



Full wwPDB EM Validation Report ⓘ

Mar 27, 2026 – 12:47 AM UTC

PDB ID : 6O8Z / pdb_00006o8z
EMDB ID : EMD-0659
Title : Cryo-EM image reconstruction of the 70S Ribosome *Enterococcus faecalis* Class04
Authors : Jogl, G.; Khayat, R.
Deposited on : 2019-03-12
Resolution : 3.49 Å (reported)
Based on initial models : 4YBB, 5LI0

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDb archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

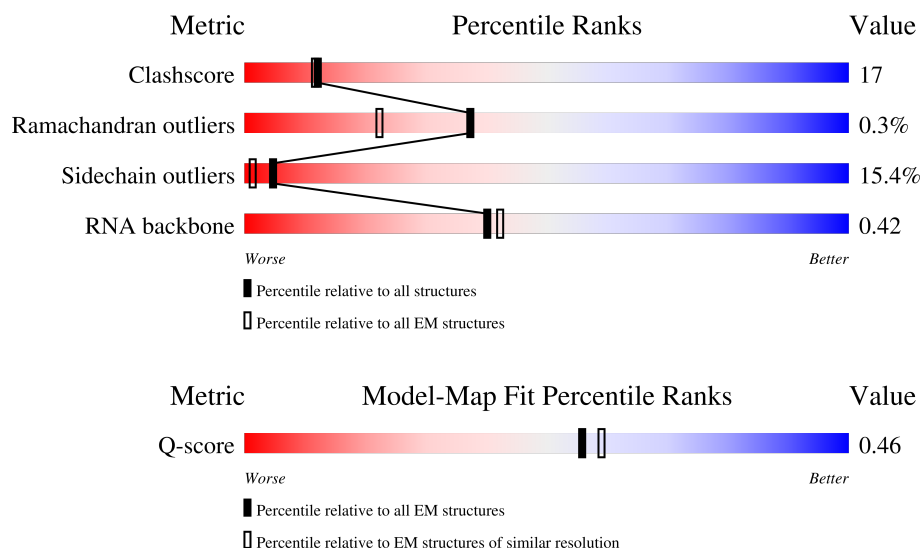
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.49 Å.

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



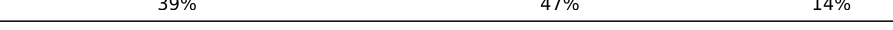
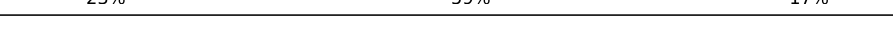
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	13600 (2.99 - 3.99)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	a	1528	
2	c	204	
3	d	201	

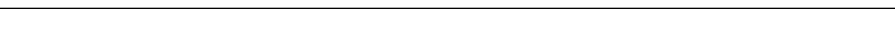
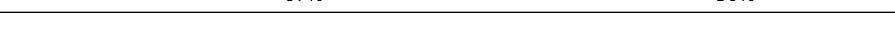
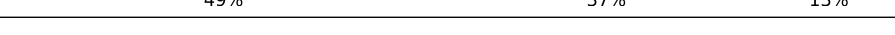
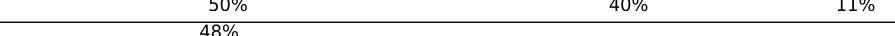
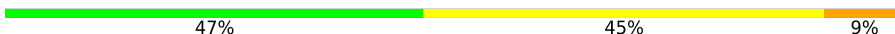
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Mol	Chain	Length	Quality of chain
4	e	163	
5	f	97	
6	g	154	
7	h	131	
8	i	128	
9	j	99	
10	k	117	
11	l	136	
12	m	112	
13	n	60	
14	o	88	
15	p	89	
16	q	83	
17	r	66	
18	s	78	
19	t	81	
20	A	2909	
21	B	116	
22	C	275	
23	D	207	
24	E	206	
25	F	177	
26	G	176	
27	K	145	
28	L	122	

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Mol	Chain	Length	Quality of chain
29	M	146	
30	N	141	
31	O	123	
32	P	117	
33	Q	114	
34	R	118	
35	S	102	
36	T	112	
37	U	89	
38	V	101	
39	W	94	
40	X	76	
41	Y	54	
42	Z	61	
43	0	58	
44	1	83	
45	2	56	
46	3	49	
47	4	44	
48	5	64	
49	6	38	

2 Entry composition [i](#)

There are 50 unique types of molecules in this entry. The entry contains 138498 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 16S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	a	1523	Total	C	N	O	P	0	0
			32646	14564	5967	10592	1523		

- Molecule 2 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	c	204	Total	C	N	O	S	0	0
			1610	1012	303	292	3		

- Molecule 3 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	d	201	Total	C	N	O	S	0	0
			1620	1016	303	297	4		

- Molecule 4 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	e	163	Total	C	N	O	S	0	0
			1204	759	222	221	2		

- Molecule 5 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	f	97	Total	C	N	O	S	0	0
			795	501	137	154	3		

- Molecule 6 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	g	154	Total	C	N	O	S	0	0
			1229	765	236	222	6		

- Molecule 7 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	h	131	Total	C	N	O	S	0	0
			1041	662	184	193	2		

- Molecule 8 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	i	128	Total	C	N	O	S	0	0
			990	615	197	177	1		

- Molecule 9 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	j	99	Total	C	N	O	S	0	0
			800	504	147	147	2		

- Molecule 10 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	k	117	Total	C	N	O	S	0	0
			863	533	165	161	4		

- Molecule 11 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	l	136	Total	C	N	O	S	0	0
			1065	661	214	188	2		

- Molecule 12 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	m	112	Total	C	N	O	S	0	0
			884	540	180	163	1		

- Molecule 13 is a protein called 30S ribosomal protein S14 type Z.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	n	60	Total	C	N	O	S	0	0
			492	310	100	77	5		

- Molecule 14 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	o	88	Total	C	N	O	S	0	0
			741	455	152	133	1		

- Molecule 15 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	p	89	Total	C	N	O	S	0	0
			708	448	131	127	2		

- Molecule 16 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	q	83	Total	C	N	O	S	0	0
			681	427	127	124	3		

- Molecule 17 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	r	66	Total	C	N	O	S	0	0
			537	343	99	94	1		

- Molecule 18 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	s	78	Total	C	N	O	S	0	0
			634	410	113	109	2		

- Molecule 19 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	t	81	Total	C	N	O	S	0	0
			610	372	119	117	2		

- Molecule 20 is a RNA chain called 23S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	A	2903	Total	C	N	O	P	0	0
			62311	27813	11458	20137	2903		

- Molecule 21 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	B	116	Total	C	N	O	P	0	0
			2480	1106	444	814	116		

- Molecule 22 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	C	275	Total	C	N	O	S	0	0
			2115	1311	416	381	7		

- Molecule 23 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	D	207	Total	C	N	O	S	0	0
			1579	994	292	289	4		

- Molecule 24 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	E	206	Total	C	N	O	S	0	0
			1574	984	290	298	2		

- Molecule 25 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	F	177	Total	C	N	O	S	0	0
			1392	887	239	260	6		

- Molecule 26 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	G	176	Total	C	N	O	S	0	0
			1345	842	244	255	4		

- Molecule 27 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	K	145	Total	C	N	O	S	0	0
			1130	714	205	207	4		

- Molecule 28 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	L	122	Total	C	N	O	S	0	0
			922	574	176	170	2		

- Molecule 29 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	M	146	Total	C	N	O	S	0	0
			1095	677	212	205	1		

- Molecule 30 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	N	141	Total	C	N	O	S	0	0
			1118	710	216	185	7		

- Molecule 31 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	O	123	Total	C	N	O	S	0	0
			979	603	190	183	3		

- Molecule 32 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	P	117	Total	C	N	O	S	0	0
			899	556	175	167	1		

- Molecule 33 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms				AltConf	Trace
33	Q	114	Total	C	N	O	0	0
			924	582	185	157		

- Molecule 34 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	R	118	Total	C	N	O	S	0	0
			950	602	184	160	4		

- Molecule 35 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	S	102	Total	C	N	O	S	0	0
			784	500	139	143	2		

- Molecule 36 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	T	112	Total	C	N	O	S	0	0
			849	532	156	159	2		

- Molecule 37 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	U	89	Total	C	N	O	S	0	0
			720	458	127	132	3		

- Molecule 38 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	V	101	Total	C	N	O	S	0	0
			763	486	135	140	2		

- Molecule 39 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	W	94	Total	C	N	O	S	0	0
			758	479	135	140	4		

- Molecule 40 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	X	76	Total	C	N	O	S	0	0
			572	351	109	112			

- Molecule 41 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	Y	54	Total	C	N	O	S	0	0
			425	265	86	72	2		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Y	51	ALA	THR	conflict	UNP A0A1B4XRZ8

- Molecule 42 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	Z	61	Total	C	N	O	S	0	0
			504	314	94	95	1		

- Molecule 43 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	0	58	Total	C	N	O	S	0	0
			435	271	81	82	1		

- Molecule 44 is a protein called 50S ribosomal protein L31 type B.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	1	83	Total	C	N	O	S	0	0
			673	424	114	133	2		

- Molecule 45 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	2	56	Total	C	N	O	S	0	0
			429	262	88	73	6		

- Molecule 46 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	3	49	Total	C	N	O	S	0	0
			419	253	86	76	4		

- Molecule 47 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	4	44	Total	C	N	O	S	0	0
			374	227	91	54	2		

- Molecule 48 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	5	64	Total	C	N	O	S	0	0
			522	320	122	78	2		

- Molecule 49 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	6	38	Total	C	N	O	S	0	0
			304	188	66	44	6		

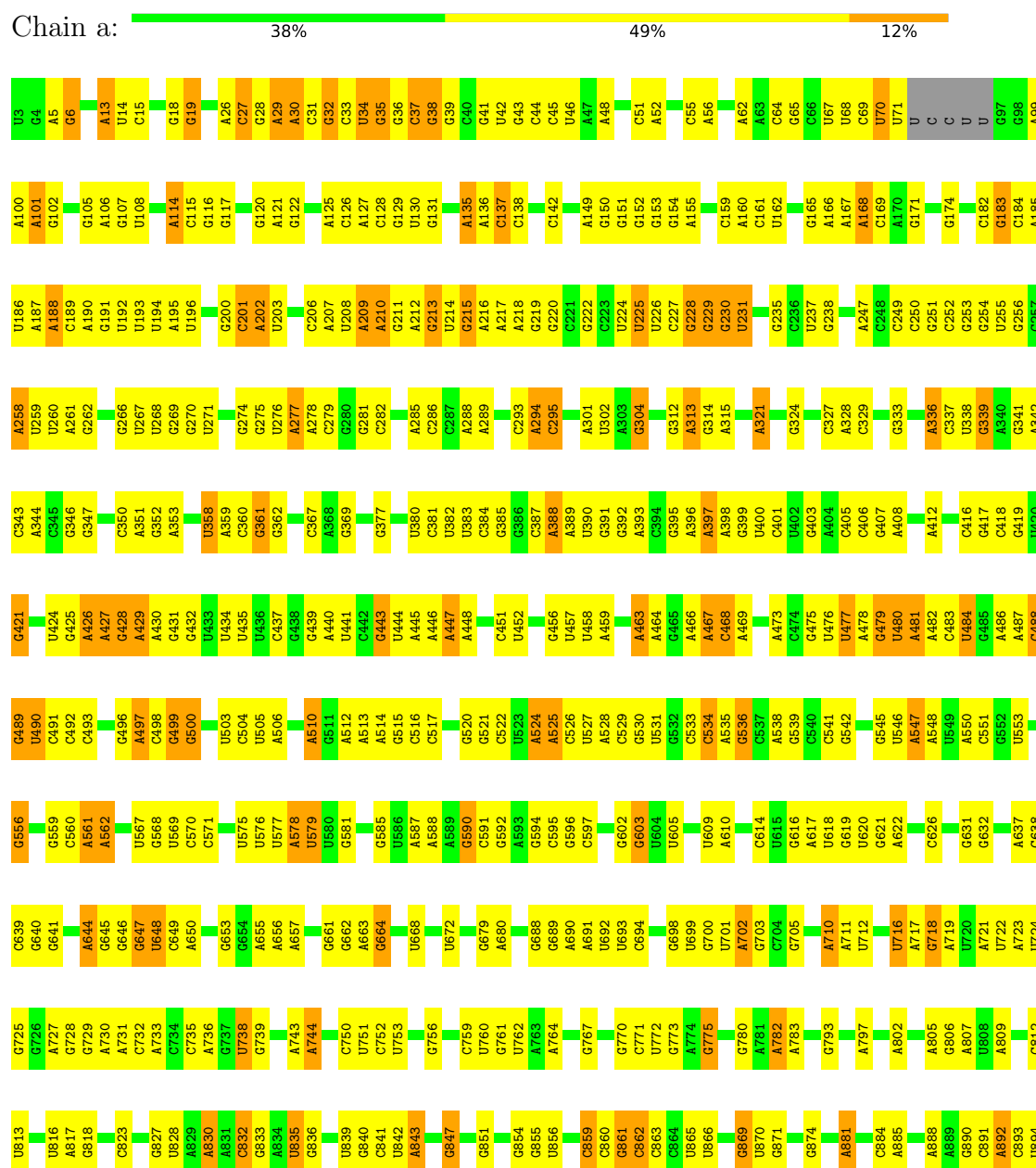
- Molecule 50 is ZINC ION (CCD ID: ZN) (formula: Zn).

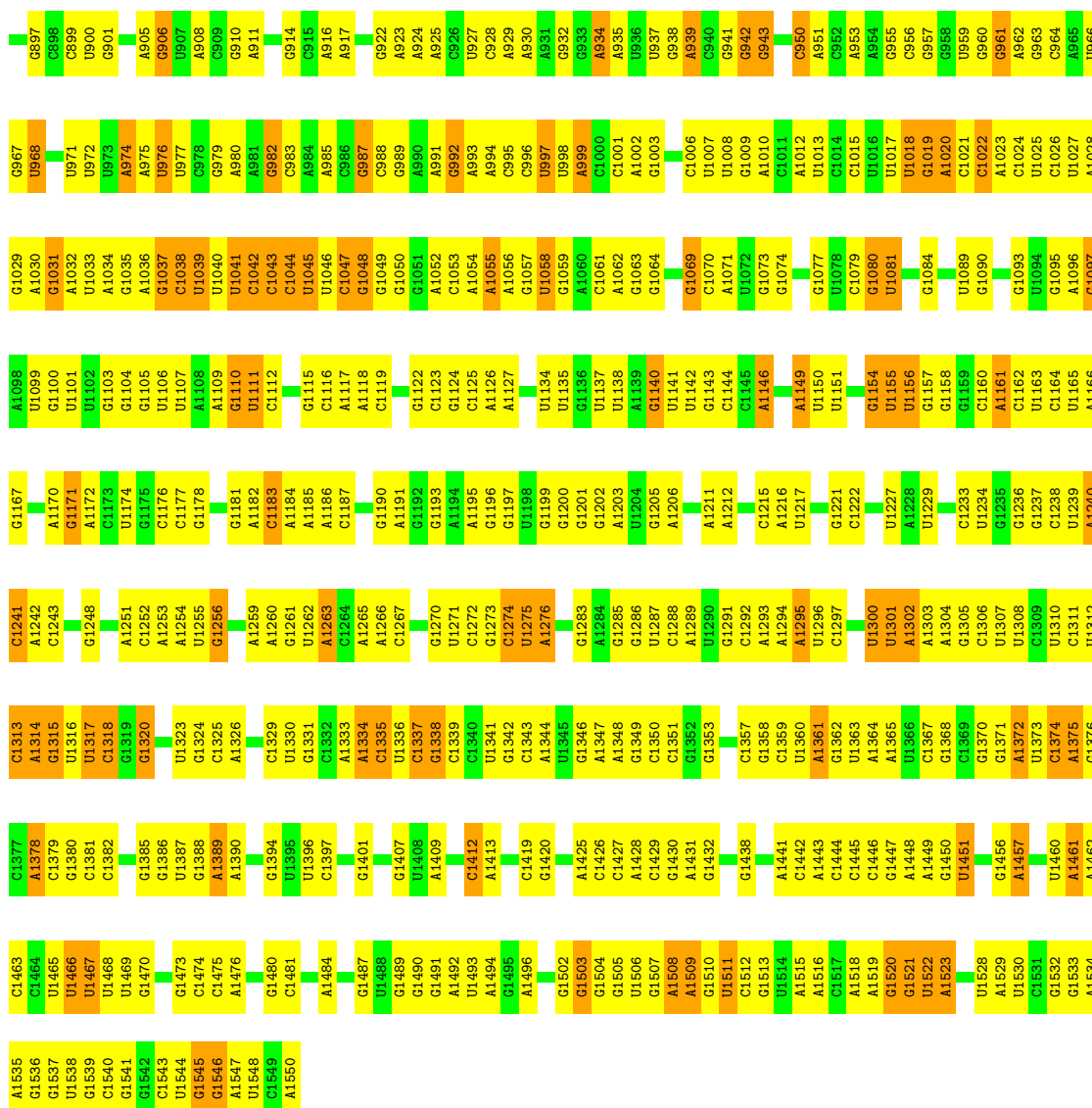
Mol	Chain	Residues	Atoms		AltConf
50	n	1	Total	Zn	0
			1	1	
50	2	1	Total	Zn	0
			1	1	
50	3	1	Total	Zn	0
			1	1	
50	6	1	Total	Zn	0
			1	1	

3 Residue-property plots

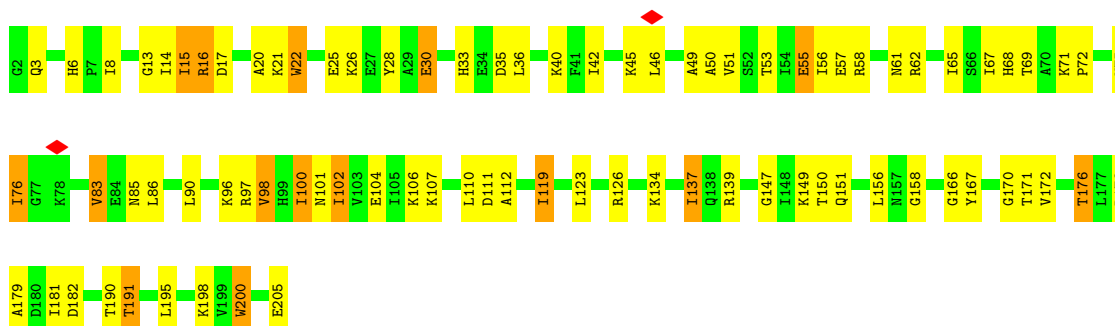
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: 16S rRNA



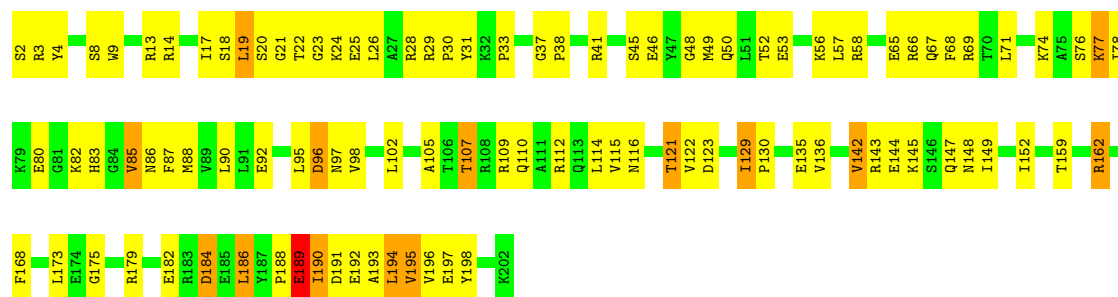


• Molecule 2: 30S ribosomal protein S3



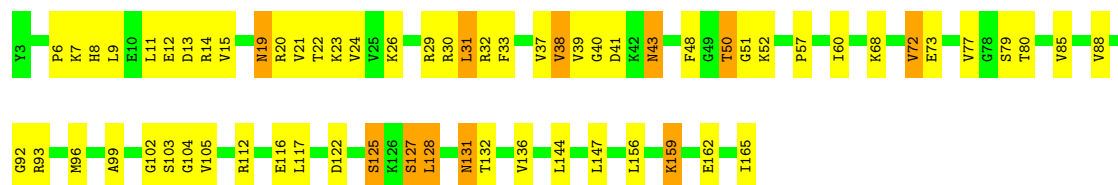
• Molecule 3: 30S ribosomal protein S4





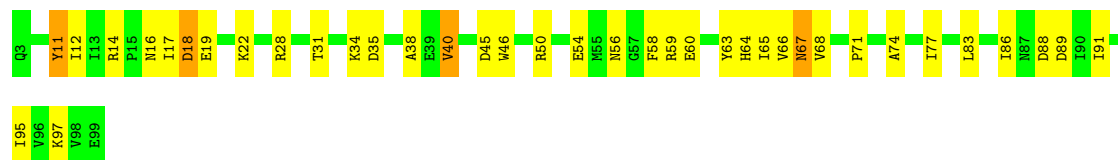
- Molecule 4: 30S ribosomal protein S5

Chain e: 60% 33% 7%



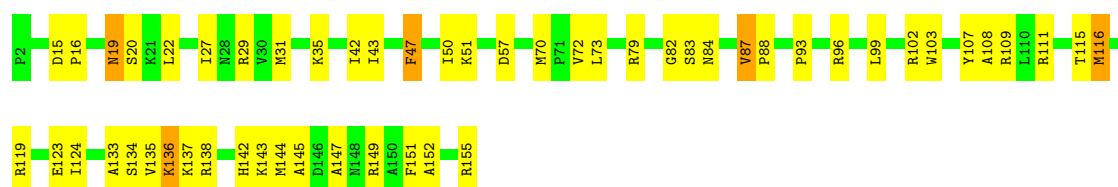
- Molecule 5: 30S ribosomal protein S6

Chain f: 61% 35% 4%



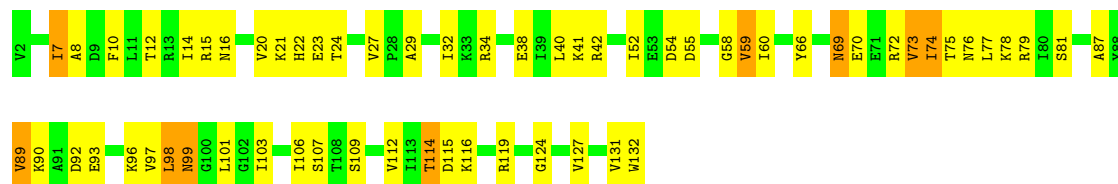
- Molecule 6: 30S ribosomal protein S7

Chain g: 66% 31% 3%

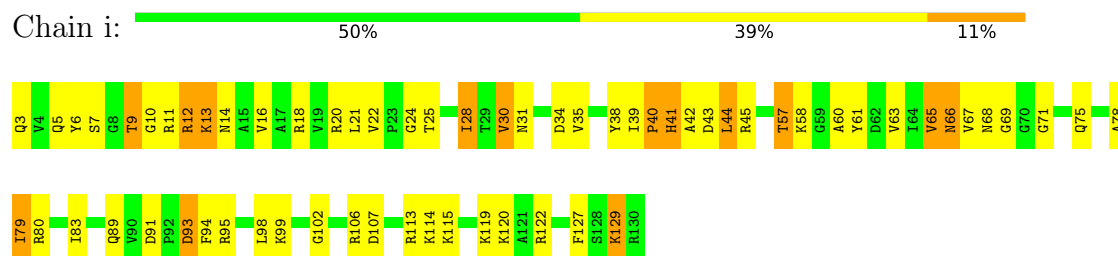


- Molecule 7: 30S ribosomal protein S8

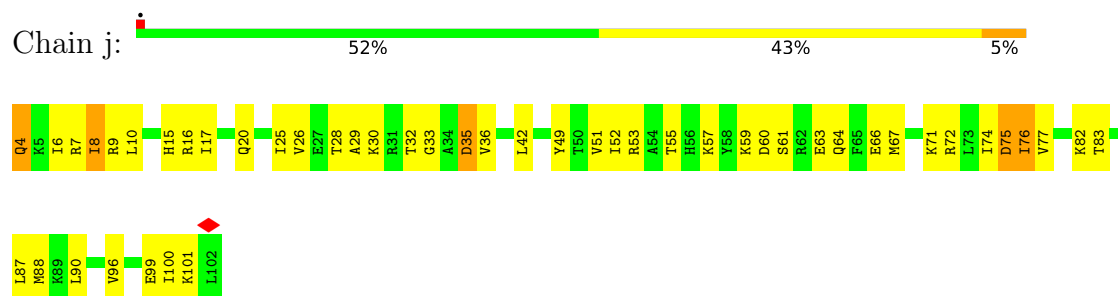
Chain h: 53% 40% 7%



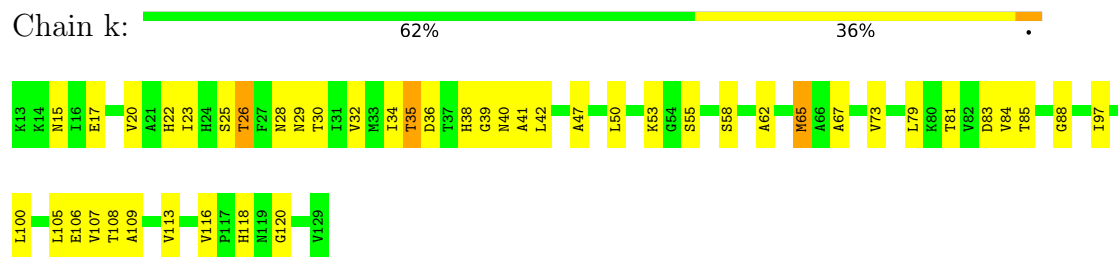
- Molecule 8: 30S ribosomal protein S9



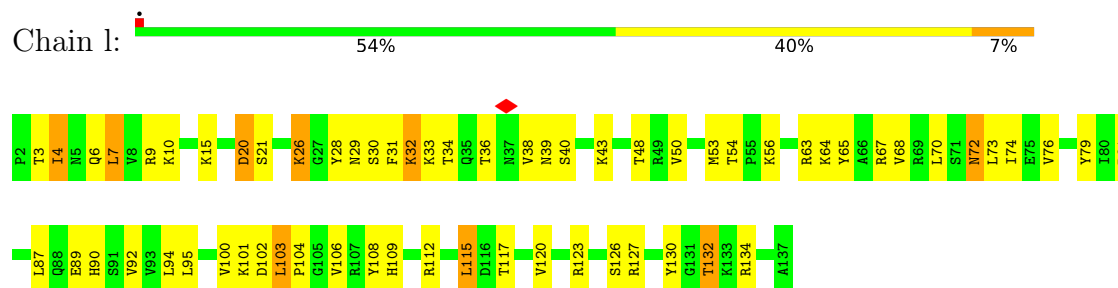
- Molecule 9: 30S ribosomal protein S10



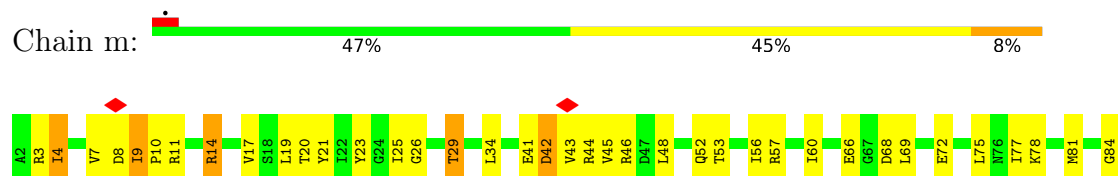
- Molecule 10: 30S ribosomal protein S11

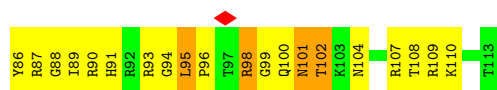


- Molecule 11: 30S ribosomal protein S12



- Molecule 12: 30S ribosomal protein S13





- Molecule 13: 30S ribosomal protein S14 type Z

Chain n: 47% 48% 5%



- Molecule 14: 30S ribosomal protein S15

Chain o: 70% 25% 5%



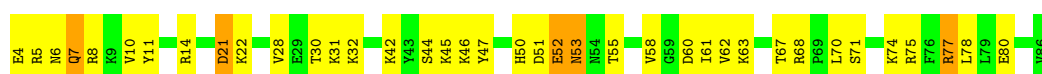
- Molecule 15: 30S ribosomal protein S16

Chain p: 57% 36% 7%



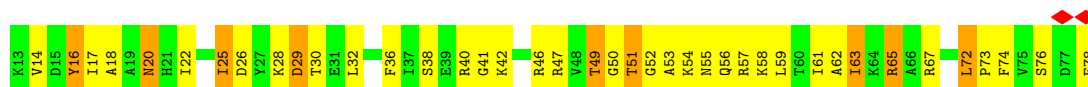
- Molecule 16: 30S ribosomal protein S17

Chain q: 54% 40% 6%



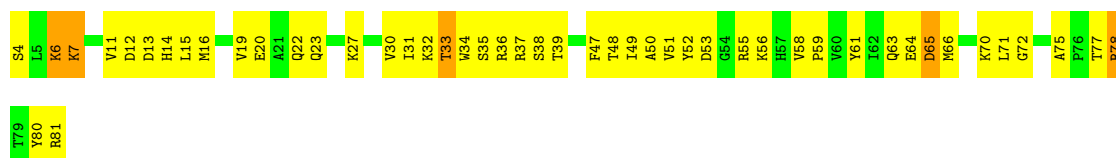
- Molecule 17: 30S ribosomal protein S18

Chain r: 39% 47% 14%



- Molecule 18: 30S ribosomal protein S19

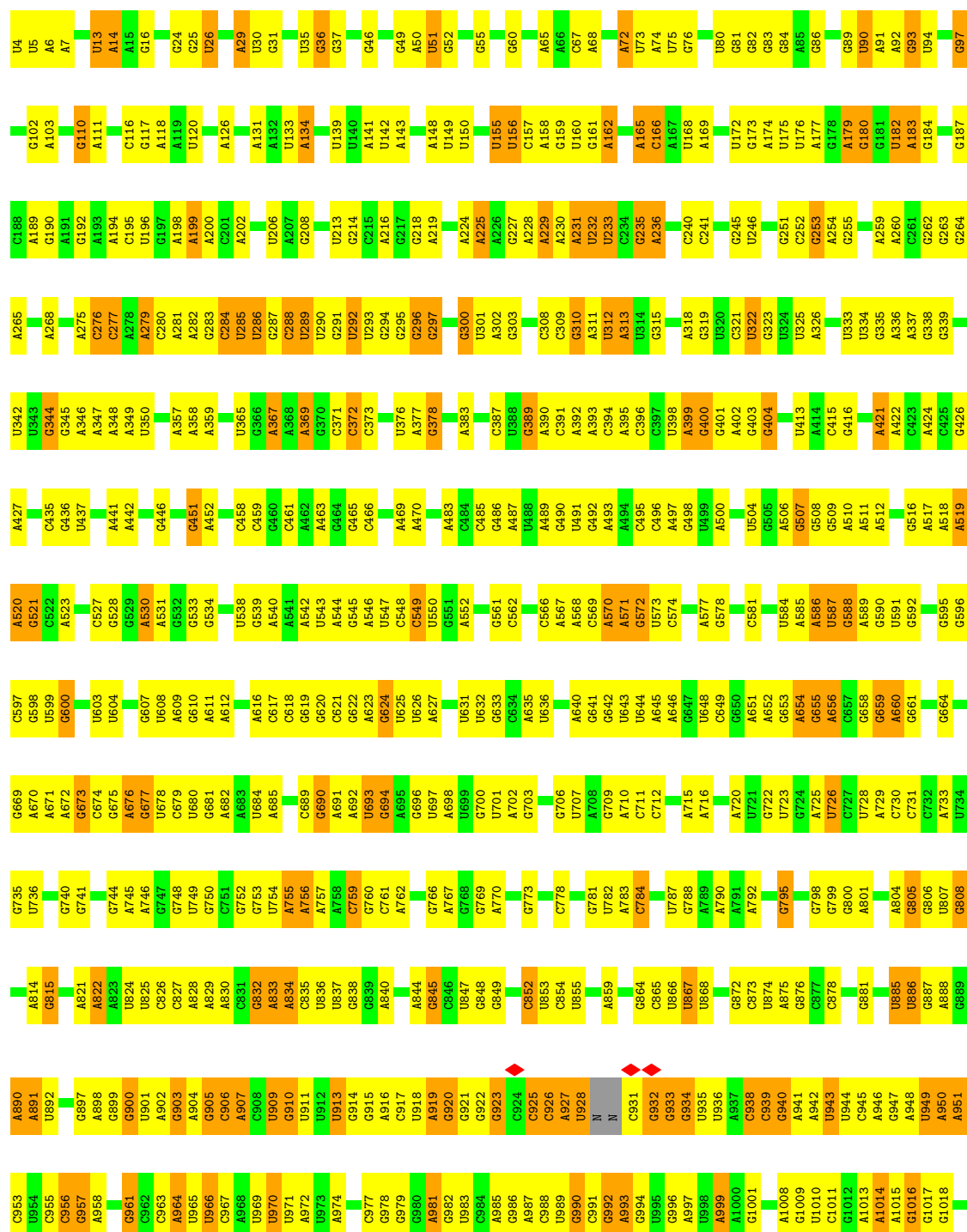
Chain s: 38% 55% 6%



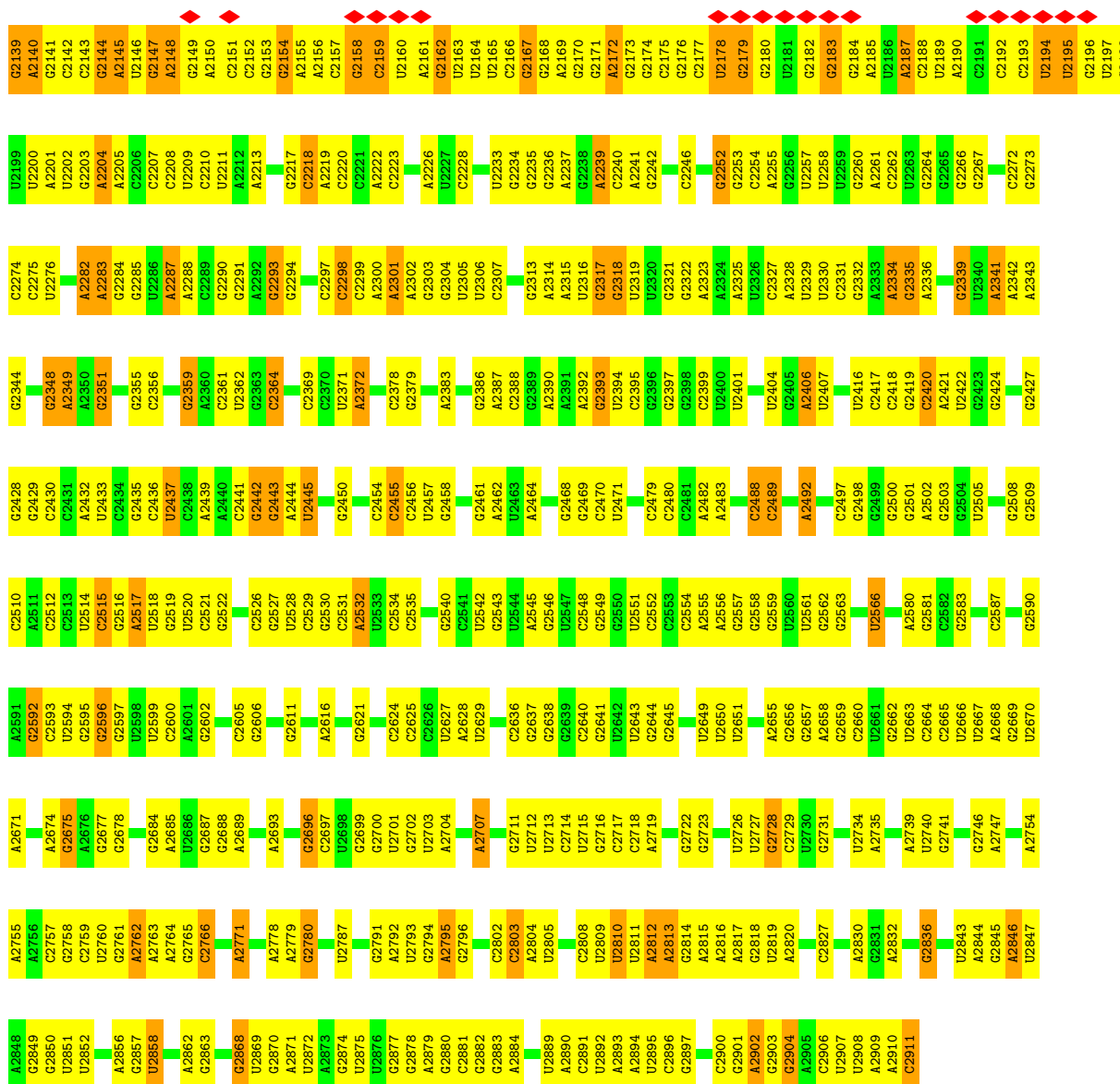
- Molecule 19: 30S ribosomal protein S20

N3	I4	E5	S6	A7		R10		N26	A27	N28		D44	N45	V46	D47	A48	L49	N50	N51		K55		K63	G64	L65	L66	H67	K68	N69	K70	A71		L78		K83
----	----	----	----	----	--	-----	--	-----	-----	-----	--	-----	-----	-----	-----	-----	-----	-----	-----	--	-----	--	-----	-----	-----	-----	-----	-----	-----	-----	-----	--	-----	--	-----

Chain A:

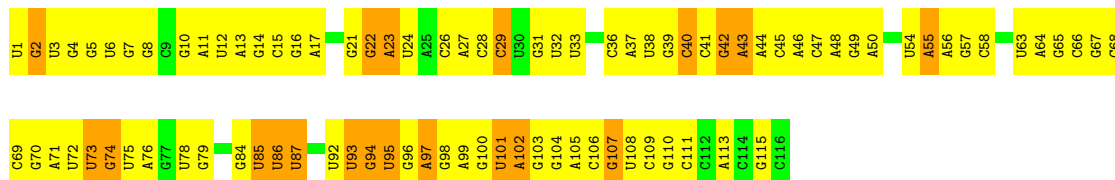


C2061	C1977	G1871	C1605	U1535	G1463	G1397	A1320	A1241	G1165	G1096	C1022
G2062	G1978	U1793	A1606	A1536	G1464	C1398	G1321	G1242	A1166	A1097	A1023
G2066	C1979	A1794	C1607	A1537	G1465	A1401	A1322	G1243	A1167	U1098	G1024
C2069	C1981	U1795	C1611	A1538	G1466	U1402	A1323	G1246	A1168	G1099	C1025
G2070	G1982	G1796	A1612	U1539	G1467	G1403	G1328	U1247	U1172	U1100	C1026
A1963	A1797	C1797	A1613	C1541	G1468	G1404	U1329	U1248	A1173	G1102	A1028
A1984	A1798	A1798	G1614	U1542	A1469	G1405	C1330	G1249	A1174	G1103	G1029
A1985	C1802	C1802	A1615	U1543	C1470	G1406	C1331	A1251	G1176	C1104	A1030
A1986	A1803	G1804	A1616	U1544	A1473	G1407	C1332	G1254	G1177	U1105	C1031
A1987	G1804	G1804	A1617	A1545	G1474	A1408	C1333	U1255	U1178	A1107	A1033
A1988	A1805	G1806	A1618	C1546	U1475	A1409	C1334	C1256	G1179	A1108	C1034
A1989	G1806	G1806	A1618	U1547	U1475	G1410	C1335	U1257	G1180	A1109	C1035
A1990	C1807	G1807	C1623	U1551	G1478	G1411	U1336	A1036	A1181	A1110	A1036
A1991	U1808	U1808	A1624	A1552	C1479	A1414	U1337	G1262	U1182	G1112	G1037
A1992	C1809	C1809	A1625	U1553	C1480	U1415	U1338	A1263	A1183	C1113	U1038
A1993	U1810	G1811	G1626	A1558	A1481	A1420	G1346	G1264	A1184	G1114	A1040
A1994	G1812	C1812	U1627	A1559	G1488	A1421	U1347	U1268	U1190	C1115	A1041
A1995	U1813	G1813	G1628	G1560	C1489	A1422	U1348	G1269	U1191	G1116	G1042
A1996	G1814	C1814	A1629	U1561	U1490	A1423	U1349	G1270	C1192	A1117	G1043
A1997	A1815	U1815	G1630	G1562	U1491	A1424	U1352	U1271	C1193	C1118	U1044
C2002	A1816	G1816	A1632	U1563	G1492	G1425	G1353	G1275	G1194	C1119	C1045
A2003	A1817	A1817	A1634	U1564	G1493	U1426	G1354	G1276	G1195	A1120	C1046
C2004	A1818	U1818	C1635	U1565	A1495	U1427	G1355	C1277	U1201	U1122	A1048
G2006	U1819	U1819	A1636	A1566	U1496	G1428	G1356	C1278	G1202	A1123	A1049
C2007	G1911	U1912	U1637	C1567	U1497	A1429	G1357	G1279	G1203	A1124	A1050
U2008	U1912	A1913	G1640	G1568	G1498	U1430	G1358	G1280	U1209	A1125	A1051
U2009	A1913	G1824	C1641	U1569	U1499	U1431	G1359	G1281	C1210	A1126	U1052
C2010	G1825	G1825	U1735	G1570	G1499	A1432	G1360	G1282	C1211	G1127	A1053
A2011	A1826	U1826	C1642	G1571	A1500	U1433	C1361	G1285	A1212	U1130	U1056
G2016	U1827	U1827	C1643	A1572	A1501	U1434	U1362	G1286	U1213	G1131	G1057
U2017	G1921	G1830	U1644	G1573	G1502	G1437	C1363	A1288	U1214	C1132	A1061
U2032	C1922	G1831	U1645	U1574	U1503	U1438	C1364	G1289	A1215	G1133	G1062
U2033	C1923	U1832	U1650	A1575	G1504	A1439	U1365	A1290	G1216	U1134	A1066
A2034	A1927	A1833	A1651	A1576	C1505	G1440	C1366	A1293	G1217	A1135	A1067
G2035	C1928	U1834	A1652	U1577	U1507	A1441	U1373	U1292	U1218	A1136	A1068
U2036	U1929	A1835	A1653	A1578	G1508	A1442	G1374	C1294	G1219	U1137	A1069
A2037	A1930	G1836	U1657	U1579	U1509	U1443	U1375	G1297	U1220	A1138	G1070
C2038	U1931	G1837	A1657	N	C1510	U1444	U1376	U1298	A1221	C1139	U1073
C2039	C1755	C1755	A1658	N	G1511	U1445	U1377	U1299	G1222	G1140	U1081
U2042	U1756	A1843	G1669	G1584	A1512	U1447	A1378	A1299	U1223	C1141	A1085
G2043	U1757	C1851	A1673	U1585	C1515	U1448	G1379	U1300	G1224	U1142	A1086
A2044	C1758	G1852	G1674	A1586	A1516	U1449	U1380	G1306	G1225	C1143	A1087
A2045	G1759	G1853	A1675	U1587	A1517	N	C1381	G1307	U1226	A1144	A1088
G2046	G1760	G1854	G1676	G1589	U1518	U1450	G1382	U1228	G1227	U1145	C1089
A2047	G1767	U1855	U1677	A1590	G1519	U1451	G1383	G1308	G1229	A1146	A1089
U2048	C1768	G1856	A1678	A1591	U1520	G1452	G1384	A1309	A1230	G1147	A1090
A1950	A1769	C1857	U1679	G1592	G1521	U1453	U1385	G1230	G1231	U1148	C1091
G2049	G1770	U1858	U1683	U1593	U1525	U1454	U1388	G1232	G1232	C1149	A1091
A1952	A1776	A1861	A1684	U1594	C1595	U1455	A1389	A1310	G1233	G1150	C1092
G2052	G1777	A1862	G1695	A1595	U1529	G1456	A1390	A1311	G1234	A1151	U1093
G2053	G1778	G1863	G1696	A1597	U1530	A1457	A1391	G1312	G1235	G1152	A1094
A2056	C1778	G1864	U1687	G1600	G1531	G1458	G1391	A1315	U1236	C1157	G1095
C2057	A1787	U1867	G1688	G1601	G1532	C1459	G1394	U1318	A1240		
U2058	U1969	A1867	A1689	U1602	A1533	A1460	A1395	G1319			
G2059	U1970		C1603	C1603	G1533	A1461	G1396				
A2060	C1976		G1690	A1604	U1534	U1462					
U2105	U2123	U2123	U2042	U2042	C1851						
U2106	G2124	G2124	G2043	G2043	C1852						
G2107	U2125	U2125	A2044	A2044	G1853						
A2108	A2126	A2126	A2045	A2045	G1854						
G2109	C2127	C2127	G2046	G2046	U1855						
U2110	A2047	A2047	A2047	A2047	G1856						
U2111	U2048	U2048	U2048	U2048	C1857						
U2112	G2049	G2049	G2049	G2049	U1858						
U2113	G2129	G2129	A1951	A1951	U1859						
U2114	G2052	G2052	A1952	A1952	A1861						
G2115	G2053	G2053	A1966	A1966	A1862						
U2116	A2056	A2056	U1969	U1969	G1863						
A2117	C2057	C2057	U1970	U1970	G1864						
C2118	U2132	U2132	A2133	A2133	G1867						
U2119	G2134	G2134	G2134	G2134	A1867						
A2120	G2135	G2135	U2136	U2136	A1868						
	A2137	A2137	G2138	G2138							



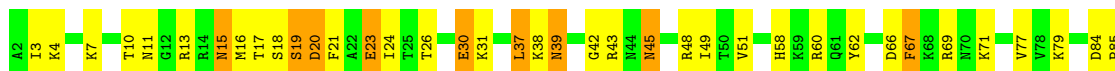
• Molecule 21: 5S rRNA

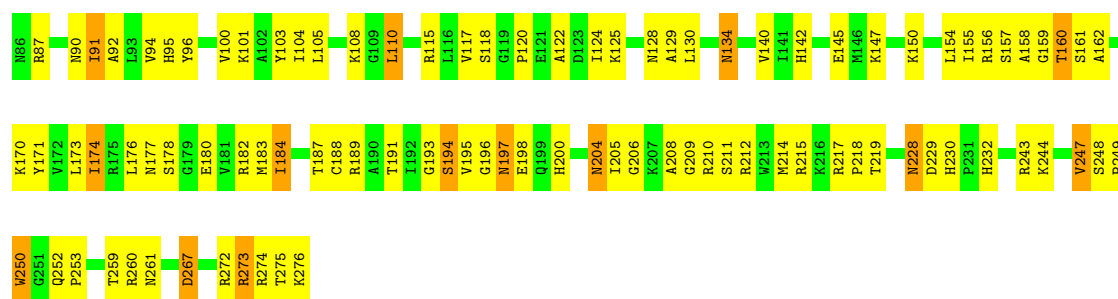
Chain B: 23% 59% 17%



• Molecule 22: 50S ribosomal protein L2

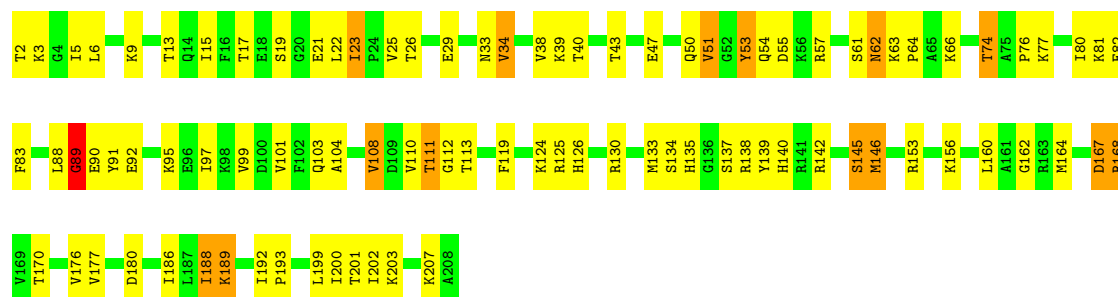
Chain C: 52% 40% 8%





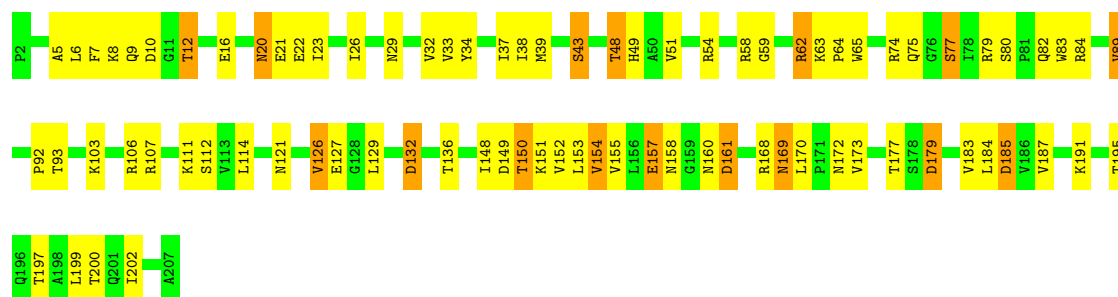
• Molecule 23: 50S ribosomal protein L3

Chain D: 55% 38% 7%



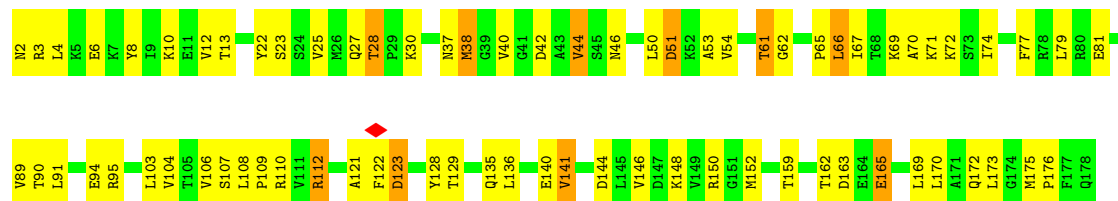
• Molecule 24: 50S ribosomal protein L4

Chain E: 60% 33% 8%



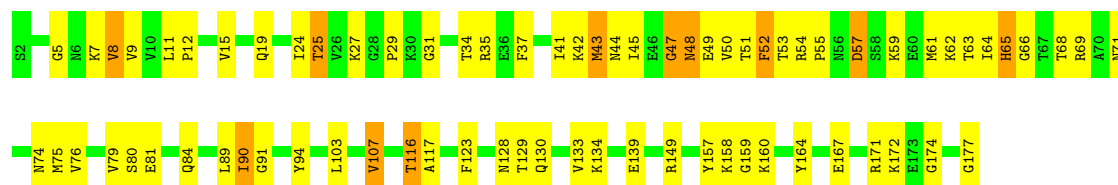
• Molecule 25: 50S ribosomal protein L5

Chain F: 58% 36% 6%



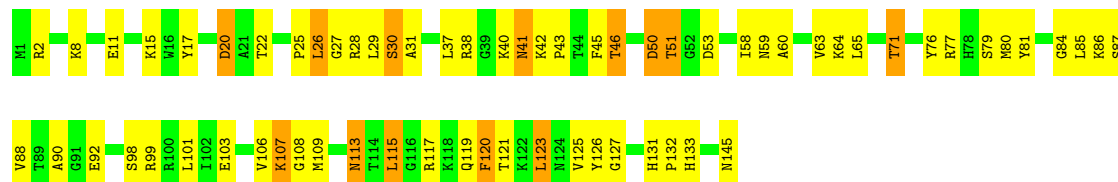
• Molecule 26: 50S ribosomal protein L6

Chain G: 58% 36% 6%



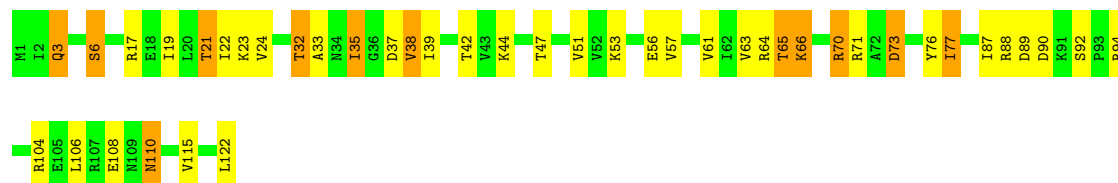
- Molecule 27: 50S ribosomal protein L13

Chain K: 54% 37% 9%



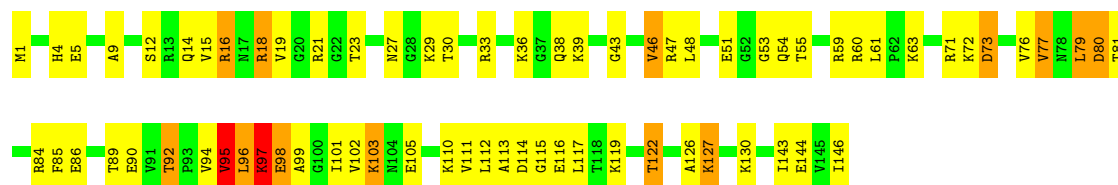
- Molecule 28: 50S ribosomal protein L14

Chain L: 65% 25% 10%



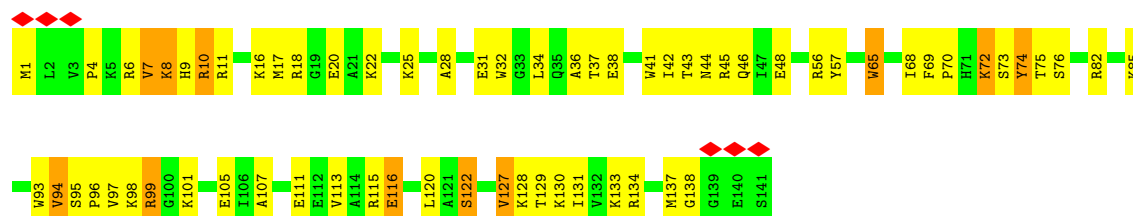
- Molecule 29: 50S ribosomal protein L15

Chain M: 51% 38% 9%

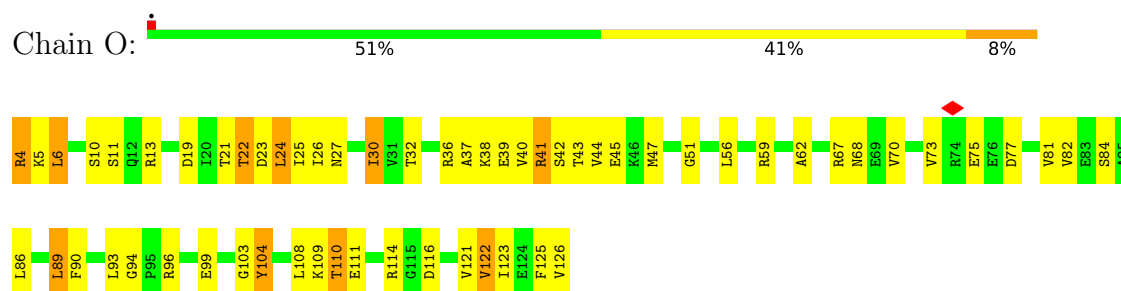


- Molecule 30: 50S ribosomal protein L16

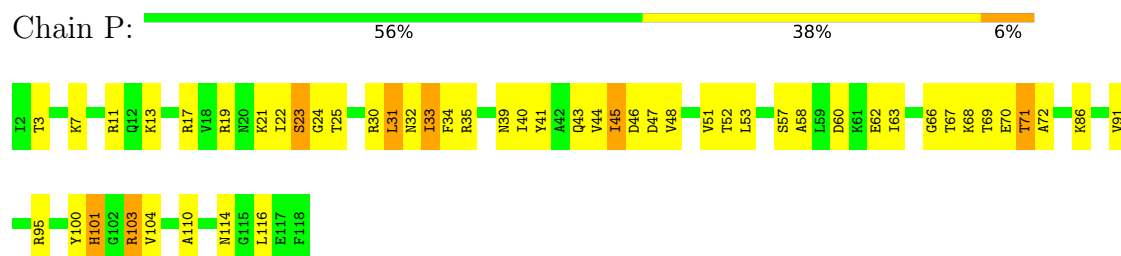
Chain N: 53% 39% 8%



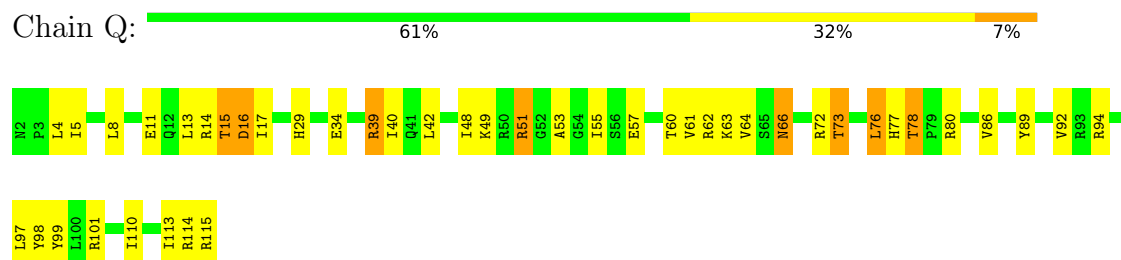
- Molecule 31: 50S ribosomal protein L17



