



Full wwPDB EM Validation Report ⓘ

Mar 27, 2026 – 01:54 AM UTC

PDB ID : 7PAK / pdb_00007pak
EMDB ID : EMD-13275
Title : 70S ribosome with EF-Tu-tRNA and P-site tRNA in *Mycoplasma pneumoniae* cells
Authors : Xue, L.; Lenz, S.; Rappsilber, J.; Mahamid, J.
Deposited on : 2021-07-30
Resolution : 5.30 Å (reported)
Based on initial models : 4V5L, 7OOD, 7OOC, 4V7C

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

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

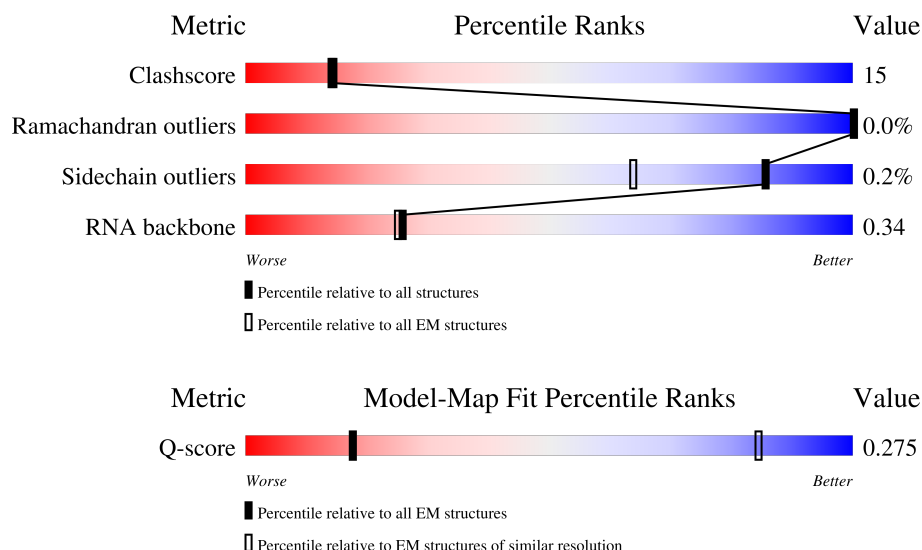
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 5.30 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	625 (4.80 - 5.80)

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	48	
2	1	59	
3	2	37	

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Mol	Chain	Length	Quality of chain
4	9	394	
5	A	294	
6	B	273	
7	C	205	
8	D	219	
9	E	215	
10	F	155	
11	G	142	
12	H	132	
13	I	108	
14	J	121	
15	K	139	
16	L	124	
17	M	61	
18	N	86	
19	O	94	
20	P	85	
21	Q	104	
22	R	87	
23	S	87	
24	T	60	
25	a	287	
26	b	287	
27	c	212	
28	d	180	

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Mol	Chain	Length	Quality of chain
29	e	184	
30	f	149	
31	g	161	
32	h	137	
33	i	146	
34	j	122	
35	k	151	
36	l	139	
37	m	124	
38	n	116	
39	o	119	
40	p	127	
41	q	100	
42	r	159	
43	s	237	
44	t	111	
45	u	104	
46	v	65	
47	w	111	
48	x	97	
49	y	57	
50	z	53	
51	3	2907	
52	4	108	
53	5	1520	

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Mol	Chain	Length	Quality of chain
54	6	76	33% 38% 45% 17%
54	7	76	41% 42% 17%

2 Entry composition

There are 54 unique types of molecules in this entry. The entry contains 149141 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 L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	0	47	Total	C	N	O	S	0	0
			380	236	81	61	2		

- Molecule 2 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	1	59	Total	C	N	O	S	0	0
			477	300	99	77	1		

- Molecule 3 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	2	37	Total	C	N	O	S	0	0
			304	189	65	46	4		

- Molecule 4 is a protein called Elongation factor Tu.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	9	393	Total	C	N	O	S	0	0
			3021	1892	533	583	13		

- Molecule 5 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	A	240	Total	C	N	O	S	0	0
			1921	1226	334	352	9		

- Molecule 6 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	B	215	Total	C	N	O	S	0	0
			1698	1073	313	307	5		

- Molecule 7 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	C	203	Total	C	N	O	S	0	0
			1660	1051	314	290	5		

- Molecule 8 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	D	153	Total	C	N	O	S	0	0
			1173	742	226	202	3		

- Molecule 9 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	E	167	Total	C	N	O	S	0	0
			1362	857	240	263	2		

- Molecule 10 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	F	154	Total	C	N	O	S	0	0
			1246	785	239	216	6		

- Molecule 11 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	G	141	Total	C	N	O	S	0	0
			1110	723	193	192	2		

- Molecule 12 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	H	128	Total	C	N	O	S	0	0
			1028	655	191	181	1		

- Molecule 13 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	I	101	Total	C	N	O	S	0	0
			809	523	142	143	1		

- Molecule 14 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	J	114	Total	C	N	O	S	0	0
			829	514	153	156	6		

- Molecule 15 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	K	136	Total	C	N	O	S	0	0
			1076	680	213	181	2		

- Molecule 16 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	L	118	Total	C	N	O	S	0	0
			951	594	191	166			

- Molecule 17 is a protein called 30S ribosomal protein S14 type Z.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	M	60	Total	C	N	O	S	0	0
			474	302	96	72	4		

- Molecule 18 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	N	83	Total	C	N	O	S	0	0
			673	428	125	120			

- Molecule 19 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	O	80	Total	C	N	O	S	0	0
			646	414	119	111	2		

- Molecule 20 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	P	83	Total	C	N	O	S	0	0
			675	425	135	115			

- Molecule 21 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	Q	65	Total	C	N	O	S	0	0
			535	342	103	86	4		

- Molecule 22 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	R	84	Total	C	N	O	S	0	0
			682	435	127	118	2		

- Molecule 23 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	S	77	Total	C	N	O	S	0	0
			629	383	135	111			

- Molecule 24 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	T	53	Total	C	N	O	S	0	0
			471	295	103	72	1		

- Molecule 25 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	a	285	Total	C	N	O	S	0	0
			2225	1385	437	397	6		

- Molecule 26 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	b	229	Total	C	N	O	S	0	0
			1762	1119	318	318	7		

- Molecule 27 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	c	210	Total	C	N	O	S	0	0
			1644	1047	297	297	3		

- Molecule 28 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	d	175	Total	C	N	O	S	0	0
			1388	893	245	246	4		

- Molecule 29 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	e	176	Total	C	N	O	S	0	0
			1396	899	247	250			

- Molecule 30 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	f	145	Total	C	N	O	S	0	0
			1160	746	204	207	3		

- Molecule 31 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	g	126	Total	C	N	O	S	0	0
			960	612	167	178	3		

- Molecule 32 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	h	128	Total	C	N	O	S	0	0
			959	616	160	177	6		

- Molecule 33 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	i	144	Total	C	N	O	S	0	0
			1164	737	213	209	5		

