



Full wwPDB EM Validation Report ⓘ

Mar 8, 2026 – 02:02 PM UTC

PDB ID : 3J5L / pdb_00003j5l
EMDB ID : EMD-5771
Title : Structure of the E. coli 50S subunit with ErmBL nascent chain
Authors : Arenz, S.; Ramu, H.; Gupta, P.; Berninghausen, O.; Beckmann, R.; Vazquez-Laslop, N.; Mankin, A.S.; Wilson, D.N.
Deposited on : 2013-10-23
Resolution : 6.60 Å(reported)
Based on initial model : 3OFR

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:

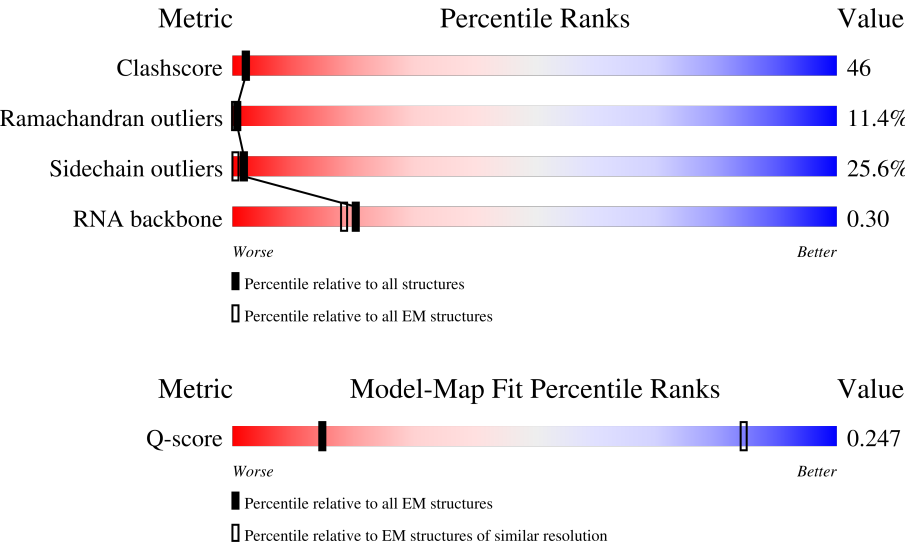
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data 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 6.60 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	531 (6.10 - 7.10)

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	0	56	62% 27% 48% 21% .
2	1	50	62% 28% 50% 18% .
3	2	46	43% 43% 37% 17% .

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Mol	Chain	Length	Quality of chain
4	3	64	
5	4	38	
6	5	2	
7	6	10	
8	7	3	
9	A	2904	
10	B	118	
11	C	271	
12	D	209	
13	E	201	
14	F	177	
15	G	176	
16	H	56	
17	I	141	
18	J	142	
19	K	122	
20	L	143	
21	M	136	
22	N	120	
23	O	116	
24	P	114	
25	Q	117	
26	R	103	
27	S	110	
28	T	93	

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Mol	Chain	Length	Quality of chain
29	U	102	82% 19% 53% 27%
30	V	94	65% 45% 43% 13%
31	W	79	61% 14% 38% 38% 10%
32	X	77	60% 18% 56% 23%
33	Y	63	70% 24% 44% 22% 10%
34	Z	58	57% 33% 41% 19% 7%

2 Entry composition

There are 36 unique types of molecules in this entry. The entry contains 89382 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called 50S ribosomal protein L32.

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

- Molecule 2 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
2	1	50	Total	C	N	O	0	0
			410	263	75	72		

- Molecule 3 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	2	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 4 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	3	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 5 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	4	38	Total	C	N	O	S	0	0
			302	185	65	48	4		

- Molecule 6 is a RNA chain called 5'-R(*CP*(MA6))-3'.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	5	2	Total	C	N	O	P	0	0
			41	21	8	11	1		

- Molecule 7 is a protein called Erythromycin resistance leader peptide.

Mol	Chain	Residues	Atoms	AltConf	Trace
7	6	8	Total C 8 8	0	8

- Molecule 8 is a RNA chain called 5'-R(*CP*CP*A)-3'.

Mol	Chain	Residues	Atoms	AltConf	Trace
8	7	3	Total C N O P 59 28 11 18 2	0	0

- Molecule 9 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms	AltConf	Trace
9	A	2853	Total C N O P 61251 27324 11274 19800 2853	0	0

- Molecule 10 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms	AltConf	Trace
10	B	117	Total C N O P 2506 1116 459 814 117	0	0

- Molecule 11 is a protein called 50S ribosomal protein L2.

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

- Molecule 12 is a protein called 50S ribosomal protein L3.

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

- Molecule 13 is a protein called 50S ribosomal protein L4.

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

- Molecule 14 is a protein called 50S ribosomal protein L5.

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

- Molecule 15 is a protein called 50S ribosomal protein L6.

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

- Molecule 16 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	H	56	Total	C	N	O	S	0	0
			431	275	77	78	1		

- Molecule 17 is a protein called 50S ribosomal protein L11.

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

- Molecule 18 is a protein called 50S ribosomal protein L13.

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

- Molecule 19 is a protein called 50S ribosomal protein L14.

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

- Molecule 20 is a protein called 50S ribosomal protein L15.

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

- Molecule 21 is a protein called 50S ribosomal protein L16.

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

- Molecule 22 is a protein called 50S ribosomal protein L17.

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

- Molecule 23 is a protein called 50S ribosomal protein L18.

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

- Molecule 24 is a protein called 50S ribosomal protein L19.

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

- Molecule 25 is a protein called 50S ribosomal protein L20.

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

- Molecule 26 is a protein called 50S ribosomal protein L21.

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

- Molecule 27 is a protein called 50S ribosomal protein L22.

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

- Molecule 28 is a protein called 50S ribosomal protein L23.

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

- Molecule 29 is a protein called 50S ribosomal protein L24.

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

- Molecule 30 is a protein called 50S ribosomal protein L25.

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

- Molecule 31 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	W	79	Total	C	N	O	S	0	0
			596	367	120	108	1		

- Molecule 32 is a protein called 50S ribosomal protein L28.

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

- Molecule 33 is a protein called 50S ribosomal protein L29.

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

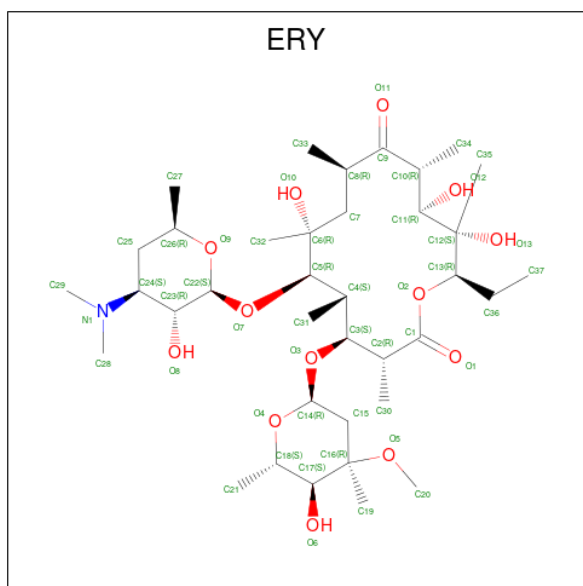
- Molecule 34 is a protein called 50S ribosomal protein L30.

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

- Molecule 35 is UNKNOWN LIGAND (CCD ID: UNL) (formula:).

Mol	Chain	Residues	Atoms				AltConf
35	5	1	Total	C	N	O	0
			4	2	1	1	

- Molecule 36 is ERYTHROMYCIN A (CCD ID: ERY) (formula: $C_{37}H_{67}NO_{13}$).

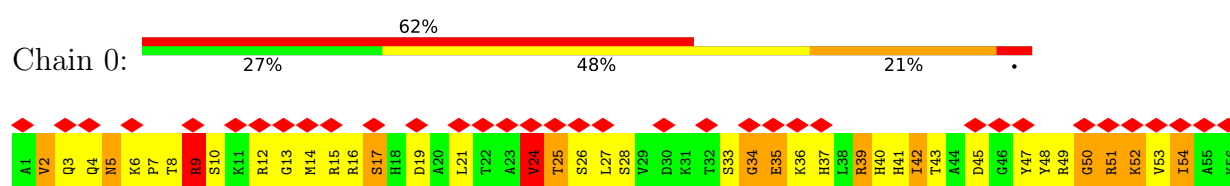


Mol	Chain	Residues	Atoms				AltConf
36	A	1	Total	C	N	O	0
			51	37	1	13	

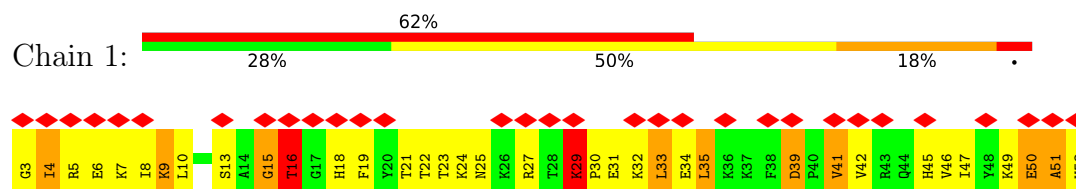
3 Residue-property plots [i](#)

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.

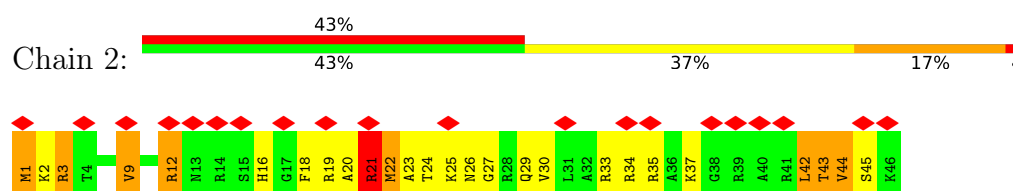
- Molecule 1: 50S ribosomal protein L32



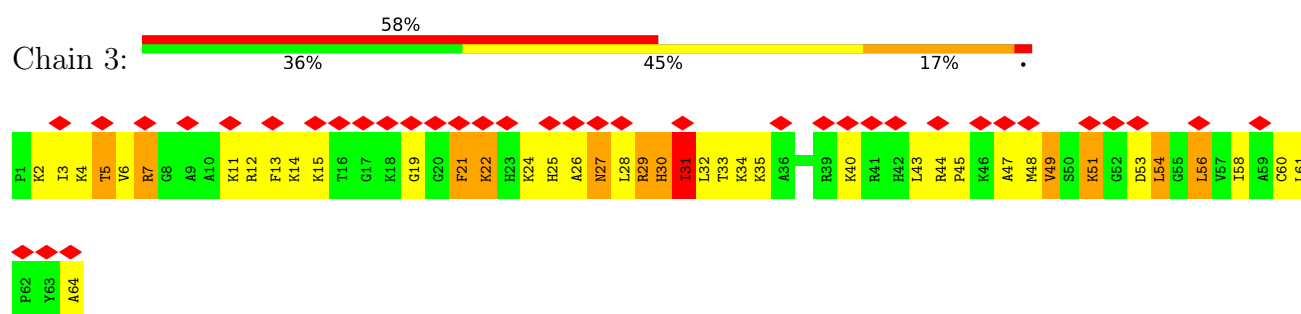
- Molecule 2: 50S ribosomal protein L33



- Molecule 3: 50S ribosomal protein L34



- Molecule 4: 50S ribosomal protein L35

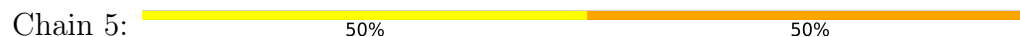


- Molecule 5: 50S ribosomal protein L36

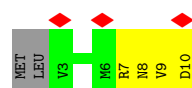
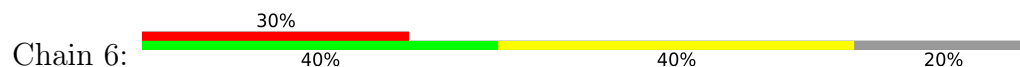




- Molecule 6: 5'-R(*CP*(MA6))-3'



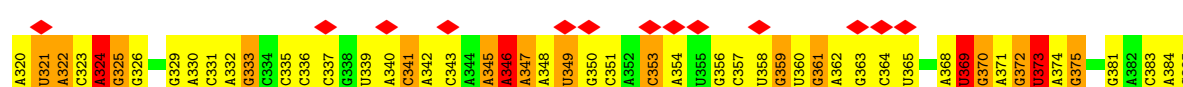
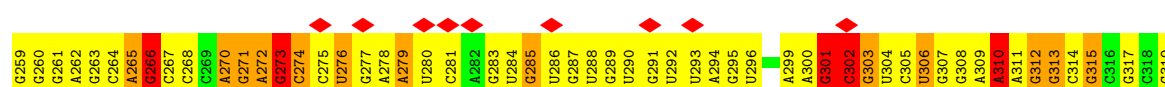
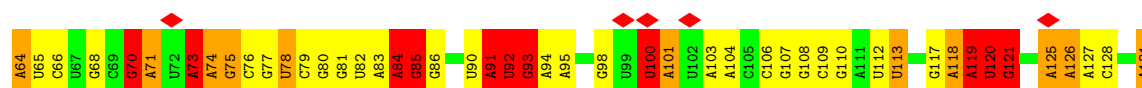
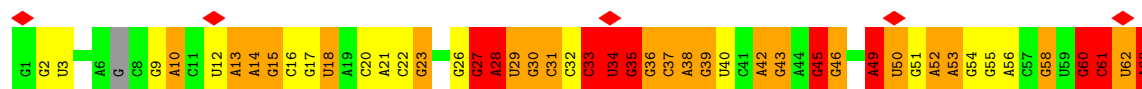
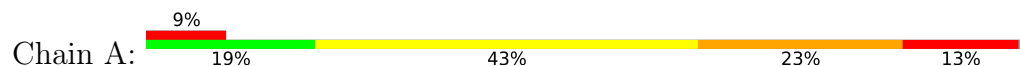
- Molecule 7: Erythromycin resistance leader peptide

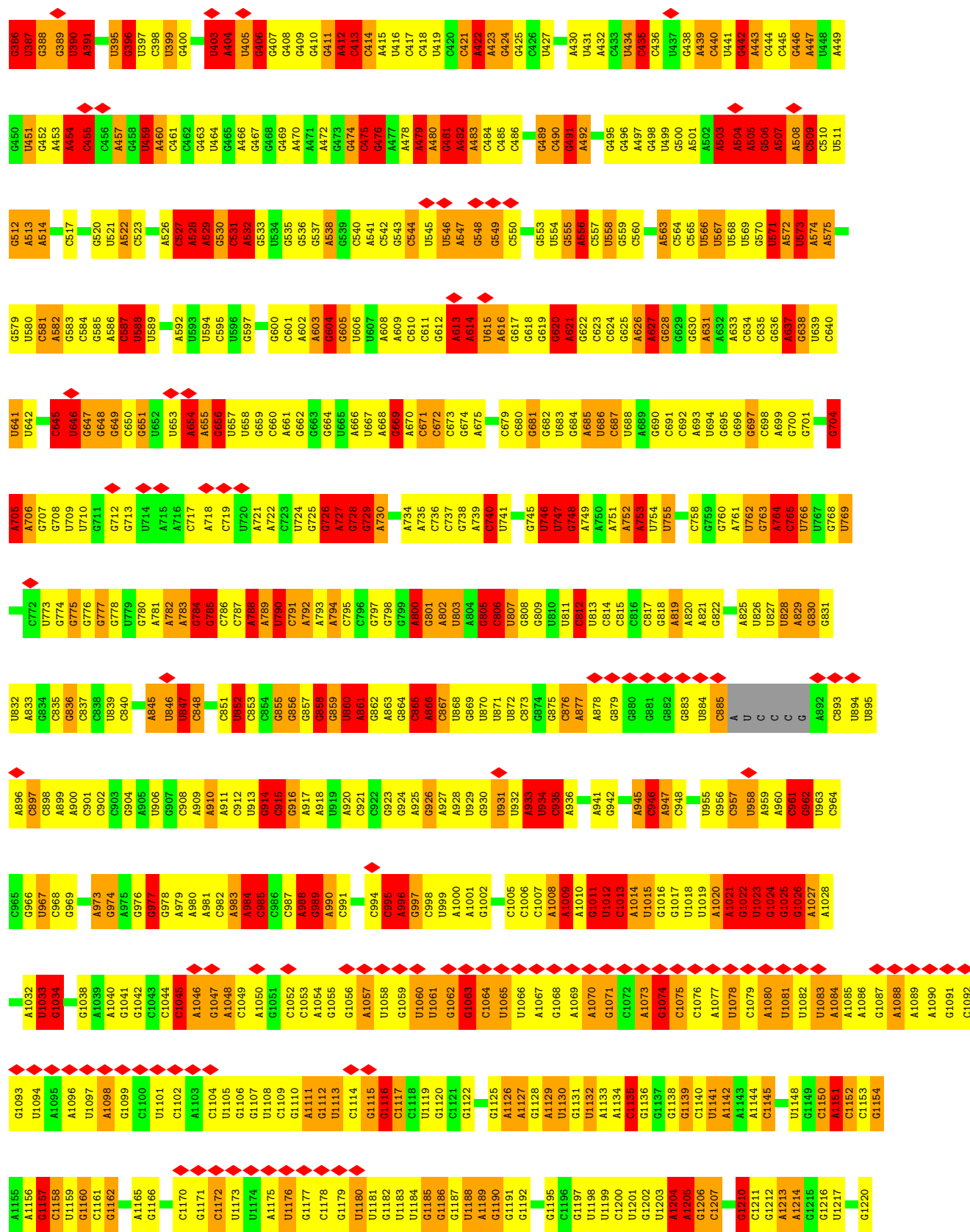


- Molecule 8: 5'-R(*CP*CP*A)-3'



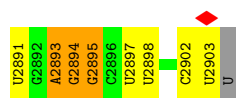
- Molecule 9: 23S ribosomal RNA



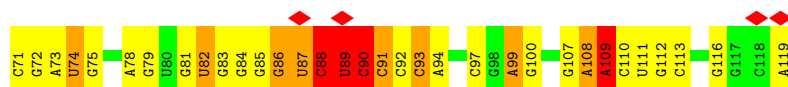
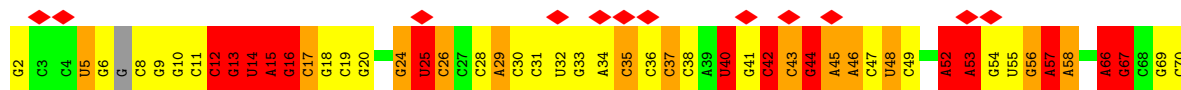
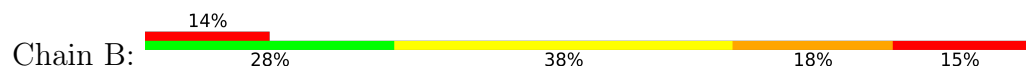


G2002	A1938	C1874	A1809	U1742	A1677	G1540	G1475	U1415	C1349	A1285	C1221
C2006	C1941	G1875	A1810	G1743	A1678	C1541	U1476	U1416	C1350	A1286	U1222
U2007	A1876	A1877	G1813	A1744	U1679	U1542	A1477	A1542	C1351	A1287	G1223
C2008	G1878	U1680	U1680	A1745	U1680	G1543	G1417	G1418	U1352	G1288	U1224
U2011	U1943	G1878	A1814	A1746	G1681	A1544	U1480	A1419	G1356	G1289	G1225
G2012	G1845	U1880	A1816	U1747	G1682	A1545	G1482	A1420	G1357	C1290	A1226
A2013	U1946	C1881	G1817	C1748	U1683	G1546	G1482	G1421	G1358	C1229	C1230
A2014	C1947	U1882	U1818	G1753	C1615	A1553	U1485	G1423	G1358	C1293	A1230
A2015	U1883	A1819	A1819	A1754	U1688	U1554	U1486	G1433	G1359	C1295	G1233
U2016	U1884	U1820	A1754	G1755	U1555	G1555	U1487	G1424	G1360	G1296	G1233
U2017	A1885	A1690	A1616	A1616	U1556	C1556	C1488	G1425	G1361	C1297	U1234
G2018	U1886	G1756	C1691	U1619	C1557	U1557	C1489	G1426	G1364	C1298	G1235
A2019	A1953	U1857	U1692	U1692	C1558	C1558	A1427	A1427	G1364	G1299	G1236
A2020	U1889	G1758	U1693	U1624	C1559	U1559	A1490	C1428	A1365	G1299	G1236
A2021	U1954	A1759	C1694	U1625	G1560	G1560	G1493	G1429	A1366	G1300	A1237
C2021	U1956	C1760	G1695	A1626	C1561	C1561	C1492	G1430	A1367	A1301	G1238
U2022	C1957	G1761	G1696	G1627	U1562	U1562	C1493	A1431	G1368	A1302	G1239
G2023	C1958	G1762	G1697	G1628	U1563	U1563	A1494	G1432	G1369	G1303	U1240
C2024	G1959	A1763	A1698	G1629	C1564	C1564	A1495	A1433	C1370	A1304	A1241
G2025	A1829	C1764	A1634	A1634	C1565	C1565	A1496	A1434	G1371	A1305	U1242
A2026	C1833	G1767	A1635	U1636	A1566	A1566	A1497	G1435	U1372	C1243	C1243
G2027	U1834	C1768	U1700	U1636	A1567	G1567	C1498	G1436	A1373	G1310	A1244
G2028	G1835	U1769	G1701	A1637	G1567	G1568	C1499	U1438	G1374	G1311	G1245
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C1902	C1837	A1773	G1703	C1639	A1570	A1570	G1501	U1440	G1376	G1313	A1247
A2031	C1838	C1774	C1706	A1640	A1571	A1571	A1502	G1441	A1378	C1314	G1248
G2032	G1839	C1774	U1707	A1641	A1572	A1572	A1503	U1442	U1379	G1315	U1249
A2033	U1840	U1775	G1708	G1642	G1573	G1573	A1504	U1443	G1380	C1251	G1250
U2034	G1907	G1776	C1708	G1643	G1574	A1505	A1505	U1443	G1381	U1316	C1251
G2035	C1908	U1777	A1711	G1644	C1575	U1506	U1506	G1444	G1382	U1318	A1253
C2036	C1909	U1778	U1712	G1645	C1576	C1576	C1507	G1445	A1383	G1319	A1254
A2037	G1910	U1779	U1713	G1646	U1577	A1583	A1583	G1446	A1384	U1265	U1265
U2038	U1911	U1780	U1714	U1647	U1578	C1447	A1509	C1447	A1385	A1321	G1266
G2039	G1912	U1781	U1715	U1648	A1579	U1579	G1510	G1448	C1386	C1267	C1267
A2042	A1913	U1782	U1716	G1649	A1580	A1580	C1511	G1449	U1387	G1323	U1268
C2043	C1914	U1783	U1717	A1650	G1581	G1581	C1512	G1450	G1392	G1324	G1269
G2044	U1915	A1784	G1717	G1651	C1582	C1582	U1513	C1451	A1392	U1325	A1260
U2049	A1916	A1785	G1718	A1652	A1583	A1583	G1514	G1452	A1393	U1326	A1261
C2050	U1917	U1786	G1719	G1653	U1584	U1584	A1515	A1453	U1394	A1327	C1261
A2051	U1917	A1787	U1720	A1654	C1585	C1585	G1516	C1454	A1395	A1328	U1263
G2052	A1918	U1788	G1721	A1655	C1586	A1586	U1520	G1455	U1396	U1329	A1264
C2053	C1920	C1788	A1722	A1656	C1587	G1587	G1521	G1456	U1397	G1330	A1265
U2054	G1921	U1790	U1725	U1657	U1588	U1588	A1522	U1457	G1398	G1331	G1266
G2055	U1922	A1791	G1726	U1662	U1589	U1589	U1523	G1459	C1399	G1332	U1267
C2056	G1923	C1792	G1727	G1663	A1590	A1590	U1524	U1460	U1400	G1333	A1268
U2057	C1924	A1793	C1728	A1664	A1591	A1591	A1525	C1461	G1401	A1269	A1268
G2058	U1925	U1794	U1729	A1665	C1592	C1592	C1526	C1462	U1402	C1335	C1270
C2059	C1926	C1795	C1730	A1666	U1593	U1593	G1527	C1463	A1403	A1336	G1271
A2060	U1927	U1796	G1731	G1667	U1594	U1594	A1528	C1464	C1404	G1337	A1272
G2061	A1928	G1797	C1732	A1668	C1595	C1595	U1599	G1465	U1405	G1338	U1273
U2062	G1929	U1798	G1733	A1669	U1600	U1600	A1531	U1466	U1406	G1339	A1274
C2063	U1930	C1799	G1734	A1670	G1601	G1601	A1532	U1467	G1407	U1340	A1275
G2064	A1931	A1801	U1735	A1671	G1602	G1602	C1533	A1468	A1408	G1341	A1276
C2065	C1932	A1802	U1736	A1672	A1603	A1603	U1534	U1469	U1409	A1342	G1277
U2066	G1933	A1803	G1737	G1673	U1604	U1604	A1470	A1471	G1410	G1343	G1281
G2067	A1934	U1807	U1738	G1674	C1605	C1605	A1535	G1471	U1411	U1344	U1282
A2068	G1935	G1807	G1739	C1675	C1606	C1606	C1536	C1472	U1412	C1345	G1283
G2069	A1936	A1808	G1740	A1676	C1606	C1606	G1537	U1474	C1414	C1348	A1284
	C1937	C1741	G1741				U1539				

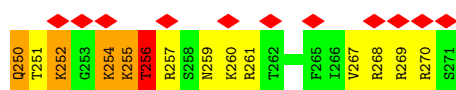
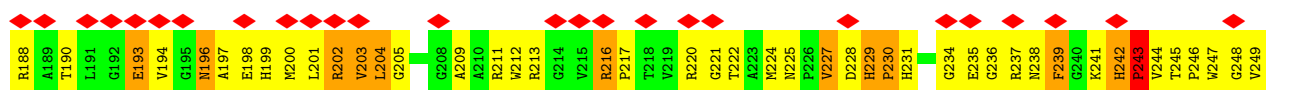
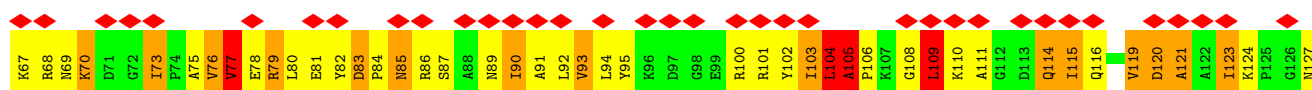
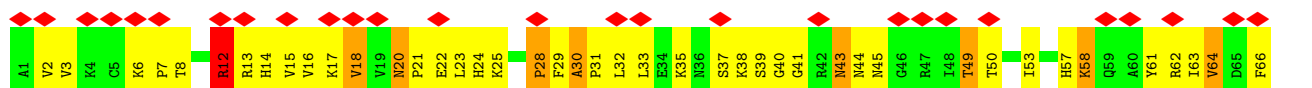
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C2827	A2766	G2639	C2674	U2511	A2448	U2387	A2317	G2193		C2072
G2828	C2702	G2640	C2675	U2512	U2449	A2388	G2318	A2194		U2076
A2829	C2703	G2641	A2513	A2514	U2450	U2389	G2319	A2135		U2077
C2830	A2705	G2642	A2577	C2515	A2451	U2390	U2320	G2136		C2078
G2831	A2706	G2643	G2578	C2516	A2452	U2391	U2321	A2198		U2079
U2832	U2707	G2644	C2579	A2517	A2453	A2392	G2322	U2137		A2080
U2833	G2708	G2645	U2580	C2518	A2454	U2393	G2323	G2138		U2081
G2834		U2646	G2581	A2519	G2455	U2394	G2324	U2139		A2082
A2835	A2711	U2647	G2582	U2519		C2395	G2325	G2140		C2083
U2836	C2712	G2648	U2583	C2520	G2456	C2396	U2326	A2141		G2084
A2837	G2713	C2649	U2584	C2521	A2457	A2397	A2327	A2142		U2085
G2838	U2714		U2585	U2522	A2458	G2398	A2328	A2143		G2087
C2839	G2715	C2852	U2586	G2523	U2460	U2399	U2329	G2144		A2088
G2840	C2716	U2853	A2587	G2524	A2461	G2400	G2330	A2145		C2089
C2841	G2717	A2854	G2588	G2525	A2462	U2401	G2331	C2146		U2090
G2842	U2718	U2855	U2589	G2526	C2463	U2402	U2332	C2147		C2091
	C2719	U2856	A2590	C2527	G2464	C2403	U2333	A2148		A2094
	G2720	A2857	C2591	U2528	C2465	U2404	A2334	G2149		A2095
	A2721	G2858	G2592	G2529	U2466	U2405	A2335	C2150		C2096
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	G2723	A2860	C2594	A2531	A2468	U2407	G2337	G2152		U2098
	U2724	G2661	G2595	G2532	U2469	U2408	C2338	C2153		U2099
	A2725	U2662		U2533	G2470	G2409	A2340	G2154		G2100
	C2726	G2863	A2598	G2536	A2471	U2410	U2341	U2155		A2101
	A2727	G2664	G2599	U2537	U2472	G2411	G2342	G2156		G2102
	U2728	A2865	A2600	U2538	U2473	A2412	U2343	G2157		C2103
	G2729	C2866	C2601	C2539	U2474	U2413	U2344	A		C2104
	C2730	G2667	A2602	C2540	A2475	G2414	G2345	C		U2105
	G2731	G2668	G2603	C2541	U2476	G2415	A2346	C		U2106
	C2732	U2670	U2604	A2542	A2477	C2416	G2347	G		G2107
	A2733	A2671		G2543	U2478	G2417	U2348	U		A2108
	G2734	U2672	G2606	C2544	U2479	A2418	G2349	G		G2110
	U2735	G2673	U2608	G2545	G2481	U2419	C2350	U		U
	A2736	G2674	U2609	U2546	A2482	G2420	A2351	G		G
			C2610	A2547		G2421	A2352	A		A
	A2740	C2678	C2611	C2548	G2485	U2422	G2353	C		U
	U2741	A2679	G2612	U2549		U2423	G2354	U		G
	G2742	C2680	U2613	G2550	U2489	A2424	G2355	G		G
	U2743	U2680	A2614	C2551	A2490	A2425	U2356	C		A
	G2744	C2681	U2615	U2552	U2491	C2426	U2357	U		A
	C2745	A2682	C2616	C2553	U2492	C2427	A2358	C		A
	U2746	C2683	U2617	U2554	U2493	G2428	G2359	C		U
	G2747	U2684	G2618	U2555	G2494	G2429	G2360	C		A
	U2748	G2685	C2619	U2556	G2495	A2430	G2361	C		A
	A2749	U2686	C2620	C2557	U2496	U2431	G2362	C		A
	G2750	U2687	G2621	C2558	A2497	A2432	G2363	C		A
	U2751	G2688	U2622	C2559	G2498	A2433	G2364	C		A
	C2752	U2689	G2623	U2562	U2499	A2434	G2365	C		A
	A2753	U2690		U2563	C2499	A2435	G2366	C		A
	U2754	C2691	G2627	A2564	U2500	G2436	G2367	C		A
	C2755	U2692	C2628	A2565	G2501	U2437	G2373	C		A
	U2756	G2693	U2629	A2566	C2502	G2438	G2374	C		A
	A2757	C2694	G2630	G2567	A2503	U2439		C2179		U
	G2758	U2695	G2631	G2568	U2504	A2440	A2308	A		G
	U2759	U2696	U2632	U2569	G2505	C2440	A2309	A		G
	C2760	U2697	A2632	G2570	U2506	U2441	C2310	A		G
	A2761	U2698	G2635	U2571	C2507	G2442	A2311	A		A
			C2636		G2508	C2443	G2312	A		A
							G2313	A		A
							A2314	A		A
							U2181	A		A
							U2182	A		A
							A2183	A		A
							U2184	A		A
							U2185	A		A
							G2186	A		A
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							U2188	A		A
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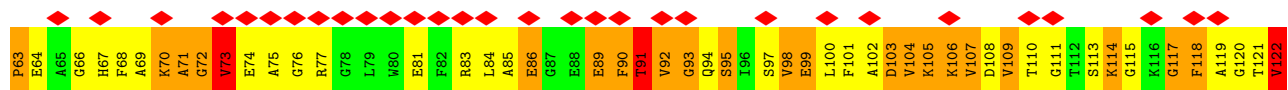
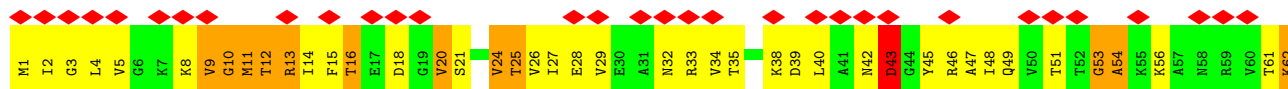
• Molecule 10: 5S ribosomal RNA

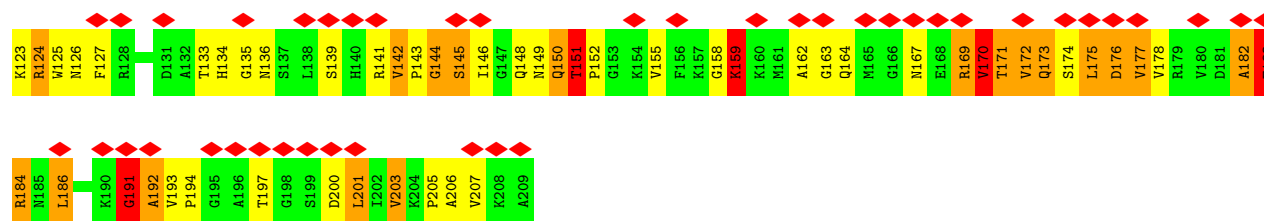


• Molecule 11: 50S ribosomal protein L2

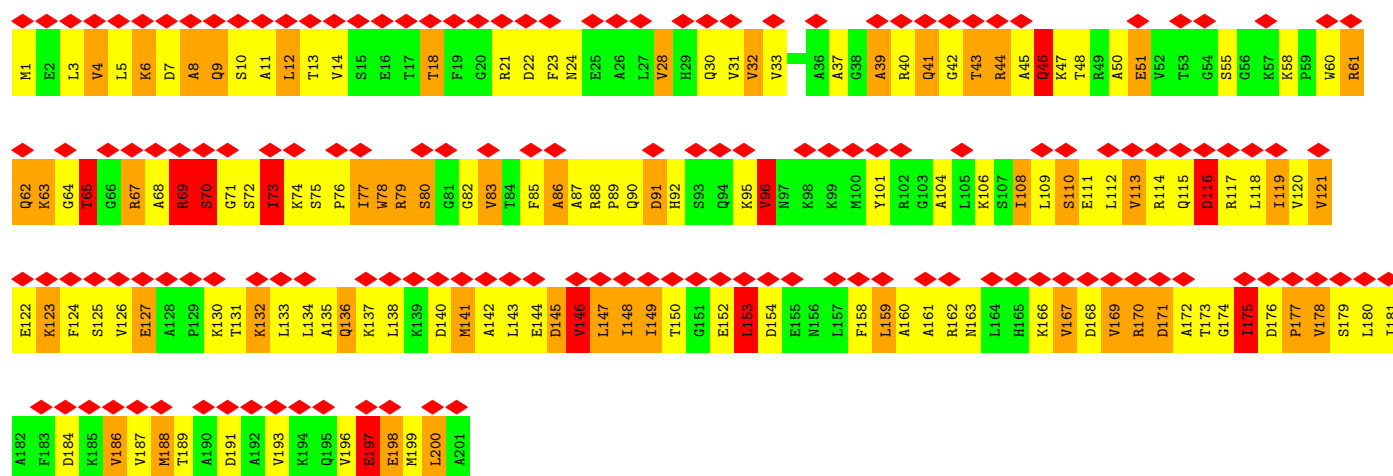
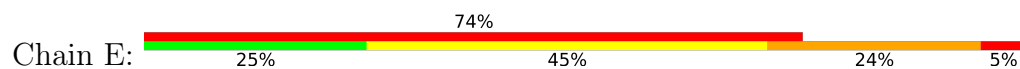


• Molecule 12: 50S ribosomal protein L3

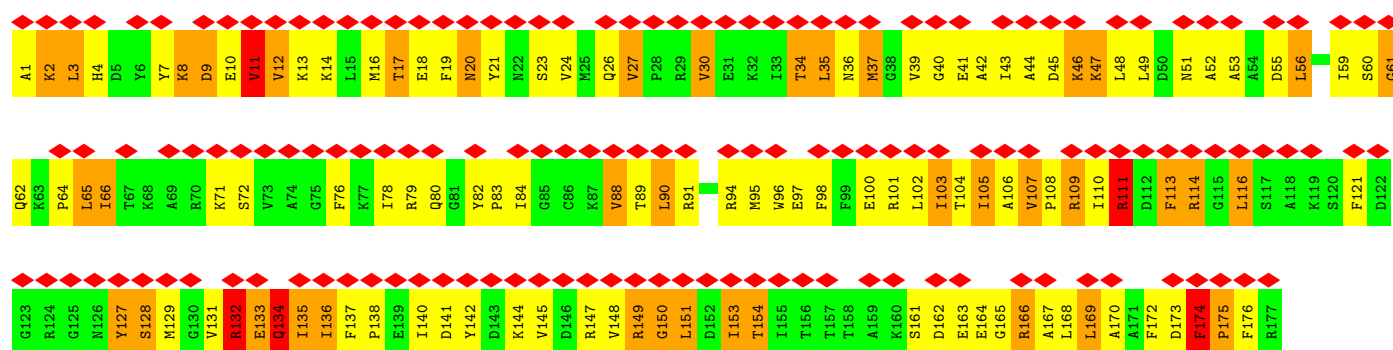
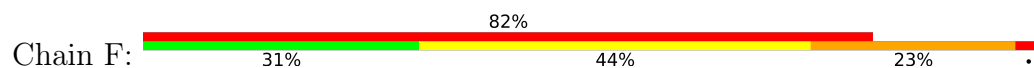




• Molecule 13: 50S ribosomal protein L4

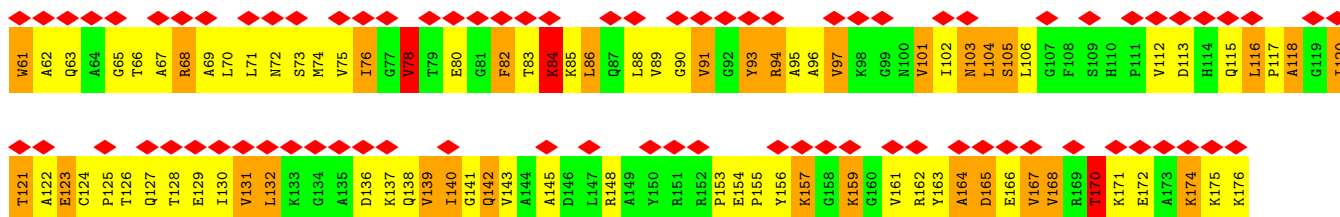


• Molecule 14: 50S ribosomal protein L5



• Molecule 15: 50S ribosomal protein L6

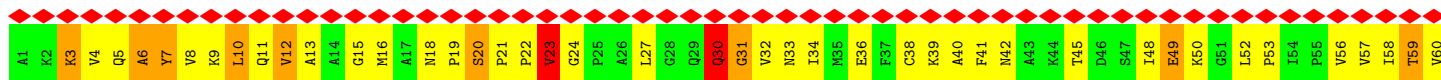




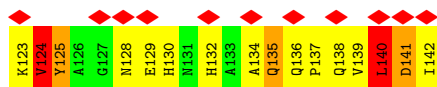
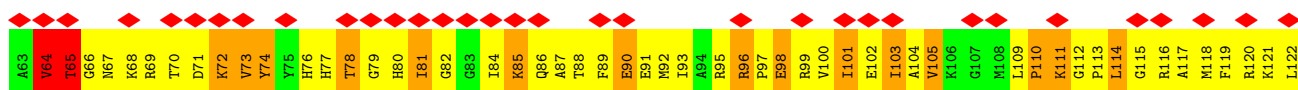
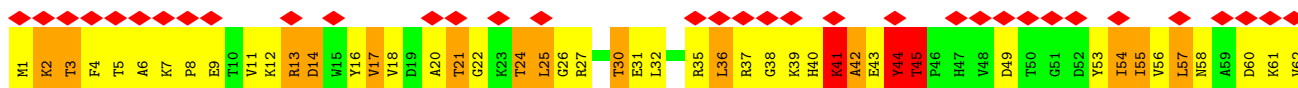
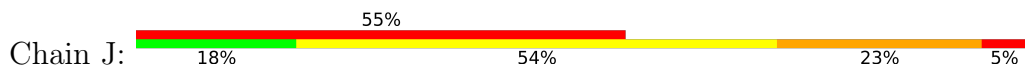
• Molecule 16: 50S ribosomal protein L9



• Molecule 17: 50S ribosomal protein L11



• Molecule 18: 50S ribosomal protein L13

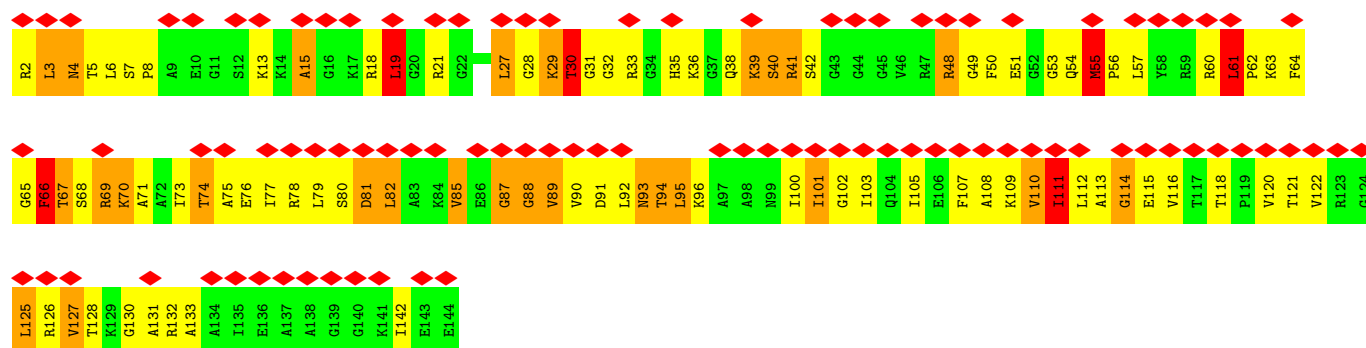


• Molecule 19: 50S ribosomal protein L14

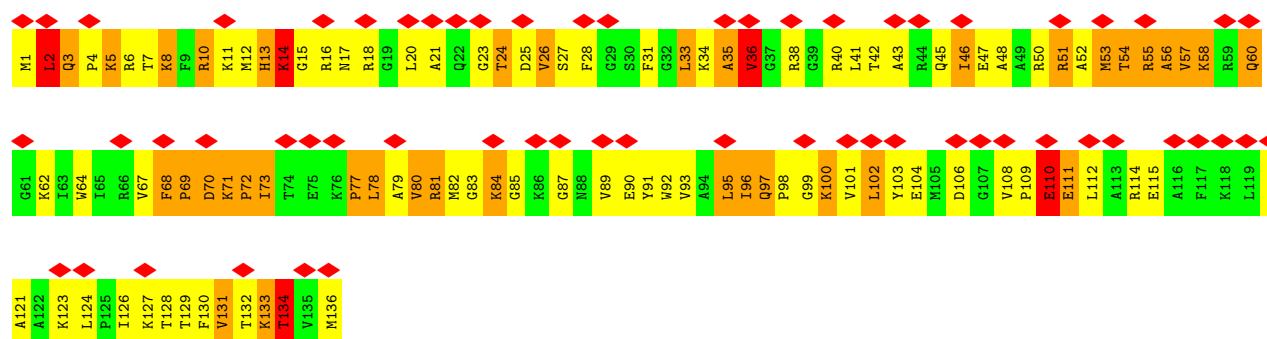
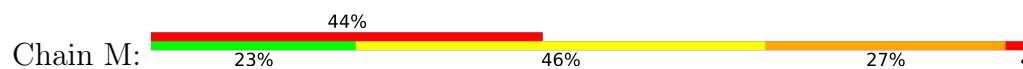




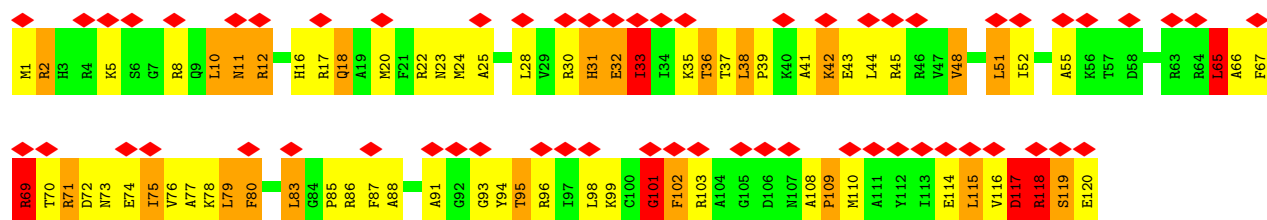
• Molecule 20: 50S ribosomal protein L15



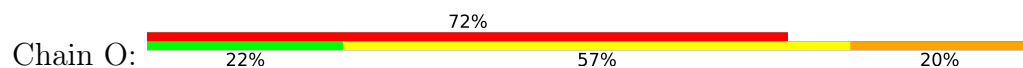
• Molecule 21: 50S ribosomal protein L16

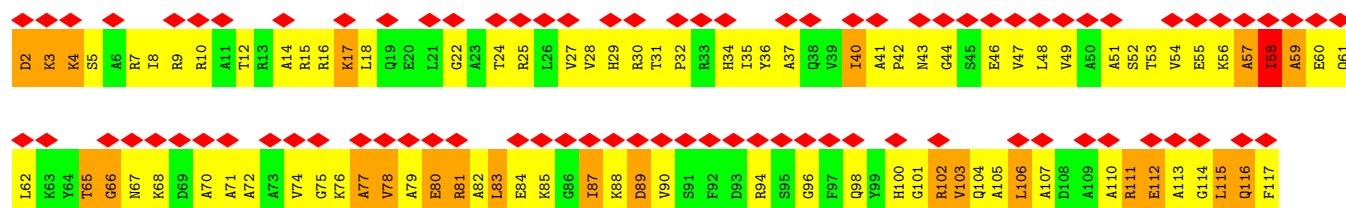


• Molecule 22: 50S ribosomal protein L17

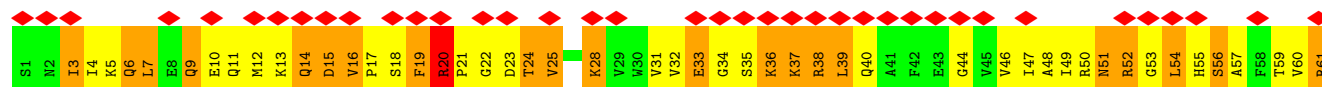
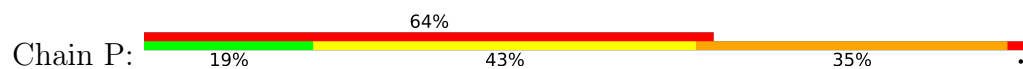


• Molecule 23: 50S ribosomal protein L18

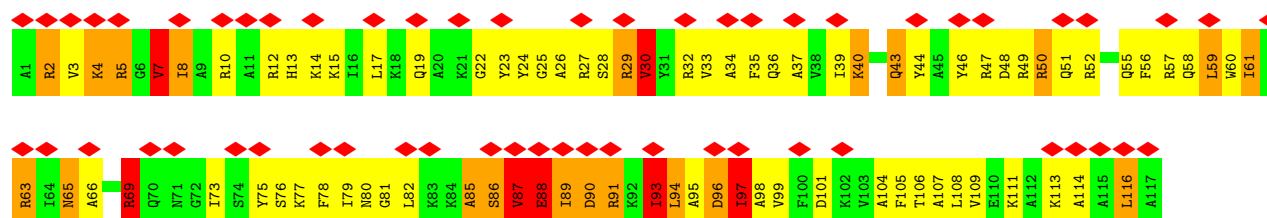




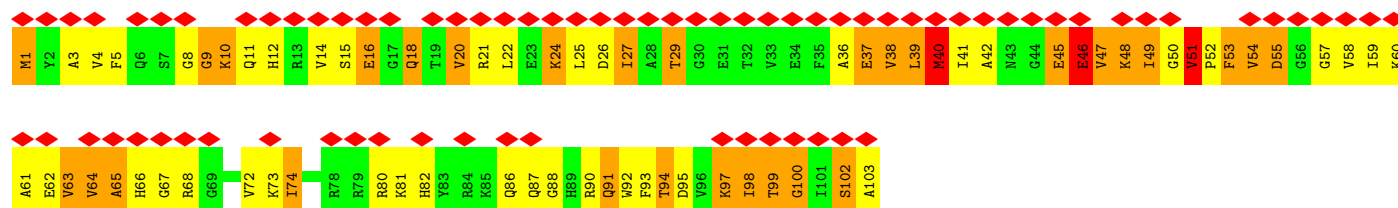
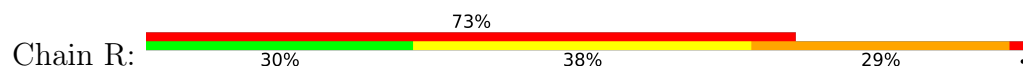
• Molecule 24: 50S ribosomal protein L19



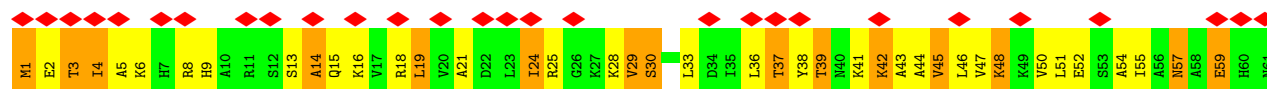
• Molecule 25: 50S ribosomal protein L20



• Molecule 26: 50S ribosomal protein L21

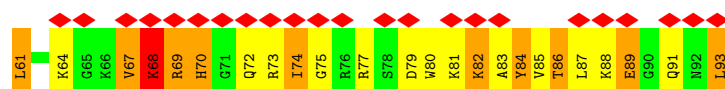
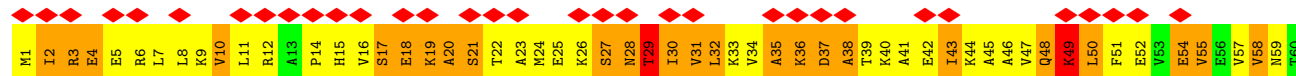
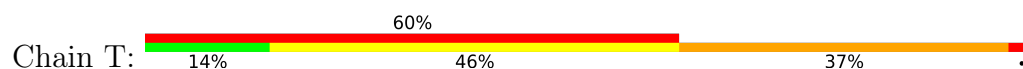


• Molecule 27: 50S ribosomal protein L22

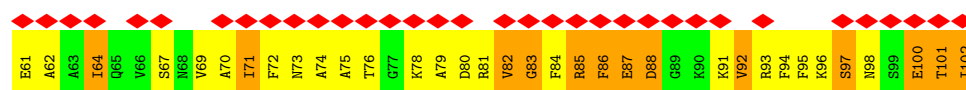
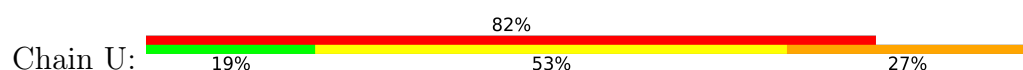




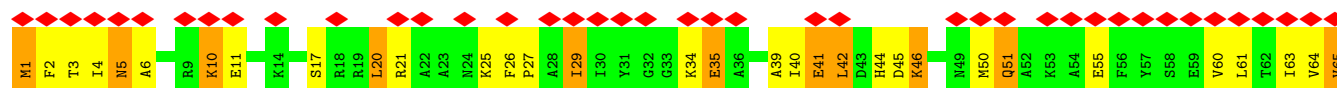
• Molecule 28: 50S ribosomal protein L23



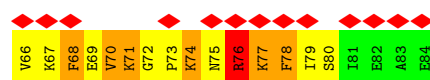
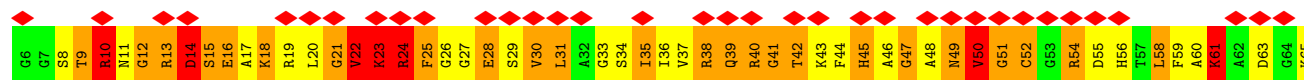
• Molecule 29: 50S ribosomal protein L24



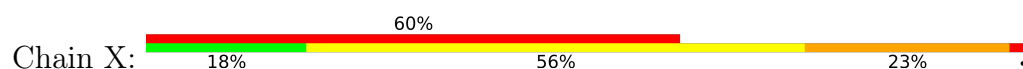
• Molecule 30: 50S ribosomal protein L25

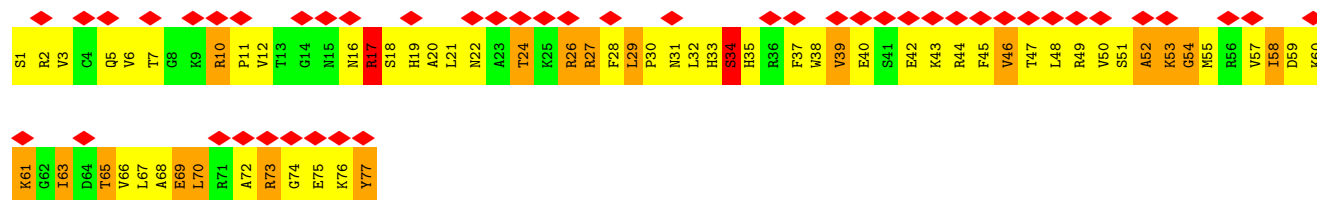


• Molecule 31: 50S ribosomal protein L27

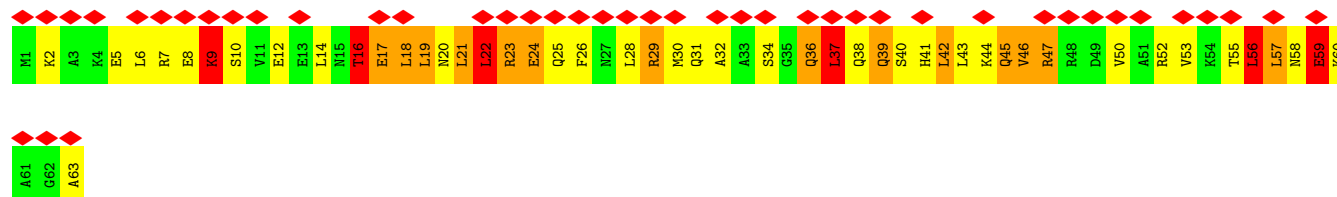
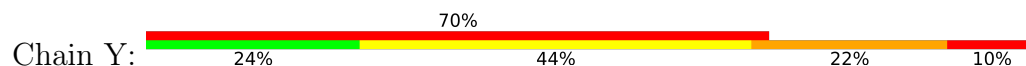


• Molecule 32: 50S ribosomal protein L28

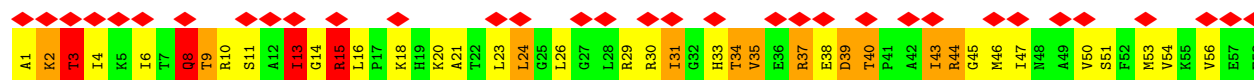




• Molecule 33: 50S ribosomal protein L29



• Molecule 34: 50S ribosomal protein L30



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	349744	Depositor
Resolution determination method	FSC 0.5 CUT-OFF	Depositor
CTF correction method	Defocus groups	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/\text{\AA}^2$)	20	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	4500	Depositor
Magnification	148721	Depositor
Image detector	TVIPS TEMCAM-F416 (4k x 4k)	Depositor
Maximum map value	0.004	Depositor
Minimum map value	-0.002	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.000	Depositor
Recommended contour level	0.0011	Depositor
Map size ($\text{\AA}$)	390.264, 390.264, 390.264	wwPDB
Map dimensions	368, 368, 368	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.0605, 1.0605, 1.0605	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: ERY, MA6, UNL

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	0	0.70	0/450	1.10	5/599 (0.8%)
2	1	0.46	0/417	1.03	4/554 (0.7%)
3	2	0.74	0/380	1.06	2/498 (0.4%)
4	3	0.65	0/513	1.08	1/676 (0.1%)
5	4	0.54	0/303	0.97	0/397
6	5	0.27	0/18	0.77	0/26
8	7	0.45	0/65	1.14	1/99 (1.0%)
9	A	0.49	1/68599 (0.0%)	1.21	848/107011 (0.8%)
10	B	0.45	0/2801	1.15	32/4365 (0.7%)
11	C	0.63	0/2122	1.17	13/2852 (0.5%)
12	D	0.80	1/1586 (0.1%)	1.15	8/2134 (0.4%)
13	E	0.65	0/1571	1.05	5/2113 (0.2%)
14	F	0.42	0/1435	0.91	3/1926 (0.2%)
15	G	0.50	0/1343	0.93	2/1816 (0.1%)
16	H	0.40	0/436	0.88	4/586 (0.7%)
17	I	0.35	0/1046	0.88	3/1410 (0.2%)
18	J	0.79	0/1152	1.30	14/1551 (0.9%)
19	K	0.73	0/948	1.19	5/1268 (0.4%)
20	L	0.70	1/1054 (0.1%)	1.24	8/1403 (0.6%)
21	M	0.73	0/1093	1.16	5/1460 (0.3%)
22	N	0.77	0/974	1.17	7/1301 (0.5%)
23	O	0.58	0/902	1.01	4/1209 (0.3%)
24	P	0.67	0/929	1.08	3/1242 (0.2%)
25	Q	0.88	0/960	1.20	7/1278 (0.5%)
26	R	0.78	1/829 (0.1%)	1.17	5/1107 (0.5%)
27	S	0.85	0/864	1.14	2/1156 (0.2%)
28	T	0.65	0/745	1.09	1/994 (0.1%)
29	U	0.58	0/788	1.09	3/1051 (0.3%)
30	V	0.61	0/766	0.95	1/1025 (0.1%)
31	W	0.85	1/603 (0.2%)	1.21	4/797 (0.5%)
32	X	0.58	0/635	1.04	2/848 (0.2%)
33	Y	0.48	0/510	0.90	4/677 (0.6%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
34	Z	0.80	0/453	1.30	5/605 (0.8%)
All	All	0.54	5/97290 (0.0%)	1.18	1011/146034 (0.7%)

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
12	D	0	1
18	J	0	1
22	N	0	1
All	All	0	3

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
31	W	50	VAL	CA-CB	6.67	1.63	1.54
20	L	30	THR	CA-CB	6.66	1.62	1.54
26	R	86	GLN	CB-CG	6.54	1.72	1.52
12	D	172	VAL	CA-CB	-5.59	1.49	1.55
9	A	2807	U	C1'-N1	-5.18	1.40	1.48

All (1011) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	2061	G	C4'-C3'-O3'	-16.34	84.89	109.40
9	A	2848	G	P-O3'-C3'	13.27	140.11	120.20
9	A	2505	G	O3'-P-O5'	-13.21	84.18	104.00
9	A	1603	A	P-O3'-C3'	-12.99	100.71	120.20
9	A	627	A	P-O3'-C3'	12.68	139.22	120.20
11	C	105	ALA	CA-C-N	12.49	133.28	119.92
11	C	105	ALA	C-N-CA	12.49	133.28	119.92
9	A	2893	A	P-O3'-C3'	11.75	137.83	120.20
9	A	250	G	P-O3'-C3'	-11.64	102.73	120.20
9	A	1997	C	N1-C1'-C2'	-11.42	94.87	112.00
19	K	2	ILE	N-CA-C	11.39	121.60	111.81
9	A	788	A	P-O3'-C3'	11.35	137.22	120.20
9	A	2507	C	C4'-C3'-O3'	-10.93	96.60	113.00
9	A	302	C	N1-C1'-C2'	-10.92	95.62	112.00
9	A	2283	C	N1-C1'-C2'	-10.91	95.64	112.00
20	L	40	SER	N-CA-C	-10.86	96.72	110.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	1151	A	P-O3'-C3'	-10.77	104.05	120.20
9	A	2776	A	P-O3'-C3'	10.62	136.13	120.20
9	A	783	A	P-O3'-C3'	-10.55	104.37	120.20
9	A	2752	C	N1-C1'-C2'	-10.55	96.18	112.00
9	A	2451	A	O3'-P-O5'	10.50	119.74	104.00
9	A	728	G	P-O3'-C3'	10.47	135.90	120.20
9	A	241	A	P-O3'-C3'	10.33	135.69	120.20
9	A	1635	A	P-O3'-C3'	-10.32	104.72	120.20
9	A	2601	C	O3'-P-O5'	10.26	119.38	104.00
9	A	2800	A	P-O3'-C3'	10.21	135.52	120.20
9	A	847	U	P-O3'-C3'	-9.99	105.22	120.20
9	A	449	A	P-O3'-C3'	-9.96	105.26	120.20
9	A	1435	G	P-O3'-C3'	-9.95	105.28	120.20
9	A	1023	U	N1-C1'-C2'	-9.90	97.15	112.00
10	B	48	U	P-O5'-C5'	-9.89	106.06	120.90
9	A	727	A	P-O5'-C5'	-9.89	106.06	120.90
10	B	90	C	N1-C1'-C2'	-9.89	97.16	112.00
9	A	1461	C	N1-C1'-C2'	-9.88	97.17	112.00
10	B	44	G	P-O3'-C3'	9.82	134.92	120.20
9	A	390	U	P-O3'-C3'	9.70	134.75	120.20
9	A	1287	A	P-O3'-C3'	-9.57	105.84	120.20
9	A	805	G	P-O3'-C3'	9.48	134.42	120.20
9	A	481	G	P-O3'-C3'	9.46	134.40	120.20
9	A	373	U	N1-C1'-C2'	-9.45	97.83	112.00
9	A	805	G	P-O5'-C5'	-9.43	106.75	120.90
14	F	174	PHE	CA-C-N	9.39	131.58	119.84
14	F	174	PHE	C-N-CA	9.39	131.58	119.84
9	A	571	U	O4'-C1'-N1	9.37	122.26	108.20
9	A	1963	U	P-O3'-C3'	-9.37	106.15	120.20
9	A	227	A	P-O3'-C3'	9.35	134.22	120.20
9	A	164	C	P-O3'-C3'	-9.32	106.22	120.20
9	A	2447	G	P-O3'-C3'	9.30	134.16	120.20
9	A	2214	C	N1-C1'-C2'	-9.27	98.09	112.00
9	A	2424	C	P-O3'-C3'	-9.23	106.36	120.20
9	A	28	A	P-O5'-C5'	-9.22	107.07	120.90
9	A	92	U	N1-C1'-C2'	-9.20	98.20	112.00
12	D	172	VAL	N-CA-C	9.18	120.11	111.48
9	A	2712	C	P-O3'-C3'	9.17	133.95	120.20
9	A	531	C	P-O3'-C3'	9.11	133.87	120.20
9	A	2809	A	P-O3'-C3'	-9.10	106.55	120.20
9	A	2505	G	C3'-C2'-O2'	-9.09	97.06	110.70
34	Z	8	GLN	N-CA-C	9.06	122.33	111.82

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	1565	C	N1-C1'-C2'	9.04	127.56	114.00
9	A	861	A	P-O3'-C3'	-9.03	106.65	120.20
9	A	2894	G	P-O3'-C3'	-9.03	106.66	120.20
9	A	1993	U	N1-C1'-C2'	-9.02	98.47	112.00
9	A	1204	A	P-O3'-C3'	9.00	133.70	120.20
9	A	1815	A	P-O3'-C3'	8.99	133.68	120.20
18	J	96	ARG	CA-C-N	8.99	128.65	118.85
18	J	96	ARG	C-N-CA	8.99	128.65	118.85
13	E	39	ALA	N-CA-C	-8.96	102.04	113.16
9	A	2581	G	P-O3'-C3'	8.96	133.64	120.20
18	J	45	THR	CA-C-N	8.94	130.04	120.47
18	J	45	THR	C-N-CA	8.94	130.04	120.47
9	A	1254	A	P-O5'-C5'	-8.92	107.52	120.90
9	A	1602	U	P-O3'-C3'	8.91	133.56	120.20
9	A	1971	U	N1-C1'-C2'	-8.91	98.64	112.00
9	A	588	U	N1-C1'-C2'	-8.90	98.65	112.00
9	A	790	U	P-O3'-C3'	-8.90	106.85	120.20
9	A	2846	G	P-O5'-C5'	-8.88	107.58	120.90
9	A	790	U	N1-C1'-C2'	-8.86	98.72	112.00
9	A	1360	G	P-O3'-C3'	-8.83	106.96	120.20
9	A	49	A	P-O3'-C3'	8.82	133.44	120.20
9	A	1971	U	O3'-P-O5'	-8.79	90.81	104.00
9	A	2879	A	P-O3'-C3'	8.76	133.34	120.20
9	A	1213	A	P-O5'-C5'	-8.74	107.80	120.90
9	A	2226	C	P-O3'-C3'	-8.73	107.10	120.20
21	M	71	LYS	CA-C-N	8.73	130.75	119.84
21	M	71	LYS	C-N-CA	8.73	130.75	119.84
9	A	531	C	O3'-P-O5'	-8.72	90.92	104.00
9	A	1340	U	O3'-P-O5'	-8.70	90.96	104.00
9	A	1654	A	N9-C1'-C2'	-8.66	99.01	112.00
9	A	2239	G	P-O3'-C3'	-8.65	107.23	120.20
9	A	2801	G	P-O3'-C3'	-8.62	107.27	120.20
9	A	1782	U	N1-C1'-C2'	-8.60	99.10	112.00
9	A	1675	C	N1-C1'-C2'	-8.60	99.11	112.00
9	A	2691	C	N1-C1'-C2'	-8.59	99.12	112.00
9	A	178	G	P-O3'-C3'	-8.58	107.33	120.20
9	A	604	G	P-O3'-C3'	-8.55	107.38	120.20
9	A	2759	G	P-O5'-C5'	-8.51	108.14	120.90
10	B	57	A	P-O3'-C3'	-8.48	107.48	120.20
9	A	656	G	P-O3'-C3'	-8.47	107.50	120.20
9	A	2044	C	P-O3'-C3'	-8.46	107.50	120.20
9	A	685	A	P-O3'-C3'	8.46	132.89	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	860	U	P-O5'-C5'	-8.46	108.22	120.90
9	A	1859	U	N1-C1'-C2'	-8.39	99.41	112.00
9	A	2382	G	P-O3'-C3'	8.39	132.78	120.20
9	A	587	C	N1-C1'-C2'	8.38	126.56	114.00
9	A	1967	C	N1-C1'-C2'	-8.35	99.48	112.00
18	J	27	ARG	N-CA-C	-8.35	102.88	113.23
9	A	1247	A	P-O3'-C3'	8.32	132.69	120.20
9	A	2425	A	P-O3'-C3'	8.32	132.68	120.20
9	A	1398	C	N1-C1'-C2'	-8.30	99.55	112.00
11	C	12	ARG	N-CA-C	-8.29	103.75	114.04
9	A	2333	A	P-O3'-C3'	8.29	132.64	120.20
9	A	1034	G	P-O3'-C3'	-8.29	107.77	120.20
9	A	2820	A	O3'-P-O5'	-8.28	91.58	104.00
9	A	125	A	O3'-P-O5'	-8.27	91.60	104.00
9	A	249	C	P-O3'-C3'	8.27	132.60	120.20
9	A	1654	A	P-O3'-C3'	-8.25	107.82	120.20
9	A	2602	A	C4'-C3'-O3'	-8.24	97.03	109.40
9	A	784	G	P-O3'-C3'	8.24	132.56	120.20
9	A	229	C	N1-C1'-C2'	-8.22	99.67	112.00
31	W	24	ARG	N-CA-C	-8.19	99.70	110.43
9	A	1816	C	P-O3'-C3'	-8.16	107.96	120.20
9	A	671	C	N1-C1'-C2'	-8.15	99.77	112.00
9	A	85	G	P-O3'-C3'	-8.14	107.99	120.20
12	D	151	THR	CA-C-N	-8.13	110.78	119.24
12	D	151	THR	C-N-CA	-8.13	110.78	119.24
9	A	435	C	N1-C1'-C2'	-8.13	99.81	112.00
9	A	2384	U	P-O3'-C3'	8.11	132.37	120.20
9	A	490	C	P-O5'-C5'	-8.11	108.74	120.90
9	A	1417	C	N1-C1'-C2'	-8.09	99.86	112.00
9	A	1427	A	P-O3'-C3'	8.09	132.34	120.20
9	A	747	U	P-O3'-C3'	-8.08	108.08	120.20
9	A	164	C	N1-C1'-C2'	-8.08	99.89	112.00
9	A	126	A	P-O3'-C3'	-8.06	108.11	120.20
9	A	645	C	P-O3'-C3'	8.04	132.26	120.20
9	A	616	A	P-O3'-C3'	-8.03	108.15	120.20
20	L	55	MET	CA-C-N	8.03	128.50	119.83
20	L	55	MET	C-N-CA	8.03	128.50	119.83
9	A	2225	A	P-O3'-C3'	7.99	132.19	120.20
9	A	1330	C	N1-C1'-C2'	-7.97	100.05	112.00
9	A	243	U	N1-C1'-C2'	-7.96	100.06	112.00
9	A	1455	G	P-O3'-C3'	-7.96	108.26	120.20
10	B	67	G	P-O5'-C5'	-7.96	108.96	120.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	119	A	P-O3'-C3'	7.96	132.13	120.20
10	B	25	U	N1-C1'-C2'	-7.95	100.08	112.00
9	A	1013	C	N1-C1'-C2'	-7.94	100.09	112.00
21	M	68	PHE	CA-C-N	7.93	129.76	119.84
21	M	68	PHE	C-N-CA	7.93	129.76	119.84
9	A	1045	C	P-O3'-C3'	7.92	132.09	120.20
9	A	522	A	P-O3'-C3'	-7.92	108.31	120.20
9	A	2497	A	P-O3'-C3'	7.92	132.08	120.20
9	A	1648	U	N1-C1'-C2'	-7.91	100.14	112.00
9	A	1682	G	P-O3'-C3'	-7.89	108.36	120.20
18	J	74	TYR	N-CA-C	7.87	120.12	110.91
9	A	1611	C	P-O5'-C5'	-7.87	109.10	120.90
9	A	2603	G	P-O3'-C3'	-7.86	108.41	120.20
9	A	934	U	N1-C1'-C2'	-7.85	100.22	112.00
9	A	1634	A	P-O3'-C3'	7.85	131.98	120.20
9	A	475	C	N1-C1'-C2'	-7.83	100.26	112.00
9	A	621	A	P-O3'-C3'	-7.83	108.46	120.20
9	A	1249	U	N1-C1'-C2'	-7.83	100.26	112.00
9	A	35	G	P-O5'-C5'	-7.81	109.19	120.90
9	A	92	U	P-O3'-C3'	-7.78	108.53	120.20
9	A	2689	U	N1-C1'-C2'	7.78	125.67	114.00
9	A	1954	G	P-O3'-C3'	7.77	131.86	120.20
9	A	2423	U	N1-C1'-C2'	7.76	123.64	112.00
9	A	1942	C	P-O5'-C5'	-7.75	109.27	120.90
26	R	46	GLU	N-CA-C	7.74	121.18	109.41
9	A	2086	U	N1-C1'-C2'	-7.72	100.42	112.00
9	A	2603	G	C4'-C3'-O3'	-7.72	101.42	113.00
9	A	2068	U	N1-C1'-C2'	-7.71	100.43	112.00
9	A	620	G	O3'-P-O5'	7.71	115.56	104.00
9	A	2062	A	O3'-P-O5'	-7.69	92.46	104.00
10	B	67	G	P-O3'-C3'	-7.69	108.66	120.20
22	N	69	ARG	N-CA-C	-7.68	100.62	110.53
9	A	2023	C	N1-C1'-C2'	-7.67	100.50	112.00
9	A	204	A	P-O3'-C3'	7.66	131.69	120.20
9	A	2030	A	P-O3'-C3'	7.66	131.68	120.20
9	A	61	C	P-O3'-C3'	-7.65	108.72	120.20
9	A	1024	G	P-O5'-C5'	-7.63	109.46	120.90
9	A	239	C	N1-C1'-C2'	-7.63	100.56	112.00
9	A	2725	A	P-O3'-C3'	7.63	131.64	120.20
9	A	1963	U	N1-C1'-C2'	-7.63	100.56	112.00
9	A	2808	G	P-O3'-C3'	7.62	131.63	120.20
9	A	451	U	O4'-C1'-N1	7.62	119.92	108.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	687	C	N1-C1'-C2'	-7.62	100.58	112.00
9	A	1012	U	O4'-C1'-N1	7.61	119.61	108.20
9	A	2728	U	P-O3'-C3'	7.61	131.61	120.20
9	A	249	C	N1-C1'-C2'	7.61	125.41	114.00
18	J	64	VAL	N-CA-C	7.60	125.15	109.34
26	R	9	GLY	N-CA-C	-7.60	95.17	113.18
9	A	962	G	P-O3'-C3'	-7.59	108.81	120.20
9	A	1920	C	P-O3'-C3'	-7.59	108.81	120.20
9	A	1250	G	P-O3'-C3'	7.59	131.58	120.20
9	A	301	G	P-O3'-C3'	7.57	131.56	120.20
9	A	215	G	P-O3'-C3'	7.57	131.56	120.20
9	A	1272	A	P-O3'-C3'	7.56	131.54	120.20
9	A	2447	G	O3'-P-O5'	-7.54	92.70	104.00
9	A	2572	A	P-O3'-C3'	7.52	131.48	120.20
9	A	2423	U	O4'-C1'-N1	-7.51	97.23	108.50
9	A	2835	A	P-O3'-C3'	7.51	131.47	120.20
11	C	242	HIS	CA-C-N	7.50	129.21	119.84
11	C	242	HIS	C-N-CA	7.50	129.21	119.84
9	A	1941	C	N1-C1'-C2'	-7.49	100.76	112.00
9	A	165	A	P-O3'-C3'	-7.49	108.97	120.20
9	A	2756	U	P-O3'-C3'	7.48	131.42	120.20
9	A	1272	A	P-O5'-C5'	-7.48	109.68	120.90
9	A	2210	U	P-O3'-C3'	7.46	131.40	120.20
9	A	2230	G	P-O3'-C3'	-7.46	109.01	120.20
9	A	2036	C	N1-C1'-C2'	-7.45	100.82	112.00
9	A	620	G	P-O3'-C3'	7.45	131.38	120.20
9	A	2733	A	P-O3'-C3'	-7.43	109.05	120.20
9	A	1981	A	P-O3'-C3'	-7.42	109.06	120.20
23	O	102	ARG	N-CA-C	-7.42	103.49	112.54
9	A	1838	C	P-O3'-C3'	7.41	131.31	120.20
9	A	61	C	N1-C1'-C2'	-7.41	100.89	112.00
9	A	2072	C	O3'-P-O5'	-7.39	92.92	104.00
9	A	1568	G	P-O3'-C3'	-7.37	109.15	120.20
9	A	646	U	N1-C1'-C2'	-7.36	100.96	112.00
9	A	527	C	P-O3'-C3'	7.35	131.23	120.20
9	A	2611	C	P-O5'-C5'	-7.35	109.88	120.90
9	A	1288	G	P-O3'-C3'	7.34	131.22	120.20
9	A	531	C	O4'-C1'-N1	-7.34	97.19	108.20
9	A	503	A	P-O3'-C3'	7.33	131.20	120.20
9	A	1326	U	P-O3'-C3'	-7.33	109.21	120.20
9	A	1606	C	P-O5'-C5'	-7.32	109.92	120.90
9	A	2137	U	N1-C1'-C2'	-7.31	101.04	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	2727	A	P-O3'-C3'	-7.31	109.23	120.20
9	A	2629	U	P-O3'-C3'	7.31	131.16	120.20
9	A	2060	A	P-O3'-C3'	7.30	131.15	120.20
9	A	1329	U	P-O3'-C3'	7.30	131.15	120.20
9	A	741	U	P-O5'-C5'	-7.29	109.97	120.90
9	A	1739	A	P-O3'-C3'	-7.28	109.28	120.20
9	A	748	G	P-O3'-C3'	-7.27	109.29	120.20
9	A	2645	G	P-O3'-C3'	7.27	131.11	120.20
9	A	2499	C	P-O5'-C5'	-7.27	109.99	120.90
9	A	2267	A	P-O5'-C5'	-7.27	110.00	120.90
9	A	2490	G	P-O3'-C3'	7.27	131.10	120.20
9	A	2264	C	P-O5'-C5'	-7.25	110.02	120.90
9	A	238	C	P-O3'-C3'	7.25	131.07	120.20
9	A	806	C	P-O5'-C5'	-7.25	110.03	120.90
9	A	1675	C	P-O3'-C3'	-7.24	109.34	120.20
2	1	29	LYS	CA-C-N	7.23	126.86	119.56
2	1	29	LYS	C-N-CA	7.23	126.86	119.56
9	A	506	G	P-O3'-C3'	7.23	131.04	120.20
9	A	861	A	P-O5'-C5'	-7.22	110.06	120.90
9	A	505	A	P-O3'-C3'	-7.22	109.37	120.20
9	A	1703	G	O3'-P-O5'	-7.22	93.17	104.00
14	F	62	GLN	N-CA-C	7.21	117.54	108.45
9	A	2611	C	N1-C1'-C2'	-7.21	101.18	112.00
10	B	52	A	P-O3'-C3'	7.20	131.01	120.20
9	A	2468	A	P-O3'-C3'	7.20	131.00	120.20
9	A	2752	C	P-O3'-C3'	-7.19	109.41	120.20
8	7	76	A	C4'-C3'-O3'	-7.16	98.66	109.40
29	U	84	PHE	N-CA-C	7.16	120.76	109.81
9	A	2681	C	P-O3'-C3'	7.16	130.94	120.20
9	A	404	A	P-O3'-C3'	7.16	130.93	120.20
9	A	1265	A	P-O3'-C3'	7.14	130.92	120.20
9	A	2321	U	P-O3'-C3'	-7.14	109.48	120.20
9	A	459	U	N1-C1'-C2'	-7.14	101.29	112.00
9	A	2347	C	N1-C1'-C2'	-7.14	101.29	112.00
9	A	583	G	P-O5'-C5'	-7.13	110.20	120.90
13	E	117	ARG	N-CA-C	-7.12	104.85	113.97
9	A	2631	G	P-O5'-C5'	-7.12	110.22	120.90
9	A	1759	A	P-O3'-C3'	-7.12	109.52	120.20
9	A	2732	G	P-O3'-C3'	7.12	130.88	120.20
9	A	2506	U	P-O5'-C5'	7.12	131.57	120.90
34	Z	15	ARG	N-CA-C	7.11	119.71	110.53
9	A	2197	U	P-O3'-C3'	7.11	130.86	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
32	X	52	ALA	N-CA-C	-7.11	99.64	110.30
9	A	1942	C	P-O3'-C3'	-7.09	109.56	120.20
9	A	1407	G	P-O3'-C3'	-7.09	109.56	120.20
22	N	79	LEU	N-CA-C	-7.08	99.83	110.24
9	A	926	G	P-O5'-C5'	-7.08	110.27	120.90
9	A	1135	C	N1-C1'-C2'	-7.08	101.38	112.00
9	A	1157	G	P-O3'-C3'	-7.08	109.59	120.20
9	A	904	G	P-O3'-C3'	-7.07	109.59	120.20
9	A	2226	C	P-O5'-C5'	-7.07	110.30	120.90
9	A	422	A	P-O3'-C3'	-7.05	109.62	120.20
9	A	443	A	P-O5'-C5'	-7.05	110.33	120.90
12	D	117	GLY	N-CA-C	7.03	124.35	115.21
9	A	1611	C	P-O3'-C3'	-7.03	109.66	120.20
9	A	2022	U	P-O5'-C5'	-7.02	110.36	120.90
9	A	1255	U	P-O5'-C5'	-7.02	110.37	120.90
9	A	1112	G	P-O3'-C3'	-7.01	109.68	120.20
9	A	2501	C	N1-C1'-C2'	7.00	122.51	112.00
9	A	1476	U	N1-C1'-C2'	-7.00	101.50	112.00
9	A	391	A	P-O3'-C3'	-6.99	109.71	120.20
9	A	567	U	O3'-P-O5'	-6.99	93.52	104.00
9	A	1993	U	P-O5'-C5'	-6.97	110.45	120.90
25	Q	97	ILE	N-CA-C	-6.96	102.69	110.62
9	A	2595	G	P-O5'-C5'	-6.96	110.47	120.90
9	A	2266	A	P-O3'-C3'	6.95	130.63	120.20
13	E	65	THR	N-CA-C	-6.93	100.02	110.28
9	A	1544	A	P-O5'-C5'	-6.93	110.50	120.90
9	A	600	G	P-O5'-C5'	-6.93	110.51	120.90
9	A	811	U	P-O3'-C3'	6.93	130.59	120.20
9	A	2312	U	N1-C1'-C2'	-6.93	101.61	112.00
9	A	585	G	O3'-P-O5'	-6.92	93.61	104.00
9	A	866	A	N9-C1'-C2'	-6.92	101.61	112.00
9	A	2506	U	C4'-C3'-O3'	6.92	123.37	113.00
9	A	556	A	P-O3'-C3'	-6.91	109.83	120.20
9	A	413	C	N1-C1'-C2'	-6.91	101.64	112.00
9	A	1848	A	P-O3'-C3'	-6.91	109.84	120.20
9	A	2319	G	P-O3'-C3'	6.90	130.56	120.20
9	A	2541	A	P-O3'-C3'	6.89	130.53	120.20
9	A	2506	U	O4'-C4'-C3'	6.88	110.88	104.00
9	A	1021	A	P-O3'-C3'	-6.88	109.88	120.20
9	A	2656	U	N1-C1'-C2'	-6.88	101.68	112.00
10	B	40	U	P-O3'-C3'	6.87	130.51	120.20
9	A	1859	U	P-O3'-C3'	-6.87	109.90	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	807	U	P-O5'-C5'	-6.86	110.61	120.90
9	A	144	A	P-O3'-C3'	-6.86	109.92	120.20
9	A	1498	C	N1-C1'-C2'	-6.85	101.72	112.00
4	3	21	PHE	N-CA-C	6.85	125.39	110.80
9	A	2502	G	P-O5'-C5'	-6.85	110.62	120.90
9	A	2200	C	N1-C1'-C2'	-6.84	101.74	112.00
25	Q	3	VAL	N-CA-C	6.84	117.72	107.80
9	A	1651	G	P-O5'-C5'	-6.83	110.65	120.90
9	A	2498	C	N1-C1'-C2'	-6.83	101.75	112.00
9	A	2777	G	P-O3'-C3'	-6.83	109.95	120.20
9	A	1013	C	P-O3'-C3'	-6.83	109.96	120.20
9	A	531	C	N1-C1'-C2'	6.83	124.24	114.00
9	A	1901	A	P-O3'-C3'	-6.83	109.96	120.20
29	U	100	GLU	N-CA-C	6.82	118.80	111.36
9	A	2051	A	P-O3'-C3'	6.82	130.43	120.20
9	A	27	G	P-O3'-C3'	6.81	130.41	120.20
9	A	476	G	P-O5'-C5'	-6.80	110.69	120.90
9	A	2645	G	O3'-P-O5'	-6.79	93.81	104.00
9	A	727	A	P-O3'-C3'	-6.79	110.01	120.20
9	A	421	C	P-O3'-C3'	6.79	130.38	120.20
9	A	200	U	N1-C1'-C2'	-6.78	101.83	112.00
9	A	984	A	O3'-P-O5'	6.77	114.16	104.00
9	A	2602	A	P-O3'-C3'	-6.76	110.06	120.20
9	A	1434	A	P-O3'-C3'	6.75	130.33	120.20
9	A	2492	U	P-O5'-C5'	-6.75	110.78	120.90
9	A	1644	C	N1-C1'-C2'	-6.74	101.88	112.00
9	A	489	G	O3'-P-O5'	-6.74	93.89	104.00
9	A	143	C	N1-C1'-C2'	-6.72	101.92	112.00
22	N	33	ILE	CB-CA-C	-6.72	100.99	110.12
9	A	34	U	P-O3'-C3'	6.71	130.27	120.20
9	A	2517	C	O4'-C1'-N1	6.71	118.27	108.20
9	A	2567	G	P-O3'-C3'	-6.71	110.13	120.20
9	A	386	G	O3'-P-O5'	-6.70	93.94	104.00
9	A	2809	A	P-O5'-C5'	-6.70	110.85	120.90
9	A	1357	C	P-O3'-C3'	-6.70	110.16	120.20
9	A	812	C	P-O3'-C3'	-6.69	110.17	120.20
9	A	2646	C	P-O5'-C5'	-6.69	110.87	120.90
9	A	1965	C	N1-C1'-C2'	-6.69	101.97	112.00
10	B	15	A	P-O5'-C5'	-6.69	110.87	120.90
9	A	1782	U	P-O3'-C3'	-6.68	110.18	120.20
9	A	2214	C	P-O3'-C3'	-6.68	110.19	120.20
9	A	1289	C	P-O3'-C3'	-6.67	110.19	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
10	B	16	G	P-O3'-C3'	-6.67	110.19	120.20
9	A	977	G	O3'-P-O5'	-6.66	94.00	104.00
1	O	24	VAL	N-CA-C	6.66	116.80	110.74
9	A	2337	G	P-O3'-C3'	-6.66	110.22	120.20
9	A	1759	A	P-O5'-C5'	-6.66	110.92	120.90
9	A	1210	G	P-O3'-C3'	6.65	130.18	120.20
9	A	2875	C	P-O5'-C5'	-6.65	110.92	120.90
11	C	134	ILE	CA-C-N	6.65	128.15	119.84
11	C	134	ILE	C-N-CA	6.65	128.15	119.84
9	A	2689	U	P-O3'-C3'	6.64	130.17	120.20
9	A	1293	C	P-O3'-C3'	-6.64	110.25	120.20
9	A	2806	C	O3'-P-O5'	-6.63	94.05	104.00
9	A	726	G	O3'-P-O5'	6.63	113.94	104.00
9	A	1626	A	P-O3'-C3'	6.63	130.14	120.20
9	A	2312	U	P-O3'-C3'	-6.63	110.26	120.20
9	A	2152	G	P-O3'-C3'	-6.62	110.27	120.20
9	A	1839	G	P-O3'-C3'	-6.62	110.28	120.20
9	A	621	A	P-O5'-C5'	-6.60	110.99	120.90
9	A	1239	G	O3'-P-O5'	-6.60	94.09	104.00
9	A	30	G	P-O5'-C5'	-6.60	111.00	120.90
9	A	1508	A	P-O3'-C3'	6.60	130.09	120.20
9	A	1240	U	O4'-C1'-N1	-6.59	98.61	108.50
9	A	1627	G	P-O3'-C3'	-6.59	110.31	120.20
9	A	1760	C	O3'-P-O5'	-6.59	94.12	104.00
9	A	1026	G	P-O3'-C3'	-6.59	110.32	120.20
9	A	1828	G	P-O5'-C5'	6.58	130.78	120.90
9	A	729	G	P-O5'-C5'	-6.58	111.03	120.90
9	A	1558	C	P-O3'-C3'	6.57	130.06	120.20
9	A	942	G	O3'-P-O5'	-6.56	94.16	104.00
9	A	847	U	N1-C1'-C2'	-6.56	102.16	112.00
9	A	2407	A	P-O5'-C5'	-6.54	111.09	120.90
9	A	2797	U	P-O3'-C3'	6.54	130.02	120.20
9	A	1885	A	P-O3'-C3'	-6.54	110.39	120.20
9	A	1555	G	P-O3'-C3'	-6.54	110.39	120.20
9	A	474	G	P-O3'-C3'	6.53	129.99	120.20
9	A	119	A	O3'-P-O5'	6.51	113.77	104.00
9	A	2458	G	P-O3'-C3'	6.51	129.96	120.20
9	A	120	U	P-O5'-C5'	-6.50	111.14	120.90
9	A	542	C	O3'-P-O5'	-6.50	94.24	104.00
9	A	1695	G	P-O3'-C3'	-6.50	110.44	120.20
9	A	1682	G	P-O5'-C5'	-6.50	111.15	120.90
9	A	2504	U	N1-C1'-C2'	-6.50	102.25	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	1379	U	N1-C1'-C2'	-6.50	102.25	112.00
9	A	2691	C	P-O5'-C5'	-6.50	111.15	120.90
9	A	2832	U	O3'-P-O5'	-6.50	94.26	104.00
9	A	2052	A	P-O5'-C5'	-6.48	111.18	120.90
9	A	2662	A	P-O3'-C3'	-6.47	110.49	120.20
9	A	856	G	O3'-P-O5'	-6.47	94.30	104.00
9	A	571	U	P-O3'-C3'	6.46	129.89	120.20
9	A	1716	U	N1-C1'-C2'	-6.45	102.33	112.00
9	A	996	A	C2'-C3'-O3'	-6.45	104.03	113.70
9	A	1816	C	N1-C1'-C2'	-6.44	102.33	112.00
9	A	1126	A	P-O3'-C3'	6.44	129.86	120.20
9	A	2426	A	P-O3'-C3'	6.44	129.86	120.20
9	A	729	G	P-O3'-C3'	-6.44	110.54	120.20
9	A	865	C	P-O3'-C3'	6.44	129.86	120.20
31	W	21	GLY	N-CA-C	-6.43	102.76	112.41
9	A	2880	C	N1-C1'-C2'	-6.43	102.35	112.00
9	A	1602	U	O4'-C1'-N1	6.42	117.83	108.20
9	A	2035	G	P-O3'-C3'	6.42	129.83	120.20
9	A	138	U	N1-C1'-C2'	-6.42	104.38	114.00
9	A	507	A	P-O3'-C3'	-6.42	110.58	120.20
9	A	2520	C	N1-C1'-C2'	-6.41	102.39	112.00
9	A	2725	A	O5'-C5'-C4'	-6.41	102.09	111.70
26	R	86	GLN	CB-CG-CD	6.41	123.49	112.60
9	A	387	U	P-O5'-C5'	-6.41	111.29	120.90
9	A	1664	A	O3'-P-O5'	-6.41	94.39	104.00
9	A	163	C	N1-C1'-C2'	-6.40	104.40	114.00
9	A	482	A	P-O3'-C3'	-6.39	110.61	120.20
9	A	1248	G	P-O5'-C5'	-6.39	111.31	120.90
9	A	1554	U	O3'-P-O5'	-6.39	94.41	104.00
9	A	2228	G	P-O5'-C5'	-6.38	111.33	120.90
9	A	1015	U	P-O5'-C5'	-6.37	111.34	120.90
9	A	2768	U	P-O3'-C3'	-6.37	110.64	120.20
9	A	1510	G	P-O3'-C3'	-6.37	110.65	120.20
9	A	985	C	P-O3'-C3'	-6.37	110.65	120.20
9	A	18	U	P-O5'-C5'	-6.36	111.36	120.90
9	A	906	U	P-O5'-C5'	-6.36	111.36	120.90
11	C	229	HIS	CA-C-N	6.36	127.79	119.84
11	C	229	HIS	C-N-CA	6.36	127.79	119.84
9	A	1942	C	N1-C1'-C2'	-6.35	102.47	112.00
19	K	58	LEU	N-CA-C	6.34	115.79	108.49
9	A	509	C	P-O3'-C3'	-6.34	110.69	120.20
9	A	1522	A	P-O3'-C3'	6.34	129.71	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	946	C	N1-C1'-C2'	-6.34	102.49	112.00
9	A	914	G	P-O3'-C3'	-6.34	110.69	120.20
9	A	504	A	P-O5'-C5'	-6.33	111.41	120.90
9	A	233	A	P-O3'-C3'	-6.32	110.72	120.20
9	A	1732	C	P-O3'-C3'	6.32	129.68	120.20
9	A	2836	U	N1-C1'-C2'	-6.32	102.53	112.00
9	A	523	C	P-O5'-C5'	-6.31	111.43	120.90
9	A	2505	G	C1'-C2'-O2'	6.31	117.86	108.40
9	A	2380	C	P-O5'-C5'	-6.30	111.45	120.90
9	A	961	C	O4'-C1'-N1	6.29	117.64	108.20
9	A	2573	C	N1-C1'-C2'	-6.29	102.57	112.00
9	A	2462	C	P-O5'-C5'	-6.29	111.47	120.90
9	A	1524	G	P-O3'-C3'	-6.28	110.78	120.20
9	A	14	A	P-O3'-C3'	-6.28	110.78	120.20
9	A	1491	G	P-O3'-C3'	-6.28	110.79	120.20
9	A	1273	U	P-O5'-C5'	-6.27	111.50	120.90
9	A	403	U	P-O3'-C3'	6.27	129.60	120.20
9	A	1461	C	P-O3'-C3'	-6.26	110.80	120.20
9	A	800	A	P-O3'-C3'	6.26	129.59	120.20
9	A	1048	A	P-O3'-C3'	-6.26	110.81	120.20
10	B	88	C	O4'-C1'-N1	-6.26	98.81	108.20
20	L	95	LEU	N-CA-C	-6.26	103.59	111.11
9	A	1119	U	P-O3'-C3'	-6.26	110.81	120.20
9	A	1653	G	P-O3'-C3'	6.26	129.59	120.20
9	A	1063	G	P-O3'-C3'	-6.25	110.82	120.20
34	Z	40	THR	CA-C-N	-6.25	113.25	119.56
34	Z	40	THR	C-N-CA	-6.25	113.25	119.56
9	A	2542	A	P-O5'-C5'	-6.23	111.55	120.90
9	A	1965	C	P-O3'-C3'	-6.23	110.85	120.20
9	A	690	G	P-O5'-C5'	-6.23	111.55	120.90
9	A	2507	C	C5'-C4'-C3'	-6.23	106.66	116.00
9	A	1956	U	N1-C1'-C2'	-6.23	102.66	112.00
32	X	54	GLY	N-CA-C	-6.22	105.11	112.64
9	A	573	U	P-O5'-C5'	-6.22	111.57	120.90
9	A	967	U	P-O3'-C3'	-6.21	110.88	120.20
13	E	146	VAL	N-CA-C	6.21	118.07	108.44
9	A	1033	U	N1-C1'-C2'	6.21	123.31	114.00
9	A	2715	C	P-O3'-C3'	-6.21	110.89	120.20
27	S	86	MET	CA-C-N	-6.21	113.37	119.76
27	S	86	MET	C-N-CA	-6.21	113.37	119.76
9	A	1135	C	P-O5'-C5'	-6.20	111.60	120.90
9	A	1666	G	P-O5'-C5'	-6.20	111.60	120.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	2797	U	N1-C1'-C2'	6.19	123.29	114.00
22	N	101	GLY	N-CA-C	6.19	127.85	113.18
9	A	2640	G	P-O5'-C5'	-6.18	111.62	120.90
9	A	463	G	P-O5'-C5'	-6.18	111.63	120.90
11	C	83	ASP	CA-C-N	6.18	125.88	119.64
11	C	83	ASP	C-N-CA	6.18	125.88	119.64
9	A	671	C	P-O3'-C3'	-6.18	110.93	120.20
9	A	2275	C	N1-C1'-C2'	6.17	123.26	114.00
9	A	2613	U	P-O3'-C3'	6.17	129.46	120.20
9	A	1965	C	P-O5'-C5'	-6.17	111.64	120.90
9	A	2459	A	P-O3'-C3'	-6.16	110.95	120.20
9	A	2791	G	P-O3'-C3'	-6.16	110.95	120.20
9	A	1867	G	P-O3'-C3'	-6.16	110.96	120.20
17	I	94	LYS	N-CA-C	-6.16	105.56	114.12
9	A	1160	G	P-O5'-C5'	-6.15	111.67	120.90
9	A	2230	G	P-O5'-C5'	-6.15	111.67	120.90
9	A	2848	G	C2'-C3'-O3'	6.15	118.73	109.50
9	A	1615	C	P-O3'-C3'	6.15	129.42	120.20
9	A	2093	G	N9-C1'-C2'	-6.15	102.78	112.00
9	A	390	U	C2'-C3'-O3'	6.14	118.71	109.50
9	A	934	U	P-O3'-C3'	-6.14	110.99	120.20
11	C	58	LYS	N-CA-C	6.13	117.84	111.03
28	T	29	THR	N-CA-C	6.13	123.86	110.80
9	A	1379	U	P-O5'-C5'	-6.13	111.70	120.90
9	A	324	A	P-O3'-C3'	-6.13	111.01	120.20
9	A	2321	U	N1-C1'-C2'	-6.13	102.81	112.00
9	A	2267	A	C3'-C2'-C1'	6.12	107.42	101.30
10	B	42	C	N1-C1'-C2'	-6.12	102.82	112.00
9	A	1733	G	P-O3'-C3'	-6.11	111.04	120.20
9	A	2581	G	O3'-P-O5'	-6.11	94.84	104.00
9	A	1324	G	P-O3'-C3'	6.10	129.35	120.20
9	A	1116	G	P-O3'-C3'	-6.10	111.06	120.20
9	A	1287	A	O3'-P-O5'	6.09	113.14	104.00
9	A	1739	A	P-O5'-C5'	-6.09	111.77	120.90
9	A	221	A	P-O3'-C3'	6.08	129.32	120.20
9	A	2258	C	O3'-P-O5'	-6.08	94.88	104.00
9	A	2505	G	C4'-C3'-O3'	-6.08	103.88	113.00
9	A	2543	G	P-O5'-C5'	-6.07	111.80	120.90
9	A	1902	C	O3'-P-O5'	-6.07	94.90	104.00
9	A	2519	U	N1-C1'-C2'	-6.07	104.90	114.00
9	A	1394	U	O4'-C1'-N1	-6.06	99.41	108.50
9	A	860	U	C2'-C3'-O3'	-6.05	104.62	113.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	985	C	P-O5'-C5'	-6.05	111.82	120.90
9	A	829	A	P-O5'-C5'	-6.05	111.82	120.90
9	A	649	G	P-O5'-C5'	-6.05	111.83	120.90
18	J	42	ALA	N-CA-C	-6.05	102.65	111.30
9	A	1980	G	P-O3'-C3'	6.05	129.27	120.20
9	A	2395	C	P-O5'-C5'	-6.04	111.84	120.90
1	O	50	GLY	N-CA-C	-6.04	101.08	111.47
9	A	984	A	N9-C1'-C2'	-6.03	102.95	112.00
9	A	1273	U	P-O3'-C3'	-6.03	111.16	120.20
9	A	73	A	P-O5'-C5'	-6.03	111.86	120.90
31	W	71	LYS	N-CA-C	6.02	117.86	109.31
9	A	1956	U	P-O5'-C5'	-6.01	111.88	120.90
9	A	389	G	O3'-P-O5'	-6.00	95.00	104.00
9	A	704	G	P-O3'-C3'	6.00	129.20	120.20
9	A	2215	C	N1-C1'-C2'	-6.00	103.00	112.00
9	A	45	G	P-O5'-C5'	-5.99	111.91	120.90
9	A	113	U	P-O5'-C5'	-5.99	111.92	120.90
9	A	2604	U	P-O5'-C5'	-5.98	111.93	120.90
9	A	783	A	N9-C1'-C2'	-5.98	103.03	112.00
9	A	1378	A	O3'-P-O5'	5.97	112.96	104.00
9	A	1303	G	P-O5'-C5'	-5.97	111.95	120.90
16	H	31	VAL	CA-C-N	-5.97	112.38	119.84
16	H	31	VAL	C-N-CA	-5.97	112.38	119.84
9	A	1937	A	P-O5'-C5'	-5.96	111.96	120.90
9	A	1289	C	P-O5'-C5'	-5.96	111.96	120.90
9	A	455	C	P-O5'-C5'	-5.96	111.97	120.90
25	Q	93	ILE	CB-CA-C	-5.95	104.26	111.88
9	A	654	A	P-O3'-C3'	5.95	129.12	120.20
16	H	48	GLU	N-CA-C	-5.95	106.66	114.04
24	P	20	ARG	CA-C-N	5.95	125.96	119.90
24	P	20	ARG	C-N-CA	5.95	125.96	119.90
9	A	1695	G	P-O5'-C5'	-5.94	111.98	120.90
9	A	369	U	N1-C1'-C2'	5.94	122.91	114.00
9	A	310	A	P-O5'-C5'	-5.94	111.99	120.90
9	A	672	C	P-O5'-C5'	-5.94	111.99	120.90
9	A	33	C	P-O3'-C3'	5.94	129.11	120.20
9	A	852	U	P-O3'-C3'	-5.94	111.29	120.20
9	A	2289	G	P-O3'-C3'	-5.93	111.30	120.20
9	A	2348	U	P-O3'-C3'	-5.93	111.31	120.20
9	A	1866	A	P-O3'-C3'	-5.93	111.31	120.20
9	A	454	A	P-O3'-C3'	5.92	129.09	120.20
9	A	390	U	N1-C1'-C2'	5.92	122.88	114.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	1694	C	N1-C1'-C2'	-5.91	105.13	114.00
9	A	2258	C	P-O3'-C3'	5.91	129.07	120.20
9	A	2215	C	P-O5'-C5'	-5.91	112.03	120.90
9	A	764	A	P-O3'-C3'	5.91	129.07	120.20
9	A	794	A	P-O3'-C3'	-5.91	111.34	120.20
9	A	1398	C	P-O3'-C3'	-5.90	111.35	120.20
9	A	196	A	P-O3'-C3'	5.90	129.05	120.20
9	A	1343	G	P-O3'-C3'	-5.90	111.35	120.20
9	A	989	G	P-O3'-C3'	-5.90	111.35	120.20
9	A	2392	A	P-O3'-C3'	-5.90	111.35	120.20
9	A	435	C	P-O5'-C5'	-5.89	112.06	120.90
25	Q	30	VAL	CB-CA-C	-5.89	103.00	111.19
20	L	81	ASP	N-CA-C	-5.89	102.73	110.33
9	A	687	C	P-O5'-C5'	-5.89	112.07	120.90
9	A	788	A	C2'-C3'-O3'	5.89	118.33	109.50
9	A	2428	G	P-O5'-C5'	-5.88	112.08	120.90
9	A	91	A	P-O3'-C3'	5.88	129.02	120.20
9	A	1809	A	P-O3'-C3'	-5.87	111.39	120.20
9	A	1145	C	O3'-P-O5'	-5.87	95.19	104.00
9	A	739	A	C4'-C3'-C2'	5.87	108.47	102.60
9	A	2383	G	P-O3'-C3'	-5.87	111.40	120.20
9	A	2646	C	N1-C1'-C2'	-5.87	103.20	112.00
9	A	2685	G	P-O5'-C5'	-5.87	112.10	120.90
20	L	70	LYS	N-CA-C	-5.87	104.89	111.28
33	Y	45	GLN	N-CA-C	-5.86	102.77	110.33
10	B	86	G	P-O3'-C3'	-5.86	111.41	120.20
9	A	2283	C	P-O3'-C3'	-5.86	111.41	120.20
9	A	2297	A	P-O3'-C3'	-5.85	111.42	120.20
9	A	858	G	P-O5'-C5'	-5.85	112.13	120.90
9	A	1494	A	P-O3'-C3'	-5.85	111.43	120.20
9	A	573	U	O4'-C1'-N1	5.83	116.95	108.20
9	A	2346	A	P-O3'-C3'	5.83	128.95	120.20
9	A	2449	U	O4'-C1'-N1	-5.83	99.45	108.20
10	B	66	A	O3'-P-O5'	5.83	112.75	104.00
9	A	29	U	P-O5'-C5'	-5.83	112.16	120.90
9	A	1480	C	P-O5'-C5'	-5.83	112.16	120.90
10	B	13	G	P-O3'-C3'	-5.83	111.46	120.20
9	A	2062	A	P-O3'-C3'	-5.82	111.47	120.20
9	A	2062	A	C4'-C3'-O3'	-5.82	100.67	109.40
9	A	2281	A	P-O5'-C5'	-5.82	112.16	120.90
9	A	14	A	P-O5'-C5'	-5.82	112.17	120.90
22	N	17	ARG	N-CA-C	-5.82	104.63	110.97

