG13	2.22	0.69
1:5:3380:U:O2'	1:5:3381:U:H5'	1.93	0.69
28:Z:83:THR:HG23	28:Z:85:TYR:N	2.05	0.69
1:5:251:G:H1'	1:5:253:A:C5	2.28	0.69
1:5:3358:U:H2'	1:5:3359:A:C8	2.28	0.69
1:5:2898:G:H5''	1:5:2899:C:C5'	2.23	0.69
1:5:1084:A:H2'	1:5:1085:A:C8	2.28	0.69
28:Z:54:THR:HG22	28:Z:57:HIS:CD2	2.27	0.69
21:S:137:ARG:HG2	21:S:139:TYR:CE1	2.27	0.69
4:A:14:SER:OG	4:A:15:ILE:N	2.26	0.69
1:5:717:C:H2'	1:5:718:G:H5'	1.73	0.69
5:B:167:ARG:HH12	5:B:168:LYS:NZ	1.90	0.69
1:5:1284:C:O2'	1:5:1285:G:OP1	2.09	0.69
1:5:2537:U:O2'	1:5:2538:U:O5'	2.10	0.69
1:5:1269:U:H1'	1:5:1272:C:H5	1.57	0.69
4:A:30:ARG:HD3	4:A:63:PHE:CD2	2.26	0.69
12:I:48:LEU:HD22	12:I:49:CYS:N	2.08	0.69
21:S:12:ARG:HD2	21:S:22:PRO:HG2	1.73	0.69
1:5:2418:G:O2'	1:5:2419:A:O5'	2.07	0.69
1:5:2341:A:OP2	5:B:247:ARG:NH2	2.26	0.69
8:E:152:THR:HG23	8:E:155:LEU:HB2	1.72	0.69
1:5:1385:C:HO2'	8:E:2:SER:N	1.90	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:H:28:VAL:HG13	11:H:33:THR:CG2	2.21	0.69
27:Y:56:VAL:HG21	27:Y:70:ILE:HD11	1.73	0.69
12:I:191:LYS:HB2	12:I:213:PHE:CE1	2.27	0.68
1:5:822:G:H1'	4:A:15:ILE:HD12	1.75	0.68
1:5:2175:U:H4'	1:5:2176:U:OP2	1.92	0.68
1:5:2430:A:H2'	1:5:2431:C:C6	2.27	0.68
1:5:1010:G:N2	12:I:193:ASP:OD2	2.26	0.68
14:L:76:THR:HG22	14:L:101:ARG:NH1	2.09	0.68
27:Y:63:LYS:HE3	27:Y:85:VAL:HG13	1.75	0.68
1:5:2923:U:H2'	1:5:2924:U:C6	2.28	0.68
1:5:1284:C:O2'	1:5:1285:G:H5'	1.93	0.68
5:B:238:LEU:HD12	5:B:239:PRO:CD	2.23	0.68
22:T:95:HIS:O	22:T:96:ILE:HD13	1.94	0.68
1:5:103:G:OP1	14:L:70:ARG:NH2	2.24	0.68
13:J:108:GLU:HA	13:J:122:ILE:HD12	1.74	0.68
12:I:36:LEU:HD11	12:I:69:ARG:CD	2.23	0.68
20:R:20:ARG:HH11	20:R:21:LYS:NZ	1.91	0.68
1:5:3094:A:OP1	24:V:14:SER:OG	2.10	0.68
13:J:109:HIS:CD2	13:J:123:PHE:H	2.10	0.68
1:5:242:C:H2'	1:5:243:G:C8	2.29	0.68
1:5:2952:G:C2'	1:5:2953:U:H5'	2.23	0.68
11:H:88:TYR:CE2	11:H:184:LYS:HB3	2.29	0.68
27:Y:37:LYS:N	27:Y:37:LYS:HE2	2.07	0.68
1:5:2884:C:O2'	1:5:2885:C:H5'	1.94	0.68
24:V:59:MET:HE3	24:V:59:MET:HA	1.76	0.68
7:D:88:ILE:HD11	7:D:243:ALA:HB2	1.76	0.68
3:8:104:A:H3'	3:8:105:A:H5''	1.75	0.68
21:S:155:ARG:CG	21:S:155:ARG:HH21	2.03	0.68
1:5:2393:G:H4'	5:B:252:ILE:HG12	1.74	0.68
16:N:15:GLN:HE21	16:N:20:ARG:HD3	1.57	0.68
14:L:114:GLN:NE2	14:L:114:GLN:HA	2.07	0.68
1:5:2561:A:HO2'	1:5:2562:A:H8	1.41	0.68
14:L:123:ILE:HD11	14:L:125:VAL:HG23	1.76	0.68
11:H:76:ASP:O	11:H:80:THR:HG23	1.93	0.68
2:7:48:U:OP2	7:D:94:ASN:HB3	1.94	0.68
6:C:93:MET:H	6:C:93:MET:HE3	1.58	0.68
20:R:81:ARG:CD	20:R:88:ARG:HH12	2.06	0.68
1:5:3386:G:H2'	1:5:3387:U:H6	1.59	0.68
13:J:92:ARG:O	13:J:95:ASN:HB2	1.94	0.68
17:O:84:LEU:O	17:O:84:LEU:HD23	1.94	0.68
1:5:97:U:C2'	1:5:98:G:H5'	2.24	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1807:G:C5'	28:Z:135:ARG:NH1	2.57	0.67
15:M:135:LEU:HD13	15:M:136:ALA:N	2.08	0.67
16:N:136:ASP:OD1	16:N:138:GLN:HG2	1.94	0.67
1:5:1257:C:H2'	1:5:1258:U:O4'	1.95	0.67
18:P:170:SER:HA	18:P:173:ARG:NH2	2.09	0.67
28:Z:88:ASP:HB3	28:Z:121:ARG:HH22	1.59	0.67
1:5:2276:G:H21	1:5:2316:G:HO2'	1.39	0.67
5:B:107:ALA:HB1	5:B:200:GLU:HG3	1.75	0.67
8:E:48:ARG:HH11	8:E:48:ARG:HG2	1.57	0.67
1:5:2178:A:H5''	4:A:132:ASN:ND2	2.09	0.67
13:J:28:ASP:HA	13:J:31:THR:CG2	2.25	0.67
5:B:308:MET:HE2	5:B:372:THR:HA	1.76	0.67
1:5:3291:G:H2'	1:5:3292:A:H8	1.59	0.67
5:B:148:LEU:O	5:B:152:LYS:HG3	1.95	0.67
1:5:536:U:C2'	1:5:537:A:H5'	2.24	0.67
5:B:44:THR:HA	5:B:340:LYS:HD3	1.77	0.67
1:5:2277:C:C4'	1:5:2317:A:H4'	2.22	0.67
20:R:144:GLN:O	20:R:148:ASP:HB2	1.95	0.67
1:5:1226:G:H2'	1:5:1227:C:C6	2.30	0.67
27:Y:76:LEU:O	27:Y:77:LYS:HB2	1.94	0.67
1:5:627:U:H4'	1:5:1399:A:O2'	1.95	0.67
9:F:179:LEU:H	9:F:179:LEU:HD22	1.59	0.67
1:5:604:G:H2'	1:5:605:U:C6	2.30	0.67
20:R:81:ARG:HD3	20:R:88:ARG:HH12	1.60	0.67
22:T:46:GLY:HA2	22:T:52:MET:HE3	1.77	0.67
24:V:121:GLU:N	24:V:121:GLU:OE1	2.28	0.67
6:C:93:MET:H	6:C:93:MET:CE	2.08	0.67
1:5:2745:G:N2	1:5:2748:A:OP2	2.27	0.66
1:5:924:G:O2'	1:5:2810:C:O4'	2.12	0.66
1:5:2609:A:C2'	1:5:2610:G:H5''	2.26	0.66
11:H:13:PRO:HG2	11:H:16:VAL:HG11	1.75	0.66
14:L:47:ALA:O	14:L:49:ARG:N	2.28	0.66
18:P:64:ASN:HB2	18:P:80:LYS:CE	2.25	0.66
1:5:717:C:C2'	1:5:718:G:H5'	2.25	0.66
10:G:238:LEU:HD12	10:G:238:LEU:H	1.59	0.66
2:7:3:U:H2'	2:7:4:U:C6	2.30	0.66
25:W:1:MET:SD	25:W:15:PRO:HG2	2.35	0.66
1:5:2137:U:OP2	1:5:2142:A:N6	2.27	0.66
1:5:3194:C:H2'	1:5:3195:U:H5'	1.77	0.66
21:S:82:ASP:OD1	21:S:87:THR:HB	1.94	0.66
1:5:2677:G:O2'	1:5:2679:A:N7	2.22	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:300:ARG:HH11	6:C:300:ARG:HG2	1.59	0.66
1:5:253:A:HO2'	1:5:254:A:P	2.18	0.66
2:7:29:C:OP2	13:J:137:ARG:HD2	1.96	0.66
1:5:73:C:N3	14:L:59:ARG:NH1	2.43	0.66
1:5:2509:U:C2'	1:5:2510:U:H5'	2.26	0.66
1:5:1231:A:N6	1:5:1277:C:OP2	2.28	0.66
1:5:2712:U:H2'	1:5:2713:U:C6	2.30	0.66
22:T:17:ARG:HH11	22:T:17:ARG:CG	1.95	0.66
7:D:49:TYR:CE2	7:D:75:LEU:HD12	2.31	0.66
1:5:1259:A:O2'	1:5:1260:A:H5'	1.94	0.66
9:F:234:GLU:HA	9:F:234:GLU:OE1	1.95	0.66
17:O:98:ALA:HA	17:O:101:ARG:NH1	2.10	0.66
11:H:67:ALA:O	11:H:70:THR:HG23	1.96	0.66
1:5:3299:A:H4'	18:P:55:GLN:NE2	2.10	0.66
6:C:208:VAL:O	6:C:251:THR:HG23	1.95	0.66
1:5:1220:U:H5''	1:5:1222:G:O4'	1.95	0.66
1:5:1324:U:H5''	21:S:2:ALA:CA	2.20	0.66
11:H:31:ARG:HB2	11:H:82:VAL:O	1.96	0.66
1:5:1575:A:H2'	1:5:1576:G:H8	1.60	0.66
26:X:24:LEU:CD2	26:X:25:LYS:H	2.08	0.66
11:H:111:PHE:HD1	11:H:127:PRO:HA	1.61	0.66
24:V:75:PRO:HB2	24:V:103:ALA:O	1.96	0.66
1:5:2190:U:H2'	1:5:2191:U:C6	2.31	0.66
1:5:1765:U:H4'	1:5:1766:G:O5'	1.95	0.66
1:5:621:A:H4'	1:5:622:A:O5'	1.95	0.66
6:C:26:PHE:HD2	6:C:130:ALA:HB2	1.61	0.66
2:7:112:G:H2'	2:7:113:C:C6	2.30	0.66
17:O:89:SER:O	17:O:95:GLY:HA3	1.95	0.66
23:U:50:LEU:HD22	23:U:54:VAL:CB	2.24	0.66
1:5:240:U:O2'	1:5:241:G:O5'	2.12	0.66
1:5:915:A:H2'	1:5:916:G:H5'	1.77	0.66
4:A:57:PRO:HG2	4:A:78:ALA:HB3	1.76	0.66
8:E:65:ILE:O	8:E:76:LEU:HD23	1.95	0.66
3:8:142:C:OP1	16:N:38:ARG:NH1	2.29	0.66
1:5:1563:C:H2'	1:5:1564:U:C6	2.31	0.66
14:L:27:ASP:N	14:L:27:ASP:OD1	2.23	0.66
17:O:121:PRO:HA	17:O:124:LEU:CD2	2.25	0.65
5:B:167:ARG:HH12	5:B:168:LYS:HZ3	1.43	0.65
1:5:1389:G:O6	6:C:186:LYS:NZ	2.29	0.65
16:N:18:VAL:HG22	16:N:19:LEU:CD1	2.25	0.65
1:5:2675:C:N4	13:J:22:SER:HB2	2.12	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:M:20:VAL:O	15:M:66:THR:HG23	1.95	0.65
8:E:56:LYS:HE3	8:E:98:VAL:HG12	1.77	0.65
12:I:38:LYS:HD3	12:I:41:ALA:HB2	1.78	0.65
1:5:1560:G:H2'	1:5:1561:G:C8	2.32	0.65
5:B:227:GLU:OE1	5:B:228:GLY:N	2.29	0.65
1:5:2828:G:OP2	12:I:7:ARG:NH1	2.28	0.65
17:O:110:PRO:HD2	17:O:111:PRO:HD2	1.78	0.65
1:5:587:U:H2'	1:5:588:G:H5'	1.78	0.65
27:Y:52:ARG:HG2	27:Y:53:ASP:N	2.12	0.65
14:L:47:ALA:HB1	14:L:48:PRO:CD	2.26	0.65
21:S:13:ARG:CG	21:S:13:ARG:HH11	2.06	0.65
1:5:250:U:OP1	1:5:250:U:H4'	1.95	0.65
1:5:2530:G:C2'	1:5:2531:C:H5''	2.25	0.65
1:5:1063:G:N1	22:T:109:VAL:HG13	2.11	0.65
18:P:67:ILE:HD12	18:P:82:ARG:CZ	2.27	0.65
27:Y:58:VAL:HG22	27:Y:104:LEU:CD2	2.26	0.65
26:X:38:LEU:O	26:X:38:LEU:HD23	1.97	0.65
1:5:2548:C:H5''	1:5:2549:G:OP1	1.97	0.65
28:Z:119:GLU:O	28:Z:123:GLN:HG2	1.97	0.65
5:B:369:ARG:HH11	5:B:369:ARG:CG	2.09	0.65
1:5:2148:U:O2'	4:A:182:ALA:HB2	1.96	0.65
1:5:3386:G:H2'	1:5:3387:U:C6	2.32	0.65
1:5:1397:C:C2'	1:5:1398:U:H5'	2.26	0.65
5:B:296:THR:HG22	5:B:298:PHE:H	1.62	0.65
28:Z:21:LYS:HD2	28:Z:21:LYS:N	2.11	0.65
6:C:138:ARG:HH21	6:C:240:PRO:HB2	1.60	0.65
2:7:56:A:O2'	13:J:148:VAL:HG13	1.97	0.65
1:5:1874:A:OP2	20:R:21:LYS:NZ	2.26	0.65
1:5:3366:G:H2'	1:5:3367:C:C6	2.31	0.65
16:N:8:GLU:HG3	16:N:50:ARG:NH1	2.12	0.65
1:5:3016:A:H2'	1:5:3017:A:C8	2.32	0.65
5:B:313:HIS:O	5:B:333:LYS:HE3	1.96	0.65
3:8:155:A:H2'	3:8:156:U:O4'	1.97	0.65
24:V:104:ASN:HB2	24:V:105:PRO:CD	2.27	0.65
1:5:2292:U:H2'	1:5:2293:C:C6	2.32	0.65
1:5:3042:U:C2'	1:5:3043:C:H5'	2.27	0.65
1:5:1950:U:H2'	1:5:1951:C:H6	1.62	0.65
1:5:1993:Y5P:H4A	1:5:1994:Y5P:H4	1.79	0.65
26:X:113:LEU:HD11	26:X:121:LYS:HD2	1.79	0.65
1:5:75:G:C5'	14:L:58:VAL:HG11	2.27	0.64
17:O:54:TYR:HD2	17:O:145:VAL:HG11	1.59	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:848:A:H2'	1:5:849:C:O4'	1.97	0.64
1:5:1260:A:O2'	1:5:1261:G:O4'	2.11	0.64
10:G:162:LEU:HD23	16:N:7:LEU:HD11	1.78	0.64
1:5:2677:G:H2'	1:5:2677:G:N3	2.11	0.64
1:5:759:U:C2'	1:5:760:G:H5'	2.27	0.64
9:F:157:ASN:O	9:F:158:LYS:HB3	1.97	0.64
11:H:115:ARG:NH1	11:H:123:ILE:HD11	2.12	0.64
14:L:165:SER:HB3	14:L:168:ARG:CB	2.25	0.64
9:F:90:LYS:HD3	9:F:220:PHE:CE1	2.31	0.64
1:5:2510:U:O2'	1:5:2511:A:H5''	1.98	0.64
1:5:769:G:C2'	1:5:770:G:H5'	2.27	0.64
12:I:38:LYS:CG	12:I:41:ALA:HB2	2.28	0.64
10:G:156:ASP:OD1	10:G:183:LYS:HB3	1.98	0.64
1:5:1063:G:O2'	1:5:1097:G:N2	2.29	0.64
1:5:381:U:H2'	1:5:382:U:C6	2.33	0.64
1:5:2519:A:O2'	1:5:2520:A:H5'	1.97	0.64
1:5:2836:C:C2'	1:5:2837:A:H5'	2.28	0.64
11:H:87:LYS:HZ2	11:H:191:LEU:HD21	1.61	0.64
1:5:1235:U:H4'	1:5:1236:G:C5'	2.28	0.64
1:5:97:U:H2'	1:5:98:G:H5'	1.78	0.64
1:5:2987:A:O2'	5:B:259:HIS:HB3	1.98	0.64
26:X:57:LEU:HD12	26:X:94:GLN:NE2	2.12	0.64
8:E:96:VAL:CG1	8:E:98:VAL:HG23	2.27	0.64
1:5:1072:G:O2'	1:5:1073:U:H5'	1.96	0.64
7:D:294:ALA:HB1	12:I:217:PHE:O	1.97	0.64
5:B:347:SER:O	5:B:348:ARG:HB3	1.97	0.64
1:5:2841:G:H2'	1:5:2844:C:H42	1.63	0.64
1:5:3289:G:H2'	1:5:3290:G:C8	2.29	0.64
8:E:116:UNK:O	8:E:120:UNK:HB1	1.98	0.64
8:E:26:ARG:HB3	8:E:27:PRO:HD2	1.79	0.64
1:5:1803:C:H2'	1:5:1804:A:C8	2.33	0.64
1:5:3040:A:H5''	24:V:12:ARG:HB2	1.78	0.64
1:5:1222:G:H1'	1:5:1223:A:OP2	1.97	0.64
1:5:1567:U:C3'	1:5:1568:U:H5''	2.27	0.64
1:5:2538:U:H3'	1:5:2539:C:H5''	1.80	0.64
1:5:1807:G:H5''	28:Z:135:ARG:HH11	1.61	0.64
28:Z:71:PHE:HA	28:Z:111:LYS:HE2	1.80	0.64
17:O:103:LYS:HB3	17:O:105:PHE:HE1	1.62	0.64
16:N:122:ASN:OD1	16:N:123:GLN:N	2.30	0.64
1:5:946:U:O2'	1:5:947:G:H5'	1.98	0.64
10:G:70:LYS:HA	10:G:235:GLY:CA	2.25	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:3139:A:H2'	1:5:3140:G:H5'	1.80	0.64
1:5:2404:A:N3	1:5:2404:A:H2'	2.11	0.64
5:B:17:LEU:N	5:B:17:LEU:HD13	2.11	0.64
18:P:170:SER:CA	18:P:173:ARG:HH21	2.08	0.64
1:5:1064:A:H4'	1:5:1065:A:O5'	1.98	0.64
6:C:26:PHE:CD2	6:C:130:ALA:HB2	2.33	0.64
1:5:3228:C:H5''	15:M:137:LYS:NZ	2.13	0.64
1:5:381:U:H2'	1:5:382:U:H6	1.63	0.64
1:5:252:U:H4'	1:5:253:A:H5'	1.79	0.64
13:J:92:ARG:HG2	13:J:92:ARG:NH1	2.04	0.64
1:5:284:A:H5'	1:5:285:A:H5'	1.80	0.64
9:F:103:LEU:CG	9:F:130:ILE:HD11	2.28	0.64
1:5:1235:U:C4'	1:5:1236:G:H5'	2.27	0.64
25:W:47:ARG:HH12	25:W:58:HIS:CD2	2.15	0.64
1:5:1568:U:O2'	1:5:1569:U:O5'	2.07	0.63
1:5:73:C:O2'	14:L:59:ARG:HG2	1.97	0.63
1:5:2676:A:H4'	1:5:2677:G:O5'	1.98	0.63
1:5:759:U:H2'	1:5:760:G:H5'	1.80	0.63
7:D:219:PHE:CZ	7:D:227:LEU:HD21	2.32	0.63
1:5:1354:G:C6	1:5:1358:C:H5'	2.34	0.63
1:5:2555:G:H5'	1:5:2556:C:OP2	1.97	0.63
1:5:2271:A:O2'	1:5:2272:G:H5'	1.98	0.63
9:F:33:ARG:HG3	9:F:33:ARG:NH1	2.11	0.63
1:5:2275:A:N1	1:5:2316:G:H1'	2.13	0.63
12:I:175:ASN:HB3	12:I:176:LEU:HD23	1.79	0.63
16:N:155:VAL:O	16:N:162:ARG:NH2	2.30	0.63
1:5:2227:C:C2'	1:5:2228:A:H5''	2.28	0.63
8:E:18:LEU:N	8:E:18:LEU:HD12	2.14	0.63
12:I:36:LEU:HD13	12:I:73:ASN:HB2	1.81	0.63
1:5:1307:G:H5'	17:O:60:LYS:HE2	1.80	0.63
1:5:2771:U:O2'	1:5:2772:C:O4'	2.15	0.63
1:5:578:A:H2'	6:C:334:PHE:HD2	1.63	0.63
5:B:14:LEU:HD23	5:B:17:LEU:HD21	1.79	0.63
4:A:188:LYS:HD2	4:A:189:TYR:CE1	2.34	0.63
1:5:587:U:C2'	1:5:588:G:H5'	2.29	0.63
5:B:287:LYS:HB3	5:B:287:LYS:NZ	2.13	0.63
5:B:218:ILE:HD12	5:B:218:ILE:N	2.13	0.63
1:5:96:G:H5'	14:L:15:ARG:NH2	2.12	0.63
7:D:146:LEU:HD11	7:D:163:LEU:HB2	1.79	0.63
24:V:13:ILE:CD1	24:V:53:SER:HB2	2.29	0.63
18:P:166:VAL:HG12	18:P:168:LEU:HG	1.81	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:V:117:PRO:HD3	25:W:25:ASP:O	1.99	0.63
10:G:147:LYS:O	10:G:201:THR:HG22	1.97	0.63
1:5:2567:C:C2'	1:5:2568:C:H5'	2.28	0.63
1:5:1261:G:H4'	1:5:1278:A:C2	2.33	0.63
1:5:2947:G:H4'	1:5:2947:G:OP2	1.98	0.63
1:5:3195:U:O3'	1:5:3196:U:H6	1.81	0.63
1:5:692:A:OP1	16:N:201:ARG:NH2	2.31	0.63
1:5:2591:A:H2'	1:5:2592:G:O4'	1.99	0.63
14:L:47:ALA:HB1	14:L:48:PRO:HD2	1.80	0.62
1:5:1639:C:O2'	1:5:1640:G:H5'	1.99	0.62
1:5:1807:G:OP1	28:Z:133:LYS:HE3	1.98	0.62
1:5:158:G:H2'	1:5:159:A:H8	1.63	0.62
1:5:174:C:H2'	1:5:175:C:O4'	1.98	0.62
2:7:3:U:H2'	2:7:4:U:H6	1.63	0.62
1:5:549:U:H2'	1:5:550:A:H8	1.64	0.62
1:5:3272:C:OP2	8:E:78:ARG:NH1	2.32	0.62
1:5:275:U:H2'	1:5:276:U:C6	2.34	0.62
1:5:595:G:H1	1:5:609:G:H5''	1.64	0.62
1:5:132:C:C2'	1:5:133:U:H5''	2.29	0.62
4:A:101:VAL:C	4:A:102:LEU:HD12	2.19	0.62
1:5:3016:A:H2'	1:5:3017:A:H8	1.65	0.62
7:D:205:SER:HB3	7:D:236:LEU:HD22	1.81	0.62
1:5:1724:U:H4'	1:5:1725:C:OP1	1.98	0.62
5:B:188:ILE:H	5:B:188:ILE:CD1	2.07	0.62
9:F:26:VAL:O	9:F:30:ARG:HB3	1.98	0.62
1:5:1645:U:C2'	1:5:1646:G:H5'	2.29	0.62
1:5:1556:C:H2'	1:5:2169:G:H1	1.64	0.62
1:5:2523:A:H4'	1:5:2524:A:OP2	1.99	0.62
8:E:157:GLN:OE1	8:E:157:GLN:N	2.33	0.62
1:5:908:G:H3'	16:N:81:TYR:OH	2.00	0.62
9:F:22:THR:O	9:F:26:VAL:HG13	1.99	0.62
1:5:2213:A:H61	1:5:2429:G:H1'	1.65	0.62
1:5:982:C:H2'	1:5:982:C:O2	2.00	0.62
18:P:120:ASN:N	18:P:120:ASN:OD1	2.31	0.62
27:Y:69:LYS:HB2	27:Y:69:LYS:NZ	2.14	0.62
20:R:85:ARG:HH11	20:R:85:ARG:HG3	1.64	0.62
3:8:81:U:O3'	3:8:82:U:C4'	2.48	0.62
1:5:1772:U:C5'	1:5:1773:C:H5'	2.29	0.62
1:5:1555:U:O2'	1:5:1556:C:H5''	1.99	0.62
1:5:524:U:OP1	15:M:77:ARG:NH2	2.32	0.62
13:J:38:GLU:HG3	13:J:44:THR:HA	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:375:A:H1'	27:Y:87:LYS:HZ3	1.64	0.62
16:N:173:GLY:O	16:N:183:THR:HG23	1.99	0.62
1:5:2437:G:H2'	1:5:2438:A:C5'	2.29	0.62
21:S:128:GLU:HG2	21:S:129:ILE:N	2.15	0.62
12:I:72:ALA:O	12:I:76:MET:HG3	1.99	0.62
1:5:2995:A:H4'	1:5:2996:U:OP1	1.99	0.62
25:W:3:VAL:HG21	25:W:14:TYR:CE1	2.35	0.62
1:5:1524:A:O2'	1:5:1526:U:OP2	2.16	0.62
1:5:2585:G:N3	1:5:2585:G:H2'	2.14	0.62
11:H:93:VAL:O	11:H:177:ASP:HA	1.99	0.62
5:B:115:LYS:HE3	5:B:129:ALA:HB3	1.80	0.62
6:C:295:ILE:O	6:C:299:ILE:HG12	2.00	0.62
26:X:135:ILE:HD13	26:X:135:ILE:O	2.00	0.62
6:C:99:MET:HE2	6:C:102:PRO:HA	1.82	0.62
17:O:12:LYS:HB3	21:S:167:ARG:NH2	2.15	0.62
16:N:153:ASP:OD2	16:N:154:PRO:HD2	1.99	0.62
1:5:1223:A:OP2	1:5:1285:G:N2	2.33	0.62
11:H:89:LYS:HG2	11:H:145:VAL:HG22	1.81	0.62
1:5:364:G:OP1	6:C:60:THR:HG23	1.99	0.62
1:5:2280:A:H5''	1:5:2281:A:OP2	1.99	0.62
7:D:270:LYS:HE2	7:D:273:ARG:NH2	2.14	0.62
7:D:8:LYS:HB3	7:D:12:TYR:CD2	2.35	0.62
5:B:308:MET:HE2	5:B:372:THR:CA	2.29	0.62
18:P:148:LEU:HD11	18:P:150:VAL:HG13	1.82	0.62
14:L:162:ASN:N	14:L:162:ASN:OD1	2.32	0.62
1:5:1360:C:H2'	1:5:1361:U:C6	2.35	0.62
14:L:52:ASP:OD1	14:L:141:ALA:HB3	2.00	0.61
12:I:99:ILE:HG13	12:I:123:HIS:HB2	1.82	0.61
1:5:1360:C:H2'	1:5:1361:U:H6	1.65	0.61
1:5:120:G:N2	10:G:123:GLN:O	2.33	0.61
13:J:23:VAL:HG11	13:J:29:ARG:HB3	1.80	0.61
2:7:77:G:H5''	21:S:49:HIS:O	1.99	0.61
1:5:1581:C:N4	1:5:2522:G:H4'	2.04	0.61
21:S:26:ARG:HD3	22:T:150:THR:HG22	1.81	0.61
1:5:158:G:O2'	1:5:159:A:H5'	2.00	0.61
4:A:44:ILE:HD13	4:A:62:VAL:HG13	1.80	0.61
2:7:23:A:H2'	2:7:24:A:C8	2.36	0.61
1:5:2198:A:C8	1:5:2270:A:H1'	2.34	0.61
16:N:49:ARG:HG2	16:N:49:ARG:HH11	1.65	0.61
1:5:3160:U:H2'	1:5:3161:C:C6	2.35	0.61
1:5:1095:U:N3	22:T:127:GLN:HG3	2.15	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:8:134:G:C2'	3:8:135:G:H5'	2.30	0.61
8:E:64:LEU:O	8:E:65:ILE:HD13	1.99	0.61
28:Z:25:ILE:HA	28:Z:43:VAL:HG12	1.83	0.61
1:5:3001:C:OP1	5:B:120:LYS:NZ	2.33	0.61
19:Q:98:LYS:HE3	19:Q:118:GLY:O	2.00	0.61
5:B:256:HIS:HA	5:B:257:PRO:C	2.19	0.61
15:M:47:ASP:C	15:M:49:PRO:HD3	2.20	0.61
1:5:248:U:H2'	1:5:249:U:C5'	2.29	0.61
2:7:27:A:H2'	2:7:28:C:C6	2.36	0.61
1:5:383:G:H5'	18:P:96:GLN:NE2	2.14	0.61
7:D:219:PHE:CE2	7:D:227:LEU:HD21	2.36	0.61
8:E:90:LYS:HB3	8:E:90:LYS:HZ2	4.83	0.61
5:B:54:THR:HG23	5:B:55:THR:N	2.15	0.61
5:B:56:ILE:HD13	5:B:76:VAL:CG1	2.31	0.61
1:5:405:U:H2'	1:5:406:G:H5'	1.83	0.61
3:8:154:C:H5"	10:G:181:LYS:CD	2.31	0.61
1:5:627:U:H2'	1:5:628:A:H8	1.65	0.61
16:N:121:VAL:O	16:N:122:ASN:HB2	2.01	0.61
7:D:211:LEU:HD13	7:D:219:PHE:HA	1.80	0.61
1:5:93:C:OP2	1:5:2764:C:O2'	2.18	0.61
1:5:1349:G:H8	1:5:1349:G:H3'	1.65	0.61
6:C:7:THR:HG23	6:C:147:GLU:OE2	2.00	0.61
1:5:845:G:HO2'	1:5:847:A:H62	1.45	0.61
13:J:133:ARG:HB3	13:J:134:PRO:HD2	1.81	0.61
1:5:2701:U:H5"	22:T:23:GLY:HA2	1.82	0.61
1:5:248:U:O2	1:5:248:U:H2'	2.00	0.61
22:T:32:LYS:HZ3	22:T:98:HIS:H	1.47	0.61
11:H:115:ARG:NH1	11:H:123:ILE:CD1	2.64	0.61
2:7:17:A:H2'	2:7:18:C:C6	2.35	0.61
3:8:126:A:OP2	3:8:126:A:H2'	2.00	0.61
1:5:2115:G:O2'	20:R:82:LYS:HE3	2.01	0.61
1:5:532:A:O2'	1:5:533:A:H5'	2.01	0.61
27:Y:97:ILE:HG22	27:Y:99:LEU:HD21	1.83	0.61
1:5:2431:C:O2'	1:5:2432:A:H5'	2.00	0.61
26:X:73:MET:CE	26:X:73:MET:HA	2.29	0.61
1:5:94:G:H2'	1:5:95:A:C8	2.35	0.61
6:C:131:VAL:O	6:C:135:VAL:HG23	2.00	0.61
13:J:13:LYS:HE2	13:J:132:ASN:HD21	1.65	0.61
1:5:253:A:O2'	1:5:254:A:H8	1.84	0.61
5:B:171:LEU:HD21	5:B:333:LYS:HG2	1.82	0.61
1:5:2585:G:O6	26:X:24:LEU:HD21	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:46:LYS:NZ	4:A:46:LYS:HA	2.16	0.60
14:L:140:SER:HG	14:L:143:ALA:H	1.48	0.60
1:5:2604:U:HO2'	1:5:2605:G:P	2.24	0.60
1:5:1715:A:H4'	1:5:1716:U:OP1	2.00	0.60
1:5:531:G:H2'	1:5:532:A:C8	2.36	0.60
1:5:1049:C:H2'	1:5:1050:U:C6	2.34	0.60
6:C:282:SER:HB3	19:Q:126:GLN:HE21	1.65	0.60
1:5:1597:C:H2'	1:5:1598:G:C8	2.36	0.60
1:5:242:C:H2'	1:5:243:G:H8	1.64	0.60
4:A:119:LYS:N	4:A:119:LYS:HD3	2.15	0.60
27:Y:37:LYS:HE2	27:Y:38:GLU:H	1.66	0.60
1:5:561:C:OP1	15:M:77:ARG:HG3	2.01	0.60
1:5:1196:C:OP2	1:5:1196:C:H2'	2.01	0.60
20:R:60:LYS:O	20:R:63:THR:HG23	2.01	0.60
10:G:86:THR:O	10:G:90:THR:HG23	2.02	0.60
16:N:172:ARG:CB	16:N:174:ILE:HD13	2.28	0.60
1:5:1362:G:H2'	1:5:1363:A:C8	2.36	0.60
23:U:42:LYS:HB3	23:U:45:GLY:O	2.02	0.60
5:B:3:HIS:CG	5:B:3:HIS:O	2.55	0.60
12:I:187:ALA:HB3	12:I:189:GLU:H	1.67	0.60
1:5:2283:G:H1'	1:5:2285:C:N4	2.15	0.60
1:5:1492:G:N7	14:L:2:ALA:N	69.29	0.60
1:5:2424:A:N6	1:5:2605:G:O2'	2.32	0.60
7:D:61:ILE:HG23	7:D:79:TYR:CE1	2.36	0.60
1:5:3285:C:H2'	1:5:3286:G:H5''	1.83	0.60
5:B:17:LEU:HD11	5:B:233:TRP:HH2	1.66	0.60
1:5:1349:G:C8	1:5:1349:G:H3'	2.37	0.60
4:A:209:HIS:CD2	4:A:211:HIS:H	2.19	0.60
1:5:977:C:O2'	1:5:978:G:H5'	2.00	0.60
10:G:83:ASP:OD2	10:G:85:ASN:HB2	2.01	0.60
1:5:13:A:H4'	26:X:39:LYS:HD2	1.83	0.60
11:H:48:VAL:HG21	11:H:52:LEU:HD13	1.82	0.60
28:Z:22:LYS:HD3	28:Z:129:TRP:CZ3	2.37	0.60
1:5:516:A:O2'	1:5:517:G:H5'	2.02	0.60
1:5:1183:C:OP1	21:S:158:LYS:NZ	2.33	0.60
1:5:2855:U:H2'	1:5:2856:G:O4'	2.02	0.60
26:X:133:LEU:HD22	26:X:133:LEU:O	2.02	0.60
1:5:1626:U:H3	1:5:1817:G:H1	1.49	0.60
1:5:948:C:O2'	1:5:949:C:H5'	2.02	0.60
4:A:70:ARG:NH1	4:A:72:ARG:HH21	1.99	0.60
1:5:2572:C:HO2'	1:5:2573:G:P	2.21	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:I:99:ILE:HD13	12:I:101:LYS:HB2	1.84	0.60
12:I:208:ASN:HA	12:I:211:ARG:HG2	1.84	0.60
7:D:37:VAL:HG12	22:T:31:LEU:HD21	1.83	0.60
27:Y:37:LYS:CE	27:Y:37:LYS:H	2.13	0.59
28:Z:128:GLN:HG2	28:Z:129:TRP:N	2.16	0.59
5:B:285:VAL:HG22	5:B:322:ILE:HD12	1.84	0.59
1:5:771:A:C2'	1:5:772:U:H5'	2.32	0.59
1:5:528:U:H2'	1:5:529:A:C8	2.36	0.59
1:5:1915:A:H2'	1:5:1916:U:C6	2.37	0.59
4:A:6:ARG:HH12	4:A:199:THR:H	1.47	0.59
1:5:3226:A:C2'	1:5:3227:A:H5''	2.32	0.59
22:T:46:GLY:HA2	22:T:52:MET:CE	2.32	0.59
2:7:62:U:O3'	7:D:285:ARG:NH1	2.35	0.59
1:5:3047:U:O2'	1:5:3048:A:H5'	2.02	0.59
4:A:187:HIS:ND1	4:A:190:ARG:NH1	2.51	0.59
19:Q:96:PHE:CD2	19:Q:97:PRO:HD2	2.37	0.59
10:G:88:ALA:O	10:G:92:LYS:HB2	2.02	0.59
17:O:11:GLY:O	17:O:41:LEU:HD13	2.02	0.59
23:U:77:LYS:O	23:U:81:LYS:HB2	2.02	0.59
6:C:321:LYS:O	6:C:325:LEU:HG	2.03	0.59
1:5:355:A:H2'	1:5:356:C:O4'	2.03	0.59
19:Q:18:ALA:HA	19:Q:53:PHE:CE1	2.38	0.59
1:5:2797:C:OP1	17:O:60:LYS:NZ	69.69	0.59
1:5:2967:A:C8	1:5:2968:G:H1'	2.37	0.59
12:I:169:LYS:O	12:I:170:LYS:HD3	2.02	0.59
8:E:55:LEU:HD23	8:E:55:LEU:N	2.18	0.59
4:A:205:ASN:HB3	4:A:206:PRO:HD2	1.84	0.59
4:A:112:ILE:O	4:A:112:ILE:HG13	2.02	0.59
13:J:164:LYS:CE	13:J:171:VAL:HB	2.32	0.59
1:5:2554:A:H4'	1:5:2555:G:OP1	2.01	0.59
26:X:58:ASP:O	26:X:62:VAL:HG23	2.03	0.59
28:Z:121:ARG:HH11	28:Z:121:ARG:CG	2.15	0.59
1:5:1272:C:H2'	1:5:1273:A:H5'	1.84	0.59
12:I:86:HIS:ND1	12:I:139:ARG:NH1	2.51	0.59
1:5:3195:U:O2'	1:5:3196:U:H5'	2.01	0.59
21:S:124:LEU:HD23	21:S:124:LEU:N	2.18	0.59
5:B:306:THR:HG21	5:B:316:GLU:HA	1.82	0.59
2:7:110:G:O2'	2:7:111:U:H5'	2.03	0.59
19:Q:153:PHE:O	19:Q:161:LYS:HG2	2.03	0.59
1:5:1767:C:C2'	1:5:1768:U:H5'	2.32	0.59
1:5:915:A:C5	1:5:917:A:H1'	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:O:178:VAL:O	17:O:182:ASN:HB3	2.03	0.59
17:O:74:ARG:HH11	17:O:74:ARG:HG2	1.66	0.59
18:P:70:THR:HG21	18:P:81:ALA:HB3	1.84	0.59
1:5:1991:Y5P:H2'	1:5:1992:Y5P:H6	1.84	0.59
1:5:1323:G:O2'	1:5:1324:U:H5'	2.03	0.59
13:J:53:THR:HG23	13:J:59:ILE:O	2.03	0.59
6:C:280:ILE:O	6:C:280:ILE:HG13	2.00	0.59
15:M:76:ALA:HB1	15:M:80:THR:OG1	2.01	0.59
1:5:1874:A:O2'	1:5:1875:G:H5'	2.03	0.59
8:E:174:LEU:HB2	8:E:176:PHE:CE1	2.37	0.59
1:5:195:U:H2'	1:5:196:G:O4'	2.02	0.59
23:U:39:ASP:O	23:U:47:VAL:HB	2.03	0.59
22:T:99:SER:HG	22:T:101:CYS:HG	1.51	0.59
1:5:162:G:O2'	1:5:163:C:H5'	2.03	0.59
13:J:79:ILE:HG12	13:J:82:ARG:HH21	1.68	0.59
11:H:162:GLN:HB2	11:H:179:ILE:O	2.03	0.59
18:P:87:SER:O	18:P:91:VAL:HG23	2.03	0.59
1:5:627:U:H2'	1:5:628:A:C8	2.38	0.59
1:5:3150:A:H5'	5:B:129:ALA:O	2.03	0.59
20:R:153:LYS:HZ3	20:R:153:LYS:HB2	1.68	0.59
8:E:47:PHE:CD1	8:E:74:VAL:HG22	2.37	0.59
6:C:317:PRO:HA	6:C:323:VAL:HG22	1.84	0.59
1:5:620:U:H5''	1:5:622:A:N7	2.18	0.59
22:T:135:PRO:O	22:T:136:ARG:HB2	2.02	0.59
1:5:101:G:H2'	1:5:102:C:O4'	2.03	0.59
1:5:506:U:H2'	1:5:507:U:O4'	2.03	0.59
6:C:274:TYR:HE1	6:C:276:LEU:HD12	1.68	0.59
17:O:77:SER:HB3	17:O:106:GLU:OE1	2.03	0.59
9:F:41:ARG:NH1	9:F:41:ARG:CG	2.53	0.59
1:5:3138:U:P	5:B:30:LYS:HZ2	2.25	0.59
7:D:51:LEU:HB2	7:D:144:VAL:CG1	2.33	0.58
12:I:197:VAL:HG12	12:I:199:PHE:CE1	2.38	0.58
8:E:154:LEU:CD1	15:M:119:GLN:HG2	2.32	0.58
1:5:382:U:H3	1:5:387:A:H61	1.50	0.58
13:J:50:ALA:HB2	13:J:65:ILE:CD1	2.31	0.58
1:5:3287:U:H2'	1:5:3288:G:H5'	1.84	0.58
1:5:2523:A:C8	10:G:51:LYS:HB2	2.38	0.58
1:5:379:C:H2'	1:5:380:U:H6	1.67	0.58
1:5:2147:A:OP1	4:A:200:ARG:HG3	2.02	0.58
25:W:5:ILE:O	25:W:5:ILE:HD12	2.03	0.58
1:5:1786:G:H2'	1:5:1787:A:C8	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:3237:U:H2'	1:5:3238:G:H5''	1.86	0.58
7:D:140:ARG:HB3	7:D:141:PRO:HD2	1.84	0.58
19:Q:85:GLY:H	19:Q:104:LEU:HB2	1.66	0.58
22:T:91:LEU:CD1	22:T:96:ILE:HD11	2.34	0.58
1:5:3041:U:H2'	1:5:3042:U:C6	2.38	0.58
13:J:25:GLU:HG3	13:J:63:GLU:OE2	2.03	0.58
7:D:25:GLU:HB2	7:D:27:LYS:HG3	1.85	0.58
9:F:108:LEU:CD2	9:F:115:THR:HG23	2.33	0.58
6:C:63:GLU:O	6:C:76:ARG:N	2.35	0.58
6:C:280:ILE:HD12	19:Q:104:LEU:CD2	2.33	0.58
16:N:182:ASN:OD1	16:N:182:ASN:N	2.37	0.58
1:5:2186:U:H2'	1:5:2187:G:C5'	2.34	0.58
1:5:1818:U:H2'	1:5:1819:U:C6	2.37	0.58
1:5:3195:U:H5''	1:5:3195:U:O2	2.03	0.58
6:C:138:ARG:NH2	6:C:240:PRO:HB2	2.19	0.58
1:5:1472:U:O2'	1:5:1473:G:H5'	2.02	0.58
9:F:161:VAL:CG1	9:F:162:PRO:HD2	2.33	0.58
8:E:115:UNK:HA	8:E:118:UNK:CG	2.31	0.58
2:7:28:C:O3'	13:J:135:GLY:HA2	2.03	0.58
1:5:2426:U:H3	1:5:2603:G:H1	1.50	0.58
24:V:104:ASN:HB2	24:V:105:PRO:HD2	1.85	0.58
1:5:797:U:O2'	1:5:798:G:H5'	2.03	0.58
1:5:1008:U:O2'	1:5:1009:A:H5'	2.02	0.58
8:E:65:ILE:O	8:E:76:LEU:HA	2.02	0.58
1:5:1916:U:H2'	1:5:1917:C:C6	2.38	0.58
1:5:374:A:HO2'	1:5:376:G:H8	1.52	0.58
4:A:116:VAL:HG13	4:A:126:LEU:HB2	1.86	0.58
1:5:3292:A:O2'	1:5:3293:U:H5'	2.03	0.58
1:5:3252:G:H2'	1:5:3253:G:H8	1.66	0.58
17:O:103:LYS:HB3	17:O:105:PHE:CE1	2.39	0.58
7:D:219:PHE:CE2	7:D:227:LEU:HD11	2.39	0.58
5:B:287:LYS:HZ2	5:B:287:LYS:HB3	1.69	0.58
23:U:58:GLU:HG2	23:U:60:GLY:H	1.69	0.58
6:C:202:ARG:NE	6:C:202:ARG:HA	2.18	0.58
1:5:353:G:N7	13:J:55:ARG:HD3	106.99	0.58
26:X:100:LYS:HG3	26:X:105:VAL:O	2.03	0.58
1:5:2925:C:H2'	1:5:2926:A:C5'	2.31	0.58
1:5:2101:C:O2'	1:5:2102:U:OP1	2.18	0.58
28:Z:26:VAL:HG22	28:Z:42:LEU:O	2.03	0.58
1:5:679:U:O2'	1:5:788:C:H1'	2.03	0.58
1:5:766:U:H4'	1:5:767:U:H5'	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:290:ASP:OD2	5:B:292:ALA:HB3	2.04	0.58
1:5:169:U:H4'	14:L:128:ARG:NH2	2.19	0.58
1:5:2157:G:N7	4:A:152:SER:OG	2.35	0.58
20:R:117:LYS:HG3	20:R:118:HIS:N	2.18	0.58
6:C:345:GLU:OE1	6:C:346:LYS:N	2.36	0.58
1:5:662:U:H2'	1:5:663:C:C6	2.39	0.58
1:5:1265:U:O2	1:5:1277:C:H1'	2.04	0.58
6:C:33:ASP:O	6:C:37:THR:HG23	2.04	0.58
5:B:214:MET:HE3	5:B:279:ASN:HA	1.86	0.58
1:5:1048:A:HO2'	1:5:2632:G:HO2'	1.50	0.58
24:V:87:ARG:HB2	24:V:89:ASP:OD1	2.03	0.58
1:5:3162:C:O2	1:5:3163:A:C8	2.57	0.57
6:C:30:ILE:O	6:C:32:PRO:HD3	2.04	0.57
8:E:152:THR:CG2	8:E:155:LEU:HD12	2.34	0.57
8:E:48:ARG:HG2	8:E:48:ARG:NH1	2.19	0.57
17:O:58:LEU:HD12	17:O:72:HIS:CG	2.39	0.57
4:A:52:SER:HB3	4:A:191:LEU:HD12	1.84	0.57
6:C:60:THR:HG22	6:C:61:SER:N	2.18	0.57
13:J:94:ARG:C	13:J:96:PHE:H	2.05	0.57
27:Y:100:HIS:CG	27:Y:101:PRO:HD2	2.38	0.57
16:N:48:ALA:O	16:N:53:TYR:HB3	2.04	0.57
7:D:257:GLU:H	7:D:257:GLU:CD	2.08	0.57
1:5:1036:A:H2'	1:5:1037:C:O4'	2.03	0.57
20:R:28:GLU:O	20:R:31:GLU:N	2.37	0.57
24:V:20:GLY:HA2	24:V:35:TYR:CE1	2.39	0.57
12:I:38:LYS:HB2	12:I:83:ASP:OD1	2.03	0.57
1:5:1245:A:N7	1:5:1271:A:O2'	2.26	0.57
1:5:1096:U:H4'	1:5:1097:G:O5'	2.04	0.57
1:5:2102:U:H2'	1:5:2103:U:C6	2.39	0.57
10:G:149:LYS:HD3	10:G:201:THR:O	2.02	0.57
1:5:3151:U:H5'	1:5:3152:U:OP1	2.03	0.57
1:5:388:G:H4'	18:P:18:ARG:O	2.05	0.57
8:E:58:LEU:HD12	8:E:78:ARG:HD3	1.85	0.57
1:5:3384:U:H2'	1:5:3385:U:H6	1.70	0.57
14:L:59:ARG:HH21	14:L:69:VAL:HG23	1.69	0.57
27:Y:109:LEU:HD22	27:Y:115:ARG:NH1	2.20	0.57
1:5:1305:U:C2	5:B:257:PRO:HB3	2.39	0.57
4:A:209:HIS:HD2	4:A:211:HIS:H	1.53	0.57
1:5:1203:A:N3	1:5:2855:U:O2'	2.37	0.57
1:5:2915:U:C5	5:B:7:GLU:HG2	2.39	0.57
27:Y:120:GLN:CA	27:Y:120:GLN:HE21	2.16	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:149:U:P	16:N:49:ARG:HH21	2.28	0.57
6:C:99:MET:CE	6:C:103:THR:H	2.17	0.57
1:5:844:G:C3'	1:5:845:G:H5'	2.35	0.57
1:5:121:A:C2	10:G:129:PRO:HB3	2.40	0.57
1:5:2769:A:C2'	1:5:2770:G:H5'	2.35	0.57
6:C:327:LEU:HA	9:F:166:ASN:HD21	1.69	0.57
4:A:149:ARG:HH22	4:A:155:LYS:CD	2.18	0.57
19:Q:72:LYS:HZ2	19:Q:72:LYS:HB3	1.69	0.57
11:H:13:PRO:O	11:H:16:VAL:HG13	2.05	0.57
1:5:2770:G:O2'	1:5:2771:U:H5'	2.05	0.57
13:J:80:LEU:HD22	13:J:80:LEU:O	2.04	0.57
1:5:1891:A:O2'	1:5:1892:G:H5'	2.04	0.57
1:5:2558:U:O2'	1:5:2559:U:H5'	2.03	0.57
1:5:248:U:C2'	1:5:249:U:H5'	2.34	0.57
8:E:8:LYS:NZ	8:E:8:LYS:HA	2.20	0.57
9:F:218:ARG:HG2	9:F:218:ARG:NH1	2.18	0.57
1:5:3151:U:OP1	5:B:128:LYS:NZ	2.38	0.57
1:5:1891:A:C2'	1:5:1892:G:H5'	2.33	0.57
1:5:2880:U:H1'	5:B:250:ALA:CB	2.34	0.57
1:5:2526:C:H2'	1:5:2527:G:H8	1.70	0.57
5:B:215:ILE:HD12	5:B:338:LEU:HB3	1.87	0.57
1:5:1444:G:H2'	1:5:1445:U:O4'	2.04	0.57
1:5:1767:C:O2'	1:5:1768:U:H5'	2.04	0.57
27:Y:97:ILE:HG22	27:Y:99:LEU:CD2	2.35	0.57
1:5:75:G:OP1	14:L:58:VAL:HG13	2.04	0.57
1:5:2808:A:HO2'	1:5:2809:C:C5'	2.17	0.57
9:F:103:LEU:HG	9:F:130:ILE:CD1	2.35	0.57
1:5:2922:G:H2'	1:5:2923:U:O4'	2.04	0.57
1:5:2573:G:H2'	1:5:2574:G:O4'	2.05	0.57
1:5:2213:A:H1'	1:5:2602:G:O4'	2.05	0.57
1:5:2428:U:H2'	1:5:2429:G:H8	1.70	0.57
6:C:99:MET:CE	6:C:102:PRO:HA	2.34	0.57
17:O:126:VAL:HG22	17:O:127:LEU:CD2	2.34	0.57
1:5:92:G:H5'	1:5:93:C:H5''	1.86	0.57
6:C:355:PHE:O	6:C:358:THR:HG22	2.05	0.57
3:8:157:U:H2'	3:8:158:U:C6	2.40	0.57
1:5:1362:G:H2'	1:5:1363:A:H8	1.70	0.57
1:5:1382:G:OP2	6:C:188:ARG:NH1	2.38	0.57
8:E:171:PRO:HA	8:E:174:LEU:CD1	2.34	0.57
1:5:2131:A:H2'	1:5:2132:C:O4'	2.05	0.57
1:5:2907:G:O2'	1:5:2908:G:H5'	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:73:VAL:HG22	24:V:86:ARG:HH21	1.70	0.57
3:8:131:A:O2'	3:8:132:G:H5'	2.04	0.57
26:X:117:ASN:OD1	26:X:119:THR:HG23	2.05	0.57
6:C:280:ILE:HD12	19:Q:104:LEU:HD22	1.87	0.56
1:5:250:U:H2'	1:5:251:G:H5'	1.87	0.56
1:5:2807:U:O2'	1:5:2808:A:H2'	2.05	0.56
5:B:171:LEU:CD2	5:B:333:LYS:HG2	2.35	0.56
27:Y:23:PRO:HG2	27:Y:26:GLN:CG	2.33	0.56
24:V:72:LYS:HG2	24:V:74:MET:HE1	1.87	0.56
13:J:30:LEU:O	13:J:34:SER:HB2	2.04	0.56
1:5:3044:G:O2'	1:5:3045:G:H5'	2.04	0.56
13:J:13:LYS:HE2	13:J:132:ASN:ND2	2.20	0.56
15:M:14:LEU:H	15:M:19:ARG:NH2	2.01	0.56
9:F:196:LYS:HB3	9:F:197:GLN:OE1	2.05	0.56
8:E:136:GLU:OE1	8:E:136:GLU:HA	2.05	0.56
1:5:839:C:H1'	1:5:1724:U:OP1	2.05	0.56
1:5:238:A:H2'	1:5:239:G:O4'	2.05	0.56
1:5:3278:C:C3'	1:5:3279:A:H5'	2.34	0.56
12:I:169:LYS:NZ	22:T:158:THR:O	2.26	0.56
1:5:3365:U:H2'	1:5:3366:G:H8	1.70	0.56
22:T:68:THR:CG2	22:T:71:SER:HB2	2.34	0.56
9:F:95:ILE:HG23	9:F:133:TYR:CE2	2.40	0.56
26:X:141:TYR:O	26:X:142:ILE:HB	2.06	0.56
24:V:120:LYS:HZ2	24:V:137:VAL:HG21	1.71	0.56
1:5:251:G:O2'	1:5:252:U:O4'	2.21	0.56
7:D:126:GLU:HB2	7:D:196:ARG:HB2	1.87	0.56
3:8:80:A:O2'	3:8:81:U:OP1	2.19	0.56
9:F:103:LEU:CD2	9:F:130:ILE:HD11	2.35	0.56
20:R:81:ARG:HD3	20:R:88:ARG:NH1	2.18	0.56
9:F:179:LEU:HD13	9:F:179:LEU:N	2.20	0.56
1:5:2769:A:O2'	1:5:2770:G:H5'	2.04	0.56
1:5:974:G:H5''	19:Q:14:GLY:O	2.05	0.56
1:5:1471:U:H2'	1:5:1472:U:H6	1.70	0.56
1:5:600:G:H5'	1:5:601:U:OP2	2.06	0.56
1:5:1631:C:H5''	1:5:1632:A:H5''	1.87	0.56
1:5:44:U:H5''	16:N:85:THR:HG23	1.86	0.56
16:N:73:ARG:CB	16:N:89:VAL:HG13	2.36	0.56
13:J:49:LYS:HD2	13:J:62:ASN:O	2.05	0.56
1:5:2649:A:O2'	1:5:2650:U:H5'	2.05	0.56
1:5:1220:U:H4'	1:5:1221:A:H5''	1.87	0.56
26:X:57:LEU:HD12	26:X:94:GLN:HE22	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2967:A:N7	1:5:2968:G:H1'	2.20	0.56
1:5:4:U:O2'	1:5:5:G:H5'	2.04	0.56
1:5:2408:U:C2'	1:5:2409:G:H5'	2.36	0.56
7:D:163:LEU:O	7:D:163:LEU:HD12	2.06	0.56
1:5:2211:U:H5	1:5:2234:G:H1	1.53	0.56
1:5:159:A:C2'	1:5:160:G:H5'	2.36	0.56
1:5:173:G:H2'	1:5:174:C:C6	2.40	0.56
9:F:203:TRP:CD1	9:F:204:PRO:HD2	2.41	0.56
10:G:130:TYR:HD1	10:G:202:GLU:HB2	1.69	0.56
1:5:1240:A:H2'	1:5:1241:U:H5'	1.87	0.56
16:N:49:ARG:CG	16:N:49:ARG:HH11	2.19	0.56
6:C:159:ILE:HG23	6:C:164:GLU:CD	2.26	0.56
1:5:3194:C:C2'	1:5:3195:U:H5'	2.36	0.56
13:J:164:LYS:HE3	13:J:171:VAL:HB	1.87	0.56
6:C:265:GLU:OE1	6:C:265:GLU:HA	2.06	0.56
1:5:107:A:H2'	1:5:108:A:O4'	2.06	0.56
25:W:49:ILE:O	25:W:52:THR:HG23	2.06	0.56
28:Z:10:VAL:O	28:Z:83:THR:HG22	2.06	0.56
7:D:51:LEU:HB2	7:D:144:VAL:HG11	1.87	0.56
1:5:238:A:HO2'	1:5:239:G:P	2.28	0.56
8:E:31:ARG:NH2	8:E:81:ALA:O	2.38	0.56
27:Y:120:GLN:HA	27:Y:120:GLN:HE21	1.70	0.56
8:E:175:LYS:NZ	15:M:111:ALA:HA	2.21	0.56
1:5:850:U:H2'	1:5:851:C:H6	1.71	0.56
5:B:159:ARG:HG2	5:B:182:GLN:HA	1.87	0.56
17:O:120:VAL:O	17:O:124:LEU:HD22	2.05	0.56
6:C:246:ARG:O	6:C:248:VAL:HG23	2.06	0.56
1:5:2243:A:O4'	1:5:2313:A:H3'	2.06	0.56
3:8:81:U:H1'	3:8:82:U:O4'	2.06	0.56
6:C:178:LEU:O	6:C:182:LEU:HD22	2.06	0.56
27:Y:52:ARG:HG2	27:Y:53:ASP:H	1.70	0.56
10:G:81:THR:HG23	10:G:82:LEU:H	1.71	0.56
14:L:85:LEU:HD22	14:L:120:GLN:NE2	2.16	0.56
1:5:238:A:O2'	1:5:239:G:OP1	2.21	0.56
1:5:3289:G:H4'	1:5:3290:G:OP1	2.06	0.56
1:5:2885:C:O2'	1:5:2886:U:H5'	2.05	0.56
8:E:130:ILE:HD12	8:E:135:VAL:CG2	2.35	0.56
17:O:65:ASN:OD1	17:O:67:THR:HB	2.05	0.56
24:V:45:ARG:HD2	24:V:46:LEU:H	1.70	0.56
1:5:1877:U:H5''	1:5:1878:G:H5'	1.86	0.56
7:D:286:VAL:O	7:D:290:ILE:HG13	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:X:108:LEU:HD22	26:X:127:THR:HG22	1.87	0.56
22:T:48:ILE:HG13	22:T:94:GLU:HG2	1.86	0.56
5:B:332:ARG:O	5:B:333:LYS:HB2	2.06	0.56
12:I:169:LYS:H	12:I:169:LYS:CE	2.18	0.56
17:O:84:LEU:HD23	17:O:84:LEU:C	2.26	0.56
4:A:95:SER:OG	4:A:97:ASN:ND2	2.39	0.56
1:5:3186:A:C2	11:H:44:THR:HG22	2.40	0.56
1:5:1559:A:H2'	26:X:33:ARG:HH22	1.70	0.56
10:G:34:PHE:CE1	10:G:42:PRO:HD3	2.41	0.55
19:Q:42:ALA:HB2	19:Q:133:LYS:HD3	1.88	0.55
9:F:22:THR:CA	9:F:25:GLN:HG2	2.30	0.55
14:L:85:LEU:N	14:L:85:LEU:HD23	2.21	0.55
4:A:83:HIS:NE2	4:A:86:GLN:HB2	2.21	0.55
5:B:109:HIS:C	5:B:110:LEU:HD12	2.27	0.55
1:5:1226:G:H2'	1:5:1227:C:H6	1.69	0.55
1:5:908:G:H4'	1:5:909:G:O5'	2.06	0.55
24:V:89:ASP:OD1	24:V:91:VAL:HG12	2.06	0.55
1:5:1770:G:H5'	1:5:1771:C:OP2	2.06	0.55
19:Q:177:GLY:O	19:Q:186:VAL:N	2.27	0.55
1:5:2725:U:H3'	1:5:2726:C:O2	2.06	0.55
4:A:117:GLU:OE2	4:A:163:ARG:NH2	2.39	0.55
27:Y:98:ASN:C	27:Y:99:LEU:HD23	2.26	0.55
1:5:2249:G:H8	1:5:2272:G:HO2'	1.53	0.55
1:5:394:G:N2	1:5:396:A:H3'	2.21	0.55
5:B:14:LEU:HD22	5:B:262:TRP:CZ3	2.41	0.55
1:5:1240:A:H2	1:5:1248:C:H41	1.54	0.55
1:5:999:G:C6	1:5:1000:C:N4	2.73	0.55
1:5:116:A:OP2	16:N:2:GLY:HA3	2.06	0.55
5:B:221:THR:HG22	5:B:272:TYR:H	1.71	0.55
8:E:43:LEU:HD11	8:E:85:ILE:HG13	1.88	0.55
4:A:70:ARG:HG3	4:A:71:LEU:N	2.21	0.55
28:Z:97:SER:HB3	28:Z:99:GLU:OE2	2.06	0.55
1:5:248:U:H2'	1:5:249:U:H5'	1.88	0.55
17:O:126:VAL:CG2	17:O:127:LEU:HD23	2.36	0.55
12:I:86:HIS:HB3	12:I:139:ARG:HG2	1.88	0.55
2:7:4:U:H2'	2:7:5:G:H8	1.70	0.55
2:7:112:G:H2'	2:7:113:C:H6	1.72	0.55
7:D:294:ALA:O	7:D:296:GLN:HG2	2.06	0.55
1:5:55:G:C2'	1:5:56:G:H5'	2.35	0.55
1:5:2616:C:H2'	1:5:2617:U:H5'	1.87	0.55
5:B:74:GLU:OE2	5:B:325:LYS:HE3	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:R:67:ALA:HA	20:R:70:LYS:HB2	1.88	0.55
21:S:26:ARG:HH22	21:S:28:ARG:HH21	1.55	0.55
1:5:1874:A:C2'	1:5:1875:G:H5'	2.36	0.55
21:S:73:LYS:NZ	21:S:97:VAL:O	2.36	0.55
1:5:1559:A:H2'	26:X:33:ARG:NH2	2.20	0.55
5:B:221:THR:O	5:B:272:TYR:HA	2.06	0.55
1:5:500:C:O2'	1:5:501:A:H5'	2.06	0.55
10:G:70:LYS:CA	10:G:235:GLY:HA3	2.27	0.55
1:5:1347:U:H5'	6:C:303:GLY:CA	2.26	0.55
16:N:184:LYS:O	16:N:184:LYS:HG2	2.05	0.55
1:5:36:C:C2'	1:5:37:U:H5'	2.34	0.55
3:8:134:G:OP1	26:X:56:ARG:HG2	2.07	0.55
16:N:8:GLU:HB2	16:N:50:ARG:HH12	1.72	0.55
12:I:175:ASN:HB3	12:I:176:LEU:CD2	2.35	0.55
4:A:205:ASN:HB3	4:A:206:PRO:CD	2.37	0.55
1:5:282:G:H3'	1:5:282:G:C8	2.41	0.55
21:S:94:ILE:HD11	21:S:106:LEU:HD23	1.89	0.55
9:F:191:VAL:HG12	9:F:192:GLY:H	1.71	0.55
1:5:2181:C:OP1	4:A:193:ARG:NH2	2.40	0.55
13:J:53:THR:OG1	13:J:60:ARG:HA	2.07	0.55
1:5:1238:C:C3'	1:5:1239:C:H5''	2.37	0.55
1:5:2536:A:H2'	1:5:2537:U:O4'	2.06	0.55
1:5:2213:A:H1'	1:5:2602:G:C4'	2.37	0.55
9:F:108:LEU:HD21	9:F:115:THR:HG23	1.88	0.55
13:J:79:ILE:HG12	13:J:82:ARG:NH2	2.21	0.55
1:5:2880:U:H1'	5:B:250:ALA:HB3	1.87	0.55
27:Y:103:LYS:HD3	27:Y:103:LYS:N	2.20	0.55
9:F:124:LEU:HD13	9:F:124:LEU:O	2.06	0.55
6:C:179:LEU:O	6:C:179:LEU:HD22	2.07	0.55
1:5:3218:A:H5''	1:5:3219:G:C5	2.41	0.55
1:5:2017:P5P:H2'	1:5:2018:P5P:H8	1.89	0.55
1:5:1462:A:C2'	1:5:1463:U:H5'	2.36	0.55
12:I:36:LEU:HD12	12:I:87:LEU:HD23	1.88	0.55
1:5:249:U:H1'	1:5:250:U:O4'	2.07	0.55
3:8:81:U:OP1	3:8:87:G:H4'	2.07	0.55
1:5:2421:U:C2'	1:5:2422:C:H5''	2.34	0.55
10:G:183:LYS:HD2	10:G:194:THR:CB	2.36	0.55
1:5:977:C:C2'	1:5:978:G:H5'	2.37	0.55
1:5:1290:A:H2'	1:5:1291:A:C8	2.41	0.55
1:5:3250:U:O2'	1:5:3251:U:H5'	2.07	0.55
20:R:136:ARG:O	20:R:139:VAL:HG22	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2916:U:H1'	24:V:44:SER:HB3	1.89	0.55
7:D:146:LEU:HD13	7:D:148:ILE:HD11	1.89	0.55
1:5:2608:G:H2'	1:5:2609:A:C8	2.41	0.55
9:F:216:VAL:HB	9:F:217:PRO:CD	2.37	0.55
1:5:1233:G:O2'	1:5:1234:G:H5'	2.07	0.55
13:J:27:GLY:O	13:J:31:THR:HG22	2.06	0.55
1:5:1916:U:H2'	1:5:1917:C:H6	1.72	0.55
20:R:123:LEU:O	20:R:127:SER:HB3	2.07	0.55
27:Y:45:ILE:HD11	27:Y:122:LYS:CE	2.23	0.55
1:5:620:U:H3'	1:5:621:A:H5'	1.89	0.55
5:B:238:LEU:CD1	5:B:239:PRO:HD3	2.33	0.55
24:V:59:MET:CE	24:V:59:MET:HA	2.36	0.55
2:7:17:A:H2'	2:7:18:C:H6	1.71	0.55
1:5:517:G:O2'	1:5:518:G:H5'	2.07	0.55
18:P:53:ASP:O	18:P:54:HIS:HB2	2.06	0.55
1:5:2181:C:H5"	4:A:193:ARG:NH2	2.21	0.55
24:V:2:SER:HB2	24:V:125:LEU:HD21	1.89	0.55
1:5:992:A:C2'	1:5:993:G:H5'	2.37	0.55
28:Z:95:VAL:HG21	28:Z:113:VAL:HG11	1.88	0.55
1:5:2583:C:O2'	1:5:2584:G:OP1	2.25	0.55
1:5:2093:A:H61	20:R:114:LYS:HD3	1.69	0.55
10:G:150:LEU:HD22	10:G:151:VAL:N	2.19	0.55
10:G:78:PHE:O	10:G:79:GLN:HB3	2.07	0.55
1:5:3083:G:H4'	25:W:42:GLN:NE2	2.22	0.55
14:L:71:ALA:HB2	14:L:147:ILE:CD1	2.37	0.55
17:O:109:PRO:HB2	17:O:110:PRO:CD	2.36	0.55
1:5:549:U:H2'	1:5:550:A:C8	2.42	0.55
1:5:599:C:H2'	1:5:600:G:O4'	2.06	0.55
1:5:585:A:H2'	1:5:586:C:H6	1.70	0.54
14:L:71:ALA:HB2	14:L:147:ILE:HD11	1.89	0.54
1:5:724:U:H2'	1:5:725:G:O4'	2.07	0.54
1:5:2408:U:O2'	1:5:2409:G:H5'	2.07	0.54
5:B:48:GLY:O	5:B:335:ILE:HD12	2.07	0.54
10:G:25:PRO:O	10:G:26:LEU:HD23	2.08	0.54
1:5:1651:U:H5"	4:A:71:LEU:HD22	1.89	0.54
28:Z:10:VAL:HG22	28:Z:24:VAL:HG13	1.88	0.54
1:5:3384:U:H2'	1:5:3385:U:C6	2.41	0.54
6:C:99:MET:HE2	6:C:103:THR:H	1.73	0.54
12:I:212:GLU:C	12:I:214:PRO:HD3	2.27	0.54
8:E:149:ILE:HG23	8:E:155:LEU:HD13	1.88	0.54
7:D:282:ARG:O	7:D:286:VAL:HG23	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:7:119:U:H3'	7:D:258:LYS:NZ	2.22	0.54
18:P:136:ILE:O	18:P:137:ASN:ND2	2.41	0.54
6:C:74:ILE:HD12	6:C:75:PRO:CD	2.27	0.54
1:5:29:C:O3'	16:N:172:ARG:NH1	2.40	0.54
1:5:2569:A:C4'	1:5:2570:U:H5'	2.30	0.54
1:5:2605:G:H2'	1:5:2607:G:O6	2.07	0.54
1:5:2712:U:H2'	1:5:2713:U:H6	1.69	0.54
1:5:3078:U:H4'	1:5:3079:U:O5'	2.07	0.54
4:A:147:ARG:NH1	4:A:147:ARG:HB2	2.22	0.54
24:V:48:ARG:NH1	24:V:48:ARG:CG	2.65	0.54
1:5:2746:A:H2'	1:5:2747:A:O4'	2.07	0.54
2:7:27:A:H2'	2:7:28:C:H6	1.72	0.54
1:5:984:G:P	9:F:101:LYS:HZ1	2.30	0.54
1:5:2562:A:H2	10:G:29:SER:HG	1.55	0.54
9:F:136:TYR:CE2	9:F:231:ASN:HB2	2.43	0.54
1:5:2772:C:H1'	1:5:2773:C:OP2	2.08	0.54
9:F:149:TYR:CE1	9:F:181:ILE:HD13	2.43	0.54
7:D:41:LYS:HB2	22:T:68:THR:O	2.07	0.54
1:5:1573:G:C2	1:5:1574:C:H1'	2.42	0.54
1:5:3351:U:H5'	1:5:3352:U:OP2	2.07	0.54
1:5:2402:A:H5''	6:C:67:THR:OG1	2.08	0.54
8:E:8:LYS:HB3	8:E:8:LYS:HZ3	4.14	0.54
12:I:85:PHE:CA	12:I:140:THR:HG22	2.33	0.54
1:5:2614:G:H8	1:5:2614:G:H5'	1.72	0.54
1:5:2098:C:O2'	1:5:2099:A:H5'	2.06	0.54
1:5:1078:U:N3	1:5:1081:U:OP2	2.34	0.54
14:L:165:SER:CB	14:L:168:ARG:HB3	2.27	0.54
6:C:64:SER:HA	6:C:75:PRO:HA	1.89	0.54
1:5:1570:U:O2'	1:5:1571:A:O4'	2.19	0.54
1:5:2582:C:O2'	1:5:2583:C:H5'	2.07	0.54
1:5:3161:C:H42	1:5:3289:G:H1	1.54	0.54
19:Q:122:ILE:HG23	19:Q:126:GLN:HB2	1.90	0.54
27:Y:27:ARG:NH1	27:Y:76:LEU:HA	2.21	0.54
10:G:238:LEU:CD1	10:G:238:LEU:H	2.21	0.54
5:B:37:ARG:HA	5:B:186:GLY:CA	2.37	0.54
1:5:2611:U:O2'	1:5:2803:A:N1	2.31	0.54
10:G:211:LEU:HD13	10:G:212:ALA:N	2.22	0.54
8:E:80:ASN:HB3	8:E:83:TYR:HD2	1.72	0.54
8:E:56:LYS:HG2	8:E:57:HIS:N	2.21	0.54
1:5:2960:C:H2'	1:5:2961:G:H8	1.73	0.54
1:5:2186:U:O2'	1:5:2187:G:H5'	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:Q:72:LYS:HZ3	19:Q:72:LYS:HB3	1.72	0.54
1:5:1819:U:O2'	1:5:1820:U:H5'	2.08	0.54
1:5:1261:G:H4'	1:5:1278:A:N1	2.22	0.54
1:5:2777:G:H5''	1:5:2778:G:OP1	2.08	0.54
7:D:266:ALA:O	7:D:270:LYS:HG3	2.07	0.54
20:R:81:ARG:HG2	20:R:88:ARG:NH1	2.22	0.54
27:Y:58:VAL:HG22	27:Y:104:LEU:HD22	1.90	0.54
5:B:14:LEU:HD23	5:B:17:LEU:CD2	2.38	0.54
1:5:609:G:H3'	1:5:609:G:N3	2.22	0.54
8:E:59:GLU:HA	8:E:59:GLU:OE1	2.08	0.54
24:V:39:VAL:O	24:V:42:SER:OG	2.25	0.54
1:5:625:G:H2'	1:5:626:U:H6	1.73	0.54
1:5:732:C:H2'	1:5:733:G:H5'	1.90	0.54
1:5:797:U:C2'	1:5:798:G:H5'	2.38	0.54
6:C:193:LYS:HB2	6:C:193:LYS:NZ	2.23	0.54
21:S:108:GLN:HA	21:S:108:GLN:NE2	2.19	0.54
1:5:2993:G:H2'	1:5:3142:A:N6	2.23	0.54
1:5:873:C:H5''	1:5:874:U:H4'	1.90	0.54
8:E:51:ARG:NH1	8:E:163:PHE:HB2	2.22	0.54
1:5:807:A:H4'	1:5:2811:A:O2'	2.08	0.54
1:5:2550:U:O4'	10:G:38:GLN:NE2	2.38	0.54
5:B:167:ARG:NH1	5:B:168:LYS:HZ3	2.05	0.54
1:5:536:U:O2'	1:5:537:A:H5'	2.08	0.54
1:5:2726:C:O2'	1:5:2727:A:H2'	2.07	0.54
28:Z:56:LYS:NZ	28:Z:56:LYS:HB2	2.23	0.54
22:T:88:ARG:O	22:T:89:LEU:HD12	2.08	0.54
1:5:2357:A:H2'	1:5:2358:A:C8	2.43	0.54
27:Y:113:LYS:HZ3	27:Y:113:LYS:HB2	1.73	0.54
4:A:149:ARG:HH22	4:A:155:LYS:HD2	1.73	0.54
1:5:1221:A:H3'	1:5:1222:G:C5'	2.38	0.54
13:J:143:ARG:HG2	13:J:144:CYS:SG	2.48	0.54
24:V:15:LEU:HA	24:V:53:SER:HB3	1.90	0.54
12:I:38:LYS:CD	12:I:41:ALA:HB2	2.37	0.54
6:C:10:SER:OG	6:C:14:GLU:OE2	2.25	0.54
4:A:77:ILE:HD12	4:A:128:ARG:HB3	1.90	0.54
1:5:173:G:H2'	1:5:174:C:O4'	2.08	0.54
21:S:137:ARG:O	21:S:141:LYS:HG3	2.08	0.54
5:B:213:GLU:OE2	5:B:340:LYS:NZ	2.41	0.54
1:5:117:U:O4	10:G:147:LYS:HD3	2.08	0.54
23:U:98:THR:CG2	23:U:104:ARG:HE	2.20	0.54
1:5:137:G:H2'	1:5:138:U:C6	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:671:U:H2'	1:5:672:A:H8	1.71	0.54
6:C:338:LYS:HD3	6:C:338:LYS:N	2.23	0.54
8:E:78:ARG:CG	8:E:78:ARG:NH1	2.61	0.53
19:Q:63:SER:OG	19:Q:64:VAL:N	2.41	0.53
1:5:3163:A:N6	1:5:3288:G:O6	2.41	0.53
16:N:197:LEU:HG	16:N:199:LEU:HD21	1.90	0.53
11:H:13:PRO:HG2	11:H:16:VAL:CG1	2.37	0.53
3:8:125:U:O2'	3:8:126:A:H5'	2.06	0.53
1:5:138:U:H2'	1:5:139:G:H8	1.72	0.53
20:R:147:ALA:O	20:R:151:ARG:HG2	2.08	0.53
1:5:3013:U:H2'	1:5:3014:U:C6	2.42	0.53
1:5:539:C:H2'	1:5:540:U:C6	2.44	0.53
8:E:43:LEU:HB2	8:E:83:TYR:O	2.08	0.53
1:5:2662:G:H2'	1:5:2663:G:H8	1.74	0.53
1:5:173:G:H2'	1:5:174:C:H6	1.72	0.53
1:5:2180:G:H2'	1:5:2181:C:C6	2.42	0.53
12:I:60:LEU:HD21	12:I:129:VAL:HG11	1.91	0.53
1:5:1334:U:H2'	1:5:1335:C:C6	2.44	0.53
10:G:41:GLN:HG3	10:G:42:PRO:HD2	1.90	0.53
15:M:106:ARG:HB2	15:M:106:ARG:CZ	3.44	0.53
11:H:67:ALA:HA	11:H:70:THR:CG2	2.37	0.53
1:5:1640:G:C2'	1:5:1641:U:H5'	2.38	0.53
1:5:3228:C:H5''	15:M:137:LYS:HZ1	1.73	0.53
1:5:2551:U:O4	4:A:95:SER:N	2.42	0.53
1:5:1290:A:H2'	1:5:1291:A:H8	1.72	0.53
2:7:33:U:O2'	2:7:34:C:H5'	2.08	0.53
1:5:2114:C:H6	1:5:2114:C:H3'	1.72	0.53
9:F:131:GLU:HB3	9:F:132:PRO:CD	2.27	0.53
26:X:86:VAL:HG11	26:X:95:ILE:HD11	1.90	0.53
1:5:2271:A:H2'	1:5:2272:G:H5'	1.88	0.53
3:8:80:A:C3'	3:8:81:U:H3'	2.39	0.53
3:8:80:A:C2'	3:8:81:U:H5'	2.38	0.53
6:C:34:ILE:HG22	6:C:35:VAL:N	2.22	0.53
7:D:107:ARG:HH22	7:D:120:LYS:CA	2.20	0.53
1:5:1950:U:H2'	1:5:1951:C:C6	2.44	0.53
8:E:129:GLU:HG2	8:E:130:ILE:N	2.23	0.53
5:B:25:ILE:HD13	5:B:25:ILE:O	2.09	0.53
10:G:243:GLN:HE22	10:G:246:MET:HE1	1.73	0.53
2:7:74:C:O2'	2:7:75:G:H5'	2.09	0.53
7:D:206:GLN:O	7:D:210:GLU:HG3	2.09	0.53
1:5:1221:A:H3'	1:5:1222:G:H5'	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:S:26:ARG:HH11	22:T:150:THR:HG22	1.68	0.53
3:8:85:G:N3	3:8:85:G:H3'	2.23	0.53
8:E:153:PRO:O	8:E:154:LEU:HB2	2.08	0.53
1:5:732:C:C2'	1:5:733:G:H5'	2.39	0.53
28:Z:4:PHE:O	28:Z:5:LEU:HB2	2.08	0.53
1:5:1845:G:H5''	1:5:1846:C:H5'	1.90	0.53
1:5:283:G:N3	1:5:283:G:H3'	2.24	0.53
22:T:65:TYR:H	22:T:65:TYR:HD2	1.56	0.53
1:5:2372:A:H3'	1:5:2373:A:C5'	2.38	0.53
7:D:49:TYR:HE2	7:D:75:LEU:HD12	1.73	0.53
12:I:169:LYS:N	12:I:169:LYS:HE2	2.20	0.53
25:W:9:SER:HB3	25:W:51:TRP:HZ3	1.72	0.53
7:D:88:ILE:CD1	7:D:239:ILE:HG22	2.39	0.53
5:B:308:MET:HB2	5:B:363:SER:HB2	1.89	0.53
8:E:52:VAL:CG1	8:E:65:ILE:HG23	2.38	0.53
5:B:126:LYS:HB2	5:B:128:LYS:HG2	1.91	0.53
27:Y:42:GLN:O	27:Y:125:LYS:HG3	2.09	0.53
27:Y:55:GLU:CD	27:Y:108:LYS:HB2	2.29	0.53
5:B:41:VAL:HA	5:B:185:GLY:CA	2.35	0.53
27:Y:23:PRO:HD2	27:Y:26:GLN:OE1	2.08	0.53
1:5:1874:A:H5''	20:R:18:GLY:HA3	1.91	0.53
12:I:72:ALA:HB2	12:I:155:ALA:HB2	1.89	0.53
13:J:133:ARG:HB3	13:J:134:PRO:CD	2.39	0.53
4:A:205:ASN:O	4:A:212:GLY:HA2	2.08	0.53
6:C:260:GLN:NE2	6:C:260:GLN:HA	2.23	0.53
1:5:1870:C:H1'	1:5:3066:U:O2'	2.09	0.53
1:5:1784:G:H2'	1:5:1785:U:O4'	2.09	0.53
14:L:114:GLN:HE21	14:L:114:GLN:CA	2.09	0.53
6:C:22:LEU:HD23	6:C:23:PRO:CD	2.33	0.53
1:5:822:G:C1'	4:A:15:ILE:HD12	2.38	0.53
24:V:72:LYS:HG2	24:V:74:MET:CE	2.38	0.53
1:5:1803:C:H2'	1:5:1804:A:H8	1.74	0.53
11:H:103:ILE:HD11	11:H:134:ILE:HG22	1.90	0.53
24:V:2:SER:CB	24:V:125:LEU:HD21	2.39	0.53
12:I:182:LEU:HD21	12:I:185:ARG:NH2	2.23	0.53
1:5:1327:C:O2'	1:5:1328:C:H5'	2.08	0.53
18:P:105:LYS:HB3	18:P:107:LEU:HD13	1.91	0.53
1:5:1583:A:H2'	1:5:1584:U:O4'	2.08	0.53
15:M:45:LEU:HD12	15:M:56:GLN:O	2.09	0.53
1:5:2683:U:OP1	13:J:18:VAL:HG11	2.07	0.53
14:L:46:ILE:CG2	14:L:49:ARG:HB2	2.38	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:L:58:VAL:HG12	14:L:59:ARG:N	2.24	0.53
1:5:237:G:H2'	1:5:238:A:H5'	1.90	0.53
1:5:2541:U:H4'	1:5:2542:U:OP1	2.08	0.53
5:B:56:ILE:HD13	5:B:76:VAL:HG11	1.91	0.53
1:5:771:A:H2'	1:5:772:U:H5'	1.91	0.53
1:5:528:U:H2'	1:5:529:A:H8	1.74	0.53
1:5:560:G:OP1	15:M:83:LYS:NZ	2.31	0.53
5:B:123:TYR:CE1	5:B:124:LYS:HB3	2.44	0.53
1:5:2799:A:H1'	4:A:42:ARG:HH12	108.17	0.53
1:5:411:U:C2	3:8:13:A:C2	2.97	0.53
3:8:9:A:H2'	3:8:10:A:C8	2.44	0.53
1:5:1223:A:C5	1:5:1224:C:C5	2.97	0.53
1:5:2573:G:H2'	1:5:2574:G:H5''	1.91	0.53
1:5:1629:U:O4'	28:Z:115:LYS:HD3	2.09	0.53
22:T:95:HIS:C	22:T:96:ILE:HD13	2.29	0.53
28:Z:103:GLN:HA	28:Z:103:GLN:OE1	2.09	0.53
1:5:1245:A:H2'	1:5:1272:C:OP1	2.08	0.53
10:G:100:GLU:OE2	10:G:108:ARG:NH1	2.41	0.53
14:L:76:THR:O	14:L:80:VAL:HG23	2.09	0.53
24:V:45:ARG:HD2	24:V:46:LEU:N	2.24	0.53
4:A:193:ARG:HB3	4:A:193:ARG:HH11	1.72	0.53
5:B:123:TYR:CD1	5:B:124:LYS:N	2.77	0.53
14:L:180:ARG:HB3	14:L:180:ARG:NH1	2.24	0.53
10:G:98:ARG:HD2	10:G:189:LEU:O	2.09	0.53
1:5:1129:A:H2'	1:5:1130:A:C8	2.44	0.53
12:I:206:LEU:O	12:I:210:ILE:HG23	2.08	0.53
1:5:251:G:P	1:5:251:G:H3'	2.49	0.52
18:P:78:VAL:HG12	18:P:80:LYS:H	1.74	0.52
9:F:23:ALA:O	9:F:26:VAL:HG22	2.09	0.52
16:N:184:LYS:N	16:N:186:GLY:H	2.03	0.52
1:5:1234:G:OP2	1:5:1235:U:H3'	2.08	0.52
17:O:127:LEU:HD22	21:S:156:VAL:HG13	1.91	0.52
1:5:536:U:H2'	1:5:537:A:H5'	1.89	0.52