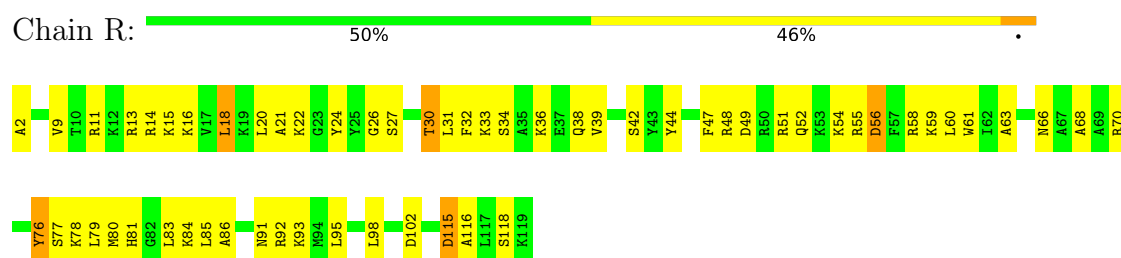
- Molecule 32: 50S ribosomal protein L18



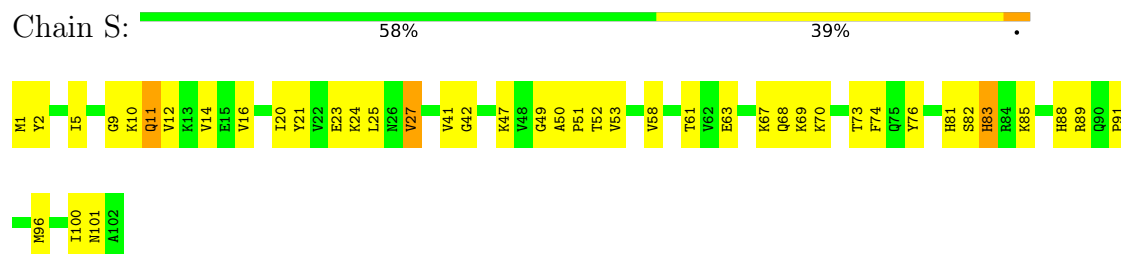
- Molecule 33: 50S ribosomal protein L19



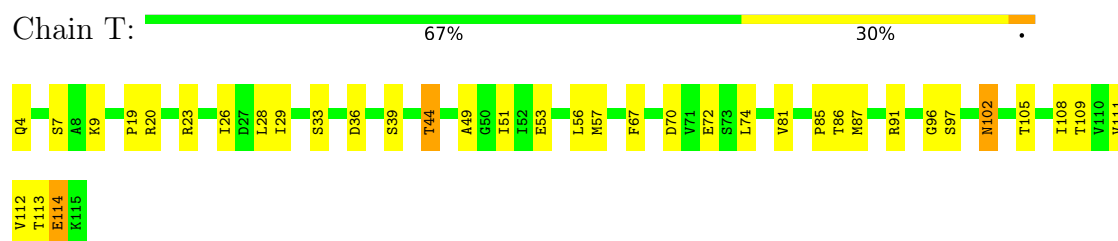
- Molecule 34: 50S ribosomal protein L20



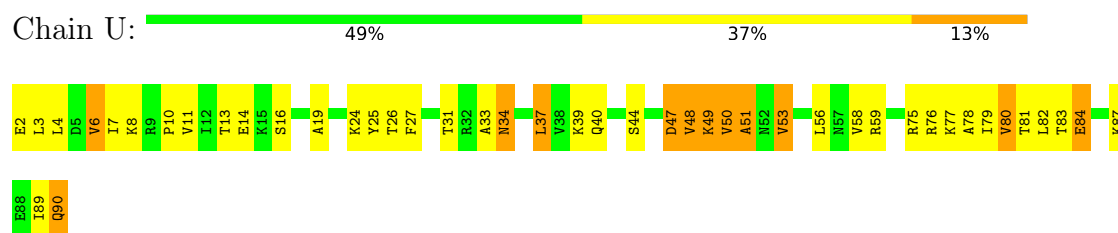
- Molecule 35: 50S ribosomal protein L21



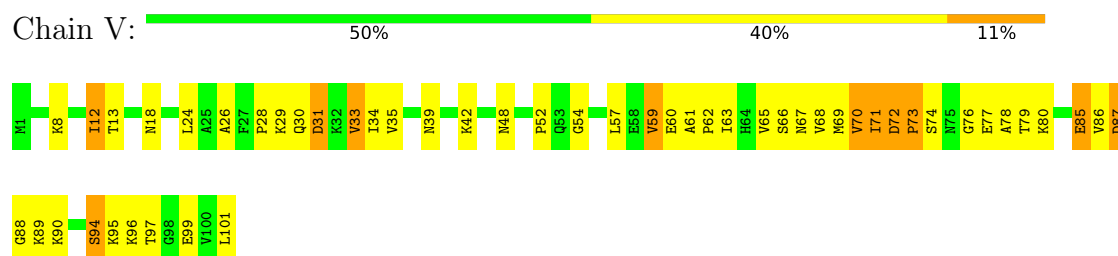
- Molecule 36: 50S ribosomal protein L22



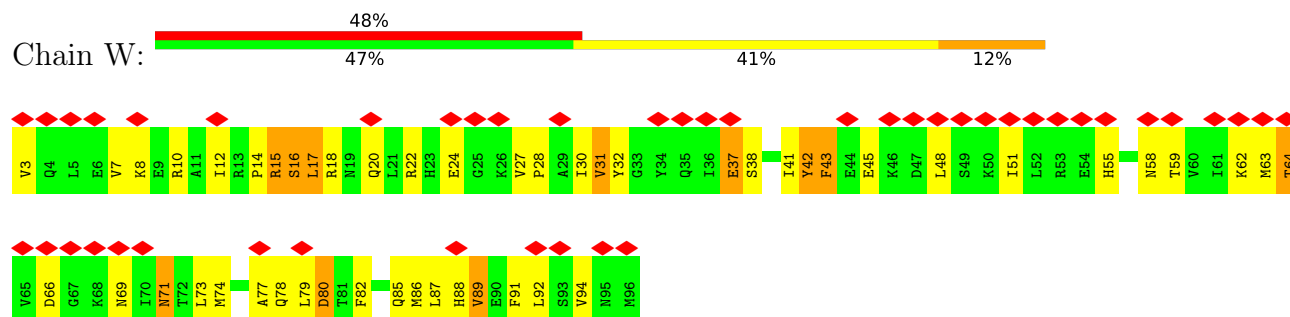
- Molecule 37: 50S ribosomal protein L23



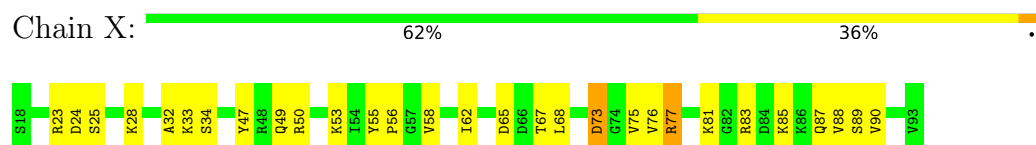
- Molecule 38: 50S ribosomal protein L24



- Molecule 39: 50S ribosomal protein L25



- Molecule 40: 50S ribosomal protein L27



- Molecule 41: 50S ribosomal protein L28

Chain Y:  50% 43% 7%



- Molecule 42: 50S ribosomal protein L29

Chain Z:  70% 26% 0%



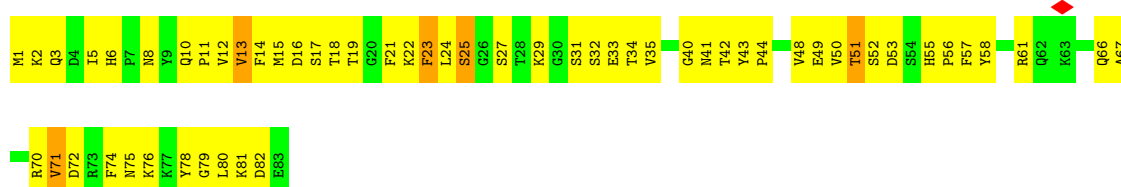
- Molecule 43: 50S ribosomal protein L30

Chain 0:  47% 45% 9%



- Molecule 44: 50S ribosomal protein L31 type B

Chain 1:  31% 63% 6%



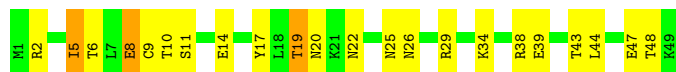
- Molecule 45: 50S ribosomal protein L32

Chain 2:  66% 30% 0%



- Molecule 46: 50S ribosomal protein L33

Chain 3:  55% 39% 6%

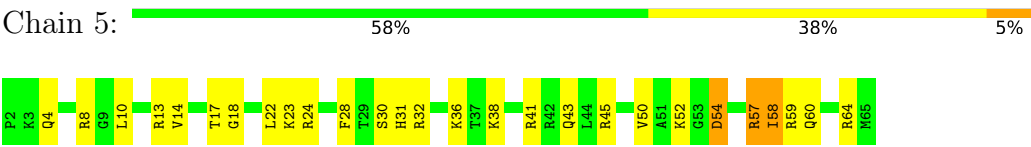


- Molecule 47: 50S ribosomal protein L34

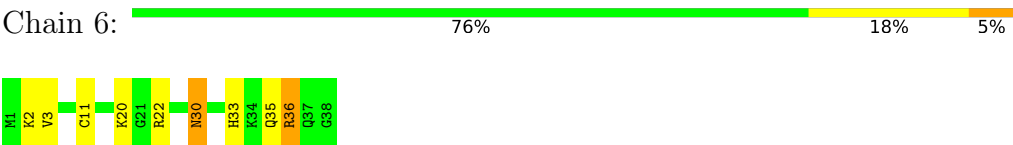
Chain 4:  50% 39% 11%



● Molecule 48: 50S ribosomal protein L35



● Molecule 49: 50S ribosomal protein L36



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	37183	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	25	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 QUANTUM (4k x 4k)	Depositor
Maximum map value	2.100	Depositor
Minimum map value	-0.938	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.096	Depositor
Recommended contour level	0.238	Depositor
Map size (Å)	482.68, 482.68, 482.68	wwPDB
Map dimensions	440, 440, 440	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.097, 1.097, 1.097	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	a	0.40	0/36547	0.40	0/57003
2	c	0.32	0/1635	0.46	0/2197
3	d	0.33	0/1650	0.49	0/2217
4	e	0.37	0/1217	0.47	0/1641
5	f	0.38	0/807	0.47	0/1087
6	g	0.27	0/1249	0.45	0/1682
7	h	0.39	0/1054	0.50	0/1417
8	i	0.29	0/1003	0.46	0/1343
9	j	0.29	0/812	0.45	0/1093
10	k	0.32	0/878	0.45	0/1185
11	l	0.36	0/1082	0.55	0/1453
12	m	0.28	0/890	0.56	0/1195
13	n	0.34	0/504	0.50	0/669
14	o	0.41	0/751	0.52	0/1001
15	p	0.39	0/720	0.49	0/966
16	q	0.38	0/689	0.51	0/920
17	r	0.36	0/544	0.51	0/728
18	s	0.27	0/650	0.51	0/872
19	t	0.32	0/612	0.52	0/818
20	A	0.49	0/69799	0.45	2/108874 (0.0%)
21	B	0.40	0/2773	0.41	0/4320
22	C	0.52	0/2150	0.60	0/2892
23	D	0.51	0/1601	0.58	0/2150
24	E	0.46	0/1596	0.52	0/2159
25	F	0.34	0/1411	0.45	0/1897
26	G	0.33	0/1365	0.50	0/1839
27	K	2.09	7/1151 (0.6%)	0.63	2/1554 (0.1%)
28	L	0.52	0/929	0.54	0/1247
29	M	0.46	0/1105	0.68	0/1474
30	N	0.41	0/1141	0.55	0/1519
31	O	0.52	0/987	0.62	0/1323
32	P	0.40	0/908	0.55	0/1216

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	Q	0.49	0/938	0.51	0/1262
34	R	0.50	0/963	0.53	0/1280
35	S	0.45	0/796	0.51	0/1068
36	T	0.48	0/858	0.50	0/1157
37	U	0.44	0/727	0.60	2/972 (0.2%)
38	V	0.34	0/772	0.59	2/1035 (0.2%)
39	W	0.23	0/769	0.52	0/1034
40	X	0.47	0/578	0.54	0/773
41	Y	0.37	0/431	0.53	0/574
42	Z	0.36	0/505	0.46	0/672
43	0	0.45	0/437	0.47	0/589
44	1	0.29	0/690	0.56	0/930
45	2	0.47	0/436	0.48	0/578
46	3	0.33	0/423	0.43	0/563
47	4	0.46	0/377	0.58	0/491
48	5	0.45	0/528	0.56	0/689
49	6	0.46	0/309	0.54	0/409
All	All	0.48	7/150747 (0.0%)	0.46	8/226027 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
3	d	0	1
19	t	0	1
23	D	0	2
26	G	0	1
29	M	0	2
30	N	0	1
31	O	0	2
37	U	0	1
38	V	0	2
39	W	0	1
All	All	0	14

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
27	K	107	LYS	CD-CE	52.85	3.11	1.52
27	K	120	PHE	CE1-CZ	19.86	1.98	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
27	K	120	PHE	CD1-CE1	19.82	1.98	1.38
27	K	120	PHE	CD2-CE2	19.82	1.98	1.38
27	K	120	PHE	CE2-CZ	18.91	1.95	1.38
27	K	120	PHE	CG-CD2	14.09	1.68	1.38
27	K	120	PHE	CG-CD1	13.76	1.67	1.38

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
27	K	107	LYS	CG-CD-CE	8.96	131.92	111.30
20	A	956	C	N3-C4-N4	-6.69	97.93	118.00
27	K	107	LYS	CD-CE-NZ	6.22	131.81	111.90
37	U	49	LYS	CA-C-N	5.82	132.44	121.97
37	U	49	LYS	C-N-CA	5.82	132.44	121.97
38	V	71	ILE	CA-C-N	5.33	134.81	121.80
38	V	71	ILE	C-N-CA	5.33	134.81	121.80
20	A	956	C	C5-C4-N4	5.20	135.79	120.20

There are no chirality outliers.

All (14) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
23	D	53	TYR	Peptide
23	D	89	GLY	Peptide
26	G	47	GLY	Peptide
29	M	85	PHE	Peptide
29	M	97	LYS	Peptide
30	N	8	LYS	Peptide
31	O	22	THR	Peptide
31	O	77	ASP	Peptide
37	U	84	GLU	Peptide
38	V	72	ASP	Peptide
38	V	87	ASP	Peptide
39	W	42	TYR	Peptide
3	d	189	GLU	Peptide
19	t	66	ILE	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	a	32646	0	16439	867	0
2	c	1610	0	1653	48	0
3	d	1620	0	1641	74	0
4	e	1204	0	1280	43	0
5	f	795	0	789	24	0
6	g	1229	0	1259	40	0
7	h	1041	0	1092	42	0
8	i	990	0	1035	50	0
9	j	800	0	846	41	0
10	k	863	0	882	27	0
11	l	1065	0	1133	47	0
12	m	884	0	932	60	0
13	n	492	0	509	28	0
14	o	741	0	756	23	0
15	p	708	0	746	26	0
16	q	681	0	719	35	0
17	r	537	0	572	31	0
18	s	634	0	649	49	0
19	t	610	0	640	16	0
20	A	62311	0	31312	1495	0
21	B	2480	0	1249	107	0
22	C	2115	0	2202	108	0
23	D	1579	0	1661	59	0
24	E	1574	0	1621	55	0
25	F	1392	0	1454	55	0
26	G	1345	0	1375	52	0
27	K	1130	0	1169	82	0
28	L	922	0	985	27	0
29	M	1095	0	1149	64	0
30	N	1118	0	1180	49	0
31	O	979	0	1019	36	0
32	P	899	0	932	48	0
33	Q	924	0	979	29	0
34	R	950	0	1009	48	0
35	S	784	0	826	32	0
36	T	849	0	906	20	0
37	U	720	0	772	30	0
38	V	763	0	824	39	0
39	W	758	0	780	55	0
40	X	572	0	580	21	0
41	Y	425	0	460	17	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
42	Z	504	0	538	13	0
43	0	435	0	472	21	0
44	1	673	0	639	51	0
45	2	429	0	446	16	0
46	3	419	0	436	13	0
47	4	374	0	424	24	0
48	5	522	0	576	26	0
49	6	304	0	337	6	0
50	2	1	0	0	0	0
50	3	1	0	0	0	0
50	6	1	0	0	0	0
50	n	1	0	0	0	0
All	All	138498	0	91884	3892	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 17.

All (3892) 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)
27:K:120:PHE:CZ	27:K:120:PHE:CE2	1.95	1.55
27:K:120:PHE:CD1	27:K:120:PHE:CE1	1.98	1.52
27:K:120:PHE:CE2	27:K:120:PHE:CD2	1.98	1.51
27:K:120:PHE:CZ	27:K:120:PHE:CE1	1.98	1.50
1:a:1019:G:C2	1:a:1052:A:N6	2.00	1.28
27:K:107:LYS:CE	27:K:120:PHE:CE1	2.34	1.10
20:A:1039:U:H3	20:A:1195:A:N6	1.49	1.09
20:A:275:A:H62	20:A:296:G:N2	1.50	1.07
27:K:107:LYS:CE	27:K:120:PHE:CZ	2.36	1.07
20:A:275:A:N6	20:A:296:G:H21	1.52	1.06
27:K:107:LYS:CE	27:K:120:PHE:CE2	2.41	1.04
27:K:107:LYS:CD	27:K:120:PHE:CD2	2.41	1.03
27:K:107:LYS:CE	27:K:120:PHE:CD1	2.42	1.02
27:K:107:LYS:CD	27:K:120:PHE:CE2	2.42	1.02
20:A:2464:A:H62	20:A:2515:C:H42	1.00	0.99
27:K:107:LYS:CD	27:K:120:PHE:CD1	2.46	0.99
20:A:1454:U:N3	20:A:1456:G:N1	2.11	0.98
27:K:107:LYS:HE3	27:K:120:PHE:CZ	1.94	0.98
21:B:78:U:H3	21:B:94:G:H1	1.10	0.98
27:K:107:LYS:CE	27:K:120:PHE:CD2	2.47	0.98
27:K:107:LYS:CD	27:K:120:PHE:CE1	2.48	0.97