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	1511	G	P-O5'-C5'	-5.81	112.18	120.90
9	A	2259	U	P-O5'-C5'	-5.81	112.19	120.90
9	A	2499	C	O3'-P-O5'	-5.81	95.29	104.00
9	A	93	G	P-O3'-C3'	-5.80	111.49	120.20
9	A	1702	G	P-O5'-C5'	-5.80	112.20	120.90
9	A	1303	G	P-O3'-C3'	-5.80	111.51	120.20
9	A	1440	U	O3'-P-O5'	-5.80	95.31	104.00
9	A	2756	U	N1-C1'-C2'	5.79	122.69	114.00
9	A	2788	C	P-O5'-C5'	-5.79	112.21	120.90
9	A	681	G	P-O5'-C5'	-5.79	112.21	120.90
9	A	1654	A	C3'-C2'-C1'	5.79	107.09	101.30
18	J	140	LEU	N-CA-C	5.79	115.66	108.19
9	A	1802	A	P-O3'-C3'	-5.79	111.52	120.20
18	J	109	LEU	CA-C-N	-5.79	113.22	120.51
18	J	109	LEU	C-N-CA	-5.79	113.22	120.51
9	A	669	G	C3'-C2'-O2'	-5.78	105.92	114.60
9	A	2452	C	P-O3'-C3'	-5.78	111.53	120.20
9	A	1681	G	P-O3'-C3'	5.78	128.87	120.20
10	B	29	A	P-O5'-C5'	-5.78	112.23	120.90
9	A	1693	U	P-O3'-C3'	5.78	128.86	120.20
9	A	1255	U	N1-C1'-C2'	-5.77	103.34	112.00
9	A	1009	A	P-O3'-C3'	-5.77	111.54	120.20
9	A	697	G	P-O3'-C3'	5.76	128.84	120.20
9	A	962	G	P-O5'-C5'	-5.76	112.26	120.90
9	A	1779	U	O4'-C1'-N1	5.76	117.14	108.50
9	A	587	C	O4'-C1'-N1	-5.76	99.56	108.20
9	A	1786	A	P-O3'-C3'	5.76	128.83	120.20
9	A	396	G	P-O3'-C3'	-5.75	111.57	120.20
9	A	613	A	P-O3'-C3'	5.75	128.83	120.20
9	A	1706	C	P-O3'-C3'	5.75	128.82	120.20
9	A	1714	U	P-O3'-C3'	-5.74	111.58	120.20
9	A	775	G	O3'-P-O5'	-5.74	95.39	104.00
9	A	1560	G	P-O3'-C3'	-5.74	111.59	120.20
1	0	6	LYS	CA-C-N	5.73	125.66	119.76
1	0	6	LYS	C-N-CA	5.73	125.66	119.76
9	A	2452	C	C4'-C3'-O3'	-5.73	104.40	113.00
33	Y	16	THR	N-CA-C	-5.73	104.03	111.02
9	A	1822	C	P-O5'-C5'	-5.73	112.30	120.90
33	Y	59	GLU	N-CA-C	-5.73	106.92	114.31
9	A	1382	G	P-O5'-C5'	-5.73	112.31	120.90
26	R	51	VAL	CA-C-N	-5.72	114.04	119.76
26	R	51	VAL	C-N-CA	-5.72	114.04	119.76

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	479	A	P-O3'-C3'	5.72	128.78	120.20
9	A	2705	A	P-O5'-C5'	-5.72	112.32	120.90
9	A	806	C	P-O3'-C3'	-5.72	111.62	120.20
9	A	1045	C	N1-C1'-C2'	5.71	122.57	114.00
9	A	1426	G	P-O5'-C5'	-5.71	112.33	120.90
9	A	2215	C	P-O3'-C3'	-5.71	111.63	120.20
9	A	1695	G	C2'-C3'-O3'	-5.71	105.13	113.70
9	A	1783	A	P-O3'-C3'	-5.71	111.63	120.20
9	A	1385	A	P-O3'-C3'	5.71	128.76	120.20
9	A	573	U	P-O3'-C3'	5.71	128.76	120.20
9	A	2566	A	P-O3'-C3'	5.71	128.76	120.20
9	A	995	C	O4'-C1'-N1	-5.70	99.65	108.20
9	A	2385	C	N1-C1'-C2'	-5.70	103.45	112.00
9	A	1416	G	P-O3'-C3'	5.70	128.75	120.20
9	A	628	G	P-O5'-C5'	-5.69	112.36	120.90
9	A	2022	U	O4'-C1'-N1	5.69	116.73	108.20
9	A	1512	C	P-O3'-C3'	-5.69	111.67	120.20
24	P	85	VAL	N-CA-C	5.68	116.33	110.82
9	A	1188	U	N1-C1'-C2'	5.68	120.52	112.00
9	A	538	A	P-O5'-C5'	-5.68	112.38	120.90
9	A	2236	U	P-O5'-C5'	-5.68	112.38	120.90
9	A	765	C	P-O5'-C5'	-5.68	112.39	120.90
9	A	2199	A	P-O3'-C3'	-5.68	111.69	120.20
9	A	2506	U	C5'-C4'-O4'	5.67	118.31	109.80
9	A	773	U	N1-C1'-C2'	5.67	120.51	112.00
9	A	1989	G	P-O5'-C5'	-5.67	112.40	120.90
9	A	489	G	P-O3'-C3'	5.66	128.69	120.20
9	A	2632	A	P-O5'-C5'	-5.66	112.41	120.90
22	N	65	LEU	N-CA-C	-5.66	104.75	111.03
9	A	216	A	P-O3'-C3'	-5.65	111.72	120.20
9	A	964	C	P-O5'-C5'	-5.65	112.42	120.90
12	D	10	GLY	N-CA-C	5.65	126.56	113.18
9	A	933	A	P-O3'-C3'	-5.64	111.74	120.20
9	A	1192	G	P-O5'-C5'	-5.64	112.44	120.90
9	A	1918	A	P-O3'-C3'	5.64	128.66	120.20
9	A	1943	U	P-O3'-C3'	5.64	128.66	120.20
9	A	1498	C	P-O3'-C3'	-5.64	111.74	120.20
9	A	125	A	P-O3'-C3'	5.64	128.65	120.20
9	A	673	C	P-O3'-C3'	-5.64	111.74	120.20
9	A	1249	U	O4'-C1'-N1	-5.64	100.05	108.50
34	Z	13	ILE	N-CA-C	5.63	115.77	110.30
9	A	1734	G	P-O3'-C3'	-5.63	111.75	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
10	B	108	A	P-O3'-C3'	5.63	128.65	120.20
9	A	177	G	P-O3'-C3'	5.63	128.64	120.20
9	A	753	A	P-O3'-C3'	-5.63	111.76	120.20
9	A	302	C	P-O3'-C3'	-5.63	111.76	120.20
9	A	2431	U	P-O5'-C5'	-5.63	112.46	120.90
25	Q	24	TYR	N-CA-C	5.63	119.09	110.20
9	A	503	A	O3'-P-O5'	5.62	112.44	104.00
9	A	2830	C	P-O5'-C5'	-5.62	112.47	120.90
9	A	2017	U	P-O5'-C5'	-5.61	112.48	120.90
9	A	2850	A	P-O3'-C3'	-5.61	111.78	120.20
9	A	812	C	N1-C1'-C2'	-5.61	103.58	112.00
9	A	1205	A	P-O3'-C3'	5.61	128.62	120.20
9	A	1074	G	P-O3'-C3'	-5.61	111.79	120.20
9	A	199	A	P-O3'-C3'	5.60	128.61	120.20
10	B	90	C	P-O5'-C5'	-5.60	112.49	120.90
3	2	21	ARG	N-CA-C	-5.60	105.08	111.07
9	A	529	A	O4'-C1'-C2'	5.59	111.39	105.80
9	A	753	A	C2'-C3'-O3'	-5.59	105.31	113.70
9	A	1451	C	P-O3'-C3'	5.59	128.59	120.20
9	A	2821	A	P-O3'-C3'	-5.59	111.81	120.20
9	A	1230	A	O3'-P-O5'	-5.59	95.62	104.00
9	A	475	C	P-O3'-C3'	-5.59	111.82	120.20
9	A	2427	C	C3'-C2'-C1'	5.59	106.89	101.30
9	A	2558	C	P-O5'-C5'	-5.59	112.52	120.90
9	A	2831	G	P-O5'-C5'	-5.58	112.54	120.90
9	A	995	C	P-O3'-C3'	5.57	128.56	120.20
9	A	2815	C	P-O5'-C5'	-5.57	112.55	120.90
9	A	1386	C	P-O3'-C3'	-5.57	111.85	120.20
9	A	2807	U	O4'-C1'-N1	-5.57	100.15	108.50
9	A	784	G	O4'-C1'-N9	-5.57	100.15	108.50
22	N	115	LEU	N-CA-C	-5.56	103.14	110.43
30	V	34	LYS	N-CA-C	-5.56	106.54	113.38
9	A	60	G	P-O3'-C3'	5.56	128.54	120.20
9	A	740	C	N1-C1'-C2'	-5.56	103.66	112.00
9	A	936	A	P-O5'-C5'	-5.56	112.56	120.90
9	A	2066	C	P-O5'-C5'	-5.56	112.56	120.90
9	A	2803	G	P-O5'-C5'	-5.56	112.56	120.90
9	A	2716	C	P-O5'-C5'	-5.55	112.57	120.90
9	A	2430	A	P-O3'-C3'	5.55	128.52	120.20
9	A	2492	U	P-O3'-C3'	-5.55	111.88	120.20
9	A	769	U	P-O5'-C5'	-5.55	112.58	120.90
18	J	141	ASP	N-CA-C	5.55	122.61	110.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
10	B	57	A	P-O5'-C5'	-5.54	112.58	120.90
9	A	395	U	P-O3'-C3'	5.54	128.52	120.20
9	A	1512	C	O3'-P-O5'	-5.54	95.69	104.00
9	A	1794	A	P-O5'-C5'	-5.54	112.59	120.90
9	A	785	G	P-O5'-C5'	-5.54	112.59	120.90
9	A	961	C	P-O3'-C3'	5.53	128.50	120.20
9	A	1210	G	P-O5'-C5'	-5.53	112.60	120.90
9	A	1396	U	O4'-C1'-N1	5.53	116.50	108.20
9	A	1625	C	N1-C1'-C2'	5.53	120.30	112.00
9	A	84	A	P-O3'-C3'	5.53	128.50	120.20
10	B	109	A	P-O3'-C3'	-5.53	111.91	120.20
9	A	2071	A	O3'-P-O5'	-5.53	95.71	104.00
9	A	2335	A	P-O3'-C3'	-5.53	111.91	120.20
9	A	2490	G	O3'-P-O5'	5.53	112.29	104.00
9	A	100	U	N1-C1'-C2'	5.52	122.28	114.00
9	A	1971	U	C3'-C2'-C1'	5.51	106.81	101.30
9	A	2728	U	N1-C1'-C2'	5.51	122.26	114.00
9	A	270	A	P-O5'-C5'	-5.51	112.64	120.90
9	A	1993	U	C3'-C2'-C1'	5.51	106.81	101.30
9	A	2414	G	O3'-P-O5'	-5.51	95.74	104.00
9	A	2431	U	P-O3'-C3'	-5.51	111.94	120.20
9	A	2501	C	P-O5'-C5'	-5.51	112.64	120.90
9	A	2713	U	O3'-P-O5'	-5.51	95.74	104.00
9	A	614	A	P-O5'-C5'	-5.50	112.64	120.90
9	A	1554	U	C4'-C3'-C2'	5.50	108.11	102.60
9	A	1288	G	O4'-C1'-N9	5.50	116.45	108.20
9	A	1286	A	P-O3'-C3'	5.50	128.45	120.20
9	A	1243	C	P-O5'-C5'	-5.50	112.66	120.90
9	A	915	C	N1-C1'-C2'	-5.49	103.77	112.00
9	A	2506	U	N1-C1'-C2'	5.49	120.24	112.00
12	D	109	VAL	N-CA-C	5.49	120.76	109.34
2	1	39	ASP	CA-C-N	5.49	125.10	119.56
2	1	39	ASP	C-N-CA	5.49	125.10	119.56
9	A	2687	U	N1-C1'-C2'	5.49	120.23	112.00
19	K	93	GLN	CA-C-N	5.49	126.34	119.98
19	K	93	GLN	C-N-CA	5.49	126.34	119.98
9	A	70	G	P-O3'-C3'	5.48	128.42	120.20
9	A	1276	A	P-O3'-C3'	-5.48	111.98	120.20
9	A	1420	A	P-O5'-C5'	-5.48	112.68	120.90
9	A	645	C	O3'-P-O5'	-5.48	95.79	104.00
9	A	1802	A	P-O5'-C5'	-5.47	112.69	120.90
9	A	2384	U	N1-C1'-C2'	5.47	122.20	114.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	1935	G	O3'-P-O5'	-5.47	95.80	104.00
9	A	777	G	N9-C1'-C2'	-5.47	103.80	112.00
9	A	2590	A	P-O5'-C5'	-5.46	112.71	120.90
9	A	726	G	P-O3'-C3'	5.45	128.38	120.20
25	Q	7	VAL	N-CA-C	-5.45	105.21	110.72
9	A	752	A	P-O3'-C3'	5.45	128.38	120.20
9	A	2089	C	P-O3'-C3'	-5.45	112.03	120.20
9	A	2286	G	P-O3'-C3'	5.45	128.38	120.20
9	A	2440	C	N1-C1'-C2'	-5.45	103.83	112.00
10	B	53	A	P-O5'-C5'	-5.45	112.73	120.90
10	B	82	U	P-O5'-C5'	-5.44	112.73	120.90
9	A	2279	G	O3'-P-O5'	-5.44	95.84	104.00
19	K	41	ILE	N-CA-C	5.43	116.18	108.42
9	A	1945	G	P-O3'-C3'	-5.43	112.06	120.20
9	A	2572	A	C2'-C3'-O3'	5.42	117.64	109.50
9	A	2656	U	P-O3'-C3'	-5.42	112.07	120.20
9	A	2547	A	P-O5'-C5'	-5.42	112.77	120.90
9	A	2615	U	N1-C1'-C2'	-5.42	103.87	112.00
9	A	2452	C	C5'-C4'-C3'	-5.42	107.87	116.00
9	A	2508	G	P-O5'-C5'	-5.42	112.77	120.90
33	Y	56	LEU	N-CA-C	-5.42	103.33	110.43
9	A	2199	A	P-O5'-C5'	-5.42	112.78	120.90
9	A	2609	U	O4'-C1'-N1	5.42	116.32	108.20
18	J	124	VAL	N-CA-C	5.41	120.60	109.34
9	A	2866	U	P-O3'-C3'	5.41	128.31	120.20
9	A	1966	A	P-O5'-C5'	-5.40	112.80	120.90
9	A	2067	G	P-O3'-C3'	5.40	128.30	120.20
9	A	1135	C	C2'-C3'-O3'	-5.40	105.61	113.70
9	A	2868	A	P-O5'-C5'	-5.40	112.81	120.90
9	A	858	G	P-O3'-C3'	5.39	128.29	120.20
9	A	1646	C	P-O5'-C5'	-5.39	112.81	120.90
9	A	1818	U	P-O3'-C3'	5.39	128.29	120.20
9	A	1499	C	P-O3'-C3'	-5.39	112.11	120.20
9	A	2151	U	N1-C1'-C2'	-5.39	103.91	112.00
9	A	2583	G	O3'-P-O5'	5.39	112.09	104.00
9	A	315	G	P-O5'-C5'	-5.39	112.82	120.90
9	A	2723	C	O3'-P-O5'	-5.39	95.92	104.00
9	A	637	A	P-O3'-C3'	5.38	128.28	120.20
9	A	1943	U	C4'-C3'-C2'	5.38	107.98	102.60
9	A	2654	A	P-O3'-C3'	5.38	128.28	120.20
9	A	835	C	N1-C1'-C2'	-5.38	103.93	112.00
9	A	1717	A	P-O3'-C3'	-5.38	112.13	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	2498	C	P-O3'-C3'	-5.38	112.13	120.20
9	A	1204	A	O3'-P-O5'	5.38	112.07	104.00
9	A	1459	G	P-O3'-C3'	-5.38	112.13	120.20
9	A	1662	U	P-O5'-C5'	-5.38	112.83	120.90
9	A	1008	A	P-O5'-C5'	5.38	128.97	120.90
9	A	1297	C	P-O5'-C5'	-5.38	112.83	120.90
23	O	12	THR	N-CA-C	5.38	116.82	111.07
9	A	2258	C	C4'-C3'-C2'	5.37	107.97	102.60
9	A	2431	U	N1-C1'-C2'	-5.37	103.94	112.00
9	A	2629	U	O3'-P-O5'	-5.37	95.94	104.00
15	G	82	PHE	N-CA-C	5.37	118.46	110.14
9	A	1396	U	P-O3'-C3'	5.37	128.25	120.20
9	A	988	A	O3'-P-O5'	5.36	112.04	104.00
9	A	2439	A	P-O3'-C3'	5.36	128.25	120.20
11	C	53	ILE	CB-CA-C	-5.36	103.72	111.34
9	A	1184	U	O3'-P-O5'	5.36	112.04	104.00
10	B	12	C	N1-C1'-C2'	5.36	122.04	114.00
9	A	1127	A	C3'-C2'-C1'	5.35	106.65	101.30
9	A	2544	G	P-O5'-C5'	-5.35	112.87	120.90
9	A	413	C	P-O5'-C5'	-5.34	112.88	120.90
9	A	656	G	O3'-P-O5'	-5.34	95.98	104.00
9	A	2327	A	P-O3'-C3'	-5.34	112.19	120.20
9	A	1735	A	P-O3'-C3'	-5.33	112.20	120.20
16	H	11	ASN	N-CA-C	5.33	122.16	110.80
9	A	1476	U	C3'-C2'-C1'	5.33	106.63	101.30
9	A	2064	C	N1-C1'-C2'	-5.33	104.01	112.00
10	B	42	C	P-O3'-C3'	-5.33	112.21	120.20
9	A	1328	A	P-O3'-C3'	5.32	128.18	120.20
9	A	2749	A	P-O5'-C5'	-5.32	112.92	120.90
9	A	1657	U	N1-C1'-C2'	5.32	119.97	112.00
9	A	333	G	P-O5'-C5'	-5.31	112.93	120.90
9	A	1129	A	C3'-C2'-C1'	5.31	106.61	101.30
9	A	406	G	P-O3'-C3'	-5.30	112.24	120.20
9	A	1022	G	O3'-P-O5'	-5.30	96.05	104.00
9	A	1448	G	P-O5'-C5'	-5.30	112.95	120.90
9	A	32	C	P-O5'-C5'	-5.29	112.96	120.90
9	A	2578	G	P-O3'-C3'	-5.29	112.27	120.20
9	A	2635	A	P-O5'-C5'	-5.29	112.97	120.90
23	O	78	VAL	CB-CA-C	-5.29	105.11	112.04
9	A	2307	G	P-O3'-C3'	5.29	128.13	120.20
9	A	2888	C	P-O3'-C3'	-5.29	112.27	120.20
12	D	62	LYS	CA-C-N	5.29	126.45	119.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
12	D	62	LYS	C-N-CA	5.29	126.45	119.84
9	A	174	U	P-O3'-C3'	-5.28	112.28	120.20
9	A	2447	G	C4'-C3'-O3'	-5.28	101.47	109.40
9	A	1238	G	N9-C1'-C2'	-5.28	104.08	112.00
9	A	2390	U	P-O5'-C5'	-5.28	112.98	120.90
9	A	63	A	P-O3'-C3'	-5.28	112.28	120.20
20	L	61	LEU	CA-C-N	5.28	125.73	120.14
20	L	61	LEU	C-N-CA	5.28	125.73	120.14
9	A	683	U	P-O5'-C5'	-5.27	112.99	120.90
9	A	232	G	P-O3'-C3'	5.27	128.11	120.20
9	A	1011	G	P-O3'-C3'	5.27	128.11	120.20
9	A	1025	G	C4'-C3'-C2'	5.27	107.87	102.60
9	A	386	G	P-O3'-C3'	5.27	128.10	120.20
9	A	2630	G	P-O3'-C3'	-5.26	112.31	120.20
9	A	528	A	P-O3'-C3'	-5.25	112.32	120.20
9	A	1274	A	P-O5'-C5'	-5.25	113.02	120.90
9	A	2423	U	P-O3'-C3'	5.25	128.07	120.20
9	A	1757	A	P-O3'-C3'	5.24	128.06	120.20
9	A	442	G	P-O3'-C3'	5.24	128.06	120.20
9	A	2277	G	P-O5'-C5'	-5.24	113.04	120.90
9	A	1920	C	N1-C1'-C2'	-5.24	104.14	112.00
9	A	566	U	P-O5'-C5'	-5.24	113.05	120.90
9	A	1953	A	P-O5'-C5'	-5.23	113.05	120.90
9	A	2646	C	P-O3'-C3'	-5.23	112.36	120.20
10	B	25	U	P-O3'-C3'	-5.22	112.36	120.20
9	A	2440	C	C2'-C3'-O3'	-5.22	105.87	113.70
9	A	529	A	C1'-C2'-O2'	-5.22	103.97	111.80
9	A	2424	C	N1-C1'-C2'	-5.22	104.17	112.00
9	A	2729	G	P-O3'-C3'	-5.21	112.38	120.20
9	A	1421	G	P-O3'-C3'	-5.21	112.38	120.20
9	A	532	A	P-O5'-C5'	-5.21	113.08	120.90
9	A	1341	G	P-O5'-C5'	-5.20	113.10	120.90
9	A	2868	A	P-O3'-C3'	-5.20	112.40	120.20
18	J	41	LYS	N-CA-C	5.20	121.87	110.80
9	A	1034	G	P-O5'-C5'	-5.20	113.10	120.90
9	A	1809	A	P-O5'-C5'	-5.20	113.10	120.90
9	A	2894	G	P-O5'-C5'	-5.20	113.10	120.90
9	A	729	G	C3'-C2'-C1'	5.20	106.50	101.30
9	A	2463	C	P-O3'-C3'	-5.20	112.41	120.20
9	A	2609	U	C4'-C3'-C2'	5.19	107.79	102.60
9	A	2681	C	N1-C1'-C2'	5.19	121.78	114.00
9	A	1829	A	P-O3'-C3'	-5.19	112.42	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	1038	G	P-O5'-C5'	-5.19	113.12	120.90
9	A	558	U	O3'-P-O5'	-5.18	96.22	104.00
9	A	746	U	P-O3'-C3'	5.18	127.98	120.20
9	A	1266	G	P-O3'-C3'	5.18	127.97	120.20
9	A	1707	G	C3'-C2'-C1'	5.18	106.48	101.30
9	A	1971	U	O4'-C1'-N1	5.18	116.27	108.50
9	A	346	A	P-O3'-C3'	-5.17	112.44	120.20
9	A	705	A	P-O5'-C5'	-5.17	113.14	120.90
9	A	855	G	P-O5'-C5'	-5.17	113.14	120.90
9	A	1738	G	P-O3'-C3'	5.17	127.96	120.20
9	A	2689	U	O4'-C1'-N1	5.17	115.96	108.20
9	A	1499	C	N1-C1'-C2'	-5.17	104.25	112.00
9	A	2718	G	P-O5'-C5'	5.16	128.65	120.90
9	A	2272	U	N1-C1'-C2'	5.16	119.74	112.00
9	A	413	C	P-O3'-C3'	-5.16	112.46	120.20
9	A	2427	C	P-O5'-C5'	-5.16	113.16	120.90
9	A	2211	A	P-O3'-C3'	5.16	127.93	120.20
9	A	934	U	C3'-C2'-C1'	5.15	106.45	101.30
9	A	1676	A	O3'-P-O5'	-5.15	96.28	104.00
9	A	802	A	P-O3'-C3'	-5.15	112.48	120.20
9	A	2866	U	O4'-C1'-N1	5.14	115.92	108.20
9	A	667	U	N1-C1'-C2'	5.14	119.71	112.00
9	A	2363	G	P-O3'-C3'	5.13	127.90	120.20
9	A	758	C	P-O5'-C5'	-5.13	113.20	120.90
9	A	588	U	C3'-C2'-C1'	5.13	106.43	101.30
9	A	2880	C	P-O3'-C3'	-5.13	112.50	120.20
17	I	72	THR	CA-C-N	5.13	125.66	120.38
17	I	72	THR	C-N-CA	5.13	125.66	120.38
9	A	740	C	O3'-P-O5'	-5.13	96.31	104.00
9	A	2239	G	P-O5'-C5'	-5.12	113.21	120.90
10	B	87	U	P-O3'-C3'	5.12	127.89	120.20
10	B	5	U	P-O5'-C5'	-5.12	113.22	120.90
3	2	45	SER	N-CA-C	5.12	115.30	108.23
9	A	2465	C	O3'-P-O5'	-5.12	96.32	104.00
9	A	1647	U	O4'-C1'-N1	5.12	115.88	108.20
9	A	2241	A	O3'-P-O5'	-5.12	96.32	104.00
10	B	94	A	P-O5'-C5'	-5.12	113.22	120.90
10	B	83	G	O3'-P-O5'	-5.11	96.33	104.00
23	O	40	ILE	N-CA-C	5.11	115.22	107.75
9	A	781	A	O3'-P-O5'	-5.11	96.33	104.00
9	A	2426	A	O3'-P-O5'	5.11	111.67	104.00
9	A	2874	C	P-O3'-C3'	-5.11	112.53	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	1435	G	O3'-P-O5'	-5.10	96.34	104.00
9	A	1330	C	C2'-C3'-O3'	-5.10	106.05	113.70
9	A	567	U	P-O3'-C3'	-5.10	112.55	120.20
9	A	706	A	P-O5'-C5'	-5.10	113.25	120.90
9	A	206	U	P-O3'-C3'	-5.10	112.55	120.20
9	A	628	G	P-O3'-C3'	-5.09	112.56	120.20
9	A	266	G	P-O3'-C3'	-5.09	112.56	120.20
9	A	1427	A	O3'-P-O5'	5.09	111.64	104.00
29	U	82	VAL	N-CA-C	5.09	119.93	109.34
9	A	2311	A	O3'-P-O5'	-5.09	96.37	104.00
9	A	2712	C	N1-C1'-C2'	5.09	121.63	114.00
9	A	1304	A	P-O5'-C5'	-5.08	113.28	120.90
9	A	1461	C	C3'-C2'-C1'	5.08	106.38	101.30
9	A	529	A	C4'-C3'-C2'	5.08	107.68	102.60
10	B	14	U	O3'-P-O5'	-5.08	96.38	104.00
9	A	1647	U	P-O3'-C3'	5.08	127.82	120.20
21	M	67	VAL	CB-CA-C	-5.08	106.00	111.59
9	A	2155	U	N1-C1'-C2'	5.08	119.62	112.00
9	A	935	C	P-O3'-C3'	-5.08	112.59	120.20
9	A	2283	C	C2'-C3'-O3'	-5.07	106.09	113.70
9	A	2781	A	C2'-C3'-O3'	-5.07	106.09	113.70
9	A	1237	A	P-O3'-C3'	5.07	127.81	120.20
9	A	2022	U	O3'-P-O5'	-5.07	96.40	104.00
9	A	2615	U	P-O5'-C5'	-5.07	113.30	120.90
9	A	2750	A	C4'-C3'-C2'	5.07	107.67	102.60
9	A	412	A	C2'-C3'-O3'	-5.07	106.10	113.70
9	A	2070	A	P-O5'-C5'	-5.07	113.30	120.90
31	W	61	LYS	N-CA-C	-5.07	107.10	113.28
9	A	1513	U	P-O5'-C5'	-5.06	113.31	120.90
9	A	1282	U	O3'-P-O5'	-5.06	96.41	104.00
9	A	1370	C	P-O5'-C5'	-5.06	113.32	120.90
9	A	491	G	C3'-C2'-C1'	5.05	106.35	101.30
9	A	2506	U	C5'-C4'-C3'	5.05	123.58	116.00
9	A	2211	A	O3'-P-O5'	5.05	111.58	104.00
9	A	1943	U	N1-C1'-C2'	5.05	121.57	114.00
9	A	2344	U	N1-C1'-C2'	5.05	121.57	114.00
9	A	2229	U	P-O3'-C3'	5.05	127.77	120.20
25	Q	69	ARG	N-CA-C	-5.05	105.96	111.82
9	A	1692	U	O3'-P-O5'	5.05	111.57	104.00
9	A	1839	G	P-O5'-C5'	-5.05	113.33	120.90
9	A	1778	U	N1-C1'-C2'	5.04	119.57	112.00
9	A	2440	C	C3'-C2'-C1'	5.04	106.34	101.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	A	2781	A	P-O3'-C3'	-5.04	112.63	120.20
9	A	2196	C	P-O5'-C5'	-5.04	113.34	120.90
15	G	139	VAL	N-CA-C	5.04	115.47	110.23
9	A	1735	A	C3'-C2'-C1'	5.03	106.33	101.30
9	A	1968	G	O3'-P-O5'	-5.03	96.45	104.00
9	A	2354	C	O4'-C1'-N1	-5.03	100.95	108.50
9	A	1398	C	C3'-C2'-C1'	5.03	106.33	101.30
9	A	1386	C	N1-C1'-C2'	-5.03	104.46	112.00
9	A	1558	C	O3'-P-O5'	5.03	111.54	104.00
9	A	16	C	P-O3'-C3'	-5.02	112.66	120.20
9	A	752	A	O3'-P-O5'	-5.02	96.47	104.00
13	E	46	GLN	N-CA-C	5.02	121.50	110.80
1	0	9	ARG	N-CA-C	-5.02	106.42	112.54
9	A	1236	G	P-O3'-C3'	5.02	127.73	120.20
9	A	1564	C	N1-C1'-C2'	5.02	119.53	112.00
9	A	1996	C	P-O3'-C3'	5.02	127.73	120.20
9	A	273	G	C3'-C2'-C1'	5.01	106.31	101.30
9	A	1320	C	P-O3'-C3'	5.01	127.72	120.20
9	A	2249	U	C4'-C3'-C2'	5.01	107.61	102.60
9	A	2325	G	P-O3'-C3'	-5.01	112.68	120.20
10	B	89	U	P-O5'-C5'	-5.01	113.38	120.90
9	A	847	U	C4'-C3'-C2'	5.01	107.61	102.60
9	A	1284	A	O3'-P-O5'	-5.01	96.49	104.00
9	A	2893	A	O3'-P-O5'	-5.01	96.49	104.00
9	A	121	G	P-O5'-C5'	-5.00	113.39	120.90
9	A	1473	G	P-O5'-C5'	-5.00	113.40	120.90
9	A	1669	A	P-O5'-C5'	-5.00	113.40	120.90
9	A	1803	A	O3'-P-O5'	-5.00	96.50	104.00
9	A	2833	U	P-O5'-C5'	-5.00	113.40	120.90

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
12	D	191	GLY	Peptide
18	J	110	PRO	Peptide
22	N	101	GLY	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	0	444	0	461	57	0
2	1	410	0	440	73	0
3	2	377	0	418	31	0
4	3	504	0	574	70	0
5	4	302	0	341	47	0
6	5	41	0	27	3	0
7	6	8	0	0	3	0
8	7	59	0	35	3	0
9	A	61251	0	30809	3073	0
10	B	2506	0	1271	107	0
11	C	2083	0	2157	332	0
12	D	1565	0	1616	280	0
13	E	1552	0	1619	205	0
14	F	1411	0	1447	215	0
15	G	1323	0	1374	229	0
16	H	431	0	451	88	0
17	I	1032	0	1088	136	0
18	J	1129	0	1162	225	0
19	K	939	0	1012	158	0
20	L	1045	0	1117	178	0
21	M	1074	0	1157	157	0
22	N	961	0	1000	124	0
23	O	892	0	923	119	0
24	P	917	0	965	192	0
25	Q	947	0	1022	202	0
26	R	816	0	839	151	0
27	S	857	0	922	94	0
28	T	739	0	807	163	0
29	U	780	0	834	102	0
30	V	753	0	780	63	0
31	W	596	0	610	288	0
32	X	625	0	655	113	0
33	Y	509	0	543	79	0
34	Z	449	0	491	51	0
35	5	4	0	0	0	0
36	A	51	0	67	4	0
All	All	89382	0	59034	6838	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 46.

All (6838) 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)
24:P:50:ARG:CG	24:P:57:ALA:H	1.24	1.48
24:P:50:ARG:HD2	24:P:51:ASN:N	1.27	1.41
24:P:50:ARG:HG2	24:P:57:ALA:N	1.13	1.40
25:Q:63:ARG:NH1	25:Q:96:ASP:HA	1.37	1.35
12:D:114:LYS:N	12:D:114:LYS:HE3	1.41	1.33
9:A:1063:G:OP1	17:I:76:ALA:HB3	1.25	1.32
12:D:151:THR:HG22	12:D:152:PRO:CD	1.60	1.30
24:P:50:ARG:CD	24:P:51:ASN:H	1.42	1.30
18:J:111:LYS:HD3	18:J:112:GLY:N	1.44	1.29
32:X:30:PRO:HB2	32:X:32:LEU:CD1	1.61	1.29
9:A:636:G:C6	20:L:111:ILE:HD11	1.70	1.24
9:A:1073:A:C2'	9:A:1074:G:H5''	1.69	1.22
15:G:84:LYS:HG3	15:G:132:LEU:N	1.53	1.22
9:A:636:G:C5	20:L:111:ILE:HD11	1.77	1.20
14:F:35:LEU:HB3	14:F:153:ILE:CG2	1.71	1.20
24:P:50:ARG:HD3	24:P:56:SER:CB	1.71	1.20
30:V:80:HIS:CD2	30:V:83:LYS:H	1.58	1.20
12:D:99:GLU:HG3	12:D:100:LEU:H	1.08	1.18
19:K:18:ARG:HB2	19:K:45:GLU:CG	1.74	1.18
27:S:66:ILE:HA	27:S:69:LEU:HD22	1.26	1.18
20:L:93:ASN:HD22	20:L:94:THR:N	1.42	1.17
15:G:83:THR:HA	15:G:84:LYS:NZ	1.58	1.17
4:3:31:ILE:CD1	4:3:34:LYS:HD2	1.73	1.16
21:M:1:MET:HE3	21:M:2:LEU:H	1.04	1.16
25:Q:4:LYS:HG3	25:Q:5:ARG:H	1.10	1.16
15:G:8:VAL:HG11	15:G:49:LEU:HB2	1.25	1.16
25:Q:63:ARG:HH12	25:Q:96:ASP:CA	1.59	1.16
26:R:49:ILE:HD12	26:R:52:PRO:CA	1.76	1.15
15:G:137:LYS:HA	15:G:140:ILE:HD11	1.28	1.15
2:1:8:ILE:HG23	2:1:51:ALA:HA	1.27	1.14
16:H:32:PRO:HB3	32:X:38:TRP:HB3	1.29	1.14
9:A:265:A:H4'	9:A:266:G:OP1	1.47	1.14
32:X:58:ILE:HD12	32:X:66:VAL:HG21	1.27	1.14
25:Q:69:ARG:CB	25:Q:69:ARG:HH21	1.60	1.13
12:D:151:THR:CG2	12:D:152:PRO:HD3	1.78	1.13
20:L:109:LYS:HG2	20:L:126:ARG:HB3	1.30	1.13
30:V:10:LYS:HD3	30:V:10:LYS:H	1.05	1.13

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1188:U:H2'	9:A:1189:A:H5'	1.31	1.12
9:A:1867:G:O2'	9:A:1868:C:H5'	1.49	1.12
12:D:106:LYS:H	12:D:106:LYS:HD2	1.11	1.12
9:A:1070:A:C2	17:I:9:LYS:HG2	1.84	1.12
14:F:40:GLY:HA2	14:F:84:ILE:HD11	1.27	1.12
15:G:104:LEU:HB2	15:G:112:VAL:CG2	1.79	1.12
26:R:49:ILE:CD1	26:R:52:PRO:HA	1.78	1.11
11:C:16:VAL:HB	11:C:203:VAL:HB	1.25	1.11
9:A:855:G:H21	31:W:23:LYS:HG2	1.13	1.11
14:F:40:GLY:CA	14:F:84:ILE:HD11	1.78	1.11
9:A:1499:C:O2'	9:A:1500:G:H5'	1.48	1.10
18:J:44:TYR:CD2	25:Q:63:ARG:HD3	1.86	1.10
12:D:106:LYS:HB3	12:D:206:ALA:HB3	1.33	1.10
31:W:28:GLU:HB3	31:W:31:LEU:HD21	1.30	1.10
18:J:73:VAL:HG23	18:J:74:TYR:H	1.01	1.10
2:1:24:LYS:HE2	2:1:52:LYS:HB2	1.31	1.10
24:P:13:LYS:HE3	24:P:76:HIS:HA	1.32	1.10
24:P:19:PHE:O	24:P:20:ARG:HB3	1.45	1.10
32:X:30:PRO:HB2	32:X:32:LEU:HD11	1.14	1.10
19:K:18:ARG:HB2	19:K:45:GLU:HG2	1.15	1.09
19:K:71:ARG:HB2	19:K:72:PRO:HD3	1.33	1.09
9:A:1179:G:C6	9:A:1180:U:H1'	1.87	1.09
31:W:23:LYS:HG3	31:W:24:ARG:O	1.52	1.09
4:3:31:ILE:HD11	4:3:34:LYS:CD	1.83	1.09
9:A:866:A:C8	9:A:866:A:H5'	1.86	1.09
9:A:866:A:H5'	9:A:866:A:H8	0.95	1.09
9:A:1060:U:C4'	9:A:1061:U:H5'	1.82	1.09
9:A:1073:A:C3'	9:A:1074:G:H5''	1.82	1.09
13:E:108:ILE:HD11	13:E:180:LEU:HB3	1.31	1.09
19:K:108:ARG:HG2	19:K:108:ARG:HH11	1.16	1.09
11:C:68:ARG:HD3	11:C:103:ILE:HD11	1.27	1.08
16:H:5:LEU:HD13	16:H:13:GLY:HA2	1.36	1.08
9:A:2309:A:O2'	9:A:2310:C:H5'	1.53	1.08
17:I:79:LEU:HA	17:I:83:ALA:HB3	1.34	1.08
13:E:170:ARG:HG2	13:E:170:ARG:HH21	0.97	1.08
9:A:1060:U:H4'	9:A:1061:U:C5'	1.82	1.07
12:D:120:GLY:HA2	12:D:162:ALA:CB	1.83	1.07
14:F:35:LEU:HB3	14:F:153:ILE:HG23	1.27	1.07
28:T:29:THR:HG22	28:T:86:THR:HG22	1.27	1.07
31:W:76:ARG:HH21	31:W:76:ARG:HG3	1.14	1.07
1:0:39:ARG:HH11	1:0:39:ARG:HB2	1.19	1.06

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:2:LYS:H	18:J:2:LYS:HD3	0.91	1.06
25:Q:69:ARG:HB2	25:Q:69:ARG:NH2	1.68	1.06
33:Y:57:LEU:HA	33:Y:60:LYS:HB3	1.35	1.06
9:A:412:A:O2'	9:A:413:C:H5'	1.55	1.06
22:N:73:ASN:HA	22:N:76:VAL:HG12	1.30	1.06
30:V:80:HIS:HD2	30:V:83:LYS:N	1.52	1.06
9:A:1179:G:C5	9:A:1180:U:H1'	1.88	1.06
18:J:114:LEU:HD22	18:J:118:MET:HE3	1.36	1.06
25:Q:63:ARG:HH22	25:Q:96:ASP:N	1.53	1.06
9:A:1791:A:O2'	11:C:205:GLY:HA2	1.55	1.06
24:P:50:ARG:HG3	24:P:57:ALA:O	1.53	1.06
24:P:77:SER:OG	24:P:79:VAL:HG13	1.54	1.06
23:O:2:ASP:HB3	23:O:5:SER:HB2	1.37	1.05
11:C:246:PRO:HG2	11:C:247:TRP:CZ3	1.92	1.05
15:G:72:ASN:O	15:G:76:ILE:HG22	1.56	1.05
21:M:2:LEU:HD23	21:M:69:PRO:HD2	1.38	1.05
31:W:23:LYS:CE	31:W:24:ARG:HG3	1.86	1.05
9:A:2431:U:H5'	9:A:2431:U:H6	1.18	1.05
31:W:23:LYS:HD2	31:W:24:ARG:H	1.20	1.04
21:M:1:MET:HE3	21:M:2:LEU:N	1.70	1.04
25:Q:86:SER:O	26:R:51:VAL:HA	1.56	1.04
9:A:1064:C:OP1	17:I:87:SER:O	1.72	1.04
9:A:1714:U:O2	9:A:1714:U:H2'	1.47	1.04
13:E:79:ARG:HG2	13:E:80:SER:H	1.11	1.04
25:Q:65:ASN:ND2	25:Q:69:ARG:HH22	1.55	1.04
9:A:1011:G:O2'	9:A:1013:C:H5''	1.58	1.04
9:A:137:U:H5''	9:A:140:C:C5	1.94	1.03
9:A:990:A:H8	9:A:990:A:H5'	1.19	1.03
4:3:31:ILE:HD11	4:3:34:LYS:HD2	1.04	1.03
18:J:81:ILE:HG23	18:J:82:GLY:H	1.19	1.03
24:P:102:ARG:HB3	24:P:107:ALA:HB2	1.38	1.03
9:A:1179:G:H3'	9:A:1180:U:H4'	1.41	1.03
33:Y:47:ARG:HH21	33:Y:47:ARG:HG3	1.19	1.03
29:U:5:ARG:HH21	29:U:5:ARG:HG2	1.23	1.03
34:Z:15:ARG:HH11	34:Z:15:ARG:HG3	1.22	1.03
9:A:1073:A:H2'	9:A:1074:G:H5''	1.35	1.02
9:A:1779:U:H5	9:A:1784:A:N7	1.56	1.02
22:N:73:ASN:HA	22:N:76:VAL:CG1	1.89	1.02
24:P:52:ARG:HH11	24:P:52:ARG:CG	1.71	1.02
28:T:61:LEU:HD12	28:T:61:LEU:O	1.57	1.02
28:T:64:LYS:HA	28:T:79:ASP:OD1	1.59	1.02

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1941:C:H6	9:A:1941:C:H5'	1.21	1.02
23:O:88:LYS:HE2	23:O:116:GLN:HE21	1.17	1.02
14:F:7:TYR:CD2	14:F:11:VAL:HG11	1.94	1.02
24:P:87:ARG:HG2	24:P:87:ARG:HH11	1.23	1.02
31:W:23:LYS:HD2	31:W:24:ARG:N	1.74	1.02
9:A:2502:G:H5'	9:A:2503:A:H5''	1.41	1.01
9:A:2680:U:OP1	12:D:114:LYS:HE2	1.60	1.01
14:F:134:GLN:HG2	14:F:135:ILE:H	1.21	1.01
31:W:24:ARG:HB2	31:W:65:LYS:HD3	1.38	1.01
18:J:17:VAL:HG22	18:J:137:PRO:HB2	1.41	1.01
2:1:33:LEU:H	2:1:51:ALA:HB3	1.21	1.01
25:Q:63:ARG:CZ	25:Q:96:ASP:HA	1.88	1.01
9:A:508:A:H4'	9:A:509:C:OP2	1.59	1.00
18:J:124:VAL:HG23	18:J:125:TYR:H	1.24	1.00
21:M:40:ARG:HB2	21:M:93:VAL:HG21	1.43	1.00
27:S:73:LYS:HA	27:S:73:LYS:HE3	1.39	1.00
9:A:545:U:H2'	9:A:546:U:H4'	1.43	1.00
9:A:2151:U:O2'	9:A:2152:G:H5''	1.62	1.00
12:D:114:LYS:N	12:D:114:LYS:CE	2.23	1.00
29:U:25:LYS:HG2	29:U:36:GLU:HB3	1.44	1.00
9:A:1458:U:H4'	9:A:1459:G:O5'	1.60	1.00
9:A:2353:G:H1'	31:W:30:VAL:CG1	1.92	1.00
11:C:12:ARG:HG3	11:C:12:ARG:HH11	1.23	1.00
12:D:5:VAL:H	12:D:32:ASN:HD21	1.10	1.00
15:G:137:LYS:CA	15:G:140:ILE:HD11	1.90	1.00
5:4:36:ARG:HG2	5:4:37:GLN:H	1.22	0.99
9:A:1277:G:H5'	22:N:20:MET:HE1	1.43	0.99
11:C:251:THR:HG22	11:C:252:LYS:H	1.24	0.99
9:A:1813:G:N3	11:C:49:THR:HG21	1.77	0.99
31:W:31:LEU:N	31:W:31:LEU:HD23	1.73	0.99
11:C:106:PRO:HB3	11:C:141:HIS:CE1	1.96	0.99
5:4:9:LYS:H	5:4:9:LYS:HD3	1.26	0.99
28:T:50:LEU:HD12	28:T:50:LEU:H	1.25	0.99
14:F:39:VAL:HG11	14:F:49:LEU:HD13	1.42	0.99
9:A:2356:U:H4'	31:W:16:GLU:HG3	1.42	0.99
14:F:11:VAL:HG12	14:F:12:VAL:H	1.28	0.99
9:A:1071:G:H1'	9:A:1089:A:N7	1.78	0.99
9:A:335:C:H5''	29:U:81:ARG:HD3	1.45	0.99
9:A:866:A:H8	9:A:866:A:C5'	1.76	0.99
10:B:90:C:H6	10:B:90:C:H5''	1.23	0.99
9:A:1716:U:O2'	9:A:1717:A:H5'	1.61	0.99

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2680:U:P	12:D:114:LYS:HE2	2.02	0.99
11:C:75:ALA:HB2	11:C:95:TYR:CD2	1.98	0.99
14:F:43:ILE:HG22	14:F:82:TYR:CE1	1.97	0.99
31:W:39:GLN:HG2	31:W:41:GLY:H	1.26	0.99
9:A:2148:G:H2'	9:A:2149:U:O4'	1.63	0.98
18:J:25:LEU:C	18:J:25:LEU:HD22	1.88	0.98
9:A:958:U:H6	9:A:958:U:H5'	1.21	0.98
9:A:2214:C:H5'	9:A:2214:C:H6	1.26	0.98
9:A:2440:C:H6	9:A:2440:C:H5'	1.26	0.98
2:1:34:GLU:HG2	2:1:49:LYS:HG3	1.46	0.98
18:J:2:LYS:HD3	18:J:2:LYS:N	1.70	0.98
31:W:18:LYS:HG3	31:W:19:ARG:H	1.28	0.98
9:A:762:U:H4'	9:A:763:G:O5'	1.57	0.98
24:P:50:ARG:HD3	24:P:56:SER:HB3	1.41	0.98
9:A:303:G:H2'	9:A:304:U:H6	1.28	0.98
9:A:1277:G:H5'	22:N:20:MET:CE	1.94	0.98
14:F:71:LYS:HD3	14:F:80:GLN:HG3	1.46	0.98
22:N:24:MET:HG2	22:N:44:LEU:HD22	1.46	0.97
12:D:13:ARG:HH12	24:P:74:GLN:NE2	1.61	0.97
13:E:170:ARG:HH21	13:E:170:ARG:CG	1.77	0.97
31:W:39:GLN:HG3	31:W:42:THR:N	1.78	0.97
14:F:131:VAL:HG22	14:F:151:LEU:HD12	1.45	0.97
19:K:21:CYS:HA	19:K:41:ILE:HD12	1.43	0.97
9:A:1627:G:H5'	9:A:1627:G:C8	1.99	0.97
18:J:88:THR:HG22	18:J:91:GLU:CG	1.92	0.97
32:X:38:TRP:HB2	32:X:45:PHE:HE2	1.26	0.97
9:A:1941:C:H5'	9:A:1941:C:C6	1.98	0.97
25:Q:4:LYS:HG3	25:Q:5:ARG:N	1.76	0.97
15:G:84:LYS:HG3	15:G:132:LEU:H	1.28	0.97
13:E:146:VAL:HG23	13:E:167:VAL:HG23	1.46	0.97
9:A:1421:G:O2'	9:A:1422:G:H5'	1.65	0.97
9:A:1784:A:H4'	9:A:1785:A:O5'	1.64	0.97
9:A:2328:A:H2'	9:A:2329:U:C6	1.99	0.97
18:J:44:TYR:HD2	25:Q:63:ARG:HD3	1.28	0.97
9:A:92:U:H6	9:A:92:U:H5''	1.28	0.97
9:A:1962:C:H4'	9:A:1963:U:OP1	1.65	0.97
5:4:9:LYS:H	5:4:9:LYS:CD	1.77	0.97
12:D:113:SER:C	12:D:114:LYS:HE3	1.90	0.97
16:H:49:ALA:HB3	16:H:50:ARG:NH2	1.79	0.96
20:L:81:ASP:O	20:L:82:LEU:HB3	1.63	0.96
22:N:103:ARG:HB2	22:N:110:MET:HE3	1.44	0.96