11:H:103:ILE:HD11	11:H:134:ILE:CG2	2.38	0.52
13:J:171:VAL:HG13	13:J:172:LEU:N	2.24	0.52
9:F:191:VAL:HG12	9:F:192:GLY:N	2.24	0.52
1:5:1081:U:O2'	1:5:1082:U:P	2.67	0.52
1:5:3008:A:O2'	1:5:3009:G:H5'	2.09	0.52
3:8:49:G:H2'	3:8:50:C:C6	2.44	0.52
1:5:313:A:H2'	1:5:314:U:C6	2.42	0.52
1:5:1134:G:O2'	1:5:2642:A:N3	2.31	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:Q:132:PRO:HD2	19:Q:135:GLN:OE1	2.09	0.52
7:D:125:VAL:HG12	7:D:126:GLU:N	2.18	0.52
11:H:106:LYS:HE3	11:H:106:LYS:CA	2.36	0.52
6:C:136:LEU:CD2	6:C:142:VAL:HG22	2.39	0.52
11:H:116:ASN:OD1	11:H:119:GLY:HA2	2.08	0.52
5:B:300:ARG:HA	5:B:300:ARG:HH11	1.73	0.52
16:N:66:VAL:O	16:N:127:TYR:HA	2.09	0.52
1:5:3025:C:C2'	1:5:3026:G:H5'	2.40	0.52
7:D:215:ASP:OD2	7:D:218:ARG:HB2	2.08	0.52
1:5:2398:A:H2'	1:5:2399:A:H5'	1.91	0.52
4:A:53:GLY:O	4:A:192:LYS:HE3	2.09	0.52
4:A:90:ALA:HB2	4:A:101:VAL:HG13	1.90	0.52
6:C:92:ASN:HA	6:C:98:ARG:O	2.09	0.52
1:5:147:U:O4	10:G:183:LYS:HE2	2.10	0.52
1:5:837:A:H5''	1:5:838:G:OP2	2.09	0.52
1:5:3042:U:O2'	1:5:3043:C:H5'	2.10	0.52
17:O:102:LEU:HG	17:O:103:LYS:N	2.24	0.52
13:J:29:ARG:HA	13:J:32:ARG:HD2	1.91	0.52
1:5:1915:A:H2'	1:5:1916:U:H6	1.73	0.52
28:Z:26:VAL:HG23	28:Z:27:LYS:N	2.24	0.52
24:V:46:LEU:O	24:V:47:ASN:HB2	2.08	0.52
3:8:148:G:H2'	3:8:149:A:C8	2.44	0.52
7:D:241:THR:O	7:D:245:GLU:HG3	2.08	0.52
1:5:40:A:H2'	1:5:40:A:N3	2.24	0.52
1:5:3375:A:O2'	1:5:3378:C:H5'	2.10	0.52
5:B:122:TRP:CZ3	5:B:127:LYS:HG2	2.43	0.52
11:H:164:ILE:HG23	11:H:165:CYS:SG	2.50	0.52
19:Q:19:PRO:HD3	19:Q:53:PHE:HE1	1.72	0.52
1:5:2312:A:OP1	1:5:2312:A:H4'	2.09	0.52
1:5:1640:G:O2'	1:5:1641:U:H5'	2.10	0.52
1:5:3159:C:H2'	1:5:3160:U:H6	1.73	0.52
28:Z:68:ILE:O	28:Z:115:LYS:HE2	2.10	0.52
6:C:71:VAL:HG13	6:C:76:ARG:NH1	2.24	0.52
10:G:78:PHE:CD2	10:G:179:ILE:HD13	2.44	0.52
1:5:2778:G:C2'	1:5:2779:A:H5'	2.37	0.52
7:D:68:THR:HG22	7:D:70:THR:HG22	1.91	0.52
8:E:52:VAL:HG11	8:E:65:ILE:HG21	1.92	0.52
23:U:58:GLU:HB2	23:U:63:VAL:HG13	1.92	0.52
20:R:139:VAL:O	20:R:143:ILE:HD13	2.09	0.52
5:B:43:LEU:N	5:B:43:LEU:HD12	2.24	0.52
24:V:128:ARG:HB3	24:V:128:ARG:NH2	2.25	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:P:102:ALA:HB1	18:P:112:LEU:HD11	1.90	0.52
16:N:104:GLU:HG2	16:N:160:GLU:HG2	1.90	0.52
4:A:35:ALA:HA	10:G:36:ILE:HD13	1.91	0.52
1:5:818:C:H2'	1:5:818:C:O2	2.07	0.52
19:Q:124:LEU:O	19:Q:127:LEU:HB3	2.09	0.52
8:E:56:LYS:HB2	8:E:98:VAL:CG1	2.39	0.52
5:B:14:LEU:O	5:B:17:LEU:HD22	2.09	0.52
1:5:578:A:H2'	6:C:334:PHE:CD2	2.44	0.52
17:O:6:VAL:HG12	17:O:7:VAL:N	2.25	0.52
1:5:2943:G:O2'	5:B:254:ALA:HB1	2.09	0.52
10:G:47:SER:O	10:G:50:VAL:HG12	2.09	0.52
9:F:37:ASN:O	9:F:41:ARG:HB2	2.09	0.52
1:5:2186:U:O2'	1:5:2313:A:N3	2.39	0.52
1:5:1276:U:H2'	1:5:1277:C:O4'	2.09	0.52
1:5:2828:G:O2'	12:I:4:ARG:NH2	2.42	0.52
1:5:537:A:C2	1:5:538:G:H1'	2.45	0.52
8:E:64:LEU:HD13	8:E:65:ILE:N	2.24	0.52
15:M:20:VAL:HG13	15:M:68:LEU:O	2.09	0.52
1:5:3150:A:C2	1:5:3151:U:H1'	2.44	0.52
14:L:17:HIS:O	14:L:19:GLN:N	2.43	0.52
1:5:419:G:O3'	1:5:420:G:H5''	2.10	0.52
16:N:165:THR:O	16:N:169:LYS:HG3	2.09	0.52
1:5:2665:U:H4'	1:5:2666:C:OP1	2.10	0.52
1:5:546:C:H4'	1:5:547:G:O5'	2.09	0.52
17:O:16:VAL:HG12	17:O:17:GLY:N	2.23	0.52
6:C:222:VAL:HG23	6:C:223:PRO:HD2	1.92	0.52
1:5:1818:U:H2'	1:5:1819:U:O4'	2.10	0.52
9:F:45:LEU:HD13	9:F:45:LEU:C	2.29	0.52
8:E:52:VAL:HG11	8:E:65:ILE:CG2	2.40	0.52
1:5:17:G:H2'	1:5:18:G:O4'	2.10	0.52
9:F:161:VAL:HG13	9:F:162:PRO:HD2	1.91	0.52
26:X:63:ILE:C	26:X:63:ILE:HD13	2.30	0.52
1:5:3218:A:H5''	1:5:3219:G:C4	2.45	0.52
1:5:2398:A:C2'	1:5:2399:A:H5'	2.40	0.52
4:A:105:GLY:HA3	4:A:160:SER:HB3	1.90	0.52
8:E:60:ASP:O	8:E:61:ASN:HB2	2.09	0.52
22:T:19:PHE:CE2	22:T:20:ARG:HD3	2.45	0.52
16:N:185:ALA:HB3	16:N:190:THR:CG2	2.40	0.52
26:X:64:GLU:OE1	26:X:85:GLN:HG2	2.10	0.52
2:7:49:G:H4'	2:7:50:U:O5'	2.09	0.52
3:8:81:U:O2'	3:8:82:U:OP2	2.27	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:28:ALA:HB1	6:C:29:PRO:HD2	1.91	0.52
1:5:1819:U:C2'	1:5:1820:U:H5'	2.39	0.52
13:J:112:LEU:HD23	13:J:112:LEU:H	1.75	0.52
1:5:2222:A:H8	1:5:2222:A:O5'	1.93	0.52
10:G:248:LYS:HZ1	10:G:248:LYS:HA	1.74	0.52
5:B:343:TYR:HD1	5:B:343:TYR:H	1.57	0.52
10:G:166:LEU:HB2	10:G:167:PRO:HD3	1.92	0.52
16:N:64:VAL:CG2	16:N:65:ARG:N	2.73	0.52
7:D:220:SER:O	7:D:224:LYS:HB2	2.09	0.52
13:J:51:ARG:HB2	13:J:52:TYR:CD1	2.45	0.52
19:Q:100:THR:CG2	19:Q:120:GLU:HB3	2.36	0.52
1:5:1348:U:C3'	1:5:1348:U:C6	2.91	0.52
27:Y:97:ILE:CG2	27:Y:99:LEU:HD21	2.39	0.52
26:X:64:GLU:O	26:X:65:GLN:HB2	2.10	0.52
9:F:41:ARG:NH1	9:F:41:ARG:HG3	2.11	0.52
23:U:77:LYS:HE2	23:U:81:LYS:HE2	1.92	0.52
8:E:39:VAL:C	8:E:40:LEU:HD23	2.31	0.52
1:5:3237:U:C3'	1:5:3238:G:H5''	2.39	0.52
26:X:83:VAL:HG22	26:X:123:TYR:HD1	1.75	0.52
5:B:286:GLY:HA3	5:B:321:PHE:CE1	2.45	0.52
1:5:1103:A:H3'	1:5:1104:G:H5'	1.91	0.52
6:C:361:HIS:CG	6:C:362:ASP:N	2.78	0.52
1:5:1809:A:H2'	1:5:1810:A:O4'	2.10	0.52
1:5:2248:C:C2'	1:5:2249:G:OP2	2.58	0.52
9:F:77:VAL:HG21	22:T:139:ARG:HD3	1.92	0.52
28:Z:121:ARG:CG	28:Z:121:ARG:NH1	2.72	0.52
1:5:1816:A:O2'	1:5:1817:G:P	2.68	0.52
1:5:1066:G:H2'	1:5:1067:U:C6	2.45	0.52
19:Q:170:ARG:HA	19:Q:174:ARG:HD2	1.92	0.52
27:Y:74:TYR:CE1	27:Y:77:LYS:HD2	2.44	0.52
8:E:52:VAL:HG13	8:E:65:ILE:HG23	1.92	0.52
9:F:156:ILE:HD12	9:F:161:VAL:HG21	1.92	0.52
1:5:3009:G:C2'	1:5:3010:U:H5'	2.40	0.52
17:O:77:SER:HB3	17:O:106:GLU:CD	2.30	0.51
8:E:154:LEU:HD12	15:M:119:GLN:HG2	1.92	0.51
3:8:83:C:H41	27:Y:113:LYS:NZ	2.08	0.51
20:R:11:ALA:O	20:R:15:VAL:HG23	2.10	0.51
10:G:148:ALA:HB3	10:G:175:VAL:HG11	1.91	0.51
9:F:175:LYS:HD3	9:F:176:TYR:CE2	2.45	0.51
21:S:48:LEU:N	21:S:48:LEU:HD23	2.26	0.51
1:5:1315:U:OP1	17:O:18:ARG:NH1	2.42	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:J:25:GLU:HG3	13:J:63:GLU:CD	2.30	0.51
1:5:284:A:C5'	1:5:285:A:H5'	2.39	0.51
6:C:13:GLY:O	6:C:14:GLU:HG3	2.10	0.51
22:T:28:SER:O	22:T:32:LYS:HG3	2.10	0.51
25:W:9:SER:HB3	25:W:51:TRP:CZ3	2.45	0.51
1:5:1289:G:O2'	1:5:1290:A:H5'	2.09	0.51
1:5:3351:U:H3'	1:5:3351:U:O2	2.10	0.51
27:Y:43:TYR:HA	27:Y:125:LYS:HB2	1.91	0.51
1:5:2416:U:O2'	1:5:2966:G:H1'	2.10	0.51
10:G:133:LYS:HB2	10:G:199:ALA:O	2.10	0.51
1:5:885:U:H2'	1:5:886:C:H6	1.76	0.51
7:D:80:SER:O	7:D:92:LEU:HD22	2.11	0.51
1:5:1721:U:OP2	20:R:124:TYR:OH	2.21	0.51
10:G:91:PHE:O	10:G:95:ASN:HB2	2.11	0.51
28:Z:9:LYS:HD2	28:Z:83:THR:O	2.10	0.51
1:5:2198:A:C2	1:5:2199:G:C8	2.99	0.51
9:F:33:ARG:O	9:F:37:ASN:ND2	2.43	0.51
1:5:2193:U:O2	1:5:2275:A:H1'	2.11	0.51
1:5:2093:A:H3'	1:5:2093:A:N3	2.26	0.51
1:5:1073:U:H2'	1:5:1074:U:C6	2.45	0.51
1:5:2101:C:HO2'	1:5:2102:U:P	2.33	0.51
26:X:73:MET:HE2	26:X:73:MET:HA	1.92	0.51
17:O:25:LYS:O	17:O:29:ASN:ND2	2.43	0.51
1:5:816:A:H1'	1:5:819:U:O4	2.11	0.51
1:5:2724:U:H4'	22:T:54:HIS:CD2	2.46	0.51
1:5:787:G:OP1	19:Q:148:GLU:HB2	2.10	0.51
2:7:117:A:O4'	7:D:74:VAL:HG11	2.09	0.51
1:5:712:G:H2'	1:5:713:U:H6	1.74	0.51
1:5:2283:G:H4'	1:5:2308:C:H41	1.74	0.51
9:F:125:GLU:OE1	9:F:128:LYS:HE3	2.11	0.51
12:I:48:LEU:C	12:I:48:LEU:HD13	2.31	0.51
5:B:369:ARG:NH1	5:B:369:ARG:CG	2.69	0.51
9:F:179:LEU:N	9:F:179:LEU:HD22	2.25	0.51
5:B:115:LYS:CE	5:B:129:ALA:HB3	2.40	0.51
1:5:712:G:H2'	1:5:713:U:C6	2.45	0.51
23:U:51:GLY:O	23:U:52:ASN:HB2	2.11	0.51
1:5:1012:G:O2'	1:5:1013:G:H5'	2.11	0.51
1:5:1014:U:C2'	1:5:1015:U:H5'	2.40	0.51
1:5:1479:U:C3'	1:5:1480:G:H5'	2.40	0.51
1:5:89:A:OP2	19:Q:171:LYS:HD2	2.11	0.51
17:O:79:ILE:HG21	17:O:138:LEU:HD11	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2636:A:H5''	1:5:2637:A:H5''	1.91	0.51
1:5:579:G:O2'	1:5:580:C:H5'	2.09	0.51
1:5:1603:A:OP1	20:R:9:ARG:NH2	2.44	0.51
1:5:3051:U:H1'	24:V:92:PHE:CE1	2.46	0.51
1:5:2572:C:H2'	1:5:2572:C:O2	2.09	0.51
1:5:3287:U:H2'	1:5:3288:G:C5'	2.40	0.51
10:G:79:GLN:O	10:G:79:GLN:HG2	2.09	0.51
1:5:3228:C:H4'	1:5:3229:G:O5'	2.10	0.51
28:Z:54:THR:H	28:Z:57:HIS:HD2	1.57	0.51
18:P:148:LEU:HD12	18:P:149:VAL:N	2.25	0.51
1:5:44:U:H5''	16:N:85:THR:CG2	2.39	0.51
13:J:89:TYR:O	13:J:169:ALA:HB1	2.10	0.51
2:7:121:U:H5''	7:D:265:TYR:HE1	1.74	0.51
6:C:128:ALA:HB2	6:C:244:LEU:HD22	1.92	0.51
24:V:129:VAL:HG12	24:V:130:ALA:N	2.25	0.51
1:5:1551:C:H2'	1:5:1552:G:O4'	2.11	0.51
1:5:73:C:C4	12:I:15:LYS:HE2	92.48	0.51
5:B:78:VAL:HG11	5:B:317:ILE:CD1	2.40	0.51
6:C:317:PRO:HA	6:C:323:VAL:CG2	2.41	0.51
16:N:73:ARG:HB3	16:N:89:VAL:HG13	1.91	0.51
1:5:1913:A:N3	1:5:2120:A:H2'	2.25	0.51
1:5:421:G:N3	1:5:421:G:H3'	2.25	0.51
14:L:45:LYS:HG3	14:L:46:ILE:CD1	2.39	0.51
7:D:62:CYS:C	7:D:63:GLN:HG3	2.31	0.51
1:5:3261:C:C2'	1:5:3262:U:H5'	2.41	0.51
5:B:252:ILE:HG21	5:B:260:VAL:HG22	1.91	0.51
20:R:106:LEU:HD21	20:R:123:LEU:HB2	1.93	0.51
18:P:102:ALA:CB	18:P:112:LEU:HD11	2.41	0.51
1:5:656:A:H2'	1:5:657:A:C8	2.45	0.51
24:V:26:ALA:O	24:V:115:THR:HG23	2.11	0.51
21:S:110:MET:HB3	21:S:121:ILE:HD11	1.92	0.51
16:N:145:ASP:OD2	16:N:148:TYR:HD2	1.94	0.51
1:5:150:A:H2'	1:5:151:A:H5'	1.93	0.51
1:5:3317:U:H4'	1:5:3318:G:O5'	2.10	0.51
13:J:92:ARG:CG	13:J:92:ARG:NH1	2.72	0.51
1:5:845:G:N2	1:5:848:A:OP2	2.43	0.51
4:A:130:SER:HA	4:A:169:ILE:CG2	2.41	0.51
5:B:144:ILE:HG22	5:B:148:LEU:CD2	2.41	0.51
1:5:2725:U:H5''	1:5:2726:C:OP2	2.11	0.51
24:V:39:VAL:HG13	24:V:58:VAL:HG12	1.93	0.51
20:R:23:TRP:CH2	20:R:25:ASP:HA	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1275:C:C2'	1:5:1276:U:H5'	2.41	0.51
4:A:44:ILE:HG23	4:A:87:PHE:CE1	2.46	0.51
15:M:135:LEU:O	15:M:136:ALA:HB3	2.11	0.51
2:7:39:C:H4'	13:J:44:THR:HG23	1.93	0.51
12:I:21:ARG:NH1	12:I:22:TYR:CE1	2.79	0.51
28:Z:46:ILE:HD11	28:Z:49:TYR:CG	2.45	0.51
18:P:174:GLY:O	18:P:177:ALA:HB3	2.10	0.51
1:5:422:A:N1	1:5:2362:C:O2'	2.42	0.51
1:5:171:G:H5'	1:5:172:G:OP2	2.10	0.51
9:F:62:ILE:O	9:F:66:LYS:HG3	2.11	0.51
7:D:51:LEU:HD13	7:D:146:LEU:CD2	2.40	0.51
7:D:78:ALA:HB3	7:D:105:ILE:CG2	2.41	0.51
2:7:46:A:OP1	7:D:158:ARG:HD3	2.11	0.51
1:5:2538:U:C3'	1:5:2539:C:H5''	2.40	0.51
1:5:3357:U:HO2'	1:5:3358:U:P	2.34	0.51
1:5:1364:C:OP1	9:F:110:ARG:NH2	2.38	0.51
13:J:28:ASP:O	13:J:31:THR:HG23	2.11	0.51
27:Y:74:TYR:CD1	27:Y:77:LYS:HD2	2.45	0.51
17:O:109:PRO:HB2	17:O:110:PRO:HD3	1.93	0.51
1:5:3037:U:H5''	5:B:348:ARG:NH1	2.26	0.51
1:5:2631:U:O2'	1:5:2632:G:H5'	2.11	0.51
10:G:27:THR:HG22	28:Z:53:VAL:O	2.11	0.51
1:5:3167:A:HO2'	1:5:3168:A:P	2.33	0.51
17:O:188:SER:O	17:O:192:LYS:HG2	2.11	0.51
17:O:193:GLN:O	17:O:197:LEU:HD12	2.11	0.51
5:B:352:GLU:HG2	5:B:353:GLU:N	2.25	0.51
11:H:87:LYS:NZ	11:H:191:LEU:CD2	2.74	0.50
9:F:41:ARG:HG2	9:F:41:ARG:HH11	1.73	0.50
15:M:113:THR:HG22	15:M:114:ASP:N	2.27	0.50
10:G:150:LEU:HD13	10:G:151:VAL:N	2.26	0.50
6:C:219:LEU:HD22	6:C:222:VAL:HG11	1.93	0.50
9:F:84:VAL:HG23	9:F:85:PHE:N	2.25	0.50
13:J:23:VAL:HG13	13:J:29:ARG:HD3	1.93	0.50
6:C:361:HIS:CG	6:C:362:ASP:H	2.30	0.50
10:G:158:ASP:OD1	10:G:159:PRO:HA	2.11	0.50
1:5:1208:U:C6	1:5:3115:C:N4	2.79	0.50
15:M:53:VAL:HG23	15:M:54:PRO:HD2	1.92	0.50
17:O:128:ARG:HH11	17:O:128:ARG:CG	2.24	0.50
6:C:205:PRO:HG2	6:C:225:VAL:HG22	1.93	0.50
6:C:330:TYR:HA	6:C:333:VAL:HG13	1.91	0.50
4:A:77:ILE:CG2	4:A:169:ILE:HG13	2.41	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1051:U:C5	1:5:1052:U:C6	2.99	0.50
1:5:2295:A:C2	24:V:37:ILE:HD12	2.46	0.50
5:B:217:ALA:C	5:B:218:ILE:HD12	2.31	0.50
10:G:106:LYS:O	10:G:110:THR:HG23	2.12	0.50
6:C:311:HIS:CD2	9:F:162:PRO:HG3	2.46	0.50
1:5:1582:C:H4'	1:5:1583:A:OP1	2.11	0.50
8:E:139:LYS:HB3	8:E:143:LYS:HE3	1.91	0.50
17:O:39:GLU:OE1	17:O:39:GLU:N	2.33	0.50
1:5:1047:A:N3	1:5:2633:U:O2'	2.43	0.50
5:B:90:VAL:HG13	5:B:103:THR:O	2.11	0.50
13:J:110:ILE:HG22	13:J:114:ILE:O	2.12	0.50
13:J:59:ILE:O	13:J:59:ILE:HG13	2.10	0.50
16:N:94:TYR:OH	16:N:96:ARG:HD3	2.11	0.50
1:5:1819:U:HO2'	1:5:1820:U:P	2.29	0.50
1:5:1066:G:H2'	1:5:1067:U:H6	1.76	0.50
12:I:86:HIS:HB3	12:I:139:ARG:CG	2.42	0.50
1:5:1430:U:H2'	4:A:9:ARG:NH2	66.41	0.50
10:G:238:LEU:HD12	10:G:238:LEU:N	2.24	0.50
4:A:104:LEU:HD21	4:A:116:VAL:CG2	2.41	0.50
1:5:137:G:H2'	1:5:138:U:H6	1.75	0.50
1:5:2223:A:OP2	1:5:2223:A:H8	1.94	0.50
1:5:1152:G:N2	1:5:1200:A:H61	2.08	0.50
1:5:2935:U:H2'	1:5:2935:U:O2	2.12	0.50
7:D:177:GLU:OE1	7:D:177:GLU:N	2.45	0.50
11:H:84:LYS:HE2	11:H:189:GLU:HG3	1.92	0.50
1:5:708:G:H5'	1:5:709:A:OP2	2.11	0.50
2:7:99:G:OP1	21:S:53:LYS:HD3	2.12	0.50
9:F:106:LEU:O	9:F:107:ARG:HB2	2.11	0.50
17:O:77:SER:HB3	17:O:106:GLU:OE2	2.11	0.50
1:5:2312:A:O2'	1:5:2315:G:C1'	2.59	0.50
1:5:1575:A:C3'	1:5:1576:G:H5''	2.39	0.50
6:C:206:LEU:HB3	6:C:248:VAL:HG22	1.93	0.50
1:5:1819:U:O2'	1:5:1820:U:C5'	2.60	0.50
4:A:55:GLY:O	4:A:56:ALA:HB3	2.11	0.50
12:I:200:LEU:HD12	12:I:213:PHE:CD2	2.47	0.50
12:I:176:LEU:N	12:I:176:LEU:HD23	2.27	0.50
1:5:3000:A:H2'	1:5:3001:C:H6	1.77	0.50
7:D:202:GLY:O	7:D:206:GLN:HG3	2.11	0.50
5:B:43:LEU:HD11	5:B:194:TRP:CH2	2.47	0.50
1:5:2599:U:H2'	1:5:2600:C:H6	1.77	0.50
1:5:2219:A:O2'	1:5:2220:A:H5'	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:I:55:ASN:HD21	12:I:164:LYS:HE3	1.75	0.50
4:A:150:LEU:HB3	4:A:151:PRO:CD	2.41	0.50
6:C:118:LYS:O	6:C:122:THR:HG22	2.10	0.50
1:5:2748:A:H4'	7:D:145:PHE:CD2	2.46	0.50
25:W:20:LEU:CD2	25:W:28:ILE:HG23	2.35	0.50
9:F:84:VAL:HG13	9:F:119:VAL:HG22	1.93	0.50
6:C:187:LEU:HD11	6:C:193:LYS:HD3	1.92	0.50
18:P:67:ILE:N	18:P:67:ILE:HD13	2.26	0.50
7:D:88:ILE:HD11	7:D:243:ALA:CB	2.41	0.50
1:5:1461:A:H2'	1:5:1462:A:H8	1.77	0.50
10:G:94:PHE:HB3	10:G:189:LEU:HD11	1.93	0.50
2:7:116:C:O2'	7:D:74:VAL:HG12	2.12	0.50
10:G:190:VAL:HG12	10:G:190:VAL:O	2.11	0.50
1:5:1491:A:O2'	1:5:1492:G:H5'	2.12	0.50
10:G:172:LYS:HZ3	10:G:172:LYS:HB2	1.71	0.50
1:5:1009:A:H2'	1:5:1010:G:O4'	2.12	0.50
14:L:76:THR:HG21	14:L:103:ASN:OD1	2.11	0.50
5:B:78:VAL:HG11	5:B:317:ILE:HD13	1.94	0.50
14:L:152:THR:O	14:L:153:ASP:HB2	2.11	0.50
10:G:44:ARG:O	26:X:28:THR:HG22	2.12	0.50
1:5:252:U:H4'	1:5:253:A:C5'	2.41	0.50
1:5:2312:A:HO2'	1:5:2315:G:HO2'	1.26	0.50
16:N:121:VAL:HG11	16:N:131:GLU:HG3	1.93	0.50
1:5:1349:G:O2'	6:C:291:ASN:ND2	2.44	0.50
7:D:281:GLU:O	7:D:285:ARG:HG3	2.12	0.50
1:5:3237:U:H2'	1:5:3238:G:O4'	2.12	0.50
10:G:68:ARG:O	10:G:69:LEU:HB2	2.12	0.50
8:E:42:LEU:HD23	8:E:42:LEU:N	2.25	0.50
1:5:1553:U:C5'	1:5:1553:U:H6	2.24	0.50
26:X:131:ASP:HB3	26:X:134:ASP:HB2	1.94	0.50
1:5:2308:C:H2'	1:5:2309:A:N7	2.26	0.50
28:Z:121:ARG:HH11	28:Z:121:ARG:HG3	1.77	0.50
12:I:99:ILE:HD12	12:I:99:ILE:O	2.12	0.50
1:5:2433:U:OP2	1:5:2434:U:O2'	2.25	0.50
8:E:48:ARG:O	8:E:48:ARG:HG3	2.12	0.50
1:5:1560:G:H2'	1:5:1561:G:H8	1.75	0.50
8:E:130:ILE:HD12	8:E:135:VAL:HG21	1.92	0.50
1:5:1915:A:H5''	20:R:84:THR:HG22	1.94	0.50
1:5:2526:C:H2'	1:5:2527:G:C8	2.47	0.50
5:B:73:VAL:CG2	24:V:86:ARG:HH21	2.24	0.50
15:M:21:VAL:HG12	15:M:65:LEU:HD23	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:546:C:H5'	1:5:547:G:OP1	2.12	0.50
1:5:1953:G:O6	1:5:2094:C:N4	2.44	0.50
1:5:1987:Y5P:H2'	1:5:1988:Y5P:H6	1.94	0.50
1:5:2730:G:H2'	1:5:2731:U:O4'	2.11	0.50
21:S:31:ALA:HB1	21:S:36:ILE:HB	1.94	0.50
1:5:2209:U:H4'	1:5:2210:G:OP1	2.12	0.50
1:5:1765:U:HO2'	20:R:43:LYS:HZ1	1.57	0.50
1:5:1637:A:OP2	28:Z:73:LYS:NZ	2.45	0.50
2:7:28:C:H5''	13:J:137:ARG:HG2	1.94	0.50
27:Y:23:PRO:HD2	27:Y:26:GLN:CD	2.32	0.50
4:A:44:ILE:HG23	4:A:87:PHE:CD1	2.46	0.50
1:5:2590:A:O2'	1:5:2591:A:H5'	2.11	0.50
9:F:179:LEU:HD13	9:F:179:LEU:H	1.76	0.50
16:N:154:PRO:O	16:N:157:LYS:HG3	2.12	0.50
5:B:285:VAL:HG22	5:B:322:ILE:CD1	2.42	0.50
21:S:4:PHE:CD1	21:S:4:PHE:N	2.78	0.50
3:8:5:U:H2'	3:8:6:U:H6	1.76	0.50
1:5:1079:A:O2'	1:5:1080:A:H5'	2.12	0.50
24:V:83:LYS:HD2	24:V:84:SER:N	2.27	0.50
27:Y:45:ILE:HD13	27:Y:48:LEU:HD21	1.93	0.49
1:5:177:U:H3	1:5:241:G:H1	1.59	0.49
1:5:2428:U:H2'	1:5:2429:G:C8	2.47	0.49
8:E:46:ARG:NH1	8:E:46:ARG:CG	2.63	0.49
1:5:2407:C:H1'	1:5:2818:U:O2	2.11	0.49
1:5:1212:A:H5'	21:S:113:ARG:HE	1.76	0.49
14:L:71:ALA:CA	14:L:147:ILE:HD11	2.42	0.49
13:J:9:MET:O	13:J:11:ASP:N	2.45	0.49
13:J:112:LEU:N	13:J:112:LEU:HD23	2.26	0.49
4:A:104:LEU:HD21	4:A:116:VAL:HG21	1.93	0.49
1:5:1462:A:O2'	1:5:1463:U:H5'	2.11	0.49
4:A:113:VAL:HG22	4:A:134:VAL:HG22	1.94	0.49
1:5:687:U:O2'	1:5:688:G:H5'	2.12	0.49
10:G:225:LYS:O	10:G:229:VAL:HG23	2.13	0.49
1:5:2909:U:H2'	1:5:2910:A:O4'	2.11	0.49
18:P:41:LEU:HD21	18:P:95:LEU:HD22	1.94	0.49
14:L:58:VAL:CG1	14:L:59:ARG:N	2.75	0.49
1:5:2438:A:C2'	1:5:2439:A:OP1	2.59	0.49
12:I:66:GLU:HG2	12:I:66:GLU:O	4.24	0.49
1:5:562:C:OP2	15:M:77:ARG:NH1	2.45	0.49
1:5:2418:G:H4'	1:5:2419:A:OP1	2.12	0.49
1:5:595:G:N1	1:5:609:G:H5''	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:U:29:ASP:HB3	23:U:32:SER:HB3	1.94	0.49
1:5:3257:C:H2'	1:5:3258:U:O4'	2.12	0.49
11:H:3:TYR:HD1	11:H:3:TYR:H	1.58	0.49
1:5:2268:U:H2'	1:5:2269:U:C6	2.47	0.49
4:A:47:GLN:HE21	4:A:60:LYS:HD2	1.77	0.49
19:Q:83:VAL:O	19:Q:103:ALA:HA	2.12	0.49
11:H:117:PHE:CE2	11:H:118:LEU:HD12	2.47	0.49
9:F:33:ARG:CG	9:F:33:ARG:NH1	2.76	0.49
1:5:2954:U:H1'	1:5:2955:U:C5'	2.40	0.49
1:5:2530:G:C3'	1:5:2531:C:H5''	2.42	0.49
5:B:312:VAL:HG12	5:B:313:HIS:ND1	2.28	0.49
4:A:114:SER:CB	4:A:169:ILE:HD13	2.40	0.49
20:R:81:ARG:CG	20:R:88:ARG:HH12	2.25	0.49
1:5:3243:A:H4'	5:B:95:THR:HG22	1.94	0.49
8:E:90:LYS:HB3	8:E:90:LYS:NZ	4.76	0.49
4:A:46:LYS:HA	4:A:46:LYS:HZ3	1.76	0.49
14:L:140:SER:OG	14:L:143:ALA:HB3	2.12	0.49
1:5:598:A:H2'	1:5:599:C:C6	2.47	0.49
1:5:291:C:OP1	16:N:68:ARG:HG3	2.12	0.49
14:L:36:ARG:HH11	14:L:36:ARG:HA	4.55	0.49
21:S:46:GLN:HG2	21:S:51:VAL:O	2.12	0.49
6:C:207:VAL:HB	6:C:227:THR:HG22	1.95	0.49
1:5:3121:U:H4'	1:5:3122:A:OP1	2.13	0.49
20:R:51:VAL:HG12	20:R:52:LYS:N	2.27	0.49
1:5:3087:A:H2'	1:5:3088:G:O4'	2.12	0.49
1:5:1223:A:C8	1:5:1286:A:N1	2.80	0.49
19:Q:124:LEU:HD23	19:Q:124:LEU:N	2.26	0.49
26:X:38:LEU:HD23	26:X:38:LEU:C	2.32	0.49
1:5:2948:C:O2'	5:B:242:THR:HG22	2.12	0.49
6:C:73:ARG:HG3	6:C:73:ARG:NH1	2.28	0.49
1:5:1272:C:C2'	1:5:1273:A:H5'	2.43	0.49
11:H:8:GLN:HE21	11:H:69:ARG:HG2	1.76	0.49
14:L:149:GLN:HE21	14:L:149:GLN:N	2.09	0.49
25:W:47:ARG:NH1	25:W:58:HIS:CD2	2.80	0.49
28:Z:129:TRP:O	28:Z:132:SER:N	2.45	0.49
21:S:36:ILE:O	21:S:40:ARG:HG2	2.11	0.49
1:5:230:U:H2'	1:5:231:G:O4'	2.13	0.49
22:T:147:VAL:HG13	22:T:148:PRO:HD2	1.94	0.49
3:8:117:C:H2'	3:8:118:C:H6	1.76	0.49
1:5:2572:C:C2'	1:5:2572:C:O2	2.60	0.49
1:5:3341:U:H5''	1:5:3342:A:OP2	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:I:50:VAL:HG22	12:I:167:LEU:HD13	1.94	0.49
7:D:243:ALA:O	7:D:247:ILE:HG13	2.13	0.49
27:Y:74:TYR:HD1	27:Y:77:LYS:HB2	1.77	0.49
21:S:47:LYS:C	21:S:48:LEU:HD23	2.33	0.49
1:5:3051:U:O2'	1:5:3052:G:H5'	2.13	0.49
1:5:3167:A:O2'	1:5:3168:A:OP1	2.27	0.49
1:5:1301:A:OP1	1:5:1301:A:H8	1.96	0.49
1:5:68:C:OP2	1:5:301:G:N2	2.45	0.49
18:P:34:GLN:OE1	18:P:34:GLN:HA	2.11	0.49
6:C:191:LYS:HG3	6:C:194:TYR:OH	2.13	0.49
1:5:181:U:H2'	1:5:182:U:O4'	2.12	0.49
7:D:25:GLU:O	13:J:144:CYS:HA	2.12	0.49
17:O:113:ASP:OD1	17:O:114:LYS:N	2.44	0.49
1:5:252:U:C4'	1:5:253:A:H5'	2.42	0.49
1:5:2232:A:H2'	1:5:2233:A:C8	2.47	0.49
10:G:161:GLU:HA	10:G:164:VAL:HG22	1.94	0.49
1:5:3009:G:O2'	1:5:3010:U:H5'	2.13	0.49
1:5:1251:A:H2'	1:5:1252:A:O4'	2.13	0.49
27:Y:57:LEU:HA	27:Y:67:GLU:HG2	1.93	0.49
10:G:72:PRO:HG2	16:N:18:VAL:HA	1.95	0.49
1:5:63:A:OP1	16:N:172:ARG:NH2	2.45	0.49
10:G:150:LEU:HB3	10:G:200:LEU:HD11	1.94	0.49
14:L:14:PHE:HB3	14:L:18:TRP:CD1	2.47	0.49
12:I:49:CYS:SG	12:I:50:VAL:N	2.85	0.49
6:C:77:VAL:HG12	6:C:78:GLY:O	2.13	0.49
1:5:1949:G:H2'	1:5:1950:U:H6	1.77	0.49
1:5:2770:G:C2'	1:5:2771:U:H5'	2.42	0.49
1:5:1471:U:H2'	1:5:1472:U:C6	2.48	0.49
20:R:136:ARG:O	20:R:140:GLU:HG3	2.13	0.49
23:U:19:VAL:HG12	23:U:105:LEU:HD12	1.95	0.49
10:G:97:TYR:OH	10:G:207:ASP:OD2	2.27	0.49
1:5:2748:A:H1'	7:D:36:LEU:HD23	1.94	0.49
2:7:45:A:H2'	2:7:46:A:O4'	2.12	0.49
1:5:3159:C:H2'	1:5:3160:U:C6	2.48	0.49
24:V:54:LEU:HD21	24:V:119:GLY:HA3	1.94	0.49
15:M:50:LYS:HD2	15:M:85:TRP:NE1	2.28	0.49
13:J:23:VAL:HG12	13:J:24:GLY:N	2.28	0.49
2:7:24:A:H2'	2:7:25:G:O4'	2.13	0.49
1:5:3000:A:H2'	1:5:3001:C:C6	2.47	0.49
1:5:992:A:O2'	1:5:993:G:H5'	2.11	0.49
11:H:3:TYR:HA	21:S:142:GLN:OE1	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:190:GLU:O	5:B:193:ASP:HB2	2.13	0.49
14:L:93:ILE:HG22	14:L:94:GLY:H	1.77	0.49
6:C:157:GLU:O	6:C:213:ASN:HB2	2.13	0.49
1:5:435:C:H2'	1:5:436:A:H8	1.77	0.49
2:7:94:C:H2'	2:7:95:A:H8	1.76	0.49
10:G:57:ARG:HG2	10:G:61:GLN:OE1	2.12	0.49
22:T:17:ARG:NH1	22:T:17:ARG:CG	2.61	0.49
6:C:301:PRO:O	6:C:302:ALA:HB2	2.12	0.49
1:5:2561:A:O2'	1:5:2562:A:H8	1.96	0.49
12:I:177:ASP:OD1	12:I:177:ASP:N	2.46	0.49
20:R:20:ARG:NH1	20:R:21:LYS:NZ	2.60	0.49
1:5:2433:U:H5''	1:5:2434:U:H2'	1.95	0.49
3:8:143:U:H2'	3:8:144:G:O4'	2.12	0.49
1:5:3045:G:H2'	1:5:3046:A:O4'	2.13	0.49
16:N:27:VAL:HB	16:N:122:ASN:HD21	1.78	0.49
12:I:174:THR:OG1	12:I:175:ASN:N	2.41	0.49
13:J:21:ILE:CD1	13:J:37:LEU:HD21	2.42	0.49
13:J:23:VAL:HG11	13:J:29:ARG:CB	2.42	0.49
1:5:55:G:H2'	1:5:56:G:H5'	1.94	0.49
11:H:83:THR:OG1	11:H:84:LYS:N	2.46	0.49
23:U:56:VAL:HG22	23:U:65:VAL:HG22	1.93	0.49
1:5:1495:U:O2	1:5:1495:U:H2'	2.11	0.49
1:5:2556:C:O2'	1:5:2557:A:H5'	2.13	0.49
1:5:1630:U:OP1	28:Z:67:LYS:NZ	2.34	0.49
21:S:26:ARG:HD3	22:T:150:THR:CG2	2.41	0.49
1:5:251:G:H1'	1:5:253:A:C6	2.47	0.49
1:5:2276:G:O6	1:5:2311:G:N3	2.46	0.49
1:5:2748:A:C2	7:D:35:ARG:HB3	2.48	0.49
1:5:3164:C:O2'	1:5:3165:A:H8	1.96	0.49
24:V:11:PHE:CD2	24:V:88:ARG:NH1	2.81	0.49
1:5:2606:G:H4'	1:5:2607:G:C8	2.48	0.49
1:5:1621:A:H2'	1:5:1622:U:H6	1.76	0.49
12:I:177:ASP:C	12:I:179:PRO:HD2	2.34	0.49
4:A:15:ILE:HG23	4:A:194:ASN:HD22	1.77	0.49
1:5:1349:G:C8	1:5:1349:G:C3'	2.94	0.49
6:C:311:HIS:CE1	6:C:314:LYS:HA	2.48	0.49
5:B:187:SER:O	5:B:190:GLU:N	2.36	0.49
5:B:46:PHE:C	5:B:47:LEU:HD12	2.33	0.49
3:8:28:C:O2'	3:8:29:U:H5'	2.12	0.49
22:T:49:GLN:NE2	22:T:49:GLN:H	2.10	0.49
1:5:1901:A:O2'	1:5:2918:G:OP1	2.23	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1532:C:H2'	1:5:1533:U:C6	2.48	0.49
26:X:92:LYS:HE2	26:X:110:VAL:O	2.13	0.48
1:5:2609:A:C3'	1:5:2610:G:H5''	2.43	0.48
3:8:155:A:H3'	3:8:156:U:H5''	1.95	0.48
12:I:191:LYS:O	12:I:197:VAL:HG22	2.13	0.48
1:5:3036:G:C2'	1:5:3037:U:H5'	2.43	0.48
26:X:83:VAL:HG22	26:X:123:TYR:CD1	2.47	0.48
14:L:53:LEU:HD22	14:L:94:GLY:O	2.13	0.48
1:5:435:C:H2'	1:5:436:A:C8	2.48	0.48
1:5:607:A:H2'	1:5:607:A:N3	2.28	0.48
8:E:112:UNK:HB2	8:E:115:UNK:HB1	1.94	0.48
28:Z:41:ALA:HB2	28:Z:77:TYR:HE2	1.77	0.48
14:L:59:ARG:HE	14:L:69:VAL:HG23	1.78	0.48
1:5:241:G:H2'	1:5:242:C:C6	2.48	0.48
27:Y:112:ASP:O	27:Y:116:LYS:HG3	2.14	0.48
1:5:1355:A:H4'	1:5:1356:U:O5'	2.13	0.48
2:7:16:U:H2'	2:7:17:A:H8	1.78	0.48
27:Y:113:LYS:NZ	27:Y:113:LYS:HB2	2.27	0.48
27:Y:55:GLU:HB2	27:Y:108:LYS:HB2	1.95	0.48
22:T:128:LEU:H	22:T:128:LEU:HD12	1.77	0.48
1:5:3173:G:H2'	1:5:3173:G:N3	2.28	0.48
1:5:2998:U:H2'	1:5:2999:U:O4'	2.13	0.48
24:V:32:ARG:HB2	24:V:64:LYS:HB3	1.95	0.48
13:J:149:GLY:O	13:J:153:LYS:HB2	2.13	0.48
19:Q:67:ILE:O	19:Q:71:LEU:HG	2.13	0.48
21:S:8:GLN:HG3	21:S:26:ARG:HE	1.78	0.48
1:5:2531:C:O4'	1:5:2531:C:O2	2.29	0.48
24:V:11:PHE:CG	24:V:88:ARG:NH1	2.82	0.48
3:8:157:U:C2'	3:8:158:U:H5'	2.44	0.48
13:J:46:VAL:O	13:J:67:VAL:HG23	2.13	0.48
1:5:3243:A:C8	17:O:156:LEU:HD13	2.48	0.48
3:8:127:U:O2	3:8:127:U:H2'	2.14	0.48
1:5:873:C:H5''	1:5:874:U:O5'	2.13	0.48
11:H:188:THR:HG22	11:H:189:GLU:N	2.28	0.48
1:5:57:A:O2'	1:5:58:G:H5'	2.13	0.48
1:5:3370:A:C2	1:5:3371:G:C4	3.02	0.48
28:Z:110:ALA:O	28:Z:114:VAL:HG23	2.13	0.48
3:8:75:G:H2'	3:8:76:C:H6	1.78	0.48
1:5:63:A:O2'	1:5:64:G:H5'	2.13	0.48
1:5:2436:U:H2'	1:5:2437:G:H5'	1.95	0.48
28:Z:135:ARG:HB3	28:Z:135:ARG:NH2	2.27	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:95:ARG:HG2	6:C:95:ARG:NH1	2.29	0.48
1:5:604:G:H2'	1:5:605:U:H6	1.76	0.48
1:5:948:C:C2'	1:5:949:C:H5'	2.44	0.48
5:B:221:THR:CG2	5:B:222:LYS:N	2.76	0.48
1:5:3257:C:O2'	1:5:3258:U:H5'	2.14	0.48
6:C:351:PRO:HA	9:F:70:LYS:O	2.13	0.48
17:O:42:ASN:HA	17:O:136:THR:O	2.13	0.48
2:7:107:C:H2'	2:7:108:A:H8	1.78	0.48
1:5:344:A:H2'	1:5:345:G:H5'	1.95	0.48
9:F:40:LYS:O	9:F:44:ILE:HG13	2.13	0.48
1:5:1764:U:H4'	1:5:1765:U:OP2	2.13	0.48
6:C:99:MET:HE1	6:C:103:THR:HG23	1.95	0.48
1:5:3379:C:O2'	1:5:3380:U:H5'	2.13	0.48
16:N:153:ASP:CG	16:N:154:PRO:HD2	2.33	0.48
27:Y:69:LYS:HZ2	27:Y:69:LYS:HB2	1.77	0.48
20:R:85:ARG:HH11	20:R:85:ARG:CG	2.27	0.48
1:5:1152:G:H5''	1:5:1153:A:OP2	2.13	0.48
1:5:778:U:O2	1:5:778:U:H2'	2.14	0.48
1:5:1679:A:O2'	1:5:1680:G:H5'	2.13	0.48
1:5:710:A:H2'	1:5:711:A:C8	2.48	0.48
1:5:1090:G:O2'	1:5:1091:A:H5'	2.14	0.48
3:8:146:U:H2'	3:8:147:U:H6	1.78	0.48
1:5:1245:A:H3'	1:5:1246:G:H5''	1.94	0.48
1:5:2836:C:H2'	1:5:2837:A:H5'	1.94	0.48
9:F:149:TYR:HE1	9:F:181:ILE:HD13	1.79	0.48
5:B:282:ILE:O	5:B:282:ILE:HG22	2.13	0.48
1:5:1666:G:H2'	1:5:1667:A:C8	2.48	0.48
20:R:90:PRO:HG2	20:R:93:VAL:HB	1.95	0.48
18:P:119:VAL:HG22	18:P:119:VAL:O	2.14	0.48
7:D:232:ASP:OD1	7:D:232:ASP:N	2.46	0.48
1:5:2689:A:N3	1:5:2689:A:H2'	2.29	0.48
1:5:2375:G:O2'	1:5:2377:G:OP2	2.22	0.48
7:D:78:ALA:HB3	7:D:105:ILE:HG23	1.95	0.48
1:5:715:A:H3'	1:5:715:A:H8	1.78	0.48
1:5:2882:U:H2'	1:5:2883:U:C6	2.48	0.48
1:5:1596:C:H2'	1:5:1597:C:C6	2.49	0.48
7:D:61:ILE:HG23	7:D:79:TYR:CD1	2.49	0.48
6:C:274:TYR:CE1	6:C:276:LEU:HD12	2.48	0.48
4:A:23:ARG:HD3	4:A:52:SER:O	2.13	0.48
1:5:2728:G:O6	22:T:78:LYS:HE3	2.14	0.48
12:I:60:LEU:N	12:I:60:LEU:HD13	4.68	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:248:LYS:HA	10:G:248:LYS:NZ	2.28	0.48
6:C:122:THR:O	6:C:126:ILE:HG13	2.14	0.48
10:G:134:TYR:CD2	10:G:190:VAL:HG11	2.49	0.48
1:5:1483:G:O2'	1:5:1484:U:H5''	2.14	0.48
1:5:1863:G:N1	1:5:1866:C:OP2	2.46	0.48
2:7:10:C:C2	7:D:20:PHE:HD1	2.32	0.48
22:T:51:GLY:HA3	22:T:92:ARG:HG3	1.96	0.48
14:L:46:ILE:O	14:L:46:ILE:CG2	2.62	0.48
1:5:620:U:O2'	18:P:167:ARG:NE	2.46	0.48
16:N:49:ARG:CG	16:N:49:ARG:NH1	2.74	0.48
9:F:22:THR:HA	9:F:25:GLN:CG	2.35	0.48
1:5:75:G:H5'	14:L:58:VAL:HG13	1.91	0.48
6:C:156:LEU:HD23	6:C:159:ILE:CD1	2.36	0.48
3:8:80:A:O2'	3:8:81:U:H5'	2.13	0.48
1:5:3360:C:O2'	1:5:3361:G:H5'	2.14	0.48
5:B:296:THR:HG22	5:B:297:SER:N	2.28	0.48
1:5:1182:A:C2'	1:5:1183:C:H5'	2.44	0.48
9:F:133:TYR:N	9:F:133:TYR:CD1	2.81	0.48
1:5:3008:A:C2'	1:5:3009:G:H5'	2.43	0.48
1:5:921:A:OP1	1:5:921:A:H3'	2.13	0.48
1:5:224:C:O2'	1:5:225:C:H5'	2.14	0.48
12:I:77:THR:HG22	12:I:82:ARG:HA	1.96	0.48
1:5:1830:G:H2'	1:5:1830:G:N3	2.28	0.48
3:8:68:G:H2'	3:8:69:U:O4'	2.14	0.48
1:5:3232:G:O2'	1:5:3233:C:H5'	2.13	0.48
1:5:2309:A:N3	1:5:2961:G:O2'	2.30	0.48
22:T:104:GLU:HG3	22:T:105:PHE:N	2.28	0.48
1:5:524:U:H2'	1:5:525:C:H5'	1.96	0.48
12:I:170:LYS:HA	12:I:177:ASP:HA	1.96	0.48
14:L:76:THR:HG23	14:L:79:GLU:CD	2.35	0.48
1:5:1560:G:H2'	1:5:1561:G:O4'	2.14	0.48
1:5:1949:G:H5''	20:R:104:ARG:NH1	2.29	0.48
1:5:2524:A:O2'	1:5:2525:G:OP2	2.27	0.48
5:B:55:THR:C	5:B:56:ILE:HD12	2.34	0.48
1:5:199:A:H4'	1:5:200:C:OP1	2.12	0.48
1:5:3242:G:H5''	1:5:3245:A:H8	1.79	0.48
1:5:3273:A:C6	1:5:3274:A:C6	3.01	0.48
7:D:136:GLU:O	7:D:137:ASP:HB3	2.13	0.48
10:G:41:GLN:HE21	10:G:44:ARG:NH2	2.12	0.48
5:B:41:VAL:HG22	5:B:185:GLY:HA3	1.95	0.48
1:5:1818:U:O2'	1:5:1819:U:H5'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:D:270:LYS:HE2	7:D:273:ARG:HH21	1.79	0.48
1:5:2946:A:C5'	1:5:2947:G:H5'	2.42	0.48
12:I:167:LEU:HD22	12:I:167:LEU:N	2.29	0.48
1:5:162:G:C2'	1:5:163:C:H5'	2.43	0.48
13:J:82:ARG:HD2	13:J:112:LEU:HB2	1.96	0.48
6:C:338:LYS:HB3	6:C:341:SER:HB2	1.96	0.48
1:5:1294:A:O2'	1:5:1295:G:H5''	2.14	0.48
1:5:2887:A:N3	1:5:2887:A:H2'	2.28	0.48
28:Z:72:ILE:N	28:Z:72:ILE:HD13	2.29	0.48
9:F:141:TYR:HA	9:F:189:ILE:CD1	2.44	0.48
1:5:726:G:H1'	1:5:744:A:H61	1.78	0.48
1:5:1279:C:H2'	1:5:1280:C:C6	2.49	0.48
17:O:78:ARG:HD2	17:O:78:ARG:N	2.23	0.47
1:5:1568:U:HO2'	1:5:1569:U:P	2.32	0.47
1:5:173:G:O2'	1:5:174:C:H5'	2.14	0.47
1:5:3237:U:C2'	1:5:3238:G:H5''	2.43	0.47
1:5:151:A:O2'	1:5:152:U:OP1	2.32	0.47
1:5:2599:U:H2'	1:5:2600:C:C6	2.49	0.47
1:5:1682:U:H4'	1:5:1684:U:O4	2.14	0.47
1:5:994:G:N2	1:5:1053:A:H2'	2.28	0.47
1:5:699:A:OP1	14:L:68:LYS:HE3	2.14	0.47
1:5:1348:U:OP2	19:Q:38:ARG:NH2	2.44	0.47
8:E:123:UNK:CG	8:E:126:UNK:HB1	2.44	0.47
1:5:2278:C:H1'	1:5:2280:A:C2	2.49	0.47
3:8:156:U:O2'	3:8:157:U:OP1	2.26	0.47
14:L:14:PHE:N	14:L:14:PHE:CD1	2.82	0.47
20:R:81:ARG:CG	20:R:88:ARG:NH1	2.76	0.47
1:5:3195:U:O3'	1:5:3196:U:C6	2.65	0.47
1:5:2289:U:H2'	1:5:2290:C:H6	1.79	0.47
1:5:3042:U:H2'	1:5:3043:C:H5'	1.95	0.47
7:D:211:LEU:HD13	7:D:219:PHE:CA	2.44	0.47
6:C:315:LYS:O	6:C:317:PRO:HD3	2.14	0.47
23:U:98:THR:HG23	23:U:104:ARG:HE	1.77	0.47
9:F:144:ILE:HD12	9:F:189:ILE:HG13	1.94	0.47
9:F:214:TRP:CE2	9:F:219:LYS:HD3	2.50	0.47
5:B:197:GLU:O	5:B:201:LYS:HD2	2.14	0.47
21:S:80:ARG:HD2	21:S:122:HIS:ND1	2.30	0.47
1:5:3283:U:H2'	1:5:3284:G:C8	2.49	0.47
4:A:149:ARG:NH2	4:A:155:LYS:HD2	2.29	0.47
1:5:1223:A:C5	1:5:1286:A:C2	3.02	0.47
10:G:44:ARG:CG	10:G:44:ARG:NH1	2.62	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:H:77:ASN:HB3	11:H:151:VAL:CG2	2.43	0.47
1:5:2537:U:O2	1:5:2543:U:C4	2.66	0.47
21:S:167:ARG:HG3	21:S:168:PRO:HD2	1.96	0.47
1:5:3339:A:O2'	1:5:3340:G:H5'	2.14	0.47
17:O:110:PRO:CD	17:O:111:PRO:HD2	2.44	0.47
8:E:175:LYS:HZ2	15:M:111:ALA:HA	1.79	0.47
1:5:2940:A:OP2	5:B:2:SER:HB3	2.13	0.47
1:5:2636:A:H5''	1:5:2637:A:C5'	2.45	0.47
3:8:5:U:H2'	3:8:6:U:C6	2.49	0.47
18:P:153:LYS:HD3	18:P:154:GLU:N	2.29	0.47
1:5:564:G:H2'	1:5:565:U:C6	2.49	0.47
10:G:231:LYS:O	10:G:231:LYS:HG2	2.15	0.47
1:5:1329:U:O2'	1:5:1330:A:H5''	2.14	0.47
3:8:67:U:OP1	13:J:85:LYS:HD2	188.32	0.47
10:G:191:ASN:O	10:G:192:GLN:HG3	2.15	0.47
19:Q:57:ILE:N	19:Q:57:ILE:HD12	2.30	0.47
10:G:67:ILE:O	10:G:235:GLY:HA2	2.15	0.47
24:V:118:VAL:O	24:V:136:VAL:HG13	2.14	0.47
18:P:52:LEU:HD13	18:P:88:VAL:HG11	1.97	0.47
1:5:2954:U:H2'	1:5:2954:U:O2	2.14	0.47
1:5:2436:U:C2'	1:5:2437:G:H5'	2.44	0.47
1:5:178:U:O2'	1:5:179:C:H5'	2.15	0.47
1:5:235:A:H2'	1:5:236:G:C8	2.49	0.47
28:Z:134:LEU:C	28:Z:134:LEU:HD22	2.35	0.47
16:N:3:ALA:O	16:N:7:LEU:HB2	2.14	0.47
1:5:1064:A:H5''	1:5:1066:G:O4'	2.14	0.47
1:5:1213:G:OP1	21:S:137:ARG:HD3	2.14	0.47
4:A:205:ASN:HB2	4:A:208:ASP:OD1	2.15	0.47
1:5:1461:A:H2'	1:5:1462:A:C8	2.49	0.47
1:5:546:C:H2'	1:5:546:C:O2	2.14	0.47
22:T:14:MET:HE1	22:T:55:LYS:HB2	1.94	0.47
16:N:22:LEU:O	16:N:26:ARG:HG3	2.14	0.47
15:M:36:VAL:HG12	15:M:75:GLY:HA2	1.96	0.47
6:C:159:ILE:HG23	6:C:164:GLU:OE1	2.14	0.47
1:5:2211:U:H5	1:5:2234:G:N1	2.12	0.47
6:C:8:VAL:O	6:C:15:ALA:HB1	2.14	0.47
12:I:9:TYR:CD2	12:I:97:LEU:HD13	2.49	0.47
9:F:121:LYS:HE2	9:F:125:GLU:OE2	2.14	0.47
1:5:2971:A:OP2	1:5:2972:G:H5''	2.15	0.47
1:5:1085:A:OP1	22:T:35:LYS:HE2	2.14	0.47
8:E:52:VAL:HG22	8:E:67:GLY:CA	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1037:C:H2'	1:5:1038:C:C6	2.50	0.47
7:D:218:ARG:HA	7:D:218:ARG:NE	2.29	0.47
1:5:172:G:N3	1:5:172:G:H2'	2.30	0.47
1:5:3369:G:N3	1:5:3369:G:H3'	2.30	0.47
1:5:951:A:C2'	1:5:952:A:H5'	2.44	0.47
6:C:259:ASP:OD1	6:C:259:ASP:N	2.47	0.47
1:5:594:U:C6	6:C:308:LYS:HE2	2.50	0.47
1:5:3110:C:H2'	1:5:3111:U:C6	2.49	0.47
1:5:2668:U:O2'	1:5:2669:G:H5'	2.14	0.47
28:Z:10:VAL:HG13	28:Z:23:VAL:O	2.15	0.47
14:L:131:LYS:N	14:L:131:LYS:HD3	2.19	0.47
5:B:169:THR:HG23	5:B:170:PRO:CD	2.39	0.47
1:5:1095:U:H3	22:T:127:GLN:CG	2.24	0.47
6:C:188:ARG:HG2	6:C:190:GLY:H	1.80	0.47
1:5:2853:A:OP1	12:I:63:GLU:HB2	2.15	0.47
1:5:2923:U:H2'	1:5:2924:U:H6	1.73	0.47
2:7:4:U:H2'	2:7:5:G:C8	2.50	0.47
3:8:126:A:H4'	3:8:127:U:OP1	2.14	0.47
5:B:306:THR:HA	5:B:307:PRO:HD3	1.72	0.47
1:5:1037:C:H2'	1:5:1038:C:H6	1.80	0.47
1:5:139:G:H2'	1:5:140:C:C6	2.50	0.47
2:7:34:C:H2'	2:7:35:C:C6	2.50	0.47
2:7:11:A:C2'	2:7:12:U:H5''	2.44	0.47
1:5:349:A:H4'	1:5:350:C:OP2	2.14	0.47
1:5:2931:C:H2'	1:5:2932:U:O4'	2.15	0.47
18:P:141:SER:C	18:P:143:PRO:HD3	2.34	0.47
10:G:90:THR:HG22	10:G:214:LEU:HD21	1.96	0.47
6:C:60:THR:CG2	6:C:61:SER:N	2.78	0.47
1:5:1347:U:H3'	19:Q:38:ARG:NH2	2.29	0.47
8:E:119:UNK:O	8:E:123:UNK:HG2	2.15	0.47
7:D:51:LEU:HD21	7:D:105:ILE:HD11	1.97	0.47
1:5:2276:G:C6	1:5:2311:G:N2	2.82	0.47
1:5:2749:G:O2'	7:D:35:ARG:HG2	2.14	0.47
1:5:1576:G:H2'	1:5:1577:G:O4'	2.15	0.47
1:5:1635:G:O6	28:Z:17:ARG:HB2	2.14	0.47
3:8:70:G:N2	3:8:87:G:O2'	2.46	0.47
6:C:177:ASP:OD2	6:C:205:PRO:HD3	2.15	0.47
1:5:1816:A:HO2'	1:5:1817:G:P	2.35	0.47
1:5:1555:U:O2'	1:5:1556:C:P	2.72	0.47
9:F:85:PHE:O	9:F:136:TYR:HA	2.15	0.47
1:5:1063:G:C6	22:T:109:VAL:HG13	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:N:199:LEU:HD23	16:N:199:LEU:N	2.30	0.47
1:5:3139:A:O2'	1:5:3140:G:H5'	2.14	0.47
8:E:154:LEU:HD13	15:M:119:GLN:HG2	1.95	0.47
17:O:98:ALA:HA	17:O:101:ARG:HH11	1.78	0.47
1:5:1949:G:H2'	1:5:1950:U:C6	2.49	0.47
5:B:258:ALA:O	5:B:259:HIS:CG	2.68	0.47
4:A:117:GLU:HG2	4:A:124:GLY:H	1.80	0.47
22:T:88:ARG:C	22:T:89:LEU:HD12	2.35	0.47
22:T:65:TYR:CE2	22:T:73:GLY:HA3	2.49	0.47
24:V:128:ARG:CZ	24:V:128:ARG:HB3	2.45	0.47
10:G:166:LEU:HD23	10:G:166:LEU:HA	1.45	0.47
24:V:94:TYR:CE1	25:W:21:PHE:HD1	2.31	0.47
2:7:11:A:O2'	2:7:12:U:H3'	2.15	0.47
1:5:2216:G:H22	1:5:2229:A:H2	1.63	0.47
3:8:15:G:C6	3:8:16:G:N1	2.83	0.47
20:R:102:LEU:CD2	20:R:138:LEU:HG	2.45	0.47
1:5:523:A:O2'	21:S:69:PRO:HD2	2.15	0.47
6:C:233:LEU:HD23	6:C:233:LEU:HA	1.55	0.47
7:D:21:ARG:HA	7:D:24:ARG:NH2	2.30	0.47
1:5:3106:A:H2'	1:5:3107:U:O4'	2.15	0.47
15:M:15:VAL:HG23	15:M:35:ILE:HD13	1.97	0.47
1:5:1651:U:C5'	4:A:71:LEU:HD22	2.45	0.47
28:Z:97:SER:HB3	28:Z:99:GLU:HG3	1.97	0.47
18:P:29:THR:HA	18:P:32:THR:CG2	2.45	0.47
1:5:1238:C:H2'	1:5:1239:C:H5''	1.96	0.47
14:L:3:ILE:HG13	14:L:3:ILE:H	1.47	0.47
11:H:24:ILE:HD11	11:H:37:ASN:ND2	2.30	0.47
20:R:112:ALA:CB	20:R:114:LYS:NZ	2.78	0.47
10:G:200:LEU:HD12	10:G:200:LEU:H	1.79	0.47
1:5:915:A:H8	1:5:2136:C:HO2'	1.63	0.47
12:I:196:PHE:CG	12:I:197:VAL:N	2.83	0.47
7:D:83:LEU:N	7:D:84:PRO:HD2	2.29	0.47
1:5:1038:C:O2'	1:5:1039:U:H5'	2.14	0.47
2:7:119:U:H3'	7:D:258:LYS:HZ3	1.78	0.47
1:5:3120:C:HO2'	1:5:3121:U:H6	1.60	0.47
20:R:89:LEU:HD12	20:R:90:PRO:HD2	1.97	0.47
17:O:140:LYS:O	17:O:140:LYS:HG2	2.15	0.47
1:5:123:A:H5'	1:5:124:U:OP2	2.14	0.47
11:H:141:LYS:HE2	11:H:142:ASP:OD2	2.14	0.47
1:5:3333:G:O2'	25:W:50:ALA:HB3	2.15	0.47
1:5:250:U:H2'	1:5:251:G:C5'	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2569:A:H4'	1:5:2570:U:C5'	2.32	0.47
9:F:77:VAL:HG12	21:S:59:VAL:O	2.14	0.47
1:5:1639:C:C2'	1:5:1640:G:H5'	2.45	0.47
1:5:238:A:O2'	1:5:239:G:P	2.73	0.47
1:5:1554:U:O2'	1:5:1555:U:H5''	2.14	0.47
12:I:9:TYR:OH	12:I:99:ILE:HG23	2.15	0.47
12:I:178:ARG:H	12:I:178:ARG:HG2	1.38	0.47
1:5:2137:U:C6	1:5:2141:U:C5	3.03	0.47
1:5:405:U:C5	1:5:406:G:C5	3.03	0.47
6:C:131:VAL:HG12	6:C:134:LEU:H	1.78	0.47
6:C:36:HIS:O	6:C:40:THR:HG23	2.15	0.47
22:T:56:PHE:CZ	22:T:78:LYS:HD3	2.50	0.47
1:5:1333:C:H2'	1:5:1334:U:C6	2.50	0.47
1:5:1110:U:H2'	1:5:1111:U:C6	2.49	0.47
7:D:128:GLU:OE2	7:D:192:PRO:HA	2.15	0.47
14:L:21:ARG:O	16:N:196:THR:HG23	2.14	0.47
12:I:135:ILE:HG22	12:I:136:PHE:CD1	2.50	0.47
4:A:183:GLY:O	4:A:186:PHE:HB3	2.14	0.47
1:5:558:U:H4'	1:5:559:A:OP2	2.15	0.47
14:L:47:ALA:C	14:L:49:ARG:H	2.17	0.47
11:H:82:VAL:HG13	11:H:82:VAL:O	2.15	0.47
24:V:54:LEU:HD12	24:V:78:VAL:O	2.14	0.47
9:F:103:LEU:HD22	9:F:108:LEU:HB2	1.97	0.47
11:H:85:GLY:O	11:H:186:PHE:HA	2.14	0.47
1:5:915:A:H8	1:5:2136:C:O2'	1.98	0.47
13:J:46:VAL:HG12	13:J:68:HIS:O	2.14	0.47
22:T:32:LYS:HE2	22:T:98:HIS:CD2	2.43	0.47
5:B:252:ILE:HG22	5:B:253:GLY:N	2.29	0.47
1:5:788:C:O2'	1:5:789:A:H5'	2.15	0.47
1:5:139:G:H2'	1:5:140:C:H6	1.80	0.47
1:5:1506:A:C2	1:5:1510:G:N1	2.83	0.47
21:S:14:LEU:HB2	21:S:55:SER:O	2.14	0.47
28:Z:16:GLY:O	28:Z:18:TYR:N	2.36	0.47
3:8:88:A:H3'	3:8:89:A:C8	2.50	0.47
4:A:137:ILE:HG23	4:A:147:ARG:O	2.15	0.46
1:5:2568:C:HO2'	1:5:2569:A:P	2.32	0.46
1:5:2808:A:OP2	1:5:2808:A:H3'	2.14	0.46
4:A:45:VAL:HG12	4:A:86:GLN:O	2.14	0.46
8:E:18:LEU:H	8:E:18:LEU:CD1	2.22	0.46
11:H:37:ASN:OD1	11:H:39:LYS:HB2	2.15	0.46
5:B:239:PRO:O	5:B:242:THR:HG23	2.14	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:160:ILE:HG22	10:G:161:GLU:OE1	2.15	0.46
1:5:1072:G:H2'	1:5:1073:U:C6	2.50	0.46
1:5:2971:A:H5''	1:5:2972:G:O5'	2.15	0.46
5:B:106:TRP:HB2	5:B:133:TYR:HE2	1.78	0.46
24:V:59:MET:HE3	24:V:74:MET:O	2.15	0.46
7:D:88:ILE:HD13	7:D:239:ILE:HG22	1.97	0.46
5:B:252:ILE:O	5:B:264:VAL:HG11	2.14	0.46
1:5:2403:G:N2	1:5:2404:A:N6	2.63	0.46
12:I:53:VAL:HG21	12:I:166:ILE:HD12	1.97	0.46
1:5:376:G:C4	1:5:401:U:C5	3.04	0.46
1:5:564:G:H2'	1:5:565:U:H6	1.80	0.46
1:5:2110:G:O2'	1:5:2111:G:H5''	2.14	0.46
14:L:75:PHE:CZ	14:L:116:LEU:HD21	2.50	0.46
14:L:46:ILE:O	14:L:47:ALA:HB3	2.16	0.46
4:A:70:ARG:HD2	4:A:72:ARG:HE	1.80	0.46
23:U:43:VAL:CG2	23:U:50:LEU:HD23	2.45	0.46
3:8:147:U:H4'	26:X:38:LEU:HD12	1.97	0.46
1:5:2584:G:C5'	1:5:2585:G:OP2	2.62	0.46
12:I:49:CYS:HA	12:I:138:VAL:O	2.15	0.46
20:R:81:ARG:HG2	20:R:88:ARG:HH12	1.80	0.46
1:5:2290:C:H2'	1:5:2291:A:H8	1.79	0.46
1:5:1631:C:H5''	1:5:1632:A:C5'	2.45	0.46
1:5:2616:C:C2'	1:5:2617:U:H5'	2.44	0.46
1:5:1779:C:H1'	20:R:93:VAL:HG21	1.97	0.46
1:5:2790:A:OP1	19:Q:180:ARG:HD3	2.14	0.46
7:D:237:GLU:H	7:D:237:GLU:CD	2.17	0.46
18:P:155:GLU:HG2	18:P:155:GLU:O	2.15	0.46
19:Q:8:LYS:HE3	19:Q:8:LYS:HB2	1.53	0.46
11:H:117:PHE:O	11:H:118:LEU:HB2	2.16	0.46
5:B:41:VAL:CA	5:B:185:GLY:HA3	2.39	0.46
13:J:141:ARG:O	13:J:145:LYS:NZ	2.48	0.46
10:G:162:LEU:HD21	16:N:45:PRO:HG2	1.97	0.46
1:5:1213:G:H4'	21:S:90:MET:HG2	1.97	0.46
3:8:105:A:H4'	3:8:106:C:OP1	2.15	0.46
8:E:40:LEU:HD11	8:E:54:TYR:HB2	1.97	0.46
1:5:70:A:N1	1:5:313:A:O2'	2.46	0.46
1:5:3051:U:H2'	1:5:3052:G:H8	1.80	0.46
17:O:40:GLU:OE1	17:O:40:GLU:HA	2.15	0.46
4:A:92:LYS:HA	4:A:92:LYS:HD2	4.40	0.46
17:O:28:LEU:HD23	17:O:28:LEU:HA	1.55	0.46
1:5:1792:C:HO2'	1:5:1794:G:H8	1.63	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:512:U:O2'	1:5:513:G:H5'	2.16	0.46
1:5:3033:A:H2'	1:5:3034:C:C6	2.51	0.46
19:Q:49:LEU:HD23	19:Q:49:LEU:HA	1.69	0.46
19:Q:104:LEU:HD23	19:Q:104:LEU:HA	1.59	0.46
1:5:2248:C:O2'	1:5:2272:G:H1'	2.16	0.46
1:5:3160:U:H2'	1:5:3161:C:H6	1.75	0.46
1:5:805:G:H1'	6:C:73:ARG:NH1	2.31	0.46
11:H:88:TYR:HE2	11:H:184:LYS:HE2	1.81	0.46
27:Y:56:VAL:HG21	27:Y:70:ILE:CD1	2.42	0.46
27:Y:76:LEU:O	27:Y:77:LYS:CB	2.61	0.46
1:5:1562:C:H2'	1:5:1562:C:O2	2.14	0.46
1:5:1354:G:O6	1:5:1358:C:H5'	2.14	0.46
1:5:999:G:O2'	1:5:1000:C:H5'	2.16	0.46
1:5:2209:U:H1'	1:5:2210:G:H5''	1.97	0.46
1:5:665:A:H8	1:5:665:A:O5'	1.98	0.46
1:5:3002:C:H2'	1:5:3003:G:O4'	2.15	0.46
6:C:60:THR:HG22	6:C:62:ALA:N	2.25	0.46
14:L:24:VAL:HB	14:L:26:PHE:CE2	2.51	0.46
9:F:30:ARG:CG	9:F:31:ALA:N	2.77	0.46
1:5:2436:U:H3	1:5:2511:A:N6	2.08	0.46
1:5:240:U:HO2'	1:5:241:G:C5'	2.27	0.46
4:A:102:LEU:HD12	4:A:102:LEU:N	2.31	0.46
1:5:1277:C:O2	1:5:1277:C:H2'	2.14	0.46
1:5:1072:G:H2'	1:5:1073:U:H6	1.81	0.46
6:C:84:ARG:HD2	6:C:87:GLN:OE1	2.16	0.46
20:R:153:LYS:HZ2	20:R:153:LYS:HA	1.80	0.46
9:F:120:THR:O	9:F:124:LEU:HB2	2.16	0.46
16:N:190:THR:O	16:N:194:GLN:HG2	2.16	0.46
1:5:1263:A:N3	1:5:1263:A:H2'	2.31	0.46
1:5:1495:U:C2'	1:5:1495:U:O2	2.64	0.46
21:S:14:LEU:HA	21:S:15:PRO:HD3	1.75	0.46
21:S:45:LEU:HA	21:S:45:LEU:HD22	1.64	0.46
1:5:2717:U:O2'	1:5:2718:U:H5'	2.16	0.46
1:5:1147:G:N2	1:5:1156:C:O2	2.33	0.46
1:5:1765:U:O2'	20:R:43:LYS:NZ	2.33	0.46
28:Z:97:SER:HB3	28:Z:99:GLU:CG	2.46	0.46
1:5:2747:A:O2'	1:5:2748:A:H5'	2.16	0.46
1:5:3384:U:C2	1:5:3385:U:C5	3.03	0.46
1:5:241:G:H2'	1:5:242:C:H6	1.81	0.46
1:5:766:U:H4'	1:5:767:U:C5'	2.46	0.46
9:F:46:GLU:O	9:F:49:ALA:HB3	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:73:ARG:HH11	6:C:73:ARG:HG3	1.81	0.46
1:5:1236:G:H3'	1:5:1237:G:C5'	2.45	0.46
24:V:104:ASN:ND2	24:V:108:GLU:HB2	2.27	0.46
1:5:1063:G:H2'	1:5:1097:G:N2	2.31	0.46
1:5:946:U:C2'	1:5:947:G:H5'	2.44	0.46
7:D:207:TYR:O	7:D:211:LEU:HB2	2.16	0.46
12:I:182:LEU:HD23	12:I:182:LEU:HA	1.61	0.46
4:A:155:LYS:HE2	4:A:155:LYS:HB3	1.70	0.46
6:C:148:ILE:HD12	6:C:148:ILE:HA	1.80	0.46
5:B:158:VAL:HG23	5:B:191:LYS:HD2	1.98	0.46
15:M:55:ARG:HH11	21:S:70:THR:HB	1.81	0.46
1:5:1087:G:C2	1:5:1088:U:C5	3.04	0.46
1:5:1472:U:H2'	1:5:1473:G:H8	1.81	0.46
1:5:3013:U:H2'	1:5:3014:U:H6	1.79	0.46
16:N:104:GLU:OE2	16:N:161:ALA:HA	2.15	0.46
21:S:50:LYS:O	21:S:51:VAL:HG22	2.15	0.46
1:5:1167:U:H2'	1:5:1168:U:O4'	2.16	0.46
1:5:69:C:OP1	16:N:178:HIS:ND1	2.49	0.46
20:R:41:ILE:HA	20:R:41:ILE:HD13	1.82	0.46
6:C:238:LEU:HD23	6:C:238:LEU:HA	1.57	0.46
9:F:83:LEU:C	9:F:83:LEU:HD13	2.36	0.46
9:F:229:PHE:C	9:F:229:PHE:CD1	2.88	0.46
1:5:1393:A:C8	1:5:1418:A:C6	3.04	0.46
1:5:2522:G:O6	4:A:70:ARG:NH2	2.49	0.46
27:Y:87:LYS:HB2	27:Y:97:ILE:HD11	1.97	0.46
26:X:62:VAL:HG13	26:X:90:ALA:CB	2.45	0.46
1:5:620:U:O2'	18:P:167:ARG:CZ	2.64	0.46
26:X:25:LYS:HE3	26:X:25:LYS:HB2	1.78	0.46
24:V:54:LEU:HA	24:V:54:LEU:HD12	1.57	0.46
1:5:2234:G:O2'	1:5:2603:G:O2'	1.98	0.46
18:P:30:ARG:HD2	18:P:63:PHE:HE1	1.80	0.46
1:5:1073:U:O2'	1:5:1074:U:H5'	2.15	0.46
28:Z:13:VAL:O	28:Z:19:ALA:HA	2.16	0.46
18:P:70:THR:CG2	18:P:81:ALA:HB3	2.45	0.46
25:W:5:ILE:C	25:W:5:ILE:HD12	2.37	0.46
1:5:282:G:C3'	1:5:282:G:C8	2.98	0.46
6:C:338:LYS:CD	6:C:338:LYS:N	2.79	0.46
1:5:344:A:C2'	1:5:345:G:H5'	2.46	0.46
1:5:3187:A:H4'	1:5:3187:A:OP1	2.16	0.46
1:5:129:U:H2'	1:5:130:A:C8	2.51	0.46
6:C:318:LEU:HD11	9:F:146:GLN:HG2	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:143:ILE:HD13	10:G:170:CYS:SG	2.56	0.46
1:5:2388:U:O3'	18:P:80:LYS:NZ	2.49	0.46
4:A:90:ALA:CB	4:A:101:VAL:HG13	2.46	0.46
1:5:1062:A:H4'	22:T:105:PHE:CE2	2.50	0.46
14:L:71:ALA:HA	14:L:147:ILE:HD11	1.98	0.46
27:Y:52:ARG:O	27:Y:53:ASP:HB2	2.16	0.46
1:5:3148:U:O2'	1:5:3149:G:H5'	2.16	0.46
16:N:73:ARG:HB3	16:N:75:VAL:HG22	1.97	0.46
1:5:1572:U:O2	1:5:1573:G:N7	2.49	0.46
1:5:1208:U:O2	1:5:1208:U:H2'	2.16	0.46
1:5:1109:U:H2'	1:5:1110:U:O4'	2.16	0.46
9:F:151:ARG:HG3	9:F:244:ASN:OD1	2.16	0.46
9:F:224:ILE:HG22	9:F:225:GLN:N	2.31	0.46
1:5:592:A:O2'	1:5:593:C:H5'	2.16	0.46
22:T:132:PRO:O	22:T:134:GLN:NE2	2.49	0.46
1:5:1185:C:OP1	15:M:42:LYS:HE3	2.15	0.46
27:Y:59:VAL:O	27:Y:64:LYS:HD2	2.16	0.46
19:Q:81:VAL:HG23	19:Q:140:LEU:HG	1.98	0.46
14:L:49:ARG:HB3	14:L:50:PRO:HD2	1.98	0.46
6:C:205:PRO:HB3	6:C:247:PHE:CE2	2.51	0.46
1:5:1268:G:O2'	1:5:1269:U:H5'	2.16	0.46
1:5:916:G:H5''	1:5:917:A:OP1	2.16	0.46
1:5:3340:G:O2'	1:5:3341:U:OP1	2.28	0.46
6:C:330:TYR:HB2	9:F:45:LEU:CD2	2.46	0.46
19:Q:122:ILE:HG22	19:Q:126:GLN:HB2	1.96	0.46
1:5:20:A:O2'	1:5:21:G:H5'	2.15	0.46
28:Z:4:PHE:O	28:Z:5:LEU:CB	2.64	0.46
6:C:106:TRP:HZ2	14:L:19:GLN:NE2	2.13	0.46
13:J:156:LYS:O	13:J:160:VAL:HG23	2.16	0.46
1:5:2400:G:H5'	1:5:2401:A:OP2	2.16	0.46
8:E:70:LYS:HB3	8:E:146:ILE:HD11	1.97	0.46
2:7:22:A:H2'	2:7:22:A:N3	2.30	0.46
1:5:437:G:O5'	1:5:437:G:H8	1.99	0.46
13:J:12:LEU:HD22	13:J:12:LEU:HA	1.77	0.46
1:5:968:G:H2'	1:5:969:C:C6	2.51	0.46
1:5:1284:C:O2'	1:5:1285:G:P	2.73	0.45
1:5:2556:C:C2'	1:5:2557:A:H5'	2.46	0.45
26:X:62:VAL:HG13	26:X:90:ALA:HB2	1.98	0.45
1:5:2388:U:H2'	1:5:2389:C:H6	1.80	0.45
1:5:2997:G:H1'	1:5:3396:U:C5'	2.42	0.45
1:5:3083:G:H2'	1:5:3084:C:O4'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2101:C:O2'	1:5:2102:U:P	2.74	0.45
22:T:32:LYS:CE	22:T:98:HIS:HD2	2.28	0.45
1:5:956:U:H4'	1:5:2726:C:H5''	1.99	0.45
12:I:60:LEU:N	12:I:60:LEU:HD23	2.31	0.45
27:Y:108:LYS:HD3	27:Y:108:LYS:HA	1.76	0.45
17:O:22:VAL:O	17:O:26:GLN:HG2	2.16	0.45
11:H:121:LYS:HA	11:H:121:LYS:HD3	1.68	0.45
24:V:96:GLU:OE1	25:W:24:GLY:N	2.49	0.45
4:A:33:ASP:OD1	4:A:36:GLU:HG3	2.16	0.45
19:Q:26:LEU:HD22	19:Q:26:LEU:HA	1.69	0.45
1:5:1580:A:H2'	1:5:1580:A:N3	2.31	0.45
1:5:2283:G:H4'	1:5:2308:C:N4	2.31	0.45
1:5:1815:U:O2'	1:5:1816:A:P	2.75	0.45
1:5:845:G:HO2'	1:5:847:A:N6	2.10	0.45
7:D:68:THR:HG22	7:D:69:ILE:N	2.32	0.45
1:5:2836:C:O2'	1:5:2837:A:H5'	2.16	0.45
14:L:140:SER:OG	14:L:143:ALA:N	2.45	0.45
27:Y:102:SER:C	27:Y:103:LYS:HD3	2.36	0.45
1:5:41:G:H21	1:5:2612:U:H5''	1.81	0.45
10:G:134:TYR:CG	10:G:190:VAL:HG11	2.51	0.45
23:U:34:ALA:O	23:U:38:ILE:HG13	2.15	0.45
21:S:136:LYS:HG2	21:S:136:LYS:H	1.55	0.45
11:H:146:LEU:HD12	11:H:146:LEU:N	2.30	0.45
1:5:1170:A:O5'	1:5:1170:A:H8	1.99	0.45
22:T:75:ILE:HG23	22:T:86:GLU:HG3	1.99	0.45
13:J:25:GLU:HG3	13:J:63:GLU:OE1	2.16	0.45
1:5:1766:G:O2'	1:5:1767:C:H5'	2.17	0.45
4:A:132:ASN:O	4:A:133:TYR:HB3	2.17	0.45
2:7:44:C:H2'	2:7:45:A:H5'	1.97	0.45
1:5:2298:U:H2'	1:5:2920:U:O2'	2.17	0.45
5:B:238:LEU:HA	5:B:238:LEU:HD13	1.76	0.45
12:I:178:ARG:N	12:I:179:PRO:HD2	2.32	0.45
1:5:715:A:O2'	1:5:752:C:O2'	2.11	0.45
1:5:2176:U:C2'	1:5:2177:G:H5'	2.47	0.45
8:E:76:LEU:HD11	8:E:141:VAL:HG21	1.98	0.45
3:8:143:U:OP1	16:N:38:ARG:NH2	2.49	0.45
1:5:3243:A:C8	17:O:156:LEU:HD22	2.51	0.45
5:B:55:THR:O	5:B:56:ILE:HD12	2.17	0.45
1:5:2880:U:O2	5:B:250:ALA:HB3	2.17	0.45
1:5:419:G:O3'	1:5:420:G:C5'	2.64	0.45
1:5:1282:G:H2'	1:5:1283:C:H6	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:105:LYS:O	10:G:109:LEU:HD23	2.16	0.45
3:8:23:U:OP1	27:Y:16:ARG:NH2	2.46	0.45
1:5:781:G:OP1	19:Q:151:ARG:HD2	2.17	0.45
1:5:2145:A:N3	1:5:2145:A:H2'	2.30	0.45
28:Z:34:LYS:HD2	28:Z:34:LYS:HA	1.59	0.45
18:P:122:ALA:HB1	18:P:123:PRO:HD2	1.97	0.45