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:1019:G:N1	1:a:1052:A:N6	2.13	0.97
20:A:1478:G:H1	20:A:1602:U:H3	1.08	0.96
27:K:107:LYS:CD	27:K:120:PHE:CZ	2.48	0.96
27:K:107:LYS:CD	27:K:120:PHE:CG	2.48	0.95
20:A:2115:G:H1	20:A:2202:U:H3	1.15	0.94
1:a:1019:G:N2	1:a:1052:A:H62	1.65	0.94
27:K:107:LYS:CE	27:K:120:PHE:CG	2.50	0.94
1:a:31:C:HO2'	1:a:32:G:H8	1.14	0.94
20:A:2180:G:H22	20:A:2185:A:H62	1.17	0.93
1:a:1018:U:H3	1:a:1053:C:H42	1.12	0.93
22:C:272:ARG:HD3	22:C:274:ARG:HH21	1.31	0.93
1:a:426:A:N6	1:a:445:A:N7	2.16	0.92
20:A:84:G:H1	20:A:102:G:HO2'	1.03	0.90
31:O:22:THR:HG21	31:O:67:ARG:H	1.34	0.89
20:A:2761:G:N2	20:A:2771:A:H62	1.71	0.89
27:K:107:LYS:HD3	27:K:120:PHE:CG	2.08	0.88
20:A:919:A:N6	20:A:941:A:N7	2.21	0.87
20:A:2761:G:H21	20:A:2771:A:N6	1.72	0.87
1:a:361:G:OP1	33:Q:39:ARG:NH1	2.08	0.87
1:a:897:G:OP2	11:l:6:GLN:NE2	2.07	0.87
27:K:107:LYS:HE2	27:K:120:PHE:CD1	2.09	0.86
27:K:107:LYS:HD2	27:K:120:PHE:CE2	2.08	0.86
1:a:1019:G:N2	1:a:1052:A:N6	2.24	0.85
12:m:11:ARG:HA	12:m:46:ARG:HH22	1.40	0.85
1:a:1045:U:H3	1:a:1050:G:H1	0.89	0.85
27:K:107:LYS:HE2	27:K:120:PHE:CE1	2.09	0.85
1:a:1053:C:H2'	1:a:1054:A:H8	1.41	0.85
20:A:2761:G:H21	20:A:2771:A:H62	0.87	0.85
20:A:1038:C:OP1	34:R:84:LYS:NZ	2.11	0.84
29:M:97:LYS:O	29:M:99:ALA:N	2.10	0.84
20:A:1768:C:OP1	33:Q:94:ARG:NH1	2.11	0.84
1:a:29:A:H2'	1:a:30:A:H8	1.43	0.83
20:A:2435:G:N7	48:5:31:HIS:NE2	2.26	0.83
20:A:2454:C:O2'	20:A:2455:C:O5'	1.94	0.83
1:a:434:U:H3	1:a:439:G:H1	1.25	0.83
1:a:1363:U:H3	1:a:1389:A:H62	1.26	0.83
20:A:1793:U:O2	20:A:1797:A:N6	2.10	0.83
20:A:2114:U:H3	20:A:2203:G:H1	0.85	0.83
1:a:1055:A:H2'	1:a:1056:A:H8	1.44	0.83
1:a:463:A:OP2	1:a:500:G:N2	2.11	0.83
20:A:2154:G:O6	20:A:2165:U:O2	1.97	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:2656:G:OP2	27:K:86:LYS:NZ	2.11	0.82
20:A:283:G:N2	20:A:287:G:O6	2.12	0.82
23:D:125:ARG:NH2	23:D:162:GLY:O	2.13	0.82
26:G:7:LYS:O	26:G:69:ARG:NH1	2.13	0.81
20:A:1133:G:N2	20:A:1138:A:N7	2.27	0.81
28:L:73:ASP:OD1	28:L:73:ASP:N	2.10	0.81
25:F:40:VAL:HG12	25:F:42:ASP:H	1.46	0.81
28:L:35:ILE:HG13	28:L:65:THR:HG23	1.62	0.81
20:A:2197:U:H2'	20:A:2198:G:H8	1.46	0.81
26:G:44:ASN:ND2	26:G:51:THR:OG1	2.13	0.81
33:Q:53:ALA:H	33:Q:57:GLU:HG2	1.46	0.81
21:B:75:U:OP2	39:W:18:ARG:NH1	2.14	0.80
11:l:29:ASN:HA	11:l:33:LYS:HA	1.61	0.80
1:a:312:G:N2	1:a:315:A:OP2	2.12	0.80
20:A:346:A:N7	20:A:367:A:N6	2.29	0.80
20:A:921:G:H5''	20:A:934:G:H1	1.45	0.80
35:S:49:GLY:HA3	35:S:53:VAL:HG22	1.62	0.80
27:K:50:ASP:OD1	27:K:50:ASP:N	2.12	0.80
1:a:428:G:N2	1:a:443:G:O2'	2.15	0.80
1:a:1022:C:H3'	1:a:1023:A:H8	1.47	0.80
3:d:80:GLU:O	3:d:86:ASN:ND2	2.14	0.79
48:5:54:ASP:N	48:5:54:ASP:OD1	2.14	0.79
1:a:208:U:H2'	1:a:209:A:H8	1.47	0.79
20:A:1133:G:N2	20:A:1139:G:O6	2.16	0.79
26:G:44:ASN:HB2	26:G:50:VAL:HG13	1.65	0.79
34:R:70:ARG:HB2	34:R:76:TYR:HE1	1.48	0.79
1:a:430:A:N6	1:a:443:G:O6	2.15	0.79
20:A:1458:G:H1	20:A:1628:G:H21	1.29	0.79
20:A:654:A:H1'	20:A:655:G:H5''	1.63	0.79
44:1:72:ASP:O	44:1:76:LYS:N	2.15	0.79
20:A:1802:C:H2'	20:A:1803:A:H8	1.47	0.78
38:V:72:ASP:HB2	38:V:76:GLY:H	1.47	0.78
1:a:1193:G:OP1	8:i:95:ARG:NH2	2.16	0.78
20:A:731:C:OP1	22:C:217:ARG:NH2	2.14	0.78
1:a:1160:C:H4'	1:a:1161:A:H5'	1.65	0.78
20:A:2361:C:O2'	46:3:17:TYR:OH	1.99	0.78
20:A:246:U:OP2	48:5:8:ARG:NH1	2.17	0.78
21:B:74:G:H5'	39:W:10:ARG:HH12	1.48	0.78
20:A:925:C:O2	20:A:933:G:N2	2.17	0.78
32:P:19:ARG:HH21	32:P:30:ARG:HH12	1.29	0.78
20:A:2501:G:H2'	20:A:2502:A:H8	1.49	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:1097:A:OP1	20:A:1127:G:N1	2.15	0.77
21:B:68:C:H5	21:B:104:G:H1	1.32	0.77
1:a:1055:A:H2'	1:a:1056:A:C8	2.18	0.77
9:j:17:ILE:HA	9:j:20:GLN:HE21	1.48	0.77
12:m:96:PRO:HG2	12:m:99:GLY:H	1.49	0.77
20:A:2636:C:O2'	20:A:2836:G:N2	2.18	0.77
20:A:746:A:OP1	22:C:7:LYS:NZ	2.16	0.77
27:K:107:LYS:HD2	27:K:120:PHE:CD2	2.19	0.77
20:A:2011:A:OP2	23:D:130:ARG:NH1	2.17	0.77
20:A:2034:A:H62	45:2:6:ARG:HH12	1.33	0.77
20:A:2327:C:H2'	20:A:2328:A:H8	1.50	0.77
38:V:12:ILE:HG13	38:V:13:THR:HG23	1.67	0.77
27:K:20:ASP:N	27:K:20:ASP:OD1	2.16	0.76
27:K:107:LYS:HD3	27:K:120:PHE:CD1	2.18	0.76
1:a:1317:U:O4	12:m:14:ARG:NH1	2.17	0.76
20:A:508:G:OP2	47:4:37:LYS:NZ	2.17	0.76
1:a:1412:C:OP2	4:e:29:ARG:NH2	2.18	0.76
20:A:1396:G:H22	20:A:2228:C:H42	1.32	0.76
20:A:1627:U:H3'	20:A:1628:G:H8	1.51	0.76
20:A:2115:G:O6	20:A:2202:U:O4	2.04	0.76
1:a:1156:U:HO2'	1:a:1157:G:H8	1.34	0.75
20:A:1036:A:OP1	27:K:2:ARG:NH2	2.18	0.75
28:L:70:ARG:NH2	28:L:76:TYR:OH	2.19	0.75
1:a:705:G:N2	1:a:712:U:O4	2.18	0.75
20:A:25:G:H2'	20:A:26:U:C6	2.21	0.75
24:E:6:LEU:HD22	24:E:127:GLU:HG2	1.69	0.75
1:a:1162:C:O2	8:i:18:ARG:NH1	2.20	0.75
20:A:2180:G:N2	20:A:2185:A:H62	1.84	0.75
20:A:2218:C:H2'	20:A:2219:A:H8	1.51	0.75
1:a:43:G:O2'	1:a:380:U:O2	2.03	0.75
20:A:90:U:H3'	20:A:91:A:H8	1.49	0.75
20:A:485:C:OP1	34:R:2:ALA:N	2.20	0.75
20:A:1254:U:OP1	34:R:15:LYS:NZ	2.20	0.75
1:a:428:G:O2'	1:a:443:G:N2	2.19	0.75
20:A:2787:U:H5''	23:D:168:ARG:HD2	1.69	0.75
1:a:1053:C:H2'	1:a:1054:A:C8	2.22	0.75
20:A:1034:C:O2'	35:S:10:LYS:NZ	2.14	0.75
24:E:161:ASP:OD1	24:E:161:ASP:N	2.19	0.75
1:a:151:G:H22	1:a:183:G:H1	1.35	0.74
11:l:20:ASP:N	11:l:20:ASP:OD1	2.18	0.74
18:s:61:TYR:OH	18:s:63:GLN:NE2	2.20	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:g:133:ALA:O	6:g:137:LYS:N	2.20	0.74
2:c:104:GLU:O	2:c:106:LYS:NZ	2.20	0.74
20:A:1101:U:H5'	20:A:1110:A:H1'	1.69	0.74
40:X:49:GLN:OE1	40:X:53:LYS:N	2.15	0.74
1:a:483:C:O2'	1:a:484:U:O5'	2.05	0.74
20:A:1141:U:O2'	20:A:1143:A:N6	2.20	0.74
20:A:715:A:OP1	24:E:63:LYS:NZ	2.19	0.74
20:A:940:G:H2'	20:A:941:A:C4	2.23	0.74
20:A:2196:G:H2'	20:A:2197:U:C6	2.22	0.74
20:A:1050:A:OP1	34:R:66:ASN:ND2	2.20	0.74
20:A:1454:U:O2	20:A:1456:G:N2	2.19	0.74
20:A:1499:G:H1	20:A:2716:G:H1	1.36	0.74
22:C:87:ARG:HD2	22:C:91:ILE:HD11	1.68	0.74
14:o:18:HIS:N	14:o:21:ASP:OD2	2.15	0.74
20:A:4:U:H2'	20:A:5:U:C6	2.23	0.74
35:S:100:ILE:HG22	35:S:101:ASN:H	1.53	0.74
1:a:705:G:OP2	10:k:29:ASN:ND2	2.21	0.73
20:A:2034:A:N7	45:2:6:ARG:NH1	2.35	0.73
21:B:78:U:O2	21:B:94:G:N2	2.15	0.73
1:a:735:C:O2'	17:r:56:GLN:NE2	2.22	0.73
20:A:196:U:N3	20:A:206:U:O2	2.20	0.73
20:A:1030:A:O2'	20:A:1032:C:OP2	2.04	0.73
20:A:97:G:OP1	42:Z:39:ASN:ND2	2.20	0.73
20:A:155:U:O2'	20:A:156:U:O5'	2.05	0.73
20:A:451:G:OP2	20:A:2420:C:O2'	2.05	0.73
20:A:2197:U:H2'	20:A:2198:G:C8	2.23	0.73
23:D:2:THR:OG1	23:D:3:LYS:N	2.21	0.73
18:s:39:THR:HA	18:s:70:LYS:HA	1.68	0.73
1:a:270:G:OP1	16:q:74:LYS:NZ	2.21	0.73
18:s:36:ARG:NH2	18:s:75:ALA:O	2.19	0.73
20:A:1508:G:H21	20:A:1590:A:H2	1.33	0.73
20:A:2640:C:H2'	20:A:2641:G:H8	1.53	0.73
38:V:39:ASN:HB3	38:V:61:ALA:H	1.53	0.73
1:a:392:G:OP1	15:p:4:LYS:NZ	2.13	0.73
20:A:925:C:N3	20:A:933:G:N1	2.36	0.73
20:A:1118:C:O2'	20:A:1128:A:N3	2.22	0.73
37:U:51:ALA:O	37:U:81:THR:OG1	2.07	0.73
47:4:3:ARG:O	47:4:6:GLN:NE2	2.21	0.73
1:a:1030:A:H2'	1:a:1031:G:C4	2.24	0.73
10:k:17:GLU:HA	10:k:79:LEU:HA	1.71	0.73
17:r:54:LYS:HA	17:r:57:ARG:HE	1.53	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:1146:A:O2'	8:i:20:ARG:NH2	2.22	0.73
4:e:131:ASN:OD1	4:e:131:ASN:N	2.22	0.73
8:i:106:ARG:NH1	8:i:107:ASP:O	2.20	0.73
23:D:111:THR:HB	23:D:170:THR:HG22	1.71	0.73
24:E:10:ASP:O	24:E:12:THR:OG1	2.06	0.73
20:A:918:U:O2'	20:A:920:G:OP2	2.07	0.73
20:A:1047:C:OP1	27:K:38:ARG:NH2	2.22	0.73
12:m:90:ARG:O	12:m:94:GLY:N	2.21	0.72
20:A:672:A:O2'	20:A:2418:C:OP1	2.05	0.72
20:A:933:G:H2'	20:A:934:G:H5''	1.71	0.72
20:A:1450:U:O2	20:A:1631:A:N6	2.16	0.72
1:a:1080:G:O2'	1:a:1081:U:O5'	2.08	0.72
12:m:10:PRO:O	12:m:46:ARG:NH2	2.22	0.72
1:a:1357:C:H2'	1:a:1358:G:H8	1.53	0.72
29:M:51:GLU:OE2	48:5:57:ARG:NH1	2.22	0.72
1:a:116:G:H5''	15:p:28:PRO:HG3	1.71	0.72
20:A:1611:C:OP1	22:C:4:LYS:NZ	2.22	0.72
20:A:689:C:N4	20:A:690:G:O6	2.23	0.72
20:A:782:U:H2'	20:A:783:A:C8	2.24	0.72
30:N:1:MET:SD	30:N:45:ARG:NH2	2.62	0.72
2:c:83:VAL:HA	2:c:86:LEU:HD12	1.71	0.72
7:h:69:ASN:N	7:h:69:ASN:OD1	2.23	0.72
20:A:2148:A:O2'	20:A:2173:G:N3	2.22	0.72
30:N:4:PRO:HB3	30:N:48:GLU:HB2	1.70	0.72
47:4:26:ASN:OD1	47:4:29:ARG:NH1	2.23	0.72
20:A:865:C:H1'	29:M:54:GLN:HE21	1.55	0.72
1:a:1466:U:O2	1:a:1469:U:N3	2.17	0.72
20:A:500:A:H62	20:A:509:G:H8	1.36	0.72
6:g:27:ILE:HG12	6:g:43:ILE:HG13	1.71	0.71
20:A:2043:G:N1	20:A:2047:A:OP2	2.21	0.71
21:B:45:C:OP2	32:P:7:LYS:NZ	2.22	0.71
47:4:8:ASN:OD1	47:4:9:LYS:N	2.22	0.71
1:a:1045:U:O2	1:a:1050:G:N2	2.22	0.71
20:A:874:U:H2'	20:A:875:A:H8	1.53	0.71
20:A:1119:C:H2'	20:A:1120:A:C8	2.25	0.71
1:a:214:U:O2'	1:a:215:G:O5'	2.07	0.71
20:A:2342:A:H2'	20:A:2343:A:H8	1.53	0.71
8:i:113:ARG:NH1	8:i:114:LYS:O	2.23	0.71
20:A:1105:U:N3	20:A:1109:A:OP2	2.22	0.71
22:C:180:GLU:OE2	22:C:275:THR:N	2.22	0.71
9:j:4:GLN:HB2	9:j:77:VAL:HA	1.71	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:900:G:O2'	20:A:957:G:O6	2.08	0.71
20:A:1724:G:H21	20:A:1776:A:H3'	1.54	0.71
20:A:2090:U:OP2	20:A:2252:G:N2	2.23	0.71
25:F:51:ASP:OD1	25:F:51:ASP:N	2.19	0.71
20:A:90:U:H3'	20:A:91:A:C8	2.26	0.71
20:A:1813:G:P	22:C:276:LYS:HZ2	2.13	0.71
43:O:23:VAL:HG13	43:O:28:LEU:HB2	1.73	0.71
33:Q:16:ASP:OD1	33:Q:16:ASP:N	2.23	0.71
20:A:1544:U:H2'	20:A:1545:A:H8	1.56	0.71
1:a:1329:C:H41	18:s:4:SER:HB3	1.55	0.71
20:A:993:A:OP2	30:N:18:ARG:NH1	2.23	0.71
1:a:1201:G:N2	13:n:61:TRP:O	2.24	0.71
1:a:1241:C:OP1	12:m:90:ARG:NH2	2.24	0.71
1:a:1265:A:H4'	8:i:69:GLY:HA2	1.71	0.71
20:A:2287:A:H2'	20:A:2288:A:C8	2.26	0.71
20:A:769:G:H22	22:C:208:ALA:HB3	1.54	0.70
44:1:16:ASP:OD1	44:1:17:SER:N	2.24	0.70
1:a:397:A:H2'	1:a:398:A:C8	2.26	0.70
44:1:8:ASN:HB3	44:1:29:LYS:HZ1	1.55	0.70
20:A:506:A:OP1	47:4:34:ARG:NH1	2.24	0.70
23:D:167:ASP:N	23:D:167:ASP:OD1	2.23	0.70
28:L:88:ARG:HH21	28:L:94:ARG:HA	1.57	0.70
1:a:182:C:H2'	1:a:183:G:C8	2.26	0.70
28:L:32:THR:OG1	28:L:33:ALA:N	2.24	0.70
47:4:24:THR:OG1	47:4:26:ASN:N	2.23	0.70
20:A:2039:C:OP1	23:D:153:ARG:NE	2.24	0.70
20:A:2114:U:O4	20:A:2203:G:O6	2.09	0.70
21:B:27:A:H2'	21:B:28:C:H6	1.55	0.70
27:K:113:ASN:OD1	27:K:113:ASN:N	2.23	0.70
1:a:1253:A:OP1	1:a:1350:C:O2'	2.08	0.70
22:C:142:HIS:HE2	22:C:161:SER:HA	1.57	0.70
1:a:476:U:H3	1:a:488:C:H42	1.40	0.70
11:l:31:PHE:O	11:l:33:LYS:NZ	2.22	0.70
44:1:72:ASP:HB3	44:1:76:LYS:HB2	1.73	0.70
1:a:937:U:O2'	4:e:23:LYS:NZ	2.23	0.70
1:a:1339:C:OP1	12:m:98:ARG:NH2	2.24	0.70
38:V:72:ASP:O	38:V:74:SER:N	2.25	0.70
1:a:722:U:H2'	1:a:723:A:H8	1.57	0.70
1:a:1020:A:OP2	1:a:1042:C:N4	2.24	0.70
1:a:1127:A:H61	2:c:176:THR:HG22	1.56	0.70
20:A:253:G:O5'	29:M:59:ARG:NH1	2.24	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:100:A:H2'	1:a:101:A:C8	2.27	0.69
1:a:1190:G:H2'	1:a:1191:A:H8	1.57	0.69
30:N:22:LYS:HB2	30:N:98:LYS:HD2	1.74	0.69
1:a:1057:G:H2'	1:a:1058:U:C6	2.28	0.69
5:f:11:TYR:HE1	5:f:64:HIS:HB3	1.57	0.69
12:m:93:ARG:O	12:m:109:ARG:NH2	2.25	0.69
32:P:31:LEU:HD23	32:P:91:VAL:HG11	1.74	0.69
8:i:93:ASP:OD1	8:i:93:ASP:N	2.24	0.69
37:U:48:VAL:HG21	37:U:87:LYS:HE2	1.73	0.69
1:a:1504:G:H2'	1:a:1505:G:H8	1.56	0.69
1:a:29:A:H2'	1:a:30:A:C8	2.26	0.69
3:d:8:SER:HB3	3:d:109:ARG:HH12	1.56	0.69
10:k:81:THR:HA	10:k:106:GLU:HB2	1.74	0.69
20:A:1124:A:OP1	20:A:1125:A:N6	2.25	0.69
20:A:2125:U:O4	20:A:2162:G:N2	2.25	0.69
20:A:2313:G:OP1	25:F:72:LYS:NZ	2.24	0.69
1:a:31:C:O2'	1:a:32:G:H8	1.75	0.69
1:a:1042:C:O2	1:a:1043:C:N4	2.25	0.69
5:f:50:ARG:HA	5:f:60:GLU:HA	1.74	0.69
18:s:65:ASP:N	18:s:65:ASP:OD1	2.25	0.69
20:A:1590:A:C4	20:A:1591:A:H8	2.09	0.69
20:A:1793:U:H5''	20:A:1794:A:H5''	1.74	0.69
20:A:2299:C:OP2	46:3:2:ARG:NH1	2.25	0.69
25:F:170:LEU:HB3	25:F:175:MET:HG3	1.75	0.69
1:a:293:C:OP2	16:q:46:LYS:NZ	2.24	0.69
3:d:46:GLU:OE2	4:e:112:ARG:NH1	2.24	0.69
14:o:17:ARG:HH22	14:o:77:ARG:HD3	1.58	0.69
1:a:1364:A:H62	1:a:1388:G:H21	1.39	0.69
6:g:133:ALA:HA	6:g:136:LYS:HB3	1.74	0.69
27:K:31:ALA:HA	27:K:109:MET:HE1	1.74	0.69
27:K:115:LEU:O	27:K:119:GLN:HB2	1.92	0.69
3:d:184:ASP:OD1	3:d:184:ASP:N	2.24	0.68
9:j:99:GLU:O	9:j:101:LYS:NZ	2.26	0.68
15:p:4:LYS:HZ2	15:p:6:ARG:HD3	1.57	0.68
18:s:6:LYS:HG2	18:s:7:LYS:HZ3	1.59	0.68
1:a:1058:U:H2'	1:a:1059:G:C8	2.28	0.68
20:A:632:U:H2'	20:A:633:G:H8	1.57	0.68
1:a:1265:A:N3	1:a:1385:G:O2'	2.25	0.68
4:e:159:LYS:NZ	7:h:42:ARG:O	2.26	0.68
9:j:32:THR:HB	9:j:82:LYS:HE2	1.74	0.68
20:A:1489:C:O2'	20:A:1590:A:O2'	2.09	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:R:66:ASN:HA	34:R:76:TYR:CD1	2.28	0.68
1:a:166:A:H2'	1:a:167:A:O4'	1.94	0.68
20:A:659:G:OP2	20:A:659:G:N2	2.19	0.68
20:A:2875:U:OP1	33:Q:115:ARG:NH1	2.26	0.68
34:R:48:ARG:NH1	34:R:49:ASP:OD1	2.26	0.68
46:3:6:THR:O	46:3:48:THR:OG1	2.10	0.68
1:a:6:G:OP1	4:e:127:SER:OG	2.11	0.68
35:S:67:LYS:HB2	35:S:89:ARG:HH11	1.58	0.68
1:a:447:A:H3'	1:a:448:A:H8	1.57	0.68
20:A:891:A:H2'	20:A:892:U:H6	1.59	0.68
20:A:1347:U:O2	37:U:59:ARG:NH1	2.24	0.68
20:A:1815:A:OP2	22:C:150:LYS:NZ	2.27	0.68
20:A:2715:U:H1'	31:O:68:ASN:HD21	1.58	0.68
25:F:135:GLN:HG2	25:F:152:MET:HE1	1.76	0.68
1:a:431:G:H2'	1:a:432:G:H8	1.59	0.68
20:A:2202:U:H2'	20:A:2203:G:C8	2.28	0.68
26:G:31:GLY:HA3	26:G:79:VAL:HG22	1.76	0.68
29:M:29:LYS:O	29:M:30:THR:OG1	2.11	0.68
29:M:94:VAL:O	29:M:96:LEU:N	2.27	0.68
37:U:19:ALA:HB1	37:U:24:LYS:HB2	1.75	0.68
1:a:165:G:N2	1:a:168:A:OP2	2.27	0.68
1:a:182:C:H2'	1:a:183:G:H8	1.59	0.68
1:a:647:G:H4'	1:a:648:U:C4	2.29	0.68
3:d:82:LYS:HB2	3:d:85:VAL:HB	1.75	0.68
26:G:9:VAL:N	26:G:50:VAL:O	2.20	0.68
1:a:294:A:H5''	1:a:295:C:H3'	1.74	0.67
1:a:860:C:N3	1:a:861:G:N2	2.42	0.67
1:a:1343:C:H2'	1:a:1344:A:H8	1.60	0.67
20:A:333:U:O3'	38:V:90:LYS:NZ	2.26	0.67
20:A:516:G:N1	20:A:519:A:OP2	2.27	0.67
1:a:1364:A:H62	1:a:1388:G:N2	1.92	0.67
13:n:16:HIS:HD2	13:n:18:THR:HG23	1.58	0.67
20:A:509:G:H22	47:4:37:LYS:NZ	1.93	0.67
20:A:675:G:N7	29:M:110:LYS:NZ	2.41	0.67
20:A:1627:U:H3'	20:A:1628:G:C8	2.29	0.67
20:A:1950:A:OP2	20:A:1976:C:N4	2.27	0.67
21:B:7:G:OP1	32:P:19:ARG:NH1	2.27	0.67
21:B:46:A:OP1	32:P:35:ARG:NH2	2.25	0.67
1:a:861:G:N3	17:r:16:TYR:OH	2.27	0.67
12:m:96:PRO:HG3	12:m:100:GLN:HE22	1.58	0.67
20:A:597:C:H2'	20:A:598:G:H8	1.58	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:m:104:ASN:HD22	12:m:107:ARG:NH2	1.92	0.67
20:A:2802:C:N4	20:A:2803:C:H41	1.92	0.67
30:N:138:GLY:O	39:W:58:ASN:ND2	2.28	0.67
20:A:506:A:H5'	47:4:21:ARG:HH22	1.58	0.67
20:A:1036:A:H4'	34:R:91:ASN:HD21	1.60	0.67
20:A:1752:U:H2'	20:A:1753:G:H8	1.59	0.67
20:A:1321:G:N2	20:A:1365:U:OP1	2.18	0.67
27:K:25:PRO:HG2	27:K:28:ARG:HG3	1.76	0.67
1:a:1237:G:OP2	1:a:1337:C:N4	2.27	0.67
1:a:1427:C:H2'	1:a:1428:A:H8	1.60	0.67
20:A:659:G:H4'	20:A:660:A:H5''	1.77	0.67
20:A:920:G:O2'	20:A:921:G:O4'	2.13	0.67
26:G:164:TYR:HB2	26:G:167:GLU:HB2	1.75	0.67
29:M:19:VAL:HG13	29:M:27:ASN:HB3	1.76	0.67
31:O:10:SER:OG	31:O:11:SER:N	2.27	0.67
39:W:20:GLN:NE2	39:W:24:GLU:OE2	2.27	0.67
12:m:85:SER:O	12:m:89:ILE:N	2.24	0.67
20:A:2364:C:P	48:5:45:ARG:HH22	2.17	0.67
7:h:114:THR:OG1	7:h:116:LYS:NZ	2.28	0.67
1:a:151:G:N2	1:a:183:G:H22	1.93	0.66
16:q:53:ASN:OD1	16:q:53:ASN:N	2.27	0.66
20:A:897:G:H2'	20:A:898:A:H8	1.59	0.66
20:A:1108:G:H8	20:A:1109:A:H5'	1.60	0.66
1:a:397:A:H2'	1:a:398:A:H8	1.58	0.66
20:A:25:G:H2'	20:A:26:U:H6	1.60	0.66
20:A:1109:A:H4'	20:A:1136:A:O4'	1.95	0.66
48:5:28:PHE:O	48:5:36:LYS:NZ	2.29	0.66
1:a:688:G:H2'	1:a:689:G:C8	2.29	0.66
9:j:9:ARG:H	9:j:101:LYS:HZ1	1.41	0.66
20:A:2655:A:OP1	27:K:77:ARG:NH1	2.28	0.66
25:F:25:VAL:O	25:F:28:THR:OG1	2.12	0.66
1:a:219:G:H2'	1:a:220:G:H8	1.60	0.66
20:A:897:G:H2'	20:A:898:A:C8	2.31	0.66
20:A:2763:A:H4'	26:G:62:LYS:HB3	1.78	0.66
24:E:150:THR:OG1	24:E:151:LYS:N	2.26	0.66
30:N:70:PRO:HA	30:N:95:SER:HB2	1.77	0.66
1:a:505:U:H2'	1:a:506:A:C8	2.29	0.66
1:a:1010:A:O2'	13:n:12:ARG:NH2	2.29	0.66
1:a:1456:G:H21	1:a:1476:A:H62	1.42	0.66
20:A:1710:G:N2	20:A:2006:G:OP2	2.26	0.66
20:A:2153:G:N7	20:A:2167:G:N2	2.44	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:C:125:LYS:O	22:C:128:ASN:ND2	2.29	0.66
24:E:39:MET:O	24:E:43:SER:OG	2.14	0.66
1:a:1021:C:O5'	1:a:1040:U:H2'	1.95	0.66
9:j:4:GLN:N	9:j:76:ILE:O	2.29	0.66
1:a:1037:G:N2	1:a:1038:C:H41	1.93	0.66
20:A:2144:G:N2	20:A:2173:G:OP2	2.29	0.66
24:E:103:LYS:HG3	24:E:106:ARG:HH21	1.60	0.66
1:a:487:A:N1	1:a:488:C:N4	2.43	0.66
15:p:24:ASP:OD1	15:p:25:SER:N	2.28	0.66
20:A:2272:C:O2'	20:A:2441:C:OP2	2.14	0.66
22:C:60:ARG:HE	22:C:85:PRO:HB2	1.60	0.66
26:G:129:THR:OG1	26:G:130:GLN:NE2	2.28	0.66
30:N:38:GLU:OE2	30:N:128:LYS:N	2.27	0.66
34:R:44:TYR:OH	35:S:76:TYR:HB2	1.96	0.66
38:V:87:ASP:O	38:V:89:LYS:N	2.26	0.66
1:a:505:U:H2'	1:a:506:A:H8	1.61	0.65
1:a:751:U:H2'	1:a:752:C:H6	1.60	0.65
10:k:22:HIS:HA	10:k:85:THR:HB	1.77	0.65
12:m:87:ARG:O	12:m:91:HIS:HB2	1.96	0.65
20:A:1108:G:C8	20:A:1109:A:H5'	2.32	0.65
20:A:1491:U:HO2'	20:A:1492:G:H8	1.41	0.65
20:A:693:U:O2'	20:A:694:G:N3	2.23	0.65
21:B:93:U:H5	39:W:16:SER:H	1.44	0.65
22:C:157:SER:O	22:C:160:THR:OG1	2.14	0.65
23:D:33:ASN:HD21	23:D:97:ILE:HB	1.60	0.65
1:a:208:U:H2'	1:a:209:A:C8	2.29	0.65
17:r:51:THR:OG1	17:r:52:GLY:N	2.30	0.65
20:A:358:A:OP2	24:E:136:THR:OG1	2.14	0.65
20:A:1872:G:O2'	20:A:1898:A:N6	2.30	0.65
39:W:89:VAL:HB	39:W:91:PHE:HE1	1.61	0.65
7:h:52:ILE:O	7:h:59:VAL:N	2.25	0.65
20:A:854:C:H1'	20:A:1262:G:H21	1.62	0.65
20:A:1264:G:N7	34:R:16:LYS:NZ	2.45	0.65
20:A:2154:G:O6	20:A:2165:U:C2	2.49	0.65
20:A:2502:A:H2'	20:A:2503:G:H8	1.62	0.65
39:W:79:LEU:HD22	39:W:86:MET:HA	1.79	0.65
44:1:32:SER:HA	44:1:43:TYR:HD2	1.61	0.65
1:a:1024:C:O2	1:a:1038:C:N4	2.30	0.65
1:a:562:A:OP1	3:d:66:ARG:NH2	2.29	0.65
19:t:47:ASP:OD1	19:t:51:ASN:ND2	2.29	0.65
20:A:338:G:O5'	38:V:80:LYS:NZ	2.28	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:1039:U:O4	20:A:1195:A:N7	2.29	0.65
27:K:107:LYS:HZ1	27:K:121:THR:HA	1.61	0.65
31:O:99:GLU:N	31:O:99:GLU:OE1	2.28	0.65
1:a:1507:G:O2'	1:a:1508:A:N6	2.29	0.65
20:A:873:C:OP1	29:M:39:LYS:NZ	2.29	0.65
20:A:2330:U:H2'	20:A:2331:C:C6	2.31	0.65
1:a:823:C:OP2	14:o:48:LYS:NZ	2.30	0.65
1:a:1167:G:OP1	9:j:72:ARG:NH2	2.28	0.65
1:a:1442:C:H2'	1:a:1443:A:C8	2.31	0.65
20:A:1146:A:N6	20:A:1148:U:OP2	2.30	0.65
20:A:2119:C:H2'	20:A:2120:A:H8	1.62	0.65
20:A:2293:G:N7	40:X:23:ARG:NH1	2.45	0.65
1:a:324:G:O2'	1:a:622:A:N1	2.30	0.65
1:a:538:A:H61	11:l:102:ASP:CG	2.05	0.65
4:e:22:THR:HG22	4:e:31:LEU:HB3	1.78	0.65
17:r:25:ILE:HD13	17:r:62:ALA:HB2	1.79	0.65
20:A:678:U:H2'	20:A:679:C:H6	1.62	0.65
20:A:1867:A:H2'	20:A:1868:A:C8	2.32	0.65
20:A:2145:A:O4'	20:A:2172:A:N6	2.30	0.65
20:A:1463:G:N2	20:A:1624:U:O2	2.30	0.65
34:R:18:LEU:O	34:R:21:ALA:N	2.28	0.65
1:a:1338:G:H5''	12:m:98:ARG:HH12	1.61	0.64
16:q:63:LYS:NZ	16:q:80:GLU:OE1	2.30	0.64
20:A:1095:G:N2	20:A:1125:A:N1	2.45	0.64
20:A:1635:C:H2'	20:A:1636:A:H8	1.61	0.64
1:a:938:G:H2'	1:a:939:A:C8	2.31	0.64
8:i:30:VAL:HA	8:i:65:VAL:HG13	1.78	0.64
20:A:2330:U:H2'	20:A:2331:C:H6	1.61	0.64
24:E:103:LYS:HA	24:E:106:ARG:HE	1.61	0.64
42:Z:34:THR:OG1	42:Z:36:GLN:NE2	2.29	0.64
47:4:17:GLY:O	47:4:43:SER:OG	2.16	0.64
20:A:295:G:H2'	20:A:296:G:H8	1.61	0.64
20:A:1496:U:OP2	31:O:59:ARG:NH2	2.31	0.64
20:A:2138:G:C6	20:A:2139:G:H1'	2.33	0.64
27:K:107:LYS:HE3	27:K:120:PHE:CE2	2.33	0.64
1:a:33:C:H2'	1:a:34:U:O4'	1.97	0.64
1:a:399:G:H2'	1:a:400:U:C6	2.33	0.64
1:a:614:C:OP1	7:h:90:LYS:NZ	2.26	0.64
36:T:102:ASN:N	36:T:102:ASN:OD1	2.30	0.64
20:A:2328:A:H2'	20:A:2329:U:C6	2.33	0.64
43:O:22:THR:HB	43:O:50:ILE:HD11	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:G:84:GLN:HE21	26:G:134:LYS:HE2	1.63	0.64
20:A:1590:A:C4	20:A:1591:A:C8	2.86	0.64
20:A:2115:G:H2'	20:A:2116:U:C6	2.33	0.64
20:A:2135:G:H2'	20:A:2136:U:C6	2.33	0.64
30:N:36:ALA:HB1	30:N:127:VAL:HG11	1.79	0.64
1:a:395:G:N2	1:a:398:A:OP2	2.30	0.64
2:c:61:ASN:OD1	2:c:96:LYS:NZ	2.32	0.64
3:d:135:GLU:OE1	3:d:136:VAL:N	2.30	0.64
20:A:1421:A:O2'	20:A:1432:U:O2	2.15	0.64
20:A:1544:U:H2'	20:A:1545:A:C8	2.33	0.64
34:R:32:PHE:O	34:R:36:LYS:NZ	2.20	0.64
2:c:17:ASP:OD2	2:c:21:LYS:NZ	2.30	0.63
20:A:597:C:H2'	20:A:598:G:C8	2.33	0.63
20:A:1451:U:P	20:A:1630:G:H22	2.21	0.63
20:A:2895:U:H2'	20:A:2896:C:O4'	1.98	0.63
31:O:73:VAL:HG22	31:O:82:VAL:HA	1.79	0.63
33:Q:98:TYR:HD1	33:Q:101:ARG:HH12	1.45	0.63
20:A:1501:A:O2'	20:A:1504:G:OP2	2.16	0.63
41:Y:21:ALA:O	41:Y:23:ASN:N	2.31	0.63
21:B:2:G:C2	21:B:115:G:N2	2.67	0.63
34:R:58:ARG:NH1	34:R:92:ARG:HH12	1.96	0.63
36:T:33:SER:OG	36:T:36:ASP:OD1	2.13	0.63
1:a:405:C:O3'	15:p:29:ARG:NH2	2.32	0.63
7:h:23:GLU:HG3	7:h:24:THR:HG23	1.81	0.63
20:A:677:G:C6	20:A:690:G:N1	2.67	0.63
20:A:1454:U:C2	20:A:1456:G:N1	2.62	0.63
20:A:1489:C:HO2'	20:A:1590:A:HO2'	1.42	0.63
31:O:45:GLU:OE2	31:O:104:TYR:N	2.30	0.63
20:A:1757:U:H2'	20:A:1758:C:C4	2.34	0.63
20:A:2364:C:OP2	48:5:45:ARG:NH2	2.32	0.63
22:C:37:LEU:HD12	22:C:62:TYR:HB2	1.79	0.63
32:P:57:SER:HB2	32:P:60:ASP:HB2	1.80	0.63
39:W:15:ARG:O	39:W:17:LEU:N	2.32	0.63
11:l:26:LYS:HB3	11:l:38:VAL:HG11	1.81	0.63
20:A:1136:A:H2'	20:A:1137:U:N3	2.13	0.63
1:a:32:G:H2'	1:a:33:C:C6	2.34	0.63
1:a:405:C:H4'	15:p:29:ARG:HH21	1.64	0.63
1:a:974:A:N1	18:s:55:ARG:HB2	2.13	0.63
1:a:1022:C:H3'	1:a:1023:A:C8	2.31	0.63
2:c:49:ALA:O	2:c:69:THR:OG1	2.17	0.63
7:h:114:THR:OG1	7:h:115:ASP:N	2.29	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:p:68:ASP:OD1	15:p:69:THR:N	2.31	0.63
21:B:46:A:P	32:P:35:ARG:HH22	2.21	0.63
24:E:169:ASN:HD22	24:E:170:LEU:H	1.45	0.63
31:O:110:THR:OG1	31:O:111:GLU:N	2.27	0.63
34:R:115:ASP:O	34:R:118:SER:OG	2.12	0.63
37:U:56:LEU:HD12	37:U:77:LYS:HD2	1.81	0.63
1:a:963:G:O3'	12:m:108:THR:OG1	2.17	0.63
20:A:173:G:H2'	20:A:174:A:H8	1.63	0.63
20:A:2342:A:H2'	20:A:2343:A:C8	2.32	0.63
25:F:61:THR:OG1	25:F:62:GLY:N	2.28	0.63
25:F:109:PRO:HB2	44:1:50:VAL:HG11	1.79	0.63
28:L:42:THR:HG22	28:L:57:VAL:HA	1.81	0.63
1:a:279:C:O2'	16:q:68:ARG:NH1	2.31	0.63
1:a:441:U:OP1	3:d:31:TYR:OH	2.16	0.63
1:a:738:U:O2	1:a:871:G:O2'	2.15	0.63
3:d:149:ILE:HB	3:d:152:ILE:HD13	1.80	0.63
20:A:1707:A:H61	20:A:2010:C:H42	1.47	0.63
20:A:2483:A:O2'	30:N:56:ARG:NH1	2.32	0.63
22:C:30:GLU:OE1	22:C:31:LYS:N	2.31	0.63
1:a:605:U:H3	1:a:664:G:H1	1.47	0.62
1:a:728:G:H2'	1:a:729:G:C8	2.33	0.62
1:a:998:U:H4'	1:a:999:A:H8	1.63	0.62
1:a:1427:C:H2'	1:a:1428:A:C8	2.34	0.62
20:A:648:U:H2'	20:A:649:C:C6	2.32	0.62
20:A:1009:G:H2'	20:A:1010:U:C6	2.33	0.62
39:W:7:VAL:HG13	39:W:41:ILE:HD13	1.81	0.62
12:m:90:ARG:HD3	12:m:95:LEU:HB2	1.82	0.62
20:A:783:A:H2'	20:A:784:C:H6	1.62	0.62
24:E:64:PRO:HG3	24:E:75:GLN:HB2	1.81	0.62
33:Q:14:ARG:NH2	33:Q:78:THR:O	2.33	0.62
1:a:458:U:O4	1:a:459:A:N6	2.31	0.62
2:c:111:ASP:OD1	2:c:112:ALA:N	2.31	0.62
14:o:89:ARG:HG3	20:A:754:U:C5	2.35	0.62
20:A:971:U:H2'	20:A:972:A:H8	1.62	0.62
20:A:1215:A:H1'	20:A:1216:G:N7	2.15	0.62
20:A:2305:U:H2'	20:A:2306:U:C6	2.34	0.62
20:A:2317:G:O2'	20:A:2318:G:OP1	2.16	0.62
25:F:2:ASN:OD1	25:F:3:ARG:N	2.32	0.62
26:G:19:GLN:HG2	26:G:24:ILE:HG12	1.81	0.62
1:a:194:U:H2'	1:a:195:A:C8	2.34	0.62
20:A:517:A:H2'	20:A:518:A:C8	2.33	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:585:A:H4'	20:A:586:A:H5'	1.80	0.62
20:A:595:G:H5''	27:K:113:ASN:ND2	2.14	0.62
20:A:943:U:H2'	20:A:944:U:C6	2.34	0.62
20:A:2047:A:O2'	20:A:2049:G:OP2	2.17	0.62
22:C:195:VAL:HG12	22:C:196:GLY:H	1.64	0.62
46:3:14:GLU:OE2	46:3:38:ARG:NH1	2.31	0.62
6:g:116:MET:O	6:g:119:ARG:NE	2.25	0.62
43:0:39:ALA:HB1	43:0:44:LYS:HE3	1.82	0.62
1:a:541:C:OP1	11:l:101:LYS:NZ	2.33	0.62
1:a:1181:G:N1	1:a:1184:A:OP2	2.32	0.62
3:d:26:LEU:HA	3:d:29:ARG:HB2	1.81	0.62
19:t:51:ASN:O	19:t:55:LYS:HG3	2.00	0.62
20:A:904:A:O2'	20:A:905:G:H8	1.82	0.62
20:A:2287:A:H2'	20:A:2288:A:H8	1.63	0.62
47:4:34:ARG:NH2	47:4:41:VAL:O	2.28	0.62
1:a:597:C:OP2	1:a:773:G:N1	2.28	0.62
1:a:1177:C:H2'	1:a:1178:G:H8	1.65	0.62
9:j:7:ARG:N	9:j:101:LYS:O	2.30	0.62
22:C:39:ASN:OD1	22:C:215:ARG:NH1	2.33	0.62
32:P:53:LEU:O	32:P:86:LYS:NZ	2.30	0.62
35:S:5:ILE:HD11	35:S:58:VAL:HG21	1.82	0.62
1:a:153:G:H2'	1:a:154:G:C8	2.35	0.62
10:k:29:ASN:OD1	10:k:30:THR:N	2.33	0.62
13:n:18:THR:OG1	13:n:18:THR:O	2.14	0.62
15:p:13:LYS:HG3	15:p:14:LYS:HG2	1.80	0.62
16:q:52:GLU:OE2	16:q:77:ARG:NH1	2.32	0.62
20:A:678:U:H2'	20:A:679:C:C6	2.35	0.62
20:A:1085:C:O2	20:A:1087:G:N1	2.32	0.62
20:A:1319:G:N2	20:A:1322:A:OP2	2.30	0.62
20:A:2085:A:H2'	20:A:2086:G:H8	1.64	0.62
20:A:2179:G:H3'	20:A:2180:G:C8	2.35	0.62
1:a:1534:A:H2'	1:a:1535:A:C8	2.36	0.61
24:E:21:GLU:OE1	24:E:21:GLU:N	2.33	0.61
1:a:972:U:H3	1:a:976:U:H5	1.46	0.61
8:i:7:SER:O	8:i:89:GLN:NE2	2.33	0.61
20:A:279:A:H2'	20:A:280:C:C6	2.35	0.61
20:A:337:A:OP2	38:V:95:LYS:NZ	2.33	0.61
20:A:517:A:H2'	20:A:518:A:H8	1.64	0.61
20:A:539:G:H22	20:A:542:A:H5'	1.64	0.61
20:A:2746:G:OP1	23:D:207:LYS:NZ	2.24	0.61
23:D:62:ASN:HD22	23:D:64:PRO:HG2	1.64	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:O:10:ARG:HB3	43:O:53:LEU:HD23	1.82	0.61
20:A:977:C:OP1	48:5:52:LYS:NZ	2.26	0.61
21:B:6:U:O3'	32:P:19:ARG:NH2	2.33	0.61
1:a:268:U:H2'	1:a:269:G:H8	1.65	0.61
1:a:1038:C:HO2'	1:a:1039:U:P	2.24	0.61
5:f:88:ASP:OD1	5:f:89:ASP:N	2.33	0.61
20:A:866:U:O2'	29:M:53:GLY:HA3	2.00	0.61
31:O:38:LYS:O	31:O:41:ARG:HG3	2.00	0.61
1:a:194:U:H2'	1:a:195:A:H8	1.66	0.61
1:a:614:C:H5''	7:h:90:LYS:HG2	1.83	0.61
20:A:302:A:H2'	20:A:303:G:H8	1.66	0.61
20:A:674:C:O2'	20:A:678:U:OP1	2.18	0.61
20:A:1629:A:C8	20:A:1630:G:H3'	2.35	0.61
22:C:16:MET:HG2	22:C:206:GLY:HA3	1.83	0.61
24:E:132:ASP:OD1	24:E:132:ASP:N	2.25	0.61
1:a:1302:A:H2'	1:a:1303:A:C8	2.35	0.61
20:A:495:C:N4	20:A:512:A:N7	2.48	0.61
20:A:1035:C:O2'	27:K:2:ARG:NH2	2.34	0.61
20:A:2328:A:H2'	20:A:2329:U:H6	1.66	0.61
1:a:228:G:H2'	1:a:229:G:C4	2.35	0.61
1:a:881:A:N3	1:a:934:A:O2'	2.33	0.61
1:a:938:G:H2'	1:a:939:A:H8	1.64	0.61
1:a:1044:C:H2'	1:a:1045:U:C2	2.36	0.61
1:a:1331:G:N1	1:a:1334:A:OP2	2.32	0.61
5:f:12:ILE:HB	5:f:91:ILE:HB	1.81	0.61
9:j:8:ILE:HG22	9:j:100:ILE:HA	1.83	0.61
20:A:523:A:O2'	38:V:54:GLY:O	2.17	0.61
20:A:909:U:O2	20:A:953:C:O2'	2.13	0.61
18:s:80:TYR:O	18:s:81:ARG:HB2	2.00	0.61
20:A:653:G:H3'	20:A:654:A:H5''	1.83	0.61
20:A:885:U:H2'	20:A:886:U:H4'	1.81	0.61
20:A:903:G:O6	20:A:956:C:N3	2.34	0.61
20:A:2300:A:H4'	20:A:2301:A:O4'	2.00	0.61
1:a:1448:A:H2'	1:a:1449:A:C8	2.35	0.61
9:j:71:LYS:O	9:j:72:ARG:NE	2.33	0.61
20:A:359:A:OP1	24:E:168:ARG:NH1	2.34	0.61
20:A:369:A:O2'	20:A:371:C:OP2	2.18	0.61
30:N:130:LYS:HG2	30:N:131:ILE:H	1.64	0.61
2:c:22:TRP:HB3	2:c:58:ARG:HB2	1.83	0.61
8:i:42:ALA:HB1	8:i:44:LEU:HG	1.82	0.61
20:A:83:G:N2	20:A:103:A:OP2	2.33	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:1377:U:OP2	20:A:1430:U:O2'	2.18	0.61
20:A:2644:G:H2'	20:A:2645:G:H8	1.65	0.61
21:B:76:A:OP1	39:W:22:ARG:NH1	2.31	0.61
1:a:214:U:O2'	1:a:215:G:O4'	2.19	0.60
1:a:1363:U:H2'	1:a:1364:A:H8	1.66	0.60
20:A:682:A:N1	20:A:2383:A:O2'	2.33	0.60
23:D:110:VAL:HG12	23:D:202:ILE:HG12	1.82	0.60
38:V:69:MET:HE2	38:V:78:ALA:HB1	1.83	0.60
1:a:761:G:H2'	1:a:762:U:H6	1.65	0.60
3:d:50:GLN:NE2	3:d:197:GLU:OE1	2.34	0.60
9:j:42:LEU:HB2	9:j:71:LYS:HB2	1.83	0.60
20:A:509:G:O6	47:4:39:ARG:NH2	2.34	0.60
20:A:872:G:H2'	20:A:873:C:C6	2.35	0.60
20:A:890:A:H2'	20:A:891:A:C8	2.36	0.60
20:A:1535:U:O2'	20:A:1536:A:OP1	2.19	0.60
20:A:2139:G:N2	20:A:2176:G:O2'	2.34	0.60
20:A:2640:C:H2'	20:A:2641:G:C8	2.35	0.60
47:4:24:THR:HG1	47:4:26:ASN:H	1.49	0.60
1:a:477:U:H2'	1:a:478:A:H8	1.63	0.60
24:E:58:ARG:O	24:E:79:ARG:NH1	2.33	0.60
26:G:12:PRO:HD2	26:G:15:VAL:HG21	1.84	0.60
1:a:1450:G:H2'	1:a:1451:U:C6	2.37	0.60
1:a:1508:A:H2'	1:a:1509:A:C8	2.36	0.60
20:A:29:A:O2'	34:R:11:ARG:NH2	2.34	0.60
20:A:2856:A:H62	20:A:2882:G:N2	2.00	0.60
22:C:30:GLU:OE2	22:C:101:LYS:NZ	2.32	0.60
27:K:71:THR:O	27:K:71:THR:OG1	2.20	0.60
41:Y:22:MET:N	41:Y:22:MET:SD	2.75	0.60
42:Z:10:THR:OG1	42:Z:13:GLU:OE1	2.16	0.60
1:a:1315:G:H4'	1:a:1316:U:H5'	1.83	0.60
20:A:1119:C:H2'	20:A:1120:A:H8	1.67	0.60
23:D:92:GLU:HB3	23:D:95:LYS:HG3	1.83	0.60
1:a:1054:A:H2'	1:a:1055:A:C8	2.37	0.60
1:a:1339:C:OP2	12:m:98:ARG:NH1	2.34	0.60
20:A:6:A:H2'	20:A:7:A:C8	2.36	0.60
20:A:179:A:O3'	20:A:180:G:H8	1.84	0.60
20:A:2501:G:H2'	20:A:2502:A:C8	2.33	0.60
23:D:89:GLY:O	23:D:91:TYR:N	2.34	0.60
30:N:17:MET:HG2	30:N:72:LYS:NZ	2.17	0.60
3:d:78:ILE:HG22	3:d:80:GLU:H	1.66	0.60
20:A:716:A:H8	20:A:2457:U:H1'	1.67	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:1446:G:H2'	20:A:1447:U:C6	2.37	0.60
20:A:1707:A:H61	20:A:2010:C:N4	2.00	0.60
20:A:2557:G:H2'	20:A:2558:G:C8	2.37	0.60
22:C:205:ILE:HG23	22:C:210:ARG:HD3	1.82	0.60
31:O:24:LEU:HB2	31:O:30:ILE:HD12	1.82	0.60
49:6:20:LYS:O	49:6:22:ARG:N	2.33	0.60
1:a:962:A:H2'	1:a:963:G:C8	2.36	0.60
20:A:435:C:H2'	20:A:436:G:H8	1.67	0.60
1:a:743:A:H2'	1:a:744:A:C8	2.36	0.60
1:a:1038:C:O2'	1:a:1039:U:O5'	2.15	0.60
20:A:213:U:OP1	47:4:29:ARG:NH2	2.31	0.60
22:C:60:ARG:NH2	22:C:85:PRO:O	2.31	0.60
43:0:6:ILE:HA	43:0:56:VAL:HG22	1.84	0.60
1:a:100:A:H2'	1:a:101:A:H8	1.67	0.60
1:a:729:G:H2'	1:a:730:A:H8	1.67	0.60
2:c:25:GLU:HG2	2:c:26:LYS:HG3	1.83	0.60
15:p:11:GLY:HA3	15:p:16:PRO:HA	1.83	0.60
20:A:570:A:OP1	20:A:598:G:N2	2.34	0.60
20:A:2520:U:O4	20:A:2597:G:O6	2.20	0.60
23:D:145:SER:OG	23:D:146:MET:N	2.33	0.60
38:V:94:SER:OG	38:V:95:LYS:O	2.18	0.60
43:0:18:ASN:O	43:0:22:THR:OG1	2.13	0.60
1:a:1505:G:H2'	1:a:1506:U:H6	1.67	0.59
3:d:13:ARG:HG3	3:d:29:ARG:HA	1.84	0.59
5:f:71:PRO:HG2	5:f:74:ALA:HB2	1.84	0.59
6:g:87:VAL:HA	6:g:152:ALA:HB1	1.83	0.59
20:A:572:G:H2'	20:A:573:U:C6	2.37	0.59
20:A:726:U:O4	47:4:12:ARG:NE	2.35	0.59
20:A:1389:A:H2'	20:A:1390:A:C8	2.37	0.59
20:A:2502:A:H2'	20:A:2503:G:C8	2.37	0.59
43:0:30:LYS:O	43:0:33:SER:OG	2.15	0.59
18:s:33:THR:OG1	18:s:34:TRP:N	2.33	0.59
32:P:19:ARG:NH2	32:P:30:ARG:HH12	2.00	0.59
33:Q:11:GLU:N	33:Q:11:GLU:OE2	2.34	0.59
1:a:1457:A:O2'	33:Q:114:ARG:NH1	2.35	0.59
9:j:53:ARG:HB2	9:j:63:GLU:HB2	1.82	0.59
14:o:24:SER:O	14:o:26:GLU:N	2.35	0.59
20:A:161:G:H2'	20:A:162:A:N3	2.16	0.59
1:a:1001:C:C2	1:a:1236:G:N2	2.71	0.59
1:a:1137:U:H2'	1:a:1138:U:C6	2.37	0.59
20:A:295:G:H2'	20:A:296:G:C8	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:2868:G:N2	20:A:2871:A:OP2	2.33	0.59
29:M:92:THR:O	29:M:96:LEU:HB3	2.02	0.59
37:U:24:LYS:HG2	37:U:81:THR:HG22	1.84	0.59
11:l:123:ARG:NH2	11:l:126:SER:OG	2.27	0.59
20:A:1190:U:N3	20:A:1191:A:N7	2.50	0.59
20:A:1499:G:H22	20:A:2716:G:H22	1.49	0.59
20:A:1725:A:H2'	20:A:1726:C:C6	2.38	0.59
20:A:2246:C:OP2	41:Y:27:ARG:NH2	2.33	0.59
27:K:8:LYS:N	27:K:11:GLU:OE2	2.22	0.59
33:Q:15:THR:O	33:Q:15:THR:OG1	2.19	0.59
1:a:352:G:H2'	1:a:353:A:H8	1.68	0.59
18:s:51:VAL:O	18:s:58:VAL:N	2.35	0.59
20:A:603:U:H5''	29:M:29:LYS:HE3	1.85	0.59
20:A:1980:A:N3	20:A:2606:G:O2'	2.36	0.59
20:A:2906:C:H2'	20:A:2907:U:C6	2.38	0.59
37:U:53:VAL:HG13	37:U:80:VAL:HG13	1.83	0.59
38:V:34:ILE:HG12	38:V:62:PRO:HA	1.83	0.59
41:Y:8:THR:OG1	41:Y:9:GLY:N	2.34	0.59
1:a:32:G:H2'	1:a:33:C:H6	1.67	0.59
1:a:490:U:H2'	1:a:491:C:C6	2.38	0.59
1:a:743:A:H2'	1:a:744:A:H8	1.67	0.59
2:c:101:ASN:OD1	2:c:102:ILE:N	2.35	0.59
5:f:11:TYR:CE1	5:f:64:HIS:HB3	2.37	0.59
20:A:1124:A:N6	20:A:1145:U:O2'	2.32	0.59
1:a:750:C:H2'	1:a:751:U:H6	1.68	0.59
20:A:641:G:C6	20:A:664:G:N1	2.70	0.59
20:A:653:G:N1	20:A:655:G:OP2	2.35	0.59
20:A:1337:A:N6	20:A:1669:G:O2'	2.35	0.59
1:a:1019:G:H3'	1:a:1042:C:H42	1.66	0.59
1:a:1460:U:H3	1:a:1473:G:H1	1.49	0.59
2:c:151:GLN:HB3	2:c:198:LYS:HG3	1.83	0.59
20:A:807:U:HO2'	20:A:808:G:H8	1.51	0.59
20:A:1203:G:OP1	35:S:24:LYS:NZ	2.29	0.59
20:A:1451:U:N3	20:A:1630:G:N7	2.51	0.59
20:A:1630:G:H1'	20:A:1631:A:C6	2.38	0.59
1:a:64:C:H2'	1:a:65:G:C8	2.38	0.59
20:A:1087:G:O2'	20:A:1088:A:O5'	2.21	0.59
20:A:2857:G:H2'	20:A:2858:U:C6	2.38	0.59
22:C:217:ARG:HG3	22:C:218:PRO:HD2	1.85	0.59
35:S:16:VAL:HG22	35:S:100:ILE:HG13	1.85	0.59
1:a:26:A:O2'	1:a:27:C:O2	2.17	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:980:A:O2'	9:j:57:LYS:NZ	2.25	0.58
2:c:62:ARG:HG2	2:c:97:ARG:HB2	1.84	0.58
20:A:1591:A:H3'	20:A:1591:A:N3	2.18	0.58
20:A:1640:G:OP2	37:U:39:LYS:NZ	2.35	0.58
20:A:2669:G:H22	20:A:2678:G:H2'	1.68	0.58
21:B:66:C:H2'	21:B:67:G:H8	1.66	0.58
22:C:173:LEU:HD23	22:C:183:MET:HB3	1.84	0.58
25:F:141:VAL:HG13	25:F:146:VAL:HG21	1.85	0.58
1:a:249:C:O3'	16:q:75:ARG:NH1	2.36	0.58
20:A:1009:G:H2'	20:A:1010:U:H6	1.67	0.58
20:A:1145:U:H3'	20:A:1146:A:O3'	2.03	0.58
20:A:2856:A:H62	20:A:2882:G:H21	1.51	0.58
22:C:20:ASP:N	22:C:20:ASP:OD1	2.33	0.58
26:G:71:ASN:O	26:G:75:MET:HG2	2.03	0.58
42:Z:34:THR:O	42:Z:36:GLN:NE2	2.36	0.58
44:1:35:VAL:HG13	44:1:41:ASN:HB3	1.85	0.58
1:a:515:G:H2'	1:a:516:C:C6	2.38	0.58
1:a:691:A:H2'	1:a:692:U:H6	1.69	0.58
1:a:1357:C:H2'	1:a:1358:G:C8	2.36	0.58
1:a:1465:U:H5''	1:a:1466:U:H5	1.67	0.58
12:m:102:THR:O	12:m:102:THR:OG1	2.22	0.58
20:A:246:U:P	48:5:8:ARG:HH22	2.26	0.58
20:A:873:C:H2'	20:A:874:U:C6	2.38	0.58
20:A:1374:G:H2'	20:A:1375:G:H8	1.69	0.58
20:A:1832:U:OP1	22:C:157:SER:OG	2.20	0.58
20:A:2069:C:H5'	20:A:2070:G:H5''	1.85	0.58
22:C:177:ASN:OD1	22:C:178:SER:N	2.31	0.58
1:a:440:A:H2'	1:a:441:U:C6	2.37	0.58
1:a:994:A:O2'	1:a:1337:C:O2	2.19	0.58
1:a:1150:U:H2'	1:a:1151:U:C6	2.38	0.58
20:A:283:G:N7	20:A:284:C:O2'	2.34	0.58
20:A:521:G:O2'	20:A:546:A:N6	2.31	0.58
20:A:712:C:C2	20:A:849:G:N2	2.71	0.58
20:A:1136:A:H2'	20:A:1137:U:C2	2.38	0.58
20:A:2135:G:H2'	20:A:2136:U:H6	1.68	0.58
1:a:716:U:O2	1:a:718:G:N1	2.37	0.58
19:t:5:GLU:OE1	19:t:6:SER:N	2.33	0.58
20:A:279:A:H2'	20:A:280:C:H6	1.67	0.58
20:A:836:U:OP1	24:E:62:ARG:NH1	2.36	0.58
20:A:1096:G:O2'	20:A:1141:U:O2	2.15	0.58
20:A:2156:A:H2'	20:A:2157:C:C6	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:M:73:ASP:OD1	29:M:73:ASP:N	2.29	0.58
1:a:441:U:OP2	3:d:28:ARG:NH2	2.36	0.58
1:a:679:G:H22	1:a:756:G:H1	1.52	0.58
1:a:1504:G:H2'	1:a:1505:G:C8	2.37	0.58
20:A:1256:G:OP1	34:R:22:LYS:NZ	2.36	0.58
22:C:69:ARG:O	22:C:189:ARG:NH1	2.37	0.58
26:G:43:MET:SD	26:G:44:ASN:N	2.67	0.58
28:L:63:VAL:HG12	28:L:64:ARG:HG2	1.85	0.58
44:1:75:ASN:C	44:1:79:GLY:HA3	2.29	0.58
1:a:961:G:C2	1:a:962:A:C8	2.92	0.58
4:e:102:GLY:N	4:e:122:ASP:OD2	2.37	0.58
16:q:67:THR:HG22	16:q:68:ARG:HG2	1.86	0.58
20:A:391:C:C2	20:A:392:A:C8	2.92	0.58
25:F:38:MET:HE2	25:F:53:ALA:HB1	1.86	0.58
1:a:1099:U:O2'	1:a:1118:A:OP2	2.21	0.58
8:i:98:LEU:O	8:i:102:GLY:N	2.36	0.58
20:A:781:G:H2'	20:A:782:U:C6	2.39	0.58
20:A:1541:C:H2'	20:A:1542:U:H6	1.69	0.58
20:A:1871:G:N2	20:A:1900:U:O4	2.37	0.58
3:d:2:SER:O	3:d:3:ARG:NH1	2.32	0.58
11:l:38:VAL:O	11:l:40:SER:N	2.37	0.58
20:A:891:A:H2'	20:A:892:U:C6	2.38	0.58
20:A:932:G:H2'	20:A:933:G:C8	2.39	0.58
20:A:2386:G:H2'	20:A:2387:A:H8	1.67	0.58
1:a:201:C:H5	16:q:4:GLU:HB2	1.68	0.58
1:a:727:A:H2'	1:a:728:G:C8	2.39	0.58
1:a:1043:C:N4	1:a:1052:A:N1	2.51	0.58
1:a:1089:U:C2	1:a:1090:G:C8	2.92	0.58
20:A:141:A:H2'	20:A:142:U:C6	2.39	0.58
20:A:1124:A:N7	20:A:1145:U:O2'	2.37	0.58
20:A:2810:U:O2'	20:A:2811:U:O4'	2.21	0.58
25:F:2:ASN:N	25:F:94:GLU:OE2	2.37	0.58
27:K:43:PRO:HB3	34:R:68:ALA:HB2	1.85	0.58
38:V:74:SER:OG	38:V:99:GLU:OE1	2.21	0.58
1:a:46:U:H3	1:a:377:G:H1'	1.67	0.57
1:a:640:G:H2'	1:a:641:G:H8	1.69	0.57
1:a:1255:U:O4	6:g:109:ARG:NH2	2.26	0.57
20:A:80:U:N3	20:A:81:G:N7	2.52	0.57
20:A:294:G:C2	20:A:295:G:C8	2.92	0.57
20:A:2712:U:H2'	20:A:2713:U:C6	2.38	0.57
1:a:733:A:C8	10:k:118:HIS:CG	2.92	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:738:U:O2'	1:a:739:G:OP1	2.20	0.57
1:a:924:A:H2'	1:a:925:A:H8	1.68	0.57
7:h:29:ALA:H	7:h:58:GLY:H	1.52	0.57
20:A:401:G:H2'	20:A:402:A:H8	1.68	0.57
20:A:573:U:H2'	20:A:574:C:C6	2.38	0.57
20:A:859:A:OP2	20:A:1225:G:N2	2.36	0.57
20:A:1450:U:HO2'	20:A:1630:G:H1	1.50	0.57
20:A:2907:U:H2'	20:A:2908:U:C6	2.39	0.57
25:F:12:VAL:HG21	25:F:173:LEU:HD21	1.84	0.57
1:a:1358:G:H2'	1:a:1359:C:C6	2.40	0.57
1:a:1397:C:O2'	6:g:79:ARG:NH1	2.38	0.57
6:g:79:ARG:HB2	6:g:82:GLY:HA2	1.86	0.57
11:l:39:ASN:N	11:l:39:ASN:OD1	2.35	0.57
11:l:103:LEU:HD23	11:l:104:PRO:HD2	1.86	0.57
14:o:74:ASP:OD1	14:o:75:ILE:N	2.37	0.57
20:A:1858:U:C2	20:A:1911:G:N2	2.71	0.57
20:A:2141:G:H2'	20:A:2142:C:C6	2.40	0.57
27:K:99:ARG:NH1	27:K:125:VAL:O	2.37	0.57
30:N:31:GLU:H	30:N:107:ALA:HB2	1.69	0.57
34:R:56:ASP:OD1	34:R:56:ASP:N	2.37	0.57
44:l:5:ILE:HG13	44:l:6:HIS:CE1	2.40	0.57
1:a:328:A:H2'	1:a:329:C:C6	2.40	0.57
1:a:1505:G:H2'	1:a:1506:U:C6	2.38	0.57
20:A:1147:G:O2'	20:A:1148:U:OP1	2.19	0.57
20:A:1802:C:H2'	20:A:1803:A:C8	2.36	0.57
21:B:57:G:H3'	21:B:58:C:H6	1.70	0.57
23:D:40:THR:HG1	23:D:43:THR:HG1	1.53	0.57
29:M:79:LEU:HD22	29:M:113:ALA:HA	1.87	0.57
33:Q:11:GLU:H	33:Q:11:GLU:CD	2.12	0.57
45:2:37:LYS:HE2	45:2:44:PRO:HD2	1.86	0.57
1:a:536:G:OP2	11:l:64:LYS:NZ	2.32	0.57
1:a:546:U:H4'	1:a:547:A:H5'	1.86	0.57
1:a:943:G:O2'	1:a:1519:A:N6	2.28	0.57
1:a:1363:U:O4	1:a:1389:A:N7	2.37	0.57
20:A:1515:C:H2'	20:A:1516:A:H8	1.70	0.57
20:A:2201:A:H2'	20:A:2202:U:C6	2.40	0.57
24:E:49:HIS:CD2	24:E:92:PRO:HB2	2.40	0.57
24:E:75:GLN:HE22	24:E:82:GLN:HE21	1.52	0.57
27:K:107:LYS:NZ	27:K:120:PHE:CD2	2.72	0.57
29:M:92:THR:C	29:M:94:VAL:H	2.13	0.57
1:a:419:G:OP1	3:d:116:ASN:ND2	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:k:26:THR:OG1	10:k:28:ASN:OD1	2.18	0.57
15:p:39:THR:OG1	15:p:40:TYR:N	2.38	0.57
20:A:922:G:N2	20:A:923:G:N7	2.49	0.57
20:A:1872:G:H2'	20:A:1897:G:H22	1.69	0.57
20:A:2290:G:C2	20:A:2291:G:C8	2.93	0.57
20:A:2674:A:H2'	20:A:2675:G:O4'	2.04	0.57
21:B:73:U:O2	39:W:30:ILE:HG12	2.05	0.57
26:G:80:SER:OG	26:G:81:GLU:OE1	2.23	0.57
1:a:1238:C:OP1	18:s:78:ARG:NH2	2.37	0.57
3:d:19:LEU:N	3:d:20:SER:HA	2.18	0.57
3:d:121:THR:OG1	3:d:122:VAL:N	2.35	0.57
20:A:1509:U:H4'	20:A:1592:G:H21	1.70	0.57
25:F:40:VAL:HG21	25:F:50:LEU:HG	1.85	0.57
1:a:966:U:H4'	1:a:987:G:N2	2.19	0.57
3:d:49:MET:O	3:d:52:THR:OG1	2.22	0.57
20:A:4:U:H2'	20:A:5:U:H6	1.69	0.57
20:A:194:A:H2'	20:A:195:C:C6	2.39	0.57
20:A:600:G:C6	20:A:2032:U:C2	2.93	0.57
20:A:1752:U:H2'	20:A:1753:G:C8	2.40	0.57
32:P:31:LEU:HD13	32:P:32:ASN:H	1.70	0.57
1:a:730:A:H2'	1:a:731:A:C8	2.40	0.57
1:a:839:U:H2'	1:a:840:G:H8	1.69	0.57
1:a:1442:C:H2'	1:a:1443:A:H8	1.67	0.57
9:j:6:ILE:HG23	9:j:76:ILE:HG13	1.86	0.57
20:A:645:A:H2'	20:A:646:A:C8	2.40	0.57
20:A:645:A:H2'	20:A:646:A:H8	1.70	0.57
20:A:1023:A:N6	20:A:1024:G:O6	2.38	0.57
24:E:157:GLU:HG2	24:E:158:ASN:H	1.70	0.57
31:O:21:THR:HG22	31:O:40:VAL:HG23	1.86	0.57
1:a:31:C:O2'	1:a:32:G:O5'	2.21	0.57
1:a:250:C:OP1	16:q:75:ARG:NH1	2.38	0.57
1:a:1539:G:H2'	1:a:1540:C:H6	1.69	0.57
20:A:1753:G:H2'	20:A:1754:A:H8	1.70	0.57
21:B:93:U:O4	39:W:16:SER:OG	2.18	0.57
22:C:230:HIS:HE1	22:C:232:HIS:CD2	2.23	0.57
46:3:6:THR:OG1	46:3:48:THR:OG1	2.22	0.57
1:a:391:G:H5''	15:p:6:ARG:HD2	1.86	0.56
1:a:538:A:N6	11:l:102:ASP:OD2	2.38	0.56
1:a:1118:A:H2'	1:a:1119:C:H6	1.69	0.56
14:o:89:ARG:HH11	20:A:754:U:H2'	1.69	0.56
20:A:281:A:H2'	20:A:282:A:C8	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:1633:A:O2'	20:A:1634:A:H5''	2.04	0.56
1:a:28:G:H3'	1:a:29:A:H5''	1.86	0.56
1:a:477:U:H2'	1:a:478:A:C8	2.40	0.56
1:a:1095:G:H2'	1:a:1096:A:C8	2.40	0.56
3:d:189:GLU:OE1	3:d:189:GLU:N	2.38	0.56
20:A:716:A:C8	20:A:2457:U:H1'	2.40	0.56
20:A:783:A:H2'	20:A:784:C:C6	2.40	0.56
20:A:829:A:H2	47:4:3:ARG:HH21	1.53	0.56
20:A:2341:A:H2'	20:A:2342:A:C8	2.40	0.56
24:E:10:ASP:OD1	24:E:10:ASP:N	2.37	0.56
24:E:59:GLY:HA2	24:E:79:ARG:HH11	1.70	0.56
30:N:10:ARG:NH2	30:N:11:ARG:HB2	2.18	0.56
44:1:14:PHE:HD2	44:1:24:LEU:HB2	1.69	0.56
1:a:160:A:N6	1:a:174:G:O6	2.39	0.56
1:a:202:A:N6	16:q:67:THR:HG23	2.20	0.56
1:a:1493:U:H2'	1:a:1494:A:H8	1.71	0.56
5:f:12:ILE:HG12	5:f:63:TYR:HE1	1.69	0.56
20:A:1147:G:P	20:A:1147:G:H8	2.28	0.56
20:A:1396:G:H22	20:A:2228:C:N4	2.01	0.56
20:A:1498:G:H2'	20:A:1499:G:C8	2.40	0.56
20:A:2004:C:H2'	20:A:2005:U:C6	2.40	0.56
20:A:2011:A:H5''	23:D:130:ARG:HH11	1.69	0.56
20:A:2483:A:OP1	30:N:57:TYR:OH	2.23	0.56
21:B:74:G:OP2	39:W:10:ARG:NH1	2.38	0.56
26:G:52:PHE:O	26:G:69:ARG:NH2	2.39	0.56
1:a:1020:A:H8	1:a:1042:C:C2	2.24	0.56
5:f:89:ASP:N	5:f:89:ASP:OD1	2.38	0.56
7:h:12:THR:HG22	7:h:15:ARG:HH21	1.70	0.56
11:l:68:VAL:HG11	11:l:95:LEU:HD11	1.87	0.56
15:p:40:TYR:CZ	15:p:42:PRO:HG3	2.41	0.56
20:A:189:A:H2'	20:A:190:G:H8	1.71	0.56
20:A:1113:A:H62	20:A:1114:G:H21	1.53	0.56
25:F:66:LEU:HD22	25:F:67:ILE:H	1.68	0.56
44:1:50:VAL:HG12	44:1:52:SER:H	1.70	0.56
1:a:352:G:H2'	1:a:353:A:C8	2.40	0.56
1:a:722:U:H2'	1:a:723:A:C8	2.38	0.56
4:e:6:PRO:HB2	4:e:8:HIS:CD2	2.40	0.56
5:f:18:ASP:OD1	5:f:18:ASP:N	2.38	0.56
20:A:570:A:H5''	20:A:571:A:C5	2.41	0.56
20:A:1242:G:H2'	20:A:1243:G:O4'	2.04	0.56
29:M:97:LYS:HD2	29:M:98:GLU:H	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:151:G:H21	1:a:183:G:H22	1.54	0.56
2:c:190:THR:HG22	2:c:191:THR:HG22	1.87	0.56
20:A:391:C:O2'	20:A:392:A:H8	1.89	0.56
20:A:1056:U:N3	20:A:1057:G:N7	2.54	0.56
20:A:2508:G:C2	20:A:2509:G:C8	2.94	0.56
27:K:45:PHE:HD1	27:K:46:THR:N	2.03	0.56
41:Y:19:SER:C	41:Y:21:ALA:H	2.13	0.56
45:2:14:ALA:O	45:2:17:ARG:N	2.39	0.56
18:s:50:ALA:HA	18:s:59:PRO:HA	1.86	0.56
20:A:302:A:H2'	20:A:303:G:C8	2.41	0.56
20:A:1394:G:O2'	20:A:1409:A:N6	2.39	0.56
20:A:1833:A:H61	22:C:276:LYS:NZ	2.04	0.56
1:a:771:C:H2'	1:a:772:U:H6	1.69	0.56
1:a:1020:A:C5	1:a:1041:U:H4'	2.40	0.56
2:c:45:LYS:HE3	2:c:86:LEU:HD21	1.86	0.56
20:A:1070:G:C6	20:A:1165:G:N2	2.74	0.56
20:A:1498:G:H2'	20:A:1499:G:H8	1.70	0.56
20:A:1835:A:H2'	20:A:1836:G:H8	1.70	0.56
20:A:2119:C:H2'	20:A:2120:A:C8	2.41	0.56
20:A:2909:A:H2'	20:A:2910:A:O4'	2.06	0.56
24:E:107:ARG:HG2	24:E:111:LYS:HE3	1.87	0.56
25:F:110:ARG:HH22	44:1:49:GLU:HB2	1.71	0.56
29:M:80:ASP:OD1	29:M:80:ASP:N	2.37	0.56
30:N:73:SER:OG	30:N:74:TYR:N	2.38	0.56
1:a:418:C:H5''	3:d:130:PRO:HD2	1.87	0.56
1:a:559:G:P	3:d:14:ARG:HH12	2.29	0.56
1:a:577:U:OP2	11:l:15:LYS:NZ	2.38	0.56
1:a:699:U:O2'	10:k:41:ALA:N	2.39	0.56
1:a:1080:G:O2'	1:a:1205:G:N2	2.39	0.56
20:A:441:A:H2'	20:A:442:A:H8	1.70	0.56
20:A:511:A:OP1	24:E:84:ARG:NH1	2.37	0.56
20:A:618:C:C2	20:A:1297:G:N2	2.74	0.56
20:A:931:C:H2'	20:A:932:G:C8	2.40	0.56
20:A:1385:A:N6	20:A:1641:C:H42	2.04	0.56
43:0:40:ASN:OD1	43:0:40:ASN:N	2.37	0.56
1:a:1362:G:N2	1:a:1389:A:OP2	2.38	0.56
1:a:1386:G:H2'	1:a:1387:U:H6	1.71	0.56
2:c:33:HIS:CD2	13:n:25:GLU:HG3	2.41	0.56
12:m:23:TYR:HE2	12:m:69:LEU:HB3	1.71	0.56
31:O:19:ASP:HA	31:O:67:ARG:HE	1.70	0.56
38:V:13:THR:OG1	38:V:67:ASN:OD1	2.24	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:3:22:ASN:OD1	46:3:25:ASN:N	2.37	0.56
1:a:567:U:H2'	1:a:568:G:H8	1.71	0.55
1:a:1079:C:C4	1:a:1080:G:C6	2.94	0.55
1:a:1170:A:H2'	1:a:1171:G:C8	2.41	0.55
1:a:1233:C:H2'	1:a:1234:U:C6	2.41	0.55
1:a:1305:G:P	6:g:35:LYS:HZ1	2.29	0.55
1:a:1315:G:H1'	1:a:1318:C:N4	2.20	0.55
3:d:190:ILE:HG13	3:d:191:ASP:H	1.70	0.55
20:A:133:U:H2'	20:A:134:A:C8	2.42	0.55
20:A:160:U:H2'	20:A:161:G:O4'	2.05	0.55
20:A:631:U:H2'	20:A:632:U:C6	2.40	0.55
20:A:853:U:H2'	20:A:854:C:C6	2.41	0.55
20:A:1574:C:H2'	20:A:1575:G:O4'	2.06	0.55
22:C:142:HIS:CD2	22:C:194:SER:HA	2.42	0.55
30:N:37:THR:OG1	30:N:128:LYS:O	2.20	0.55
36:T:7:SER:HA	36:T:112:VAL:O	2.06	0.55
1:a:1338:G:H2'	1:a:1339:C:C6	2.42	0.55
4:e:15:VAL:HA	4:e:37:VAL:HG22	1.88	0.55
7:h:29:ALA:H	7:h:58:GLY:HA2	1.69	0.55
7:h:79:ARG:NH2	7:h:81:SER:O	2.39	0.55
8:i:39:ILE:HG22	8:i:40:PRO:O	2.06	0.55
11:l:26:LYS:HG2	11:l:28:TYR:HD1	1.71	0.55
20:A:1109:A:O2'	20:A:1136:A:O5'	2.24	0.55
1:a:201:C:C5	16:q:4:GLU:HB2	2.41	0.55
1:a:1118:A:H2'	1:a:1119:C:C6	2.41	0.55
2:c:6:HIS:CE1	2:c:8:ILE:HG12	2.42	0.55
7:h:29:ALA:H	7:h:58:GLY:N	2.03	0.55
20:A:728:U:H2'	20:A:729:A:H8	1.72	0.55
20:A:1047:C:OP1	27:K:40:LYS:NZ	2.36	0.55
20:A:1459:C:H2'	20:A:1460:A:O4'	2.06	0.55
20:A:1634:A:H3'	20:A:1635:C:H6	1.72	0.55
20:A:1635:C:H2'	20:A:1636:A:C8	2.40	0.55
20:A:2218:C:OP1	22:C:147:LYS:NZ	2.39	0.55
20:A:2809:U:OP2	20:A:2810:U:N3	2.38	0.55
22:C:90:ASN:ND2	22:C:197:ASN:OD1	2.39	0.55
1:a:101:A:H2'	1:a:102:G:C8	2.41	0.55
1:a:481:A:H2'	1:a:482:A:H8	1.72	0.55
7:h:10:PHE:HD2	7:h:27:VAL:HG11	1.71	0.55
20:A:1039:U:N3	20:A:1195:A:N6	2.25	0.55
22:C:174:ILE:HD12	22:C:184:ILE:HD11	1.88	0.55
22:C:267:ASP:OD1	22:C:267:ASP:N	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:T:87:MET:N	36:T:87:MET:SD	2.79	0.55
1:a:729:G:H2'	1:a:730:A:C8	2.41	0.55
15:p:37:VAL:HG22	15:p:55:LEU:HD23	1.88	0.55
20:A:67:C:C2	20:A:68:A:C8	2.94	0.55
20:A:1039:U:C2	20:A:1195:A:N6	2.74	0.55
20:A:1406:C:H2'	20:A:1407:G:H8	1.71	0.55
20:A:1826:A:O2'	22:C:45:ASN:OD1	2.18	0.55
20:A:2359:G:OP2	46:3:34:LYS:NZ	2.29	0.55
23:D:9:LYS:HB2	23:D:200:ILE:HD11	1.89	0.55
23:D:19:SER:O	33:Q:80:ARG:NH2	2.35	0.55
31:O:23:ASP:C	31:O:25:ILE:H	2.15	0.55
1:a:447:A:H3'	1:a:448:A:C8	2.41	0.55
2:c:65:ILE:HG12	2:c:100:ILE:HG22	1.87	0.55
3:d:112:ARG:O	3:d:116:ASN:HB2	2.07	0.55
3:d:159:THR:HG22	3:d:162:ARG:HH22	1.71	0.55
15:p:35:GLU:OE2	15:p:59:TRP:NE1	2.36	0.55
20:A:310:G:C6	20:A:400:G:C6	2.94	0.55
20:A:441:A:H2'	20:A:442:A:C8	2.40	0.55
20:A:836:U:H2'	20:A:837:U:C6	2.42	0.55
20:A:1125:A:N7	20:A:1126:A:N6	2.55	0.55
20:A:1813:G:O5'	22:C:276:LYS:NZ	2.40	0.55
20:A:2209:U:H2'	20:A:2210:C:H6	1.71	0.55
20:A:2671:A:O2'	26:G:160:LYS:NZ	2.40	0.55
20:A:2696:G:C2	20:A:2697:C:C6	2.95	0.55
27:K:120:PHE:HE1	27:K:123:LEU:HD12	1.71	0.55
1:a:645:G:H2'	1:a:646:G:O4'	2.07	0.55
1:a:723:A:H4'	10:k:38:HIS:O	2.07	0.55
1:a:1017:U:H2'	1:a:1018:U:H4'	1.89	0.55
1:a:1018:U:C4	1:a:1019:G:H1'	2.42	0.55
3:d:50:GLN:HG2	3:d:194:LEU:HD22	1.88	0.55
3:d:112:ARG:O	3:d:116:ASN:CB	2.55	0.55
5:f:46:TRP:N	5:f:63:TYR:O	2.37	0.55
17:r:59:LEU:O	17:r:63:ILE:HG23	2.07	0.55
20:A:1389:A:H2'	20:A:1390:A:H8	1.71	0.55
20:A:2264:G:H21	20:A:2264:G:P	2.30	0.55
44:1:35:VAL:HA	44:1:41:ASN:HA	1.89	0.55
44:1:75:ASN:O	44:1:79:GLY:HA3	2.07	0.55
1:a:1271:U:H2'	1:a:1293:A:N7	2.21	0.55
16:q:11:TYR:HD2	16:q:47:TYR:HE2	1.55	0.55
17:r:46:ARG:O	17:r:50:GLY:N	2.40	0.55
20:A:759:C:H2'	20:A:760:G:H8	1.70	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:1040:A:H2'	20:A:1041:A:C8	2.42	0.55
20:A:1131:G:H2'	20:A:1132:C:C6	2.42	0.55
20:A:1240:A:H2'	20:A:1241:A:C8	2.42	0.55
20:A:2327:C:H2'	20:A:2328:A:C8	2.37	0.55
22:C:200:HIS:ND1	22:C:200:HIS:O	2.40	0.55
23:D:103:GLN:HG3	23:D:104:ALA:H	1.72	0.55
1:a:333:G:O6	1:a:351:A:N6	2.40	0.55
7:h:96:LYS:HB2	7:h:119:ARG:HH22	1.71	0.55
18:s:34:TRP:NE1	18:s:36:ARG:H	2.05	0.55
20:A:2097:G:H2'	20:A:2098:U:C6	2.42	0.55
20:A:2605:C:H2'	20:A:2606:G:H8	1.72	0.55
20:A:2870:G:H2'	20:A:2871:A:C8	2.42	0.55
16:q:63:LYS:HZ3	16:q:80:GLU:HB3	1.72	0.55
20:A:701:U:O2'	29:M:14:GLN:OE1	2.19	0.55
20:A:735:G:N1	20:A:808:G:C5	2.75	0.55
20:A:1137:U:O2'	20:A:1138:A:O4'	2.22	0.55
20:A:1571:G:H22	20:A:1591:A:H62	1.55	0.55
20:A:1857:C:H2'	20:A:1858:U:H6	1.72	0.55
22:C:38:LYS:HG2	22:C:39:ASN:N	2.21	0.55
24:E:179:ASP:N	24:E:179:ASP:OD1	2.39	0.55
30:N:6:ARG:HG2	30:N:7:VAL:H	1.72	0.55
41:Y:25:THR:OG1	41:Y:26:LYS:N	2.40	0.55
47:4:24:THR:OG1	47:4:25:LYS:N	2.35	0.55
1:a:993:A:N6	1:a:1239:U:O4'	2.40	0.54
1:a:1304:A:O3'	6:g:35:LYS:NZ	2.40	0.54
9:j:25:ILE:HD11	9:j:74:ILE:HD12	1.88	0.54
15:p:7:LEU:HD22	15:p:18:TYR:HB3	1.87	0.54
20:A:1594:U:H2'	20:A:1595:C:C6	2.42	0.54
20:A:2329:U:H2'	20:A:2330:U:H6	1.73	0.54
20:A:2393:G:H2'	20:A:2394:U:C6	2.41	0.54
20:A:2820:A:C4	20:A:2902:A:N6	2.75	0.54
21:B:49:G:H2'	21:B:50:A:C8	2.42	0.54
22:C:37:LEU:HD23	22:C:38:LYS:H	1.71	0.54
36:T:44:THR:HG23	45:2:24:ILE:HD12	1.89	0.54
1:a:771:C:H2'	1:a:772:U:C6	2.42	0.54
11:l:70:LEU:HD21	11:l:95:LEU:HD12	1.89	0.54
20:A:285:U:H4'	20:A:286:U:C4	2.42	0.54
20:A:782:U:H2'	20:A:783:A:H8	1.68	0.54
21:B:27:A:H2'	21:B:28:C:C6	2.38	0.54
27:K:107:LYS:CG	27:K:120:PHE:CE1	2.89	0.54
30:N:28:ALA:O	30:N:134:ARG:NH2	2.33	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:V:26:ALA:HA	38:V:33:VAL:HG22	1.87	0.54
39:W:31:VAL:HG11	39:W:41:ILE:HD12	1.90	0.54
39:W:51:ILE:HG23	39:W:55:HIS:CD2	2.42	0.54
44:1:33:GLU:HB2	44:1:44:PRO:HD2	1.90	0.54
1:a:614:C:H4'	7:h:124:GLY:HA3	1.90	0.54
20:A:1823:A:H2'	20:A:1824:A:C8	2.42	0.54
20:A:2204:A:H3'	20:A:2205:A:H8	1.73	0.54
20:A:2754:A:H2'	20:A:2755:A:C8	2.43	0.54
22:C:38:LYS:HG2	22:C:39:ASN:H	1.73	0.54
1:a:751:U:H2'	1:a:752:C:C6	2.40	0.54
1:a:1473:G:H2'	1:a:1474:C:C6	2.43	0.54
3:d:102:LEU:HD21	3:d:175:GLY:HA3	1.89	0.54
10:k:20:VAL:HG13	10:k:83:ASP:HB3	1.89	0.54
20:A:996:G:OP2	30:N:16:LYS:NZ	2.37	0.54
20:A:1793:U:C2	20:A:1797:A:N7	2.76	0.54
20:A:2156:A:H2'	20:A:2157:C:H6	1.73	0.54
20:A:2817:A:H2'	20:A:2818:G:H8	1.72	0.54
21:B:94:G:H2'	21:B:95:U:C6	2.42	0.54
32:P:40:ILE:H	32:P:58:ALA:HB2	1.71	0.54
33:Q:13:LEU:HD22	33:Q:77:HIS:CE1	2.42	0.54
1:a:631:G:H2'	1:a:632:G:H8	1.73	0.54
1:a:974:A:C6	18:s:55:ARG:HD3	2.41	0.54
3:d:98:VAL:O	3:d:102:LEU:N	2.34	0.54
6:g:50:ILE:HD13	6:g:124:ILE:HD11	1.89	0.54
20:A:1101:U:C5	20:A:1110:A:H4'	2.43	0.54
32:P:57:SER:CB	32:P:60:ASP:HB2	2.37	0.54
44:1:72:ASP:HA	44:1:75:ASN:HB2	1.90	0.54
1:a:481:A:H2'	1:a:482:A:C8	2.42	0.54
5:f:28:ARG:O	5:f:31:THR:OG1	2.20	0.54
5:f:83:LEU:HA	5:f:86:ILE:HG12	1.90	0.54
20:A:68:A:H1'	20:A:89:G:N2	2.22	0.54
20:A:172:U:H2'	20:A:173:G:H8	1.72	0.54
20:A:939:C:H2'	20:A:940:G:N7	2.23	0.54
20:A:2158:G:O2'	20:A:2161:A:N6	2.41	0.54
20:A:2707:A:N6	20:A:2731:G:O6	2.41	0.54
41:Y:40:ILE:HD12	41:Y:45:LYS:HG3	1.88	0.54
1:a:188:A:H1'	1:a:190:A:N7	2.23	0.54
1:a:195:A:H2'	1:a:196:U:C6	2.42	0.54
1:a:388:A:C2	1:a:389:A:C8	2.96	0.54
1:a:1320:G:O2'	1:a:1346:G:N2	2.34	0.54
1:a:1362:G:O6	8:i:12:ARG:NH1	2.28	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:h:54:ASP:OD1	7:h:55:ASP:N	2.38	0.54
20:A:814:A:O2'	20:A:815:G:OP2	2.25	0.54
20:A:921:G:H3'	20:A:934:G:H22	1.73	0.54
20:A:1488:G:O6	20:A:1508:G:O6	2.26	0.54
20:A:2702:G:N1	20:A:2734:U:OP2	2.32	0.54
44:1:13:VAL:HG22	44:1:22:LYS:HB3	1.90	0.54
1:a:750:C:H2'	1:a:751:U:C6	2.43	0.54
1:a:1323:U:OP2	12:m:96:PRO:HB3	2.08	0.54
13:n:47:LEU:HD23	13:n:50:LYS:HG3	1.90	0.54
24:E:153:LEU:HD22	24:E:154:VAL:H	1.72	0.54
48:5:24:ARG:HD2	48:5:50:VAL:HG22	1.90	0.54
20:A:1221:A:H2'	20:A:1222:G:C8	2.43	0.54
44:1:78:TYR:HA	44:1:81:LYS:HE2	1.90	0.54
1:a:492:C:H2'	1:a:493:C:C6	2.42	0.54
1:a:1335:C:N4	18:s:36:ARG:O	2.41	0.54
8:i:80:ARG:HA	8:i:83:ILE:HD12	1.89	0.54
11:l:4:ILE:HA	11:l:7:LEU:HD12	1.90	0.54
12:m:11:ARG:NH2	25:F:144:ASP:OD2	2.41	0.54
12:m:96:PRO:HG3	12:m:100:GLN:NE2	2.22	0.54
20:A:921:G:O6	20:A:938:C:N4	2.41	0.54
20:A:1502:G:H3'	20:A:1503:U:H5'	1.90	0.54
21:B:15:C:H2'	21:B:16:G:O4'	2.07	0.54
29:M:86:GLU:O	29:M:119:LYS:HD2	2.08	0.54
1:a:992:G:N7	1:a:1374:C:H1'	2.23	0.53
1:a:1287:U:H2'	1:a:1288:C:C6	2.42	0.53
20:A:616:A:H2'	20:A:617:C:H6	1.73	0.53
20:A:1603:C:OP2	20:A:1604:A:O2'	2.23	0.53
20:A:2444:A:O2'	20:A:2445:U:O5'	2.23	0.53
25:F:148:LYS:HD3	25:F:150:ARG:NE	2.24	0.53
48:5:17:THR:OG1	48:5:18:GLY:N	2.39	0.53
1:a:227:C:H3'	1:a:228:G:H4'	1.90	0.53
2:c:13:GLY:N	2:c:16:ARG:O	2.41	0.53
9:j:66:GLU:HB3	13:n:59:ALA:HB2	1.90	0.53
20:A:263:G:C6	20:A:264:G:N7	2.76	0.53
20:A:1721:A:H2'	20:A:1722:A:H8	1.73	0.53
22:C:197:ASN:OD1	22:C:197:ASN:N	2.40	0.53
1:a:30:A:H2'	1:a:31:C:C6	2.43	0.53
1:a:99:A:H2'	1:a:100:A:C8	2.44	0.53
1:a:384:C:H2'	1:a:385:G:H8	1.72	0.53
5:f:22:LYS:NZ	5:f:45:ASP:OD2	2.34	0.53
20:A:1093:U:O4	20:A:1147:G:C8	2.61	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:1335:G:N2	20:A:1683:A:N7	2.57	0.53
20:A:1454:U:N3	20:A:1456:G:C6	2.68	0.53
22:C:84:ASP:HB2	22:C:91:ILE:HD13	1.89	0.53
30:N:31:GLU:N	30:N:107:ALA:HB2	2.24	0.53
31:O:89:LEU:HD23	31:O:93:LEU:HD12	1.90	0.53
1:a:406:C:C4	1:a:407:G:N7	2.76	0.53
1:a:1539:G:H2'	1:a:1540:C:C6	2.44	0.53
20:A:259:A:H2'	20:A:260:A:C8	2.43	0.53
20:A:1460:A:H1'	20:A:1626:G:N2	2.24	0.53
20:A:1576:A:H2'	20:A:1577:A:N7	2.23	0.53
22:C:158:ALA:HB1	22:C:197:ASN:O	2.09	0.53
28:L:17:ARG:HD2	28:L:47:THR:HG23	1.90	0.53
38:V:94:SER:HB3	38:V:99:GLU:HB2	1.89	0.53
1:a:503:U:H2'	1:a:504:C:C6	2.43	0.53
1:a:529:C:C2	1:a:530:G:C8	2.96	0.53
1:a:759:C:H2'	1:a:760:U:C6	2.44	0.53
8:i:39:ILE:HG23	8:i:42:ALA:HB3	1.91	0.53
20:A:281:A:H2'	20:A:282:A:H8	1.74	0.53
20:A:357:A:H4'	20:A:359:A:N7	2.23	0.53
20:A:854:C:C2	20:A:855:U:C5	2.97	0.53
20:A:2711:G:H2'	20:A:2712:U:C6	2.43	0.53
35:S:5:ILE:HD12	35:S:14:VAL:HG21	1.90	0.53
35:S:11:GLN:N	35:S:11:GLN:HE21	2.06	0.53
44:1:66:GLN:HA	44:1:67:ALA:HB3	1.91	0.53
45:2:30:CYS:SG	45:2:31:SER:N	2.81	0.53
1:a:37:C:H2'	1:a:38:G:H8	1.73	0.53
1:a:159:C:H2'	1:a:160:A:H8	1.72	0.53
1:a:833:G:O2'	1:a:835:U:OP2	2.26	0.53
1:a:1047:C:H1'	1:a:1048:G:C6	2.43	0.53
1:a:1122:G:H2'	1:a:1123:C:C6	2.43	0.53
7:h:21:LYS:HG2	7:h:66:TYR:HE2	1.73	0.53
12:m:101:ASN:N	12:m:101:ASN:OD1	2.42	0.53
17:r:17:ILE:HG21	17:r:36:PHE:HE1	1.72	0.53
20:A:1017:G:C6	20:A:1018:G:N7	2.77	0.53
20:A:1094:A:H2'	20:A:1141:U:C4	2.44	0.53
20:A:1857:C:H2'	20:A:1858:U:C6	2.44	0.53
20:A:2119:C:C2	20:A:2120:A:C8	2.96	0.53
20:A:2301:A:C8	20:A:2303:G:C8	2.97	0.53
38:V:72:ASP:CB	38:V:76:GLY:H	2.19	0.53
1:a:515:G:H2'	1:a:516:C:H6	1.73	0.53
1:a:807:A:O2'	1:a:809:A:N7	2.36	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:1305:G:H5'	6:g:35:LYS:HZ2	1.74	0.53
20:A:620:G:H2'	20:A:621:C:C6	2.44	0.53
20:A:655:G:O2'	20:A:656:A:OP2	2.20	0.53
20:A:1068:A:H2'	20:A:1069:A:C8	2.44	0.53
20:A:1767:G:N2	20:A:1770:G:N3	2.57	0.53
20:A:2107:G:O6	20:A:2108:A:N6	2.42	0.53
20:A:2355:G:H2'	20:A:2356:C:C6	2.44	0.53
20:A:2464:A:H62	20:A:2515:C:N4	1.86	0.53
21:B:42:G:OP1	44:1:1:MET:N	2.41	0.53
23:D:39:LYS:O	23:D:47:GLU:HA	2.08	0.53
24:E:22:GLU:HG3	24:E:23:ILE:HG13	1.91	0.53
36:T:36:ASP:OD1	36:T:36:ASP:N	2.42	0.53
1:a:590:G:O2'	1:a:836:G:H5'	2.09	0.53
1:a:616:G:C5	1:a:653:G:C6	2.97	0.53
1:a:955:G:O3'	6:g:102:ARG:NH2	2.41	0.53
1:a:1311:C:P	12:m:44:ARG:HH21	2.32	0.53
8:i:25:THR:C	8:i:60:ALA:HB1	2.34	0.53
20:A:676:A:OP1	29:M:113:ALA:HB3	2.09	0.53
20:A:1087:G:HO2'	20:A:1088:A:P	2.31	0.53
20:A:1113:A:H62	20:A:1114:G:N2	2.06	0.53
20:A:1132:C:H2'	20:A:1133:G:C8	2.44	0.53
20:A:2236:G:H2'	20:A:2237:A:C8	2.44	0.53
20:A:2306:U:H2'	20:A:2307:C:H6	1.73	0.53
20:A:2817:A:H2'	20:A:2818:G:C8	2.44	0.53
21:B:84:G:C5	21:B:85:U:C4	2.96	0.53
23:D:61:SER:OG	23:D:62:ASN:N	2.42	0.53
23:D:137:SER:OG	23:D:138:ARG:N	2.40	0.53
29:M:95:VAL:O	29:M:98:GLU:HB2	2.09	0.53
38:V:66:SER:O	38:V:66:SER:OG	2.14	0.53
1:a:960:G:N1	1:a:1353:G:OP2	2.42	0.53
7:h:21:LYS:HE3	7:h:72:ARG:NE	2.24	0.53
11:l:79:TYR:HB3	11:l:109:HIS:HB3	1.91	0.53
20:A:491:U:C2	20:A:493:A:N7	2.77	0.53
20:A:591:U:H2'	20:A:592:G:C8	2.44	0.53
20:A:1288:A:OP1	34:R:13:ARG:NH2	2.41	0.53
26:G:159:GLY:HA3	26:G:171:ARG:HH21	1.73	0.53
31:O:47:MET:HE1	31:O:62:ALA:HA	1.91	0.53
41:Y:16:ASN:N	41:Y:16:ASN:OD1	2.42	0.53
44:1:76:LYS:HG3	44:1:80:LEU:HG	1.91	0.53
1:a:215:G:OP1	19:t:55:LYS:NZ	2.30	0.53
1:a:1447:G:O2'	1:a:1448:A:OP2	2.26	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:h:29:ALA:H	7:h:58:GLY:CA	2.22	0.53
12:m:81:MET:HA	12:m:88:GLY:HA3	1.91	0.53
20:A:469:A:H2'	20:A:470:A:C8	2.43	0.53
20:A:804:A:H5''	22:C:209:GLY:HA3	1.90	0.53
20:A:1767:G:N2	20:A:1770:G:OP2	2.42	0.53
20:A:2183:G:OP1	20:A:2183:G:N2	2.41	0.53
20:A:2535:C:C2	20:A:2559:G:N2	2.77	0.53
26:G:103:LEU:HD11	26:G:123:PHE:CE1	2.43	0.53
37:U:33:ALA:O	37:U:76:ARG:NH1	2.40	0.53
1:a:360:C:O2	1:a:361:G:N2	2.42	0.52
1:a:689:G:H2'	1:a:690:A:H8	1.75	0.52
2:c:205:GLU:OE1	2:c:205:GLU:N	2.36	0.52
6:g:70:MET:HB3	6:g:96:ARG:HG2	1.90	0.52
20:A:1105:U:O2'	20:A:1113:A:N6	2.42	0.52
20:A:1425:G:H2'	20:A:1426:U:H6	1.74	0.52
20:A:1634:A:H3'	20:A:1635:C:C6	2.44	0.52
20:A:2321:G:N1	20:A:2325:A:N7	2.56	0.52
20:A:2545:A:H62	26:G:177:GLY:HA2	1.74	0.52
22:C:142:HIS:CE1	22:C:155:ILE:HG21	2.45	0.52
26:G:42:LYS:HG2	26:G:55:PRO:HD3	1.91	0.52
34:R:77:SER:OG	34:R:78:LYS:N	2.41	0.52
43:O:17:GLN:OE1	43:O:17:GLN:N	2.41	0.52
1:a:1262:U:O2	1:a:1305:G:O6	2.28	0.52
2:c:134:LYS:HD3	2:c:137:ILE:HD11	1.89	0.52
11:l:87:LEU:HD21	11:l:117:THR:HB	1.90	0.52
18:s:22:GLN:HE21	18:s:27:LYS:HA	1.74	0.52
20:A:527:C:H2'	20:A:528:G:O4'	2.10	0.52
20:A:920:G:H2'	20:A:921:G:C8	2.44	0.52
20:A:993:A:C2	20:A:994:G:C8	2.96	0.52
20:A:1146:A:C2	20:A:1147:G:H5''	2.43	0.52
20:A:1756:U:O2'	20:A:1760:G:N2	2.43	0.52
20:A:2137:A:H2'	20:A:2138:G:C8	2.44	0.52
20:A:2140:A:C6	20:A:2177:C:H4'	2.44	0.52
22:C:142:HIS:NE2	22:C:161:SER:HA	2.23	0.52
34:R:52:GLN:HG2	34:R:55:ARG:HD2	1.92	0.52
4:e:38:VAL:HA	4:e:48:PHE:HA	1.92	0.52
6:g:29:ARG:HH12	6:g:102:ARG:HH21	1.56	0.52
13:n:27:CYS:SG	13:n:29:ARG:HG3	2.50	0.52
20:A:539:G:N1	20:A:542:A:OP2	2.41	0.52
20:A:622:G:H8	20:A:622:G:O5'	1.92	0.52
20:A:2150:A:N6	20:A:2170:G:H1	2.08	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:2162:G:H2'	20:A:2163:U:C6	2.44	0.52
20:A:2816:A:H2'	20:A:2817:A:H8	1.74	0.52
21:B:16:G:H2'	21:B:17:A:H8	1.73	0.52
26:G:37:PHE:HB3	26:G:41:ILE:HD12	1.91	0.52
29:M:101:ILE:HG22	29:M:102:VAL:HG23	1.91	0.52
39:W:55:HIS:HB3	39:W:59:THR:HG21	1.92	0.52
1:a:1054:A:C6	1:a:1055:A:C6	2.98	0.52
1:a:1142:U:N3	1:a:1295:A:OP1	2.39	0.52
15:p:19:ARG:HA	15:p:39:THR:HA	1.91	0.52
18:s:55:ARG:HG2	18:s:56:LYS:HG2	1.91	0.52
20:A:176:U:H2'	20:A:177:A:C8	2.45	0.52
20:A:1834:U:H3	22:C:159:GLY:HA3	1.74	0.52
20:A:2387:A:H2'	20:A:2388:C:C6	2.44	0.52
20:A:2688:G:H2'	20:A:2689:A:C8	2.44	0.52
20:A:2857:G:H2'	20:A:2858:U:H6	1.72	0.52
1:a:338:U:H2'	1:a:339:G:O4'	2.09	0.52
1:a:1462:A:OP1	1:a:1463:C:N4	2.37	0.52
2:c:179:ALA:HB1	2:c:181:ILE:HG23	1.90	0.52
12:m:95:LEU:HD22	12:m:96:PRO:HD3	1.91	0.52
16:q:21:ASP:N	16:q:21:ASP:OD1	2.40	0.52
20:A:1235:G:C2	20:A:1236:U:C5	2.98	0.52
20:A:1631:A:C5	20:A:1632:A:N1	2.78	0.52
20:A:2307:C:H5'	32:P:95:ARG:HH12	1.74	0.52
20:A:2657:G:C4	20:A:2658:A:C8	2.97	0.52
20:A:2700:G:H2'	20:A:2701:U:C6	2.45	0.52
25:F:140:GLU:N	25:F:140:GLU:OE2	2.41	0.52
25:F:152:MET:N	25:F:152:MET:SD	2.83	0.52
32:P:46:ASP:OD1	32:P:47:ASP:N	2.42	0.52
40:X:55:TYR:HD2	40:X:81:LYS:HE2	1.73	0.52
1:a:482:A:H2'	1:a:483:C:C6	2.44	0.52
1:a:1348:A:H2'	1:a:1349:G:O4'	2.09	0.52
1:a:1528:U:H2'	1:a:1529:A:C8	2.44	0.52
3:d:105:ALA:HB1	3:d:110:GLN:HB3	1.92	0.52
11:l:28:TYR:N	11:l:34:THR:O	2.42	0.52
18:s:20:GLU:HG2	18:s:23:GLN:HE21	1.74	0.52
20:A:1045:C:C2	20:A:1046:C:C5	2.97	0.52
20:A:2042:U:H2'	20:A:2043:G:C8	2.44	0.52
29:M:14:GLN:OE1	29:M:14:GLN:N	2.40	0.52
32:P:25:THR:OG1	32:P:47:ASP:N	2.42	0.52
48:5:38:LYS:HA	48:5:41:ARG:HG2	1.90	0.52
1:a:998:U:H4'	1:a:999:A:C8	2.43	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:1236:G:C2	1:a:1237:G:C8	2.98	0.52
2:c:20:ALA:HB1	2:c:22:TRP:HE1	1.73	0.52
3:d:9:TRP:CZ2	3:d:25:GLU:HG2	2.45	0.52
4:e:72:VAL:HG12	4:e:73:GLU:H	1.74	0.52
10:k:38:HIS:HB2	10:k:39:GLY:HA2	1.91	0.52
20:A:577:A:H2'	20:A:578:G:O4'	2.10	0.52
20:A:1131:G:N2	20:A:1142:C:H41	2.07	0.52
21:B:21:G:O2'	21:B:22:G:H5'	2.09	0.52
35:S:1:MET:HE3	35:S:2:TYR:H	1.75	0.52
37:U:47:ASP:OD1	37:U:47:ASP:N	2.42	0.52
38:V:31:ASP:N	38:V:31:ASP:OD1	2.39	0.52
46:3:19:THR:OG1	46:3:20:ASN:N	2.42	0.52
48:5:4:GLN:HE22	48:5:60:GLN:HE21	1.58	0.52
1:a:891:C:C4	1:a:892:A:N7	2.77	0.52
1:a:962:A:H2'	1:a:963:G:H8	1.75	0.52
6:g:107:TYR:CE1	6:g:133:ALA:HB3	2.44	0.52
7:h:107:SER:O	7:h:107:SER:OG	2.28	0.52
16:q:14:ARG:HB3	16:q:61:ILE:HG12	1.91	0.52
20:A:1334:C:C2	20:A:1686:G:N2	2.78	0.52
20:A:2114:U:H2'	20:A:2115:G:C8	2.45	0.52
44:1:2:LYS:HD2	44:1:5:ILE:HD11	1.92	0.52
1:a:483:C:HO2'	1:a:484:U:P	2.31	0.52
5:f:67:ASN:OD1	5:f:67:ASN:N	2.41	0.52
20:A:182:U:O3'	20:A:183:A:H3'	2.10	0.52
20:A:654:A:H1'	20:A:655:G:H2'	1.92	0.52
20:A:874:U:C2	20:A:875:A:C8	2.98	0.52
22:C:134:ASN:N	22:C:134:ASN:OD1	2.42	0.52
32:P:67:THR:O	32:P:67:THR:OG1	2.20	0.52
37:U:48:VAL:HG12	37:U:49:LYS:H	1.75	0.52
39:W:8:LYS:O	39:W:41:ILE:HG12	2.10	0.52
1:a:1149:A:C6	1:a:1150:U:N3	2.78	0.52
1:a:1238:C:O5'	1:a:1239:U:H5''	2.10	0.52
1:a:1510:G:H2'	1:a:1511:U:C6	2.44	0.52
16:q:6:ASN:CG	16:q:7:GLN:H	2.18	0.52
20:A:357:A:H4'	20:A:359:A:C8	2.44	0.52
20:A:1216:G:H3'	20:A:1217:G:H5''	1.92	0.52
20:A:2208:C:H2'	20:A:2209:U:C6	2.45	0.52
20:A:2233:U:N3	20:A:2234:G:N7	2.57	0.52
20:A:2492:A:C8	20:A:2543:G:C5	2.98	0.52
21:B:1:U:H3	21:B:115:G:N2	2.08	0.52
33:Q:34:GLU:OE2	33:Q:39:ARG:NH2	2.41	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:X:75:VAL:O	40:X:90:VAL:HA	2.10	0.52
44:1:23:PHE:HD2	44:1:24:LEU:HG	1.75	0.52
1:a:891:C:N4	1:a:892:A:N7	2.57	0.51
1:a:1295:A:O2'	1:a:1296:U:H5'	2.10	0.51
2:c:14:ILE:HG22	2:c:15:ILE:HG22	1.91	0.51
12:m:14:ARG:HD2	12:m:41:GLU:HB3	1.91	0.51
20:A:359:A:H5'	20:A:377:A:H1'	1.91	0.51
20:A:854:C:H2'	20:A:855:U:H6	1.75	0.51
20:A:1144:C:H2'	20:A:1145:U:C6	2.45	0.51
20:A:1233:G:C2	20:A:1234:C:C5	2.98	0.51
20:A:1437:G:H2'	20:A:1438:U:C6	2.45	0.51
20:A:1816:A:H2'	20:A:1817:A:C8	2.45	0.51
20:A:2240:C:H2'	20:A:2241:A:O4'	2.10	0.51
20:A:2261:A:H2'	20:A:2262:C:H6	1.75	0.51
21:B:56:A:C4	21:B:57:G:C8	2.98	0.51
22:C:108:LYS:HB2	22:C:195:VAL:O	2.10	0.51
24:E:5:ALA:HA	24:E:16:GLU:HG2	1.91	0.51
1:a:352:G:C2	1:a:353:A:C5	2.97	0.51
1:a:477:U:C2'	1:a:478:A:H8	2.23	0.51
1:a:534:C:H2'	1:a:535:A:O4'	2.10	0.51
1:a:1035:G:O6	1:a:1036:A:N6	2.42	0.51
3:d:21:GLY:C	3:d:23:GLY:H	2.17	0.51
20:A:1099:G:C8	20:A:1100:U:H2'	2.46	0.51
20:A:1875:G:H2'	20:A:1876:G:H8	1.76	0.51
20:A:2061:C:H2'	20:A:2062:G:H8	1.76	0.51
20:A:2085:A:H2'	20:A:2086:G:C8	2.43	0.51
20:A:2526:C:H2'	20:A:2527:G:O4'	2.10	0.51
29:M:55:THR:O	29:M:60:ARG:NH1	2.43	0.51
32:P:69:THR:HA	32:P:72:ALA:HB3	1.92	0.51
40:X:76:VAL:C	40:X:77:ARG:HG2	2.35	0.51
44:1:11:PRO:HA	44:1:25:SER:HB2	1.93	0.51
44:1:33:GLU:HB2	44:1:44:PRO:CD	2.40	0.51
1:a:150:G:H2'	1:a:151:G:O4'	2.10	0.51
1:a:377:G:N2	1:a:380:U:OP2	2.43	0.51
1:a:570:C:H2'	1:a:571:C:C6	2.45	0.51
1:a:1172:A:C2	1:a:1196:G:C4	2.98	0.51
1:a:1248:G:OP1	8:i:119:LYS:NZ	2.43	0.51
6:g:107:TYR:OH	6:g:133:ALA:N	2.42	0.51
9:j:35:ASP:N	9:j:35:ASP:OD1	2.43	0.51
20:A:67:C:H2'	20:A:68:A:H8	1.75	0.51
20:A:390:A:C6	20:A:391:C:N4	2.79	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:654:A:O2'	20:A:655:G:OP2	2.22	0.51
20:A:1043:G:N2	20:A:1193:C:C2	2.78	0.51
20:A:1808:U:H2'	20:A:1809:C:H6	1.75	0.51
22:C:230:HIS:CD2	22:C:249:PRO:HB3	2.46	0.51
23:D:38:VAL:HG13	23:D:88:LEU:HD11	1.92	0.51
32:P:44:VAL:HG12	32:P:53:LEU:HD12	1.92	0.51
1:a:417:G:OP1	3:d:67:GLN:NE2	2.44	0.51
1:a:892:A:OP1	7:h:15:ARG:NH1	2.44	0.51
1:a:1216:A:H4'	1:a:1217:U:H5''	1.92	0.51
20:A:904:A:O2'	20:A:905:G:O5'	2.29	0.51
20:A:1178:G:C5	20:A:1179:G:H1'	2.45	0.51
20:A:1978:G:O2'	20:A:1981:C:OP1	2.29	0.51
20:A:2707:A:C6	20:A:2731:G:C6	2.99	0.51
20:A:2716:G:C2	20:A:2717:C:C6	2.98	0.51
20:A:2892:U:C2	20:A:2893:A:C8	2.99	0.51
21:B:94:G:OP2	39:W:15:ARG:NH1	2.44	0.51
1:a:432:G:N2	1:a:556:G:OP1	2.43	0.51
1:a:578:A:H5''	1:a:579:U:OP1	2.10	0.51
1:a:718:G:H4'	1:a:719:A:H5'	1.92	0.51
1:a:927:U:H2'	1:a:928:C:C6	2.46	0.51
1:a:1105:G:C5	1:a:1106:U:C5	2.98	0.51
1:a:1425:A:H2'	1:a:1426:C:H6	1.73	0.51
10:k:47:ALA:HB2	10:k:62:ALA:HB1	1.91	0.51
15:p:40:TYR:HB2	15:p:49:VAL:HG22	1.91	0.51
17:r:40:ARG:O	17:r:76:SER:OG	2.28	0.51
20:A:252:C:O2	29:M:63:LYS:NZ	2.42	0.51
20:A:538:U:H2'	20:A:539:G:O4'	2.10	0.51
20:A:1195:A:H4'	34:R:55:ARG:HH21	1.75	0.51
20:A:2260:G:H2'	20:A:2261:A:H8	1.76	0.51
20:A:2369:C:H4'	40:X:33:LYS:HD2	1.92	0.51
20:A:2595:G:H2'	20:A:2595:G:N3	2.26	0.51
26:G:11:LEU:HB2	26:G:48:ASN:CG	2.36	0.51
37:U:58:VAL:HG12	37:U:59:ARG:O	2.10	0.51
44:1:14:PHE:CD2	44:1:24:LEU:HB2	2.45	0.51
1:a:475:G:O6	1:a:488:C:N4	2.44	0.51
1:a:1038:C:O2'	1:a:1039:U:H6	1.94	0.51
20:A:259:A:H2'	20:A:260:A:H8	1.74	0.51
20:A:276:C:H2'	20:A:277:C:H5'	1.91	0.51
20:A:312:U:H5''	20:A:313:A:OP1	2.11	0.51
20:A:345:G:H2'	20:A:346:A:O4'	2.10	0.51
20:A:567:A:H2	27:K:117:ARG:HH12	1.57	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:853:U:H2'	20:A:854:C:H6	1.74	0.51
20:A:1111:G:N2	20:A:1130:U:OP2	2.44	0.51
20:A:1453:U:C6	20:A:1628:G:H2'	2.45	0.51
20:A:1516:A:H2'	20:A:1517:A:C8	2.46	0.51
20:A:1531:G:N2	20:A:1532:A:H1'	2.25	0.51
20:A:2085:A:C2	20:A:2086:G:C5	2.98	0.51
30:N:32:TRP:CZ3	30:N:133:LYS:HB3	2.46	0.51
37:U:10:PRO:HA	37:U:27:PHE:HA	1.92	0.51
39:W:64:THR:HB	39:W:66:ASP:H	1.74	0.51
40:X:56:PRO:HD3	40:X:62:ILE:HD11	1.93	0.51
44:1:56:PRO:HG2	44:1:61:ARG:NH1	2.25	0.51
1:a:487:A:C6	1:a:488:C:N4	2.78	0.51
1:a:616:G:H2'	1:a:617:A:H8	1.75	0.51
1:a:1018:U:N3	1:a:1019:G:H1'	2.25	0.51
20:A:92:A:H2'	20:A:93:G:H5'	1.91	0.51
20:A:148:A:H2'	20:A:149:U:H6	1.75	0.51
20:A:292:U:H2'	20:A:293:U:C6	2.46	0.51
20:A:322:U:H2'	20:A:323:G:H8	1.76	0.51
20:A:1384:G:O6	20:A:1642:C:N4	2.44	0.51
20:A:1464:G:C6	20:A:1623:C:N3	2.79	0.51
20:A:1835:A:H2'	20:A:1836:G:C8	2.45	0.51
21:B:38:U:O2	21:B:41:C:H3'	2.11	0.51
21:B:45:C:OP1	32:P:11:ARG:NH2	2.43	0.51
38:V:72:ASP:CG	38:V:77:GLU:H	2.19	0.51
1:a:153:G:H2'	1:a:154:G:H8	1.73	0.51
1:a:391:G:H2'	1:a:392:G:H8	1.75	0.51
1:a:835:U:H4'	1:a:836:G:OP2	2.11	0.51
1:a:1425:A:H2'	1:a:1426:C:C6	2.45	0.51
20:A:173:G:H2'	20:A:174:A:C8	2.45	0.51
20:A:344:G:H8	20:A:346:A:N7	2.08	0.51
20:A:1106:U:H2'	20:A:1109:A:N7	2.25	0.51
20:A:2187:A:C5	20:A:2188:C:C5	2.99	0.51
33:Q:60:THR:HG22	33:Q:73:THR:HB	1.93	0.51
1:a:621:G:C2	1:a:647:G:C5	2.99	0.51
1:a:979:G:H2'	1:a:980:A:H8	1.76	0.51
17:r:67:ARG:HB3	17:r:74:PHE:CE1	2.46	0.51
20:A:199:A:H62	29:M:38:GLN:NE2	2.09	0.51
20:A:1126:A:O2'	20:A:1127:G:N2	2.44	0.51
20:A:1377:U:H5''	20:A:1433:U:C2	2.46	0.51
20:A:1627:U:C2	20:A:1628:G:H1'	2.45	0.51
20:A:1898:A:C2	20:A:1899:A:C8	2.98	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:2035:G:OP2	45:2:9:SER:OG	2.29	0.51
20:A:2554:C:C2	20:A:2555:A:C8	2.98	0.51
20:A:2605:C:H2'	20:A:2606:G:C8	2.46	0.51
21:B:46:A:H2'	21:B:47:C:C6	2.46	0.51
23:D:111:THR:OG1	23:D:112:GLY:N	2.43	0.51
24:E:37:ILE:HG23	24:E:184:LEU:HD21	1.93	0.51
1:a:475:G:C6	1:a:489:G:C6	2.99	0.51
9:j:35:ASP:CB	9:j:77:VAL:HB	2.41	0.51
20:A:2088:U:C2	20:A:2450:G:N2	2.79	0.51
20:A:2234:G:C4	20:A:2235:G:C8	2.99	0.51
20:A:2734:U:H2'	20:A:2735:A:H8	1.74	0.51
21:B:45:C:P	32:P:7:LYS:HZ3	2.33	0.51
23:D:55:ASP:OD1	23:D:77:LYS:NZ	2.35	0.51
24:E:149:ASP:O	24:E:172:ASN:ND2	2.41	0.51
24:E:150:THR:O	24:E:172:ASN:ND2	2.44	0.51
31:O:24:LEU:HD12	31:O:44:VAL:HG21	1.93	0.51
45:2:36:MET:O	45:2:37:LYS:HD2	2.10	0.51
1:a:201:C:O2	16:q:8:ARG:NE	2.32	0.50
1:a:1106:U:H2'	1:a:1107:U:H6	1.76	0.50
2:c:53:THR:OG1	2:c:68:HIS:ND1	2.43	0.50
4:e:93:ARG:HB2	4:e:128:LEU:HB3	1.91	0.50
10:k:23:ILE:N	10:k:85:THR:O	2.44	0.50
20:A:1378:A:O2'	20:A:1380:U:OP2	2.28	0.50
20:A:1396:G:O6	20:A:2228:C:O2	2.29	0.50
20:A:1450:U:O2'	20:A:1630:G:N1	2.39	0.50
20:A:1996:U:H2'	20:A:1997:U:C6	2.46	0.50
20:A:2145:A:H1'	20:A:2147:G:C4	2.46	0.50
22:C:260:ARG:HG2	22:C:261:ASN:H	1.76	0.50
25:F:54:VAL:HG13	25:F:65:PRO:HG2	1.93	0.50
27:K:60:ALA:O	27:K:98:SER:OG	2.29	0.50
37:U:26:THR:HA	37:U:78:ALA:O	2.11	0.50
1:a:274:G:C4	1:a:275:G:C8	2.99	0.50
1:a:476:U:H2'	1:a:477:U:C6	2.45	0.50
1:a:782:A:H2'	1:a:783:A:H8	1.74	0.50
1:a:1347:A:H2'	1:a:1348:A:C8	2.45	0.50
10:k:35:THR:HB	10:k:40:ASN:O	2.11	0.50
20:A:832:G:O2'	20:A:2454:C:N4	2.44	0.50
20:A:905:G:OP1	21:B:98:G:N2	2.38	0.50
20:A:1319:G:N2	20:A:1321:G:H3'	2.26	0.50
20:A:1808:U:H2'	20:A:1809:C:C6	2.46	0.50
20:A:1872:G:C2	20:A:1897:G:C2	2.99	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:B:93:U:H3'	39:W:15:ARG:HE	1.75	0.50
24:E:34:TYR:HB2	29:M:1:MET:HE1	1.93	0.50
28:L:71:ARG:HH12	28:L:104:ARG:HD2	1.75	0.50
30:N:8:LYS:HD2	30:N:8:LYS:N	2.26	0.50
39:W:8:LYS:HB2	39:W:42:TYR:CD2	2.45	0.50
1:a:463:A:C2	1:a:464:A:C5	2.99	0.50
1:a:609:U:H2'	1:a:610:A:H8	1.76	0.50
1:a:1020:A:N6	1:a:1041:U:O3'	2.44	0.50
1:a:1045:U:C2	1:a:1049:G:C2	2.99	0.50
1:a:1288:C:H2'	1:a:1289:A:C8	2.46	0.50
2:c:35:ASP:OD1	2:c:56:ILE:HG13	2.11	0.50
2:c:147:GLY:HA2	2:c:170:GLY:HA3	1.94	0.50
20:A:1453:U:H4'	20:A:1454:U:H6	1.76	0.50
20:A:2147:G:N1	20:A:2171:G:N7	2.59	0.50
20:A:2492:A:OP2	49:6:2:LYS:NZ	2.31	0.50
20:A:2910:A:H2'	20:A:2911:C:O4'	2.11	0.50
25:F:22:TYR:CD1	25:F:27:GLN:HB3	2.47	0.50
25:F:136:LEU:HA	25:F:141:VAL:HG11	1.92	0.50
1:a:996:C:O2'	13:n:19:GLN:NE2	2.38	0.50
20:A:133:U:H2'	20:A:134:A:H8	1.75	0.50
20:A:413:U:O2'	20:A:463:A:H1'	2.11	0.50
20:A:1033:A:OP2	34:R:51:ARG:NH1	2.34	0.50
20:A:1190:U:C2	20:A:1191:A:C8	2.99	0.50
20:A:1577:A:N7	20:A:1578:A:N6	2.59	0.50
22:C:180:GLU:CD	22:C:274:ARG:H	2.19	0.50
34:R:18:LEU:HD11	34:R:32:PHE:CE1	2.47	0.50
39:W:14:PRO:HB2	39:W:17:LEU:HD12	1.94	0.50
1:a:151:G:N2	1:a:183:G:H1	2.04	0.50
1:a:219:G:H2'	1:a:220:G:C8	2.46	0.50
1:a:1045:U:O4	1:a:1050:G:O6	2.29	0.50
9:j:32:THR:OG1	9:j:33:GLY:N	2.44	0.50
20:A:1090:A:H2'	20:A:1091:A:O4'	2.11	0.50
20:A:1147:G:HO2'	20:A:1148:U:P	2.33	0.50
20:A:1328:G:H2'	20:A:1329:U:C6	2.46	0.50
20:A:1423:A:H2'	20:A:1424:G:H8	1.77	0.50
20:A:2189:U:H2'	20:A:2190:A:C8	2.47	0.50
20:A:2301:A:N7	20:A:2303:G:C8	2.80	0.50
22:C:145:GLU:HB2	22:C:188:CYS:HB3	1.92	0.50
27:K:64:LYS:O	27:K:65:LEU:HD23	2.11	0.50
31:O:51:GLY:HA2	31:O:90:PHE:CE1	2.47	0.50
36:T:19:PRO:HB2	36:T:23:ARG:HH21	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:4:5:TYR:N	47:4:5:TYR:CD1	2.79	0.50
1:a:1097:G:P	4:e:32:ARG:HH21	2.35	0.50
1:a:1181:G:C6	1:a:1183:C:H5''	2.45	0.50
3:d:144:GLU:OE1	3:d:147:GLN:NE2	2.45	0.50
7:h:81:SER:HB2	7:h:87:ALA:H	1.75	0.50
16:q:60:ASP:OD1	16:q:61:ILE:N	2.45	0.50
20:A:1633:A:O2'	20:A:1634:A:N3	2.41	0.50
20:A:1713:C:H2'	20:A:1714:U:O4'	2.12	0.50
20:A:2329:U:H2'	20:A:2330:U:C6	2.47	0.50
28:L:53:LYS:N	28:L:56:GLU:OE2	2.43	0.50
1:a:225:U:O2'	1:a:227:C:OP2	2.25	0.50
1:a:529:C:H2'	1:a:530:G:H8	1.77	0.50
1:a:657:A:C5	7:h:109:SER:HA	2.47	0.50
20:A:1120:A:H2'	20:A:1121:U:O4'	2.11	0.50
20:A:1374:G:H2'	20:A:1375:G:C8	2.46	0.50
20:A:1834:U:N3	22:C:159:GLY:HA3	2.27	0.50
20:A:1878:U:OP1	20:A:2424:G:O2'	2.28	0.50
20:A:2457:U:C2	20:A:2458:G:C8	3.00	0.50
20:A:2551:U:H2'	20:A:2552:C:C6	2.47	0.50
20:A:2669:G:N2	20:A:2670:U:O4	2.45	0.50
21:B:46:A:H2'	21:B:47:C:H6	1.76	0.50
22:C:118:SER:HB2	22:C:129:ALA:HB3	1.92	0.50
1:a:222:G:H1	1:a:231:U:H3	1.60	0.50
5:f:54:GLU:HB3	5:f:59:ARG:HD3	1.94	0.50
8:i:12:ARG:HH21	8:i:13:LYS:HD3	1.77	0.50
16:q:51:ASP:OD2	16:q:55:THR:OG1	2.19	0.50
17:r:38:SER:OG	17:r:41:GLY:N	2.42	0.50
20:A:288:C:HO2'	20:A:289:U:H5	1.55	0.50
20:A:1097:A:OP1	20:A:1097:A:H8	1.94	0.50
20:A:1406:C:H2'	20:A:1407:G:C8	2.47	0.50
20:A:1453:U:H4'	20:A:1454:U:H5'	1.92	0.50
20:A:1516:A:H2'	20:A:1517:A:H8	1.76	0.50
20:A:2257:U:H2'	20:A:2258:U:C6	2.47	0.50
21:B:16:G:H1'	21:B:65:G:N2	2.26	0.50
30:N:41:TRP:CE3	30:N:94:VAL:HG21	2.47	0.50
1:a:1019:G:N2	1:a:1052:A:N7	2.60	0.50
9:j:75:ASP:OD1	9:j:75:ASP:N	2.44	0.50
12:m:42:ASP:OD1	12:m:42:ASP:N	2.44	0.50
18:s:6:LYS:H	18:s:6:LYS:HD3	1.77	0.50
20:A:595:G:H5''	27:K:113:ASN:HD22	1.76	0.50
20:A:847:U:OP1	29:M:36:LYS:NZ	2.39	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:1102:G:N7	20:A:1104:C:N4	2.60	0.50
20:A:1498:G:C2	20:A:1499:G:C5	3.00	0.50
20:A:2106:U:O2	20:A:2239:A:O2'	2.29	0.50
20:A:2207:C:H2'	20:A:2208:C:C6	2.47	0.50
20:A:2812:A:O2'	20:A:2813:A:OP1	2.28	0.50
23:D:176:VAL:HG22	23:D:188:ILE:HG22	1.94	0.50
34:R:18:LEU:HD11	34:R:32:PHE:HE1	1.76	0.50
35:S:2:TYR:CD2	35:S:42:GLY:HA3	2.47	0.50
1:a:391:G:OP1	15:p:6:ARG:HB2	2.12	0.49
1:a:1106:U:H2'	1:a:1107:U:C6	2.46	0.49
1:a:1154:G:N2	1:a:1158:G:O6	2.45	0.49
1:a:1364:A:N6	1:a:1388:G:H21	2.08	0.49
20:A:116:C:H2'	20:A:117:G:O4'	2.12	0.49
20:A:297:G:H8	20:A:297:G:OP2	1.94	0.49
20:A:1011:C:O2'	20:A:1023:A:N3	2.44	0.49
20:A:1177:G:H2'	20:A:1178:G:O4'	2.12	0.49
20:A:1541:C:H2'	20:A:1542:U:C6	2.47	0.49
20:A:1576:A:H2'	20:A:1577:A:C8	2.46	0.49
20:A:1721:A:C4	20:A:1722:A:C8	3.00	0.49
20:A:1966:A:OP1	28:L:44:LYS:NZ	2.35	0.49
1:a:39:G:O2'	1:a:637:A:N1	2.40	0.49
1:a:772:U:H2'	1:a:773:G:O4'	2.12	0.49
1:a:1019:G:N2	1:a:1052:A:C6	2.80	0.49
1:a:1084:G:OP2	1:a:1110:G:H5'	2.12	0.49
8:i:66:ASN:OD1	8:i:66:ASN:N	2.45	0.49
20:A:72:A:H5''	20:A:74:A:C8	2.46	0.49
20:A:697:U:H2'	20:A:698:A:C8	2.46	0.49
20:A:2132:U:H5''	20:A:2133:A:OP2	2.12	0.49
20:A:2202:U:H2'	20:A:2203:G:H8	1.75	0.49
20:A:2644:G:H2'	20:A:2645:G:C8	2.45	0.49
20:A:2815:A:H2'	20:A:2816:A:H8	1.77	0.49
21:B:84:G:C6	21:B:85:U:C4	3.00	0.49
24:E:185:ASP:OD1	24:E:185:ASP:N	2.43	0.49
45:2:37:LYS:NZ	45:2:43:CYS:HB3	2.27	0.49
1:a:14:U:H2'	1:a:15:C:H6	1.78	0.49
1:a:691:A:H2'	1:a:692:U:C6	2.47	0.49
1:a:1058:U:H2'	1:a:1059:G:N9	2.26	0.49
1:a:1372:A:H2	1:a:1380:G:H22	1.60	0.49
2:c:134:LYS:HE3	2:c:167:TYR:CD2	2.47	0.49
7:h:34:ARG:O	7:h:38:GLU:HG2	2.12	0.49
12:m:94:GLY:HA3	12:m:109:ARG:CZ	2.42	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:2073:A:H2'	20:A:2517:A:N1	2.26	0.49
20:A:2162:G:H2'	20:A:2163:U:H6	1.76	0.49
20:A:2359:G:C2	20:A:2395:C:C2	3.01	0.49
20:A:2529:C:H2'	20:A:2530:G:H8	1.77	0.49
21:B:74:G:H5'	39:W:10:ARG:NH1	2.22	0.49
29:M:12:SER:O	29:M:12:SER:OG	2.28	0.49
37:U:13:THR:H	37:U:16:SER:HG	1.54	0.49
1:a:389:A:C6	1:a:390:U:C4	3.00	0.49
1:a:661:G:C2	1:a:662:G:C8	3.00	0.49
1:a:662:G:H2'	1:a:663:A:H8	1.77	0.49
1:a:761:G:H2'	1:a:762:U:C6	2.45	0.49
1:a:897:G:OP1	11:l:9:ARG:NH2	2.45	0.49
1:a:916:A:H2'	1:a:917:A:C8	2.46	0.49
1:a:959:U:H2'	1:a:960:G:C8	2.47	0.49
1:a:1360:U:H5''	8:i:122:ARG:HH11	1.78	0.49
7:h:8:ALA:HB2	7:h:79:ARG:HD3	1.93	0.49
9:j:53:ARG:N	9:j:61:SER:O	2.38	0.49
11:l:28:TYR:CE1	11:l:36:THR:HA	2.47	0.49
20:A:289:U:H2'	20:A:290:U:C6	2.48	0.49
20:A:573:U:C2	20:A:574:C:C5	3.00	0.49
20:A:1040:A:H2'	20:A:1041:A:H8	1.77	0.49
20:A:1489:C:H2'	20:A:1490:A:C8	2.47	0.49
20:A:1578:A:H2'	20:A:1579:U:C6	2.47	0.49
22:C:60:ARG:HG2	22:C:85:PRO:HB2	1.95	0.49
24:E:158:ASN:O	24:E:160:ASN:N	2.40	0.49
26:G:54:ARG:HD3	26:G:65:HIS:CD2	2.47	0.49
26:G:54:ARG:HH12	26:G:64:ILE:HB	1.77	0.49
26:G:103:LEU:HD21	26:G:123:PHE:CG	2.47	0.49
28:L:104:ARG:N	28:L:122:LEU:O	2.46	0.49
36:T:9:LYS:HG2	36:T:111:VAL:HG13	1.93	0.49
40:X:81:LYS:HD2	40:X:87:GLN:HG3	1.93	0.49
1:a:285:A:H2'	1:a:286:C:C6	2.47	0.49
1:a:1288:C:H2'	1:a:1289:A:O4'	2.13	0.49
1:a:1465:U:O4	1:a:1470:G:N2	2.46	0.49
5:f:50:ARG:NH2	5:f:59:ARG:HD2	2.27	0.49
20:A:126:A:H61	47:4:42:ILE:HD11	1.78	0.49
20:A:421:A:C2	20:A:422:A:C8	3.00	0.49
20:A:644:U:H5	20:A:659:G:C5	2.29	0.49
20:A:1457:A:H1'	20:A:1630:G:H21	1.77	0.49
20:A:1861:A:O2'	20:A:1862:A:H8	1.95	0.49
20:A:2196:G:H2'	20:A:2197:U:H6	1.71	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:C:11:ASN:C	22:C:13:ARG:H	2.20	0.49
22:C:15:ASN:O	22:C:204:ASN:ND2	2.46	0.49
20:A:24:G:C2	20:A:25:G:C8	3.01	0.49
20:A:245:G:O2'	20:A:246:U:OP2	2.30	0.49
20:A:890:A:HO2'	20:A:891:A:P	2.33	0.49
20:A:901:U:C2	20:A:2282:A:C8	3.01	0.49
20:A:1234:C:H2'	20:A:1235:G:H8	1.77	0.49
20:A:1575:G:H2'	20:A:1584:G:N2	2.28	0.49
20:A:2359:G:N3	20:A:2395:C:H2'	2.28	0.49
20:A:2700:G:H2'	20:A:2701:U:H6	1.77	0.49
23:D:6:LEU:HB2	23:D:53:TYR:CG	2.47	0.49
35:S:70:LYS:HA	35:S:88:HIS:O	2.12	0.49
1:a:135:A:N1	16:q:4:GLU:N	2.60	0.49
1:a:215:G:OP1	19:t:55:LYS:HG2	2.13	0.49
1:a:847:G:C6	1:a:871:G:C6	3.00	0.49
3:d:92:GLU:CD	3:d:97:ASN:HD21	2.20	0.49
4:e:41:ASP:N	4:e:41:ASP:OD1	2.46	0.49
5:f:14:ARG:HB3	5:f:58:PHE:CE2	2.48	0.49
11:l:89:GLU:HG2	11:l:90:HIS:ND1	2.28	0.49
12:m:53:THR:HB	12:m:57:ARG:NH2	2.27	0.49
20:A:616:A:H2'	20:A:617:C:C6	2.48	0.49
20:A:1726:C:H2'	20:A:1727:C:H6	1.77	0.49
20:A:1833:A:H61	22:C:276:LYS:HZ1	1.61	0.49
20:A:2325:A:C2	25:F:77:PHE:HB3	2.47	0.49
22:C:180:GLU:OE2	22:C:274:ARG:N	2.46	0.49
25:F:121:ALA:HB3	25:F:128:TYR:HD2	1.78	0.49
26:G:25:THR:HB	26:G:34:THR:HG22	1.95	0.49
37:U:24:LYS:HA	37:U:80:VAL:O	2.12	0.49
37:U:90:GLN:N	37:U:90:GLN:HE21	2.11	0.49
39:W:43:PHE:CD2	39:W:48:LEU:HD11	2.47	0.49
1:a:1314:A:C5	1:a:1316:U:C2	3.00	0.49
6:g:19:ASN:N	6:g:19:ASN:OD1	2.45	0.49
14:o:5:GLN:HA	14:o:8:LYS:HB3	1.94	0.49
17:r:55:ASN:HA	17:r:58:LYS:HE2	1.94	0.49
20:A:624:G:OP1	29:M:21:ARG:NH1	2.46	0.49
20:A:2644:G:C4	20:A:2904:G:C2	3.00	0.49
20:A:2763:A:C8	20:A:2764:A:C8	3.00	0.49
21:B:12:U:OP2	40:X:83:ARG:NH2	2.46	0.49
21:B:26:C:OP1	32:P:39:ASN:ND2	2.44	0.49
43:O:10:ARG:HG3	43:O:11:SER:H	1.77	0.49
44:1:19:THR:HB	44:1:21:PHE:CZ	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:3:8:GLU:OE1	46:3:9:CYS:N	2.46	0.49
1:a:70:U:H2'	1:a:71:U:C6	2.48	0.49
1:a:151:G:C2	1:a:152:G:C8	3.01	0.49
1:a:693:U:H2'	1:a:694:C:C6	2.47	0.49
1:a:1029:G:N2	1:a:1032:A:OP2	2.31	0.49
7:h:74:ILE:O	7:h:74:ILE:HG13	2.11	0.49
12:m:90:ARG:HD3	12:m:95:LEU:CB	2.43	0.49
20:A:84:G:H21	20:A:103:A:H2	1.61	0.49
20:A:347:A:C6	20:A:349:A:C4	3.01	0.49
20:A:641:G:C4	20:A:664:G:N2	2.81	0.49
20:A:918:U:O3'	20:A:919:A:H3'	2.12	0.49
20:A:1036:A:H1'	35:S:9:GLY:O	2.13	0.49
20:A:1521:G:C6	20:A:1558:A:C2	3.01	0.49
20:A:2200:U:H2'	20:A:2201:A:C8	2.48	0.49
20:A:2469:G:C4	20:A:2470:C:C5	3.01	0.49
20:A:2516:G:H5''	20:A:2517:A:H5''	1.94	0.49
20:A:2521:C:O5'	20:A:2521:C:H6	1.95	0.49
20:A:2522:G:N1	20:A:2596:G:O6	2.46	0.49
20:A:2649:U:O2'	23:D:82:GLU:OE2	2.29	0.49
1:a:201:C:H2'	1:a:202:A:H2	1.77	0.49
1:a:597:C:C4	1:a:775:G:O6	2.65	0.49
1:a:989:G:OP1	9:j:59:LYS:HD3	2.13	0.49
1:a:1017:U:C4	1:a:1018:U:H1'	2.48	0.49
1:a:1317:U:C5	12:m:17:VAL:HG21	2.48	0.49
1:a:1480:G:H2'	1:a:1481:C:H6	1.77	0.49
3:d:13:ARG:HH11	3:d:33:PRO:HA	1.78	0.49
6:g:47:PHE:HA	6:g:50:ILE:HD12	1.95	0.49
8:i:129:LYS:O	8:i:129:LYS:NZ	2.46	0.49
12:m:4:ILE:HG12	12:m:9:ILE:HG13	1.95	0.49
17:r:49:THR:O	17:r:49:THR:OG1	2.26	0.49
20:A:31:G:O2'	20:A:1251:A:N3	2.40	0.49
20:A:157:C:H2'	20:A:158:A:H8	1.78	0.49
20:A:165:A:O2'	20:A:166:C:O5'	2.31	0.49
20:A:690:G:N1	20:A:691:A:N1	2.61	0.49
20:A:690:G:C6	20:A:691:A:N1	2.81	0.49
20:A:1014:A:C5	20:A:1029:G:C2	3.00	0.49
20:A:1292:U:C4	20:A:2074:A:C8	3.00	0.49
20:A:1631:A:O2'	20:A:1632:A:H5'	2.13	0.49
20:A:1992:A:C5	20:A:1993:C:C5	3.01	0.49
20:A:2088:U:H2'	20:A:2089:U:C6	2.48	0.49
20:A:2210:C:H2'	20:A:2211:U:H6	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:B:16:G:H2'	21:B:17:A:C8	2.47	0.49
23:D:54:GLN:O	23:D:77:LYS:HD2	2.12	0.49
38:V:8:LYS:HB3	38:V:71:ILE:HD12	1.95	0.49
1:a:700:G:H21	1:a:721:A:N6	2.11	0.48
1:a:730:A:H2'	1:a:731:A:H8	1.78	0.48
1:a:1045:U:C4	1:a:1049:G:C6	3.01	0.48
1:a:1503:G:C2	1:a:1504:G:C8	3.01	0.48
9:j:51:VAL:HG13	13:n:41:ARG:HG2	1.93	0.48
14:o:26:GLU:O	14:o:29:ILE:HG12	2.13	0.48
14:o:89:ARG:NH1	20:A:754:U:C2	2.81	0.48
14:o:89:ARG:NH1	20:A:754:U:H2'	2.28	0.48
16:q:6:ASN:OD1	16:q:7:GLN:N	2.38	0.48
20:A:755:A:O2'	20:A:756:A:OP1	2.29	0.48
20:A:1313:A:H5''	31:O:36:ARG:HH12	1.78	0.48
20:A:1473:A:H61	20:A:1607:C:H42	1.61	0.48
20:A:1594:U:H2'	20:A:1595:C:H6	1.77	0.48
20:A:1627:U:H2'	20:A:1628:G:O4'	2.13	0.48
20:A:1929:U:C2	20:A:1930:A:C8	3.01	0.48
24:E:75:GLN:HE22	24:E:82:GLN:NE2	2.10	0.48
30:N:122:SER:O	30:N:122:SER:OG	2.28	0.48
1:a:941:G:C2	1:a:943:G:C8	3.01	0.48
1:a:1002:A:H2'	1:a:1003:G:O4'	2.12	0.48
1:a:1024:C:H2'	1:a:1025:U:C6	2.48	0.48
2:c:57:GLU:OE1	2:c:58:ARG:N	2.44	0.48
2:c:149:LYS:HD2	2:c:200:TRP:NE1	2.29	0.48
13:n:24:CYS:HB2	13:n:40:CYS:HB3	1.93	0.48
18:s:34:TRP:CZ2	18:s:37:ARG:HB2	2.48	0.48
20:A:401:G:H2'	20:A:402:A:C8	2.48	0.48
20:A:436:G:H2'	20:A:437:U:C6	2.47	0.48
20:A:642:G:H2'	20:A:643:U:O4'	2.13	0.48
20:A:735:G:H2'	20:A:736:U:O4'	2.13	0.48
20:A:1093:U:C4	20:A:1094:A:C6	3.01	0.48
20:A:1099:G:H2'	20:A:1100:U:C5	2.48	0.48
21:B:72:U:O2	39:W:38:SER:HB2	2.13	0.48
22:C:155:ILE:HD12	22:C:162:ALA:HB2	1.96	0.48
28:L:38:VAL:HG12	28:L:39:ILE:H	1.79	0.48
31:O:5:LYS:HB2	31:O:39:GLU:OE2	2.13	0.48
32:P:66:GLY:N	32:P:70:GLU:OE1	2.29	0.48
1:a:115:C:C2	1:a:116:G:C8	3.02	0.48
1:a:142:C:H4'	15:p:65:GLN:OE1	2.12	0.48
1:a:782:A:C4	1:a:783:A:C8	3.01	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:1023:A:N6	1:a:1039:U:O2	2.45	0.48
1:a:1184:A:H2'	1:a:1185:A:C8	2.48	0.48
1:a:1445:C:H2'	1:a:1446:C:C6	2.48	0.48
17:r:38:SER:HG	17:r:42:LYS:H	1.60	0.48
20:A:84:G:N2	20:A:102:G:H1'	2.28	0.48
20:A:175:U:H2'	20:A:176:U:C6	2.47	0.48
20:A:225:A:N6	20:A:227:G:C2	2.81	0.48
20:A:283:G:H2'	20:A:285:U:OP2	2.13	0.48
20:A:322:U:H2'	20:A:323:G:C8	2.48	0.48
20:A:506:A:N3	20:A:723:U:H1'	2.29	0.48
20:A:1357:A:H2'	20:A:1358:A:H8	1.78	0.48
20:A:1374:G:C2	20:A:1375:G:C4	3.01	0.48
20:A:1627:U:C4	20:A:1628:G:C4	3.01	0.48
21:B:41:C:C4	21:B:43:A:N6	2.81	0.48
21:B:74:G:H4'	39:W:28:PRO:HB2	1.95	0.48
24:E:77:SER:OG	24:E:79:ARG:O	2.30	0.48
39:W:80:ASP:HB2	39:W:87:LEU:HD12	1.94	0.48
1:a:187:A:C5	1:a:215:G:C6	3.00	0.48
1:a:333:G:C6	1:a:351:A:C6	3.01	0.48
1:a:516:C:OP1	11:l:127:ARG:NH1	2.36	0.48
1:a:1273:G:H2'	1:a:1274:C:C5	2.48	0.48
18:s:11:VAL:HG22	18:s:38:SER:HB2	1.95	0.48
20:A:1106:U:C2'	20:A:1109:A:H62	2.25	0.48
20:A:1201:U:C2	20:A:1202:G:C8	3.01	0.48
20:A:1572:A:N1	20:A:1590:A:C8	2.81	0.48
20:A:2322:G:H5''	20:A:2323:A:OP2	2.14	0.48
20:A:2868:G:H5'	20:A:2869:U:OP2	2.13	0.48
22:C:178:SER:O	22:C:275:THR:OG1	2.16	0.48
24:E:48:THR:O	24:E:48:THR:OG1	2.23	0.48
30:N:17:MET:HE2	30:N:96:PRO:HG3	1.96	0.48
48:5:14:VAL:HG22	48:5:24:ARG:HE	1.79	0.48
1:a:390:U:C2	1:a:391:G:C8	3.01	0.48
1:a:953:A:H1'	1:a:1394:G:N2	2.29	0.48
1:a:1371:G:HO2'	1:a:1372:A:H8	1.60	0.48
9:j:60:ASP:N	9:j:60:ASP:OD1	2.43	0.48
12:m:7:VAL:HG22	12:m:8:ASP:H	1.78	0.48
18:s:6:LYS:HG2	18:s:7:LYS:NZ	2.26	0.48
18:s:38:SER:O	18:s:71:LEU:N	2.44	0.48
20:A:36:G:C6	20:A:486:G:N2	2.82	0.48
20:A:229:A:C6	20:A:230:A:C6	3.02	0.48
20:A:815:G:C5	20:A:834:A:C8	3.01	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:1093:U:H5'	20:A:1140:C:O2	2.13	0.48
20:A:2133:A:H2'	20:A:2135:G:P	2.53	0.48
20:A:2316:U:N3	20:A:2317:G:N7	2.62	0.48
27:K:107:LYS:CG	27:K:120:PHE:CZ	2.96	0.48
1:a:129:G:H2'	1:a:130:U:C6	2.48	0.48
1:a:397:A:C2	1:a:398:A:C5	3.02	0.48
1:a:1283:G:H1'	1:a:1341:U:O2'	2.14	0.48
4:e:80:THR:HG21	4:e:99:ALA:H	1.78	0.48
6:g:111:ARG:NH2	6:g:123:GLU:HA	2.28	0.48
8:i:6:TYR:HB2	8:i:21:LEU:HB3	1.95	0.48
20:A:29:A:H2'	20:A:30:U:O4'	2.13	0.48
20:A:424:A:H2'	20:A:424:A:N3	2.29	0.48
20:A:458:C:H2'	20:A:459:C:H6	1.78	0.48
20:A:504:U:C4	20:A:828:A:C5	3.01	0.48
20:A:1616:A:H2'	20:A:1617:A:C8	2.49	0.48
20:A:1810:U:H2'	20:A:1811:C:H6	1.79	0.48
20:A:2325:A:H2	25:F:77:PHE:HB3	1.79	0.48
32:P:40:ILE:N	32:P:58:ALA:HB2	2.28	0.48
40:X:32:ALA:HB2	40:X:47:TYR:HD1	1.78	0.48
1:a:208:U:C2	1:a:209:A:C8	3.02	0.48
1:a:427:A:H4'	1:a:428:G:O5'	2.14	0.48
1:a:1330:U:HO2'	1:a:1375:A:H8	1.61	0.48
3:d:77:LYS:HE2	3:d:77:LYS:HB3	1.54	0.48
20:A:542:A:C6	20:A:545:G:C6	3.02	0.48
20:A:725:A:C2	20:A:729:A:C6	3.01	0.48
20:A:928:U:OP1	20:A:928:U:H4'	2.14	0.48
20:A:1025:C:C2	20:A:1026:C:C5	3.02	0.48
20:A:1147:G:C6	20:A:1148:U:C4	3.01	0.48
20:A:1802:C:C2	20:A:1803:A:C8	3.01	0.48
23:D:5:ILE:HG22	23:D:6:LEU:O	2.13	0.48
26:G:54:ARG:HB2	26:G:65:HIS:NE2	2.29	0.48
29:M:77:VAL:HG23	29:M:81:THR:HB	1.94	0.48
32:P:45:ILE:HG12	32:P:52:THR:HG22	1.96	0.48
35:S:68:GLN:O	35:S:89:ARG:NH1	2.47	0.48
1:a:1149:A:N1	1:a:1157:G:C6	2.82	0.48
1:a:1323:U:P	12:m:96:PRO:HB3	2.53	0.48
12:m:94:GLY:O	12:m:95:LEU:HD23	2.14	0.48
20:A:1584:G:H1'	20:A:1585:U:OP2	2.14	0.48
21:B:108:U:H2'	21:B:109:C:C6	2.48	0.48
23:D:33:ASN:CG	23:D:53:TYR:CZ	2.92	0.48
24:E:49:HIS:HD2	24:E:92:PRO:HB2	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:F:122:PHE:HB3	25:F:163:ASP:CG	2.37	0.48
37:U:10:PRO:HD3	42:Z:30:PHE:CD1	2.49	0.48
1:a:247:A:O2'	1:a:277:A:N6	2.46	0.48
1:a:520:G:C2	1:a:521:G:C5	3.02	0.48
1:a:1099:U:H3'	1:a:1100:G:C8	2.49	0.48
1:a:1360:U:H5''	8:i:122:ARG:NH1	2.28	0.48