- Molecule 34 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	j	122	Total	C	N	O	S	0	0
			944	595	178	167	4		

- Molecule 35 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms				AltConf	Trace
35	k	148	Total	C	N	O	0	0
			1153	731	226	196		

- Molecule 36 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	l	136	Total	C	N	O	S	0	0
			1079	694	196	182	7		

- Molecule 37 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	m	119	Total	C	N	O	S	0	0
			958	609	175	171	3		

- Molecule 38 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	n	112	Total	C	N	O	S	0	0
			889	557	175	155	2		

- Molecule 39 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	o	115	Total	C	N	O	S	0	0
			938	592	180	165	1		

- Molecule 40 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	p	114	Total	C	N	O	S	0	0
			947	603	188	154	2		

- Molecule 41 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	q	99	Total	C	N	O	S	0	0
			811	525	148	134	4		

- Molecule 42 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	r	139	Total	C	N	O	S	0	0
			1068	663	207	191	7		

- Molecule 43 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	s	92	Total	C	N	O	S	0	0
			720	475	122	122	1		

- Molecule 44 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	t	111	Total	C	N	O	S	0	0
			872	550	166	153	3		

- Molecule 45 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	u	86	Total	C	N	O	S	0	0
			657	409	130	117	1		

- Molecule 46 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	v	63	Total	C	N	O	S	0	0
			513	317	108	87	1		

- Molecule 47 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	w	100	Total	C	N	O	S	0	0
			818	517	153	148			

- Molecule 48 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	x	44	Total	C	N	O	S	0	0
			344	221	55	64	4		

- Molecule 49 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	y	56	Total	C	N	O	S	0	0
			452	274	98	75	5		

- Molecule 50 is a protein called 50S ribosomal protein L33 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	z	50	Total	C	N	O	S	0	0
			408	255	81	68	4		

- Molecule 51 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	3	2878	Total	C	N	O	P	0	0
			61664	27558	11236	19995	2875		

- Molecule 52 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	4	105	Total	C	N	O	P	0	0
			2239	1003	409	724	103		

- Molecule 53 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	5	1493	Total	C	N	O	P	0	0
			31943	14279	5792	10382	1490		

- Molecule 54 is a RNA chain called tRNA-Phe.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	6	76	Total	C	N	O	P	0	0
			1618	723	289	531	75		
54	7	76	Total	C	N	O	P	0	0
			1618	723	289	531	75		

3 Residue-property plots

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

- Molecule 1: 50S ribosomal protein L34

Chain 0: 



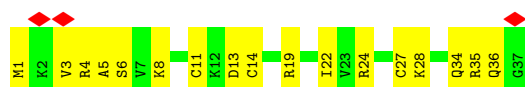
- Molecule 2: 50S ribosomal protein L35

Chain 1: 



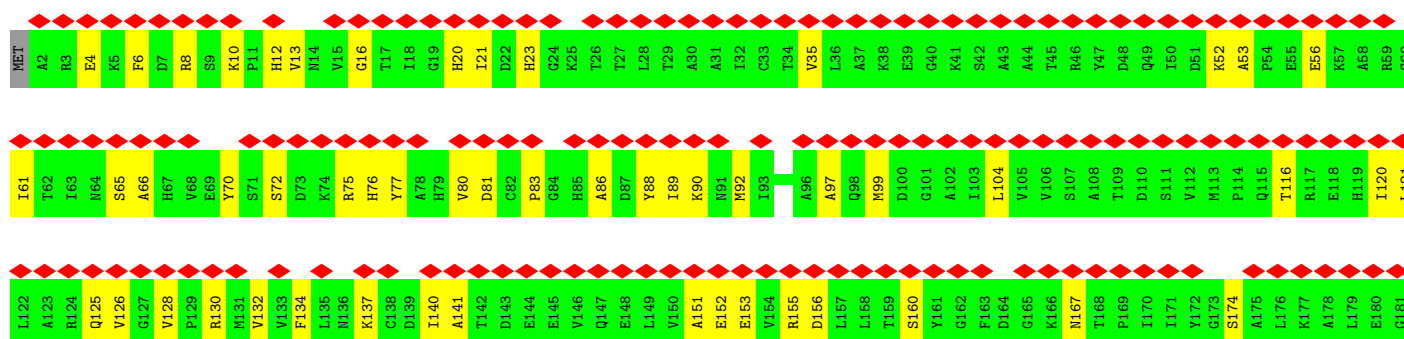
- Molecule 3: 50S ribosomal protein L36

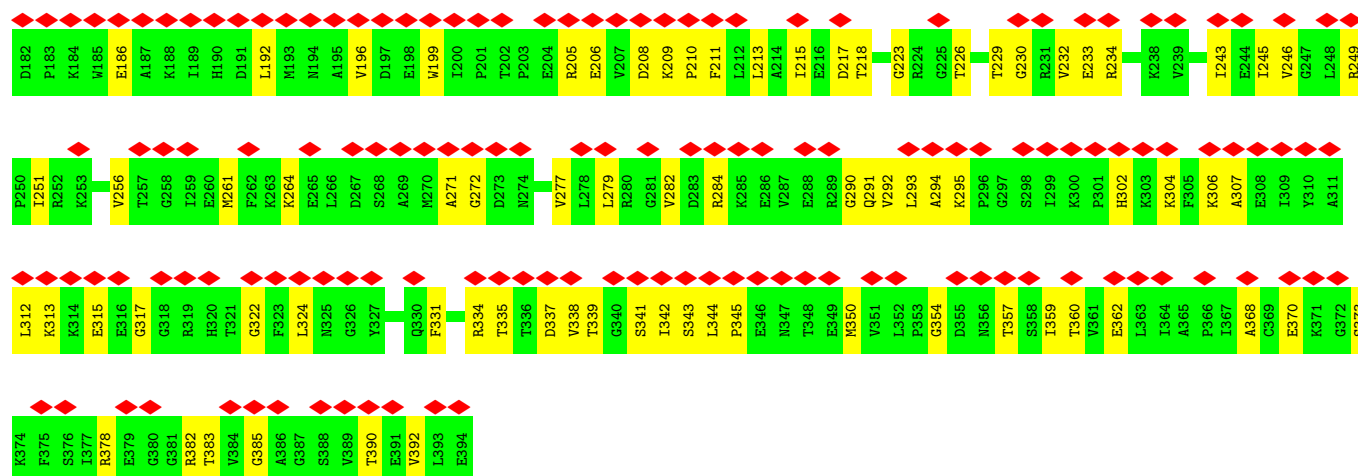
Chain 2: 