1:5:359:U:H4'	1:5:817:A:N6	2.32	0.45
1:5:2573:G:C3'	1:5:2574:G:H5''	2.46	0.45
18:P:52:LEU:HD12	18:P:52:LEU:HA	1.60	0.45
11:H:24:ILE:HD13	11:H:37:ASN:HA	1.99	0.45
1:5:1011:A:H1'	12:I:193:ASP:OD1	2.17	0.45
1:5:3195:U:H1'	1:5:3196:U:OP1	2.16	0.45
1:5:2727:A:OP2	1:5:2728:G:N2	2.46	0.45
1:5:2181:C:H5''	4:A:193:ARG:HH21	1.81	0.45
1:5:3315:G:H2'	5:B:123:TYR:CD2	2.52	0.45
1:5:3009:G:H2'	1:5:3010:U:H5'	1.98	0.45
1:5:2943:G:C8	5:B:2:SER:N	2.85	0.45
28:Z:122:HIS:HB2	28:Z:131:PHE:CE1	2.51	0.45
1:5:1989:Y5P:H2'	1:5:1990:Y5P:H6	1.99	0.45
28:Z:81:LEU:HD22	28:Z:81:LEU:HA	1.61	0.45
21:S:52:LYS:HE3	21:S:54:ALA:HB3	1.98	0.45
7:D:75:LEU:O	7:D:75:LEU:HD23	2.16	0.45
1:5:2513:U:C4'	1:5:2514:U:OP1	2.64	0.45
1:5:2960:C:H2'	1:5:2961:G:C8	2.51	0.45
1:5:2808:A:HO2'	1:5:2809:C:P	2.37	0.45
1:5:236:G:H2'	1:5:237:G:O4'	2.17	0.45
4:A:102:LEU:HB3	4:A:103:PRO:HD2	1.96	0.45
1:5:2422:C:N3	1:5:2609:A:N1	2.64	0.45
28:Z:123:GLN:O	28:Z:124:ALA:HB3	2.16	0.45
1:5:1597:C:H2'	1:5:1598:G:H8	1.78	0.45
1:5:100:A:C2'	1:5:101:G:H5'	2.46	0.45
1:5:886:C:O2'	1:5:887:G:H5'	2.16	0.45
24:V:84:SER:HA	24:V:94:TYR:HB3	1.98	0.45
1:5:894:G:N2	1:5:1660:C:H5'	2.31	0.45
22:T:102:ARG:NH1	22:T:106:LEU:HD21	2.31	0.45
7:D:259:LYS:HD3	7:D:259:LYS:H	1.80	0.45
1:5:1778:G:O2'	1:5:1780:G:OP2	2.35	0.45
1:5:266:A:N6	12:I:30:LYS:HA	125.11	0.45
14:L:46:ILE:O	14:L:46:ILE:HG22	2.17	0.45
1:5:2270:A:C6	1:5:2271:A:N6	2.84	0.45
2:7:26:C:H2'	2:7:27:A:O4'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2537:U:HO2'	1:5:2538:U:C4'	2.22	0.45
15:M:55:ARG:HD3	21:S:70:THR:HB	1.97	0.45
1:5:159:A:H2'	1:5:160:G:H8	1.81	0.45
12:I:191:LYS:CB	12:I:213:PHE:HE1	2.27	0.45
18:P:166:VAL:CG1	18:P:168:LEU:HG	2.46	0.45
1:5:3152:U:C5	1:5:3395:G:C6	3.05	0.45
2:7:24:A:H2'	2:7:25:G:C8	2.51	0.45
1:5:3209:A:H2'	1:5:3209:A:N3	2.31	0.45
5:B:114:VAL:HG13	5:B:163:HIS:CG	2.50	0.45
1:5:142:C:H2'	1:5:143:G:O4'	2.17	0.45
26:X:100:LYS:HZ1	26:X:107:VAL:H	1.65	0.45
24:V:120:LYS:HB2	24:V:120:LYS:NZ	2.32	0.45
2:7:43:U:C4	2:7:44:C:C5	3.04	0.45
1:5:2511:A:C3'	1:5:2512:C:H5'	2.46	0.45
1:5:2538:U:H2'	1:5:2539:C:C5'	2.47	0.45
8:E:152:THR:HG23	8:E:155:LEU:CB	2.46	0.45
3:8:104:A:H3'	3:8:105:A:C5'	2.43	0.45
27:Y:52:ARG:NH1	27:Y:52:ARG:HB3	2.31	0.45
9:F:166:ASN:OD1	9:F:181:ILE:N	2.44	0.45
3:8:83:C:N4	27:Y:113:LYS:NZ	2.65	0.45
1:5:995:U:N3	1:5:2637:A:C8	2.85	0.45
15:M:97:SER:O	15:M:101:LYS:HG3	2.16	0.45
24:V:106:LYS:HB3	24:V:106:LYS:HE2	1.78	0.45
1:5:1724:U:H1'	1:5:1725:C:C6	2.52	0.45
4:A:174:ARG:CG	4:A:174:ARG:NH1	2.71	0.45
22:T:96:ILE:HG22	22:T:97:LYS:N	2.32	0.45
1:5:121:A:C5	10:G:108:ARG:NH1	2.84	0.45
1:5:3294:A:OP2	5:B:126:LYS:NZ	2.50	0.45
1:5:1182:A:OP2	21:S:158:LYS:HE3	2.17	0.45
2:7:34:C:H2'	2:7:35:C:H6	1.81	0.45
12:I:75:TYR:O	12:I:79:VAL:HG23	2.17	0.45
18:P:114:VAL:HG22	18:P:114:VAL:O	2.17	0.45
18:P:117:ILE:O	18:P:117:ILE:HG23	2.17	0.45
1:5:3199:G:H4'	15:M:6:ILE:HD13	1.98	0.45
1:5:338:A:OP1	6:C:47:ARG:HA	2.17	0.45
1:5:2845:A:H2	1:5:2850:G:H1	1.64	0.45
21:S:8:GLN:HB2	21:S:64:ILE:HD11	1.98	0.45
26:X:91:ASN:ND2	26:X:94:GLN:OE1	2.50	0.45
3:8:84:C:H4'	3:8:85:G:OP1	2.16	0.45
6:C:219:LEU:HD13	6:C:225:VAL:HG11	1.98	0.45
7:D:270:LYS:HG2	7:D:273:ARG:NH2	2.26	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2592:G:H4'	1:5:2594:C:C2	2.52	0.45
25:W:2:LYS:HG2	25:W:3:VAL:N	2.31	0.45
1:5:107:A:H1'	1:5:325:A:N3	2.32	0.45
1:5:655:C:H2'	1:5:656:A:C8	2.52	0.45
21:S:4:PHE:HD1	21:S:4:PHE:N	2.14	0.45
1:5:224:C:C2'	1:5:225:C:H5'	2.47	0.45
8:E:37:GLY:HA2	8:E:93:VAL:HG23	1.99	0.45
1:5:2894:C:OP1	11:H:168:ARG:HD2	2.16	0.45
1:5:1898:G:C2'	1:5:1899:G:H5'	2.47	0.45
16:N:163:GLY:C	16:N:164:LEU:HD23	2.38	0.45
1:5:278:U:H2'	1:5:279:U:H6	1.81	0.45
4:A:72:ARG:HD3	4:A:72:ARG:HA	1.34	0.45
1:5:1063:G:C2'	1:5:1097:G:N2	2.80	0.45
1:5:1447:G:O5'	18:P:63:PHE:HB3	2.17	0.45
27:Y:74:TYR:CD1	27:Y:77:LYS:HB2	2.52	0.45
1:5:2837:A:H5"	12:I:154:ARG:HH12	1.81	0.45
8:E:54:TYR:C	8:E:55:LEU:HD23	2.37	0.45
5:B:287:LYS:NZ	5:B:287:LYS:CB	2.80	0.45
26:X:112:THR:HG22	26:X:122:ALA:HB2	1.98	0.45
26:X:67:ILE:HB	26:X:83:VAL:HG12	1.98	0.45
7:D:40:HIS:CE1	22:T:69:LYS:HA	2.52	0.45
1:5:850:U:O2'	1:5:851:C:P	2.75	0.45
2:7:94:C:H2'	2:7:95:A:C8	2.50	0.45
1:5:1989:Y5P:H4A	1:5:1990:Y5P:H4	1.99	0.45
5:B:45:SER:OG	5:B:181:ILE:HG12	2.17	0.45
12:I:216:TYR:CD1	12:I:216:TYR:C	2.90	0.45
20:R:99:LEU:HD22	20:R:103:ARG:NE	2.32	0.45
1:5:2388:U:H2'	1:5:2389:C:C6	2.52	0.44
1:5:2525:G:H4'	10:G:49:TYR:OH	2.17	0.44
28:Z:129:TRP:O	28:Z:132:SER:OG	2.24	0.44
1:5:163:C:O2'	1:5:164:A:H5'	2.17	0.44
1:5:1279:C:H2'	1:5:1280:C:H6	1.83	0.44
1:5:1908:A:O5'	1:5:1908:A:H8	2.00	0.44
1:5:1313:G:H5'	17:O:83:ALA:HB1	1.98	0.44
1:5:970:A:C2	1:5:971:G:C4	3.05	0.44
1:5:1718:G:H2'	1:5:1719:G:C8	2.52	0.44
26:X:61:LYS:HB2	26:X:61:LYS:HE3	1.82	0.44
1:5:2746:A:C2	7:D:148:ILE:HD13	2.52	0.44
7:D:36:LEU:O	7:D:48:LYS:HD2	2.16	0.44
24:V:11:PHE:O	24:V:13:ILE:HG22	2.18	0.44
16:N:94:TYR:HD2	16:N:96:ARG:O	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2213:A:O4'	1:5:2602:G:H4'	2.18	0.44
1:5:2426:U:H2'	1:5:2427:U:C6	2.53	0.44
1:5:1265:U:C2	1:5:1277:C:H1'	2.52	0.44
1:5:110:G:OP2	14:L:73:ARG:NH1	2.43	0.44
1:5:2883:U:O2'	1:5:2884:C:H5'	2.17	0.44
1:5:3195:U:C1'	1:5:3196:U:OP1	2.65	0.44
5:B:218:ILE:N	5:B:218:ILE:CD1	2.80	0.44
4:A:5:ILE:HG22	4:A:209:HIS:HA	1.99	0.44
15:M:19:ARG:HG2	15:M:65:LEU:HD22	1.98	0.44
12:I:207:GLU:O	12:I:210:ILE:HG12	2.17	0.44
5:B:343:TYR:CD1	5:B:343:TYR:N	2.85	0.44
1:5:2094:C:H2'	1:5:2094:C:O2	2.17	0.44
17:O:31:GLN:HE21	17:O:32:LYS:N	2.15	0.44
17:O:47:PHE:HA	17:O:136:THR:OG1	2.17	0.44
1:5:3232:G:C6	1:5:3256:G:C6	3.06	0.44
1:5:3344:A:H5''	1:5:3345:G:OP2	2.17	0.44
1:5:1306:G:O6	1:5:2366:C:O2'	2.33	0.44
13:J:87:LYS:HE2	13:J:87:LYS:HA	1.98	0.44
1:5:3130:A:N3	1:5:3130:A:H2'	2.32	0.44
1:5:118:U:N3	1:5:122:A:OP2	2.44	0.44
2:7:1:G:C2	2:7:2:G:C8	3.05	0.44
23:U:111:THR:HG23	23:U:112:PRO:HD2	1.98	0.44
1:5:987:U:H2'	1:5:988:U:C6	2.52	0.44
2:7:83:U:C2'	2:7:84:A:H5'	2.47	0.44
1:5:1793:C:C4	4:A:179:LEU:HD22	2.52	0.44
12:I:36:LEU:HD11	12:I:69:ARG:CG	2.48	0.44
1:5:2211:U:H5	1:5:2234:G:C6	2.36	0.44
4:A:77:ILE:HG21	4:A:169:ILE:HG13	2.00	0.44
4:A:79:ASN:O	4:A:80:GLU:HB3	2.16	0.44
21:S:87:THR:HG23	22:T:156:TYR:CE2	2.52	0.44
1:5:94:G:H2'	1:5:95:A:H8	1.81	0.44
15:M:19:ARG:HA	15:M:69:THR:HG22	1.99	0.44
1:5:2684:C:H2'	1:5:2685:C:C6	2.53	0.44
1:5:1477:A:OP1	1:5:3075:G:O2'	2.35	0.44
5:B:146:ARG:CZ	5:B:146:ARG:HA	2.47	0.44
1:5:2158:A:OP2	4:A:156:LYS:NZ	2.45	0.44
27:Y:83:ASP:O	27:Y:84:LYS:HB2	2.16	0.44
4:A:180:LEU:HD21	18:P:22:LEU:HB3	86.66	0.44
1:5:2757:U:H4'	22:T:7:TYR:HB3	1.99	0.44
1:5:1220:U:O5'	1:5:1222:G:H5''	2.18	0.44
26:X:57:LEU:HD13	26:X:62:VAL:HG22	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:Y:36:SER:HB2	27:Y:37:LYS:NZ	2.33	0.44
27:Y:39:LEU:HD21	27:Y:107:THR:O	2.18	0.44
20:R:85:ARG:HB2	20:R:85:ARG:CZ	2.48	0.44
1:5:3294:A:H2'	1:5:3295:A:O4'	2.17	0.44
3:8:117:C:H2'	3:8:118:C:C6	2.51	0.44
11:H:129:ARG:O	11:H:132:VAL:HB	2.17	0.44
1:5:877:C:H2'	1:5:878:G:O4'	2.18	0.44
16:N:183:THR:CG2	16:N:183:THR:O	2.66	0.44
1:5:1491:A:C2'	1:5:1492:G:H5'	2.47	0.44
28:Z:115:LYS:O	28:Z:119:GLU:HG3	2.17	0.44
1:5:640:U:H2'	1:5:641:C:C6	2.52	0.44
10:G:162:LEU:HD23	16:N:7:LEU:CD1	2.47	0.44
4:A:117:GLU:HB3	4:A:122:ASP:OD1	2.17	0.44
12:I:79:VAL:HG11	12:I:147:VAL:HG13	1.98	0.44
1:5:1301:A:H4'	1:5:1302:A:H5''	2.00	0.44
1:5:1252:A:H2'	1:5:1253:U:H5'	1.99	0.44
1:5:3242:G:C5'	1:5:3245:A:H8	2.31	0.44
1:5:3086:A:H2'	1:5:3086:A:N3	2.32	0.44
5:B:240:ARG:O	5:B:240:ARG:HG2	2.16	0.44
27:Y:3:LYS:O	27:Y:3:LYS:HG3	2.17	0.44
9:F:127:LEU:HD23	9:F:127:LEU:HA	1.65	0.44
7:D:261:THR:O	7:D:264:GLN:N	2.39	0.44
1:5:1317:A:OP2	1:5:1317:A:H3'	2.17	0.44
1:5:208:C:C2'	1:5:209:A:H5'	2.47	0.44
1:5:791:A:H2'	1:5:792:G:C8	2.53	0.44
1:5:2144:A:C1'	1:5:2281:A:H61	2.25	0.44
6:C:95:ARG:HG2	6:C:95:ARG:HH11	1.82	0.44
1:5:383:G:C5'	18:P:96:GLN:HE22	2.24	0.44
1:5:2997:G:C6	1:5:3396:U:C4	3.05	0.44
1:5:1093:A:C2	1:5:1096:U:O2	2.70	0.44
1:5:1562:C:H2'	1:5:1563:C:C6	2.53	0.44
5:B:120:LYS:HD2	5:B:120:LYS:HA	1.73	0.44
1:5:1241:U:C4'	1:5:1242:G:OP1	2.65	0.44
11:H:3:TYR:CD1	11:H:3:TYR:N	2.85	0.44
1:5:575:G:H2'	1:5:576:C:H6	1.82	0.44
17:O:155:LYS:HE2	17:O:155:LYS:HB3	1.83	0.44
7:D:185:PHE:HD1	7:D:185:PHE:H	1.65	0.44
21:S:10:ILE:HA	21:S:25:PHE:O	2.17	0.44
6:C:152:VAL:HG12	6:C:153:SER:N	2.32	0.44
11:H:99:ILE:HD11	11:H:117:PHE:HD1	1.82	0.44
5:B:284:ARG:NH2	5:B:295:ALA:O	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:F:77:VAL:HG22	22:T:139:ARG:O	2.18	0.44
4:A:102:LEU:HB3	4:A:103:PRO:CD	2.47	0.44
11:H:38:LEU:HD13	11:H:71:VAL:HG22	1.99	0.44
27:Y:70:ILE:HG13	27:Y:80:VAL:CG1	2.47	0.44
5:B:215:ILE:HG21	5:B:282:ILE:HD11	1.99	0.44
1:5:3218:A:OP1	1:5:3218:A:H3'	2.18	0.44
9:F:210:PRO:HG3	9:F:214:TRP:CE2	2.52	0.44
1:5:269:G:OP1	16:N:47:LYS:HE2	2.18	0.44
21:S:111:ALA:O	21:S:115:ARG:HA	2.18	0.44
19:Q:172:PHE:N	19:Q:172:PHE:CD1	2.86	0.44
18:P:39:TRP:O	18:P:113:TYR:HB2	2.18	0.44
9:F:199:ASN:O	9:F:202:LEU:HB2	2.17	0.44
14:L:47:ALA:CB	14:L:48:PRO:CD	2.96	0.44
6:C:299:ILE:CG2	19:Q:39:ARG:NH1	2.67	0.44
5:B:232:ARG:CZ	5:B:268:GLY:HA3	2.47	0.44
3:8:79:A:N3	3:8:79:A:H2'	2.32	0.44
3:8:80:A:H2'	3:8:81:U:H2'	1.99	0.44
6:C:73:ARG:HH11	6:C:73:ARG:CG	2.30	0.44
1:5:847:A:H8	1:5:847:A:O5'	2.01	0.44
1:5:1713:G:N2	1:5:1730:G:H1'	2.32	0.44
8:E:52:VAL:HG13	8:E:53:VAL:N	2.33	0.44
12:I:175:ASN:C	12:I:176:LEU:HG	2.38	0.44
1:5:1101:G:OP2	9:F:196:LYS:NZ	2.49	0.44
3:8:83:C:N4	27:Y:113:LYS:HZ1	2.15	0.44
1:5:308:A:H5'	1:5:2223:A:O2'	2.18	0.44
11:H:92:TYR:HD1	11:H:142:ASP:O	2.00	0.44
1:5:1840:U:H4'	1:5:1841:A:H5'	1.99	0.44
7:D:117:GLU:HG3	7:D:117:GLU:H	1.55	0.44
8:E:123:UNK:HG2	8:E:126:UNK:HB1	1.99	0.44
6:C:178:LEU:HA	6:C:178:LEU:HD23	1.71	0.44
1:5:1819:U:O2'	1:5:1820:U:P	2.76	0.44
6:C:330:TYR:OH	9:F:52:GLN:HG2	2.18	0.44
1:5:524:U:H5''	15:M:77:ARG:HH21	1.83	0.44
14:L:71:ALA:CB	14:L:147:ILE:HD11	2.48	0.44
1:5:1397:C:O2'	1:5:1398:U:H5'	2.18	0.44
13:J:133:ARG:NH1	13:J:154:THR:HG22	2.33	0.44
1:5:2611:U:H2'	1:5:2612:U:C6	2.52	0.44
1:5:1334:U:H2'	1:5:1335:C:H6	1.82	0.44
1:5:3121:U:H1'	1:5:3122:A:H5''	2.00	0.44
7:D:191:ASP:HA	7:D:192:PRO:HD2	1.77	0.44
9:F:151:ARG:NH1	9:F:244:ASN:HA	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:47:ARG:NH1	6:C:109:TRP:O	2.51	0.44
10:G:205:ALA:HA	10:G:208:GLU:OE1	2.17	0.44
4:A:149:ARG:CZ	4:A:149:ARG:HB2	2.46	0.43
16:N:182:ASN:O	16:N:183:THR:CG2	2.63	0.43
7:D:126:GLU:HB2	7:D:196:ARG:HE	1.82	0.43
26:X:34:LEU:CD1	26:X:35:PRO:HD2	2.41	0.43
1:5:3162:C:O2'	1:5:3163:A:H5'	2.18	0.43
15:M:118:PHE:O	15:M:121:MET:HB3	2.18	0.43
1:5:2233:A:H2	1:5:2603:G:O4'	2.01	0.43
1:5:2662:G:H2'	1:5:2663:G:C8	2.52	0.43
3:8:155:A:C3'	3:8:156:U:H5''	2.48	0.43
4:A:130:SER:HA	4:A:169:ILE:HG22	1.99	0.43
7:D:194:LEU:HD11	7:D:198:TYR:HE2	1.82	0.43
18:P:10:ASN:HA	18:P:11:PRO:HD2	1.89	0.43
17:O:109:PRO:CB	17:O:110:PRO:HD3	2.48	0.43
17:O:105:PHE:N	17:O:105:PHE:CD1	2.86	0.43
2:7:15:C:C2	2:7:16:U:C5	3.05	0.43
1:5:3047:U:C2'	1:5:3048:A:H5'	2.48	0.43
1:5:3186:A:N3	11:H:44:THR:HG22	2.33	0.43
1:5:281:G:C2'	1:5:282:G:H5'	2.48	0.43
6:C:318:LEU:HD23	6:C:318:LEU:N	2.33	0.43
9:F:151:ARG:HD2	9:F:207:LEU:HD23	2.00	0.43
21:S:23:LYS:HD2	21:S:23:LYS:N	2.32	0.43
11:H:156:GLN:O	11:H:159:ALA:N	2.49	0.43
1:5:259:C:C2	1:5:260:C:C5	3.06	0.43
28:Z:36:HIS:N	28:Z:37:PRO:HD3	2.33	0.43
1:5:2023:P5P:H2'	1:5:2024:P5P:H8	1.99	0.43
26:X:105:VAL:HG11	26:X:126:LEU:HD13	2.00	0.43
1:5:618:C:H2'	1:5:619:A:O4'	2.18	0.43
13:J:16:LYS:HD3	13:J:72:ARG:CZ	2.48	0.43
1:5:1275:C:H2'	1:5:1276:U:H5'	1.99	0.43
17:O:23:VAL:HG13	17:O:33:ILE:HG21	1.98	0.43
1:5:601:U:OP1	1:5:601:U:H6	2.01	0.43
1:5:281:G:H2'	1:5:282:G:H5'	2.00	0.43
1:5:671:U:O2'	19:Q:20:LYS:HD3	2.17	0.43
1:5:3233:C:H2'	1:5:3234:A:C8	2.52	0.43
1:5:3245:A:H2	1:5:3246:G:C2	2.35	0.43
1:5:258:G:H2'	1:5:259:C:H6	1.83	0.43
13:J:158:ASP:O	13:J:161:SER:HB3	2.18	0.43
7:D:162:ALA:O	7:D:166:ALA:HB2	2.19	0.43
1:5:2714:G:H5''	1:5:2714:G:N3	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:H:161:LEU:HD13	11:H:161:LEU:O	2.18	0.43
1:5:3058:U:H3'	1:5:3058:U:O2	2.17	0.43
20:R:35:ALA:O	20:R:37:SER:N	2.51	0.43
1:5:3212:C:OP2	15:M:124:ARG:NH2	2.51	0.43
27:Y:32:SER:HA	27:Y:49:PRO:HA	2.00	0.43
1:5:271:C:H2'	1:5:272:G:O4'	2.18	0.43
7:D:122:VAL:CG1	7:D:125:VAL:HA	2.48	0.43
1:5:3289:G:O2'	1:5:3290:G:P	2.76	0.43
20:R:112:ALA:CB	20:R:114:LYS:HZ1	2.31	0.43
6:C:140:HIS:ND1	6:C:247:PHE:HB3	2.33	0.43
1:5:1447:G:OP1	18:P:65:SER:OG	2.26	0.43
25:W:9:SER:CB	25:W:51:TRP:HZ3	2.31	0.43
1:5:1864:A:H5'	20:R:88:ARG:HD2	2.00	0.43
6:C:180:LYS:O	6:C:184:SER:HB3	2.18	0.43
21:S:106:LEU:HD13	21:S:106:LEU:C	2.39	0.43
3:8:66:A:H2'	3:8:67:U:C6	2.53	0.43
1:5:3095:U:H2'	1:5:3096:C:H6	1.83	0.43
1:5:3354:U:O4'	1:5:3354:U:O2	2.36	0.43
1:5:1118:C:H6	1:5:1118:C:O5'	2.02	0.43
1:5:211:A:OP2	6:C:221:ASN:HB2	2.18	0.43
1:5:1387:G:N2	1:5:1421:G:C4	2.85	0.43
18:P:28:ASN:O	18:P:32:THR:HG22	2.18	0.43
1:5:3357:U:O2'	1:5:3358:U:OP1	2.33	0.43
1:5:1063:G:H2'	1:5:1097:G:H21	1.83	0.43
22:T:157:GLU:HG2	22:T:158:THR:N	2.33	0.43
11:H:90:MET:HB3	11:H:180:TYR:O	2.19	0.43
2:7:16:U:H2'	2:7:17:A:C8	2.53	0.43
1:5:1471:U:C2	1:5:1472:U:C5	3.06	0.43
7:D:177:GLU:HA	7:D:180:PHE:CD2	2.53	0.43
11:H:10:ILE:HD13	11:H:75:VAL:HG11	2.00	0.43
6:C:165:ALA:O	6:C:168:ALA:HB3	2.18	0.43
5:B:161:LEU:HD23	5:B:180:GLU:HG2	2.01	0.43
14:L:134:GLU:HG3	14:L:135:ALA:N	2.33	0.43
19:Q:165:ILE:HA	19:Q:165:ILE:HD12	1.82	0.43
10:G:171:LYS:HA	10:G:171:LYS:HD2	1.81	0.43
3:8:150:G:O2'	10:G:56:VAL:HG13	2.19	0.43
17:O:128:ARG:CG	17:O:128:ARG:NH1	2.81	0.43
11:H:89:LYS:HB3	11:H:143:GLU:OE2	2.19	0.43
24:V:48:ARG:HG3	24:V:48:ARG:NH1	2.06	0.43
26:X:86:VAL:CG1	26:X:87:SER:N	2.81	0.43
1:5:1566:A:H2'	1:5:1567:U:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:V:93:LEU:HA	25:W:20:LEU:O	2.18	0.43
6:C:330:TYR:HB2	9:F:45:LEU:HD22	2.00	0.43
9:F:158:LYS:C	9:F:158:LYS:HD3	2.39	0.43
1:5:3015:G:C4	1:5:3040:A:C2	3.07	0.43
1:5:3009:G:C5	1:5:3010:U:C5	3.06	0.43
1:5:545:U:H3'	1:5:546:C:H6	1.82	0.43
10:G:166:LEU:CB	10:G:167:PRO:HD3	2.49	0.43
28:Z:130:PHE:HE1	28:Z:131:PHE:CE2	2.36	0.43
2:7:22:A:H1'	7:D:272:TYR:CE2	2.54	0.43
28:Z:58:GLY:O	28:Z:62:VAL:HG23	2.18	0.43
1:5:2575:G:C2	1:5:2576:G:C8	3.06	0.43
1:5:514:G:N2	6:C:340:GLY:O	2.50	0.43
11:H:87:LYS:HZ3	11:H:191:LEU:CD2	2.32	0.43
19:Q:30:VAL:HG12	19:Q:30:VAL:O	2.83	0.43
27:Y:86:THR:CA	27:Y:97:ILE:HD13	2.40	0.43
26:X:65:GLN:HA	26:X:66:PRO:HD3	1.87	0.43
1:5:2421:U:C3'	1:5:2422:C:H5''	2.48	0.43
1:5:59:G:H2'	3:8:33:A:C2'	2.48	0.43
1:5:100:A:O2'	1:5:101:G:H5'	2.19	0.43
1:5:678:G:H2'	1:5:679:U:O4'	2.18	0.43
5:B:187:SER:HB3	5:B:190:GLU:OE1	2.18	0.43
1:5:1329:U:O2'	1:5:1330:A:OP1	2.28	0.43
13:J:151:SER:O	13:J:152:HIS:CB	2.66	0.43
1:5:2871:G:H3'	1:5:2872:A:C5'	2.48	0.43
1:5:2643:A:OP2	22:T:3:LYS:HE2	2.18	0.43
16:N:203:ARG:HA	16:N:203:ARG:HD3	1.86	0.43
14:L:188:ARG:HG2	14:L:188:ARG:O	2.19	0.43
1:5:112:U:O2'	1:5:113:C:H5''	2.19	0.43
1:5:1676:A:OP2	23:U:72:SER:HB2	2.18	0.43
1:5:897:U:C2	1:5:898:U:C5	3.06	0.43
1:5:534:U:OP1	21:S:132:THR:OG1	2.33	0.43
1:5:335:G:OP1	27:Y:9:SER:HB2	2.19	0.43
1:5:1323:G:C2'	1:5:1324:U:H5'	2.48	0.43
14:L:131:LYS:H	14:L:131:LYS:CD	2.19	0.43
1:5:1813:A:O2'	1:5:1816:A:N3	2.49	0.43
1:5:1555:U:O2'	1:5:1556:C:C5'	2.66	0.43
17:O:126:VAL:HG22	17:O:127:LEU:N	2.34	0.43
1:5:3228:C:H5''	15:M:137:LYS:HZ2	1.81	0.43
24:V:19:VAL:HG13	24:V:37:ILE:HA	2.00	0.43
12:I:174:THR:HG23	12:I:175:ASN:H	1.83	0.43
22:T:99:SER:OG	22:T:101:CYS:SG	2.64	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:138:GLY:O	4:A:146:THR:HG23	2.19	0.43
1:5:1845:G:C5'	1:5:1846:C:H5'	2.47	0.43
14:L:164:GLU:OE1	14:L:164:GLU:HA	2.19	0.43
1:5:192:C:C2	1:5:193:C:C5	3.07	0.43
21:S:171:PHE:CG	21:S:172:TYR:N	2.86	0.43
5:B:92:TYR:CE2	5:B:101:SER:HB3	2.54	0.43
1:5:2842:U:H2'	1:5:2843:U:H5'	2.00	0.43
1:5:1188:U:OP1	1:5:1210:U:O2'	2.26	0.43
1:5:2116:G:C2	1:5:3064:U:H5'	2.54	0.43
4:A:196:TRP:CG	4:A:197:PRO:HA	2.54	0.43
1:5:2156:C:C4	1:5:2178:A:C2	3.06	0.43
1:5:2747:A:H5'	7:D:175:HIS:HA	2.01	0.43
5:B:67:PHE:HD2	24:V:88:ARG:NH2	2.16	0.43
1:5:2562:A:N6	1:5:2579:G:H1'	2.34	0.43
3:8:155:A:H5'	10:G:185:ARG:HD2	2.01	0.43
1:5:3268:A:H5''	8:E:46:ARG:HH21	1.83	0.43
25:W:42:GLN:O	25:W:43:ARG:HB2	2.19	0.43
10:G:163:VAL:O	10:G:166:LEU:HB2	2.19	0.43
9:F:176:TYR:CD1	9:F:194:HIS:CD2	3.07	0.43
1:5:1553:U:H5'	1:5:1553:U:H6	1.82	0.43
2:7:76:A:O2'	21:S:50:LYS:NZ	2.50	0.43
4:A:180:LEU:HD23	4:A:180:LEU:HA	1.84	0.43
18:P:151:THR:CG2	18:P:152:GLU:N	2.82	0.43
18:P:151:THR:HG22	18:P:152:GLU:N	2.34	0.43
12:I:29:SER:OG	12:I:31:ILE:O	2.37	0.43
6:C:110:ASN:N	6:C:110:ASN:OD1	2.52	0.43
16:N:84:PRO:HA	16:N:87:GLN:HB2	2.01	0.43
28:Z:89:VAL:O	28:Z:89:VAL:HG22	2.18	0.43
11:H:190:ASP:HB3	11:H:191:LEU:H	1.58	0.43
4:A:147:ARG:HH11	4:A:147:ARG:HB2	1.83	0.43
5:B:235:THR:HG23	5:B:236:LYS:N	2.33	0.43
1:5:2584:G:H1'	10:G:240:ASN:HD21	1.84	0.43
12:I:85:PHE:CB	12:I:140:THR:CG2	2.96	0.43
3:8:84:C:C2	27:Y:112:ASP:HA	2.54	0.43
9:F:53:LYS:O	9:F:57:THR:HG23	2.18	0.43
12:I:48:LEU:O	12:I:139:ARG:HA	2.19	0.43
1:5:2176:U:H2'	1:5:2177:G:H5'	2.00	0.43
1:5:939:U:H2'	1:5:940:G:H8	1.82	0.43
1:5:3149:G:O2'	5:B:129:ALA:O	2.26	0.43
1:5:625:G:H2'	1:5:626:U:C6	2.53	0.43
1:5:2222:A:H2'	1:5:2223:A:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:7:75:G:H1'	2:7:104:A:N6	2.34	0.43
17:O:35:VAL:HB	17:O:104:VAL:HG13	2.00	0.43
1:5:833:G:H2'	1:5:834:U:O4'	2.19	0.43
19:Q:32:LEU:O	19:Q:32:LEU:HD23	2.19	0.43
4:A:109:GLU:H	4:A:109:GLU:CD	2.21	0.43
1:5:340:C:O2'	1:5:341:G:H5'	2.18	0.43
10:G:81:THR:O	10:G:82:LEU:HD13	2.19	0.43
3:8:146:U:H2'	3:8:147:U:C6	2.54	0.43
17:O:183:ALA:HA	17:O:186:ALA:CB	2.35	0.43
1:5:2573:G:C2'	1:5:2574:G:H5''	2.49	0.43
3:8:79:A:O2'	3:8:80:A:OP1	2.25	0.43
1:5:2211:U:H5	1:5:2234:G:O6	2.02	0.43
17:O:8:VAL:HG22	17:O:34:VAL:HG13	2.00	0.43
9:F:47:ARG:O	9:F:50:ALA:N	2.52	0.43
11:H:88:TYR:CD2	11:H:184:LYS:HB3	2.53	0.43
1:5:3340:G:H4'	1:5:3341:U:OP1	2.18	0.43
23:U:81:LYS:HD3	23:U:90:ARG:NH2	2.34	0.43
1:5:2899:C:O2'	1:5:2901:G:OP2	2.30	0.43
5:B:369:ARG:HB3	25:W:32:GLN:NE2	2.34	0.43
3:8:103:G:C6	3:8:105:A:N6	2.87	0.43
1:5:1377:G:H1'	1:5:1431:G:N2	2.33	0.43
17:O:88:VAL:HG12	17:O:89:SER:N	2.33	0.43
20:R:85:ARG:NH1	20:R:85:ARG:CG	2.82	0.43
1:5:1333:C:H2'	1:5:1334:U:H6	1.83	0.43
5:B:343:TYR:HD1	5:B:343:TYR:N	2.16	0.43
6:C:357:GLU:O	6:C:361:HIS:HB2	2.19	0.43
1:5:2689:A:C8	1:5:2702:A:C6	3.07	0.43
1:5:1941:C:H2'	1:5:1942:U:C6	2.54	0.43
1:5:1395:G:H2'	1:5:1396:C:C6	2.54	0.43
1:5:1054:A:H2'	1:5:1054:A:N3	2.33	0.43
7:D:142:PHE:O	7:D:172:TYR:HB3	2.19	0.43
1:5:997:A:C2'	1:5:998:A:H5'	2.49	0.43
1:5:997:A:H2'	1:5:998:A:O4'	2.18	0.43
14:L:191:ALA:O	14:L:194:GLU:HB2	2.19	0.43
15:M:49:PRO:HG2	15:M:81:VAL:HG12	2.01	0.42
26:X:105:VAL:HG12	26:X:106:ASP:N	2.34	0.42
11:H:147:SER:HB2	11:H:187:ILE:HD11	2.01	0.42
5:B:188:ILE:HD12	5:B:188:ILE:N	2.17	0.42
2:7:47:C:OP2	7:D:158:ARG:HD2	2.19	0.42
20:R:62:ARG:HB2	20:R:62:ARG:CZ	2.48	0.42
27:Y:109:LEU:HD23	27:Y:109:LEU:HA	1.68	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:759:U:C3'	1:5:760:G:H5'	2.49	0.42
13:J:164:LYS:HE2	13:J:171:VAL:H	1.84	0.42
1:5:1494:U:H4'	1:5:1495:U:O5'	2.18	0.42
1:5:3269:U:H5'	1:5:3271:G:O4'	2.19	0.42
5:B:323:MET:HB3	5:B:323:MET:HE2	1.87	0.42
14:L:190:LYS:HE3	14:L:190:LYS:HB3	1.69	0.42
3:8:62:C:H4'	3:8:63:G:O5'	2.18	0.42
1:5:1523:U:H2'	1:5:1607:U:O2	2.18	0.42
10:G:90:THR:OG1	10:G:91:PHE:N	2.52	0.42
1:5:354:U:C5	1:5:364:G:N2	2.87	0.42
2:7:44:C:C2'	2:7:45:A:H5'	2.49	0.42
11:H:71:VAL:HG12	11:H:72:LYS:N	2.33	0.42
3:8:157:U:H3'	3:8:158:U:H3'	2.00	0.42
10:G:185:ARG:O	10:G:188:THR:OG1	2.28	0.42
10:G:183:LYS:HG3	10:G:184:ALA:N	2.34	0.42
24:V:37:ILE:HG12	24:V:59:MET:O	2.19	0.42
13:J:21:ILE:HD11	13:J:37:LEU:HD21	2.01	0.42
5:B:311:PHE:HB2	5:B:314:TYR:HB3	2.01	0.42
21:S:33:ASN:OD1	21:S:36:ILE:HG13	2.19	0.42
1:5:2950:G:OP1	5:B:241:LYS:NZ	2.48	0.42
17:O:181:ALA:O	17:O:184:THR:HG22	2.18	0.42
1:5:3158:G:OP2	1:5:3158:G:H4'	2.19	0.42
1:5:1386:A:H5''	6:C:141:ARG:NH2	2.34	0.42
19:Q:88:THR:HA	19:Q:107:THR:HG23	2.00	0.42
1:5:1831:U:OP2	26:X:92:LYS:HD2	2.19	0.42
26:X:57:LEU:CD1	26:X:62:VAL:HG22	2.49	0.42
1:5:2247:G:N2	1:5:2271:A:C2	2.86	0.42
1:5:620:U:OP1	1:5:622:A:C6	2.73	0.42
7:D:18:THR:HA	7:D:19:PRO:HD3	1.80	0.42
7:D:56:THR:OG1	7:D:59:ASP:N	2.53	0.42
7:D:62:CYS:HB3	7:D:105:ILE:HD13	2.00	0.42
1:5:2438:A:O2'	1:5:2439:A:OP1	2.30	0.42
1:5:2243:A:C4	1:5:2313:A:H2'	2.55	0.42
1:5:3289:G:O2'	1:5:3290:G:O5'	2.34	0.42
20:R:112:ALA:HB1	20:R:114:LYS:NZ	2.34	0.42
11:H:88:TYR:CE2	11:H:184:LYS:CB	3.01	0.42
12:I:42:THR:HG23	12:I:45:GLU:HG3	1.99	0.42
19:Q:102:ALA:HA	19:Q:122:ILE:O	2.20	0.42
6:C:184:SER:HB2	6:C:202:ARG:HG2	2.02	0.42
1:5:679:U:O2'	1:5:788:C:O2	2.37	0.42
5:B:261:MET:SD	17:O:64:PHE:HA	2.59	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:73:VAL:HG22	24:V:86:ARG:NH2	2.33	0.42
7:D:41:LYS:O	7:D:41:LYS:HG2	4.84	0.42
28:Z:46:ILE:HD11	28:Z:49:TYR:CD2	2.54	0.42
9:F:141:TYR:HA	9:F:189:ILE:HD12	1.99	0.42
28:Z:11:ALA:HB1	28:Z:81:LEU:O	2.19	0.42
9:F:92:ILE:HD12	9:F:92:ILE:C	2.40	0.42
5:B:356:LEU:HD23	5:B:356:LEU:N	2.33	0.42
2:7:7:G:OP1	7:D:33:ARG:HD2	2.19	0.42
1:5:2545:C:C2'	1:5:2546:C:H5'	2.49	0.42
3:8:108:C:H2'	3:8:109:A:O4'	2.18	0.42
1:5:1796:G:H5'	4:A:22:LEU:HD13	2.00	0.42
1:5:880:G:C8	18:P:132:ALA:CB	3.01	0.42
1:5:896:A:C2	1:5:913:A:C2	3.08	0.42
17:O:128:ARG:CB	17:O:128:ARG:NH1	2.65	0.42
6:C:300:ARG:NH1	6:C:300:ARG:HG3	2.25	0.42
12:I:36:LEU:HD11	12:I:69:ARG:HG2	2.00	0.42
16:N:99:ARG:HH21	16:N:167:THR:HG22	1.85	0.42
1:5:2512:C:H2'	1:5:2513:U:C6	2.54	0.42
1:5:2282:U:O2	1:5:2310:U:H4'	2.19	0.42
9:F:80:GLN:HG3	22:T:136:ARG:HB3	2.01	0.42
1:5:1246:G:N3	1:5:1264:G:O2'	2.41	0.42
1:5:158:G:H2'	1:5:159:A:C8	2.49	0.42
1:5:1397:C:H2'	1:5:1398:U:H5'	1.99	0.42
5:B:56:ILE:CD1	5:B:76:VAL:HG11	2.49	0.42
13:J:133:ARG:HH12	13:J:154:THR:HA	1.83	0.42
4:A:209:HIS:HD2	4:A:211:HIS:HB2	1.85	0.42
17:O:25:LYS:HD3	17:O:29:ASN:HD21	1.83	0.42
22:T:68:THR:HG23	22:T:69:LYS:N	2.34	0.42
10:G:33:ASN:HB3	10:G:38:GLN:HG3	2.01	0.42
10:G:68:ARG:O	10:G:69:LEU:CB	2.67	0.42
1:5:1166:G:O2'	1:5:1167:U:H5'	2.19	0.42
22:T:134:GLN:HA	22:T:134:GLN:OE1	2.20	0.42
1:5:1282:G:C5	1:5:1283:C:C5	3.07	0.42
18:P:39:TRP:N	18:P:39:TRP:CD1	2.87	0.42
1:5:854:G:H2'	1:5:855:U:H6	1.84	0.42
1:5:553:U:O2'	1:5:554:A:H5'	2.19	0.42
15:M:72:LEU:HD23	15:M:73:PRO:CD	2.32	0.42
1:5:617:G:C2'	1:5:618:C:H5'	2.49	0.42
1:5:2572:C:H2'	1:5:2572:C:OP2	2.19	0.42
1:5:1238:C:C2'	1:5:1239:C:H5''	2.50	0.42
4:A:103:PRO:HD2	4:A:106:SER:HB2	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:F:101:LYS:O	9:F:104:GLN:N	2.51	0.42
9:F:103:LEU:HG	9:F:130:ILE:CG1	2.48	0.42
7:D:107:ARG:HA	7:D:107:ARG:HD3	1.74	0.42
1:5:2101:C:H2'	1:5:2102:U:C6	2.54	0.42
1:5:3243:A:N7	17:O:156:LEU:HD22	2.35	0.42
8:E:54:TYR:CE1	8:E:63:LEU:HD22	2.53	0.42
5:B:307:PRO:HA	5:B:361:THR:O	2.20	0.42
5:B:306:THR:HG23	5:B:311:PHE:CD1	2.54	0.42
6:C:25:VAL:HG13	6:C:276:LEU:HD21	2.02	0.42
1:5:281:G:C6	1:5:282:G:C6	3.07	0.42
12:I:206:LEU:O	12:I:206:LEU:HG	2.19	0.42
1:5:3009:G:H2'	1:5:3010:U:C5'	2.50	0.42
1:5:994:G:H22	1:5:1053:A:H2'	1.84	0.42
1:5:1141:C:H2'	1:5:1142:G:H5'	2.01	0.42
4:A:179:LEU:HD13	4:A:179:LEU:HA	1.65	0.42
9:F:116:PHE:HB2	9:F:199:ASN:OD1	2.19	0.42
25:W:39:LEU:HA	25:W:39:LEU:HD12	1.78	0.42
1:5:1076:C:H2'	1:5:1076:C:O2	2.20	0.42
1:5:1381:A:C2	1:5:1426:C:C2	3.08	0.42
1:5:1342:C:H2'	1:5:1343:A:C8	2.54	0.42
1:5:1070:U:C2'	1:5:1071:U:H5'	2.49	0.42
19:Q:162:ALA:HA	19:Q:163:PRO:HD2	1.83	0.42
1:5:273:A:H2'	1:5:274:G:C8	2.55	0.42
15:M:36:VAL:CG2	15:M:47:ASP:HB2	2.50	0.42
6:C:300:ARG:NH1	6:C:300:ARG:CG	2.56	0.42
24:V:13:ILE:HD11	24:V:54:LEU:H	1.84	0.42
6:C:92:ASN:H	6:C:93:MET:HE2	1.84	0.42
11:H:38:LEU:HD23	11:H:38:LEU:HA	1.82	0.42
1:5:2112:U:C4'	1:5:2113:A:H5'	2.40	0.42
1:5:2796:G:H4'	1:5:2798:C:C6	2.54	0.42
28:Z:135:ARG:HH21	28:Z:135:ARG:HB3	1.84	0.42
1:5:3357:U:O2'	1:5:3358:U:P	2.77	0.42
1:5:1554:U:H1'	1:5:1555:U:H5''	2.02	0.42
1:5:1555:U:HO2'	1:5:1556:C:P	2.35	0.42
7:D:83:LEU:N	7:D:84:PRO:CD	2.82	0.42
8:E:52:VAL:HG22	8:E:67:GLY:HA2	2.00	0.42
16:N:38:ARG:NE	16:N:60:VAL:HG13	2.34	0.42
1:5:2835:U:H2'	1:5:2836:C:O2	2.18	0.42
13:J:13:LYS:HE3	13:J:13:LYS:HB2	1.79	0.42
4:A:104:LEU:HD12	4:A:104:LEU:HA	1.71	0.42
14:L:180:ARG:HB3	14:L:180:ARG:HH11	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:N:164:LEU:HD23	16:N:164:LEU:N	2.34	0.42
1:5:1942:U:H2'	1:5:1943:C:O4'	2.20	0.42
1:5:2560:C:O2	1:5:2560:C:H2'	2.18	0.42
25:W:18:GLY:HA3	25:W:31:PHE:O	2.19	0.42
6:C:309:ARG:CZ	6:C:312:VAL:HG12	2.49	0.42
1:5:1521:G:H21	1:5:1835:A:H1'	1.85	0.42
1:5:905:U:O2'	1:5:910:G:H4'	2.20	0.42
1:5:730:C:C2	1:5:731:U:C5	3.08	0.42
2:7:28:C:H2'	2:7:29:C:O4'	2.20	0.42
1:5:2919:A:C6	1:5:2920:U:C4	3.08	0.42
1:5:2514:U:OP1	1:5:2514:U:H6	2.03	0.42
20:R:112:ALA:HB1	20:R:114:LYS:HZ1	1.84	0.42
28:Z:116:LYS:HB2	28:Z:116:LYS:HE3	1.73	0.42
14:L:14:PHE:HE2	16:N:197:LEU:HD22	1.84	0.42
7:D:194:LEU:O	7:D:194:LEU:HD12	2.20	0.42
1:5:947:G:C6	1:5:948:C:N4	2.88	0.42
9:F:153:PHE:CD1	9:F:162:PRO:HA	2.55	0.42
28:Z:26:VAL:HG23	28:Z:27:LYS:H	1.84	0.42
1:5:282:G:H8	1:5:282:G:H3'	1.84	0.42
2:7:118:A:H2'	2:7:119:U:O4'	2.20	0.42
7:D:74:VAL:O	7:D:74:VAL:HG13	2.19	0.42
3:8:35:C:O5'	3:8:35:C:H6	2.02	0.42
1:5:3274:A:C5	18:P:171:ARG:NH2	2.88	0.42
1:5:112:U:HO2'	1:5:113:C:H5"	1.85	0.42
10:G:204:ARG:HB3	10:G:206:GLU:OE2	2.20	0.42
1:5:2168:A:H8	1:5:2168:A:O5'	2.03	0.42
28:Z:51:LEU:HA	28:Z:51:LEU:HD23	1.78	0.42
22:T:83:ARG:NH1	22:T:85:LEU:HD21	2.34	0.42
22:T:144:GLU:C	22:T:146:ASN:H	2.22	0.42
1:5:1223:A:OP2	1:5:1223:A:H8	2.02	0.42
5:B:211:GLN:HB3	5:B:212:ASN:ND2	2.34	0.42
1:5:2279:A:H2	1:5:2305:G:N7	2.18	0.42
1:5:2538:U:H2'	1:5:2539:C:H5"	2.01	0.42
27:Y:36:SER:OG	27:Y:39:LEU:HD23	2.19	0.42
1:5:715:A:C8	1:5:715:A:H3'	2.54	0.42
7:D:68:THR:CG2	7:D:70:THR:HG22	2.50	0.42
1:5:3044:G:H2'	1:5:3045:G:C8	2.55	0.42
4:A:47:GLN:NE2	4:A:60:LYS:HD2	2.34	0.42
1:5:1862:U:H5"	1:5:1863:G:OP2	2.19	0.42
7:D:185:PHE:CD1	7:D:186:GLU:N	2.88	0.42
1:5:112:U:O2'	1:5:113:C:P	2.78	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1653:G:H2'	1:5:1654:A:O4'	2.19	0.42
13:J:166:LYS:O	13:J:167:TYR:HB2	2.19	0.42
5:B:57:VAL:O	5:B:357:LYS:HB2	2.19	0.42
1:5:2342:U:H5''	1:5:3089:C:O2'	2.20	0.42
28:Z:55:LYS:HD3	28:Z:55:LYS:C	2.39	0.42
1:5:3305:A:O2'	1:5:3306:U:H5'	2.20	0.42
1:5:1711:C:H2'	1:5:1712:G:O4'	2.19	0.42
1:5:3131:U:H2'	1:5:3132:C:H6	1.83	0.42
27:Y:99:LEU:HD23	27:Y:99:LEU:N	2.33	0.42
9:F:131:GLU:CB	9:F:132:PRO:HD3	2.23	0.42
1:5:253:A:C4	1:5:254:A:C8	3.08	0.42
2:7:48:U:C2'	2:7:49:G:H5'	2.50	0.42
1:5:1125:U:OP1	12:I:15:LYS:HG3	2.19	0.42
1:5:2233:A:C4'	1:5:2428:U:H4'	2.50	0.42
1:5:2561:A:C2	10:G:32:LYS:HG2	2.54	0.42
16:N:198:SER:C	16:N:199:LEU:HD23	2.40	0.42
1:5:3292:A:H4'	5:B:132:LYS:NZ	2.35	0.42
1:5:3043:C:C2	1:5:3044:G:C8	3.08	0.42
12:I:76:MET:HE3	12:I:148:VAL:HA	2.01	0.42
15:M:131:VAL:HG22	17:O:182:ASN:HA	2.01	0.42
22:T:56:PHE:C	22:T:56:PHE:CD1	2.94	0.42
1:5:1939:G:H1'	1:5:2114:C:O2	2.20	0.42
3:8:148:G:H2'	3:8:149:A:H8	1.83	0.42
18:P:95:LEU:HA	18:P:95:LEU:HD23	1.88	0.42
1:5:2235:C:C2	1:5:2236:G:C8	3.08	0.42
1:5:211:A:H3'	6:C:221:ASN:ND2	2.34	0.42
1:5:833:G:N2	1:5:834:U:H1'	2.35	0.42
11:H:50:ASN:ND2	15:M:5:SER:H	2.18	0.42
24:V:16:GLY:O	24:V:18:PRO:HD3	2.20	0.42
14:L:42:ARG:HG3	14:L:42:ARG:O	2.18	0.42
20:R:120:TYR:CD2	20:R:120:TYR:C	2.92	0.42
1:5:1946:A:H2'	1:5:1947:G:O4'	2.20	0.42
1:5:261:U:H2'	1:5:262:U:C6	2.55	0.42
11:H:86:TYR:O	11:H:147:SER:HA	2.20	0.42
28:Z:76:ASN:OD1	28:Z:77:TYR:N	2.53	0.42
7:D:144:VAL:CG1	7:D:145:PHE:N	2.83	0.42
1:5:2297:U:HO2'	1:5:2920:U:C1'	2.33	0.42
14:L:60:ALA:HA	14:L:61:PRO:HD3	1.80	0.42
8:E:8:LYS:HZ2	8:E:8:LYS:HA	1.84	0.42
1:5:2308:C:H2'	1:5:2309:A:C8	2.54	0.42
1:5:2309:A:H1'	1:5:2961:G:O2'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2538:U:H4'	1:5:2541:U:O4	2.20	0.42
24:V:11:PHE:CZ	24:V:88:ARG:HD2	2.55	0.42
1:5:1062:A:H5''	1:5:1063:G:H5'	2.02	0.42
1:5:1094:U:H3'	1:5:1096:U:OP1	2.20	0.42
14:L:73:ARG:HG2	14:L:98:ASP:HB2	2.01	0.42
1:5:1212:A:O2'	1:5:1213:G:H5'	2.19	0.42
14:L:70:ARG:HG2	14:L:71:ALA:N	2.35	0.42
4:A:189:TYR:CD1	4:A:189:TYR:N	2.88	0.42
1:5:2915:U:H5	5:B:7:GLU:HG2	1.83	0.42
1:5:823:C:H5'	4:A:19:HIS:CE1	2.55	0.42
10:G:211:LEU:HD13	10:G:211:LEU:C	2.40	0.42
7:D:218:ARG:O	7:D:222:LEU:HG	2.19	0.42
1:5:57:A:C2	1:5:58:G:C4	3.07	0.42
3:8:76:C:H2'	3:8:77:A:O5'	2.19	0.42
1:5:2736:A:OP1	22:T:92:ARG:NH1	2.48	0.42
9:F:92:ILE:HD12	9:F:92:ILE:O	2.20	0.42
6:C:181:VAL:HG11	6:C:224:GLY:HA3	2.02	0.42
5:B:196:ARG:HE	5:B:196:ARG:HA	1.85	0.42
16:N:175:ASN:HB2	16:N:180:PHE:CD2	2.55	0.42
19:Q:74:GLU:O	19:Q:74:GLU:HG2	3.59	0.41
18:P:29:THR:HA	18:P:32:THR:HG23	2.01	0.41
1:5:2919:A:N6	1:5:2920:U:O4	2.53	0.41
1:5:1638:A:H5''	1:5:1639:C:OP2	2.19	0.41
1:5:2286:U:C4	1:5:2288:G:H1'	2.54	0.41
1:5:1238:C:H3'	1:5:1239:C:H5''	2.01	0.41
1:5:179:C:C2	1:5:238:A:C2	3.07	0.41
1:5:1363:A:H2'	1:5:1364:C:O4'	2.20	0.41
27:Y:70:ILE:HG13	27:Y:80:VAL:HG11	2.01	0.41
1:5:1008:U:C2'	1:5:1009:A:H5'	2.50	0.41
4:A:5:ILE:HG21	4:A:210:PRO:HD3	2.01	0.41
28:Z:128:GLN:CG	28:Z:129:TRP:N	2.81	0.41
13:J:171:VAL:O	13:J:172:LEU:HD23	2.20	0.41
16:N:185:ALA:HB3	16:N:190:THR:HG22	2.00	0.41
2:7:107:C:H2'	2:7:108:A:C8	2.55	0.41
1:5:3060:C:O2	1:5:3332:U:O2'	2.35	0.41
18:P:131:ARG:HD2	18:P:131:ARG:HA	1.68	0.41
24:V:28:ASN:OD1	24:V:28:ASN:N	2.48	0.41
1:5:1688:U:H2'	1:5:1689:U:C6	2.55	0.41
14:L:95:ILE:HG22	14:L:96:ALA:N	2.34	0.41
1:5:414:U:C2'	1:5:415:G:H5'	2.50	0.41
1:5:651:G:O2'	1:5:1435:A:OP1	2.32	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:4:ARG:CG	5:B:4:ARG:NH1	2.59	0.41
11:H:87:LYS:HE2	11:H:89:LYS:HE2	2.02	0.41
1:5:1761:C:H2'	1:5:1762:C:O2	2.19	0.41
19:Q:31:LYS:HB3	19:Q:31:LYS:HE3	1.83	0.41
10:G:72:PRO:HA	10:G:73:PRO:HD3	1.68	0.41
7:D:146:LEU:HA	7:D:146:LEU:HD23	1.75	0.41
4:A:103:PRO:HG2	4:A:106:SER:OG	2.20	0.41
1:5:2214:A:H2	1:5:2430:A:C1'	2.33	0.41
1:5:1231:A:H4'	1:5:1261:G:C8	2.55	0.41
1:5:374:A:O2'	1:5:376:G:H8	2.02	0.41
1:5:265:A:H5''	1:5:266:A:OP2	2.20	0.41
1:5:1507:G:H5'	1:5:1507:G:N3	2.35	0.41
18:P:101:ASN:OD1	18:P:101:ASN:N	2.52	0.41
27:Y:31:LEU:HD23	27:Y:31:LEU:HA	1.80	0.41
1:5:735:A:HO2'	1:5:736:A:P	2.42	0.41
1:5:736:A:H2'	1:5:737:G:O4'	2.19	0.41
17:O:78:ARG:HD2	17:O:78:ARG:HA	1.72	0.41
27:Y:94:SER:O	27:Y:95:VAL:HG23	2.21	0.41
6:C:74:ILE:HA	6:C:75:PRO:HD3	1.93	0.41
1:5:248:U:C3'	1:5:249:U:C5'	2.93	0.41
1:5:616:G:H2'	1:5:617:G:H8	1.85	0.41
1:5:2297:U:H2'	1:5:2299:A:N7	2.35	0.41
1:5:3279:A:C2'	1:5:3280:U:H5'	2.50	0.41
12:I:213:PHE:N	12:I:214:PRO:HD3	2.34	0.41
7:D:68:THR:HG22	7:D:70:THR:H	1.85	0.41
1:5:3167:A:H2'	1:5:3168:A:H8	1.85	0.41
3:8:14:C:N4	3:8:15:G:N1	2.68	0.41
13:J:87:LYS:NZ	13:J:87:LYS:HB3	2.35	0.41
1:5:986:U:H1'	9:F:126:LEU:HD21	2.01	0.41
9:F:129:LEU:N	9:F:129:LEU:HD23	2.35	0.41
1:5:1127:G:H5'	12:I:118:ALA:O	2.20	0.41
18:P:7:THR:HB	18:P:9:THR:HG22	2.02	0.41
6:C:113:VAL:HG12	6:C:114:ASN:N	2.36	0.41
20:R:24:LEU:HD22	20:R:50:ILE:HG12	2.02	0.41
1:5:1610:G:H2'	1:5:1611:G:O4'	2.21	0.41
1:5:1220:U:H5''	1:5:1222:G:C5'	2.50	0.41
27:Y:98:ASN:O	27:Y:99:LEU:HD23	2.21	0.41
16:N:13:LYS:O	16:N:19:LEU:HD22	2.20	0.41
1:5:618:C:H2'	1:5:619:A:C4'	2.51	0.41
3:8:80:A:H2'	3:8:81:U:H5'	2.02	0.41
1:5:1492:G:H2'	1:5:1493:G:O4'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:95:THR:HB	5:B:96:PRO:HD2	2.01	0.41
11:H:115:ARG:NH1	11:H:123:ILE:HD12	2.33	0.41
5:B:56:ILE:HD13	5:B:76:VAL:HG13	2.02	0.41
28:Z:128:GLN:O	28:Z:129:TRP:C	2.57	0.41
5:B:311:PHE:CE1	5:B:317:ILE:HD11	2.55	0.41
1:5:2096:A:H2'	1:5:2097:U:C6	2.55	0.41
5:B:37:ARG:HH11	5:B:37:ARG:HG3	1.84	0.41
16:N:194:GLN:H	16:N:194:GLN:HG2	1.59	0.41
21:S:53:LYS:HE3	21:S:53:LYS:HB2	1.78	0.41
18:P:31:GLU:OE2	18:P:61:ARG:N	2.53	0.41
1:5:511:G:H2'	1:5:512:U:O4'	2.20	0.41
6:C:318:LEU:CD1	9:F:146:GLN:HG2	2.51	0.41
16:N:129:TYR:CD1	16:N:129:TYR:N	2.88	0.41
5:B:244:ARG:HG2	5:B:244:ARG:HH11	1.83	0.41
16:N:80:THR:HG21	16:N:86:ASN:O	2.20	0.41
1:5:1501:U:H2'	1:5:1502:C:C6	2.55	0.41
1:5:629:U:H2'	1:5:630:A:C8	2.56	0.41
1:5:2991:A:N3	18:P:69:ARG:NH2	2.69	0.41
2:7:49:G:N3	2:7:50:U:H5	2.18	0.41
1:5:1635:G:N2	1:5:1638:A:OP2	2.41	0.41
14:L:59:ARG:O	14:L:60:ALA:HB3	2.21	0.41
8:E:8:LYS:NZ	8:E:8:LYS:CB	3.67	0.41
1:5:2285:C:H2'	1:5:2286:U:C5	2.55	0.41
1:5:2309:A:C1'	1:5:2962:U:H5'	2.49	0.41
1:5:1277:C:O2	1:5:1277:C:C2'	2.68	0.41
1:5:1579:C:O5'	4:A:68:LYS:NZ	2.48	0.41
20:R:20:ARG:NH1	20:R:21:LYS:HZ2	2.08	0.41
26:X:53:HIS:ND1	26:X:56:ARG:NH1	2.67	0.41
6:C:135:VAL:HG13	6:C:245:GLY:O	2.21	0.41
13:J:13:LYS:O	13:J:131:MET:HE3	2.21	0.41
1:5:1824:U:H2'	1:5:1825:G:O4'	2.21	0.41
1:5:3236:U:O2'	1:5:3237:U:H5'	2.19	0.41
1:5:2612:U:H2'	1:5:2613:U:O4'	2.21	0.41
20:R:89:LEU:HA	20:R:90:PRO:HD2	1.93	0.41
1:5:1156:C:OP2	9:F:94:LYS:NZ	2.51	0.41
1:5:3353:G:H4'	1:5:3354:U:OP2	2.19	0.41
5:B:161:LEU:CD2	5:B:180:GLU:HG2	2.50	0.41
5:B:92:TYR:HB2	5:B:157:VAL:HG22	2.01	0.41
22:T:83:ARG:HH11	22:T:85:LEU:HD21	1.86	0.41
1:5:77:A:C2'	1:5:78:U:H5'	2.51	0.41
1:5:2892:A:O2'	1:5:2893:C:H5'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1320:C:O2'	1:5:1321:G:H5'	2.20	0.41
17:O:125:ARG:HG3	17:O:129:LEU:HD22	2.02	0.41
7:D:209:GLU:HG3	7:D:233:ALA:CB	2.50	0.41
1:5:1821:U:H4'	1:5:1822:C:OP2	2.19	0.41
13:J:25:GLU:OE2	13:J:60:ARG:NH1	2.54	0.41
6:C:300:ARG:NH1	6:C:300:ARG:HG2	2.29	0.41
8:E:119:UNK:O	8:E:123:UNK:CG	2.68	0.41
1:5:2531:C:H2'	1:5:2532:U:H5'	2.03	0.41
1:5:147:U:O4'	10:G:162:LEU:HD13	2.20	0.41
4:A:79:ASN:ND2	4:A:166:ILE:O	2.54	0.41
7:D:256:THR:OG1	7:D:258:LYS:HE2	2.20	0.41
1:5:2098:C:C2'	1:5:2099:A:H5'	2.50	0.41
1:5:1081:U:O2'	1:5:1082:U:OP2	2.36	0.41
5:B:37:ARG:HA	5:B:186:GLY:HA2	2.03	0.41
5:B:382:THR:C	5:B:383:LEU:HD23	2.41	0.41
18:P:182:ILE:CG2	18:P:182:ILE:O	2.69	0.41
1:5:1159:A:N3	1:5:1159:A:H3'	2.36	0.41
10:G:186:LEU:HD23	10:G:186:LEU:HA	1.82	0.41
1:5:31:C:H2'	1:5:31:C:O2	2.19	0.41
1:5:423:A:N6	1:5:424:G:C6	2.88	0.41
1:5:3272:C:O2	8:E:80:ASN:HB2	2.21	0.41
11:H:87:LYS:HZ3	11:H:191:LEU:HD21	1.83	0.41
1:5:620:U:H3'	1:5:621:A:C5'	2.50	0.41
17:O:121:PRO:HG3	21:S:164:SER:HB2	2.01	0.41
7:D:122:VAL:HG12	7:D:122:VAL:O	2.21	0.41
12:I:46:PHE:CD1	12:I:140:THR:HA	2.56	0.41
1:5:768:C:H2'	1:5:769:G:O5'	2.21	0.41
1:5:2243:A:N3	1:5:2313:A:H2'	2.36	0.41
18:P:170:SER:CB	18:P:173:ARG:HH21	2.34	0.41
4:A:101:VAL:O	4:A:101:VAL:HG22	2.19	0.41
1:5:2112:U:H4'	1:5:2113:A:C5'	2.42	0.41
1:5:3226:A:C3'	1:5:3227:A:H5''	2.50	0.41
1:5:3359:A:H2'	1:5:3360:C:C6	2.55	0.41
1:5:1817:G:O2'	1:5:1818:U:C5	2.74	0.41
1:5:1874:A:H5''	20:R:18:GLY:CA	2.50	0.41
7:D:83:LEU:HB3	7:D:88:ILE:HB	2.02	0.41
8:E:64:LEU:HD22	8:E:64:LEU:HA	1.78	0.41
1:5:2289:U:H2'	1:5:2290:C:C6	2.55	0.41
23:U:99:LYS:HB2	23:U:102:GLU:OE1	2.20	0.41
10:G:98:ARG:HA	10:G:99:PRO:HD3	1.77	0.41
10:G:175:VAL:HA	10:G:176:PRO:HD3	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:887:G:H2'	1:5:888:A:C8	2.56	0.41
1:5:150:A:C2'	1:5:151:A:H5'	2.50	0.41
1:5:1525:G:H5'	1:5:1830:G:OP2	2.20	0.41
1:5:3198:U:H4'	1:5:3199:G:OP2	2.21	0.41
1:5:830:A:H2'	1:5:831:G:O4'	2.21	0.41
1:5:1928:G:H2'	1:5:1929:G:O4'	2.20	0.41
9:F:188:ILE:HD13	9:F:188:ILE:HA	1.84	0.41
1:5:114:A:H2'	1:5:115:A:O4'	2.20	0.41
1:5:1893:A:C4	1:5:1894:U:C5	3.08	0.41
1:5:521:A:H2'	1:5:522:A:O4'	2.21	0.41
7:D:223:PHE:O	7:D:226:TYR:N	2.51	0.41
19:Q:29:LEU:HD21	19:Q:124:LEU:HB2	2.02	0.41
19:Q:3:ILE:HG22	19:Q:4:ASP:N	2.35	0.41
1:5:249:U:H1'	1:5:250:U:C1'	2.51	0.41
8:E:126:UNK:HG2	8:E:126:UNK:O	2.21	0.41
1:5:2514:U:C6	1:5:2514:U:OP1	2.74	0.41
1:5:591:G:N2	8:E:18:LEU:HB3	2.35	0.41
22:T:97:LYS:HB3	22:T:97:LYS:HE2	1.85	0.41
3:8:135:G:OP2	26:X:56:ARG:NH2	2.53	0.41
22:T:32:LYS:NZ	22:T:98:HIS:H	2.18	0.41
8:E:152:THR:HA	8:E:153:PRO:HD3	1.89	0.41
21:S:82:ASP:HB2	21:S:120:SER:OG	2.20	0.41
5:B:14:LEU:HA	5:B:17:LEU:CD2	2.51	0.41
21:S:124:LEU:HD22	22:T:153:PRO:HB2	2.01	0.41
6:C:338:LYS:O	6:C:339:LEU:CB	2.68	0.41
1:5:1939:G:OP1	20:R:77:GLY:HA3	2.20	0.41
1:5:2114:C:C3'	1:5:2114:C:C6	3.04	0.41
10:G:103:ALA:O	10:G:107:GLU:HG3	2.21	0.41
22:T:14:MET:CE	22:T:55:LYS:HB2	2.50	0.41
1:5:1108:U:H2'	1:5:1109:U:C6	2.56	0.41
1:5:720:A:H2'	1:5:720:A:N3	2.35	0.41
27:Y:111:LEU:HD23	27:Y:111:LEU:HA	1.66	0.41
11:H:163:GLN:O	11:H:166:ARG:HG3	2.20	0.41
1:5:2200:U:C2	1:5:2201:G:C8	3.09	0.41
1:5:2553:U:H3'	1:5:2554:A:H5''	2.02	0.41
1:5:2682:C:HO2'	1:5:2683:U:P	2.44	0.41
19:Q:135:GLN:HB3	19:Q:135:GLN:HE21	1.61	0.41
26:X:135:ILE:HD13	26:X:135:ILE:C	2.40	0.41
24:V:120:LYS:NZ	24:V:120:LYS:CB	2.84	0.41
13:J:137:ARG:O	13:J:141:ARG:HG2	2.21	0.41
1:5:2298:U:H5	1:5:2926:A:C2	2.39	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2282:U:C2	1:5:2310:U:H4'	2.55	0.41
1:5:2426:U:H2'	1:5:2427:U:H6	1.85	0.41
1:5:2817:A:HO2'	1:5:2818:U:H5	1.68	0.41
1:5:981:U:C5	1:5:1065:A:N6	2.89	0.41
1:5:2897:A:N7	1:5:2899:C:C6	2.88	0.41
1:5:715:A:C3'	1:5:715:A:C8	3.03	0.41
1:5:587:U:O2'	1:5:588:G:H5'	2.21	0.41
24:V:117:PRO:HA	24:V:135:VAL:O	2.21	0.41
7:D:205:SER:CB	7:D:236:LEU:HD22	2.50	0.41
5:B:214:MET:HE3	5:B:279:ASN:CA	2.50	0.41
16:N:53:TYR:CD1	16:N:53:TYR:C	2.95	0.41
1:5:2408:U:H2'	1:5:2409:G:H5'	2.03	0.41
19:Q:177:GLY:HA2	19:Q:184:PHE:CD2	2.55	0.41
8:E:51:ARG:HD2	8:E:158:TYR:CZ	2.56	0.41
1:5:1895:A:O2'	1:5:3053:G:H4'	2.21	0.41
1:5:1208:U:H6	1:5:3115:C:N4	2.19	0.41
1:5:1253:U:O2	1:5:1263:A:H5'	2.20	0.41
1:5:199:A:C4	1:5:201:A:C8	3.08	0.41
1:5:1070:U:O2'	1:5:1071:U:H5'	2.21	0.41
17:O:129:LEU:HA	17:O:129:LEU:HD12	1.60	0.41
18:P:48:LEU:HA	18:P:48:LEU:HD23	1.81	0.41
1:5:311:C:O2	1:5:311:C:H2'	2.21	0.41
23:U:84:LEU:HD23	23:U:84:LEU:HA	1.93	0.41
19:Q:150:VAL:O	19:Q:150:VAL:HG23	2.21	0.41
15:M:16:GLU:HB3	21:S:149:LYS:HB3	2.02	0.41
4:A:148:VAL:HG11	4:A:158:ILE:HD11	2.03	0.41
1:5:706:A:H2'	1:5:707:U:O4'	2.21	0.41
5:B:151:ILE:O	5:B:155:ALA:HB3	2.20	0.41
3:8:20:U:H2'	3:8:21:C:O5'	2.20	0.41
1:5:218:G:C2	1:5:372:A:C2	3.08	0.41
14:L:141:ALA:HA	14:L:144:THR:HB	2.03	0.41
4:A:4:VAL:HG12	4:A:8:GLN:HB2	2.03	0.41
26:X:64:GLU:HG3	26:X:64:GLU:H	1.56	0.41
1:5:2389:C:H1'	18:P:69:ARG:NE	2.35	0.41
11:H:37:ASN:OD1	11:H:39:LYS:N	2.40	0.41
9:F:103:LEU:CD2	9:F:108:LEU:HB2	2.50	0.41
6:C:71:VAL:HG22	6:C:72:ALA:H	1.86	0.41
1:5:585:A:C4	1:5:586:C:C5	3.09	0.41
12:I:200:LEU:C	12:I:200:LEU:HD23	2.41	0.41
1:5:2970:C:H4'	1:5:2971:A:N1	2.36	0.41
1:5:2922:G:H3'	1:5:2923:U:H5''	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2291:A:H2'	1:5:2292:U:C6	2.56	0.41
1:5:949:C:HO2'	1:5:950:G:H5'	1.85	0.41
16:N:153:ASP:OD2	16:N:155:VAL:HG23	2.20	0.41
1:5:3150:A:H2'	1:5:3151:U:O4'	2.21	0.41
1:5:1240:A:C2'	1:5:1241:U:H5'	2.51	0.41
8:E:175:LYS:HD2	15:M:110:ALA:O	2.21	0.41
1:5:992:A:H5''	22:T:43:LYS:HD2	2.03	0.41
3:8:8:C:H2'	3:8:9:A:C8	2.56	0.41
1:5:1810:A:H2'	1:5:1811:G:O4'	2.21	0.41
27:Y:57:LEU:O	27:Y:105:VAL:HG12	2.21	0.41
1:5:791:A:H2'	1:5:792:G:H8	1.85	0.41
11:H:161:LEU:HD13	11:H:161:LEU:C	2.42	0.41
17:O:125:ARG:HG3	17:O:129:LEU:CD2	2.51	0.41
15:M:58:ILE:HG12	15:M:59:ASN:N	2.36	0.41
27:Y:126:LEU:C	27:Y:127:GLU:HG3	2.41	0.41
17:O:160:ARG:O	17:O:160:ARG:HG2	2.20	0.41
26:X:120:LYS:HB2	26:X:120:LYS:HE3	1.78	0.41
13:J:10:ARG:HD3	13:J:10:ARG:O	2.20	0.41
7:D:187:THR:HG22	7:D:189:GLU:OE2	2.21	0.41
21:S:92:LYS:HE3	21:S:109:ASP:OD2	2.21	0.41
8:E:6:ALA:HA	8:E:7:PRO:HD3	1.84	0.41
1:5:2941:A:OP1	5:B:255:TRP:HB3	2.21	0.41
19:Q:58:ASN:C	19:Q:60:PRO:HD3	2.41	0.40
19:Q:28:LEU:O	19:Q:31:LYS:HB2	2.21	0.40
24:V:120:LYS:HB2	24:V:137:VAL:CG2	2.52	0.40
7:D:55:PHE:CD1	7:D:60:ILE:HG12	2.56	0.40
1:5:2297:U:HO2'	1:5:2920:U:C4'	2.35	0.40
1:5:1049:C:C2	1:5:1050:U:C5	3.09	0.40
1:5:1094:U:H4'	1:5:1095:U:OP2	2.21	0.40
22:T:143:THR:O	22:T:143:THR:HG23	2.20	0.40
1:5:163:C:C2'	1:5:164:A:H5'	2.52	0.40
1:5:1470:U:H2'	1:5:1471:U:C6	2.56	0.40
1:5:2631:U:P	22:T:6:GLY:HA3	2.62	0.40
17:O:58:LEU:HA	17:O:58:LEU:HD12	1.81	0.40
7:D:40:HIS:CE1	22:T:69:LYS:HB2	2.56	0.40
1:5:2409:G:C2	1:5:2813:A:C2	3.09	0.40
1:5:1479:U:H2'	1:5:1480:G:H5'	2.03	0.40
1:5:2322:C:C2'	1:5:2323:G:H5'	2.51	0.40
16:N:192:LYS:O	16:N:192:LYS:HG2	2.21	0.40
1:5:590:G:C2	1:5:610:G:H2'	2.56	0.40
24:V:66:LYS:O	24:V:70:ARG:HG3	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1700:G:H2'	1:5:1701:C:H6	1.86	0.40
19:Q:89:ASP:OD1	19:Q:90:ASP:N	2.54	0.40
1:5:2749:G:H2'	1:5:2750:U:H6	1.87	0.40
1:5:3288:G:HO2'	1:5:3289:G:P	2.44	0.40
1:5:3214:U:H2'	15:M:121:MET:CE	2.52	0.40
1:5:1245:A:C3'	1:5:1246:G:H5''	2.51	0.40
6:C:276:LEU:HA	6:C:277:PRO:HD3	1.91	0.40
1:5:3237:U:H3'	1:5:3238:G:H5''	2.02	0.40
5:B:37:ARG:HA	5:B:186:GLY:HA3	2.02	0.40
1:5:827:A:O2'	1:5:828:A:H5'	2.21	0.40
28:Z:72:ILE:H	28:Z:72:ILE:HD13	1.86	0.40
20:R:102:LEU:HD22	20:R:138:LEU:HG	2.02	0.40
1:5:1317:A:O2'	1:5:1318:A:H3'	2.22	0.40
1:5:792:G:H2'	1:5:793:C:C6	2.56	0.40
20:R:46:LYS:HE2	20:R:46:LYS:HB3	1.58	0.40
4:A:96:LEU:HD21	4:A:107:VAL:HG12	2.04	0.40
1:5:2904:U:H2'	1:5:2905:U:C6	2.56	0.40
15:M:48:GLY:N	15:M:49:PRO:HD3	2.37	0.40
8:E:43:LEU:HA	8:E:43:LEU:HD23	1.80	0.40
10:G:214:LEU:HD12	10:G:214:LEU:HA	1.77	0.40
19:Q:28:LEU:HD23	19:Q:28:LEU:HA	1.68	0.40
7:D:22:ARG:HA	7:D:25:GLU:CG	2.51	0.40
10:G:71:VAL:HG23	10:G:72:PRO:O	2.20	0.40
1:5:2572:C:O2'	1:5:2573:G:P	2.75	0.40
23:U:90:ARG:O	23:U:91:ASP:HB2	2.21	0.40
6:C:30:ILE:HG22	6:C:32:PRO:HD3	2.02	0.40
5:B:265:ALA:C	5:B:266:ARG:HG2	2.42	0.40
18:P:67:ILE:CG2	18:P:68:GLY:N	2.85	0.40
1:5:3259:U:H5''	1:5:3261:C:H5	1.86	0.40
1:5:2971:A:OP2	1:5:2972:G:C5'	2.69	0.40
7:D:239:ILE:O	7:D:243:ALA:HB2	2.22	0.40
26:X:113:LEU:HD12	26:X:113:LEU:C	2.42	0.40
1:5:1048:A:H2'	12:I:22:TYR:CZ	2.56	0.40
22:T:6:GLY:H	22:T:9:SER:HB3	1.85	0.40
9:F:82:LYS:HB3	9:F:191:VAL:HG21	2.03	0.40
6:C:260:GLN:O	6:C:270:SER:HB3	2.21	0.40
25:W:21:PHE:HE2	25:W:23:ARG:HG3	1.87	0.40
1:5:1192:C:N4	1:5:1301:A:O3'	2.55	0.40
1:5:1168:U:C5	1:5:1329:U:C4	3.09	0.40
15:M:58:ILE:HG12	15:M:59:ASN:H	1.85	0.40
6:C:170:LYS:HE3	6:C:175:HIS:ND1	2.37	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1661:G:H2'	1:5:1662:G:C8	2.56	0.40
1:5:219:A:N3	1:5:219:A:H2'	2.36	0.40
7:D:279:LYS:HG2	7:D:280:GLU:OE2	2.21	0.40
1:5:409:A:H2	1:5:1441:G:N3	2.19	0.40
5:B:219:ALA:CB	5:B:336:VAL:HG22	2.51	0.40
1:5:433:A:H2'	1:5:434:U:O4'	2.21	0.40
17:O:128:ARG:HA	17:O:128:ARG:HD2	1.74	0.40
17:O:78:ARG:CG	17:O:78:ARG:NH1	2.54	0.40
14:L:50:PRO:O	14:L:51:LEU:CB	2.70	0.40
1:5:1567:U:H2'	1:5:1570:U:H5	1.87	0.40
1:5:3383:G:H2'	1:5:3384:U:H6	1.86	0.40
1:5:2283:G:H1	1:5:2307:G:H5'	1.86	0.40
10:G:136:LEU:HD11	10:G:162:LEU:HB3	2.02	0.40
4:A:43:GLY:HA3	4:A:63:PHE:CE1	2.57	0.40
18:P:65:SER:O	18:P:66:SER:HB2	2.21	0.40
1:5:3243:A:N3	17:O:109:PRO:HB3	2.36	0.40
1:5:92:G:H8	1:5:92:G:H3'	1.87	0.40
1:5:2115:G:C2	1:5:2119:A:C2	3.09	0.40
24:V:2:SER:HA	24:V:56:ASP:HA	2.03	0.40
23:U:98:THR:OG1	23:U:102:GLU:O	2.37	0.40
1:5:818:C:C2	1:5:819:U:C6	3.10	0.40
18:P:142:SER:N	18:P:143:PRO:HD3	2.37	0.40
1:5:971:G:C6	1:5:972:A:C5	3.09	0.40
1:5:3095:U:H2'	1:5:3096:C:C6	2.56	0.40
13:J:35:LYS:O	13:J:39:GLN:HB2	2.22	0.40
1:5:371:G:N2	1:5:373:A:H3'	2.36	0.40
23:U:21:SER:N	23:U:22:PRO:HD2	2.37	0.40
1:5:49:A:OP1	14:L:16:LYS:NZ	2.49	0.40
1:5:566:G:O2'	1:5:567:G:H5'	2.20	0.40
27:Y:118:LEU:HG	27:Y:119:ILE:N	2.34	0.40
20:R:22:VAL:O	20:R:53:LYS:NZ	2.52	0.40
6:C:300:ARG:HB2	6:C:301:PRO:HD3	2.03	0.40
26:X:131:ASP:O	26:X:135:ILE:HG22	2.22	0.40
1:5:616:G:H2'	1:5:617:G:C8	2.56	0.40
1:5:2193:U:H1'	1:5:2275:A:H1'	2.04	0.40
7:D:55:PHE:HE1	7:D:60:ILE:CD1	2.34	0.40
2:7:43:U:O2	2:7:43:U:H2'	2.20	0.40
1:5:178:U:H2'	1:5:179:C:O4'	2.21	0.40
10:G:172:LYS:CB	10:G:172:LYS:NZ	2.79	0.40
7:D:235:SER:O	7:D:239:ILE:HG12	2.21	0.40
1:5:2291:A:O2'	1:5:2292:U:H5'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:772:U:O2'	1:5:773:G:H5'	2.21	0.40
1:5:2097:U:H2'	1:5:2098:C:C6	2.57	0.40
1:5:818:C:C2'	1:5:818:C:O2	2.70	0.40
28:Z:131:PHE:HA	28:Z:131:PHE:HD2	1.77	0.40
8:E:93:VAL:O	8:E:93:VAL:CG1	2.69	0.40
1:5:1652:G:O2'	1:5:1653:G:H5'	2.22	0.40
1:5:3131:U:H2'	1:5:3132:C:C6	2.56	0.40
1:5:986:U:C1'	9:F:126:LEU:HD21	2.51	0.40
20:R:10:LEU:HA	20:R:10:LEU:HD12	1.72	0.40
10:G:146:LYS:HB3	10:G:146:LYS:HE3	1.90	0.40
18:P:23:ARG:HA	18:P:23:ARG:HD3	1.99	0.40
1:5:3099:C:O2'	1:5:3100:U:H5'	2.22	0.40
1:5:673:U:O2'	1:5:674:G:H5'	2.22	0.40
9:F:173:LEU:HD21	9:F:198:ALA:HA	2.04	0.40
5:B:162:VAL:O	5:B:178:LEU:HD12	2.21	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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%)	195 (93%)	14 (7%)	1 (0%)	34	75
5	B	384/387 (99%)	367 (96%)	17 (4%)	0	100	100
6	C	359/362 (99%)	329 (92%)	28 (8%)	2 (1%)	30	73
7	D	292/297 (98%)	282 (97%)	8 (3%)	2 (1%)	26	70
8	E	155/176 (88%)	143 (92%)	9 (6%)	3 (2%)	10	50
9	F	221/244 (91%)	210 (95%)	10 (4%)	1 (0%)	34	75
10	G	229/256 (90%)	200 (87%)	28 (12%)	1 (0%)	39	79
11	H	189/191 (99%)	178 (94%)	10 (5%)	1 (0%)	34	75