5:f:12:ILE:HG23	5:f:63:TYR:CE1	2.49	0.48
8:i:35:VAL:HG11	8:i:45:ARG:CZ	2.43	0.48
9:j:26:VAL:HG12	9:j:30:LYS:NZ	2.29	0.48
20:A:92:A:H2'	20:A:92:A:N3	2.27	0.48
20:A:979:G:OP1	48:5:59:ARG:NH1	2.47	0.48
20:A:1066:A:H8	20:A:1067:A:C8	2.32	0.48
20:A:1335:G:H5''	20:A:1336:U:OP1	2.14	0.48
20:A:1657:A:N6	36:T:96:GLY:O	2.46	0.48
20:A:1700:U:H2'	20:A:1701:C:H6	1.79	0.48
20:A:2009:U:O2	28:L:3:GLN:NE2	2.45	0.48
20:A:2906:C:H2'	20:A:2907:U:H6	1.78	0.48
24:E:20:ASN:HB2	24:E:22:GLU:HG2	1.96	0.48
46:3:9:CYS:SG	46:3:43:THR:HG21	2.53	0.48
1:a:993:A:H2'	1:a:994:A:H5''	1.95	0.48
1:a:1193:G:H21	1:a:1195:A:H8	1.61	0.48
1:a:1300:U:O2'	1:a:1301:U:OP2	2.30	0.48
1:a:1343:C:H2'	1:a:1344:A:C8	2.44	0.48
8:i:99:LYS:C	8:i:102:GLY:H	2.22	0.48
16:q:62:VAL:HG22	16:q:63:LYS:H	1.79	0.48
16:q:71:SER:HB2	16:q:74:LYS:HB3	1.95	0.48
20:A:6:A:H2'	20:A:7:A:H8	1.77	0.48
20:A:80:U:C2	20:A:81:G:C8	3.01	0.48
20:A:348:A:C6	20:A:365:U:C4	3.02	0.48
20:A:567:A:H2	27:K:117:ARG:NH1	2.11	0.48
20:A:1385:A:H61	20:A:1641:C:N4	2.12	0.48
20:A:1712:A:O2'	20:A:2563:G:OP1	2.32	0.48
20:A:2307:C:OP1	32:P:95:ARG:NH1	2.47	0.48
26:G:9:VAL:HB	26:G:50:VAL:HB	1.96	0.48
27:K:51:THR:O	27:K:51:THR:OG1	2.28	0.48
27:K:131:HIS:HD2	27:K:133:HIS:H	1.60	0.48
28:L:6:SER:O	28:L:21:THR:HG23	2.14	0.48
29:M:30:THR:O	29:M:33:ARG:N	2.43	0.48
33:Q:63:LYS:HG2	33:Q:64:VAL:H	1.79	0.48
42:Z:10:THR:O	42:Z:14:MET:HG2	2.13	0.48
1:a:520:G:H2'	1:a:521:G:H8	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:616:G:H2'	1:a:617:A:C8	2.49	0.47
1:a:631:G:C6	1:a:640:G:C6	3.01	0.47
1:a:914:G:N2	1:a:917:A:OP2	2.46	0.47
1:a:1156:U:O2'	1:a:1157:G:H8	1.95	0.47
2:c:200:TRP:N	2:c:200:TRP:CD1	2.82	0.47
16:q:50:HIS:HD2	16:q:74:LYS:NZ	2.12	0.47
18:s:52:TYR:HE1	18:s:55:ARG:C	2.21	0.47
20:A:291:G:O2'	20:A:292:U:H5'	2.14	0.47
20:A:1299:A:C6	20:A:1300:U:C4	3.02	0.47
20:A:1537:A:H2'	20:A:1538:A:C8	2.49	0.47
20:A:1657:A:N6	36:T:97:SER:O	2.36	0.47
20:A:2428:G:C2	20:A:2429:G:C8	3.02	0.47
20:A:2469:G:H2'	20:A:2470:C:C6	2.49	0.47
20:A:2830:A:O2'	20:A:2832:A:N7	2.45	0.47
21:B:37:A:H2'	21:B:38:U:C6	2.49	0.47
21:B:38:U:N3	21:B:42:G:OP1	2.32	0.47
21:B:41:C:C2	21:B:43:A:N6	2.82	0.47
21:B:72:U:H1'	39:W:38:SER:CB	2.44	0.47
1:a:14:U:H2'	1:a:15:C:C6	2.48	0.47
1:a:62:A:N7	1:a:396:A:N6	2.62	0.47
1:a:160:A:C6	1:a:174:G:C6	3.02	0.47
1:a:1177:C:H2'	1:a:1178:G:C8	2.47	0.47
1:a:1274:C:N4	1:a:1275:U:O4	2.47	0.47
11:l:112:ARG:HB2	11:l:130:TYR:HA	1.96	0.47
12:m:104:ASN:HB2	12:m:107:ARG:HE	1.79	0.47
20:A:158:A:N6	20:A:173:G:O6	2.46	0.47
20:A:389:G:C6	20:A:390:A:C5	3.02	0.47
20:A:673:G:H2'	20:A:674:C:H6	1.78	0.47
20:A:702:A:H2'	20:A:703:G:H8	1.79	0.47
20:A:833:A:OP2	20:A:2085:A:O2'	2.32	0.47
20:A:932:G:C6	20:A:933:G:O6	2.67	0.47
20:A:969:U:H2'	20:A:970:U:C6	2.49	0.47
20:A:1725:A:H2'	20:A:1726:C:H6	1.77	0.47
20:A:2419:G:O2'	20:A:2420:C:OP2	2.28	0.47
20:A:2637:G:C2	20:A:2638:G:C8	3.01	0.47
21:B:98:G:C4	21:B:99:A:C8	3.01	0.47
22:C:120:PRO:O	22:C:134:ASN:ND2	2.46	0.47
23:D:53:TYR:O	23:D:54:GLN:HB2	2.13	0.47
28:L:70:ARG:HB2	28:L:76:TYR:CE1	2.49	0.47
29:M:9:ALA:O	29:M:12:SER:HB3	2.13	0.47
43:O:26:LEU:HD21	43:O:46:MET:SD	2.53	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:1057:G:O2'	1:a:1058:U:H5'	2.14	0.47
1:a:1543:C:H2'	1:a:1544:U:C6	2.49	0.47
20:A:319:G:N2	20:A:395:A:H1'	2.29	0.47
20:A:711:C:OP1	29:M:43:GLY:N	2.47	0.47
20:A:1125:A:N3	20:A:1145:U:O2'	2.47	0.47
20:A:1358:A:C2	20:A:1359:G:C8	3.03	0.47
20:A:2168:G:H2'	20:A:2169:A:C8	2.49	0.47
20:A:2444:A:HO2'	20:A:2445:U:P	2.36	0.47
20:A:2734:U:H2'	20:A:2735:A:C8	2.48	0.47
25:F:42:ASP:O	25:F:46:ASN:N	2.35	0.47
29:M:97:LYS:C	29:M:99:ALA:N	2.72	0.47
34:R:54:LYS:HE2	34:R:54:LYS:HB3	1.69	0.47
35:S:63:GLU:CD	35:S:96:MET:HB2	2.40	0.47
1:a:269:G:C6	1:a:288:A:N1	2.82	0.47
1:a:336:A:H2'	1:a:337:C:C6	2.50	0.47
1:a:1064:G:O3'	13:n:2:ALA:N	2.48	0.47
1:a:1077:G:OP1	9:j:61:SER:OG	2.27	0.47
1:a:1271:U:C2	1:a:1273:G:C6	3.03	0.47
1:a:1302:A:H2	1:a:1368:G:H1'	1.80	0.47
1:a:1331:G:N2	1:a:1334:A:O5'	2.37	0.47
6:g:31:MET:HG3	6:g:35:LYS:O	2.13	0.47
20:A:345:G:C2	20:A:540:A:N7	2.82	0.47
20:A:347:A:C5	20:A:349:A:C5	3.03	0.47
20:A:573:U:H2'	20:A:574:C:H6	1.78	0.47
20:A:919:A:N6	20:A:941:A:H62	2.12	0.47
20:A:2602:G:C5	20:A:2621:G:N2	2.82	0.47
20:A:2809:U:C4	20:A:2814:G:C2	3.03	0.47
21:B:99:A:C4	21:B:100:G:C8	3.02	0.47
22:C:230:HIS:HE1	22:C:232:HIS:HD2	1.61	0.47
34:R:52:GLN:HG2	34:R:55:ARG:HH11	1.79	0.47
1:a:135:A:H4'	1:a:136:A:H5''	1.96	0.47
1:a:339:G:N1	1:a:342:A:OP2	2.48	0.47
1:a:358:U:O3'	1:a:359:A:H8	1.97	0.47
1:a:609:U:H2'	1:a:610:A:C8	2.49	0.47
2:c:69:THR:HG23	2:c:71:LYS:H	1.80	0.47
16:q:63:LYS:NZ	16:q:80:GLU:HB3	2.29	0.47
20:A:262:G:H21	20:A:660:A:H8	1.62	0.47
20:A:611:A:N6	20:A:2048:U:OP1	2.48	0.47
20:A:832:G:HO2'	20:A:2454:C:H42	1.59	0.47
20:A:1292:U:C4	20:A:2074:A:H8	2.31	0.47
22:C:42:GLY:O	22:C:43:ARG:HG3	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:D:23:ILE:HD13	23:D:189:LYS:HD2	1.95	0.47
23:D:192:ILE:HG12	23:D:193:PRO:HD2	1.96	0.47
32:P:23:SER:OG	32:P:24:GLY:N	2.48	0.47
33:Q:66:ASN:OD1	33:Q:66:ASN:N	2.47	0.47
36:T:28:LEU:HD21	45:2:22:LEU:O	2.15	0.47
1:a:865:U:H2'	1:a:866:U:H6	1.80	0.47
1:a:910:G:H2'	1:a:911:A:H8	1.79	0.47
1:a:962:A:C2	1:a:963:G:C5	3.03	0.47
1:a:971:U:H2'	1:a:972:U:C6	2.50	0.47
1:a:1020:A:H5''	1:a:1042:C:N3	2.29	0.47
1:a:1489:G:H2'	1:a:1490:G:C8	2.50	0.47
1:a:1512:C:H2'	1:a:1513:G:C8	2.50	0.47
1:a:1521:G:H4'	1:a:1522:U:H5''	1.96	0.47
3:d:142:VAL:HG21	3:d:173:LEU:HB2	1.97	0.47
10:k:84:VAL:HG21	10:k:107:VAL:HG13	1.95	0.47
11:l:26:LYS:HZ1	11:l:29:ASN:H	1.63	0.47
11:l:31:PHE:HB2	11:l:32:LYS:NZ	2.30	0.47
20:A:1313:A:H2'	20:A:1314:C:C6	2.50	0.47
20:A:1853:G:C6	20:A:1854:G:C8	3.03	0.47
20:A:2432:A:OP1	48:5:45:ARG:HD3	2.14	0.47
25:F:70:ALA:HB3	25:F:81:GLU:HA	1.95	0.47
26:G:91:GLY:HA2	26:G:160:LYS:HG2	1.95	0.47
29:M:114:ASP:HA	29:M:115:GLY:HA2	1.56	0.47
38:V:39:ASN:O	38:V:60:GLU:HA	2.14	0.47
1:a:13:A:O2'	4:e:21:VAL:HG13	2.15	0.47
1:a:230:G:H2'	1:a:231:U:O4'	2.15	0.47
1:a:416:C:H2'	1:a:417:G:H8	1.79	0.47
1:a:974:A:C5	18:s:55:ARG:HD3	2.50	0.47
1:a:1124:G:C5	1:a:1125:C:C5	3.02	0.47
1:a:1386:G:H2'	1:a:1387:U:C6	2.50	0.47
1:a:1466:U:C4	1:a:1467:U:N3	2.83	0.47
2:c:126:ARG:HH22	2:c:158:GLY:HA3	1.80	0.47
4:e:21:VAL:O	4:e:32:ARG:N	2.40	0.47
4:e:50:THR:OG1	4:e:51:GLY:N	2.45	0.47
7:h:76:ASN:OD1	7:h:77:LEU:N	2.33	0.47
9:j:28:THR:HG21	9:j:90:LEU:HD22	1.95	0.47
9:j:60:ASP:OD1	9:j:61:SER:N	2.46	0.47
10:k:25:SER:H	10:k:88:GLY:HA3	1.79	0.47
12:m:42:ASP:N	12:m:43:VAL:HA	2.28	0.47
16:q:77:ARG:HD3	16:q:77:ARG:HA	1.64	0.47
20:A:13:U:O2'	20:A:14:A:OP1	2.22	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:740:G:H2'	20:A:741:G:O4'	2.14	0.47
20:A:1099:G:H2'	20:A:1100:U:H5	1.80	0.47
20:A:1218:U:H2'	20:A:1219:G:H8	1.79	0.47
20:A:1421:A:C4	20:A:1439:A:C2	3.03	0.47
20:A:1585:U:O2'	20:A:1586:A:OP1	2.32	0.47
20:A:1640:G:H5''	20:A:1641:C:OP1	2.14	0.47
20:A:2105:U:C4	20:A:2106:U:C4	3.02	0.47
20:A:2148:A:N6	20:A:2171:G:O2'	2.48	0.47
20:A:2283:A:C4	20:A:2284:G:C8	3.03	0.47
20:A:2443:G:H5''	20:A:2444:A:OP2	2.14	0.47
20:A:2530:G:C6	20:A:2583:G:C2	3.03	0.47
20:A:2757:C:H2'	20:A:2758:G:O4'	2.14	0.47
21:B:2:G:H2'	21:B:3:U:C6	2.50	0.47
21:B:75:U:H2'	21:B:76:A:H8	1.79	0.47
22:C:92:ALA:O	22:C:103:TYR:HD1	1.98	0.47
22:C:200:HIS:O	22:C:200:HIS:CG	2.68	0.47
23:D:34:VAL:HG21	23:D:74:THR:HG21	1.96	0.47
25:F:44:VAL:HG21	25:F:79:LEU:HD23	1.95	0.47
25:F:61:THR:HG21	25:F:89:VAL:HG21	1.97	0.47
25:F:104:VAL:HA	25:F:108:LEU:HD12	1.96	0.47
27:K:120:PHE:CE1	27:K:123:LEU:HD12	2.49	0.47
30:N:45:ARG:O	30:N:48:GLU:N	2.47	0.47
39:W:74:MET:HA	39:W:91:PHE:HA	1.97	0.47
1:a:393:A:N6	1:a:401:C:H42	2.12	0.47
1:a:1165:U:C4	1:a:1166:A:N7	2.83	0.47
1:a:1186:A:H2'	1:a:1187:C:C6	2.50	0.47
6:g:151:PHE:O	6:g:155:ARG:NH1	2.47	0.47
17:r:54:LYS:HA	17:r:57:ARG:HH21	1.80	0.47
20:A:148:A:H2'	20:A:149:U:C6	2.50	0.47
20:A:393:A:H2'	20:A:394:C:C6	2.50	0.47
20:A:733:A:OP1	22:C:39:ASN:ND2	2.48	0.47
20:A:1397:G:H2'	20:A:1398:C:C6	2.50	0.47
20:A:1921:G:O6	20:A:1938:C:N4	2.48	0.47
20:A:2759:C:H2'	20:A:2760:U:C6	2.50	0.47
20:A:2850:G:C6	20:A:2851:U:C4	3.03	0.47
29:M:15:VAL:O	29:M:16:ARG:HB2	2.14	0.47
35:S:50:ALA:O	35:S:51:PRO:C	2.56	0.47
1:a:389:A:C4	1:a:390:U:C5	3.03	0.47
1:a:475:G:C6	1:a:476:U:C4	3.02	0.47
1:a:626:C:N4	1:a:644:A:H61	2.13	0.47
1:a:1254:A:C4	1:a:1313:C:N4	2.83	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:p:69:THR:O	15:p:73:ILE:HG23	2.14	0.47
18:s:63:GLN:HG2	18:s:64:GLU:H	1.80	0.47
20:A:681:G:H21	20:A:685:A:H62	1.63	0.47
20:A:1563:G:C6	20:A:1564:U:C4	3.03	0.47
20:A:2110:U:C2	20:A:2111:G:C8	3.03	0.47
20:A:2665:C:H2'	20:A:2666:U:C6	2.49	0.47
43:O:6:ILE:HG23	43:O:54:VAL:HG11	1.96	0.47
1:a:200:G:N2	1:a:203:U:OP2	2.28	0.47
1:a:421:G:C5	1:a:510:A:C5	3.03	0.47
4:e:104:GLY:N	4:e:122:ASP:OD1	2.47	0.47
6:g:135:VAL:HG13	6:g:138:ARG:HH21	1.80	0.47
12:m:3:ARG:HB3	12:m:9:ILE:HB	1.97	0.47
12:m:104:ASN:O	12:m:107:ARG:HG3	2.15	0.47
17:r:52:GLY:HA3	17:r:55:ASN:HD22	1.80	0.47
20:A:157:C:H2'	20:A:158:A:C8	2.50	0.47
20:A:295:G:C4	20:A:296:G:C8	3.03	0.47
20:A:458:C:H2'	20:A:459:C:C6	2.50	0.47
20:A:653:G:H3'	20:A:654:A:C5'	2.45	0.47
20:A:673:G:H2'	20:A:674:C:C6	2.50	0.47
20:A:805:G:C2	20:A:806:G:N7	2.83	0.47
20:A:1010:U:H2'	20:A:1011:C:H6	1.79	0.47
20:A:1590:A:C5	20:A:1591:A:H8	2.32	0.47
34:R:76:TYR:CD1	34:R:76:TYR:N	2.80	0.47
44:1:52:SER:O	44:1:58:TYR:HB2	2.15	0.47
1:a:128:C:H2'	1:a:129:G:H8	1.80	0.46
1:a:277:A:C8	1:a:278:A:C8	3.02	0.46
1:a:350:C:H2'	1:a:351:A:H8	1.80	0.46
1:a:491:C:H2'	1:a:492:C:C6	2.50	0.46
1:a:528:A:C6	1:a:529:C:C4	3.03	0.46
20:A:159:G:C2	20:A:160:U:C2	3.03	0.46
20:A:1228:G:H2'	20:A:1229:G:C8	2.50	0.46
20:A:1334:C:C4	20:A:1335:G:C5	3.02	0.46
20:A:1489:C:C2	20:A:1490:A:N7	2.83	0.46
20:A:1518:U:O2'	20:A:1519:G:OP2	2.33	0.46
20:A:1601:G:C6	20:A:1602:U:C4	3.03	0.46
20:A:2042:U:H2'	20:A:2043:G:H8	1.79	0.46
20:A:2180:G:H22	20:A:2185:A:N6	1.99	0.46
20:A:2595:G:H4'	20:A:2596:G:C8	2.50	0.46
20:A:2816:A:H2'	20:A:2817:A:C8	2.50	0.46
21:B:101:U:O2'	21:B:102:A:OP1	2.33	0.46
28:L:71:ARG:HH21	28:L:77:ILE:HD11	1.79	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:N:41:TRP:CD2	30:N:94:VAL:HG11	2.51	0.46
39:W:79:LEU:HB3	39:W:85:GLN:O	2.15	0.46
44:1:55:HIS:O	44:1:57:PHE:N	2.46	0.46
1:a:928:C:H2'	1:a:929:A:C8	2.50	0.46
1:a:1006:C:H2'	1:a:1007:U:C6	2.50	0.46
1:a:1036:A:H2'	1:a:1037:G:C8	2.49	0.46
1:a:1285:G:C2	1:a:1286:G:C5	3.03	0.46
3:d:179:ARG:NH1	3:d:179:ARG:HB3	2.31	0.46
10:k:15:ASN:HB3	10:k:17:GLU:OE2	2.15	0.46
11:l:4:ILE:H	11:l:4:ILE:HG12	1.56	0.46
20:A:6:A:C2	20:A:2909:A:C2	3.03	0.46
20:A:2154:G:C2	20:A:2166:C:C2	3.03	0.46
20:A:2163:U:H2'	20:A:2164:U:C6	2.50	0.46
20:A:2862:A:C6	20:A:2863:G:C5	3.03	0.46
26:G:5:GLY:O	26:G:69:ARG:NH2	2.48	0.46
34:R:56:ASP:O	34:R:59:LYS:N	2.48	0.46
49:6:30:ASN:OD1	49:6:30:ASN:N	2.48	0.46
1:a:301:A:H2'	1:a:302:U:C6	2.51	0.46
1:a:503:U:H2'	1:a:504:C:H6	1.80	0.46
1:a:1259:A:H2'	1:a:1260:A:H8	1.81	0.46
3:d:28:ARG:C	3:d:30:PRO:HD2	2.40	0.46
4:e:128:LEU:HD12	4:e:128:LEU:HA	1.76	0.46
18:s:27:LYS:HD3	18:s:47:PHE:CD2	2.49	0.46
20:A:696:G:H2'	20:A:697:U:C6	2.50	0.46
20:A:1039:U:H3	20:A:1195:A:H62	0.63	0.46
20:A:1090:A:H1'	20:A:2765:G:N2	2.30	0.46
20:A:1334:C:N4	20:A:1335:G:C6	2.84	0.46
20:A:1480:U:C2	20:A:1481:A:C8	3.03	0.46
20:A:1863:G:H2'	20:A:1864:G:H8	1.80	0.46
21:B:7:G:C6	21:B:110:G:C6	3.03	0.46
25:F:30:LYS:H	25:F:159:THR:HG1	1.55	0.46
26:G:157:TYR:HE1	26:G:174:GLY:HA3	1.79	0.46
1:a:190:A:C4	1:a:191:G:C8	3.03	0.46
1:a:516:C:H2'	1:a:517:C:C6	2.50	0.46
1:a:956:C:H2'	1:a:957:G:O4'	2.16	0.46
1:a:1063:G:P	13:n:4:LYS:HZ3	2.36	0.46
6:g:72:VAL:HG13	6:g:73:LEU:HG	1.98	0.46
6:g:145:ALA:C	6:g:147:ALA:H	2.23	0.46
11:l:21:SER:HB3	11:l:108:TYR:HE1	1.80	0.46
11:l:26:LYS:HG2	11:l:28:TYR:CD1	2.49	0.46
18:s:12:ASP:HB2	18:s:34:TRP:CH2	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:509:G:H22	47:4:37:LYS:HZ3	1.62	0.46
20:A:941:A:C4	20:A:942:A:C8	3.02	0.46
20:A:947:G:C2	20:A:948:A:C8	3.04	0.46
20:A:1228:G:H2'	20:A:1229:G:H8	1.80	0.46
20:A:1584:G:N2	20:A:1585:U:O4	2.48	0.46
20:A:2151:C:C4	20:A:2152:C:C4	3.04	0.46
20:A:2545:A:C6	20:A:2546:G:C5	3.04	0.46
30:N:97:VAL:HG13	30:N:101:LYS:HD3	1.96	0.46
31:O:84:SER:C	31:O:86:LEU:H	2.23	0.46
36:T:53:GLU:O	36:T:57:MET:HG2	2.14	0.46
1:a:67:U:H2'	1:a:68:U:H6	1.80	0.46
1:a:478:A:H2'	1:a:479:G:C8	2.50	0.46
1:a:478:A:N6	1:a:486:A:N1	2.64	0.46
1:a:1329:C:OP2	18:s:6:LYS:NZ	2.34	0.46
1:a:1443:A:H2'	1:a:1444:C:C6	2.50	0.46
3:d:107:THR:HG23	3:d:110:GLN:HB2	1.98	0.46
14:o:12:ILE:O	14:o:16:ALA:HB2	2.16	0.46
20:A:1212:A:N3	20:A:1213:U:H5	2.13	0.46
20:A:1318:U:H2'	20:A:1319:G:C8	2.51	0.46
20:A:1361:C:O2	36:T:91:ARG:NH2	2.46	0.46
20:A:1377:U:H5''	20:A:1433:U:O2	2.14	0.46
20:A:1451:U:C2	20:A:1630:G:C5	3.04	0.46
20:A:2045:A:N3	20:A:2469:G:O2'	2.44	0.46
20:A:2096:A:C5	20:A:2097:G:C8	3.04	0.46
20:A:2115:G:O6	20:A:2202:U:C4	2.68	0.46
21:B:57:G:H3'	21:B:58:C:C6	2.50	0.46
32:P:35:ARG:HG2	32:P:103:ARG:NH1	2.31	0.46
1:a:619:G:C6	1:a:650:A:C6	3.03	0.46
1:a:812:C:H2'	1:a:813:U:C6	2.50	0.46
1:a:1515:A:C2	1:a:1516:A:C8	3.04	0.46
3:d:53:GLU:HG2	3:d:194:LEU:HB2	1.96	0.46
8:i:9:THR:OG1	8:i:10:GLY:N	2.47	0.46
14:o:89:ARG:HH21	14:o:89:ARG:HB3	1.79	0.46
20:A:172:U:C4	20:A:173:G:N7	2.84	0.46
20:A:289:U:H2'	20:A:290:U:H6	1.80	0.46
20:A:333:U:H2'	20:A:334:U:H6	1.79	0.46
20:A:377:A:C5	20:A:378:G:C8	3.03	0.46
20:A:899:G:N2	20:A:2283:A:OP2	2.35	0.46
20:A:1193:C:OP1	34:R:92:ARG:NH2	2.49	0.46
20:A:1491:U:O2'	20:A:1492:G:H8	1.99	0.46
20:A:2528:U:H2'	20:A:2529:C:C6	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:2561:U:H2'	20:A:2562:G:H8	1.80	0.46
32:P:110:ALA:O	32:P:114:ASN:ND2	2.44	0.46
35:S:73:THR:O	35:S:73:THR:OG1	2.24	0.46
36:T:81:VAL:HG22	36:T:108:ILE:HG12	1.97	0.46
39:W:45:GLU:OE1	39:W:85:GLN:HB2	2.15	0.46
39:W:77:ALA:HB2	39:W:89:VAL:HA	1.98	0.46
1:a:1056:A:H2'	1:a:1057:G:C8	2.51	0.46
1:a:1134:U:H2'	1:a:1135:U:O4'	2.15	0.46
1:a:1251:A:H2'	1:a:1252:C:C6	2.51	0.46
1:a:1529:A:H2'	1:a:1530:U:C6	2.51	0.46
3:d:88:MET:HE3	3:d:186:LEU:HD12	1.97	0.46
4:e:43:ASN:O	4:e:43:ASN:ND2	2.30	0.46
17:r:25:ILE:HD12	17:r:26:ASP:N	2.31	0.46
20:A:81:G:C2	20:A:82:G:C8	3.03	0.46
20:A:654:A:H4'	20:A:655:G:C8	2.51	0.46
20:A:677:G:C4	20:A:690:G:N2	2.84	0.46
20:A:922:G:H2'	20:A:922:G:N3	2.31	0.46
20:A:1096:G:H2'	20:A:1127:G:N2	2.31	0.46
20:A:2273:G:C2	20:A:2274:C:C6	3.03	0.46
20:A:2762:A:H4'	26:G:66:GLY:HA3	1.96	0.46
1:a:188:A:N1	1:a:215:G:C2	2.84	0.46
1:a:610:A:N1	1:a:656:A:C4	2.83	0.46
1:a:1125:C:C2	1:a:1126:A:C8	3.04	0.46
1:a:1295:A:P	9:j:9:ARG:HH12	2.39	0.46
2:c:90:LEU:HD23	2:c:98:VAL:HG21	1.98	0.46
4:e:93:ARG:HB2	4:e:128:LEU:O	2.16	0.46
9:j:49:TYR:CD1	13:n:34:TYR:HE2	2.34	0.46
20:A:865:C:H1'	29:M:54:GLN:NE2	2.27	0.46
20:A:1036:A:O2'	34:R:91:ASN:ND2	2.48	0.46
20:A:1502:G:H21	20:A:1503:U:H5''	1.81	0.46
20:A:2602:G:C6	20:A:2621:G:C2	3.04	0.46
20:A:2850:G:O2'	31:O:103:GLY:N	2.48	0.46
22:C:79:LYS:HD2	22:C:95:HIS:CD2	2.51	0.46
27:K:42:LYS:NZ	27:K:53:ASP:OD1	2.36	0.46
30:N:37:THR:HB	39:W:82:PHE:CE1	2.51	0.46
33:Q:51:ARG:HE	33:Q:51:ARG:HB2	1.37	0.46
44:1:31:SER:OG	44:1:33:GLU:OE2	2.21	0.46
1:a:107:G:H2'	1:a:108:U:H6	1.81	0.46
1:a:520:G:C8	1:a:550:A:C8	3.04	0.46
1:a:756:G:O4'	14:o:52:SER:OG	2.34	0.46
1:a:1103:G:C6	1:a:1115:G:N1	2.84	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:1240:A:H1'	18:s:78:ARG:HE	1.81	0.46
3:d:18:SER:HB3	3:d:22:THR:H	1.81	0.46
12:m:104:ASN:HB2	12:m:107:ARG:HH21	1.81	0.46
16:q:11:TYR:HD2	16:q:47:TYR:CE2	2.33	0.46
20:A:159:G:H2'	20:A:160:U:C6	2.50	0.46
20:A:225:A:N7	20:A:227:G:C4	2.84	0.46
20:A:228:A:C5	20:A:229:A:C8	3.03	0.46
20:A:807:U:O2'	20:A:808:G:H8	1.99	0.46
20:A:1754:A:H2'	20:A:1755:C:C6	2.51	0.46
20:A:2348:G:O3'	32:P:17:ARG:HG2	2.15	0.46
20:A:2592:G:C2	20:A:2593:C:C5	3.04	0.46
21:B:26:C:H2'	21:B:27:A:O4'	2.16	0.46
25:F:152:MET:HE3	25:F:152:MET:HB3	1.82	0.46
30:N:9:HIS:O	30:N:10:ARG:HB3	2.16	0.46
33:Q:76:LEU:HB3	33:Q:77:HIS:CD2	2.51	0.46
37:U:34:ASN:OD1	37:U:34:ASN:N	2.49	0.46
1:a:419:G:O2'	1:a:513:A:N1	2.47	0.46
1:a:1305:G:C5	1:a:1306:C:C5	3.04	0.46
1:a:1465:U:H2'	1:a:1465:U:O2	2.16	0.46
7:h:89:VAL:HG13	7:h:93:GLU:HB2	1.97	0.46
8:i:57:THR:HA	8:i:58:LYS:HA	1.60	0.46
20:A:89:G:H2'	20:A:90:U:O4'	2.15	0.46
20:A:213:U:H2'	20:A:214:G:H8	1.79	0.46
20:A:982:G:H2'	20:A:983:U:O4'	2.15	0.46
20:A:1105:U:H2'	20:A:1106:U:C5	2.51	0.46
20:A:1464:G:N1	20:A:1623:C:N3	2.64	0.46
20:A:2254:C:H2'	20:A:2255:A:H8	1.81	0.46
20:A:2390:A:N1	32:P:100:TYR:OH	2.40	0.46
20:A:2851:U:H2'	20:A:2852:U:C6	2.51	0.46
22:C:43:ARG:HA	22:C:48:ARG:O	2.15	0.46
22:C:104:ILE:HG22	22:C:105:LEU:O	2.16	0.46
26:G:94:TYR:CD1	26:G:107:VAL:HA	2.50	0.46
29:M:144:GLU:HB2	29:M:146:ILE:HG13	1.98	0.46
33:Q:76:LEU:HA	33:Q:76:LEU:HD23	1.78	0.46
1:a:38:G:C6	1:a:417:G:C6	3.05	0.45
1:a:466:A:N7	1:a:496:G:C6	2.84	0.45
1:a:959:U:H2'	1:a:960:G:H8	1.81	0.45
1:a:1390:A:H4'	6:g:29:ARG:HH21	1.81	0.45
9:j:29:ALA:HB1	9:j:76:ILE:HG21	1.99	0.45
18:s:11:VAL:HG13	18:s:38:SER:HB2	1.98	0.45
20:A:110:G:C2	20:A:111:A:C8	3.04	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:854:C:H2'	20:A:855:U:C6	2.52	0.45
20:A:1406:C:C2	20:A:1407:G:C8	3.03	0.45
20:A:1425:G:H2'	20:A:1426:U:C6	2.52	0.45
20:A:2144:G:H5'	20:A:2145:A:OP1	2.15	0.45
20:A:2688:G:H2'	20:A:2689:A:H8	1.79	0.45
21:B:72:U:H1'	39:W:38:SER:OG	2.16	0.45
21:B:98:G:H2'	21:B:99:A:H8	1.81	0.45
25:F:165:GLU:H	25:F:165:GLU:HG3	1.47	0.45
26:G:57:ASP:HA	26:G:61:MET:HG2	1.98	0.45
35:S:74:PHE:CE1	35:S:85:LYS:HB3	2.51	0.45
38:V:73:PRO:HD2	38:V:101:LEU:HD22	1.97	0.45
1:a:35:G:O4'	1:a:35:G:OP1	2.34	0.45
1:a:698:G:C6	1:a:699:U:C4	3.04	0.45
1:a:950:C:N4	1:a:1360:U:C4	2.85	0.45
1:a:1330:U:H2'	1:a:1331:G:O4'	2.16	0.45
6:g:51:LYS:HE3	6:g:51:LYS:HB3	1.62	0.45
7:h:10:PHE:CD2	7:h:27:VAL:HG11	2.49	0.45
15:p:87:LYS:HD2	15:p:87:LYS:HA	1.67	0.45
20:A:626:U:H2'	20:A:627:A:C8	2.51	0.45
20:A:696:G:H2'	20:A:697:U:H6	1.81	0.45
20:A:925:C:C2	20:A:933:G:N1	2.84	0.45
20:A:1757:U:H2'	20:A:1758:C:N3	2.31	0.45
20:A:2178:U:H3'	20:A:2178:U:OP2	2.16	0.45
20:A:2188:C:C4	20:A:2189:U:C4	3.04	0.45
20:A:2759:C:C4	20:A:2760:U:C4	3.04	0.45
21:B:76:A:P	39:W:22:ARG:HH22	2.39	0.45
23:D:62:ASN:HD22	23:D:64:PRO:CG	2.29	0.45
24:E:148:ILE:HG23	24:E:191:LYS:HD2	1.99	0.45
35:S:76:TYR:CD2	35:S:83:HIS:HB3	2.52	0.45
40:X:24:ASP:OD1	40:X:25:SER:N	2.49	0.45
40:X:62:ILE:HG12	40:X:68:LEU:HD22	1.98	0.45
1:a:137:C:O2'	1:a:277:A:H8	1.99	0.45
1:a:153:G:C2	1:a:154:G:C5	3.04	0.45
1:a:524:A:O2'	1:a:525:A:OP1	2.24	0.45
1:a:619:G:H2'	1:a:620:U:O4'	2.16	0.45
1:a:780:G:C6	1:a:827:G:C4	3.04	0.45
1:a:859:C:H5'	1:a:861:G:C6	2.51	0.45
1:a:1097:G:OP2	4:e:52:LYS:NZ	2.48	0.45
3:d:188:PRO:HA	3:d:189:GLU:HA	1.62	0.45
11:l:32:LYS:HE3	11:l:32:LYS:HB3	1.74	0.45
11:l:94:LEU:HD13	11:l:115:LEU:HD12	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:155:U:HO2'	20:A:156:U:H6	1.62	0.45
20:A:229:A:C6	20:A:230:A:C5	3.05	0.45
20:A:922:G:N7	20:A:934:G:N2	2.54	0.45
20:A:1191:A:H4'	34:R:81:HIS:CD2	2.51	0.45
20:A:1501:A:H2'	20:A:1501:A:N3	2.31	0.45
20:A:1600:C:H4'	20:A:1601:G:OP2	2.15	0.45
20:A:2202:U:H2'	20:A:2203:G:O4'	2.16	0.45
20:A:2218:C:H2'	20:A:2219:A:C8	2.42	0.45
20:A:2502:A:C2	20:A:2503:G:C5	3.04	0.45
22:C:154:LEU:HD23	22:C:154:LEU:HA	1.66	0.45
24:E:83:TRP:H	24:E:83:TRP:CD1	2.35	0.45
28:L:110:ASN:OD1	28:L:110:ASN:N	2.48	0.45
31:O:86:LEU:O	31:O:89:LEU:N	2.50	0.45
37:U:40:GLN:O	37:U:44:SER:OG	2.22	0.45
48:5:10:LEU:HD23	48:5:10:LEU:HA	1.76	0.45
48:5:14:VAL:HG11	48:5:22:LEU:HD13	1.97	0.45
1:a:216:A:H2'	1:a:217:A:C8	2.51	0.45
1:a:313:A:C6	1:a:314:G:C2	3.04	0.45
1:a:346:G:HO2'	19:t:3:ASN:N	2.14	0.45
1:a:399:G:H2'	1:a:400:U:H6	1.80	0.45
1:a:830:A:H4'	1:a:832:C:C5	2.52	0.45
1:a:963:G:H2'	1:a:964:C:C6	2.51	0.45
1:a:1306:C:O3'	8:i:41:HIS:HB3	2.16	0.45
1:a:1465:U:H3'	1:a:1466:U:C5	2.52	0.45
2:c:100:ILE:H	2:c:100:ILE:HG12	1.54	0.45
15:p:4:LYS:HE2	15:p:4:LYS:HB3	1.81	0.45
20:A:172:U:H2'	20:A:173:G:C8	2.50	0.45
20:A:834:A:H2'	20:A:835:C:C6	2.51	0.45
20:A:940:G:C8	20:A:941:A:C6	3.04	0.45
20:A:1250:A:H2'	20:A:1251:A:H8	1.82	0.45
20:A:1532:A:N6	20:A:1542:U:H3	2.14	0.45
20:A:1564:U:H2'	20:A:1565:G:O4'	2.17	0.45
20:A:1612:A:O2'	22:C:58:HIS:HD2	1.99	0.45
20:A:2275:C:C4	20:A:2294:G:N1	2.85	0.45
23:D:51:VAL:O	23:D:80:ILE:HA	2.16	0.45
30:N:44:ASN:OD1	30:N:93:TRP:HB2	2.16	0.45
45:2:37:LYS:HZ1	45:2:43:CYS:HB3	1.80	0.45
47:4:20:LYS:O	47:4:20:LYS:HD3	2.17	0.45
1:a:42:U:H2'	1:a:43:G:H8	1.82	0.45
1:a:270:G:H2'	1:a:271:U:C6	2.51	0.45
1:a:435:U:N3	1:a:437:C:O2	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:1206:A:OP1	2:c:3:GLN:HG3	2.16	0.45
1:a:1493:U:H2'	1:a:1494:A:C8	2.51	0.45
3:d:65:GLU:O	3:d:69:ARG:HG3	2.16	0.45
4:e:7:LYS:HE2	4:e:68:LYS:O	2.17	0.45
11:l:81:PRO:O	11:l:112:ARG:NH1	2.49	0.45
12:m:78:LYS:HA	12:m:81:MET:HE3	1.99	0.45
20:A:1293:G:C6	20:A:1294:C:N4	2.84	0.45
20:A:1396:G:N2	20:A:2228:C:H42	2.05	0.45
20:A:1397:G:H2'	20:A:1398:C:H6	1.81	0.45
20:A:1455:U:O4	20:A:1628:G:N2	2.49	0.45
20:A:2118:C:H2'	20:A:2119:C:C6	2.51	0.45
20:A:2157:C:H2'	20:A:2159:C:H5	1.81	0.45
20:A:2169:A:H3'	20:A:2170:G:H8	1.81	0.45
20:A:2890:A:H2'	20:A:2890:A:N3	2.32	0.45
21:B:4:G:C6	21:B:113:A:C6	3.04	0.45
21:B:5:G:H2'	21:B:6:U:C6	2.51	0.45
21:B:47:C:H2'	21:B:48:A:H8	1.81	0.45
21:B:87:U:H6	21:B:87:U:O5'	1.99	0.45
23:D:139:TYR:CE1	23:D:142:ARG:HB2	2.52	0.45
26:G:59:LYS:HB2	26:G:63:THR:OG1	2.17	0.45
29:M:103:LYS:H	29:M:103:LYS:HG2	1.59	0.45
30:N:111:GLU:O	30:N:115:ARG:HG3	2.15	0.45
1:a:115:C:C4	1:a:116:G:C5	3.05	0.45
1:a:515:G:H5''	11:l:134:ARG:HH12	1.81	0.45
1:a:995:C:N4	13:n:18:THR:OG1	2.49	0.45
1:a:1186:A:H2'	1:a:1187:C:H6	1.81	0.45
1:a:1193:G:N2	1:a:1195:A:H8	2.15	0.45
1:a:1386:G:O3'	8:i:71:GLY:HA3	2.17	0.45
1:a:1461:A:O2'	1:a:1462:A:H5'	2.16	0.45
12:m:84:GLY:H	12:m:85:SER:HB2	1.82	0.45
20:A:155:U:O2'	20:A:156:U:H6	1.99	0.45
20:A:326:A:C6	20:A:389:G:C6	3.04	0.45
20:A:587:U:C4	35:S:21:TYR:CD2	3.04	0.45
20:A:872:G:H2'	20:A:873:C:C5	2.52	0.45
20:A:1116:C:O2'	20:A:1118:C:N4	2.50	0.45
20:A:1376:U:H4'	20:A:1377:U:OP2	2.16	0.45
20:A:2154:G:C6	20:A:2166:C:C4	3.04	0.45
20:A:2429:G:C4	20:A:2430:C:C5	3.04	0.45
21:B:72:U:H1'	39:W:38:SER:HB2	1.99	0.45
30:N:34:LEU:HD22	30:N:129:THR:HB	1.99	0.45
41:Y:5:CYS:SG	41:Y:50:SER:HB3	2.56	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:Z:62:ASN:N	42:Z:62:ASN:OD1	2.49	0.45
1:a:136:A:O2'	1:a:137:C:O5'	2.28	0.45
1:a:407:G:C4	1:a:408:A:C8	3.04	0.45
1:a:431:G:H2'	1:a:432:G:C8	2.47	0.45
1:a:486:A:H2'	1:a:487:A:C8	2.52	0.45
1:a:619:G:O6	1:a:650:A:N6	2.50	0.45
1:a:1520:G:OP1	1:a:1523:A:H4'	2.16	0.45
1:a:1540:C:C2	1:a:1541:G:C8	3.04	0.45
2:c:28:TYR:OH	13:n:54:PRO:HG2	2.16	0.45
11:l:28:TYR:OH	11:l:38:VAL:HB	2.17	0.45
13:n:16:HIS:CD2	13:n:18:THR:HG23	2.44	0.45
17:r:54:LYS:HA	17:r:57:ARG:NE	2.28	0.45
20:A:483:A:H2	20:A:1282:G:N3	2.13	0.45
20:A:490:G:N2	20:A:491:U:H5	2.14	0.45
20:A:669:G:H1	29:M:71:ARG:NH1	2.15	0.45
20:A:991:C:H2'	20:A:992:G:H5'	1.98	0.45
20:A:1016:G:HO2'	20:A:1195:A:HO2'	1.62	0.45
20:A:1373:G:C6	20:A:1374:G:C5	3.04	0.45
20:A:2011:A:H5''	23:D:130:ARG:NH1	2.31	0.45
20:A:2116:U:O4	20:A:2117:A:N6	2.50	0.45
29:M:86:GLU:H	29:M:86:GLU:CD	2.24	0.45
37:U:8:LYS:HE2	37:U:8:LYS:HB3	1.69	0.45
38:V:86:VAL:HG12	38:V:87:ASP:OD1	2.17	0.45
1:a:520:G:H2'	1:a:521:G:C8	2.51	0.45
1:a:530:G:H2'	1:a:531:U:C6	2.52	0.45
1:a:711:A:H2'	1:a:712:U:H6	1.81	0.45
1:a:1071:A:C6	1:a:1221:G:C5	3.04	0.45
1:a:1266:A:H2'	1:a:1267:C:C6	2.51	0.45
3:d:25:GLU:OE2	3:d:29:ARG:NH1	2.50	0.45
4:e:23:LYS:HD3	4:e:30:ARG:NH2	2.31	0.45
8:i:68:ASN:OD1	8:i:68:ASN:N	2.49	0.45
9:j:99:GLU:HB3	9:j:101:LYS:NZ	2.32	0.45
11:l:29:ASN:HD22	11:l:73:LEU:HD11	1.82	0.45
14:o:17:ARG:NH2	14:o:26:GLU:OE2	2.50	0.45
18:s:31:ILE:HB	18:s:49:ILE:HG12	1.97	0.45
20:A:192:G:H2'	20:A:208:G:N2	2.32	0.45
20:A:349:A:C6	20:A:350:U:C4	3.04	0.45
20:A:623:A:H5'	24:E:89:VAL:HG21	1.99	0.45
20:A:1103:G:N2	20:A:1117:A:N1	2.64	0.45
20:A:1216:G:C5	20:A:1217:G:C2	3.05	0.45
20:A:1421:A:C6	20:A:1439:A:C6	3.04	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:2421:A:C4	20:A:2422:U:C5	3.05	0.45
20:A:2906:C:C2	20:A:2907:U:C5	3.05	0.45
25:F:4:LEU:HD23	25:F:4:LEU:HA	1.70	0.45
27:K:38:ARG:HH21	27:K:40:LYS:HZ2	1.65	0.45
27:K:41:ASN:OD1	27:K:41:ASN:N	2.47	0.45
27:K:60:ALA:HB3	27:K:127:GLY:HA2	1.98	0.45
29:M:94:VAL:HG12	29:M:95:VAL:H	1.82	0.45
35:S:51:PRO:O	35:S:52:THR:OG1	2.31	0.45
36:T:85:PRO:O	36:T:105:THR:OG1	2.34	0.45
38:V:70:VAL:HG12	38:V:71:ILE:H	1.82	0.45
41:Y:19:SER:O	41:Y:21:ALA:N	2.47	0.45
1:a:30:A:C4	1:a:31:C:C5	3.05	0.45
1:a:114:A:H62	1:a:339:G:H21	1.64	0.45
1:a:114:A:N1	1:a:341:G:C6	2.85	0.45
1:a:149:A:H5''	1:a:150:G:H5'	1.99	0.45
1:a:575:U:H4'	1:a:576:U:H5''	1.99	0.45
1:a:690:A:H1'	10:k:118:HIS:CD2	2.52	0.45
1:a:750:C:C2	1:a:751:U:C5	3.05	0.45
1:a:816:U:H2'	1:a:817:A:H8	1.82	0.45
1:a:1329:C:H2'	1:a:1330:U:C6	2.52	0.45
9:j:35:ASP:HB3	9:j:77:VAL:HB	1.97	0.45
18:s:34:TRP:CG	18:s:35:SER:N	2.84	0.45
20:A:377:A:C2	20:A:378:G:H1'	2.51	0.45
20:A:415:C:H2'	20:A:416:G:H8	1.82	0.45
20:A:509:G:O2'	20:A:510:A:O5'	2.25	0.45
20:A:753:G:H2'	20:A:754:U:C6	2.51	0.45
20:A:1043:G:C2	20:A:1193:C:N3	2.85	0.45
20:A:1225:G:H8	20:A:1225:G:O5'	2.00	0.45
20:A:2261:A:H2'	20:A:2262:C:C6	2.51	0.45
20:A:2349:A:N7	20:A:2351:G:C5	2.85	0.45
20:A:2359:G:C5	20:A:2361:C:C5	3.05	0.45
20:A:2406:A:H2'	20:A:2407:U:O4'	2.17	0.45
21:B:101:U:O2'	21:B:102:A:O4'	2.24	0.45
23:D:50:GLN:HA	23:D:81:LYS:O	2.17	0.45
23:D:180:ASP:OD1	23:D:180:ASP:N	2.49	0.45
26:G:103:LEU:HD11	26:G:123:PHE:CZ	2.52	0.45
26:G:103:LEU:HD21	26:G:123:PHE:CD2	2.52	0.45
32:P:68:LYS:HD2	32:P:70:GLU:CD	2.42	0.45
35:S:74:PHE:HB3	35:S:76:TYR:CE1	2.52	0.45
39:W:3:VAL:HA	39:W:62:LYS:HB2	1.99	0.45
39:W:15:ARG:C	39:W:17:LEU:H	2.25	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:1:76:LYS:C	44:1:79:GLY:H	2.25	0.45
1:a:30:A:C6	1:a:31:C:N4	2.85	0.45
1:a:1029:G:N2	1:a:1031:G:H3'	2.32	0.45
1:a:1069:G:H4'	1:a:1070:C:H3'	1.99	0.45
1:a:1106:U:C2	1:a:1107:U:C5	3.05	0.45
1:a:1253:A:N3	1:a:1256:G:O2'	2.38	0.45
5:f:14:ARG:H	5:f:14:ARG:HG3	1.53	0.45
6:g:107:TYR:CE2	6:g:134:SER:HB3	2.52	0.45
10:k:50:LEU:HD23	10:k:65:MET:HB2	1.98	0.45
15:p:89:VAL:O	15:p:90:LYS:HG3	2.16	0.45
20:A:334:U:H2'	20:A:335:G:O4'	2.17	0.45
20:A:1571:G:H22	20:A:1591:A:N6	2.15	0.45
20:A:1856:G:H2'	20:A:1857:C:H6	1.81	0.45
20:A:2442:G:H5''	20:A:2443:G:OP1	2.17	0.45
28:L:87:ILE:HG22	28:L:89:ASP:H	1.82	0.45
38:V:59:VAL:HG12	38:V:60:GLU:H	1.82	0.45
1:a:488:C:O2'	1:a:489:G:H8	2.00	0.44
1:a:560:C:H2'	1:a:561:A:O4'	2.17	0.44
1:a:578:A:O2'	1:a:581:G:O3'	2.35	0.44
1:a:906:G:O2'	1:a:922:G:O6	2.34	0.44
1:a:942:G:C6	1:a:1521:G:C6	3.05	0.44
1:a:1163:U:H2'	1:a:1164:C:O4'	2.17	0.44
2:c:67:ILE:HG13	2:c:102:ILE:HG12	1.99	0.44
7:h:40:LEU:HD12	7:h:40:LEU:HA	1.85	0.44
12:m:46:ARG:HG3	12:m:48:LEU:HG	1.98	0.44
17:r:38:SER:OG	17:r:42:LYS:N	2.36	0.44
20:A:198:A:H5''	29:M:47:ARG:HH22	1.82	0.44
20:A:903:G:H2'	20:A:904:A:H5'	1.99	0.44
20:A:1041:A:H2'	20:A:1042:G:O4'	2.17	0.44
20:A:1147:G:C4	20:A:1148:U:C5	3.05	0.44
20:A:1231:G:C2	20:A:1232:A:C4	3.05	0.44
20:A:1578:A:O2'	20:A:1579:U:O4'	2.22	0.44
20:A:1626:G:H2'	20:A:1627:U:C5	2.53	0.44
20:A:1831:G:OP1	22:C:87:ARG:NH2	2.39	0.44
20:A:2192:C:H2'	20:A:2193:C:C6	2.52	0.44
20:A:2203:G:H2'	20:A:2204:A:O4'	2.17	0.44
36:T:49:ALA:C	36:T:51:ILE:H	2.25	0.44
42:Z:9:LEU:HB3	42:Z:13:GLU:HB2	1.99	0.44
1:a:182:C:OP2	19:t:63:LYS:NZ	2.49	0.44
1:a:467:A:H2'	1:a:468:C:O4'	2.17	0.44
1:a:647:G:H4'	1:a:648:U:C5	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:1012:A:H2'	1:a:1013:U:H6	1.82	0.44
1:a:1276:A:N7	1:a:1289:A:H2	2.15	0.44
1:a:1291:G:H2'	1:a:1292:C:O4'	2.17	0.44
1:a:1523:A:C4	1:a:1546:G:C2	3.05	0.44
2:c:30:GLU:H	2:c:30:GLU:HG3	1.31	0.44
8:i:31:ASN:HD21	8:i:66:ASN:HA	1.82	0.44
20:A:55:G:C6	20:A:117:G:N2	2.85	0.44
20:A:60:G:O2'	20:A:75:U:OP2	2.26	0.44
20:A:729:A:H2'	20:A:730:C:C6	2.52	0.44
20:A:1062:G:C6	20:A:1180:C:C4	3.05	0.44
20:A:1117:A:H4'	20:A:1118:C:OP1	2.17	0.44
20:A:1146:A:OP1	20:A:1147:G:H5'	2.16	0.44
20:A:1335:G:N2	20:A:1683:A:C8	2.85	0.44
20:A:1423:A:H5'	20:A:1512:A:O2'	2.17	0.44
20:A:1604:A:H4'	20:A:1605:C:O5'	2.17	0.44
20:A:2321:G:H8	20:A:2321:G:OP1	2.00	0.44
20:A:2479:C:C2	20:A:2480:C:C5	3.05	0.44
20:A:2713:U:H2'	20:A:2714:C:C6	2.51	0.44
20:A:2717:C:C2	20:A:2718:C:C5	3.05	0.44
20:A:2877:G:N2	20:A:2879:A:H1'	2.32	0.44
21:B:2:G:H2'	21:B:3:U:H6	1.83	0.44
21:B:56:A:H2'	21:B:57:G:H8	1.82	0.44
24:E:114:LEU:HD23	24:E:114:LEU:HA	1.77	0.44
27:K:45:PHE:CD1	27:K:46:THR:N	2.84	0.44
27:K:76:TYR:CE1	27:K:87:SER:HB3	2.53	0.44
28:L:22:ILE:HG22	28:L:23:LYS:HG3	1.99	0.44
29:M:95:VAL:HA	29:M:98:GLU:HG3	1.98	0.44
42:Z:25:LEU:HD11	42:Z:47:ARG:HG2	1.99	0.44
44:1:34:THR:O	44:1:42:THR:N	2.43	0.44
1:a:37:C:H2'	1:a:38:G:C8	2.53	0.44
1:a:405:C:H2'	1:a:406:C:C6	2.52	0.44
1:a:567:U:C2	1:a:568:G:C8	3.05	0.44
1:a:1270:G:C6	1:a:1294:A:N7	2.85	0.44
1:a:1315:G:H1'	1:a:1318:C:H42	1.81	0.44
1:a:1371:G:O2'	1:a:1372:A:H8	2.00	0.44
1:a:1546:G:O2'	1:a:1547:A:H8	2.00	0.44
8:i:67:VAL:HG21	8:i:75:GLN:HB2	2.00	0.44
12:m:72:GLU:O	12:m:75:LEU:HG	2.18	0.44
14:o:7:ARG:O	14:o:11:ILE:HG23	2.18	0.44
20:A:93:G:O2'	20:A:94:U:O4'	2.09	0.44
20:A:192:G:H2'	20:A:208:G:H22	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:312:U:H4'	20:A:313:A:O5'	2.17	0.44
20:A:333:U:H2'	20:A:334:U:C6	2.52	0.44
20:A:596:G:C5	20:A:597:C:C5	3.06	0.44
20:A:604:U:OP2	29:M:29:LYS:NZ	2.44	0.44
20:A:897:G:C2	20:A:898:A:C5	3.05	0.44
20:A:1349:U:H2'	20:A:1653:A:C2	2.52	0.44
20:A:1349:U:C2	20:A:1653:A:H2	2.36	0.44
20:A:1551:U:O2	20:A:1551:U:H2'	2.17	0.44
20:A:2314:A:H2'	20:A:2315:A:H8	1.82	0.44
27:K:40:LYS:C	27:K:42:LYS:H	2.25	0.44
27:K:84:GLY:O	27:K:86:LYS:HG3	2.17	0.44
29:M:46:VAL:HG23	29:M:47:ARG:O	2.18	0.44
30:N:32:TRP:CE3	30:N:133:LYS:HB3	2.53	0.44
30:N:44:ASN:HD21	30:N:93:TRP:HB2	1.82	0.44
36:T:7:SER:HB3	36:T:113:THR:HA	1.98	0.44
41:Y:18:ARG:HD2	41:Y:22:MET:HB3	1.98	0.44
1:a:218:A:O2'	1:a:235:G:N2	2.50	0.44
1:a:536:G:N7	11:l:63:ARG:NH1	2.55	0.44
1:a:702:A:C8	1:a:716:U:C4	3.05	0.44
1:a:994:A:C6	1:a:1333:A:C6	3.06	0.44
1:a:996:C:H1'	13:n:19:GLN:NE2	2.32	0.44
1:a:1336:U:P	1:a:1337:C:H3'	2.58	0.44
1:a:1465:U:H3'	1:a:1466:U:C6	2.53	0.44
4:e:12:GLU:N	4:e:40:GLY:O	2.50	0.44
6:g:83:SER:OG	6:g:84:ASN:N	2.49	0.44
6:g:93:PRO:HA	6:g:96:ARG:NH1	2.33	0.44
7:h:21:LYS:HE3	7:h:72:ARG:CZ	2.48	0.44
13:n:10:ASN:HD21	13:n:21:TYR:HE1	1.66	0.44
14:o:17:ARG:NH2	14:o:77:ARG:HD3	2.30	0.44
16:q:31:LYS:HE2	16:q:42:LYS:HD3	1.99	0.44
17:r:20:ASN:O	17:r:22:ILE:N	2.48	0.44
20:A:126:A:H61	47:4:42:ILE:CD1	2.30	0.44
20:A:369:A:C5	20:A:372:C:N4	2.86	0.44
20:A:519:A:H1'	20:A:520:A:H5''	2.00	0.44
20:A:847:U:OP2	29:M:36:LYS:HD3	2.18	0.44
20:A:1106:U:O2'	20:A:1109:A:N6	2.44	0.44
20:A:1268:G:H2'	20:A:1269:G:H8	1.82	0.44
20:A:1931:U:H2'	20:A:1932:A:C8	2.53	0.44
20:A:2097:G:H2'	20:A:2098:U:H6	1.82	0.44
20:A:2369:C:O3'	40:X:33:LYS:NZ	2.46	0.44
20:A:2407:U:OP2	48:5:30:SER:OG	2.35	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:2468:G:C5	20:A:2469:G:C8	3.05	0.44
20:A:2699:G:OP2	33:Q:49:LYS:NZ	2.51	0.44
21:B:73:U:C2	21:B:74:G:C8	3.06	0.44
21:B:74:G:H1'	39:W:30:ILE:HD11	1.99	0.44
21:B:111:C:H4'	32:P:51:VAL:HG22	1.99	0.44
22:C:250:TRP:CD1	22:C:250:TRP:N	2.84	0.44
32:P:68:LYS:H	32:P:71:THR:HG1	1.65	0.44
35:S:100:ILE:HG22	35:S:101:ASN:N	2.28	0.44
36:T:36:ASP:O	36:T:39:SER:OG	2.32	0.44
41:Y:5:CYS:SG	41:Y:10:ARG:HB2	2.58	0.44
44:1:21:PHE:HB3	44:1:23:PHE:CZ	2.53	0.44
1:a:56:A:C4	1:a:346:G:N2	2.85	0.44
1:a:698:G:H2'	1:a:699:U:C6	2.52	0.44
1:a:881:A:H8	1:a:881:A:OP2	2.01	0.44
1:a:1363:U:H3	1:a:1389:A:N6	2.05	0.44
11:l:63:ARG:NH2	11:l:102:ASP:OD2	2.46	0.44
20:A:335:G:N2	20:A:376:U:C5	2.85	0.44
20:A:690:G:C2	20:A:691:A:C2	3.05	0.44
20:A:952:A:N3	30:N:11:ARG:NH2	2.66	0.44
20:A:964:A:H2'	20:A:965:U:C6	2.52	0.44
20:A:1101:U:H5	20:A:1111:G:H5'	1.82	0.44
20:A:1120:A:C6	20:A:1121:U:C2	3.05	0.44
20:A:1576:A:C4	20:A:1577:A:N7	2.86	0.44
20:A:2665:C:N3	20:A:2684:G:N1	2.65	0.44
21:B:107:G:C6	21:B:108:U:C4	3.06	0.44
25:F:71:LYS:HE3	25:F:71:LYS:HB2	1.68	0.44
27:K:103:GLU:O	27:K:107:LYS:HG3	2.18	0.44
30:N:37:THR:C	30:N:99:ARG:HB3	2.42	0.44
33:Q:86:VAL:HG11	33:Q:89:TYR:CE1	2.52	0.44
34:R:61:TRP:CH2	34:R:93:LYS:HB2	2.52	0.44
40:X:28:LYS:HA	40:X:28:LYS:HD3	1.68	0.44
1:a:267:U:C2	1:a:268:U:C5	3.06	0.44
1:a:424:U:H2'	1:a:425:G:O4'	2.17	0.44
1:a:1036:A:H2'	1:a:1037:G:H8	1.82	0.44
1:a:1046:U:H5''	1:a:1047:C:C5	2.53	0.44
3:d:45:SER:O	3:d:49:MET:HG2	2.17	0.44
6:g:107:TYR:CD2	6:g:134:SER:HB3	2.53	0.44
19:t:3:ASN:O	19:t:5:GLU:HG3	2.17	0.44
20:A:292:U:H2'	20:A:293:U:H6	1.81	0.44
20:A:679:C:H2'	20:A:680:U:C6	2.52	0.44
20:A:805:G:H2'	20:A:806:G:H8	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:1014:A:C4	20:A:1224:G:C2	3.05	0.44
20:A:1114:G:C2	20:A:1115:C:N4	2.86	0.44
20:A:1377:U:H2'	20:A:1433:U:O2	2.17	0.44
20:A:1382:G:C6	20:A:1644:G:C6	3.06	0.44
20:A:1385:A:N6	20:A:1641:C:N4	2.65	0.44
20:A:1630:G:H1'	20:A:1631:A:C5	2.53	0.44
20:A:1690:G:OP1	20:A:1690:G:H4'	2.16	0.44
20:A:1813:G:C6	20:A:1833:A:N7	2.86	0.44
20:A:2327:C:H4'	25:F:37:ASN:HD21	1.81	0.44
20:A:2593:C:H2'	20:A:2594:U:H6	1.83	0.44
21:B:104:G:H2'	21:B:105:A:C8	2.52	0.44
22:C:23:GLU:OE1	22:C:24:ILE:N	2.50	0.44
24:E:26:ILE:HD13	24:E:111:LYS:HB3	2.00	0.44
24:E:126:VAL:HG11	24:E:129:LEU:HD21	2.00	0.44
25:F:6:GLU:O	25:F:10:LYS:HG3	2.17	0.44
26:G:90:ILE:HG22	26:G:91:GLY:H	1.82	0.44
33:Q:5:ILE:O	33:Q:8:LEU:N	2.50	0.44
1:a:129:G:H2'	1:a:130:U:H6	1.82	0.44
1:a:545:G:H3'	1:a:545:G:N3	2.33	0.44
1:a:595:C:H2'	1:a:596:G:O4'	2.17	0.44
1:a:702:A:H2	1:a:719:A:C4	2.35	0.44
1:a:731:A:C6	1:a:732:C:C4	3.05	0.44
1:a:899:C:O2'	1:a:900:U:H5'	2.18	0.44
1:a:1157:G:N3	1:a:1157:G:H2'	2.33	0.44
1:a:1265:A:H2'	1:a:1266:A:C8	2.53	0.44
1:a:1330:U:O2'	1:a:1375:A:H8	2.01	0.44
1:a:1456:G:N2	1:a:1476:A:H62	2.13	0.44
3:d:24:LYS:HG2	3:d:29:ARG:HH21	1.83	0.44
12:m:53:THR:O	12:m:56:ILE:HG12	2.17	0.44
13:n:47:LEU:HD23	13:n:47:LEU:HA	1.77	0.44
19:t:68:LYS:O	19:t:71:ALA:HB3	2.18	0.44
20:A:159:G:H2'	20:A:160:U:O4'	2.18	0.44
20:A:435:C:H2'	20:A:436:G:C8	2.51	0.44
20:A:735:G:N2	20:A:808:G:C4	2.85	0.44
20:A:1009:G:C4	20:A:1010:U:C5	3.05	0.44
20:A:1119:C:C2	20:A:1128:A:C6	3.06	0.44
20:A:1510:C:C2	20:A:1570:G:N2	2.86	0.44
20:A:1897:G:O2'	20:A:1898:A:H8	2.01	0.44
21:B:26:C:C2	21:B:27:A:C8	3.06	0.44
21:B:40:C:C5	25:F:66:LEU:HG	2.53	0.44
21:B:97:A:H2'	21:B:97:A:N3	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:M:86:GLU:HA	29:M:119:LYS:NZ	2.32	0.44
34:R:24:TYR:O	34:R:26:GLY:N	2.44	0.44
34:R:95:LEU:HD23	34:R:95:LEU:HA	1.79	0.44
41:Y:11:LYS:HB2	41:Y:11:LYS:HE3	1.77	0.44
41:Y:41:ASP:OD1	41:Y:41:ASP:N	2.50	0.44
43:O:8:LEU:HA	43:O:54:VAL:HG22	1.99	0.44
44:1:51:THR:OG1	44:1:53:ASP:HB2	2.16	0.44
1:a:105:G:H2'	1:a:106:A:H8	1.83	0.44
1:a:567:U:H2'	1:a:568:G:C8	2.50	0.44
1:a:662:G:H2'	1:a:663:A:C8	2.53	0.44
1:a:908:A:C2	1:a:923:A:C4	3.05	0.44
1:a:1020:A:O2'	1:a:1053:C:H1'	2.18	0.44
1:a:1057:G:C5	1:a:1058:U:C4	3.06	0.44
1:a:1363:U:H2'	1:a:1364:A:C8	2.50	0.44
6:g:50:ILE:CD1	6:g:124:ILE:HD11	2.48	0.44
17:r:46:ARG:NH1	17:r:53:ALA:HA	2.32	0.44
17:r:53:ALA:O	17:r:57:ARG:NE	2.51	0.44
17:r:61:ILE:O	17:r:65:ARG:HD3	2.18	0.44
19:t:49:LEU:HD12	19:t:50:TYR:H	1.82	0.44
20:A:240:C:C2	20:A:241:C:C5	3.06	0.44
20:A:485:C:H2'	20:A:486:G:O4'	2.18	0.44
20:A:498:G:H22	20:A:509:G:H2'	1.83	0.44
20:A:586:A:O2'	20:A:587:U:O5'	2.35	0.44
20:A:815:G:C6	20:A:834:A:C8	3.05	0.44
20:A:987:A:H2'	20:A:988:C:C6	2.53	0.44
20:A:1467:G:H8	20:A:1467:G:O5'	2.00	0.44
20:A:1529:U:O4	20:A:1530:A:N6	2.50	0.44
20:A:1676:G:C6	20:A:1678:A:C5	3.05	0.44
20:A:2201:A:H2'	20:A:2202:U:O4'	2.17	0.44
20:A:2207:C:H2'	20:A:2208:C:H6	1.83	0.44
20:A:2275:C:C2	20:A:2294:G:N2	2.86	0.44
20:A:2304:G:H2'	20:A:2305:U:C6	2.53	0.44
20:A:2332:G:H8	20:A:2332:G:O5'	2.01	0.44
23:D:124:LYS:HE3	23:D:124:LYS:HB3	1.90	0.44
26:G:116:THR:OG1	26:G:117:ALA:N	2.49	0.44
27:K:126:TYR:CE2	27:K:132:PRO:HD2	2.53	0.44
32:P:39:ASN:HB3	32:P:58:ALA:HB3	2.00	0.44
33:Q:29:HIS:CE1	33:Q:42:LEU:HD21	2.52	0.44
37:U:25:TYR:HE2	37:U:82:LEU:HD11	1.82	0.44
46:3:29:ARG:HB3	46:3:47:GLU:HB3	2.00	0.44
48:5:4:GLN:NE2	48:5:60:GLN:HE21	2.16	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:1342:G:H2'	1:a:1343:C:C6	2.53	0.44
2:c:134:LYS:HD3	2:c:134:LYS:HA	1.81	0.44
6:g:72:VAL:HG12	6:g:142:HIS:CE1	2.53	0.44
11:l:43:LYS:HB2	11:l:70:LEU:HD22	1.99	0.44
20:A:155:U:O2'	20:A:156:U:C6	2.71	0.44
20:A:235:G:H4'	20:A:236:A:OP1	2.17	0.44
20:A:345:G:C6	20:A:346:A:C2	3.06	0.44
20:A:597:C:C2	20:A:598:G:C8	3.06	0.44
20:A:748:G:H2'	20:A:749:U:C6	2.52	0.44
20:A:750:G:C6	20:A:762:A:C6	3.06	0.44
20:A:752:G:H2'	20:A:753:G:H8	1.82	0.44
20:A:1855:U:N3	20:A:1856:G:N7	2.66	0.44
20:A:2210:C:H2'	20:A:2211:U:C6	2.52	0.44
20:A:2222:A:C6	20:A:2223:C:N4	2.85	0.44
20:A:2641:G:N3	20:A:2795:A:H2	2.16	0.44
20:A:2759:C:H2'	20:A:2760:U:H6	1.82	0.44
21:B:63:U:H2'	21:B:106:C:H41	1.83	0.44
24:E:75:GLN:NE2	24:E:83:TRP:HE1	2.15	0.44
31:O:22:THR:HG21	31:O:67:ARG:N	2.16	0.44
32:P:13:LYS:HB2	32:P:13:LYS:HE3	1.71	0.44
32:P:116:LEU:HD23	32:P:116:LEU:HA	1.64	0.44
38:V:42:LYS:HA	38:V:57:LEU:O	2.18	0.44
39:W:43:PHE:HD1	39:W:43:PHE:HA	1.67	0.44
43:O:10:ARG:HA	43:O:10:ARG:HD3	1.86	0.44
1:a:42:U:H2'	1:a:43:G:C8	2.53	0.43
1:a:70:U:H2'	1:a:71:U:H6	1.82	0.43
1:a:498:C:H5''	1:a:499:G:OP2	2.16	0.43
1:a:569:U:H2'	1:a:570:C:C6	2.53	0.43
1:a:869:G:C6	1:a:870:U:C2	3.06	0.43
1:a:1532:G:C2	1:a:1536:G:C2	3.06	0.43
1:a:1537:G:H2'	1:a:1538:U:O4'	2.18	0.43
3:d:9:TRP:O	3:d:13:ARG:N	2.29	0.43
9:j:36:VAL:HG23	9:j:76:ILE:HG23	1.99	0.43
11:l:26:LYS:NZ	11:l:29:ASN:H	2.16	0.43
12:m:9:ILE:HD13	12:m:9:ILE:HA	1.83	0.43
20:A:620:G:H2'	20:A:621:C:H6	1.80	0.43
20:A:919:A:O2'	20:A:920:G:C4	2.71	0.43
20:A:1097:A:P	20:A:1127:G:H22	2.41	0.43
20:A:1427:U:H5''	20:A:1428:G:OP2	2.18	0.43
20:A:1563:G:C2	20:A:1564:U:C2	3.06	0.43
20:A:1591:A:C5	20:A:1592:G:C6	3.06	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:1887:G:H2'	20:A:1888:C:H6	1.83	0.43
20:A:2306:U:H2'	20:A:2307:C:C6	2.52	0.43
20:A:2371:U:H2'	20:A:2372:A:H5''	2.00	0.43
27:K:107:LYS:NZ	27:K:121:THR:HA	2.32	0.43
38:V:12:ILE:H	38:V:12:ILE:HG12	1.55	0.43
1:a:30:A:C6	1:a:31:C:C4	3.06	0.43
1:a:191:G:H2'	1:a:192:U:C6	2.53	0.43
1:a:587:A:HO2'	1:a:932:G:HO2'	1.63	0.43
1:a:702:A:N7	1:a:716:U:N3	2.67	0.43
1:a:1056:A:C6	1:a:1057:G:C5	3.06	0.43
1:a:1307:U:H2'	1:a:1308:U:H6	1.82	0.43
1:a:1367:C:H2'	1:a:1368:G:H8	1.83	0.43
1:a:1491:G:C2	1:a:1492:A:C8	3.06	0.43
3:d:96:ASP:OD1	3:d:96:ASP:N	2.51	0.43
6:g:103:TRP:N	6:g:103:TRP:CD1	2.86	0.43
7:h:54:ASP:CG	7:h:55:ASP:H	2.25	0.43
8:i:31:ASN:ND2	8:i:66:ASN:HA	2.33	0.43
11:l:53:MET:HE3	11:l:65:TYR:CD1	2.53	0.43
12:m:20:THR:HA	12:m:25:ILE:HG22	2.00	0.43
15:p:10:MET:HE2	15:p:10:MET:HB3	1.86	0.43
20:A:49:G:C2	20:A:180:G:C6	3.05	0.43
20:A:798:G:C2	20:A:799:G:N7	2.87	0.43
20:A:1454:U:H2'	20:A:1455:U:O4'	2.18	0.43
20:A:1707:A:N6	20:A:2010:C:H42	2.14	0.43
20:A:1855:U:C2	20:A:1856:G:C8	3.06	0.43
20:A:1969:U:C4	20:A:2566:U:H1'	2.53	0.43
20:A:2147:G:C2	20:A:2171:G:C5	3.06	0.43
21:B:96:G:H1	39:W:18:ARG:NH1	2.16	0.43
22:C:71:LYS:HZ2	22:C:96:TYR:HD2	1.66	0.43
23:D:110:VAL:HG21	23:D:192:ILE:HG13	2.00	0.43
25:F:12:VAL:HA	25:F:172:GLN:OE1	2.19	0.43
44:l:79:GLY:O	44:l:82:ASP:HB2	2.18	0.43
1:a:1054:A:H3'	1:a:1055:A:H8	1.84	0.43
1:a:1507:G:H5''	1:a:1508:A:OP1	2.19	0.43
8:i:43:ASP:C	8:i:45:ARG:H	2.26	0.43
10:k:36:ASP:OD1	10:k:40:ASN:N	2.51	0.43
12:m:86:TYR:CZ	12:m:90:ARG:HD2	2.53	0.43
20:A:729:A:H2'	20:A:730:C:H6	1.82	0.43
20:A:878:C:C2	20:A:981:A:C6	3.06	0.43
20:A:910:G:C6	20:A:911:U:C4	3.06	0.43
20:A:915:G:C2	20:A:945:C:C2	3.06	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:927:A:N3	20:A:931:C:N4	2.66	0.43
20:A:963:C:C4	20:A:964:A:N7	2.87	0.43
20:A:965:U:H3'	20:A:966:U:H5''	1.99	0.43
20:A:1336:U:C2	20:A:1669:G:C6	3.06	0.43
20:A:1707:A:C2	20:A:2740:U:C2	3.06	0.43
20:A:1752:U:C2	20:A:1753:G:C8	3.06	0.43
20:A:2157:C:C2'	20:A:2159:C:H41	2.30	0.43
20:A:2488:C:OP2	20:A:2489:C:H5	2.01	0.43
22:C:11:ASN:N	22:C:11:ASN:OD1	2.50	0.43
22:C:110:LEU:HA	22:C:110:LEU:HD23	1.73	0.43
23:D:66:LYS:HE2	23:D:76:PRO:HG3	2.01	0.43
34:R:76:TYR:O	34:R:80:MET:HE3	2.18	0.43
39:W:37:GLU:H	39:W:37:GLU:HG3	1.50	0.43
1:a:67:U:C2	1:a:68:U:C5	3.06	0.43
1:a:569:U:C2	1:a:570:C:C5	3.06	0.43
1:a:807:A:N3	1:a:809:A:C5	2.87	0.43
1:a:1018:U:C2	1:a:1019:G:H1'	2.53	0.43
1:a:1190:G:C4	1:a:1191:A:C8	3.07	0.43
1:a:1326:A:C6	1:a:1342:G:C6	3.07	0.43
1:a:1502:G:H2'	1:a:1503:G:C8	2.53	0.43
5:f:14:ARG:NE	5:f:16:ASN:OD1	2.51	0.43
7:h:58:GLY:HA2	7:h:59:VAL:HA	1.65	0.43
8:i:28:ILE:HB	8:i:63:VAL:HB	2.00	0.43
9:j:8:ILE:HG12	9:j:74:ILE:O	2.19	0.43
12:m:25:ILE:HD12	12:m:29:THR:HB	2.01	0.43
18:s:71:LEU:HD23	18:s:71:LEU:HA	1.80	0.43
20:A:1096:G:N2	20:A:1127:G:N3	2.65	0.43
20:A:1182:A:C2	20:A:1184:A:C6	3.07	0.43
20:A:1551:U:O2	20:A:1552:A:H5'	2.17	0.43
20:A:2275:C:C2	20:A:2276:U:C5	3.06	0.43
22:C:66:ASP:OD1	22:C:67:PHE:N	2.51	0.43
22:C:90:ASN:C	22:C:91:ILE:HD12	2.43	0.43
26:G:29:PRO:HD2	26:G:79:VAL:HG12	2.00	0.43
27:K:115:LEU:HD22	27:K:115:LEU:HA	1.73	0.43
29:M:4:HIS:HD2	29:M:5:GLU:HG3	1.84	0.43
29:M:96:LEU:HG	29:M:97:LYS:N	2.24	0.43
30:N:37:THR:HB	39:W:82:PHE:CD1	2.54	0.43
32:P:31:LEU:HD22	32:P:31:LEU:HA	1.84	0.43
39:W:16:SER:C	39:W:18:ARG:N	2.76	0.43
48:5:64:ARG:HA	48:5:64:ARG:HD2	1.87	0.43
1:a:418:C:H5'	3:d:129:ILE:HG22	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:429:A:C6	1:a:430:A:C5	3.06	0.43
1:a:884:C:H2'	1:a:885:A:O4'	2.19	0.43
1:a:1055:A:C2	1:a:1056:A:C5	3.06	0.43
1:a:1196:G:O2'	1:a:1197:G:N7	2.48	0.43
1:a:1221:G:H2'	1:a:1222:C:O4'	2.17	0.43
1:a:1443:A:H2'	1:a:1444:C:H6	1.84	0.43
1:a:1529:A:H2'	1:a:1530:U:H6	1.83	0.43
4:e:162:GLU:O	4:e:165:ILE:HD11	2.19	0.43
7:h:75:THR:HG22	7:h:132:TRP:C	2.43	0.43
18:s:7:LYS:HD3	18:s:7:LYS:HA	1.84	0.43
20:A:173:G:N3	20:A:174:A:C8	2.86	0.43
20:A:399:A:OP1	20:A:399:A:H4'	2.18	0.43
20:A:489:A:C6	20:A:490:G:C5	3.06	0.43
20:A:607:G:C6	20:A:2044:A:N7	2.86	0.43
20:A:892:U:H1'	43:0:46:MET:HE2	1.99	0.43
20:A:917:C:H2'	20:A:918:U:O4'	2.18	0.43
20:A:2456:C:H2'	20:A:2457:U:C6	2.52	0.43
20:A:2884:A:N1	31:O:4:ARG:NH2	2.65	0.43
26:G:158:LYS:O	26:G:171:ARG:NH2	2.51	0.43
27:K:15:LYS:HD2	27:K:17:TYR:OH	2.19	0.43
1:a:250:C:P	16:q:75:ARG:NH1	2.92	0.43
1:a:268:U:H2'	1:a:269:G:C8	2.49	0.43
1:a:1141:U:C2	1:a:1143:G:C8	3.06	0.43
1:a:1462:A:P	1:a:1463:C:H41	2.39	0.43
3:d:17:ILE:HD13	3:d:56:LYS:HD2	2.01	0.43
8:i:40:PRO:C	8:i:42:ALA:H	2.26	0.43
8:i:40:PRO:C	8:i:42:ALA:N	2.77	0.43
17:r:29:ASP:HB2	17:r:32:LEU:HD23	2.00	0.43
17:r:72:LEU:HG	17:r:73:PRO:HD2	2.00	0.43
18:s:34:TRP:HZ2	18:s:37:ARG:HB2	1.82	0.43
18:s:51:VAL:N	18:s:58:VAL:O	2.50	0.43
20:A:262:G:C2	20:A:263:G:C8	3.07	0.43
20:A:347:A:O2'	20:A:348:A:H2'	2.18	0.43
20:A:1383:G:N1	20:A:1643:C:N3	2.66	0.43
20:A:1515:C:H2'	20:A:1516:A:C8	2.52	0.43
20:A:2125:U:O2	20:A:2162:G:H1'	2.19	0.43
20:A:2273:G:C8	20:A:2441:C:C4	3.06	0.43
20:A:2401:U:H5'	40:X:65:ASP:OD2	2.18	0.43
20:A:2531:C:O2'	20:A:2556:A:N6	2.51	0.43
20:A:2545:A:C2	20:A:2546:G:C8	3.06	0.43
20:A:2596:G:H21	20:A:2597:G:H1'	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:B:46:A:P	32:P:35:ARG:HH12	2.40	0.43
23:D:9:LYS:HB2	23:D:200:ILE:CD1	2.48	0.43
24:E:170:LEU:HD23	24:E:170:LEU:HA	1.83	0.43
25:F:123:ASP:OD1	25:F:123:ASP:N	2.51	0.43
26:G:31:GLY:H	26:G:79:VAL:HG13	1.82	0.43
26:G:128:ASN:N	26:G:128:ASN:OD1	2.51	0.43
32:P:66:GLY:C	32:P:68:LYS:HE3	2.42	0.43
33:Q:63:LYS:HG2	33:Q:64:VAL:N	2.34	0.43
37:U:25:TYR:O	37:U:79:ILE:HA	2.18	0.43
1:a:184:C:H2'	1:a:185:A:O4'	2.19	0.43
1:a:839:U:H2'	1:a:840:G:C8	2.52	0.43
1:a:860:C:O2	17:r:16:TYR:OH	2.36	0.43
1:a:1020:A:H62	1:a:1042:C:P	2.41	0.43
1:a:1445:C:C2	1:a:1487:G:N2	2.87	0.43
6:g:108:ALA:HB2	6:g:123:GLU:HG2	2.00	0.43
8:i:75:GLN:HA	8:i:78:ALA:HB3	2.00	0.43
9:j:32:THR:OG1	9:j:83:THR:HB	2.19	0.43
18:s:35:SER:OG	18:s:51:VAL:HG13	2.18	0.43
20:A:174:A:C6	20:A:175:U:C4	3.06	0.43
20:A:308:C:N4	20:A:402:A:H61	2.17	0.43
20:A:588:G:C2	20:A:589:A:C8	3.06	0.43
20:A:926:C:C6	20:A:926:C:H3'	2.54	0.43
20:A:1300:U:OP1	45:2:13:LYS:NZ	2.37	0.43
20:A:1458:G:H1	20:A:1628:G:N2	2.07	0.43
20:A:1628:G:H8	20:A:1628:G:OP2	2.00	0.43
20:A:2664:C:C2	20:A:2685:A:C2	3.06	0.43
21:B:56:A:H2'	21:B:57:G:C8	2.53	0.43
22:C:45:ASN:OD1	22:C:45:ASN:N	2.37	0.43
23:D:133:MET:HE3	23:D:133:MET:HB3	1.82	0.43
28:L:66:LYS:HE3	28:L:66:LYS:HB3	1.91	0.43
28:L:70:ARG:HB2	28:L:76:TYR:HE1	1.83	0.43
28:L:71:ARG:HE	28:L:77:ILE:HD11	1.84	0.43
44:1:56:PRO:O	44:1:61:ARG:HA	2.19	0.43
1:a:206:C:H2'	1:a:207:A:H8	1.83	0.43
1:a:213:G:C8	1:a:214:U:H5	2.36	0.43
1:a:805:A:C6	1:a:806:G:C6	3.07	0.43
1:a:1056:A:C6	1:a:1057:G:C6	3.07	0.43
1:a:1057:G:C6	1:a:1058:U:C4	3.06	0.43
1:a:1093:G:N1	1:a:1097:G:C6	2.87	0.43
1:a:1201:G:H21	13:n:61:TRP:C	2.22	0.43
2:c:72:PRO:O	2:c:76:ILE:HG23	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:e:7:LYS:HD3	4:e:68:LYS:HE3	2.00	0.43
4:e:14:ARG:NH1	4:e:116:GLU:OE1	2.46	0.43
4:e:26:LYS:HB2	4:e:26:LYS:HE3	1.71	0.43
8:i:91:ASP:HB2	8:i:94:PHE:CE2	2.53	0.43
12:m:66:GLU:HB2	12:m:68:ASP:H	1.84	0.43
19:t:44:ASP:CG	19:t:45:ASN:H	2.26	0.43
20:A:403:G:C5	20:A:404:G:C6	3.07	0.43
20:A:567:A:C6	20:A:2056:A:C5	3.07	0.43
20:A:658:G:H3'	20:A:659:G:N2	2.34	0.43
20:A:678:U:C2	20:A:679:C:C5	3.07	0.43
20:A:844:A:H5''	20:A:845:G:OP1	2.19	0.43
20:A:890:A:O2'	20:A:891:A:OP1	2.29	0.43
20:A:899:G:N2	20:A:961:G:N1	2.65	0.43
20:A:1040:A:N7	20:A:1195:A:N6	2.67	0.43
20:A:1168:A:C6	20:A:2532:A:C6	3.07	0.43
20:A:1219:G:C6	20:A:1220:U:C4	3.07	0.43
20:A:1315:A:C6	20:A:1328:G:C6	3.07	0.43
20:A:1546:C:H2'	20:A:1547:U:C6	2.54	0.43
20:A:1883:U:H1'	20:A:1886:G:O6	2.18	0.43
20:A:1904:A:C5	20:A:1905:G:C8	3.07	0.43
20:A:2846:A:N1	20:A:2889:U:N3	2.66	0.43
24:E:160:ASN:ND2	24:E:160:ASN:O	2.52	0.43
25:F:106:VAL:HG13	44:1:48:VAL:HG11	2.00	0.43
27:K:79:SER:O	27:K:81:TYR:HD1	2.02	0.43
30:N:57:TYR:HB3	30:N:116:GLU:CD	2.43	0.43
35:S:50:ALA:HB1	35:S:51:PRO:HD2	2.01	0.43
1:a:251:G:H2'	1:a:252:C:O4'	2.18	0.43
1:a:478:A:C6	1:a:479:G:C6	3.07	0.43
1:a:923:A:C6	1:a:924:A:C5	3.06	0.43
1:a:974:A:C6	18:s:55:ARG:HB2	2.54	0.43
1:a:1033:U:C2	1:a:1034:A:C8	3.07	0.43
1:a:1122:G:H4'	2:c:171:THR:HB	2.01	0.43
1:a:1140:G:O2'	1:a:1141:U:OP2	2.26	0.43
1:a:1294:A:C8	1:a:1297:C:N4	2.87	0.43
8:i:91:ASP:C	8:i:93:ASP:H	2.27	0.43
10:k:34:ILE:O	10:k:42:LEU:HB2	2.18	0.43
12:m:19:LEU:HD23	12:m:19:LEU:HA	1.77	0.43
20:A:37:G:C6	20:A:485:C:N4	2.86	0.43
20:A:294:G:N3	20:A:295:G:C8	2.87	0.43
20:A:436:G:H2'	20:A:437:U:H6	1.83	0.43
20:A:999:A:N3	20:A:2471:U:O2'	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:1329:U:H2'	20:A:1330:C:C6	2.54	0.43
20:A:1489:C:C2	20:A:1490:A:C8	3.06	0.43
20:A:2060:G:H2'	20:A:2061:C:C6	2.53	0.43
21:B:2:G:C6	21:B:3:U:C4	3.07	0.43
22:C:180:GLU:HG2	22:C:274:ARG:H	1.84	0.43
38:V:28:PRO:O	38:V:29:LYS:HB3	2.18	0.43
38:V:39:ASN:ND2	38:V:61:ALA:O	2.48	0.43
1:a:752:C:H2'	1:a:753:U:C6	2.54	0.43
1:a:855:G:N1	1:a:863:C:N3	2.67	0.43
1:a:1103:G:C5	1:a:1115:G:N2	2.87	0.43
1:a:1331:G:O2'	1:a:1333:A:N7	2.50	0.43
3:d:25:GLU:OE1	3:d:25:GLU:N	2.52	0.43
3:d:190:ILE:O	3:d:191:ASP:HB2	2.19	0.43
6:g:149:ARG:CZ	6:g:149:ARG:HB3	2.49	0.43
10:k:65:MET:HE3	10:k:65:MET:HB3	1.58	0.43
12:m:20:THR:OG1	12:m:26:GLY:O	2.25	0.43
20:A:264:G:C2	20:A:265:A:N7	2.87	0.43
20:A:798:G:C2	20:A:799:G:C8	3.07	0.43
20:A:864:G:H2'	20:A:865:C:C6	2.54	0.43
20:A:1086:A:H5'	20:A:1087:G:C8	2.54	0.43
20:A:1533:G:C6	20:A:1534:U:C4	3.07	0.43
20:A:1565:G:C8	20:A:1566:A:C8	3.06	0.43
20:A:2045:A:O2'	20:A:2468:G:N2	2.51	0.43
20:A:2728:G:H2'	20:A:2729:C:C6	2.54	0.43
21:B:44:A:OP1	32:P:7:LYS:NZ	2.34	0.43
22:C:170:LYS:HG2	22:C:171:TYR:HD1	1.83	0.43
24:E:183:VAL:O	24:E:187:VAL:HG23	2.19	0.43
25:F:103:LEU:HA	25:F:107:SER:HB2	2.01	0.43
32:P:43:GLN:OE1	32:P:52:THR:HG21	2.18	0.43
34:R:30:THR:O	34:R:31:LEU:HD23	2.19	0.43
37:U:2:GLU:C	37:U:4:LEU:H	2.26	0.43
39:W:62:LYS:HB3	39:W:69:ASN:HB3	2.01	0.43
1:a:336:A:H2	1:a:347:G:H22	1.67	0.42
1:a:390:U:N3	1:a:391:G:N7	2.67	0.42
1:a:530:G:H2'	1:a:531:U:H6	1.84	0.42
1:a:619:G:H2'	1:a:620:U:C6	2.54	0.42
1:a:640:G:H2'	1:a:641:G:C8	2.52	0.42
1:a:862:C:H2'	1:a:863:C:H6	1.84	0.42
1:a:953:A:H1'	1:a:1394:G:H22	1.83	0.42
1:a:982:G:H2'	1:a:983:C:C6	2.54	0.42
1:a:1103:G:C4	1:a:1115:G:N2	2.87	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:1254:A:C5	1:a:1313:C:N4	2.87	0.42
1:a:1305:G:N3	1:a:1305:G:H2'	2.34	0.42
1:a:1323:U:H2'	1:a:1324:G:C8	2.54	0.42
1:a:1540:C:H2'	1:a:1541:G:H8	1.83	0.42
3:d:121:THR:HG22	3:d:143:ARG:HB2	2.00	0.42
4:e:88:VAL:HG22	4:e:93:ARG:HA	2.01	0.42
4:e:156:LEU:HB3	7:h:73:VAL:HG12	2.00	0.42
11:l:10:LYS:HB3	11:l:10:LYS:HE2	1.61	0.42
19:t:70:LYS:HE2	19:t:70:LYS:HB3	1.85	0.42
20:A:5:U:N3	20:A:2910:A:C2	2.86	0.42
20:A:25:G:C4	20:A:26:U:C5	3.07	0.42
20:A:735:G:C2	20:A:808:G:C4	3.07	0.42
20:A:788:G:C2	20:A:790:A:N6	2.87	0.42
20:A:1008:A:H2'	20:A:1009:G:H8	1.84	0.42
20:A:1352:U:C2	20:A:1353:G:C8	3.06	0.42
20:A:1408:U:HO2'	20:A:2226:A:H8	1.66	0.42
20:A:1450:U:H1'	20:A:1630:G:N1	2.34	0.42
20:A:1490:A:C6	20:A:1491:U:C5	3.07	0.42
20:A:2283:A:H3'	20:A:2284:G:H8	1.84	0.42
20:A:2530:G:C6	20:A:2531:C:N4	2.87	0.42
20:A:2644:G:C2	20:A:2645:G:C5	3.07	0.42
20:A:2758:G:C2	20:A:2759:C:C6	3.06	0.42
20:A:2814:G:C2	20:A:2815:A:C8	3.07	0.42
21:B:73:U:OP2	39:W:12:ILE:HG23	2.18	0.42
22:C:77:VAL:HG22	22:C:115:ARG:HG2	2.00	0.42
22:C:248:SER:HB2	22:C:249:PRO:HD2	2.01	0.42
26:G:117:ALA:HB2	26:G:123:PHE:CE1	2.54	0.42
37:U:6:VAL:HG11	37:U:37:LEU:HD13	2.01	0.42
1:a:36:G:C4	1:a:419:G:N2	2.87	0.42
1:a:36:G:C6	1:a:37:C:C4	3.07	0.42
1:a:154:G:C2	1:a:155:A:C8	3.08	0.42
1:a:207:A:H2'	1:a:208:U:C6	2.54	0.42
1:a:716:U:H4'	1:a:718:G:C8	2.54	0.42
1:a:797:A:C6	1:a:816:U:C2	3.07	0.42
2:c:46:LEU:HD13	2:c:51:VAL:HG22	2.01	0.42
3:d:76:SER:HB3	3:d:83:HIS:HE1	1.83	0.42
3:d:122:VAL:HG22	3:d:123:ASP:OD1	2.19	0.42
4:e:159:LYS:HE2	4:e:159:LYS:HB3	1.77	0.42
8:i:5:GLN:OE1	8:i:20:ARG:NH1	2.41	0.42
9:j:4:GLN:HB2	9:j:77:VAL:HG13	2.00	0.42
10:k:83:ASP:OD1	10:k:109:ALA:HB3	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:n:50:LYS:H	13:n:50:LYS:HG2	1.71	0.42
20:A:187:G:C5	20:A:216:A:N6	2.88	0.42
20:A:311:A:H2'	20:A:312:U:O4'	2.19	0.42
20:A:372:C:C2	20:A:373:C:C5	3.07	0.42
20:A:821:A:O2'	20:A:822:A:OP2	2.34	0.42
20:A:1213:U:H2'	20:A:1214:U:O4'	2.19	0.42
20:A:1374:G:C2	20:A:1375:G:C5	3.07	0.42
20:A:1735:U:H2'	20:A:1737:C:C5	2.53	0.42
20:A:1873:A:C6	20:A:1898:A:C8	3.06	0.42
20:A:2107:G:N1	20:A:2108:A:C5	2.87	0.42
20:A:2421:A:C6	20:A:2422:U:C4	3.07	0.42
20:A:2421:A:H2'	20:A:2422:U:C6	2.54	0.42
20:A:2590:G:H8	20:A:2595:G:O6	2.02	0.42
20:A:2651:U:C2	20:A:2796:G:N2	2.86	0.42
20:A:2667:U:H3'	20:A:2668:A:H8	1.84	0.42
20:A:2699:G:O2'	20:A:2700:G:H5'	2.19	0.42
20:A:2778:A:N7	20:A:2780:G:C6	2.87	0.42
21:B:67:G:C2	21:B:68:C:C2	3.07	0.42
22:C:273:ARG:H	22:C:273:ARG:HG3	1.50	0.42
23:D:156:LYS:HG3	27:K:80:MET:O	2.19	0.42
24:E:170:LEU:C	24:E:172:ASN:H	2.27	0.42
26:G:35:ARG:NH2	26:G:139:GLU:OE2	2.52	0.42
33:Q:14:ARG:HD2	33:Q:17:ILE:HD11	2.00	0.42
34:R:47:PHE:HE1	34:R:51:ARG:CZ	2.32	0.42
44:1:71:VAL:HG13	44:1:75:ASN:OD1	2.19	0.42
44:1:79:GLY:HA2	44:1:82:ASP:OD2	2.19	0.42
1:a:159:C:H2'	1:a:160:A:C8	2.51	0.42
1:a:710:A:H2'	1:a:711:A:C8	2.54	0.42
1:a:1190:G:H2'	1:a:1191:A:C8	2.45	0.42
1:a:1306:C:H4'	8:i:40:PRO:HB2	2.01	0.42
20:A:275:A:H62	20:A:296:G:H21	0.69	0.42
20:A:706:G:H2'	20:A:707:U:C6	2.54	0.42
20:A:720:A:C6	20:A:838:G:C6	3.07	0.42
20:A:826:C:O2'	20:A:827:C:H5'	2.19	0.42
20:A:887:G:H3'	20:A:887:G:N3	2.35	0.42
20:A:1128:A:N3	20:A:1128:A:H2'	2.34	0.42
20:A:1928:C:H4'	20:A:1928:C:OP1	2.19	0.42
20:A:2153:G:C6	20:A:2167:G:C2	3.08	0.42
20:A:2175:C:O2	20:A:2187:A:H1'	2.19	0.42
20:A:2241:A:C6	20:A:2242:G:C5	3.08	0.42
20:A:2509:G:C6	20:A:2510:C:N4	2.87	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:2637:G:N3	20:A:2638:G:C8	2.87	0.42
21:B:94:G:C6	21:B:95:U:N3	2.87	0.42
22:C:243:ARG:HG2	22:C:244:LYS:O	2.20	0.42
23:D:88:LEU:O	23:D:89:GLY:C	2.62	0.42
31:O:21:THR:HG22	31:O:40:VAL:CG2	2.48	0.42
37:U:4:LEU:HD12	37:U:4:LEU:HA	1.77	0.42
46:3:5:ILE:HG12	46:3:47:GLU:HG3	2.00	0.42
1:a:190:A:H2'	1:a:191:G:H8	1.84	0.42
1:a:616:G:C6	1:a:653:G:C6	3.07	0.42
1:a:934:A:H2'	1:a:935:A:C8	2.54	0.42
1:a:1103:G:C2	1:a:1104:G:C5	3.07	0.42
1:a:1202:G:H2'	1:a:1203:A:H8	1.84	0.42
1:a:1532:G:H2'	1:a:1534:A:OP2	2.19	0.42
3:d:74:LYS:HG2	3:d:90:LEU:HD21	2.02	0.42
3:d:193:ALA:HA	3:d:196:VAL:HG12	2.02	0.42
4:e:20:ARG:HB3	4:e:33:PHE:CE2	2.54	0.42
4:e:103:SER:OG	4:e:104:GLY:N	2.52	0.42
11:l:120:VAL:O	11:l:132:THR:OG1	2.37	0.42
20:A:520:A:O2'	38:V:42:LYS:O	2.38	0.42
20:A:989:U:C4	20:A:990:G:N2	2.88	0.42
20:A:1131:G:O6	20:A:1139:G:H2'	2.19	0.42
20:A:1490:A:H2'	20:A:1490:A:N3	2.34	0.42
20:A:1852:C:N4	20:A:1913:A:C4	2.87	0.42
20:A:2164:U:H2'	20:A:2165:U:O4'	2.19	0.42
20:A:2344:G:O2'	40:X:53:LYS:HE3	2.19	0.42
20:A:2500:G:C6	20:A:2501:G:C5	3.07	0.42
20:A:2739:A:N7	20:A:2741:G:C5	2.87	0.42
21:B:69:C:C2	21:B:104:G:C2	3.08	0.42
28:L:61:VAL:HB	28:L:87:ILE:HD11	2.02	0.42
29:M:72:LYS:HB2	29:M:72:LYS:HE3	1.61	0.42
30:N:38:GLU:HB2	30:N:127:VAL:HG13	2.01	0.42
34:R:98:LEU:HA	34:R:98:LEU:HD23	1.65	0.42
38:V:87:ASP:OD1	38:V:87:ASP:N	2.51	0.42
44:1:48:VAL:HG12	44:1:50:VAL:H	1.85	0.42
46:3:29:ARG:HA	46:3:47:GLU:OE1	2.19	0.42
1:a:191:G:H2'	1:a:192:U:H6	1.83	0.42
1:a:200:G:H4'	16:q:4:GLU:HG2	2.01	0.42
1:a:865:U:H2'	1:a:866:U:C6	2.54	0.42
1:a:893:C:C2	1:a:894:U:C5	3.08	0.42
1:a:1012:A:H2'	1:a:1013:U:C6	2.54	0.42
5:f:77:ILE:HG23	5:f:95:ILE:HD13	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:i:129:LYS:HA	8:i:129:LYS:HD2	1.83	0.42
9:j:10:LEU:HD22	9:j:72:ARG:HB2	2.00	0.42
10:k:105:LEU:HA	10:k:105:LEU:HD23	1.75	0.42
18:s:16:MET:O	18:s:19:VAL:HG12	2.18	0.42
20:A:50:A:H4'	20:A:51:U:H5''	2.02	0.42
20:A:465:G:C2	20:A:466:C:C6	3.07	0.42
20:A:800:G:H2'	20:A:801:A:O4'	2.18	0.42
20:A:1346:G:N2	20:A:1349:U:C4	2.87	0.42
20:A:1874:U:C2	20:A:1875:G:C8	3.08	0.42
20:A:1887:G:H2'	20:A:1888:C:C6	2.54	0.42
20:A:2218:C:C2	20:A:2219:A:C8	3.07	0.42
20:A:2812:A:O2'	20:A:2813:A:P	2.77	0.42
20:A:2880:G:H2'	20:A:2881:C:H6	1.84	0.42
23:D:125:ARG:HD2	23:D:126:HIS:NE2	2.34	0.42
25:F:62:GLY:HA3	25:F:95:ARG:NH1	2.35	0.42
27:K:22:THR:O	27:K:22:THR:OG1	2.38	0.42
29:M:94:VAL:O	29:M:97:LYS:N	2.46	0.42
31:O:22:THR:O	31:O:26:ILE:HG13	2.20	0.42
39:W:79:LEU:HD13	39:W:86:MET:HA	2.02	0.42
47:4:26:ASN:O	47:4:30:VAL:HG23	2.19	0.42
1:a:52:A:H61	1:a:383:U:H5	1.68	0.42
1:a:129:G:C6	1:a:253:G:N1	2.87	0.42
1:a:187:A:C4	1:a:216:A:N6	2.87	0.42
1:a:927:U:H2'	1:a:928:C:H6	1.85	0.42
1:a:1027:U:H2'	1:a:1028:A:C8	2.55	0.42
1:a:1270:G:C4	1:a:1294:A:N6	2.88	0.42
3:d:102:LEU:HA	3:d:102:LEU:HD12	1.73	0.42
4:e:13:ASP:OD1	4:e:39:VAL:HG22	2.19	0.42
14:o:89:ARG:HH22	20:A:756:A:H5''	1.85	0.42
20:A:618:C:OP1	34:R:33:LYS:HG3	2.20	0.42
20:A:902:A:C2	20:A:903:G:H1'	2.55	0.42
20:A:1453:U:H2'	20:A:1629:A:OP2	2.19	0.42
20:A:2084:G:C4	20:A:2085:A:C8	3.08	0.42
20:A:2284:G:C4	20:A:2285:G:C8	3.07	0.42
20:A:2393:G:H2'	20:A:2394:U:H6	1.84	0.42
20:A:2656:G:C2	20:A:2657:G:C8	3.07	0.42
22:C:19:SER:OG	22:C:20:ASP:N	2.52	0.42
22:C:142:HIS:NE2	22:C:160:THR:O	2.53	0.42
30:N:57:TYR:HB3	30:N:116:GLU:OE1	2.19	0.42
35:S:67:LYS:HA	35:S:91:PRO:HA	2.02	0.42
38:V:96:LYS:O	38:V:97:THR:OG1	2.33	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:X:58:VAL:HB	40:X:89:SER:HB2	2.01	0.42
48:5:10:LEU:HD22	48:5:24:ARG:HH21	1.84	0.42
1:a:162:U:O2	1:a:171:G:O6	2.38	0.42
1:a:224:U:O2	1:a:230:G:C2	2.72	0.42
1:a:525:A:OP2	3:d:41:ARG:NH2	2.43	0.42
1:a:700:G:O4'	10:k:41:ALA:HB3	2.20	0.42
1:a:1353:G:O5'	1:a:1353:G:H8	2.03	0.42
1:a:1430:G:H2'	1:a:1431:A:H8	1.83	0.42
9:j:64:GLN:H	9:j:64:GLN:CD	2.27	0.42
17:r:17:ILE:HG13	17:r:18:ALA:N	2.35	0.42
18:s:36:ARG:NH1	18:s:72:GLY:O	2.53	0.42
18:s:53:ASP:HB2	18:s:77:THR:HG22	2.01	0.42
20:A:68:A:H1'	20:A:89:G:H22	1.84	0.42
20:A:549:C:C2	20:A:550:U:C5	3.08	0.42
20:A:655:G:H1'	20:A:656:A:C8	2.55	0.42
20:A:753:G:H2'	20:A:754:U:H6	1.84	0.42
20:A:852:C:H2'	20:A:853:U:H6	1.85	0.42
20:A:875:A:N3	20:A:876:G:C8	2.88	0.42
20:A:940:G:N7	20:A:941:A:N6	2.68	0.42
20:A:1104:C:H2'	20:A:1105:U:O4'	2.19	0.42
20:A:1707:A:C6	20:A:2740:U:C4	3.08	0.42
20:A:1798:A:C8	20:A:1798:A:OP2	2.73	0.42
20:A:2154:G:H2'	20:A:2155:A:H5'	2.02	0.42
20:A:2429:G:C6	20:A:2430:C:C4	3.07	0.42
20:A:2508:G:C6	20:A:2509:G:N7	2.88	0.42
20:A:2817:A:C2	20:A:2818:G:C5	3.08	0.42
20:A:2893:A:N1	20:A:2894:A:C5	2.88	0.42
22:C:142:HIS:HD2	22:C:193:GLY:O	2.03	0.42
22:C:173:LEU:O	22:C:174:ILE:HG13	2.19	0.42
42:Z:25:LEU:HD23	42:Z:25:LEU:HA	1.83	0.42
1:a:37:C:C2	1:a:38:G:C8	3.08	0.42
1:a:602:G:O2'	1:a:603:G:H5'	2.20	0.42
1:a:618:U:N3	1:a:619:G:N7	2.68	0.42
1:a:892:A:C6	1:a:893:C:N4	2.87	0.42
1:a:1073:G:H2'	1:a:1074:G:O4'	2.19	0.42
1:a:1164:C:OP1	8:i:11:ARG:NH2	2.52	0.42
1:a:1236:G:N1	1:a:1237:G:N7	2.67	0.42
1:a:1294:A:H8	1:a:1297:C:N4	2.18	0.42
1:a:1324:G:O6	1:a:1344:A:C6	2.73	0.42
1:a:1475:C:OP1	19:t:26:ASN:ND2	2.53	0.42
3:d:95:LEU:HG	3:d:115:VAL:HG21	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:158:A:C6	20:A:173:G:C6	3.07	0.42
20:A:282:A:C2	20:A:283:G:C5	3.08	0.42
20:A:635:A:H2'	20:A:636:U:C6	2.54	0.42
20:A:761:C:C2	20:A:762:A:C8	3.07	0.42
20:A:949:U:HO2'	20:A:950:A:P	2.41	0.42
20:A:992:G:O2'	20:A:993:A:P	2.78	0.42
20:A:1022:C:H6	20:A:1022:C:H2'	1.71	0.42
20:A:1362:U:C4	20:A:1363:C:C4	3.08	0.42
20:A:1383:G:C2	20:A:1643:C:C2	3.08	0.42
20:A:1451:U:O5'	20:A:1630:G:N2	2.51	0.42
20:A:1635:C:C2	20:A:1636:A:C8	3.08	0.42
20:A:1678:A:C5	20:A:1679:U:C5	3.08	0.42
20:A:1711:A:N7	20:A:1717:G:C6	2.88	0.42
20:A:1836:G:C2	20:A:1837:G:C8	3.07	0.42
20:A:1868:A:O5'	20:A:1868:A:H8	2.02	0.42
20:A:2153:G:C5	20:A:2167:G:N2	2.87	0.42
20:A:2321:G:C2	20:A:2325:A:N7	2.88	0.42
20:A:2497:C:C4	20:A:2498:G:C8	3.07	0.42
20:A:2521:C:C2	20:A:2597:G:C2	3.07	0.42
21:B:94:G:C5	21:B:95:U:C4	3.08	0.42
24:E:170:LEU:O	24:E:172:ASN:N	2.53	0.42
24:E:184:LEU:HD23	24:E:184:LEU:HA	1.91	0.42
40:X:49:GLN:HE21	40:X:68:LEU:HD21	1.84	0.42
49:6:11:CYS:SG	49:6:33:HIS:NE2	2.91	0.42
1:a:130:U:H2'	1:a:131:G:C8	2.54	0.42
1:a:480:U:H5'	1:a:481:A:OP2	2.19	0.42
1:a:731:A:H1'	10:k:120:GLY:HA2	2.01	0.42
3:d:37:GLY:N	3:d:38:PRO:HD2	2.35	0.42
3:d:102:LEU:HD11	3:d:168:PHE:HB2	2.02	0.42
4:e:11:LEU:HD13	4:e:68:LYS:HD2	2.02	0.42
11:l:48:THR:HG22	11:l:67:ARG:O	2.19	0.42
14:o:89:ARG:NH1	20:A:756:A:H8	2.18	0.42
18:s:13:ASP:C	18:s:15:LEU:H	2.28	0.42
20:A:73:U:H3	42:Z:55:THR:HG22	1.85	0.42
20:A:165:A:O2'	20:A:166:C:H6	2.03	0.42
20:A:291:G:H2'	20:A:292:U:C6	2.55	0.42
20:A:310:G:C6	20:A:311:A:C6	3.08	0.42
20:A:345:G:H21	20:A:517:A:N6	2.18	0.42
20:A:596:G:N2	34:R:49:ASP:OD2	2.53	0.42
20:A:916:A:H2'	20:A:917:C:O4'	2.19	0.42
20:A:1015:A:C2	20:A:1030:A:C8	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:1355:G:H3'	20:A:1356:G:N2	2.35	0.42
20:A:1604:A:H1'	20:A:1605:C:OP2	2.20	0.42
20:A:1632:A:C2	20:A:1633:A:N6	2.88	0.42
20:A:2260:G:H2'	20:A:2261:A:C8	2.54	0.42
20:A:2528:U:H2'	20:A:2529:C:H6	1.85	0.42
20:A:2542:U:OP1	26:G:172:LYS:NZ	2.46	0.42
20:A:2605:C:N4	20:A:2606:G:O6	2.52	0.42
20:A:2662:G:H2'	20:A:2663:U:H6	1.84	0.42
20:A:2815:A:C4	20:A:2816:A:C8	3.08	0.42
21:B:23:A:H2'	21:B:24:U:C6	2.55	0.42
21:B:79:G:C5	21:B:94:G:C2	3.08	0.42
22:C:16:MET:HE3	22:C:16:MET:HB3	1.86	0.42
26:G:84:GLN:HA	26:G:133:VAL:O	2.20	0.42
29:M:97:LYS:CD	29:M:98:GLU:H	2.31	0.42
37:U:58:VAL:HB	37:U:75:ARG:HB2	2.02	0.42
40:X:55:TYR:O	40:X:87:GLN:HA	2.19	0.42
41:Y:39:LEU:HD23	41:Y:39:LEU:HA	1.90	0.42
44:1:10:GLN:O	44:1:12:VAL:HG23	2.20	0.42
44:1:79:GLY:HA2	44:1:82:ASP:CG	2.45	0.42
45:2:30:CYS:HB2	45:2:37:LYS:HD3	2.01	0.42
48:5:23:LYS:HE3	48:5:23:LYS:HB3	1.91	0.42
1:a:209:A:C4	1:a:210:A:C8	3.07	0.42
1:a:219:G:C5	1:a:235:G:C2	3.08	0.42
1:a:407:G:H2'	1:a:408:A:H8	1.84	0.42
1:a:691:A:C4	1:a:692:U:C5	3.07	0.42
1:a:698:G:O6	1:a:723:A:C5	2.72	0.42
3:d:92:GLU:OE1	3:d:97:ASN:ND2	2.53	0.42
4:e:96:MET:HG2	4:e:125:SER:OG	2.20	0.42
7:h:41:LYS:HE3	7:h:41:LYS:HB3	1.70	0.42
12:m:42:ASP:HA	12:m:43:VAL:HG23	2.02	0.42
20:A:633:G:C6	20:A:702:A:C2	3.08	0.42
20:A:783:A:C6	20:A:795:G:C6	3.08	0.42
20:A:1096:G:H2'	20:A:1127:G:H22	1.84	0.42
20:A:1138:A:H2'	20:A:1139:G:N7	2.34	0.42
20:A:1629:A:N7	20:A:1630:G:H3'	2.35	0.42
20:A:1826:A:H2'	20:A:1827:U:C6	2.55	0.42
20:A:2128:A:H2'	20:A:2128:A:N3	2.34	0.42
20:A:2176:G:H1'	20:A:2187:A:C5	2.55	0.42
20:A:2514:U:O2	20:A:2518:U:N3	2.53	0.42
20:A:2722:G:C6	20:A:2723:G:N7	2.88	0.42
20:A:2856:A:C5	20:A:2857:G:C8	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:C:249:PRO:HG2	22:C:250:TRP:CE2	2.55	0.42
23:D:39:LYS:NZ	23:D:82:GLU:OE2	2.36	0.42
25:F:121:ALA:HB3	25:F:128:TYR:CD2	2.55	0.42
29:M:97:LYS:HB2	29:M:102:VAL:O	2.20	0.42
29:M:111:VAL:O	29:M:112:LEU:HD23	2.19	0.42
31:O:59:ARG:HA	31:O:90:PHE:HE2	1.85	0.42
32:P:66:GLY:O	32:P:68:LYS:N	2.53	0.42
49:6:33:HIS:O	49:6:35:GLN:HG3	2.20	0.42
1:a:201:C:N4	16:q:4:GLU:HA	2.35	0.41
1:a:451:C:H2'	1:a:452:U:C6	2.55	0.41
1:a:854:G:C2	1:a:855:G:C5	3.08	0.41
3:d:182:GLU:O	3:d:186:LEU:HB2	2.19	0.41
4:e:79:SER:O	4:e:80:THR:OG1	2.34	0.41
5:f:38:ALA:HB1	5:f:68:VAL:HG21	2.01	0.41
6:g:88:PRO:HD2	6:g:152:ALA:O	2.20	0.41
8:i:24:GLY:H	8:i:61:TYR:HA	1.85	0.41
16:q:22:LYS:HA	16:q:51:ASP:O	2.20	0.41
20:A:231:A:N6	20:A:233:U:C2	2.88	0.41
20:A:280:C:H2'	20:A:281:A:C8	2.55	0.41
20:A:1277:G:N7	20:A:1278:C:C5	2.88	0.41
20:A:1569:G:H2'	20:A:1570:G:C8	2.55	0.41
20:A:1585:U:C2	20:A:1586:A:C8	3.07	0.41
20:A:1709:G:O2'	28:L:6:SER:OG	2.18	0.41
20:A:1851:C:H2'	20:A:1913:A:H61	1.84	0.41
20:A:2145:A:H2'	20:A:2145:A:N3	2.34	0.41
20:A:2314:A:H2'	20:A:2315:A:C8	2.55	0.41
20:A:2530:G:C5	20:A:2583:G:N2	2.88	0.41
22:C:87:ARG:HB3	22:C:87:ARG:NH1	2.35	0.41
22:C:275:THR:OG1	22:C:275:THR:O	2.36	0.41
23:D:134:SER:O	23:D:135:HIS:HB2	2.20	0.41
25:F:176:PRO:HG3	44:1:58:TYR:HE2	1.85	0.41
31:O:108:LEU:HB2	31:O:122:VAL:HG23	2.02	0.41
35:S:67:LYS:HB2	35:S:89:ARG:NH1	2.32	0.41
43:0:5:LYS:HE3	43:0:5:LYS:HB3	1.87	0.41
43:0:8:LEU:HA	43:0:8:LEU:HD23	1.85	0.41
43:0:9:LYS:HD2	43:0:55:ASP:HB2	2.01	0.41
45:2:16:ARG:O	45:2:16:ARG:HG2	2.19	0.41
47:4:42:ILE:H	47:4:42:ILE:HG12	1.57	0.41
1:a:212:A:H2'	1:a:213:G:C8	2.55	0.41
1:a:972:U:N3	1:a:976:U:H5	2.15	0.41
1:a:996:C:H2'	1:a:997:U:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:1202:G:N2	13:n:60:SER:OG	2.49	0.41
1:a:1428:A:H61	1:a:1503:G:H1	1.68	0.41
3:d:135:GLU:CD	3:d:136:VAL:H	2.25	0.41
7:h:75:THR:HG22	7:h:132:TRP:O	2.20	0.41
7:h:99:ASN:OD1	7:h:99:ASN:N	2.51	0.41
14:o:11:ILE:HG13	14:o:12:ILE:N	2.33	0.41
17:r:25:ILE:HD12	17:r:26:ASP:H	1.85	0.41
19:t:7:ALA:O	19:t:10:ARG:N	2.53	0.41
20:A:530:A:C6	20:A:531:A:C5	3.08	0.41
20:A:1147:G:P	20:A:1147:G:C8	3.11	0.41
20:A:1224:G:H2'	20:A:1225:G:O4'	2.20	0.41
20:A:1246:G:C6	20:A:1275:G:O6	2.73	0.41
20:A:1384:G:C6	20:A:1642:C:N4	2.88	0.41
20:A:1441:C:H2'	20:A:1442:A:H8	1.85	0.41
20:A:2052:G:H2'	20:A:2053:G:O4'	2.20	0.41
20:A:2802:C:C5	20:A:2803:C:H5	2.37	0.41
20:A:2814:G:N1	20:A:2815:A:C5	2.88	0.41
20:A:2819:U:H2'	20:A:2820:A:H8	1.84	0.41
21:B:37:A:H2'	21:B:38:U:C5	2.55	0.41
21:B:86:U:H4'	21:B:87:U:C5	2.55	0.41
22:C:230:HIS:HD2	22:C:249:PRO:HB3	1.84	0.41
22:C:243:ARG:HD2	22:C:247:VAL:HG21	2.01	0.41
23:D:199:LEU:HD22	23:D:200:ILE:N	2.34	0.41
25:F:122:PHE:HB3	25:F:163:ASP:OD2	2.19	0.41
26:G:41:ILE:HD11	26:G:68:THR:HG21	2.02	0.41
26:G:42:LYS:HB2	26:G:53:THR:O	2.20	0.41
28:L:66:LYS:O	28:L:66:LYS:NZ	2.32	0.41
30:N:45:ARG:O	30:N:46:GLN:C	2.62	0.41
30:N:65:TRP:HD1	30:N:105:GLU:HB2	1.85	0.41
31:O:84:SER:O	31:O:86:LEU:N	2.52	0.41
34:R:63:ALA:HA	34:R:66:ASN:ND2	2.34	0.41
38:V:85:GLU:H	38:V:85:GLU:HG3	1.57	0.41
1:a:393:A:N1	1:a:401:C:N3	2.68	0.41
1:a:1002:A:C6	1:a:1003:G:C5	3.07	0.41
1:a:1375:A:C8	1:a:1376:G:C8	3.08	0.41
3:d:195:VAL:O	3:d:198:TYR:N	2.53	0.41
13:n:23:ARG:HD2	13:n:28:GLY:O	2.20	0.41
20:A:194:A:O5'	20:A:194:A:H8	2.03	0.41
20:A:315:G:C2	20:A:398:U:C2	3.08	0.41
20:A:498:G:N2	20:A:509:G:H2'	2.35	0.41
20:A:507:G:C2	20:A:508:G:C8	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:890:A:H2'	20:A:891:A:H8	1.84	0.41
20:A:913:U:H2'	20:A:914:G:H8	1.86	0.41
20:A:948:A:H5'	30:N:25:LYS:HE3	2.02	0.41
20:A:992:G:C4	20:A:993:A:C8	3.09	0.41
20:A:1458:G:C6	20:A:1628:G:N2	2.89	0.41
20:A:2222:A:H2'	20:A:2223:C:C6	2.56	0.41
20:A:2361:C:C2	20:A:2362:U:C5	3.09	0.41
20:A:2557:G:H2'	20:A:2558:G:H8	1.81	0.41
20:A:2665:C:C4	20:A:2666:U:C4	3.08	0.41
20:A:2699:G:C2	20:A:2700:G:C8	3.09	0.41
20:A:2846:A:OP1	23:D:57:ARG:NH2	2.43	0.41
27:K:26:LEU:O	27:K:30:SER:OG	2.38	0.41
27:K:45:PHE:CD1	27:K:45:PHE:C	2.99	0.41
40:X:73:ASP:OD1	40:X:73:ASP:N	2.53	0.41
43:O:5:LYS:HG2	43:O:36:THR:HG22	2.02	0.41
44:1:35:VAL:HA	44:1:41:ASN:CA	2.50	0.41
1:a:187:A:C6	1:a:215:G:C6	3.08	0.41
1:a:192:U:C2	1:a:193:U:C5	3.08	0.41
1:a:270:G:H2'	1:a:271:U:H6	1.86	0.41
1:a:405:C:H2'	1:a:406:C:H6	1.85	0.41
1:a:1124:G:N3	1:a:1124:G:H2'	2.35	0.41
1:a:1265:A:H2	1:a:1385:G:H1'	1.85	0.41
2:c:6:HIS:HB3	13:n:49:TYR:CD1	2.56	0.41
3:d:48:GLY:O	3:d:52:THR:HG23	2.20	0.41
3:d:129:ILE:H	3:d:129:ILE:HG13	1.45	0.41
8:i:65:VAL:HG21	8:i:79:ILE:HD13	2.02	0.41
8:i:99:LYS:O	8:i:102:GLY:N	2.50	0.41
11:l:70:LEU:HB3	11:l:72:ASN:OD1	2.20	0.41
12:m:110:LYS:HB3	12:m:110:LYS:HE2	1.81	0.41
19:t:28:MET:HB3	19:t:28:MET:HE2	1.77	0.41
20:A:231:A:HO2'	20:A:232:U:H2'	1.85	0.41
20:A:941:A:C6	20:A:942:A:N7	2.88	0.41
20:A:1100:U:H4'	20:A:1101:U:OP1	2.19	0.41
20:A:1270:C:C2	20:A:1271:U:C5	3.08	0.41
20:A:1573:G:C2	20:A:1589:G:C8	3.08	0.41
20:A:1576:A:N7	20:A:1583:A:C5	2.88	0.41
20:A:1627:U:C5	20:A:1628:G:C5	3.08	0.41
20:A:2317:G:O6	20:A:2328:A:N6	2.54	0.41
20:A:2662:G:H2'	20:A:2663:U:C6	2.56	0.41
20:A:2814:G:C2	20:A:2815:A:C5	3.09	0.41
20:A:2874:G:H2'	20:A:2875:U:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:B:28:C:H2'	21:B:29:C:O4'	2.20	0.41
21:B:85:U:C4	21:B:86:U:C2	3.09	0.41
23:D:13:THR:HG21	33:Q:5:ILE:HG21	2.02	0.41
29:M:126:ALA:O	29:M:127:LYS:HD3	2.20	0.41
31:O:37:ALA:O	31:O:40:VAL:HG12	2.20	0.41
32:P:34:PHE:CD2	32:P:41:TYR:HB2	2.55	0.41
34:R:86:ALA:HB2	34:R:116:ALA:HB2	2.02	0.41
37:U:50:VAL:O	37:U:51:ALA:HB3	2.20	0.41
1:a:35:G:H5''	1:a:35:G:H8	1.85	0.41
1:a:160:A:C6	1:a:161:C:C4	3.08	0.41
1:a:724:U:H2'	1:a:725:G:C8	2.56	0.41
1:a:855:G:C6	1:a:856:U:C4	3.08	0.41
1:a:1025:U:H2'	1:a:1026:C:C6	2.55	0.41
1:a:1057:G:C2	1:a:1058:U:C2	3.08	0.41
1:a:1079:C:O5'	1:a:1080:G:H3'	2.21	0.41
1:a:1155:U:O2'	1:a:1156:U:H5'	2.20	0.41
5:f:34:LYS:HE2	5:f:40:VAL:HG11	2.03	0.41
6:g:15:ASP:HA	6:g:16:PRO:HD3	1.92	0.41
11:l:72:ASN:OD1	11:l:72:ASN:N	2.32	0.41
20:A:568:A:H2'	20:A:568:A:N3	2.35	0.41
20:A:706:G:H2'	20:A:707:U:H6	1.86	0.41
20:A:867:U:C5	20:A:2444:A:C5	3.09	0.41
20:A:925:C:N3	20:A:933:G:C6	2.88	0.41
20:A:932:G:C6	20:A:933:G:C6	3.09	0.41
20:A:1118:C:H3'	20:A:1118:C:OP2	2.21	0.41
20:A:1332:A:H2'	20:A:1333:C:C6	2.56	0.41
20:A:1444:U:H2'	20:A:1445:U:H6	1.86	0.41
20:A:1994:G:C2	20:A:1996:U:C4	3.08	0.41
20:A:2016:G:C2	20:A:2017:A:C8	3.08	0.41
20:A:2827:C:O3'	31:O:109:LYS:NZ	2.53	0.41
21:B:5:G:H2'	21:B:6:U:H6	1.85	0.41
32:P:32:ASN:O	32:P:33:ILE:HD12	2.21	0.41
35:S:25:LEU:HB3	35:S:27:VAL:HG23	2.03	0.41
35:S:41:VAL:HB	35:S:47:LYS:HB2	2.02	0.41
35:S:74:PHE:HB3	35:S:76:TYR:CZ	2.55	0.41
38:V:79:THR:HG21	38:V:94:SER:HB2	2.01	0.41
39:W:16:SER:C	39:W:18:ARG:H	2.28	0.41
44:1:19:THR:HB	44:1:21:PHE:CE1	2.55	0.41
1:a:28:G:N7	1:a:321:A:H1'	2.36	0.41
1:a:150:G:C4	1:a:151:G:C8	3.09	0.41
1:a:388:A:C4	1:a:497:A:C6	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:478:A:C6	1:a:486:A:N1	2.88	0.41
1:a:489:G:O2'	1:a:490:U:O5'	2.39	0.41
1:a:662:G:C2	1:a:663:A:C5	3.08	0.41
1:a:830:A:C2	1:a:1545:G:C6	3.08	0.41
1:a:841:C:O2	7:h:16:ASN:ND2	2.54	0.41
1:a:1019:G:N2	1:a:1052:A:C5	2.88	0.41
1:a:1035:G:N1	1:a:1036:A:C5	2.88	0.41
1:a:1064:G:P	13:n:4:LYS:HD2	2.60	0.41
1:a:1104:G:C4	1:a:1105:G:C8	3.08	0.41
1:a:1182:A:C6	1:a:1184:A:C6	3.09	0.41
1:a:1233:C:O3'	13:n:15:LYS:NZ	2.53	0.41
1:a:1373:U:H3	1:a:1378:A:H62	1.68	0.41
1:a:1419:C:H2'	1:a:1420:G:C8	2.56	0.41
2:c:46:LEU:HD12	2:c:50:ALA:HA	2.03	0.41
3:d:189:GLU:N	3:d:189:GLU:CD	2.78	0.41
18:s:63:GLN:H	18:s:66:MET:HE3	1.84	0.41
20:A:29:A:C2	20:A:552:A:C8	3.08	0.41
20:A:174:A:C5	20:A:175:U:C5	3.08	0.41
20:A:336:A:C6	20:A:359:A:C4	3.08	0.41
20:A:725:A:N3	20:A:729:A:N6	2.69	0.41
20:A:748:G:H2'	20:A:749:U:H6	1.86	0.41
20:A:907:A:C6	20:A:955:C:C5	3.08	0.41
20:A:1122:U:H2'	20:A:1123:U:H4'	2.01	0.41
20:A:1473:A:H61	20:A:1607:C:N4	2.18	0.41
20:A:1585:U:O2'	20:A:1586:A:P	2.79	0.41
20:A:1856:G:H2'	20:A:1857:C:C6	2.55	0.41
20:A:2266:G:C5	20:A:2267:G:C8	3.09	0.41
20:A:2298:C:H1'	20:A:2339:G:N2	2.35	0.41
23:D:61:SER:HB3	23:D:66:LYS:HE3	2.03	0.41
26:G:48:ASN:O	26:G:49:GLU:HG3	2.20	0.41
30:N:85:LYS:H	30:N:85:LYS:HG3	1.61	0.41
31:O:6:LEU:HA	31:O:13:ARG:NE	2.36	0.41
33:Q:97:LEU:HD23	33:Q:99:TYR:CE1	2.56	0.41
35:S:2:TYR:HD2	35:S:42:GLY:HA3	1.84	0.41
44:1:78:TYR:HA	44:1:81:LYS:HB3	2.01	0.41
1:a:120:G:C2	1:a:304:G:N7	2.88	0.41
1:a:185:A:H5'	1:a:186:U:OP2	2.21	0.41
1:a:187:A:C6	1:a:216:A:N7	2.89	0.41
1:a:638:C:H2'	1:a:639:C:C6	2.56	0.41
1:a:647:G:C5	1:a:649:C:C4	3.08	0.41
1:a:702:A:C2	1:a:719:A:C5	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:964:C:H41	12:m:107:ARG:HH12	1.67	0.41
1:a:967:G:H2'	1:a:968:U:O4'	2.20	0.41
1:a:1115:G:H2'	1:a:1116:C:O4'	2.21	0.41
1:a:1365:A:OP2	8:i:120:LYS:NZ	2.35	0.41
1:a:1528:U:H2'	1:a:1529:A:H8	1.85	0.41
17:r:26:ASP:OD1	17:r:28:LYS:NZ	2.53	0.41
19:t:44:ASP:OD1	19:t:45:ASN:N	2.51	0.41
20:A:596:G:C6	20:A:597:C:C4	3.09	0.41
20:A:655:G:HO2'	20:A:656:A:P	2.37	0.41
20:A:917:C:N3	20:A:918:U:N3	2.69	0.41
20:A:931:C:H2'	20:A:932:G:H8	1.85	0.41
20:A:1457:A:C2	20:A:1458:G:H1'	2.56	0.41
20:A:2138:G:C5	20:A:2139:G:H1'	2.55	0.41
20:A:2361:C:O5'	48:5:38:LYS:NZ	2.53	0.41
20:A:2392:A:C5	20:A:2393:G:H1'	2.55	0.41
20:A:2849:G:C4	20:A:2850:G:C8	3.08	0.41
22:C:244:LYS:HE3	22:C:244:LYS:HB2	1.73	0.41
25:F:112:ARG:H	25:F:112:ARG:HG3	1.46	0.41
26:G:8:VAL:HA	26:G:51:THR:HG22	2.02	0.41
29:M:110:LYS:HG3	29:M:127:LYS:HB3	2.01	0.41
37:U:10:PRO:HD3	42:Z:30:PHE:CE1	2.55	0.41
44:1:32:SER:HA	44:1:43:TYR:CD2	2.48	0.41
45:2:53:ASP:OD1	45:2:54:VAL:N	2.53	0.41
1:a:101:A:H8	1:a:101:A:OP2	2.04	0.41
1:a:128:C:C2	1:a:129:G:N7	2.89	0.41
1:a:672:U:O2'	14:o:22:THR:O	2.32	0.41
1:a:1547:A:C6	1:a:1548:U:N3	2.89	0.41
2:c:119:ILE:H	2:c:119:ILE:HG12	1.77	0.41
2:c:182:ASP:N	2:c:182:ASP:OD1	2.54	0.41
7:h:7:ILE:HD12	7:h:79:ARG:NH1	2.36	0.41
12:m:3:ARG:HA	12:m:3:ARG:HD2	1.76	0.41
20:A:133:U:O4	20:A:134:A:N6	2.53	0.41
20:A:300:G:C2	20:A:461:C:N4	2.89	0.41
20:A:740:G:C6	20:A:773:G:C2	3.09	0.41
20:A:832:G:HO2'	20:A:2454:C:N4	2.17	0.41
20:A:934:G:O2'	20:A:935:U:O4'	2.37	0.41
20:A:1353:G:C2	20:A:1354:G:C8	3.09	0.41
20:A:1798:A:OP2	20:A:1798:A:H8	2.04	0.41
20:A:1944:G:N2	20:A:1983:A:OP2	2.46	0.41
20:A:2002:C:C2	20:A:2003:A:C8	3.09	0.41
20:A:2060:G:C4	20:A:2061:C:C5	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:2144:G:H1'	20:A:2172:A:O2'	2.21	0.41
22:C:122:ALA:HB3	22:C:130:LEU:HD21	2.02	0.41
23:D:3:LYS:O	23:D:203:LYS:HA	2.19	0.41
27:K:90:ALA:C	27:K:92:GLU:H	2.29	0.41
29:M:90:GLU:H	29:M:122:THR:HG23	1.86	0.41
30:N:10:ARG:NH1	30:N:11:ARG:HH11	2.18	0.41
31:O:30:ILE:HG23	31:O:32:THR:HG23	2.02	0.41
34:R:27:SER:O	34:R:27:SER:OG	2.35	0.41
48:5:54:ASP:O	48:5:58:ILE:HG13	2.21	0.41
1:a:121:A:C5	1:a:122:G:C8	3.09	0.41
1:a:184:C:C2	1:a:185:A:C8	3.09	0.41
1:a:258:A:C5	1:a:260:U:C4	3.08	0.41
1:a:927:U:C2	1:a:928:C:C5	3.09	0.41
1:a:1144:C:H1'	1:a:1162:C:H42	1.85	0.41
1:a:1325:C:H2'	1:a:1326:A:H8	1.86	0.41
4:e:88:VAL:HA	4:e:92:GLY:O	2.21	0.41
9:j:35:ASP:HB2	9:j:77:VAL:HB	2.03	0.41
10:k:67:ALA:HB1	10:k:100:LEU:HD12	2.03	0.41
13:n:26:ARG:H	13:n:26:ARG:HG3	1.44	0.41
15:p:9:ARG:HB3	15:p:29:ARG:NH1	2.36	0.41
20:A:189:A:N1	20:A:214:G:C6	2.89	0.41
20:A:276:C:C2'	20:A:277:C:H5'	2.51	0.41
20:A:295:G:C6	20:A:296:G:C5	3.09	0.41
20:A:391:C:O2'	20:A:392:A:C8	2.73	0.41
20:A:533:G:C2	20:A:534:G:C8	3.09	0.41
20:A:881:G:C6	20:A:978:G:N1	2.89	0.41
20:A:951:A:O2'	20:A:952:A:C8	2.69	0.41
20:A:1027:C:O2'	20:A:1040:A:N3	2.48	0.41
20:A:1124:A:N7	20:A:1125:A:N3	2.68	0.41
20:A:1143:A:N7	20:A:1144:C:C2	2.89	0.41
20:A:1209:A:H2'	20:A:1210:C:C6	2.56	0.41
20:A:1213:U:H3'	20:A:1214:U:C6	2.55	0.41
20:A:1250:A:H2'	20:A:1251:A:C8	2.56	0.41
20:A:1321:G:H8	20:A:1321:G:O5'	2.02	0.41
20:A:1430:U:H3'	20:A:1431:A:H5''	2.03	0.41
20:A:1515:C:C2	20:A:1516:A:C8	3.09	0.41
20:A:1520:A:C5	20:A:1521:G:H1'	2.55	0.41
20:A:1532:A:N6	20:A:1533:G:C5	2.89	0.41
20:A:1544:U:OP1	22:C:79:LYS:NZ	2.30	0.41
20:A:1699:C:H2'	20:A:1700:U:C6	2.56	0.41
20:A:2165:U:O2	20:A:2165:U:H2'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:2179:G:H5'	20:A:2180:G:OP2	2.21	0.41
20:A:2194:U:H2'	20:A:2195:U:H4'	2.03	0.41
20:A:2305:U:H2'	20:A:2306:U:C5	2.55	0.41
20:A:2437:U:H6	20:A:2437:U:H2'	1.73	0.41
20:A:2501:G:C4	20:A:2502:A:N7	2.89	0.41
20:A:2802:C:C4	20:A:2803:C:H5	2.39	0.41
21:B:4:G:O6	21:B:113:A:N6	2.54	0.41
21:B:36:C:O2'	32:P:101:HIS:HE1	2.02	0.41
21:B:36:C:H4'	32:P:101:HIS:CE1	2.56	0.41
21:B:55:A:H5'	25:F:23:SER:OG	2.20	0.41
21:B:69:C:N3	21:B:104:G:N1	2.69	0.41
21:B:103:G:N1	21:B:104:G:C5	2.89	0.41
22:C:228:ASN:ND2	22:C:229:ASP:OD1	2.54	0.41
22:C:252:GLN:HA	22:C:253:PRO:HD2	1.94	0.41
23:D:63:LYS:N	23:D:64:PRO:HD2	2.36	0.41
23:D:83:PHE:CE1	23:D:203:LYS:HE2	2.56	0.41
25:F:37:ASN:O	25:F:152:MET:HA	2.21	0.41
25:F:74:ILE:HG22	25:F:77:PHE:H	1.85	0.41
27:K:87:SER:O	27:K:88:VAL:C	2.64	0.41
27:K:106:VAL:C	27:K:108:GLY:H	2.29	0.41
27:K:131:HIS:HD2	27:K:133:HIS:N	2.18	0.41
27:K:145:ASN:N	27:K:145:ASN:OD1	2.52	0.41
29:M:48:LEU:HD23	29:M:48:LEU:HA	1.92	0.41
29:M:97:LYS:HE2	29:M:98:GLU:HG2	2.02	0.41
33:Q:57:GLU:O	33:Q:76:LEU:HB2	2.21	0.41
36:T:74:LEU:HD23	36:T:114:GLU:HA	2.02	0.41
41:Y:18:ARG:HH11	41:Y:22:MET:HB3	1.85	0.41
41:Y:54:LEU:HD23	41:Y:54:LEU:HA	1.84	0.41
1:a:275:G:H2'	1:a:276:U:C6	2.56	0.41
1:a:753:U:OP2	5:f:97:LYS:NZ	2.27	0.41
1:a:782:A:H2'	1:a:783:A:C8	2.56	0.41
1:a:1285:G:H2'	1:a:1286:G:H8	1.86	0.41
1:a:1310:U:H2'	1:a:1311:C:C6	2.56	0.41
1:a:1381:C:H2'	1:a:1382:C:C6	2.56	0.41
16:q:28:VAL:HG12	16:q:45:LYS:HB2	2.01	0.41
16:q:32:LYS:HD3	16:q:32:LYS:HA	1.83	0.41
17:r:29:ASP:HB2	17:r:32:LEU:HB3	2.03	0.41
18:s:6:LYS:HD3	18:s:6:LYS:N	2.35	0.41
18:s:48:THR:HA	18:s:61:TYR:HA	2.03	0.41
20:A:149:U:H2'	20:A:150:U:H6	1.86	0.41
20:A:200:A:C6	20:A:2444:A:C8	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:655:G:O2'	20:A:656:A:P	2.79	0.41
20:A:759:C:H2'	20:A:760:G:C8	2.55	0.41
20:A:808:G:H22	20:A:1415:U:H1'	1.86	0.41
20:A:886:U:O2	20:A:886:U:H2'	2.20	0.41
20:A:1088:A:OP2	20:A:1150:G:N2	2.32	0.41
20:A:1105:U:HO2'	20:A:1113:A:N6	2.19	0.41
20:A:1289:G:OP1	34:R:13:ARG:NH1	2.50	0.41
20:A:1391:G:OP1	22:C:38:LYS:NZ	2.54	0.41
20:A:1536:A:N3	20:A:1536:A:H2'	2.36	0.41
20:A:1563:G:C5	20:A:1564:U:C4	3.09	0.41
20:A:1753:G:C2	20:A:1754:A:C5	3.08	0.41
20:A:2469:G:C6	20:A:2470:C:N4	2.89	0.41
20:A:2657:G:C5	20:A:2658:A:N7	2.89	0.41
20:A:2765:G:H5'	20:A:2766:C:C5	2.56	0.41
24:E:29:ASN:OD1	24:E:32:VAL:HG23	2.21	0.41
31:O:94:GLY:C	31:O:96:ARG:H	2.29	0.41
34:R:39:VAL:O	34:R:42:SER:OG	2.35	0.41
38:V:65:VAL:C	38:V:67:ASN:H	2.27	0.41
39:W:27:VAL:HG13	39:W:87:LEU:HA	2.01	0.41
39:W:63:MET:O	39:W:69:ASN:HA	2.21	0.41
39:W:71:ASN:OD1	39:W:71:ASN:N	2.53	0.41
43:O:6:ILE:HG12	43:O:56:VAL:HG22	2.02	0.41
44:1:40:GLY:O	44:1:42:THR:OG1	2.27	0.41
47:4:31:LEU:HD23	47:4:31:LEU:HA	1.87	0.41
1:a:29:A:C2	1:a:30:A:C5	3.09	0.40
1:a:456:G:H2'	1:a:457:U:C6	2.56	0.40
1:a:780:G:C5	1:a:827:G:C2	3.09	0.40
1:a:812:C:H2'	1:a:813:U:H6	1.87	0.40
1:a:843:A:H62	1:a:874:G:N2	2.20	0.40
1:a:1111:U:H2'	1:a:1112:C:C6	2.56	0.40
1:a:1263:A:N6	1:a:1305:G:C5	2.90	0.40
1:a:1370:G:O2'	1:a:1371:G:H5'	2.21	0.40
2:c:150:THR:O	2:c:166:GLY:HA3	2.20	0.40
3:d:191:ASP:OD1	3:d:192:GLU:N	2.53	0.40
6:g:99:LEU:HD13	6:g:103:TRP:CZ2	2.56	0.40
8:i:28:ILE:HG23	8:i:35:VAL:HB	2.03	0.40
12:m:23:TYR:CE2	12:m:69:LEU:HB3	2.54	0.40
14:o:89:ARG:NH1	20:A:756:A:O5'	2.54	0.40
20:A:344:G:C8	20:A:346:A:C8	3.09	0.40
20:A:389:G:C4	20:A:390:A:C8	3.09	0.40
20:A:590:G:C6	20:A:591:U:C4	3.09	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:619:G:OP1	34:R:14:ARG:NH1	2.54	0.40
20:A:744:G:O2'	20:A:745:A:OP2	2.37	0.40
20:A:847:U:H2'	20:A:848:G:H8	1.85	0.40
20:A:905:G:H2'	20:A:906:C:H6	1.86	0.40
20:A:1040:A:C6	20:A:1041:A:C6	3.09	0.40
20:A:1473:A:N6	20:A:1607:C:H42	2.19	0.40
20:A:1634:A:OP1	20:A:1634:A:H4'	2.22	0.40
20:A:1718:C:H6	20:A:1718:C:O5'	2.04	0.40
20:A:2305:U:C2	20:A:2306:U:C5	3.08	0.40
20:A:2329:U:C2	20:A:2330:U:C5	3.09	0.40
27:K:27:GLY:O	27:K:30:SER:OG	2.28	0.40
29:M:18:ARG:HE	29:M:18:ARG:HB3	1.65	0.40
38:V:28:PRO:C	38:V:30:GLN:H	2.29	0.40
39:W:73:LEU:N	39:W:92:LEU:O	2.48	0.40
1:a:18:G:H2'	1:a:19:G:C8	2.57	0.40
1:a:621:G:N1	1:a:646:G:N7	2.69	0.40
1:a:1275:U:H3	1:a:1291:G:H1	1.69	0.40
1:a:1320:G:HO2'	1:a:1346:G:H22	1.62	0.40
1:a:1539:G:C4	1:a:1540:C:C5	3.09	0.40
8:i:44:LEU:HG	8:i:44:LEU:H	1.67	0.40
9:j:83:THR:O	9:j:87:LEU:HG	2.22	0.40
17:r:58:LYS:H	17:r:58:LYS:HG2	1.59	0.40
18:s:27:LYS:HD3	18:s:47:PHE:CG	2.56	0.40
18:s:63:GLN:H	18:s:66:MET:CE	2.34	0.40
20:A:200:A:C5	20:A:2444:A:C5	3.09	0.40
20:A:631:U:C2	20:A:632:U:C5	3.10	0.40
20:A:645:A:C4	20:A:646:A:C8	3.10	0.40
20:A:691:A:C5	20:A:692:A:C2	3.10	0.40
20:A:1051:A:C4	20:A:1053:A:C8	3.09	0.40
20:A:1125:A:C2	20:A:1145:U:O2'	2.74	0.40
20:A:1332:A:C6	20:A:1688:G:C6	3.09	0.40
20:A:1423:A:H2'	20:A:1424:G:C8	2.55	0.40
20:A:1611:C:O2'	20:A:1612:A:H5''	2.21	0.40
20:A:1911:G:H2'	20:A:1912:U:O4'	2.21	0.40
20:A:1991:A:C5	20:A:1992:A:C8	3.09	0.40
20:A:2204:A:H3'	20:A:2205:A:C8	2.53	0.40
20:A:2665:C:C2	20:A:2684:G:C2	3.09	0.40
20:A:2845:G:N7	20:A:2890:A:C2	2.90	0.40
21:B:74:G:N3	39:W:88:HIS:NE2	2.70	0.40
24:E:54:ARG:HE	24:E:54:ARG:HB3	1.58	0.40
24:E:170:LEU:C	24:E:172:ASN:N	2.79	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:F:4:LEU:O	25:F:8:TYR:N	2.37	0.40
26:G:27:LYS:HA	26:G:31:GLY:O	2.22	0.40
29:M:94:VAL:C	29:M:96:LEU:N	2.79	0.40
30:N:10:ARG:HB3	30:N:10:ARG:HE	1.57	0.40
37:U:83:THR:O	37:U:84:GLU:HG3	2.21	0.40
40:X:53:LYS:HA	40:X:85:LYS:NZ	2.36	0.40
42:Z:51:ALA:O	42:Z:55:THR:HG23	2.21	0.40
44:1:72:ASP:N	44:1:72:ASP:OD1	2.53	0.40
1:a:237:U:H2'	1:a:238:G:H8	1.87	0.40
1:a:327:C:N4	1:a:328:A:N6	2.69	0.40
1:a:421:G:C4	1:a:510:A:C6	3.09	0.40
1:a:655:A:C6	1:a:656:A:N1	2.89	0.40
1:a:963:G:OP1	12:m:107:ARG:HB3	2.21	0.40
1:a:1025:U:C2	1:a:1037:G:N2	2.89	0.40
3:d:68:PHE:CE1	3:d:87:PHE:HZ	2.39	0.40
4:e:19:ASN:O	4:e:19:ASN:ND2	2.32	0.40
4:e:57:PRO:HA	4:e:60:ILE:HG12	2.03	0.40
12:m:52:GLN:O	12:m:56:ILE:HG23	2.22	0.40
14:o:66:LEU:HD23	14:o:66:LEU:HA	1.73	0.40
20:A:625:U:H2'	20:A:626:U:C6	2.57	0.40
20:A:635:A:C2	20:A:700:G:C2	3.10	0.40
20:A:1141:U:H2'	20:A:1144:C:H42	1.86	0.40
20:A:1577:A:C8	20:A:1578:A:N6	2.89	0.40
20:A:1711:A:N3	20:A:1713:C:N4	2.69	0.40
20:A:2378:C:H2'	20:A:2379:G:O4'	2.21	0.40
20:A:2500:G:C6	20:A:2501:G:N7	2.89	0.40
20:A:2900:C:H2'	20:A:2901:G:O4'	2.21	0.40
21:B:6:U:H5'	32:P:34:PHE:HE1	1.85	0.40
21:B:41:C:N3	21:B:43:A:N6	2.69	0.40
21:B:100:G:N2	39:W:32:TYR:CZ	2.90	0.40
23:D:108:VAL:HG22	23:D:203:LYS:O	2.21	0.40
27:K:58:ILE:HG22	27:K:59:ASN:CG	2.46	0.40
27:K:131:HIS:CD2	27:K:133:HIS:H	2.38	0.40
28:L:104:ARG:O	28:L:106:LEU:N	2.54	0.40
35:S:83:HIS:CD2	35:S:83:HIS:N	2.88	0.40
38:V:48:ASN:O	38:V:52:PRO:HA	2.22	0.40
45:2:37:LYS:HG2	45:2:43:CYS:HA	2.03	0.40
1:a:36:G:H2'	1:a:37:C:O4'	2.20	0.40
1:a:395:G:C2	1:a:399:G:C6	3.09	0.40
1:a:481:A:H8	1:a:481:A:OP1	2.04	0.40
1:a:910:G:C4	1:a:911:A:C8	3.09	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:979:G:C4	1:a:980:A:C8	3.09	0.40
1:a:1236:G:H4'	18:s:77:THR:HG21	2.04	0.40
1:a:1314:A:N3	1:a:1314:A:H2'	2.36	0.40
2:c:55:GLU:O	2:c:65:ILE:HB	2.21	0.40
20:A:681:G:N2	20:A:685:A:H62	2.20	0.40
20:A:1270:C:H2'	20:A:1271:U:H6	1.87	0.40
20:A:1635:C:C2	20:A:1636:A:N7	2.89	0.40
20:A:1818:A:H2'	20:A:1819:U:H6	1.86	0.40
20:A:2219:A:C4	20:A:2220:C:C5	3.10	0.40
20:A:2304:G:H2'	20:A:2305:U:H6	1.87	0.40
20:A:2334:A:H5''	20:A:2335:G:C8	2.56	0.40
20:A:2540:G:H1	20:A:2551:U:H3	1.70	0.40
20:A:2662:G:C4	20:A:2687:G:C2	3.10	0.40
20:A:2902:A:C6	20:A:2903:G:C2	3.10	0.40
22:C:228:ASN:ND2	22:C:228:ASN:O	2.54	0.40
27:K:106:VAL:C	27:K:108:GLY:N	2.78	0.40
29:M:61:LEU:HD12	48:5:13:ARG:HD3	2.02	0.40
30:N:137:MET:HE3	30:N:137:MET:HB3	2.00	0.40
34:R:83:LEU:HD23	34:R:83:LEU:HA	1.84	0.40
36:T:70:ASP:C	36:T:72:GLU:N	2.79	0.40
39:W:15:ARG:C	39:W:17:LEU:N	2.80	0.40
44:1:40:GLY:O	44:1:42:THR:N	2.55	0.40
49:6:3:VAL:HG22	49:6:36:ARG:HD3	2.03	0.40
1:a:213:G:C5	1:a:214:U:C5	3.10	0.40
1:a:1022:C:C5	1:a:1040:U:H4'	2.57	0.40
1:a:1338:G:H5''	12:m:98:ARG:NH1	2.34	0.40
1:a:1361:A:H62	1:a:1390:A:H62	1.69	0.40
1:a:1450:G:H2'	1:a:1451:U:H6	1.84	0.40
6:g:143:LYS:O	6:g:147:ALA:HB2	2.21	0.40
7:h:98:LEU:HD23	7:h:101:LEU:HB2	2.02	0.40
15:p:20:ILE:HB	15:p:37:VAL:O	2.21	0.40
20:A:173:G:C4	20:A:174:A:C8	3.09	0.40
20:A:367:A:H2	20:A:1247:U:H2'	1.86	0.40
20:A:492:G:C2	20:A:498:G:C5	3.09	0.40
20:A:608:U:O4'	20:A:2044:A:H2	2.05	0.40
20:A:910:G:C2	20:A:950:A:C2	3.09	0.40
20:A:920:G:HO2'	20:A:921:G:C4'	2.34	0.40
20:A:952:A:C6	30:N:11:ARG:NE	2.90	0.40
20:A:1009:G:O3'	43:0:14:GLY:HA2	2.21	0.40
20:A:1009:G:C6	20:A:1010:U:C4	3.10	0.40
20:A:1401:A:C6	20:A:1402:U:C4	3.09	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:A:1506:A:H2'	20:A:1507:U:O4'	2.21	0.40
20:A:1562:U:N3	20:A:1563:G:N7	2.69	0.40
20:A:1698:A:C8	20:A:1699:C:C5	3.09	0.40
20:A:1752:U:C2	20:A:1753:G:N7	2.90	0.40
20:A:1806:G:H5'	22:C:204:ASN:OD1	2.21	0.40
20:A:1876:G:C2	20:A:1877:G:C8	3.10	0.40
20:A:2111:G:H2'	20:A:2112:U:C6	2.56	0.40
20:A:2643:U:H5'	20:A:2643:U:H6	1.87	0.40
20:A:2722:G:C2	20:A:2723:G:C8	3.09	0.40
21:B:39:G:O6	25:F:69:LYS:HE2	2.22	0.40
22:C:19:SER:OG	22:C:21:PHE:N	2.50	0.40
22:C:176:LEU:HA	22:C:176:LEU:HD23	1.79	0.40
24:E:6:LEU:HD23	24:E:6:LEU:HA	1.88	0.40
25:F:66:LEU:HD23	25:F:66:LEU:HA	1.85	0.40
31:O:47:MET:HE3	31:O:47:MET:HB3	1.91	0.40
31:O:59:ARG:CZ	31:O:90:PHE:HD2	2.35	0.40
38:V:24:LEU:HD23	38:V:24:LEU:HA	1.89	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	
2	c	202/204 (99%)	177 (88%)	25 (12%)	0	100	100
3	d	199/201 (99%)	159 (80%)	39 (20%)	1 (0%)	24	57
4	e	161/163 (99%)	140 (87%)	21 (13%)	0	100	100
5	f	95/97 (98%)	79 (83%)	16 (17%)	0	100	100
6	g	152/154 (99%)	129 (85%)	23 (15%)	0	100	100
7	h	129/131 (98%)	106 (82%)	23 (18%)	0	100	100
8	i	126/128 (98%)	109 (86%)	15 (12%)	2 (2%)	7	36