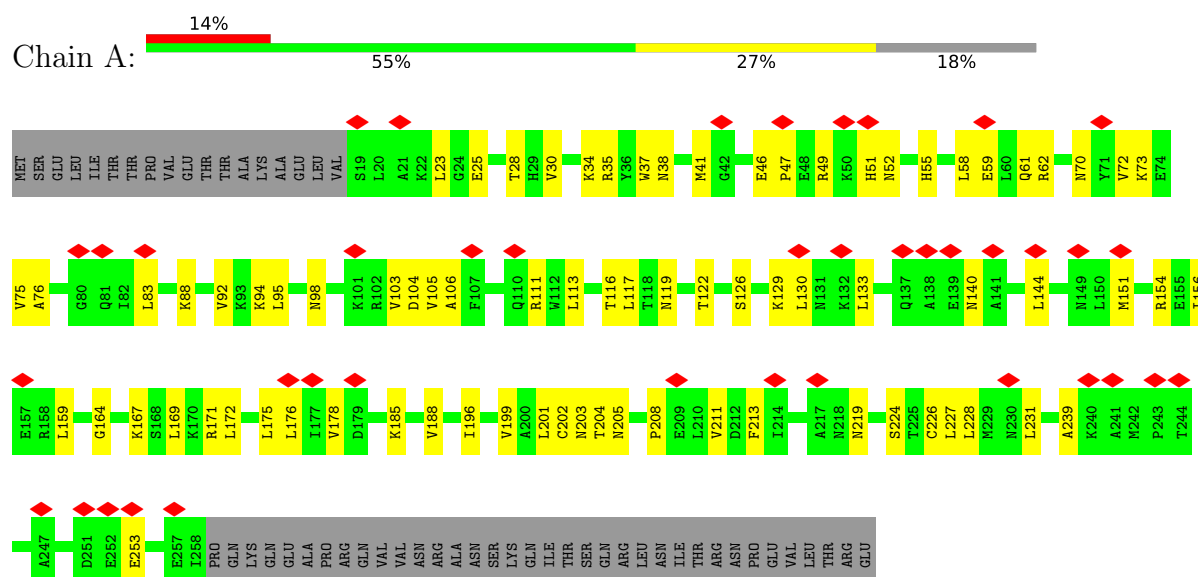
- Molecule 4: Elongation factor Tu

Chain 9: 

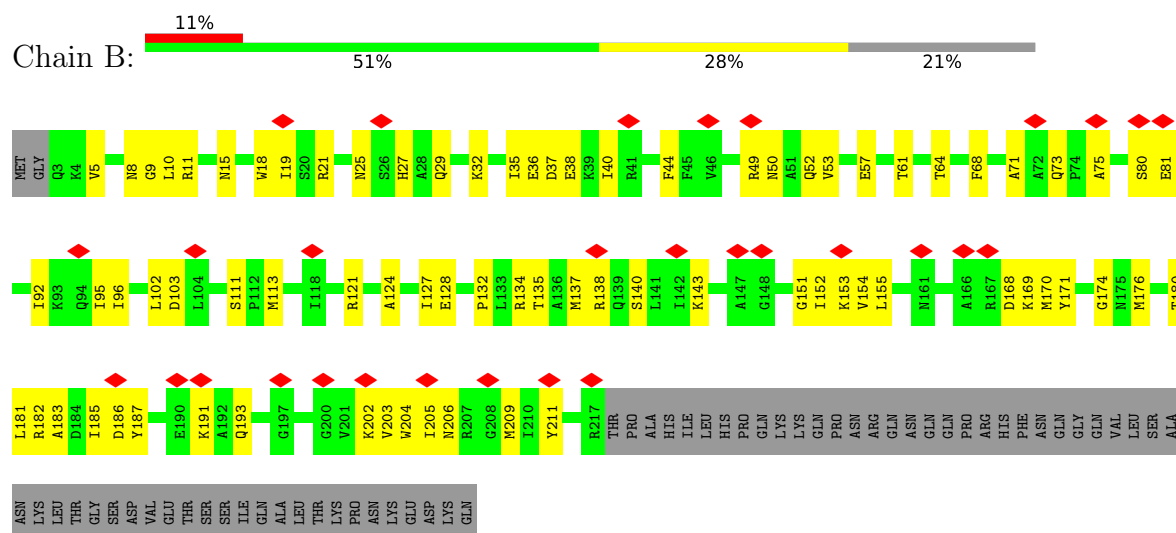




• Molecule 5: 30S ribosomal protein S2

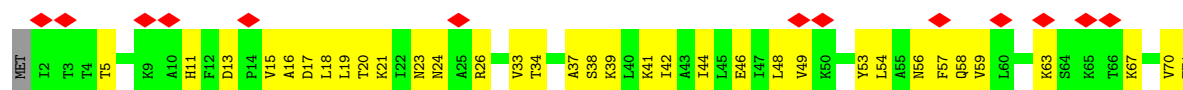


• Molecule 6: 30S ribosomal protein S3

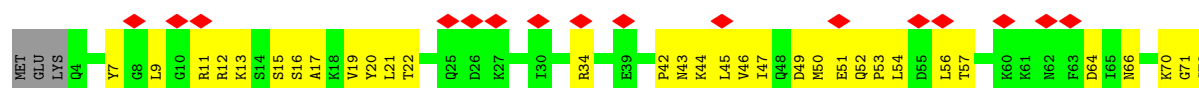




- Molecule 11: 30S ribosomal protein S8



- Molecule 12: 30S ribosomal protein S9



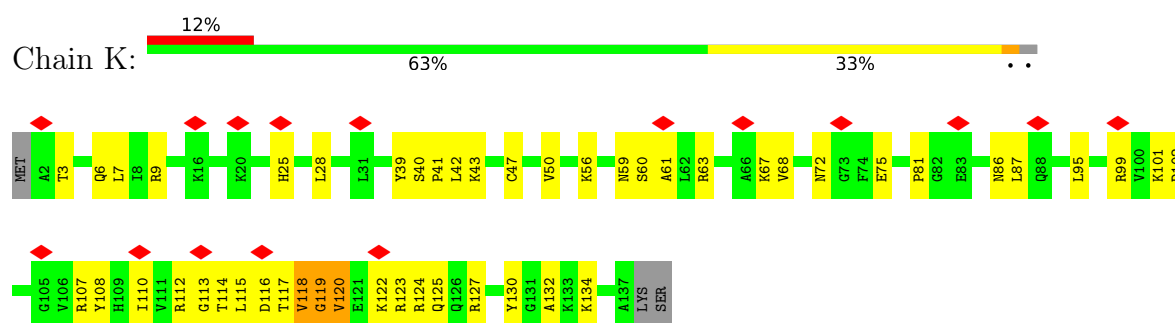
- Molecule 13: 30S ribosomal protein S10