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
12	I	209/221 (95%)	193 (92%)	16 (8%)	0	100	100
13	J	167/174 (96%)	143 (86%)	18 (11%)	6 (4%)	4	36
14	L	192/199 (96%)	170 (88%)	20 (10%)	2 (1%)	19	64
15	M	135/138 (98%)	133 (98%)	2 (2%)	0	100	100
16	N	201/204 (98%)	187 (93%)	13 (6%)	1 (0%)	34	75
17	O	195/199 (98%)	193 (99%)	2 (1%)	0	100	100
18	P	181/184 (98%)	176 (97%)	5 (3%)	0	100	100
19	Q	183/186 (98%)	174 (95%)	8 (4%)	1 (0%)	34	75
20	R	154/189 (82%)	148 (96%)	5 (3%)	1 (1%)	30	73
21	S	169/172 (98%)	163 (96%)	6 (4%)	0	100	100
22	T	157/160 (98%)	151 (96%)	4 (2%)	2 (1%)	15	58
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%)	3 (5%)	1 (2%)	12	53
26	X	118/142 (83%)	109 (92%)	9 (8%)	0	100	100
27	Y	124/127 (98%)	118 (95%)	5 (4%)	1 (1%)	24	68
28	Z	133/136 (98%)	112 (84%)	18 (14%)	3 (2%)	8	46
29	a	146/149 (98%)	132 (90%)	13 (9%)	1 (1%)	26	70
30	b	56/59 (95%)	53 (95%)	3 (5%)	0	100	100
31	c	98/105 (93%)	92 (94%)	6 (6%)	0	100	100
32	d	107/113 (95%)	97 (91%)	8 (8%)	2 (2%)	10	50
33	e	127/130 (98%)	120 (94%)	7 (6%)	0	100	100
34	f	104/107 (97%)	100 (96%)	4 (4%)	0	100	100
35	g	110/121 (91%)	104 (94%)	5 (4%)	1 (1%)	21	66
36	h	117/120 (98%)	109 (93%)	8 (7%)	0	100	100
37	i	97/100 (97%)	86 (89%)	8 (8%)	3 (3%)	5	40
38	j	85/88 (97%)	77 (91%)	8 (9%)	0	100	100
39	k	75/78 (96%)	70 (93%)	4 (5%)	1 (1%)	15	58
40	l	48/51 (94%)	47 (98%)	1 (2%)	0	100	100
41	m	50/128 (39%)	46 (92%)	3 (6%)	1 (2%)	9	49
42	o	103/106 (97%)	94 (91%)	9 (9%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
43	p	89/92 (97%)	82 (92%)	7 (8%)	0	100	100
44	q	116/312 (37%)	111 (96%)	4 (3%)	1 (1%)	21	66
45	x	577/616 (94%)	544 (94%)	32 (6%)	1 (0%)	52	87
46	y	201/401 (50%)	191 (95%)	10 (5%)	0	100	100
All	All	6958/7887 (88%)	6511 (94%)	407 (6%)	40 (1%)	34	73