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
9	j	97/99 (98%)	76 (78%)	21 (22%)	0	100	100
10	k	115/117 (98%)	93 (81%)	22 (19%)	0	100	100
11	l	134/136 (98%)	105 (78%)	29 (22%)	0	100	100
12	m	110/112 (98%)	81 (74%)	29 (26%)	0	100	100
13	n	58/60 (97%)	49 (84%)	9 (16%)	0	100	100
14	o	86/88 (98%)	75 (87%)	10 (12%)	1 (1%)	10	41
15	p	87/89 (98%)	72 (83%)	15 (17%)	0	100	100
16	q	81/83 (98%)	68 (84%)	13 (16%)	0	100	100
17	r	64/66 (97%)	56 (88%)	8 (12%)	0	100	100
18	s	76/78 (97%)	60 (79%)	16 (21%)	0	100	100
19	t	79/81 (98%)	72 (91%)	7 (9%)	0	100	100
22	C	273/275 (99%)	219 (80%)	54 (20%)	0	100	100
23	D	205/207 (99%)	163 (80%)	40 (20%)	2 (1%)	12	44
24	E	204/206 (99%)	167 (82%)	37 (18%)	0	100	100
25	F	175/177 (99%)	144 (82%)	31 (18%)	0	100	100
26	G	174/176 (99%)	133 (76%)	39 (22%)	2 (1%)	11	43
27	K	143/145 (99%)	112 (78%)	31 (22%)	0	100	100
28	L	120/122 (98%)	97 (81%)	23 (19%)	0	100	100
29	M	144/146 (99%)	101 (70%)	40 (28%)	3 (2%)	5	31
30	N	139/141 (99%)	111 (80%)	28 (20%)	0	100	100
31	O	121/123 (98%)	92 (76%)	29 (24%)	0	100	100
32	P	115/117 (98%)	90 (78%)	25 (22%)	0	100	100
33	Q	112/114 (98%)	101 (90%)	11 (10%)	0	100	100
34	R	116/118 (98%)	102 (88%)	14 (12%)	0	100	100
35	S	100/102 (98%)	85 (85%)	15 (15%)	0	100	100
36	T	110/112 (98%)	94 (86%)	16 (14%)	0	100	100
37	U	87/89 (98%)	66 (76%)	19 (22%)	2 (2%)	5	30
38	V	99/101 (98%)	68 (69%)	29 (29%)	2 (2%)	6	32
39	W	92/94 (98%)	67 (73%)	23 (25%)	2 (2%)	5	30
40	X	74/76 (97%)	63 (85%)	11 (15%)	0	100	100
41	Y	52/54 (96%)	39 (75%)	13 (25%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
42	Z	59/61 (97%)	54 (92%)	5 (8%)	0	100	100
43	0	56/58 (97%)	50 (89%)	6 (11%)	0	100	100
44	1	81/83 (98%)	52 (64%)	29 (36%)	0	100	100
45	2	54/56 (96%)	46 (85%)	8 (15%)	0	100	100
46	3	47/49 (96%)	40 (85%)	7 (15%)	0	100	100
47	4	42/44 (96%)	36 (86%)	6 (14%)	0	100	100
48	5	62/64 (97%)	47 (76%)	15 (24%)	0	100	100
49	6	36/38 (95%)	28 (78%)	8 (22%)	0	100	100
All	All	5143/5235 (98%)	4173 (81%)	953 (18%)	17 (0%)	37	67