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:W:23:LYS:HE3	31:W:24:ARG:HG3	1.44	0.96
9:A:1084:A:H2'	9:A:1085:A:C8	1.99	0.96
18:J:44:TYR:HB2	25:Q:63:ARG:HB3	1.45	0.96
9:A:1188:U:C2'	9:A:1189:A:H5'	1.94	0.96
14:F:34:THR:HG23	14:F:89:THR:HG23	1.47	0.96
18:J:88:THR:HG22	18:J:91:GLU:HG3	1.45	0.96
18:J:111:LYS:CD	18:J:112:GLY:H	1.77	0.96
21:M:35:ALA:O	21:M:128:THR:HA	1.66	0.96
18:J:77:HIS:CD2	18:J:79:GLY:H	1.82	0.96
24:P:52:ARG:HH11	24:P:52:ARG:HG3	1.31	0.96
12:D:61:THR:OG1	12:D:63:PRO:HD2	1.66	0.96
19:K:71:ARG:CB	19:K:72:PRO:HD3	1.96	0.95
26:R:51:VAL:HB	26:R:52:PRO:CD	1.95	0.95
15:G:8:VAL:O	15:G:9:VAL:HG12	1.65	0.95
9:A:923:G:H21	31:W:23:LYS:NZ	1.63	0.95
18:J:44:TYR:CD1	18:J:44:TYR:O	2.20	0.95
25:Q:63:ARG:HH12	25:Q:96:ASP:HA	0.82	0.95
29:U:80:ASP:OD1	29:U:95:PHE:HB3	1.67	0.95
9:A:2820:A:H8	9:A:2820:A:H3'	1.28	0.95
28:T:48:GLN:HA	28:T:48:GLN:HE21	1.29	0.95
15:G:83:THR:HA	15:G:84:LYS:HZ1	1.30	0.95
17:I:15:GLY:HA2	17:I:50:LYS:HB3	1.47	0.95
9:A:1340:U:H4'	9:A:1341:G:OP2	1.65	0.95
9:A:2197:U:O2'	9:A:2198:A:H2'	1.64	0.95
9:A:2540:C:H2'	9:A:2541:A:H5'	1.49	0.95
14:F:134:GLN:O	14:F:136:ILE:HG12	1.67	0.95
24:P:95:LYS:HG2	24:P:97:TYR:CE1	2.02	0.95
25:Q:69:ARG:HH21	25:Q:69:ARG:HB2	1.21	0.95
14:F:11:VAL:HG12	14:F:12:VAL:N	1.77	0.94
9:A:923:G:N3	31:W:23:LYS:HE2	1.80	0.94
9:A:996:A:H4'	25:Q:91:ARG:HG2	1.49	0.94
9:A:35:G:H8	9:A:35:G:H5'	1.30	0.94
9:A:1585:C:C2'	9:A:1586:A:H5'	1.96	0.94
28:T:61:LEU:HD12	28:T:61:LEU:C	1.91	0.94
27:S:59:GLU:HA	27:S:64:ALA:CB	1.98	0.94
9:A:2820:A:H3'	9:A:2820:A:C8	2.02	0.94
27:S:96:ILE:C	27:S:96:ILE:HD12	1.92	0.94
31:W:18:LYS:HA	31:W:36:ILE:CG1	1.97	0.94
9:A:100:U:H4'	9:A:101:A:O5'	1.67	0.94
9:A:1020:A:H4'	9:A:1021:A:O5'	1.66	0.94
20:L:112:LEU:HD12	20:L:130:GLY:HA3	1.49	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:8:ILE:HD11	2:1:24:LYS:HG2	1.49	0.94
9:A:2352:A:N1	31:W:30:VAL:HG11	1.83	0.94
13:E:119:ILE:CD1	13:E:187:VAL:HA	1.96	0.94
28:T:29:THR:HA	28:T:86:THR:HA	1.49	0.94
9:A:1063:G:P	17:I:76:ALA:HB3	2.08	0.93
18:J:64:VAL:O	18:J:65:THR:HB	1.68	0.93
3:2:1:MET:HE3	3:2:2:LYS:H	1.31	0.93
9:A:1644:C:O2'	9:A:1645:G:H5'	1.68	0.93
12:D:14:ILE:HA	24:P:11:GLN:HE22	1.33	0.93
13:E:79:ARG:HG2	13:E:80:SER:N	1.80	0.93
25:Q:91:ARG:HB3	25:Q:93:ILE:HG22	1.49	0.93
20:L:132:ARG:HG3	20:L:142:ILE:HD12	1.49	0.93
24:P:77:SER:HG	24:P:79:VAL:HG13	1.32	0.93
14:F:129:MET:HG2	14:F:153:ILE:CD1	1.98	0.93
9:A:636:G:C6	20:L:111:ILE:CD1	2.52	0.93
13:E:170:ARG:HG2	13:E:170:ARG:NH2	1.73	0.93
9:A:1885:A:H2'	9:A:1886:U:H6	1.31	0.93
28:T:31:VAL:C	28:T:32:LEU:HD23	1.94	0.93
25:Q:4:LYS:HE2	25:Q:7:VAL:HG13	1.51	0.93
9:A:2328:A:H2'	9:A:2329:U:H6	1.30	0.93
9:A:729:G:N3	9:A:729:G:H2'	1.80	0.92
9:A:1064:C:H5'	17:I:88:GLY:HA3	1.50	0.92
9:A:1073:A:H3'	9:A:1074:G:H5''	1.51	0.92
19:K:18:ARG:H	19:K:45:GLU:HB2	1.31	0.92
12:D:120:GLY:HA2	12:D:162:ALA:HB2	1.50	0.92
16:H:4:ILE:HG23	16:H:17:ASP:O	1.68	0.92
9:A:558:U:P	18:J:113:PRO:HG2	2.09	0.92
13:E:112:LEU:HD13	13:E:186:VAL:HG11	1.51	0.92
28:T:39:THR:HB	28:T:42:GLU:HB2	1.50	0.92
3:2:37:LYS:HE2	9:A:469:G:O6	1.69	0.92
5:4:23:ILE:HD13	9:A:1032:A:H1'	1.52	0.92
9:A:855:G:N2	31:W:23:LYS:HG2	1.84	0.92
12:D:151:THR:CG2	12:D:152:PRO:CD	2.43	0.92
16:H:2:GLN:O	16:H:3:VAL:HG22	1.70	0.92
17:I:23:VAL:HB	17:I:27:LEU:HB3	1.49	0.92
18:J:56:VAL:HG12	18:J:57:LEU:H	1.33	0.92
22:N:79:LEU:O	22:N:80:PHE:HB2	1.70	0.92
28:T:32:LEU:H	28:T:83:ALA:HB3	1.33	0.92
9:A:933:A:H2'	9:A:933:A:N3	1.83	0.92
9:A:1664:A:H5''	9:A:1665:A:OP2	1.70	0.92
13:E:119:ILE:HD13	13:E:187:VAL:HA	1.48	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Q:111:LYS:CE	26:R:50:GLY:HA2	1.99	0.92
27:S:73:LYS:HE3	27:S:74:ILE:N	1.84	0.92
9:A:491:G:H2'	9:A:492:A:C8	2.04	0.92
11:C:16:VAL:H	11:C:203:VAL:HG12	1.34	0.92
18:J:2:LYS:H	18:J:2:LYS:CD	1.81	0.92
14:F:10:GLU:O	14:F:11:VAL:HB	1.67	0.92
19:K:21:CYS:HA	19:K:41:ILE:CD1	2.00	0.91
9:A:923:G:H21	31:W:23:LYS:HZ3	1.16	0.91
14:F:35:LEU:HB3	14:F:153:ILE:HG22	1.53	0.91
33:Y:31:GLN:HG2	33:Y:37:LEU:HB2	1.53	0.91
2:1:33:LEU:N	2:1:51:ALA:HB3	1.84	0.91
14:F:72:SER:HB2	14:F:80:GLN:H	1.36	0.91
1:0:9:ARG:HH21	1:0:9:ARG:HG3	1.34	0.91
9:A:1060:U:H4'	9:A:1061:U:H5'	0.94	0.91
9:A:1585:C:H2'	9:A:1586:A:O4'	1.70	0.91
27:S:1:MET:HA	27:S:1:MET:HE2	1.52	0.91
12:D:97:SER:C	12:D:99:GLU:HG2	1.96	0.91
3:2:3:ARG:HG2	3:2:3:ARG:HH21	1.33	0.91
9:A:2503:A:H4'	9:A:2504:U:OP1	1.67	0.91
11:C:12:ARG:HH11	11:C:12:ARG:CG	1.83	0.91
12:D:120:GLY:HA2	12:D:162:ALA:HB1	1.51	0.91
12:D:99:GLU:HG3	12:D:100:LEU:N	1.85	0.91
23:O:76:LYS:O	23:O:80:GLU:HG2	1.70	0.90
9:A:894:U:H2'	9:A:895:U:C6	2.06	0.90
9:A:1348:C:H2'	9:A:1349:C:H5'	1.53	0.90
9:A:1929:G:H4'	9:A:1930:G:OP1	1.69	0.90
18:J:43:GLU:O	18:J:45:THR:CG2	2.19	0.90
32:X:58:ILE:CD1	32:X:66:VAL:HG21	2.02	0.90
12:D:91:THR:O	12:D:93:GLY:N	2.05	0.90
26:R:80:ARG:C	26:R:81:LYS:HD3	1.97	0.90
11:C:251:THR:HG22	11:C:252:LYS:N	1.86	0.90
8:7:74:C:N3	9:A:2252:G:N2	2.19	0.90
9:A:962:G:H21	9:A:2250:G:H1	1.14	0.90
25:Q:93:ILE:HG23	25:Q:94:LEU:N	1.86	0.90
27:S:73:LYS:HE3	27:S:73:LYS:CA	2.02	0.90
31:W:37:VAL:C	31:W:38:ARG:HG2	1.95	0.90
9:A:777:G:O2'	9:A:778:G:H5'	1.71	0.90
9:A:1935:G:H1'	9:A:1964:G:N2	1.86	0.90
9:A:1936:A:H2	9:A:1943:U:C5	1.89	0.90
12:D:110:THR:HG23	12:D:171:THR:HG22	1.54	0.90
32:X:5:GLN:HE21	32:X:49:ARG:H	1.20	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2431:U:H5'	9:A:2431:U:C6	2.06	0.90
11:C:28:PRO:HG2	11:C:33:LEU:HD11	1.53	0.90
21:M:114:ARG:HG2	21:M:130:PHE:CE1	2.07	0.90
9:A:603:A:H4'	9:A:604:G:O5'	1.67	0.90
9:A:215:G:H4'	9:A:216:A:H4'	1.52	0.89
9:A:1653:G:H1	22:N:11:ASN:ND2	1.69	0.89
12:D:104:VAL:HA	12:D:106:LYS:HZ3	1.35	0.89
15:G:104:LEU:HB2	15:G:112:VAL:HG21	1.49	0.89
20:L:110:VAL:O	20:L:111:ILE:HB	1.71	0.89
9:A:417:C:H2'	9:A:418:C:H6	1.37	0.89
9:A:1498:C:O2'	9:A:1499:C:H6	1.55	0.89
9:A:784:G:C6	11:C:227:VAL:HG11	2.07	0.89
9:A:2540:C:C2'	9:A:2541:A:H5'	2.03	0.89
18:J:73:VAL:HG23	18:J:74:TYR:N	1.85	0.89
26:R:9:GLY:C	26:R:10:LYS:HD3	1.98	0.89
2:1:33:LEU:HB3	2:1:51:ALA:CB	2.02	0.89
9:A:1110:G:HO2'	9:A:1111:A:H8	1.21	0.89
9:A:1799:G:H4'	9:A:1800:C:O5'	1.71	0.89
11:C:106:PRO:HB3	11:C:141:HIS:HE1	1.35	0.89
13:E:46:GLN:HG3	13:E:87:ALA:H	1.33	0.89
29:U:5:ARG:HH21	29:U:5:ARG:CG	1.84	0.89
32:X:6:VAL:HG13	32:X:7:THR:HG23	1.53	0.89
9:A:1056:G:H5''	9:A:1057:A:H5'	1.54	0.89
9:A:1627:G:H5'	9:A:1627:G:H8	1.37	0.89
11:C:80:LEU:HD11	11:C:109:LEU:HG	1.53	0.89
12:D:106:LYS:HD2	12:D:106:LYS:N	1.87	0.89
2:1:8:ILE:CG2	2:1:51:ALA:HA	2.02	0.89
13:E:110:SER:O	13:E:113:VAL:HG12	1.73	0.89
18:J:25:LEU:HD22	18:J:26:GLY:N	1.88	0.89
28:T:70:HIS:HB2	28:T:73:ARG:O	1.73	0.89
9:A:990:A:H5'	9:A:990:A:C8	2.08	0.89
16:H:8:LYS:O	16:H:13:GLY:HA3	1.73	0.89
16:H:41:LYS:HA	16:H:44:ILE:HG12	1.53	0.89
20:L:91:ASP:H	20:L:94:THR:HG21	1.36	0.89
31:W:14:ASP:O	31:W:15:SER:HB2	1.70	0.88
19:K:95:ILE:C	19:K:95:ILE:HD12	1.98	0.88
9:A:2502:G:H5'	9:A:2503:A:C5'	2.02	0.88
11:C:20:ASN:HD21	11:C:22:GLU:HG2	1.36	0.88
24:P:50:ARG:HD3	24:P:56:SER:HB2	1.55	0.88
9:A:483:A:O2'	29:U:56:GLY:HA2	1.73	0.88
9:A:1746:A:H2'	9:A:1747:U:C6	2.08	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:G:8:VAL:CG1	15:G:49:LEU:HB2	2.04	0.88
22:N:12:ARG:HH21	22:N:12:ARG:HG3	1.37	0.88
31:W:23:LYS:O	31:W:66:VAL:HB	1.73	0.88
9:A:1429:G:O2'	9:A:1430:G:H5'	1.73	0.88
31:W:18:LYS:HG3	31:W:19:ARG:N	1.85	0.88
18:J:111:LYS:CD	18:J:112:GLY:N	2.33	0.88
28:T:18:GLU:OE2	28:T:18:GLU:HA	1.73	0.88
9:A:153:U:O2'	9:A:154:U:H5'	1.73	0.88
9:A:1287:A:H5'	22:N:103:ARG:HD2	1.54	0.88
24:P:33:GLU:HG3	24:P:34:GLY:H	1.38	0.88
30:V:10:LYS:HD3	30:V:10:LYS:N	1.87	0.88
34:Z:40:THR:HG22	34:Z:43:ILE:HG23	1.55	0.88
9:A:2579:C:C2'	9:A:2580:U:H5'	2.04	0.88
27:S:73:LYS:HE3	27:S:74:ILE:H	1.36	0.88
9:A:409:G:O2'	9:A:410:G:H5'	1.74	0.88
9:A:726:G:O2'	9:A:727:A:P	2.32	0.88
9:A:1056:G:O2'	9:A:1086:A:H1'	1.73	0.88
9:A:1188:U:H2'	9:A:1189:A:C5'	2.04	0.87
27:S:43:ALA:HA	27:S:46:LEU:HD12	1.54	0.87
32:X:58:ILE:HD11	32:X:66:VAL:HG11	1.55	0.87
9:A:434:U:H4'	9:A:435:C:OP1	1.74	0.87
9:A:1414:C:C4	9:A:1415:U:H5	1.91	0.87
9:A:2790:U:H4'	9:A:2791:G:OP1	1.74	0.87
19:K:95:ILE:HD12	19:K:95:ILE:O	1.73	0.87
9:A:2636:C:H2'	9:A:2637:U:C6	2.09	0.87
13:E:149:ILE:HD11	13:E:172:ALA:HA	1.56	0.87
18:J:77:HIS:HD2	18:J:79:GLY:N	1.71	0.87
31:W:46:ALA:HB3	31:W:79:ILE:O	1.74	0.87
9:A:272:A:HO2'	9:A:273:G:H8	0.91	0.87
9:A:357:C:H2'	9:A:358:U:C6	2.09	0.87
9:A:1063:G:OP1	17:I:76:ALA:CB	2.19	0.87
24:P:20:ARG:HD3	24:P:112:ARG:NH1	1.89	0.87
31:W:40:ARG:HD3	31:W:45:HIS:CE1	2.09	0.87
9:A:2138:G:H1	9:A:2153:C:N4	1.70	0.87
4:3:5:THR:HG21	9:A:243:U:OP1	1.72	0.87
9:A:1936:A:C2	9:A:1943:U:H5	1.93	0.87
19:K:19:VAL:HG22	19:K:41:ILE:HG13	1.57	0.87
9:A:2138:G:H1	9:A:2153:C:H42	1.23	0.87
11:C:67:LYS:HG2	11:C:150:GLY:HA2	1.56	0.87
9:A:2661:G:O2'	9:A:2662:A:H5'	1.74	0.87
18:J:88:THR:CG2	18:J:91:GLU:HG3	2.04	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:111:LYS:HD3	18:J:112:GLY:H	1.03	0.87
21:M:1:MET:CE	21:M:2:LEU:H	1.88	0.87
9:A:2207:C:H2'	9:A:2208:C:H6	1.39	0.87
10:B:45:A:O2'	10:B:46:A:H5'	1.73	0.87
9:A:1779:U:C5	9:A:1784:A:N7	2.43	0.86
11:C:33:LEU:HD21	11:C:62:ARG:HD3	1.57	0.86
19:K:18:ARG:HH11	19:K:18:ARG:HG3	1.40	0.86
24:P:50:ARG:HG2	24:P:56:SER:C	1.99	0.86
27:S:66:ILE:HD13	27:S:67:ASP:N	1.88	0.86
15:G:35:THR:C	15:G:36:LEU:HD22	1.99	0.86
18:J:77:HIS:HD2	18:J:79:GLY:H	0.90	0.86
21:M:40:ARG:HB2	21:M:93:VAL:CG2	2.05	0.86
9:A:1062:G:OP1	9:A:1070:A:H4'	1.75	0.86
12:D:169:ARG:O	12:D:170:VAL:HG13	1.75	0.86
13:E:79:ARG:CG	13:E:80:SER:H	1.85	0.86
20:L:93:ASN:ND2	20:L:94:THR:N	2.23	0.86
20:L:110:VAL:HG11	20:L:131:ALA:HB1	1.56	0.86
23:O:40:ILE:HG12	23:O:47:VAL:HG12	1.57	0.86
32:X:30:PRO:CB	32:X:32:LEU:HD11	2.03	0.86
15:G:126:THR:HG22	15:G:127:GLN:N	1.88	0.86
9:A:558:U:OP1	18:J:113:PRO:HG2	1.75	0.86
21:M:64:TRP:HZ3	21:M:106:ASP:HB2	1.39	0.86
24:P:102:ARG:CB	24:P:107:ALA:HB2	2.05	0.86
14:F:129:MET:HE2	14:F:153:ILE:HD11	1.58	0.86
9:A:1277:G:H4'	22:N:20:MET:HE2	1.57	0.86
29:U:35:VAL:HG12	29:U:38:ILE:HG12	1.57	0.86
15:G:33:THR:C	15:G:34:ARG:HD3	2.00	0.86
9:A:646:U:H3'	9:A:647:G:H5''	1.58	0.86
9:A:1510:G:H2'	9:A:1511:G:H8	1.39	0.86
9:A:2571:U:O2'	12:D:151:THR:HG21	1.76	0.86
11:C:246:PRO:HG2	11:C:247:TRP:CH2	2.09	0.86
22:N:36:THR:HG23	22:N:37:THR:O	1.76	0.86
10:B:46:A:H2'	10:B:47:C:C6	2.11	0.86
13:E:96:VAL:O	13:E:96:VAL:HG12	1.72	0.86
20:L:110:VAL:HG12	20:L:111:ILE:N	1.89	0.86
28:T:29:THR:CG2	28:T:86:THR:HG22	2.04	0.86
14:F:132:ARG:O	14:F:133:GLU:HB3	1.74	0.85
19:K:108:ARG:HH11	19:K:108:ARG:CG	1.89	0.85
31:W:18:LYS:HA	31:W:36:ILE:HG13	1.58	0.85
9:A:74:A:H4'	9:A:75:G:O5'	1.75	0.85
9:A:1073:A:H3'	9:A:1074:G:C5'	2.03	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:T:15:HIS:HB3	28:T:31:VAL:CG2	2.04	0.85
9:A:1885:A:H2'	9:A:1886:U:C6	2.11	0.85
33:Y:9:LYS:HA	33:Y:9:LYS:NZ	1.91	0.85
18:J:110:PRO:HB2	18:J:111:LYS:HG3	1.56	0.85
12:D:174:SER:O	12:D:175:LEU:HB2	1.75	0.85
9:A:1070:A:C2	17:I:9:LYS:CG	2.58	0.85
9:A:2444:G:OP2	13:E:63:LYS:HE2	1.75	0.85
23:O:88:LYS:CE	23:O:116:GLN:HE21	1.89	0.85
12:D:34:VAL:HG22	12:D:94:GLN:H	1.41	0.85
24:P:50:ARG:CD	24:P:51:ASN:N	2.14	0.85
9:A:528:A:C2	9:A:2043:C:H4'	2.12	0.85
21:M:35:ALA:O	21:M:36:VAL:HG12	1.76	0.85
26:R:49:ILE:HB	26:R:51:VAL:O	1.76	0.85
24:P:3:ILE:O	24:P:3:ILE:HD13	1.76	0.85
27:S:73:LYS:HA	27:S:73:LYS:CE	1.99	0.85
31:W:37:VAL:HG11	31:W:55:ASP:HB2	1.57	0.85
2:1:24:LYS:HE2	2:1:52:LYS:CB	2.06	0.85
9:A:2353:G:H1'	31:W:30:VAL:HG13	1.58	0.84
19:K:113:MET:SD	19:K:116:ILE:HD11	2.17	0.84
27:S:82:MET:HG3	27:S:98:LYS:HB2	1.57	0.84
31:W:28:GLU:HB3	31:W:31:LEU:CD2	2.07	0.84
9:A:855:G:H21	31:W:23:LYS:CG	1.88	0.84
1:0:47:TYR:CE2	1:0:52:LYS:HB2	2.11	0.84
11:C:20:ASN:HD22	11:C:20:ASN:C	1.83	0.84
15:G:84:LYS:N	15:G:84:LYS:HE2	1.93	0.84
1:0:33:SER:OG	1:0:35:GLU:HG3	1.76	0.84
5:4:9:LYS:C	5:4:10:LEU:HD23	2.02	0.84
9:A:303:G:H2'	9:A:304:U:C6	2.12	0.84
9:A:2813:A:H2	9:A:2887:A:H61	1.25	0.84
15:G:137:LYS:HA	15:G:140:ILE:CD1	2.06	0.84
9:A:1068:G:H2'	9:A:1069:A:H5'	1.58	0.84
9:A:2311:A:H1'	14:F:78:ILE:CD1	2.08	0.84
9:A:2352:A:C2	31:W:30:VAL:HG11	2.12	0.84
11:C:131:MET:HA	11:C:134:ILE:HD12	1.59	0.84
14:F:131:VAL:CG2	14:F:151:LEU:HD12	2.07	0.84
15:G:60:GLY:O	15:G:61:TRP:HB2	1.75	0.84
21:M:62:LYS:HD3	21:M:64:TRP:CZ2	2.13	0.84
16:H:31:VAL:HB	16:H:32:PRO:CD	2.07	0.84
18:J:44:TYR:O	18:J:44:TYR:HD1	1.59	0.84
9:A:1150:C:H2'	9:A:1151:A:O5'	1.78	0.84
10:B:109:A:O2'	10:B:110:C:H5'	1.77	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:P:9:GLN:HA	24:P:12:MET:HG3	1.56	0.84
9:A:2440:C:H5'	9:A:2440:C:C6	2.12	0.84
12:D:104:VAL:HA	12:D:106:LYS:NZ	1.93	0.84
9:A:545:U:H2'	9:A:546:U:C4'	2.07	0.84
14:F:37:MET:HG2	14:F:56:LEU:HG	1.58	0.84
14:F:43:ILE:HG22	14:F:82:TYR:CD1	2.13	0.84
23:O:7:ARG:HG3	23:O:96:GLY:HA3	1.60	0.84
25:Q:29:ARG:HH11	25:Q:29:ARG:HG3	1.41	0.84
5:4:10:LEU:HD12	5:4:33:HIS:CD2	2.13	0.83
9:A:372:G:O4'	32:X:60:LYS:HE3	1.77	0.83
11:C:165:ALA:HB3	11:C:172:THR:HG23	1.60	0.83
24:P:112:ARG:C	24:P:113:LEU:HD23	2.03	0.83
26:R:24:LYS:HA	26:R:94:THR:HG23	1.59	0.83
31:W:40:ARG:HB2	31:W:56:HIS:ND1	1.91	0.83
4:3:61:LEU:HB3	4:3:64:ALA:HB2	1.60	0.83
9:A:856:G:H1'	31:W:23:LYS:HB3	1.60	0.83
9:A:958:U:H5'	9:A:958:U:C6	2.10	0.83
18:J:124:VAL:O	18:J:125:TYR:HB2	1.78	0.83
9:A:1178:C:H2'	9:A:1179:G:N7	1.94	0.83
24:P:61:ARG:HG2	24:P:70:GLU:HG2	1.58	0.83
31:W:23:LYS:CD	31:W:24:ARG:H	1.90	0.83
16:H:10:ALA:O	16:H:12:LEU:N	2.12	0.83
19:K:18:ARG:N	19:K:45:GLU:HB2	1.94	0.83
30:V:10:LYS:NZ	30:V:11:GLU:HG3	1.93	0.83
31:W:40:ARG:HG2	31:W:52:CYS:SG	2.17	0.83
9:A:2103:C:H2'	9:A:2104:C:H5'	1.58	0.83
9:A:250:G:H2'	9:A:251:A:C8	2.13	0.83
13:E:146:VAL:HG23	13:E:167:VAL:CG2	2.09	0.83
20:L:30:THR:O	20:L:33:ARG:HG2	1.78	0.83
28:T:28:ASN:C	28:T:91:GLN:HE22	1.86	0.83
31:W:9:THR:HG22	31:W:10:ARG:NH1	1.94	0.83
11:C:251:THR:CG2	11:C:252:LYS:H	1.91	0.83
15:G:33:THR:HA	15:G:34:ARG:HH11	1.44	0.83
24:P:50:ARG:CD	24:P:56:SER:CB	2.55	0.83
9:A:278:A:C2	9:A:362:A:C8	2.67	0.83
19:K:21:CYS:HB2	19:K:39:ILE:HD11	1.61	0.83
28:T:73:ARG:NH2	28:T:73:ARG:HB3	1.93	0.83
31:W:17:ALA:HA	31:W:35:ILE:HG23	1.60	0.83
33:Y:17:GLU:HG3	33:Y:18:LEU:N	1.92	0.83
31:W:28:GLU:CG	31:W:29:SER:H	1.92	0.82
9:A:1073:A:C3'	9:A:1074:G:C5'	2.57	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1286:A:H4'	9:A:1287:A:OP1	1.78	0.82
13:E:23:PHE:CD1	13:E:111:GLU:HG3	2.14	0.82
21:M:2:LEU:CD2	21:M:69:PRO:HD2	2.08	0.82
27:S:66:ILE:HD13	27:S:66:ILE:C	2.04	0.82
29:U:93:ARG:NH1	29:U:102:ILE:HD11	1.94	0.82
9:A:1734:G:HO2'	9:A:1735:A:H8	0.83	0.82
27:S:1:MET:HE2	27:S:2:GLU:H	1.42	0.82
31:W:28:GLU:HB3	31:W:31:LEU:HD11	1.61	0.82
9:A:243:U:O2'	9:A:244:A:H5'	1.79	0.82
9:A:2758:A:H2'	9:A:2759:G:H5'	1.59	0.82
14:F:11:VAL:CG1	14:F:12:VAL:N	2.42	0.82
14:F:134:GLN:HG2	14:F:135:ILE:N	1.95	0.82
16:H:32:PRO:HB3	32:X:38:TRP:CB	2.07	0.82
32:X:52:ALA:O	32:X:53:LYS:HB2	1.79	0.82
14:F:34:THR:CG2	14:F:89:THR:HG23	2.09	0.82
14:F:127:TYR:O	14:F:128:SER:HB2	1.78	0.82
24:P:83:ILE:C	24:P:83:ILE:HD13	2.04	0.82
9:A:1078:U:H4'	9:A:1079:C:H6	1.45	0.82
18:J:124:VAL:HG23	18:J:125:TYR:N	1.87	0.82
25:Q:85:ALA:O	25:Q:87:VAL:O	1.96	0.82
9:A:1069:A:O2'	9:A:1070:A:H5''	1.79	0.82
11:C:79:ARG:NH2	11:C:92:LEU:HD22	1.94	0.82
25:Q:111:LYS:HE2	26:R:50:GLY:HA2	1.62	0.82
27:S:66:ILE:HA	27:S:69:LEU:CD2	2.08	0.82
28:T:44:LYS:HG3	28:T:55:VAL:HG11	1.61	0.82
4:3:22:LYS:HA	4:3:47:ALA:O	1.80	0.82
9:A:2068:U:H6	9:A:2068:U:H5''	1.44	0.82
9:A:1287:A:OP2	22:N:103:ARG:HG3	1.80	0.82
9:A:2352:A:C6	31:W:30:VAL:HG11	2.14	0.81
9:A:2800:A:C2	9:A:2895:G:H1'	2.14	0.81
10:B:53:A:O2'	10:B:54:G:H5'	1.78	0.81
11:C:16:VAL:H	11:C:203:VAL:CG1	1.92	0.81
14:F:100:GLU:HG2	14:F:104:THR:OG1	1.80	0.81
19:K:10:VAL:HB	19:K:16:ALA:HB1	1.62	0.81
31:W:39:GLN:C	31:W:41:GLY:N	2.34	0.81
9:A:35:G:H5'	9:A:35:G:C8	2.15	0.81
9:A:1061:U:H3'	9:A:1062:G:H5''	1.61	0.81
9:A:1378:A:O2'	9:A:1379:U:H3'	1.80	0.81
9:A:1707:G:H2'	9:A:1708:C:C6	2.15	0.81
9:A:2092:U:H4'	9:A:2093:G:O5'	1.78	0.81
20:L:77:ILE:CD1	20:L:108:ALA:HB1	2.09	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Q:91:ARG:NH2	25:Q:93:ILE:HD13	1.96	0.81
34:Z:15:ARG:HG3	34:Z:15:ARG:NH1	1.90	0.81
2:1:49:LYS:O	2:1:50:GLU:HB3	1.78	0.81
9:A:995:C:H6	9:A:995:C:H5'	1.45	0.81
9:A:1248:G:OP2	13:E:44:ARG:NH1	2.13	0.81
10:B:88:C:H5'	10:B:88:C:H6	1.44	0.81
18:J:12:LYS:O	18:J:13:ARG:HB2	1.79	0.81
19:K:10:VAL:CB	19:K:16:ALA:HB1	2.10	0.81
22:N:73:ASN:CA	22:N:76:VAL:HG12	2.09	0.81
24:P:52:ARG:HG3	24:P:52:ARG:NH1	1.94	0.81
26:R:64:VAL:O	26:R:64:VAL:HG12	1.81	0.81
9:A:704:G:O2'	9:A:726:G:N2	2.13	0.81
15:G:126:THR:HG22	15:G:128:THR:H	1.44	0.81
25:Q:63:ARG:HH22	25:Q:96:ASP:CA	1.94	0.81
9:A:1078:U:H4'	9:A:1079:C:C6	2.16	0.81
23:O:15:ARG:HH11	23:O:15:ARG:HG3	1.44	0.81
9:A:1159:U:C2'	9:A:1160:G:H5'	2.10	0.81
25:Q:65:ASN:HD21	25:Q:69:ARG:HH22	1.27	0.81
9:A:1339:G:N2	9:A:1603:A:H1'	1.96	0.81
15:G:140:ILE:HD12	15:G:140:ILE:N	1.95	0.81
19:K:91:SER:O	19:K:93:GLN:HB2	1.81	0.81
23:O:41:ALA:HB2	23:O:48:LEU:HD21	1.63	0.81
24:P:92:ARG:O	24:P:93:LYS:HB2	1.79	0.81
25:Q:8:ILE:O	25:Q:8:ILE:HD12	1.80	0.81
29:U:52:ASN:C	29:U:54:PRO:HD2	2.05	0.81
31:W:23:LYS:CD	31:W:24:ARG:N	2.44	0.81
32:X:35:HIS:HB3	32:X:37:PHE:CE2	2.15	0.81
9:A:529:A:H4'	9:A:530:G:OP1	1.81	0.81
15:G:120:ILE:HD11	15:G:132:LEU:HB2	1.63	0.81
28:T:61:LEU:C	28:T:61:LEU:CD1	2.51	0.81
30:V:20:LEU:HD23	30:V:25:LYS:HB2	1.62	0.81
5:4:1:MET:HE2	5:4:34:LYS:HG2	1.62	0.81
9:A:1110:G:O2'	9:A:1111:A:H8	1.63	0.81
12:D:118:PHE:HD2	12:D:119:ALA:H	1.28	0.81
13:E:108:ILE:HD11	13:E:180:LEU:CB	2.09	0.81
24:P:51:ASN:O	24:P:52:ARG:HG2	1.80	0.81
22:N:103:ARG:HB2	22:N:110:MET:CE	2.10	0.81
24:P:50:ARG:CG	24:P:57:ALA:N	2.04	0.81
9:A:491:G:H2'	9:A:492:A:H8	1.42	0.80
23:O:31:THR:HG23	23:O:34:HIS:H	1.46	0.80
9:A:1062:G:O2'	9:A:1063:G:C8	2.34	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:C:15:VAL:HA	11:C:203:VAL:HG11	1.62	0.80
11:C:76:VAL:CG2	11:C:76:VAL:O	2.27	0.80
18:J:73:VAL:CG2	18:J:74:TYR:H	1.84	0.80
31:W:35:ILE:HG23	31:W:35:ILE:O	1.79	0.80
9:A:2393:U:H5'	20:L:60:ARG:O	1.81	0.80
9:A:2816:G:O3'	22:N:99:LYS:HE2	1.82	0.80
11:C:106:PRO:O	11:C:109:LEU:HD13	1.81	0.80
24:P:50:ARG:CD	24:P:56:SER:HB2	2.10	0.80
26:R:49:ILE:CB	26:R:51:VAL:O	2.29	0.80
27:S:48:LYS:O	27:S:52:GLU:HG3	1.81	0.80
32:X:65:THR:O	32:X:68:ALA:HB3	1.81	0.80
1:O:39:ARG:HG2	1:O:40:HIS:ND1	1.97	0.80
9:A:2094:A:H4'	16:H:25:TYR:CE1	2.16	0.80
9:A:2188:U:H2'	9:A:2189:U:H6	1.43	0.80
12:D:1:MET:HG2	12:D:205:PRO:HG2	1.64	0.80
12:D:172:VAL:O	12:D:173:GLN:HB2	1.80	0.80
14:F:72:SER:HB2	14:F:80:GLN:N	1.95	0.80
31:W:49:ASN:HA	31:W:61:LYS:HB2	1.62	0.80
9:A:1998:A:OP2	12:D:141:ARG:NH2	2.15	0.80
12:D:12:THR:HG23	12:D:13:ARG:N	1.95	0.80
15:G:126:THR:HG22	15:G:127:GLN:H	1.43	0.80
30:V:2:PHE:HD1	30:V:50:MET:HE2	1.46	0.80
9:A:957:C:H4'	9:A:958:U:OP1	1.78	0.80
10:B:45:A:H2'	10:B:46:A:H8	1.46	0.80
21:M:53:MET:O	21:M:56:ALA:HB3	1.82	0.80
15:G:120:ILE:HD13	15:G:121:THR:N	1.96	0.80
9:A:1139:G:O2'	9:A:1140:C:H5'	1.81	0.80
9:A:2543:G:H5'	9:A:2543:G:H8	1.47	0.80
34:Z:40:THR:CG2	34:Z:43:ILE:HG23	2.12	0.80
9:A:2425:A:H5'	9:A:2427:C:O4'	1.82	0.80
23:O:2:ASP:HB3	23:O:5:SER:CB	2.10	0.80
9:A:1076:C:H2'	9:A:1077:A:H8	1.46	0.80
19:K:116:ILE:HD12	19:K:117:SER:N	1.97	0.80
5:4:9:LYS:HB3	5:4:14:CYS:HB3	1.64	0.79
24:P:95:LYS:HG2	24:P:97:TYR:CZ	2.16	0.79
30:V:10:LYS:H	30:V:10:LYS:CD	1.88	0.79
9:A:1253:A:H3'	9:A:1254:A:H5''	1.63	0.79
9:A:1417:C:O2'	9:A:1418:G:H5'	1.82	0.79
9:A:1734:G:O2'	9:A:1735:A:H8	1.64	0.79
9:A:2327:A:H2'	9:A:2328:A:C8	2.17	0.79
9:A:2795:C:H2'	9:A:2796:U:H6	1.48	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:N:32:GLU:OE1	22:N:118:ARG:HA	1.83	0.79
25:Q:63:ARG:HH22	25:Q:95:ALA:C	1.88	0.79
2:1:7:LYS:HA	2:1:23:THR:HG22	1.63	0.79
26:R:29:THR:O	26:R:63:VAL:HG22	1.81	0.79
14:F:105:ILE:HD11	14:F:138:PRO:HG2	1.65	0.79
16:H:31:VAL:HB	16:H:32:PRO:HD2	1.64	0.79
9:A:143:C:HO2'	9:A:144:A:H8	1.30	0.79
9:A:662:G:H4'	20:L:15:ALA:O	1.82	0.79
9:A:1022:G:N2	9:A:1142:A:C2	2.49	0.79
9:A:2341:G:H2'	9:A:2342:C:C6	2.17	0.79
18:J:43:GLU:O	18:J:45:THR:HG23	1.81	0.79
23:O:88:LYS:HE2	23:O:116:GLN:NE2	1.98	0.79
26:R:60:LYS:H	26:R:100:GLY:HA3	1.48	0.79
9:A:855:G:N3	31:W:23:LYS:HD3	1.98	0.79
9:A:915:C:H6	9:A:915:C:H5''	1.45	0.79
17:I:53:PRO:HD2	17:I:77:VAL:HG21	1.64	0.79
1:O:8:THR:HG21	9:A:2021:C:P	2.23	0.79
9:A:1936:A:C2	9:A:1943:U:C5	2.70	0.79
9:A:2813:A:H2	9:A:2887:A:N6	1.80	0.79
9:A:2887:A:N3	9:A:2887:A:H2'	1.98	0.79
13:E:189:THR:OG1	13:E:191:ASP:HB3	1.81	0.79
20:L:81:ASP:O	20:L:82:LEU:CB	2.29	0.79
23:O:58:ILE:O	23:O:59:ALA:HB2	1.82	0.79
28:T:40:LYS:CA	28:T:43:ILE:HG23	2.12	0.79
28:T:45:ALA:O	28:T:48:GLN:HB2	1.82	0.79
33:Y:5:GLU:O	33:Y:8:GLU:HB2	1.82	0.79
33:Y:9:LYS:HZ2	33:Y:10:SER:H	1.30	0.79
33:Y:57:LEU:HA	33:Y:60:LYS:CB	2.13	0.79
9:A:2093:G:O2'	9:A:2094:A:H5'	1.82	0.79
15:G:11:PRO:O	15:G:14:VAL:HG22	1.82	0.79
20:L:27:LEU:N	20:L:27:LEU:HD12	1.97	0.79
20:L:68:SER:HB3	20:L:71:ALA:HB2	1.64	0.79
21:M:73:ILE:HG21	21:M:91:TYR:CZ	2.16	0.79
23:O:31:THR:HG22	23:O:34:HIS:O	1.82	0.79
12:D:106:LYS:HB3	12:D:206:ALA:CB	2.13	0.79
15:G:3:VAL:O	15:G:68:ARG:HG3	1.82	0.79
17:I:100:ILE:HG22	17:I:101:SER:H	1.47	0.79
20:L:74:THR:HG23	20:L:107:PHE:HB2	1.62	0.79
31:W:28:GLU:CB	31:W:31:LEU:HD21	2.12	0.79
9:A:668:A:H2'	9:A:670:A:H62	1.48	0.78
11:C:252:LYS:HZ3	11:C:252:LYS:HB2	1.47	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:56:VAL:HG12	18:J:57:LEU:N	1.91	0.78
25:Q:4:LYS:NZ	25:Q:8:ILE:HG23	1.98	0.78
29:U:87:GLU:HG3	29:U:88:ASP:N	1.98	0.78
9:A:284:U:H2'	9:A:285:G:H8	1.47	0.78
12:D:151:THR:HG22	12:D:152:PRO:HD3	0.82	0.78
15:G:142:GLN:HA	15:G:142:GLN:NE2	1.97	0.78
18:J:44:TYR:O	18:J:45:THR:HG22	1.83	0.78
29:U:15:GLY:O	29:U:17:ASP:N	2.15	0.78
17:I:3:LYS:HD2	17:I:4:VAL:HG23	1.66	0.78
28:T:32:LEU:N	28:T:83:ALA:HB3	1.96	0.78
31:W:28:GLU:CB	31:W:31:LEU:HD11	2.12	0.78
9:A:45:G:H5''	9:A:46:G:OP1	1.83	0.78
9:A:1326:U:O2'	9:A:1327:A:H5'	1.83	0.78
9:A:1414:C:C4	9:A:1415:U:C5	2.71	0.78
13:E:142:ALA:C	13:E:143:LEU:HD23	2.08	0.78
18:J:44:TYR:C	18:J:45:THR:HG22	2.09	0.78
31:W:51:GLY:HA3	31:W:59:PHE:CE2	2.19	0.78
9:A:1252:G:N3	25:Q:32:ARG:HG2	1.99	0.78
10:B:25:U:O2'	10:B:26:C:H5'	1.83	0.78
12:D:118:PHE:O	12:D:120:GLY:N	2.16	0.78
14:F:37:MET:HE3	14:F:151:LEU:HB3	1.64	0.78
20:L:110:VAL:CG1	20:L:111:ILE:N	2.47	0.78
9:A:277:G:H4'	9:A:278:A:N7	1.98	0.78
9:A:1339:G:H21	9:A:1603:A:H1'	1.48	0.78
9:A:2707:U:O2	22:N:71:ARG:NH1	2.17	0.78
15:G:8:VAL:CG1	15:G:9:VAL:N	2.46	0.78
20:L:27:LEU:HD12	20:L:27:LEU:H	1.49	0.78
31:W:30:VAL:HA	31:W:60:ALA:HB3	1.66	0.78
9:A:2210:U:H4'	9:A:2211:A:C5'	2.14	0.78
20:L:91:ASP:H	20:L:94:THR:CG2	1.95	0.78
34:Z:1:ALA:O	34:Z:3:THR:HG22	1.83	0.78
2:1:10:LEU:HD21	2:1:33:LEU:HD23	1.65	0.78
9:A:1735:A:O2'	9:A:1736:U:H5'	1.84	0.78
9:A:2547:A:H2'	9:A:2548:U:C6	2.17	0.78
26:R:16:GLU:HA	26:R:98:ILE:HG22	1.66	0.78
2:1:9:LYS:O	2:1:50:GLU:HG3	1.84	0.78
9:A:641:U:H5''	9:A:642:U:OP2	1.84	0.78
9:A:1199:U:H2'	9:A:1200:C:C6	2.18	0.78
9:A:2341:G:H2'	9:A:2342:C:H6	1.48	0.78
11:C:246:PRO:CG	11:C:247:TRP:CZ3	2.66	0.78
19:K:43:ILE:CD1	19:K:52:VAL:HG21	2.13	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:N:65:LEU:HD11	22:N:69:ARG:NH2	1.99	0.78
15:G:18:ILE:HD12	15:G:42:VAL:HG13	1.67	0.77
15:G:68:ARG:HD2	15:G:68:ARG:C	2.06	0.77
23:O:116:GLN:OE1	23:O:116:GLN:HA	1.83	0.77
25:Q:29:ARG:HH11	25:Q:29:ARG:CG	1.97	0.77
23:O:59:ALA:HA	23:O:62:LEU:HD13	1.66	0.77
2:1:13:SER:HB3	2:1:47:ILE:O	1.83	0.77
9:A:2250:G:N2	9:A:2496:C:H5''	1.99	0.77
9:A:2330:G:H21	31:W:38:ARG:HA	1.48	0.77
17:I:33:ASN:HB3	17:I:36:GLU:HB2	1.66	0.77
27:S:36:LEU:HD23	27:S:48:LYS:HA	1.66	0.77
27:S:59:GLU:HA	27:S:64:ALA:HB2	1.65	0.77
31:W:37:VAL:HG13	31:W:55:ASP:O	1.84	0.77
4:3:26:ALA:O	4:3:27:ASN:HB2	1.81	0.77
11:C:16:VAL:N	11:C:203:VAL:CG1	2.46	0.77
15:G:83:THR:HA	15:G:84:LYS:CE	2.13	0.77
18:J:64:VAL:CG1	18:J:68:LYS:HB2	2.14	0.77
20:L:110:VAL:HG12	20:L:111:ILE:H	1.48	0.77
31:W:73:PRO:CG	31:W:76:ARG:HD2	2.14	0.77
3:2:1:MET:HE3	3:2:2:LYS:N	2.00	0.77
9:A:1179:G:OP2	9:A:1180:U:H5''	1.84	0.77
9:A:1434:A:H2'	9:A:1435:G:C8	2.20	0.77
19:K:70:ARG:HD3	19:K:76:VAL:CG2	2.15	0.77
21:M:31:PHE:CE2	21:M:110:GLU:HG2	2.19	0.77
29:U:38:ILE:HG22	29:U:39:ASN:N	1.99	0.77
1:0:39:ARG:HB2	1:0:39:ARG:NH1	1.97	0.77
18:J:44:TYR:HA	25:Q:59:LEU:CD2	2.15	0.77
19:K:77:ILE:HD12	19:K:77:ILE:N	1.99	0.77
20:L:110:VAL:CG1	20:L:131:ALA:HB1	2.15	0.77
1:0:9:ARG:HH21	1:0:9:ARG:CG	1.98	0.77
9:A:1063:G:H2'	9:A:1064:C:H6	1.48	0.77
9:A:2214:C:H5'	9:A:2214:C:C6	2.17	0.77
11:C:106:PRO:CB	11:C:141:HIS:HE1	1.95	0.77
11:C:246:PRO:HG2	11:C:247:TRP:CE3	2.20	0.77
9:A:1537:G:N3	9:A:1537:G:H5''	2.00	0.77
9:A:1778:U:H2'	9:A:1784:A:N6	2.00	0.77
11:C:76:VAL:O	11:C:76:VAL:HG23	1.84	0.77
14:F:39:VAL:CG1	14:F:49:LEU:HD13	2.14	0.77
15:G:22:VAL:HG22	15:G:36:LEU:CD1	2.14	0.77
15:G:85:LYS:C	15:G:86:LEU:HD12	2.10	0.77
18:J:44:TYR:CD2	25:Q:63:ARG:CD	2.65	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:88:THR:HG23	18:J:91:GLU:H	1.49	0.77
26:R:42:ALA:HA	26:R:46:GLU:HB2	1.66	0.77
28:T:26:LYS:O	28:T:27:SER:HB2	1.84	0.77
9:A:1461:C:O2'	9:A:1462:C:H5'	1.85	0.77
10:B:66:A:H61	10:B:107:G:H2'	1.49	0.77
12:D:151:THR:CG2	12:D:152:PRO:N	2.47	0.77
18:J:17:VAL:CG2	18:J:137:PRO:HB2	2.15	0.77
20:L:64:PHE:O	20:L:64:PHE:HD1	1.68	0.77
29:U:73:ASN:ND2	29:U:76:THR:HG23	2.01	0.77
31:W:24:ARG:CD	31:W:25:PHE:N	2.48	0.77
5:4:37:GLN:O	5:4:37:GLN:HG2	1.82	0.76
9:A:324:A:O2'	9:A:325:G:H5'	1.84	0.76
9:A:1993:U:H4'	12:D:133:THR:HG21	1.67	0.76
10:B:33:G:O2'	10:B:34:A:H5'	1.85	0.76
11:C:104:LEU:O	11:C:105:ALA:HB2	1.83	0.76
23:O:106:LEU:C	23:O:106:LEU:HD12	2.10	0.76
24:P:80:VAL:HG12	24:P:81:ASP:N	1.98	0.76
31:W:28:GLU:HA	31:W:28:GLU:OE2	1.84	0.76
9:A:287:G:H1	9:A:353:C:H42	1.33	0.76
9:A:1784:A:H4'	9:A:1785:A:C5'	2.15	0.76
9:A:2415:G:H4'	20:L:66:PHE:HB3	1.67	0.76
13:E:83:VAL:O	13:E:83:VAL:HG12	1.85	0.76
20:L:68:SER:HB3	20:L:71:ALA:CB	2.15	0.76
28:T:39:THR:HB	28:T:42:GLU:H	1.49	0.76
9:A:272:A:O2'	9:A:273:G:H8	1.67	0.76
9:A:2847:U:C2'	9:A:2848:G:H5'	2.15	0.76
27:S:5:ALA:HB3	27:S:54:ALA:HB2	1.68	0.76
9:A:274:C:O2'	9:A:275:C:H5'	1.85	0.76
9:A:1073:A:P	9:A:1073:A:H8	2.08	0.76
10:B:46:A:H2'	10:B:47:C:H6	1.46	0.76
9:A:276:U:O2'	9:A:278:A:N7	2.19	0.76
11:C:244:VAL:HB	11:C:249:VAL:O	1.85	0.76
13:E:119:ILE:HD11	13:E:187:VAL:CG2	2.16	0.76
9:A:709:U:H2'	9:A:710:U:O4'	1.85	0.76
9:A:898:C:H2'	9:A:899:A:H5'	1.65	0.76
17:I:104:GLN:O	17:I:105:LEU:HB2	1.84	0.76
26:R:39:LEU:N	26:R:39:LEU:HD23	2.00	0.76
9:A:800:A:H4'	9:A:801:G:O5'	1.86	0.76
9:A:893:C:H2'	9:A:894:U:O4'	1.85	0.76
9:A:2470:G:O2'	9:A:2471:A:H5'	1.85	0.76
9:A:556:A:H5''	9:A:557:C:OP2	1.84	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1420:A:O2'	9:A:1421:G:H5'	1.86	0.76
9:A:1438:U:O2'	9:A:1439:A:H5'	1.84	0.76
10:B:90:C:H5''	10:B:90:C:C6	2.16	0.76
11:C:108:GLY:C	11:C:109:LEU:HD22	2.11	0.76
14:F:109:ARG:CB	14:F:136:ILE:HG22	2.15	0.76
17:I:115:ASP:O	17:I:116:MET:HG2	1.86	0.76
26:R:51:VAL:HB	26:R:52:PRO:HD2	1.64	0.76
31:W:50:VAL:O	31:W:52:CYS:N	2.16	0.76
9:A:1873:G:O2'	9:A:1874:C:H5'	1.86	0.76
21:M:64:TRP:CZ3	21:M:106:ASP:HB2	2.20	0.76
9:A:65:U:H2'	9:A:66:C:H6	1.52	0.76
9:A:92:U:H5''	9:A:92:U:C6	2.17	0.76
9:A:794:A:H2'	9:A:795:C:C6	2.21	0.76
9:A:2199:A:H5'	9:A:2200:C:H5	1.51	0.76
14:F:45:ASP:HB3	14:F:48:LEU:HB2	1.67	0.76
24:P:33:GLU:CG	24:P:34:GLY:H	1.97	0.76
31:W:40:ARG:HB2	31:W:56:HIS:CG	2.21	0.76
9:A:686:U:H4'	9:A:687:C:OP2	1.84	0.75
9:A:2086:U:H2'	9:A:2087:G:C8	2.21	0.75
11:C:257:ARG:CG	11:C:269:ARG:HH22	1.98	0.75
9:A:705:A:N6	9:A:726:G:H1'	2.01	0.75
9:A:1820:U:O2	11:C:199:HIS:HB3	1.86	0.75
21:M:62:LYS:HD3	21:M:64:TRP:CH2	2.20	0.75
24:P:67:GLU:OE1	24:P:67:GLU:HA	1.84	0.75
25:Q:85:ALA:O	25:Q:86:SER:C	2.29	0.75
9:A:2352:A:H5''	9:A:2353:G:OP2	1.86	0.75
14:F:3:LEU:HD23	14:F:100:GLU:HG3	1.66	0.75
9:A:914:G:C8	9:A:914:G:H5''	2.22	0.75
9:A:1141:U:H4'	9:A:1142:A:O5'	1.85	0.75
17:I:7:TYR:HB3	17:I:58:ILE:H	1.50	0.75
21:M:46:ILE:C	21:M:46:ILE:HD12	2.11	0.75
25:Q:81:GLY:HA2	25:Q:116:LEU:CD1	2.16	0.75
28:T:40:LYS:H	28:T:43:ILE:CG2	1.99	0.75
31:W:28:GLU:HG3	31:W:29:SER:H	1.49	0.75
9:A:506:G:H4'	9:A:507:A:H5'	1.67	0.75
9:A:747:U:C5	9:A:2613:U:C5	2.74	0.75
9:A:2148:G:C2'	9:A:2149:U:O4'	2.34	0.75
9:A:2630:G:O2'	9:A:2631:G:H5'	1.86	0.75
11:C:199:HIS:CE1	11:C:202:ARG:HH22	2.04	0.75
21:M:23:GLY:O	21:M:101:VAL:HG12	1.86	0.75
24:P:80:VAL:O	24:P:81:ASP:HB3	1.85	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Q:57:ARG:HG2	25:Q:61:ILE:HD12	1.67	0.75
32:X:38:TRP:HB2	32:X:45:PHE:CE2	2.16	0.75
4:3:12:ARG:HD3	20:L:61:LEU:O	1.85	0.75
9:A:228:C:H4'	9:A:229:C:H5''	1.68	0.75
9:A:2571:U:O2'	12:D:151:THR:CG2	2.35	0.75
12:D:107:VAL:H	12:D:206:ALA:H	1.34	0.75
18:J:64:VAL:HG13	18:J:68:LYS:HB2	1.69	0.75
9:A:1415:U:O2	9:A:1415:U:H2'	1.86	0.75
21:M:8:LYS:HE3	21:M:8:LYS:HA	1.68	0.75
31:W:40:ARG:H	31:W:56:HIS:HB3	1.49	0.75
9:A:513:A:O2'	9:A:514:A:H5'	1.87	0.75
9:A:1499:C:O2'	9:A:1500:G:C5'	2.30	0.75
9:A:2207:C:H2'	9:A:2208:C:C6	2.21	0.75
14:F:106:ALA:N	14:F:108:PRO:HD2	2.02	0.75
20:L:101:ILE:CG2	20:L:102:GLY:N	2.49	0.75
21:M:132:THR:HG22	21:M:133:LYS:H	1.50	0.75
24:P:24:THR:O	24:P:44:GLY:O	2.05	0.75
24:P:67:GLU:HG3	24:P:68:GLY:H	1.50	0.75
9:A:197:A:N6	9:A:2430:A:H2'	2.01	0.75
9:A:855:G:N3	31:W:23:LYS:CD	2.50	0.75
9:A:1494:A:O2'	9:A:1495:A:H5'	1.85	0.75
9:A:1871:A:O2'	9:A:1872:A:C8	2.39	0.75
10:B:66:A:H4'	10:B:67:G:OP1	1.85	0.75
13:E:46:GLN:HG3	13:E:87:ALA:N	2.01	0.75
20:L:109:LYS:CG	20:L:126:ARG:HB3	2.15	0.75
25:Q:63:ARG:NH2	25:Q:95:ALA:C	2.45	0.75
25:Q:93:ILE:CG2	25:Q:94:LEU:N	2.50	0.75
28:T:4:GLU:OE1	28:T:6:ARG:HG3	1.86	0.75
28:T:29:THR:HA	28:T:86:THR:CA	2.16	0.75
9:A:1182:G:H2'	9:A:1183:U:O4'	1.87	0.74
9:A:1707:G:H2'	9:A:1708:C:H6	1.52	0.74
12:D:121:THR:HG22	12:D:125:TRP:HD1	1.52	0.74
15:G:86:LEU:HD12	15:G:86:LEU:N	2.01	0.74
18:J:88:THR:HG22	18:J:91:GLU:CB	2.17	0.74
25:Q:26:ALA:HB1	25:Q:30:VAL:CG2	2.17	0.74
31:W:40:ARG:HD3	31:W:45:HIS:HE1	1.51	0.74
31:W:77:LYS:O	31:W:78:PHE:HB2	1.85	0.74
9:A:1059:G:H4'	17:I:116:MET:HE1	1.67	0.74
9:A:1654:A:H4'	12:D:118:PHE:CZ	2.21	0.74
9:A:2210:U:H4'	9:A:2211:A:O5'	1.86	0.74
12:D:70:LYS:O	12:D:71:ALA:CB	2.35	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:N:2:ARG:HA	22:N:5:LYS:HD2	1.68	0.74
26:R:39:LEU:HD23	26:R:39:LEU:H	1.52	0.74
29:U:25:LYS:O	29:U:26:ASN:HB3	1.86	0.74
31:W:47:GLY:O	31:W:49:ASN:N	2.20	0.74
9:A:1462:C:C2'	9:A:1463:C:H5'	2.16	0.74
9:A:1738:G:HO2'	9:A:1739:A:H8	1.35	0.74
9:A:2742:G:C2'	9:A:2743:U:H5'	2.18	0.74
11:C:94:LEU:HD12	11:C:95:TYR:N	2.02	0.74
15:G:8:VAL:HG12	15:G:49:LEU:H	1.51	0.74
17:I:33:ASN:HD22	17:I:64:ARG:NH2	1.85	0.74
25:Q:69:ARG:HH21	25:Q:69:ARG:CG	2.00	0.74
30:V:10:LYS:HZ1	30:V:11:GLU:HG3	1.50	0.74
9:A:1653:G:H1	22:N:11:ASN:HD21	1.33	0.74
12:D:15:PHE:H	24:P:11:GLN:NE2	1.85	0.74
14:F:84:ILE:HG13	14:F:84:ILE:O	1.86	0.74
15:G:84:LYS:CG	15:G:132:LEU:H	1.99	0.74
18:J:39:LYS:HA	18:J:43:GLU:HG3	1.69	0.74
31:W:39:GLN:HG2	31:W:40:ARG:N	2.01	0.74
33:Y:56:LEU:O	33:Y:57:LEU:HB3	1.86	0.74
9:A:2297:A:H5''	9:A:2297:A:C8	2.22	0.74
9:A:2358:A:H61	20:L:54:GLN:HE22	1.35	0.74
9:A:2438:U:O2'	9:A:2439:A:H5''	1.88	0.74
9:A:2795:C:H2'	9:A:2796:U:C6	2.23	0.74
15:G:84:LYS:CG	15:G:132:LEU:N	2.45	0.74
15:G:104:LEU:HD22	15:G:106:LEU:HD11	1.67	0.74
16:H:5:LEU:CD1	16:H:13:GLY:HA2	2.15	0.74
18:J:6:ALA:CB	18:J:45:THR:HG21	2.17	0.74
32:X:34:SER:HA	32:X:49:ARG:HA	1.70	0.74
9:A:1011:G:HO2'	9:A:1013:C:H5''	1.49	0.74
9:A:1919:A:H5'	9:A:1919:A:C8	2.21	0.74
11:C:15:VAL:CA	11:C:203:VAL:HG11	2.17	0.74
17:I:78:LEU:HD13	17:I:108:ILE:HG23	1.69	0.74
28:T:54:GLU:O	28:T:55:VAL:HB	1.88	0.74
31:W:39:GLN:CG	31:W:41:GLY:H	1.99	0.74
9:A:1064:C:H5'	17:I:88:GLY:CA	2.17	0.74
9:A:2052:A:H4'	12:D:148:GLN:O	1.88	0.74
9:A:2152:G:O2'	9:A:2153:C:H5'	1.86	0.74
24:P:63:ILE:HA	24:P:68:GLY:HA2	1.69	0.74
30:V:5:ASN:ND2	30:V:5:ASN:H	1.86	0.74
9:A:782:A:C2	11:C:224:MET:HE2	2.22	0.74
9:A:1430:G:O2'	9:A:1431:A:H5'	1.88	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:G:30:GLY:HA3	15:G:78:VAL:HG12	1.70	0.74
17:I:79:LEU:HD13	17:I:135:MET:SD	2.28	0.74
20:L:127:VAL:HG11	20:L:142:ILE:HG21	1.70	0.74
32:X:30:PRO:HB2	32:X:32:LEU:HD13	1.67	0.74
9:A:996:A:O2'	25:Q:91:ARG:HG3	1.88	0.74
9:A:2094:A:H5'	16:H:25:TYR:CD1	2.23	0.74
9:A:2656:U:C5	9:A:2664:G:N2	2.56	0.74
11:C:15:VAL:HA	11:C:203:VAL:CG1	2.16	0.74
23:O:24:THR:HG22	23:O:42:PRO:HD3	1.68	0.74
26:R:49:ILE:HD12	26:R:52:PRO:HA	0.86	0.74
28:T:8:LEU:HD12	28:T:46:ALA:HA	1.67	0.74
28:T:15:HIS:HB3	28:T:31:VAL:HG23	1.69	0.74
9:A:1084:A:H2'	9:A:1085:A:H8	1.51	0.74
9:A:1498:C:HO2'	9:A:1499:C:H6	0.76	0.74
9:A:2503:A:O2'	9:A:2505:G:OP2	2.06	0.74
11:C:77:VAL:HA	11:C:93:VAL:HA	1.68	0.74
11:C:79:ARG:NH2	11:C:81:GLU:OE2	2.21	0.74
18:J:6:ALA:HB2	18:J:45:THR:HG21	1.69	0.74
18:J:74:TYR:OH	18:J:100:VAL:HG13	1.87	0.74
20:L:91:ASP:HB3	20:L:94:THR:HB	1.69	0.74
30:V:2:PHE:CD1	30:V:50:MET:HE2	2.23	0.74
31:W:73:PRO:HG3	31:W:76:ARG:HD2	1.69	0.74
33:Y:59:GLU:O	33:Y:63:ALA:HB3	1.87	0.74
9:A:1590:A:H2'	9:A:1591:A:C8	2.23	0.73
9:A:1901:A:H2'	9:A:1902:C:H6	1.51	0.73
9:A:2150:C:H2'	9:A:2151:U:C5	2.23	0.73
9:A:2383:G:O2'	9:A:2384:U:H5'	1.89	0.73
11:C:257:ARG:HG3	11:C:269:ARG:HH22	1.51	0.73
16:H:18:GLN:HA	16:H:18:GLN:HE21	1.53	0.73
26:R:49:ILE:O	26:R:51:VAL:O	2.05	0.73
29:U:91:LYS:O	29:U:92:VAL:HB	1.86	0.73
9:A:384:A:H2'	9:A:385:C:H5'	1.68	0.73
14:F:129:MET:CE	14:F:153:ILE:HD11	2.17	0.73
1:O:2:VAL:HG23	9:A:2015:A:C2	2.23	0.73
2:1:34:GLU:CG	2:1:49:LYS:HG3	2.18	0.73
9:A:613:A:C8	9:A:616:A:N1	2.55	0.73
9:A:2758:A:C2'	9:A:2759:G:H5'	2.18	0.73
9:A:2773:C:OP1	12:D:171:THR:HG23	1.88	0.73
9:A:2808:G:N2	9:A:2891:U:C6	2.56	0.73
15:G:73:SER:HA	15:G:76:ILE:CG2	2.18	0.73
17:I:126:ARG:HA	17:I:129:GLU:HB2	1.69	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:W:30:VAL:C	31:W:31:LEU:HD23	2.12	0.73
31:W:67:LYS:O	31:W:68:PHE:HB2	1.88	0.73
14:F:43:ILE:HG22	14:F:82:TYR:HE1	1.53	0.73
15:G:15:ASP:CG	15:G:16:VAL:H	1.95	0.73
16:H:6:LEU:O	16:H:15:LEU:HA	1.86	0.73
17:I:33:ASN:HD22	17:I:64:ARG:HH22	1.36	0.73
18:J:74:TYR:CD2	18:J:92:MET:HE2	2.24	0.73
20:L:114:GLY:C	20:L:115:GLU:HG3	2.11	0.73
22:N:1:MET:O	22:N:2:ARG:HB2	1.87	0.73
25:Q:23:TYR:O	25:Q:28:SER:HB3	1.89	0.73
28:T:33:LYS:HG3	28:T:80:TRP:CE3	2.22	0.73
9:A:2250:G:H21	9:A:2496:C:H5'	1.51	0.73
11:C:104:LEU:O	11:C:105:ALA:CB	2.35	0.73
15:G:23:ILE:HD12	15:G:23:ILE:H	1.52	0.73
15:G:59:ASP:HB2	15:G:63:GLN:HG2	1.70	0.73
15:G:137:LYS:C	15:G:140:ILE:CD1	2.61	0.73
25:Q:4:LYS:HZ2	25:Q:5:ARG:CA	2.02	0.73
30:V:20:LEU:CD2	30:V:25:LYS:HB2	2.17	0.73
33:Y:9:LYS:HA	33:Y:9:LYS:HZ2	1.49	0.73
5:4:36:ARG:HG2	5:4:37:GLN:N	2.02	0.73
9:A:864:G:O2'	9:A:865:C:H5'	1.89	0.73
9:A:2492:U:O2'	9:A:2493:U:H5'	1.88	0.73
11:C:257:ARG:NE	11:C:269:ARG:NH2	2.37	0.73
25:Q:63:ARG:NH2	25:Q:96:ASP:HA	2.02	0.73
12:D:92:VAL:O	12:D:93:GLY:C	2.31	0.73
12:D:114:LYS:HE3	12:D:114:LYS:H	1.52	0.73
15:G:83:THR:HA	15:G:84:LYS:HZ3	1.53	0.73
32:X:52:ALA:O	32:X:53:LYS:CB	2.36	0.73
33:Y:47:ARG:HG3	33:Y:47:ARG:NH2	1.97	0.73
1:0:42:ILE:HD11	22:N:98:LEU:HD22	1.69	0.73
9:A:1870:C:H4'	9:A:1871:A:OP1	1.88	0.73
10:B:28:C:OP1	23:O:31:THR:HG21	1.88	0.73
10:B:112:G:H2'	10:B:113:C:C6	2.24	0.73
11:C:29:PHE:CE2	11:C:31:PRO:HG2	2.24	0.73
19:K:114:LYS:HE2	19:K:114:LYS:HA	1.70	0.73
31:W:50:VAL:HG12	31:W:51:GLY:N	2.04	0.73
9:A:962:G:N2	9:A:2250:G:H1	1.86	0.73
9:A:1152:C:O2'	9:A:1153:C:H5'	1.88	0.73
9:A:2355:G:H4'	31:W:20:LEU:HD13	1.69	0.73
13:E:142:ALA:O	13:E:143:LEU:HD23	1.88	0.73
15:G:10:VAL:HG23	15:G:10:VAL:O	1.88	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:G:84:LYS:HB3	15:G:132:LEU:O	1.88	0.73
15:G:115:GLN:H	15:G:115:GLN:CD	1.97	0.73
24:P:87:ARG:HG2	24:P:87:ARG:NH1	1.94	0.73
31:W:31:LEU:N	31:W:31:LEU:CD2	2.46	0.73
9:A:855:G:H1'	31:W:23:LYS:HD3	1.70	0.73
9:A:1150:C:C2'	9:A:1151:A:O5'	2.37	0.73
9:A:1558:C:H4'	9:A:1559:U:O5'	1.88	0.72
11:C:39:SER:C	11:C:41:GLY:H	1.97	0.72
11:C:79:ARG:HH22	11:C:92:LEU:HD22	1.51	0.72
11:C:259:ASN:O	11:C:260:LYS:HB2	1.88	0.72
16:H:49:ALA:HB3	16:H:50:ARG:HH21	1.53	0.72
18:J:111:LYS:HE2	18:J:115:GLY:H	1.52	0.72
26:R:49:ILE:HG21	26:R:53:PHE:H	1.54	0.72
29:U:5:ARG:HG2	29:U:5:ARG:NH2	1.91	0.72
9:A:1277:G:C5'	22:N:20:MET:CE	2.67	0.72
11:C:80:LEU:CD1	11:C:109:LEU:HG	2.19	0.72
11:C:89:ASN:O	11:C:90:ILE:HD13	1.89	0.72
15:G:15:ASP:CG	15:G:16:VAL:N	2.47	0.72
18:J:44:TYR:HB2	25:Q:63:ARG:CB	2.17	0.72
9:A:2777:G:H5''	9:A:2778:A:OP1	1.89	0.72
18:J:56:VAL:CG1	18:J:57:LEU:H	2.02	0.72
20:L:77:ILE:HG12	20:L:95:LEU:HD13	1.70	0.72
31:W:76:ARG:HG3	31:W:76:ARG:NH2	1.92	0.72
9:A:346:A:C2	9:A:347:A:H1'	2.24	0.72
11:C:251:THR:HG22	11:C:252:LYS:NZ	2.04	0.72
20:L:127:VAL:HG23	20:L:131:ALA:HB3	1.71	0.72
28:T:8:LEU:HD22	28:T:8:LEU:N	2.05	0.72
28:T:39:THR:H	28:T:43:ILE:HG22	1.53	0.72
31:W:37:VAL:HG22	31:W:55:ASP:O	1.89	0.72
34:Z:9:THR:HG23	34:Z:10:ARG:HB2	1.71	0.72
21:M:17:ASN:O	21:M:38:ARG:HD3	1.90	0.72
22:N:109:PRO:HG2	22:N:109:PRO:O	1.89	0.72
26:R:45:GLU:HA	26:R:45:GLU:OE2	1.89	0.72
9:A:2146:C:H4'	9:A:2147:A:O5'	1.88	0.72
13:E:119:ILE:HD11	13:E:187:VAL:HG22	1.72	0.72
20:L:94:THR:HG22	20:L:95:LEU:H	1.52	0.72
28:T:2:ILE:HG12	28:T:3:ARG:HG2	1.71	0.72
9:A:1253:A:C3'	9:A:1254:A:H5''	2.19	0.72
26:R:74:ILE:HB	26:R:87:GLN:HB3	1.70	0.72
29:U:71:ILE:HD11	29:U:81:ARG:H	1.53	0.72
9:A:1988:G:C2'	9:A:1989:G:H5'	2.19	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:T:39:THR:HG22	28:T:41:ALA:HB3	1.71	0.72
9:A:438:G:C2'	9:A:439:A:H5'	2.19	0.72
9:A:580:U:H2'	9:A:581:C:C6	2.24	0.72
9:A:2820:A:C8	9:A:2820:A:C3'	2.68	0.72
12:D:70:LYS:O	12:D:71:ALA:HB3	1.90	0.72
26:R:97:LYS:O	26:R:98:ILE:HB	1.89	0.72
29:U:78:LYS:HG2	29:U:79:ALA:H	1.55	0.72
9:A:1268:A:C2	9:A:2013:A:C4	2.78	0.72
9:A:1695:G:C8	11:C:7:PRO:HG2	2.24	0.72
9:A:1867:G:O2'	9:A:1868:C:C5'	2.34	0.72
14:F:134:GLN:N	14:F:134:GLN:HE21	1.87	0.72
21:M:42:THR:OG1	21:M:45:GLN:HG3	1.90	0.72
26:R:21:ARG:NH2	26:R:93:PHE:CZ	2.57	0.72
28:T:27:SER:C	28:T:28:ASN:CG	2.57	0.72
9:A:357:C:H2'	9:A:358:U:H6	1.50	0.71
9:A:989:G:C8	34:Z:13:ILE:HD11	2.24	0.71
9:A:1654:A:O2'	12:D:118:PHE:CG	2.41	0.71
9:A:1857:G:H1'	9:A:1884:G:N2	2.05	0.71
19:K:18:ARG:CB	19:K:45:GLU:HG2	2.08	0.71
29:U:87:GLU:HG3	29:U:88:ASP:H	1.55	0.71
9:A:1179:G:C5	9:A:1180:U:C1'	2.71	0.71
9:A:1179:G:H3'	9:A:1180:U:C4'	2.20	0.71
9:A:1364:G:OP2	32:X:1:SER:N	2.23	0.71
9:A:2786:U:O2'	12:D:66:GLY:HA3	1.90	0.71
11:C:141:HIS:HB2	11:C:190:THR:HB	1.72	0.71
21:M:114:ARG:HG2	21:M:130:PHE:CZ	2.24	0.71
9:A:679:C:O2'	9:A:680:C:H5'	1.91	0.71
9:A:1063:G:H2'	9:A:1064:C:C6	2.25	0.71
9:A:1714:U:O2	9:A:1714:U:C2'	2.33	0.71
9:A:2210:U:H4'	9:A:2211:A:H5'	1.73	0.71
17:I:89:SER:HB3	17:I:92:PRO:HG3	1.72	0.71
19:K:70:ARG:HD3	19:K:76:VAL:HG22	1.72	0.71
20:L:64:PHE:O	20:L:64:PHE:CD1	2.43	0.71
22:N:33:ILE:HG23	22:N:114:GLU:HB3	1.71	0.71
27:S:63:GLY:O	27:S:64:ALA:HB3	1.89	0.71
34:Z:13:ILE:HG22	34:Z:14:GLY:N	2.03	0.71
1:O:33:SER:CB	1:O:35:GLU:HG3	2.19	0.71
9:A:1107:G:H2'	9:A:1108:U:H6	1.54	0.71
9:A:1427:A:H4'	9:A:1428:C:O5'	1.90	0.71
18:J:81:ILE:HG23	18:J:82:GLY:N	2.00	0.71
23:O:31:THR:CG2	23:O:34:HIS:H	2.02	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:O:43:ASN:HD21	23:O:46:GLU:HG2	1.51	0.71
28:T:39:THR:CB	28:T:42:GLU:HB2	2.20	0.71
9:A:412:A:C2'	9:A:413:C:H5'	2.21	0.71
9:A:894:U:H2'	9:A:895:U:H6	1.52	0.71
9:A:2325:G:C6	9:A:2326:C:N4	2.59	0.71
9:A:2480:C:H2'	9:A:2481:G:H5'	1.72	0.71
9:A:2667:C:C2'	9:A:2668:G:H5'	2.21	0.71
11:C:93:VAL:CG1	11:C:94:LEU:N	2.52	0.71
14:F:3:LEU:CD2	14:F:100:GLU:HG3	2.20	0.71
23:O:15:ARG:HG3	23:O:15:ARG:NH1	2.03	0.71
24:P:4:ILE:HG22	24:P:5:LYS:N	2.04	0.71
27:S:1:MET:HA	27:S:1:MET:CE	2.20	0.71
31:W:37:VAL:C	31:W:38:ARG:CG	2.61	0.71
31:W:54:ARG:HH11	31:W:54:ARG:HB2	1.54	0.71
33:Y:45:GLN:O	33:Y:46:VAL:HB	1.90	0.71
5:4:32:LYS:HD3	9:A:2478:A:H5'	1.73	0.71
9:A:671:C:H3'	20:L:42:SER:OG	1.88	0.71
9:A:2211:A:OP2	9:A:2211:A:H4'	1.89	0.71
13:E:127:GLU:CD	13:E:127:GLU:H	1.97	0.71
23:O:75:GLY:HA2	23:O:106:LEU:HD13	1.70	0.71
3:2:3:ARG:HG2	3:2:3:ARG:NH2	1.97	0.71
9:A:313:G:C2'	9:A:314:C:H5'	2.20	0.71
9:A:573:U:H4'	9:A:574:A:OP1	1.91	0.71
9:A:1747:U:H2'	9:A:1748:C:C6	2.26	0.71
9:A:2396:G:O2'	9:A:2397:G:H5'	1.91	0.71
12:D:182:ALA:C	12:D:184:ARG:N	2.46	0.71
19:K:76:VAL:C	19:K:77:ILE:HD12	2.15	0.71
27:S:2:GLU:O	27:S:3:THR:CG2	2.39	0.71
9:A:1788:C:C2'	9:A:1789:A:H5'	2.21	0.71
9:A:2269:G:H4'	31:W:18:LYS:HE2	1.71	0.71
9:A:2667:C:H2'	9:A:2668:G:H5'	1.73	0.71
12:D:176:ASP:OD2	12:D:176:ASP:N	2.23	0.71
18:J:9:GLU:HA	18:J:9:GLU:OE2	1.87	0.71
20:L:4:ASN:HD22	20:L:4:ASN:H	1.39	0.71
22:N:103:ARG:HD3	22:N:110:MET:HE3	1.71	0.71
31:W:39:GLN:HG3	31:W:42:THR:H	1.52	0.71
9:A:1080:A:O2'	17:I:126:ARG:CG	2.39	0.71
20:L:77:ILE:HD11	20:L:108:ALA:HB1	1.71	0.71
24:P:13:LYS:HE3	24:P:76:HIS:CA	2.18	0.71
31:W:23:LYS:CG	31:W:24:ARG:N	2.54	0.71
3:2:21:ARG:NH1	9:A:684:G:OP1	2.24	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:S:1:MET:HE2	27:S:2:GLU:N	2.05	0.71
9:A:454:A:H4'	9:A:455:C:OP2	1.91	0.70
9:A:1459:G:O2'	9:A:1460:U:H5''	1.91	0.70
9:A:1794:A:H2'	9:A:1795:C:H6	1.56	0.70
12:D:14:ILE:CA	24:P:11:GLN:HE22	2.02	0.70
15:G:6:ALA:HB1	15:G:7:PRO:HD2	1.72	0.70
16:H:4:ILE:HG12	16:H:18:GLN:NE2	2.06	0.70
23:O:88:LYS:O	23:O:89:ASP:HB2	1.91	0.70
28:T:40:LYS:N	28:T:43:ILE:HG23	2.05	0.70
29:U:72:PHE:CE2	29:U:74:ALA:HA	2.26	0.70
9:A:1015:U:O2'	9:A:1016:G:H5'	1.90	0.70
9:A:1747:U:O2'	9:A:1748:C:H5'	1.90	0.70
10:B:16:G:O2'	10:B:17:C:H5'	1.90	0.70
12:D:108:ASP:OD2	12:D:173:GLN:HA	1.91	0.70
13:E:61:ARG:NH1	13:E:64:GLY:HA3	2.05	0.70
13:E:150:THR:HG21	13:E:153:LEU:HA	1.73	0.70
27:S:2:GLU:O	27:S:107:VAL:O	2.09	0.70
9:A:869:G:O2'	21:M:8:LYS:HD3	1.90	0.70
9:A:1734:G:N3	9:A:1735:A:C8	2.59	0.70
11:C:159:THR:O	11:C:194:VAL:HG12	1.92	0.70
14:F:66:ILE:O	14:F:66:ILE:HG13	1.90	0.70
18:J:58:ASN:HD21	18:J:128:ASN:HB2	1.55	0.70
21:M:8:LYS:N	21:M:8:LYS:HD2	2.05	0.70
21:M:72:PRO:O	21:M:91:TYR:O	2.09	0.70
31:W:51:GLY:HA3	31:W:59:PHE:CZ	2.25	0.70
1:O:3:GLN:HA	9:A:2615:U:C2	2.25	0.70
4:3:44:ARG:N	4:3:45:PRO:HD2	2.05	0.70
9:A:1654:A:H1'	12:D:118:PHE:CD1	2.26	0.70
9:A:1798:U:OP1	11:C:257:ARG:HB2	1.90	0.70
9:A:1813:G:N3	11:C:49:THR:CG2	2.53	0.70
10:B:45:A:H2'	10:B:46:A:C8	2.25	0.70
10:B:90:C:H6	10:B:90:C:C5'	2.00	0.70
11:C:33:LEU:CD2	11:C:62:ARG:HD3	2.22	0.70
11:C:77:VAL:HG22	11:C:111:ALA:HA	1.74	0.70
15:G:104:LEU:CB	15:G:112:VAL:CG2	2.65	0.70
31:W:18:LYS:CA	31:W:36:ILE:HG13	2.19	0.70
9:A:196:A:H2'	9:A:805:G:O6	1.92	0.70
9:A:923:G:N2	31:W:23:LYS:HZ3	1.87	0.70
9:A:2180:U:H2'	9:A:2181:U:C5	2.27	0.70
15:G:33:THR:HA	15:G:34:ARG:NH1	2.06	0.70
18:J:44:TYR:CD1	18:J:44:TYR:C	2.69	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:368:A:H2'	9:A:369:U:H5'	1.74	0.70
9:A:675:A:OP1	13:E:58:LYS:HE2	1.91	0.70
20:L:91:ASP:CB	20:L:94:THR:HB	2.21	0.70
30:V:39:ALA:C	30:V:40:ILE:HD13	2.17	0.70
31:W:37:VAL:HG13	31:W:55:ASP:C	2.15	0.70
9:A:271:G:O2'	9:A:272:A:H5''	1.91	0.70
9:A:285:G:H2'	9:A:285:G:N3	2.06	0.70
9:A:2154:A:H2'	9:A:2155:U:O4'	1.92	0.70
9:A:2309:A:O2'	9:A:2310:C:C5'	2.38	0.70
9:A:2728:U:O2'	9:A:2729:G:O5'	2.09	0.70
12:D:101:PHE:CZ	12:D:203:VAL:HG22	2.27	0.70
18:J:44:TYR:HD1	18:J:44:TYR:C	1.98	0.70
20:L:93:ASN:HD22	20:L:93:ASN:C	2.00	0.70
20:L:95:LEU:HD13	20:L:100:ILE:HD11	1.73	0.70
9:A:1450:G:C6	9:A:1451:C:N4	2.60	0.70
12:D:97:SER:O	12:D:99:GLU:HG2	1.91	0.70
14:F:134:GLN:N	14:F:134:GLN:NE2	2.39	0.70
28:T:29:THR:CA	28:T:86:THR:HA	2.21	0.70
31:W:23:LYS:NZ	31:W:24:ARG:HG3	2.06	0.70
14:F:127:TYR:O	14:F:128:SER:CB	2.40	0.70
15:G:126:THR:CG2	15:G:127:GLN:H	2.04	0.70
28:T:24:MET:HE2	28:T:28:ASN:OD1	1.91	0.70
31:W:54:ARG:HB2	31:W:54:ARG:NH1	2.06	0.70
9:A:308:G:O2'	9:A:309:A:H5'	1.92	0.70
9:A:1945:G:H2'	9:A:1946:U:C6	2.27	0.70
9:A:2192:U:O2'	9:A:2193:G:H5'	1.91	0.70
12:D:69:ALA:HA	12:D:73:VAL:HG13	1.73	0.70
25:Q:4:LYS:CG	25:Q:5:ARG:N	2.53	0.70
31:W:8:SER:O	31:W:9:THR:CB	2.37	0.70
31:W:22:VAL:HG13	31:W:25:PHE:CE2	2.26	0.70
9:A:1019:U:H3	9:A:1142:A:H62	1.40	0.69
15:G:34:ARG:HD3	15:G:34:ARG:N	2.06	0.69
18:J:25:LEU:C	18:J:25:LEU:CD2	2.63	0.69
4:3:14:LYS:O	4:3:21:PHE:O	2.10	0.69
9:A:63:A:O2'	9:A:64:A:H5'	1.92	0.69
9:A:485:C:H2'	9:A:486:C:H6	1.56	0.69
9:A:620:G:H4'	9:A:621:A:O5'	1.93	0.69
9:A:646:U:H3'	9:A:647:G:C5'	2.21	0.69
9:A:1250:G:OP2	20:L:21:ARG:NH2	2.26	0.69
9:A:1288:G:C4	9:A:1327:A:C2	2.80	0.69
9:A:1794:A:H2'	9:A:1795:C:C6	2.28	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2480:C:C2'	9:A:2481:G:H5'	2.22	0.69
19:K:76:VAL:HB	24:P:72:VAL:HG22	1.72	0.69
9:A:1508:A:H4'	9:A:1509:A:H5'	1.74	0.69
9:A:2221:G:O2'	9:A:2222:C:H5'	1.92	0.69
20:L:29:LYS:HG3	20:L:30:THR:HG23	1.73	0.69
27:S:13:SER:O	27:S:14:ALA:HB2	1.90	0.69
28:T:29:THR:HA	28:T:86:THR:H	1.58	0.69
28:T:50:LEU:HD12	28:T:50:LEU:N	2.04	0.69
9:A:21:A:O2'	9:A:22:C:H5'	1.92	0.69
9:A:386:G:H4'	9:A:387:U:OP2	1.90	0.69
9:A:990:A:H8	9:A:990:A:C5'	2.02	0.69
14:F:37:MET:CG	14:F:56:LEU:HG	2.22	0.69
19:K:10:VAL:CG2	19:K:16:ALA:HB1	2.22	0.69
19:K:93:GLN:OE1	19:K:93:GLN:HA	1.91	0.69
20:L:77:ILE:HG12	20:L:95:LEU:CD1	2.21	0.69
4:3:26:ALA:O	4:3:27:ASN:CB	2.39	0.69
9:A:395:U:O2'	9:A:396:G:N7	2.23	0.69
9:A:746:U:O2'	9:A:747:U:OP2	2.10	0.69
9:A:2444:G:OP2	13:E:63:LYS:CE	2.40	0.69
13:E:12:LEU:O	13:E:12:LEU:HD13	1.92	0.69
17:I:74:PRO:O	17:I:77:VAL:HG22	1.93	0.69
26:R:49:ILE:O	26:R:49:ILE:HG13	1.91	0.69
29:U:71:ILE:HD11	29:U:81:ARG:N	2.06	0.69
31:W:24:ARG:HD2	31:W:25:PHE:N	2.06	0.69
9:A:1116:G:O2'	9:A:1117:C:H5'	1.92	0.69
9:A:1256:G:C2'	13:E:77:ILE:HD11	2.22	0.69
9:A:1430:G:C2'	9:A:1431:A:H5'	2.22	0.69
9:A:1963:U:C3'	9:A:1963:U:H6	2.03	0.69
9:A:2180:U:H2'	9:A:2181:U:H5	1.57	0.69
15:G:120:ILE:HD13	15:G:121:THR:H	1.56	0.69
17:I:98:GLY:HA3	17:I:137:LEU:HD23	1.75	0.69
18:J:95:ARG:HG3	18:J:95:ARG:O	1.91	0.69
20:L:55:MET:HE2	20:L:56:PRO:CD	2.22	0.69
24:P:13:LYS:CE	24:P:76:HIS:HA	2.17	0.69
24:P:113:LEU:HG	24:P:113:LEU:O	1.91	0.69
31:W:19:ARG:NH1	31:W:22:VAL:HG11	2.07	0.69
31:W:37:VAL:HG12	31:W:38:ARG:H	1.58	0.69
31:W:42:THR:HG22	31:W:43:LYS:HG2	1.74	0.69
9:A:851:C:O2'	34:Z:45:GLY:HA3	1.93	0.69
9:A:1434:A:H2'	9:A:1435:G:H8	1.55	0.69
9:A:1462:C:H2'	9:A:1463:C:H5'	1.72	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2305:U:C4	14:F:150:GLY:O	2.46	0.69
14:F:9:ASP:O	14:F:10:GLU:HB2	1.92	0.69
27:S:1:MET:HE2	27:S:1:MET:CA	2.22	0.69
8:7:74:C:H42	9:A:2252:G:H1	1.40	0.69
9:A:80:G:C2'	9:A:81:G:H5'	2.22	0.69
9:A:438:G:O2'	9:A:439:A:H5'	1.93	0.69
9:A:479:A:O2'	9:A:481:G:H5'	1.93	0.69
9:A:1510:G:H2'	9:A:1511:G:C8	2.25	0.69
9:A:1559:U:H4'	9:A:1560:G:OP2	1.92	0.69
9:A:2353:G:O2'	31:W:31:LEU:CD2	2.41	0.69
9:A:2661:G:H2'	9:A:2662:A:C8	2.28	0.69
9:A:2689:U:H4'	9:A:2690:U:OP2	1.92	0.69
11:C:90:ILE:CG2	11:C:102:TYR:CD1	2.75	0.69
11:C:199:HIS:CE1	11:C:202:ARG:NH2	2.60	0.69
12:D:122:VAL:HG12	12:D:123:LYS:N	2.06	0.69
13:E:187:VAL:HG12	13:E:188:MET:N	2.08	0.69
16:H:32:PRO:CB	32:X:38:TRP:HB3	2.16	0.69
21:M:80:VAL:CG2	21:M:81:ARG:N	2.55	0.69
23:O:49:VAL:HG21	23:O:82:ALA:HA	1.74	0.69
24:P:4:ILE:O	24:P:5:LYS:HB3	1.91	0.69
25:Q:89:ILE:O	25:Q:90:ASP:HB2	1.93	0.69
25:Q:97:ILE:HD11	25:Q:105:PHE:HB2	1.73	0.69
26:R:49:ILE:HG22	26:R:54:VAL:N	2.07	0.69
30:V:41:GLU:C	30:V:42:LEU:HD23	2.18	0.69
32:X:40:GLU:O	32:X:43:LYS:HD2	1.92	0.69
9:A:62:U:H4'	9:A:63:A:OP1	1.93	0.69
9:A:2373:G:H2'	9:A:2374:C:C6	2.28	0.69
10:B:112:G:H2'	10:B:113:C:H6	1.57	0.69
17:I:20:SER:HB3	17:I:21:PRO:HD3	1.75	0.69
22:N:38:LEU:HB3	22:N:39:PRO:HD3	1.73	0.69
24:P:50:ARG:NE	24:P:56:SER:HB2	2.08	0.69
31:W:72:GLY:N	31:W:73:PRO:HD2	2.07	0.69
9:A:1073:A:C2'	9:A:1074:G:C5'	2.61	0.69
9:A:1159:U:O2'	9:A:1160:G:H5'	1.93	0.69
9:A:1585:C:H2'	9:A:1586:A:H5'	1.74	0.69
9:A:1795:C:H2'	9:A:1796:U:H6	1.58	0.69
10:B:70:C:O2'	10:B:71:C:H5'	1.93	0.69
12:D:114:LYS:CE	12:D:114:LYS:H	2.02	0.69
14:F:37:MET:CE	14:F:151:LEU:HB3	2.23	0.69
15:G:22:VAL:HG22	15:G:36:LEU:HD13	1.73	0.69
15:G:86:LEU:N	15:G:86:LEU:CD1	2.56	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:4:PHE:O	18:J:44:TYR:CE1	2.45	0.69
18:J:74:TYR:HB2	18:J:87:ALA:O	1.93	0.69
20:L:66:PHE:CD1	20:L:66:PHE:C	2.70	0.69
20:L:132:ARG:HG3	20:L:142:ILE:CD1	2.20	0.69
31:W:28:GLU:CD	31:W:29:SER:H	2.02	0.69
2:1:34:GLU:O	2:1:35:LEU:HB3	1.92	0.68
9:A:527:C:H4'	9:A:528:A:O5'	1.93	0.68
9:A:995:C:O2'	9:A:996:A:P	2.51	0.68
9:A:1060:U:H5''	9:A:1061:U:OP1	1.93	0.68
18:J:140:LEU:C	18:J:140:LEU:HD13	2.18	0.68
25:Q:91:ARG:HH21	25:Q:93:ILE:HD13	1.58	0.68
31:W:18:LYS:CA	31:W:36:ILE:CG1	2.70	0.68
32:X:40:GLU:HG3	32:X:43:LYS:NZ	2.08	0.68
33:Y:7:ARG:O	33:Y:7:ARG:HG3	1.94	0.68
9:A:407:G:O2'	9:A:408:G:H5'	1.93	0.68
9:A:1063:G:O2'	9:A:1064:C:O4'	2.11	0.68
9:A:1791:A:HO2'	11:C:205:GLY:HA2	1.57	0.68
9:A:2311:A:H1'	14:F:78:ILE:HD13	1.74	0.68
9:A:2886:A:H2'	9:A:2887:A:O4'	1.93	0.68
18:J:43:GLU:O	18:J:45:THR:HG22	1.91	0.68
23:O:57:ALA:O	23:O:59:ALA:N	2.27	0.68
25:Q:4:LYS:HZ3	25:Q:8:ILE:HG23	1.56	0.68
25:Q:40:LYS:HA	25:Q:43:GLN:CG	2.23	0.68
31:W:8:SER:O	31:W:9:THR:HB	1.91	0.68
34:Z:26:LEU:O	34:Z:37:ARG:NH1	2.26	0.68
5:4:23:ILE:CD1	9:A:1032:A:H1'	2.22	0.68
9:A:143:C:O2'	9:A:144:A:H8	1.75	0.68
9:A:1490:A:H5'	9:A:1491:G:OP2	1.93	0.68
9:A:1801:A:C5	11:C:261:ARG:NH1	2.61	0.68
9:A:1901:A:H2'	9:A:1902:C:C6	2.28	0.68
14:F:37:MET:CE	14:F:37:MET:HA	2.23	0.68
29:U:85:ARG:HA	29:U:91:LYS:O	1.92	0.68
4:3:5:THR:CG2	9:A:243:U:OP1	2.42	0.68
9:A:1996:C:H4'	9:A:1997:C:OP1	1.92	0.68
11:C:16:VAL:CB	11:C:203:VAL:HB	2.15	0.68
11:C:20:ASN:C	11:C:20:ASN:ND2	2.50	0.68
12:D:114:LYS:HE3	12:D:114:LYS:CA	2.24	0.68
13:E:153:LEU:C	13:E:153:LEU:HD12	2.19	0.68
15:G:163:TYR:O	15:G:164:ALA:CB	2.42	0.68
18:J:114:LEU:HD22	18:J:118:MET:CE	2.18	0.68
24:P:51:ASN:O	24:P:52:ARG:CG	2.41	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2:LYS:HE2	9:A:242:G:OP2	1.94	0.68
9:A:1735:A:H2'	9:A:1736:U:C6	2.28	0.68
12:D:149:ASN:CG	12:D:150:GLN:H	2.00	0.68
13:E:145:ASP:HB3	13:E:184:ASP:HB2	1.76	0.68
18:J:12:LYS:O	18:J:13:ARG:CB	2.40	0.68
23:O:104:GLN:O	23:O:107:ALA:HB3	1.94	0.68
23:O:111:ARG:HD3	23:O:112:GLU:N	2.08	0.68
26:R:47:VAL:HG12	26:R:47:VAL:O	1.94	0.68
9:A:1402:U:H2'	9:A:1403:A:O5'	1.94	0.68
9:A:2752:C:H2'	9:A:2753:A:C8	2.29	0.68
25:Q:97:ILE:HD11	25:Q:105:PHE:CA	2.23	0.68
9:A:358:U:H2'	9:A:359:G:O4'	1.94	0.68
9:A:1061:U:H3'	9:A:1062:G:C5'	2.24	0.68
9:A:1107:G:H2'	9:A:1108:U:C6	2.29	0.68
9:A:1858:A:O2'	9:A:1859:U:C5'	2.42	0.68
9:A:2415:G:H4'	20:L:65:GLY:O	1.94	0.68
11:C:161:VAL:O	11:C:161:VAL:HG12	1.94	0.68
12:D:99:GLU:CG	12:D:100:LEU:H	1.93	0.68
13:E:95:LYS:O	13:E:96:VAL:HB	1.93	0.68
20:L:65:GLY:O	20:L:66:PHE:HB3	1.94	0.68
22:N:79:LEU:O	22:N:80:PHE:CB	2.42	0.68
24:P:4:ILE:HG22	24:P:5:LYS:H	1.59	0.68
24:P:87:ARG:NH2	24:P:111:GLU:HG3	2.09	0.68
28:T:39:THR:HG22	28:T:39:THR:O	1.94	0.68
9:A:581:C:OP1	25:Q:32:ARG:HB2	1.93	0.68
9:A:861:A:H5''	9:A:862:G:OP2	1.93	0.68
9:A:1188:U:C2'	9:A:1189:A:C5'	2.68	0.68
9:A:1688:U:O2	9:A:1700:A:H5''	1.94	0.68
14:F:134:GLN:NE2	14:F:134:GLN:H	1.92	0.68
17:I:7:TYR:HA	17:I:58:ILE:HB	1.75	0.68
21:M:2:LEU:HD23	21:M:69:PRO:CD	2.21	0.68
24:P:37:LYS:HG2	24:P:37:LYS:O	1.94	0.68
31:W:49:ASN:ND2	31:W:49:ASN:C	2.49	0.68
2:1:8:ILE:HG22	2:1:9:LYS:N	2.08	0.68
4:3:22:LYS:O	4:3:22:LYS:HG2	1.92	0.68
9:A:587:C:N3	20:L:33:ARG:NH2	2.42	0.68
9:A:1079:C:C4	9:A:1088:A:H2	2.12	0.68
9:A:2729:G:H8	9:A:2729:G:H5''	1.58	0.68
14:F:71:LYS:HA	14:F:80:GLN:CG	2.23	0.68
18:J:2:LYS:N	18:J:2:LYS:CD	2.47	0.68
18:J:5:THR:HG22	18:J:6:ALA:O	1.94	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:M:12:MET:HE3	21:M:71:LYS:HG3	1.76	0.68
21:M:46:ILE:HD12	21:M:47:GLU:N	2.09	0.68
22:N:71:ARG:HH21	22:N:71:ARG:CG	2.06	0.68
29:U:93:ARG:HH11	29:U:102:ILE:HD11	1.56	0.68
2:1:29:LYS:HD2	2:1:31:GLU:OE1	1.94	0.68
4:3:11:LYS:HE3	9:A:247:G:O6	1.93	0.68
9:A:1115:G:HO2'	9:A:1116:G:H8	1.40	0.68
18:J:31:GLU:OE2	18:J:35:ARG:HD2	1.94	0.68
20:L:29:LYS:CG	20:L:30:THR:HG23	2.24	0.68
24:P:52:ARG:HH11	24:P:52:ARG:HG2	1.58	0.68
25:Q:63:ARG:NH1	25:Q:98:ALA:HB3	2.09	0.68
31:W:9:THR:OG1	31:W:10:ARG:N	2.26	0.68
31:W:39:GLN:O	31:W:40:ARG:C	2.37	0.68
9:A:22:C:H2'	9:A:23:G:O5'	1.94	0.67
9:A:224:U:H2'	9:A:225:C:O5'	1.94	0.67
9:A:244:A:C2	9:A:255:A:C4	2.82	0.67
9:A:1161:C:H1'	26:R:8:GLY:O	1.95	0.67
9:A:1486:U:O2'	9:A:1487:U:H5'	1.94	0.67
9:A:1654:A:C1'	12:D:118:PHE:CE1	2.77	0.67
19:K:71:ARG:CB	19:K:72:PRO:CD	2.72	0.67
19:K:95:ILE:C	19:K:95:ILE:CD1	2.64	0.67
26:R:81:LYS:HD3	26:R:81:LYS:N	2.03	0.67
13:E:28:VAL:O	13:E:32:VAL:HG13	1.93	0.67
15:G:82:PHE:CZ	15:G:137:LYS:HB2	2.29	0.67
18:J:21:THR:HG22	18:J:22:GLY:N	2.07	0.67
18:J:44:TYR:HA	25:Q:59:LEU:HD21	1.73	0.67
28:T:7:LEU:HD21	28:T:42:GLU:OE2	1.95	0.67
31:W:9:THR:HG22	31:W:10:ARG:HH11	1.57	0.67
33:Y:18:LEU:O	33:Y:18:LEU:HD13	1.94	0.67
9:A:26:G:H1'	9:A:514:A:N6	2.10	0.67
9:A:1572:A:O2'	9:A:1573:G:H5'	1.93	0.67
20:L:132:ARG:HA	20:L:142:ILE:HD11	1.77	0.67
31:W:9:THR:HG23	31:W:10:ARG:N	2.10	0.67
4:3:29:ARG:HD3	9:A:2394:C:OP2	1.92	0.67
9:A:789:A:OP1	9:A:790:U:H5	1.77	0.67
9:A:923:G:C2	31:W:23:LYS:HE2	2.29	0.67
11:C:12:ARG:HG3	11:C:12:ARG:NH1	2.01	0.67
19:K:7:MET:SD	19:K:20:MET:HB2	2.34	0.67
9:A:782:A:N1	11:C:224:MET:HE2	2.09	0.67
9:A:962:G:H2'	9:A:963:U:C6	2.29	0.67
9:A:1248:G:O2'	25:Q:2:ARG:HA	1.95	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1676:A:C2	9:A:1993:U:H5'	2.30	0.67
9:A:2440:C:H6	9:A:2440:C:C5'	2.04	0.67
19:K:108:ARG:HG2	19:K:108:ARG:NH1	1.98	0.67
20:L:92:LEU:HA	20:L:125:LEU:HD21	1.74	0.67
9:A:1510:G:H5'	9:A:1510:G:H8	1.60	0.67
9:A:1793:C:O2'	9:A:1794:A:H5'	1.94	0.67
9:A:2636:C:H2'	9:A:2637:U:H6	1.57	0.67
9:A:2800:A:O2'	9:A:2801:G:OP1	2.12	0.67
12:D:110:THR:CG2	12:D:171:THR:HG22	2.24	0.67
22:N:44:LEU:HD12	22:N:44:LEU:O	1.93	0.67
23:O:52:SER:OG	23:O:54:VAL:HG12	1.95	0.67
24:P:50:ARG:HH21	24:P:51:ASN:HA	1.59	0.67
27:S:51:LEU:O	27:S:55:ILE:HG13	1.94	0.67
29:U:42:LYS:HD3	29:U:42:LYS:N	2.08	0.67
9:A:1386:C:H2'	9:A:1387:A:C8	2.30	0.67
9:A:2402:U:H2'	9:A:2403:C:OP2	1.95	0.67
11:C:69:ASN:O	11:C:70:LYS:HB2	1.94	0.67
11:C:85:ASN:OD1	11:C:85:ASN:N	2.28	0.67
20:L:94:THR:HG22	20:L:95:LEU:N	2.10	0.67
21:M:78:LEU:HD23	21:M:79:ALA:N	2.10	0.67
25:Q:26:ALA:HB1	25:Q:30:VAL:HG23	1.77	0.67
31:W:18:LYS:HA	31:W:36:ILE:CD1	2.24	0.67
1:O:27:LEU:HD23	1:O:27:LEU:H	1.59	0.67
11:C:245:THR:OG1	11:C:249:VAL:HB	1.95	0.67
13:E:152:GLU:O	13:E:153:LEU:HG	1.95	0.67
25:Q:63:ARG:NH2	25:Q:96:ASP:CA	2.56	0.67
26:R:29:THR:C	26:R:63:VAL:HG22	2.20	0.67
26:R:39:LEU:HA	26:R:49:ILE:HG21	1.77	0.67
27:S:21:ALA:HB1	27:S:74:ILE:HD13	1.77	0.67
9:A:335:C:C5'	29:U:81:ARG:HD3	2.24	0.67
9:A:659:G:H21	13:E:30:GLN:HE22	1.43	0.67
9:A:782:A:C6	11:C:224:MET:HE2	2.30	0.67
9:A:1515:A:H2'	9:A:1516:G:O4'	1.95	0.67
9:A:1712:U:C2	9:A:1713:A:N7	2.63	0.67
9:A:1788:C:H2'	9:A:1789:A:H5'	1.75	0.67
9:A:2579:C:H2'	9:A:2580:U:H5'	1.77	0.67
13:E:24:ASN:C	13:E:24:ASN:HD22	2.01	0.67
14:F:121:PHE:HB3	14:F:162:ASP:OD2	1.95	0.67
15:G:148:ARG:HD2	15:G:163:TYR:CE2	2.30	0.67
20:L:100:ILE:HD12	20:L:101:ILE:HD13	1.77	0.67
22:N:24:MET:HG2	22:N:44:LEU:CD2	2.24	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:R:49:ILE:HG21	26:R:53:PHE:N	2.10	0.67
27:S:4:ILE:HG22	27:S:106:VAL:HG13	1.76	0.67
28:T:29:THR:HA	28:T:86:THR:N	2.09	0.67
2:1:8:ILE:HG23	2:1:51:ALA:CA	2.17	0.67
5:4:9:LYS:HD3	5:4:9:LYS:N	2.06	0.67
9:A:364:C:H2'	9:A:365:U:C6	2.30	0.67
9:A:2019:A:H4'	25:Q:33:VAL:HG21	1.75	0.67
14:F:16:MET:O	14:F:20:ASN:HA	1.95	0.67
25:Q:94:LEU:HD23	26:R:11:GLN:HB2	1.76	0.67
32:X:38:TRP:NE1	32:X:40:GLU:HB2	2.10	0.67
4:3:31:ILE:O	4:3:35:LYS:HE3	1.95	0.66
9:A:475:C:O2'	9:A:476:G:H5'	1.95	0.66
9:A:1510:G:O2'	9:A:1511:G:H5'	1.96	0.66
9:A:1585:C:O2'	9:A:1586:A:H5'	1.94	0.66
14:F:35:LEU:HD23	14:F:153:ILE:CG2	2.25	0.66
23:O:53:THR:HB	23:O:65:THR:HG22	1.77	0.66
9:A:914:G:H5''	9:A:914:G:H8	1.58	0.66
9:A:1071:G:H1'	9:A:1089:A:C5	2.31	0.66
9:A:1498:C:O2'	9:A:1499:C:C5'	2.44	0.66
9:A:1988:G:H2'	9:A:1989:G:H5'	1.77	0.66
9:A:2473:U:O2	9:A:2473:U:H2'	1.94	0.66
15:G:155:PRO:O	15:G:170:THR:HA	1.95	0.66
17:I:42:ASN:HA	17:I:45:THR:HB	1.78	0.66
18:J:44:TYR:CE2	25:Q:63:ARG:HD3	2.30	0.66
9:A:1253:A:H3'	9:A:1254:A:C5'	2.24	0.66
9:A:2331:G:O2'	9:A:2336:A:N1	2.28	0.66
24:P:92:ARG:HH11	24:P:92:ARG:HB2	1.61	0.66
26:R:49:ILE:CG1	26:R:51:VAL:O	2.43	0.66
27:S:73:LYS:HE3	27:S:73:LYS:C	2.19	0.66
28:T:32:LEU:H	28:T:83:ALA:CB	2.05	0.66
31:W:28:GLU:OE2	31:W:28:GLU:CA	2.43	0.66
32:X:38:TRP:HE1	32:X:40:GLU:HB2	1.61	0.66
9:A:1082:U:H5'	17:I:117:THR:O	1.94	0.66
9:A:1435:G:O2'	9:A:1436:G:H5'	1.95	0.66
9:A:1941:C:H2'	9:A:1942:C:C6	2.30	0.66
14:F:13:LYS:O	14:F:17:THR:HG23	1.95	0.66
26:R:49:ILE:C	26:R:51:VAL:O	2.38	0.66
9:A:151:C:H5'	9:A:1360:G:OP1	1.95	0.66
9:A:958:U:H6	9:A:958:U:C5'	2.01	0.66
9:A:1733:G:HO2'	9:A:1734:G:H8	1.42	0.66
9:A:2085:U:O2'	9:A:2086:U:H5'	1.94	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2311:A:O3'	9:A:2312:U:C6	2.48	0.66
14:F:161:SER:OG	14:F:164:GLU:HG3	1.96	0.66
14:F:169:LEU:HD12	14:F:169:LEU:N	2.11	0.66
20:L:127:VAL:HG23	20:L:131:ALA:CB	2.26	0.66
31:W:17:ALA:O	31:W:18:LYS:HB3	1.96	0.66
31:W:30:VAL:H	31:W:31:LEU:HD23	1.59	0.66
1:O:16:ARG:HG2	1:O:19:ASP:OD1	1.95	0.66
9:A:915:C:H5''	9:A:915:C:C6	2.30	0.66
9:A:1425:G:C2'	9:A:1426:G:H5'	2.26	0.66
9:A:2080:A:H5'	32:X:18:SER:CB	2.26	0.66
9:A:2152:G:O2'	9:A:2153:C:C5'	2.43	0.66
11:C:79:ARG:NH2	11:C:92:LEU:CD2	2.58	0.66
18:J:36:LEU:HD21	18:J:122:LEU:HB2	1.78	0.66
23:O:88:LYS:CE	23:O:116:GLN:NE2	2.58	0.66
30:V:44:HIS:HE1	30:V:86:LEU:H	1.41	0.66
31:W:39:GLN:HG2	31:W:41:GLY:N	2.05	0.66
2:1:35:LEU:O	2:1:35:LEU:HD23	1.96	0.66
9:A:77:G:OP1	33:Y:52:ARG:HD3	1.96	0.66
9:A:132:G:O2'	9:A:133:U:H5'	1.95	0.66
9:A:1416:G:O2'	9:A:1417:C:O5'	2.14	0.66
9:A:2038:G:H2'	9:A:2039:U:O4'	1.95	0.66
9:A:2704:C:H5''	9:A:2705:A:OP2	1.96	0.66
11:C:166:ARG:CG	11:C:166:ARG:O	2.44	0.66
12:D:94:GLN:O	12:D:95:SER:HB2	1.96	0.66
13:E:175:ILE:HG23	13:E:175:ILE:O	1.96	0.66
14:F:107:VAL:N	14:F:108:PRO:CD	2.58	0.66
24:P:25:VAL:N	24:P:85:VAL:O	2.25	0.66
27:S:24:ILE:HG12	27:S:36:LEU:HD11	1.77	0.66
31:W:24:ARG:CB	31:W:65:LYS:HD3	2.22	0.66
33:Y:6:LEU:O	33:Y:7:ARG:HB3	1.94	0.66
9:A:84:A:H62	9:A:101:A:H2	1.42	0.66
9:A:289:G:H2'	9:A:290:U:O4'	1.96	0.66
9:A:726:G:O2'	9:A:727:A:OP2	2.11	0.66
9:A:836:G:H5''	9:A:837:C:OP2	1.94	0.66
9:A:869:G:O2'	21:M:8:LYS:CD	2.44	0.66
9:A:1624:U:H2'	9:A:1625:C:H6	1.59	0.66
9:A:1820:U:C2	11:C:200:MET:HG3	2.31	0.66
14:F:129:MET:CG	14:F:153:ILE:HD11	2.26	0.66
23:O:62:LEU:HD23	23:O:70:ALA:HA	1.78	0.66
9:A:63:A:H5'	9:A:63:A:H8	1.60	0.66
9:A:1392:A:H61	28:T:18:GLU:CD	2.04	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1734:G:C4	9:A:1735:A:N7	2.64	0.66
9:A:1842:G:H2'	9:A:1843:C:C6	2.31	0.66
9:A:1970:A:H4'	9:A:1971:U:O5'	1.94	0.66
9:A:2346:A:H3'	9:A:2347:C:H5''	1.77	0.66
19:K:76:VAL:HB	24:P:72:VAL:CG2	2.26	0.66
20:L:94:THR:CG2	20:L:95:LEU:N	2.58	0.66
21:M:36:VAL:HG12	21:M:127:LYS:O	1.96	0.66
21:M:132:THR:HG22	21:M:133:LYS:N	2.10	0.66
25:Q:8:ILE:HD12	25:Q:8:ILE:C	2.21	0.66
28:T:19:LYS:O	28:T:23:ALA:N	2.26	0.66
28:T:39:THR:HB	28:T:42:GLU:CB	2.24	0.66
28:T:48:GLN:HA	28:T:48:GLN:NE2	2.08	0.66
31:W:28:GLU:HG3	31:W:29:SER:N	2.11	0.66
3:2:18:PHE:O	3:2:22:MET:HB2	1.96	0.66
9:A:1056:G:HO2'	9:A:1086:A:H1'	1.59	0.66
9:A:1416:G:HO2'	9:A:1417:C:H6	1.42	0.66
9:A:1474:U:H2'	9:A:1475:G:H5'	1.77	0.66
9:A:2352:A:N1	31:W:30:VAL:HG21	2.11	0.66
9:A:2671:G:C2'	9:A:2672:U:H5'	2.26	0.66
12:D:98:VAL:O	12:D:99:GLU:C	2.38	0.66
15:G:83:THR:C	15:G:84:LYS:HE2	2.20	0.66
15:G:93:TYR:CD2	15:G:106:LEU:HA	2.31	0.66
19:K:10:VAL:HG21	19:K:16:ALA:HB1	1.78	0.66
21:M:12:MET:CE	21:M:71:LYS:HG3	2.26	0.66
31:W:9:THR:CG2	31:W:10:ARG:HH11	2.08	0.66
33:Y:39:GLN:HG3	33:Y:42:LEU:HD22	1.77	0.66
9:A:706:A:OP1	11:C:6:LYS:HE3	1.96	0.65
9:A:1045:C:C3'	9:A:1046:A:H5'	2.25	0.65
9:A:1414:C:C5	9:A:1415:U:H5	2.13	0.65
9:A:2540:C:H2'	9:A:2541:A:C5'	2.25	0.65
12:D:48:ILE:HG23	12:D:84:LEU:HD21	1.78	0.65
22:N:8:ARG:HD2	22:N:43:GLU:HG3	1.77	0.65
31:W:19:ARG:HA	31:W:34:SER:HA	1.78	0.65
9:A:856:G:H1'	31:W:23:LYS:CB	2.26	0.65
9:A:962:G:H2'	9:A:963:U:H6	1.61	0.65
9:A:1079:C:C4	9:A:1088:A:C2	2.84	0.65
9:A:1080:A:O2'	17:I:126:ARG:HG2	1.96	0.65
9:A:2476:A:C2'	9:A:2477:U:H5'	2.26	0.65
15:G:8:VAL:HG12	15:G:9:VAL:H	1.61	0.65
15:G:84:LYS:HG3	15:G:131:VAL:C	2.19	0.65
25:Q:4:LYS:CE	25:Q:7:VAL:HG13	2.26	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Q:39:ILE:O	25:Q:43:GLN:HG2	1.95	0.65
28:T:50:LEU:O	28:T:51:PHE:HB2	1.96	0.65
9:A:1654:A:H1'	12:D:118:PHE:CE1	2.31	0.65
9:A:2315:G:O2'	9:A:2316:G:H5'	1.97	0.65
22:N:103:ARG:CD	22:N:110:MET:HE3	2.26	0.65
25:Q:81:GLY:CA	25:Q:116:LEU:CD1	2.74	0.65
27:S:25:ARG:HD3	27:S:73:LYS:HZ2	1.60	0.65
28:T:86:THR:O	28:T:87:LEU:HD23	1.97	0.65
32:X:5:GLN:NE2	32:X:49:ARG:H	1.91	0.65
32:X:30:PRO:O	32:X:32:LEU:HD13	1.96	0.65
32:X:46:VAL:HG21	32:X:67:LEU:HD11	1.78	0.65
9:A:1071:G:H1'	9:A:1089:A:C8	2.32	0.65
9:A:1980:G:HO2'	9:A:1982:U:H5	1.44	0.65
9:A:2199:A:H3'	9:A:2200:C:H6	1.61	0.65
9:A:2431:U:H6	9:A:2431:U:C5'	2.03	0.65
16:H:27:ARG:NH1	16:H:38:PRO:HG3	2.12	0.65
19:K:35:VAL:HG12	19:K:36:GLY:N	2.10	0.65
28:T:28:ASN:HA	28:T:91:GLN:NE2	2.12	0.65
28:T:39:THR:O	28:T:40:LYS:HB2	1.95	0.65
5:4:9:LYS:CD	5:4:9:LYS:N	2.55	0.65
9:A:215:G:C4'	9:A:216:A:H4'	2.27	0.65
9:A:1059:G:H5''	9:A:1060:U:H3'	1.79	0.65
9:A:1680:U:H2'	9:A:1681:G:O4'	1.96	0.65
9:A:2134:A:N6	9:A:2157:G:C5	2.65	0.65
9:A:2150:C:O2'	9:A:2151:U:C6	2.49	0.65
9:A:2791:G:H5''	9:A:2791:G:H8	1.61	0.65
13:E:7:ASP:O	13:E:9:GLN:N	2.30	0.65
14:F:133:GLU:H	14:F:150:GLY:HA3	1.62	0.65
24:P:50:ARG:HD2	24:P:51:ASN:CA	2.25	0.65
31:W:8:SER:O	31:W:9:THR:HG22	1.96	0.65
31:W:18:LYS:N	31:W:36:ILE:HG12	2.12	0.65
33:Y:32:ALA:HA	33:Y:37:LEU:HB3	1.78	0.65
9:A:1059:G:O2'	17:I:128:ILE:HD13	1.96	0.65
9:A:2197:U:O2'	9:A:2198:A:C2'	2.44	0.65
9:A:2726:A:O2'	9:A:2727:A:H5'	1.96	0.65
13:E:1:MET:HG2	13:E:14:VAL:HG23	1.78	0.65
18:J:43:GLU:O	18:J:45:THR:N	2.30	0.65
9:A:1059:G:H1'	17:I:127:SER:HB2	1.78	0.65
9:A:1681:G:O2'	9:A:1762:A:H1'	1.96	0.65
11:C:68:ARG:HD3	11:C:103:ILE:CD1	2.16	0.65
14:F:134:GLN:O	14:F:136:ILE:N	2.28	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:O:28:VAL:HG23	23:O:106:LEU:HD21	1.78	0.65
2:1:3:GLY:O	2:1:5:ARG:N	2.24	0.65
9:A:475:C:C4	9:A:481:G:O6	2.49	0.65
9:A:1277:G:C4'	22:N:20:MET:HE2	2.27	0.65
12:D:69:ALA:HA	12:D:73:VAL:CG1	2.25	0.65
14:F:129:MET:HE2	14:F:153:ILE:CD1	2.27	0.65
21:M:21:ALA:CB	21:M:100:LYS:N	2.60	0.65
28:T:27:SER:C	28:T:28:ASN:ND2	2.55	0.65
28:T:54:GLU:OE1	28:T:88:LYS:HG3	1.96	0.65
9:A:485:C:H2'	9:A:486:C:C6	2.32	0.65
9:A:548:G:H8	9:A:548:G:H3'	1.61	0.65
9:A:2188:U:H2'	9:A:2189:U:C6	2.30	0.65
9:A:2439:A:H1'	9:A:2587:A:OP1	1.96	0.65
11:C:39:SER:O	11:C:41:GLY:N	2.30	0.65
15:G:60:GLY:O	15:G:61:TRP:CB	2.45	0.65
15:G:104:LEU:CB	15:G:112:VAL:HG21	2.26	0.65
24:P:28:LYS:HE3	24:P:82:SER:OG	1.96	0.65
27:S:37:THR:HB	27:S:38:TYR:CD1	2.32	0.65
9:A:646:U:C3'	9:A:647:G:H5''	2.27	0.65
9:A:1539:U:H2'	9:A:1540:G:H8	1.62	0.65
9:A:1941:C:H6	9:A:1941:C:C5'	2.06	0.65
14:F:109:ARG:HB3	14:F:136:ILE:HG22	1.79	0.65
20:L:78:ARG:HB3	20:L:113:ALA:HB3	1.77	0.65
28:T:40:LYS:N	28:T:43:ILE:CG2	2.60	0.65
28:T:73:ARG:HB3	28:T:73:ARG:CZ	2.25	0.65
29:U:48:VAL:O	29:U:53:GLN:HB3	1.97	0.65
31:W:23:LYS:HD2	31:W:24:ARG:CB	2.27	0.65
9:A:747:U:C4	9:A:2613:U:C5	2.85	0.64
9:A:1338:G:O2'	9:A:1339:G:H5'	1.97	0.64
9:A:2491:U:H5''	9:A:2570:G:H5''	1.79	0.64
14:F:131:VAL:CG2	14:F:151:LEU:CD1	2.75	0.64
14:F:142:TYR:O	14:F:145:VAL:HG22	1.97	0.64
19:K:63:VAL:HG22	19:K:107:LEU:HD22	1.80	0.64
20:L:87:GLY:O	20:L:89:VAL:N	2.29	0.64
23:O:58:ILE:O	23:O:59:ALA:CB	2.44	0.64
23:O:59:ALA:C	23:O:61:GLN:H	2.04	0.64
24:P:13:LYS:HE3	24:P:75:THR:O	1.97	0.64
26:R:49:ILE:HG13	26:R:51:VAL:O	1.97	0.64
32:X:5:GLN:HE21	32:X:49:ARG:N	1.91	0.64
9:A:404:A:H1'	9:A:405:U:OP2	1.96	0.64
9:A:1644:C:C2'	9:A:1645:G:H5'	2.26	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1654:A:O2'	12:D:118:PHE:CD1	2.48	0.64
9:A:2292:U:H2'	9:A:2293:G:C8	2.31	0.64
11:C:245:THR:HB	11:C:247:TRP:CE3	2.33	0.64
20:L:68:SER:O	20:L:69:ARG:HB2	1.97	0.64
21:M:68:PHE:C	21:M:68:PHE:CD2	2.74	0.64
23:O:106:LEU:HD12	23:O:106:LEU:O	1.97	0.64
24:P:52:ARG:H	24:P:56:SER:HB3	1.63	0.64
29:U:73:ASN:O	29:U:75:ALA:N	2.27	0.64
31:W:19:ARG:NH2	31:W:22:VAL:HG21	2.12	0.64
31:W:24:ARG:CD	31:W:24:ARG:C	2.70	0.64
2:1:16:THR:CG2	2:1:41:VAL:CG2	2.75	0.64
5:4:25:VAL:C	5:4:26:ILE:HD13	2.22	0.64
9:A:617:G:C2'	9:A:618:G:H5'	2.27	0.64
9:A:1842:G:O4'	11:C:242:HIS:CE1	2.49	0.64
9:A:2266:A:H4'	9:A:2267:A:O5'	1.98	0.64
9:A:2339:C:H2'	9:A:2340:A:H8	1.63	0.64
9:A:2408:U:H2'	9:A:2409:G:C8	2.33	0.64
9:A:2801:G:O2'	9:A:2802:G:H5'	1.96	0.64
9:A:2889:C:H2'	9:A:2890:G:O5'	1.98	0.64
19:K:98:ARG:O	19:K:99:ILE:HD13	1.97	0.64
26:R:58:VAL:HG12	26:R:102:SER:HB2	1.78	0.64
28:T:8:LEU:N	28:T:8:LEU:CD2	2.60	0.64
30:V:80:HIS:CD2	30:V:82:TYR:H	2.15	0.64
31:W:70:VAL:O	31:W:70:VAL:HG13	1.96	0.64
9:A:309:A:O3'	29:U:15:GLY:HA2	1.98	0.64
9:A:1190:G:H5''	20:L:32:GLY:HA2	1.79	0.64
9:A:1735:A:O2'	9:A:1736:U:C5'	2.45	0.64
9:A:2492:U:H2'	9:A:2493:U:H6	1.61	0.64
10:B:24:G:N7	10:B:56:G:H2'	2.13	0.64
12:D:174:SER:O	12:D:175:LEU:CB	2.44	0.64
13:E:112:LEU:HD13	13:E:186:VAL:CG1	2.26	0.64
18:J:7:LYS:O	18:J:11:VAL:HG23	1.98	0.64
21:M:114:ARG:HA	21:M:130:PHE:CE1	2.31	0.64
24:P:33:GLU:CG	24:P:34:GLY:N	2.58	0.64
29:U:42:LYS:HA	29:U:58:VAL:O	1.98	0.64
31:W:30:VAL:HG23	31:W:60:ALA:O	1.98	0.64
9:A:274:C:H2'	9:A:275:C:H6	1.63	0.64
9:A:898:C:C2'	9:A:899:A:H5'	2.27	0.64
9:A:1475:G:O2'	9:A:1476:U:P	2.56	0.64
20:L:93:ASN:HD22	20:L:94:THR:H	1.43	0.64
21:M:10:ARG:NH2	21:M:89:VAL:HB	2.13	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:N:33:ILE:HG12	22:N:118:ARG:CZ	2.27	0.64
33:Y:47:ARG:HH21	33:Y:47:ARG:CG	2.01	0.64
1:O:24:VAL:C	1:O:25:THR:HG23	2.23	0.64
2:1:49:LYS:HG2	2:1:50:GLU:H	1.62	0.64
3:2:26:ASN:OD1	9:A:682:G:H5'	1.98	0.64
9:A:571:U:H4'	9:A:572:A:OP1	1.98	0.64
9:A:1141:U:C6	18:J:65:THR:CG2	2.81	0.64
9:A:1416:G:O2'	9:A:1417:C:H6	1.81	0.64
9:A:1682:G:H2'	9:A:1683:U:C6	2.32	0.64
9:A:1775:U:H2'	9:A:1776:G:O5'	1.98	0.64
9:A:2544:G:O2'	9:A:2545:G:H5'	1.97	0.64
10:B:12:C:H4'	10:B:13:G:OP1	1.97	0.64
19:K:88:ASN:HD22	19:K:90:ASN:H	1.44	0.64
21:M:35:ALA:O	21:M:36:VAL:CG1	2.44	0.64
28:T:1:MET:HB2	28:T:2:ILE:HD13	1.78	0.64
9:A:37:C:O2'	9:A:38:A:H5'	1.98	0.64
9:A:544:C:N3	9:A:548:G:OP1	2.30	0.64
9:A:1499:C:H2'	9:A:1500:G:H8	1.62	0.64
12:D:35:THR:OG1	12:D:49:GLN:HG2	1.98	0.64
13:E:72:SER:C	13:E:74:LYS:H	2.06	0.64
15:G:31:GLU:O	15:G:31:GLU:HG3	1.97	0.64
15:G:63:GLN:OE1	15:G:63:GLN:HA	1.98	0.64
21:M:57:VAL:HA	21:M:112:LEU:HD21	1.80	0.64
25:Q:63:ARG:NH1	25:Q:96:ASP:CA	2.30	0.64
25:Q:87:VAL:O	25:Q:88:GLU:CB	2.46	0.64
32:X:38:TRP:CB	32:X:45:PHE:HE2	2.05	0.64
32:X:50:VAL:CG1	32:X:51:SER:N	2.60	0.64
9:A:93:G:O2'	9:A:94:A:H5'	1.97	0.64
9:A:580:U:H2'	9:A:581:C:H6	1.61	0.64
9:A:1935:G:H1	9:A:1962:C:H2'	1.62	0.64
9:A:2352:A:C3'	9:A:2353:G:H5'	2.25	0.64
9:A:2520:C:O2'	9:A:2521:C:H5'	1.98	0.64
11:C:91:ALA:HB3	11:C:103:ILE:HG22	1.79	0.64
11:C:203:VAL:O	11:C:204:LEU:HB2	1.96	0.64
13:E:119:ILE:HD11	13:E:187:VAL:HA	1.74	0.64
18:J:32:LEU:O	18:J:36:LEU:HB2	1.97	0.64
27:S:84:ARG:HB2	27:S:96:ILE:HD11	1.80	0.64
31:W:39:GLN:O	31:W:41:GLY:N	2.31	0.64
34:Z:6:ILE:O	34:Z:35:VAL:HG12	1.97	0.64
34:Z:40:THR:HG23	34:Z:43:ILE:H	1.62	0.64
9:A:1654:A:H2'	9:A:1655:A:H8	1.63	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1906:G:H2'	9:A:1907:G:O5'	1.97	0.64
9:A:2796:U:H3	9:A:2799:A:H61	1.46	0.64
12:D:53:GLY:HA3	12:D:77:ARG:HB2	1.79	0.64
13:E:7:ASP:CG	13:E:8:ALA:H	2.06	0.64
15:G:132:LEU:CD1	15:G:143:VAL:HG12	2.27	0.64
15:G:148:ARG:HA	15:G:161:VAL:CG1	2.27	0.64
30:V:26:PHE:HB2	30:V:27:PRO:CD	2.28	0.64
31:W:41:GLY:O	31:W:42:THR:C	2.41	0.64
34:Z:3:THR:HA	34:Z:38:GLU:HA	1.80	0.64
5:4:15:LYS:O	5:4:16:ILE:HB	1.98	0.64
9:A:528:A:H2	9:A:2043:C:C5'	2.10	0.64
9:A:1820:U:C2	11:C:200:MET:CG	2.80	0.64
11:C:80:LEU:HD11	11:C:109:LEU:CG	2.27	0.64
11:C:144:GLU:HA	11:C:151:GLY:HA2	1.80	0.64
12:D:68:PHE:CD2	12:D:75:ALA:HA	2.32	0.64
13:E:24:ASN:O	13:E:28:VAL:HG12	1.98	0.64
20:L:76:GLU:C	20:L:77:ILE:HD12	2.22	0.64
23:O:105:ALA:O	23:O:106:LEU:HB3	1.96	0.64
31:W:47:GLY:C	31:W:49:ASN:H	2.05	0.64
9:A:1866:A:H2'	9:A:1867:G:O4'	1.98	0.63
11:C:106:PRO:CB	11:C:141:HIS:CE1	2.74	0.63
11:C:229:HIS:CD2	11:C:246:PRO:HA	2.33	0.63
12:D:8:LYS:HB2	12:D:201:LEU:CD2	2.28	0.63
12:D:182:ALA:O	12:D:184:ARG:N	2.31	0.63
18:J:44:TYR:CD2	25:Q:63:ARG:HG2	2.32	0.63
19:K:19:VAL:HG22	19:K:41:ILE:CG1	2.26	0.63
26:R:41:ILE:O	26:R:46:GLU:HB2	1.98	0.63
31:W:17:ALA:O	31:W:18:LYS:CB	2.46	0.63
31:W:23:LYS:NZ	31:W:24:ARG:CG	2.61	0.63
3:2:24:THR:HG23	3:2:27:GLY:H	1.61	0.63
4:3:33:THR:HG23	4:3:34:LYS:N	2.12	0.63
9:A:277:G:C8	9:A:361:G:O6	2.51	0.63
9:A:712:G:H2'	9:A:713:G:H5'	1.80	0.63
9:A:1417:C:H2'	9:A:1418:G:C8	2.33	0.63
9:A:1799:G:N2	11:C:153:LEU:HD23	2.13	0.63
11:C:12:ARG:CG	11:C:12:ARG:NH1	2.53	0.63
11:C:180:MET:HG3	11:C:268:ARG:NH1	2.13	0.63
12:D:8:LYS:HB2	12:D:201:LEU:HD21	1.79	0.63
15:G:132:LEU:N	15:G:132:LEU:HD23	2.13	0.63
15:G:137:LYS:C	15:G:140:ILE:HD11	2.20	0.63
16:H:21:VAL:HG21	16:H:25:TYR:HD2	1.64	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:H:44:ILE:O	16:H:48:GLU:HB2	1.97	0.63
16:H:53:GLU:HG2	16:H:53:GLU:O	1.98	0.63
23:O:111:ARG:C	23:O:113:ALA:H	2.05	0.63
25:Q:85:ALA:O	25:Q:88:GLU:HB2	1.98	0.63
26:R:49:ILE:HG22	26:R:53:PHE:C	2.23	0.63
31:W:46:ALA:O	31:W:47:GLY:O	2.16	0.63
9:A:142:A:O2'	9:A:143:C:C6	2.52	0.63
9:A:417:C:H2'	9:A:418:C:C6	2.25	0.63
9:A:996:A:C4'	25:Q:91:ARG:HG2	2.26	0.63
9:A:2134:A:O2'	9:A:2135:A:H5''	1.99	0.63
13:E:79:ARG:CG	13:E:80:SER:N	2.51	0.63
15:G:104:LEU:O	15:G:112:VAL:HG22	1.99	0.63
18:J:88:THR:HG22	18:J:91:GLU:HB2	1.79	0.63
18:J:130:HIS:CD2	18:J:132:HIS:H	2.16	0.63
18:J:130:HIS:HD2	18:J:132:HIS:H	1.45	0.63
22:N:1:MET:O	22:N:2:ARG:CB	2.45	0.63
31:W:18:LYS:HA	31:W:36:ILE:HD11	1.81	0.63
31:W:28:GLU:HB3	31:W:31:LEU:CD1	2.28	0.63
33:Y:18:LEU:O	33:Y:22:LEU:CB	2.46	0.63
9:A:2334:U:H4'	9:A:2335:A:OP2	1.98	0.63
9:A:2654:A:H4'	9:A:2655:G:OP1	1.97	0.63
18:J:54:ILE:HD12	18:J:54:ILE:C	2.23	0.63
18:J:55:ILE:HG13	18:J:55:ILE:O	1.97	0.63
9:A:638:G:H2'	9:A:639:U:C6	2.32	0.63
9:A:825:A:O2'	9:A:826:U:H5'	1.99	0.63
9:A:863:A:O2'	9:A:864:G:H5'	1.99	0.63
9:A:973:A:O4'	9:A:1188:U:C6	2.52	0.63
11:C:30:ALA:HB3	11:C:31:PRO:CD	2.29	0.63
12:D:5:VAL:H	12:D:32:ASN:ND2	1.90	0.63
12:D:47:ALA:HA	12:D:84:LEU:HG	1.81	0.63
14:F:172:PHE:O	14:F:173:ASP:C	2.41	0.63
15:G:168:VAL:O	15:G:170:THR:HG23	1.98	0.63
31:W:13:ARG:O	31:W:14:ASP:C	2.41	0.63
31:W:22:VAL:O	31:W:25:PHE:HD2	1.82	0.63
9:A:686:U:H2'	9:A:788:A:N1	2.13	0.63
9:A:1061:U:H1'	9:A:1070:A:H1'	1.81	0.63
9:A:1606:C:HO2'	9:A:1607:C:P	2.22	0.63
9:A:2151:U:O2'	9:A:2152:G:C5'	2.45	0.63
11:C:83:ASP:OD1	11:C:84:PRO:HD2	1.98	0.63
12:D:121:THR:O	12:D:122:VAL:HB	1.98	0.63
13:E:45:ALA:C	13:E:46:GLN:HG2	2.22	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:G:8:VAL:HG12	15:G:49:LEU:N	2.13	0.63
15:G:10:VAL:O	15:G:10:VAL:CG2	2.46	0.63
16:H:26:ALA:HA	16:H:30:LEU:HB2	1.79	0.63
19:K:61:VAL:HG22	19:K:87:LEU:HD11	1.80	0.63
20:L:19:LEU:HB2	20:L:27:LEU:HD22	1.81	0.63
30:V:51:GLN:HG2	30:V:86:LEU:HD11	1.80	0.63
33:Y:26:PHE:HD2	33:Y:29:ARG:HH11	1.45	0.63
9:A:287:G:H1	9:A:353:C:N4	1.96	0.63
9:A:563:A:C2	9:A:564:C:C2	2.87	0.63
9:A:611:C:H2'	9:A:612:G:C5'	2.28	0.63
9:A:748:G:OP2	27:S:88:ARG:HG3	1.99	0.63
9:A:1425:G:O2'	9:A:1426:G:H5'	1.99	0.63
9:A:1498:C:O2'	9:A:1499:C:H5'	1.97	0.63
9:A:2728:U:O2'	9:A:2729:G:C5'	2.46	0.63
15:G:59:ASP:O	15:G:60:GLY:C	2.42	0.63
20:L:55:MET:HE2	20:L:56:PRO:HD2	1.79	0.63
23:O:111:ARG:HD3	23:O:111:ARG:C	2.24	0.63
32:X:77:TYR:O	32:X:77:TYR:CD1	2.52	0.63
9:A:84:A:H4'	9:A:85:G:O5'	1.98	0.63
9:A:503:A:H4'	9:A:504:A:O5'	1.98	0.63
9:A:754:U:H2'	9:A:755:U:C6	2.34	0.63
9:A:946:C:H2'	9:A:947:A:H8	1.64	0.63
9:A:2641:G:OP1	18:J:76:HIS:HE1	1.82	0.63
12:D:13:ARG:NH1	24:P:74:GLN:NE2	2.42	0.63
12:D:111:GLY:O	12:D:169:ARG:O	2.16	0.63
12:D:142:VAL:HG23	12:D:143:PRO:N	2.13	0.63
13:E:48:THR:HG22	13:E:86:ALA:HB3	1.79	0.63
13:E:73:ILE:O	13:E:73:ILE:HG12	1.98	0.63
14:F:105:ILE:CD1	14:F:138:PRO:HG2	2.28	0.63
14:F:129:MET:CG	14:F:153:ILE:CD1	2.74	0.63
23:O:62:LEU:CD2	23:O:70:ALA:HA	2.28	0.63
25:Q:86:SER:HB2	26:R:50:GLY:O	1.98	0.63
4:3:21:PHE:H	4:3:48:MET:CE	2.11	0.63
9:A:1074:G:O2'	9:A:1075:C:H6	1.82	0.63
9:A:1556:C:C2'	9:A:1557:C:H5'	2.28	0.63
9:A:1734:G:C4	9:A:1735:A:C8	2.86	0.63
9:A:2071:A:H2'	9:A:2072:C:C6	2.34	0.63
11:C:77:VAL:HG22	11:C:77:VAL:O	1.98	0.63
12:D:97:SER:OG	12:D:99:GLU:HG2	1.99	0.63
13:E:150:THR:HG23	13:E:153:LEU:H	1.62	0.63
13:E:154:ASP:OD2	13:E:154:ASP:C	2.42	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:F:7:TYR:CD2	14:F:11:VAL:CG1	2.78	0.63
14:F:169:LEU:CD1	14:F:169:LEU:H	2.12	0.63
15:G:8:VAL:HG13	15:G:9:VAL:N	2.14	0.63
24:P:33:GLU:N	24:P:36:LYS:O	2.32	0.63
29:U:100:GLU:O	29:U:101:THR:HB	1.99	0.63
32:X:29:LEU:N	32:X:29:LEU:CD2	2.61	0.63
9:A:1303:G:H2'	9:A:1304:A:H8	1.64	0.62
9:A:1579:A:O2'	9:A:1580:A:H5'	1.99	0.62
9:A:2339:C:H2'	9:A:2340:A:C8	2.32	0.62
12:D:4:LEU:HD13	12:D:100:LEU:HD23	1.81	0.62
2:1:33:LEU:HB3	2:1:51:ALA:HB1	1.81	0.62
9:A:302:C:HO2'	9:A:303:G:H8	1.46	0.62
9:A:503:A:H5'	9:A:505:A:OP1	1.98	0.62
9:A:974:G:C8	9:A:989:G:C2	2.86	0.62
9:A:1747:U:H2'	9:A:1748:C:H6	1.64	0.62
9:A:2816:G:O2'	9:A:2817:U:H5'	1.98	0.62
11:C:15:VAL:HG22	11:C:204:LEU:O	1.98	0.62
13:E:61:ARG:HH11	13:E:64:GLY:HA3	1.63	0.62
9:A:320:A:H4'	9:A:322:A:N7	2.13	0.62
9:A:1105:U:H2'	9:A:1106:G:H8	1.64	0.62
9:A:2847:U:H2'	9:A:2848:G:H5'	1.80	0.62
25:Q:27:ARG:HG3	25:Q:27:ARG:HH11	1.64	0.62
26:R:1:MET:HG3	26:R:1:MET:O	1.99	0.62
9:A:855:G:H1'	31:W:23:LYS:NZ	2.15	0.62
9:A:859:G:OP2	9:A:859:G:H8	1.82	0.62
9:A:995:C:H5'	9:A:995:C:C6	2.30	0.62
9:A:1023:U:C6	9:A:1023:U:H5'	2.35	0.62
11:C:182:LYS:O	11:C:183:VAL:HG23	1.99	0.62
14:F:39:VAL:HG13	14:F:40:GLY:N	2.13	0.62
17:I:71:LYS:HG2	17:I:72:THR:H	1.63	0.62
9:A:2408:U:H2'	9:A:2409:G:H8	1.64	0.62
9:A:2495:G:C2'	9:A:2496:C:H5'	2.30	0.62
11:C:255:LYS:C	11:C:256:THR:HG23	2.25	0.62
19:K:36:GLY:HA2	19:K:62:VAL:O	2.00	0.62
9:A:12:U:O2	9:A:12:U:H2'	1.97	0.62
9:A:13:A:O2'	9:A:15:G:N7	2.33	0.62
9:A:1022:G:C6	9:A:1141:U:C5	2.88	0.62
9:A:1110:G:O2'	9:A:1111:A:C8	2.41	0.62
9:A:1366:A:C2	9:A:1367:A:H1'	2.34	0.62
12:D:16:THR:CG2	12:D:20:VAL:HB	2.29	0.62
12:D:125:TRP:O	12:D:126:ASN:HB2	1.99	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:P:85:VAL:O	24:P:86:LYS:HB2	1.99	0.62
24:P:104:GLY:O	24:P:106:ALA:N	2.33	0.62
4:3:21:PHE:N	4:3:48:MET:HE1	2.13	0.62
9:A:137:U:H3	9:A:142:A:N6	1.98	0.62
9:A:1845:G:O2'	9:A:1846:G:H5'	2.00	0.62
9:A:1996:C:P	19:K:31:ARG:HH21	2.22	0.62
9:A:2214:C:H2'	9:A:2215:C:H6	1.65	0.62
10:B:17:C:O2'	10:B:18:G:H5'	1.99	0.62
25:Q:87:VAL:O	25:Q:88:GLU:HB3	2.00	0.62
27:S:24:ILE:HG23	27:S:71:VAL:HG11	1.80	0.62
9:A:405:U:H3'	9:A:406:G:H5'	1.82	0.62
9:A:574:A:H4'	9:A:575:A:O5'	1.99	0.62
9:A:855:G:C1'	31:W:23:LYS:HD3	2.29	0.62
9:A:1432:G:O2'	9:A:1433:A:H5'	1.99	0.62
9:A:2136:G:C2	9:A:2137:U:C4	2.87	0.62
11:C:16:VAL:N	11:C:203:VAL:HG11	2.14	0.62
12:D:33:ARG:HH21	12:D:51:THR:HG23	1.64	0.62
13:E:150:THR:CG2	13:E:153:LEU:HA	2.30	0.62
16:H:3:VAL:HA	16:H:37:VAL:O	2.00	0.62
16:H:8:LYS:O	16:H:9:VAL:HB	2.00	0.62
18:J:135:GLN:HA	18:J:135:GLN:HE21	1.64	0.62
19:K:21:CYS:CA	19:K:41:ILE:CD1	2.75	0.62
20:L:101:ILE:HG22	20:L:102:GLY:H	1.64	0.62
24:P:102:ARG:O	24:P:103:THR:CG2	2.48	0.62
5:4:13:ASN:H	5:4:13:ASN:ND2	1.95	0.62
9:A:1256:G:H2'	13:E:77:ILE:HD11	1.81	0.62
15:G:61:TRP:HA	15:G:61:TRP:CE3	2.34	0.62
16:H:31:VAL:O	16:H:32:PRO:C	2.43	0.62
17:I:116:MET:HE2	17:I:116:MET:HA	1.81	0.62
18:J:140:LEU:C	18:J:140:LEU:CD1	2.73	0.62
19:K:18:ARG:HG3	19:K:18:ARG:NH1	2.11	0.62
26:R:42:ALA:CA	26:R:46:GLU:HB2	2.29	0.62
26:R:48:LYS:O	26:R:48:LYS:HD2	1.99	0.62
28:T:43:ILE:O	28:T:47:VAL:HG23	2.00	0.62
9:A:610:C:O2'	9:A:611:C:H5'	2.00	0.62
9:A:945:A:H5'	9:A:946:C:OP2	1.99	0.62
9:A:1287:A:OP2	22:N:103:ARG:CG	2.48	0.62
9:A:1428:C:C5	9:A:1569:A:H5''	2.35	0.62
9:A:1556:C:O2'	9:A:1557:C:H5'	2.00	0.62
9:A:2134:A:N6	9:A:2135:A:N6	2.47	0.62
9:A:2140:G:H8	9:A:2140:G:OP2	1.83	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:D:53:GLY:HA3	12:D:77:ARG:H	1.63	0.62
15:G:23:ILE:HG21	15:G:71:LEU:HD11	1.82	0.62
25:Q:97:ILE:HD11	25:Q:105:PHE:CB	2.30	0.62
28:T:39:THR:CG2	28:T:41:ALA:HB3	2.30	0.62
2:1:32:LYS:HG2	2:1:52:LYS:OXT	1.99	0.61
9:A:42:A:C3'	9:A:43:G:H5''	2.30	0.61
9:A:588:U:H1'	13:E:85:PHE:CD1	2.34	0.61
9:A:1656:C:H5''	12:D:141:ARG:HB2	1.82	0.61
9:A:1963:U:H6	9:A:1963:U:H3'	1.64	0.61
9:A:2720:U:OP1	24:P:52:ARG:NH2	2.33	0.61
13:E:143:LEU:HD13	13:E:146:VAL:HG11	1.82	0.61
14:F:167:ALA:O	14:F:170:ALA:HB3	1.99	0.61
20:L:39:LYS:C	20:L:40:SER:O	2.38	0.61
21:M:77:PRO:HD2	21:M:80:VAL:HG11	1.81	0.61
25:Q:109:VAL:HG12	25:Q:113:LYS:HD2	1.81	0.61
32:X:44:ARG:CG	32:X:45:PHE:N	2.62	0.61
3:2:29:GLN:O	3:2:33:ARG:HG3	2.00	0.61
9:A:686:U:H2'	9:A:788:A:C2	2.35	0.61
9:A:1507:C:C2	9:A:1508:A:C2	2.88	0.61
9:A:1722:A:N6	9:A:1738:G:H1'	2.15	0.61
9:A:2405:G:H1'	9:A:2412:A:N6	2.15	0.61
9:A:2476:A:H2'	9:A:2477:U:H5'	1.81	0.61
9:A:2678:C:C2'	9:A:2679:A:H5'	2.30	0.61
9:A:2729:G:O2'	9:A:2730:C:H5'	2.00	0.61
12:D:45:TYR:N	12:D:45:TYR:CD1	2.68	0.61
14:F:35:LEU:HD23	14:F:153:ILE:HG21	1.81	0.61
15:G:1:SER:HA	15:G:5:LYS:HG3	1.81	0.61
18:J:4:PHE:N	18:J:44:TYR:OH	2.33	0.61
20:L:100:ILE:HD12	20:L:100:ILE:O	2.00	0.61
22:N:116:VAL:HG22	22:N:116:VAL:O	2.00	0.61
24:P:19:PHE:O	24:P:20:ARG:CB	2.32	0.61
25:Q:49:ARG:HG3	25:Q:49:ARG:HH11	1.65	0.61
9:A:480:A:H2	9:A:499:U:O2	1.83	0.61
9:A:1836:C:H2'	9:A:1837:C:H5'	1.82	0.61
12:D:9:VAL:CG2	12:D:26:VAL:CG1	2.78	0.61
14:F:37:MET:HE3	14:F:151:LEU:CB	2.30	0.61
15:G:10:VAL:HG11	15:G:16:VAL:HG21	1.82	0.61
26:R:15:SER:O	26:R:18:GLN:HB3	2.00	0.61
29:U:17:ASP:HB3	29:U:20:LYS:HD2	1.82	0.61
29:U:17:ASP:O	29:U:19:GLY:N	2.32	0.61
31:W:18:LYS:CG	31:W:19:ARG:H	2.09	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:528:A:H8	9:A:528:A:H3'	1.65	0.61
9:A:666:A:H4'	20:L:48:ARG:HE	1.65	0.61
9:A:1746:A:H2'	9:A:1747:U:H6	1.65	0.61
14:F:37:MET:HE3	14:F:37:MET:HA	1.81	0.61
18:J:25:LEU:HB2	18:J:62:VAL:HG21	1.83	0.61
22:N:44:LEU:HD11	22:N:48:VAL:CG2	2.31	0.61
30:V:6:ALA:HB2	30:V:42:LEU:HD22	1.82	0.61
1:O:2:VAL:HG23	9:A:2015:A:N1	2.15	0.61
9:A:634:C:O5'	9:A:634:C:H6	1.83	0.61
9:A:790:U:HO2'	9:A:791:C:P	2.22	0.61
9:A:1062:G:C2'	9:A:1063:G:C8	2.83	0.61
9:A:1171:G:C6	9:A:1172:C:C4	2.89	0.61
9:A:2269:G:O2'	31:W:18:LYS:HG2	2.01	0.61
9:A:2292:U:H2'	9:A:2293:G:H8	1.65	0.61
9:A:2505:G:O2'	9:A:2506:U:H6	1.84	0.61
11:C:132:ARG:HH12	11:C:169:ALA:HA	1.65	0.61
14:F:97:GLU:O	14:F:101:ARG:HG2	1.99	0.61
16:H:32:PRO:HA	32:X:38:TRP:HD1	1.65	0.61
21:M:1:MET:O	21:M:2:LEU:CB	2.49	0.61
21:M:1:MET:O	21:M:2:LEU:HB2	1.99	0.61
22:N:103:ARG:HD3	22:N:110:MET:CE	2.29	0.61
4:3:56:LEU:CD2	4:3:56:LEU:N	2.63	0.61
9:A:1057:A:C2	9:A:1082:U:C2	2.88	0.61
9:A:1286:A:O2'	9:A:1288:G:OP2	2.18	0.61
9:A:1315:C:O2'	9:A:1316:U:H5'	2.00	0.61
9:A:1964:G:H4'	9:A:1965:C:OP2	1.99	0.61
9:A:2023:C:O2	9:A:2023:C:H2'	1.99	0.61
9:A:2319:G:HO2'	9:A:2320:U:H5	1.48	0.61
9:A:2520:C:C6	9:A:2567:G:H1'	2.36	0.61
9:A:2591:C:OP1	11:C:237:ARG:HG3	2.01	0.61
9:A:2663:G:H2'	9:A:2664:G:H8	1.65	0.61
9:A:2784:U:H2'	9:A:2785:C:C6	2.35	0.61
9:A:2820:A:O2'	9:A:2821:A:P	2.57	0.61
11:C:142:ASN:O	11:C:142:ASN:ND2	2.34	0.61
14:F:52:ALA:O	14:F:55:ASP:HB2	2.00	0.61
30:V:65:VAL:CG2	30:V:65:VAL:O	2.49	0.61
31:W:9:THR:CG2	31:W:10:ARG:NH1	2.64	0.61
32:X:50:VAL:HG12	32:X:51:SER:N	2.16	0.61
9:A:483:A:C8	9:A:484:C:C5	2.88	0.61
9:A:623:C:H2'	9:A:624:C:C6	2.36	0.61
9:A:712:G:C2'	9:A:713:G:H5'	2.29	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:910:A:C4	21:M:13:HIS:CE1	2.89	0.61
9:A:2075:U:H2'	9:A:2238:G:N2	2.16	0.61
9:A:2402:U:C2'	9:A:2403:C:OP2	2.48	0.61
10:B:49:C:OP1	23:O:102:ARG:HG3	2.00	0.61
12:D:62:LYS:HB2	12:D:63:PRO:HD3	1.82	0.61
15:G:33:THR:CA	15:G:34:ARG:HH11	2.12	0.61
26:R:10:LYS:HD3	26:R:10:LYS:N	2.15	0.61
9:A:34:U:H1'	9:A:35:G:OP1	2.01	0.61
9:A:610:C:C2'	9:A:611:C:H5'	2.31	0.61
9:A:613:A:H8	9:A:616:A:N1	1.95	0.61
9:A:1073:A:P	9:A:1073:A:C8	2.94	0.61
9:A:1098:A:H5'	9:A:1099:G:OP2	2.00	0.61
9:A:1204:A:H4'	9:A:1205:A:O5'	2.01	0.61
9:A:1534:U:H5'	9:A:1535:A:OP1	2.00	0.61
9:A:1797:G:O3'	11:C:255:LYS:HA	2.00	0.61
11:C:14:HIS:O	11:C:203:VAL:HG11	2.00	0.61
11:C:252:LYS:HZ3	11:C:252:LYS:CB	2.14	0.61
12:D:9:VAL:HG21	12:D:26:VAL:CG1	2.30	0.61
12:D:169:ARG:C	12:D:170:VAL:CG1	2.74	0.61
14:F:98:PHE:O	14:F:102:LEU:HB2	2.00	0.61
24:P:85:VAL:CG1	24:P:86:LYS:N	2.64	0.61
25:Q:86:SER:HB3	26:R:51:VAL:HG13	1.81	0.61
4:3:56:LEU:N	4:3:56:LEU:HD22	2.16	0.61
9:A:322:A:C5	9:A:340:A:C2	2.89	0.61
9:A:574:A:H2	12:D:150:GLN:HE22	1.48	0.61
9:A:1340:U:H3'	28:T:61:LEU:CD2	2.30	0.61
9:A:1501:G:C2'	9:A:1502:A:H5'	2.31	0.61
11:C:257:ARG:HG3	11:C:269:ARG:NH2	2.15	0.61
13:E:6:LYS:HG2	13:E:7:ASP:N	2.15	0.61
15:G:9:VAL:HA	15:G:48:THR:HA	1.82	0.61
15:G:37:ASN:O	15:G:38:ASP:HB3	2.00	0.61
17:I:120:ASP:HB3	17:I:123:ALA:HB3	1.83	0.61
19:K:5:GLN:O	19:K:6:THR:HB	2.01	0.61
19:K:77:ILE:N	19:K:77:ILE:CD1	2.64	0.61
19:K:113:MET:SD	19:K:116:ILE:CD1	2.89	0.61
21:M:34:LYS:HE3	21:M:131:VAL:HG11	1.83	0.61
22:N:10:LEU:O	22:N:12:ARG:HG3	2.01	0.61
7:6:7:ARG:CA	7:6:8:ASN:CA	2.78	0.61
9:A:572:A:C2	9:A:2033:A:C2	2.88	0.61
9:A:751:A:H5'	27:S:90:LYS:HA	1.83	0.61
9:A:1061:U:C5	17:I:9:LYS:HG3	2.36	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2846:G:OP2	24:P:51:ASN:HB2	2.01	0.61
12:D:158:GLY:O	12:D:159:LYS:C	2.44	0.61
19:K:107:LEU:O	19:K:109:SER:N	2.32	0.61
30:V:93:ARG:O	30:V:94:ALA:HB2	1.99	0.61
31:W:23:LYS:HD2	31:W:24:ARG:CA	2.30	0.61
9:A:617:G:O2'	9:A:618:G:H5'	2.01	0.60
9:A:656:G:H2'	9:A:657:U:C6	2.35	0.60
9:A:1062:G:H2'	9:A:1063:G:C8	2.36	0.60
9:A:1106:G:C2	9:A:1107:G:C8	2.89	0.60
9:A:1809:A:H2'	9:A:1810:A:C8	2.36	0.60
9:A:1850:G:C6	9:A:1851:U:C4	2.89	0.60
11:C:141:HIS:N	11:C:190:THR:O	2.29	0.60
14:F:4:HIS:O	14:F:7:TYR:HB3	2.00	0.60
14:F:147:ARG:HG3	14:F:148:VAL:N	2.16	0.60
18:J:44:TYR:HD2	25:Q:63:ARG:CD	2.07	0.60
24:P:28:LYS:HB2	24:P:82:SER:HB3	1.82	0.60
24:P:33:GLU:HB3	24:P:36:LYS:H	1.65	0.60
31:W:25:PHE:O	31:W:65:LYS:HA	2.01	0.60
4:3:5:THR:HG23	9:A:242:G:O2'	2.01	0.60
9:A:1494:A:C2	9:A:1495:A:C4	2.87	0.60
9:A:1673:G:C2'	9:A:1674:G:H5'	2.31	0.60
9:A:1867:G:HO2'	9:A:1868:C:H5'	1.60	0.60
32:X:34:SER:HA	32:X:48:LEU:O	2.01	0.60
1:0:39:ARG:HH11	1:0:39:ARG:CB	2.05	0.60
2:1:9:LYS:NZ	2:1:50:GLU:OE2	2.33	0.60
4:3:21:PHE:H	4:3:48:MET:HE1	1.67	0.60
9:A:548:G:H3'	9:A:548:G:C8	2.37	0.60
9:A:687:C:H2'	9:A:688:U:C6	2.36	0.60
9:A:1061:U:H1'	9:A:1070:A:C1'	2.31	0.60
9:A:1081:U:OP2	9:A:1081:U:H6	1.84	0.60
9:A:1402:U:C2'	9:A:1403:A:O5'	2.49	0.60
9:A:1495:A:O2'	9:A:1496:A:H5'	2.01	0.60
9:A:1911:U:C2	9:A:1918:A:C2	2.89	0.60
9:A:2103:C:C2'	9:A:2104:C:H5'	2.30	0.60
10:B:40:U:O2	10:B:43:C:H3'	2.01	0.60
11:C:94:LEU:HD13	11:C:100:ARG:HD3	1.82	0.60
14:F:40:GLY:C	14:F:84:ILE:HD11	2.26	0.60
14:F:106:ALA:C	14:F:108:PRO:HD2	2.25	0.60
16:H:50:ARG:O	16:H:54:LEU:HB2	2.01	0.60
18:J:18:VAL:HG22	18:J:140:LEU:CD1	2.31	0.60
18:J:44:TYR:HA	25:Q:59:LEU:HD22	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:P:53:GLY:O	24:P:55:HIS:N	2.34	0.60
25:Q:94:LEU:C	25:Q:96:ASP:H	2.09	0.60
27:S:8:ARG:HB3	27:S:102:HIS:ND1	2.16	0.60
28:T:7:LEU:C	28:T:9:LYS:H	2.08	0.60
31:W:8:SER:O	31:W:9:THR:CG2	2.49	0.60
31:W:45:HIS:ND1	31:W:45:HIS:N	2.48	0.60
32:X:38:TRP:HE3	32:X:45:PHE:CE2	2.18	0.60
7:6:9:VAL:CA	7:6:10:ASP:CA	2.80	0.60
9:A:141:G:N1	28:T:2:ILE:CG2	2.65	0.60
9:A:250:G:H2'	9:A:251:A:H8	1.62	0.60
9:A:639:U:H2'	9:A:640:C:C6	2.36	0.60
9:A:960:A:H5''	9:A:961:C:OP2	2.02	0.60
9:A:1011:G:H5''	25:Q:76:SER:OG	2.01	0.60
9:A:1060:U:C5'	9:A:1061:U:H5'	2.30	0.60
9:A:1713:A:H4'	9:A:1714:U:OP1	1.99	0.60
9:A:2258:C:C2	9:A:2426:A:H4'	2.36	0.60
12:D:62:LYS:N	12:D:63:PRO:CD	2.64	0.60
15:G:4:ALA:HB2	15:G:65:GLY:HA2	1.82	0.60
16:H:31:VAL:HG13	16:H:36:ALA:O	2.01	0.60
18:J:40:HIS:C	18:J:41:LYS:CG	2.75	0.60
18:J:72:LYS:HD3	18:J:74:TYR:CE1	2.37	0.60
22:N:12:ARG:HH21	22:N:12:ARG:CG	2.11	0.60
33:Y:43:LEU:O	33:Y:47:ARG:HB2	2.01	0.60
2:1:9:LYS:N	2:1:9:LYS:HD3	2.17	0.60
9:A:364:C:H2'	9:A:365:U:H6	1.65	0.60
9:A:368:A:C2'	9:A:369:U:H5'	2.32	0.60
9:A:754:U:H2'	9:A:755:U:H6	1.67	0.60
9:A:1033:U:H4'	9:A:1034:G:OP1	2.01	0.60
9:A:1405:U:H2'	9:A:1406:U:C6	2.36	0.60
9:A:2231:U:OP1	32:X:29:LEU:CD2	2.50	0.60
9:A:2310:C:C5	14:F:76:PHE:CZ	2.90	0.60
9:A:2773:C:OP1	12:D:171:THR:CG2	2.49	0.60
11:C:15:VAL:C	11:C:203:VAL:HG11	2.26	0.60
11:C:90:ILE:HA	11:C:104:LEU:O	2.01	0.60
11:C:250:GLN:H	11:C:250:GLN:CD	2.09	0.60
13:E:41:GLN:HB2	13:E:43:THR:HG23	1.84	0.60
14:F:114:ARG:HD2	14:F:114:ARG:N	2.16	0.60
18:J:4:PHE:O	18:J:44:TYR:HE1	1.84	0.60
20:L:78:ARG:HB3	20:L:113:ALA:CB	2.31	0.60
27:S:59:GLU:HA	27:S:64:ALA:CA	2.32	0.60
28:T:32:LEU:HD23	28:T:32:LEU:N	2.16	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:42:A:H3'	9:A:43:G:H5''	1.82	0.60
9:A:142:A:H2'	9:A:143:C:C5	2.36	0.60
9:A:1026:G:O2'	9:A:1027:A:H5'	2.00	0.60
9:A:1461:C:O2'	9:A:1462:C:C5'	2.49	0.60
9:A:1698:A:H4'	9:A:1699:G:O5'	2.00	0.60
9:A:2485:G:H5''	21:M:45:GLN:HE22	1.67	0.60
9:A:2524:G:H2'	9:A:2525:G:O5'	2.01	0.60
11:C:140:VAL:HA	11:C:190:THR:O	2.01	0.60
12:D:172:VAL:O	12:D:173:GLN:CB	2.49	0.60
13:E:48:THR:OG1	13:E:50:ALA:HB3	2.01	0.60
18:J:3:THR:HG22	18:J:44:TYR:OH	2.02	0.60
18:J:31:GLU:O	18:J:32:LEU:C	2.42	0.60
19:K:88:ASN:ND2	19:K:90:ASN:H	1.99	0.60
25:Q:69:ARG:CB	25:Q:69:ARG:NH2	2.35	0.60
27:S:24:ILE:HG12	27:S:36:LEU:CD1	2.32	0.60
32:X:31:ASN:OD1	32:X:33:HIS:NE2	2.34	0.60
9:A:141:G:H1	28:T:2:ILE:HG23	1.65	0.60
9:A:387:U:H4'	9:A:388:G:O5'	2.01	0.60
9:A:1064:C:OP1	17:I:87:SER:C	2.45	0.60
9:A:1252:G:C2	25:Q:32:ARG:HG2	2.37	0.60
9:A:1464:G:O2'	9:A:1465:G:H5'	2.01	0.60
9:A:1845:G:C2'	9:A:1846:G:H5'	2.31	0.60
15:G:36:LEU:HD22	15:G:36:LEU:N	2.17	0.60
15:G:93:TYR:CE2	15:G:106:LEU:HA	2.36	0.60
18:J:44:TYR:O	18:J:45:THR:CG2	2.49	0.60
30:V:17:SER:O	30:V:20:LEU:HB2	2.02	0.60
32:X:69:GLU:HA	32:X:72:ALA:HB3	1.84	0.60
34:Z:35:VAL:HG21	34:Z:37:ARG:NH1	2.16	0.60
9:A:792:A:N3	9:A:2072:C:O2'	2.30	0.60
9:A:962:G:O2'	9:A:963:U:H5'	2.01	0.60
9:A:1510:G:O2'	9:A:1511:G:C5'	2.50	0.60
9:A:2679:A:C2'	9:A:2680:U:O5'	2.49	0.60
9:A:2849:U:H4'	9:A:2868:A:C2	2.37	0.60
11:C:255:LYS:O	11:C:256:THR:HG23	2.02	0.60
15:G:22:VAL:HG22	15:G:36:LEU:HD11	1.82	0.60
20:L:101:ILE:HG23	20:L:102:GLY:N	2.17	0.60
24:P:3:ILE:HD13	24:P:3:ILE:C	2.27	0.60
24:P:87:ARG:CZ	24:P:111:GLU:HG3	2.32	0.60
30:V:80:HIS:CD2	30:V:83:LYS:N	2.42	0.60
31:W:24:ARG:HD3	31:W:25:PHE:N	2.16	0.60
9:A:92:U:H6	9:A:92:U:C5'	2.09	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:866:A:C8	9:A:866:A:C5'	2.65	0.60
9:A:1159:U:H2'	9:A:1160:G:H5'	1.83	0.60
9:A:2134:A:C6	9:A:2135:A:C6	2.89	0.60
11:C:136:VAL:HG23	11:C:166:ARG:NH1	2.17	0.60
14:F:7:TYR:HD2	14:F:11:VAL:HG11	1.60	0.60
28:T:32:LEU:O	28:T:34:VAL:HG13	2.02	0.60
29:U:102:ILE:O	29:U:102:ILE:HG13	2.01	0.60
1:O:53:VAL:O	1:O:54:ILE:C	2.44	0.60
9:A:325:G:O2'	9:A:326:G:H5'	2.02	0.60
9:A:1059:G:C6	9:A:1060:U:C4	2.90	0.60
9:A:1104:C:H2'	9:A:1105:U:C6	2.37	0.60
9:A:2214:C:H2'	9:A:2215:C:C6	2.37	0.60
9:A:2543:G:H2'	9:A:2544:G:C8	2.37	0.60
13:E:126:VAL:HG22	13:E:127:GLU:H	1.67	0.60
17:I:15:GLY:CA	17:I:50:LYS:HB3	2.28	0.60
17:I:105:LEU:HA	17:I:108:ILE:HB	1.84	0.60
20:L:77:ILE:HD13	20:L:108:ALA:HB1	1.84	0.60
32:X:58:ILE:HD12	32:X:66:VAL:CG2	2.16	0.60
1:O:33:SER:HB2	1:O:35:GLU:HG3	1.84	0.59
2:1:27:ARG:O	2:1:30:PRO:HD3	2.02	0.59
4:3:30:HIS:CE1	4:3:31:ILE:CG2	2.85	0.59
9:A:855:G:H1'	31:W:23:LYS:CD	2.31	0.59
9:A:1076:C:H2'	9:A:1077:A:C8	2.33	0.59
9:A:1476:U:OP2	9:A:1476:U:C6	2.54	0.59
9:A:1716:U:H2'	9:A:1717:A:C8	2.37	0.59
9:A:2415:G:H2'	9:A:2416:C:H6	1.66	0.59
9:A:2439:A:H4'	9:A:2440:C:O5'	2.02	0.59
9:A:2599:G:N7	11:C:234:GLY:HA2	2.16	0.59
9:A:2778:A:H4'	9:A:2779:U:OP2	2.02	0.59
12:D:92:VAL:O	12:D:92:VAL:HG12	2.02	0.59
12:D:182:ALA:C	12:D:184:ARG:H	2.08	0.59
14:F:43:ILE:HA	14:F:82:TYR:CE1	2.37	0.59
14:F:147:ARG:HG3	14:F:148:VAL:H	1.67	0.59
16:H:14:SER:OG	16:H:17:ASP:HB2	2.01	0.59
17:I:10:LEU:HD13	17:I:27:LEU:HA	1.84	0.59
20:L:110:VAL:CG1	20:L:131:ALA:CB	2.80	0.59
25:Q:40:LYS:HA	25:Q:43:GLN:HG3	1.83	0.59
25:Q:65:ASN:ND2	25:Q:69:ARG:NH2	2.38	0.59
27:S:36:LEU:HD23	27:S:48:LYS:CA	2.32	0.59
9:A:622:G:H2'	9:A:623:C:C6	2.37	0.59
9:A:705:A:H62	9:A:726:G:H1'	1.66	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:877:A:C6	9:A:899:A:C6	2.90	0.59
9:A:1115:G:O2'	9:A:1116:G:H8	1.84	0.59
9:A:1254:A:H5'	9:A:1254:A:H8	1.67	0.59
9:A:2133:G:P	9:A:2133:G:H21	2.26	0.59
9:A:2200:C:O2'	9:A:2201:G:H5'	2.02	0.59
9:A:2291:U:H2'	9:A:2292:U:C6	2.37	0.59
9:A:2636:C:H4'	12:D:81:GLU:OE2	2.02	0.59
9:A:2648:G:H2'	9:A:2649:C:C6	2.38	0.59
11:C:254:LYS:O	11:C:255:LYS:HB2	2.02	0.59
16:H:43:ASN:HD22	16:H:43:ASN:N	1.99	0.59
18:J:44:TYR:CD2	25:Q:63:ARG:CG	2.84	0.59
19:K:61:VAL:HG21	19:K:112:PHE:CE2	2.38	0.59
19:K:113:MET:CG	19:K:116:ILE:HD11	2.31	0.59
1:O:2:VAL:HG23	9:A:2015:A:C6	2.38	0.59
9:A:1113:U:C2	9:A:1114:C:C5	2.89	0.59
9:A:1338:G:O2'	28:T:18:GLU:HG2	2.02	0.59
9:A:2014:A:H2'	9:A:2015:A:C8	2.37	0.59
9:A:2405:G:O2'	9:A:2411:A:N6	2.35	0.59
9:A:2531:A:OP1	15:G:174:LYS:HG3	2.01	0.59
12:D:97:SER:O	12:D:99:GLU:CG	2.50	0.59
12:D:151:THR:O	12:D:152:PRO:C	2.42	0.59
14:F:35:LEU:CB	14:F:153:ILE:HG22	2.31	0.59
15:G:37:ASN:HB3	15:G:40:VAL:CG1	2.32	0.59
26:R:90:ARG:O	26:R:91:GLN:CB	2.50	0.59
27:S:2:GLU:O	27:S:3:THR:HG22	2.01	0.59
28:T:1:MET:CB	28:T:2:ILE:HD13	2.33	0.59
31:W:37:VAL:HG12	31:W:38:ARG:N	2.16	0.59
31:W:40:ARG:N	31:W:56:HIS:HB3	2.17	0.59
9:A:65:U:H2'	9:A:66:C:C6	2.36	0.59
9:A:478:A:N6	9:A:480:A:N6	2.49	0.59
9:A:1300:G:H5''	9:A:1301:A:H5'	1.85	0.59
9:A:1609:A:O2'	9:A:1610:A:H5''	2.02	0.59
9:A:1673:G:H2'	9:A:1674:G:H5'	1.84	0.59
9:A:1963:U:C3'	9:A:1963:U:C6	2.78	0.59
9:A:2076:U:O5'	9:A:2076:U:O2	2.20	0.59
9:A:2109:U:H2'	9:A:2110:G:H5'	1.85	0.59
9:A:2524:G:N2	9:A:2539:C:O2	2.34	0.59
12:D:16:THR:HG23	12:D:20:VAL:HB	1.85	0.59
15:G:8:VAL:HG12	15:G:9:VAL:N	2.17	0.59
15:G:23:ILE:HD12	15:G:23:ILE:N	2.17	0.59
19:K:71:ARG:HB2	19:K:72:PRO:CD	2.22	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:M:80:VAL:HG23	21:M:81:ARG:N	2.17	0.59
25:Q:91:ARG:NH2	25:Q:93:ILE:CD1	2.65	0.59
28:T:27:SER:O	28:T:28:ASN:CG	2.46	0.59
31:W:22:VAL:HG13	31:W:25:PHE:HE2	1.64	0.59
9:A:851:C:H2'	9:A:852:U:C6	2.38	0.59
9:A:1060:U:O4'	9:A:1062:G:H5''	2.03	0.59
9:A:1392:A:C6	9:A:1393:A:C6	2.90	0.59
9:A:2353:G:H1'	31:W:30:VAL:HG12	1.80	0.59
11:C:93:VAL:HG13	11:C:94:LEU:N	2.17	0.59
14:F:30:VAL:CG1	14:F:96:TRP:CH2	2.85	0.59
21:M:1:MET:HE3	21:M:1:MET:CA	2.32	0.59
24:P:64:SER:O	24:P:65:ASN:C	2.45	0.59
24:P:92:ARG:O	24:P:92:ARG:CG	2.51	0.59
24:P:112:ARG:O	24:P:113:LEU:HD23	2.02	0.59
25:Q:91:ARG:HB3	25:Q:93:ILE:CG2	2.29	0.59
26:R:21:ARG:NH2	26:R:93:PHE:CE1	2.71	0.59
29:U:94:PHE:CD1	29:U:94:PHE:O	2.56	0.59
9:A:18:U:O3'	25:Q:22:GLY:HA2	2.03	0.59
9:A:216:A:H2'	9:A:217:A:H8	1.68	0.59
9:A:286:U:H2'	9:A:287:G:O4'	2.02	0.59
9:A:1419:A:H2'	9:A:1421:G:N7	2.17	0.59
9:A:1885:A:C2	9:A:1886:U:H1'	2.37	0.59
11:C:143:VAL:HG21	11:C:161:VAL:HG11	1.83	0.59
14:F:39:VAL:HG13	14:F:84:ILE:HD12	1.83	0.59
14:F:40:GLY:CA	14:F:84:ILE:CD1	2.69	0.59
22:N:65:LEU:HD11	22:N:69:ARG:HH21	1.66	0.59
24:P:50:ARG:HD3	24:P:56:SER:CA	2.33	0.59
29:U:38:ILE:O	29:U:40:LEU:HG	2.02	0.59
29:U:43:LYS:O	29:U:57:ILE:HA	2.03	0.59
9:A:287:G:H2'	9:A:288:U:C6	2.37	0.59
9:A:319:G:C4	9:A:333:G:N2	2.71	0.59
9:A:1456:G:C5	9:A:1457:U:C5	2.91	0.59
9:A:1505:A:C2'	9:A:1506:U:H5'	2.32	0.59
9:A:1836:C:C2'	9:A:1837:C:H5'	2.33	0.59
9:A:1882:U:O2'	9:A:1883:U:H5'	2.03	0.59
9:A:2080:A:H5'	32:X:18:SER:HB2	1.84	0.59
9:A:2199:A:H3'	9:A:2200:C:C6	2.36	0.59
9:A:2599:G:C2'	9:A:2600:A:H5'	2.33	0.59
12:D:97:SER:H	12:D:99:GLU:CD	2.11	0.59
13:E:147:LEU:HB2	13:E:186:VAL:HB	1.84	0.59
18:J:74:TYR:CG	18:J:92:MET:HE2	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:K:34:GLY:O	19:K:35:VAL:C	2.45	0.59
20:L:2:ARG:HA	20:L:5:THR:OG1	2.02	0.59
21:M:1:MET:HE3	21:M:1:MET:C	2.28	0.59
22:N:103:ARG:CB	22:N:110:MET:HE3	2.26	0.59
25:Q:85:ALA:O	25:Q:87:VAL:C	2.46	0.59
28:T:2:ILE:HD13	28:T:2:ILE:N	2.16	0.59
28:T:31:VAL:C	28:T:32:LEU:CD2	2.74	0.59
9:A:22:C:C2'	9:A:23:G:O5'	2.51	0.59
9:A:309:A:H4'	29:U:15:GLY:HA2	1.84	0.59
9:A:1058:U:O2'	17:I:117:THR:HG23	2.02	0.59
9:A:1818:U:O2'	9:A:1819:A:OP2	2.18	0.59
11:C:24:HIS:CE1	11:C:25:LYS:O	2.55	0.59
12:D:68:PHE:C	12:D:73:VAL:HG12	2.28	0.59
13:E:79:ARG:O	13:E:80:SER:C	2.46	0.59
18:J:111:LYS:HD3	18:J:111:LYS:C	2.22	0.59
5:4:4:ARG:HB2	9:A:2466:C:OP1	2.03	0.59
9:A:303:G:C5	9:A:304:U:C5	2.90	0.59
9:A:1113:U:H2'	9:A:1114:C:H6	1.68	0.59
9:A:1494:A:O2'	9:A:1495:A:C5'	2.50	0.59
11:C:139:THR:O	11:C:161:VAL:O	2.20	0.59
16:H:32:PRO:HA	32:X:38:TRP:CD1	2.37	0.59
18:J:124:VAL:O	18:J:125:TYR:CB	2.45	0.59
24:P:98:TYR:CE2	24:P:99:LEU:HD13	2.38	0.59
25:Q:63:ARG:NH2	25:Q:96:ASP:N	2.37	0.59
27:S:85:ILE:HG22	27:S:86:MET:N	2.17	0.59
2:1:16:THR:CG2	2:1:41:VAL:HG21	2.33	0.59
4:3:56:LEU:CD2	4:3:56:LEU:H	2.15	0.59
9:A:568:U:O2	9:A:570:G:C8	2.56	0.59
9:A:584:C:OP1	25:Q:5:ARG:HB3	2.03	0.59
9:A:588:U:H2'	9:A:589:U:C6	2.38	0.59
9:A:893:C:O2'	9:A:894:U:H5'	2.02	0.59
9:A:1132:U:H5'	18:J:84:ILE:HD13	1.84	0.59
9:A:1165:A:O2'	9:A:1166:G:H5'	2.03	0.59
9:A:1507:C:C6	9:A:1508:A:H2	2.21	0.59
9:A:1575:C:H2'	9:A:1576:U:O4'	2.03	0.59
9:A:1676:A:H2	9:A:1993:U:H5'	1.68	0.59
9:A:2681:C:C5	9:A:2724:U:C5	2.91	0.59
9:A:2747:G:O6	9:A:2755:C:H5''	2.03	0.59
12:D:169:ARG:O	12:D:170:VAL:CG1	2.48	0.59
14:F:131:VAL:HG22	14:F:151:LEU:H	1.68	0.59
18:J:13:ARG:O	18:J:14:ASP:HB2	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:V:6:ALA:HB1	30:V:40:ILE:HG22	1.85	0.59
9:A:221:A:H4'	9:A:222:A:O5'	2.03	0.58
9:A:455:C:N3	9:A:472:A:H2'	2.18	0.58
9:A:1070:A:C6	9:A:1097:U:H4'	2.38	0.58
14:F:90:LEU:C	14:F:95:MET:HB2	2.28	0.58
16:H:38:PRO:HB2	16:H:40:THR:HG23	1.85	0.58
16:H:53:GLU:O	16:H:54:LEU:HD22	2.03	0.58
18:J:97:PRO:O	18:J:98:GLU:C	2.46	0.58
19:K:20:MET:C	19:K:41:ILE:HD11	2.28	0.58
24:P:102:ARG:O	24:P:103:THR:HG22	2.02	0.58
28:T:86:THR:C	28:T:87:LEU:HD23	2.28	0.58
9:A:988:A:C2'	9:A:989:G:O5'	2.51	0.58
9:A:2732:G:H8	9:A:2732:G:OP2	1.86	0.58
13:E:121:VAL:O	13:E:189:THR:HA	2.01	0.58
13:E:160:ALA:O	13:E:161:ALA:HB3	2.03	0.58
15:G:96:ALA:O	15:G:97:VAL:HB	2.03	0.58
16:H:29:PHE:O	16:H:33:GLN:HB3	2.02	0.58
21:M:108:VAL:HG13	21:M:109:PRO:HD2	1.85	0.58
23:O:4:LYS:O	23:O:8:ILE:HG13	2.02	0.58
28:T:20:ALA:O	28:T:22:THR:N	2.37	0.58
33:Y:18:LEU:O	33:Y:22:LEU:HB2	2.03	0.58
9:A:373:U:O2'	9:A:374:A:H5'	2.03	0.58
9:A:422:A:H2'	9:A:423:A:C8	2.37	0.58
9:A:790:U:O2'	9:A:791:C:O5'	2.20	0.58
9:A:1238:G:O2'	9:A:1239:G:H5'	2.03	0.58
9:A:1408:G:O2'	9:A:1409:U:H5'	2.03	0.58