All (40) 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
25	W	25	ASP
14	L	18	TRP
28	Z	17	ARG
28	Z	130	PHE
13	J	115	LYS
27	Y	125	LYS
28	Z	129	TRP
29	a	78	LEU
35	g	83	ASN
37	i	34	SER
37	i	63	ASN
39	k	17	ARG
6	C	71	VAL
9	F	191	VAL
20	R	35	ALA
32	d	83	GLU
37	i	64	SER
13	J	12	LEU
14	L	47	ALA
22	T	69	LYS
22	T	136	ARG
32	d	7	VAL
8	E	97	ASN
13	J	94	ARG
10	G	203	VAL
6	C	148	ILE
7	D	125	VAL
19	Q	97	PRO

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Mol	Chain	Res	Type
45	x	519	ARG
4	A	56	ALA
8	E	10	TYR
11	H	167	VAL
13	J	114	ILE
41	m	78	ILE
44	q	33	VAL
7	D	122	VAL

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.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	A	166/196 (85%)	133 (80%)	33 (20%)	1	8
5	B	321/323 (99%)	260 (81%)	61 (19%)	2	9
6	C	288/289 (100%)	234 (81%)	54 (19%)	2	9
7	D	243/245 (99%)	209 (86%)	34 (14%)	4	23
8	E	135/136 (99%)	123 (91%)	12 (9%)	12	47
9	F	187/205 (91%)	168 (90%)	19 (10%)	9	39
10	G	177/208 (85%)	150 (85%)	27 (15%)	3	20
11	H	171/171 (100%)	148 (86%)	23 (14%)	5	25
12	I	179/187 (96%)	153 (86%)	26 (14%)	4	22
13	J	147/150 (98%)	122 (83%)	25 (17%)	2	14
14	L	154/159 (97%)	126 (82%)	28 (18%)	2	11
15	M	108/109 (99%)	95 (88%)	13 (12%)	6	30
16	N	175/176 (99%)	143 (82%)	32 (18%)	2	10
17	O	160/162 (99%)	129 (81%)	31 (19%)	2	8
18	P	145/146 (99%)	118 (81%)	27 (19%)	2	9
19	Q	150/151 (99%)	127 (85%)	23 (15%)	3	20
20	R	129/154 (84%)	106 (82%)	23 (18%)	2	12