All (17) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
26	G	48	ASN
29	M	95	VAL
29	M	98	GLU
38	V	73	PRO
39	W	16	SER
8	i	41	HIS
26	G	47	GLY
37	U	50	VAL
38	V	88	GLY
23	D	90	GLU
37	U	51	ALA
39	W	17	LEU
14	o	25	PRO
23	D	89	GLY
29	M	16	ARG
3	d	190	ILE
8	i	40	PRO

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	
2	c	162/162 (100%)	134 (83%)	28 (17%)	2	11
3	d	175/175 (100%)	154 (88%)	21 (12%)	5	23
4	e	126/126 (100%)	105 (83%)	21 (17%)	2	13
5	f	86/86 (100%)	76 (88%)	10 (12%)	5	24
6	g	131/131 (100%)	120 (92%)	11 (8%)	10	34
7	h	112/112 (100%)	89 (80%)	23 (20%)	1	7
8	i	101/101 (100%)	81 (80%)	20 (20%)	1	7
9	j	90/90 (100%)	78 (87%)	12 (13%)	4	20
10	k	91/91 (100%)	79 (87%)	12 (13%)	4	20
11	l	118/118 (100%)	99 (84%)	19 (16%)	2	14
12	m	95/95 (100%)	81 (85%)	14 (15%)	3	17
13	n	51/51 (100%)	42 (82%)	9 (18%)	2	11
14	o	78/78 (100%)	69 (88%)	9 (12%)	5	24
15	p	79/79 (100%)	66 (84%)	13 (16%)	2	13
16	q	76/76 (100%)	64 (84%)	12 (16%)	2	15
17	r	57/57 (100%)	44 (77%)	13 (23%)	1	5
18	s	68/68 (100%)	60 (88%)	8 (12%)	5	23
19	t	62/62 (100%)	56 (90%)	6 (10%)	8	30
22	C	225/225 (100%)	180 (80%)	45 (20%)	1	7
23	D	170/170 (100%)	140 (82%)	30 (18%)	2	11
24	E	172/172 (100%)	135 (78%)	37 (22%)	1	6
25	F	154/154 (100%)	138 (90%)	16 (10%)	7	27
26	G	146/146 (100%)	132 (90%)	14 (10%)	8	30
27	K	122/122 (100%)	106 (87%)	16 (13%)	4	20
28	L	98/98 (100%)	78 (80%)	20 (20%)	1	7
29	M	112/112 (100%)	90 (80%)	22 (20%)	1	8
30	N	112/112 (100%)	92 (82%)	20 (18%)	2	10
31	O	105/105 (100%)	83 (79%)	22 (21%)	1	6
32	P	91/91 (100%)	77 (85%)	14 (15%)	2	16
33	Q	97/97 (100%)	79 (81%)	18 (19%)	1	9
34	R	94/94 (100%)	81 (86%)	13 (14%)	3	19
35	S	83/83 (100%)	73 (88%)	10 (12%)	5	23