9:A:1471:G:H2'	9:A:1472:C:H6	1.67	0.58
9:A:1761:C:C2'	9:A:1762:A:H5'	2.33	0.58
9:A:1801:A:C6	11:C:261:ARG:NH1	2.70	0.58
9:A:2555:U:C5	9:A:2556:C:C6	2.92	0.58
9:A:2674:G:H4'	19:K:30:ARG:HG3	1.84	0.58
11:C:78:GLU:OE1	11:C:100:ARG:NE	2.36	0.58
11:C:80:LEU:HD11	11:C:109:LEU:HB2	1.86	0.58
11:C:114:GLN:O	11:C:115:ILE:HD12	2.03	0.58
12:D:73:VAL:HG23	12:D:74:GLU:H	1.67	0.58
14:F:72:SER:H	14:F:80:GLN:HB2	1.68	0.58
18:J:43:GLU:O	18:J:44:TYR:C	2.46	0.58
31:W:47:GLY:N	31:W:80:SER:HB3	2.18	0.58
9:A:1858:A:H2'	9:A:1859:U:C5	2.38	0.58
9:A:1993:U:H4'	12:D:133:THR:CG2	2.33	0.58
9:A:2104:C:H2'	9:A:2105:U:O4'	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2356:U:C4'	31:W:16:GLU:HG3	2.24	0.58
12:D:11:MET:HE1	12:D:192:ALA:HA	1.85	0.58
12:D:107:VAL:O	12:D:174:SER:O	2.22	0.58
15:G:83:THR:CA	15:G:84:LYS:CE	2.81	0.58
15:G:97:VAL:HG23	15:G:124:CYS:SG	2.44	0.58
18:J:25:LEU:HB2	18:J:62:VAL:CG2	2.34	0.58
23:O:59:ALA:C	23:O:61:GLN:N	2.60	0.58
30:V:2:PHE:CB	30:V:61:LEU:HD22	2.33	0.58
31:W:37:VAL:O	31:W:38:ARG:CG	2.51	0.58
2:1:29:LYS:HB3	2:1:29:LYS:NZ	2.19	0.58
3:2:9:VAL:HG13	9:A:1309:G:OP1	2.03	0.58
9:A:348:A:H2'	9:A:349:U:O4'	2.03	0.58
9:A:693:A:H2'	9:A:694:U:O4'	2.04	0.58
9:A:1016:G:H2'	9:A:1017:G:O5'	2.04	0.58
10:B:2:G:N1	10:B:119:A:C2	2.72	0.58
11:C:196:ASN:O	11:C:197:ALA:HB3	2.03	0.58
13:E:124:PHE:CD1	13:E:124:PHE:C	2.82	0.58
13:E:148:ILE:HA	13:E:187:VAL:HB	1.85	0.58
15:G:83:THR:C	15:G:84:LYS:CE	2.76	0.58
19:K:39:ILE:HG22	19:K:60:ALA:O	2.02	0.58
21:M:109:PRO:O	21:M:110:GLU:C	2.46	0.58
22:N:75:ILE:HD12	22:N:75:ILE:O	2.03	0.58
24:P:105:LYS:HA	24:P:108:ARG:HH21	1.68	0.58
31:W:24:ARG:CZ	31:W:65:LYS:HE2	2.33	0.58
5:4:5:ALA:HB3	9:A:2466:C:H5'	1.85	0.58
9:A:68:G:N2	9:A:74:A:OP2	2.36	0.58
9:A:1106:G:N2	9:A:1107:G:H1'	2.18	0.58
9:A:1131:G:C8	18:J:77:HIS:CE1	2.91	0.58
9:A:1161:C:C2'	9:A:1162:G:O5'	2.52	0.58
9:A:1759:A:C8	9:A:2696:U:H1'	2.39	0.58
9:A:2531:A:P	15:G:174:LYS:HG3	2.44	0.58
9:A:2897:U:H2'	9:A:2898:U:C6	2.38	0.58
11:C:49:THR:HG22	11:C:50:THR:N	2.17	0.58
25:Q:75:TYR:C	25:Q:75:TYR:CD2	2.82	0.58
31:W:24:ARG:O	31:W:25:PHE:HB2	2.04	0.58
32:X:39:VAL:O	32:X:40:GLU:HB3	2.02	0.58
32:X:53:LYS:O	32:X:57:VAL:HG23	2.03	0.58
9:A:90:U:H2'	9:A:91:A:C8	2.38	0.58
9:A:138:U:C3'	9:A:139:U:H5'	2.32	0.58
9:A:528:A:C3'	9:A:528:A:C8	2.87	0.58
9:A:2352:A:C2	31:W:30:VAL:CG1	2.87	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:124:VAL:CG2	18:J:125:TYR:N	2.63	0.58
20:L:89:VAL:HA	20:L:121:THR:HG23	1.85	0.58
21:M:71:LYS:HB3	21:M:93:VAL:O	2.04	0.58
22:N:24:MET:CE	22:N:44:LEU:HB2	2.34	0.58
25:Q:26:ALA:HB1	25:Q:30:VAL:HG21	1.84	0.58
9:A:33:C:O2'	9:A:34:U:H5'	2.04	0.58
9:A:197:A:H62	9:A:2430:A:H2'	1.67	0.58
9:A:363:G:O2'	9:A:364:C:H5'	2.02	0.58
9:A:1179:G:C2	9:A:1180:U:O2'	2.56	0.58
9:A:1728:C:O2'	9:A:1729:U:H6	1.87	0.58
9:A:1786:A:H1'	9:A:1938:A:N6	2.19	0.58
9:A:1858:A:H2'	9:A:1859:U:C6	2.39	0.58
10:B:28:C:H2'	10:B:29:A:O4'	2.03	0.58
11:C:64:VAL:HG11	11:C:66:PHE:CZ	2.38	0.58
24:P:50:ARG:CG	24:P:57:ALA:O	2.42	0.58
26:R:49:ILE:CG2	26:R:53:PHE:N	2.67	0.58
27:S:85:ILE:CG2	27:S:86:MET:N	2.66	0.58
33:Y:9:LYS:HZ2	33:Y:10:SER:N	2.00	0.58
2:1:22:THR:OG1	2:1:23:THR:N	2.34	0.58
3:2:12:ARG:HH21	3:2:12:ARG:HB2	1.69	0.58
9:A:60:G:C8	9:A:62:U:C6	2.92	0.58
9:A:1016:G:C2'	9:A:1017:G:O5'	2.52	0.58
9:A:1241:A:C2'	9:A:1242:U:H5'	2.33	0.58
9:A:1257:C:H5'	13:E:78:TRP:CZ3	2.38	0.58
9:A:1327:A:H2'	9:A:1328:A:O4'	2.04	0.58
9:A:1463:C:H5'	9:A:1463:C:H6	1.67	0.58
9:A:1585:C:H2'	9:A:1586:A:C5'	2.34	0.58
9:A:1592:C:O2'	9:A:1593:A:H5'	2.04	0.58
9:A:2260:C:O2'	9:A:2261:C:H5'	2.03	0.58
9:A:2547:A:H2'	9:A:2548:U:H6	1.67	0.58
9:A:2552:U:H2'	9:A:2554:U:OP2	2.03	0.58
9:A:2637:U:C2'	9:A:2638:G:H5'	2.34	0.58
12:D:106:LYS:HB2	12:D:206:ALA:H	1.68	0.58
15:G:37:ASN:HB3	15:G:40:VAL:HG11	1.86	0.58
18:J:117:ALA:HA	18:J:120:ARG:NH2	2.19	0.58
19:K:61:VAL:CG2	19:K:87:LEU:HD11	2.33	0.58
19:K:71:ARG:HG3	19:K:106:GLU:OE2	2.03	0.58
21:M:83:GLY:O	21:M:85:GLY:N	2.37	0.58
30:V:6:ALA:CB	30:V:42:LEU:HD22	2.34	0.58
9:A:528:A:H2	9:A:2043:C:H5'	1.69	0.58
9:A:783:A:C8	9:A:784:G:H4'	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1165:A:H2'	9:A:1166:G:C8	2.39	0.58
9:A:1422:G:C4	9:A:1423:G:C8	2.92	0.58
9:A:1853:A:N1	9:A:2087:G:H1'	2.18	0.58
9:A:2228:G:H2'	9:A:2229:U:C6	2.39	0.58
12:D:12:THR:CG2	12:D:13:ARG:N	2.67	0.58
12:D:69:ALA:N	12:D:73:VAL:HG12	2.19	0.58
20:L:68:SER:CB	20:L:71:ALA:HB2	2.34	0.58
23:O:2:ASP:O	23:O:3:LYS:CB	2.52	0.58
24:P:85:VAL:HG12	24:P:86:LYS:N	2.19	0.58
25:Q:88:GLU:C	25:Q:88:GLU:OE1	2.47	0.58
4:3:31:ILE:C	4:3:31:ILE:HD12	2.29	0.57
9:A:145:C:O2'	9:A:146:A:H5'	2.04	0.57
9:A:273:G:O2'	9:A:274:C:C5'	2.52	0.57
9:A:284:U:H2'	9:A:285:G:C8	2.35	0.57
9:A:1065:U:H3'	9:A:1065:U:P	2.44	0.57
9:A:1068:G:C2'	9:A:1069:A:H5'	2.31	0.57
9:A:1141:U:H6	18:J:65:THR:HG21	1.68	0.57
9:A:1508:A:O2'	9:A:1509:A:O5'	2.22	0.57
9:A:1842:G:H2'	9:A:1843:C:H6	1.67	0.57
9:A:2196:C:O2'	9:A:2197:U:H5'	2.03	0.57
9:A:2544:G:C2'	9:A:2545:G:H5'	2.33	0.57
12:D:51:THR:OG1	12:D:76:GLY:HA3	2.04	0.57
15:G:30:GLY:HA3	15:G:78:VAL:CG1	2.33	0.57
19:K:73:ASP:C	19:K:73:ASP:OD1	2.46	0.57
21:M:35:ALA:O	21:M:36:VAL:CB	2.52	0.57
28:T:59:ASN:O	28:T:83:ALA:O	2.21	0.57
9:A:2661:G:O2'	9:A:2662:A:C5'	2.51	0.57
10:B:46:A:C5	10:B:47:C:C4	2.92	0.57
11:C:18:VAL:O	11:C:18:VAL:HG22	2.04	0.57
12:D:151:THR:HG23	12:D:152:PRO:N	2.18	0.57
14:F:72:SER:OG	14:F:79:ARG:HA	2.04	0.57
15:G:23:ILE:HG21	15:G:71:LEU:CD1	2.33	0.57
16:H:49:ALA:CB	16:H:50:ARG:NH2	2.63	0.57
21:M:96:ILE:C	21:M:96:ILE:HD12	2.28	0.57
24:P:4:ILE:HA	24:P:7:LEU:HB2	1.85	0.57
29:U:6:ARG:O	29:U:24:VAL:HB	2.05	0.57
29:U:71:ILE:HD12	29:U:71:ILE:N	2.18	0.57
4:3:30:HIS:HD2	9:A:2421:G:N7	2.02	0.57
9:A:112:U:H5'	33:Y:58:ASN:HD21	1.70	0.57
9:A:272:A:O2'	9:A:273:G:O5'	2.21	0.57
9:A:606:U:H4'	9:A:658:U:HO2'	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:933:A:N3	9:A:933:A:C2'	2.64	0.57
9:A:1084:A:C6	9:A:1085:A:C6	2.92	0.57
9:A:1927:A:C6	9:A:1928:A:C6	2.92	0.57
9:A:2211:A:OP2	9:A:2211:A:C4'	2.52	0.57
9:A:2365:G:H2'	9:A:2366:A:C8	2.39	0.57
14:F:64:PRO:HA	14:F:88:VAL:HG23	1.85	0.57
18:J:132:HIS:HB3	18:J:135:GLN:HG2	1.86	0.57
23:O:2:ASP:C	23:O:2:ASP:OD1	2.47	0.57
26:R:74:ILE:N	26:R:74:ILE:CD1	2.68	0.57
9:A:224:U:C2'	9:A:225:C:O5'	2.50	0.57
9:A:390:U:O2'	9:A:391:A:OP2	2.21	0.57
9:A:582:A:C2	9:A:1259:G:C2	2.92	0.57
9:A:996:A:C2	9:A:997:G:C8	2.92	0.57
9:A:1108:U:H2'	9:A:1109:C:O4'	2.05	0.57
9:A:1148:U:C6	9:A:1148:U:H3'	2.40	0.57
9:A:1476:U:OP2	9:A:1476:U:H6	1.86	0.57
9:A:2203:U:H5''	9:A:2204:G:OP1	2.05	0.57
9:A:2747:G:O2'	15:G:66:THR:HG22	2.04	0.57
10:B:16:G:O2'	10:B:17:C:C5'	2.52	0.57
11:C:166:ARG:O	11:C:166:ARG:HG2	2.04	0.57
12:D:3:GLY:O	12:D:4:LEU:HD12	2.04	0.57
15:G:39:ALA:HB1	15:G:57:TYR:CG	2.40	0.57
15:G:54:ARG:C	15:G:54:ARG:HD3	2.28	0.57
17:I:123:ALA:C	17:I:125:THR:H	2.10	0.57
18:J:31:GLU:HG3	18:J:142:ILE:HD12	1.86	0.57
20:L:55:MET:HE2	20:L:56:PRO:HD3	1.86	0.57
23:O:79:ALA:HB1	23:O:113:ALA:HB3	1.86	0.57
9:A:276:U:O2	9:A:276:U:H2'	2.03	0.57
9:A:780:G:H21	9:A:783:A:H62	1.52	0.57
9:A:1115:G:O2'	9:A:1116:G:O5'	2.22	0.57
9:A:2091:C:O3'	32:X:55:MET:HE1	2.04	0.57
9:A:2276:G:OP2	21:M:83:GLY:O	2.23	0.57
9:A:2808:G:C2	9:A:2891:U:C5	2.93	0.57
11:C:245:THR:HB	11:C:247:TRP:HE3	1.69	0.57
15:G:142:GLN:HA	15:G:142:GLN:HE21	1.68	0.57
24:P:5:LYS:O	24:P:9:GLN:HG2	2.05	0.57
28:T:74:ILE:CG2	28:T:75:GLY:N	2.66	0.57
2:1:16:THR:HG22	2:1:41:VAL:CG2	2.35	0.57
4:3:30:HIS:CE1	4:3:31:ILE:HG22	2.40	0.57
9:A:313:G:H2'	9:A:314:C:H5'	1.85	0.57
9:A:511:U:C5	9:A:512:G:C5	2.92	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:996:A:H4'	25:Q:91:ARG:CG	2.30	0.57
9:A:2593:U:H2'	9:A:2594:C:H6	1.69	0.57
12:D:105:LYS:O	12:D:105:LYS:HD2	2.05	0.57
15:G:154:GLU:OE1	15:G:157:LYS:N	2.38	0.57
18:J:124:VAL:CG2	18:J:125:TYR:H	2.07	0.57
20:L:101:ILE:HG22	20:L:102:GLY:N	2.19	0.57
22:N:101:GLY:HA3	22:N:102:PHE:CD2	2.39	0.57
26:R:38:VAL:HG23	26:R:40:MET:H	1.70	0.57
9:A:303:G:C4	9:A:304:U:C5	2.93	0.57
9:A:482:A:N6	9:A:506:G:O2'	2.35	0.57
9:A:806:C:O5'	9:A:806:C:H6	1.87	0.57
9:A:1020:A:N1	9:A:1141:U:O2'	2.37	0.57
9:A:1361:G:C5	9:A:1371:G:N2	2.73	0.57
9:A:1452:G:H2'	9:A:1457:U:O4	2.04	0.57
9:A:2332:C:OP1	31:W:44:PHE:HZ	1.88	0.57
10:B:5:U:O2'	10:B:6:G:H5'	2.05	0.57
13:E:141:MET:HB2	13:E:143:LEU:HG	1.86	0.57
18:J:20:ALA:O	18:J:21:THR:C	2.46	0.57
25:Q:78:PHE:CZ	25:Q:82:LEU:HD11	2.40	0.57
9:A:545:U:H2'	9:A:546:U:C5'	2.35	0.57
9:A:654:A:H3'	9:A:654:A:N3	2.19	0.57
9:A:869:G:H4'	21:M:8:LYS:HD3	1.85	0.57
9:A:1153:C:H2'	9:A:1154:G:O5'	2.04	0.57
9:A:1738:G:O2'	9:A:1739:A:H8	1.88	0.57
9:A:2362:C:C2'	9:A:2363:G:H5'	2.34	0.57
9:A:2555:U:C5	9:A:2556:C:C2	2.92	0.57
12:D:9:VAL:HG21	12:D:26:VAL:HG11	1.86	0.57
14:F:60:SER:O	14:F:61:GLY:C	2.48	0.57
15:G:82:PHE:CE2	15:G:137:LYS:HB2	2.39	0.57
15:G:83:THR:CA	15:G:84:LYS:HE2	2.35	0.57
15:G:84:LYS:O	15:G:85:LYS:HB2	2.05	0.57
15:G:148:ARG:HA	15:G:161:VAL:HG11	1.86	0.57
17:I:48:ILE:HG13	17:I:49:GLU:H	1.68	0.57
20:L:100:ILE:HD12	20:L:100:ILE:C	2.29	0.57
25:Q:81:GLY:HA2	25:Q:116:LEU:HD12	1.84	0.57
26:R:51:VAL:HB	26:R:52:PRO:HD3	1.83	0.57
29:U:27:VAL:HA	29:U:33:VAL:HG12	1.87	0.57
33:Y:39:GLN:HB2	33:Y:41:HIS:CD2	2.40	0.57
9:A:627:A:C6	9:A:637:A:C8	2.93	0.57
9:A:1474:U:C2'	9:A:1475:G:H5'	2.35	0.57
9:A:1952:A:C5	19:K:22:ILE:HG21	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2051:A:H4'	9:A:2052:A:OP1	2.05	0.57
9:A:2571:U:HO2'	12:D:151:THR:HG21	1.70	0.57
13:E:145:ASP:HB2	13:E:184:ASP:OD2	2.05	0.57
23:O:55:GLU:O	23:O:56:LYS:C	2.47	0.57
27:S:13:SER:O	27:S:14:ALA:CB	2.53	0.57
27:S:96:ILE:HD12	27:S:96:ILE:O	2.04	0.57
9:A:289:G:H2'	9:A:290:U:C6	2.40	0.57
9:A:528:A:H2	9:A:2043:C:H4'	1.67	0.57
9:A:1056:G:H5''	9:A:1057:A:C5'	2.30	0.57
9:A:1080:A:H4'	17:I:126:ARG:HG3	1.87	0.57
9:A:1735:A:H2'	9:A:1736:U:H6	1.66	0.57
9:A:1819:A:OP1	11:C:154:ALA:HA	2.05	0.57
9:A:1872:A:O2'	9:A:1873:G:O4'	2.23	0.57
9:A:2233:U:H2'	9:A:2234:G:C8	2.40	0.57
9:A:2353:G:O2'	31:W:31:LEU:HD22	2.04	0.57
9:A:2682:A:C8	12:D:11:MET:HG2	2.40	0.57
14:F:39:VAL:CG1	14:F:84:ILE:HD12	2.35	0.57
15:G:86:LEU:HB3	15:G:162:ARG:O	2.05	0.57
20:L:110:VAL:HG12	20:L:131:ALA:CB	2.35	0.57
27:S:6:LYS:HB2	27:S:103:ILE:O	2.04	0.57
2:1:16:THR:HG22	2:1:41:VAL:HG21	1.87	0.56
9:A:64:A:H2'	9:A:65:U:C6	2.40	0.56
9:A:855:G:N3	31:W:23:LYS:CG	2.68	0.56
9:A:1505:A:C6	9:A:1506:U:N3	2.73	0.56
9:A:1941:C:C6	9:A:1941:C:C5'	2.83	0.56
9:A:2383:G:H2'	9:A:2384:U:C6	2.40	0.56
9:A:2492:U:H2'	9:A:2493:U:C6	2.40	0.56
9:A:2592:G:N1	9:A:2603:G:C6	2.73	0.56
12:D:155:VAL:CG1	12:D:159:LYS:HG3	2.34	0.56
13:E:147:LEU:O	13:E:168:ASP:O	2.23	0.56
18:J:40:HIS:C	18:J:41:LYS:HG2	2.30	0.56
22:N:28:LEU:HD23	22:N:48:VAL:HG11	1.86	0.56
23:O:59:ALA:CA	23:O:62:LEU:HD13	2.35	0.56
34:Z:29:ARG:C	34:Z:30:ARG:HG3	2.30	0.56
9:A:142:A:O2'	9:A:143:C:O5'	2.22	0.56
9:A:619:G:H5''	9:A:620:G:OP2	2.05	0.56
9:A:819:A:C4	9:A:1189:A:C2	2.93	0.56
9:A:996:A:P	25:Q:91:ARG:HH12	2.28	0.56
9:A:2080:A:C5'	32:X:18:SER:CB	2.83	0.56
9:A:2471:A:H2'	9:A:2472:G:H5'	1.86	0.56
9:A:2524:G:C2'	9:A:2525:G:O5'	2.53	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:F:35:LEU:CB	14:F:153:ILE:HG23	2.20	0.56
14:F:71:LYS:HA	14:F:80:GLN:HG2	1.86	0.56
15:G:104:LEU:HB2	15:G:112:VAL:HG23	1.78	0.56
18:J:81:ILE:CG2	18:J:82:GLY:H	1.96	0.56
23:O:34:HIS:CD2	23:O:53:THR:OG1	2.58	0.56
31:W:47:GLY:H	31:W:80:SER:HB3	1.69	0.56
5:4:3:VAL:O	5:4:4:ARG:O	2.24	0.56
9:A:181:A:C2	9:A:182:A:C4	2.92	0.56
9:A:277:G:H8	9:A:361:G:O6	1.87	0.56
9:A:636:G:C5	20:L:111:ILE:CD1	2.70	0.56
9:A:784:G:O2'	9:A:785:G:H5''	2.06	0.56
9:A:832:U:H2'	9:A:833:A:C8	2.40	0.56
9:A:1054:A:H2'	9:A:1055:G:C8	2.40	0.56
9:A:1056:G:H4'	9:A:1086:A:H8	1.70	0.56
9:A:1179:G:N1	9:A:1180:U:O2'	2.38	0.56
9:A:1275:A:N1	9:A:1295:C:O2'	2.36	0.56
9:A:1300:G:H5''	9:A:1301:A:C5'	2.35	0.56
9:A:1495:A:H2'	9:A:1496:A:C8	2.38	0.56
9:A:1565:C:O2'	9:A:1566:A:H2'	2.04	0.56
9:A:1876:A:C2'	9:A:1877:A:H5'	2.34	0.56
9:A:2136:G:O2'	9:A:2137:U:C6	2.58	0.56
9:A:2275:C:O2	21:M:84:LYS:HG2	2.04	0.56
9:A:2865:U:C4	9:A:2866:U:C4	2.93	0.56
11:C:259:ASN:C	11:C:261:ARG:H	2.14	0.56
12:D:107:VAL:H	12:D:206:ALA:N	2.02	0.56
13:E:5:LEU:HD22	13:E:121:VAL:HA	1.87	0.56
13:E:153:LEU:HD12	13:E:153:LEU:O	2.05	0.56
14:F:7:TYR:O	14:F:11:VAL:HG12	2.05	0.56
16:H:31:VAL:C	16:H:33:GLN:N	2.63	0.56
17:I:53:PRO:O	17:I:74:PRO:HD2	2.04	0.56
20:L:92:LEU:HD23	20:L:125:LEU:HD23	1.87	0.56
21:M:41:LEU:O	21:M:93:VAL:HG23	2.04	0.56
25:Q:97:ILE:C	25:Q:97:ILE:HD12	2.30	0.56
28:T:32:LEU:O	28:T:83:ALA:HB2	2.06	0.56
31:W:37:VAL:O	31:W:38:ARG:CB	2.52	0.56
33:Y:16:THR:O	33:Y:20:ASN:N	2.32	0.56
2:1:50:GLU:OE1	2:1:50:GLU:HA	2.05	0.56
5:4:16:ILE:HD13	5:4:25:VAL:HG22	1.86	0.56
9:A:58:G:N2	9:A:70:G:C4	2.74	0.56
9:A:134:G:H2'	9:A:135:U:O4'	2.06	0.56
9:A:659:G:H4'	13:E:95:LYS:HD2	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1205:A:H3'	9:A:1206:G:H5'	1.87	0.56
9:A:1224:U:H4'	26:R:88:GLY:O	2.06	0.56
9:A:1249:U:C6	9:A:1249:U:H5'	2.40	0.56
9:A:2214:C:H6	9:A:2214:C:C5'	2.11	0.56
14:F:169:LEU:N	14:F:169:LEU:CD1	2.69	0.56
19:K:43:ILE:HD12	19:K:52:VAL:CG2	2.35	0.56
22:N:32:GLU:CB	22:N:115:LEU:HD12	2.36	0.56
25:Q:63:ARG:HH12	25:Q:96:ASP:C	2.14	0.56
33:Y:56:LEU:HA	33:Y:59:GLU:CG	2.35	0.56
1:O:14:MET:O	1:O:17:SER:HB3	2.04	0.56
2:1:10:LEU:HD21	2:1:33:LEU:CD2	2.32	0.56
5:4:9:LYS:H	5:4:9:LYS:CE	2.17	0.56
9:A:979:A:H2'	9:A:982:C:H42	1.71	0.56
11:C:234:GLY:O	11:C:236:GLY:N	2.38	0.56
12:D:4:LEU:HD23	12:D:29:VAL:HG11	1.88	0.56
17:I:58:ILE:O	17:I:60:VAL:HG23	2.06	0.56
9:A:611:C:H2'	9:A:612:G:O5'	2.05	0.56
9:A:645:C:N4	9:A:2350:C:H4'	2.20	0.56
9:A:717:C:O2	9:A:717:C:H2'	2.06	0.56
9:A:788:A:O2'	9:A:789:A:OP2	2.22	0.56
9:A:1216:G:C5	9:A:1217:U:C5	2.93	0.56
9:A:1340:U:C5	9:A:1603:A:C8	2.94	0.56
9:A:2458:G:O2'	9:A:2460:U:O4	2.17	0.56
9:A:2554:U:C4	9:A:2555:U:O4	2.59	0.56
11:C:252:LYS:NZ	11:C:252:LYS:CB	2.67	0.56
18:J:99:ARG:O	18:J:103:ILE:HG23	2.04	0.56
19:K:24:VAL:HG12	19:K:30:ARG:HD2	1.86	0.56
29:U:25:LYS:HB2	29:U:34:ILE:O	2.05	0.56
9:A:271:G:H4'	9:A:272:A:OP1	2.06	0.56
9:A:747:U:C4	9:A:2613:U:C4	2.94	0.56
9:A:1071:G:H4'	9:A:1088:A:O2'	2.06	0.56
9:A:1079:C:N4	9:A:1088:A:C2	2.74	0.56
9:A:1289:C:H2'	9:A:1290:C:H6	1.71	0.56
9:A:1501:G:O2'	9:A:1502:A:H5'	2.05	0.56
9:A:1641:A:H2'	9:A:1642:G:O4'	2.06	0.56
9:A:2615:U:O2'	9:A:2616:C:H5'	2.06	0.56
9:A:2784:U:H2'	9:A:2785:C:H6	1.70	0.56
12:D:117:GLY:C	12:D:118:PHE:CG	2.81	0.56
17:I:3:LYS:CD	17:I:4:VAL:HG23	2.35	0.56
17:I:23:VAL:HG23	17:I:24:GLY:H	1.71	0.56
18:J:41:LYS:N	25:Q:66:ALA:HB1	2.20	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:88:THR:CG2	18:J:91:GLU:H	2.19	0.56
19:K:20:MET:C	19:K:41:ILE:CD1	2.79	0.56
23:O:111:ARG:O	23:O:113:ALA:N	2.39	0.56
27:S:1:MET:CE	27:S:2:GLU:H	2.18	0.56
31:W:30:VAL:O	31:W:30:VAL:HG22	2.04	0.56
9:A:481:G:C4	9:A:507:A:C2	2.94	0.56
9:A:1334:G:C6	9:A:1335:C:C4	2.93	0.56
9:A:1508:A:O2'	9:A:1509:A:C5'	2.53	0.56
9:A:1736:U:H2'	9:A:1737:G:O4'	2.06	0.56
9:A:2279:G:N7	31:W:10:ARG:NH2	2.53	0.56
10:B:2:G:C2	10:B:119:A:C2	2.94	0.56
11:C:121:ALA:HB3	11:C:129:LEU:HD21	1.87	0.56
11:C:165:ALA:HB3	11:C:172:THR:CG2	2.35	0.56
16:H:6:LEU:HD22	16:H:36:ALA:N	2.20	0.56
19:K:95:ILE:HG13	19:K:96:GLY:N	2.20	0.56
20:L:93:ASN:O	20:L:95:LEU:N	2.38	0.56
21:M:36:VAL:O	21:M:36:VAL:HG13	2.04	0.56
24:P:50:ARG:HG2	24:P:56:SER:CA	2.36	0.56
29:U:48:VAL:O	29:U:48:VAL:HG13	2.05	0.56
29:U:100:GLU:O	29:U:101:THR:CB	2.54	0.56
9:A:31:C:O3'	9:A:1238:G:C5'	2.54	0.56
9:A:275:C:H3'	9:A:276:U:H5''	1.88	0.56
9:A:659:G:H21	13:E:30:GLN:NE2	2.04	0.56
9:A:734:A:C4	9:A:735:A:C8	2.94	0.56
9:A:1064:C:H4'	17:I:90:GLY:H	1.71	0.56
9:A:1080:A:O2'	17:I:126:ARG:HG3	2.06	0.56
9:A:2400:G:O2'	9:A:2401:U:H5'	2.06	0.56
9:A:2784:U:H4'	12:D:42:ASN:HD21	1.71	0.56
10:B:11:C:O2	10:B:109:A:N1	2.39	0.56
11:C:64:VAL:HG11	11:C:66:PHE:CE2	2.41	0.56
11:C:246:PRO:CG	11:C:247:TRP:CH2	2.85	0.56
12:D:53:GLY:HA3	12:D:77:ARG:CB	2.35	0.56
13:E:1:MET:HB3	13:E:14:VAL:O	2.05	0.56
14:F:133:GLU:H	14:F:150:GLY:CA	2.18	0.56
18:J:44:TYR:O	18:J:45:THR:CB	2.54	0.56
21:M:78:LEU:CD2	21:M:79:ALA:N	2.69	0.56
23:O:35:ILE:HG21	23:O:71:ALA:HA	1.88	0.56
24:P:25:VAL:CG1	24:P:46:VAL:HG23	2.36	0.56
25:Q:29:ARG:HG3	25:Q:29:ARG:NH1	2.11	0.56
9:A:138:U:H3'	9:A:139:U:H5'	1.88	0.56
9:A:301:G:OP2	29:U:81:ARG:NH1	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:875:G:C2'	9:A:876:C:H5'	2.36	0.56
9:A:1857:G:O2'	9:A:1858:A:P	2.64	0.56
12:D:85:ALA:O	12:D:86:GLU:HB2	2.06	0.56
13:E:120:VAL:HA	13:E:188:MET:O	2.06	0.56
22:N:117:ASP:O	22:N:119:SER:N	2.37	0.56
25:Q:97:ILE:HD13	25:Q:104:ALA:HB3	1.88	0.56
28:T:40:LYS:O	28:T:44:LYS:N	2.38	0.56
30:V:44:HIS:CE1	30:V:86:LEU:H	2.22	0.56
32:X:16:ASN:HB2	32:X:24:THR:OG1	2.06	0.56
1:O:15:ARG:NE	9:A:1266:G:OP1	2.38	0.55
9:A:405:U:C3'	9:A:406:G:H5'	2.36	0.55
9:A:740:C:H5'	9:A:1784:A:H3'	1.88	0.55
9:A:1435:G:H8	9:A:1435:G:H5''	1.71	0.55
9:A:1465:G:C6	9:A:1466:U:N3	2.73	0.55
9:A:1997:C:OP1	9:A:1997:C:C4'	2.52	0.55
9:A:2144:G:N2	9:A:2148:G:C8	2.75	0.55
9:A:2386:A:H2'	9:A:2387:U:C6	2.41	0.55
9:A:2862:G:H2'	9:A:2863:C:H6	1.71	0.55
10:B:78:A:C2	10:B:99:A:C4	2.94	0.55
11:C:119:VAL:HG12	11:C:133:ASN:ND2	2.21	0.55
11:C:170:TYR:CD2	11:C:184:GLU:HA	2.41	0.55
19:K:91:SER:O	19:K:92:GLU:C	2.48	0.55
23:O:2:ASP:O	23:O:3:LYS:HG2	2.06	0.55
25:Q:48:ASP:HA	25:Q:51:GLN:HB2	1.88	0.55
29:U:78:LYS:HG2	29:U:79:ALA:N	2.20	0.55
9:A:189:G:H2'	9:A:205:G:N2	2.21	0.55
9:A:226:A:N6	9:A:227:A:C6	2.74	0.55
9:A:359:G:H3'	9:A:360:U:H6	1.70	0.55
9:A:1059:G:C6	9:A:1080:A:C6	2.94	0.55
9:A:1160:G:N2	26:R:10:LYS:HD2	2.21	0.55
9:A:1585:C:C3'	9:A:1586:A:H5'	2.35	0.55
9:A:1654:A:C4'	12:D:118:PHE:CZ	2.89	0.55
9:A:1693:U:O2'	11:C:13:ARG:NH2	2.40	0.55
9:A:2080:A:H5'	32:X:18:SER:HB3	1.86	0.55
9:A:2430:A:H5'	9:A:2431:U:OP2	2.06	0.55
12:D:34:VAL:CG2	12:D:94:GLN:H	2.16	0.55
15:G:59:ASP:CB	15:G:63:GLN:HG2	2.35	0.55
22:N:38:LEU:HD12	22:N:38:LEU:O	2.06	0.55
23:O:78:VAL:HG23	23:O:79:ALA:N	2.21	0.55
31:W:76:ARG:HH21	31:W:76:ARG:CG	2.02	0.55
5:4:3:VAL:C	5:4:4:ARG:HG2	2.30	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:63:A:H5'	9:A:63:A:C8	2.41	0.55
9:A:1056:G:H4'	9:A:1086:A:C8	2.40	0.55
9:A:1098:A:C6	9:A:1099:G:N1	2.74	0.55
9:A:1612:C:H2'	9:A:1613:G:O5'	2.07	0.55
9:A:2319:G:O2'	9:A:2320:U:H5	1.90	0.55
9:A:2575:C:H5''	9:A:2576:G:OP2	2.05	0.55
11:C:39:SER:C	11:C:41:GLY:N	2.56	0.55
14:F:30:VAL:HG11	14:F:96:TRP:CH2	2.42	0.55
14:F:131:VAL:C	14:F:132:ARG:HG3	2.32	0.55
15:G:137:LYS:O	15:G:140:ILE:CD1	2.53	0.55
16:H:34:GLY:O	16:H:35:LYS:HG3	2.06	0.55
20:L:93:ASN:ND2	20:L:94:THR:H	2.03	0.55
22:N:24:MET:HE3	22:N:44:LEU:HB2	1.87	0.55
23:O:75:GLY:HA3	23:O:106:LEU:HA	1.88	0.55
28:T:22:THR:O	28:T:25:GLU:N	2.36	0.55
32:X:19:HIS:C	32:X:21:LEU:H	2.13	0.55
1:O:37:HIS:HB3	1:O:43:THR:HG22	1.87	0.55
9:A:84:A:N1	9:A:98:G:O2'	2.29	0.55
9:A:271:G:O2'	9:A:272:A:C5'	2.54	0.55
9:A:1061:U:H6	9:A:1070:A:C1'	2.19	0.55
9:A:1179:G:O5'	9:A:1180:U:O5'	2.25	0.55
9:A:1360:G:O6	9:A:1372:U:C2	2.60	0.55
9:A:1678:A:C2'	9:A:1679:A:H5'	2.37	0.55
9:A:2485:G:H5''	21:M:45:GLN:NE2	2.22	0.55
9:A:2793:C:H2'	9:A:2794:C:H6	1.70	0.55
10:B:2:G:C2	10:B:119:A:N3	2.74	0.55
12:D:155:VAL:HG13	12:D:159:LYS:HG3	1.88	0.55
13:E:18:THR:HA	13:E:106:LYS:HG2	1.89	0.55
13:E:37:ALA:C	13:E:39:ALA:H	2.15	0.55
16:H:27:ARG:HH12	16:H:38:PRO:HG3	1.70	0.55
17:I:19:PRO:HG2	17:I:23:VAL:CG2	2.37	0.55
19:K:113:MET:HA	19:K:116:ILE:HG13	1.87	0.55
21:M:36:VAL:HG12	21:M:127:LYS:C	2.31	0.55
24:P:37:LYS:O	24:P:37:LYS:CG	2.55	0.55
2:1:18:HIS:ND1	2:1:19:PHE:N	2.55	0.55
9:A:1799:G:N2	9:A:1818:U:O2'	2.32	0.55
9:A:1935:G:N1	9:A:1962:C:H2'	2.22	0.55
9:A:2310:C:C4	14:F:76:PHE:CZ	2.94	0.55
9:A:2665:A:O2'	9:A:2666:C:H5'	2.06	0.55
9:A:2680:U:O2'	12:D:11:MET:HE3	2.05	0.55
12:D:85:ALA:O	12:D:86:GLU:CB	2.55	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:E:127:GLU:CD	13:E:127:GLU:N	2.64	0.55
15:G:70:LEU:O	15:G:74:MET:HG3	2.06	0.55
15:G:117:PRO:O	15:G:118:ALA:C	2.49	0.55
18:J:53:TYR:CD1	18:J:121:LYS:HG2	2.41	0.55
19:K:18:ARG:HB2	19:K:45:GLU:HG3	1.81	0.55
19:K:47:ILE:HG13	19:K:48:PRO:HD2	1.87	0.55
19:K:74:GLY:HA3	24:P:74:GLN:HE21	1.72	0.55
22:N:65:LEU:C	22:N:65:LEU:HD12	2.30	0.55
24:P:25:VAL:HG11	24:P:46:VAL:HG23	1.87	0.55
24:P:39:LEU:H	24:P:39:LEU:HD12	1.70	0.55
30:V:75:GLN:HB2	30:V:92:VAL:HG23	1.89	0.55
34:Z:2:LYS:O	34:Z:3:THR:HG23	2.07	0.55
34:Z:34:THR:HG22	34:Z:35:VAL:N	2.21	0.55
9:A:181:A:H2'	9:A:182:A:C8	2.42	0.55
9:A:287:G:N3	9:A:354:A:C2	2.75	0.55
9:A:339:U:C2'	9:A:340:A:H5'	2.36	0.55
9:A:812:C:O2'	9:A:813:U:H5'	2.05	0.55
9:A:1259:G:H2'	9:A:1260:A:C8	2.41	0.55
9:A:1579:A:C2'	9:A:1580:A:H5'	2.36	0.55
9:A:1735:A:C2	9:A:1736:U:C2	2.94	0.55
11:C:68:ARG:CD	11:C:103:ILE:HD11	2.20	0.55
14:F:46:LYS:N	14:F:46:LYS:HD2	2.21	0.55
14:F:151:LEU:CD1	14:F:151:LEU:C	2.79	0.55
19:K:113:MET:O	19:K:116:ILE:HG13	2.06	0.55
20:L:27:LEU:N	20:L:27:LEU:CD1	2.69	0.55
23:O:111:ARG:C	23:O:113:ALA:N	2.64	0.55
30:V:72:VAL:HG23	30:V:73:LYS:N	2.22	0.55
9:A:156:A:O2'	9:A:157:C:H5'	2.07	0.55
9:A:435:C:O2'	9:A:436:C:H5'	2.07	0.55
9:A:901:C:H2'	9:A:902:C:H6	1.71	0.55
9:A:1075:C:C4	9:A:1076:C:N4	2.75	0.55
9:A:1197:G:O2'	9:A:1198:U:H5'	2.06	0.55
9:A:1203:U:H1'	20:L:4:ASN:HB3	1.88	0.55
9:A:1300:G:C5'	9:A:1301:A:H5'	2.36	0.55
9:A:1385:A:C2	9:A:1386:C:C2	2.95	0.55
9:A:1733:G:O2'	9:A:1734:G:O5'	2.25	0.55
9:A:2332:C:H5''	9:A:2333:A:OP1	2.06	0.55
9:A:2678:C:O2'	9:A:2679:A:H5'	2.07	0.55
9:A:2800:A:H5''	9:A:2800:A:H8	1.71	0.55
11:C:247:TRP:C	11:C:249:VAL:H	2.15	0.55
13:E:91:ASP:C	13:E:91:ASP:OD2	2.49	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:F:71:LYS:HA	14:F:80:GLN:HG3	1.89	0.55
15:G:25:ILE:HD11	15:G:71:LEU:HD12	1.88	0.55
15:G:163:TYR:O	15:G:164:ALA:HB3	2.06	0.55
17:I:24:GLY:O	17:I:27:LEU:HG	2.07	0.55
18:J:135:GLN:HE21	18:J:135:GLN:CA	2.18	0.55
22:N:30:ARG:NH1	22:N:74:GLU:OE2	2.39	0.55
27:S:45:VAL:HG22	27:S:46:LEU:N	2.22	0.55
27:S:73:LYS:CE	27:S:74:ILE:H	2.15	0.55
34:Z:9:THR:CG2	34:Z:10:ARG:HB2	2.34	0.55
2:1:31:GLU:O	2:1:31:GLU:HG2	2.04	0.55
9:A:80:G:H2'	9:A:81:G:H5'	1.88	0.55
9:A:141:G:N1	28:T:2:ILE:HG23	2.21	0.55
9:A:636:G:C4	20:L:111:ILE:HD11	2.35	0.55
9:A:789:A:OP1	9:A:790:U:C5	2.58	0.55
9:A:1052:C:C2'	9:A:1053:C:H5'	2.36	0.55
9:A:1060:U:O4'	9:A:1062:G:C5'	2.55	0.55
9:A:1695:G:H2'	9:A:1696:G:O4'	2.07	0.55
9:A:1761:C:H2'	9:A:1762:A:H5'	1.88	0.55
9:A:1909:C:C2	9:A:1922:G:N2	2.75	0.55
18:J:65:THR:CG2	18:J:66:GLY:N	2.69	0.55
25:Q:97:ILE:HD11	25:Q:105:PHE:N	2.22	0.55
26:R:62:GLU:O	26:R:64:VAL:HG23	2.07	0.55
9:A:232:G:H4'	9:A:233:A:OP1	2.06	0.55
9:A:851:C:C2'	9:A:852:U:O5'	2.55	0.55
9:A:1001:A:C2'	9:A:1002:G:H5'	2.37	0.55
9:A:1001:A:H2'	9:A:1002:G:C5'	2.37	0.55
9:A:1098:A:C5	9:A:1099:G:C6	2.95	0.55
9:A:1321:A:H5''	9:A:1321:A:H8	1.71	0.55
9:A:1945:G:H2'	9:A:1946:U:H6	1.69	0.55
9:A:2093:G:H1'	9:A:2198:A:C2	2.42	0.55
12:D:118:PHE:HD2	12:D:119:ALA:N	2.03	0.55
14:F:132:ARG:O	14:F:133:GLU:CB	2.53	0.55
15:G:171:LYS:HD3	15:G:172:GLU:H	1.72	0.55
26:R:66:HIS:ND1	26:R:94:THR:HB	2.22	0.55
28:T:74:ILE:HG23	28:T:75:GLY:N	2.21	0.55
2:1:8:ILE:HG22	2:1:9:LYS:H	1.69	0.55
9:A:163:C:C6	9:A:163:C:OP1	2.60	0.55
9:A:526:A:H5''	9:A:527:C:OP1	2.06	0.55
9:A:687:C:O2'	9:A:1780:A:N1	2.40	0.55
9:A:2199:A:C5'	9:A:2200:C:H5	2.19	0.55
9:A:2250:G:O5'	9:A:2250:G:H8	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2750:A:O2'	9:A:2752:C:N4	2.35	0.55
14:F:175:PRO:O	14:F:176:PHE:HB2	2.07	0.55
19:K:43:ILE:CD1	19:K:52:VAL:CG2	2.83	0.55
21:M:6:ARG:CZ	21:M:6:ARG:HB2	2.37	0.55
21:M:53:MET:HE1	21:M:103:TYR:CD2	2.41	0.55
22:N:103:ARG:CD	22:N:110:MET:CE	2.85	0.55
26:R:61:ALA:HB1	26:R:98:ILE:H	1.71	0.55
28:T:51:PHE:C	28:T:52:GLU:HG2	2.30	0.55
31:W:18:LYS:N	31:W:36:ILE:CG1	2.70	0.55
32:X:29:LEU:HD23	32:X:29:LEU:H	1.72	0.55
9:A:361:G:H8	9:A:361:G:OP2	1.91	0.54
9:A:1287:A:O2'	9:A:1288:G:H5'	2.07	0.54
9:A:1348:C:H2'	9:A:1349:C:C5'	2.32	0.54
9:A:1462:C:O2'	9:A:1463:C:H5''	2.07	0.54
9:A:1778:U:H2'	9:A:1784:A:H62	1.69	0.54
9:A:1784:A:H4'	9:A:1785:A:H5''	1.90	0.54
10:B:74:U:O2	30:V:29:ILE:CD1	2.55	0.54
12:D:39:ASP:CG	12:D:40:LEU:N	2.65	0.54
12:D:66:GLY:O	12:D:69:ALA:HB3	2.07	0.54
14:F:53:ALA:O	14:F:64:PRO:HG2	2.07	0.54
17:I:104:GLN:O	17:I:105:LEU:CB	2.54	0.54
21:M:2:LEU:O	21:M:3:GLN:HB3	2.06	0.54
25:Q:40:LYS:HG2	25:Q:44:TYR:CE1	2.42	0.54
30:V:68:LYS:O	30:V:69:GLU:C	2.49	0.54
31:W:24:ARG:HD2	31:W:24:ARG:C	2.32	0.54
32:X:29:LEU:HB2	32:X:30:PRO:CD	2.37	0.54
34:Z:4:ILE:HD11	34:Z:43:ILE:HD11	1.89	0.54
2:1:22:THR:HG23	2:1:23:THR:N	2.22	0.54
9:A:288:U:O2'	9:A:289:G:H5'	2.07	0.54
9:A:777:G:O2'	9:A:778:G:C5'	2.52	0.54
9:A:871:U:H2'	9:A:872:U:C6	2.42	0.54
9:A:1026:G:C8	9:A:1134:A:C4	2.95	0.54
9:A:1056:G:HO2'	9:A:1086:A:H8	1.54	0.54
9:A:1154:G:OP2	25:Q:57:ARG:NH1	2.40	0.54
13:E:5:LEU:O	13:E:6:LYS:C	2.50	0.54
14:F:133:GLU:O	14:F:136:ILE:HD11	2.07	0.54
18:J:16:TYR:HA	18:J:138:GLN:O	2.06	0.54
20:L:68:SER:O	20:L:69:ARG:CB	2.56	0.54
30:V:5:ASN:ND2	30:V:5:ASN:N	2.51	0.54
30:V:61:LEU:O	30:V:71:LYS:HA	2.06	0.54
3:2:30:VAL:O	3:2:34:ARG:HG3	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:274:C:C5	9:A:275:C:C5	2.95	0.54
9:A:813:U:H2'	9:A:814:C:C6	2.42	0.54
9:A:1277:G:C4'	22:N:20:MET:CE	2.86	0.54
9:A:1794:A:O2'	9:A:1795:C:H5'	2.08	0.54
9:A:2134:A:C6	9:A:2135:A:N6	2.75	0.54
9:A:2243:U:H2'	9:A:2244:U:C6	2.42	0.54
9:A:2772:C:H2'	9:A:2773:C:C6	2.42	0.54
11:C:93:VAL:HG12	11:C:94:LEU:H	1.73	0.54
12:D:101:PHE:CE2	12:D:203:VAL:HG22	2.42	0.54
15:G:162:ARG:CZ	15:G:168:VAL:HG21	2.38	0.54
19:K:1:MET:HE3	19:K:32:TYR:CG	2.43	0.54
22:N:71:ARG:CG	22:N:71:ARG:NH2	2.68	0.54
22:N:108:ALA:O	22:N:110:MET:HG2	2.07	0.54
26:R:39:LEU:N	26:R:39:LEU:CD2	2.69	0.54
28:T:19:LYS:HA	28:T:22:THR:OG1	2.07	0.54
9:A:618:G:C6	9:A:619:G:C4	2.95	0.54
9:A:826:U:O2'	20:L:53:GLY:HA3	2.07	0.54
9:A:1094:U:H2'	9:A:1096:A:OP2	2.08	0.54
9:A:1731:G:C5	9:A:1733:G:N7	2.75	0.54
9:A:1733:G:O2'	9:A:1734:G:H8	1.91	0.54
9:A:1857:G:N2	9:A:1884:G:O2'	2.41	0.54
9:A:2068:U:H6	9:A:2068:U:C5'	2.18	0.54
9:A:2109:U:C4	9:A:2181:U:O4	2.61	0.54
9:A:2555:U:C5	9:A:2556:C:N1	2.75	0.54
9:A:2808:G:C2	9:A:2891:U:C6	2.96	0.54
14:F:40:GLY:N	14:F:84:ILE:HD11	2.23	0.54
14:F:169:LEU:HD12	14:F:169:LEU:H	1.71	0.54
25:Q:40:LYS:HG2	25:Q:44:TYR:CD1	2.43	0.54
25:Q:75:TYR:CE2	25:Q:79:ILE:HG13	2.42	0.54
27:S:69:LEU:HA	27:S:108:SER:O	2.08	0.54
31:W:23:LYS:CG	31:W:24:ARG:O	2.41	0.54
31:W:40:ARG:NH1	31:W:45:HIS:CE1	2.76	0.54
1:O:33:SER:O	1:O:34:GLY:O	2.26	0.54
9:A:528:A:C2	9:A:2043:C:C5'	2.90	0.54
9:A:545:U:C6	9:A:546:U:H4'	2.43	0.54
9:A:1360:G:H2'	9:A:1361:G:H5'	1.89	0.54
9:A:1371:G:O2'	9:A:1372:U:H5'	2.07	0.54
9:A:1901:A:C4	9:A:1902:C:C5	2.96	0.54
9:A:1947:C:C2	9:A:1960:A:C2	2.96	0.54
9:A:2083:G:C2'	9:A:2084:C:H5'	2.38	0.54
11:C:124:LYS:HB3	11:C:127:ASN:ND2	2.23	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:D:136:ASN:ND2	12:D:139:SER:O	2.36	0.54
14:F:7:TYR:O	14:F:11:VAL:CG1	2.55	0.54
18:J:110:PRO:O	18:J:111:LYS:HD2	2.08	0.54
18:J:114:LEU:CD2	18:J:118:MET:HE3	2.24	0.54
25:Q:35:PHE:CE1	25:Q:39:ILE:HD11	2.42	0.54
25:Q:63:ARG:HH11	25:Q:99:VAL:HG23	1.72	0.54
28:T:54:GLU:HB3	28:T:88:LYS:CG	2.38	0.54
1:O:35:GLU:OE1	1:O:45:ASP:HB2	2.07	0.54
9:A:1067:A:H8	9:A:1067:A:OP2	1.89	0.54
9:A:1539:U:C2	9:A:1540:G:C8	2.95	0.54
9:A:1912:A:O2'	9:A:1913:A:H5''	2.08	0.54
11:C:44:ASN:C	11:C:44:ASN:OD1	2.49	0.54
11:C:94:LEU:HD12	11:C:94:LEU:C	2.28	0.54
12:D:68:PHE:CE2	12:D:75:ALA:HA	2.42	0.54
13:E:42:GLY:C	13:E:43:THR:HG23	2.31	0.54
15:G:165:ASP:N	15:G:165:ASP:OD1	2.41	0.54
24:P:20:ARG:O	24:P:20:ARG:HG2	2.08	0.54
27:S:59:GLU:HA	27:S:64:ALA:HA	1.90	0.54
31:W:30:VAL:H	31:W:31:LEU:CD2	2.20	0.54
33:Y:16:THR:O	33:Y:19:LEU:N	2.41	0.54
2:1:22:THR:HG21	9:A:2286:G:O6	2.08	0.54
9:A:31:C:O3'	9:A:1238:G:H5''	2.07	0.54
9:A:605:G:H1'	9:A:657:U:H1'	1.90	0.54
9:A:860:U:C6	9:A:860:U:H5'	2.43	0.54
9:A:1001:A:H2'	9:A:1002:G:H5'	1.89	0.54
9:A:1059:G:C6	9:A:1060:U:N3	2.76	0.54
9:A:1392:A:N6	9:A:1393:A:N6	2.56	0.54
9:A:1439:A:C2	9:A:1553:A:C5	2.96	0.54
9:A:1614:A:C2	27:S:93:ALA:HB2	2.42	0.54
9:A:1667:G:OP1	19:K:6:THR:HA	2.08	0.54
9:A:2314:A:O2'	9:A:2315:G:H5'	2.07	0.54
9:A:2345:G:C5	9:A:2381:A:C2	2.96	0.54
9:A:2725:A:O2'	9:A:2726:A:H2'	2.07	0.54
9:A:2804:U:H2'	9:A:2805:C:C6	2.43	0.54
11:C:29:PHE:CD2	11:C:31:PRO:HG2	2.42	0.54
11:C:250:GLN:N	11:C:250:GLN:NE2	2.55	0.54
12:D:35:THR:HG1	12:D:49:GLN:HG2	1.72	0.54
17:I:64:ARG:HG3	17:I:65:SER:N	2.22	0.54
19:K:10:VAL:HG11	19:K:16:ALA:HB2	1.89	0.54
21:M:81:ARG:HG3	21:M:82:MET:H	1.73	0.54
31:W:37:VAL:CG1	31:W:55:ASP:HB2	2.33	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:54:ILE:HG22	1:0:54:ILE:O	2.06	0.54
9:A:78:U:H2'	9:A:79:C:C6	2.42	0.54
9:A:1775:U:C2'	9:A:1776:G:O5'	2.55	0.54
9:A:1866:A:O2'	9:A:1867:G:H5'	2.08	0.54
9:A:1871:A:H8	9:A:1872:A:C5	2.25	0.54
9:A:2672:U:C2'	9:A:2673:G:O5'	2.56	0.54
10:B:110:C:O2'	10:B:111:U:H5'	2.07	0.54
13:E:196:VAL:HG13	13:E:200:LEU:CD2	2.38	0.54
14:F:84:ILE:O	14:F:84:ILE:CG1	2.52	0.54
14:F:110:ILE:O	14:F:111:ARG:C	2.51	0.54
16:H:27:ARG:HG3	32:X:59:ASP:OD1	2.08	0.54
18:J:111:LYS:CE	18:J:115:GLY:H	2.20	0.54
28:T:4:GLU:O	28:T:8:LEU:HD23	2.08	0.54
30:V:68:LYS:O	30:V:68:LYS:HG2	2.07	0.54
33:Y:56:LEU:HA	33:Y:59:GLU:HG2	1.90	0.54
2:1:47:ILE:H	2:1:47:ILE:HD12	1.73	0.54
4:3:44:ARG:N	4:3:45:PRO:CD	2.71	0.54
9:A:74:A:N3	9:A:74:A:H5''	2.22	0.54
9:A:163:C:HO2'	9:A:164:C:C5'	2.21	0.54
9:A:833:A:OP2	20:L:39:LYS:HE3	2.08	0.54
9:A:994:C:O3'	9:A:995:C:H3'	2.08	0.54
9:A:1090:A:O2'	9:A:1091:G:H5'	2.08	0.54
9:A:1092:C:H2'	9:A:1093:G:O4'	2.08	0.54
9:A:1360:G:C2'	9:A:1361:G:H5'	2.37	0.54
9:A:1568:G:H4'	11:C:58:LYS:HB3	1.90	0.54
9:A:1761:C:H6	9:A:1761:C:O5'	1.91	0.54
9:A:1773:A:C2'	9:A:1774:C:H5'	2.38	0.54
9:A:2431:U:C6	9:A:2431:U:C5'	2.87	0.54
9:A:2567:G:H2'	9:A:2568:U:C6	2.43	0.54
9:A:2847:U:O2'	9:A:2848:G:H5'	2.08	0.54
12:D:9:VAL:HG22	12:D:26:VAL:HB	1.89	0.54
15:G:37:ASN:O	15:G:38:ASP:CB	2.56	0.54
17:I:27:LEU:C	17:I:27:LEU:HD12	2.32	0.54
18:J:16:TYR:O	18:J:55:ILE:HG23	2.08	0.54
21:M:21:ALA:HB2	21:M:97:GLN:O	2.08	0.54
28:T:54:GLU:O	28:T:55:VAL:CB	2.56	0.54
31:W:16:GLU:O	31:W:17:ALA:HB3	2.07	0.54
31:W:49:ASN:CA	31:W:61:LYS:HB2	2.36	0.54
9:A:765:C:H2'	9:A:766:U:C6	2.43	0.54
9:A:1675:C:H2'	9:A:1676:A:C8	2.43	0.54
9:A:1821:A:H2'	9:A:1822:C:C6	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1858:A:O2'	9:A:1859:U:H5'	2.06	0.54
9:A:2706:A:C2	9:A:2707:U:C2	2.96	0.54
9:A:2760:C:C2'	9:A:2761:A:H5'	2.38	0.54
9:A:2776:A:H4'	9:A:2778:A:OP1	2.08	0.54
11:C:199:HIS:O	11:C:202:ARG:HG3	2.09	0.54
18:J:40:HIS:H	18:J:40:HIS:CD2	2.25	0.54
19:K:58:LEU:HD23	19:K:58:LEU:N	2.23	0.54
21:M:13:HIS:O	21:M:14:LYS:CB	2.56	0.54
21:M:54:THR:O	21:M:56:ALA:N	2.40	0.54
22:N:71:ARG:NH2	22:N:71:ARG:HG3	2.23	0.54
26:R:73:LYS:C	26:R:74:ILE:HD12	2.33	0.54
31:W:72:GLY:N	31:W:73:PRO:CD	2.71	0.54
2:1:8:ILE:CG2	2:1:51:ALA:CA	2.83	0.53
9:A:611:C:H2'	9:A:612:G:H5'	1.90	0.53
9:A:852:U:H2'	9:A:853:C:C6	2.43	0.53
9:A:1054:A:C4	9:A:1055:G:C8	2.96	0.53
9:A:1131:G:OP1	18:J:82:GLY:HA2	2.08	0.53
9:A:1441:G:O2'	9:A:1442:U:H5'	2.08	0.53
9:A:1858:A:O2'	9:A:1859:U:O5'	2.25	0.53
9:A:2564:A:C2	9:A:2647:U:H4'	2.42	0.53
9:A:2758:A:H2'	9:A:2759:G:C5'	2.35	0.53
9:A:2850:A:H2'	9:A:2851:A:C8	2.43	0.53
12:D:46:ARG:HG2	12:D:46:ARG:NH1	2.22	0.53
15:G:166:GLU:OE2	15:G:168:VAL:HG22	2.09	0.53
19:K:51:LYS:HE3	19:K:51:LYS:C	2.32	0.53
23:O:116:GLN:OE1	23:O:116:GLN:CA	2.53	0.53
28:T:20:ALA:O	28:T:21:SER:C	2.50	0.53
29:U:44:HIS:O	29:U:45:GLN:C	2.51	0.53
9:A:36:G:O2'	9:A:37:C:H5'	2.07	0.53
9:A:137:U:N3	9:A:142:A:N6	2.55	0.53
9:A:983:A:C6	9:A:984:A:C2	2.96	0.53
9:A:1028:A:H61	9:A:1125:G:H2'	1.73	0.53
9:A:1394:U:H3'	9:A:1394:U:C6	2.42	0.53
9:A:1454:C:H41	22:N:73:ASN:HD21	1.57	0.53
9:A:2310:C:C5	14:F:76:PHE:HZ	2.26	0.53
9:A:2515:C:O2'	9:A:2516:A:H5'	2.08	0.53
9:A:2682:A:H8	12:D:11:MET:HG2	1.73	0.53
9:A:2810:A:H2'	9:A:2811:G:O4'	2.08	0.53
9:A:2816:G:H1'	9:A:2883:A:O2'	2.08	0.53
10:B:30:C:H2'	10:B:31:C:H5'	1.90	0.53
13:E:145:ASP:CB	13:E:184:ASP:OD2	2.56	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:E:148:ILE:H	13:E:187:VAL:H	1.56	0.53
14:F:134:GLN:O	14:F:135:ILE:HB	2.08	0.53
15:G:26:LYS:HB3	15:G:32:LEU:HG	1.90	0.53
17:I:126:ARG:HA	17:I:129:GLU:CG	2.39	0.53
19:K:86:LEU:N	19:K:86:LEU:HD23	2.24	0.53
20:L:109:LYS:HD2	20:L:126:ARG:HE	1.73	0.53
26:R:53:PHE:N	26:R:53:PHE:CD1	2.73	0.53
34:Z:8:GLN:O	34:Z:9:THR:HG22	2.08	0.53
1:0:8:THR:HG21	9:A:2021:C:OP1	2.08	0.53
3:2:37:LYS:CE	9:A:469:G:O6	2.51	0.53
9:A:52:A:O2'	9:A:53:A:H5'	2.09	0.53
9:A:725:G:C6	9:A:726:G:N1	2.76	0.53
9:A:947:A:HO2'	9:A:984:A:H2	1.55	0.53
9:A:995:C:HO2'	9:A:996:A:P	2.31	0.53
9:A:1508:A:C4'	9:A:1509:A:H5'	2.37	0.53
9:A:1522:A:O2'	9:A:1523:U:P	2.67	0.53
9:A:1919:A:H5'	9:A:1919:A:H8	1.66	0.53
9:A:2135:A:O2'	9:A:2136:G:H8	1.91	0.53
9:A:2136:G:O6	9:A:2156:G:C2	2.62	0.53
9:A:2680:U:P	12:D:114:LYS:CE	2.90	0.53
9:A:2742:G:O2'	9:A:2743:U:H5'	2.07	0.53
10:B:2:G:C6	10:B:119:A:C2	2.96	0.53
15:G:136:ASP:O	15:G:140:ILE:HD11	2.08	0.53
24:P:33:GLU:C	24:P:33:GLU:OE1	2.51	0.53
31:W:17:ALA:HA	31:W:35:ILE:CG2	2.35	0.53
32:X:32:LEU:O	32:X:33:HIS:CG	2.62	0.53
4:3:12:ARG:NH1	9:A:250:G:OP2	2.41	0.53
5:4:13:ASN:H	5:4:13:ASN:HD22	1.55	0.53
9:A:286:U:O2'	9:A:287:G:H5'	2.09	0.53
9:A:814:C:O2'	9:A:815:C:H5'	2.09	0.53
9:A:1394:U:H3'	9:A:1394:U:H6	1.73	0.53
9:A:1870:C:H3'	9:A:1871:A:C2	2.43	0.53
9:A:2318:G:C6	9:A:2319:G:N1	2.76	0.53
9:A:2383:G:H2'	9:A:2384:U:H6	1.73	0.53
9:A:2459:A:H2'	9:A:2459:A:N3	2.23	0.53
9:A:2511:U:O4	9:A:2575:C:N3	2.42	0.53
11:C:43:ASN:HB3	11:C:45:ASN:H	1.74	0.53
14:F:35:LEU:CB	14:F:153:ILE:CG2	2.66	0.53
14:F:165:GLY:O	14:F:168:LEU:HB3	2.07	0.53
16:H:52:ALA:C	16:H:54:LEU:H	2.17	0.53
22:N:8:ARG:HD2	22:N:43:GLU:CG	2.37	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:N:73:ASN:C	22:N:76:VAL:HG12	2.33	0.53
24:P:98:TYR:CD2	24:P:99:LEU:HD13	2.43	0.53
27:S:18:ARG:HG2	27:S:76:VAL:HG13	1.89	0.53
27:S:74:ILE:HG13	27:S:105:VAL:HG22	1.91	0.53
29:U:51:LEU:HA	29:U:53:GLN:OE1	2.08	0.53
1:O:8:THR:HG22	9:A:2020:A:H5'	1.90	0.53
3:2:16:HIS:HD2	9:A:684:G:OP1	1.91	0.53
9:A:27:G:O2'	9:A:28:A:P	2.66	0.53
9:A:303:G:C4	9:A:304:U:C6	2.96	0.53
9:A:721:A:H2'	9:A:722:A:C8	2.44	0.53
9:A:1006:C:C2	9:A:1138:G:N2	2.77	0.53
9:A:1104:C:H2'	9:A:1105:U:H6	1.71	0.53
9:A:1277:G:C5'	22:N:20:MET:HE1	2.25	0.53
9:A:1728:C:O2'	9:A:1729:U:C6	2.61	0.53
9:A:2804:U:H2'	9:A:2805:C:H6	1.73	0.53
9:A:2885:G:H3'	9:A:2886:A:H5''	1.90	0.53
10:B:81:G:C2'	10:B:82:U:H5'	2.38	0.53
10:B:85:G:O2'	10:B:86:G:H5'	2.08	0.53
11:C:252:LYS:NZ	11:C:252:LYS:CA	2.72	0.53
17:I:60:VAL:HG22	17:I:66:PHE:HB2	1.90	0.53
17:I:126:ARG:HA	17:I:129:GLU:CB	2.36	0.53
20:L:7:SER:HB2	20:L:8:PRO:HD2	1.90	0.53
28:T:1:MET:HE1	28:T:49:LYS:HZ2	1.73	0.53
9:A:271:G:C6	9:A:272:A:N6	2.77	0.53
9:A:301:G:O2'	9:A:302:C:P	2.66	0.53
9:A:359:G:C2	9:A:360:U:H1'	2.43	0.53
9:A:2109:U:N3	9:A:2181:U:C4	2.76	0.53
9:A:2365:G:H4'	31:W:59:PHE:CZ	2.43	0.53
9:A:2742:G:H2'	9:A:2743:U:H5'	1.88	0.53
10:B:35:C:C2'	10:B:36:C:O5'	2.56	0.53
11:C:257:ARG:NE	11:C:269:ARG:HH22	2.06	0.53
13:E:115:GLN:O	13:E:116:ASP:C	2.51	0.53
15:G:30:GLY:CA	15:G:78:VAL:HG12	2.36	0.53
15:G:140:ILE:HD12	15:G:140:ILE:H	1.70	0.53
19:K:121:GLU:O	19:K:122:VAL:C	2.52	0.53
21:M:8:LYS:HD2	21:M:8:LYS:H	1.74	0.53
23:O:82:ALA:O	23:O:87:ILE:HG12	2.09	0.53
29:U:71:ILE:HD12	29:U:71:ILE:O	2.07	0.53
31:W:8:SER:C	31:W:9:THR:HG22	2.34	0.53
9:A:142:A:C5	9:A:143:C:N4	2.76	0.53
9:A:900:A:C5	9:A:901:C:C5	2.97	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:923:G:H21	31:W:23:LYS:CE	2.21	0.53
9:A:1017:G:O2'	9:A:1018:U:H5'	2.08	0.53
9:A:1057:A:N7	9:A:1086:A:H2'	2.24	0.53
9:A:1537:G:H2'	9:A:1538:G:O4'	2.08	0.53
9:A:1864:U:OP1	9:A:2411:A:H5'	2.09	0.53
9:A:1911:U:O4	9:A:1918:A:H2'	2.09	0.53
9:A:2134:A:HO2'	9:A:2135:A:H8	1.56	0.53
9:A:2331:G:H2'	9:A:2332:C:C6	2.43	0.53
9:A:2679:A:H2'	9:A:2680:U:O5'	2.08	0.53
11:C:63:ILE:O	11:C:64:VAL:HB	2.08	0.53
11:C:70:LYS:HE2	11:C:73:ILE:HG13	1.91	0.53
12:D:124:ARG:HG2	12:D:125:TRP:NE1	2.23	0.53
12:D:182:ALA:O	12:D:183:GLU:C	2.50	0.53
14:F:114:ARG:HD2	14:F:114:ARG:H	1.73	0.53
17:I:105:LEU:HD23	17:I:108:ILE:HG21	1.91	0.53
19:K:1:MET:HE3	19:K:32:TYR:CD1	2.43	0.53
19:K:113:MET:HG3	19:K:116:ILE:HD11	1.89	0.53
20:L:85:VAL:CG2	20:L:94:THR:HG23	2.38	0.53
21:M:80:VAL:HG23	21:M:81:ARG:H	1.74	0.53
3:2:21:ARG:C	3:2:23:ALA:H	2.17	0.53
9:A:95:A:O2'	33:Y:41:HIS:HD2	1.91	0.53
9:A:112:U:H5'	33:Y:58:ASN:ND2	2.24	0.53
9:A:247:G:H4'	9:A:386:G:C5	2.43	0.53
9:A:987:C:C2'	9:A:988:A:H5'	2.38	0.53
9:A:1165:A:H2'	9:A:1166:G:H8	1.73	0.53
9:A:1178:C:N4	9:A:1180:U:C4	2.76	0.53
9:A:1223:G:OP2	26:R:68:ARG:NH1	2.42	0.53
9:A:1348:C:C2'	9:A:1349:C:H5'	2.34	0.53
9:A:1378:A:H2'	9:A:1380:G:N7	2.23	0.53
9:A:1459:G:O2'	9:A:1460:U:H3'	2.07	0.53
9:A:1782:U:C6	9:A:2609:U:C5	2.96	0.53
9:A:1801:A:C4	11:C:261:ARG:NH1	2.76	0.53
9:A:1833:C:H2'	9:A:1834:U:H6	1.73	0.53
11:C:182:LYS:C	11:C:183:VAL:HG23	2.33	0.53
13:E:127:GLU:HG2	13:E:133:LEU:HD13	1.90	0.53
17:I:78:LEU:HD23	17:I:81:LYS:HE3	1.90	0.53
24:P:53:GLY:O	24:P:56:SER:OG	2.23	0.53
29:U:82:VAL:O	29:U:94:PHE:O	2.27	0.53
31:W:22:VAL:CG1	31:W:25:PHE:HE2	2.20	0.53
31:W:74:LYS:O	31:W:75:ASN:C	2.51	0.53
33:Y:21:LEU:O	33:Y:22:LEU:C	2.51	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:33:THR:CG2	4:3:34:LYS:N	2.71	0.53
9:A:289:G:H2'	9:A:290:U:H6	1.73	0.53
9:A:403:U:O2'	9:A:404:A:OP2	2.22	0.53
9:A:460:A:H2'	9:A:461:C:O4'	2.09	0.53
9:A:674:G:O2'	13:E:69:ARG:HD2	2.08	0.53
9:A:706:A:H2'	9:A:707:G:O4'	2.08	0.53
9:A:1063:G:H5'	17:I:76:ALA:CB	2.39	0.53
9:A:1256:G:O2'	13:E:77:ILE:HD11	2.07	0.53
9:A:1626:A:O2'	9:A:1627:G:OP2	2.27	0.53
9:A:1773:A:H2'	9:A:1774:C:H5'	1.91	0.53
9:A:2152:G:O2'	9:A:2153:C:O4'	2.25	0.53
9:A:2373:G:H2'	9:A:2374:C:H6	1.74	0.53
9:A:2765:A:N3	9:A:2765:A:H2'	2.23	0.53
9:A:2848:G:O2'	9:A:2867:G:N2	2.34	0.53
11:C:216:ARG:HB2	11:C:217:PRO:HD2	1.91	0.53
24:P:111:GLU:H	24:P:111:GLU:CD	2.16	0.53
29:U:10:VAL:HB	29:U:70:ALA:O	2.09	0.53
31:W:19:ARG:HH22	31:W:22:VAL:HG21	1.74	0.53
2:1:3:GLY:O	2:1:4:ILE:HG12	2.10	0.53
9:A:409:G:C2'	9:A:410:G:H5'	2.38	0.53
9:A:1107:G:C4	9:A:1108:U:C5	2.97	0.53
9:A:1141:U:H6	18:J:65:THR:CG2	2.20	0.53
9:A:1562:U:H2'	9:A:1563:U:O4'	2.08	0.53
9:A:1670:C:C5	9:A:1671:U:C4	2.97	0.53
9:A:1912:A:C2	9:A:1919:A:C6	2.96	0.53
9:A:2418:A:C5	9:A:2419:U:C5	2.98	0.53
11:C:129:LEU:HB2	11:C:134:ILE:HD11	1.91	0.53
11:C:229:HIS:HD2	11:C:246:PRO:HA	1.71	0.53
12:D:106:LYS:N	12:D:106:LYS:CD	2.64	0.53
14:F:71:LYS:CD	14:F:80:GLN:HG3	2.31	0.53
16:H:43:ASN:HA	16:H:46:PHE:HB3	1.91	0.53
19:K:93:GLN:OE1	19:K:93:GLN:CA	2.57	0.53
22:N:70:THR:HG21	22:N:75:ILE:HD11	1.90	0.53
23:O:3:LYS:CG	23:O:4:LYS:H	2.21	0.53
24:P:25:VAL:HA	24:P:84:SER:O	2.08	0.53
27:S:73:LYS:HB3	27:S:106:VAL:HB	1.91	0.53
28:T:39:THR:O	28:T:41:ALA:N	2.42	0.53
31:W:30:VAL:N	31:W:31:LEU:HD23	2.23	0.53
31:W:44:PHE:O	31:W:78:PHE:HA	2.08	0.53
32:X:77:TYR:O	32:X:77:TYR:CG	2.61	0.53
9:A:300:A:N1	9:A:333:G:O2'	2.34	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:339:U:H2'	9:A:340:A:H5'	1.91	0.52
9:A:495:G:H1'	27:S:57:ASN:ND2	2.24	0.52
9:A:860:U:H5'	9:A:860:U:H6	1.74	0.52
9:A:1022:G:O2'	9:A:1023:U:OP2	2.28	0.52
9:A:1148:U:C6	9:A:1148:U:C3'	2.92	0.52
9:A:1301:A:H2'	9:A:1301:A:N3	2.25	0.52
9:A:1568:G:H4'	11:C:58:LYS:HG2	1.90	0.52
9:A:2414:G:C2'	9:A:2415:G:H5'	2.39	0.52
9:A:2648:G:H2'	9:A:2649:C:H6	1.73	0.52
10:B:12:C:C4'	10:B:13:G:OP1	2.56	0.52
13:E:21:ARG:HG2	13:E:22:ASP:O	2.09	0.52
31:W:22:VAL:O	31:W:23:LYS:O	2.26	0.52
1:O:39:ARG:O	1:O:40:HIS:HB2	2.09	0.52
9:A:324:A:O2'	9:A:325:G:C5'	2.57	0.52
9:A:532:A:N7	9:A:2021:C:H2'	2.24	0.52
9:A:687:C:H2'	9:A:688:U:H6	1.72	0.52
9:A:981:A:H5''	9:A:982:C:OP2	2.10	0.52
9:A:1259:G:H2'	9:A:1260:A:H8	1.74	0.52
9:A:2467:C:C2'	9:A:2468:A:H5'	2.39	0.52
9:A:2663:G:C2'	9:A:2664:G:H5'	2.39	0.52
11:C:203:VAL:CG1	11:C:204:LEU:N	2.68	0.52
11:C:229:HIS:HD2	11:C:246:PRO:CA	2.22	0.52
12:D:62:LYS:N	12:D:63:PRO:HD3	2.23	0.52
13:E:48:THR:H	13:E:51:GLU:CG	2.22	0.52
18:J:44:TYR:C	18:J:45:THR:CG2	2.78	0.52
18:J:44:TYR:CG	25:Q:63:ARG:HG2	2.44	0.52
19:K:21:CYS:CA	19:K:41:ILE:HD12	2.28	0.52
24:P:91:VAL:HG11	24:P:96:LEU:HD21	1.90	0.52
25:Q:27:ARG:HA	25:Q:33:VAL:HG12	1.91	0.52
25:Q:91:ARG:NE	26:R:11:GLN:H	2.06	0.52
28:T:38:ALA:HB1	28:T:43:ILE:CG2	2.38	0.52
29:U:10:VAL:HG23	29:U:11:ILE:N	2.23	0.52
32:X:38:TRP:HE3	32:X:45:PHE:CD2	2.28	0.52
34:Z:6:ILE:O	34:Z:34:THR:HA	2.09	0.52
9:A:9:G:C6	9:A:2629:U:C6	2.98	0.52
9:A:866:A:C8	9:A:866:A:C4'	2.91	0.52
9:A:934:U:H2'	9:A:935:C:C6	2.44	0.52
9:A:2197:U:HO2'	9:A:2198:A:P	2.33	0.52
9:A:2415:G:H2'	9:A:2416:C:C6	2.43	0.52
11:C:108:GLY:O	11:C:109:LEU:HD22	2.09	0.52
13:E:115:GLN:OE1	13:E:115:GLN:HA	2.08	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:F:134:GLN:C	14:F:136:ILE:H	2.16	0.52
15:G:168:VAL:O	15:G:168:VAL:HG23	2.10	0.52
19:K:92:GLU:OE1	19:K:92:GLU:N	2.43	0.52
22:N:109:PRO:O	22:N:109:PRO:CG	2.58	0.52
29:U:13:LEU:HD12	29:U:69:VAL:CA	2.38	0.52
30:V:5:ASN:H	30:V:5:ASN:HD22	1.54	0.52
30:V:26:PHE:HD1	30:V:27:PRO:O	1.93	0.52
33:Y:21:LEU:HA	33:Y:25:GLN:HB3	1.92	0.52
9:A:580:U:C2'	9:A:581:C:H5'	2.39	0.52
9:A:627:A:C5	9:A:637:A:C8	2.97	0.52
9:A:658:U:O2'	13:E:95:LYS:NZ	2.40	0.52
9:A:946:C:O2'	9:A:947:A:H5'	2.09	0.52
9:A:1052:C:H2'	9:A:1053:C:H5'	1.91	0.52
9:A:1070:A:N1	9:A:1097:U:H4'	2.24	0.52
9:A:1172:C:N3	9:A:1173:U:H1'	2.24	0.52
9:A:2199:A:H5'	9:A:2200:C:C5	2.40	0.52
10:B:73:A:OP1	10:B:73:A:H4'	2.08	0.52
11:C:91:ALA:O	11:C:102:TYR:HA	2.10	0.52
11:C:184:GLU:O	11:C:185:ALA:HB3	2.09	0.52
12:D:118:PHE:C	12:D:120:GLY:H	2.14	0.52
13:E:126:VAL:HG22	13:E:127:GLU:N	2.23	0.52
18:J:89:PHE:CE1	18:J:93:ILE:HG13	2.44	0.52
19:K:13:ASN:O	19:K:15:GLY:N	2.40	0.52
19:K:18:ARG:H	19:K:45:GLU:CB	2.13	0.52
22:N:101:GLY:C	22:N:102:PHE:CD2	2.87	0.52
23:O:89:ASP:H	23:O:116:GLN:HB2	1.73	0.52
24:P:102:ARG:C	24:P:103:THR:HG22	2.34	0.52
25:Q:46:TYR:CZ	25:Q:50:ARG:NH1	2.77	0.52
26:R:42:ALA:HA	26:R:46:GLU:CB	2.37	0.52
27:S:8:ARG:O	27:S:9:HIS:HB2	2.10	0.52
29:U:53:GLN:N	29:U:54:PRO:CD	2.73	0.52
31:W:49:ASN:O	31:W:49:ASN:CG	2.50	0.52
33:Y:45:GLN:O	33:Y:46:VAL:CB	2.57	0.52
9:A:412:A:C2'	9:A:413:C:C5'	2.86	0.52
9:A:603:A:C4'	9:A:604:G:O5'	2.50	0.52
9:A:783:A:H8	9:A:784:G:H4'	1.73	0.52
9:A:1288:G:C5	9:A:1327:A:C2	2.98	0.52
9:A:1359:A:H2'	9:A:1360:G:O5'	2.10	0.52
9:A:1421:G:C2	9:A:1422:G:N7	2.77	0.52
9:A:1669:A:H2'	9:A:1669:A:N3	2.24	0.52
9:A:1799:G:C2	11:C:153:LEU:HD23	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2273:A:H2'	9:A:2274:A:C8	2.45	0.52
9:A:2793:C:H2'	9:A:2794:C:C6	2.44	0.52
15:G:131:VAL:CG2	15:G:131:VAL:O	2.58	0.52
18:J:101:ILE:O	18:J:104:ALA:HB3	2.09	0.52
22:N:33:ILE:HD11	22:N:118:ARG:NH2	2.25	0.52
24:P:50:ARG:HG3	24:P:57:ALA:C	2.31	0.52
26:R:61:ALA:HB2	26:R:98:ILE:HA	1.92	0.52
28:T:67:VAL:C	28:T:68:LYS:HD3	2.35	0.52
31:W:18:LYS:HE3	31:W:19:ARG:CG	2.40	0.52
33:Y:8:GLU:O	33:Y:9:LYS:CB	2.55	0.52
33:Y:18:LEU:O	33:Y:22:LEU:HB3	2.09	0.52
3:2:12:ARG:HB2	3:2:12:ARG:NH2	2.25	0.52
9:A:27:G:N2	9:A:512:G:O2'	2.37	0.52
9:A:163:C:O2'	9:A:164:C:P	2.67	0.52
9:A:197:A:H2'	9:A:198:C:H5'	1.91	0.52
9:A:412:A:O2'	9:A:413:C:C5'	2.44	0.52
9:A:1047:G:N2	9:A:1110:G:C4	2.77	0.52
9:A:1056:G:N2	9:A:1102:C:C5	2.78	0.52
9:A:1073:A:C8	9:A:1073:A:OP1	2.62	0.52
9:A:1157:G:H2'	9:A:1158:C:H6	1.74	0.52
9:A:1593:A:H2'	9:A:1594:U:O4'	2.10	0.52
9:A:1637:A:H4'	9:A:2711:A:O2'	2.09	0.52
9:A:1999:C:O2'	9:A:2000:C:H5'	2.10	0.52
9:A:2405:G:H1'	9:A:2412:A:H61	1.73	0.52
9:A:2491:U:H2'	9:A:2491:U:O5'	2.10	0.52
9:A:2593:U:H2'	9:A:2594:C:C6	2.44	0.52
9:A:2772:C:H2'	9:A:2773:C:H6	1.74	0.52
11:C:90:ILE:HD12	11:C:103:ILE:O	2.10	0.52
12:D:105:LYS:HE3	12:D:176:ASP:HB3	1.92	0.52
14:F:134:GLN:C	14:F:136:ILE:HG12	2.34	0.52
15:G:93:TYR:HE2	15:G:106:LEU:C	2.18	0.52
20:L:96:LYS:HD3	20:L:103:ILE:HA	1.92	0.52
32:X:12:VAL:HG23	32:X:28:PHE:HB2	1.92	0.52
9:A:142:A:C5	9:A:143:C:C4	2.98	0.52
9:A:372:G:C8	32:X:60:LYS:HE2	2.44	0.52
9:A:855:G:H21	31:W:23:LYS:CB	2.23	0.52
9:A:885:C:H6	9:A:885:C:H3'	1.75	0.52
9:A:1485:U:C2	9:A:1505:A:C2	2.97	0.52
9:A:1535:A:H4'	9:A:1536:C:OP2	2.08	0.52
9:A:1872:A:H2'	9:A:1873:G:O4'	2.10	0.52
9:A:2221:G:C2'	9:A:2222:C:H5'	2.40	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2305:U:O2'	9:A:2306:C:H5'	2.09	0.52
9:A:2673:G:H2'	9:A:2674:G:H8	1.75	0.52
9:A:2733:A:O2'	9:A:2734:A:H5'	2.10	0.52
12:D:97:SER:CA	12:D:99:GLU:HG2	2.39	0.52
12:D:121:THR:HG22	12:D:125:TRP:CD1	2.41	0.52
17:I:86:LYS:H	17:I:86:LYS:HD2	1.74	0.52
19:K:1:MET:C	19:K:2:ILE:HD12	2.35	0.52
20:L:4:ASN:HD22	20:L:4:ASN:N	1.99	0.52
20:L:64:PHE:CD1	20:L:64:PHE:C	2.88	0.52
22:N:12:ARG:HD3	22:N:16:HIS:CG	2.45	0.52
26:R:97:LYS:O	26:R:98:ILE:CB	2.57	0.52
31:W:19:ARG:CZ	31:W:22:VAL:HB	2.40	0.52
9:A:215:G:H4'	9:A:216:A:OP1	2.10	0.52
9:A:259:G:O2'	9:A:260:G:H5'	2.09	0.52
9:A:559:G:H1'	25:Q:55:GLN:NE2	2.24	0.52
9:A:560:C:O2	25:Q:47:ARG:NH1	2.41	0.52
9:A:570:G:H2'	9:A:2030:A:N7	2.24	0.52
9:A:859:G:N2	9:A:916:G:H2'	2.25	0.52
9:A:1157:G:H2'	9:A:1158:C:C6	2.45	0.52
9:A:1161:C:H2'	9:A:1162:G:O5'	2.10	0.52
9:A:1644:C:O2	9:A:1644:C:H2'	2.09	0.52
11:C:241:LYS:O	11:C:243:PRO:HD3	2.10	0.52
13:E:175:ILE:HG21	13:E:199:MET:HE1	1.90	0.52
15:G:139:VAL:O	15:G:140:ILE:C	2.51	0.52
16:H:35:LYS:O	16:H:36:ALA:HB2	2.09	0.52
17:I:126:ARG:HA	17:I:129:GLU:CD	2.35	0.52
18:J:89:PHE:CD1	18:J:89:PHE:C	2.88	0.52
28:T:29:THR:N	28:T:86:THR:HA	2.25	0.52
29:U:93:ARG:NH1	29:U:102:ILE:CD1	2.70	0.52
2:1:15:GLY:O	2:1:16:THR:O	2.28	0.52
4:3:40:LYS:HA	4:3:43:LEU:HD12	1.91	0.52
9:A:310:A:O2'	9:A:311:A:P	2.67	0.52
9:A:648:G:O2'	9:A:2351:G:OP1	2.16	0.52
9:A:784:G:C5'	11:C:225:ASN:OD1	2.58	0.52
9:A:1189:A:H2'	9:A:1190:G:O5'	2.10	0.52
9:A:1385:A:O2'	9:A:1396:U:O2	2.28	0.52
9:A:1668:A:H4'	9:A:1669:A:O5'	2.10	0.52
9:A:2469:A:C6	9:A:2482:A:C8	2.98	0.52
9:A:2662:A:H2'	9:A:2663:G:O4'	2.09	0.52
11:C:90:ILE:CG2	11:C:102:TYR:HD1	2.21	0.52
11:C:119:VAL:HG12	11:C:133:ASN:HD21	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:D:29:VAL:HB	12:D:98:VAL:HG13	1.91	0.52
14:F:161:SER:HG	14:F:164:GLU:HG3	1.74	0.52
15:G:33:THR:H	15:G:34:ARG:NH1	2.08	0.52
16:H:41:LYS:C	16:H:43:ASN:N	2.65	0.52
19:K:18:ARG:N	19:K:45:GLU:CB	2.69	0.52
20:L:110:VAL:O	20:L:111:ILE:CB	2.49	0.52
20:L:125:LEU:HD23	20:L:125:LEU:N	2.25	0.52
21:M:73:ILE:HG21	21:M:91:TYR:CE2	2.44	0.52
24:P:24:THR:C	24:P:25:VAL:HG12	2.35	0.52
25:Q:91:ARG:CZ	26:R:11:GLN:H	2.23	0.52
26:R:1:MET:HA	26:R:42:ALA:O	2.10	0.52
26:R:74:ILE:N	26:R:74:ILE:HD12	2.25	0.52
27:S:84:ARG:O	27:S:95:ARG:O	2.26	0.52
9:A:234:U:C2'	9:A:235:U:H5'	2.40	0.52
9:A:273:G:HO2'	9:A:274:C:C5'	2.23	0.52
9:A:301:G:C6	9:A:317:G:C6	2.98	0.52
9:A:784:G:H5''	11:C:225:ASN:OD1	2.10	0.52
9:A:784:G:C5	11:C:227:VAL:HG11	2.45	0.52
9:A:1115:G:O2'	9:A:1116:G:C5'	2.57	0.52
9:A:1377:G:O5'	9:A:1377:G:H8	1.93	0.52
9:A:1505:A:O2'	9:A:1506:U:H5'	2.09	0.52
9:A:1585:C:H2'	9:A:1586:A:C4'	2.40	0.52
9:A:1838:C:C5	9:A:1899:A:C5	2.98	0.52
9:A:1936:A:H2	9:A:1943:U:C4	2.28	0.52
9:A:2314:A:C2'	9:A:2315:G:H5'	2.39	0.52
9:A:2659:G:N2	9:A:2661:G:H3'	2.25	0.52
12:D:34:VAL:HG23	12:D:34:VAL:O	2.09	0.52
13:E:5:LEU:HD13	13:E:122:GLU:CG	2.40	0.52
13:E:41:GLN:HB2	13:E:43:THR:CG2	2.40	0.52
15:G:97:VAL:HA	15:G:101:VAL:O	2.10	0.52
16:H:50:ARG:C	16:H:52:ALA:H	2.16	0.52
17:I:56:VAL:HG23	17:I:69:VAL:O	2.10	0.52
21:M:11:LYS:HE2	21:M:87:GLY:O	2.09	0.52
22:N:75:ILE:HD12	22:N:75:ILE:C	2.35	0.52
27:S:25:ARG:HD3	27:S:73:LYS:NZ	2.25	0.52
28:T:30:ILE:O	28:T:30:ILE:HG12	2.09	0.52
31:W:11:ASN:C	31:W:12:GLY:O	2.50	0.52
31:W:50:VAL:C	31:W:52:CYS:N	2.67	0.52
31:W:75:ASN:O	31:W:76:ARG:HB2	2.09	0.52
33:Y:47:ARG:NH2	33:Y:47:ARG:CG	2.66	0.52
4:3:53:ASP:HB3	20:L:57:LEU:HD22	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:37:C:H2'	9:A:38:A:O5'	2.10	0.51
9:A:211:C:O2'	9:A:212:G:H5'	2.10	0.51
9:A:294:A:C5	9:A:345:A:C2	2.98	0.51
9:A:514:A:H1'	9:A:581:C:O2'	2.09	0.51
9:A:646:U:H5'	9:A:647:G:H5''	1.91	0.51
9:A:857:G:H2'	9:A:858:G:O4'	2.09	0.51
9:A:1106:G:C2	9:A:1107:G:N9	2.78	0.51
9:A:1394:U:C6	9:A:1394:U:C3'	2.93	0.51
9:A:1405:U:N3	9:A:1406:U:C4	2.77	0.51
9:A:1534:U:O2	9:A:1534:U:H2'	2.09	0.51
9:A:1767:G:O2'	9:A:1768:C:H5'	2.10	0.51
9:A:1932:A:H2'	9:A:1933:G:O4'	2.10	0.51
9:A:2109:U:O4	9:A:2110:G:C5	2.63	0.51
9:A:2330:G:N2	31:W:38:ARG:HA	2.23	0.51
9:A:2564:A:OP1	9:A:2648:G:H4'	2.09	0.51
11:C:142:ASN:O	11:C:142:ASN:CG	2.53	0.51
11:C:244:VAL:HG23	11:C:245:THR:O	2.10	0.51
13:E:174:GLY:O	13:E:175:ILE:C	2.53	0.51
14:F:135:ILE:C	14:F:137:PHE:N	2.68	0.51
17:I:75:ALA:HB3	17:I:131:THR:HG21	1.91	0.51
21:M:132:THR:CG2	21:M:133:LYS:H	2.20	0.51
25:Q:86:SER:HB3	26:R:51:VAL:CG1	2.40	0.51
31:W:70:VAL:HG23	31:W:75:ASN:OD1	2.08	0.51
9:A:1644:C:O2'	9:A:1645:G:C5'	2.53	0.51
9:A:1744:A:H5''	9:A:1745:A:OP2	2.09	0.51
9:A:2340:A:H2'	9:A:2341:G:C8	2.46	0.51
16:H:24:GLY:O	16:H:28:ASN:HB2	2.09	0.51
17:I:107:GLU:O	17:I:111:THR:HG23	2.10	0.51
21:M:36:VAL:HG23	30:V:82:TYR:CD1	2.44	0.51
34:Z:38:GLU:OE1	34:Z:38:GLU:N	2.41	0.51
9:A:26:G:H1'	9:A:514:A:H61	1.73	0.51
9:A:118:A:C8	9:A:119:A:C8	2.98	0.51
9:A:137:U:C4	9:A:142:A:N6	2.72	0.51
9:A:408:G:O2'	9:A:409:G:H5'	2.09	0.51
9:A:871:U:OP1	21:M:5:LYS:HG3	2.10	0.51
9:A:1471:G:H2'	9:A:1472:C:C6	2.43	0.51
9:A:2063:C:H2'	9:A:2064:C:H5'	1.92	0.51
9:A:2182:U:H2'	9:A:2183:A:OP1	2.10	0.51
9:A:2182:U:C2'	9:A:2183:A:OP1	2.58	0.51
9:A:2889:C:C2'	9:A:2890:G:O5'	2.58	0.51
11:C:103:ILE:HG23	11:C:104:LEU:N	2.25	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:69:ARG:O	18:J:90:GLU:HG2	2.11	0.51
19:K:45:GLU:HA	19:K:45:GLU:OE2	2.10	0.51
25:Q:12:ARG:O	25:Q:13:HIS:C	2.50	0.51
31:W:73:PRO:HG2	31:W:76:ARG:HD2	1.91	0.51
4:3:2:LYS:HE2	9:A:242:G:P	2.50	0.51
9:A:163:C:O2'	9:A:164:C:O5'	2.27	0.51
9:A:345:A:O2'	9:A:347:A:N7	2.44	0.51
9:A:839:U:H2'	9:A:840:C:C6	2.45	0.51
9:A:923:G:H4'	31:W:25:PHE:CE1	2.45	0.51
9:A:1360:G:H5''	9:A:1360:G:H8	1.76	0.51
9:A:1411:U:C2'	9:A:1412:U:H5'	2.40	0.51
9:A:1716:U:HO2'	9:A:1717:A:H5'	1.71	0.51
9:A:1838:C:C4	9:A:1899:A:C4	2.99	0.51
9:A:2063:C:C2'	9:A:2064:C:H5'	2.41	0.51
9:A:2149:U:HO2'	9:A:2150:C:C4'	2.23	0.51
9:A:2225:A:H4'	9:A:2226:C:O5'	2.11	0.51
9:A:2757:A:N1	15:G:66:THR:HG21	2.25	0.51
11:C:141:HIS:NE2	11:C:193:GLU:C	2.68	0.51
12:D:29:VAL:HB	12:D:98:VAL:CG1	2.40	0.51
15:G:167:VAL:O	15:G:168:VAL:C	2.53	0.51
17:I:32:VAL:HG13	17:I:66:PHE:CE2	2.46	0.51
20:L:40:SER:O	20:L:41:ARG:CB	2.58	0.51
22:N:25:ALA:HA	22:N:48:VAL:CG2	2.40	0.51
23:O:59:ALA:O	23:O:61:GLN:N	2.44	0.51
25:Q:4:LYS:HZ2	25:Q:5:ARG:HA	1.73	0.51
26:R:67:GLY:C	26:R:93:PHE:CE2	2.89	0.51
27:S:29:VAL:HG12	27:S:30:SER:N	2.25	0.51
28:T:37:ASP:C	28:T:38:ALA:O	2.51	0.51
31:W:46:ALA:CB	31:W:79:ILE:O	2.52	0.51
32:X:10:ARG:HB2	32:X:11:PRO:CD	2.40	0.51
32:X:29:LEU:N	32:X:29:LEU:HD23	2.24	0.51
9:A:395:U:O2'	9:A:396:G:C8	2.62	0.51
9:A:571:U:C4	9:A:575:A:C5	2.98	0.51
9:A:855:G:C2	31:W:23:LYS:HG2	2.46	0.51
9:A:1027:A:C6	9:A:1126:A:N3	2.79	0.51
9:A:1153:C:C2'	9:A:1154:G:O5'	2.59	0.51
9:A:1572:A:C2'	9:A:1573:G:H5'	2.40	0.51
9:A:1738:G:O2'	9:A:1739:A:O5'	2.29	0.51
9:A:1945:G:C4	9:A:1946:U:C5	2.99	0.51
9:A:2400:G:C2'	9:A:2401:U:H5'	2.40	0.51
9:A:2898:U:O2	18:J:134:ALA:HB1	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:B:92:C:C2'	10:B:93:C:O5'	2.58	0.51
11:C:93:VAL:O	11:C:94:LEU:HB3	2.10	0.51
18:J:49:ASP:OD1	18:J:121:LYS:NZ	2.43	0.51
23:O:75:GLY:HA2	23:O:106:LEU:CD1	2.39	0.51
24:P:87:ARG:NH1	24:P:87:ARG:CG	2.68	0.51
25:Q:91:ARG:CZ	25:Q:93:ILE:HG21	2.41	0.51
26:R:90:ARG:O	26:R:91:GLN:HB3	2.10	0.51
1:O:27:LEU:H	1:O:27:LEU:CD2	2.24	0.51
1:O:39:ARG:HG2	1:O:40:HIS:HD1	1.73	0.51
3:2:27:GLY:O	3:2:30:VAL:HB	2.10	0.51
9:A:103:A:H2'	9:A:104:A:C8	2.46	0.51
9:A:545:U:H6	9:A:546:U:H4'	1.75	0.51
9:A:601:C:O2	9:A:605:G:H4'	2.10	0.51
9:A:659:G:N2	13:E:30:GLN:HE22	2.09	0.51
9:A:1055:G:H3'	9:A:1056:G:H8	1.75	0.51
9:A:1627:G:C2	9:A:1628:G:C8	2.99	0.51
9:A:2630:G:C2'	9:A:2631:G:H5'	2.40	0.51
9:A:2663:G:H2'	9:A:2664:G:C8	2.44	0.51
13:E:8:ALA:O	13:E:9:GLN:C	2.54	0.51
13:E:12:LEU:O	13:E:13:THR:HB	2.11	0.51
13:E:119:ILE:HD13	13:E:119:ILE:H	1.76	0.51
15:G:30:GLY:O	15:G:32:LEU:N	2.44	0.51
17:I:33:ASN:HB3	17:I:36:GLU:CB	2.38	0.51
23:O:31:THR:CG2	23:O:34:HIS:N	2.72	0.51
24:P:3:ILE:C	24:P:3:ILE:CD1	2.83	0.51
28:T:34:VAL:HG11	28:T:43:ILE:HD12	1.92	0.51
31:W:37:VAL:CG1	31:W:55:ASP:O	2.56	0.51
5:4:7:VAL:HG13	5:4:38:GLY:HA2	1.92	0.51
9:A:439:A:H2'	9:A:440:C:O5'	2.11	0.51
9:A:548:G:H4'	9:A:549:G:H5'	1.93	0.51
9:A:570:G:C4	9:A:2030:A:N7	2.78	0.51
9:A:845:A:C6	9:A:847:U:C6	2.98	0.51
9:A:1013:C:H2'	9:A:1014:A:H8	1.75	0.51
9:A:1105:U:H2'	9:A:1106:G:C8	2.45	0.51
9:A:1590:A:H2'	9:A:1591:A:H8	1.73	0.51
9:A:1730:C:H1'	9:A:1731:G:C2	2.46	0.51
9:A:1906:G:C2'	9:A:1907:G:O5'	2.59	0.51
9:A:1947:C:N3	9:A:1960:A:C2	2.79	0.51
9:A:2311:A:O3'	9:A:2312:U:H6	1.92	0.51
9:A:2579:C:O2'	9:A:2580:U:H5'	2.10	0.51
17:I:89:SER:OG	17:I:135:MET:HA	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:40:HIS:O	18:J:41:LYS:HG2	2.10	0.51
18:J:81:ILE:HG12	18:J:82:GLY:N	2.25	0.51
21:M:45:GLN:O	21:M:46:ILE:C	2.53	0.51
24:P:56:SER:O	24:P:75:THR:HG23	2.11	0.51
24:P:92:ARG:O	24:P:92:ARG:HG3	2.11	0.51
25:Q:77:LYS:HE2	25:Q:116:LEU:CD2	2.40	0.51
28:T:85:VAL:O	28:T:86:THR:O	2.29	0.51
31:W:28:GLU:C	31:W:63:ASP:HB3	2.36	0.51
31:W:42:THR:HG22	31:W:43:LYS:N	2.26	0.51
31:W:42:THR:CG2	31:W:43:LYS:HZ2	2.24	0.51
32:X:34:SER:CA	32:X:49:ARG:HA	2.39	0.51
4:3:28:LEU:HD11	4:3:40:LYS:HB3	1.93	0.51
5:4:7:VAL:HG23	5:4:8:LYS:H	1.74	0.51
9:A:763:G:O2'	9:A:765:C:H5'	2.11	0.51
9:A:1206:G:O2'	9:A:1207:C:H5'	2.11	0.51
9:A:1327:A:H2'	9:A:1328:A:O5'	2.11	0.51
9:A:1430:G:H2'	9:A:1431:A:H8	1.75	0.51
9:A:1497:U:H5''	9:A:1498:C:OP2	2.11	0.51
9:A:1535:A:O2'	9:A:1536:C:OP1	2.28	0.51
9:A:1760:C:H2'	9:A:1761:C:O4'	2.10	0.51
9:A:1935:G:H1'	9:A:1964:G:H21	1.70	0.51
9:A:2134:A:O2'	9:A:2135:A:C8	2.64	0.51
9:A:2210:U:C2	9:A:2212:A:N7	2.79	0.51
10:B:43:C:O2	14:F:91:ARG:NH2	2.44	0.51
11:C:108:GLY:O	11:C:109:LEU:CD2	2.58	0.51
11:C:246:PRO:HD2	11:C:247:TRP:CZ3	2.46	0.51
13:E:68:ALA:O	13:E:69:ARG:C	2.54	0.51
13:E:127:GLU:N	13:E:127:GLU:OE1	2.44	0.51
18:J:135:GLN:CA	18:J:135:GLN:NE2	2.74	0.51
21:M:53:MET:HE1	21:M:103:TYR:CE2	2.45	0.51
25:Q:40:LYS:HD3	25:Q:44:TYR:CE1	2.46	0.51
28:T:19:LYS:HA	28:T:22:THR:HG1	1.76	0.51
34:Z:43:ILE:CD1	34:Z:47:ILE:HD11	2.40	0.51
9:A:980:A:C6	9:A:981:A:N1	2.78	0.51
9:A:1009:A:O5'	9:A:1009:A:H8	1.94	0.51
9:A:1064:C:H4'	17:I:89:SER:N	2.26	0.51
9:A:1712:U:N3	9:A:1713:A:C5	2.79	0.51
9:A:1795:C:H2'	9:A:1796:U:C6	2.42	0.51
9:A:1820:U:OP1	11:C:176:ARG:HG2	2.11	0.51
9:A:1857:G:N3	9:A:1884:G:C2	2.79	0.51
9:A:1897:G:C2	9:A:1898:U:C2	2.98	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2080:A:C5'	32:X:18:SER:HB3	2.41	0.51
9:A:2784:U:H4'	12:D:42:ASN:ND2	2.25	0.51
9:A:2806:C:C2'	9:A:2807:U:H5'	2.41	0.51
10:B:92:C:H2'	10:B:93:C:O5'	2.11	0.51
12:D:104:VAL:HG13	12:D:106:LYS:CD	2.41	0.51
12:D:142:VAL:HG23	12:D:143:PRO:CD	2.41	0.51
14:F:39:VAL:CG1	14:F:40:GLY:N	2.73	0.51
20:L:85:VAL:HG21	20:L:94:THR:HG23	1.92	0.51
21:M:57:VAL:O	21:M:58:LYS:HB2	2.11	0.51
23:O:2:ASP:O	23:O:3:LYS:CG	2.59	0.51
23:O:67:ASN:H	23:O:70:ALA:HB3	1.76	0.51
23:O:70:ALA:O	23:O:71:ALA:C	2.54	0.51
24:P:80:VAL:HG12	24:P:81:ASP:H	1.72	0.51
25:Q:4:LYS:NZ	25:Q:5:ARG:HA	2.26	0.51
25:Q:8:ILE:C	25:Q:8:ILE:CD1	2.83	0.51
28:T:31:VAL:CA	28:T:32:LEU:HD23	2.41	0.51
29:U:35:VAL:HG12	29:U:38:ILE:CG1	2.32	0.51
9:A:112:U:C5'	33:Y:58:ASN:HD21	2.24	0.51
9:A:859:G:OP2	9:A:859:G:C8	2.64	0.51
9:A:945:A:C4	9:A:2448:A:C2	2.98	0.51
9:A:1424:G:H2'	9:A:1425:G:O4'	2.11	0.51
9:A:1459:G:C5	9:A:1461:C:C4	2.99	0.51
9:A:1523:U:O2'	9:A:1524:G:H5'	2.10	0.51
9:A:1627:G:C8	9:A:1627:G:C5'	2.85	0.51
9:A:2013:A:H2'	9:A:2014:A:H5'	1.93	0.51
9:A:2451:A:OP1	9:A:2497:A:N6	2.44	0.51
11:C:142:ASN:HA	11:C:153:LEU:O	2.11	0.51
13:E:141:MET:O	13:E:142:ALA:HB3	2.10	0.51
14:F:151:LEU:HD12	14:F:151:LEU:C	2.36	0.51
15:G:117:PRO:O	15:G:118:ALA:O	2.28	0.51
19:K:52:VAL:HG23	19:K:53:LYS:N	2.26	0.51
20:L:132:ARG:HA	20:L:142:ILE:CD1	2.41	0.51
21:M:40:ARG:HB3	21:M:95:LEU:HD12	1.93	0.51
23:O:24:THR:N	23:O:42:PRO:HG3	2.26	0.51
25:Q:26:ALA:CB	25:Q:30:VAL:HG23	2.40	0.51
26:R:37:GLU:CD	26:R:37:GLU:N	2.66	0.51
28:T:39:THR:O	28:T:39:THR:CG2	2.59	0.51
3:2:20:ALA:O	3:2:23:ALA:HB3	2.10	0.50
9:A:302:C:O2'	9:A:303:G:C5'	2.59	0.50
9:A:511:U:H5	9:A:512:G:C5	2.28	0.50
9:A:554:U:O4	9:A:555:G:C6	2.64	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:996:A:O3'	25:Q:91:ARG:HG2	2.11	0.50
9:A:1240:U:C6	9:A:1240:U:H5''	2.46	0.50
9:A:1247:A:C4	9:A:1249:U:C5	2.99	0.50
9:A:1500:G:O2'	9:A:1501:G:H5'	2.11	0.50
9:A:1694:C:H4'	9:A:1695:G:C5'	2.41	0.50
9:A:1875:G:H2'	9:A:1876:A:OP2	2.11	0.50
9:A:2197:U:O2'	9:A:2198:A:P	2.69	0.50
9:A:2563:U:O2	9:A:2565:A:H8	1.94	0.50
9:A:2656:U:C4	9:A:2664:G:N2	2.79	0.50
10:B:90:C:C2'	10:B:91:C:O5'	2.59	0.50
14:F:131:VAL:HG21	14:F:151:LEU:CD1	2.40	0.50
17:I:58:ILE:HG22	17:I:60:VAL:HG23	1.92	0.50
20:L:96:LYS:HA	20:L:101:ILE:HG22	1.93	0.50
25:Q:40:LYS:HA	25:Q:43:GLN:HG2	1.93	0.50
25:Q:63:ARG:NH2	25:Q:95:ALA:O	2.43	0.50
25:Q:65:ASN:HD22	25:Q:69:ARG:HH22	1.52	0.50
26:R:47:VAL:CG1	26:R:54:VAL:HB	2.41	0.50
30:V:6:ALA:HB1	30:V:40:ILE:CG2	2.41	0.50
4:3:32:LEU:O	4:3:33:THR:C	2.53	0.50
5:4:7:VAL:HG23	5:4:8:LYS:N	2.27	0.50
9:A:37:C:H1'	13:E:45:ALA:HB2	1.92	0.50
9:A:568:U:OP1	20:L:36:LYS:HE3	2.12	0.50
9:A:1437:C:H2'	9:A:1438:U:C6	2.45	0.50
9:A:2140:G:OP2	9:A:2140:G:C8	2.63	0.50
9:A:2720:U:C6	9:A:2872:A:N6	2.79	0.50
9:A:2728:U:O2'	9:A:2729:G:H5''	2.11	0.50
11:C:247:TRP:O	11:C:249:VAL:N	2.44	0.50
12:D:35:THR:CG2	12:D:51:THR:HG22	2.41	0.50
13:E:134:LEU:HD11	13:E:138:LEU:HD11	1.93	0.50
15:G:36:LEU:N	15:G:36:LEU:CD2	2.74	0.50
15:G:93:TYR:O	15:G:94:ARG:HB3	2.11	0.50
16:H:9:VAL:O	16:H:13:GLY:HA3	2.12	0.50
21:M:5:LYS:HZ2	21:M:5:LYS:HB3	1.75	0.50
23:O:67:ASN:O	23:O:68:LYS:C	2.55	0.50
25:Q:93:ILE:CG2	25:Q:94:LEU:H	2.24	0.50
26:R:18:GLN:O	26:R:97:LYS:O	2.29	0.50
26:R:39:LEU:HB3	26:R:49:ILE:HD13	1.94	0.50
28:T:32:LEU:N	28:T:83:ALA:CB	2.70	0.50
31:W:75:ASN:OD1	31:W:76:ARG:N	2.44	0.50
5:4:9:LYS:O	5:4:10:LEU:HD23	2.11	0.50
9:A:28:A:C2	9:A:513:A:C8	3.00	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:151:C:H2'	9:A:152:A:C8	2.47	0.50
9:A:238:C:H3'	9:A:238:C:C6	2.47	0.50
9:A:622:G:H2'	9:A:623:C:H6	1.74	0.50
9:A:830:G:H4'	9:A:831:G:OP2	2.11	0.50
9:A:1141:U:C4'	9:A:1142:A:O5'	2.58	0.50
9:A:1565:C:O2'	9:A:1566:A:O5'	2.30	0.50
9:A:2077:A:O2'	9:A:2078:C:H5'	2.12	0.50
9:A:2280:G:C2	9:A:2281:A:C8	2.99	0.50
11:C:123:ILE:O	11:C:123:ILE:CG1	2.58	0.50
11:C:238:ASN:O	11:C:239:PHE:HB2	2.12	0.50
13:E:7:ASP:CG	13:E:8:ALA:N	2.69	0.50
15:G:27:GLY:O	15:G:28:LYS:C	2.54	0.50
15:G:115:GLN:OE1	15:G:115:GLN:N	2.44	0.50
17:I:135:MET:HG2	17:I:137:LEU:HG	1.92	0.50
26:R:102:SER:O	26:R:103:ALA:O	2.29	0.50
27:S:73:LYS:CA	27:S:73:LYS:CE	2.71	0.50
28:T:28:ASN:C	28:T:91:GLN:NE2	2.64	0.50
31:W:22:VAL:CG1	31:W:25:PHE:CE2	2.92	0.50
32:X:70:LEU:HB3	32:X:75:GLU:HB2	1.93	0.50
1:0:50:GLY:O	1:0:51:ARG:O	2.29	0.50
4:3:51:LYS:NZ	4:3:54:LEU:HD23	2.26	0.50
9:A:611:C:C2'	9:A:612:G:H5'	2.42	0.50
9:A:1195:G:N3	9:A:1226:A:H2	2.08	0.50
9:A:1405:U:C2	9:A:1406:U:C5	2.99	0.50
9:A:1568:G:H4'	11:C:58:LYS:CG	2.42	0.50
9:A:1650:A:H2'	9:A:1651:G:H5''	1.93	0.50
9:A:2134:A:O2'	9:A:2135:A:H8	1.94	0.50
9:A:2543:G:H5'	9:A:2543:G:C8	2.36	0.50
9:A:2635:A:H2'	9:A:2636:C:O5'	2.11	0.50
12:D:25:THR:O	12:D:25:THR:HG22	2.09	0.50
14:F:27:VAL:O	14:F:27:VAL:CG1	2.59	0.50
14:F:153:ILE:HD12	14:F:153:ILE:O	2.12	0.50
15:G:136:ASP:C	15:G:136:ASP:OD1	2.53	0.50
19:K:1:MET:CE	19:K:32:TYR:CE1	2.95	0.50
19:K:120:PRO:HG3	24:P:65:ASN:HD21	1.77	0.50
21:M:64:TRP:HB2	21:M:104:GLU:HB2	1.94	0.50
23:O:14:ALA:O	23:O:15:ARG:C	2.54	0.50
25:Q:104:ALA:O	25:Q:107:ALA:HB3	2.11	0.50
31:W:71:LYS:HD3	31:W:71:LYS:N	2.26	0.50
34:Z:34:THR:CG2	34:Z:35:VAL:N	2.75	0.50
1:0:41:HIS:CD2	22:N:101:GLY:H	2.29	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:8:ILE:CG2	2:1:9:LYS:N	2.74	0.50
9:A:324:A:N6	9:A:339:U:O4'	2.44	0.50
9:A:659:G:C5	9:A:660:C:C5	2.99	0.50
9:A:734:A:C5	9:A:735:A:N7	2.80	0.50
9:A:876:C:H2'	9:A:877:A:C8	2.47	0.50
9:A:978:G:O2'	9:A:979:A:H5'	2.12	0.50
9:A:1508:A:HO2'	9:A:1509:A:H8	1.52	0.50
9:A:1678:A:H2'	9:A:1679:A:H5'	1.94	0.50
9:A:1788:C:H2'	9:A:1789:A:C5'	2.39	0.50
9:A:1945:G:O2'	9:A:1946:U:H5'	2.12	0.50
12:D:104:VAL:HG13	12:D:106:LYS:HD3	1.92	0.50
15:G:2:ARG:HH21	15:G:2:ARG:HG3	1.76	0.50
15:G:84:LYS:CB	15:G:132:LEU:H	2.25	0.50
15:G:137:LYS:O	15:G:140:ILE:HD13	2.10	0.50
17:I:72:THR:HB	17:I:112:LYS:NZ	2.26	0.50
22:N:38:LEU:HD12	22:N:38:LEU:C	2.36	0.50
22:N:44:LEU:HD11	22:N:48:VAL:HG23	1.93	0.50
23:O:111:ARG:O	23:O:114:GLY:N	2.42	0.50
27:S:66:ILE:C	27:S:66:ILE:CD1	2.73	0.50
28:T:11:LEU:HG	28:T:46:ALA:HB1	1.93	0.50
28:T:50:LEU:HD23	33:Y:26:PHE:CE1	2.46	0.50
31:W:37:VAL:CG2	31:W:55:ASP:O	2.59	0.50
31:W:39:GLN:CG	31:W:42:THR:H	2.23	0.50
32:X:31:ASN:O	32:X:51:SER:HA	2.11	0.50
32:X:67:LEU:HD22	32:X:77:TYR:CG	2.46	0.50
4:3:31:ILE:O	4:3:31:ILE:HG13	2.12	0.50
9:A:103:A:H2'	9:A:104:A:O4'	2.12	0.50
9:A:153:U:C2'	9:A:154:U:H5'	2.42	0.50
9:A:272:A:O2'	9:A:273:G:P	2.69	0.50
9:A:275:C:N4	9:A:276:U:C6	2.79	0.50
9:A:359:G:H5''	9:A:360:U:OP2	2.12	0.50
9:A:398:C:H2'	9:A:399:U:O5'	2.11	0.50
9:A:451:U:C2	9:A:453:A:N7	2.80	0.50
9:A:1058:U:O4'	17:I:117:THR:HG21	2.11	0.50
9:A:1305:C:O2	9:A:1305:C:H2'	2.11	0.50
9:A:1356:G:C2	9:A:1357:C:C2	3.00	0.50
9:A:1656:C:H5''	12:D:141:ARG:CB	2.41	0.50
9:A:1694:C:H4'	9:A:1695:G:H5''	1.92	0.50
9:A:2489:U:H2'	9:A:2490:G:O5'	2.12	0.50
9:A:2579:C:C3'	9:A:2580:U:H5'	2.39	0.50
12:D:121:THR:HB	12:D:127:PHE:CD1	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:E:10:SER:O	13:E:11:ALA:HB3	2.12	0.50
15:G:162:ARG:NH1	15:G:168:VAL:HG21	2.26	0.50
18:J:56:VAL:CG1	18:J:57:LEU:N	2.59	0.50
20:L:93:ASN:O	20:L:94:THR:HG22	2.12	0.50
21:M:5:LYS:HB3	21:M:5:LYS:NZ	2.26	0.50
25:Q:91:ARG:HD3	26:R:11:GLN:CG	2.41	0.50
30:V:29:ILE:HG22	30:V:90:ASP:HA	1.92	0.50
33:Y:9:LYS:HA	33:Y:9:LYS:HZ3	1.75	0.50
9:A:38:A:O2'	13:E:43:THR:HA	2.12	0.50
9:A:1240:U:H5''	9:A:1240:U:H6	1.75	0.50
9:A:1610:A:H4'	9:A:1611:C:OP2	2.12	0.50
9:A:2085:U:H2'	9:A:2086:U:O5'	2.11	0.50
9:A:2250:G:H21	9:A:2496:C:C5'	2.22	0.50
9:A:2297:A:H5''	9:A:2297:A:H8	1.73	0.50
9:A:2321:U:H6	9:A:2321:U:H5''	1.76	0.50
9:A:2425:A:H5''	9:A:2427:C:H5'	1.94	0.50
9:A:2444:G:P	13:E:63:LYS:HE2	2.52	0.50
9:A:2520:C:O2'	9:A:2521:C:C5'	2.60	0.50
9:A:2659:G:P	15:G:157:LYS:HE3	2.51	0.50
10:B:46:A:C5	10:B:47:C:C5	3.00	0.50
12:D:53:GLY:CA	12:D:77:ARG:H	2.24	0.50
14:F:128:SER:OG	14:F:154:THR:HB	2.12	0.50
15:G:94:ARG:HG3	15:G:127:GLN:OE1	2.12	0.50
19:K:12:ASP:HA	19:K:98:ARG:O	2.12	0.50
25:Q:49:ARG:HG3	25:Q:49:ARG:NH1	2.26	0.50
26:R:61:ALA:HB2	26:R:98:ILE:HD13	1.93	0.50
34:Z:40:THR:CG2	34:Z:43:ILE:H	2.23	0.50
4:3:26:ALA:HB1	9:A:2392:A:O3'	2.12	0.50
9:A:207:A:H2'	9:A:208:C:O4'	2.11	0.50
9:A:216:A:H2'	9:A:217:A:C8	2.47	0.50
9:A:357:C:C6	9:A:358:U:C5	3.00	0.50
9:A:920:A:C6	9:A:921:C:C4	2.99	0.50
9:A:988:A:OP2	34:Z:11:SER:HB3	2.11	0.50
9:A:1074:G:H2'	9:A:1075:C:C6	2.47	0.50
9:A:1081:U:OP2	9:A:1081:U:C6	2.64	0.50
9:A:1275:A:O2'	9:A:1645:G:N3	2.44	0.50
9:A:2199:A:N3	9:A:2199:A:H2'	2.27	0.50
9:A:2897:U:H2'	9:A:2898:U:H6	1.75	0.50
12:D:39:ASP:CG	12:D:40:LEU:H	2.19	0.50
12:D:146:ILE:HB	12:D:159:LYS:HD2	1.93	0.50
14:F:162:ASP:O	14:F:163:GLU:C	2.55	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:H:1:MET:HB3	16:H:21:VAL:O	2.12	0.50
17:I:6:ALA:HB3	17:I:60:VAL:H	1.77	0.50
19:K:21:CYS:N	19:K:41:ILE:HD11	2.26	0.50
21:M:1:MET:HE3	21:M:1:MET:HA	1.93	0.50
28:T:2:ILE:HG13	28:T:3:ARG:CZ	2.42	0.50
28:T:29:THR:CA	28:T:86:THR:H	2.24	0.50
31:W:24:ARG:HD2	31:W:25:PHE:CA	2.42	0.50
31:W:40:ARG:HH11	31:W:45:HIS:CE1	2.30	0.50
32:X:40:GLU:C	32:X:42:GLU:N	2.68	0.50
9:A:31:C:H4'	9:A:1238:G:H4'	1.94	0.50
9:A:142:A:C2	9:A:143:C:C2	3.00	0.50
9:A:332:A:C5	9:A:335:C:C4	3.00	0.50
9:A:912:C:H2'	9:A:913:U:C6	2.47	0.50
9:A:1098:A:H3'	9:A:1099:G:C8	2.47	0.50
9:A:1179:G:N7	9:A:1180:U:H1'	2.24	0.50
9:A:1223:G:N2	9:A:1226:A:OP2	2.41	0.50
9:A:1249:U:H5'	9:A:1249:U:H6	1.77	0.50
9:A:1520:U:H2'	9:A:1521:G:O5'	2.12	0.50
9:A:1754:A:C6	9:A:1755:A:C6	3.00	0.50
9:A:2503:A:H3'	9:A:2503:A:OP2	2.12	0.50
9:A:2637:U:OP1	12:D:83:ARG:NH2	2.45	0.50
9:A:2865:U:C4	9:A:2866:U:C5	3.00	0.50
13:E:4:VAL:O	13:E:4:VAL:HG12	2.11	0.50
14:F:168:LEU:HG	14:F:169:LEU:HD12	1.92	0.50
15:G:89:VAL:O	15:G:159:LYS:HA	2.12	0.50
15:G:175:LYS:O	15:G:176:LYS:C	2.53	0.50
18:J:13:ARG:O	18:J:14:ASP:CB	2.60	0.50
19:K:10:VAL:HB	19:K:16:ALA:CB	2.35	0.50
25:Q:97:ILE:CD1	25:Q:105:PHE:HB2	2.42	0.50
27:S:2:GLU:O	27:S:3:THR:HG23	2.10	0.50
29:U:98:ASN:C	29:U:98:ASN:OD1	2.55	0.50
30:V:2:PHE:HB3	30:V:61:LEU:HD22	1.94	0.50
31:W:77:LYS:O	31:W:78:PHE:CB	2.58	0.50
32:X:44:ARG:HE	32:X:46:VAL:HG13	1.76	0.50
2:1:3:GLY:C	2:1:4:ILE:HG12	2.36	0.49
4:3:61:LEU:CB	4:3:64:ALA:HB2	2.39	0.49
9:A:947:A:O2'	9:A:984:A:H2	1.95	0.49
9:A:1188:U:O2'	9:A:1189:A:H5'	2.12	0.49
9:A:1869:G:N2	9:A:1873:G:C6	2.80	0.49
9:A:2006:C:O5'	9:A:2006:C:H6	1.94	0.49
9:A:2199:A:C4	9:A:2225:A:C2	2.99	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2575:C:H2'	9:A:2578:G:O6	2.12	0.49
9:A:2861:U:O2'	9:A:2862:G:H5'	2.12	0.49
10:B:89:U:H3'	10:B:90:C:H5''	1.94	0.49
16:H:1:MET:O	16:H:20:ASN:ND2	2.44	0.49
18:J:6:ALA:H	18:J:45:THR:HG21	1.76	0.49
19:K:4:GLU:O	19:K:5:GLN:HB2	2.11	0.49
20:L:29:LYS:C	20:L:30:THR:HG23	2.37	0.49
20:L:38:GLN:O	20:L:40:SER:O	2.30	0.49
21:M:51:ARG:O	21:M:52:ALA:C	2.53	0.49
25:Q:65:ASN:O	25:Q:69:ARG:HB3	2.12	0.49
28:T:1:MET:HE1	28:T:49:LYS:NZ	2.26	0.49
28:T:14:PRO:HA	28:T:32:LEU:HB3	1.93	0.49
28:T:14:PRO:O	28:T:14:PRO:HG2	2.12	0.49
28:T:40:LYS:HA	28:T:43:ILE:HG23	1.90	0.49
31:W:22:VAL:O	31:W:25:PHE:HB2	2.12	0.49
34:Z:24:LEU:HG	34:Z:24:LEU:O	2.11	0.49
9:A:79:C:O2'	9:A:346:A:H1'	2.12	0.49
9:A:182:A:O2'	9:A:183:C:H5'	2.12	0.49
9:A:478:A:C6	9:A:480:A:C6	3.00	0.49
9:A:616:A:H4'	13:E:101:TYR:CE2	2.47	0.49
9:A:1055:G:H2'	9:A:1055:G:N3	2.26	0.49
9:A:1469:A:H2'	9:A:1470:A:C8	2.48	0.49
9:A:1923:U:H2'	9:A:1924:C:H6	1.77	0.49
9:A:1936:A:H2'	9:A:1945:G:O6	2.12	0.49
9:A:2352:A:N1	31:W:30:VAL:CG1	2.66	0.49
9:A:2638:G:O2'	9:A:2775:G:N2	2.45	0.49
9:A:2728:U:HO2'	9:A:2729:G:P	2.34	0.49
9:A:2840:C:H2'	9:A:2841:C:H6	1.77	0.49
11:C:256:THR:O	11:C:257:ARG:C	2.54	0.49
12:D:38:LYS:O	12:D:46:ARG:HA	2.12	0.49
14:F:134:GLN:CG	14:F:135:ILE:N	2.65	0.49
19:K:2:ILE:O	19:K:3:GLN:O	2.30	0.49
19:K:63:VAL:HG22	19:K:107:LEU:CD2	2.41	0.49
20:L:67:THR:CG2	20:L:68:SER:N	2.72	0.49
31:W:26:GLY:O	31:W:27:GLY:C	2.55	0.49
33:Y:18:LEU:HD13	33:Y:22:LEU:HB2	1.94	0.49
5:4:10:LEU:HD12	5:4:33:HIS:HD2	1.69	0.49
9:A:1106:G:C4	9:A:1107:G:C8	3.00	0.49
9:A:1416:G:O2'	9:A:1417:C:C5'	2.60	0.49
9:A:1643:G:C2'	9:A:1644:C:O5'	2.60	0.49
9:A:1742:U:O2'	9:A:1743:G:H5'	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1856:U:O4	9:A:1857:G:N1	2.45	0.49
9:A:2704:C:O2	9:A:2704:C:H2'	2.11	0.49
9:A:2846:G:H2'	9:A:2847:U:O4'	2.13	0.49
10:B:14:U:OP2	10:B:70:C:O2'	2.31	0.49
11:C:251:THR:CG2	11:C:252:LYS:N	2.54	0.49
21:M:69:PRO:O	21:M:70:ASP:CG	2.54	0.49
23:O:2:ASP:O	23:O:3:LYS:HB3	2.12	0.49
25:Q:40:LYS:NZ	25:Q:40:LYS:HB2	2.27	0.49
26:R:67:GLY:HA3	26:R:93:PHE:CZ	2.47	0.49
28:T:22:THR:O	28:T:25:GLU:HB3	2.12	0.49
28:T:57:VAL:HG22	28:T:58:VAL:N	2.28	0.49
31:W:16:GLU:CA	31:W:16:GLU:OE2	2.60	0.49
31:W:40:ARG:NH1	31:W:45:HIS:NE2	2.60	0.49
6:5:76:MA6:H103	9:A:2584:U:H5'	1.93	0.49
9:A:27:G:O2'	9:A:28:A:OP2	2.27	0.49
9:A:1131:G:O2'	9:A:2026:U:H5'	2.12	0.49
9:A:1179:G:C6	9:A:1180:U:O2'	2.64	0.49
9:A:1850:G:C5	9:A:1851:U:C4	3.00	0.49
9:A:1856:U:C4	9:A:1857:G:C6	3.01	0.49
9:A:1958:C:C2'	9:A:1959:G:H5'	2.42	0.49
9:A:2217:G:H2'	9:A:2218:G:O4'	2.13	0.49
9:A:2307:G:N2	9:A:2311:A:C8	2.81	0.49
9:A:2435:A:C2'	9:A:2436:G:O5'	2.61	0.49
9:A:2601:C:C2	9:A:2603:G:N7	2.80	0.49
10:B:19:C:O2'	10:B:20:G:H5'	2.12	0.49
10:B:35:C:H2'	10:B:36:C:O5'	2.11	0.49
10:B:52:A:H4'	10:B:53:A:OP1	2.11	0.49
11:C:229:HIS:CD2	11:C:230:PRO:HD2	2.47	0.49
13:E:108:ILE:CD1	13:E:180:LEU:CD1	2.91	0.49
19:K:61:VAL:CG2	19:K:112:PHE:CE2	2.95	0.49
24:P:17:PRO:HG3	24:P:83:ILE:O	2.12	0.49
24:P:103:THR:O	24:P:103:THR:HG23	2.11	0.49
25:Q:91:ARG:HD3	26:R:11:GLN:HG3	1.94	0.49
27:S:74:ILE:HG23	27:S:74:ILE:O	2.11	0.49
30:V:5:ASN:HB3	30:V:64:VAL:HB	1.95	0.49
32:X:77:TYR:CD1	32:X:77:TYR:C	2.90	0.49
33:Y:57:LEU:CA	33:Y:60:LYS:HB3	2.24	0.49
9:A:71:A:N3	9:A:71:A:H5''	2.28	0.49
9:A:273:G:O2'	9:A:274:C:O5'	2.30	0.49
9:A:466:A:H2'	9:A:467:G:H5'	1.95	0.49
9:A:839:U:H1'	9:A:1191:G:H1'	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:908:C:O2'	9:A:909:A:H5'	2.12	0.49
9:A:927:A:H2'	9:A:928:A:C8	2.48	0.49
9:A:987:C:H2'	9:A:988:A:H5'	1.93	0.49
9:A:1257:C:C5'	13:E:78:TRP:CZ3	2.95	0.49
9:A:1296:G:H2'	9:A:1297:C:O5'	2.12	0.49
9:A:2385:C:O2'	9:A:2386:A:H5'	2.12	0.49
9:A:2495:G:O2'	9:A:2496:C:H5'	2.12	0.49
9:A:2672:U:H2'	9:A:2673:G:O5'	2.13	0.49
9:A:2756:U:H4'	9:A:2757:A:O5'	2.12	0.49
13:E:85:PHE:O	13:E:86:ALA:C	2.54	0.49
14:F:106:ALA:C	14:F:108:PRO:CD	2.85	0.49
14:F:174:PHE:CD1	14:F:176:PHE:CE1	3.00	0.49
19:K:28:SER:O	19:K:29:HIS:HB2	2.12	0.49
19:K:51:LYS:CE	19:K:51:LYS:O	2.61	0.49
25:Q:105:PHE:O	25:Q:108:LEU:N	2.46	0.49
26:R:49:ILE:CD1	26:R:53:PHE:H	2.24	0.49
31:W:23:LYS:HG3	31:W:24:ARG:N	2.28	0.49
31:W:39:GLN:HG3	31:W:42:THR:CA	2.42	0.49
31:W:76:ARG:NH2	31:W:76:ARG:CG	2.68	0.49
9:A:499:U:H2'	9:A:500:G:O4'	2.13	0.49
9:A:536:G:H2'	9:A:537:G:O5'	2.13	0.49
9:A:571:U:C4	9:A:2030:A:N1	2.80	0.49
9:A:846:U:O2	9:A:846:U:H2'	2.13	0.49
9:A:1005:C:H1'	9:A:1012:U:C4	2.47	0.49
9:A:1383:A:H2'	9:A:1384:A:C8	2.47	0.49
9:A:1430:G:H2'	9:A:1431:A:C8	2.47	0.49
9:A:1507:C:C4	9:A:1508:A:C2	3.01	0.49
9:A:1510:G:H5'	9:A:1510:G:C8	2.45	0.49
9:A:1513:U:C2'	9:A:1514:G:H5'	2.43	0.49
9:A:1927:A:H2'	9:A:1928:A:C8	2.48	0.49
9:A:2152:G:O2'	9:A:2153:C:C4'	2.61	0.49
9:A:2188:U:O2'	9:A:2189:U:H5'	2.13	0.49
9:A:2264:C:H41	31:W:11:ASN:ND2	2.10	0.49
9:A:2282:G:H5''	9:A:2283:C:O4'	2.13	0.49
9:A:2489:U:O2	9:A:2491:U:C4	2.66	0.49
9:A:2681:C:C2	9:A:2724:U:O4	2.66	0.49
9:A:2805:C:C4	9:A:2806:C:C4	3.01	0.49
10:B:49:C:O3'	23:O:68:LYS:HE2	2.12	0.49
10:B:53:A:O2'	10:B:54:G:C5'	2.57	0.49
11:C:250:GLN:CD	11:C:250:GLN:N	2.71	0.49
12:D:86:GLU:OE1	12:D:86:GLU:HA	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:E:149:ILE:HD12	13:E:175:ILE:HB	1.95	0.49
14:F:39:VAL:CG1	14:F:49:LEU:CD1	2.89	0.49
17:I:16:MET:O	17:I:19:PRO:HD3	2.12	0.49
20:L:68:SER:HB3	20:L:71:ALA:HB3	1.95	0.49
23:O:7:ARG:HA	23:O:10:ARG:NH2	2.27	0.49
24:P:24:THR:O	24:P:25:VAL:O	2.30	0.49
24:P:50:ARG:HG2	24:P:57:ALA:H	0.40	0.49
25:Q:60:TRP:CH2	25:Q:93:ILE:HB	2.47	0.49
1:O:2:VAL:HG21	9:A:2015:A:C4	2.47	0.49
9:A:847:U:O2'	9:A:848:C:H5'	2.13	0.49
9:A:1073:A:H2'	9:A:1074:G:C5'	2.23	0.49
9:A:1429:G:N3	9:A:1568:G:C2	2.81	0.49
9:A:1612:C:C2'	9:A:1613:G:O5'	2.61	0.49
9:A:2056:G:C2	9:A:2057:G:C8	3.00	0.49
11:C:131:MET:O	11:C:132:ARG:C	2.55	0.49
14:F:100:GLU:C	14:F:102:LEU:N	2.67	0.49
19:K:113:MET:O	19:K:116:ILE:CD1	2.60	0.49
20:L:79:LEU:HD13	20:L:116:VAL:HG12	1.94	0.49
21:M:77:PRO:CD	21:M:80:VAL:HG11	2.42	0.49
21:M:114:ARG:HA	21:M:130:PHE:HE1	1.74	0.49
23:O:116:GLN:O	23:O:117:PHE:HB3	2.12	0.49
26:R:49:ILE:HG22	26:R:54:VAL:HG12	1.95	0.49
28:T:44:LYS:O	28:T:48:GLN:HG2	2.13	0.49
29:U:12:VAL:HA	29:U:69:VAL:HG12	1.95	0.49
29:U:33:VAL:O	29:U:64:ILE:HG22	2.13	0.49
31:W:71:LYS:N	31:W:71:LYS:CD	2.76	0.49
9:A:928:A:C2'	9:A:929:U:H5'	2.42	0.49
9:A:998:C:OP2	25:Q:57:ARG:NH2	2.43	0.49
9:A:1074:G:H2'	9:A:1075:C:C5	2.48	0.49
9:A:1088:A:H4'	9:A:1089:A:H8	1.78	0.49
9:A:1210:G:P	9:A:1212:G:H5'	2.53	0.49
9:A:1214:A:H4'	9:A:1239:G:H4'	1.95	0.49
9:A:1296:G:C2'	9:A:1297:C:O5'	2.60	0.49
9:A:1694:C:H4'	9:A:1695:G:O5'	2.13	0.49
9:A:1820:U:O2'	11:C:157:ALA:O	2.28	0.49
9:A:1936:A:N3	9:A:1943:U:H5	2.11	0.49
11:C:90:ILE:HG21	11:C:102:TYR:CD1	2.47	0.49
13:E:5:LEU:HD12	13:E:10:SER:HB3	1.95	0.49
13:E:119:ILE:CD1	13:E:187:VAL:HG22	2.43	0.49
15:G:7:PRO:O	15:G:68:ARG:NH1	2.45	0.49
17:I:32:VAL:HG22	17:I:66:PHE:CG	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:I:90:GLY:O	17:I:92:PRO:HD3	2.12	0.49
18:J:3:THR:HG21	25:Q:60:TRP:HE1	1.78	0.49
19:K:103:VAL:O	19:K:122:VAL:HB	2.12	0.49
22:N:73:ASN:ND2	22:N:76:VAL:HG11	2.28	0.49
23:O:115:LEU:HD12	23:O:116:GLN:H	1.78	0.49
33:Y:9:LYS:HB3	33:Y:12:GLU:HG3	1.95	0.49
33:Y:17:GLU:OE2	33:Y:21:LEU:HD11	2.12	0.49
1:O:42:ILE:CD1	1:O:48:TYR:HB2	2.43	0.49
9:A:137:U:O2'	9:A:138:U:P	2.71	0.49
9:A:314:C:O2'	9:A:315:G:H5'	2.13	0.49
9:A:1206:G:C5	9:A:1207:C:C5	3.01	0.49
9:A:1604:C:H2'	9:A:1605:C:C6	2.47	0.49
9:A:1739:A:C8	9:A:1739:A:H5''	2.47	0.49
9:A:1786:A:C4	9:A:1938:A:C6	3.00	0.49
9:A:2107:G:O6	9:A:2183:A:C5	2.66	0.49
9:A:2148:G:O2'	9:A:2149:U:O4'	2.31	0.49
9:A:2149:U:O2'	9:A:2150:C:C4'	2.61	0.49
11:C:76:VAL:O	11:C:77:VAL:C	2.56	0.49
13:E:197:GLU:O	13:E:198:GLU:C	2.56	0.49
14:F:109:ARG:C	14:F:136:ILE:HG22	2.38	0.49
16:H:6:LEU:HD13	16:H:6:LEU:N	2.28	0.49
17:I:61:TYR:CD2	17:I:61:TYR:N	2.81	0.49
18:J:30:THR:HG22	18:J:31:GLU:N	2.27	0.49
20:L:95:LEU:HD22	20:L:100:ILE:HG12	1.95	0.49
21:M:1:MET:CE	21:M:1:MET:HA	2.43	0.49
22:N:65:LEU:HD12	22:N:65:LEU:O	2.13	0.49
23:O:3:LYS:CG	23:O:4:LYS:N	2.75	0.49
23:O:31:THR:HG23	23:O:34:HIS:N	2.23	0.49
23:O:31:THR:HG22	23:O:34:HIS:C	2.38	0.49
24:P:103:THR:O	24:P:104:GLY:O	2.30	0.49
29:U:27:VAL:HG22	29:U:28:LEU:N	2.27	0.49
29:U:80:ASP:O	29:U:81:ARG:HB2	2.12	0.49
31:W:23:LYS:HZ2	31:W:24:ARG:CG	2.23	0.49
31:W:39:GLN:CG	31:W:42:THR:N	2.66	0.49
32:X:67:LEU:HD22	32:X:77:TYR:CD2	2.48	0.49
2:1:8:ILE:CD1	2:1:24:LYS:HG2	2.33	0.49
2:1:16:THR:HG21	2:1:41:VAL:HG22	1.95	0.49
9:A:244:A:H2'	9:A:245:G:O4'	2.13	0.49
9:A:626:A:C2	20:L:78:ARG:HD3	2.48	0.49
9:A:699:A:H1'	9:A:1634:A:H2'	1.95	0.49
9:A:845:A:H3'	9:A:845:A:N3	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1171:G:C5	9:A:1172:C:C5	3.01	0.49
9:A:1406:U:O2'	9:A:1407:G:O5'	2.31	0.49
9:A:1485:U:N3	9:A:1505:A:C2	2.80	0.49
9:A:1499:C:H2'	9:A:1500:G:C8	2.46	0.49
9:A:2824:C:H2'	9:A:2825:G:O5'	2.12	0.49
13:E:175:ILE:CG2	13:E:199:MET:HE1	2.42	0.49
14:F:129:MET:HG2	14:F:153:ILE:HD12	1.90	0.49
15:G:71:LEU:HD13	15:G:74:MET:SD	2.52	0.49
15:G:142:GLN:NE2	15:G:142:GLN:CA	2.74	0.49
19:K:13:ASN:OD1	19:K:13:ASN:N	2.41	0.49
20:L:18:ARG:O	20:L:19:LEU:O	2.31	0.49
20:L:28:GLY:O	26:R:82:HIS:NE2	2.46	0.49
22:N:52:ILE:HG21	22:N:94:TYR:CG	2.48	0.49
23:O:110:ALA:O	23:O:113:ALA:HB3	2.13	0.49
24:P:102:ARG:HB3	24:P:107:ALA:CB	2.25	0.49
26:R:42:ALA:CB	26:R:46:GLU:HB2	2.43	0.49
27:S:72:THR:HG21	27:S:108:SER:OG	2.13	0.49
29:U:5:ARG:HH21	29:U:5:ARG:CB	2.26	0.49
9:A:310:A:HO2'	9:A:311:A:P	2.36	0.48
9:A:320:A:H4'	9:A:322:A:C8	2.48	0.48
9:A:729:G:H2'	9:A:1775:U:H1'	1.95	0.48
9:A:792:A:C3'	9:A:793:A:H5'	2.43	0.48
9:A:807:U:O2'	9:A:808:G:H5'	2.12	0.48
9:A:864:G:C6	9:A:865:C:N4	2.80	0.48
9:A:930:G:C5'	9:A:931:U:OP2	2.62	0.48
9:A:1934:C:H4'	9:A:1974:C:O3'	2.13	0.48
9:A:2210:U:O2	9:A:2212:A:C8	2.66	0.48
9:A:2405:G:O2'	9:A:2406:A:P	2.71	0.48
10:B:37:C:C5	10:B:38:C:C5	3.01	0.48
12:D:16:THR:HG1	12:D:18:ASP:CG	2.21	0.48
12:D:119:ALA:HB1	12:D:123:LYS:HB3	1.95	0.48
14:F:1:ALA:O	14:F:2:LYS:HB3	2.12	0.48
14:F:102:LEU:C	14:F:102:LEU:HD13	2.38	0.48
15:G:61:TRP:HA	15:G:61:TRP:HE3	1.76	0.48
16:H:5:LEU:O	16:H:16:GLY:HA2	2.13	0.48
18:J:49:ASP:OD2	18:J:49:ASP:C	2.56	0.48
20:L:19:LEU:HA	20:L:27:LEU:O	2.14	0.48
22:N:32:GLU:HB3	22:N:115:LEU:HD12	1.94	0.48
22:N:93:GLY:C	22:N:95:THR:H	2.21	0.48
23:O:59:ALA:N	23:O:62:LEU:CD1	2.76	0.48
24:P:62:LYS:HB3	24:P:69:VAL:HG13	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:R:57:GLY:HA2	26:R:103:ALA:O	2.13	0.48
27:S:2:GLU:C	27:S:3:THR:HG22	2.38	0.48
27:S:21:ALA:CB	27:S:74:ILE:HD13	2.43	0.48
27:S:28:LYS:O	27:S:29:VAL:C	2.56	0.48
29:U:73:ASN:HD22	29:U:76:THR:H	1.59	0.48
33:Y:8:GLU:O	33:Y:9:LYS:HB3	2.13	0.48
34:Z:15:ARG:HH11	34:Z:15:ARG:CG	2.06	0.48
9:A:250:G:C6	9:A:251:A:C6	3.00	0.48
9:A:278:A:H2'	9:A:278:A:N3	2.28	0.48
9:A:292:U:H2'	9:A:293:U:O4'	2.13	0.48
9:A:528:A:H8	9:A:528:A:C3'	2.24	0.48
9:A:594:U:H2'	9:A:595:C:C6	2.48	0.48
9:A:745:G:H2'	9:A:746:U:H5'	1.95	0.48
9:A:1059:G:C2	9:A:1080:A:C4	3.00	0.48
9:A:1069:A:N1	9:A:1074:G:N7	2.61	0.48
9:A:1116:G:O2'	9:A:1117:C:C5'	2.58	0.48
9:A:1655:A:H3'	9:A:1656:C:H6	1.78	0.48
9:A:2210:U:OP1	9:A:2210:U:H6	1.96	0.48
9:A:2505:G:H1'	9:A:2506:U:H5	1.78	0.48
9:A:2798:U:H3'	9:A:2798:U:OP2	2.13	0.48
11:C:246:PRO:CD	11:C:247:TRP:CZ3	2.96	0.48
12:D:118:PHE:O	12:D:119:ALA:HB3	2.12	0.48
13:E:75:SER:OG	13:E:77:ILE:HG23	2.13	0.48
14:F:98:PHE:C	14:F:98:PHE:CD2	2.90	0.48
17:I:12:VAL:HG23	17:I:13:ALA:H	1.78	0.48
18:J:40:HIS:H	18:J:40:HIS:HD2	1.60	0.48
18:J:54:ILE:HD12	18:J:55:ILE:N	2.28	0.48
18:J:125:TYR:HH	18:J:132:HIS:CD2	2.26	0.48
20:L:77:ILE:HD12	20:L:77:ILE:N	2.28	0.48
21:M:50:ARG:O	21:M:53:MET:HB3	2.13	0.48
23:O:81:ARG:O	23:O:84:GLU:HB3	2.13	0.48
26:R:49:ILE:HB	26:R:53:PHE:N	2.28	0.48
26:R:64:VAL:O	26:R:65:ALA:HB3	2.12	0.48
27:S:39:THR:HG22	27:S:44:ALA:HB2	1.95	0.48
27:S:84:ARG:HB2	27:S:96:ILE:CD1	2.43	0.48
28:T:20:ALA:C	28:T:22:THR:N	2.70	0.48
28:T:30:ILE:HG12	28:T:32:LEU:CD2	2.43	0.48
29:U:17:ASP:O	29:U:18:LYS:C	2.56	0.48
30:V:4:ILE:O	30:V:63:ILE:HA	2.13	0.48
31:W:9:THR:CG2	31:W:10:ARG:HD3	2.43	0.48
31:W:9:THR:O	31:W:10:ARG:O	2.30	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:W:22:VAL:HG13	31:W:25:PHE:CD2	2.48	0.48
31:W:23:LYS:HD2	31:W:24:ARG:HB3	1.95	0.48
31:W:51:GLY:O	31:W:52:CYS:O	2.31	0.48
5:4:13:ASN:ND2	5:4:13:ASN:N	2.62	0.48
9:A:321:U:H1'	13:E:159:LEU:HG	1.95	0.48
9:A:520:G:H2'	9:A:521:U:C6	2.48	0.48
9:A:1139:G:C2'	9:A:1140:C:H5'	2.44	0.48
9:A:1438:U:HO2'	9:A:1439:A:H5'	1.76	0.48
9:A:1565:C:HO2'	9:A:1566:A:P	2.34	0.48
9:A:1735:A:O2'	9:A:1736:U:O4'	2.27	0.48
9:A:1820:U:H4'	9:A:1821:A:OP2	2.13	0.48
9:A:2065:C:H2'	9:A:2066:C:H6	1.79	0.48
11:C:80:LEU:HD11	11:C:109:LEU:CB	2.44	0.48
17:I:21:PRO:HB2	17:I:22:PRO:HD3	1.94	0.48
19:K:21:CYS:HB2	19:K:39:ILE:CD1	2.39	0.48
20:L:29:LYS:HG2	20:L:30:THR:HG23	1.95	0.48
23:O:57:ALA:O	23:O:58:ILE:C	2.54	0.48
4:3:28:LEU:HD12	4:3:28:LEU:HA	1.73	0.48
9:A:70:G:H2'	9:A:113:U:O2'	2.12	0.48
9:A:108:G:O2'	9:A:109:C:H5'	2.13	0.48
9:A:657:U:H2'	9:A:658:U:C6	2.49	0.48
9:A:996:A:O2'	25:Q:91:ARG:CG	2.60	0.48
9:A:1394:U:H2'	9:A:1395:A:O5'	2.13	0.48
9:A:1476:U:O2'	9:A:1477:A:H5'	2.13	0.48
9:A:1682:G:H2'	9:A:1683:U:H6	1.78	0.48
9:A:1983:G:O2'	9:A:1984:G:H5'	2.12	0.48
9:A:2414:G:H2'	9:A:2415:G:H5'	1.94	0.48
12:D:9:VAL:CG2	12:D:26:VAL:HG12	2.44	0.48
15:G:97:VAL:HG22	15:G:102:ILE:HG12	1.96	0.48
15:G:115:GLN:CD	15:G:115:GLN:N	2.68	0.48
19:K:19:VAL:HG23	19:K:43:ILE:HA	1.95	0.48
19:K:118:LEU:O	19:K:119:ALA:HB3	2.12	0.48
23:O:3:LYS:HG3	23:O:4:LYS:N	2.27	0.48
24:P:92:ARG:HH11	24:P:92:ARG:CB	2.25	0.48
9:A:416:U:C4	9:A:417:C:C4	3.01	0.48
9:A:520:G:H2'	9:A:521:U:H6	1.77	0.48
9:A:548:G:C8	9:A:548:G:C3'	2.94	0.48
9:A:696:G:O2'	9:A:697:G:H5'	2.13	0.48
9:A:1559:U:OP1	9:A:1559:U:H6	1.96	0.48
9:A:1820:U:O2	11:C:200:MET:HG3	2.13	0.48
9:A:1849:G:H2'	9:A:1850:G:H8	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1872:A:C2'	9:A:1873:G:O4'	2.61	0.48
9:A:2151:U:C4	9:A:2152:G:N7	2.82	0.48
9:A:2595:G:H1	11:C:238:ASN:HD21	1.61	0.48
11:C:161:VAL:HG22	11:C:175:LEU:HA	1.96	0.48
12:D:163:GLY:O	12:D:164:GLN:C	2.56	0.48
13:E:108:ILE:CD1	13:E:180:LEU:CB	2.88	0.48
13:E:113:VAL:CG1	13:E:114:ARG:N	2.76	0.48
14:F:107:VAL:HG13	14:F:113:PHE:CZ	2.49	0.48
14:F:107:VAL:HG11	14:F:175:PRO:HG2	1.94	0.48
17:I:19:PRO:HG2	17:I:23:VAL:HG22	1.96	0.48
24:P:53:GLY:C	24:P:55:HIS:N	2.71	0.48
33:Y:38:GLN:OE1	33:Y:38:GLN:N	2.47	0.48
4:3:24:LYS:HD3	20:L:62:PRO:HG3	1.95	0.48
5:4:10:LEU:HD23	5:4:10:LEU:N	2.27	0.48
9:A:17:G:H2'	9:A:18:U:C6	2.49	0.48
9:A:61:C:H6	9:A:61:C:O5'	1.96	0.48
9:A:153:U:H2'	9:A:154:U:O5'	2.13	0.48
9:A:274:C:C2'	9:A:275:C:H5'	2.43	0.48
9:A:580:U:O3'	25:Q:30:VAL:CG1	2.61	0.48
9:A:686:U:C4'	9:A:687:C:OP2	2.59	0.48
9:A:1079:C:N4	9:A:1088:A:H2	2.10	0.48
9:A:1588:G:C2	9:A:1589:U:C6	3.01	0.48
9:A:2661:G:C2'	9:A:2662:A:O5'	2.62	0.48
9:A:2755:C:O5'	9:A:2755:C:H6	1.96	0.48
11:C:23:LEU:HD12	11:C:82:TYR:N	2.29	0.48
11:C:106:PRO:CA	11:C:141:HIS:HE1	2.25	0.48
11:C:230:PRO:HG2	11:C:245:THR:O	2.14	0.48
12:D:20:VAL:CG1	12:D:21:SER:N	2.74	0.48
13:E:187:VAL:O	13:E:188:MET:CB	2.59	0.48
14:F:40:GLY:N	14:F:84:ILE:CD1	2.77	0.48
15:G:8:VAL:O	15:G:9:VAL:CG1	2.51	0.48
18:J:74:TYR:CD2	18:J:92:MET:CE	2.93	0.48
18:J:128:ASN:O	18:J:128:ASN:CG	2.56	0.48
19:K:113:MET:HA	19:K:116:ILE:CG1	2.43	0.48
21:M:31:PHE:CZ	21:M:110:GLU:HG2	2.48	0.48
29:U:33:VAL:HG23	29:U:64:ILE:CG2	2.43	0.48
30:V:10:LYS:N	30:V:10:LYS:CD	2.61	0.48
32:X:44:ARG:HG2	32:X:45:PHE:N	2.28	0.48
1:0:9:ARG:CG	1:0:9:ARG:NH2	2.64	0.48
9:A:60:G:C8	9:A:62:U:H2'	2.48	0.48
9:A:132:G:C2'	9:A:133:U:H5'	2.44	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:134:G:N2	9:A:146:A:C4	2.82	0.48
9:A:611:C:C2'	9:A:612:G:O5'	2.62	0.48
9:A:872:U:H2'	9:A:873:C:C6	2.48	0.48
9:A:1050:A:C2	9:A:2751:G:C5	3.01	0.48
9:A:1063:G:O2'	9:A:1064:C:C5'	2.62	0.48
9:A:1081:U:O2	9:A:1081:U:H2'	2.11	0.48
9:A:1360:G:C6	9:A:1372:U:C2	3.02	0.48
9:A:1365:A:O5'	32:X:27:ARG:NH2	2.42	0.48
9:A:1716:U:H2'	9:A:1717:A:H8	1.78	0.48
9:A:2094:A:C2	9:A:2196:C:C2	3.02	0.48
9:A:2149:U:O2'	9:A:2150:C:O5'	2.30	0.48
9:A:2393:U:H2'	9:A:2394:C:O4'	2.14	0.48
9:A:2523:G:O2'	9:A:2524:G:H5'	2.13	0.48
9:A:2862:G:H2'	9:A:2863:C:C6	2.48	0.48
10:B:48:U:O2	10:B:48:U:H2'	2.14	0.48
13:E:172:ALA:O	13:E:175:ILE:HG22	2.14	0.48
15:G:35:THR:O	15:G:36:LEU:HD22	2.14	0.48
15:G:123:GLU:CD	15:G:124:CYS:N	2.72	0.48
16:H:22:LYS:O	16:H:23:ALA:C	2.57	0.48
18:J:56:VAL:O	18:J:124:VAL:O	2.32	0.48
21:M:95:LEU:HD12	21:M:95:LEU:HA	1.60	0.48
22:N:18:GLN:HE21	22:N:22:ARG:NH1	2.12	0.48
31:W:19:ARG:HH12	31:W:22:VAL:HG11	1.78	0.48
32:X:19:HIS:C	32:X:21:LEU:N	2.71	0.48
32:X:70:LEU:O	32:X:74:GLY:N	2.47	0.48
32:X:73:ARG:HG3	32:X:73:ARG:O	2.14	0.48
1:0:33:SER:O	1:0:34:GLY:C	2.54	0.48
5:4:15:LYS:O	5:4:16:ILE:CB	2.61	0.48
5:4:16:ILE:HA	5:4:24:ARG:O	2.13	0.48
9:A:28:A:C4	9:A:29:U:C6	3.02	0.48
9:A:33:C:H4'	9:A:34:U:OP1	2.12	0.48
9:A:807:U:C2'	9:A:808:G:H5'	2.43	0.48
9:A:1020:A:C2	9:A:1141:U:O2'	2.64	0.48
9:A:1570:A:H2'	9:A:1571:A:C8	2.48	0.48
9:A:1577:C:H2'	9:A:1578:U:C1'	2.43	0.48
9:A:1842:G:O4'	11:C:242:HIS:ND1	2.47	0.48
9:A:1845:G:H2'	9:A:1846:G:C5'	2.43	0.48
9:A:2064:C:H2'	9:A:2065:C:C6	2.49	0.48
9:A:2094:A:C5'	16:H:25:TYR:CD1	2.93	0.48
9:A:2150:C:C2'	9:A:2151:U:C5	2.96	0.48
9:A:2489:U:C2'	9:A:2490:G:O5'	2.62	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2515:C:O2	9:A:2570:G:C2	2.67	0.48
9:A:2800:A:HO2'	9:A:2801:G:P	2.36	0.48
11:C:93:VAL:HG12	11:C:94:LEU:N	2.26	0.48
14:F:45:ASP:CB	14:F:48:LEU:HB2	2.41	0.48
14:F:131:VAL:O	14:F:132:ARG:C	2.57	0.48
15:G:123:GLU:CD	15:G:124:CYS:H	2.22	0.48
17:I:85:ILE:HD13	17:I:88:GLY:HA2	1.96	0.48
18:J:125:TYR:OH	18:J:132:HIS:NE2	2.35	0.48
22:N:16:HIS:HD2	22:N:16:HIS:O	1.97	0.48
26:R:25:LEU:N	26:R:94:THR:CG2	2.77	0.48
31:W:51:GLY:H	31:W:61:LYS:HZ2	1.61	0.48
34:Z:2:LYS:C	34:Z:3:THR:CG2	2.87	0.48
3:2:12:ARG:NH2	9:A:686:U:O4	2.46	0.48
9:A:85:G:H8	9:A:85:G:H5''	1.79	0.48
9:A:141:G:H5'	9:A:142:A:N7	2.29	0.48
9:A:141:G:C5'	9:A:142:A:C8	2.97	0.48
9:A:1435:G:C8	9:A:1435:G:H5''	2.49	0.48
9:A:1534:U:H5'	9:A:1535:A:P	2.53	0.48
9:A:1577:C:H2'	9:A:1578:U:O4'	2.14	0.48
9:A:1871:A:C8	9:A:1872:A:C6	3.01	0.48
9:A:1924:C:C2	9:A:1925:C:C6	3.02	0.48
9:A:2148:G:O2'	9:A:2149:U:C4'	2.61	0.48
9:A:2267:A:H5''	9:A:2268:A:H5'	1.96	0.48
9:A:2665:A:C2	9:A:2666:C:C6	3.02	0.48
9:A:2773:C:H2'	9:A:2774:C:H6	1.79	0.48
12:D:106:LYS:H	12:D:106:LYS:CD	1.97	0.48
13:E:37:ALA:C	13:E:39:ALA:N	2.71	0.48
21:M:24:THR:HG23	21:M:24:THR:O	2.13	0.48
26:R:1:MET:O	26:R:1:MET:CG	2.61	0.48
28:T:29:THR:CG2	28:T:86:THR:CG2	2.87	0.48
32:X:38:TRP:CE3	32:X:45:PHE:CE2	3.01	0.48
33:Y:56:LEU:O	33:Y:57:LEU:CB	2.55	0.48
9:A:9:G:C5	9:A:2629:U:C5	3.02	0.48
9:A:62:U:C4'	9:A:63:A:OP1	2.61	0.48
9:A:445:C:O2'	9:A:446:G:H5'	2.14	0.48
9:A:604:G:H2'	9:A:605:G:C8	2.49	0.48
9:A:832:U:O2'	9:A:833:A:H5'	2.14	0.48
9:A:1381:G:C2'	9:A:1382:G:H5'	2.43	0.48
9:A:1449:G:H2'	9:A:1450:G:O5'	2.14	0.48
9:A:1464:G:C2'	9:A:1465:G:H5'	2.44	0.48
9:A:1508:A:O2'	9:A:1509:A:P	2.72	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1848:A:O2'	9:A:1849:G:H5'	2.14	0.48
9:A:2264:C:H41	31:W:11:ASN:HD21	1.62	0.48
9:A:2578:G:H2'	9:A:2578:G:N3	2.28	0.48
9:A:2582:G:H2'	9:A:2582:G:N3	2.28	0.48
9:A:2850:A:H2'	9:A:2851:A:H8	1.78	0.48
9:A:2887:A:N3	9:A:2887:A:C2'	2.75	0.48
10:B:17:C:C2'	10:B:18:G:H5'	2.43	0.48
11:C:20:ASN:ND2	11:C:22:GLU:H	2.12	0.48
13:E:112:LEU:CD1	13:E:186:VAL:HG11	2.34	0.48
15:G:83:THR:C	15:G:84:LYS:CD	2.86	0.48
19:K:1:MET:HG3	19:K:67:LYS:HG3	1.96	0.48
20:L:91:ASP:HB2	20:L:94:THR:HB	1.96	0.48
24:P:4:ILE:CG2	24:P:5:LYS:N	2.74	0.48
24:P:22:GLY:O	24:P:109:ILE:HD11	2.13	0.48
25:Q:94:LEU:HD12	25:Q:94:LEU:O	2.14	0.48
29:U:40:LEU:O	29:U:41:VAL:HG13	2.14	0.48
29:U:48:VAL:O	29:U:53:GLN:CB	2.61	0.48
9:A:139:U:C5	28:T:1:MET:SD	3.07	0.47
9:A:391:A:C6	9:A:411:G:C2	3.02	0.47
9:A:1430:G:H2'	9:A:1431:A:C5'	2.43	0.47
9:A:1465:G:C5	9:A:1466:U:C4	3.02	0.47
9:A:1569:A:C2	9:A:1570:A:C4	3.02	0.47
9:A:2204:G:O5'	11:C:149:LYS:HE3	2.14	0.47
9:A:2572:A:N7	12:D:150:GLN:HB3	2.28	0.47
11:C:80:LEU:HD23	11:C:80:LEU:HA	1.46	0.47
12:D:16:THR:HG21	12:D:20:VAL:HB	1.96	0.47
15:G:126:THR:CG2	15:G:128:THR:H	2.20	0.47
15:G:148:ARG:HD2	15:G:163:TYR:HE2	1.77	0.47
16:H:31:VAL:CG1	16:H:36:ALA:O	2.60	0.47
19:K:27:GLY:O	19:K:28:SER:C	2.56	0.47
19:K:63:VAL:CG1	19:K:103:VAL:HG12	2.43	0.47
19:K:98:ARG:C	19:K:99:ILE:HD13	2.39	0.47
20:L:29:LYS:HG3	20:L:30:THR:CG2	2.43	0.47
21:M:28:PHE:HD2	21:M:104:GLU:OE1	1.97	0.47
24:P:9:GLN:C	24:P:11:GLN:H	2.22	0.47
26:R:21:ARG:NH2	26:R:93:PHE:CE2	2.82	0.47
31:W:21:GLY:C	31:W:22:VAL:HG12	2.38	0.47
31:W:70:VAL:CG2	31:W:75:ASN:OD1	2.62	0.47
1:O:50:GLY:O	1:O:51:ARG:C	2.57	0.47
9:A:2:G:H2'	9:A:3:U:C6	2.49	0.47
9:A:80:G:C2	9:A:107:G:C2	3.02	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:146:A:H2'	9:A:147:C:H6	1.79	0.47
9:A:580:U:O2'	9:A:581:C:H5'	2.14	0.47
9:A:608:A:C2	9:A:621:A:C2	3.02	0.47
9:A:988:A:H2'	9:A:989:G:O5'	2.12	0.47
9:A:1028:A:N6	9:A:1125:G:H2'	2.29	0.47
9:A:1113:U:N3	9:A:1114:C:C5	2.83	0.47
9:A:1462:C:O2'	9:A:1463:C:C5'	2.62	0.47
9:A:1520:U:O2'	9:A:1521:G:H5'	2.14	0.47
9:A:1654:A:H2'	9:A:1655:A:C8	2.48	0.47
9:A:1707:G:C5	9:A:1756:G:C6	3.02	0.47
9:A:1912:A:N1	9:A:1919:A:N7	2.62	0.47
9:A:1962:C:O2'	9:A:1964:G:OP2	2.33	0.47
9:A:2513:A:H2	12:D:148:GLN:HE21	1.62	0.47
11:C:7:PRO:CB	11:C:13:ARG:HB2	2.43	0.47
11:C:229:HIS:HD2	11:C:246:PRO:HB3	1.79	0.47
12:D:142:VAL:HG23	12:D:144:GLY:H	1.79	0.47
16:H:2:GLN:O	16:H:3:VAL:CG2	2.54	0.47
16:H:18:GLN:HA	16:H:18:GLN:NE2	2.24	0.47
17:I:56:VAL:HG22	17:I:57:VAL:N	2.29	0.47
17:I:123:ALA:C	17:I:125:THR:N	2.72	0.47
19:K:71:ARG:CG	19:K:106:GLU:OE2	2.62	0.47
21:M:73:ILE:HG12	21:M:93:VAL:HG12	1.95	0.47
22:N:87:PHE:HE1	22:N:116:VAL:CG1	2.26	0.47
23:O:31:THR:O	23:O:32:PRO:C	2.57	0.47
23:O:79:ALA:HA	23:O:115:LEU:HD22	1.94	0.47
25:Q:34:ALA:O	25:Q:37:ALA:HB3	2.14	0.47
9:A:39:G:H2'	9:A:40:U:C6	2.50	0.47
9:A:68:G:C2	9:A:74:A:C4	3.02	0.47
9:A:319:G:C5	9:A:333:G:C2	3.02	0.47
9:A:531:C:H4'	9:A:532:A:H5''	1.95	0.47
9:A:626:A:H2'	20:L:78:ARG:CZ	2.44	0.47
9:A:1534:U:H3'	9:A:1536:C:H5	1.79	0.47
9:A:1731:G:C6	9:A:1733:G:C5	3.01	0.47
9:A:2531:A:C6	9:A:2532:G:C5	3.03	0.47
11:C:76:VAL:O	11:C:77:VAL:O	2.32	0.47
11:C:83:ASP:OD1	11:C:84:PRO:CD	2.62	0.47
12:D:106:LYS:O	12:D:175:LEU:O	2.32	0.47
13:E:47:LYS:HB3	13:E:51:GLU:HG3	1.96	0.47
15:G:93:TYR:O	15:G:105:SER:HB3	2.15	0.47
19:K:38:ILE:HD11	19:K:112:PHE:HZ	1.78	0.47
19:K:57:VAL:C	19:K:58:LEU:HD23	2.40	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:K:63:VAL:HG13	19:K:103:VAL:HG12	1.97	0.47
23:O:65:THR:O	23:O:66:GLY:C	2.57	0.47
24:P:31:VAL:O	24:P:37:LYS:HA	2.14	0.47
2:1:33:LEU:HB3	2:1:51:ALA:HB3	1.91	0.47
4:3:2:LYS:HE2	9:A:242:G:O5'	2.14	0.47
4:3:27:ASN:HD22	4:3:27:ASN:N	2.12	0.47
9:A:414:C:H4'	9:A:1879:C:O2	2.15	0.47
9:A:528:A:H2	9:A:2043:C:C4'	2.25	0.47
9:A:623:C:H2'	9:A:624:C:H6	1.78	0.47
9:A:734:A:C5	9:A:735:A:C8	3.02	0.47
9:A:1189:A:C2'	9:A:1190:G:O5'	2.62	0.47
9:A:1299:G:H2'	9:A:1639:C:N4	2.29	0.47
9:A:1488:C:H2'	9:A:1489:C:H6	1.79	0.47
9:A:1542:U:H2'	9:A:1543:G:O4'	2.15	0.47
9:A:1985:C:C2'	9:A:1986:C:O5'	2.62	0.47
9:A:2082:A:H2'	9:A:2083:G:O4'	2.14	0.47
9:A:2331:G:O2'	31:W:39:GLN:O	2.31	0.47
9:A:2540:C:O2'	9:A:2541:A:H5'	2.14	0.47
9:A:2722:G:H8	9:A:2722:G:O5'	1.96	0.47
11:C:29:PHE:O	11:C:30:ALA:C	2.57	0.47
12:D:9:VAL:CG2	12:D:10:GLY:N	2.75	0.47
14:F:142:TYR:HA	14:F:145:VAL:HG13	1.96	0.47
15:G:38:ASP:H	15:G:40:VAL:CG1	2.27	0.47
17:I:18:ASN:ND2	17:I:38:CYS:HB3	2.29	0.47
18:J:25:LEU:CD2	18:J:26:GLY:N	2.70	0.47
18:J:136:GLN:N	18:J:137:PRO:CD	2.77	0.47
23:O:30:ARG:HG2	23:O:31:THR:N	2.27	0.47
26:R:91:GLN:HA	26:R:91:GLN:OE1	2.14	0.47
29:U:42:LYS:HB3	29:U:57:ILE:HG23	1.97	0.47
30:V:1:MET:HG3	30:V:2:PHE:N	2.29	0.47
31:W:18:LYS:H	31:W:36:ILE:HG12	1.78	0.47
9:A:95:A:O2'	33:Y:41:HIS:CD2	2.67	0.47
9:A:171:U:O2'	9:A:172:A:H5'	2.13	0.47
9:A:308:G:C2'	9:A:309:A:H5'	2.44	0.47
9:A:481:G:O2'	9:A:482:A:P	2.72	0.47
9:A:503:A:C6	9:A:506:G:C6	3.03	0.47
9:A:786:C:O2'	9:A:787:C:H5'	2.14	0.47
9:A:1052:C:H3'	9:A:1052:C:C6	2.48	0.47
9:A:1276:A:H8	9:A:1276:A:H5''	1.79	0.47
9:A:1282:U:H2'	9:A:1283:G:O4'	2.14	0.47
9:A:1462:C:C2'	9:A:1463:C:C5'	2.91	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1604:C:H2'	9:A:1605:C:H6	1.80	0.47
9:A:1857:G:HO2'	9:A:1858:A:P	2.38	0.47
9:A:2078:C:O2'	9:A:2079:U:H5'	2.14	0.47
9:A:2552:U:O5'	9:A:2552:U:H6	1.98	0.47
9:A:2740:A:C6	9:A:2764:A:C8	3.02	0.47
11:C:170:TYR:HD2	11:C:183:VAL:C	2.21	0.47
11:C:221:GLY:HA3	11:C:229:HIS:CE1	2.48	0.47
13:E:145:ASP:HA	13:E:166:LYS:O	2.14	0.47
15:G:88:LEU:HD11	15:G:95:ALA:HB2	1.96	0.47
16:H:32:PRO:O	16:H:33:GLN:HB2	2.13	0.47
17:I:60:VAL:HG22	17:I:66:PHE:CB	2.45	0.47
18:J:3:THR:HG21	25:Q:60:TRP:NE1	2.29	0.47
19:K:113:MET:O	19:K:114:LYS:C	2.57	0.47
25:Q:81:GLY:CA	25:Q:116:LEU:HD13	2.44	0.47
26:R:39:LEU:HA	26:R:49:ILE:CG2	2.44	0.47
26:R:47:VAL:O	26:R:47:VAL:CG1	2.61	0.47
28:T:40:LYS:HG2	28:T:58:VAL:O	2.15	0.47
31:W:11:ASN:O	31:W:12:GLY:O	2.33	0.47
33:Y:23:ARG:O	33:Y:24:GLU:C	2.57	0.47
2:1:49:LYS:HG2	2:1:50:GLU:N	2.26	0.47
9:A:363:G:H2'	9:A:364:C:C6	2.49	0.47
9:A:1079:C:N3	9:A:1080:A:N7	2.62	0.47
9:A:1083:U:O2	9:A:1086:A:N1	2.48	0.47
9:A:1416:G:O2'	9:A:1417:C:C6	2.59	0.47
9:A:1542:U:O2'	9:A:1543:G:H5'	2.14	0.47
9:A:2388:A:H5'	9:A:2389:G:OP2	2.14	0.47
9:A:2562:U:C4	9:A:2563:U:C5	3.01	0.47
9:A:2660:A:C2	9:A:2661:G:C4	3.02	0.47
9:A:2754:U:O5'	9:A:2754:U:H6	1.96	0.47
11:C:141:HIS:HB3	11:C:142:ASN:H	1.30	0.47
11:C:144:GLU:OE2	11:C:188:ARG:HB2	2.15	0.47
12:D:149:ASN:CG	12:D:150:GLN:N	2.71	0.47
14:F:23:SER:O	14:F:26:GLN:HB3	2.15	0.47
14:F:134:GLN:C	14:F:136:ILE:N	2.72	0.47
15:G:72:ASN:O	15:G:76:ILE:CG2	2.47	0.47
17:I:72:THR:HB	17:I:112:LYS:HZ2	1.77	0.47
17:I:91:LYS:O	17:I:97:VAL:HG21	2.14	0.47
20:L:3:LEU:HA	20:L:3:LEU:HD23	1.49	0.47
21:M:72:PRO:O	21:M:73:ILE:O	2.33	0.47
23:O:37:ALA:HB3	23:O:78:VAL:HG11	1.96	0.47
23:O:54:VAL:O	23:O:54:VAL:HG22	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:P:9:GLN:C	24:P:11:GLN:N	2.72	0.47
26:R:61:ALA:CB	26:R:98:ILE:H	2.28	0.47
29:U:71:ILE:O	29:U:71:ILE:CD1	2.63	0.47
31:W:28:GLU:HB2	31:W:31:LEU:HD11	1.93	0.47
31:W:67:LYS:O	31:W:68:PHE:CB	2.59	0.47
32:X:40:GLU:HG3	32:X:43:LYS:HZ1	1.76	0.47
32:X:50:VAL:HG12	32:X:51:SER:O	2.13	0.47
2:1:9:LYS:N	2:1:9:LYS:CD	2.77	0.47
2:1:13:SER:OG	2:1:46:VAL:HG13	2.15	0.47
6:5:75:C:O2'	9:A:2507:C:H4'	2.15	0.47
9:A:235:U:H2'	9:A:236:C:H6	1.80	0.47
9:A:918:A:H4'	10:B:97:C:O2	2.15	0.47
9:A:1022:G:N2	9:A:1142:A:N1	2.62	0.47
9:A:1476:U:O2'	9:A:1477:A:C5'	2.63	0.47
9:A:1654:A:C4'	12:D:118:PHE:CE1	2.98	0.47
9:A:1824:G:H2'	9:A:1825:U:H6	1.80	0.47
9:A:1963:U:O2'	9:A:1964:G:H5''	2.14	0.47
9:A:1967:C:H2'	9:A:1968:G:C8	2.49	0.47
9:A:1974:C:H2'	9:A:1975:G:O5'	2.14	0.47
9:A:2136:G:O6	9:A:2156:G:N3	2.47	0.47
9:A:2788:C:H2'	9:A:2789:C:C6	2.49	0.47
10:B:49:C:OP1	23:O:101:GLY:HA3	2.15	0.47
11:C:29:PHE:CZ	11:C:31:PRO:CG	2.97	0.47
11:C:33:LEU:HD21	11:C:62:ARG:CD	2.39	0.47
11:C:33:LEU:HD23	11:C:33:LEU:HA	1.63	0.47
11:C:257:ARG:CD	11:C:269:ARG:NH2	2.78	0.47
13:E:60:TRP:CZ2	13:E:70:SER:HB3	2.50	0.47
13:E:132:LYS:NZ	13:E:132:LYS:HB3	2.29	0.47
14:F:109:ARG:HB2	14:F:136:ILE:HG22	1.96	0.47
14:F:134:GLN:NE2	14:F:148:VAL:O	2.48	0.47
15:G:83:THR:C	15:G:84:LYS:HD3	2.38	0.47
16:H:8:LYS:O	16:H:13:GLY:CA	2.53	0.47
16:H:14:SER:O	16:H:16:GLY:N	2.47	0.47
16:H:18:GLN:HE21	16:H:18:GLN:CA	2.22	0.47
16:H:53:GLU:O	16:H:53:GLU:CG	2.62	0.47
19:K:35:VAL:HG12	19:K:36:GLY:H	1.78	0.47
20:L:95:LEU:HD22	20:L:100:ILE:HD11	1.97	0.47
21:M:13:HIS:O	21:M:14:LYS:HB3	2.15	0.47
23:O:103:VAL:O	23:O:105:ALA:O	2.32	0.47
24:P:28:LYS:O	24:P:80:VAL:O	2.32	0.47
25:Q:94:LEU:HD23	26:R:11:GLN:CB	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:R:24:LYS:HA	26:R:94:THR:CG2	2.37	0.47
26:R:49:ILE:HG21	26:R:53:PHE:CA	2.45	0.47
29:U:97:SER:O	29:U:98:ASN:CB	2.61	0.47
30:V:21:ARG:HA	30:V:25:LYS:O	2.15	0.47
31:W:46:ALA:CB	31:W:80:SER:HB3	2.44	0.47
31:W:49:ASN:O	31:W:50:VAL:HG23	2.14	0.47
4:3:7:ARG:HG3	9:A:245:G:O6	2.13	0.47
9:A:163:C:HO2'	9:A:164:C:P	2.38	0.47
9:A:279:A:H2'	9:A:280:U:O4'	2.15	0.47
9:A:875:G:H2'	9:A:876:C:H5'	1.96	0.47
9:A:1088:A:H4'	9:A:1089:A:C8	2.50	0.47
9:A:1748:C:H2'	9:A:1749:A:H8	1.80	0.47
9:A:1782:U:H1'	9:A:2609:U:O4'	2.14	0.47
9:A:1787:A:O4'	9:A:2589:A:H4'	2.14	0.47
9:A:1818:U:H2'	11:C:152:GLN:O	2.14	0.47
9:A:1901:A:N3	9:A:1902:C:C6	2.83	0.47
9:A:2107:G:H2'	9:A:2152:G:OP1	2.14	0.47
9:A:2344:U:H4'	9:A:2345:G:OP1	2.14	0.47
9:A:2500:U:H5''	9:A:2501:C:OP2	2.15	0.47
9:A:2870:C:H2'	9:A:2871:U:H5'	1.97	0.47
10:B:35:C:H2'	10:B:36:C:O4'	2.15	0.47
12:D:33:ARG:NH2	12:D:51:THR:HG23	2.29	0.47
12:D:46:ARG:HG2	12:D:46:ARG:HH11	1.78	0.47
13:E:176:ASP:C	13:E:176:ASP:OD1	2.57	0.47
14:F:141:ASP:HB3	14:F:144:LYS:HB2	1.97	0.47
18:J:140:LEU:HD12	18:J:140:LEU:N	2.29	0.47
25:Q:88:GLU:OE1	25:Q:88:GLU:O	2.33	0.47
26:R:25:LEU:N	26:R:94:THR:HG21	2.29	0.47
28:T:39:THR:HB	28:T:42:GLU:N	2.24	0.47
28:T:48:GLN:HB3	28:T:49:LYS:HE3	1.97	0.47
29:U:83:GLY:HA3	29:U:96:LYS:HE2	1.96	0.47
31:W:22:VAL:O	31:W:23:LYS:C	2.57	0.47
32:X:60:LYS:O	32:X:61:LYS:C	2.57	0.47
4:3:54:LEU:HD13	4:3:54:LEU:HA	1.76	0.47
9:A:65:U:C2	9:A:66:C:C5	3.02	0.47
9:A:178:G:O2'	9:A:179:C:H5'	2.14	0.47
9:A:412:A:H2'	9:A:413:C:H6	1.80	0.47
9:A:608:A:N3	9:A:621:A:C2	2.83	0.47
9:A:645:C:H42	9:A:2350:C:C1'	2.28	0.47
9:A:726:G:O2'	9:A:727:A:O5'	2.32	0.47
9:A:1034:G:C5	9:A:1122:G:C2	3.03	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1385:A:C2	9:A:1386:C:N3	2.83	0.47