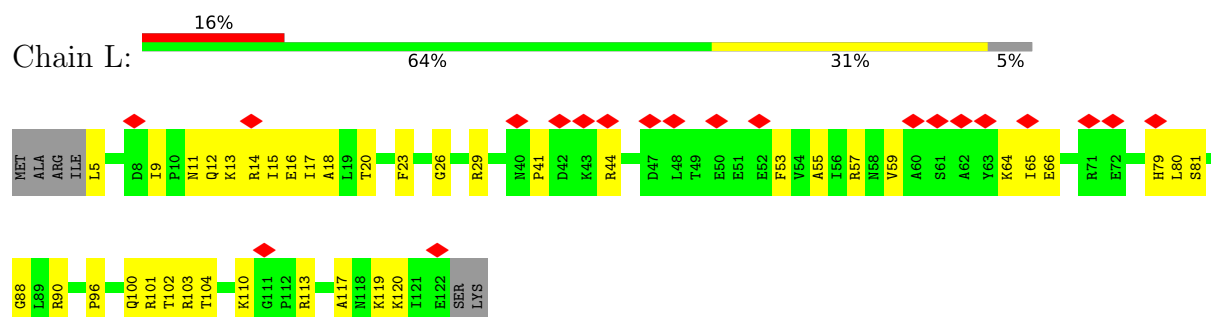
- Molecule 14: 30S ribosomal protein S11



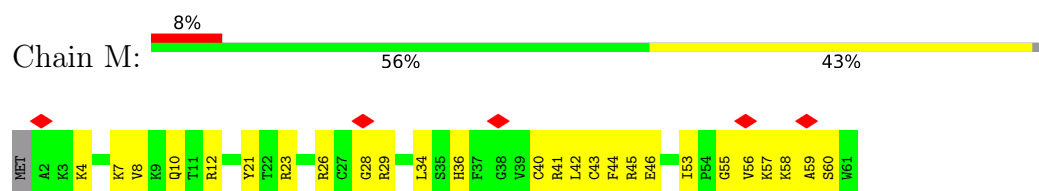
- Molecule 15: 30S ribosomal protein S12



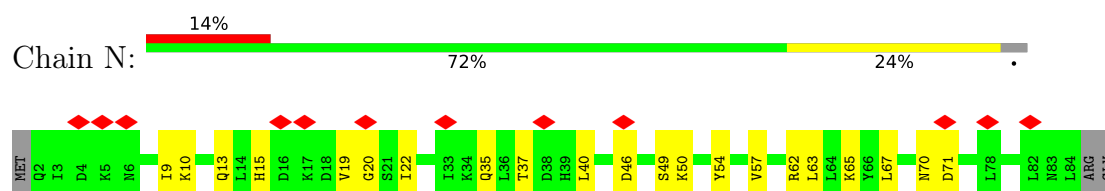
- Molecule 16: 30S ribosomal protein S13



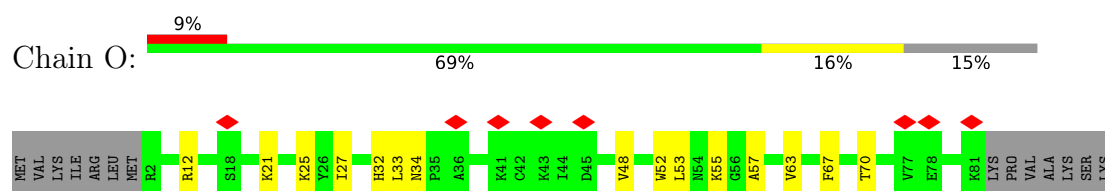
- Molecule 17: 30S ribosomal protein S14 type Z



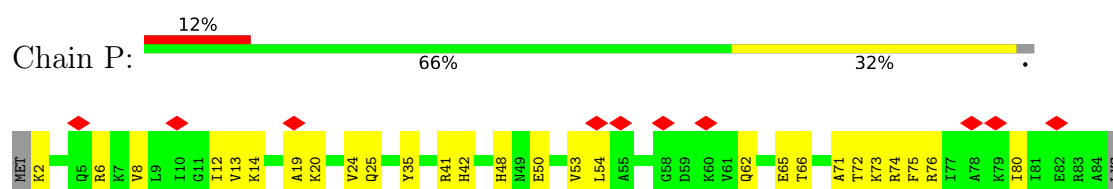
- Molecule 18: 30S ribosomal protein S15



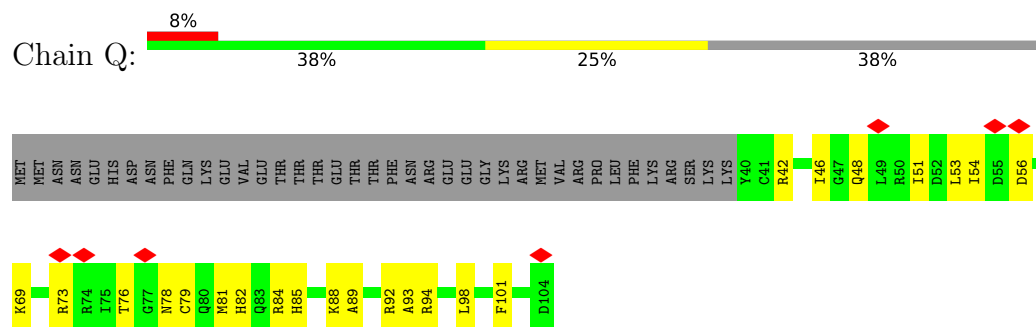
- Molecule 19: 30S ribosomal protein S16



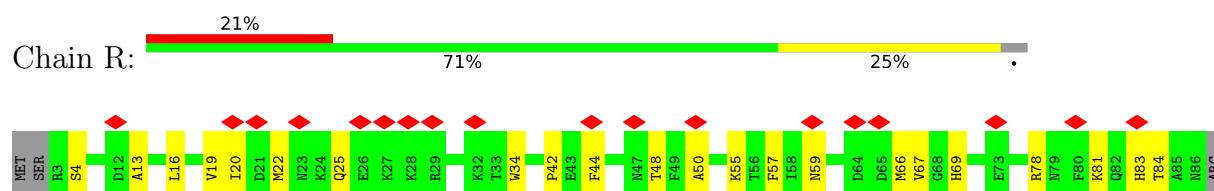
- Molecule 20: 30S ribosomal protein S17



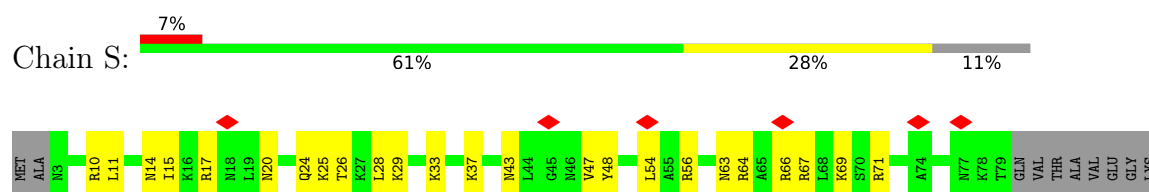
- Molecule 21: 30S ribosomal protein S18