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
36	T	95/95 (100%)	84 (88%)	11 (12%)	5	24
37	U	80/80 (100%)	66 (82%)	14 (18%)	2	11
38	V	85/85 (100%)	74 (87%)	11 (13%)	4	21
39	W	85/85 (100%)	75 (88%)	10 (12%)	5	23
40	X	61/61 (100%)	55 (90%)	6 (10%)	7	30
41	Y	47/47 (100%)	36 (77%)	11 (23%)	1	4
42	Z	55/55 (100%)	48 (87%)	7 (13%)	4	21
43	0	49/49 (100%)	38 (78%)	11 (22%)	1	5
44	1	75/75 (100%)	64 (85%)	11 (15%)	3	17
45	2	46/46 (100%)	41 (89%)	5 (11%)	6	26
46	3	49/49 (100%)	41 (84%)	8 (16%)	2	14
47	4	39/39 (100%)	33 (85%)	6 (15%)	2	16
48	5	51/51 (100%)	46 (90%)	5 (10%)	7	30
49	6	35/35 (100%)	33 (94%)	2 (6%)	18	45
All	All	4391/4391 (100%)	3715 (85%)	676 (15%)	5	16

All (676) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	c	15	ILE
2	c	16	ARG
2	c	22	TRP
2	c	30	GLU
2	c	36	LEU
2	c	40	LYS
2	c	42	ILE
2	c	55	GLU
2	c	75	VAL
2	c	76	ILE
2	c	83	VAL
2	c	85	ASN
2	c	98	VAL
2	c	100	ILE
2	c	102	ILE
2	c	107	LYS
2	c	110	LEU
2	c	119	ILE

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Mol	Chain	Res	Type
2	c	123	LEU
2	c	137	ILE
2	c	139	ARG
2	c	156	LEU
2	c	172	VAL
2	c	176	THR
2	c	178	ARG
2	c	191	THR
2	c	195	LEU
2	c	200	TRP
3	d	4	TYR
3	d	19	LEU
3	d	57	LEU
3	d	58	ARG
3	d	71	LEU
3	d	77	LYS
3	d	85	VAL
3	d	96	ASP
3	d	107	THR
3	d	114	LEU
3	d	121	THR
3	d	129	ILE
3	d	142	VAL
3	d	145	LYS
3	d	148	ASN
3	d	162	ARG
3	d	184	ASP
3	d	186	LEU
3	d	189	GLU
3	d	194	LEU
3	d	195	VAL
4	e	9	LEU
4	e	19	ASN
4	e	24	VAL
4	e	31	LEU
4	e	38	VAL
4	e	43	ASN
4	e	50	THR
4	e	72	VAL
4	e	77	VAL
4	e	85	VAL
4	e	105	VAL

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Mol	Chain	Res	Type
4	e	117	LEU
4	e	125	SER
4	e	127	SER
4	e	128	LEU
4	e	131	ASN
4	e	132	THR
4	e	136	VAL
4	e	144	LEU
4	e	147	LEU
4	e	159	LYS
5	f	11	TYR
5	f	17	ILE
5	f	18	ASP
5	f	19	GLU
5	f	35	ASP
5	f	40	VAL
5	f	56	ASN
5	f	65	ILE
5	f	66	VAL
5	f	67	ASN
6	g	19	ASN
6	g	20	SER
6	g	22	LEU
6	g	42	ILE
6	g	47	PHE
6	g	57	ASP
6	g	87	VAL
6	g	115	THR
6	g	116	MET
6	g	136	LYS
6	g	144	MET
7	h	7	ILE
7	h	14	ILE
7	h	20	VAL
7	h	22	HIS
7	h	32	ILE
7	h	59	VAL
7	h	60	ILE
7	h	69	ASN
7	h	70	GLU
7	h	73	VAL
7	h	74	ILE

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Mol	Chain	Res	Type
7	h	78	LYS
7	h	89	VAL
7	h	92	ASP
7	h	97	VAL
7	h	98	LEU
7	h	99	ASN
7	h	103	ILE
7	h	106	ILE
7	h	112	VAL
7	h	114	THR
7	h	127	VAL
7	h	131	VAL
8	i	3	GLN
8	i	9	THR
8	i	12	ARG
8	i	13	LYS
8	i	14	ASN
8	i	16	VAL
8	i	22	VAL
8	i	28	ILE
8	i	30	VAL
8	i	34	ASP
8	i	38	TYR
8	i	44	LEU
8	i	57	THR
8	i	65	VAL
8	i	66	ASN
8	i	79	ILE
8	i	93	ASP
8	i	115	LYS
8	i	127	PHE
8	i	129	LYS
9	j	4	GLN
9	j	8	ILE
9	j	15	HIS
9	j	16	ARG
9	j	35	ASP
9	j	52	ILE
9	j	55	THR
9	j	67	MET
9	j	75	ASP
9	j	76	ILE

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Mol	Chain	Res	Type
9	j	88	MET
9	j	96	VAL
10	k	26	THR
10	k	32	VAL
10	k	35	THR
10	k	53	LYS
10	k	55	SER
10	k	58	SER
10	k	65	MET
10	k	73	VAL
10	k	97	ILE
10	k	108	THR
10	k	113	VAL
10	k	116	VAL
11	l	3	THR
11	l	4	ILE
11	l	7	LEU
11	l	20	ASP
11	l	26	LYS
11	l	30	SER
11	l	32	LYS
11	l	50	VAL
11	l	54	THR
11	l	56	LYS
11	l	72	ASN
11	l	74	ILE
11	l	76	VAL
11	l	92	VAL
11	l	100	VAL
11	l	103	LEU
11	l	106	VAL
11	l	115	LEU
11	l	132	THR
12	m	4	ILE
12	m	9	ILE
12	m	14	ARG
12	m	21	TYR
12	m	29	THR
12	m	34	LEU
12	m	42	ASP
12	m	45	VAL
12	m	60	ILE

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Mol	Chain	Res	Type
12	m	77	ILE
12	m	95	LEU
12	m	98	ARG
12	m	101	ASN
12	m	102	THR
13	n	5	SER
13	n	7	ILE
13	n	18	THR
13	n	26	ARG
13	n	27	CYS
13	n	33	VAL
13	n	36	LYS
13	n	42	ILE
13	n	57	LYS
14	o	10	GLU
14	o	24	SER
14	o	26	GLU
14	o	37	ASN
14	o	52	SER
14	o	67	LEU
14	o	80	GLU
14	o	87	LEU
14	o	89	ARG
15	p	3	VAL
15	p	5	ILE
15	p	10	MET
15	p	13	LYS
15	p	21	VAL
15	p	22	VAL
15	p	26	ARG
15	p	39	THR
15	p	40	TYR
15	p	65	GLN
15	p	73	ILE
15	p	84	HIS
15	p	85	GLU
16	q	5	ARG
16	q	7	GLN
16	q	10	VAL
16	q	21	ASP
16	q	30	THR
16	q	44	SER

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Mol	Chain	Res	Type
16	q	52	GLU
16	q	53	ASN
16	q	58	VAL
16	q	70	LEU
16	q	77	ARG
16	q	78	LEU
17	r	14	VAL
17	r	16	TYR
17	r	20	ASN
17	r	25	ILE
17	r	29	ASP
17	r	30	THR
17	r	47	ARG
17	r	49	THR
17	r	51	THR
17	r	63	ILE
17	r	65	ARG
17	r	72	LEU
17	r	78	GLU
18	s	6	LYS
18	s	7	LYS
18	s	14	HIS
18	s	30	VAL
18	s	32	LYS
18	s	33	THR
18	s	65	ASP
18	s	78	ARG
19	t	4	ILE
19	t	5	GLU
19	t	46	VAL
19	t	49	LEU
19	t	65	LEU
19	t	78	LEU
22	C	3	ILE
22	C	10	THR
22	C	15	ASN
22	C	17	THR
22	C	18	SER
22	C	19	SER
22	C	20	ASP
22	C	23	GLU
22	C	26	THR

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Mol	Chain	Res	Type
22	C	30	GLU
22	C	37	LEU
22	C	39	ASN
22	C	45	ASN
22	C	49	ILE
22	C	51	VAL
22	C	67	PHE
22	C	91	ILE
22	C	94	VAL
22	C	100	VAL
22	C	110	LEU
22	C	117	VAL
22	C	124	ILE
22	C	134	ASN
22	C	140	VAL
22	C	156	ARG
22	C	160	THR
22	C	174	ILE
22	C	182	ARG
22	C	184	ILE
22	C	187	THR
22	C	191	THR
22	C	194	SER
22	C	197	ASN
22	C	198	GLU
22	C	204	ASN
22	C	211	SER
22	C	212	ARG
22	C	214	MET
22	C	219	THR
22	C	228	ASN
22	C	247	VAL
22	C	250	TRP
22	C	259	THR
22	C	267	ASP
22	C	273	ARG
23	D	15	ILE
23	D	17	THR
23	D	21	GLU
23	D	22	LEU
23	D	23	ILE
23	D	25	VAL

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Mol	Chain	Res	Type
23	D	26	THR
23	D	29	GLU
23	D	34	VAL
23	D	51	VAL
23	D	62	ASN
23	D	74	THR
23	D	99	VAL
23	D	101	VAL
23	D	108	VAL
23	D	111	THR
23	D	113	THR
23	D	119	PHE
23	D	140	HIS
23	D	145	SER
23	D	146	MET
23	D	160	LEU
23	D	164	MET
23	D	167	ASP
23	D	168	ARG
23	D	177	VAL
23	D	186	ILE
23	D	188	ILE
23	D	189	LYS
23	D	201	THR
24	E	7	PHE
24	E	8	LYS
24	E	9	GLN
24	E	12	THR
24	E	20	ASN
24	E	33	VAL
24	E	38	ILE
24	E	43	SER
24	E	48	THR
24	E	51	VAL
24	E	62	ARG
24	E	65	TRP
24	E	74	ARG
24	E	77	SER
24	E	80	SER
24	E	89	VAL
24	E	93	THR
24	E	112	SER

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Mol	Chain	Res	Type
24	E	121	ASN
24	E	126	VAL
24	E	132	ASP
24	E	150	THR
24	E	152	VAL
24	E	154	VAL
24	E	155	VAL
24	E	157	GLU
24	E	161	ASP
24	E	169	ASN
24	E	173	VAL
24	E	177	THR
24	E	179	ASP
24	E	185	ASP
24	E	195	THR
24	E	197	THR
24	E	199	LEU
24	E	200	THR
24	E	202	ILE
25	F	13	THR
25	F	28	THR
25	F	38	MET
25	F	44	VAL
25	F	51	ASP
25	F	61	THR
25	F	66	LEU
25	F	90	THR
25	F	91	LEU
25	F	112	ARG
25	F	123	ASP
25	F	129	THR
25	F	141	VAL
25	F	162	THR
25	F	165	GLU
25	F	169	LEU
26	G	8	VAL
26	G	25	THR
26	G	43	MET
26	G	45	ILE
26	G	52	PHE
26	G	57	ASP
26	G	65	HIS

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Mol	Chain	Res	Type
26	G	74	ASN
26	G	76	VAL
26	G	89	LEU
26	G	90	ILE
26	G	107	VAL
26	G	116	THR
26	G	149	ARG
27	K	20	ASP
27	K	26	LEU
27	K	29	LEU
27	K	30	SER
27	K	37	LEU
27	K	41	ASN
27	K	46	THR
27	K	50	ASP
27	K	51	THR
27	K	63	VAL
27	K	71	THR
27	K	85	LEU
27	K	101	LEU
27	K	113	ASN
27	K	115	LEU
27	K	123	LEU
28	L	3	GLN
28	L	6	SER
28	L	19	ILE
28	L	21	THR
28	L	24	VAL
28	L	32	THR
28	L	35	ILE
28	L	37	ASP
28	L	38	VAL
28	L	51	VAL
28	L	65	THR
28	L	66	LYS
28	L	70	ARG
28	L	73	ASP
28	L	77	ILE
28	L	90	ASP
28	L	92	SER
28	L	108	GLU
28	L	110	ASN

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Mol	Chain	Res	Type
28	L	115	VAL
29	M	18	ARG
29	M	23	THR
29	M	46	VAL
29	M	73	ASP
29	M	76	VAL
29	M	77	VAL
29	M	79	LEU
29	M	80	ASP
29	M	84	ARG
29	M	89	THR
29	M	92	THR
29	M	95	VAL
29	M	96	LEU
29	M	97	LYS
29	M	103	LYS
29	M	105	GLU
29	M	116	GLU
29	M	117	LEU
29	M	122	THR
29	M	127	LYS
29	M	130	LYS
29	M	143	ILE
30	N	7	VAL
30	N	10	ARG
30	N	20	GLU
30	N	42	ILE
30	N	43	THR
30	N	65	TRP
30	N	68	ILE
30	N	69	PHE
30	N	72	LYS
30	N	74	TYR
30	N	75	THR
30	N	76	SER
30	N	82	ARG
30	N	94	VAL
30	N	99	ARG
30	N	113	VAL
30	N	116	GLU
30	N	120	LEU
30	N	122	SER

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Mol	Chain	Res	Type
30	N	127	VAL
31	O	4	ARG
31	O	6	LEU
31	O	24	LEU
31	O	27	ASN
31	O	30	ILE
31	O	41	ARG
31	O	42	SER
31	O	43	THR
31	O	56	LEU
31	O	70	VAL
31	O	75	GLU
31	O	81	VAL
31	O	89	LEU
31	O	104	TYR
31	O	110	THR
31	O	114	ARG
31	O	116	ASP
31	O	121	VAL
31	O	122	VAL
31	O	123	ILE
31	O	125	PHE
31	O	126	VAL
32	P	3	THR
32	P	21	LYS
32	P	22	ILE
32	P	23	SER
32	P	31	LEU
32	P	33	ILE
32	P	45	ILE
32	P	48	VAL
32	P	62	GLU
32	P	63	ILE
32	P	71	THR
32	P	101	HIS
32	P	103	ARG
32	P	104	VAL
33	Q	4	LEU
33	Q	15	THR
33	Q	16	ASP
33	Q	39	ARG
33	Q	40	ILE

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Mol	Chain	Res	Type
33	Q	48	ILE
33	Q	51	ARG
33	Q	55	ILE
33	Q	61	VAL
33	Q	62	ARG
33	Q	66	ASN
33	Q	72	ARG
33	Q	73	THR
33	Q	76	LEU
33	Q	78	THR
33	Q	92	VAL
33	Q	110	ILE
33	Q	113	ILE
34	R	9	VAL
34	R	18	LEU
34	R	20	LEU
34	R	30	THR
34	R	34	SER
34	R	38	GLN
34	R	56	ASP
34	R	60	LEU
34	R	76	TYR
34	R	79	LEU
34	R	85	LEU
34	R	102	ASP
34	R	115	ASP
35	S	11	GLN
35	S	12	VAL
35	S	20	ILE
35	S	23	GLU
35	S	27	VAL
35	S	61	THR
35	S	69	LYS
35	S	81	HIS
35	S	82	SER
35	S	83	HIS
36	T	4	GLN
36	T	20	ARG
36	T	26	ILE
36	T	29	ILE
36	T	44	THR
36	T	56	LEU

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Mol	Chain	Res	Type
36	T	67	PHE
36	T	86	THR
36	T	102	ASN
36	T	109	THR
36	T	114	GLU
37	U	3	LEU
37	U	6	VAL
37	U	7	ILE
37	U	11	VAL
37	U	14	GLU
37	U	31	THR
37	U	34	ASN
37	U	37	LEU
37	U	47	ASP
37	U	48	VAL
37	U	53	VAL
37	U	80	VAL
37	U	89	ILE
37	U	90	GLN
38	V	12	ILE
38	V	18	ASN
38	V	31	ASP
38	V	33	VAL
38	V	35	VAL
38	V	59	VAL
38	V	63	ILE
38	V	68	VAL
38	V	70	VAL
38	V	85	GLU
38	V	94	SER
39	W	15	ARG
39	W	31	VAL
39	W	37	GLU
39	W	43	PHE
39	W	64	THR
39	W	71	ASN
39	W	78	GLN
39	W	80	ASP
39	W	89	VAL
39	W	94	VAL
40	X	34	SER
40	X	50	ARG