9:A:1430:G:C2'	9:A:1431:A:C5'	2.91	0.47
9:A:1840:G:C2	9:A:1841:U:C2	3.03	0.47
9:A:2080:A:C5'	32:X:18:SER:HB2	2.44	0.47
9:A:2140:G:H2'	9:A:2141:G:H8	1.79	0.47
9:A:2192:U:H2'	9:A:2193:G:H8	1.80	0.47
9:A:2249:U:H4'	9:A:2250:G:OP2	2.14	0.47
9:A:2300:C:O5'	9:A:2300:C:H6	1.98	0.47
9:A:2648:G:C2	9:A:2649:C:C2	3.03	0.47
9:A:2671:G:H2'	9:A:2672:U:H5'	1.97	0.47
12:D:103:ASP:CG	12:D:104:VAL:H	2.22	0.47
15:G:1:SER:HB3	15:G:5:LYS:HZ3	1.80	0.47
15:G:15:ASP:O	15:G:16:VAL:HB	2.14	0.47
15:G:26:LYS:HB3	15:G:32:LEU:HA	1.96	0.47
15:G:126:THR:HG22	15:G:128:THR:N	2.20	0.47
16:H:30:LEU:O	16:H:35:LYS:HB2	2.14	0.47
17:I:56:VAL:HG11	17:I:68:PHE:HD2	1.80	0.47
18:J:44:TYR:O	18:J:45:THR:HB	2.15	0.47
21:M:41:LEU:HD22	21:M:124:LEU:HD22	1.97	0.47
23:O:74:VAL:O	23:O:77:ALA:HB3	2.14	0.47
25:Q:35:PHE:C	25:Q:37:ALA:N	2.72	0.47
26:R:58:VAL:HG12	26:R:102:SER:CB	2.45	0.47
31:W:22:VAL:O	31:W:25:PHE:CD2	2.66	0.47
31:W:58:LEU:HA	31:W:58:LEU:HD12	1.51	0.47
2:1:10:LEU:O	2:1:19:PHE:HB2	2.15	0.47
9:A:397:U:C2'	9:A:398:C:H5'	2.45	0.47
9:A:545:U:O2	9:A:545:U:O4'	2.33	0.47
9:A:638:G:C5	9:A:651:G:C2	3.03	0.47
9:A:659:G:C6	9:A:660:C:C4	3.03	0.47
9:A:670:A:H4'	9:A:671:C:H5''	1.97	0.47
9:A:870:U:C2'	9:A:871:U:H5'	2.44	0.47
9:A:2149:U:O2'	9:A:2150:C:O4'	2.26	0.47
9:A:2362:C:H2'	9:A:2363:G:H5'	1.96	0.47
9:A:2617:U:H2'	9:A:2618:G:O4'	2.14	0.47
9:A:2768:U:H2'	9:A:2769:U:O5'	2.15	0.47
11:C:230:PRO:HD2	11:C:246:PRO:HA	1.96	0.47
11:C:254:LYS:O	11:C:255:LYS:CB	2.63	0.47
12:D:142:VAL:HG23	12:D:144:GLY:N	2.30	0.47
12:D:191:GLY:O	12:D:192:ALA:HB3	2.14	0.47
15:G:23:ILE:H	15:G:23:ILE:CD1	2.25	0.47
18:J:64:VAL:HG11	18:J:68:LYS:HB2	1.92	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:K:87:LEU:HD22	19:K:93:GLN:N	2.29	0.47
22:N:103:ARG:CZ	22:N:110:MET:HE1	2.44	0.47
26:R:87:GLN:HG2	26:R:88:GLY:N	2.30	0.47
28:T:22:THR:C	28:T:25:GLU:H	2.21	0.47
29:U:97:SER:O	29:U:98:ASN:CG	2.57	0.47
30:V:2:PHE:HD1	30:V:50:MET:CE	2.23	0.47
32:X:40:GLU:C	32:X:43:LYS:H	2.23	0.47
32:X:73:ARG:O	32:X:73:ARG:CG	2.62	0.47
9:A:154:U:H2'	9:A:155:A:C8	2.50	0.46
9:A:263:G:C2'	9:A:264:C:O5'	2.63	0.46
9:A:361:G:OP2	9:A:361:G:C8	2.67	0.46
9:A:364:C:O2'	9:A:365:U:H5'	2.15	0.46
9:A:1243:C:H2'	9:A:1244:A:O4'	2.16	0.46
9:A:1327:A:C2'	9:A:1328:A:O5'	2.63	0.46
9:A:1378:A:O2'	9:A:1379:U:P	2.73	0.46
9:A:1379:U:H5'	9:A:1379:U:H6	1.81	0.46
9:A:1524:G:O2'	9:A:1525:A:H5'	2.15	0.46
9:A:2152:G:HO2'	9:A:2153:C:C4'	2.27	0.46
9:A:2345:G:C4	9:A:2381:A:C2	3.03	0.46
9:A:2422:C:H6	9:A:2422:C:H5''	1.80	0.46
9:A:2619:C:H5'	12:D:155:VAL:O	2.15	0.46
9:A:2780:G:H4'	9:A:2781:A:OP2	2.14	0.46
13:E:5:LEU:HD23	13:E:120:VAL:O	2.14	0.46
20:L:80:SER:C	20:L:81:ASP:O	2.56	0.46
21:M:4:PRO:CG	21:M:70:ASP:HA	2.45	0.46
21:M:53:MET:HE2	21:M:120:ALA:CB	2.44	0.46
22:N:44:LEU:HD11	22:N:48:VAL:HG21	1.96	0.46
22:N:44:LEU:CD1	22:N:48:VAL:HG23	2.45	0.46
24:P:21:PRO:HA	24:P:46:VAL:HG12	1.97	0.46
27:S:24:ILE:HA	27:S:24:ILE:HD12	1.49	0.46
29:U:85:ARG:HG3	29:U:86:PHE:N	2.30	0.46
31:W:18:LYS:HG3	31:W:19:ARG:HG3	1.97	0.46
34:Z:8:GLN:HB3	34:Z:31:ILE:HA	1.97	0.46
34:Z:11:SER:O	34:Z:15:ARG:NE	2.47	0.46
2:1:50:GLU:OE1	2:1:50:GLU:CA	2.61	0.46
9:A:252:G:N2	9:A:253:C:H1'	2.30	0.46
9:A:411:G:H5''	9:A:412:A:OP1	2.15	0.46
9:A:566:U:O2'	9:A:809:G:OP2	2.26	0.46
9:A:1080:A:O3'	17:I:126:ARG:HG3	2.15	0.46
9:A:1508:A:O2'	9:A:1509:A:C8	2.62	0.46
9:A:1717:A:H2'	9:A:1718:G:O4'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1739:A:H2'	9:A:1740:G:O4'	2.15	0.46
9:A:2258:C:C2	9:A:2426:A:C4'	2.98	0.46
9:A:2525:G:C2	9:A:2539:C:C2	3.03	0.46
11:C:68:ARG:HH22	11:C:115:ILE:HG23	1.80	0.46
11:C:159:THR:OG1	11:C:194:VAL:HG11	2.16	0.46
12:D:101:PHE:O	12:D:102:ALA:C	2.57	0.46
12:D:113:SER:O	12:D:167:ASN:N	2.42	0.46
13:E:119:ILE:HD11	13:E:187:VAL:HG23	1.97	0.46
16:H:5:LEU:HD23	16:H:36:ALA:HB2	1.97	0.46
18:J:42:ALA:O	18:J:43:GLU:C	2.58	0.46
18:J:60:ASP:OD1	18:J:61:LYS:HG3	2.15	0.46
22:N:71:ARG:HH21	22:N:71:ARG:HG3	1.76	0.46
23:O:89:ASP:O	23:O:90:VAL:HG13	2.15	0.46
24:P:63:ILE:HG22	24:P:63:ILE:O	2.14	0.46
25:Q:57:ARG:HG2	25:Q:61:ILE:CD1	2.41	0.46
34:Z:6:ILE:HD11	34:Z:47:ILE:HD11	1.98	0.46
9:A:149:A:H2'	9:A:150:U:H6	1.80	0.46
9:A:197:A:C2'	9:A:198:C:H5'	2.45	0.46
9:A:227:A:N6	9:A:410:G:H1'	2.30	0.46
9:A:321:U:O2'	13:E:162:ARG:NH1	2.48	0.46
9:A:423:A:H5''	9:A:424:G:O5'	2.15	0.46
9:A:1064:C:H4'	17:I:89:SER:HB2	1.98	0.46
9:A:1241:A:H2'	9:A:1242:U:H5'	1.97	0.46
9:A:1385:A:C5	9:A:1403:A:C6	3.03	0.46
9:A:1522:A:O2'	9:A:1523:U:OP2	2.32	0.46
9:A:1655:A:H5'	12:D:118:PHE:CD2	2.51	0.46
9:A:1665:A:C2'	9:A:1666:G:H5'	2.45	0.46
9:A:1733:G:C2	9:A:1734:G:C5	3.03	0.46
9:A:2083:G:H2'	9:A:2084:C:H5'	1.96	0.46
9:A:2145:C:H3'	9:A:2146:C:H5''	1.96	0.46
9:A:2714:G:H2'	9:A:2715:C:C6	2.51	0.46
9:A:2757:A:H2'	9:A:2757:A:N3	2.29	0.46
9:A:2808:G:O2'	9:A:2809:A:OP2	2.34	0.46
13:E:149:ILE:O	13:E:188:MET:HA	2.16	0.46
14:F:19:PHE:O	14:F:20:ASN:C	2.58	0.46
14:F:116:LEU:O	14:F:176:PHE:HA	2.15	0.46
16:H:6:LEU:N	16:H:6:LEU:CD1	2.78	0.46
24:P:59:THR:HG23	24:P:72:VAL:HG12	1.98	0.46
29:U:60:LYS:HA	29:U:60:LYS:HD2	1.60	0.46
33:Y:44:LYS:O	33:Y:47:ARG:HB3	2.14	0.46
2:I:16:THR:HB	2:I:41:VAL:HG21	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:2:9:VAL:CG1	9:A:1309:G:OP1	2.64	0.46
3:2:12:ARG:HB2	9:A:686:U:O4	2.15	0.46
9:A:245:G:H2'	9:A:246:C:H6	1.81	0.46
9:A:360:U:H5''	9:A:361:G:OP1	2.16	0.46
9:A:475:C:C4	9:A:481:G:C6	3.04	0.46
9:A:636:G:N1	20:L:111:ILE:HD11	2.21	0.46
9:A:974:G:C4	9:A:1186:G:C2	3.03	0.46
9:A:1106:G:C6	9:A:1107:G:N7	2.83	0.46
9:A:1153:C:H2'	9:A:1154:G:C5'	2.45	0.46
9:A:1178:C:H2'	9:A:1178:C:O2	2.15	0.46
9:A:1206:G:C6	9:A:1207:C:C4	3.03	0.46
9:A:1233:C:C4	9:A:1234:U:C5	3.04	0.46
9:A:1345:C:O2	9:A:1345:C:H2'	2.15	0.46
9:A:2136:G:C6	9:A:2137:U:O4	2.69	0.46
9:A:2304:G:H22	9:A:2312:U:H3	1.62	0.46
9:A:2544:G:H8	9:A:2544:G:O5'	1.99	0.46
9:A:2807:U:O5'	9:A:2807:U:H6	1.98	0.46
9:A:2825:G:H2'	9:A:2826:A:H5'	1.96	0.46
10:B:74:U:O2	30:V:29:ILE:HD12	2.15	0.46
11:C:252:LYS:HA	11:C:252:LYS:HZ2	1.80	0.46
12:D:12:THR:HG22	12:D:24:VAL:HG22	1.97	0.46
13:E:48:THR:C	13:E:50:ALA:N	2.72	0.46
17:I:79:LEU:HD22	17:I:137:LEU:CD1	2.46	0.46
18:J:110:PRO:C	18:J:111:LYS:HD2	2.40	0.46
21:M:26:VAL:HG13	21:M:104:GLU:OE2	2.16	0.46
21:M:96:ILE:O	21:M:96:ILE:HG13	2.14	0.46
22:N:18:GLN:NE2	22:N:22:ARG:NH1	2.63	0.46
24:P:31:VAL:HG22	24:P:32:VAL:N	2.31	0.46
25:Q:94:LEU:HA	25:Q:94:LEU:HD13	1.29	0.46
26:R:49:ILE:CG2	26:R:53:PHE:CA	2.94	0.46
27:S:13:SER:OG	27:S:16:LYS:HG3	2.16	0.46
1:0:5:ASN:O	1:0:7:PRO:HD3	2.15	0.46
2:1:7:LYS:HE3	4:3:33:THR:HG21	1.96	0.46
3:2:35:ARG:HG2	3:2:42:LEU:HD21	1.97	0.46
4:3:56:LEU:H	4:3:56:LEU:HD23	1.79	0.46
9:A:221:A:N1	9:A:265:A:O2'	2.45	0.46
9:A:570:G:H2'	9:A:2030:A:C8	2.51	0.46
9:A:780:G:H2'	9:A:782:A:N7	2.31	0.46
9:A:901:C:H2'	9:A:902:C:C6	2.50	0.46
9:A:912:C:C4	9:A:913:U:O4	2.68	0.46
9:A:915:C:H6	9:A:915:C:C5'	2.24	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1024:G:N2	9:A:1142:A:H2	2.12	0.46
9:A:1061:U:H1'	9:A:1070:A:O4'	2.16	0.46
9:A:1417:C:O2'	9:A:1418:G:C5'	2.60	0.46
9:A:1733:G:O2'	9:A:1734:G:P	2.73	0.46
9:A:1998:A:H2'	9:A:1999:C:C6	2.50	0.46
9:A:2496:C:OP1	21:M:82:MET:HB2	2.16	0.46
9:A:2557:G:H2'	9:A:2558:C:C6	2.51	0.46
9:A:2851:A:H2'	9:A:2852:G:O4'	2.15	0.46
11:C:161:VAL:HG22	11:C:175:LEU:HD12	1.98	0.46
11:C:182:LYS:O	11:C:183:VAL:CG2	2.62	0.46
12:D:77:ARG:HD3	12:D:200:ASP:OD1	2.16	0.46
12:D:133:THR:HG23	12:D:134:HIS:N	2.30	0.46
12:D:148:GLN:HB2	12:D:152:PRO:HG2	1.98	0.46
16:H:31:VAL:CB	16:H:32:PRO:HD2	2.42	0.46
24:P:7:LEU:O	24:P:10:GLU:HG2	2.15	0.46
24:P:32:VAL:O	24:P:33:GLU:O	2.32	0.46
24:P:33:GLU:HG3	24:P:34:GLY:N	2.15	0.46
26:R:24:LYS:CA	26:R:94:THR:HG23	2.39	0.46
27:S:18:ARG:CG	27:S:76:VAL:HG13	2.44	0.46
29:U:5:ARG:O	29:U:6:ARG:C	2.58	0.46
31:W:25:PHE:HB3	31:W:66:VAL:HG23	1.98	0.46
9:A:430:A:H5''	9:A:431:U:OP2	2.16	0.46
9:A:669:G:C6	9:A:801:G:O6	2.68	0.46
9:A:819:A:OP2	9:A:1187:G:N2	2.43	0.46
9:A:960:A:N7	9:A:962:G:C8	2.84	0.46
9:A:1014:A:H2'	9:A:1015:U:C6	2.50	0.46
9:A:1244:A:O5'	20:L:7:SER:HB3	2.15	0.46
9:A:1358:G:N2	9:A:1374:G:C5	2.84	0.46
9:A:1403:A:O2'	9:A:1404:C:H5'	2.16	0.46
9:A:1826:G:C5	9:A:1827:U:C5	3.04	0.46
9:A:1945:G:H2'	9:A:1946:U:C5	2.51	0.46
9:A:2032:G:N1	9:A:2572:A:C8	2.83	0.46
9:A:2415:G:C5	9:A:2416:C:C5	3.03	0.46
9:A:2508:G:H2'	9:A:2509:G:O4'	2.16	0.46
11:C:156:SER:O	11:C:194:VAL:HG11	2.15	0.46
12:D:69:ALA:CA	12:D:73:VAL:CG1	2.94	0.46
12:D:97:SER:OG	12:D:99:GLU:CG	2.63	0.46
13:E:147:LEU:HB2	13:E:186:VAL:HA	1.97	0.46
15:G:93:TYR:HD2	15:G:93:TYR:HA	1.67	0.46
15:G:154:GLU:OE1	15:G:157:LYS:HB2	2.15	0.46
17:I:115:ASP:C	17:I:115:ASP:OD1	2.59	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:114:LEU:HD23	18:J:114:LEU:C	2.41	0.46
20:L:21:ARG:HD3	20:L:21:ARG:HA	1.69	0.46
21:M:47:GLU:O	21:M:48:ALA:C	2.57	0.46
23:O:36:TYR:CD2	23:O:36:TYR:N	2.84	0.46
25:Q:85:ALA:O	25:Q:88:GLU:CB	2.64	0.46
26:R:21:ARG:HG3	26:R:95:ASP:OD1	2.14	0.46
31:W:25:PHE:C	31:W:27:GLY:H	2.24	0.46
9:A:544:C:H2'	9:A:544:C:O2	2.16	0.46
9:A:996:A:P	25:Q:91:ARG:NH1	2.89	0.46
9:A:1011:G:H5''	25:Q:76:SER:HG	1.80	0.46
9:A:1059:G:C2	9:A:1080:A:N3	2.83	0.46
9:A:1063:G:H5'	17:I:76:ALA:HB3	1.98	0.46
9:A:1289:C:H2'	9:A:1290:C:C6	2.50	0.46
9:A:1421:G:C2	9:A:1422:G:C8	3.04	0.46
9:A:1450:G:H2'	9:A:1451:C:C6	2.50	0.46
9:A:1507:C:H2'	9:A:1508:A:N3	2.30	0.46
9:A:1734:G:O2'	9:A:1735:A:C8	2.48	0.46
9:A:1798:U:C4	9:A:1819:A:C2	3.04	0.46
9:A:1820:U:C2	11:C:200:MET:HG2	2.50	0.46
9:A:1857:G:H1'	9:A:1884:G:H22	1.81	0.46
9:A:1934:C:H2'	9:A:1935:G:O5'	2.15	0.46
9:A:2103:C:H2'	9:A:2104:C:C5'	2.38	0.46
9:A:2222:C:H4'	11:C:184:GLU:OE1	2.16	0.46
9:A:2302:U:H2'	9:A:2303:G:H8	1.81	0.46
9:A:2336:A:N6	31:W:40:ARG:HD2	2.31	0.46
9:A:2447:G:C4	9:A:2500:U:C5	3.04	0.46
36:A:9000:ERY:H8	36:A:9000:ERY:H321	1.58	0.46
10:B:15:A:O2'	10:B:16:G:H5'	2.15	0.46
10:B:70:C:C2'	10:B:71:C:H5'	2.46	0.46
10:B:75:G:O2'	30:V:88:HIS:HE1	1.99	0.46
11:C:75:ALA:HB1	11:C:94:LEU:O	2.16	0.46
11:C:257:ARG:CD	11:C:269:ARG:HH22	2.29	0.46
15:G:166:GLU:OE2	15:G:167:VAL:N	2.49	0.46
18:J:120:ARG:O	18:J:123:LYS:HE2	2.16	0.46
19:K:105:ARG:NE	19:K:106:GLU:OE2	2.49	0.46
21:M:132:THR:CG2	21:M:133:LYS:N	2.78	0.46
23:O:107:ALA:O	23:O:110:ALA:HB3	2.15	0.46
24:P:13:LYS:NZ	24:P:80:VAL:CG1	2.78	0.46
24:P:83:ILE:C	24:P:83:ILE:CD1	2.78	0.46
26:R:80:ARG:O	26:R:81:LYS:HD3	2.13	0.46
28:T:29:THR:HG22	28:T:86:THR:CG2	2.20	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:W:36:ILE:O	31:W:39:GLN:HB3	2.16	0.46
32:X:30:PRO:C	32:X:32:LEU:HD13	2.40	0.46
32:X:40:GLU:HG3	32:X:43:LYS:HZ3	1.78	0.46
9:A:728:G:O2'	9:A:730:A:H5''	2.15	0.46
9:A:928:A:C2	34:Z:46:MET:HE1	2.50	0.46
9:A:995:C:H42	18:J:2:LYS:HB2	1.81	0.46
9:A:1022:G:HO2'	9:A:1023:U:P	2.37	0.46
9:A:1060:U:C5'	9:A:1061:U:OP1	2.62	0.46
9:A:1069:A:C6	9:A:1074:G:C5	3.03	0.46
9:A:1360:G:H5''	9:A:1360:G:C8	2.51	0.46
9:A:2308:G:H2'	9:A:2310:C:H5	1.80	0.46
9:A:2325:G:C6	9:A:2326:C:C4	3.04	0.46
9:A:2383:G:O2'	9:A:2384:U:C5'	2.59	0.46
9:A:2663:G:O2'	9:A:2664:G:H5'	2.15	0.46
9:A:2720:U:C2	9:A:2872:A:C6	3.04	0.46
11:C:123:ILE:O	11:C:123:ILE:HG12	2.15	0.46
11:C:237:ARG:O	11:C:238:ASN:HB2	2.15	0.46
16:H:37:VAL:HG23	16:H:38:PRO:HD2	1.97	0.46
17:I:79:LEU:HD11	17:I:132:ALA:HA	1.97	0.46
18:J:31:GLU:HG3	18:J:142:ILE:HG21	1.98	0.46
21:M:114:ARG:CA	21:M:130:PHE:CE1	2.98	0.46
22:N:67:PHE:HE2	22:N:71:ARG:NH1	2.14	0.46
26:R:81:LYS:O	26:R:82:HIS:C	2.58	0.46
29:U:54:PRO:HG2	29:U:55:GLY:H	1.80	0.46
30:V:42:LEU:HD23	30:V:42:LEU:N	2.30	0.46
31:W:49:ASN:ND2	31:W:50:VAL:N	2.64	0.46
33:Y:42:LEU:HD12	33:Y:42:LEU:HA	1.71	0.46
2:1:7:LYS:CA	2:1:23:THR:HG22	2.41	0.46
2:1:8:ILE:HG21	2:1:51:ALA:CB	2.46	0.46
2:1:29:LYS:HB3	2:1:29:LYS:HZ2	1.80	0.46
9:A:103:A:H2'	9:A:104:A:H8	1.81	0.46
9:A:108:G:C2'	9:A:109:C:H5'	2.46	0.46
9:A:136:G:H2'	9:A:137:U:C6	2.51	0.46
9:A:544:C:H3'	9:A:545:U:O2	2.16	0.46
9:A:634:C:H2'	9:A:635:C:C6	2.50	0.46
9:A:670:A:H4'	9:A:671:C:O5'	2.15	0.46
9:A:1023:U:H5'	9:A:1023:U:H6	1.79	0.46
9:A:1606:C:O2'	9:A:1607:C:O5'	2.34	0.46
9:A:1644:C:C2'	9:A:1644:C:O2	2.60	0.46
9:A:1673:G:C3'	9:A:1674:G:H5'	2.46	0.46
9:A:1845:G:H2'	9:A:1846:G:H5'	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2639:A:H4'	18:J:96:ARG:NH2	2.31	0.46
9:A:2794:C:H2'	9:A:2795:C:C6	2.51	0.46
9:A:2804:U:O2'	9:A:2805:C:H5'	2.16	0.46
9:A:2840:C:H4'	22:N:91:ALA:O	2.16	0.46
12:D:90:PHE:N	12:D:90:PHE:CD1	2.83	0.46
15:G:95:ALA:HA	15:G:103:ASN:O	2.15	0.46
16:H:49:ALA:HB3	16:H:50:ARG:HH22	1.72	0.46
18:J:132:HIS:HB3	18:J:135:GLN:CG	2.46	0.46
19:K:47:ILE:HG13	19:K:48:PRO:CD	2.45	0.46
21:M:6:ARG:O	21:M:7:THR:HG23	2.16	0.46
21:M:43:ALA:O	21:M:46:ILE:HG13	2.16	0.46
21:M:78:LEU:O	21:M:80:VAL:N	2.49	0.46
29:U:10:VAL:CG1	29:U:24:VAL:HG23	2.46	0.46
34:Z:9:THR:HG21	34:Z:53:MET:C	2.41	0.46
9:A:160:A:C6	9:A:161:A:C6	3.04	0.46
9:A:226:A:C6	9:A:227:A:C6	3.04	0.46
9:A:263:G:H2'	9:A:264:C:O5'	2.15	0.46
9:A:312:G:H2'	9:A:313:G:H8	1.81	0.46
9:A:441:U:H2'	9:A:442:G:C8	2.50	0.46
9:A:441:U:O2'	13:E:41:GLN:NE2	2.49	0.46
9:A:475:C:O5'	9:A:475:C:H6	1.99	0.46
9:A:565:C:H2'	9:A:566:U:O4'	2.15	0.46
9:A:817:C:H2'	9:A:818:G:O4'	2.15	0.46
9:A:861:A:C2	9:A:917:A:C4	3.04	0.46
9:A:925:A:H2'	9:A:926:G:O4'	2.16	0.46
9:A:1059:G:C6	9:A:1080:A:N1	2.84	0.46
9:A:1198:U:H2'	9:A:1199:U:C6	2.51	0.46
9:A:1441:G:H2'	9:A:1442:U:C6	2.51	0.46
9:A:1655:A:C2	9:A:1656:C:H1'	2.51	0.46
9:A:1791:A:N6	9:A:1828:G:O2'	2.45	0.46
9:A:1853:A:C5	9:A:1889:A:C6	3.04	0.46
9:A:1980:G:O2'	9:A:1982:U:H5	1.99	0.46
9:A:2428:G:H5''	9:A:2429:G:OP1	2.15	0.46
9:A:2470:G:C2'	9:A:2471:A:H5'	2.45	0.46
9:A:2578:G:C5	12:D:145:SER:HB2	2.51	0.46
9:A:2610:C:H4'	36:A:9000:ERY:C30	2.46	0.46
9:A:2752:C:H2'	9:A:2753:A:H8	1.74	0.46
12:D:98:VAL:O	12:D:101:PHE:N	2.47	0.46
12:D:148:GLN:OE1	12:D:148:GLN:N	2.50	0.46
18:J:38:GLY:C	18:J:40:HIS:H	2.24	0.46
18:J:70:THR:HA	18:J:90:GLU:HG2	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:97:PRO:C	18:J:99:ARG:N	2.74	0.46
21:M:77:PRO:HB2	21:M:80:VAL:CG1	2.46	0.46
25:Q:4:LYS:HZ2	25:Q:5:ARG:N	2.13	0.46
28:T:10:VAL:HG23	28:T:11:LEU:HD23	1.98	0.46
29:U:10:VAL:HG21	29:U:69:VAL:HB	1.97	0.46
29:U:25:LYS:N	29:U:34:ILE:O	2.49	0.46
30:V:6:ALA:HB1	30:V:41:GLU:O	2.16	0.46
33:Y:23:ARG:NE	33:Y:23:ARG:HA	2.31	0.46
9:A:160:A:C4	9:A:167:A:C2	3.04	0.45
9:A:356:G:C6	9:A:357:C:C4	3.04	0.45
9:A:528:A:C2	9:A:2042:A:H2'	2.51	0.45
9:A:735:A:H3'	9:A:736:C:C6	2.51	0.45
9:A:897:C:H5''	9:A:898:C:OP2	2.16	0.45
9:A:923:G:H4'	31:W:25:PHE:CZ	2.51	0.45
9:A:1025:G:H4'	9:A:1026:G:OP2	2.15	0.45
9:A:1161:C:C1'	26:R:8:GLY:O	2.63	0.45
9:A:1300:G:H2'	9:A:1635:A:OP1	2.16	0.45
9:A:1587:G:C4	9:A:1588:G:C8	3.04	0.45
9:A:1850:G:C5	9:A:1851:U:C5	3.04	0.45
9:A:2093:G:OP1	16:H:24:GLY:N	2.41	0.45
9:A:2393:U:O3'	20:L:62:PRO:HA	2.15	0.45
9:A:2397:G:H2'	9:A:2398:U:H6	1.81	0.45
9:A:2507:C:O2	9:A:2507:C:H2'	2.17	0.45
9:A:2635:A:C2'	9:A:2636:C:O5'	2.64	0.45
11:C:17:LYS:HA	11:C:17:LYS:HE3	1.97	0.45
11:C:133:ASN:C	11:C:134:ILE:HG13	2.40	0.45
11:C:141:HIS:O	11:C:143:VAL:N	2.50	0.45
12:D:9:VAL:HG22	12:D:26:VAL:CG1	2.44	0.45
13:E:65:THR:HG23	13:E:65:THR:O	2.17	0.45
14:F:52:ALA:HB2	14:F:149:ARG:HD3	1.97	0.45
15:G:136:ASP:O	15:G:140:ILE:CD1	2.64	0.45
17:I:40:ALA:HB3	17:I:68:PHE:CE1	2.50	0.45
17:I:105:LEU:HA	17:I:108:ILE:HD12	1.97	0.45
17:I:123:ALA:HA	17:I:126:ARG:CZ	2.46	0.45
19:K:40:LYS:HE3	19:K:57:VAL:HG13	1.98	0.45
20:L:82:LEU:HG	20:L:90:VAL:HG21	1.97	0.45
23:O:51:ALA:HB3	23:O:78:VAL:HG13	1.98	0.45
26:R:58:VAL:HG22	26:R:59:ILE:N	2.31	0.45
28:T:37:ASP:OD2	28:T:37:ASP:N	2.49	0.45
29:U:5:ARG:CG	29:U:5:ARG:NH2	2.56	0.45
5:4:5:ALA:HB3	9:A:2466:C:C5'	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:37:GLN:HG3	9:A:1125:G:H5'	1.97	0.45
9:A:718:A:H2'	9:A:719:C:H5'	1.98	0.45
9:A:861:A:N3	10:B:79:G:O2'	2.47	0.45
9:A:1220:G:H2'	9:A:1221:C:C6	2.51	0.45
9:A:1256:G:H21	13:E:77:ILE:HG13	1.80	0.45
9:A:1416:G:C4	9:A:1417:C:C5	3.04	0.45
9:A:1507:C:C4	9:A:1508:A:N1	2.84	0.45
9:A:1588:G:N3	9:A:1589:U:C6	2.85	0.45
9:A:1594:U:H2'	9:A:1595:C:C6	2.51	0.45
9:A:1624:U:H2'	9:A:1625:C:C6	2.46	0.45
9:A:1624:U:C2	9:A:1625:C:C5	3.04	0.45
9:A:1654:A:C1'	12:D:118:PHE:CD1	2.95	0.45
9:A:2105:U:H6	9:A:2105:U:OP2	1.99	0.45
9:A:2134:A:N6	9:A:2157:G:C6	2.80	0.45
9:A:2151:U:N3	9:A:2152:G:C5	2.84	0.45
9:A:2850:A:C2	9:A:2851:A:C4	3.04	0.45
12:D:117:GLY:C	12:D:118:PHE:CD1	2.94	0.45
14:F:3:LEU:HD23	14:F:100:GLU:CG	2.41	0.45
14:F:37:MET:HA	14:F:37:MET:HE2	1.97	0.45
20:L:95:LEU:HD22	20:L:100:ILE:CD1	2.46	0.45
21:M:46:ILE:C	21:M:46:ILE:CD1	2.80	0.45
26:R:49:ILE:CG2	26:R:54:VAL:HG12	2.45	0.45
28:T:26:LYS:O	28:T:27:SER:CB	2.59	0.45
31:W:24:ARG:NE	31:W:65:LYS:HE2	2.32	0.45
31:W:46:ALA:HB3	31:W:79:ILE:C	2.40	0.45
32:X:26:ARG:NH1	32:X:27:ARG:O	2.49	0.45
4:3:29:ARG:HH21	9:A:2394:C:P	2.39	0.45
9:A:28:A:H2'	9:A:29:U:H6	1.81	0.45
9:A:274:C:C6	9:A:275:C:C5	3.03	0.45
9:A:369:U:O2'	9:A:370:G:P	2.75	0.45
9:A:957:C:C4'	9:A:958:U:OP1	2.59	0.45
9:A:1000:A:C6	9:A:1001:A:C6	3.04	0.45
9:A:1223:G:P	26:R:68:ARG:HH12	2.40	0.45
9:A:1394:U:C2'	9:A:1395:A:O5'	2.65	0.45
9:A:1509:A:N3	9:A:1510:G:C8	2.85	0.45
9:A:1606:C:O2'	9:A:1607:C:P	2.72	0.45
9:A:1744:A:H3'	9:A:1745:A:H8	1.80	0.45
9:A:2356:U:H4'	31:W:16:GLU:CG	2.31	0.45
9:A:2461:A:H1'	9:A:2492:U:C2	2.52	0.45
9:A:2547:A:C2	9:A:2562:U:C2	3.04	0.45
10:B:5:U:H2'	10:B:6:G:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:D:49:GLN:HE22	12:D:67:HIS:CE1	2.34	0.45
12:D:49:GLN:NE2	12:D:67:HIS:CE1	2.85	0.45
13:E:175:ILE:HD11	13:E:180:LEU:HD11	1.99	0.45
14:F:82:TYR:O	14:F:84:ILE:HG22	2.17	0.45
14:F:90:LEU:HB3	14:F:95:MET:HA	1.97	0.45
14:F:174:PHE:HD1	14:F:176:PHE:CE1	2.35	0.45
18:J:111:LYS:CG	18:J:112:GLY:H	2.18	0.45
25:Q:4:LYS:CD	25:Q:7:VAL:HG13	2.46	0.45
25:Q:88:GLU:O	25:Q:88:GLU:CD	2.59	0.45
26:R:42:ALA:CB	26:R:46:GLU:CB	2.94	0.45
28:T:93:LEU:HA	28:T:93:LEU:HD13	1.62	0.45
29:U:94:PHE:O	29:U:94:PHE:CG	2.68	0.45
1:O:36:LYS:O	1:O:37:HIS:HB3	2.16	0.45
2:1:10:LEU:HD23	2:1:50:GLU:O	2.17	0.45
4:3:24:LYS:CD	20:L:62:PRO:HG3	2.47	0.45
5:4:7:VAL:O	5:4:8:LYS:HB2	2.16	0.45
9:A:142:A:C4	9:A:143:C:C4	3.03	0.45
9:A:239:C:O2'	9:A:240:C:H5'	2.17	0.45
9:A:478:A:N6	9:A:480:A:C6	2.84	0.45
9:A:636:G:H3'	20:L:128:THR:HG21	1.98	0.45
9:A:1276:A:H5''	9:A:1276:A:C8	2.52	0.45
9:A:1301:A:C2	9:A:1303:G:C6	3.04	0.45
9:A:1450:G:C4	9:A:1451:C:C5	3.05	0.45
9:A:1460:U:H3'	9:A:1461:C:C5'	2.46	0.45
9:A:1858:A:HO2'	9:A:1859:U:H6	1.64	0.45
9:A:2023:C:O2	9:A:2023:C:C2'	2.60	0.45
11:C:131:MET:HA	11:C:134:ILE:CD1	2.39	0.45
11:C:159:THR:N	11:C:194:VAL:CG1	2.79	0.45
11:C:234:GLY:C	11:C:236:GLY:H	2.22	0.45
12:D:2:ILE:HG13	12:D:100:LEU:HD21	1.97	0.45
12:D:3:GLY:C	12:D:4:LEU:HD12	2.41	0.45
13:E:108:ILE:CD1	13:E:180:LEU:HD13	2.47	0.45
13:E:174:GLY:O	13:E:175:ILE:O	2.34	0.45
14:F:131:VAL:CG2	14:F:151:LEU:H	2.27	0.45
17:I:107:GLU:HA	17:I:110:GLN:HB3	1.98	0.45
19:K:11:ALA:O	19:K:99:ILE:HA	2.16	0.45
19:K:108:ARG:CG	19:K:108:ARG:NH1	2.56	0.45
20:L:27:LEU:H	20:L:27:LEU:CD1	2.25	0.45
22:N:12:ARG:HG3	22:N:12:ARG:NH2	2.16	0.45
22:N:78:LYS:O	22:N:79:LEU:C	2.53	0.45
23:O:3:LYS:HG3	23:O:4:LYS:H	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:P:88:ARG:CG	24:P:112:ARG:NH2	2.80	0.45
26:R:24:LYS:HE2	26:R:24:LYS:HB3	1.64	0.45
26:R:68:ARG:HD3	26:R:92:TRP:CZ2	2.51	0.45
27:S:29:VAL:HG22	27:S:55:ILE:HD11	1.97	0.45
28:T:12:ARG:HD2	33:Y:29:ARG:NH2	2.31	0.45
29:U:49:PRO:O	29:U:51:LEU:N	2.49	0.45
30:V:29:ILE:O	30:V:91:PHE:N	2.50	0.45
31:W:18:LYS:H	31:W:36:ILE:CG1	2.30	0.45
31:W:46:ALA:HB3	31:W:80:SER:HB3	1.99	0.45
31:W:75:ASN:O	31:W:76:ARG:CB	2.64	0.45
32:X:68:ALA:C	32:X:69:GLU:O	2.58	0.45
5:4:36:ARG:HD3	9:A:2742:G:OP1	2.15	0.45
9:A:186:G:H2'	9:A:187:G:H8	1.82	0.45
9:A:447:A:N1	9:A:454:A:H2'	2.31	0.45
9:A:479:A:N3	9:A:481:G:H5''	2.31	0.45
9:A:573:U:O2'	9:A:574:A:H3'	2.17	0.45
9:A:611:C:C2'	9:A:612:G:C5'	2.94	0.45
9:A:777:G:H2'	9:A:778:G:H8	1.82	0.45
9:A:1135:C:H6	9:A:1135:C:H5''	1.81	0.45
9:A:1248:G:HO2'	25:Q:2:ARG:HA	1.82	0.45
9:A:1359:A:C2'	9:A:1360:G:O5'	2.64	0.45
9:A:1374:G:C2'	9:A:1375:U:H5'	2.47	0.45
9:A:1410:G:C2	9:A:1593:A:C2	3.04	0.45
9:A:1655:A:H2'	9:A:1656:C:O4'	2.17	0.45
9:A:1681:G:H4'	9:A:1763:G:C8	2.51	0.45
9:A:1866:A:O2'	9:A:1867:G:C5'	2.64	0.45
9:A:2385:C:H2'	9:A:2386:A:C8	2.51	0.45
9:A:2874:C:H2'	9:A:2875:C:H6	1.80	0.45
11:C:196:ASN:OD1	11:C:197:ALA:N	2.49	0.45
11:C:245:THR:HB	11:C:246:PRO:HD2	1.97	0.45
12:D:107:VAL:O	12:D:107:VAL:HG12	2.15	0.45
13:E:32:VAL:CG2	13:E:33:VAL:N	2.79	0.45
13:E:130:LYS:O	13:E:131:THR:C	2.59	0.45
16:H:3:VAL:CA	16:H:37:VAL:O	2.63	0.45
25:Q:40:LYS:HB2	25:Q:40:LYS:HZ3	1.82	0.45
28:T:67:VAL:C	28:T:68:LYS:CD	2.90	0.45
29:U:10:VAL:CG2	29:U:69:VAL:HB	2.46	0.45
31:W:18:LYS:HE3	31:W:19:ARG:HG3	1.97	0.45
31:W:28:GLU:HB3	31:W:31:LEU:CG	2.46	0.45
5:4:26:ILE:HD13	5:4:26:ILE:N	2.31	0.45
9:A:28:A:H2'	9:A:29:U:O4'	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:270:A:C2	9:A:369:U:H4'	2.51	0.45
9:A:341:C:H2'	9:A:342:A:O4'	2.17	0.45
9:A:621:A:H2'	9:A:622:G:O4'	2.16	0.45
9:A:748:G:O5'	27:S:89:ALA:HB2	2.16	0.45
9:A:1107:G:N3	9:A:1108:U:C6	2.84	0.45
9:A:1326:U:C2'	9:A:1327:A:H5'	2.46	0.45
9:A:1343:G:H2'	9:A:1344:U:C6	2.52	0.45
9:A:1398:C:H2'	9:A:1399:C:C6	2.52	0.45
9:A:1486:U:C2'	9:A:1487:U:H5'	2.47	0.45
9:A:1818:U:HO2'	9:A:1819:A:P	2.40	0.45
9:A:2139:U:O2	9:A:2152:G:N2	2.49	0.45
9:A:2532:G:C5	9:A:2533:U:C5	3.04	0.45
9:A:2834:G:O6	9:A:2879:A:H2'	2.16	0.45
10:B:33:G:C2'	10:B:34:A:H5'	2.47	0.45
11:C:29:PHE:CZ	11:C:31:PRO:HG3	2.51	0.45
11:C:70:LYS:HG3	11:C:101:ARG:CZ	2.47	0.45
12:D:113:SER:HB2	12:D:114:LYS:NZ	2.31	0.45
12:D:139:SER:HA	12:D:142:VAL:HG13	1.98	0.45
12:D:142:VAL:CB	12:D:143:PRO:CD	2.94	0.45
13:E:159:LEU:HD12	13:E:159:LEU:HA	1.53	0.45
14:F:88:VAL:CG1	14:F:90:LEU:CD1	2.94	0.45
18:J:18:VAL:CG2	18:J:140:LEU:CD1	2.95	0.45
18:J:58:ASN:ND2	18:J:128:ASN:HB2	2.29	0.45
18:J:89:PHE:CE1	18:J:93:ILE:CG1	3.00	0.45
19:K:13:ASN:C	19:K:15:GLY:H	2.23	0.45
24:P:4:ILE:O	24:P:5:LYS:CB	2.56	0.45
24:P:67:GLU:CG	24:P:68:GLY:H	2.24	0.45
24:P:88:ARG:HD3	24:P:112:ARG:HH21	1.82	0.45
25:Q:51:GLN:O	25:Q:52:ARG:C	2.58	0.45
25:Q:57:ARG:HA	25:Q:60:TRP:CE3	2.51	0.45
26:R:26:ASP:O	26:R:27:ILE:C	2.59	0.45
31:W:19:ARG:NH1	31:W:22:VAL:CG1	2.79	0.45
31:W:73:PRO:HG2	31:W:76:ARG:HB2	1.98	0.45
1:O:10:SER:O	1:O:14:MET:HG3	2.16	0.45
5:4:19:ARG:NH1	9:A:2755:C:C4	2.85	0.45
9:A:81:G:C2	9:A:106:C:C2	3.04	0.45
9:A:142:A:C2	9:A:143:C:N3	2.84	0.45
9:A:412:A:H2'	9:A:413:C:C5'	2.46	0.45
9:A:602:A:C2	9:A:656:G:C6	3.05	0.45
9:A:672:C:OP2	20:L:42:SER:OG	2.28	0.45
9:A:806:C:H2'	9:A:807:U:H6	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:825:A:C2'	9:A:826:U:H5'	2.47	0.45
9:A:900:A:C5	9:A:901:C:C6	3.05	0.45
9:A:1374:G:C5	9:A:1375:U:C5	3.04	0.45
9:A:1467:U:C4	9:A:1546:G:C2	3.04	0.45
9:A:1567:G:H2'	11:C:84:PRO:HG3	1.99	0.45
9:A:1822:C:O5'	9:A:1822:C:H6	2.00	0.45
9:A:2043:C:N3	9:A:2777:G:C2	2.85	0.45
9:A:2356:U:C5'	31:W:16:GLU:HG3	2.46	0.45
9:A:2480:C:H2'	9:A:2481:G:C5'	2.45	0.45
9:A:2641:G:H5''	18:J:78:THR:HB	1.98	0.45
9:A:2865:U:C2	9:A:2866:U:C5	3.04	0.45
11:C:141:HIS:CD2	11:C:194:VAL:N	2.85	0.45
13:E:74:LYS:O	13:E:75:SER:C	2.59	0.45
13:E:108:ILE:HD13	13:E:180:LEU:HD13	1.98	0.45
14:F:13:LYS:HG3	14:F:14:LYS:N	2.31	0.45
15:G:96:ALA:O	15:G:97:VAL:CB	2.61	0.45
19:K:7:MET:C	19:K:8:LEU:HD22	2.42	0.45
19:K:24:VAL:CG1	19:K:30:ARG:HD2	2.47	0.45
20:L:29:LYS:O	20:L:30:THR:HG23	2.17	0.45
20:L:73:ILE:C	20:L:105:ILE:HD13	2.41	0.45
30:V:77:VAL:O	30:V:77:VAL:HG13	2.17	0.45
1:O:47:TYR:CZ	1:O:52:LYS:HB2	2.49	0.45
9:A:26:G:C6	9:A:27:G:N1	2.85	0.45
9:A:306:U:C3'	9:A:307:G:H5'	2.44	0.45
9:A:374:A:H2'	9:A:375:G:C5'	2.47	0.45
9:A:567:U:C2'	9:A:568:U:O5'	2.65	0.45
9:A:645:C:N4	9:A:2350:C:C4'	2.80	0.45
9:A:946:C:H2'	9:A:947:A:C8	2.46	0.45
9:A:1303:G:O2'	9:A:1304:A:H5'	2.16	0.45
9:A:1510:G:C4	9:A:1511:G:C8	3.05	0.45
9:A:1556:C:H2'	9:A:1557:C:H5'	1.97	0.45
9:A:1783:A:H5'	9:A:2608:G:H4'	1.99	0.45
9:A:1859:U:H2'	9:A:1860:G:H8	1.82	0.45
9:A:1917:U:C4	9:A:1918:A:C5	3.05	0.45
9:A:2287:A:C8	9:A:2289:G:C8	3.05	0.45
9:A:2435:A:H2'	9:A:2436:G:O5'	2.16	0.45
9:A:2463:C:O5'	9:A:2463:C:H6	2.00	0.45
9:A:2485:G:OP1	21:M:45:GLN:NE2	2.50	0.45
9:A:2748:A:N6	9:A:2749:A:C6	2.85	0.45
10:B:110:C:H2'	10:B:111:U:C5'	2.47	0.45
11:C:82:TYR:CD1	11:C:82:TYR:C	2.95	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:C:229:HIS:O	11:C:231:HIS:O	2.35	0.45
11:C:246:PRO:HG2	11:C:247:TRP:CZ2	2.51	0.45
12:D:68:PHE:O	12:D:69:ALA:C	2.59	0.45
15:G:112:VAL:HG23	15:G:113:ASP:N	2.32	0.45
16:H:16:GLY:C	16:H:51:ARG:HH21	2.25	0.45
27:S:37:THR:HB	27:S:38:TYR:CE1	2.52	0.45
29:U:25:LYS:CG	29:U:36:GLU:HB3	2.32	0.45
9:A:31:C:O3'	9:A:1238:G:H5'	2.16	0.45
9:A:760:G:H2'	9:A:761:A:O4'	2.16	0.45
9:A:930:G:H5''	9:A:931:U:OP2	2.16	0.45
9:A:995:C:OP2	25:Q:52:ARG:NH1	2.50	0.45
9:A:1774:C:H4'	9:A:1979:U:O2	2.16	0.45
9:A:1946:U:C2	9:A:1947:C:C5	3.05	0.45
9:A:2352:A:O5'	9:A:2352:A:H8	2.00	0.45
9:A:2601:C:N3	9:A:2603:G:O6	2.50	0.45
9:A:2856:A:C2'	9:A:2857:G:H5'	2.47	0.45
10:B:19:C:C2'	10:B:20:G:H5'	2.47	0.45
12:D:91:THR:C	12:D:93:GLY:N	2.74	0.45
12:D:122:VAL:O	12:D:126:ASN:HA	2.17	0.45
15:G:85:LYS:HA	15:G:130:ILE:O	2.16	0.45
18:J:84:ILE:HG23	18:J:84:ILE:O	2.17	0.45
21:M:21:ALA:HB3	21:M:100:LYS:N	2.32	0.45
23:O:25:ARG:HG3	23:O:27:VAL:CG2	2.47	0.45
23:O:28:VAL:HG23	23:O:106:LEU:CD2	2.46	0.45
23:O:111:ARG:C	23:O:111:ARG:CD	2.89	0.45
25:Q:82:LEU:HD22	25:Q:88:GLU:OE2	2.16	0.45
9:A:58:G:O2'	9:A:73:A:N1	2.49	0.45
9:A:396:G:H2'	9:A:397:U:C6	2.53	0.45
9:A:480:A:H3'	9:A:481:G:C5'	2.47	0.45
9:A:752:A:O2'	9:A:753:A:P	2.75	0.45
9:A:831:G:C6	9:A:832:U:C4	3.06	0.45
9:A:867:C:C4	9:A:868:U:C5	3.05	0.45
9:A:869:G:H2'	9:A:870:U:O4'	2.17	0.45
9:A:923:G:N2	31:W:23:LYS:HE2	2.31	0.45
9:A:1216:G:H2'	9:A:1217:U:H6	1.82	0.45
9:A:1607:C:H4'	9:A:1608:A:O5'	2.17	0.45
9:A:2023:C:C6	9:A:2023:C:H5''	2.52	0.45
9:A:2136:G:C2	9:A:2137:U:O4	2.69	0.45
9:A:2185:U:C5	9:A:2186:G:N7	2.85	0.45
9:A:2225:A:H4'	9:A:2226:C:H6	1.82	0.45
9:A:2353:G:H2'	9:A:2354:C:O5'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2536:G:C5	9:A:2537:U:C4	3.05	0.45
11:C:20:ASN:HA	11:C:21:PRO:HD2	1.90	0.45
11:C:106:PRO:CA	11:C:141:HIS:CE1	2.99	0.45
11:C:180:MET:CG	11:C:268:ARG:NH1	2.79	0.45
12:D:14:ILE:HA	24:P:11:GLN:NE2	2.15	0.45
12:D:105:LYS:CE	12:D:176:ASP:HB3	2.47	0.45
13:E:196:VAL:HG13	13:E:200:LEU:HD22	1.99	0.45
14:F:16:MET:O	14:F:20:ASN:N	2.50	0.45
14:F:91:ARG:N	14:F:95:MET:HB2	2.32	0.45
15:G:131:VAL:O	15:G:131:VAL:HG23	2.16	0.45
18:J:119:PHE:CD1	18:J:119:PHE:C	2.95	0.45
21:M:25:ASP:OD2	21:M:25:ASP:N	2.50	0.45
23:O:79:ALA:HB1	23:O:113:ALA:CB	2.47	0.45
24:P:95:LYS:CG	24:P:97:TYR:CZ	2.96	0.45
26:R:41:ILE:HG22	26:R:42:ALA:N	2.32	0.45
28:T:25:GLU:C	28:T:27:SER:N	2.75	0.45
31:W:19:ARG:NH2	31:W:22:VAL:CG2	2.78	0.45
32:X:51:SER:O	32:X:52:ALA:C	2.57	0.45
9:A:37:C:C2'	9:A:38:A:O5'	2.66	0.44
9:A:187:G:C2	9:A:210:C:O2	2.70	0.44
9:A:277:G:H4'	9:A:278:A:C8	2.52	0.44
9:A:497:A:H2'	9:A:498:G:O4'	2.17	0.44
9:A:633:A:H2'	9:A:634:C:H5'	1.99	0.44
9:A:659:G:C5	9:A:660:C:C4	3.05	0.44
9:A:670:A:H4'	9:A:671:C:C5'	2.47	0.44
9:A:869:G:C6	9:A:870:U:C4	3.06	0.44
9:A:1313:U:O2	9:A:1313:U:H2'	2.16	0.44
9:A:1539:U:H2'	9:A:1540:G:C8	2.47	0.44
9:A:1585:C:C2'	9:A:1586:A:C5'	2.81	0.44
9:A:1844:C:C3'	9:A:1844:C:C6	3.00	0.44
9:A:2415:G:C4	9:A:2416:C:C6	3.05	0.44
9:A:2470:G:N2	9:A:2471:A:C4	2.85	0.44
9:A:2838:G:H2'	9:A:2839:G:O4'	2.17	0.44
11:C:254:LYS:HE3	11:C:254:LYS:HB3	1.72	0.44
12:D:105:LYS:N	12:D:106:LYS:HD2	2.31	0.44
17:I:24:GLY:O	17:I:34:ILE:HD12	2.16	0.44
17:I:52:LEU:HD12	17:I:52:LEU:N	2.32	0.44
22:N:65:LEU:O	22:N:66:ALA:C	2.60	0.44
22:N:70:THR:O	22:N:71:ARG:C	2.58	0.44
22:N:87:PHE:CE1	22:N:116:VAL:HG12	2.53	0.44
23:O:75:GLY:CA	23:O:106:LEU:HD13	2.43	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:8:ILE:CG2	2:1:9:LYS:H	2.29	0.44
4:3:2:LYS:HA	9:A:592:A:O2'	2.17	0.44
4:3:60:CYS:O	4:3:61:LEU:HD23	2.17	0.44
6:5:75:C:H2'	6:5:76:MA6:O4'	2.18	0.44
9:A:345:A:O2'	9:A:346:A:N7	2.51	0.44
9:A:558:U:P	18:J:113:PRO:CG	2.96	0.44
9:A:1487:U:N3	9:A:1503:A:C2	2.85	0.44
9:A:1565:C:H3'	11:C:17:LYS:HZ3	1.83	0.44
9:A:1695:G:H8	11:C:7:PRO:HG2	1.78	0.44
9:A:1842:G:H2'	9:A:1843:C:O4'	2.18	0.44
9:A:1950:G:H5''	9:A:1951:U:OP2	2.17	0.44
9:A:2001:C:C2	9:A:2002:G:C8	3.05	0.44
9:A:2097:A:O2'	9:A:2098:U:H5'	2.16	0.44
9:A:2340:A:H2'	9:A:2341:G:H8	1.80	0.44
9:A:2540:C:C2'	9:A:2541:A:C5'	2.86	0.44
9:A:2671:G:C3'	9:A:2672:U:H5'	2.48	0.44
9:A:2729:G:H5''	9:A:2729:G:C8	2.46	0.44
10:B:78:A:H2'	10:B:79:G:O4'	2.17	0.44
10:B:90:C:OP1	21:M:16:ARG:HB3	2.18	0.44
10:B:110:C:C2'	10:B:111:U:H5'	2.48	0.44
11:C:103:ILE:O	11:C:104:LEU:O	2.34	0.44
11:C:203:VAL:HG12	11:C:204:LEU:N	2.32	0.44
12:D:15:PHE:H	24:P:11:GLN:HE21	1.59	0.44
13:E:178:VAL:O	13:E:181:ILE:N	2.47	0.44
14:F:105:ILE:O	14:F:105:ILE:HG13	2.12	0.44
14:F:173:ASP:O	14:F:174:PHE:C	2.60	0.44
20:L:57:LEU:HD11	20:L:61:LEU:HD21	2.00	0.44
21:M:55:ARG:O	21:M:56:ALA:HB2	2.16	0.44
26:R:52:PRO:O	26:R:53:PHE:HB2	2.16	0.44
28:T:29:THR:CB	28:T:86:THR:HG22	2.47	0.44
32:X:46:VAL:HG11	32:X:77:TYR:CD1	2.52	0.44
33:Y:37:LEU:O	33:Y:37:LEU:HD13	2.18	0.44
2:1:13:SER:OG	2:1:46:VAL:CG1	2.65	0.44
9:A:30:G:H2'	9:A:31:C:C6	2.53	0.44
9:A:83:A:N6	9:A:101:A:C4	2.86	0.44
9:A:414:C:O2'	9:A:415:A:H5'	2.17	0.44
9:A:726:G:O2'	9:A:727:A:H8	1.99	0.44
9:A:847:U:O2	9:A:934:U:H1'	2.17	0.44
9:A:933:A:H3'	9:A:934:U:C5'	2.46	0.44
9:A:1178:C:C4	9:A:1180:U:C4	3.06	0.44
9:A:1337:G:O2'	9:A:1338:G:H5'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2356:U:H5'	31:W:16:GLU:HG3	1.98	0.44
9:A:2415:G:C6	9:A:2416:C:C4	3.04	0.44
9:A:2494:G:O2'	21:M:79:ALA:HA	2.17	0.44
9:A:2665:A:H2	9:A:2666:C:C2	2.35	0.44
10:B:71:C:H2'	10:B:72:G:H5'	1.99	0.44
11:C:184:GLU:O	11:C:186:ASP:N	2.47	0.44
12:D:13:ARG:HD2	24:P:55:HIS:ND1	2.32	0.44
12:D:90:PHE:C	12:D:92:VAL:N	2.73	0.44
13:E:175:ILE:O	13:E:175:ILE:CG2	2.65	0.44
14:F:10:GLU:O	14:F:11:VAL:CB	2.50	0.44
15:G:68:ARG:HD2	15:G:68:ARG:O	2.17	0.44
16:H:50:ARG:C	16:H:52:ALA:N	2.75	0.44
19:K:40:LYS:HG3	19:K:41:ILE:N	2.32	0.44
20:L:91:ASP:O	20:L:93:ASN:O	2.34	0.44
24:P:98:TYR:CE2	24:P:99:LEU:CD1	3.00	0.44
27:S:43:ALA:O	27:S:46:LEU:HB2	2.16	0.44
28:T:88:LYS:O	28:T:89:GLU:CB	2.63	0.44
34:Z:43:ILE:HD12	34:Z:43:ILE:C	2.42	0.44
2:1:16:THR:CG2	2:1:41:VAL:HG22	2.48	0.44
5:4:9:LYS:HG3	5:4:16:ILE:HG13	2.00	0.44
9:A:1013:C:H2'	9:A:1014:A:C8	2.53	0.44
9:A:1021:A:C6	9:A:1023:U:C5	3.05	0.44
9:A:1687:G:H2'	9:A:1688:U:C6	2.52	0.44
9:A:2094:A:C4'	16:H:25:TYR:CE1	2.96	0.44
9:A:2107:G:C2'	9:A:2152:G:OP1	2.66	0.44
9:A:2492:U:C2	9:A:2493:U:C5	3.05	0.44
9:A:2647:U:O2'	9:A:2648:G:H5'	2.17	0.44
9:A:2682:A:C8	12:D:11:MET:CG	3.00	0.44
9:A:2820:A:OP1	22:N:2:ARG:NH2	2.50	0.44
9:A:2824:C:C2'	9:A:2825:G:O5'	2.66	0.44
9:A:2855:C:O5'	9:A:2855:C:H6	2.00	0.44
11:C:259:ASN:C	11:C:261:ARG:N	2.75	0.44
12:D:9:VAL:CG2	12:D:26:VAL:HB	2.47	0.44
12:D:9:VAL:HG22	12:D:26:VAL:CB	2.48	0.44
12:D:25:THR:HG22	12:D:27:ILE:HG13	2.00	0.44
12:D:68:PHE:CB	12:D:73:VAL:HG12	2.48	0.44
12:D:106:LYS:CB	12:D:206:ALA:H	2.30	0.44
14:F:46:LYS:HE3	14:F:46:LYS:H	1.82	0.44
15:G:61:TRP:O	15:G:62:ALA:C	2.58	0.44
15:G:67:ALA:O	15:G:68:ARG:C	2.59	0.44
15:G:94:ARG:HA	15:G:127:GLN:O	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:G:156:TYR:O	15:G:157:LYS:HG3	2.17	0.44
17:I:126:ARG:CA	17:I:129:GLU:HB2	2.43	0.44
18:J:40:HIS:CD2	18:J:40:HIS:N	2.85	0.44
20:L:30:THR:O	20:L:31:GLY:C	2.59	0.44
20:L:113:ALA:O	20:L:114:GLY:O	2.35	0.44
21:M:16:ARG:HA	21:M:16:ARG:HD3	1.91	0.44
22:N:85:PRO:HA	22:N:88:ALA:HB2	2.00	0.44
22:N:96:ARG:NH1	22:N:116:VAL:HG23	2.32	0.44
22:N:101:GLY:HA2	22:N:110:MET:H	1.81	0.44
24:P:53:GLY:O	24:P:54:LEU:C	2.59	0.44
24:P:87:ARG:HG3	24:P:88:ARG:H	1.82	0.44
26:R:4:VAL:HG22	26:R:40:MET:HB3	2.00	0.44
26:R:15:SER:H	26:R:18:GLN:NE2	2.16	0.44
28:T:15:HIS:O	28:T:17:SER:N	2.51	0.44
28:T:17:SER:O	28:T:18:GLU:CB	2.63	0.44
28:T:38:ALA:HB1	28:T:43:ILE:HG21	1.99	0.44
29:U:52:ASN:C	29:U:54:PRO:CD	2.83	0.44
32:X:12:VAL:CG2	32:X:28:PHE:HB2	2.48	0.44
32:X:34:SER:H	32:X:50:VAL:H	1.65	0.44
34:Z:15:ARG:HD3	34:Z:53:MET:SD	2.57	0.44
1:0:39:ARG:HG2	1:0:40:HIS:CE1	2.52	0.44
1:0:48:TYR:O	1:0:49:ARG:HB2	2.18	0.44
9:A:323:C:C4	9:A:333:G:C8	3.05	0.44
9:A:528:A:H3'	9:A:528:A:C8	2.47	0.44
9:A:571:U:C5	9:A:575:A:C6	3.06	0.44
9:A:851:C:H2'	9:A:852:U:H6	1.82	0.44
9:A:968:C:O2'	9:A:969:G:H5'	2.18	0.44
9:A:1052:C:C6	9:A:1052:C:C3'	3.00	0.44
9:A:1376:C:O2'	9:A:1377:G:H5'	2.17	0.44
9:A:1595:C:H6	9:A:1595:C:O5'	1.99	0.44
9:A:1733:G:O2'	9:A:1734:G:C5'	2.66	0.44
9:A:1854:A:H2	9:A:2087:G:N3	2.16	0.44
9:A:1912:A:N1	9:A:1919:A:C5	2.86	0.44
9:A:1959:G:H2'	9:A:1960:A:O5'	2.17	0.44
9:A:1996:C:OP1	19:K:31:ARG:NE	2.51	0.44
9:A:2243:U:O2	9:A:2434:A:C2	2.70	0.44
9:A:2563:U:H1'	9:A:2566:A:N6	2.32	0.44
9:A:2615:U:H2'	9:A:2616:C:H6	1.82	0.44
9:A:2645:G:H4'	9:A:2646:C:OP2	2.18	0.44
9:A:2752:C:O5'	9:A:2752:C:H6	2.01	0.44
10:B:34:A:H2'	10:B:35:C:OP2	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:B:57:A:H2'	10:B:58:A:C8	2.52	0.44
11:C:32:LEU:HD23	11:C:32:LEU:HA	1.76	0.44
11:C:105:ALA:HA	11:C:106:PRO:HD2	1.62	0.44
11:C:108:GLY:C	11:C:109:LEU:CD2	2.88	0.44
11:C:108:GLY:O	11:C:109:LEU:C	2.60	0.44
12:D:9:VAL:CG1	12:D:28:GLU:HB2	2.48	0.44
17:I:30:GLN:NE2	17:I:32:VAL:HB	2.33	0.44
19:K:1:MET:HE3	19:K:32:TYR:CD2	2.53	0.44
22:N:87:PHE:HE1	22:N:116:VAL:HG12	1.82	0.44
23:O:59:ALA:CA	23:O:62:LEU:CD1	2.95	0.44
25:Q:15:LYS:O	25:Q:19:GLN:HG3	2.17	0.44
29:U:24:VAL:HA	29:U:35:VAL:HG22	2.00	0.44
33:Y:40:SER:C	33:Y:42:LEU:N	2.72	0.44
5:4:36:ARG:CG	5:4:37:GLN:H	2.04	0.44
9:A:28:A:C5	9:A:29:U:C5	3.06	0.44
9:A:119:A:H4'	9:A:120:U:O5'	2.17	0.44
9:A:304:U:O2'	9:A:305:C:H5'	2.18	0.44
9:A:540:C:O2'	9:A:541:A:H5'	2.17	0.44
9:A:547:A:N1	9:A:549:G:N2	2.65	0.44
9:A:579:G:C2	9:A:1262:A:C5	3.06	0.44
9:A:900:A:C4	9:A:901:C:C6	3.06	0.44
9:A:1071:G:C4	9:A:1089:A:C6	3.06	0.44
9:A:1081:U:N3	9:A:1082:U:C5	2.85	0.44
9:A:1416:G:O2'	9:A:1417:C:P	2.76	0.44
9:A:1721:G:H22	9:A:1738:G:H2'	1.82	0.44
9:A:1865:U:O2'	9:A:1866:A:H5''	2.16	0.44
9:A:2244:U:H2'	9:A:2245:U:O4'	2.18	0.44
9:A:2289:G:O2'	9:A:2290:G:H5'	2.18	0.44
9:A:2417:C:H2'	9:A:2418:A:O5'	2.17	0.44
9:A:2551:C:H2'	9:A:2552:U:C6	2.52	0.44
9:A:2643:G:H2'	9:A:2644:G:O4'	2.17	0.44
9:A:2693:G:O2'	9:A:2694:G:H5'	2.16	0.44
9:A:2756:U:H1'	9:A:2757:A:H5''	1.99	0.44
10:B:5:U:H2'	10:B:6:G:H8	1.82	0.44
11:C:121:ALA:HB3	11:C:129:LEU:CD2	2.47	0.44
13:E:5:LEU:HD13	13:E:122:GLU:HG3	2.00	0.44
13:E:37:ALA:O	13:E:39:ALA:N	2.51	0.44
13:E:198:GLU:O	13:E:199:MET:C	2.61	0.44
14:F:61:GLY:HA3	14:F:94:ARG:HD2	1.98	0.44
15:G:33:THR:CA	15:G:34:ARG:NH1	2.76	0.44
18:J:37:ARG:O	18:J:37:ARG:CG	2.66	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:K:18:ARG:HB2	19:K:45:GLU:CB	2.43	0.44
20:L:53:GLY:O	20:L:54:GLN:C	2.60	0.44
21:M:4:PRO:HG2	21:M:92:TRP:CZ3	2.52	0.44
24:P:50:ARG:O	24:P:51:ASN:HB2	2.17	0.44
24:P:88:ARG:HD3	24:P:112:ARG:NH2	2.33	0.44
24:P:91:VAL:O	24:P:92:ARG:C	2.60	0.44
26:R:66:HIS:CE1	26:R:94:THR:HB	2.52	0.44
27:S:86:MET:HG3	27:S:88:ARG:HD3	1.99	0.44
32:X:6:VAL:HG23	32:X:66:VAL:HG13	2.00	0.44
1:O:2:VAL:CG2	9:A:2015:A:C5	3.01	0.44
4:3:24:LYS:HB3	20:L:62:PRO:HG2	2.00	0.44
9:A:68:G:N2	9:A:74:A:C4	2.86	0.44
9:A:117:G:C6	9:A:119:A:N6	2.86	0.44
9:A:289:G:C8	9:A:290:U:C5	3.05	0.44
9:A:480:A:OP2	29:U:43:LYS:HD2	2.18	0.44
9:A:666:A:H4'	20:L:48:ARG:NE	2.31	0.44
9:A:1058:U:H4'	17:I:117:THR:CG2	2.48	0.44
9:A:1304:A:C2	9:A:1305:C:C6	3.06	0.44
9:A:1403:A:H2'	9:A:1404:C:C6	2.53	0.44
9:A:1725:U:H2'	9:A:1726:C:O4'	2.18	0.44
9:A:1731:G:C6	9:A:1733:G:C6	3.06	0.44
9:A:2081:U:H2'	9:A:2082:A:C8	2.52	0.44
9:A:2302:U:H3	9:A:2314:A:H61	1.65	0.44
9:A:2715:C:C4	9:A:2716:C:C5	3.06	0.44
11:C:198:GLU:O	11:C:199:HIS:C	2.60	0.44
13:E:170:ARG:CG	13:E:170:ARG:NH2	2.48	0.44
15:G:162:ARG:NH2	15:G:168:VAL:HG21	2.32	0.44
16:H:41:LYS:CA	16:H:44:ILE:HG12	2.35	0.44
18:J:121:LYS:HB2	18:J:121:LYS:HE3	1.71	0.44
18:J:130:HIS:HD2	18:J:132:HIS:N	2.14	0.44
21:M:97:GLN:HB2	21:M:98:PRO:CD	2.48	0.44
23:O:80:GLU:O	23:O:81:ARG:C	2.61	0.44
24:P:47:ILE:HA	24:P:96:LEU:HB2	1.99	0.44
28:T:7:LEU:O	28:T:7:LEU:HG	2.18	0.44
28:T:25:GLU:O	28:T:27:SER:N	2.42	0.44
31:W:24:ARG:HD3	31:W:65:LYS:CD	2.48	0.44
1:O:9:ARG:NH2	9:A:517:C:OP2	2.37	0.44
1:O:12:ARG:O	1:O:13:GLY:C	2.60	0.44
4:3:3:ILE:CG2	20:L:48:ARG:HH21	2.31	0.44
9:A:275:C:C4	9:A:276:U:H6	2.36	0.44
9:A:536:G:H2'	9:A:537:G:C5'	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:923:G:N2	31:W:23:LYS:NZ	2.46	0.44
9:A:1520:U:O5'	9:A:1520:U:H6	2.01	0.44
9:A:1566:A:O2'	9:A:1567:G:H5'	2.18	0.44
9:A:1711:A:H2'	9:A:1712:U:H6	1.83	0.44
9:A:1885:A:H2'	9:A:1886:U:O4'	2.18	0.44
9:A:2076:U:O2	9:A:2076:U:O4'	2.36	0.44
11:C:116:GLN:N	11:C:127:ASN:OD1	2.44	0.44
11:C:159:THR:C	11:C:194:VAL:HG12	2.43	0.44
12:D:120:GLY:CA	12:D:162:ALA:HB2	2.34	0.44
13:E:12:LEU:HD22	13:E:12:LEU:HA	1.85	0.44
13:E:82:GLY:O	13:E:83:VAL:HB	2.17	0.44
15:G:112:VAL:HG23	15:G:113:ASP:H	1.82	0.44
18:J:44:TYR:HB2	25:Q:63:ARG:CG	2.47	0.44
20:L:110:VAL:HG12	20:L:131:ALA:HB2	1.99	0.44
21:M:77:PRO:HB2	21:M:80:VAL:HG12	1.99	0.44
22:N:103:ARG:NE	22:N:110:MET:CE	2.80	0.44
23:O:117:PHE:CD1	23:O:117:PHE:O	2.70	0.44
24:P:19:PHE:N	24:P:19:PHE:CD2	2.86	0.44
26:R:16:GLU:HA	26:R:98:ILE:CG2	2.40	0.44
26:R:39:LEU:O	26:R:40:MET:HB2	2.16	0.44
27:S:42:LYS:HB2	27:S:42:LYS:HE2	1.47	0.44
28:T:2:ILE:HG13	28:T:3:ARG:NH2	2.32	0.44
28:T:37:ASP:O	28:T:38:ALA:C	2.61	0.44
29:U:28:LEU:O	29:U:30:SER:N	2.51	0.44
29:U:39:ASN:HB3	29:U:62:ALA:O	2.18	0.44
31:W:28:GLU:OE2	31:W:29:SER:N	2.51	0.44
1:0:42:ILE:HD12	1:0:48:TYR:HB2	2.00	0.44
2:1:16:THR:C	2:1:18:HIS:H	2.26	0.44
3:2:19:ARG:O	3:2:23:ALA:HB2	2.18	0.44
9:A:50:U:H4'	9:A:51:G:OP2	2.18	0.44
9:A:527:C:N3	9:A:2779:U:H2'	2.32	0.44
9:A:597:G:C2	9:A:661:A:C2	3.05	0.44
9:A:802:A:H2'	9:A:803:U:C6	2.53	0.44
9:A:855:G:N2	31:W:23:LYS:HB3	2.33	0.44
9:A:1074:G:N3	9:A:1075:C:C5	2.86	0.44
9:A:1693:U:O5'	9:A:1694:C:H5	2.01	0.44
9:A:1759:A:H2'	9:A:1760:C:C6	2.53	0.44
9:A:1858:A:H8	9:A:1858:A:OP2	2.00	0.44
9:A:2365:G:C2'	9:A:2366:A:C8	3.01	0.44
9:A:2415:G:H4'	20:L:66:PHE:CB	2.42	0.44
9:A:2683:C:O2	19:K:70:ARG:NH2	2.44	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2745:C:C4	9:A:2746:U:C4	3.06	0.44
9:A:2783:U:H2'	9:A:2784:U:C6	2.53	0.44
9:A:2865:U:C2	9:A:2866:U:H5	2.36	0.44
9:A:2888:C:O2	9:A:2888:C:H2'	2.17	0.44
11:C:30:ALA:N	11:C:31:PRO:HD2	2.32	0.44
11:C:269:ARG:HD3	11:C:269:ARG:HA	1.71	0.44
20:L:75:ALA:HB2	20:L:105:ILE:CD1	2.48	0.44
24:P:44:GLY:HA3	24:P:61:ARG:O	2.18	0.44
25:Q:69:ARG:NH2	25:Q:69:ARG:CG	2.72	0.44
31:W:49:ASN:O	31:W:50:VAL:CG2	2.66	0.44
4:3:54:LEU:O	4:3:58:ILE:HG13	2.18	0.43
9:A:138:U:H3'	9:A:139:U:C5'	2.47	0.43
9:A:225:C:H2'	9:A:226:A:O4'	2.18	0.43
9:A:528:A:C2	9:A:2043:C:C4'	2.91	0.43
9:A:704:G:O2'	9:A:726:G:C2	2.71	0.43
9:A:855:G:H1'	31:W:23:LYS:HZ3	1.81	0.43
9:A:883:G:H2'	9:A:884:U:O4'	2.18	0.43
9:A:1080:A:C3'	17:I:126:ARG:HG3	2.48	0.43
9:A:1319:C:O2'	9:A:1320:C:H5'	2.17	0.43
9:A:1471:G:O2'	9:A:1472:C:H5'	2.18	0.43
9:A:1494:A:H2'	9:A:1495:A:C8	2.53	0.43
9:A:1609:A:O2'	9:A:1610:A:C5'	2.66	0.43
9:A:1735:A:N3	9:A:1736:U:C6	2.86	0.43
9:A:1946:U:H2'	9:A:1947:C:C6	2.53	0.43
9:A:2142:A:H2'	9:A:2143:C:OP2	2.18	0.43
9:A:2570:G:C2'	9:A:2571:U:H5'	2.48	0.43
11:C:175:LEU:HA	11:C:175:LEU:HD12	1.72	0.43
12:D:32:ASN:O	12:D:95:SER:HA	2.17	0.43
12:D:117:GLY:O	12:D:118:PHE:CD1	2.71	0.43
13:E:24:ASN:C	13:E:24:ASN:ND2	2.70	0.43
13:E:133:LEU:O	13:E:136:GLN:HB2	2.17	0.43
15:G:59:ASP:O	15:G:60:GLY:O	2.36	0.43
15:G:90:GLY:O	15:G:91:VAL:C	2.59	0.43
17:I:92:PRO:HB2	17:I:93:ASN:H	1.65	0.43
18:J:24:THR:O	18:J:25:LEU:C	2.60	0.43
18:J:44:TYR:HB2	25:Q:63:ARG:HG2	2.00	0.43
20:L:101:ILE:HD12	20:L:101:ILE:HA	1.53	0.43
21:M:3:GLN:HB3	21:M:3:GLN:HE21	1.61	0.43
21:M:46:ILE:CD1	21:M:47:GLU:N	2.80	0.43
21:M:102:LEU:N	21:M:102:LEU:CD1	2.81	0.43
27:S:57:ASN:HD22	27:S:57:ASN:HA	1.61	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:W:9:THR:HG23	31:W:10:ARG:CG	2.48	0.43
32:X:50:VAL:HG12	32:X:51:SER:C	2.43	0.43
34:Z:20:LYS:O	34:Z:21:ALA:C	2.60	0.43
1:0:51:ARG:HE	1:0:51:ARG:HB2	1.61	0.43
5:4:16:ILE:CD1	5:4:25:VAL:HG22	2.48	0.43
9:A:2:G:O2'	9:A:3:U:H5'	2.18	0.43
9:A:153:U:C2'	9:A:154:U:C5'	2.95	0.43
9:A:286:U:H2'	9:A:287:G:H8	1.82	0.43
9:A:302:C:O2'	9:A:303:G:H5'	2.18	0.43
9:A:511:U:C5	9:A:512:G:C4	3.06	0.43
9:A:553:G:H2'	9:A:554:U:O4'	2.18	0.43
9:A:554:U:C4	9:A:555:G:C6	3.06	0.43
9:A:820:A:H2'	9:A:821:A:O4'	2.18	0.43
9:A:855:G:N2	31:W:23:LYS:CG	2.63	0.43
9:A:1045:C:H3'	9:A:1046:A:H5'	1.99	0.43
9:A:1070:A:C2	9:A:1097:U:H4'	2.53	0.43
9:A:1085:A:H3'	9:A:1086:A:C2	2.53	0.43
9:A:1266:G:N7	27:S:16:LYS:HE2	2.33	0.43
9:A:1269:A:H2'	9:A:1270:C:C6	2.54	0.43
9:A:1330:C:O2'	9:A:1331:G:H5'	2.18	0.43
9:A:1398:C:H2'	9:A:1399:C:H6	1.83	0.43
9:A:1662:U:H2'	9:A:1663:G:O4'	2.18	0.43
9:A:1753:G:OP1	24:P:92:ARG:HD3	2.18	0.43
9:A:1789:A:OP2	11:C:220:ARG:NH1	2.51	0.43
9:A:1997:C:H6	9:A:1997:C:C5'	2.30	0.43
9:A:1999:C:H4'	9:A:2723:C:O2	2.18	0.43
9:A:2013:A:C2	27:S:88:ARG:NH1	2.87	0.43
9:A:2149:U:O2'	9:A:2150:C:P	2.76	0.43
9:A:2256:G:O2'	9:A:2257:U:H5'	2.18	0.43
9:A:2343:U:H2'	9:A:2344:U:C6	2.54	0.43
9:A:2663:G:C4	9:A:2664:G:C8	3.06	0.43
9:A:2697:G:C5	9:A:2698:U:C5	3.06	0.43
9:A:2840:C:H2'	9:A:2841:C:C6	2.53	0.43
10:B:32:U:O2'	10:B:33:G:H5'	2.18	0.43
10:B:55:U:H2'	10:B:56:G:O4'	2.18	0.43
11:C:29:PHE:CZ	11:C:31:PRO:HG2	2.53	0.43
11:C:255:LYS:O	11:C:256:THR:CB	2.67	0.43
12:D:72:GLY:O	12:D:73:VAL:O	2.36	0.43
12:D:149:ASN:O	12:D:152:PRO:HD2	2.17	0.43
13:E:132:LYS:HB3	13:E:132:LYS:HZ2	1.83	0.43
14:F:103:ILE:H	14:F:103:ILE:HG12	1.56	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:G:66:THR:OG1	15:G:67:ALA:N	2.51	0.43
23:O:83:LEU:HD12	23:O:83:LEU:HA	1.56	0.43
25:Q:79:ILE:O	25:Q:80:ASN:C	2.60	0.43
26:R:60:LYS:N	26:R:100:GLY:HA3	2.24	0.43
28:T:39:THR:C	28:T:41:ALA:N	2.76	0.43
28:T:67:VAL:HG23	28:T:68:LYS:N	2.33	0.43
31:W:39:GLN:HE21	31:W:42:THR:CG2	2.31	0.43
31:W:41:GLY:HA2	31:W:44:PHE:CZ	2.53	0.43
32:X:38:TRP:HA	32:X:45:PHE:CD2	2.53	0.43
7:6:10:ASP:CA	8:7:76:A:O3'	2.67	0.43
9:A:146:A:H2'	9:A:147:C:C6	2.52	0.43
9:A:417:C:O5'	9:A:417:C:H6	2.01	0.43
9:A:460:A:C2	9:A:470:A:C4	3.06	0.43
9:A:615:U:H4'	9:A:616:A:OP2	2.18	0.43
9:A:637:A:H4'	9:A:638:G:O5'	2.18	0.43
9:A:668:A:H2'	9:A:670:A:N6	2.25	0.43
9:A:729:G:C2'	9:A:1775:U:H1'	2.48	0.43
9:A:1185:G:H5''	9:A:1186:G:P	2.58	0.43
9:A:1275:A:H4'	9:A:1276:A:O5'	2.17	0.43
9:A:1738:G:O2'	9:A:1739:A:P	2.76	0.43
9:A:1829:A:N3	11:C:14:HIS:HE1	2.16	0.43
9:A:1956:U:C2'	9:A:1957:C:H5'	2.48	0.43
9:A:2086:U:H2'	9:A:2087:G:H8	1.74	0.43
9:A:2299:U:O5'	9:A:2299:U:H6	2.01	0.43
9:A:2491:U:O5'	9:A:2491:U:C2'	2.66	0.43
9:A:2637:U:O2'	9:A:2638:G:H5'	2.17	0.43
10:B:69:G:C2'	10:B:70:C:H5'	2.48	0.43
11:C:229:HIS:HE1	11:C:231:HIS:ND1	2.16	0.43
15:G:17:LYS:HB2	15:G:17:LYS:HE3	1.67	0.43
15:G:140:ILE:O	15:G:141:GLY:C	2.60	0.43
16:H:4:ILE:HG12	16:H:18:GLN:HE22	1.82	0.43
17:I:49:GLU:HG2	17:I:50:LYS:H	1.83	0.43
18:J:53:TYR:CE1	18:J:121:LYS:HG2	2.53	0.43
21:M:103:TYR:N	21:M:103:TYR:CD1	2.86	0.43
22:N:72:ASP:OD1	22:N:75:ILE:HG23	2.19	0.43
23:O:17:LYS:O	23:O:17:LYS:HD3	2.18	0.43
23:O:105:ALA:C	23:O:107:ALA:N	2.76	0.43
26:R:68:ARG:HH11	26:R:90:ARG:HH11	1.65	0.43
30:V:35:GLU:HG3	30:V:93:ARG:HD3	2.00	0.43
34:Z:39:ASP:OD1	34:Z:44:ARG:NE	2.41	0.43
5:4:2:LYS:HB2	5:4:4:ARG:HD3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:64:A:N1	9:A:91:A:N6	2.67	0.43
9:A:302:C:H2'	9:A:303:G:H8	1.84	0.43
9:A:372:G:H5''	32:X:60:LYS:HE3	2.00	0.43
9:A:547:A:C8	9:A:548:G:N3	2.87	0.43
9:A:910:A:C6	9:A:911:A:C6	3.06	0.43
9:A:1324:G:C4	9:A:1328:A:N6	2.87	0.43
9:A:1588:G:C2	9:A:1589:U:C5	3.07	0.43
9:A:1819:A:H5''	11:C:159:THR:HG21	2.00	0.43
9:A:1820:U:H3	11:C:197:ALA:HA	1.82	0.43
9:A:1972:G:H2'	9:A:1973:G:H8	1.83	0.43
9:A:2599:G:H2'	9:A:2600:A:H5'	2.00	0.43
9:A:2870:C:C2'	9:A:2871:U:H5'	2.48	0.43
10:B:13:G:O2'	10:B:15:A:OP2	2.36	0.43
11:C:146:LYS:O	11:C:147:PRO:C	2.57	0.43
13:E:153:LEU:HB3	13:E:171:ASP:HB2	2.00	0.43
14:F:72:SER:N	14:F:80:GLN:HB2	2.32	0.43
14:F:131:VAL:HG11	14:F:151:LEU:HD11	2.00	0.43
14:F:166:ARG:O	14:F:167:ALA:C	2.61	0.43
17:I:49:GLU:C	17:I:50:LYS:HD3	2.44	0.43
17:I:100:ILE:HG22	17:I:101:SER:N	2.23	0.43
18:J:42:ALA:O	18:J:45:THR:HG22	2.18	0.43
20:L:51:GLU:OE2	20:L:60:ARG:NH1	2.51	0.43
25:Q:59:LEU:HD23	25:Q:59:LEU:HA	1.65	0.43
25:Q:61:ILE:HG23	25:Q:75:TYR:CE1	2.53	0.43
27:S:29:VAL:CG1	27:S:30:SER:N	2.74	0.43
29:U:4:ILE:O	29:U:4:ILE:HG22	2.15	0.43
31:W:49:ASN:HA	31:W:61:LYS:H	1.82	0.43
9:A:21:A:C2'	9:A:22:C:H5'	2.48	0.43
9:A:141:G:H2'	9:A:142:A:O4'	2.18	0.43
9:A:247:G:H4'	9:A:386:G:C6	2.54	0.43
9:A:381:G:OP1	32:X:17:ARG:NH2	2.44	0.43
9:A:553:G:N7	9:A:554:U:C5	2.87	0.43
9:A:659:G:H4'	13:E:95:LYS:CD	2.48	0.43
9:A:1007:C:H5''	18:J:37:ARG:NH2	2.33	0.43
9:A:1315:C:C2'	9:A:1316:U:H5'	2.48	0.43
9:A:1462:C:H2'	9:A:1463:C:C6	2.53	0.43
9:A:1506:U:H6	9:A:1506:U:H3'	1.83	0.43
9:A:1570:A:C6	9:A:1571:A:C6	3.06	0.43
9:A:1600:C:OP1	28:T:81:LYS:NZ	2.52	0.43
9:A:1689:A:O2'	9:A:1690:A:H5'	2.19	0.43
9:A:2013:A:N3	27:S:88:ARG:NH1	2.66	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2029:G:H2'	9:A:2031:A:OP1	2.18	0.43
9:A:2350:C:C2'	9:A:2351:G:H5'	2.48	0.43
9:A:2364:C:C2'	9:A:2365:G:H5'	2.48	0.43
9:A:2771:C:H2'	9:A:2772:C:C6	2.53	0.43
9:A:2816:G:H2'	9:A:2817:U:O5'	2.18	0.43
9:A:2832:U:O2'	9:A:2833:U:P	2.77	0.43
12:D:13:ARG:NE	12:D:15:PHE:CZ	2.86	0.43
12:D:71:ALA:O	12:D:73:VAL:N	2.52	0.43
12:D:73:VAL:CG2	12:D:74:GLU:H	2.29	0.43
12:D:99:GLU:O	12:D:100:LEU:C	2.62	0.43
13:E:5:LEU:HD21	13:E:120:VAL:HG22	2.00	0.43
14:F:46:LYS:N	14:F:46:LYS:CD	2.81	0.43
14:F:88:VAL:HG13	14:F:90:LEU:CD1	2.48	0.43
15:G:54:ARG:HG3	15:G:57:TYR:CD1	2.53	0.43
19:K:10:VAL:HG11	19:K:16:ALA:CB	2.48	0.43
20:L:40:SER:C	20:L:41:ARG:HG2	2.44	0.43
23:O:48:LEU:N	23:O:48:LEU:HD23	2.34	0.43
24:P:14:GLN:O	24:P:15:ASP:HB3	2.17	0.43
26:R:49:ILE:CB	26:R:53:PHE:N	2.81	0.43
27:S:50:VAL:O	27:S:51:LEU:C	2.59	0.43
28:T:7:LEU:C	28:T:9:LYS:N	2.75	0.43
30:V:65:VAL:O	30:V:66:ASP:OD1	2.37	0.43
31:W:16:GLU:OE2	31:W:16:GLU:HA	2.18	0.43
1:0:24:VAL:C	1:0:25:THR:CG2	2.92	0.43
2:1:46:VAL:CG1	2:1:47:ILE:N	2.81	0.43
4:3:30:HIS:ND1	4:3:30:HIS:C	2.76	0.43
4:3:30:HIS:ND1	4:3:31:ILE:CG2	2.82	0.43
9:A:164:C:H2'	9:A:165:A:O4'	2.19	0.43
9:A:183:C:O2	9:A:432:A:H2	2.02	0.43
9:A:797:G:H2'	9:A:798:G:O4'	2.18	0.43
9:A:828:U:O4	9:A:2247:A:H1'	2.19	0.43
9:A:1141:U:H5'	9:A:1142:A:O4'	2.19	0.43
9:A:1287:A:C5'	22:N:103:ARG:HD2	2.37	0.43
9:A:1498:C:C2'	9:A:1499:C:H6	2.30	0.43
9:A:1733:G:N3	9:A:1734:G:C8	2.86	0.43
9:A:1869:G:H8	9:A:1869:G:OP2	2.01	0.43
9:A:2205:A:C6	9:A:2206:C:C4	3.07	0.43
9:A:2222:C:H2'	9:A:2223:G:O5'	2.18	0.43
9:A:2230:G:O3'	32:X:29:LEU:HD23	2.19	0.43
9:A:2286:G:H5''	9:A:2287:A:O4'	2.19	0.43
9:A:2443:C:O2'	9:A:2444:G:H5'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2661:G:H2'	9:A:2662:A:O5'	2.19	0.43
9:A:2733:A:O5'	9:A:2733:A:H8	2.02	0.43
9:A:2830:C:O3'	12:D:56:LYS:NZ	2.52	0.43
11:C:83:ASP:HA	11:C:84:PRO:HD3	1.72	0.43
11:C:134:ILE:HA	11:C:135:PRO:HD2	1.79	0.43
12:D:139:SER:HA	12:D:142:VAL:CG1	2.49	0.43
12:D:150:GLN:HG3	12:D:151:THR:N	2.22	0.43
13:E:3:LEU:O	13:E:11:ALA:HA	2.18	0.43
13:E:124:PHE:C	13:E:124:PHE:HD1	2.24	0.43
15:G:84:LYS:HG2	15:G:85:LYS:N	2.34	0.43
15:G:116:LEU:HD21	15:G:122:ALA:HB3	2.00	0.43
17:I:3:LYS:HD2	17:I:4:VAL:H	1.82	0.43
18:J:54:ILE:HD11	18:J:56:VAL:CG2	2.48	0.43
20:L:93:ASN:ND2	20:L:93:ASN:C	2.65	0.43
25:Q:35:PHE:C	25:Q:37:ALA:H	2.25	0.43
25:Q:94:LEU:O	25:Q:96:ASP:N	2.51	0.43
28:T:37:ASP:O	28:T:38:ALA:O	2.36	0.43
33:Y:17:GLU:HG3	33:Y:18:LEU:H	1.78	0.43
34:Z:4:ILE:HG12	34:Z:37:ARG:O	2.18	0.43
34:Z:8:GLN:O	34:Z:10:ARG:N	2.52	0.43
1:O:27:LEU:HD23	1:O:27:LEU:N	2.26	0.43
3:2:16:HIS:CE1	9:A:464:U:O2'	2.72	0.43
4:3:13:PHE:CE1	20:L:61:LEU:HD23	2.54	0.43
9:A:141:G:H5'	9:A:142:A:C8	2.53	0.43
9:A:855:G:H21	31:W:23:LYS:HB3	1.83	0.43
9:A:1206:G:H2'	9:A:1207:C:H6	1.83	0.43
9:A:1858:A:C2'	9:A:1859:U:C6	3.02	0.43
9:A:1922:G:H2'	9:A:1923:U:O4'	2.19	0.43
9:A:2049:G:N2	9:A:2620:C:C2	2.87	0.43
9:A:2079:U:O2'	32:X:22:ASN:ND2	2.49	0.43
9:A:2151:U:O4	9:A:2152:G:O6	2.37	0.43
9:A:2187:U:C2	9:A:2188:U:C5	3.06	0.43
9:A:2531:A:OP1	15:G:174:LYS:CG	2.65	0.43
9:A:2672:U:H2'	9:A:2673:G:C5'	2.49	0.43
9:A:2704:C:O2	9:A:2704:C:C2'	2.66	0.43
10:B:88:C:H6	10:B:88:C:C5'	2.24	0.43
11:C:132:ARG:NH1	11:C:169:ALA:HA	2.29	0.43
13:E:5:LEU:CD2	13:E:121:VAL:HA	2.48	0.43
14:F:8:LYS:HA	14:F:12:VAL:CG1	2.49	0.43
14:F:51:ASN:O	14:F:52:ALA:C	2.61	0.43
16:H:42:LYS:O	16:H:46:PHE:HB2	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:I:59:THR:HG22	17:I:61:TYR:CE2	2.53	0.43
20:L:55:MET:CE	20:L:55:MET:HA	2.48	0.43
22:N:71:ARG:HH21	22:N:71:ARG:HG2	1.82	0.43
23:O:79:ALA:HB2	23:O:110:ALA:HA	2.00	0.43
25:Q:35:PHE:CE1	25:Q:39:ILE:CD1	3.02	0.43
26:R:36:ALA:HA	26:R:58:VAL:HG23	2.01	0.43
28:T:50:LEU:H	28:T:50:LEU:CD1	2.03	0.43
29:U:17:ASP:CB	29:U:20:LYS:HD2	2.46	0.43
29:U:27:VAL:CG2	29:U:28:LEU:N	2.82	0.43
9:A:259:G:C2'	9:A:260:G:H5'	2.49	0.43
9:A:273:G:O2'	9:A:274:C:H5'	2.19	0.43
9:A:310:A:O2'	9:A:311:A:O5'	2.36	0.43
9:A:319:G:C8	9:A:333:G:N2	2.87	0.43
9:A:384:A:C2'	9:A:385:C:H5'	2.44	0.43
9:A:528:A:N1	9:A:2042:A:H2'	2.34	0.43
9:A:640:C:C2'	9:A:641:U:O5'	2.67	0.43
9:A:655:A:H4'	9:A:656:G:OP1	2.17	0.43
9:A:1054:A:H3'	9:A:1055:G:H8	1.83	0.43
9:A:1062:G:N1	9:A:1077:A:C6	2.87	0.43
9:A:1074:G:O2'	9:A:1075:C:H5'	2.19	0.43
9:A:1132:U:H5'	18:J:84:ILE:CD1	2.48	0.43
9:A:1201:U:H2'	9:A:1202:G:O4'	2.18	0.43
9:A:1246:A:H2'	9:A:1247:A:O5'	2.18	0.43
9:A:1252:G:N1	25:Q:36:GLN:OE1	2.38	0.43
9:A:1265:A:O4'	9:A:1267:U:C6	2.72	0.43
9:A:1496:A:H2'	9:A:1498:C:N4	2.33	0.43
9:A:1586:A:C8	9:A:1587:G:C8	3.07	0.43
9:A:1753:G:H5''	24:P:92:ARG:HE	1.84	0.43
9:A:2087:G:H2'	9:A:2088:A:H8	1.84	0.43
9:A:2103:C:C2'	9:A:2104:C:C5'	2.96	0.43
9:A:2109:U:O4	9:A:2110:G:C4	2.71	0.43
9:A:2136:G:N3	9:A:2137:U:C4	2.87	0.43
9:A:2330:G:H8	9:A:2330:G:OP2	2.02	0.43
9:A:2437:G:O2'	9:A:2438:U:H5'	2.18	0.43
9:A:2601:C:C2'	9:A:2602:A:OP2	2.66	0.43
9:A:2627:G:H2'	9:A:2628:C:C6	2.54	0.43
10:B:71:C:H2'	10:B:72:G:C5'	2.49	0.43
15:G:54:ARG:O	15:G:57:TYR:HB2	2.19	0.43
15:G:93:TYR:O	15:G:105:SER:O	2.37	0.43
17:I:53:PRO:HB2	17:I:74:PRO:CG	2.49	0.43
17:I:79:LEU:HD21	17:I:132:ALA:HB1	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:80:HIS:O	18:J:81:ILE:C	2.61	0.43
18:J:140:LEU:HD13	18:J:141:ASP:N	2.33	0.43
24:P:25:VAL:HG11	24:P:46:VAL:CG2	2.48	0.43
26:R:49:ILE:O	26:R:50:GLY:C	2.61	0.43
31:W:22:VAL:CG2	31:W:23:LYS:N	2.82	0.43
32:X:30:PRO:CB	32:X:32:LEU:CD1	2.58	0.43
32:X:44:ARG:HH21	32:X:46:VAL:CG1	2.32	0.43
32:X:51:SER:O	32:X:54:GLY:N	2.52	0.43
33:Y:30:MET:O	33:Y:34:SER:HB3	2.18	0.43
3:2:43:THR:O	3:2:44:VAL:HG22	2.19	0.43
9:A:216:A:C4	9:A:217:A:C8	3.07	0.43
9:A:588:U:H1'	13:E:85:PHE:CG	2.54	0.43
9:A:613:A:O2'	9:A:614:A:OP1	2.33	0.43
9:A:640:C:H2'	9:A:641:U:C6	2.54	0.43
9:A:695:G:C2	9:A:696:G:C8	3.07	0.43
9:A:749:A:H4'	9:A:1271:G:N3	2.34	0.43
9:A:877:A:N6	9:A:899:A:N6	2.67	0.43
9:A:1114:C:O2	9:A:1114:C:H2'	2.18	0.43
9:A:1486:U:H2'	9:A:1487:U:C6	2.54	0.43
9:A:1680:U:C2'	9:A:1681:G:H5'	2.49	0.43
9:A:1691:C:H2'	9:A:1692:U:O5'	2.19	0.43
9:A:1992:G:N2	9:A:1996:C:O2'	2.46	0.43
9:A:2093:G:O2'	9:A:2094:A:C5'	2.61	0.43
9:A:2684:U:H2'	9:A:2685:G:O5'	2.18	0.43
10:B:44:G:O2'	10:B:45:A:OP2	2.32	0.43
10:B:57:A:O2'	10:B:58:A:H5'	2.19	0.43
11:C:12:ARG:HD2	11:C:12:ARG:HA	1.82	0.43
11:C:76:VAL:O	11:C:76:VAL:HG22	2.14	0.43
11:C:245:THR:C	11:C:247:TRP:H	2.26	0.43
12:D:15:PHE:H	24:P:11:GLN:HE22	1.66	0.43
12:D:53:GLY:O	12:D:54:ALA:HB2	2.18	0.43
14:F:56:LEU:HD22	14:F:56:LEU:HA	1.83	0.43
18:J:49:ASP:OD2	18:J:49:ASP:O	2.37	0.43
19:K:105:ARG:C	19:K:107:LEU:N	2.76	0.43
20:L:49:GLY:O	20:L:50:PHE:C	2.59	0.43
21:M:70:ASP:C	21:M:70:ASP:OD1	2.62	0.43
24:P:59:THR:HG23	24:P:72:VAL:CG1	2.49	0.43
27:S:14:ALA:O	27:S:15:GLN:C	2.62	0.43
31:W:9:THR:CG2	31:W:10:ARG:N	2.70	0.43
33:Y:24:GLU:O	33:Y:25:GLN:C	2.61	0.43
9:A:10:A:C5	9:A:2800:A:C6	3.06	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:54:G:C5	9:A:55:G:C8	3.07	0.43
9:A:262:A:H5'	9:A:610:C:O2'	2.19	0.43
9:A:571:U:C5	9:A:575:A:C5	3.07	0.43
9:A:640:C:H2'	9:A:641:U:O5'	2.19	0.43
9:A:669:G:C5	9:A:801:G:C6	3.06	0.43
9:A:708:G:N2	9:A:724:U:H1'	2.33	0.43
9:A:753:A:H2'	9:A:754:U:C6	2.54	0.43
9:A:860:U:C2'	9:A:861:A:O5'	2.67	0.43
9:A:998:C:H2'	9:A:999:U:O5'	2.19	0.43
9:A:1050:A:C2	9:A:2751:G:C4	3.06	0.43
9:A:1430:G:H2'	9:A:1431:A:H5'	1.99	0.43
9:A:1615:C:C5	9:A:1617:C:C4	3.07	0.43
9:A:1692:U:H2'	9:A:1694:C:C4	2.53	0.43
9:A:1737:G:H5''	9:A:1738:G:OP2	2.19	0.43
9:A:1821:A:O5'	9:A:1821:A:H8	2.01	0.43
9:A:1824:G:C6	9:A:1825:U:C4	3.07	0.43
9:A:2275:C:O2'	21:M:84:LYS:HA	2.19	0.43
9:A:2364:C:O2'	9:A:2365:G:H5'	2.19	0.43
9:A:2366:A:C2	9:A:2367:G:H1'	2.54	0.43
9:A:2536:G:C6	9:A:2537:U:C4	3.07	0.43
9:A:2888:C:O2	9:A:2888:C:C2'	2.67	0.43
12:D:69:ALA:N	12:D:73:VAL:CG1	2.81	0.43
12:D:85:ALA:O	12:D:86:GLU:HG2	2.19	0.43
12:D:135:GLY:O	12:D:136:ASN:C	2.61	0.43
12:D:150:GLN:O	12:D:151:THR:C	2.62	0.43
13:E:170:ARG:NH1	13:E:176:ASP:OD2	2.52	0.43
14:F:16:MET:O	14:F:20:ASN:CA	2.65	0.43
16:H:9:VAL:HG12	16:H:13:GLY:H	1.82	0.43
17:I:56:VAL:CG2	17:I:68:PHE:HB2	2.49	0.43
21:M:21:ALA:HA	21:M:97:GLN:HG2	2.00	0.43
26:R:47:VAL:HG12	26:R:54:VAL:HG11	2.01	0.43
27:S:50:VAL:HG12	27:S:105:VAL:HB	2.01	0.43
31:W:39:GLN:HE21	31:W:42:THR:HB	1.84	0.43
33:Y:18:LEU:HD22	33:Y:18:LEU:HA	1.84	0.43
33:Y:20:ASN:HB3	33:Y:50:VAL:HG23	2.01	0.43
2:1:16:THR:CB	2:1:41:VAL:HG21	2.49	0.42
5:4:9:LYS:O	5:4:9:LYS:HE2	2.19	0.42
9:A:209:C:C2'	9:A:210:C:H5'	2.49	0.42
9:A:356:G:O2'	9:A:357:C:H5'	2.19	0.42
9:A:544:C:N4	9:A:548:G:OP1	2.50	0.42
9:A:608:A:C6	9:A:609:A:C6	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:763:G:O2'	9:A:764:A:H3'	2.18	0.42
9:A:1074:G:C2'	9:A:1075:C:H6	2.32	0.42
9:A:1082:U:C4	9:A:1083:U:N3	2.87	0.42
9:A:1101:U:C4	9:A:1102:C:C5	3.07	0.42
9:A:1190:G:OP1	20:L:32:GLY:HA2	2.18	0.42
9:A:1520:U:C2'	9:A:1521:G:O5'	2.67	0.42
9:A:1654:A:H4'	12:D:118:PHE:HZ	1.80	0.42
9:A:1802:A:N1	9:A:1822:C:H1'	2.34	0.42
9:A:1848:A:O2'	9:A:1849:G:C5'	2.67	0.42
9:A:2087:G:H2'	9:A:2088:A:C8	2.54	0.42
9:A:2459:A:C8	9:A:2459:A:O5'	2.72	0.42
9:A:2495:G:H2'	9:A:2496:C:H5'	2.00	0.42
9:A:2548:U:C2'	9:A:2549:G:O5'	2.66	0.42
9:A:2822:G:P	12:D:115:GLY:HA3	2.59	0.42
10:B:40:U:HO2'	10:B:43:C:H5	1.58	0.42
10:B:116:G:H4'	23:O:54:VAL:O	2.18	0.42
12:D:13:ARG:HD2	24:P:55:HIS:CE1	2.54	0.42
12:D:16:THR:OG1	12:D:18:ASP:OD1	2.32	0.42
12:D:89:GLU:HG3	12:D:94:GLN:OE1	2.18	0.42
13:E:147:LEU:HA	13:E:147:LEU:HD22	1.53	0.42
15:G:1:SER:CA	15:G:5:LYS:HG3	2.46	0.42
17:I:19:PRO:HB2	17:I:22:PRO:HD2	2.01	0.42
18:J:37:ARG:O	18:J:37:ARG:HG2	2.19	0.42
18:J:114:LEU:CD2	18:J:114:LEU:C	2.92	0.42
20:L:77:ILE:O	20:L:110:VAL:O	2.37	0.42
21:M:80:VAL:HG22	21:M:81:ARG:O	2.19	0.42
22:N:16:HIS:O	22:N:16:HIS:CD2	2.71	0.42
22:N:38:LEU:HB3	22:N:39:PRO:CD	2.46	0.42
22:N:72:ASP:OD2	22:N:72:ASP:C	2.61	0.42
31:W:50:VAL:CG1	31:W:51:GLY:N	2.69	0.42
33:Y:36:GLN:O	33:Y:37:LEU:HB3	2.19	0.42
3:2:3:ARG:HH21	3:2:3:ARG:CG	2.12	0.42
4:3:7:ARG:HA	4:3:7:ARG:HD2	1.66	0.42
9:A:157:C:C3'	9:A:157:C:C6	3.02	0.42
9:A:418:C:H2'	9:A:419:U:O4'	2.18	0.42
9:A:571:U:C4	9:A:2030:A:C6	3.07	0.42
9:A:747:U:H2'	9:A:2613:U:O4	2.18	0.42
9:A:768:G:C5	9:A:769:U:C5	3.06	0.42
9:A:914:G:H8	9:A:914:G:C5'	2.30	0.42
9:A:917:A:C2'	9:A:918:A:H5'	2.49	0.42
9:A:1075:C:H2'	9:A:1076:C:C6	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1281:G:H2'	9:A:1282:U:C6	2.54	0.42
9:A:1341:G:C4	28:T:84:TYR:CD1	3.06	0.42
9:A:1410:G:C2	9:A:1593:A:N3	2.88	0.42
9:A:1889:A:H2'	9:A:1890:A:O4'	2.18	0.42
9:A:1996:C:OP1	19:K:31:ARG:NH2	2.51	0.42
9:A:2019:A:H4'	25:Q:33:VAL:CG2	2.48	0.42
9:A:2414:G:N2	20:L:66:PHE:CE2	2.86	0.42
9:A:2816:G:H1'	9:A:2883:A:HO2'	1.85	0.42
9:A:2874:C:H2'	9:A:2875:C:C6	2.54	0.42
9:A:2890:G:O5'	9:A:2890:G:H8	2.02	0.42
10:B:91:C:OP2	21:M:18:ARG:HG2	2.20	0.42
11:C:73:ILE:H	11:C:73:ILE:HG12	1.68	0.42
11:C:131:MET:CA	11:C:134:ILE:HD12	2.39	0.42
13:E:160:ALA:C	13:E:162:ARG:H	2.27	0.42
13:E:169:VAL:O	13:E:169:VAL:CG2	2.62	0.42
14:F:35:LEU:CD2	14:F:153:ILE:CG2	2.97	0.42
15:G:38:ASP:CG	15:G:39:ALA:H	2.27	0.42
15:G:155:PRO:O	15:G:171:LYS:N	2.52	0.42
18:J:54:ILE:HD12	18:J:55:ILE:C	2.45	0.42
18:J:101:ILE:O	18:J:105:VAL:HG13	2.19	0.42
20:L:132:ARG:O	20:L:133:ALA:C	2.61	0.42
24:P:99:LEU:HD12	24:P:99:LEU:HA	1.55	0.42
29:U:86:PHE:CE1	29:U:101:THR:HG21	2.54	0.42
32:X:1:SER:O	32:X:3:VAL:N	2.52	0.42
33:Y:57:LEU:CA	33:Y:60:LYS:CB	2.91	0.42
9:A:60:G:O2'	9:A:61:C:P	2.78	0.42
9:A:90:U:C4	9:A:91:A:C5	3.07	0.42
9:A:197:A:H62	9:A:2430:A:C2'	2.30	0.42
9:A:229:C:H2'	9:A:230:G:O4'	2.19	0.42
9:A:398:C:C3'	9:A:398:C:C6	3.02	0.42
9:A:587:C:C6	9:A:671:C:H1'	2.54	0.42
9:A:638:G:H2'	9:A:639:U:H6	1.84	0.42
9:A:729:G:C4	9:A:1775:U:C2	3.07	0.42
9:A:792:A:H3'	9:A:793:A:H5'	2.02	0.42
9:A:912:C:H2'	9:A:913:U:H6	1.83	0.42
9:A:947:A:H2'	9:A:948:C:C6	2.55	0.42
9:A:1007:C:H5''	18:J:37:ARG:HH21	1.83	0.42
9:A:1059:G:C5	9:A:1060:U:C4	3.07	0.42
9:A:1115:G:O2'	9:A:1116:G:H5''	2.19	0.42
9:A:1317:G:C2	9:A:1336:A:C2	3.08	0.42
9:A:1411:U:H2'	9:A:1412:U:O4'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1654:A:O3'	12:D:118:PHE:CE2	2.72	0.42
9:A:1759:A:H8	9:A:2696:U:H1'	1.84	0.42
9:A:1795:C:C2	9:A:1796:U:C6	3.07	0.42
9:A:1844:C:C6	9:A:1844:C:H3'	2.54	0.42
9:A:1848:A:H2'	9:A:1849:G:H8	1.84	0.42
9:A:1849:G:H2'	9:A:1850:G:C8	2.53	0.42
9:A:2470:G:HO2'	9:A:2471:A:H5'	1.82	0.42
9:A:2471:A:C2'	9:A:2472:G:H5'	2.48	0.42
9:A:2571:U:HO2'	12:D:151:THR:CG2	2.29	0.42
9:A:2795:C:O2'	9:A:2796:U:H5'	2.19	0.42
9:A:2821:A:H2'	9:A:2822:G:H8	1.84	0.42
10:B:71:C:C2'	10:B:72:G:H5'	2.50	0.42
11:C:7:PRO:HB3	11:C:13:ARG:HB2	2.01	0.42
11:C:252:LYS:CA	11:C:252:LYS:HZ2	2.33	0.42
11:C:257:ARG:HG3	11:C:269:ARG:HH12	1.83	0.42
12:D:9:VAL:HG22	12:D:26:VAL:HG12	2.01	0.42
12:D:16:THR:OG1	12:D:18:ASP:CG	2.62	0.42
12:D:118:PHE:CD2	12:D:119:ALA:N	2.80	0.42
12:D:177:VAL:O	12:D:177:VAL:CG2	2.65	0.42
14:F:43:ILE:CG2	14:F:82:TYR:HE1	2.27	0.42
14:F:59:ILE:HD13	14:F:137:PHE:CE2	2.54	0.42
14:F:173:ASP:O	14:F:174:PHE:O	2.36	0.42
16:H:33:GLN:HB2	16:H:33:GLN:HE21	1.69	0.42
18:J:20:ALA:O	18:J:21:THR:O	2.37	0.42
19:K:23:LYS:HE3	19:K:23:LYS:HB2	1.96	0.42
20:L:70:LYS:O	20:L:71:ALA:C	2.62	0.42
20:L:112:LEU:HD12	20:L:130:GLY:CA	2.36	0.42
21:M:21:ALA:HB3	21:M:99:GLY:C	2.45	0.42
23:O:85:LYS:HB2	23:O:87:ILE:HD11	2.02	0.42
25:Q:65:ASN:CG	25:Q:75:TYR:HB2	2.44	0.42
28:T:54:GLU:CB	28:T:88:LYS:HB2	2.49	0.42
30:V:65:VAL:O	30:V:65:VAL:HG22	2.19	0.42
33:Y:2:LYS:HE3	33:Y:52:ARG:CZ	2.49	0.42
1:O:21:LEU:HD12	27:S:19:LEU:O	2.18	0.42
9:A:20:C:O2'	9:A:21:A:H5'	2.18	0.42
9:A:31:C:O2'	9:A:1238:G:H5'	2.19	0.42
9:A:141:G:H5''	9:A:142:A:C8	2.55	0.42
9:A:153:U:C2'	9:A:154:U:O5'	2.67	0.42
9:A:182:A:H2'	9:A:183:C:C6	2.55	0.42
9:A:227:A:C6	9:A:2407:A:C8	3.08	0.42
9:A:283:G:C5	9:A:284:U:C5	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:301:G:O2'	9:A:302:C:O5'	2.36	0.42
9:A:532:A:C8	9:A:2021:C:C6	3.07	0.42
9:A:625:G:H2'	9:A:626:A:O5'	2.20	0.42
9:A:783:A:H8	9:A:783:A:H2'	1.41	0.42
9:A:869:G:C4'	21:M:8:LYS:HD3	2.49	0.42
9:A:916:G:H8	9:A:916:G:O5'	2.02	0.42
9:A:923:G:N3	31:W:23:LYS:CE	2.67	0.42
9:A:1060:U:C1'	9:A:1062:G:H5'	2.49	0.42
9:A:1384:A:H1'	9:A:1405:U:O4'	2.20	0.42
9:A:1507:C:C5	9:A:1508:A:H2	2.38	0.42
9:A:1799:G:C2	11:C:153:LEU:CD2	3.02	0.42
9:A:1952:A:C6	9:A:1953:A:N1	2.87	0.42
9:A:2079:U:C2	9:A:2080:A:C8	3.07	0.42
9:A:2415:G:C4	9:A:2416:C:C5	3.08	0.42
9:A:2591:C:P	11:C:237:ARG:HG3	2.59	0.42
9:A:2620:C:H2'	9:A:2621:G:O4'	2.19	0.42
9:A:2796:U:H3	9:A:2799:A:N6	2.17	0.42
9:A:2847:U:H2'	9:A:2848:G:C5'	2.47	0.42
10:B:17:C:H2'	10:B:18:G:C5'	2.48	0.42
10:B:89:U:H3'	10:B:90:C:C5'	2.49	0.42
11:C:28:PRO:HB2	11:C:29:PHE:H	1.56	0.42
13:E:111:GLU:HG2	13:E:114:ARG:NH1	2.35	0.42
13:E:177:PRO:O	13:E:180:LEU:HB2	2.19	0.42
19:K:2:ILE:HG21	19:K:39:ILE:HD12	2.00	0.42
21:M:15:GLY:O	21:M:16:ARG:HD3	2.19	0.42
21:M:78:LEU:HD23	21:M:79:ALA:CA	2.49	0.42
22:N:31:HIS:O	22:N:33:ILE:N	2.49	0.42
23:O:106:LEU:C	23:O:106:LEU:CD1	2.81	0.42
25:Q:89:ILE:O	25:Q:90:ASP:CB	2.63	0.42
25:Q:111:LYS:NZ	26:R:50:GLY:HA2	2.35	0.42
28:T:33:LYS:HG3	28:T:80:TRP:HE3	1.79	0.42
31:W:43:LYS:HG2	31:W:43:LYS:HZ2	1.38	0.42
32:X:29:LEU:CD2	32:X:29:LEU:H	2.30	0.42
34:Z:30:ARG:O	34:Z:31:ILE:C	2.61	0.42
9:A:65:U:N3	9:A:66:C:C5	2.87	0.42
9:A:94:A:H2'	9:A:95:A:O4'	2.20	0.42
9:A:191:A:H2'	9:A:192:C:C6	2.54	0.42
9:A:295:G:C2	9:A:296:U:C6	3.07	0.42
9:A:350:G:O2'	9:A:351:C:H5'	2.18	0.42
9:A:470:A:H61	28:T:72:GLN:HE22	1.68	0.42
9:A:973:A:OP2	26:R:81:LYS:NZ	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1074:G:C2	9:A:1075:C:C5	3.07	0.42
9:A:1178:C:O2	9:A:1178:C:C2'	2.65	0.42
9:A:1327:A:C8	9:A:1327:A:H3'	2.55	0.42
9:A:1413:A:H2'	9:A:1414:C:O4'	2.20	0.42
9:A:1820:U:N3	11:C:197:ALA:HA	2.35	0.42
9:A:1839:G:H2'	9:A:1840:G:H8	1.84	0.42
9:A:2231:U:OP1	32:X:29:LEU:HD23	2.18	0.42
9:A:2318:G:C5	9:A:2319:G:C6	3.08	0.42
9:A:2720:U:C4	9:A:2872:A:N1	2.88	0.42
9:A:2800:A:H3'	9:A:2801:G:H5'	2.01	0.42
10:B:45:A:C4	10:B:46:A:C8	3.07	0.42
11:C:202:ARG:HG3	11:C:202:ARG:H	1.66	0.42
12:D:11:MET:HE2	12:D:11:MET:HB2	1.90	0.42
12:D:124:ARG:HG2	12:D:125:TRP:CD1	2.54	0.42
12:D:178:VAL:O	12:D:178:VAL:CG1	2.68	0.42
13:E:48:THR:N	13:E:51:GLU:HG3	2.34	0.42
13:E:134:LEU:O	13:E:135:ALA:C	2.62	0.42
14:F:40:GLY:H	14:F:84:ILE:CD1	2.31	0.42
14:F:52:ALA:CB	14:F:149:ARG:HD3	2.49	0.42
15:G:10:VAL:HB	15:G:14:VAL:CG2	2.50	0.42
16:H:41:LYS:C	16:H:43:ASN:H	2.27	0.42
18:J:7:LYS:HA	18:J:8:PRO:HD3	1.86	0.42
21:M:96:ILE:HD11	21:M:126:ILE:CD1	2.49	0.42
21:M:111:GLU:O	21:M:112:LEU:C	2.62	0.42
24:P:15:ASP:O	24:P:16:VAL:C	2.61	0.42
24:P:86:LYS:HD3	24:P:86:LYS:HA	1.72	0.42
29:U:73:ASN:ND2	29:U:75:ALA:HB3	2.34	0.42
31:W:28:GLU:CD	31:W:29:SER:N	2.75	0.42
1:O:15:ARG:HH12	9:A:1264:A:P	2.42	0.42
2:1:6:GLU:O	2:1:23:THR:HA	2.19	0.42
2:1:39:ASP:OD1	2:1:39:ASP:C	2.63	0.42
4:3:4:LYS:HG2	9:A:242:G:C8	2.55	0.42
4:3:12:ARG:HG3	20:L:63:LYS:HA	2.02	0.42
9:A:271:G:C4	9:A:272:A:N7	2.88	0.42
9:A:736:C:N3	9:A:737:C:C5	2.88	0.42
9:A:851:C:H2'	9:A:852:U:O5'	2.19	0.42
9:A:966:G:C5	9:A:967:U:C4	3.08	0.42
9:A:976:G:C2	9:A:977:G:C8	3.08	0.42
9:A:1084:A:C6	9:A:1085:A:N6	2.87	0.42
9:A:1178:C:H2'	9:A:1179:G:C8	2.53	0.42
9:A:1242:U:H2'	9:A:1243:C:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1324:G:H1'	9:A:1616:A:N6	2.35	0.42
9:A:1652:A:OP1	22:N:8:ARG:NH2	2.53	0.42
9:A:1681:G:O2'	9:A:1762:A:C1'	2.67	0.42
9:A:1711:A:H2'	9:A:1712:U:C6	2.55	0.42
9:A:1868:C:H2'	9:A:1869:G:O4'	2.19	0.42
9:A:1878:G:C6	9:A:1879:C:N3	2.88	0.42
9:A:1885:A:O2'	9:A:1886:U:C5'	2.68	0.42
9:A:2007:U:H2'	9:A:2008:C:C6	2.54	0.42
9:A:2144:G:H3'	9:A:2144:G:N3	2.34	0.42
9:A:2284:A:C2'	9:A:2285:C:H5'	2.50	0.42
9:A:2454:G:C5	9:A:2455:G:C8	3.07	0.42
9:A:2505:G:O2'	9:A:2506:U:C6	2.70	0.42
9:A:2607:G:H2'	9:A:2608:G:O4'	2.19	0.42
9:A:2716:C:O2'	9:A:2717:C:H5'	2.20	0.42
9:A:2794:C:C2	9:A:2795:C:C5	3.07	0.42
11:C:20:ASN:CG	11:C:23:LEU:HD23	2.44	0.42
13:E:76:PRO:HA	13:E:82:GLY:HA3	2.01	0.42
14:F:42:ALA:C	14:F:44:ALA:H	2.27	0.42
14:F:107:VAL:N	14:F:108:PRO:HD2	2.34	0.42
15:G:66:THR:O	15:G:69:ALA:N	2.53	0.42
15:G:124:CYS:HA	15:G:129:GLU:O	2.20	0.42
19:K:20:MET:O	19:K:41:ILE:HD12	2.20	0.42
19:K:43:ILE:HD12	19:K:52:VAL:HG23	2.01	0.42
19:K:80:ASP:OD2	24:P:61:ARG:NH1	2.53	0.42
20:L:28:GLY:O	20:L:29:LYS:O	2.37	0.42
20:L:55:MET:HA	20:L:56:PRO:HD3	1.63	0.42
20:L:92:LEU:HA	20:L:125:LEU:CD2	2.48	0.42
22:N:55:ALA:HA	22:N:80:PHE:CE1	2.55	0.42
25:Q:56:PHE:O	25:Q:57:ARG:C	2.62	0.42
25:Q:114:ALA:C	25:Q:116:LEU:H	2.28	0.42
29:U:64:ILE:O	29:U:64:ILE:HG23	2.19	0.42
29:U:86:PHE:HB2	29:U:92:VAL:HB	2.02	0.42
1:O:2:VAL:CG2	9:A:2015:A:C4	3.03	0.42
3:2:18:PHE:CE1	3:2:22:MET:HG2	2.55	0.42
9:A:508:A:C4'	9:A:509:C:OP2	2.45	0.42
9:A:568:U:P	20:L:36:LYS:HE3	2.60	0.42
9:A:1026:G:H2'	9:A:1027:A:C8	2.53	0.42
9:A:1097:U:O2	17:I:8:VAL:HG12	2.19	0.42
9:A:1170:C:N4	9:A:1180:U:C2	2.87	0.42
9:A:1225:G:C6	9:A:1226:A:N6	2.88	0.42
9:A:1431:A:C2'	9:A:1432:G:O5'	2.67	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1460:U:H3'	9:A:1461:C:H5'	2.02	0.42
9:A:1488:C:H2'	9:A:1489:C:C6	2.54	0.42
9:A:1744:A:N3	9:A:1744:A:H2'	2.34	0.42
9:A:1974:C:C2'	9:A:1975:G:O5'	2.67	0.42
9:A:2085:U:C2'	9:A:2086:U:H5'	2.50	0.42
11:C:30:ALA:CB	11:C:31:PRO:CD	2.94	0.42
11:C:116:GLN:O	11:C:127:ASN:HB3	2.19	0.42
14:F:42:ALA:C	14:F:44:ALA:N	2.77	0.42
15:G:159:LYS:HB3	15:G:159:LYS:HE2	1.86	0.42
18:J:72:LYS:HB3	18:J:89:PHE:HB2	2.02	0.42
19:K:35:VAL:CG1	19:K:36:GLY:H	2.31	0.42
21:M:100:LYS:HD3	21:M:100:LYS:HA	1.76	0.42
24:P:48:ALA:O	24:P:49:ILE:HG12	2.19	0.42
25:Q:91:ARG:NH1	26:R:10:LYS:HB3	2.35	0.42
29:U:53:GLN:N	29:U:54:PRO:HD2	2.35	0.42
4:3:31:ILE:O	4:3:31:ILE:CG1	2.67	0.42
9:A:287:G:C2	9:A:354:A:C2	3.08	0.42
9:A:350:G:C2'	9:A:351:C:H5'	2.50	0.42
9:A:396:G:H1'	32:X:28:PHE:HB3	2.02	0.42
9:A:439:A:C8	9:A:439:A:H3'	2.55	0.42
9:A:447:A:C2	9:A:454:A:H2'	2.55	0.42
9:A:529:A:C4'	9:A:530:G:OP1	2.61	0.42
9:A:543:G:C2	9:A:544:C:H1'	2.55	0.42
9:A:616:A:H4'	13:E:101:TYR:CZ	2.54	0.42
9:A:1229:C:C2	9:A:1230:A:C8	3.07	0.42
9:A:1402:U:C6	9:A:1402:U:H3'	2.55	0.42
9:A:1506:U:H3'	9:A:1506:U:C6	2.55	0.42
9:A:1722:A:H62	9:A:1738:G:H1'	1.84	0.42
9:A:1872:A:HO2'	9:A:1873:G:C4'	2.32	0.42
9:A:1999:C:O2	9:A:2687:U:O2'	2.37	0.42
9:A:2555:U:C6	9:A:2556:C:C6	3.08	0.42
9:A:2569:G:C2	9:A:2570:G:C8	3.08	0.42
9:A:2665:A:C2	9:A:2666:C:C2	3.07	0.42
9:A:2698:U:H2'	9:A:2699:C:C6	2.55	0.42
9:A:2701:U:H2'	9:A:2702:G:OP1	2.20	0.42
10:B:66:A:N6	10:B:107:G:H2'	2.28	0.42
11:C:236:GLY:O	11:C:237:ARG:HB2	2.20	0.42
12:D:12:THR:HG23	12:D:13:ARG:H	1.79	0.42
13:E:176:ASP:CG	13:E:179:SER:HG	2.27	0.42
14:F:134:GLN:HE21	14:F:134:GLN:CA	2.32	0.42
14:F:135:ILE:C	14:F:137:PHE:H	2.28	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:97:PRO:O	18:J:99:ARG:N	2.52	0.42
18:J:142:ILE:OXT	18:J:142:ILE:HG22	2.18	0.42
20:L:87:GLY:O	20:L:88:GLY:C	2.63	0.42
21:M:6:ARG:HD2	21:M:8:LYS:NZ	2.34	0.42
21:M:50:ARG:O	21:M:51:ARG:C	2.62	0.42
22:N:18:GLN:NE2	22:N:22:ARG:HH12	2.17	0.42
22:N:76:VAL:O	22:N:79:LEU:O	2.38	0.42
24:P:37:LYS:H	24:P:37:LYS:HD3	1.85	0.42
24:P:50:ARG:HG2	24:P:56:SER:HA	2.01	0.42
24:P:57:ALA:HA	24:P:75:THR:CG2	2.50	0.42
25:Q:27:ARG:HG3	25:Q:27:ARG:NH1	2.31	0.42
25:Q:77:LYS:HE2	25:Q:116:LEU:HD23	2.02	0.42
28:T:5:GLU:OE1	33:Y:22:LEU:HD22	2.20	0.42
28:T:51:PHE:C	28:T:52:GLU:CG	2.92	0.42
31:W:23:LYS:CD	31:W:24:ARG:HG3	2.45	0.42
32:X:29:LEU:N	32:X:29:LEU:HD22	2.35	0.42
4:3:15:LYS:HE2	4:3:19:GLY:HA2	2.01	0.42
4:3:30:HIS:O	4:3:31:ILE:C	2.63	0.42
4:3:43:LEU:C	4:3:45:PRO:HD2	2.45	0.42
9:A:157:C:C2'	9:A:158:U:O5'	2.68	0.42
9:A:221:A:C8	9:A:266:G:O6	2.73	0.42
9:A:289:G:C5	9:A:290:U:C4	3.08	0.42
9:A:319:G:N9	9:A:333:G:N2	2.68	0.42
9:A:438:G:H2'	9:A:439:A:H5'	1.99	0.42
9:A:569:U:H1'	9:A:947:A:O4'	2.20	0.42
9:A:1056:G:O2'	9:A:1086:A:C8	2.70	0.42
9:A:1056:G:O2'	9:A:1086:A:H8	2.03	0.42
9:A:1083:U:H6	9:A:1083:U:H3'	1.85	0.42
9:A:1374:G:O2'	9:A:1375:U:H5'	2.19	0.42
9:A:1585:C:H6	9:A:1585:C:O5'	2.03	0.42
9:A:1857:G:C1'	9:A:1884:G:N2	2.80	0.42
9:A:2109:U:C2'	9:A:2110:G:H5'	2.49	0.42
9:A:2262:U:H5'	9:A:2387:U:O2	2.20	0.42
9:A:2531:A:H5'	15:G:156:TYR:CZ	2.54	0.42
9:A:2641:G:OP1	18:J:76:HIS:CE1	2.69	0.42
9:A:2777:G:C8	9:A:2777:G:O5'	2.73	0.42
11:C:61:TYR:HA	11:C:85:ASN:HD21	1.84	0.42
11:C:137:GLY:N	11:C:163:ILE:O	2.51	0.42
12:D:8:LYS:HB2	12:D:201:LEU:HD22	2.01	0.42
13:E:137:LYS:O	13:E:141:MET:HG3	2.19	0.42
14:F:88:VAL:CG1	14:F:90:LEU:HD13	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:F:151:LEU:HD12	14:F:151:LEU:H	1.85	0.42
16:H:3:VAL:HB	16:H:37:VAL:O	2.19	0.42
16:H:30:LEU:HD23	16:H:30:LEU:HA	1.79	0.42
19:K:1:MET:HE2	19:K:1:MET:HB3	1.83	0.42
19:K:49:ARG:HB3	19:K:50:GLY:H	1.63	0.42
21:M:42:THR:HG23	21:M:45:GLN:OE1	2.20	0.42
24:P:24:THR:C	24:P:25:VAL:CG1	2.92	0.42
25:Q:25:GLY:O	25:Q:29:ARG:HG3	2.19	0.42
31:W:24:ARG:O	31:W:25:PHE:CB	2.62	0.42
32:X:63:ILE:H	32:X:63:ILE:HG13	1.49	0.42
34:Z:29:ARG:O	34:Z:30:ARG:HG3	2.19	0.42
1:O:41:HIS:HD2	22:N:101:GLY:H	1.67	0.42
4:3:21:PHE:HB2	4:3:49:VAL:HG13	2.01	0.42
9:A:323:C:N4	9:A:333:G:N7	2.68	0.42
9:A:336:C:O2'	9:A:337:C:H5'	2.20	0.42
9:A:627:A:C4	9:A:637:A:N7	2.88	0.42
9:A:681:G:C2'	9:A:682:G:O5'	2.67	0.42
9:A:691:C:H2'	9:A:692:C:H6	1.85	0.42
9:A:740:C:O2	9:A:740:C:H2'	2.19	0.42
9:A:1041:G:O2'	9:A:1042:G:H5'	2.19	0.42
9:A:1057:A:H62	9:A:1087:G:P	2.40	0.42
9:A:1130:U:O2'	9:A:1131:G:H2'	2.20	0.42
9:A:1340:U:H3'	28:T:61:LEU:HD22	2.00	0.42
9:A:1827:U:O2'	9:A:1828:G:H5'	2.20	0.42
9:A:1916:A:H2'	9:A:1917:U:O4'	2.19	0.42
9:A:2233:U:H2'	9:A:2234:G:H8	1.85	0.42
9:A:2307:G:C2	9:A:2311:A:N7	2.88	0.42
9:A:2471:A:C6	9:A:2472:G:C4	3.08	0.42
9:A:2485:G:C5'	21:M:45:GLN:NE2	2.82	0.42
9:A:2771:C:H2'	9:A:2772:C:H6	1.85	0.42
11:C:172:THR:HA	11:C:182:LYS:HA	2.02	0.42
14:F:3:LEU:HA	14:F:3:LEU:HD13	1.68	0.42
16:H:43:ASN:C	16:H:45:GLU:N	2.77	0.42
17:I:130:GLY:HA2	17:I:133:ARG:HB3	2.01	0.42
18:J:17:VAL:HG13	18:J:55:ILE:CG1	2.50	0.42
22:N:28:LEU:O	22:N:32:GLU:N	2.47	0.42
22:N:51:LEU:HD12	22:N:51:LEU:HA	1.63	0.42
24:P:17:PRO:HD2	24:P:83:ILE:HG23	2.02	0.42
24:P:33:GLU:C	24:P:33:GLU:CD	2.88	0.42
28:T:73:ARG:HB3	28:T:73:ARG:HH21	1.77	0.42
31:W:70:VAL:C	31:W:71:LYS:HD3	2.45	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:Y:17:GLU:HB2	33:Y:53:VAL:HG11	2.01	0.42
4:3:12:ARG:HG2	20:L:62:PRO:O	2.19	0.41
9:A:149:A:C5	9:A:150:U:C5	3.08	0.41
9:A:288:U:C2'	9:A:289:G:H5'	2.50	0.41
9:A:321:U:OP1	13:E:130:LYS:HE3	2.20	0.41
9:A:323:C:N4	9:A:333:G:C5	2.88	0.41
9:A:604:G:H2'	9:A:605:G:H8	1.85	0.41
9:A:729:G:H4'	9:A:763:G:H5'	2.01	0.41
9:A:960:A:H2'	9:A:962:G:H5'	2.02	0.41
9:A:974:G:N3	9:A:1186:G:N2	2.67	0.41
9:A:1079:C:C4	9:A:1080:A:N7	2.87	0.41
9:A:1252:G:N3	25:Q:32:ARG:CG	2.75	0.41
9:A:1341:G:O2'	28:T:59:ASN:ND2	2.52	0.41
9:A:1378:A:H4'	9:A:1379:U:OP1	2.20	0.41
9:A:1759:A:C2	9:A:1760:C:C2	3.07	0.41
9:A:2105:U:H2'	9:A:2106:U:C6	2.55	0.41
9:A:2107:G:O6	9:A:2183:A:C6	2.72	0.41
9:A:2887:A:C5	9:A:2888:C:C5	3.08	0.41
11:C:247:TRP:C	11:C:249:VAL:N	2.77	0.41
14:F:4:HIS:CD2	14:F:96:TRP:NE1	2.88	0.41
20:L:79:LEU:HD13	20:L:116:VAL:CG1	2.49	0.41
25:Q:46:TYR:CD2	25:Q:46:TYR:C	2.98	0.41
26:R:3:ALA:HB3	26:R:59:ILE:HD11	2.01	0.41
26:R:39:LEU:C	26:R:49:ILE:HG23	2.45	0.41
26:R:49:ILE:CG2	26:R:53:PHE:C	2.92	0.41
27:S:59:GLU:CA	27:S:64:ALA:HB2	2.44	0.41
30:V:26:PHE:HB2	30:V:27:PRO:HD2	2.02	0.41
33:Y:28:LEU:HD23	33:Y:28:LEU:HA	1.64	0.41
9:A:372:G:N2	9:A:400:G:H2'	2.35	0.41
9:A:785:G:C6	9:A:786:C:C4	3.08	0.41
9:A:983:A:N6	9:A:984:A:C2	2.88	0.41
9:A:1445:G:H2'	9:A:1446:C:C6	2.55	0.41
9:A:1491:G:C6	9:A:1500:G:C2	3.08	0.41
9:A:1610:A:H5'	9:A:1610:A:H8	1.84	0.41
9:A:1934:C:C2'	9:A:1935:G:O5'	2.68	0.41
9:A:2068:U:H5''	9:A:2068:U:C6	2.36	0.41
9:A:2095:A:H2'	9:A:2096:C:C6	2.55	0.41
9:A:2436:G:N3	9:A:2598:A:H2	2.18	0.41
9:A:2441:U:OP2	9:A:2586:U:O2'	2.36	0.41
9:A:2700:A:N1	9:A:2708:G:C6	2.89	0.41
9:A:2766:A:C2	9:A:2767:C:C6	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2824:C:O5'	9:A:2824:C:H6	2.03	0.41
11:C:141:HIS:CD2	11:C:193:GLU:C	2.98	0.41
13:E:12:LEU:O	13:E:13:THR:CB	2.65	0.41
15:G:54:ARG:HG3	15:G:57:TYR:HD1	1.85	0.41
19:K:1:MET:HE3	19:K:32:TYR:CE1	2.55	0.41
19:K:43:ILE:HD13	19:K:52:VAL:HG21	1.96	0.41
19:K:49:ARG:C	19:K:49:ARG:HD3	2.45	0.41
19:K:51:LYS:O	19:K:51:LYS:NZ	2.52	0.41
19:K:67:LYS:HD3	19:K:67:LYS:HA	1.81	0.41
21:M:110:GLU:O	21:M:111:GLU:C	2.62	0.41
23:O:41:ALA:HA	23:O:42:PRO:HD3	1.89	0.41
24:P:92:ARG:O	24:P:93:LYS:CB	2.54	0.41
24:P:104:GLY:O	24:P:105:LYS:C	2.63	0.41
26:R:5:PHE:HA	26:R:39:LEU:CD2	2.50	0.41
27:S:96:ILE:HD12	27:S:97:LEU:N	2.34	0.41
28:T:30:ILE:HG12	28:T:32:LEU:HD21	2.02	0.41
5:4:14:CYS:HA	5:4:26:ILE:O	2.19	0.41
9:A:49:A:N6	9:A:177:G:C4	2.89	0.41
9:A:171:U:H2'	9:A:172:A:C8	2.55	0.41
9:A:182:A:C6	9:A:183:C:C4	3.08	0.41
9:A:287:G:C4	9:A:354:A:C2	3.08	0.41
9:A:308:G:C4	9:A:501:A:C8	3.09	0.41
9:A:314:C:C2'	9:A:315:G:H5'	2.50	0.41
9:A:480:A:H3'	9:A:481:G:H5''	2.02	0.41
9:A:866:A:O2'	9:A:867:C:H5'	2.21	0.41
9:A:977:G:N3	9:A:1001:A:H2	2.18	0.41
9:A:1070:A:H2	17:I:9:LYS:HG2	1.65	0.41
9:A:1313:U:H4'	9:A:1332:G:H4'	2.02	0.41
9:A:1459:G:C6	9:A:1461:C:C4	3.08	0.41
9:A:1782:U:O4'	9:A:2609:U:C2	2.73	0.41
9:A:1824:G:C5	9:A:1825:U:C5	3.08	0.41
9:A:2138:G:C5	9:A:2154:A:C6	3.08	0.41
9:A:2151:U:C5	9:A:2152:G:N7	2.88	0.41
9:A:2684:U:C2'	9:A:2685:G:O5'	2.68	0.41
9:A:2765:A:N3	9:A:2765:A:C2'	2.83	0.41
9:A:2770:G:H5''	9:A:2771:C:OP2	2.20	0.41
9:A:2808:G:N1	9:A:2891:U:C5	2.88	0.41
10:B:90:C:C6	10:B:90:C:C4'	3.03	0.41
12:D:106:LYS:O	12:D:107:VAL:HB	2.20	0.41
13:E:23:PHE:CZ	13:E:28:VAL:HG11	2.54	0.41
13:E:88:ARG:HB3	13:E:89:PRO:HD2	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:E:188:MET:HE3	13:E:196:VAL:HG21	2.03	0.41
19:K:61:VAL:HG22	19:K:112:PHE:CZ	2.56	0.41
23:O:29:HIS:ND1	23:O:29:HIS:C	2.78	0.41
25:Q:4:LYS:O	25:Q:5:ARG:HB3	2.20	0.41
26:R:20:VAL:HG21	26:R:22:LEU:HD21	2.02	0.41
29:U:82:VAL:HG12	29:U:83:GLY:N	2.34	0.41
1:O:24:VAL:O	1:O:25:THR:HG23	2.21	0.41
4:3:53:ASP:HB3	20:L:57:LEU:CD2	2.51	0.41
9:A:174:U:H2'	9:A:175:G:O4'	2.20	0.41
9:A:423:A:H5''	9:A:424:G:C5'	2.50	0.41
9:A:612:G:H2'	9:A:614:A:C8	2.55	0.41
9:A:912:C:C6	9:A:913:U:H5	2.38	0.41
9:A:915:C:O2	10:B:100:G:H4'	2.20	0.41
9:A:1840:G:C6	9:A:1841:U:C4	3.09	0.41
9:A:1930:G:N2	9:A:1968:G:H2'	2.36	0.41
9:A:2212:A:H4'	9:A:2213:U:OP1	2.20	0.41
9:A:2259:U:C6	9:A:2427:C:C4	3.09	0.41
9:A:2655:G:N2	9:A:2664:G:H2'	2.36	0.41
9:A:2726:A:O2'	9:A:2727:A:C5'	2.65	0.41
9:A:2799:A:C6	9:A:2801:G:C5	3.09	0.41
10:B:16:G:C5	10:B:69:G:C2	3.08	0.41
11:C:181:ARG:HG2	11:C:182:LYS:O	2.20	0.41
11:C:185:ALA:C	11:C:187:CYS:N	2.77	0.41
14:F:98:PHE:HA	14:F:101:ARG:HG3	2.01	0.41
15:G:39:ALA:HB1	15:G:57:TYR:HB3	2.02	0.41
17:I:57:VAL:HG12	17:I:58:ILE:N	2.35	0.41
19:K:4:GLU:O	19:K:5:GLN:CB	2.68	0.41
19:K:51:LYS:C	19:K:51:LYS:CE	2.93	0.41
23:O:58:ILE:H	23:O:58:ILE:HG13	1.59	0.41
24:P:53:GLY:C	24:P:55:HIS:H	2.29	0.41
26:R:36:ALA:N	26:R:37:GLU:OE2	2.53	0.41
28:T:2:ILE:HB	28:T:3:ARG:CZ	2.50	0.41
28:T:28:ASN:HA	28:T:91:GLN:CD	2.44	0.41
28:T:54:GLU:HB2	28:T:88:LYS:HB2	2.02	0.41
30:V:65:VAL:O	30:V:65:VAL:HG23	2.19	0.41
30:V:80:HIS:CD2	30:V:83:LYS:HB2	2.55	0.41
34:Z:2:LYS:O	34:Z:3:THR:CG2	2.67	0.41
3:2:43:THR:C	3:2:44:VAL:CG2	2.93	0.41
9:A:322:A:C4	9:A:340:A:C2	3.09	0.41
9:A:479:A:C2	9:A:480:A:C4	3.08	0.41
9:A:603:A:C8	9:A:655:A:C6	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:729:G:O2'	9:A:1775:U:H1'	2.21	0.41
9:A:1056:G:C4'	9:A:1086:A:H8	2.32	0.41
9:A:1059:G:H4'	17:I:116:MET:CE	2.45	0.41
9:A:1131:G:C4	18:J:77:HIS:ND1	2.89	0.41
9:A:1386:C:H5''	9:A:1396:U:O2	2.20	0.41
9:A:1606:C:C2'	9:A:1607:C:OP2	2.68	0.41
9:A:1731:G:C4	9:A:1733:G:C8	3.09	0.41
9:A:1848:A:H2'	9:A:1849:G:C8	2.54	0.41
9:A:1858:A:N6	9:A:1884:G:H1'	2.36	0.41
9:A:1918:A:C3'	9:A:1920:C:H41	2.33	0.41
9:A:2297:A:C8	9:A:2297:A:C5'	2.99	0.41
9:A:2531:A:C5	9:A:2532:G:N7	2.88	0.41
9:A:2611:C:H6	9:A:2611:C:C5'	2.34	0.41
9:A:2611:C:H5'	36:A:9000:ERY:H301	2.01	0.41
9:A:2811:G:H2'	9:A:2812:G:O4'	2.21	0.41
10:B:49:C:O5'	10:B:49:C:H6	2.03	0.41
11:C:33:LEU:HA	11:C:61:TYR:O	2.21	0.41
11:C:216:ARG:CB	11:C:217:PRO:HD2	2.49	0.41
14:F:106:ALA:CA	14:F:108:PRO:HD2	2.50	0.41
15:G:66:THR:O	15:G:67:ALA:C	2.63	0.41
17:I:56:VAL:CG2	17:I:57:VAL:N	2.83	0.41
17:I:58:ILE:HG22	17:I:60:VAL:CG2	2.50	0.41
21:M:6:ARG:CZ	21:M:6:ARG:CB	2.98	0.41
21:M:134:THR:O	21:M:134:THR:HG22	2.21	0.41
22:N:33:ILE:HG12	22:N:118:ARG:NE	2.35	0.41
24:P:85:VAL:HG12	24:P:86:LYS:H	1.86	0.41
28:T:54:GLU:HB3	28:T:88:LYS:HG3	2.02	0.41
9:A:51:G:H4'	9:A:52:A:H5'	2.02	0.41
9:A:157:C:C6	9:A:157:C:H3'	2.56	0.41
9:A:265:A:N1	9:A:427:U:O2'	2.48	0.41
9:A:332:A:C2	9:A:335:C:C5	3.08	0.41
9:A:920:A:OP1	34:Z:18:LYS:HE3	2.20	0.41
9:A:1057:A:C2	9:A:1082:U:N3	2.88	0.41
9:A:1074:G:N3	9:A:1075:C:C6	2.88	0.41
9:A:1126:A:H4'	9:A:1127:A:H5''	2.02	0.41
9:A:1179:G:C3'	9:A:1180:U:H4'	2.31	0.41
9:A:1378:A:O2'	9:A:1379:U:O5'	2.39	0.41
9:A:1647:U:H3'	9:A:1647:U:OP2	2.20	0.41
9:A:1792:G:OP1	11:C:203:VAL:O	2.39	0.41
9:A:1858:A:H62	9:A:1884:G:H1'	1.86	0.41
9:A:1875:G:C2'	9:A:1876:A:OP2	2.68	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1893:C:H2'	9:A:1894:C:O4'	2.21	0.41
9:A:2140:G:H2'	9:A:2141:G:C8	2.55	0.41
9:A:2142:A:C2'	9:A:2143:C:OP2	2.69	0.41
9:A:2397:G:H2'	9:A:2398:U:C6	2.56	0.41
9:A:2430:A:C3'	9:A:2431:U:C5'	2.97	0.41
9:A:2527:C:C2'	9:A:2528:U:H5'	2.51	0.41
9:A:2735:G:C6	9:A:2736:A:C5	3.08	0.41
10:B:46:A:C4	10:B:47:C:C6	3.09	0.41
10:B:90:C:C6	10:B:90:C:C5'	2.91	0.41
11:C:57:HIS:ND1	11:C:58:LYS:N	2.65	0.41
11:C:193:GLU:O	11:C:194:VAL:C	2.60	0.41
11:C:255:LYS:C	11:C:256:THR:CG2	2.92	0.41
12:D:118:PHE:C	12:D:120:GLY:N	2.73	0.41
14:F:47:LYS:NZ	14:F:47:LYS:CB	2.83	0.41
14:F:98:PHE:O	14:F:98:PHE:CD2	2.74	0.41
17:I:93:ASN:OD1	17:I:136:GLY:HA2	2.21	0.41
19:K:88:ASN:HB3	19:K:92:GLU:O	2.20	0.41
19:K:119:ALA:HA	19:K:120:PRO:HD2	1.84	0.41
22:N:67:PHE:CE2	22:N:71:ARG:NH1	2.88	0.41
22:N:83:LEU:HA	22:N:83:LEU:HD12	1.72	0.41
23:O:71:ALA:O	23:O:72:ALA:C	2.63	0.41
24:P:91:VAL:O	24:P:92:ARG:HG2	2.21	0.41
25:Q:63:ARG:NH1	25:Q:99:VAL:HG23	2.36	0.41
25:Q:94:LEU:C	25:Q:96:ASP:N	2.76	0.41
26:R:27:ILE:H	26:R:27:ILE:HG12	1.73	0.41
26:R:93:PHE:CD1	26:R:93:PHE:C	2.98	0.41
27:S:25:ARG:CD	27:S:73:LYS:HZ2	2.29	0.41
28:T:8:LEU:HD12	28:T:46:ALA:CA	2.43	0.41
28:T:46:ALA:C	28:T:48:GLN:N	2.79	0.41
28:T:50:LEU:HD23	33:Y:26:PHE:CD1	2.56	0.41
29:U:11:ILE:HG13	29:U:21:ARG:HG3	2.02	0.41
33:Y:57:LEU:C	33:Y:59:GLU:N	2.77	0.41
2:1:25:ASN:OD1	2:1:25:ASN:C	2.63	0.41
9:A:9:G:H2'	9:A:2629:U:O4	2.20	0.41
9:A:234:U:H2'	9:A:235:U:H5'	2.03	0.41
9:A:306:U:H5''	9:A:307:G:OP2	2.21	0.41
9:A:388:G:N7	9:A:390:U:H2'	2.35	0.41
9:A:548:G:C4'	9:A:549:G:H5'	2.50	0.41
9:A:995:C:P	25:Q:52:ARG:HH11	2.43	0.41
9:A:995:C:P	25:Q:52:ARG:NH1	2.93	0.41
9:A:1063:G:P	17:I:76:ALA:CB	2.96	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1247:A:C2	9:A:1249:U:C6	3.08	0.41
9:A:1373:A:H8	9:A:1373:A:O5'	2.03	0.41
9:A:1459:G:C2'	9:A:1460:U:H5''	2.51	0.41
9:A:1720:U:H5''	9:A:1721:G:OP2	2.20	0.41
9:A:2075:U:H2'	9:A:2238:G:H22	1.82	0.41
9:A:2098:U:C4	9:A:2099:U:C4	3.09	0.41
9:A:2489:U:C4	9:A:2490:G:C6	3.09	0.41
9:A:2496:C:H5''	21:M:82:MET:HG3	2.03	0.41
9:A:2662:A:O5'	9:A:2662:A:H8	2.04	0.41
9:A:2854:G:H2'	9:A:2855:C:C6	2.56	0.41
10:B:46:A:C4	10:B:47:C:C5	3.08	0.41
13:E:3:LEU:HD12	13:E:14:VAL:HG11	2.03	0.41
13:E:40:ARG:HD2	13:E:92:HIS:ND1	2.35	0.41
13:E:134:LEU:HD12	13:E:138:LEU:HG	2.02	0.41
14:F:39:VAL:C	14:F:41:GLU:H	2.28	0.41
15:G:84:LYS:N	15:G:84:LYS:CE	2.74	0.41
15:G:174:LYS:O	15:G:174:LYS:HD2	2.21	0.41
16:H:48:GLU:C	16:H:50:ARG:N	2.77	0.41
18:J:112:GLY:O	18:J:116:ARG:HB2	2.21	0.41
24:P:3:ILE:HD12	24:P:7:LEU:HD22	2.03	0.41
30:V:51:GLN:NE2	30:V:51:GLN:O	2.54	0.41
33:Y:7:ARG:H	33:Y:60:LYS:NZ	2.19	0.41
34:Z:15:ARG:NH1	34:Z:15:ARG:CG	2.69	0.41
9:A:220:G:H2'	9:A:427:U:O4	2.21	0.41
9:A:404:A:C8	9:A:406:G:C6	3.08	0.41
9:A:784:G:H5'	11:C:225:ASN:OD1	2.21	0.41
9:A:858:G:C5	9:A:2268:A:C2	3.08	0.41
9:A:866:A:C8	9:A:866:A:C3'	3.03	0.41
9:A:960:A:C8	9:A:962:G:C8	3.09	0.41
9:A:1023:U:O2	9:A:1023:U:H2'	2.15	0.41
9:A:1062:G:O2'	9:A:1063:G:O5'	2.39	0.41
9:A:1125:G:H8	9:A:1125:G:O5'	2.04	0.41
9:A:1894:C:H6	9:A:1894:C:O5'	2.04	0.41
9:A:2505:G:C2'	9:A:2506:U:O5'	2.69	0.41
9:A:2639:A:O3'	18:J:96:ARG:NH1	2.54	0.41
9:A:2776:A:H4'	9:A:2777:G:H5''	2.03	0.41
9:A:2822:G:O2'	9:A:2824:C:OP2	2.33	0.41
9:A:2842:G:C4	9:A:2876:G:N2	2.89	0.41
13:E:65:THR:H	13:E:65:THR:HG22	1.65	0.41
13:E:123:LYS:HD3	13:E:123:LYS:HA	1.94	0.41
17:I:49:GLU:HG2	17:I:50:LYS:N	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:K:47:ILE:HA	19:K:47:ILE:HD12	1.78	0.41
21:M:33:LEU:CD2	21:M:128:THR:HB	2.51	0.41
21:M:54:THR:HG22	21:M:55:ARG:N	2.36	0.41
22:N:23:ASN:ND2	22:N:23:ASN:H	2.19	0.41
25:Q:91:ARG:NE	25:Q:93:ILE:HG21	2.36	0.41
26:R:46:GLU:OE1	26:R:46:GLU:O	2.38	0.41
26:R:66:HIS:ND1	26:R:94:THR:CG2	2.83	0.41
30:V:46:LYS:O	30:V:50:MET:HG3	2.20	0.41
31:W:18:LYS:HD2	31:W:36:ILE:HD11	2.01	0.41
33:Y:16:THR:O	33:Y:17:GLU:C	2.63	0.41
34:Z:50:VAL:O	34:Z:51:SER:C	2.64	0.41
4:3:25:HIS:HB3	4:3:43:LEU:CD2	2.51	0.41
5:4:15:LYS:HE3	5:4:15:LYS:HB3	1.90	0.41
9:A:75:G:H5''	9:A:75:G:H8	1.85	0.41
9:A:77:G:N2	9:A:110:G:H1'	2.36	0.41
9:A:83:A:N6	9:A:101:A:C5	2.89	0.41
9:A:149:A:H2'	9:A:150:U:C6	2.56	0.41
9:A:153:U:H2'	9:A:154:U:C5'	2.50	0.41
9:A:238:C:C6	9:A:238:C:C3'	3.03	0.41
9:A:369:U:O2'	9:A:370:G:OP2	2.38	0.41
9:A:457:A:O4'	9:A:459:U:C6	2.74	0.41
9:A:496:G:C5	9:A:497:A:C8	3.09	0.41
9:A:571:U:N3	9:A:2030:A:C2	2.89	0.41
9:A:572:A:OP2	26:R:80:ARG:NH2	2.46	0.41
9:A:764:A:H3'	9:A:765:C:H5'	2.02	0.41
9:A:780:G:H1	11:C:228:ASP:CG	2.28	0.41
9:A:855:G:N2	31:W:23:LYS:CB	2.84	0.41
9:A:1148:U:H3'	9:A:1148:U:H6	1.82	0.41
9:A:1260:A:C6	9:A:1261:C:C4	3.09	0.41
9:A:1274:A:N3	9:A:1297:C:H1'	2.35	0.41
9:A:1316:U:H2'	9:A:1317:G:C8	2.56	0.41
9:A:1359:A:N7	9:A:1373:A:C2	2.89	0.41
9:A:1429:G:O2'	9:A:1430:G:C5'	2.57	0.41
9:A:1447:C:O5'	9:A:1447:C:H6	2.04	0.41
9:A:1460:U:C3'	9:A:1461:C:C5'	2.99	0.41
9:A:1637:A:H2'	9:A:1638:C:O4'	2.20	0.41
9:A:1839:G:C6	9:A:1927:A:C5	3.08	0.41
9:A:1905:C:H4'	9:A:1929:G:H8	1.85	0.41
9:A:1927:A:N1	9:A:1928:A:C2	2.89	0.41
9:A:2013:A:OP1	27:S:96:ILE:HA	2.20	0.41
9:A:2031:A:C6	9:A:2498:C:H1'	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:2052:A:H2'	9:A:2053:G:H8	1.86	0.41
9:A:2293:G:H2'	9:A:2294:G:O4'	2.21	0.41
9:A:2397:G:C2	9:A:2420:C:C2	3.09	0.41
9:A:2432:A:N1	32:X:20:ALA:HA	2.36	0.41
9:A:2454:G:C4	9:A:2455:G:C8	3.08	0.41
9:A:2518:A:N3	9:A:2518:A:H2'	2.36	0.41
9:A:2599:G:O2'	9:A:2600:A:H5'	2.20	0.41
9:A:2630:G:HO2'	9:A:2631:G:H5'	1.82	0.41
9:A:2808:G:O2'	9:A:2809:A:P	2.78	0.41
36:A:9000:ERY:O13	36:A:9000:ERY:H343	2.21	0.41
10:B:8:C:O3'	23:O:25:ARG:NH1	2.54	0.41
10:B:10:G:H2'	10:B:11:C:H5'	2.02	0.41
10:B:42:C:C5	14:F:65:LEU:HD22	2.56	0.41
11:C:181:ARG:HG2	11:C:181:ARG:HH21	1.86	0.41
11:C:211:ARG:C	11:C:213:ARG:H	2.29	0.41
11:C:229:HIS:HD2	11:C:246:PRO:CB	2.34	0.41
11:C:257:ARG:CG	11:C:269:ARG:NH2	2.73	0.41
11:C:270:ARG:HG2	11:C:270:ARG:HH11	1.86	0.41
12:D:11:MET:HA	12:D:25:THR:HA	2.02	0.41
12:D:42:ASN:O	12:D:43:ASP:O	2.39	0.41
12:D:141:ARG:HH11	12:D:141:ARG:HD3	1.65	0.41
13:E:46:GLN:HE21	13:E:87:ALA:H	1.69	0.41
13:E:158:PHE:O	13:E:160:ALA:O	2.39	0.41
13:E:172:ALA:O	13:E:175:ILE:CG2	2.69	0.41
14:F:21:TYR:CD1	14:F:26:GLN:HG2	2.56	0.41
15:G:15:ASP:O	15:G:16:VAL:CB	2.69	0.41
15:G:29:ASN:O	15:G:78:VAL:HG12	2.21	0.41
15:G:102:ILE:CD1	15:G:116:LEU:HD11	2.51	0.41
15:G:142:GLN:O	15:G:145:ALA:HB3	2.21	0.41
17:I:41:PHE:CE2	17:I:45:THR:HG21	2.56	0.41
17:I:90:GLY:C	17:I:92:PRO:HD3	2.46	0.41
18:J:41:LYS:HB2	18:J:42:ALA:H	1.69	0.41
18:J:54:ILE:O	18:J:54:ILE:HG13	2.21	0.41
18:J:76:HIS:CD2	18:J:85:LYS:HB2	2.55	0.41
18:J:114:LEU:O	18:J:117:ALA:N	2.54	0.41
20:L:127:VAL:HG22	20:L:128:THR:O	2.20	0.41
21:M:50:ARG:HG2	21:M:50:ARG:HH21	1.86	0.41
21:M:121:ALA:C	21:M:123:LYS:H	2.29	0.41
21:M:127:LYS:C	21:M:128:THR:HG23	2.46	0.41
21:M:134:THR:HG23	21:M:136:MET:H	1.86	0.41
24:P:5:LYS:O	24:P:6:GLN:C	2.60	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:P:21:PRO:HA	24:P:46:VAL:CG1	2.50	0.41
24:P:102:ARG:C	24:P:103:THR:CG2	2.94	0.41
24:P:105:LYS:HA	24:P:108:ARG:HD3	2.03	0.41
24:P:111:GLU:O	24:P:113:LEU:HD22	2.20	0.41
25:Q:26:ALA:CB	25:Q:30:VAL:CG2	2.92	0.41
26:R:37:GLU:OE1	26:R:37:GLU:O	2.38	0.41
26:R:61:ALA:HA	26:R:99:THR:HG23	2.02	0.41
27:S:2:GLU:C	27:S:3:THR:CG2	2.93	0.41
32:X:27:ARG:HH11	32:X:27:ARG:HD3	1.73	0.41
32:X:67:LEU:O	32:X:69:GLU:O	2.38	0.41
33:Y:57:LEU:C	33:Y:59:GLU:H	2.29	0.41
34:Z:9:THR:CG2	34:Z:53:MET:C	2.94	0.41
34:Z:16:LEU:HD23	34:Z:16:LEU:HA	1.17	0.41
34:Z:33:HIS:O	34:Z:34:THR:HB	2.20	0.41
9:A:117:G:C6	9:A:119:A:C6	3.09	0.41
9:A:276:U:C2'	9:A:277:G:O5'	2.69	0.41
9:A:286:U:H2'	9:A:287:G:C8	2.55	0.41
9:A:1078:U:H5''	9:A:1079:C:O5'	2.20	0.41
9:A:1406:U:HO2'	9:A:1407:G:H8	1.69	0.41
9:A:1444:G:H2'	9:A:1445:G:O4'	2.21	0.41
9:A:1638:C:N4	9:A:1639:C:C4	2.88	0.41
9:A:1730:C:H6	9:A:1730:C:H2'	1.69	0.41
9:A:1733:G:C2	9:A:1734:G:C8	3.09	0.41
9:A:2255:G:C2'	9:A:2256:G:H5'	2.51	0.41
9:A:2828:G:H2'	9:A:2829:A:O5'	2.21	0.41
9:A:2902:C:O2'	9:A:2903:U:H5'	2.21	0.41
11:C:220:ARG:HB3	11:C:222:THR:HG22	2.03	0.41
12:D:193:VAL:HB	12:D:194:PRO:HD2	2.03	0.41
13:E:31:VAL:HG21	13:E:104:ALA:HB2	2.03	0.41
14:F:49:LEU:HD12	14:F:49:LEU:HA	1.96	0.41
14:F:94:ARG:HE	14:F:94:ARG:HB2	1.72	0.41
16:H:12:LEU:HB2	16:H:19:VAL:HG11	2.03	0.41
18:J:67:ASN:O	18:J:68:LYS:C	2.63	0.41
18:J:102:GLU:C	18:J:104:ALA:N	2.77	0.41
18:J:135:GLN:HA	18:J:135:GLN:NE2	2.34	0.41
21:M:46:ILE:HD12	21:M:47:GLU:CA	2.51	0.41
24:P:52:ARG:CG	24:P:52:ARG:NH1	2.42	0.41
25:Q:4:LYS:HZ2	25:Q:5:ARG:C	2.28	0.41
25:Q:27:ARG:NH1	25:Q:27:ARG:CG	2.83	0.41
25:Q:81:GLY:O	25:Q:82:LEU:C	2.63	0.41
26:R:58:VAL:HG22	26:R:59:ILE:H	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:V:39:ALA:O	30:V:40:ILE:HD13	2.21	0.41
31:W:72:GLY:C	31:W:74:LYS:H	2.29	0.41
31:W:75:ASN:CG	31:W:76:ARG:H	2.27	0.41
2:1:10:LEU:CD2	2:1:33:LEU:HD23	2.44	0.40
9:A:137:U:OP2	9:A:137:U:C5	2.74	0.40
9:A:278:A:H2	9:A:362:A:C8	2.31	0.40
9:A:497:A:C4	9:A:498:G:C8	3.10	0.40
9:A:1402:U:C6	9:A:1402:U:C3'	3.04	0.40
9:A:1719:G:C5	9:A:1720:U:C5	3.09	0.40
9:A:1834:U:O2	9:A:1834:U:H2'	2.19	0.40
9:A:1845:G:C2'	9:A:1846:G:C5'	2.98	0.40
9:A:2027:G:H2'	9:A:2028:U:H6	1.86	0.40
9:A:2263:C:H2'	9:A:2264:C:C6	2.55	0.40
9:A:2315:G:C4	9:A:2316:G:C8	3.10	0.40
9:A:2601:C:H2'	9:A:2602:A:OP2	2.21	0.40
9:A:2797:U:O2'	9:A:2798:U:P	2.79	0.40
11:C:90:ILE:HG22	11:C:102:TYR:CD1	2.56	0.40
12:D:121:THR:O	12:D:122:VAL:CB	2.66	0.40
12:D:125:TRP:O	12:D:126:ASN:CB	2.65	0.40
13:E:137:LYS:O	13:E:140:ASP:HB2	2.21	0.40
14:F:121:PHE:CB	14:F:162:ASP:OD2	2.67	0.40
15:G:3:VAL:O	15:G:6:ALA:HB3	2.21	0.40
17:I:5:GLN:O	17:I:6:ALA:HB2	2.21	0.40
17:I:31:GLY:HA3	17:I:60:VAL:HG11	2.03	0.40
18:J:25:LEU:HD22	18:J:26:GLY:CA	2.50	0.40
22:N:74:GLU:O	22:N:77:ALA:HB3	2.20	0.40
23:O:42:PRO:C	23:O:44:GLY:N	2.76	0.40
24:P:24:THR:HB	24:P:87:ARG:HB3	2.03	0.40
24:P:33:GLU:OE2	24:P:38:ARG:NH1	2.54	0.40
24:P:50:ARG:CG	24:P:56:SER:HA	2.51	0.40
28:T:34:VAL:O	28:T:35:ALA:O	2.39	0.40
28:T:61:LEU:HD11	28:T:82:LYS:HD2	2.03	0.40
29:U:94:PHE:O	29:U:95:PHE:C	2.64	0.40
33:Y:37:LEU:HD13	33:Y:37:LEU:C	2.46	0.40
34:Z:9:THR:HG23	34:Z:9:THR:O	2.14	0.40
3:2:21:ARG:C	3:2:23:ALA:N	2.78	0.40
3:2:24:THR:O	3:2:25:LYS:C	2.64	0.40
9:A:37:C:O2'	13:E:45:ALA:CB	2.69	0.40
9:A:55:G:C2	9:A:56:A:C8	3.10	0.40
9:A:58:G:N2	9:A:70:G:C5	2.89	0.40
9:A:209:C:H2'	9:A:210:C:H5'	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:285:G:N3	9:A:285:G:C2'	2.80	0.40
9:A:407:G:C2'	9:A:408:G:H5'	2.50	0.40
9:A:535:G:C2	9:A:559:G:C5	3.10	0.40
9:A:602:A:C2	9:A:656:G:C5	3.09	0.40
9:A:605:G:N3	9:A:657:U:O2'	2.52	0.40
9:A:679:C:H2'	9:A:680:C:C6	2.56	0.40
9:A:847:U:C6	9:A:847:U:H5''	2.55	0.40
9:A:870:U:C4	9:A:871:U:C5	3.09	0.40
9:A:885:C:C3'	9:A:885:C:C6	3.05	0.40
9:A:985:C:O5'	9:A:985:C:H6	2.04	0.40
9:A:1085:A:C2	9:A:1086:A:N7	2.90	0.40
9:A:1091:G:O2'	9:A:1092:C:C5'	2.68	0.40
9:A:1314:C:O2	9:A:1314:C:H2'	2.20	0.40
9:A:1498:C:O2'	9:A:1499:C:O5'	2.39	0.40
9:A:1599:U:H2'	9:A:1600:C:C6	2.57	0.40
9:A:1627:G:H8	9:A:1627:G:C5'	2.21	0.40
9:A:1720:U:H2'	9:A:1721:G:O4'	2.22	0.40
9:A:2065:C:H2'	9:A:2066:C:C6	2.55	0.40
9:A:2068:U:C6	9:A:2068:U:C4'	3.04	0.40
9:A:2140:G:C5	9:A:2152:G:N2	2.89	0.40
9:A:2319:G:O2'	9:A:2320:U:C5	2.70	0.40
9:A:2328:A:C5	9:A:2329:U:C5	3.10	0.40
9:A:2331:G:H4'	31:W:41:GLY:HA3	2.03	0.40
9:A:2332:C:H5''	9:A:2333:A:P	2.61	0.40
9:A:2544:G:H2'	9:A:2545:G:H5'	2.03	0.40
9:A:2700:A:H2'	9:A:2701:U:C6	2.57	0.40
9:A:2869:G:H2'	9:A:2870:C:O4'	2.22	0.40
10:B:10:G:C2'	10:B:11:C:H5'	2.51	0.40
10:B:81:G:H2'	10:B:82:U:H5'	2.03	0.40
11:C:87:SER:HB2	11:C:199:HIS:CD2	2.56	0.40
14:F:105:ILE:O	14:F:109:ARG:HD3	2.20	0.40
15:G:6:ALA:HB1	15:G:7:PRO:CD	2.48	0.40
15:G:84:LYS:HB2	15:G:132:LEU:H	1.87	0.40
15:G:175:LYS:HA	15:G:175:LYS:HD3	1.75	0.40
17:I:52:LEU:HD11	17:I:81:LYS:HE2	2.03	0.40
18:J:17:VAL:HG13	18:J:55:ILE:HG12	2.03	0.40
20:L:95:LEU:HD22	20:L:100:ILE:CG1	2.51	0.40
22:N:36:THR:HG23	22:N:37:THR:N	2.35	0.40
24:P:9:GLN:HE21	24:P:9:GLN:HB3	1.51	0.40
25:Q:4:LYS:CE	25:Q:8:ILE:HG23	2.51	0.40
26:R:49:ILE:O	26:R:49:ILE:CG1	2.64	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:R:60:LYS:HB2	26:R:100:GLY:CA	2.50	0.40
33:Y:39:GLN:O	33:Y:42:LEU:HB2	2.20	0.40
33:Y:40:SER:C	33:Y:42:LEU:H	2.29	0.40
33:Y:56:LEU:HA	33:Y:59:GLU:HG3	2.02	0.40
5:4:9:LYS:HE2	5:4:9:LYS:CA	2.49	0.40
9:A:157:C:H2'	9:A:158:U:O5'	2.22	0.40
9:A:346:A:C2'	9:A:347:A:O5'	2.70	0.40
9:A:790:U:O2'	9:A:791:C:P	2.76	0.40
9:A:1286:A:C6	9:A:1329:U:C2	3.10	0.40
9:A:1824:G:H2'	9:A:1825:U:C6	2.55	0.40
9:A:1909:C:C2'	9:A:1910:G:H5'	2.51	0.40
9:A:1965:C:H6	9:A:1965:C:H5''	1.85	0.40
9:A:2190:G:H2'	9:A:2191:A:H8	1.86	0.40
15:G:124:CYS:HA	15:G:125:PRO:HD2	1.92	0.40
15:G:171:LYS:CG	15:G:172:GLU:N	2.85	0.40
16:H:2:GLN:HA	16:H:20:ASN:HA	2.03	0.40
16:H:9:VAL:O	16:H:10:ALA:O	2.39	0.40
18:J:65:THR:HG23	18:J:66:GLY:N	2.36	0.40
20:L:95:LEU:HB3	20:L:100:ILE:HD11	2.03	0.40
23:O:88:LYS:HE3	23:O:116:GLN:NE2	2.33	0.40
24:P:23:ASP:HA	24:P:89:GLY:H	1.87	0.40
25:Q:88:GLU:C	25:Q:88:GLU:CD	2.90	0.40
26:R:11:GLN:C	26:R:12:HIS:CG	2.99	0.40
26:R:25:LEU:HA	26:R:25:LEU:HD12	1.86	0.40
26:R:52:PRO:O	26:R:53:PHE:CB	2.69	0.40
29:U:3:LYS:O	29:U:82:VAL:HG21	2.22	0.40
29:U:38:ILE:HG22	29:U:39:ASN:H	1.80	0.40
29:U:78:LYS:CG	29:U:79:ALA:H	2.27	0.40
31:W:24:ARG:HD3	31:W:65:LYS:HD3	2.04	0.40
33:Y:16:THR:O	33:Y:19:LEU:HB2	2.21	0.40
34:Z:43:ILE:O	34:Z:44:ARG:C	2.64	0.40
2:1:8:ILE:H	2:1:23:THR:HA	1.87	0.40
9:A:121:G:C2	9:A:131:A:C5	3.10	0.40
9:A:256:A:O2'	9:A:257:C:H5'	2.22	0.40
9:A:260:G:H2'	9:A:261:G:O5'	2.21	0.40
9:A:390:U:O2'	9:A:391:A:P	2.80	0.40
9:A:397:U:O2'	9:A:398:C:H5'	2.22	0.40
9:A:924:G:H4'	31:W:24:ARG:HH21	1.87	0.40
9:A:1090:A:C2	9:A:1091:G:C8	3.09	0.40
9:A:1508:A:O2'	9:A:1509:A:H8	2.02	0.40
9:A:1613:G:C2	9:A:1619:G:C5	3.10	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1716:U:O2'	9:A:1717:A:C5'	2.50	0.40
9:A:1857:G:C1'	9:A:1884:G:H22	2.34	0.40
9:A:2096:C:O2	9:A:2096:C:H2'	2.20	0.40
9:A:2296:U:H4'	9:A:2297:A:OP1	2.21	0.40
9:A:2307:G:H1'	9:A:2308:G:C5	2.57	0.40
9:A:2331:G:C5	9:A:2332:C:C4	3.10	0.40
9:A:2553:G:N1	9:A:2554:U:O2	2.55	0.40
9:A:2628:C:O2'	9:A:2781:A:H2'	2.21	0.40
9:A:2783:U:H2'	9:A:2784:U:H6	1.87	0.40
9:A:2800:A:C3'	9:A:2801:G:H5'	2.50	0.40
9:A:2802:G:H2'	9:A:2803:G:O4'	2.22	0.40
9:A:2805:C:H2'	9:A:2806:C:H6	1.86	0.40
9:A:2822:G:OP2	12:D:115:GLY:HA3	2.22	0.40
10:B:25:U:H2'	10:B:26:C:C6	2.56	0.40
10:B:91:C:O2'	10:B:92:C:H5'	2.22	0.40
11:C:229:HIS:CD2	11:C:246:PRO:CA	3.00	0.40
12:D:12:THR:HG22	12:D:24:VAL:CG2	2.50	0.40
15:G:171:LYS:HG3	15:G:172:GLU:N	2.37	0.40
22:N:24:MET:CG	22:N:44:LEU:HD22	2.33	0.40
22:N:31:HIS:C	22:N:33:ILE:H	2.29	0.40
22:N:42:LYS:O	22:N:45:ARG:HG3	2.21	0.40
22:N:116:VAL:C	22:N:117:ASP:CG	2.88	0.40
28:T:38:ALA:HB3	28:T:81:LYS:HE2	2.03	0.40
30:V:10:LYS:C	30:V:10:LYS:HZ2	2.30	0.40
30:V:44:HIS:O	30:V:45:ASP:C	2.63	0.40
32:X:32:LEU:C	32:X:33:HIS:CG	2.99	0.40
33:Y:22:LEU:O	33:Y:23:ARG:O	2.40	0.40
1:0:24:VAL:C	1:0:26:SER:H	2.28	0.40
2:1:8:ILE:CD1	2:1:52:LYS:CG	3.00	0.40
2:1:8:ILE:HD12	2:1:51:ALA:C	2.46	0.40
9:A:142:A:H2'	9:A:143:C:C6	2.56	0.40
9:A:170:U:H2'	9:A:171:U:O5'	2.22	0.40
9:A:240:C:H2'	9:A:241:A:C8	2.56	0.40
9:A:342:A:C2	9:A:343:C:H1'	2.57	0.40
9:A:422:A:C2	9:A:423:A:C4	3.10	0.40
9:A:630:G:H5''	9:A:631:A:OP2	2.21	0.40
9:A:649:G:C5	9:A:650:C:C4	3.10	0.40
9:A:700:G:H2'	9:A:701:G:O4'	2.22	0.40
9:A:846:U:C2'	9:A:847:U:OP2	2.69	0.40
9:A:990:A:OP1	9:A:1157:G:H5''	2.22	0.40
9:A:1058:U:C1'	17:I:117:THR:HG21	2.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:1176:U:H2'	9:A:1177:G:C4	2.56	0.40
9:A:1247:A:C5	9:A:1249:U:C5	3.10	0.40
9:A:1387:A:C2	9:A:1401:G:C2	3.09	0.40
9:A:1436:G:H2'	9:A:1437:C:O5'	2.22	0.40
9:A:1509:A:O2'	9:A:1510:G:H5'	2.21	0.40
9:A:1688:U:H1'	9:A:1701:A:C5	2.57	0.40
9:A:1881:C:C6	9:A:1881:C:C3'	3.05	0.40
9:A:1967:C:O2'	9:A:1968:G:H5'	2.21	0.40
9:A:2299:U:O2'	9:A:2300:C:H5'	2.21	0.40
9:A:2523:G:C2'	9:A:2524:G:H5'	2.51	0.40
9:A:2531:A:H4'	15:G:156:TYR:CE1	2.57	0.40
9:A:2728:U:C2'	9:A:2729:G:H5''	2.51	0.40
9:A:2889:C:H2'	9:A:2890:G:C5'	2.52	0.40
11:C:66:PHE:HZ	11:C:86:ARG:NH1	2.20	0.40
11:C:209:ALA:HA	11:C:212:TRP:NE1	2.37	0.40
12:D:186:LEU:HD11	24:P:3:ILE:CD1	2.51	0.40
13:E:65:THR:C	13:E:67:ARG:H	2.29	0.40
13:E:119:ILE:HG12	13:E:119:ILE:O	2.22	0.40
14:F:116:LEU:HD13	14:F:116:LEU:HA	1.92	0.40
15:G:96:ALA:HB3	15:G:103:ASN:CB	2.51	0.40
15:G:140:ILE:HD12	15:G:141:GLY:H	1.86	0.40
16:H:32:PRO:HB3	32:X:38:TRP:CG	2.55	0.40
17:I:126:ARG:HD3	17:I:126:ARG:H	1.86	0.40
18:J:49:ASP:CG	18:J:121:LYS:NZ	2.80	0.40
18:J:70:THR:C	18:J:71:ASP:OD2	2.64	0.40
19:K:60:ALA:HB1	19:K:84:CYS:HB2	2.03	0.40
19:K:72:PRO:O	19:K:72:PRO:HD2	2.21	0.40
19:K:116:ILE:HD12	19:K:117:SER:H	1.83	0.40
20:L:35:HIS:O	20:L:36:LYS:HB2	2.22	0.40
21:M:14:LYS:O	21:M:15:GLY:C	2.64	0.40
21:M:52:ALA:O	21:M:53:MET:C	2.64	0.40
23:O:4:LYS:HD3	23:O:7:ARG:NH2	2.37	0.40
24:P:13:LYS:NZ	24:P:80:VAL:HG12	2.37	0.40
26:R:38:VAL:O	26:R:53:PHE:HA	2.22	0.40
31:W:37:VAL:CG1	31:W:38:ARG:N	2.84	0.40
32:X:21:LEU:HA	32:X:21:LEU:HD23	1.70	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	
1	0	54/56 (96%)	41 (76%)	9 (17%)	4 (7%)	1	10
2	1	48/50 (96%)	37 (77%)	6 (12%)	5 (10%)	0	6
3	2	44/46 (96%)	37 (84%)	7 (16%)	0	100	100
4	3	62/64 (97%)	53 (86%)	5 (8%)	4 (6%)	1	12
5	4	36/38 (95%)	24 (67%)	9 (25%)	3 (8%)	0	9
11	C	269/271 (99%)	197 (73%)	47 (18%)	25 (9%)	0	8
12	D	207/209 (99%)	141 (68%)	32 (16%)	34 (16%)	0	2
13	E	199/201 (99%)	145 (73%)	34 (17%)	20 (10%)	0	7
14	F	175/177 (99%)	123 (70%)	36 (21%)	16 (9%)	0	8
15	G	174/176 (99%)	111 (64%)	38 (22%)	25 (14%)	0	3
16	H	54/56 (96%)	21 (39%)	13 (24%)	20 (37%)	0	0
17	I	139/141 (99%)	84 (60%)	41 (30%)	14 (10%)	0	7
18	J	140/142 (99%)	104 (74%)	24 (17%)	12 (9%)	0	9
19	K	120/122 (98%)	88 (73%)	18 (15%)	14 (12%)	0	4
20	L	141/143 (99%)	100 (71%)	30 (21%)	11 (8%)	1	10
21	M	134/136 (98%)	96 (72%)	18 (13%)	20 (15%)	0	3
22	N	118/120 (98%)	91 (77%)	16 (14%)	11 (9%)	0	8
23	O	114/116 (98%)	85 (75%)	18 (16%)	11 (10%)	0	7
24	P	112/114 (98%)	78 (70%)	20 (18%)	14 (12%)	0	4
25	Q	115/117 (98%)	100 (87%)	7 (6%)	8 (7%)	1	11
26	R	101/103 (98%)	76 (75%)	14 (14%)	11 (11%)	0	6
27	S	108/110 (98%)	89 (82%)	14 (13%)	5 (5%)	2	16
28	T	91/93 (98%)	49 (54%)	26 (29%)	16 (18%)	0	2
29	U	100/102 (98%)	66 (66%)	15 (15%)	19 (19%)	0	2
30	V	92/94 (98%)	75 (82%)	15 (16%)	2 (2%)	5	29