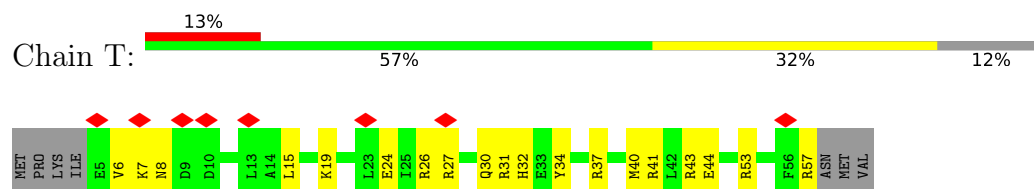
- Molecule 22: 30S ribosomal protein S19



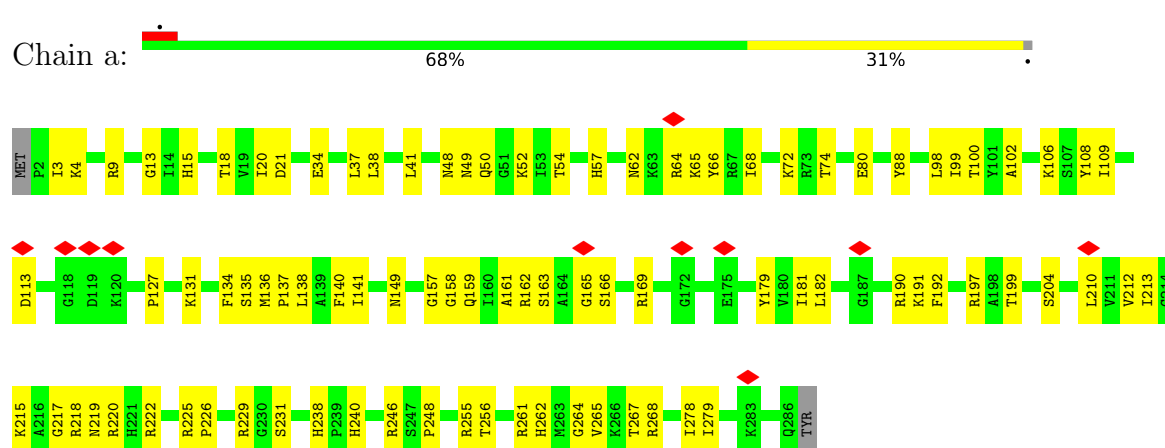
- Molecule 23: 30S ribosomal protein S20



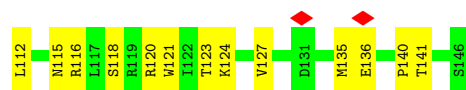
- Molecule 24: 30S ribosomal protein S21



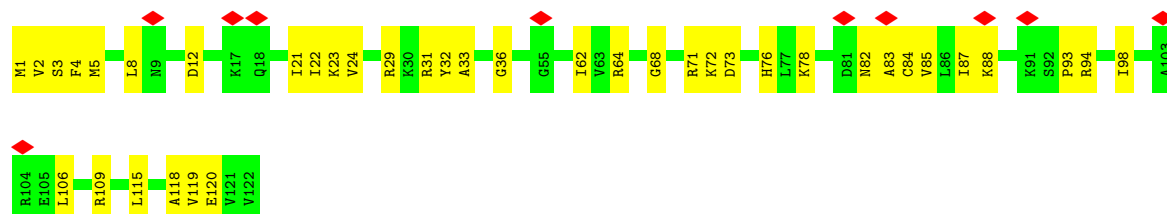
- Molecule 25: 50S ribosomal protein L2



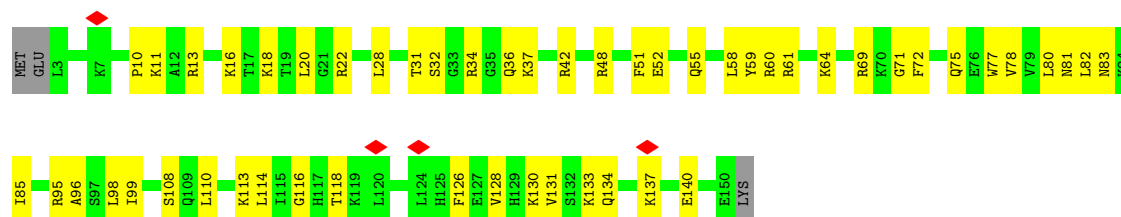
- Molecule 26: 50S ribosomal protein L3



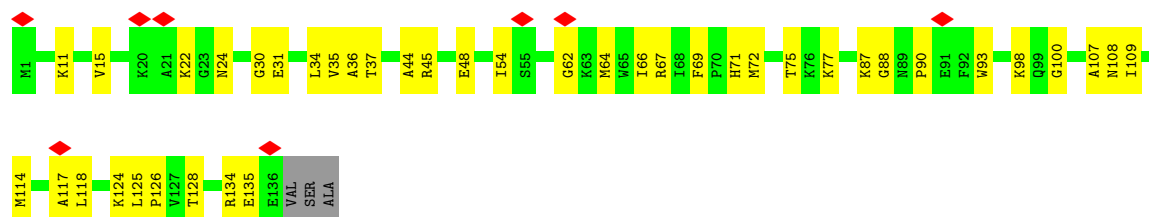
- Molecule 34: 50S ribosomal protein L14



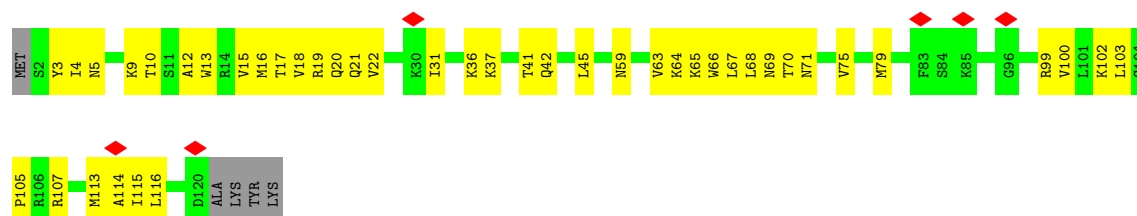
- Molecule 35: 50S ribosomal protein L15



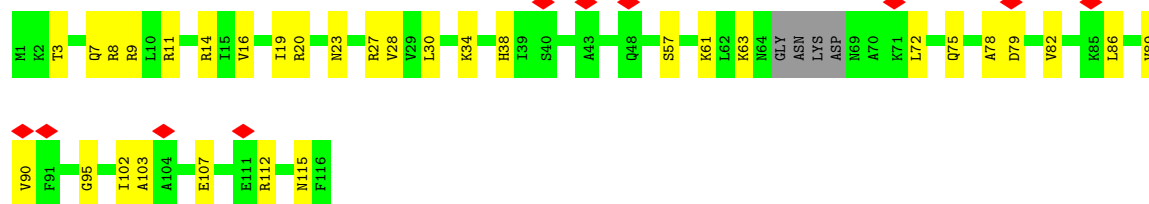
- Molecule 36: 50S ribosomal protein L16