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
21	S	155/156 (99%)	131 (84%)	24 (16%)	3	19
22	T	136/137 (99%)	113 (83%)	23 (17%)	2	14
23	U	89/107 (83%)	80 (90%)	9 (10%)	9	40
24	V	104/105 (99%)	93 (89%)	11 (11%)	8	37
25	W	55/129 (43%)	52 (94%)	3 (6%)	27	67
26	X	104/118 (88%)	86 (83%)	18 (17%)	2	13
27	Y	109/110 (99%)	96 (88%)	13 (12%)	6	30
28	Z	115/116 (99%)	92 (80%)	23 (20%)	1	7
29	a	118/119 (99%)	106 (90%)	12 (10%)	9	39
30	b	46/47 (98%)	38 (83%)	8 (17%)	2	13
31	c	84/88 (96%)	70 (83%)	14 (17%)	3	15
32	d	94/97 (97%)	85 (90%)	9 (10%)	10	42
33	e	110/111 (99%)	94 (86%)	16 (14%)	4	22
34	f	90/91 (99%)	84 (93%)	6 (7%)	20	61
35	g	95/103 (92%)	84 (88%)	11 (12%)	7	32
36	h	103/105 (98%)	84 (82%)	19 (18%)	2	10
37	i	80/82 (98%)	61 (76%)	19 (24%)	1	4
38	j	70/71 (99%)	59 (84%)	11 (16%)	3	18
39	k	67/69 (97%)	60 (90%)	7 (10%)	9	38
40	l	45/46 (98%)	35 (78%)	10 (22%)	1	5
41	m	47/116 (40%)	41 (87%)	6 (13%)	5	27
42	o	90/91 (99%)	72 (80%)	18 (20%)	1	7
43	p	71/72 (99%)	54 (76%)	17 (24%)	1	4
44	q	105/254 (41%)	88 (84%)	17 (16%)	3	16
45	x	508/540 (94%)	469 (92%)	39 (8%)	16	54
46	y	187/355 (53%)	171 (91%)	16 (9%)	13	49
All	All	5912/6602 (90%)	5042 (85%)	870 (15%)	8	21