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
31	W	77/79 (98%)	31 (40%)	22 (29%)	24 (31%)	0	0
32	X	75/77 (97%)	58 (77%)	10 (13%)	7 (9%)	0	8
33	Y	61/63 (97%)	38 (62%)	15 (25%)	8 (13%)	0	4
34	Z	56/58 (97%)	47 (84%)	5 (9%)	4 (7%)	1	11
All	All	3216/3274 (98%)	2285 (71%)	564 (18%)	367 (11%)	1	5

All (367) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	0	51	ARG
1	0	54	ILE
2	1	16	THR
5	4	4	ARG
11	C	77	VAL
11	C	104	LEU
11	C	105	ALA
11	C	142	ASN
11	C	239	PHE
12	D	43	ASP
12	D	73	VAL
12	D	92	VAL
12	D	99	GLU
12	D	103	ASP
12	D	122	VAL
13	E	6	LYS
13	E	8	ALA
13	E	62	GLN
13	E	69	ARG
13	E	79	ARG
13	E	175	ILE
14	F	11	VAL
14	F	61	GLY
14	F	134	GLN
14	F	174	PHE
14	F	175	PRO
15	G	8	VAL
15	G	28	LYS
15	G	31	GLU
15	G	38	ASP
15	G	44	HIS
15	G	45	ALA