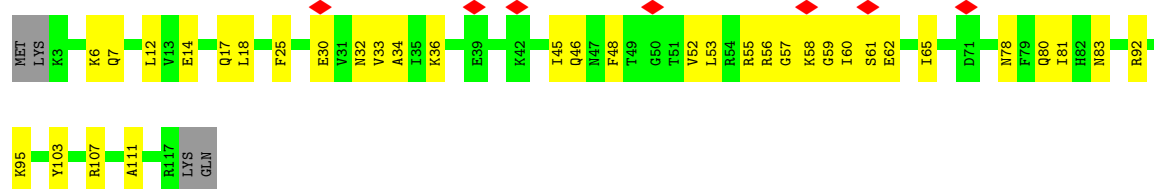
- Molecule 37: 50S ribosomal protein L17



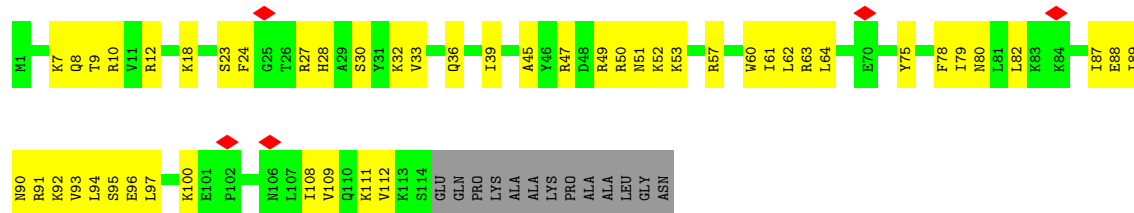
- Molecule 38: 50S ribosomal protein L18



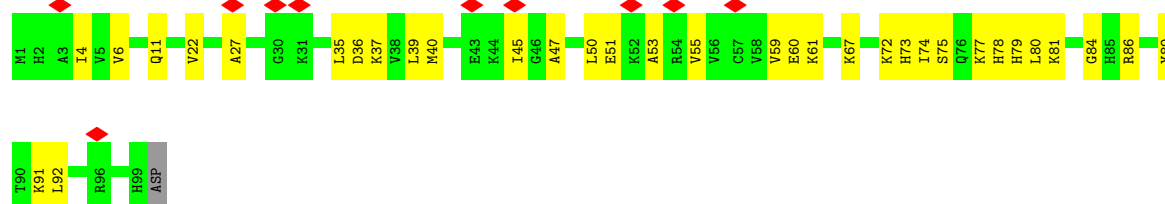
- Molecule 39: 50S ribosomal protein L19



- Molecule 40: 50S ribosomal protein L20



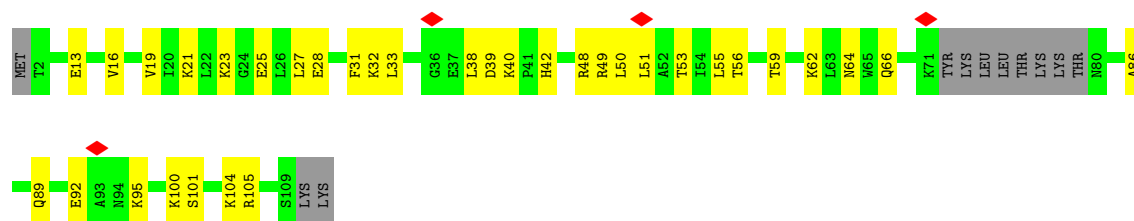
- Molecule 41: 50S ribosomal protein L21



- Molecule 42: 50S ribosomal protein L22

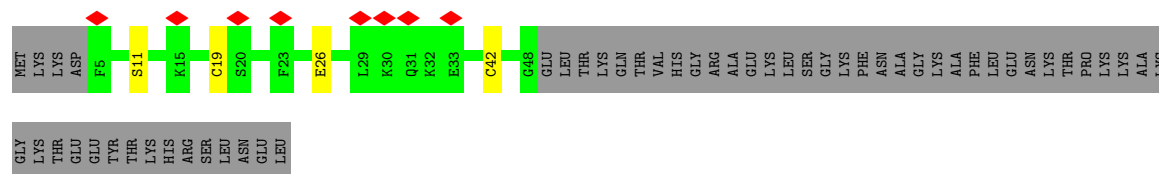


Chain w: 



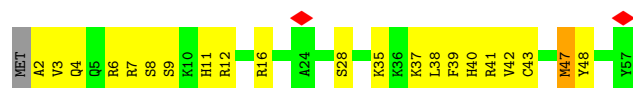
- Molecule 48: 50S ribosomal protein L31

Chain x: 



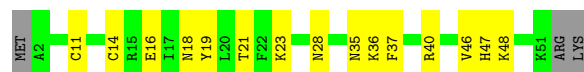
- Molecule 49: 50S ribosomal protein L32

Chain y: 

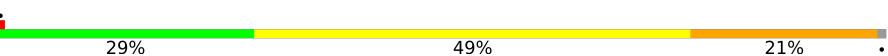


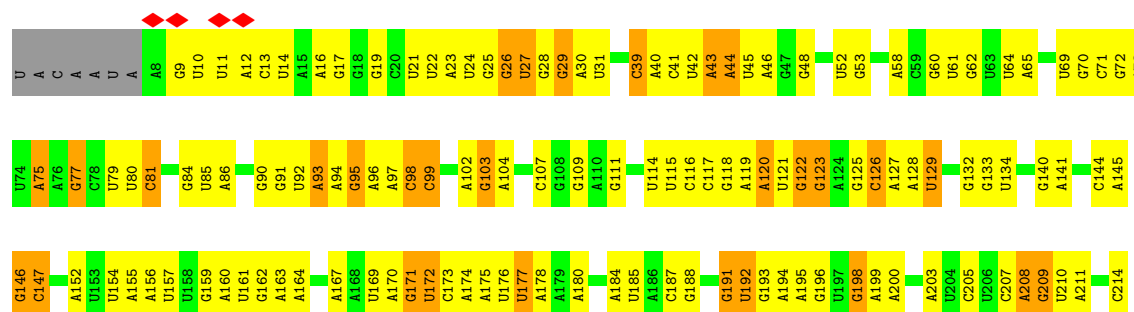
- Molecule 50: 50S ribosomal protein L33 1