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Mol	Chain	Res	Type
40	X	67	THR
40	X	73	ASP
40	X	77	ARG
40	X	88	VAL
41	Y	8	THR
41	Y	12	THR
41	Y	14	SER
41	Y	16	ASN
41	Y	25	THR
41	Y	32	ASN
41	Y	36	VAL
41	Y	41	ASP
41	Y	43	LYS
41	Y	47	VAL
41	Y	55	LYS
42	Z	6	ILE
42	Z	17	LYS
42	Z	32	LEU
42	Z	39	ASN
42	Z	50	ILE
42	Z	57	LEU
42	Z	62	ASN
43	0	8	LEU
43	0	12	VAL
43	0	13	ILE
43	0	22	THR
43	0	34	THR
43	0	40	ASN
43	0	43	ILE
43	0	47	VAL
43	0	49	THR
43	0	50	ILE
43	0	53	LEU
44	1	3	GLN
44	1	13	VAL
44	1	15	MET
44	1	18	THR
44	1	23	PHE
44	1	25	SER
44	1	27	SER
44	1	51	THR
44	1	70	ARG

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Mol	Chain	Res	Type
44	1	71	VAL
44	1	74	PHE
45	2	9	SER
45	2	12	LYS
45	2	18	THR
45	2	32	ASN
45	2	37	LYS
46	3	5	ILE
46	3	8	GLU
46	3	10	THR
46	3	11	SER
46	3	19	THR
46	3	26	ASN
46	3	39	GLU
46	3	44	LEU
47	4	3	ARG
47	4	4	THR
47	4	5	TYR
47	4	20	LYS
47	4	24	THR
47	4	42	ILE
48	5	32	ARG
48	5	43	GLN
48	5	54	ASP
48	5	57	ARG
48	5	58	ILE
49	6	30	ASN
49	6	36	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (79) such sidechains are listed below:

Mol	Chain	Res	Type
2	c	6	HIS
2	c	33	HIS
2	c	125	ASN
3	d	39	ASN
3	d	59	HIS
3	d	113	GLN
3	d	116	ASN
6	g	28	ASN
7	h	122	ASN
8	i	126	GLN

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Mol	Chain	Res	Type
9	j	20	GLN
9	j	56	HIS
10	k	77	HIS
10	k	118	HIS
11	l	35	GLN
12	m	104	ASN
13	n	10	ASN
13	n	16	HIS
13	n	19	GLN
13	n	38	HIS
13	n	52	GLN
14	o	28	GLN
15	p	65	GLN
15	p	72	ASN
16	q	12	GLN
16	q	50	HIS
17	r	21	HIS
17	r	55	ASN
17	r	56	GLN
18	s	22	GLN
18	s	23	GLN
18	s	63	GLN
22	C	226	ASN
22	C	232	HIS
23	D	33	ASN
23	D	37	GLN
23	D	54	GLN
23	D	62	ASN
23	D	68	HIS
23	D	126	HIS
24	E	75	GLN
24	E	169	ASN
25	F	37	ASN
25	F	178	GLN
26	G	23	ASN
26	G	44	ASN
26	G	56	ASN
26	G	84	GLN
26	G	130	GLN
27	K	131	HIS
29	M	4	HIS
29	M	54	GLN

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Mol	Chain	Res	Type
31	O	12	GLN
31	O	61	GLN
31	O	68	ASN
32	P	101	HIS
33	Q	77	HIS
33	Q	83	GLN
34	R	29	HIS
34	R	91	ASN
35	S	11	GLN
35	S	68	GLN
35	S	83	HIS
35	S	88	HIS
37	U	90	GLN
38	V	44	HIS
39	W	88	HIS
40	X	59	ASN
40	X	87	GLN
41	Y	20	HIS
41	Y	23	ASN
42	Z	36	GLN
45	2	40	HIS
45	2	48	HIS
46	3	4	ASN
48	5	4	GLN
48	5	60	GLN
48	5	61	GLN
49	6	13	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	a	1521/1528 (99%)	312 (20%)	0
20	A	2899/2909 (99%)	654 (22%)	27 (0%)
21	B	115/116 (99%)	30 (26%)	3 (2%)
All	All	4535/4553 (99%)	996 (21%)	30 (0%)

All (996) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	a	5	A
1	a	6	G

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Mol	Chain	Res	Type
1	a	13	A
1	a	19	G
1	a	27	C
1	a	29	A
1	a	30	A
1	a	32	G
1	a	34	U
1	a	35	G
1	a	37	C
1	a	38	G
1	a	41	G
1	a	44	C
1	a	45	C
1	a	48	A
1	a	51	C
1	a	55	C
1	a	69	C
1	a	70	U
1	a	101	A
1	a	114	A
1	a	117	G
1	a	125	A
1	a	126	C
1	a	127	A
1	a	135	A
1	a	137	C
1	a	138	C
1	a	168	A
1	a	169	C
1	a	183	G
1	a	188	A
1	a	189	C
1	a	201	C
1	a	202	A
1	a	209	A
1	a	210	A
1	a	211	G
1	a	213	G
1	a	215	G
1	a	225	U
1	a	226	U
1	a	228	G

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Mol	Chain	Res	Type
1	a	229	G
1	a	230	G
1	a	231	U
1	a	254	G
1	a	255	U
1	a	256	G
1	a	258	A
1	a	259	U
1	a	261	A
1	a	262	G
1	a	266	G
1	a	277	A
1	a	281	G
1	a	282	C
1	a	289	A
1	a	294	A
1	a	295	C
1	a	304	G
1	a	313	A
1	a	321	A
1	a	336	A
1	a	339	G
1	a	343	C
1	a	344	A
1	a	358	U
1	a	361	G
1	a	362	G
1	a	367	C
1	a	369	G
1	a	381	C
1	a	382	U
1	a	387	C
1	a	388	A
1	a	397	A
1	a	403	G
1	a	412	A
1	a	421	G
1	a	426	A
1	a	427	A
1	a	428	G
1	a	429	A
1	a	443	G

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Mol	Chain	Res	Type
1	a	444	U
1	a	446	A
1	a	447	A
1	a	463	A
1	a	467	A
1	a	468	C
1	a	469	A
1	a	473	A
1	a	477	U
1	a	479	G
1	a	480	U
1	a	481	A
1	a	484	U
1	a	488	C
1	a	489	G
1	a	490	U
1	a	497	A
1	a	499	G
1	a	500	G
1	a	510	A
1	a	512	A
1	a	514	A
1	a	522	C
1	a	524	A
1	a	525	A
1	a	526	C
1	a	527	U
1	a	533	C
1	a	534	C
1	a	536	G
1	a	539	G
1	a	542	G
1	a	547	A
1	a	548	A
1	a	551	C
1	a	553	U
1	a	556	G
1	a	561	A
1	a	562	A
1	a	578	A
1	a	579	U
1	a	585	G

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Mol	Chain	Res	Type
1	a	588	A
1	a	590	G
1	a	591	C
1	a	592	G
1	a	594	G
1	a	603	G
1	a	644	A
1	a	647	G
1	a	648	U
1	a	664	G
1	a	668	U
1	a	680	A
1	a	701	U
1	a	702	A
1	a	703	G
1	a	710	A
1	a	716	U
1	a	717	A
1	a	718	G
1	a	736	A
1	a	738	U
1	a	744	A
1	a	764	A
1	a	767	G
1	a	770	G
1	a	775	G
1	a	782	A
1	a	793	G
1	a	802	A
1	a	818	G
1	a	828	U
1	a	830	A
1	a	832	C
1	a	835	U
1	a	842	U
1	a	843	A
1	a	847	G
1	a	851	G
1	a	859	C
1	a	861	G
1	a	862	C
1	a	869	G

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Mol	Chain	Res	Type
1	a	881	A
1	a	888	A
1	a	890	G
1	a	892	A
1	a	901	G
1	a	905	A
1	a	906	G
1	a	930	A
1	a	934	A
1	a	939	A
1	a	942	G
1	a	943	G
1	a	950	C
1	a	951	A
1	a	961	G
1	a	968	U
1	a	974	A
1	a	975	A
1	a	976	U
1	a	977	U
1	a	982	G
1	a	985	A
1	a	987	G
1	a	988	C
1	a	991	A
1	a	992	G
1	a	997	U
1	a	999	A
1	a	1008	U
1	a	1009	G
1	a	1015	C
1	a	1018	U
1	a	1019	G
1	a	1020	A
1	a	1022	C
1	a	1031	G
1	a	1037	G
1	a	1038	C
1	a	1039	U
1	a	1041	U
1	a	1042	C
1	a	1043	C

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Mol	Chain	Res	Type
1	a	1044	C
1	a	1045	U
1	a	1047	C
1	a	1048	G
1	a	1055	A
1	a	1058	U
1	a	1061	C
1	a	1062	A
1	a	1069	G
1	a	1080	G
1	a	1081	U
1	a	1097	G
1	a	1101	U
1	a	1109	A
1	a	1110	G
1	a	1111	U
1	a	1117	A
1	a	1140	G
1	a	1146	A
1	a	1149	A
1	a	1154	G
1	a	1155	U
1	a	1156	U
1	a	1161	A
1	a	1171	G
1	a	1174	U
1	a	1176	C
1	a	1183	C
1	a	1199	G
1	a	1200	G
1	a	1211	A
1	a	1212	A
1	a	1215	C
1	a	1227	U
1	a	1229	U
1	a	1240	A
1	a	1241	C
1	a	1242	A
1	a	1243	C
1	a	1256	G
1	a	1261	G
1	a	1263	A

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Mol	Chain	Res	Type
1	a	1272	C
1	a	1274	C
1	a	1275	U
1	a	1276	A
1	a	1295	A
1	a	1300	U
1	a	1301	U
1	a	1302	A
1	a	1312	U
1	a	1313	C
1	a	1314	A
1	a	1315	G
1	a	1317	U
1	a	1318	C
1	a	1320	G
1	a	1334	A
1	a	1335	C
1	a	1337	C
1	a	1338	G
1	a	1351	C
1	a	1361	A
1	a	1372	A
1	a	1374	C
1	a	1375	A
1	a	1378	A
1	a	1379	C
1	a	1389	A
1	a	1396	U
1	a	1401	G
1	a	1407	G
1	a	1409	A
1	a	1412	C
1	a	1413	A
1	a	1429	C
1	a	1432	G
1	a	1438	G
1	a	1441	A
1	a	1451	U
1	a	1457	A
1	a	1461	A
1	a	1466	U
1	a	1467	U

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Mol	Chain	Res	Type
1	a	1468	U
1	a	1484	A
1	a	1496	A
1	a	1503	G
1	a	1508	A
1	a	1509	A
1	a	1511	U
1	a	1518	A
1	a	1520	G
1	a	1521	G
1	a	1522	U
1	a	1523	A
1	a	1533	G
1	a	1545	G
1	a	1546	G
1	a	1550	A
20	A	14	A
20	A	16	G
20	A	26	U
20	A	29	A
20	A	35	U
20	A	36	G
20	A	46	G
20	A	51	U
20	A	52	G
20	A	65	A
20	A	72	A
20	A	76	G
20	A	86	G
20	A	90	U
20	A	93	G
20	A	97	G
20	A	110	G
20	A	118	A
20	A	120	U
20	A	131	A
20	A	134	A
20	A	139	U
20	A	143	A
20	A	155	U
20	A	156	U
20	A	162	A

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Mol	Chain	Res	Type
20	A	165	A
20	A	166	C
20	A	168	U
20	A	169	A
20	A	180	G
20	A	183	A
20	A	184	G
20	A	199	A
20	A	202	A
20	A	218	G
20	A	219	A
20	A	224	A
20	A	225	A
20	A	229	A
20	A	231	A
20	A	232	U
20	A	233	U
20	A	235	G
20	A	236	A
20	A	251	G
20	A	253	G
20	A	254	A
20	A	255	G
20	A	268	A
20	A	276	C
20	A	277	C
20	A	279	A
20	A	284	C
20	A	285	U
20	A	286	U
20	A	288	C
20	A	289	U
20	A	292	U
20	A	296	G
20	A	297	G
20	A	300	G
20	A	301	U
20	A	309	C
20	A	310	G
20	A	313	A
20	A	318	A
20	A	321	C

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Mol	Chain	Res	Type
20	A	322	U
20	A	325	U
20	A	339	G
20	A	342	U
20	A	344	G
20	A	367	A
20	A	369	A
20	A	372	C
20	A	378	G
20	A	383	A
20	A	387	C
20	A	389	G
20	A	396	C
20	A	399	A
20	A	400	G
20	A	404	G
20	A	421	A
20	A	426	G
20	A	446	G
20	A	451	G
20	A	452	A
20	A	487	A
20	A	496	C
20	A	497	A
20	A	507	G
20	A	520	A
20	A	521	G
20	A	530	A
20	A	543	U
20	A	544	A
20	A	547	U
20	A	548	C
20	A	549	C
20	A	561	G
20	A	562	C
20	A	566	C
20	A	569	C
20	A	570	A
20	A	571	A
20	A	572	G
20	A	581	C
20	A	584	U

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Mol	Chain	Res	Type
20	A	586	A
20	A	587	U
20	A	588	G
20	A	599	U
20	A	600	G
20	A	609	A
20	A	610	G
20	A	612	A
20	A	624	G
20	A	640	A
20	A	651	A
20	A	652	A
20	A	654	A
20	A	655	G
20	A	656	A
20	A	659	G
20	A	660	A
20	A	661	G
20	A	670	A
20	A	671	A
20	A	673	G
20	A	676	A
20	A	677	G
20	A	684	U
20	A	690	G
20	A	693	U
20	A	694	G
20	A	709	G
20	A	710	A
20	A	722	G
20	A	726	U
20	A	756	A
20	A	757	A
20	A	759	C
20	A	766	G
20	A	767	A
20	A	770	A
20	A	778	C
20	A	784	C
20	A	787	U
20	A	792	A
20	A	795	G

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Mol	Chain	Res	Type
20	A	805	G
20	A	808	G
20	A	815	G
20	A	822	A
20	A	824	U
20	A	825	U
20	A	830	A
20	A	832	G
20	A	833	A
20	A	834	A
20	A	840	A
20	A	845	G
20	A	852	C
20	A	867	U
20	A	868	U
20	A	885	U
20	A	886	U
20	A	888	A
20	A	891	A
20	A	900	G
20	A	903	G
20	A	905	G
20	A	906	C
20	A	907	A
20	A	909	U
20	A	910	G
20	A	913	U
20	A	919	A
20	A	920	G
20	A	923	G
20	A	925	C
20	A	926	C
20	A	927	A
20	A	928	U
20	A	932	G
20	A	933	G
20	A	934	G
20	A	936	U
20	A	938	C
20	A	939	C
20	A	940	G
20	A	943	U

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Mol	Chain	Res	Type
20	A	946	A
20	A	950	A
20	A	951	A
20	A	952	A
20	A	957	G
20	A	958	A
20	A	961	G
20	A	964	A
20	A	966	U
20	A	967	C
20	A	970	U
20	A	981	A
20	A	985	A
20	A	986	G
20	A	990	G
20	A	992	G
20	A	993	A
20	A	997	A
20	A	999	A
20	A	1001	G
20	A	1013	A
20	A	1014	A
20	A	1016	G
20	A	1028	A
20	A	1036	A
20	A	1037	G
20	A	1045	C
20	A	1049	A
20	A	1051	A
20	A	1052	U
20	A	1053	A
20	A	1061	A
20	A	1062	G
20	A	1066	A
20	A	1067	A
20	A	1068	A
20	A	1073	U
20	A	1081	U
20	A	1085	C
20	A	1086	A
20	A	1087	G
20	A	1088	A

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Mol	Chain	Res	Type
20	A	1093	U
20	A	1094	A
20	A	1096	G
20	A	1097	A
20	A	1098	U
20	A	1100	U
20	A	1101	U
20	A	1102	G
20	A	1106	U
20	A	1107	A
20	A	1108	G
20	A	1109	A
20	A	1110	A
20	A	1111	G
20	A	1112	C
20	A	1113	A
20	A	1114	G
20	A	1115	C
20	A	1116	C
20	A	1117	A
20	A	1118	C
20	A	1122	U
20	A	1123	U
20	A	1125	A
20	A	1126	A
20	A	1127	G
20	A	1128	A
20	A	1129	G
20	A	1131	G
20	A	1135	A
20	A	1136	A
20	A	1137	U
20	A	1138	A
20	A	1139	G
20	A	1140	C
20	A	1141	U
20	A	1142	C
20	A	1143	A
20	A	1144	C
20	A	1146	A
20	A	1147	G
20	A	1148	U

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Mol	Chain	Res	Type
20	A	1149	C
20	A	1150	G
20	A	1151	A
20	A	1152	G
20	A	1157	C
20	A	1167	A
20	A	1168	A
20	A	1172	U
20	A	1173	A
20	A	1174	C
20	A	1175	C
20	A	1179	G
20	A	1181	U
20	A	1182	A
20	A	1210	C
20	A	1212	A
20	A	1215	A
20	A	1217	G
20	A	1224	G
20	A	1249	G
20	A	1257	A
20	A	1264	G
20	A	1275	G
20	A	1276	C
20	A	1277	G
20	A	1285	G
20	A	1290	A
20	A	1293	G
20	A	1294	C
20	A	1306	G
20	A	1308	G
20	A	1309	A
20	A	1310	A
20	A	1311	A
20	A	1322	A
20	A	1323	A
20	A	1335	G
20	A	1336	U
20	A	1337	A
20	A	1338	U
20	A	1349	U
20	A	1357	A

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Mol	Chain	Res	Type
20	A	1365	U
20	A	1366	C
20	A	1376	U
20	A	1377	U
20	A	1388	U
20	A	1394	G
20	A	1396	G
20	A	1397	G
20	A	1401	A
20	A	1402	U
20	A	1404	G
20	A	1411	G
20	A	1414	A
20	A	1415	U
20	A	1420	A
20	A	1427	U
20	A	1428	G
20	A	1431	A
20	A	1432	U
20	A	1447	U
20	A	1448	U
20	A	1449	U
20	A	1451	U
20	A	1452	G
20	A	1453	U
20	A	1454	U
20	A	1455	U
20	A	1456	G
20	A	1457	A
20	A	1461	A
20	A	1462	U
20	A	1463	G
20	A	1465	A
20	A	1469	A
20	A	1470	C
20	A	1475	U
20	A	1489	C
20	A	1490	A
20	A	1491	U
20	A	1492	G
20	A	1493	C
20	A	1494	G

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Mol	Chain	Res	Type
20	A	1495	A
20	A	1497	U
20	A	1500	A
20	A	1501	A
20	A	1502	G
20	A	1503	U
20	A	1504	G
20	A	1510	C
20	A	1512	A
20	A	1519	G
20	A	1521	G
20	A	1525	U
20	A	1531	G
20	A	1532	A
20	A	1533	G
20	A	1535	U
20	A	1536	A
20	A	1539	U
20	A	1551	U
20	A	1552	A
20	A	1559	A
20	A	1560	G
20	A	1568	G
20	A	1573	G
20	A	1584	G
20	A	1585	U
20	A	1586	A
20	A	1590	A
20	A	1593	U
20	A	1601	G
20	A	1605	C
20	A	1606	A
20	A	1612	A
20	A	1613	A
20	A	1615	A
20	A	1618	A
20	A	1623	C
20	A	1624	U
20	A	1627	U
20	A	1629	A
20	A	1630	G
20	A	1631	A

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Mol	Chain	Res	Type
20	A	1632	A
20	A	1633	A
20	A	1634	A
20	A	1635	C
20	A	1640	G
20	A	1645	U
20	A	1650	U
20	A	1651	A
20	A	1653	A
20	A	1673	A
20	A	1674	G
20	A	1677	U
20	A	1685	G
20	A	1690	G
20	A	1691	C
20	A	1716	G
20	A	1717	G
20	A	1718	C
20	A	1738	G
20	A	1741	A
20	A	1742	G
20	A	1746	G
20	A	1756	U
20	A	1757	U
20	A	1759	G
20	A	1770	G
20	A	1776	A
20	A	1777	G
20	A	1778	G
20	A	1787	A
20	A	1790	G
20	A	1793	U
20	A	1795	U
20	A	1798	A
20	A	1805	A
20	A	1814	C
20	A	1815	A
20	A	1823	A
20	A	1826	A
20	A	1830	A
20	A	1843	A
20	A	1868	A

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Mol	Chain	Res	Type
20	A	1884	U
20	A	1886	G
20	A	1887	G
20	A	1896	A
20	A	1913	A
20	A	1919	C
20	A	1920	G
20	A	1923	C
20	A	1927	A
20	A	1928	C
20	A	1929	U
20	A	1930	A
20	A	1943	G
20	A	1944	G
20	A	1948	C
20	A	1952	A
20	A	1970	U
20	A	1976	C
20	A	1978	G
20	A	1979	C
20	A	1981	C
20	A	1984	A
20	A	1985	A
20	A	1986	G
20	A	1989	G
20	A	1996	U
20	A	2005	U
20	A	2006	G
20	A	2007	U
20	A	2035	G
20	A	2037	A
20	A	2039	C
20	A	2044	A
20	A	2045	A
20	A	2046	G
20	A	2047	A
20	A	2057	C
20	A	2066	G
20	A	2069	C
20	A	2070	G
20	A	2074	A
20	A	2075	G

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Mol	Chain	Res	Type
20	A	2076	A
20	A	2082	U
20	A	2083	G
20	A	2086	G
20	A	2107	G
20	A	2114	U
20	A	2115	G
20	A	2119	C
20	A	2123	U
20	A	2125	U
20	A	2126	A
20	A	2127	C
20	A	2129	G
20	A	2130	G
20	A	2131	A
20	A	2132	U
20	A	2133	A
20	A	2134	G
20	A	2139	G
20	A	2140	A
20	A	2143	C
20	A	2144	G
20	A	2145	A
20	A	2146	U
20	A	2147	G
20	A	2148	A
20	A	2149	G
20	A	2154	G
20	A	2158	G
20	A	2159	C
20	A	2160	U
20	A	2162	G
20	A	2167	G
20	A	2172	A
20	A	2174	G
20	A	2178	U
20	A	2179	G
20	A	2182	G
20	A	2183	G
20	A	2184	G
20	A	2187	A
20	A	2194	U

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Mol	Chain	Res	Type
20	A	2195	U
20	A	2204	A
20	A	2213	A
20	A	2217	G
20	A	2218	C
20	A	2239	A
20	A	2252	G
20	A	2253	G
20	A	2282	A
20	A	2283	A
20	A	2287	A
20	A	2293	G
20	A	2297	C
20	A	2298	C
20	A	2301	A
20	A	2302	A
20	A	2317	G
20	A	2318	G
20	A	2319	U
20	A	2334	A
20	A	2335	G
20	A	2336	A
20	A	2339	G
20	A	2341	A
20	A	2348	G
20	A	2349	A
20	A	2351	G
20	A	2359	G
20	A	2364	C
20	A	2372	A
20	A	2393	G
20	A	2397	G
20	A	2399	C
20	A	2404	U
20	A	2406	A
20	A	2416	U
20	A	2417	C
20	A	2420	C
20	A	2427	G
20	A	2433	U
20	A	2436	C
20	A	2437	U

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Mol	Chain	Res	Type
20	A	2439	A
20	A	2442	G
20	A	2443	G
20	A	2445	U
20	A	2455	C
20	A	2461	G
20	A	2462	A
20	A	2482	A
20	A	2488	C
20	A	2489	C
20	A	2492	A
20	A	2505	U
20	A	2512	C
20	A	2515	C
20	A	2517	A
20	A	2519	G
20	A	2532	A
20	A	2534	C
20	A	2548	C
20	A	2549	G
20	A	2566	U
20	A	2580	A
20	A	2581	G
20	A	2587	C
20	A	2592	G
20	A	2596	G
20	A	2599	U
20	A	2600	C
20	A	2611	G
20	A	2616	A
20	A	2624	C
20	A	2625	C
20	A	2627	U
20	A	2628	A
20	A	2629	U
20	A	2650	U
20	A	2659	G
20	A	2660	C
20	A	2675	G
20	A	2677	G
20	A	2693	A
20	A	2696	G

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Mol	Chain	Res	Type
20	A	2703	U
20	A	2704	A
20	A	2707	A
20	A	2719	A
20	A	2726	U
20	A	2727	U
20	A	2728	G
20	A	2747	A
20	A	2762	A
20	A	2766	C
20	A	2771	A
20	A	2779	A
20	A	2780	G
20	A	2791	G
20	A	2792	A
20	A	2793	U
20	A	2794	G
20	A	2795	A
20	A	2803	C
20	A	2804	A
20	A	2805	U
20	A	2808	C
20	A	2810	U
20	A	2812	A
20	A	2813	A
20	A	2836	G
20	A	2843	U
20	A	2844	A
20	A	2846	A
20	A	2847	U
20	A	2858	U
20	A	2868	G
20	A	2872	U
20	A	2878	G
20	A	2883	G
20	A	2891	C
20	A	2897	G
20	A	2902	A
20	A	2904	G
20	A	2911	C
21	B	2	G
21	B	8	G

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Mol	Chain	Res	Type
21	B	10	G
21	B	11	A
21	B	13	A
21	B	14	G
21	B	22	G
21	B	23	A
21	B	29	C
21	B	31	G
21	B	33	U
21	B	40	C
21	B	42	G
21	B	43	A
21	B	54	U
21	B	55	A
21	B	64	A
21	B	70	G
21	B	71	A
21	B	73	U
21	B	74	G
21	B	85	U
21	B	86	U
21	B	87	U
21	B	92	U
21	B	94	G
21	B	95	U
21	B	97	A
21	B	102	A
21	B	107	G

All (30) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
20	A	13	U
20	A	29	A
20	A	179	A
20	A	182	U
20	A	312	U
20	A	427	A
20	A	519	A
20	A	693	U
20	A	755	A
20	A	890	A

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Mol	Chain	Res	Type
20	A	949	U
20	A	974	A
20	A	1087	G
20	A	1100	U
20	A	1101	U
20	A	1147	G
20	A	1226	U
20	A	1584	G
20	A	1585	U
20	A	1600	C
20	A	1604	A
20	A	1605	C
20	A	1689	A
20	A	2132	U
20	A	2144	G
20	A	2317	G
20	A	2812	A
21	B	32	U
21	B	93	U
21	B	101	U

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 4 ligands modelled in this entry, 4 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](#)

There are no chain breaks in this entry.

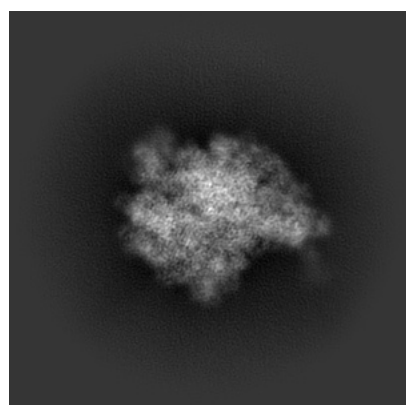
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-0659. These allow visual inspection of the internal detail of the map and identification of artifacts.

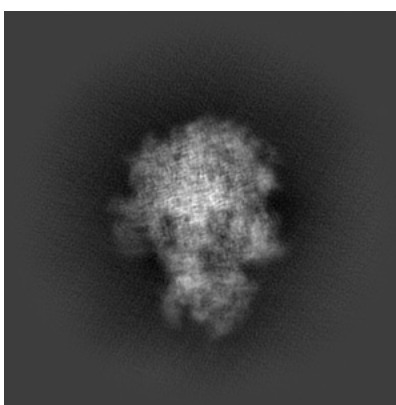
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

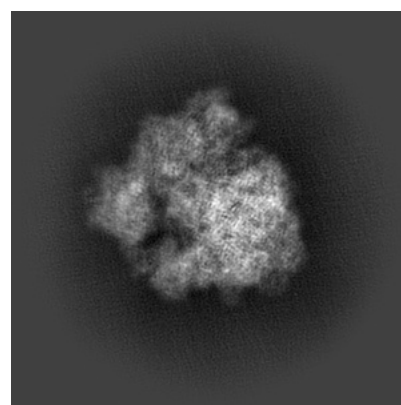
6.1.1 Primary map



X



Y

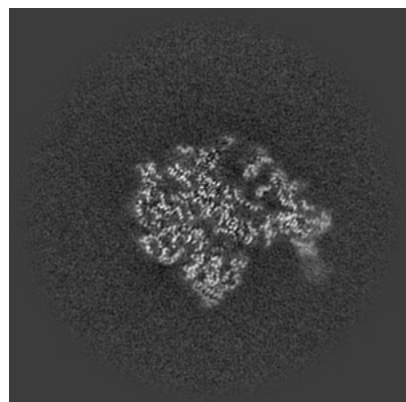


Z

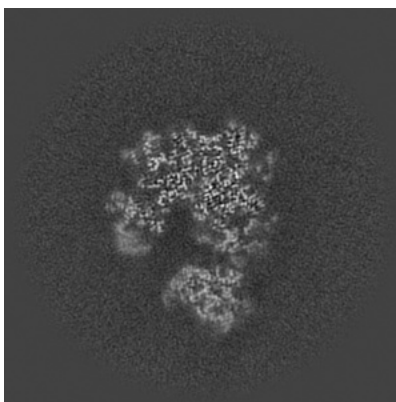
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

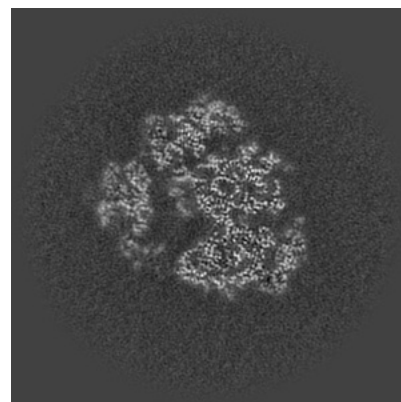
6.2.1 Primary map



X Index: 220



Y Index: 220

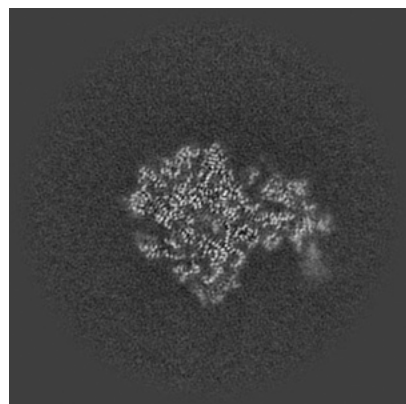


Z Index: 220

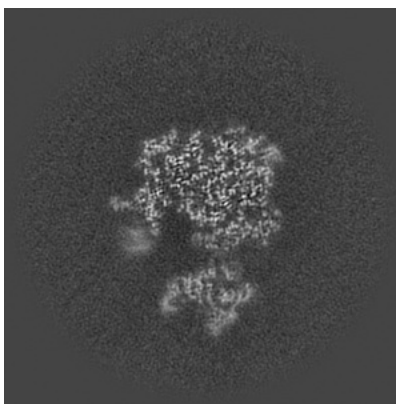
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

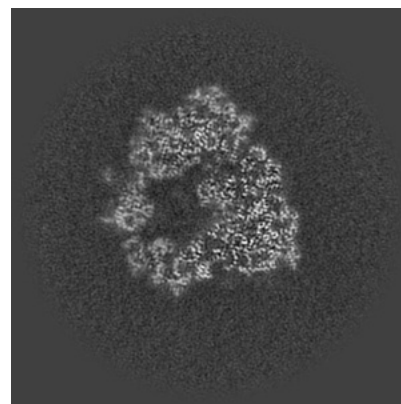
6.3.1 Primary map



X Index: 227



Y Index: 231

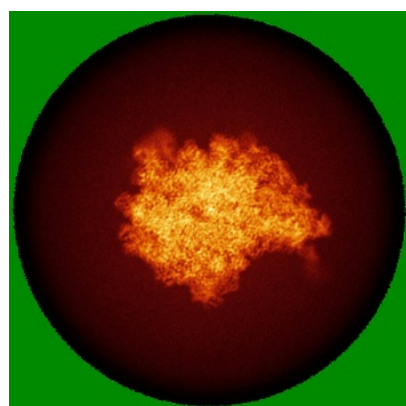


Z Index: 205

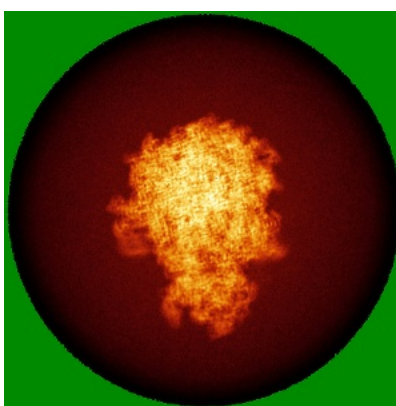
The images above show the largest variance slices of the map in three orthogonal directions.

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

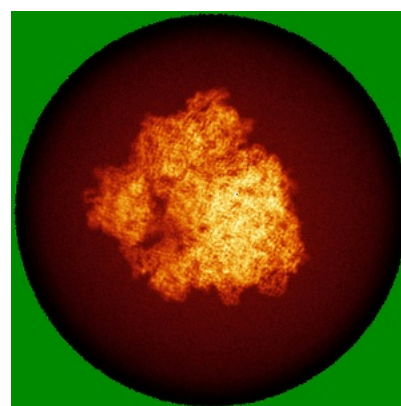
6.4.1 Primary map



X



Y

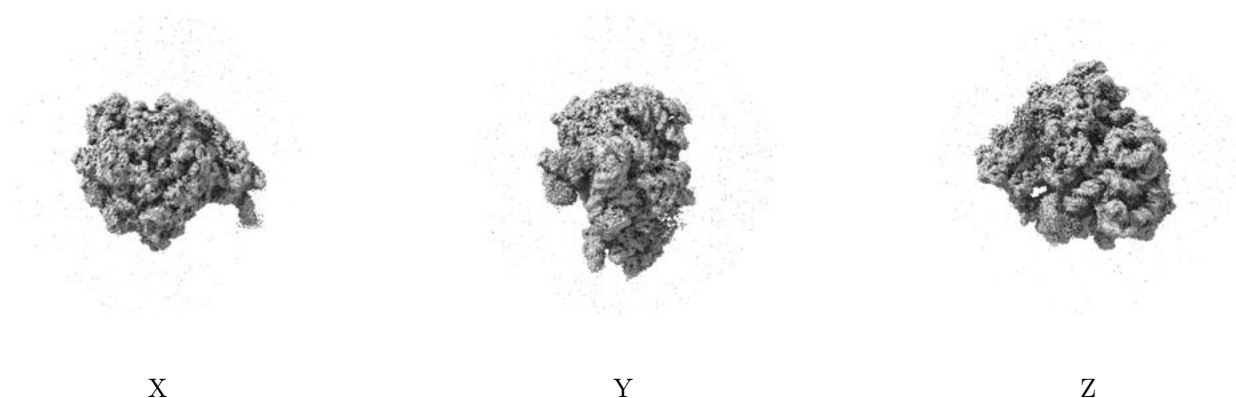


Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.238. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

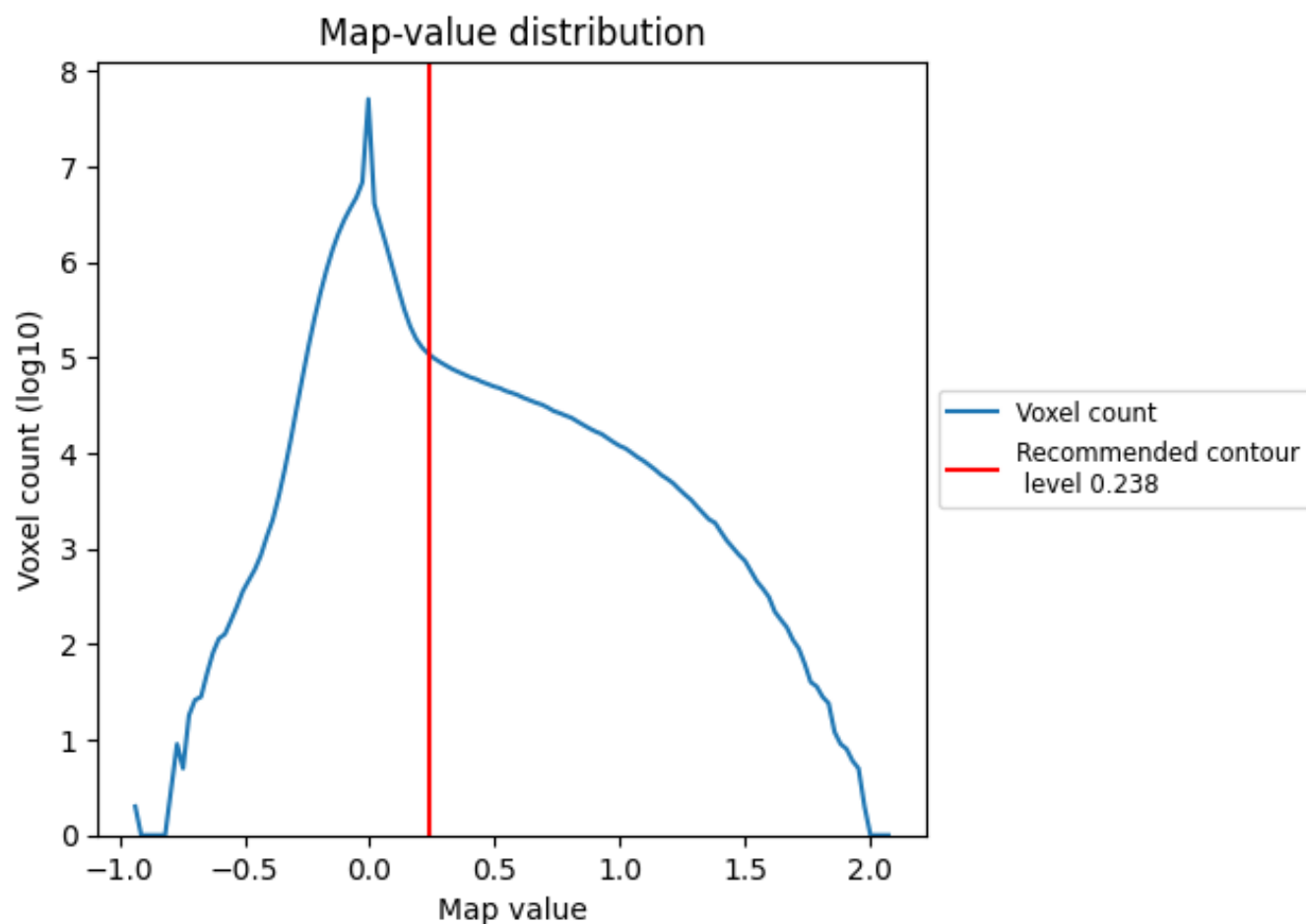
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

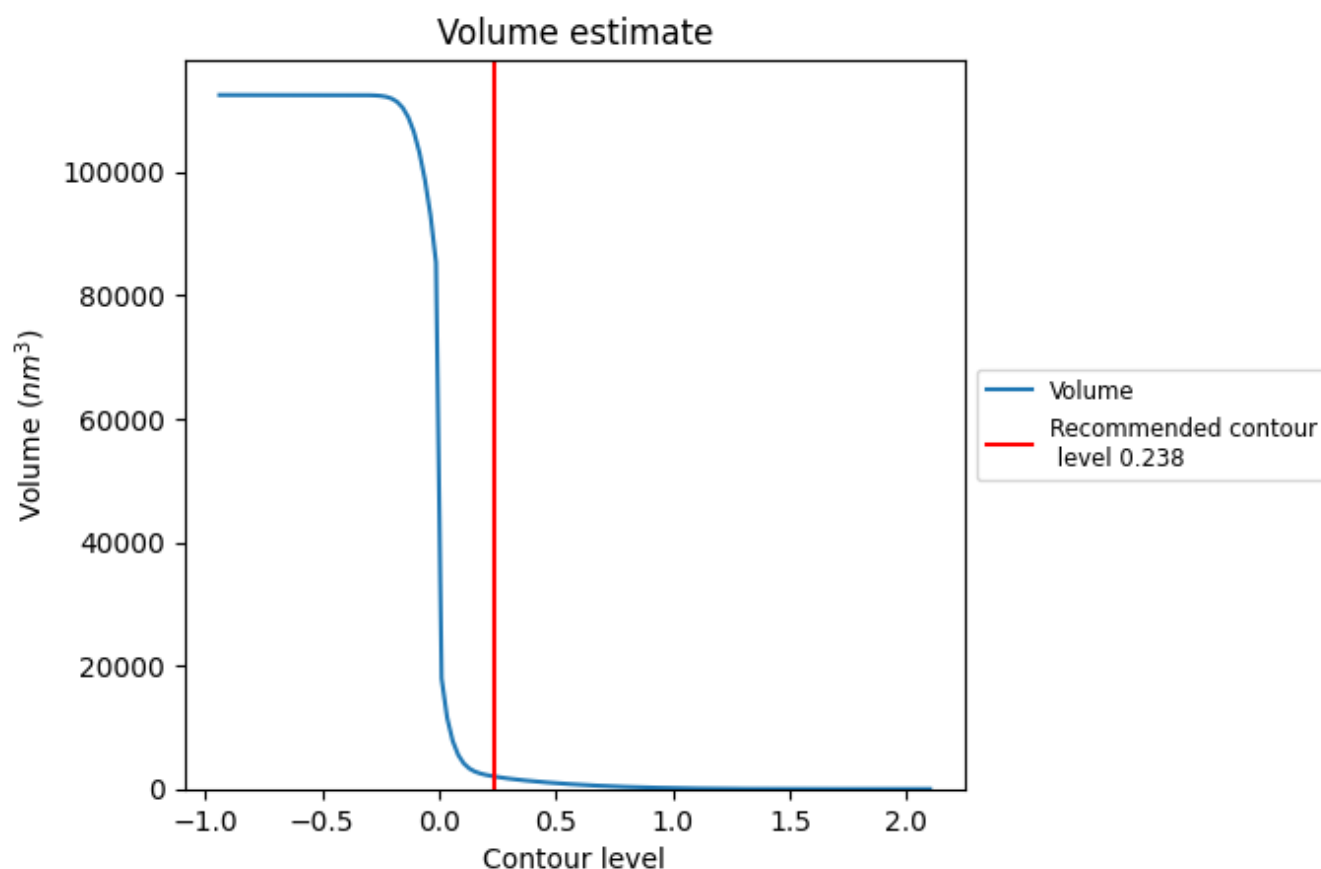
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

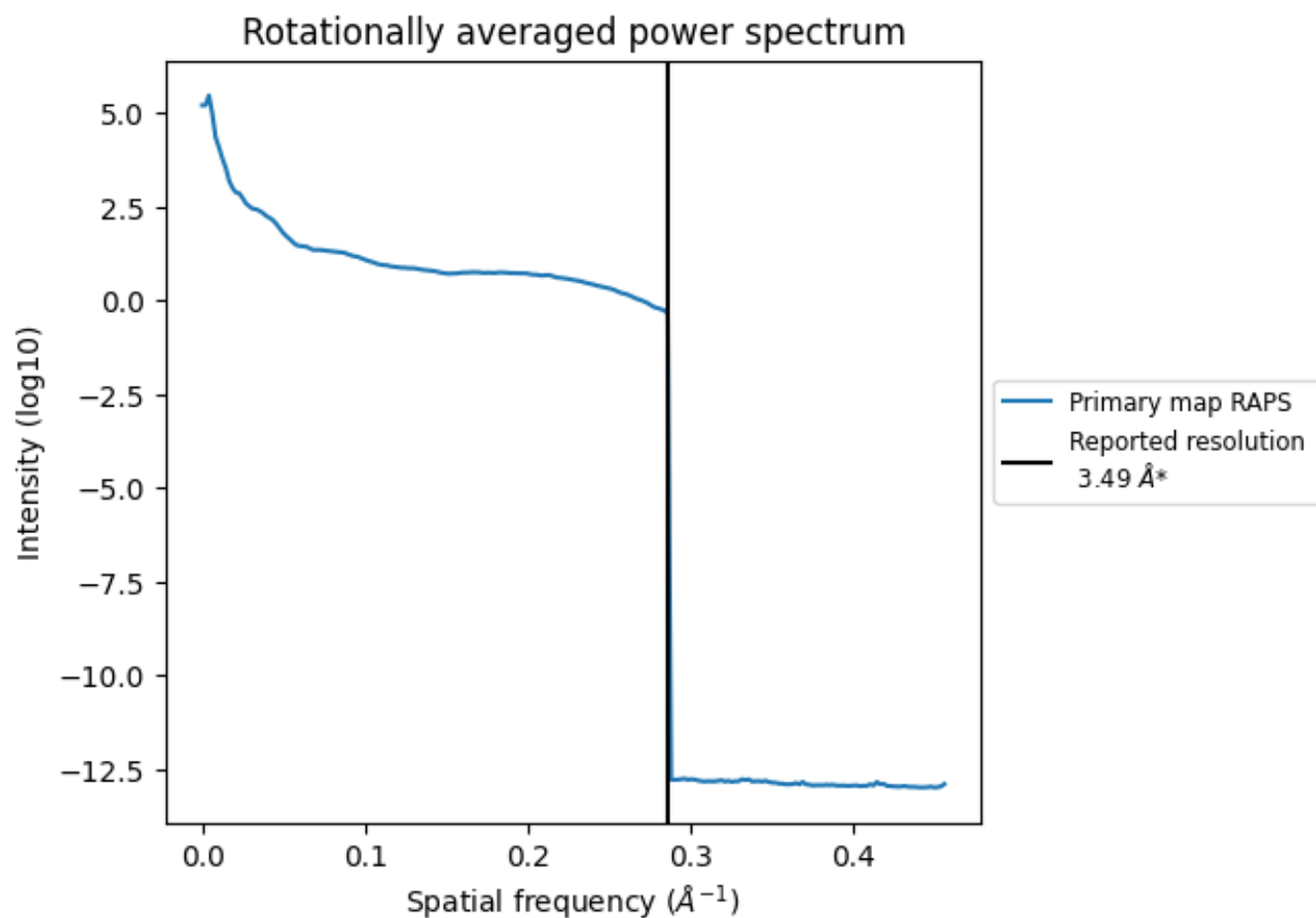
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2013 nm^3 ; this corresponds to an approximate mass of 1818 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ



*Reported resolution corresponds to spatial frequency of 0.287 Å⁻¹

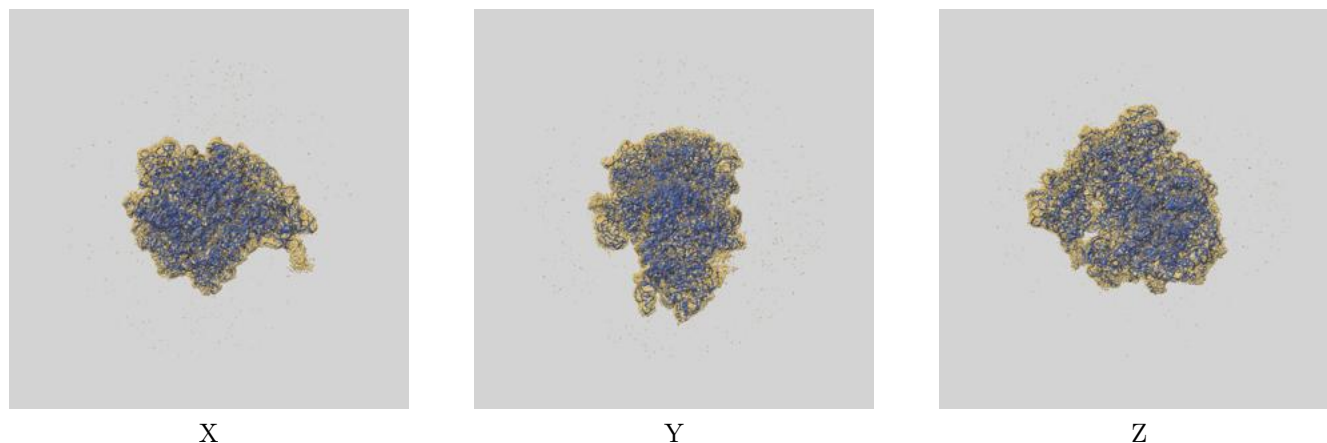
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

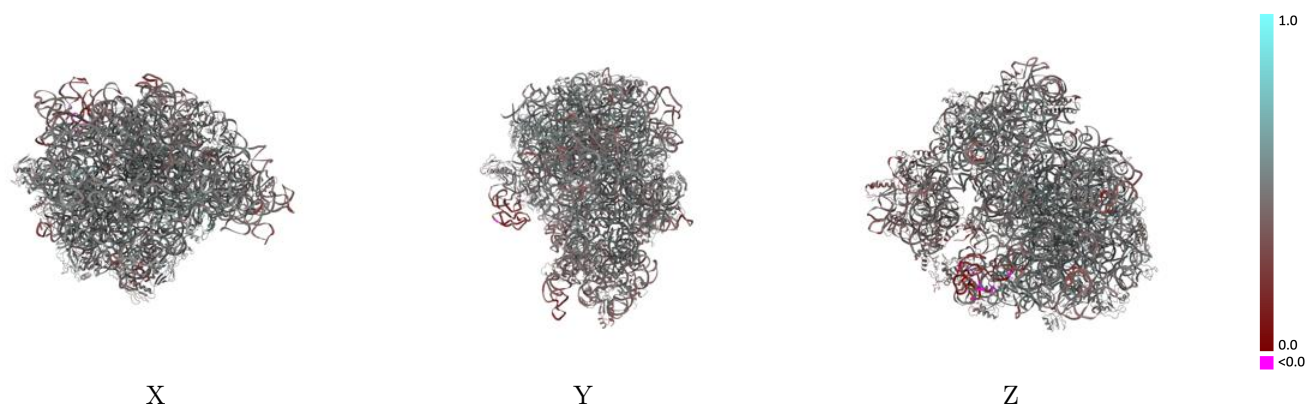
This section contains information regarding the fit between EMDB map EMD-0659 and PDB model 6O8Z. Per-residue inclusion information can be found in section [3](#) on page [13](#).

9.1 Map-model overlay [i](#)



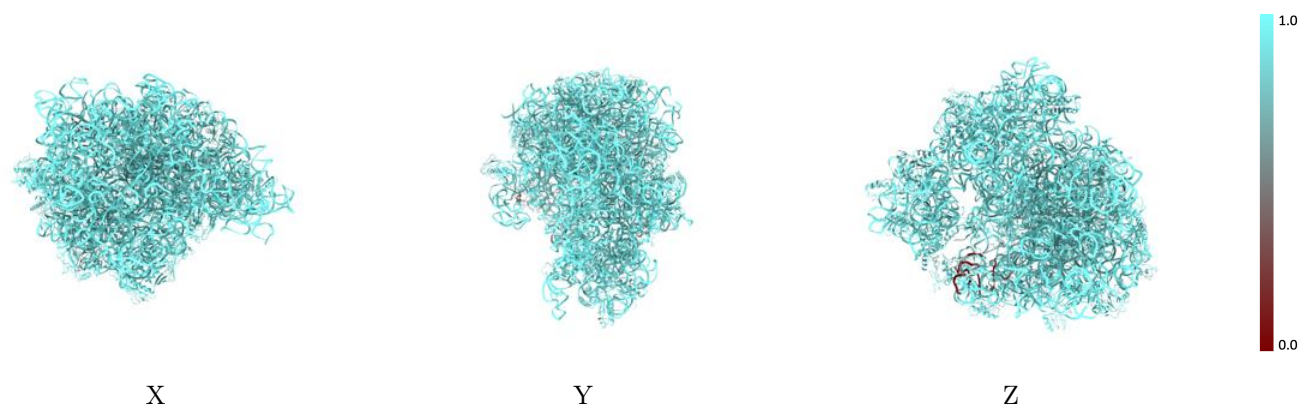
The images above show the 3D surface view of the map at the recommended contour level 0.238 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



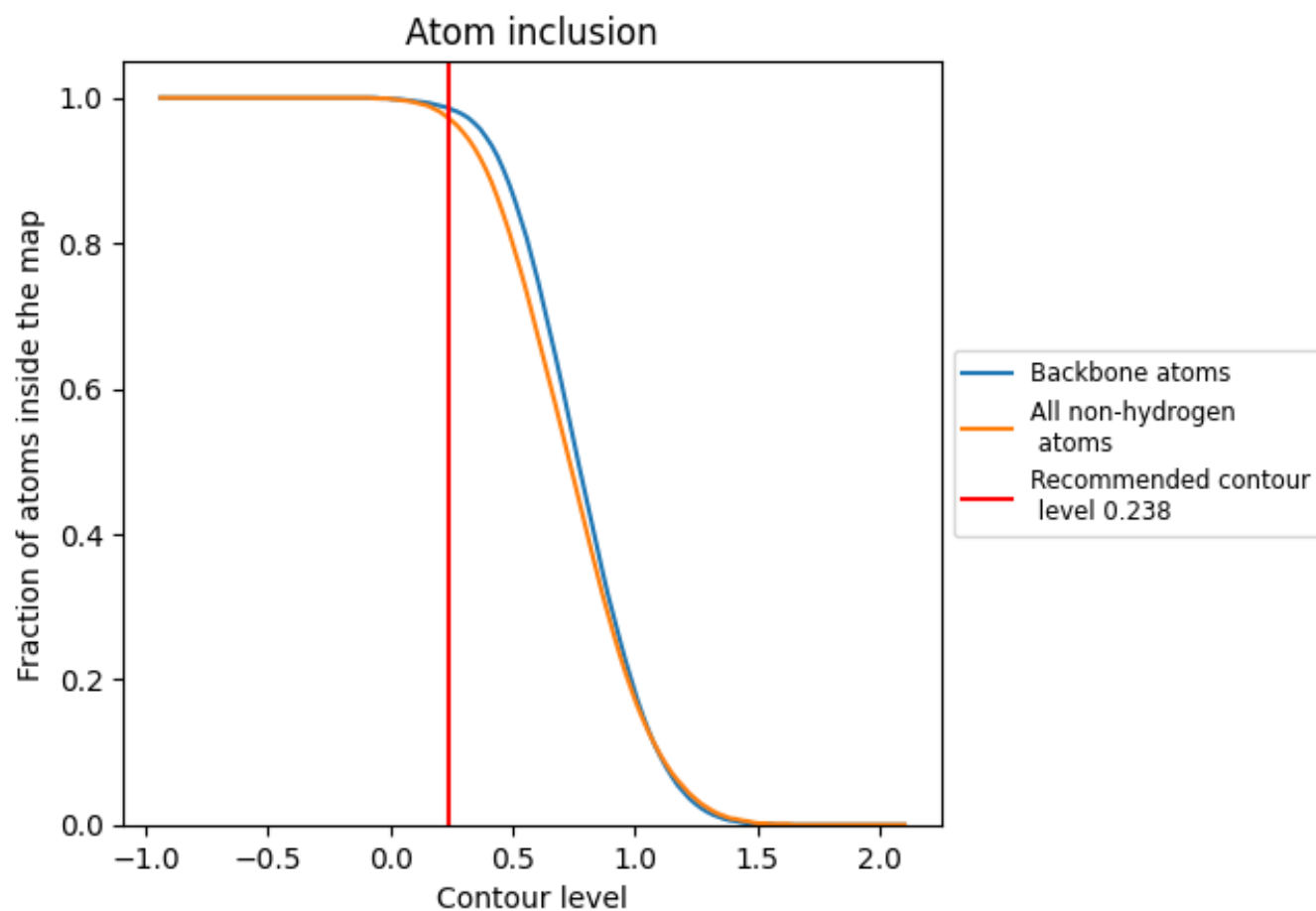
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.238).

9.4 Atom inclusion [i](#)



At the recommended contour level, 99% of all backbone atoms, 97% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.238) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9720	 0.4600
0	 0.9530	 0.5030
1	 0.9230	 0.3680
2	 0.9790	 0.5270
3	 0.9380	 0.5030
4	 0.9520	 0.5090
5	 0.9600	 0.5370
6	 0.9760	 0.5230
A	 0.9810	 0.4600
B	 0.9960	 0.4360
C	 0.9640	 0.5140
D	 0.9630	 0.5210
E	 0.9700	 0.4940
F	 0.9360	 0.4430
G	 0.9270	 0.4420
K	 0.9670	 0.5100
L	 0.9510	 0.5260
M	 0.9680	 0.5020
N	 0.8910	 0.4780
O	 0.9640	 0.5020
P	 0.9440	 0.4500
Q	 0.9680	 0.5210
R	 0.9470	 0.4850
S	 0.9340	 0.5040
T	 0.9680	 0.5110
U	 0.9570	 0.4850
V	 0.9250	 0.4600
W	 0.4090	 0.3400
X	 0.9530	 0.5130
Y	 0.9440	 0.5060
Z	 0.9450	 0.4550
a	 0.9970	 0.4490
c	 0.9270	 0.4390
d	 0.9510	 0.4530
e	 0.9470	 0.4780



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Chain	Atom inclusion	Q-score
f	 0.9420	 0.4790
g	 0.9230	 0.4170
h	 0.9670	 0.4840
i	 0.9620	 0.4250
j	 0.9240	 0.4220
k	 0.9260	 0.4530
l	 0.9260	 0.4840
m	 0.9020	 0.3860
n	 0.9750	 0.4660
o	 0.9430	 0.4710
p	 0.9700	 0.4780
q	 0.9350	 0.4860
r	 0.9230	 0.4630
s	 0.9570	 0.4100
t	 0.9530	 0.4440