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Mol	Chain	Res	Type
15	G	61	TRP
15	G	84	LYS
15	G	118	ALA
15	G	170	THR
16	H	10	ALA
16	H	11	ASN
16	H	14	SER
16	H	15	LEU
16	H	23	ALA
16	H	28	ASN
16	H	32	PRO
16	H	33	GLN
17	I	65	SER
17	I	92	PRO
18	J	13	ARG
18	J	21	THR
18	J	41	LYS
18	J	45	THR
18	J	73	VAL
18	J	81	ILE
19	K	49	ARG
19	K	71	ARG
19	K	108	ARG
20	L	66	PHE
20	L	88	GLY
21	M	35	ALA
21	M	36	VAL
21	M	56	ALA
21	M	69	PRO
22	N	11	ASN
22	N	80	PHE
22	N	102	PHE
23	O	3	LYS
23	O	57	ALA
23	O	58	ILE
24	P	15	ASP
24	P	20	ARG
24	P	25	VAL
24	P	33	GLU
24	P	93	LYS
24	P	105	LYS
25	Q	90	ASP

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Mol	Chain	Res	Type
25	Q	91	ARG
26	R	27	ILE
26	R	55	ASP
26	R	91	GLN
27	S	14	ALA
28	T	27	SER
28	T	29	THR
28	T	35	ALA
28	T	36	LYS
28	T	69	ARG
28	T	86	THR
28	T	89	GLU
29	U	6	ARG
29	U	16	LYS
29	U	18	LYS
29	U	29	SER
29	U	51	LEU
29	U	88	ASP
30	V	69	GLU
31	W	9	THR
31	W	10	ARG
31	W	18	LYS
31	W	23	LYS
31	W	30	VAL
31	W	40	ARG
31	W	47	GLY
31	W	50	VAL
31	W	51	GLY
32	X	53	LYS
33	Y	22	LEU
33	Y	23	ARG
33	Y	24	GLU
1	0	34	GLY
2	1	4	ILE
4	3	27	ASN
11	C	110	LYS
11	C	120	ASP
11	C	121	ALA
11	C	140	VAL
11	C	196	ASN
11	C	243	PRO
11	C	255	LYS