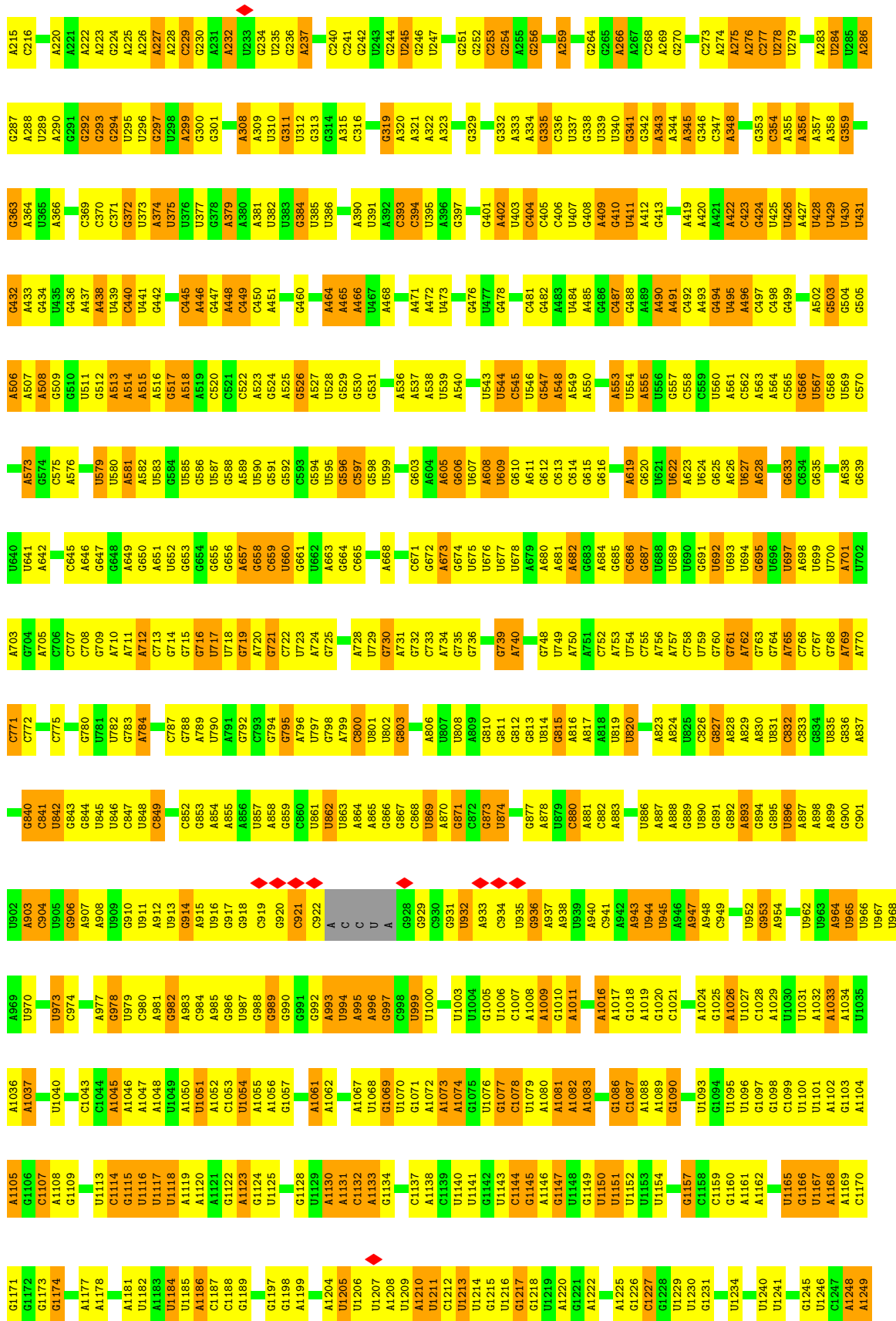
Chain z: 



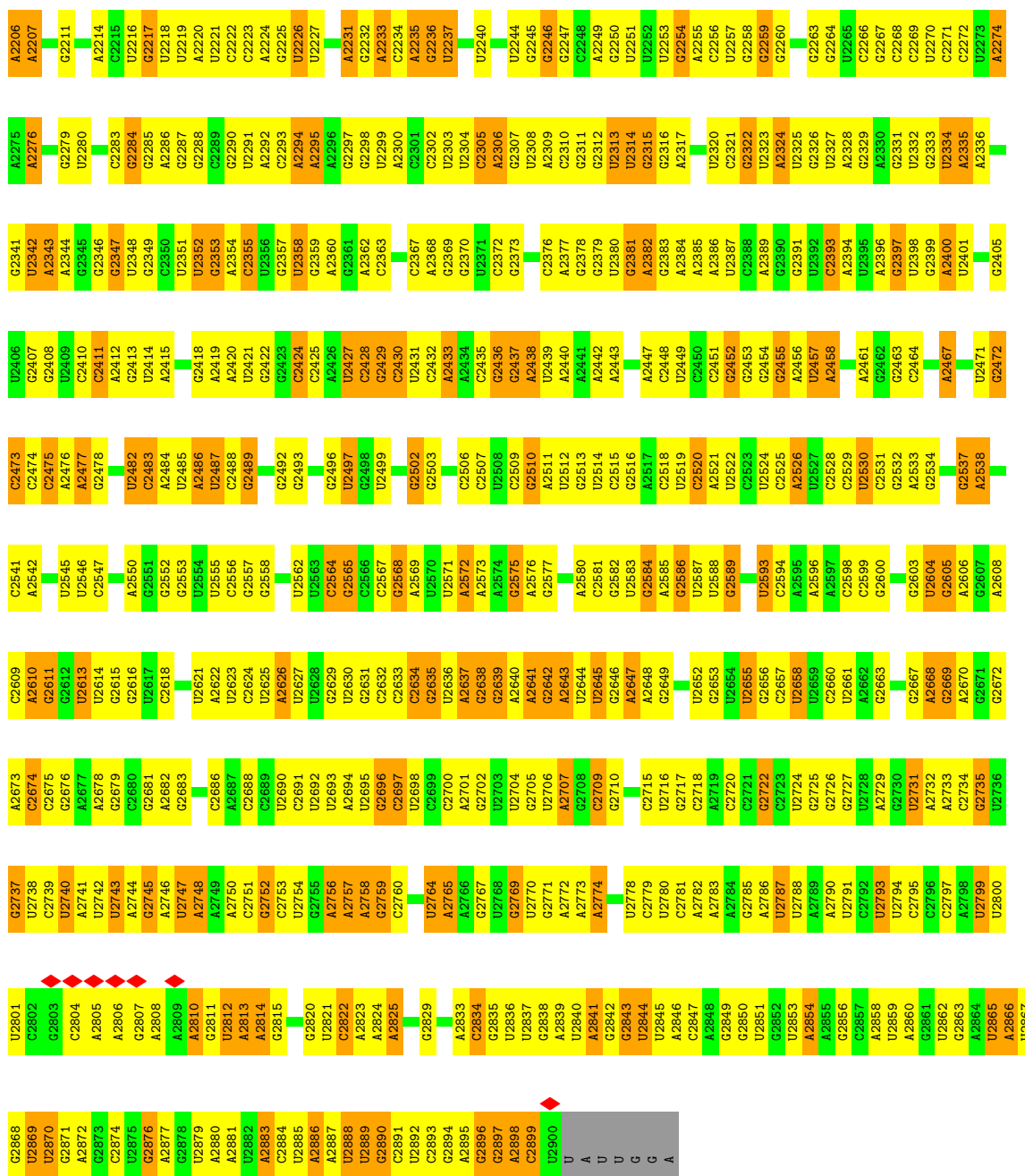
- Molecule 51: 23S ribosomal RNA

Chain 3: 