All (870) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	A	10	LYS
4	A	15	ILE

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Mol	Chain	Res	Type
4	A	23	ARG
4	A	31	THR
4	A	32	LEU
4	A	44	ILE
4	A	45	VAL
4	A	48	ILE
4	A	49	VAL
4	A	62	VAL
4	A	68	LYS
4	A	70	ARG
4	A	71	LEU
4	A	72	ARG
4	A	98	VAL
4	A	101	VAL
4	A	104	LEU
4	A	107	VAL
4	A	109	GLU
4	A	119	LYS
4	A	137	ILE
4	A	142	ASP
4	A	147	ARG
4	A	149	ARG
4	A	155	LYS
4	A	157	VAL
4	A	158	ILE
4	A	168	VAL
4	A	169	ILE
4	A	179	LEU
4	A	193	ARG
4	A	199	THR
4	A	207	VAL
5	B	3	HIS
5	B	4	ARG
5	B	10	ARG
5	B	17	LEU
5	B	19	ARG
5	B	25	ILE
5	B	37	ARG
5	B	45	SER
5	B	46	PHE
5	B	54	THR
5	B	59	ASP

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Mol	Chain	Res	Type
5	B	67	PHE
5	B	77	THR
5	B	85	VAL
5	B	89	VAL
5	B	102	LEU
5	B	103	THR
5	B	104	THR
5	B	114	VAL
5	B	120	LYS
5	B	123	TYR
5	B	124	LYS
5	B	139	GLN
5	B	146	ARG
5	B	148	LEU
5	B	150	ARG
5	B	153	LYS
5	B	158	VAL
5	B	192	VAL
5	B	196	ARG
5	B	202	THR
5	B	205	VAL
5	B	206	ASP
5	B	221	THR
5	B	227	GLU
5	B	229	VAL
5	B	232	ARG
5	B	235	THR
5	B	236	LYS
5	B	238	LEU
5	B	246	LEU
5	B	247	ARG
5	B	251	CYS
5	B	252	ILE
5	B	266	ARG
5	B	274	SER
5	B	284	ARG
5	B	287	LYS
5	B	289	ASP
5	B	291	GLU
5	B	301	THR
5	B	323	MET
5	B	324	VAL

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Mol	Chain	Res	Type
5	B	327	CYS
5	B	332	ARG
5	B	338	LEU
5	B	340	LYS
5	B	343	TYR
5	B	365	PHE
5	B	369	ARG
5	B	386	ASP
6	C	2	SER
6	C	7	THR
6	C	12	THR
6	C	14	GLU
6	C	18	ASN
6	C	22	LEU
6	C	34	ILE
6	C	35	VAL
6	C	37	THR
6	C	47	ARG
6	C	52	VAL
6	C	67	THR
6	C	73	ARG
6	C	74	ILE
6	C	93	MET
6	C	105	THR
6	C	120	TYR
6	C	122	THR
6	C	133	SER
6	C	136	LEU
6	C	141	ARG
6	C	147	GLU
6	C	150	LEU
6	C	156	LEU
6	C	160	GLN
6	C	166	VAL
6	C	172	VAL
6	C	179	LEU
6	C	181	VAL
6	C	182	LEU
6	C	187	LEU
6	C	206	LEU
6	C	217	LYS
6	C	222	VAL

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Mol	Chain	Res	Type
6	C	226	GLU
6	C	230	VAL
6	C	246	ARG
6	C	251	THR
6	C	258	LEU
6	C	259	ASP
6	C	267	VAL
6	C	270	SER
6	C	280	ILE
6	C	287	THR
6	C	300	ARG
6	C	307	GLN
6	C	313	LEU
6	C	323	VAL
6	C	327	LEU
6	C	338	LYS
6	C	343	LYS
6	C	345	GLU
6	C	359	LEU
6	C	362	ASP
7	D	4	GLN
7	D	5	LYS
7	D	9	SER
7	D	25	GLU
7	D	34	LYS
7	D	35	ARG
7	D	51	LEU
7	D	61	ILE
7	D	66	SER
7	D	70	THR
7	D	81	HIS
7	D	93	THR
7	D	95	TRP
7	D	126	GLU
7	D	129	TYR
7	D	136	GLU
7	D	146	LEU
7	D	148	ILE
7	D	150	LEU
7	D	152	ARG
7	D	155	THR
7	D	164	LYS