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Mol	Chain	Res	Type
12	D	54	ALA
12	D	71	ALA
12	D	72	GLY
12	D	93	GLY
12	D	104	VAL
12	D	106	LYS
12	D	118	PHE
12	D	144	GLY
12	D	145	SER
12	D	183	GLU
12	D	184	ARG
12	D	191	GLY
13	E	46	GLN
13	E	153	LEU
14	F	111	ARG
14	F	128	SER
15	G	9	VAL
15	G	30	GLY
15	G	60	GLY
15	G	164	ALA
15	G	168	VAL
16	H	3	VAL
16	H	13	GLY
16	H	29	PHE
16	H	34	GLY
16	H	35	LYS
17	I	30	GLN
17	I	105	LEU
19	K	3	GLN
19	K	13	ASN
19	K	35	VAL
19	K	48	PRO
19	K	72	PRO
20	L	15	ALA
20	L	29	LYS
20	L	69	ARG
20	L	82	LEU
20	L	111	ILE
20	L	114	GLY
21	M	2	LEU
21	M	14	LYS
21	M	54	THR

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Mol	Chain	Res	Type
21	M	55	ARG
21	M	73	ILE
21	M	110	GLU
22	N	2	ARG
22	N	118	ARG
22	N	119	SER
23	O	22	GLY
23	O	59	ALA
23	O	100	HIS
23	O	112	GLU
24	P	54	LEU
24	P	92	ARG
24	P	103	THR
24	P	104	GLY
24	P	113	LEU
25	Q	5	ARG
25	Q	86	SER
25	Q	88	GLU
26	R	29	THR
26	R	64	VAL
27	S	3	THR
28	T	16	VAL
29	U	38	ILE
29	U	50	ALA
29	U	92	VAL
29	U	97	SER
31	W	12	GLY
31	W	48	ALA
31	W	52	CYS
31	W	70	VAL
31	W	77	LYS
32	X	2	ARG
33	Y	36	GLN
34	Z	3	THR
1	0	35	GLU
2	1	50	GLU
2	1	51	ALA
4	3	31	ILE
5	4	16	ILE
11	C	28	PRO
11	C	64	VAL
11	C	256	THR

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Mol	Chain	Res	Type
12	D	11	MET
12	D	91	THR
12	D	169	ARG
12	D	173	GLN
12	D	175	LEU
12	D	192	ALA
13	E	71	GLY
13	E	83	VAL
13	E	86	ALA
13	E	197	GLU
14	F	20	ASN
14	F	113	PHE
14	F	127	TYR
14	F	132	ARG
14	F	149	ARG
15	G	7	PRO
15	G	53	PRO
16	H	12	LEU
17	I	59	THR
18	J	44	TYR
18	J	98	GLU
18	J	125	TYR
19	K	16	ALA
20	L	41	ARG
21	M	78	LEU
21	M	84	LYS
21	M	111	GLU
22	N	32	GLU
22	N	117	ASP
23	O	60	GLU
23	O	77	ALA
25	Q	85	ALA
25	Q	101	ASP
26	R	98	ILE
27	S	64	ALA
27	S	95	ARG
27	S	96	ILE
28	T	38	ALA
28	T	49	LYS
28	T	55	VAL
28	T	68	LYS
28	T	70	HIS

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Mol	Chain	Res	Type
28	T	84	TYR
29	U	45	GLN
29	U	87	GLU
31	W	14	ASP
31	W	25	PHE
31	W	39	GLN
31	W	41	GLY
32	X	34	SER
32	X	61	LYS
32	X	69	GLU
32	X	76	LYS
33	Y	9	LYS
33	Y	17	GLU
33	Y	37	LEU
2	1	15	GLY
5	4	8	LYS
11	C	109	LEU
11	C	157	ALA
11	C	230	PRO
11	C	235	GLU
11	C	248	GLY
12	D	53	GLY
12	D	86	GLU
12	D	107	VAL
12	D	170	VAL
12	D	182	ALA
13	E	9	GLN
13	E	67	ARG
13	E	70	SER
14	F	133	GLU
16	H	8	LYS
16	H	9	VAL
16	H	25	TYR
17	I	6	ALA
17	I	83	ALA
19	K	14	SER
19	K	93	GLN
19	K	119	ALA
21	M	51	ARG
21	M	53	MET
21	M	58	LYS
21	M	60	GLN

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Mol	Chain	Res	Type
21	M	77	PRO
21	M	134	THR
24	P	65	ASN
24	P	86	LYS
25	Q	87	VAL
26	R	65	ALA
28	T	20	ALA
28	T	21	SER
29	U	26	ASN
29	U	83	GLY
29	U	85	ARG
29	U	101	THR
31	W	22	VAL
31	W	33	GLY
31	W	74	LYS
31	W	76	ARG
34	Z	34	THR
4	3	22	LYS
11	C	40	GLY
11	C	135	PRO
11	C	204	LEU
13	E	96	VAL
13	E	116	ASP
13	E	188	MET
14	F	2	LYS
15	G	16	VAL
15	G	33	THR
15	G	94	ARG
15	G	97	VAL
16	H	31	VAL
16	H	40	THR
16	H	53	GLU
17	I	3	LYS
17	I	7	TYR
17	I	20	SER
17	I	89	SER
18	J	14	ASP
19	K	73	ASP
20	L	19	LEU
22	N	41	ALA
22	N	42	LYS
23	O	89	ASP

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Mol	Chain	Res	Type
24	P	51	ASN
29	U	53	GLN
32	X	17	ARG
34	Z	39	ASP
11	C	30	ALA
11	C	37	SER
12	D	95	SER
12	D	109	VAL
12	D	159	LYS
14	F	83	PRO
18	J	65	THR
19	K	46	ALA
23	O	66	GLY
26	R	40	MET
26	R	53	PHE
31	W	68	PHE
31	W	78	PHE
17	I	97	VAL
18	J	124	VAL
20	L	87	GLY
21	M	26	VAL
26	R	49	ILE
29	U	54	PRO
4	3	6	VAL
13	E	177	PRO
14	F	150	GLY
15	G	167	VAL
33	Y	46	VAL
34	Z	35	VAL
15	G	78	VAL
15	G	153	PRO
17	I	23	VAL
30	V	67	GLY
12	D	63	PRO
12	D	151	THR
13	E	73	ILE
17	I	31	GLY
22	N	101	GLY
26	R	100	GLY
15	G	91	VAL
29	U	47	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	
1	0	47/47 (100%)	36 (77%)	11 (23%)	1	5
2	1	45/45 (100%)	36 (80%)	9 (20%)	1	7
3	2	38/38 (100%)	29 (76%)	9 (24%)	1	4
4	3	51/51 (100%)	42 (82%)	9 (18%)	2	9
5	4	34/34 (100%)	28 (82%)	6 (18%)	2	9
11	C	216/216 (100%)	169 (78%)	47 (22%)	1	6
12	D	164/164 (100%)	131 (80%)	33 (20%)	1	7
13	E	165/165 (100%)	106 (64%)	59 (36%)	0	1
14	F	148/148 (100%)	110 (74%)	38 (26%)	0	3
15	G	137/137 (100%)	99 (72%)	38 (28%)	0	3
16	H	44/44 (100%)	31 (70%)	13 (30%)	0	2
17	I	109/109 (100%)	95 (87%)	14 (13%)	4	15
18	J	116/116 (100%)	87 (75%)	29 (25%)	0	4
19	K	103/103 (100%)	77 (75%)	26 (25%)	0	4
20	L	102/102 (100%)	76 (74%)	26 (26%)	0	3
21	M	109/109 (100%)	78 (72%)	31 (28%)	0	2
22	N	100/100 (100%)	79 (79%)	21 (21%)	1	6
23	O	86/86 (100%)	67 (78%)	19 (22%)	1	6
24	P	99/99 (100%)	64 (65%)	35 (35%)	0	1
25	Q	89/89 (100%)	61 (68%)	28 (32%)	0	2
26	R	84/84 (100%)	59 (70%)	25 (30%)	0	2
27	S	93/93 (100%)	67 (72%)	26 (28%)	0	3
28	T	80/80 (100%)	52 (65%)	28 (35%)	0	1
29	U	83/83 (100%)	66 (80%)	17 (20%)	1	7
30	V	78/78 (100%)	63 (81%)	15 (19%)	1	8
31	W	59/59 (100%)	39 (66%)	20 (34%)	0	1

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
32	X	67/67 (100%)	51 (76%)	16 (24%)	1	4
33	Y	55/55 (100%)	39 (71%)	16 (29%)	0	2
34	Z	48/48 (100%)	34 (71%)	14 (29%)	0	2
All	All	2649/2649 (100%)	1971 (74%)	678 (26%)	2	3

All (678) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	0	2	VAL
1	0	4	GLN
1	0	5	ASN
1	0	9	ARG
1	0	17	SER
1	0	24	VAL
1	0	25	THR
1	0	28	SER
1	0	39	ARG
1	0	42	ILE
1	0	52	LYS
2	1	9	LYS
2	1	16	THR
2	1	21	THR
2	1	29	LYS
2	1	33	LEU
2	1	35	LEU
2	1	41	VAL
2	1	42	VAL
2	1	45	HIS
3	2	1	MET
3	2	3	ARG
3	2	9	VAL
3	2	12	ARG
3	2	21	ARG
3	2	22	MET
3	2	42	LEU
3	2	43	THR
3	2	44	VAL
4	3	5	THR
4	3	7	ARG
4	3	29	ARG
4	3	30	HIS

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Mol	Chain	Res	Type
4	3	31	ILE
4	3	49	VAL
4	3	51	LYS
4	3	54	LEU
4	3	56	LEU
5	4	4	ARG
5	4	9	LYS
5	4	10	LEU
5	4	13	ASN
5	4	14	CYS
5	4	16	ILE
11	C	2	VAL
11	C	3	VAL
11	C	8	THR
11	C	12	ARG
11	C	18	VAL
11	C	20	ASN
11	C	35	LYS
11	C	38	LYS
11	C	43	ASN
11	C	49	THR
11	C	70	LYS
11	C	73	ILE
11	C	76	VAL
11	C	77	VAL
11	C	79	ARG
11	C	85	ASN
11	C	90	ILE
11	C	93	VAL
11	C	103	ILE
11	C	104	LEU
11	C	109	LEU
11	C	114	GLN
11	C	115	ILE
11	C	119	VAL
11	C	120	ASP
11	C	123	ILE
11	C	140	VAL
11	C	142	ASN
11	C	143	VAL
11	C	152	GLN
11	C	155	ARG

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Mol	Chain	Res	Type
11	C	161	VAL
11	C	172	THR
11	C	173	LEU
11	C	175	LEU
11	C	193	GLU
11	C	201	LEU
11	C	202	ARG
11	C	203	VAL
11	C	216	ARG
11	C	227	VAL
11	C	243	PRO
11	C	250	GLN
11	C	252	LYS
11	C	254	LYS
11	C	256	THR
11	C	267	VAL
12	D	9	VAL
12	D	12	THR
12	D	13	ARG
12	D	16	THR
12	D	20	VAL
12	D	24	VAL
12	D	25	THR
12	D	43	ASP
12	D	64	GLU
12	D	70	LYS
12	D	73	VAL
12	D	89	GLU
12	D	90	PHE
12	D	91	THR
12	D	98	VAL
12	D	105	LYS
12	D	114	LYS
12	D	122	VAL
12	D	124	ARG
12	D	142	VAL
12	D	150	GLN
12	D	151	THR
12	D	159	LYS
12	D	170	VAL
12	D	171	THR
12	D	176	ASP

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Mol	Chain	Res	Type
12	D	177	VAL
12	D	183	GLU
12	D	186	LEU
12	D	197	THR
12	D	201	LEU
12	D	203	VAL
12	D	207	VAL
13	E	4	VAL
13	E	12	LEU
13	E	18	THR
13	E	28	VAL
13	E	32	VAL
13	E	41	GLN
13	E	43	THR
13	E	44	ARG
13	E	46	GLN
13	E	51	GLU
13	E	55	SER
13	E	61	ARG
13	E	62	GLN
13	E	63	LYS
13	E	65	THR
13	E	69	ARG
13	E	70	SER
13	E	73	ILE
13	E	77	ILE
13	E	78	TRP
13	E	80	SER
13	E	90	GLN
13	E	91	ASP
13	E	96	VAL
13	E	108	ILE
13	E	109	LEU
13	E	110	SER
13	E	113	VAL
13	E	116	ASP
13	E	118	LEU
13	E	119	ILE
13	E	121	VAL
13	E	123	LYS
13	E	125	SER
13	E	127	GLU

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Mol	Chain	Res	Type
13	E	132	LYS
13	E	136	GLN
13	E	141	MET
13	E	144	GLU
13	E	145	ASP
13	E	146	VAL
13	E	147	LEU
13	E	148	ILE
13	E	149	ILE
13	E	153	LEU
13	E	159	LEU
13	E	163	ASN
13	E	167	VAL
13	E	169	VAL
13	E	170	ARG
13	E	171	ASP
13	E	173	THR
13	E	175	ILE
13	E	178	VAL
13	E	186	VAL
13	E	193	VAL
13	E	197	GLU
13	E	198	GLU
13	E	200	LEU
14	F	3	LEU
14	F	8	LYS
14	F	9	ASP
14	F	11	VAL
14	F	12	VAL
14	F	17	THR
14	F	18	GLU
14	F	24	VAL
14	F	27	VAL
14	F	30	VAL
14	F	34	THR
14	F	35	LEU
14	F	36	ASN
14	F	37	MET
14	F	46	LYS
14	F	47	LYS
14	F	56	LEU
14	F	65	LEU

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Mol	Chain	Res	Type
14	F	66	ILE
14	F	88	VAL
14	F	90	LEU
14	F	103	ILE
14	F	105	ILE
14	F	107	VAL
14	F	109	ARG
14	F	111	ARG
14	F	114	ARG
14	F	116	LEU
14	F	132	ARG
14	F	134	GLN
14	F	135	ILE
14	F	136	ILE
14	F	140	ILE
14	F	151	LEU
14	F	153	ILE
14	F	154	THR
14	F	166	ARG
14	F	169	LEU
15	G	3	VAL
15	G	7	PRO
15	G	8	VAL
15	G	10	VAL
15	G	18	ILE
15	G	34	ARG
15	G	35	THR
15	G	40	VAL
15	G	41	GLU
15	G	42	VAL
15	G	50	THR
15	G	59	ASP
15	G	68	ARG
15	G	75	VAL
15	G	76	ILE
15	G	78	VAL
15	G	80	GLU
15	G	84	LYS
15	G	86	LEU
15	G	93	TYR
15	G	101	VAL
15	G	103	ASN

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Mol	Chain	Res	Type
15	G	104	LEU
15	G	105	SER
15	G	116	LEU
15	G	120	ILE
15	G	121	THR
15	G	123	GLU
15	G	131	VAL
15	G	132	LEU
15	G	138	GLN
15	G	140	ILE
15	G	142	GLN
15	G	157	LYS
15	G	159	LYS
15	G	165	ASP
15	G	170	THR
15	G	174	LYS
16	H	2	GLN
16	H	3	VAL
16	H	6	LEU
16	H	9	VAL
16	H	12	LEU
16	H	14	SER
16	H	15	LEU
16	H	18	GLN
16	H	28	ASN
16	H	31	VAL
16	H	43	ASN
16	H	50	ARG
16	H	54	LEU
17	I	10	LEU
17	I	11	GLN
17	I	12	VAL
17	I	23	VAL
17	I	30	GLN
17	I	39	LYS
17	I	49	GLU
17	I	61	TYR
17	I	71	LYS
17	I	81	LYS
17	I	85	ILE
17	I	86	LYS
17	I	95	ASP

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Mol	Chain	Res	Type
17	I	107	GLU
18	J	1	MET
18	J	2	LYS
18	J	3	THR
18	J	17	VAL
18	J	24	THR
18	J	25	LEU
18	J	30	THR
18	J	36	LEU
18	J	41	LYS
18	J	44	TYR
18	J	54	ILE
18	J	55	ILE
18	J	57	LEU
18	J	64	VAL
18	J	65	THR
18	J	72	LYS
18	J	78	THR
18	J	85	LYS
18	J	86	GLN
18	J	90	GLU
18	J	101	ILE
18	J	103	ILE
18	J	105	VAL
18	J	111	LYS
18	J	114	LEU
18	J	129	GLU
18	J	135	GLN
18	J	139	VAL
18	J	140	LEU
19	K	8	LEU
19	K	13	ASN
19	K	18	ARG
19	K	23	LYS
19	K	30	ARG
19	K	39	ILE
19	K	41	ILE
19	K	43	ILE
19	K	45	GLU
19	K	47	ILE
19	K	51	LYS
19	K	52	VAL

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Mol	Chain	Res	Type
19	K	54	LYS
19	K	57	VAL
19	K	58	LEU
19	K	63	VAL
19	K	67	LYS
19	K	73	ASP
19	K	77	ILE
19	K	86	LEU
19	K	92	GLU
19	K	93	GLN
19	K	95	ILE
19	K	108	ARG
19	K	114	LYS
19	K	118	LEU
20	L	3	LEU
20	L	4	ASN
20	L	6	LEU
20	L	13	LYS
20	L	19	LEU
20	L	27	LEU
20	L	30	THR
20	L	39	LYS
20	L	48	ARG
20	L	55	MET
20	L	61	LEU
20	L	66	PHE
20	L	67	THR
20	L	74	THR
20	L	85	VAL
20	L	89	VAL
20	L	93	ASN
20	L	94	THR
20	L	101	ILE
20	L	110	VAL
20	L	111	ILE
20	L	118	THR
20	L	120	VAL
20	L	122	VAL
20	L	125	LEU
20	L	127	VAL
21	M	2	LEU
21	M	3	GLN

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Mol	Chain	Res	Type
21	M	5	LYS
21	M	8	LYS
21	M	10	ARG
21	M	13	HIS
21	M	14	LYS
21	M	20	LEU
21	M	24	THR
21	M	27	SER
21	M	33	LEU
21	M	36	VAL
21	M	46	ILE
21	M	57	VAL
21	M	60	GLN
21	M	70	ASP
21	M	72	PRO
21	M	80	VAL
21	M	81	ARG
21	M	90	GLU
21	M	95	LEU
21	M	96	ILE
21	M	97	GLN
21	M	100	LYS
21	M	102	LEU
21	M	110	GLU
21	M	115	GLU
21	M	129	THR
21	M	131	VAL
21	M	133	LYS
21	M	134	THR
22	N	10	LEU
22	N	12	ARG
22	N	18	GLN
22	N	31	HIS
22	N	33	ILE
22	N	35	LYS
22	N	36	THR
22	N	38	LEU
22	N	48	VAL
22	N	51	LEU
22	N	65	LEU
22	N	69	ARG
22	N	71	ARG

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Mol	Chain	Res	Type
22	N	75	ILE
22	N	83	LEU
22	N	86	ARG
22	N	95	THR
22	N	109	PRO
22	N	117	ASP
22	N	118	ARG
22	N	120	GLU
23	O	2	ASP
23	O	4	LYS
23	O	9	ARG
23	O	16	ARG
23	O	17	LYS
23	O	18	LEU
23	O	58	ILE
23	O	65	THR
23	O	80	GLU
23	O	81	ARG
23	O	83	LEU
23	O	87	ILE
23	O	94	ARG
23	O	98	GLN
23	O	103	VAL
23	O	106	LEU
23	O	111	ARG
23	O	115	LEU
23	O	116	GLN
24	P	3	ILE
24	P	6	GLN
24	P	7	LEU
24	P	9	GLN
24	P	14	GLN
24	P	16	VAL
24	P	18	SER
24	P	19	PHE
24	P	20	ARG
24	P	24	THR
24	P	28	LYS
24	P	35	SER
24	P	36	LYS
24	P	37	LYS
24	P	38	ARG

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Mol	Chain	Res	Type
24	P	39	LEU
24	P	40	GLN
24	P	52	ARG
24	P	56	SER
24	P	60	VAL
24	P	61	ARG
24	P	64	SER
24	P	69	VAL
24	P	75	THR
24	P	79	VAL
24	P	80	VAL
24	P	83	ILE
24	P	85	VAL
24	P	87	ARG
24	P	91	VAL
24	P	92	ARG
24	P	95	LYS
24	P	96	LEU
24	P	99	LEU
24	P	109	ILE
25	Q	2	ARG
25	Q	4	LYS
25	Q	7	VAL
25	Q	8	ILE
25	Q	10	ARG
25	Q	14	LYS
25	Q	17	LEU
25	Q	29	ARG
25	Q	30	VAL
25	Q	40	LYS
25	Q	43	GLN
25	Q	50	ARG
25	Q	58	GLN
25	Q	59	LEU
25	Q	61	ILE
25	Q	63	ARG
25	Q	65	ASN
25	Q	69	ARG
25	Q	73	ILE
25	Q	87	VAL
25	Q	88	GLU
25	Q	89	ILE

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Mol	Chain	Res	Type
25	Q	93	ILE
25	Q	94	LEU
25	Q	96	ASP
25	Q	97	ILE
25	Q	106	THR
25	Q	116	LEU
26	R	1	MET
26	R	10	LYS
26	R	14	VAL
26	R	16	GLU
26	R	18	GLN
26	R	20	VAL
26	R	24	LYS
26	R	37	GLU
26	R	38	VAL
26	R	39	LEU
26	R	40	MET
26	R	45	GLU
26	R	46	GLU
26	R	47	VAL
26	R	48	LYS
26	R	51	VAL
26	R	54	VAL
26	R	55	ASP
26	R	63	VAL
26	R	72	VAL
26	R	74	ILE
26	R	94	THR
26	R	97	LYS
26	R	99	THR
26	R	102	SER
27	S	1	MET
27	S	4	ILE
27	S	19	LEU
27	S	24	ILE
27	S	29	VAL
27	S	30	SER
27	S	33	LEU
27	S	37	THR
27	S	39	THR
27	S	41	LYS
27	S	42	LYS

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Mol	Chain	Res	Type
27	S	45	VAL
27	S	47	VAL
27	S	48	LYS
27	S	57	ASN
27	S	59	GLU
27	S	66	ILE
27	S	69	LEU
27	S	71	VAL
27	S	73	LYS
27	S	74	ILE
27	S	76	VAL
27	S	83	LYS
27	S	88	ARG
27	S	96	ILE
27	S	101	SER
28	T	2	ILE
28	T	3	ARG
28	T	4	GLU
28	T	10	VAL
28	T	17	SER
28	T	18	GLU
28	T	19	LYS
28	T	28	ASN
28	T	29	THR
28	T	30	ILE
28	T	31	VAL
28	T	32	LEU
28	T	36	LYS
28	T	37	ASP
28	T	43	ILE
28	T	48	GLN
28	T	49	LYS
28	T	50	LEU
28	T	54	GLU
28	T	58	VAL
28	T	61	LEU
28	T	67	VAL
28	T	68	LYS
28	T	69	ARG
28	T	74	ILE
28	T	77	ARG
28	T	82	LYS

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Mol	Chain	Res	Type
28	T	93	LEU
29	U	4	ILE
29	U	5	ARG
29	U	8	ASP
29	U	10	VAL
29	U	14	THR
29	U	18	LYS
29	U	29	SER
29	U	30	SER
29	U	33	VAL
29	U	42	LYS
29	U	43	LYS
29	U	61	GLU
29	U	64	ILE
29	U	67	SER
29	U	71	ILE
29	U	86	PHE
29	U	102	ILE
30	V	1	MET
30	V	3	THR
30	V	5	ASN
30	V	10	LYS
30	V	20	LEU
30	V	29	ILE
30	V	35	GLU
30	V	41	GLU
30	V	42	LEU
30	V	46	LYS
30	V	51	GLN
30	V	55	GLU
30	V	60	VAL
30	V	65	VAL
30	V	85	LYS
31	W	10	ARG
31	W	13	ARG
31	W	14	ASP
31	W	15	SER
31	W	16	GLU
31	W	22	VAL
31	W	23	LYS
31	W	24	ARG
31	W	28	GLU

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Mol	Chain	Res	Type
31	W	31	LEU
31	W	35	ILE
31	W	38	ARG
31	W	42	THR
31	W	45	HIS
31	W	49	ASN
31	W	54	ARG
31	W	58	LEU
31	W	61	LYS
31	W	69	GLU
31	W	76	ARG
32	X	10	ARG
32	X	17	ARG
32	X	24	THR
32	X	26	ARG
32	X	27	ARG
32	X	29	LEU
32	X	34	SER
32	X	39	VAL
32	X	46	VAL
32	X	47	THR
32	X	58	ILE
32	X	63	ILE
32	X	65	THR
32	X	70	LEU
32	X	73	ARG
32	X	77	TYR
33	Y	9	LYS
33	Y	14	LEU
33	Y	16	THR
33	Y	18	LEU
33	Y	19	LEU
33	Y	21	LEU
33	Y	22	LEU
33	Y	29	ARG
33	Y	37	LEU
33	Y	39	GLN
33	Y	42	LEU
33	Y	47	ARG
33	Y	55	THR
33	Y	56	LEU
33	Y	57	LEU

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Mol	Chain	Res	Type
33	Y	59	GLU
34	Z	2	LYS
34	Z	3	THR
34	Z	8	GLN
34	Z	9	THR
34	Z	13	ILE
34	Z	15	ARG
34	Z	23	LEU
34	Z	24	LEU
34	Z	31	ILE
34	Z	37	ARG
34	Z	43	ILE
34	Z	44	ARG
34	Z	54	VAL
34	Z	56	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (115) such sidechains are listed below:

Mol	Chain	Res	Type
1	0	3	GLN
1	0	4	GLN
1	0	41	HIS
3	2	6	GLN
3	2	13	ASN
3	2	16	HIS
4	3	27	ASN
4	3	30	HIS
5	4	13	ASN
5	4	33	HIS
5	4	35	GLN
11	C	14	HIS
11	C	20	ASN
11	C	43	ASN
11	C	59	GLN
11	C	69	ASN
11	C	89	ASN
11	C	114	GLN
11	C	141	HIS
11	C	142	ASN
11	C	152	GLN
11	C	199	HIS
11	C	229	HIS

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Mol	Chain	Res	Type
11	C	238	ASN
11	C	250	GLN
12	D	32	ASN
12	D	42	ASN
12	D	49	GLN
12	D	58	ASN
12	D	126	ASN
12	D	130	GLN
12	D	150	GLN
13	E	24	ASN
13	E	30	GLN
13	E	46	GLN
13	E	62	GLN
13	E	97	ASN
14	F	4	HIS
14	F	22	ASN
14	F	26	GLN
14	F	134	GLN
15	G	72	ASN
15	G	103	ASN
15	G	138	GLN
16	H	11	ASN
16	H	18	GLN
16	H	20	ASN
16	H	33	GLN
16	H	43	ASN
17	I	5	GLN
17	I	30	GLN
17	I	110	GLN
18	J	40	HIS
18	J	58	ASN
18	J	76	HIS
18	J	77	HIS
18	J	128	ASN
18	J	130	HIS
18	J	135	GLN
19	K	3	GLN
19	K	5	GLN
19	K	88	ASN
19	K	89	ASN
20	L	4	ASN
20	L	54	GLN

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Mol	Chain	Res	Type
20	L	93	ASN
20	L	99	ASN
20	L	104	GLN
21	M	3	GLN
21	M	88	ASN
22	N	9	GLN
22	N	11	ASN
22	N	18	GLN
22	N	62	ASN
22	N	73	ASN
22	N	107	ASN
23	O	19	GLN
23	O	34	HIS
23	O	98	GLN
23	O	116	GLN
24	P	9	GLN
24	P	11	GLN
24	P	40	GLN
24	P	65	ASN
24	P	74	GLN
25	Q	43	GLN
25	Q	51	GLN
25	Q	65	ASN
26	R	18	GLN
26	R	43	ASN
26	R	87	GLN
26	R	89	HIS
27	S	40	ASN
27	S	57	ASN
27	S	61	ASN
28	T	48	GLN
28	T	72	GLN
28	T	91	GLN
29	U	52	ASN
29	U	65	GLN
29	U	73	ASN
30	V	5	ASN
30	V	44	HIS
30	V	51	GLN
30	V	80	HIS
30	V	87	GLN
30	V	88	HIS

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Mol	Chain	Res	Type
31	W	39	GLN
32	X	5	GLN
32	X	22	ASN
33	Y	15	ASN
33	Y	20	ASN
33	Y	27	ASN
33	Y	41	HIS
33	Y	58	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
10	B	115/118 (97%)	37 (32%)	17 (14%)
6	5	1/2 (50%)	0	0
8	7	2/3 (66%)	0	0
9	A	2848/2904 (98%)	986 (34%)	423 (14%)
All	All	2966/3027 (97%)	1023 (34%)	440 (14%)

All (1023) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
9	A	10	A
9	A	13	A
9	A	14	A
9	A	15	G
9	A	23	G
9	A	27	G
9	A	28	A
9	A	31	C
9	A	34	U
9	A	35	G
9	A	36	G
9	A	37	C
9	A	38	A
9	A	39	G
9	A	42	A
9	A	43	G
9	A	45	G
9	A	46	G
9	A	49	A
9	A	50	U

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Mol	Chain	Res	Type
9	A	52	A
9	A	53	A
9	A	58	G
9	A	61	C
9	A	63	A
9	A	64	A
9	A	70	G
9	A	71	A
9	A	73	A
9	A	74	A
9	A	75	G
9	A	76	C
9	A	78	U
9	A	82	U
9	A	84	A
9	A	85	G
9	A	86	G
9	A	91	A
9	A	92	U
9	A	93	G
9	A	101	A
9	A	118	A
9	A	119	A
9	A	120	U
9	A	121	G
9	A	126	A
9	A	127	A
9	A	128	C
9	A	131	A
9	A	134	G
9	A	137	U
9	A	138	U
9	A	139	U
9	A	140	C
9	A	141	G
9	A	142	A
9	A	143	C
9	A	144	A
9	A	145	C
9	A	147	C
9	A	162	U
9	A	163	C

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Mol	Chain	Res	Type
9	A	164	C
9	A	165	A
9	A	166	U
9	A	196	A
9	A	197	A
9	A	198	C
9	A	199	A
9	A	200	U
9	A	204	A
9	A	205	G
9	A	206	U
9	A	207	A
9	A	214	G
9	A	216	A
9	A	221	A
9	A	222	A
9	A	223	A
9	A	224	U
9	A	225	C
9	A	226	A
9	A	227	A
9	A	228	C
9	A	229	C
9	A	230	G
9	A	231	A
9	A	232	G
9	A	233	A
9	A	239	C
9	A	240	C
9	A	241	A
9	A	242	G
9	A	243	U
9	A	244	A
9	A	248	G
9	A	249	C
9	A	250	G
9	A	255	A
9	A	265	A
9	A	266	G
9	A	267	C
9	A	268	C
9	A	271	G

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Mol	Chain	Res	Type
9	A	272	A
9	A	273	G
9	A	274	C
9	A	276	U
9	A	279	A
9	A	281	C
9	A	285	G
9	A	291	G
9	A	299	A
9	A	301	G
9	A	302	C
9	A	303	G
9	A	306	U
9	A	310	A
9	A	312	G
9	A	313	G
9	A	322	A
9	A	324	A
9	A	325	G
9	A	329	G
9	A	330	A
9	A	331	C
9	A	341	C
9	A	345	A
9	A	346	A
9	A	347	A
9	A	349	U
9	A	353	C
9	A	359	G
9	A	361	G
9	A	369	U
9	A	370	G
9	A	371	A
9	A	372	G
9	A	373	U
9	A	375	G
9	A	383	C
9	A	386	G
9	A	387	U
9	A	388	G
9	A	389	G
9	A	390	U

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Mol	Chain	Res	Type
9	A	391	A
9	A	396	G
9	A	399	U
9	A	404	A
9	A	405	U
9	A	406	G
9	A	411	G
9	A	412	A
9	A	413	C
9	A	414	C
9	A	421	C
9	A	422	A
9	A	423	A
9	A	424	G
9	A	425	G
9	A	434	U
9	A	435	C
9	A	439	A
9	A	440	C
9	A	443	A
9	A	444	C
9	A	446	G
9	A	447	A
9	A	452	G
9	A	454	A
9	A	455	C
9	A	457	A
9	A	459	U
9	A	460	A
9	A	474	G
9	A	475	C
9	A	476	G
9	A	479	A
9	A	480	A
9	A	481	G
9	A	482	A
9	A	483	A
9	A	489	G
9	A	490	C
9	A	491	G
9	A	492	A
9	A	504	A

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Mol	Chain	Res	Type
9	A	505	A
9	A	506	G
9	A	507	A
9	A	508	A
9	A	509	C
9	A	510	C
9	A	512	G
9	A	513	A
9	A	514	A
9	A	522	A
9	A	528	A
9	A	529	A
9	A	530	G
9	A	531	C
9	A	532	A
9	A	533	G
9	A	538	A
9	A	544	C
9	A	546	U
9	A	547	A
9	A	548	G
9	A	549	G
9	A	550	C
9	A	555	G
9	A	556	A
9	A	563	A
9	A	571	U
9	A	572	A
9	A	573	U
9	A	574	A
9	A	575	A
9	A	581	C
9	A	582	A
9	A	586	A
9	A	587	C
9	A	588	U
9	A	604	G
9	A	605	G
9	A	613	A
9	A	614	A
9	A	615	U
9	A	621	A

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Mol	Chain	Res	Type
9	A	626	A
9	A	627	A
9	A	628	G
9	A	631	A
9	A	637	A
9	A	638	G
9	A	641	U
9	A	645	C
9	A	646	U
9	A	647	G
9	A	648	G
9	A	651	G
9	A	653	U
9	A	654	A
9	A	655	A
9	A	656	G
9	A	664	G
9	A	685	A
9	A	686	U
9	A	698	C
9	A	704	G
9	A	705	A
9	A	727	A
9	A	728	G
9	A	729	G
9	A	730	A
9	A	738	G
9	A	740	C
9	A	747	U
9	A	748	G
9	A	755	U
9	A	762	U
9	A	763	G
9	A	764	A
9	A	765	C
9	A	766	U
9	A	774	G
9	A	775	G
9	A	776	G
9	A	782	A
9	A	784	G
9	A	785	G

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Mol	Chain	Res	Type
9	A	788	A
9	A	789	A
9	A	791	C
9	A	792	A
9	A	800	A
9	A	801	G
9	A	803	U
9	A	805	G
9	A	806	C
9	A	812	C
9	A	819	A
9	A	822	G
9	A	827	U
9	A	828	U
9	A	829	A
9	A	830	G
9	A	836	G
9	A	845	A
9	A	846	U
9	A	847	U
9	A	848	C
9	A	852	U
9	A	858	G
9	A	859	G
9	A	860	U
9	A	861	A
9	A	865	C
9	A	866	A
9	A	867	C
9	A	876	C
9	A	877	A
9	A	878	A
9	A	879	G
9	A	885	C
9	A	896	A
9	A	897	C
9	A	910	A
9	A	914	G
9	A	915	C
9	A	916	G
9	A	932	U
9	A	933	A

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Mol	Chain	Res	Type
9	A	934	U
9	A	935	C
9	A	941	A
9	A	945	A
9	A	946	C
9	A	947	A
9	A	955	U
9	A	956	G
9	A	958	U
9	A	959	A
9	A	961	C
9	A	962	G
9	A	974	G
9	A	977	G
9	A	983	A
9	A	984	A
9	A	985	C
9	A	989	G
9	A	990	A
9	A	991	C
9	A	995	C
9	A	996	A
9	A	997	G
9	A	1008	A
9	A	1009	A
9	A	1010	A
9	A	1011	G
9	A	1012	U
9	A	1013	C
9	A	1014	A
9	A	1020	A
9	A	1021	A
9	A	1022	G
9	A	1023	U
9	A	1024	G
9	A	1025	G
9	A	1026	G
9	A	1027	A
9	A	1033	U
9	A	1034	G
9	A	1040	A
9	A	1044	C

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Mol	Chain	Res	Type
9	A	1045	C
9	A	1046	A
9	A	1047	G
9	A	1048	A
9	A	1049	C
9	A	1057	A
9	A	1060	U
9	A	1061	U
9	A	1062	G
9	A	1063	G
9	A	1064	C
9	A	1065	U
9	A	1066	U
9	A	1070	A
9	A	1071	G
9	A	1073	A
9	A	1074	G
9	A	1075	C
9	A	1078	U
9	A	1080	A
9	A	1081	U
9	A	1083	U
9	A	1084	A
9	A	1088	A
9	A	1098	A
9	A	1111	A
9	A	1112	G
9	A	1113	U
9	A	1115	G
9	A	1116	G
9	A	1117	C
9	A	1120	G
9	A	1128	G
9	A	1129	A
9	A	1130	U
9	A	1132	U
9	A	1133	A
9	A	1135	C
9	A	1136	G
9	A	1139	G
9	A	1141	U
9	A	1142	A

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Mol	Chain	Res	Type
9	A	1144	A
9	A	1145	C
9	A	1151	A
9	A	1152	C
9	A	1154	G
9	A	1156	A
9	A	1157	G
9	A	1158	C
9	A	1162	G
9	A	1172	C
9	A	1175	A
9	A	1176	U
9	A	1180	U
9	A	1181	U
9	A	1185	G
9	A	1186	G
9	A	1189	A
9	A	1190	G
9	A	1204	A
9	A	1205	A
9	A	1206	G
9	A	1207	C
9	A	1210	G
9	A	1211	C
9	A	1213	A
9	A	1214	A
9	A	1238	G
9	A	1247	A
9	A	1248	G
9	A	1249	U
9	A	1250	G
9	A	1251	C
9	A	1253	A
9	A	1254	A
9	A	1255	U
9	A	1256	G
9	A	1262	A
9	A	1266	G
9	A	1267	U
9	A	1268	A
9	A	1271	G
9	A	1272	A

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Mol	Chain	Res	Type
9	A	1273	U
9	A	1275	A
9	A	1276	A
9	A	1277	G
9	A	1284	A
9	A	1287	A
9	A	1288	G
9	A	1289	C
9	A	1290	C
9	A	1297	C
9	A	1300	G
9	A	1301	A
9	A	1303	G
9	A	1304	A
9	A	1319	C
9	A	1320	C
9	A	1321	A
9	A	1322	A
9	A	1324	G
9	A	1325	U
9	A	1327	A
9	A	1328	A
9	A	1329	U
9	A	1330	C
9	A	1336	A
9	A	1340	U
9	A	1341	G
9	A	1343	G
9	A	1344	U
9	A	1345	C
9	A	1349	C
9	A	1350	C
9	A	1352	U
9	A	1356	G
9	A	1360	G
9	A	1361	G
9	A	1365	A
9	A	1368	G
9	A	1377	G
9	A	1378	A
9	A	1379	U
9	A	1380	G

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Mol	Chain	Res	Type
9	A	1383	A
9	A	1386	C
9	A	1387	A
9	A	1395	A
9	A	1397	U
9	A	1398	C
9	A	1399	C
9	A	1403	A
9	A	1404	C
9	A	1407	G
9	A	1408	G
9	A	1415	U
9	A	1416	G
9	A	1417	C
9	A	1418	G
9	A	1419	A
9	A	1420	A
9	A	1421	G
9	A	1422	G
9	A	1425	G
9	A	1427	A
9	A	1428	C
9	A	1429	G
9	A	1430	G
9	A	1434	A
9	A	1435	G
9	A	1436	G
9	A	1440	U
9	A	1451	C
9	A	1452	G
9	A	1453	A
9	A	1455	G
9	A	1459	G
9	A	1460	U
9	A	1461	C
9	A	1462	C
9	A	1463	C
9	A	1475	G
9	A	1476	U
9	A	1477	A
9	A	1482	G
9	A	1490	A

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Mol	Chain	Res	Type
9	A	1491	G
9	A	1492	G
9	A	1494	A
9	A	1495	A
9	A	1497	U
9	A	1498	C
9	A	1499	C
9	A	1504	A
9	A	1507	C
9	A	1509	A
9	A	1510	G
9	A	1511	G
9	A	1512	C
9	A	1515	A
9	A	1522	A
9	A	1523	U
9	A	1527	G
9	A	1528	A
9	A	1533	C
9	A	1534	U
9	A	1535	A
9	A	1536	C
9	A	1537	G
9	A	1538	G
9	A	1540	G
9	A	1554	U
9	A	1555	G
9	A	1556	C
9	A	1558	C
9	A	1559	U
9	A	1564	C
9	A	1565	C
9	A	1566	A
9	A	1569	A
9	A	1574	C
9	A	1578	U
9	A	1581	G
9	A	1583	A
9	A	1584	U
9	A	1585	C
9	A	1588	G
9	A	1602	U

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Mol	Chain	Res	Type
9	A	1603	A
9	A	1606	C
9	A	1607	C
9	A	1608	A
9	A	1609	A
9	A	1610	A
9	A	1613	G
9	A	1615	C
9	A	1616	A
9	A	1627	G
9	A	1628	G
9	A	1634	A
9	A	1635	A
9	A	1639	C
9	A	1644	C
9	A	1645	G
9	A	1647	U
9	A	1648	U
9	A	1649	G
9	A	1651	G
9	A	1652	A
9	A	1654	A
9	A	1655	A
9	A	1674	G
9	A	1675	C
9	A	1676	A
9	A	1695	G
9	A	1696	G
9	A	1698	A
9	A	1699	G
9	A	1700	A
9	A	1701	A
9	A	1707	G
9	A	1708	C
9	A	1713	A
9	A	1714	U
9	A	1715	G
9	A	1716	U
9	A	1717	A
9	A	1720	U
9	A	1729	U
9	A	1730	C

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Mol	Chain	Res	Type
9	A	1732	C
9	A	1733	G
9	A	1734	G
9	A	1735	A
9	A	1736	U
9	A	1737	G
9	A	1738	G
9	A	1739	A
9	A	1740	G
9	A	1744	A
9	A	1754	A
9	A	1755	A
9	A	1758	U
9	A	1759	A
9	A	1760	C
9	A	1764	C
9	A	1769	U
9	A	1773	A
9	A	1776	G
9	A	1782	U
9	A	1783	A
9	A	1785	A
9	A	1786	A
9	A	1787	A
9	A	1788	C
9	A	1791	A
9	A	1798	U
9	A	1799	G
9	A	1800	C
9	A	1801	A
9	A	1802	A
9	A	1807	G
9	A	1808	A
9	A	1815	A
9	A	1816	C
9	A	1817	G
9	A	1819	A
9	A	1821	A
9	A	1829	A
9	A	1838	C
9	A	1839	G
9	A	1848	A

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Mol	Chain	Res	Type
9	A	1849	G
9	A	1857	G
9	A	1858	A
9	A	1859	U
9	A	1865	U
9	A	1866	A
9	A	1867	G
9	A	1871	A
9	A	1872	A
9	A	1873	G
9	A	1885	A
9	A	1886	U
9	A	1900	A
9	A	1901	A
9	A	1906	G
9	A	1907	G
9	A	1913	A
9	A	1914	C
9	A	1918	A
9	A	1919	A
9	A	1920	C
9	A	1926	U
9	A	1927	A
9	A	1929	G
9	A	1930	G
9	A	1931	U
9	A	1932	A
9	A	1935	G
9	A	1936	A
9	A	1937	A
9	A	1938	A
9	A	1941	C
9	A	1943	U
9	A	1944	U
9	A	1945	G
9	A	1946	U
9	A	1954	G
9	A	1955	U
9	A	1960	A
9	A	1962	C
9	A	1963	U
9	A	1964	G

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Mol	Chain	Res	Type
9	A	1965	C
9	A	1966	A
9	A	1967	C
9	A	1968	G
9	A	1970	A
9	A	1971	U
9	A	1972	G
9	A	1975	G
9	A	1979	U
9	A	1980	G
9	A	1981	A
9	A	1986	C
9	A	1991	U
9	A	1993	U
9	A	1994	C
9	A	1996	C
9	A	1997	C
9	A	1998	A
9	A	2011	U
9	A	2022	U
9	A	2023	C
9	A	2024	G
9	A	2030	A
9	A	2031	A
9	A	2032	G
9	A	2033	A
9	A	2035	G
9	A	2036	C
9	A	2043	C
9	A	2049	G
9	A	2051	A
9	A	2052	A
9	A	2055	C
9	A	2056	G
9	A	2060	A
9	A	2061	G
9	A	2064	C
9	A	2068	U
9	A	2069	G
9	A	2072	C
9	A	2086	U
9	A	2092	U

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Mol	Chain	Res	Type
9	A	2093	G
9	A	2094	A
9	A	2104	C
9	A	2106	U
9	A	2107	G
9	A	2109	U
9	A	2110	G
9	A	2134	A
9	A	2135	A
9	A	2136	G
9	A	2137	U
9	A	2138	G
9	A	2140	G
9	A	2143	C
9	A	2144	G
9	A	2145	C
9	A	2147	A
9	A	2148	G
9	A	2149	U
9	A	2150	C
9	A	2155	U
9	A	2156	G
9	A	2180	U
9	A	2181	U
9	A	2183	A
9	A	2184	A
9	A	2190	G
9	A	2197	U
9	A	2198	A
9	A	2199	A
9	A	2200	C
9	A	2201	G
9	A	2203	U
9	A	2204	G
9	A	2210	U
9	A	2211	A
9	A	2212	A
9	A	2214	C
9	A	2215	C
9	A	2225	A
9	A	2226	C
9	A	2230	G

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Mol	Chain	Res	Type
9	A	2238	G
9	A	2239	G
9	A	2243	U
9	A	2248	C
9	A	2249	U
9	A	2250	G
9	A	2258	C
9	A	2259	U
9	A	2262	U
9	A	2267	A
9	A	2268	A
9	A	2269	G
9	A	2273	A
9	A	2275	C
9	A	2276	G
9	A	2278	A
9	A	2282	G
9	A	2283	C
9	A	2284	A
9	A	2286	G
9	A	2287	A
9	A	2296	U
9	A	2297	A
9	A	2298	A
9	A	2305	U
9	A	2307	G
9	A	2308	G
9	A	2309	A
9	A	2310	C
9	A	2312	U
9	A	2320	U
9	A	2321	U
9	A	2322	A
9	A	2325	G
9	A	2326	C
9	A	2327	A
9	A	2328	A
9	A	2330	G
9	A	2333	A
9	A	2334	U
9	A	2335	A
9	A	2336	A

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Mol	Chain	Res	Type
9	A	2337	G
9	A	2338	C
9	A	2344	U
9	A	2345	G
9	A	2347	C
9	A	2353	G
9	A	2358	A
9	A	2361	G
9	A	2383	G
9	A	2384	U
9	A	2385	C
9	A	2389	G
9	A	2391	G
9	A	2392	A
9	A	2393	U
9	A	2402	U
9	A	2403	C
9	A	2406	A
9	A	2407	A
9	A	2408	U
9	A	2418	A
9	A	2423	U
9	A	2424	C
9	A	2425	A
9	A	2426	A
9	A	2427	C
9	A	2428	G
9	A	2429	G
9	A	2430	A
9	A	2431	U
9	A	2432	A
9	A	2435	A
9	A	2439	A
9	A	2440	C
9	A	2441	U
9	A	2447	G
9	A	2448	A
9	A	2459	A
9	A	2460	U
9	A	2468	A
9	A	2469	A
9	A	2476	A

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Mol	Chain	Res	Type
9	A	2477	U
9	A	2482	A
9	A	2490	G
9	A	2491	U
9	A	2497	A
9	A	2501	C
9	A	2502	G
9	A	2503	A
9	A	2504	U
9	A	2505	G
9	A	2508	G
9	A	2515	C
9	A	2518	A
9	A	2520	C
9	A	2521	C
9	A	2525	G
9	A	2529	G
9	A	2542	A
9	A	2543	G
9	A	2544	G
9	A	2547	A
9	A	2550	G
9	A	2554	U
9	A	2566	A
9	A	2567	G
9	A	2572	A
9	A	2573	C
9	A	2574	G
9	A	2576	G
9	A	2580	U
9	A	2582	G
9	A	2602	A
9	A	2609	U
9	A	2610	C
9	A	2611	C
9	A	2612	C
9	A	2613	U
9	A	2615	U
9	A	2616	C
9	A	2621	G
9	A	2622	U
9	A	2623	G

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Mol	Chain	Res	Type
9	A	2629	U
9	A	2630	G
9	A	2632	A
9	A	2638	G
9	A	2639	A
9	A	2645	G
9	A	2646	C
9	A	2652	C
9	A	2654	A
9	A	2655	G
9	A	2656	U
9	A	2657	A
9	A	2660	A
9	A	2662	A
9	A	2663	G
9	A	2669	G
9	A	2672	U
9	A	2673	G
9	A	2674	G
9	A	2680	U
9	A	2681	C
9	A	2682	A
9	A	2689	U
9	A	2690	U
9	A	2712	C
9	A	2713	U
9	A	2714	G
9	A	2716	C
9	A	2724	U
9	A	2726	A
9	A	2727	A
9	A	2728	U
9	A	2729	G
9	A	2730	C
9	A	2731	G
9	A	2732	G
9	A	2733	A
9	A	2743	U
9	A	2748	A
9	A	2750	A
9	A	2751	G
9	A	2756	U

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Mol	Chain	Res	Type
9	A	2757	A
9	A	2758	A
9	A	2765	A
9	A	2771	C
9	A	2777	G
9	A	2778	A
9	A	2779	U
9	A	2781	A
9	A	2782	G
9	A	2790	U
9	A	2791	G
9	A	2798	U
9	A	2799	A
9	A	2800	A
9	A	2801	G
9	A	2806	C
9	A	2808	G
9	A	2809	A
9	A	2820	A
9	A	2821	A
9	A	2825	G
9	A	2832	U
9	A	2833	U
9	A	2835	A
9	A	2836	U
9	A	2848	G
9	A	2849	U
9	A	2861	U
9	A	2862	G
9	A	2866	U
9	A	2867	G
9	A	2873	A
9	A	2874	C
9	A	2879	A
9	A	2880	C
9	A	2883	A
9	A	2884	U
9	A	2886	A
9	A	2890	G
9	A	2893	A
9	A	2894	G
9	A	2895	G

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Mol	Chain	Res	Type
10	B	9	G
10	B	12	C
10	B	13	G
10	B	14	U
10	B	15	A
10	B	16	G
10	B	17	C
10	B	24	G
10	B	25	U
10	B	26	C
10	B	35	C
10	B	37	C
10	B	40	U
10	B	41	G
10	B	42	C
10	B	43	C
10	B	44	G
10	B	45	A
10	B	46	A
10	B	52	A
10	B	53	A
10	B	56	G
10	B	57	A
10	B	58	A
10	B	66	A
10	B	67	G
10	B	74	U
10	B	84	G
10	B	87	U
10	B	88	C
10	B	89	U
10	B	90	C
10	B	91	C
10	B	93	C
10	B	99	A
10	B	108	A
10	B	109	A

All (440) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
9	A	13	A

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Mol	Chain	Res	Type
9	A	14	A
9	A	27	G
9	A	33	C
9	A	34	U
9	A	35	G
9	A	36	G
9	A	49	A
9	A	52	A
9	A	60	G
9	A	62	U
9	A	63	A
9	A	70	G
9	A	73	A
9	A	74	A
9	A	75	G
9	A	84	A
9	A	85	G
9	A	91	A
9	A	92	U
9	A	100	U
9	A	119	A
9	A	125	A
9	A	126	A
9	A	137	U
9	A	143	C
9	A	144	A
9	A	162	U
9	A	164	C
9	A	165	A
9	A	177	G
9	A	196	A
9	A	199	A
9	A	204	A
9	A	206	U
9	A	215	G
9	A	221	A
9	A	223	A
9	A	227	A
9	A	229	C
9	A	232	G
9	A	238	C
9	A	239	C

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Mol	Chain	Res	Type
9	A	241	A
9	A	243	U
9	A	249	C
9	A	265	A
9	A	266	G
9	A	271	G
9	A	273	G
9	A	301	G
9	A	302	C
9	A	310	A
9	A	312	G
9	A	321	U
9	A	324	A
9	A	345	A
9	A	346	A
9	A	369	U
9	A	373	U
9	A	386	G
9	A	388	G
9	A	390	U
9	A	403	U
9	A	404	A
9	A	411	G
9	A	412	A
9	A	413	C
9	A	421	C
9	A	422	A
9	A	434	U
9	A	435	C
9	A	442	G
9	A	443	A
9	A	446	G
9	A	454	A
9	A	459	U
9	A	474	G
9	A	475	C
9	A	479	A
9	A	480	A
9	A	481	G
9	A	482	A
9	A	489	G
9	A	491	G

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Mol	Chain	Res	Type
9	A	503	A
9	A	506	G
9	A	507	A
9	A	509	C
9	A	512	G
9	A	513	A
9	A	527	C
9	A	529	A
9	A	531	C
9	A	555	G
9	A	571	U
9	A	572	A
9	A	573	U
9	A	587	C
9	A	603	A
9	A	604	G
9	A	613	A
9	A	620	G
9	A	627	A
9	A	637	A
9	A	645	C
9	A	654	A
9	A	655	A
9	A	669	G
9	A	685	A
9	A	704	G
9	A	726	G
9	A	727	A
9	A	729	G
9	A	746	U
9	A	747	U
9	A	753	A
9	A	762	U
9	A	763	G
9	A	764	A
9	A	765	C
9	A	774	G
9	A	788	A
9	A	790	U
9	A	800	A
9	A	805	G
9	A	829	A

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Mol	Chain	Res	Type
9	A	846	U
9	A	847	U
9	A	858	G
9	A	860	U
9	A	865	C
9	A	866	A
9	A	914	G
9	A	915	C
9	A	931	U
9	A	933	A
9	A	934	U
9	A	945	A
9	A	946	C
9	A	957	C
9	A	958	U
9	A	961	C
9	A	973	A
9	A	984	A
9	A	988	A
9	A	990	A
9	A	995	C
9	A	996	A
9	A	1008	A
9	A	1009	A
9	A	1011	G
9	A	1013	C
9	A	1020	A
9	A	1021	A
9	A	1022	G
9	A	1023	U
9	A	1025	G
9	A	1026	G
9	A	1033	U
9	A	1045	C
9	A	1046	A
9	A	1048	A
9	A	1060	U
9	A	1062	G
9	A	1063	G
9	A	1074	G
9	A	1112	G
9	A	1116	G

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Mol	Chain	Res	Type
9	A	1128	G
9	A	1135	C
9	A	1141	U
9	A	1150	C
9	A	1151	A
9	A	1157	G
9	A	1204	A
9	A	1206	G
9	A	1210	G
9	A	1213	A
9	A	1236	G
9	A	1247	A
9	A	1249	U
9	A	1250	G
9	A	1254	A
9	A	1255	U
9	A	1267	U
9	A	1275	A
9	A	1276	A
9	A	1286	A
9	A	1287	A
9	A	1288	G
9	A	1289	C
9	A	1300	G
9	A	1303	G
9	A	1311	G
9	A	1320	C
9	A	1321	A
9	A	1324	G
9	A	1327	A
9	A	1329	U
9	A	1330	C
9	A	1340	U
9	A	1343	G
9	A	1359	A
9	A	1360	G
9	A	1378	A
9	A	1379	U
9	A	1386	C
9	A	1396	U
9	A	1398	C
9	A	1403	A

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Mol	Chain	Res	Type
9	A	1407	G
9	A	1416	G
9	A	1417	C
9	A	1419	A
9	A	1421	G
9	A	1427	A
9	A	1429	G
9	A	1434	A
9	A	1435	G
9	A	1451	C
9	A	1455	G
9	A	1458	U
9	A	1459	G
9	A	1461	C
9	A	1475	G
9	A	1476	U
9	A	1490	A
9	A	1491	G
9	A	1493	C
9	A	1494	A
9	A	1497	U
9	A	1498	C
9	A	1508	A
9	A	1510	G
9	A	1522	A
9	A	1535	A
9	A	1537	G
9	A	1554	U
9	A	1555	G
9	A	1558	C
9	A	1565	C
9	A	1602	U
9	A	1603	A
9	A	1606	C
9	A	1615	C
9	A	1626	A
9	A	1627	G
9	A	1634	A
9	A	1644	C
9	A	1647	U
9	A	1653	G
9	A	1654	A

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Mol	Chain	Res	Type
9	A	1674	G
9	A	1675	C
9	A	1693	U
9	A	1695	G
9	A	1698	A
9	A	1700	A
9	A	1706	C
9	A	1707	G
9	A	1713	A
9	A	1714	U
9	A	1716	U
9	A	1717	A
9	A	1732	C
9	A	1734	G
9	A	1735	A
9	A	1738	G
9	A	1739	A
9	A	1757	A
9	A	1759	A
9	A	1782	U
9	A	1784	A
9	A	1786	A
9	A	1787	A
9	A	1799	G
9	A	1808	A
9	A	1815	A
9	A	1816	C
9	A	1818	U
9	A	1838	C
9	A	1847	A
9	A	1848	A
9	A	1857	G
9	A	1858	A
9	A	1865	U
9	A	1866	A
9	A	1870	C
9	A	1871	A
9	A	1872	A
9	A	1884	G
9	A	1885	A
9	A	1900	A
9	A	1918	A

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Mol	Chain	Res	Type
9	A	1919	A
9	A	1920	C
9	A	1929	G
9	A	1931	U
9	A	1936	A
9	A	1941	C
9	A	1942	C
9	A	1943	U
9	A	1945	G
9	A	1954	G
9	A	1962	C
9	A	1963	U
9	A	1965	C
9	A	1966	A
9	A	1967	C
9	A	1970	A
9	A	1971	U
9	A	1980	G
9	A	1993	U
9	A	1996	C
9	A	1997	C
9	A	2023	C
9	A	2030	A
9	A	2035	G
9	A	2036	C
9	A	2051	A
9	A	2060	A
9	A	2068	U
9	A	2092	U
9	A	2093	G
9	A	2137	U
9	A	2146	C
9	A	2197	U
9	A	2199	A
9	A	2200	C
9	A	2210	U
9	A	2214	C
9	A	2225	A
9	A	2238	G
9	A	2249	U
9	A	2250	G
9	A	2258	C

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Mol	Chain	Res	Type
9	A	2267	A
9	A	2275	C
9	A	2282	G
9	A	2283	C
9	A	2286	G
9	A	2296	U
9	A	2297	A
9	A	2307	G
9	A	2309	A
9	A	2311	A
9	A	2319	G
9	A	2321	U
9	A	2324	U
9	A	2325	G
9	A	2326	C
9	A	2327	A
9	A	2333	A
9	A	2335	A
9	A	2337	G
9	A	2344	U
9	A	2382	G
9	A	2383	G
9	A	2391	G
9	A	2392	A
9	A	2405	G
9	A	2407	A
9	A	2423	U
9	A	2425	A
9	A	2427	C
9	A	2430	A
9	A	2431	U
9	A	2439	A
9	A	2440	C
9	A	2458	G
9	A	2459	A
9	A	2468	A
9	A	2490	G
9	A	2503	A
9	A	2517	C
9	A	2520	C
9	A	2541	A
9	A	2543	G

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Mol	Chain	Res	Type
9	A	2566	A
9	A	2572	A
9	A	2573	C
9	A	2581	G
9	A	2609	U
9	A	2611	C
9	A	2615	U
9	A	2629	U
9	A	2638	G
9	A	2645	G
9	A	2654	A
9	A	2656	U
9	A	2662	A
9	A	2672	U
9	A	2673	G
9	A	2681	C
9	A	2689	U
9	A	2712	C
9	A	2725	A
9	A	2727	A
9	A	2728	U
9	A	2729	G
9	A	2732	G
9	A	2750	A
9	A	2752	C
9	A	2756	U
9	A	2757	A
9	A	2777	G
9	A	2778	A
9	A	2781	A
9	A	2790	U
9	A	2791	G
9	A	2797	U
9	A	2800	A
9	A	2808	G
9	A	2820	A
9	A	2832	U
9	A	2835	A
9	A	2848	G
9	A	2866	U
9	A	2873	A
9	A	2879	A

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Mol	Chain	Res	Type
9	A	2893	A
9	A	2894	G
10	B	12	C
10	B	14	U
10	B	16	G
10	B	24	G
10	B	25	U
10	B	40	U
10	B	42	C
10	B	44	G
10	B	45	A
10	B	52	A
10	B	56	G
10	B	57	A
10	B	66	A
10	B	87	U
10	B	90	C
10	B	108	A
10	B	109	A

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

1 non-standard protein/DNA/RNA residue is modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
6	MA6	5	76	6,9,35	23,26,27	0.45	0	33,38,41	0.94	1 (3%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	MA6	5	76	6,9,35	-	0/11/29/30	0/3/3/3

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	5	76	MA6	C2-N1-C6	2.91	118.94	111.83

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	5	76	MA6	2	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 2 ligands modelled in this entry, 1 is unknown - leaving 1 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
36	ERY	A	9000	-	53,53,53	0.82	1 (1%)	82,82,82	1.69	18 (21%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
36	ERY	A	9000	-	-	9/72/107/107	0/3/3/3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
36	A	9000	ERY	C6-C5	2.43	1.59	1.55

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
36	A	9000	ERY	C25-C24-C23	-5.06	102.75	110.02
36	A	9000	ERY	O7-C5-C6	-4.99	100.45	106.40
36	A	9000	ERY	O2-C1-O1	-3.68	117.30	123.95
36	A	9000	ERY	C3-C2-C1	-3.45	102.96	109.93
36	A	9000	ERY	C27-C26-C25	-3.17	108.47	113.27
36	A	9000	ERY	C32-C6-C7	-3.01	106.21	111.09
36	A	9000	ERY	O3-C14-C15	-2.78	104.34	108.99
36	A	9000	ERY	O6-C17-C18	-2.71	104.80	109.46
36	A	9000	ERY	O3-C3-C4	-2.60	105.17	108.23
36	A	9000	ERY	O3-C3-C2	-2.57	106.83	111.16
36	A	9000	ERY	C19-C16-C17	2.54	116.17	111.19
36	A	9000	ERY	C6-C7-C8	-2.44	110.74	115.61
36	A	9000	ERY	O11-C9-C8	-2.43	116.92	121.30
36	A	9000	ERY	C32-C6-C5	2.35	114.14	110.13
36	A	9000	ERY	O2-C13-C12	-2.33	103.61	107.28
36	A	9000	ERY	C16-C17-C18	-2.29	107.80	111.12
36	A	9000	ERY	C8-C9-C10	2.15	122.76	119.13
36	A	9000	ERY	C15-C16-C17	-2.12	104.01	107.64

There are no chirality outliers.

All (9) torsion outliers are listed below:

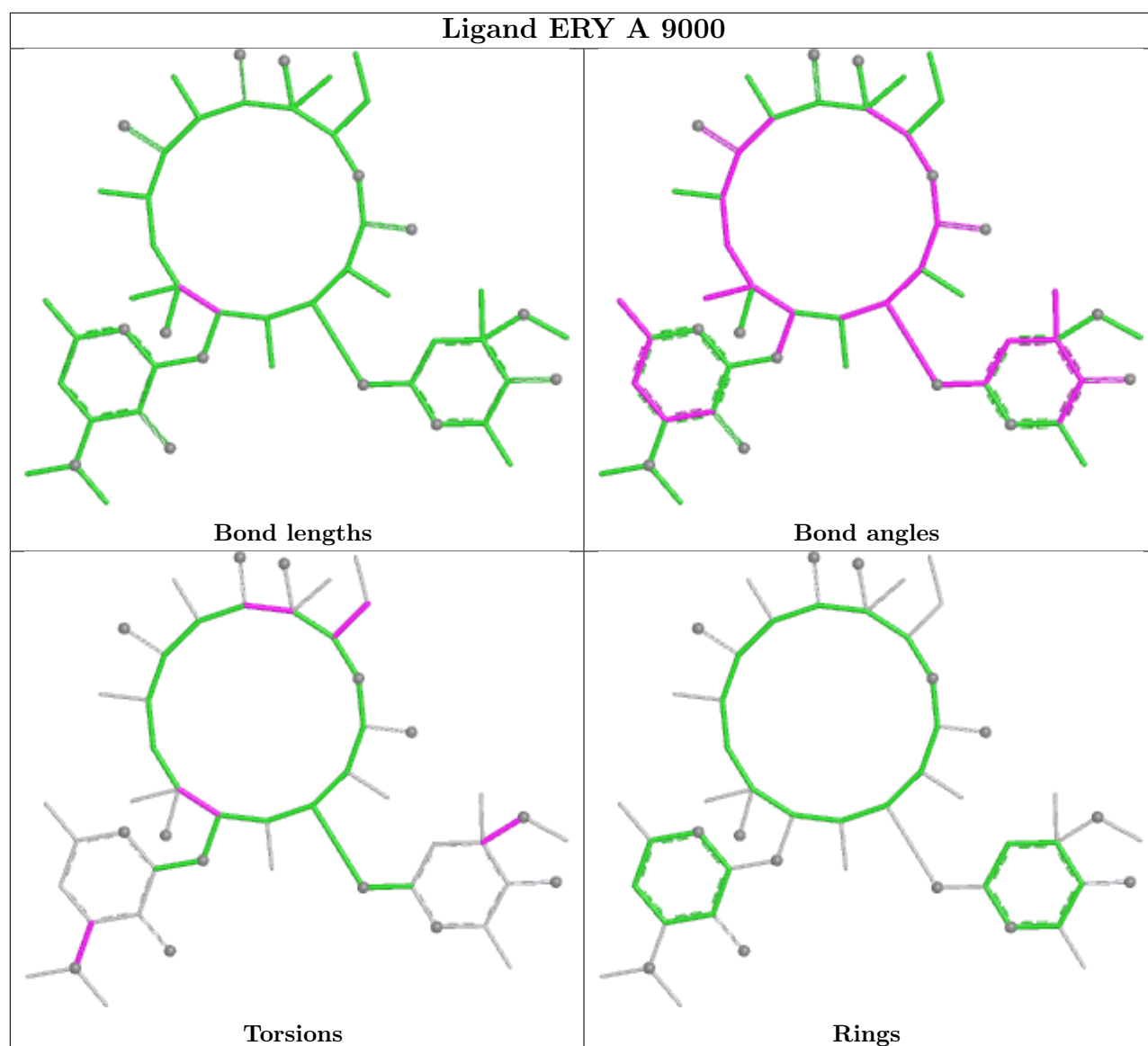
Mol	Chain	Res	Type	Atoms
36	A	9000	ERY	C15-C16-O5-C20
36	A	9000	ERY	C19-C16-O5-C20
36	A	9000	ERY	C10-C11-C12-O13
36	A	9000	ERY	C25-C24-N1-C28
36	A	9000	ERY	C4-C5-C6-C32
36	A	9000	ERY	C17-C16-O5-C20
36	A	9000	ERY	O2-C13-C36-C37
36	A	9000	ERY	O12-C11-C12-O13
36	A	9000	ERY	O12-C11-C12-C13

There are no ring outliers.

1 monomer is involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
36	A	9000	ERY	4	0

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



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

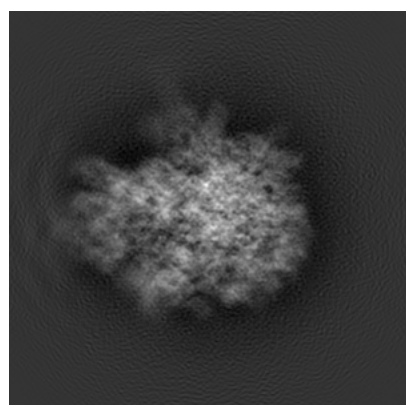
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-5771. These allow visual inspection of the internal detail of the map and identification of artifacts.

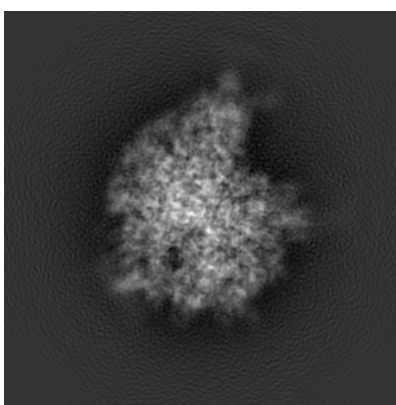
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

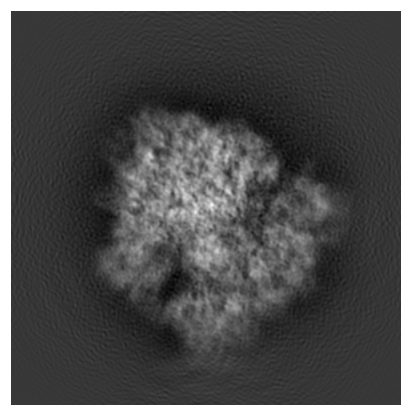
6.1.1 Primary map



X



Y

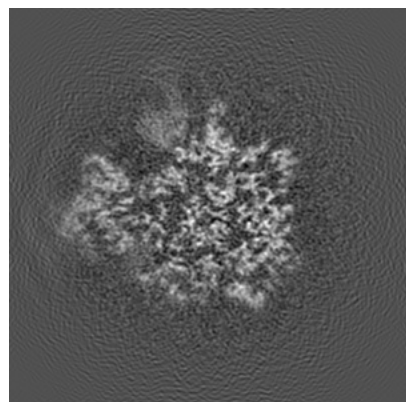


Z

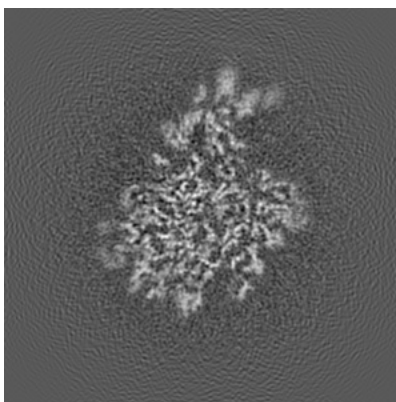
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

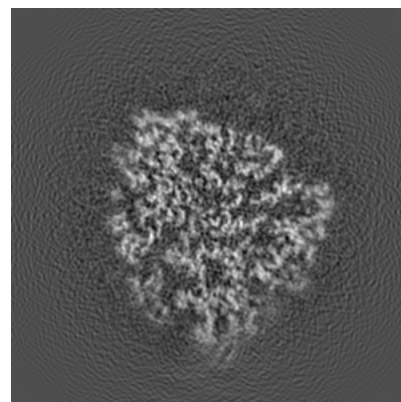
6.2.1 Primary map



X Index: 184



Y Index: 184

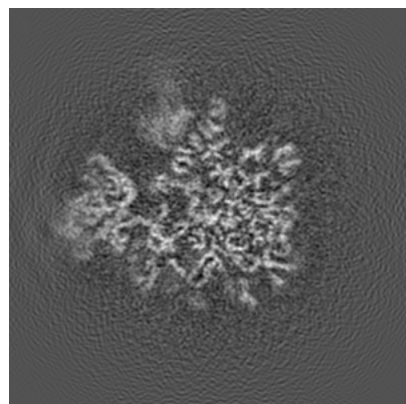


Z Index: 184

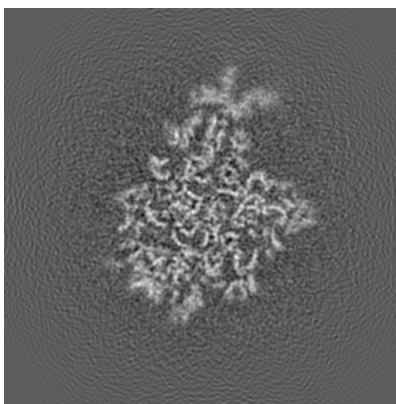
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

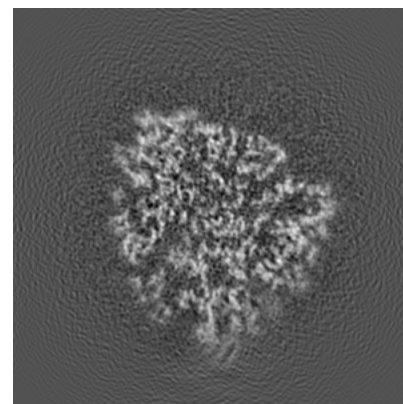
6.3.1 Primary map



X Index: 180



Y Index: 189

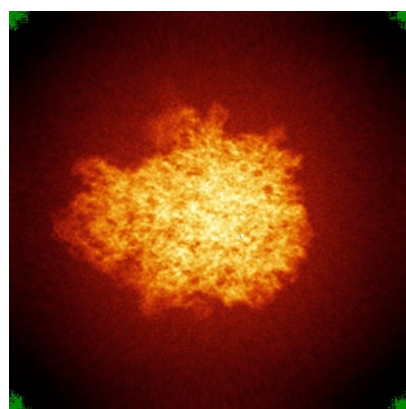


Z Index: 183

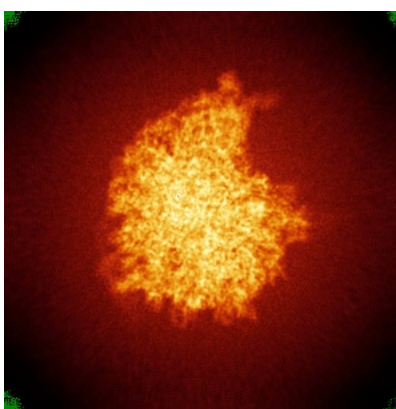
The images above show the largest variance slices of the map in three orthogonal directions.

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

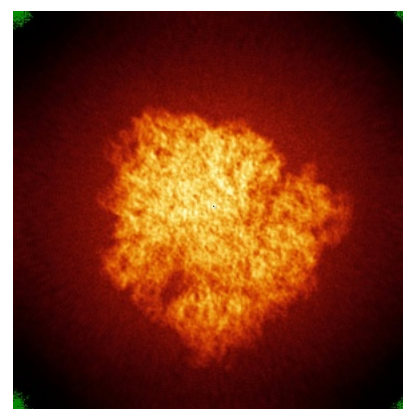
6.4.1 Primary map



X



Y

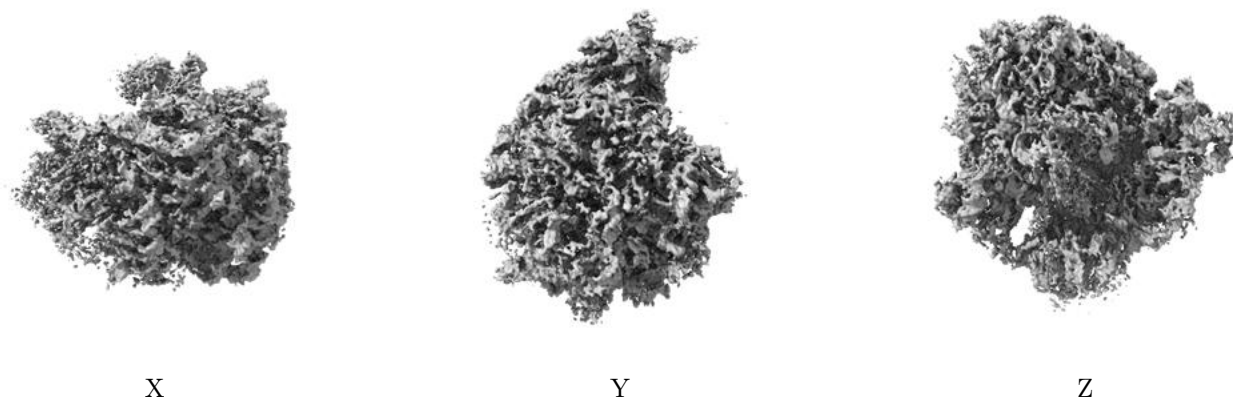


Z

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 0.0011. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

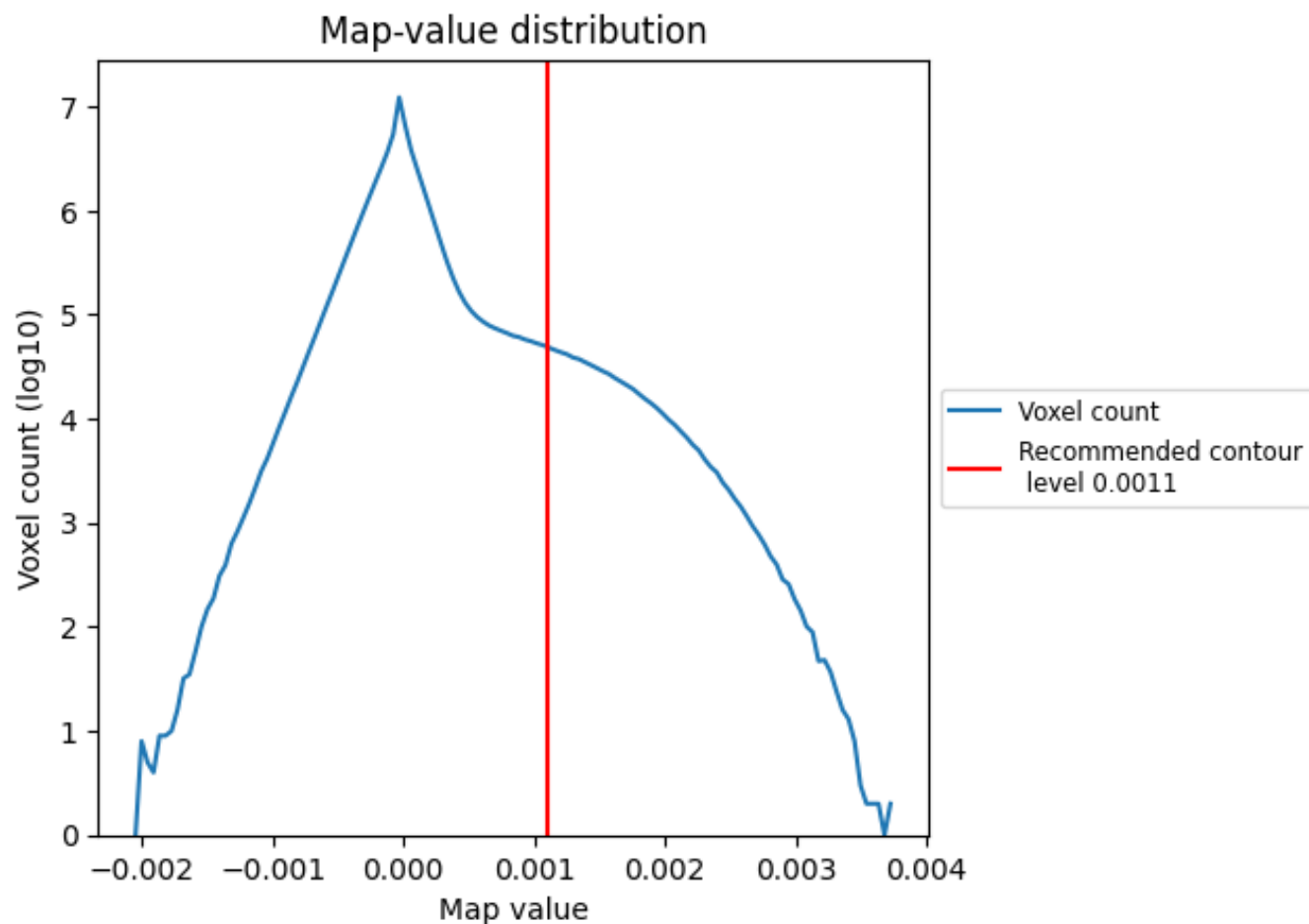
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

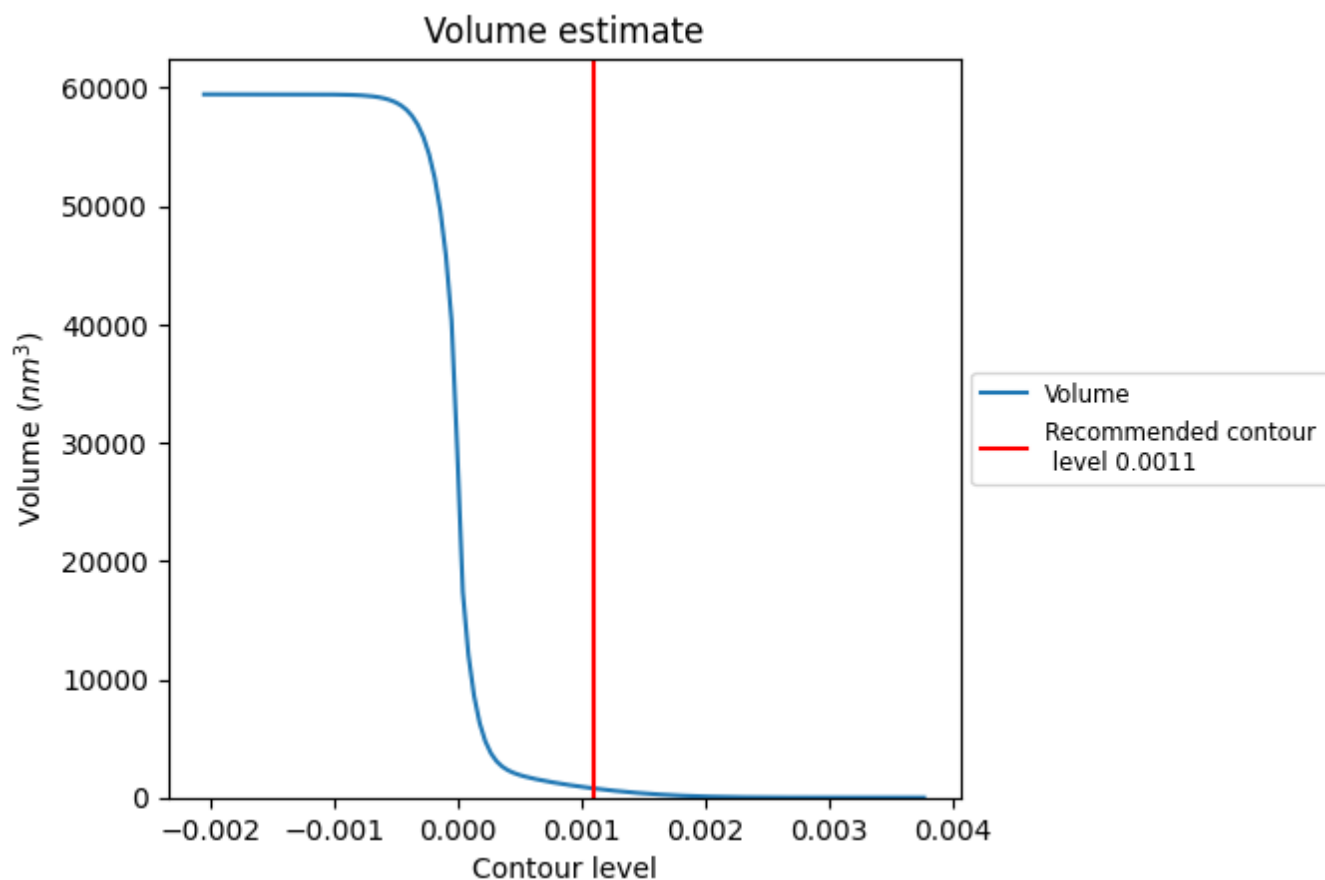
This section contains the results of statistical analysis of the map.

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.

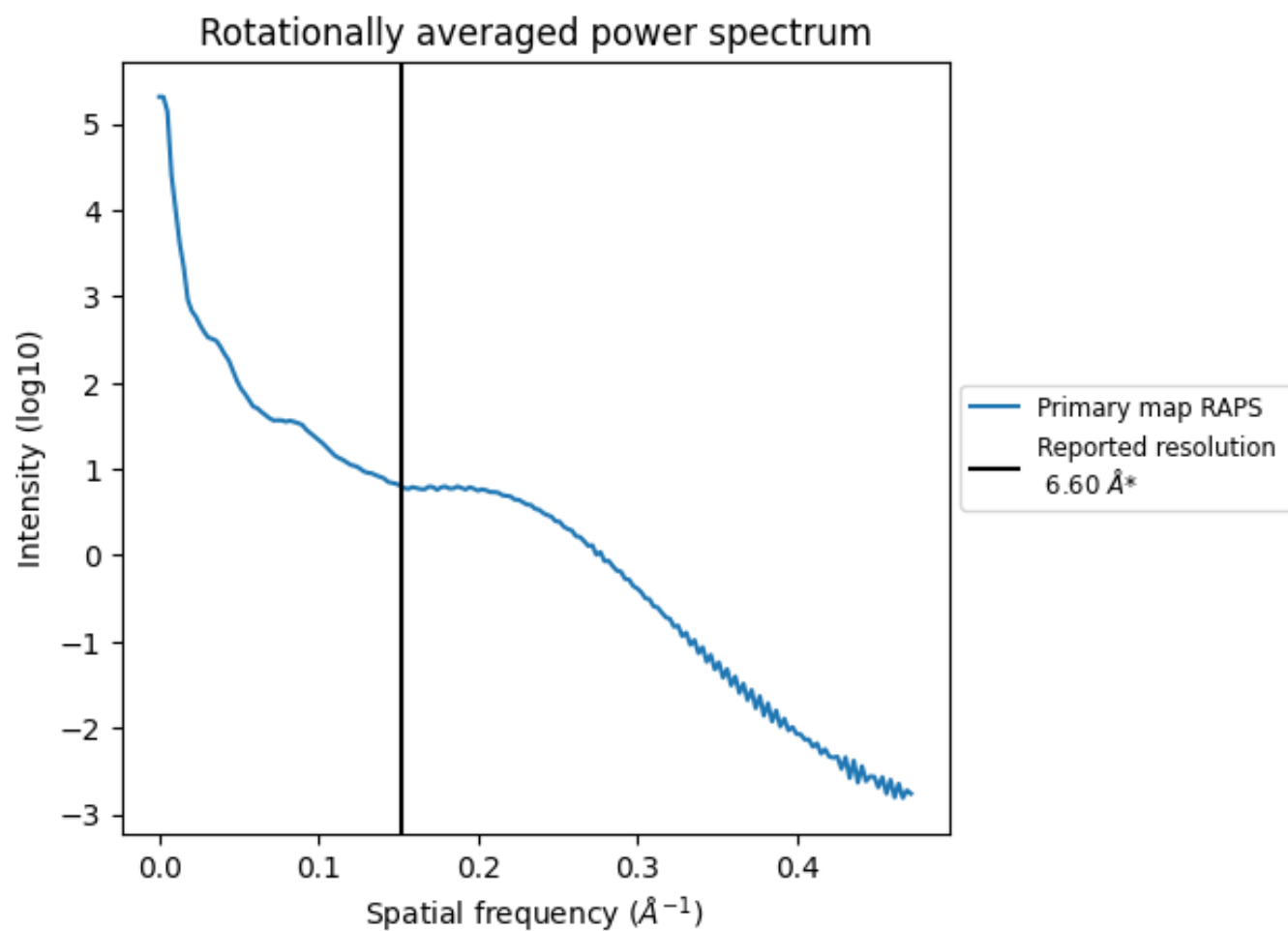
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 776 nm³; this corresponds to an approximate mass of 701 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 0.152 Å⁻¹

8 Fourier-Shell correlation

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

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-5771 and PDB model 3J5L. Per-residue inclusion information can be found in section 3 on page 11.

9.1 Map-model overlay ⓘ

This section was not generated.

9.2 Q-score mapped to coordinate model ⓘ

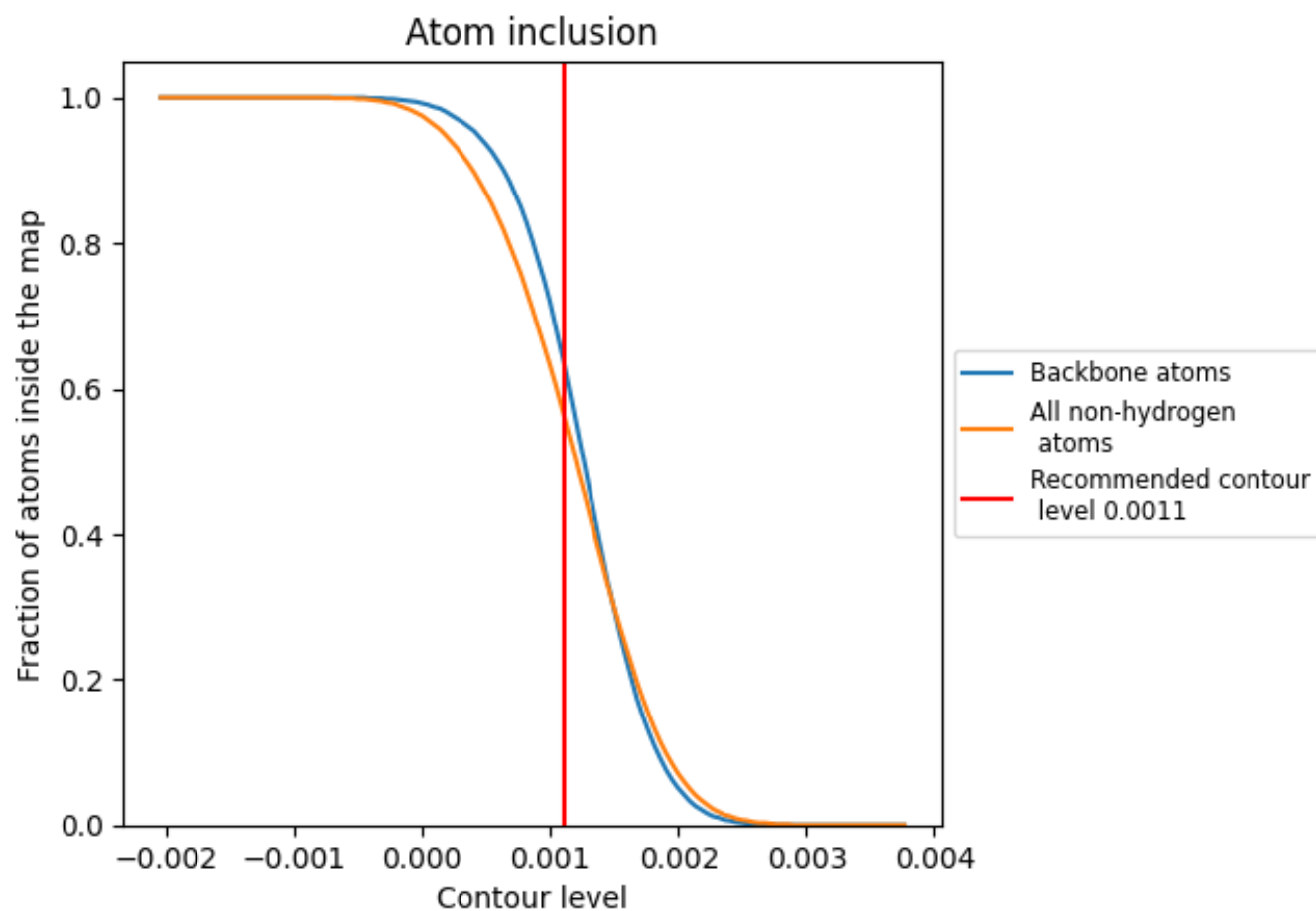


The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

This section was not generated.

9.4 Atom inclusion [i](#)



At the recommended contour level, 64% of all backbone atoms, 57% 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 (0.0011) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5670	 0.2470
0	 0.3640	 0.2200
1	 0.3260	 0.1940
2	 0.4250	 0.2620
3	 0.3690	 0.2420
4	 0.4250	 0.2410
5	 0.4440	 0.2410
6	 0.6250	 0.3380
7	 0.6100	 0.3120
A	 0.6650	 0.2640
B	 0.6360	 0.2360
C	 0.3950	 0.2600
D	 0.3820	 0.2500
E	 0.2490	 0.1960
F	 0.1990	 0.1110
G	 0.2820	 0.1940
H	 0.0900	 0.1270
I	 0.0040	 0.0030
J	 0.3740	 0.2450
K	 0.3490	 0.2320
L	 0.3120	 0.2380
M	 0.4200	 0.2470
N	 0.3990	 0.2410
O	 0.2720	 0.1930
P	 0.3450	 0.2360
Q	 0.3940	 0.2070
R	 0.2660	 0.2300
S	 0.4040	 0.2150
T	 0.3150	 0.2000
U	 0.2130	 0.1780
V	 0.3280	 0.2110
W	 0.3450	 0.2220
X	 0.3790	 0.2340
Y	 0.2940	 0.2020
Z	 0.3390	 0.2070