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Mol	Chain	Res	Type
7	D	177	GLU
7	D	185	PHE
7	D	196	ARG
7	D	207	TYR
7	D	211	LEU
7	D	218	ARG
7	D	232	ASP
7	D	238	ASP
7	D	257	GLU
7	D	259	LYS
7	D	275	THR
7	D	282	ARG
8	E	8	LYS
8	E	20	LYS
8	E	21	THR
8	E	31	ARG
8	E	46	ARG
8	E	50	LYS
8	E	78	ARG
8	E	85	ILE
8	E	91	VAL
8	E	145	LEU
8	E	155	LEU
8	E	174	LEU
9	F	22	THR
9	F	25	GLN
9	F	30	ARG
9	F	41	ARG
9	F	56	GLU
9	F	83	LEU
9	F	84	VAL
9	F	95	ILE
9	F	98	LYS
9	F	110	ARG
9	F	111	ILE
9	F	115	THR
9	F	151	ARG
9	F	175	LYS
9	F	179	LEU
9	F	180	SER
9	F	182	ASP
9	F	184	LEU

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Mol	Chain	Res	Type
9	F	239	LEU
10	G	44	ARG
10	G	65	LEU
10	G	68	ARG
10	G	69	LEU
10	G	70	LYS
10	G	74	THR
10	G	79	GLN
10	G	81	THR
10	G	82	LEU
10	G	89	GLU
10	G	109	LEU
10	G	128	LYS
10	G	136	LEU
10	G	142	LEU
10	G	149	LYS
10	G	160	ILE
10	G	164	VAL
10	G	172	LYS
10	G	183	LYS
10	G	195	SER
10	G	200	LEU
10	G	206	GLU
10	G	208	GLU
10	G	211	LEU
10	G	213	LYS
10	G	227	ASP
10	G	248	LYS
11	H	1	MET
11	H	4	ILE
11	H	6	THR
11	H	16	VAL
11	H	18	VAL
11	H	31	ARG
11	H	44	THR
11	H	46	THR
11	H	52	LEU
11	H	68	LEU
11	H	69	ARG
11	H	70	THR
11	H	71	VAL
11	H	82	VAL

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Mol	Chain	Res	Type
11	H	105	GLU
11	H	106	LYS
11	H	133	THR
11	H	162	GLN
11	H	163	GLN
11	H	165	CYS
11	H	166	ARG
11	H	177	ASP
11	H	179	ILE
12	I	4	ARG
12	I	7	ARG
12	I	21	ARG
12	I	22	TYR
12	I	24	ARG
12	I	29	SER
12	I	48	LEU
12	I	49	CYS
12	I	52	LEU
12	I	60	LEU
12	I	63	GLU
12	I	69	ARG
12	I	70	ILE
12	I	71	CYS
12	I	90	ARG
12	I	116	ARG
12	I	153	ARG
12	I	156	ARG
12	I	163	GLN
12	I	169	LYS
12	I	174	THR
12	I	176	LEU
12	I	177	ASP
12	I	178	ARG
12	I	197	VAL
12	I	211	ARG
13	J	10	ARG
13	J	12	LEU
13	J	13	LYS
13	J	31	THR
13	J	34	SER
13	J	35	LYS
13	J	39	GLN

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Mol	Chain	Res	Type
13	J	43	GLN
13	J	51	ARG
13	J	54	VAL
13	J	80	LEU
13	J	87	LYS
13	J	92	ARG
13	J	95	ASN
13	J	106	ILE
13	J	107	ASP
13	J	122	ILE
13	J	128	TYR
13	J	130	VAL
13	J	132	ASN
13	J	140	ARG
13	J	155	THR
13	J	158	ASP
13	J	171	VAL
13	J	174	LYS
14	L	3	ILE
14	L	4	SER
14	L	10	LEU
14	L	14	PHE
14	L	27	ASP
14	L	42	ARG
14	L	46	ILE
14	L	51	LEU
14	L	57	VAL
14	L	59	ARG
14	L	63	VAL
14	L	67	ARG
14	L	69	VAL
14	L	76	THR
14	L	85	LEU
14	L	93	ILE
14	L	98	ASP
14	L	107	GLU
14	L	114	GLN
14	L	123	ILE
14	L	128	ARG
14	L	131	LYS
14	L	149	GLN
14	L	162	ASN

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Mol	Chain	Res	Type
14	L	164	GLU
14	L	168	ARG
14	L	190	LYS
14	L	194	GLU
15	M	3	THR
15	M	12	TRP
15	M	15	VAL
15	M	20	VAL
15	M	47	ASP
15	M	53	VAL
15	M	64	VAL
15	M	66	THR
15	M	72	LEU
15	M	115	PHE
15	M	120	VAL
15	M	121	MET
15	M	131	VAL
16	N	5	LYS
16	N	8	GLU
16	N	10	LEU
16	N	12	ARG
16	N	13	LYS
16	N	15	GLN
16	N	18	VAL
16	N	22	LEU
16	N	27	VAL
16	N	49	ARG
16	N	51	LEU
16	N	62	TYR
16	N	64	VAL
16	N	66	VAL
16	N	68	ARG
16	N	91	GLU
16	N	92	LEU
16	N	104	GLU
16	N	105	ARG
16	N	106	VAL
16	N	117	ASN
16	N	121	VAL
16	N	126	THR
16	N	138	GLN
16	N	153	ASP

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Mol	Chain	Res	Type
16	N	167	THR
16	N	182	ASN
16	N	183	THR
16	N	184	LYS
16	N	187	ARG
16	N	199	LEU
16	N	204	LYS
17	O	3	VAL
17	O	4	GLU
17	O	12	LYS
17	O	16	VAL
17	O	18	ARG
17	O	25	LYS
17	O	41	LEU
17	O	43	ILE
17	O	44	SER
17	O	53	LYS
17	O	56	ASP
17	O	59	ARG
17	O	72	HIS
17	O	78	ARG
17	O	79	ILE
17	O	82	LYS
17	O	85	ARG
17	O	94	ARG
17	O	108	ILE
17	O	117	ARG
17	O	124	LEU
17	O	126	VAL
17	O	128	ARG
17	O	129	LEU
17	O	145	VAL
17	O	160	ARG
17	O	171	LYS
17	O	175	THR
17	O	182	ASN
17	O	194	LEU
17	O	197	LEU
18	P	23	ARG
18	P	24	VAL
18	P	25	SER
18	P	31	GLU

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Mol	Chain	Res	Type
18	P	32	THR
18	P	34	GLN
18	P	40	GLU
18	P	41	LEU
18	P	42	THR
18	P	52	LEU
18	P	55	GLN
18	P	64	ASN
18	P	67	ILE
18	P	69	ARG
18	P	74	LYS
18	P	76	PHE
18	P	80	LYS
18	P	89	LYS
18	P	94	LEU
18	P	116	HIS
18	P	119	VAL
18	P	120	ASN
18	P	121	GLN
18	P	127	ARG
18	P	142	SER
18	P	144	SER
18	P	148	LEU
19	Q	12	ARG
19	Q	41	ASP
19	Q	49	LEU
19	Q	63	SER
19	Q	64	VAL
19	Q	66	ARG
19	Q	69	ARG
19	Q	80	THR
19	Q	81	VAL
19	Q	93	ILE
19	Q	100	THR
19	Q	105	ARG
19	Q	107	THR
19	Q	124	LEU
19	Q	135	GLN
19	Q	138	LEU
19	Q	147	ARG
19	Q	150	VAL
19	Q	161	LYS

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Mol	Chain	Res	Type
19	Q	166	LEU
19	Q	167	SER
19	Q	170	ARG
19	Q	180	ARG
20	R	7	GLN
20	R	10	LEU
20	R	19	LYS
20	R	20	ARG
20	R	29	THR
20	R	30	SER
20	R	31	GLU
20	R	36	ASN
20	R	49	THR
20	R	56	THR
20	R	63	THR
20	R	70	LYS
20	R	74	ARG
20	R	75	HIS
20	R	76	SER
20	R	92	GLN
20	R	98	ARG
20	R	99	LEU
20	R	105	LEU
20	R	114	LYS
20	R	127	SER
20	R	152	GLU
20	R	153	LYS
21	S	4	PHE
21	S	8	GLN
21	S	13	ARG
21	S	17	GLU
21	S	23	LYS
21	S	32	SER
21	S	45	LEU
21	S	51	VAL
21	S	71	LYS
21	S	80	ARG
21	S	87	THR
21	S	97	VAL
21	S	98	SER
21	S	104	GLU
21	S	108	GLN

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Mol	Chain	Res	Type
21	S	120	SER
21	S	130	GLU
21	S	136	LYS
21	S	137	ARG
21	S	155	ARG
21	S	162	THR
21	S	167	ARG
21	S	171	PHE
21	S	172	TYR
22	T	9	SER
22	T	17	ARG
22	T	25	VAL
22	T	26	HIS
22	T	35	LYS
22	T	49	GLN
22	T	50	LYS
22	T	55	LYS
22	T	60	LYS
22	T	65	TYR
22	T	72	VAL
22	T	78	LYS
22	T	79	MET
22	T	80	VAL
22	T	83	ARG
22	T	97	LYS
22	T	102	ARG
22	T	104	GLU
22	T	126	VAL
22	T	128	LEU
22	T	131	GLN
22	T	139	ARG
22	T	143	THR
23	U	11	ILE
23	U	27	VAL
23	U	58	GLU
23	U	61	THR
23	U	63	VAL
23	U	84	LEU
23	U	90	ARG
23	U	98	THR
23	U	100	THR
24	V	4	ASN

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Mol	Chain	Res	Type
24	V	13	ILE
24	V	42	SER
24	V	48	ARG
24	V	64	LYS
24	V	68	GLU
24	V	69	LEU
24	V	72	LYS
24	V	88	ARG
24	V	115	THR
24	V	129	VAL
25	W	39	LEU
25	W	52	THR
25	W	57	LYS
26	X	24	LEU
26	X	27	ARG
26	X	39	LYS
26	X	45	LYS
26	X	63	ILE
26	X	64	GLU
26	X	68	THR
26	X	71	THR
26	X	73	MET
26	X	108	LEU
26	X	109	LYS
26	X	115	ARG
26	X	117	ASN
26	X	119	THR
26	X	125	ARG
26	X	129	ASP
26	X	133	LEU
26	X	135	ILE
27	Y	12	ARG
27	Y	13	ARG
27	Y	17	LYS
27	Y	37	LYS
27	Y	50	ILE
27	Y	57	LEU
27	Y	74	TYR
27	Y	76	LEU
27	Y	90	VAL
27	Y	95	VAL
27	Y	107	THR

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Mol	Chain	Res	Type
27	Y	109	LEU
27	Y	120	GLN
28	Z	3	LYS
28	Z	14	VAL
28	Z	17	ARG
28	Z	21	LYS
28	Z	24	VAL
28	Z	30	ASP
28	Z	34	LYS
28	Z	46	ILE
28	Z	52	LYS
28	Z	53	VAL
28	Z	55	LYS
28	Z	72	ILE
28	Z	81	LEU
28	Z	83	THR
28	Z	92	PHE
28	Z	95	VAL
28	Z	99	GLU
28	Z	102	GLU
28	Z	121	ARG
28	Z	126	LYS
28	Z	127	ASN
28	Z	130	PHE
28	Z	134	LEU
29	a	14	HIS
29	a	22	ILE
29	a	25	HIS
29	a	26	ARG
29	a	43	ILE
29	a	60	TYR
29	a	73	LEU
29	a	85	ASP
29	a	91	LEU
29	a	97	GLU
29	a	115	LYS
29	a	118	ILE
30	b	6	ASN
30	b	12	GLN
30	b	18	ARG
30	b	29	TYR
30	b	41	ARG

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Mol	Chain	Res	Type
30	b	50	THR
30	b	58	LYS
30	b	59	LYS
31	c	8	GLU
31	c	11	ASN
31	c	24	THR
31	c	34	LEU
31	c	41	LEU
31	c	42	ILE
31	c	61	MET
31	c	68	TYR
31	c	76	GLU
31	c	83	LYS
31	c	86	ARG
31	c	89	VAL
31	c	100	ILE
31	c	104	LEU
32	d	6	ASP
32	d	26	LYS
32	d	31	ARG
32	d	35	GLU
32	d	73	LEU
32	d	83	GLU
32	d	91	SER
32	d	94	GLU
32	d	102	LYS
33	e	4	LEU
33	e	8	LYS
33	e	27	ARG
33	e	31	ASN
33	e	33	ARG
33	e	34	LYS
33	e	50	ILE
33	e	51	SER
33	e	73	THR
33	e	75	LEU
33	e	82	LEU
33	e	89	THR
33	e	100	ILE
33	e	106	VAL
33	e	120	THR
33	e	125	ARG

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Mol	Chain	Res	Type
34	f	31	LYS
34	f	48	ARG
34	f	53	TYR
34	f	70	LYS
34	f	74	THR
34	f	86	ARG
35	g	23	VAL
35	g	29	ILE
35	g	46	ASP
35	g	57	LEU
35	g	58	ARG
35	g	76	TYR
35	g	80	ARG
35	g	81	CYS
35	g	88	ARG
35	g	95	ILE
35	g	98	GLN
36	h	14	LYS
36	h	19	SER
36	h	21	LEU
36	h	36	LEU
36	h	41	LEU
36	h	45	LYS
36	h	48	ARG
36	h	51	ILE
36	h	56	THR
36	h	62	GLN
36	h	68	GLN
36	h	86	ARG
36	h	89	ARG
36	h	90	ARG
36	h	94	LYS
36	h	101	THR
36	h	105	ARG
36	h	107	LYS
36	h	119	LYS
37	i	3	VAL
37	i	5	THR
37	i	9	ILE
37	i	17	VAL
37	i	26	ILE
37	i	43	LEU

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Mol	Chain	Res	Type
37	i	45	ARG
37	i	57	LEU
37	i	58	ILE
37	i	60	LEU
37	i	68	ARG
37	i	75	LYS
37	i	76	ARG
37	i	81	THR
37	i	84	LYS
37	i	87	VAL
37	i	88	GLU
37	i	94	ILE
37	i	98	ARG
38	j	5	THR
38	j	12	HIS
38	j	15	SER
38	j	17	THR
38	j	21	ARG
38	j	28	HIS
38	j	45	ARG
38	j	55	ARG
38	j	59	THR
38	j	65	ARG
38	j	79	GLN
39	k	8	ILE
39	k	31	LEU
39	k	46	ARG
39	k	53	THR
39	k	61	LYS
39	k	64	LYS
39	k	67	GLN
40	l	4	GLN
40	l	11	GLN
40	l	21	ARG
40	l	23	LEU
40	l	27	ILE
40	l	28	ARG
40	l	29	LEU
40	l	41	ARG
40	l	45	ARG
40	l	46	ARG
41	m	88	LYS

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Mol	Chain	Res	Type
41	m	90	ASN
41	m	106	ARG
41	m	112	LYS
41	m	113	ARG
41	m	114	LYS
42	o	2	VAL
42	o	7	THR
42	o	8	ARG
42	o	20	HIS
42	o	38	GLN
42	o	45	ARG
42	o	47	GLN
42	o	55	LYS
42	o	71	ARG
42	o	80	ARG
42	o	83	LEU
42	o	84	THR
42	o	85	LEU
42	o	89	LYS
42	o	93	LEU
42	o	99	GLN
42	o	104	LEU
42	o	105	GLN
43	p	8	VAL
43	p	16	VAL
43	p	22	LEU
43	p	24	ARG
43	p	26	VAL
43	p	28	LYS
43	p	33	GLN
43	p	46	THR
43	p	49	ARG
43	p	54	ILE
43	p	56	THR
43	p	57	CYS
43	p	59	CYS
43	p	71	VAL
43	p	73	THR
43	p	78	THR
43	p	80	ARG
44	q	4	ILE
44	q	7	LYS

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Mol	Chain	Res	Type
44	q	15	LEU
44	q	35	SER
44	q	39	HIS
44	q	46	ARG
44	q	52	LEU
44	q	57	THR
44	q	67	LEU
44	q	70	LEU
44	q	72	ASP
44	q	76	LEU
44	q	81	LYS
44	q	97	LYS
44	q	104	ARG
44	q	185	LEU
44	q	191	TYR
45	x	30	THR
45	x	87	ARG
45	x	108	ILE
45	x	143	LEU
45	x	167	LYS
45	x	184	VAL
45	x	189	ILE
45	x	203	THR
45	x	207	LEU
45	x	216	SER
45	x	229	THR
45	x	235	ASN
45	x	243	ARG
45	x	244	VAL
45	x	261	GLU
45	x	267	VAL
45	x	315	GLU
45	x	334	LEU
45	x	337	LEU
45	x	356	ARG
45	x	375	SER
45	x	384	LYS
45	x	427	SER
45	x	432	CYS
45	x	446	ASP
45	x	447	HIS
45	x	452	THR

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Mol	Chain	Res	Type
45	x	453	ASN
45	x	461	ASP
45	x	477	LYS
45	x	478	LEU
45	x	497	SER
45	x	504	CYS
45	x	510	CYS
45	x	511	ASP
45	x	518	ASP
45	x	523	LEU
45	x	541	HIS
45	x	542	GLU
46	y	179	ASN
46	y	197	LEU
46	y	199	ASP
46	y	207	MET
46	y	208	SER
46	y	221	ASN
46	y	227	LEU
46	y	319	GLN
46	y	347	PHE
46	y	359	GLN
46	y	364	GLN
46	y	365	THR
46	y	366	GLU
46	y	373	LEU
46	y	376	ARG
46	y	398	HIS

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (107) such sidechains are listed below:

Mol	Chain	Res	Type
4	A	47	GLN
4	A	97	ASN
4	A	132	ASN
4	A	139	HIS
4	A	194	ASN
4	A	209	HIS
5	B	11	HIS
5	B	121	ASN
5	B	211	GLN
5	B	243	HIS

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Mol	Chain	Res	Type
5	B	273	HIS
6	C	5	GLN
6	C	114	ASN
6	C	221	ASN
6	C	260	GLN
6	C	291	ASN
6	C	311	HIS
7	D	40	HIS
7	D	57	ASN
7	D	63	GLN
8	E	172	HIS
9	F	25	GLN
9	F	37	ASN
9	F	159	GLN
9	F	194	HIS
10	G	41	GLN
10	G	221	ASN
10	G	240	ASN
10	G	243	GLN
11	H	8	GLN
11	H	50	ASN
11	H	100	ASN
11	H	169	ASN
11	H	183	HIS
12	I	12	GLN
12	I	59	GLN
13	J	132	ASN
14	L	13	HIS
14	L	19	GLN
14	L	114	GLN
14	L	120	GLN
14	L	149	GLN
16	N	15	GLN
16	N	90	ASN
17	O	26	GLN
17	O	29	ASN
17	O	31	GLN
17	O	50	ASN
17	O	122	GLN
18	P	55	GLN
18	P	96	GLN
18	P	125	GLN

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Mol	Chain	Res	Type
19	Q	73	GLN
19	Q	135	GLN
20	R	58	HIS
21	S	8	GLN
21	S	138	GLN
22	T	16	GLN
22	T	49	GLN
22	T	77	ASN
22	T	95	HIS
22	T	98	HIS
23	U	109	GLN
25	W	42	GLN
25	W	58	HIS
26	X	65	GLN
27	Y	120	GLN
28	Z	36	HIS
28	Z	57	HIS
28	Z	106	GLN
29	a	44	ASN
30	b	6	ASN
31	c	75	ASN
33	e	52	GLN
34	f	5	HIS
34	f	13	HIS
34	f	77	ASN
35	g	3	GLN
35	g	18	ASN
36	h	20	GLN
36	h	68	GLN
36	h	99	GLN
36	h	104	GLN
36	h	108	GLN
40	l	25	GLN
40	l	38	ASN
42	o	22	GLN
43	p	34	HIS
44	q	37	GLN
45	x	18	ASN
45	x	51	HIS
45	x	118	ASN
45	x	146	HIS
45	x	188	HIS

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Mol	Chain	Res	Type
45	x	235	ASN
45	x	281	ASN
45	x	294	GLN
45	x	366	GLN
45	x	377	GLN
45	x	405	ASN
45	x	429	ASN
45	x	447	HIS
45	x	471	HIS
46	y	172	HIS
46	y	182	HIS
46	y	239	HIS
46	y	319	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	5	3084/3396 (90%)	669 (21%)	73 (2%)
2	7	120/121 (99%)	14 (11%)	0
3	8	157/158 (99%)	36 (22%)	5 (3%)
All	All	3361/3675 (91%)	719 (21%)	78 (2%)

All (719) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	5	14	U
1	5	15	C
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	91	G
1	5	96	G
1	5	98	G

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Mol	Chain	Res	Type
1	5	109	A
1	5	110	G
1	5	111	C
1	5	113	C
1	5	116	A
1	5	121	A
1	5	122	A
1	5	133	U
1	5	134	U
1	5	135	C
1	5	136	G
1	5	146	U
1	5	150	A
1	5	152	U
1	5	155	G
1	5	156	G
1	5	157	A
1	5	166	C
1	5	170	G
1	5	171	G
1	5	172	G
1	5	175	C
1	5	182	U
1	5	187	A
1	5	190	U
1	5	191	U
1	5	210	U
1	5	211	A
1	5	213	A
1	5	218	G
1	5	219	A
1	5	221	A
1	5	237	G
1	5	239	G
1	5	240	U
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

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Mol	Chain	Res	Type
1	5	254	A
1	5	269	G
1	5	270	U
1	5	282	G
1	5	283	G
1	5	284	A
1	5	286	U
1	5	295	A
1	5	315	C
1	5	323	A
1	5	329	U
1	5	334	A
1	5	339	C
1	5	350	C
1	5	370	U
1	5	376	G
1	5	378	A
1	5	390	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	438	A
1	5	439	C
1	5	494	G
1	5	498	A
1	5	521	A
1	5	535	G
1	5	546	C
1	5	547	G
1	5	548	G
1	5	557	A
1	5	559	A
1	5	569	A
1	5	578	A
1	5	579	G
1	5	592	A
1	5	594	U
1	5	600	G

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Mol	Chain	Res	Type
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	636	C
1	5	647	A
1	5	649	A
1	5	660	A
1	5	677	A
1	5	681	U
1	5	683	U
1	5	690	A
1	5	705	A
1	5	710	A
1	5	712	G
1	5	713	U
1	5	715	A
1	5	716	A
1	5	717	C
1	5	720	A
1	5	725	G
1	5	735	A
1	5	736	A
1	5	750	G
1	5	760	G
1	5	766	U
1	5	776	U
1	5	777	U
1	5	780	A
1	5	781	G
1	5	785	G
1	5	786	A
1	5	799	G
1	5	806	A
1	5	808	A
1	5	812	G
1	5	817	A
1	5	830	A
1	5	832	G

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Mol	Chain	Res	Type
1	5	837	A
1	5	844	G
1	5	845	G
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	883	A
1	5	895	A
1	5	896	A
1	5	907	G
1	5	908	G
1	5	909	G
1	5	914	A
1	5	916	G
1	5	921	A
1	5	923	C
1	5	925	A
1	5	932	U
1	5	937	G
1	5	944	C
1	5	953	G
1	5	959	C
1	5	960	U
1	5	961	C
1	5	974	G
1	5	979	U
1	5	982	C
1	5	983	A
1	5	984	G
1	5	991	G
1	5	995	U
1	5	1001	G
1	5	1002	A
1	5	1010	G
1	5	1014	U
1	5	1015	U
1	5	1047	A
1	5	1049	C
1	5	1057	A

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Mol	Chain	Res	Type
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	1096	U
1	5	1097	G
1	5	1098	A
1	5	1103	A
1	5	1104	G
1	5	1117	G
1	5	1131	G
1	5	1138	U
1	5	1144	U
1	5	1151	U
1	5	1152	G
1	5	1153	A
1	5	1155	C
1	5	1157	G
1	5	1159	A
1	5	1160	C
1	5	1180	A
1	5	1181	U
1	5	1183	C
1	5	1186	G
1	5	1190	A
1	5	1191	U
1	5	1192	C
1	5	1196	C
1	5	1201	C
1	5	1209	G
1	5	1216	C
1	5	1217	A
1	5	1222	G
1	5	1223	A
1	5	1232	C
1	5	1235	U

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Mol	Chain	Res	Type
1	5	1236	G
1	5	1237	G
1	5	1239	C
1	5	1241	U
1	5	1242	G
1	5	1243	G
1	5	1245	A
1	5	1246	G
1	5	1252	A
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	1285	G
1	5	1307	G
1	5	1308	A
1	5	1309	U
1	5	1314	C
1	5	1329	U
1	5	1330	A
1	5	1345	G
1	5	1348	U
1	5	1349	G
1	5	1350	A
1	5	1351	U
1	5	1352	A
1	5	1353	U
1	5	1356	U
1	5	1357	G
1	5	1380	G
1	5	1385	C
1	5	1386	A
1	5	1391	C
1	5	1394	A
1	5	1398	U
1	5	1399	A
1	5	1400	G
1	5	1408	G
1	5	1415	U

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Mol	Chain	Res	Type
1	5	1419	A
1	5	1421	G
1	5	1433	A
1	5	1434	G
1	5	1435	A
1	5	1437	C
1	5	1446	A
1	5	1450	G
1	5	1460	A
1	5	1480	G
1	5	1481	A
1	5	1483	G
1	5	1484	U
1	5	1490	A
1	5	1502	C
1	5	1503	A
1	5	1508	C
1	5	1514	G
1	5	1533	U
1	5	1536	G
1	5	1539	A
1	5	1544	G
1	5	1554	U
1	5	1555	U
1	5	1556	C
1	5	1557	A
1	5	1560	G
1	5	1561	G
1	5	1562	C
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
1	5	1579	C
1	5	1581	C

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Mol	Chain	Res	Type
1	5	1582	C
1	5	1587	A
1	5	1589	A
1	5	1593	A
1	5	1596	C
1	5	1607	U
1	5	1608	C
1	5	1620	U
1	5	1629	U
1	5	1639	C
1	5	1642	A
1	5	1643	A
1	5	1644	C
1	5	1645	U
1	5	1649	U
1	5	1677	G
1	5	1683	A
1	5	1704	A
1	5	1716	U
1	5	1717	U
1	5	1718	G
1	5	1721	U
1	5	1724	U
1	5	1725	C
1	5	1730	G
1	5	1741	A
1	5	1750	A
1	5	1751	G
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	1780	G
1	5	1797	A
1	5	1812	G
1	5	1814	A
1	5	1815	U
1	5	1816	A
1	5	1817	G

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Mol	Chain	Res	Type
1	5	1818	U
1	5	1820	U
1	5	1821	U
1	5	1839	A
1	5	1840	U
1	5	1841	A
1	5	1842	A
1	5	1846	C
1	5	1849	C
1	5	1850	A
1	5	1866	C
1	5	1877	U
1	5	1878	G
1	5	1879	A
1	5	1880	U
1	5	1887	A
1	5	1893	A
1	5	1901	A
1	5	1906	G
1	5	1907	C
1	5	1918	C
1	5	1930	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	2118	C
1	5	2121	G
1	5	2122	G
1	5	2131	A
1	5	2144	A
1	5	2158	A
1	5	2163	C
1	5	2164	A
1	5	2169	G
1	5	2185	G
1	5	2192	C
1	5	2193	U

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Mol	Chain	Res	Type
1	5	2205	U
1	5	2210	G
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	2275	A
1	5	2279	A
1	5	2281	A
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	2338	C
1	5	2363	A
1	5	2373	A
1	5	2374	C
1	5	2375	G
1	5	2378	C
1	5	2385	G
1	5	2388	U
1	5	2390	A
1	5	2391	G
1	5	2393	G
1	5	2394	G
1	5	2397	A
1	5	2401	A
1	5	2402	A
1	5	2403	G

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Mol	Chain	Res	Type
1	5	2411	U
1	5	2417	U
1	5	2418	G
1	5	2419	A
1	5	2420	C
1	5	2421	U
1	5	2422	C
1	5	2423	U
1	5	2426	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	2554	A
1	5	2555	G
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

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Mol	Chain	Res	Type
1	5	2585	G
1	5	2589	G
1	5	2593	A
1	5	2594	C
1	5	2604	U
1	5	2605	G
1	5	2606	G
1	5	2607	G
1	5	2609	A
1	5	2610	G
1	5	2614	G
1	5	2615	G
1	5	2626	A
1	5	2629	U
1	5	2636	A
1	5	2652	U
1	5	2656	A
1	5	2657	A
1	5	2662	G
1	5	2663	G
1	5	2674	A
1	5	2677	G
1	5	2681	U
1	5	2683	U
1	5	2689	A
1	5	2690	G
1	5	2691	A
1	5	2694	A
1	5	2703	A
1	5	2704	A
1	5	2714	G
1	5	2726	C
1	5	2728	G
1	5	2729	U
1	5	2736	A
1	5	2737	C
1	5	2740	A
1	5	2742	C
1	5	2752	U
1	5	2753	G
1	5	2761	G
1	5	2772	C

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Mol	Chain	Res	Type
1	5	2773	C
1	5	2777	G
1	5	2778	G
1	5	2779	A
1	5	2796	G
1	5	2799	A
1	5	2800	G
1	5	2801	A
1	5	2802	A
1	5	2804	A
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	2839	G
1	5	2844	C
1	5	2845	A
1	5	2847	A
1	5	2853	A
1	5	2856	G
1	5	2867	C
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	2898	G
1	5	2899	C
1	5	2907	G
1	5	2911	A
1	5	2916	U
1	5	2918	G
1	5	2923	U
1	5	2928	C
1	5	2935	U

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Mol	Chain	Res	Type
1	5	2936	A
1	5	2942	C
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	2971	A
1	5	2972	G
1	5	2978	U
1	5	2979	U
1	5	2983	C
1	5	2990	G
1	5	2996	U
1	5	2997	G
1	5	3003	G
1	5	3012	A
1	5	3028	G
1	5	3057	U
1	5	3059	G
1	5	3078	U
1	5	3079	U
1	5	3086	A
1	5	3092	C
1	5	3109	G
1	5	3116	G
1	5	3117	C
1	5	3122	A
1	5	3123	A
1	5	3130	A
1	5	3131	U
1	5	3142	A
1	5	3143	C
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

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Mol	Chain	Res	Type
1	5	3175	U
1	5	3176	G
1	5	3179	U
1	5	3181	C
1	5	3186	A
1	5	3187	A
1	5	3194	C
1	5	3195	U
1	5	3196	U
1	5	3207	U
1	5	3217	C
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	3243	A
1	5	3244	A
1	5	3245	A
1	5	3247	G
1	5	3249	C
1	5	3253	G
1	5	3259	U
1	5	3263	G
1	5	3265	C
1	5	3269	U
1	5	3270	U
1	5	3273	A
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	3289	G
1	5	3290	G
1	5	3294	A
1	5	3304	U
1	5	3313	U

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Mol	Chain	Res	Type
1	5	3316	A
1	5	3317	U
1	5	3318	G
1	5	3319	U
1	5	3324	C
1	5	3341	U
1	5	3342	A
1	5	3345	G
1	5	3346	U
1	5	3351	U
1	5	3352	U
1	5	3354	U
1	5	3356	G
1	5	3357	U
1	5	3358	U
1	5	3362	A
1	5	3369	G
1	5	3378	C
1	5	3383	G
1	5	3389	U
1	5	3390	G
1	5	3394	U
1	5	3396	U
2	7	7	G
2	7	22	A
2	7	33	U
2	7	54	U
2	7	60	G
2	7	65	G
2	7	73	C
2	7	74	C
2	7	76	A
2	7	91	G
2	7	93	C
2	7	99	G
2	7	102	A
2	7	112	G
3	8	23	U
3	8	25	G
3	8	34	U
3	8	42	G
3	8	48	A

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Mol	Chain	Res	Type
3	8	51	G
3	8	59	A
3	8	60	U
3	8	62	C
3	8	63	G
3	8	77	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	89	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	125	U
3	8	126	A
3	8	127	U
3	8	138	A
3	8	156	U
3	8	157	U
3	8	158	U

All (78) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	5	151	A
1	5	190	U
1	5	210	U
1	5	217	U
1	5	238	A
1	5	282	G
1	5	438	A

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Mol	Chain	Res	Type
1	5	546	C
1	5	620	U
1	5	621	A
1	5	715	A
1	5	735	A
1	5	765	C
1	5	850	U
1	5	873	C
1	5	981	U
1	5	982	C
1	5	1064	A
1	5	1081	U
1	5	1094	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	1568	U
1	5	1571	A
1	5	1580	A
1	5	1607	U
1	5	1716	U
1	5	1724	U
1	5	1816	A
1	5	1819	U
1	5	2101	C
1	5	2112	U
1	5	2204	C
1	5	2209	U
1	5	2248	C
1	5	2307	G
1	5	2418	G
1	5	2422	C
1	5	2438	A
1	5	2513	U
1	5	2539	C
1	5	2583	C

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Mol	Chain	Res	Type
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	2817	A
1	5	2871	G
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	3340	G
1	5	3341	U
1	5	3357	U
3	8	79	A
3	8	80	A
3	8	88	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	3.23	2 (14%)	18,26,29	3.04	2 (11%)
1	Y5P	5	1987	1	14,19,20	3.26	2 (14%)	18,26,29	2.89	2 (11%)
1	Y5P	5	1988	1	14,19,20	3.23	2 (14%)	18,26,29	2.98	2 (11%)
1	Y5P	5	1989	1	14,19,20	3.25	2 (14%)	18,26,29	2.88	2 (11%)
1	Y5P	5	1990	1	14,19,20	3.23	2 (14%)	18,26,29	3.01	2 (11%)
1	Y5P	5	1991	1	14,19,20	3.30	2 (14%)	18,26,29	2.81	2 (11%)
1	Y5P	5	1992	1	14,19,20	3.18	2 (14%)	18,26,29	3.01	2 (11%)
1	Y5P	5	1993	1	14,19,20	3.30	2 (14%)	18,26,29	2.90	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	3.25	2 (14%)	18,26,29	2.87	2 (11%)
1	P5P	5	2016	1	16,23,24	0.71	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	0.79	0
1	P5P	5	2019	1	16,23,24	0.72	0	15,33,36	0.81	0
1	P5P	5	2020	1	16,23,24	0.71	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	0.72	0	15,33,36	0.82	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	0.70	0	15,33,36	0.79	0
1	P5P	5	2025	1	16,23,24	0.70	0	15,33,36	0.74	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
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

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
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	-11.56	1.38	1.46
1	5	1993	Y5P	C4-N3	-11.45	1.38	1.46
1	5	1987	Y5P	C4-N3	-11.41	1.38	1.46
1	5	1995	Y5P	C4-N3	-11.36	1.38	1.46
1	5	1989	Y5P	C4-N3	-11.34	1.38	1.46
1	5	1994	Y5P	C4-N3	-11.31	1.38	1.46
1	5	1988	Y5P	C4-N3	-11.19	1.38	1.46
1	5	1990	Y5P	C4-N3	-11.19	1.38	1.46
1	5	1986	Y5P	C4-N3	-11.15	1.38	1.46
1	5	1992	Y5P	C4-N3	-10.93	1.38	1.46
1	5	1991	Y5P	C2-N3	3.91	1.37	1.29
1	5	1987	Y5P	C2-N3	3.92	1.37	1.29
1	5	1995	Y5P	C2-N3	3.95	1.37	1.29
1	5	1989	Y5P	C2-N3	3.99	1.37	1.29
1	5	1990	Y5P	C2-N3	4.17	1.38	1.29
1	5	1994	Y5P	C2-N3	4.17	1.38	1.29
1	5	1993	Y5P	C2-N3	4.18	1.38	1.29
1	5	1988	Y5P	C2-N3	4.21	1.38	1.29
1	5	1986	Y5P	C2-N3	4.26	1.38	1.29
1	5	1992	Y5P	C2-N3	4.34	1.38	1.29

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	1986	Y5P	N1-C2-N3	-12.11	114.34	125.85
1	5	1994	Y5P	N1-C2-N3	-12.07	114.37	125.85
1	5	1992	Y5P	N1-C2-N3	-11.93	114.50	125.85
1	5	1990	Y5P	N1-C2-N3	-11.90	114.53	125.85
1	5	1988	Y5P	N1-C2-N3	-11.82	114.61	125.85
1	5	1993	Y5P	N1-C2-N3	-11.48	114.93	125.85
1	5	1989	Y5P	N1-C2-N3	-11.41	114.99	125.85

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	1987	Y5P	N1-C2-N3	-11.37	115.03	125.85
1	5	1995	Y5P	N1-C2-N3	-11.33	115.08	125.85
1	5	1991	Y5P	N1-C2-N3	-11.03	115.36	125.85
1	5	1993	Y5P	C4-N3-C2	3.84	126.89	117.71
1	5	1991	Y5P	C4-N3-C2	3.91	127.06	117.71
1	5	1989	Y5P	C4-N3-C2	3.92	127.07	117.71
1	5	1990	Y5P	C4-N3-C2	3.94	127.13	117.71
1	5	1988	Y5P	C4-N3-C2	3.96	127.17	117.71
1	5	1992	Y5P	C4-N3-C2	4.00	127.27	117.71
1	5	1995	Y5P	C4-N3-C2	4.00	127.28	117.71
1	5	1987	Y5P	C4-N3-C2	4.01	127.28	117.71
1	5	1994	Y5P	C4-N3-C2	4.01	127.30	117.71
1	5	1986	Y5P	C4-N3-C2	4.05	127.39	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 [i](#)

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	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	z	107:UNK	C	115:UNK	N	20.22
1	5	1995:Y5P	O3'	2016:P5P	P	17.42
1	z	127:UNK	C	131:UNK	N	9.67