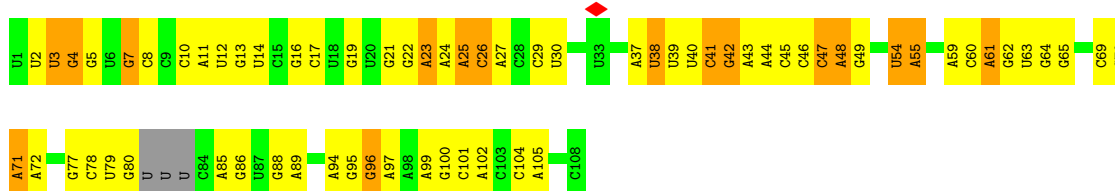


C2144	A2078	A2010	G1942	G1869	G1800	G1730	G1663	U1598	A1535	G1464	A1393	A1250
A2145	G2079	G2011	A1943	U1801	U1801	G1731	A1664	C1536	C1537	U1465	A1394	G1253
A2146	C2080	A2012	A1944	U1802	C1802	A1734	A1665	A1601	U1537	U1466	A1395	U1254
G2147	U2082	C2013	A1945	G1876	A1803	G1735	A1666	G1603	U1538	U1467	A1396	G1255
U2148	U2083	C2015	U1946	G1877	A1804	G1736	G1667	A1604	G1540	C1470	C1398	A1256
C2149	C2084	G2016	U1947	A1805	G1806	G1736	A1668	A1604	U1541	A1471	G1399	G1257
C2151	C2085	G2017	C1948	A1806	G1807	G1741	A1669	A1605	A1542	C1472	U1400	C1258
C2152	U2086	U2018	C1949	A1807	C1808	G1741	U1670	A1606	U1543	C1473	A1401	U1259
U2153	C2087	G2019	U1950	G1880	C1809	U1745	C1671	A1607	U1544	C1474	G1402	U1260
C2154	U2088	A2020	A1951	G1882	C1808	U1746	U1673	C1608	A1545	C1475	G1403	C1333
U2155	A2089	A2021	G1954	G1883	G1814	U1746	U1673	U1609	A1546	C1476	U1404	U1261
G2155	U2092	A2022	C1955	A1884	U1815	G1747	U1677	U1610	U1547	C1477	G1405	G1262
G2156	U2093	U2023	G1956	G1885	A1816	U1748	U1678	C1611	A1548	U1478	A1406	U1264
A2157	C2094	C2024	U1957	C1886	U1817	A1749	U1679	U1612	U1549	U1479	U1407	G1265
U2158	A2095	C2025	U1958	U1887	G1818	A1751	U1680	A1613	G1550	A1480	G1338	G1266
C2159	U2096	A2026	A1959	U1888	U1819	A1752	G1681	G1614	U1551	U1481	U1339	A1267
U2160	U2097	G2027	U1962	U1889	G1820	G1753	C1682	G1615	C1552	U1482	U1340	U1268
G2161	A2098	A2030	U1963	U1890	A1822	U1754	G1683	U1616	G1553	G1483	U1341	A1276
U2162	U2099	C2031	U1964	A1891	U1823	A1755	A1684	U1617	U1556	U1487	C1342	A1277
U2163	G2100	G2032	C1965	U1887	G1824	A1756	G1685	A1618	G1557	U1488	C1343	G1278
U2164	A2101	G2033	U1966	U1892	U1825	U1766	U1686	A1619	A1558	U1489	U1344	U1279
A2165	U2102	G2034	U1967	U1893	A1826	G1761	G1687	A1620	U1559	U1494	G1345	G1280
G2166	C2103	U2035	U1968	U1894	U1827	G1762	A1688	U1621	U	A1495	A1347	A1281
A2167	A2104	G2036	C1968	A1897	A1828	G1763	U1691	G1622	G	A1496	G1348	G1282
C2168	G2105	A2037	C1970	C1901	U1829	U1764	A1692	U1623	A	U1497	C1349	A1283
G2169	U2110	G2038	G1971	C1902	G1830	G1765	U1693	A1624	A	U1498	A1350	A1284
A2170	U2111	C2039	U1972	A1903	G1832	A1767	A1694	G1625	U	C1499	G1351	U1285
A2171	G2112	A2040	U1973	G1906	G1833	G1768	G1695	G1628	C	A1500	U1428	U1286
A2172	U2113	C2041	U1974	A1907	U1834	A1769	C1696	U1629	A	U1501	G1429	G1353
G2173	C2114	G2042	U1975	A1907	G1835	A1770	C1697	C1633	U	A1502	U1430	G1289
U2174	A2115	C2043	U1976	G1910	A1836	G1772	A1698	A1634	A	U1503	A1431	G1290
U2175	G1979	G2051	U1977	G1913	C1837	G1775	G1699	G1635	U1570	U1506	U1432	U1293
G2176	U2116	C2052	U1978	G1913	A1838	G1776	G1701	U1636	G1572	U1507	U1434	G1294
C2177	U2117	G2053	U1983	U1916	U1841	G1777	A1702	A1637	A1573	G1508	A1435	A1295
A2178	A2119	C2054	U1984	G1917	G1842	G1778	G1706	G1640	U1577	U1509	A1437	G1296
U2180	G2120	A2055	C1986	U1918	C1845	G1779	U1707	A1641	A1578	A1510	A1437	U1297
C2182	A2121	C2056	U1987	A1919	A1846	A1780	G1708	G1642	G1579	C1511	U1440	A1298
U2183	G2122	G2057	C1988	A1920	G1847	C1781	G1709	A1643	U1580	A1512	C1300	C1300
A2184	A2123	C2058	U1989	U1924	U1848	U1782	A1710	A1644	G1581	U1514	U1444	G1301
C2185	U2124	G2059	C1990	A1925	G1849	G1783	U1713	G1645	G1582	A1515	U1445	C1302
C2186	U2125	A2061	U1991	A1926	C1850	U1784	U1714	A1646	G1583	U1516	G1446	U1303
C2187	A2126	G2062	C1992	C1927	G1852	U1786	A1715	A1647	U1584	G1517	A1449	U1304
U2188	G2127	G2063	U1996	U1930	A1854	A1787	A1716	C1651	U1586	C1523	G1450	G1307
U2189	C2128	A2065	C1997	C1931	A1855	A1788	C1717	A1652	U1587	C1524	A1451	A1308
G2190	G2132	A2066	U1998	U1932	U1859	U1789	G1720	G1653	A1588	U1526	G1452	G1309
U2191	A2133	G2067	U1999	A1934	U1862	A1791	G1721	G1654	U1589	U1527	U1453	G1311
U2192	C2134	U2068	U2000	U1935	A1862	U1792	U1722	U1655	C1591	G1528	A1456	A1312
G2194	C2135	A2069	A1936	A1937	G1863	A1793	U1723	A1656	U1592	U1529	A1457	G1313
U2195	U2136	C2072	C2004	G1937	A1864	A1794	G1724	G1657	U1593	G1530	A1458	A1314
U2196	A2137	G2005	G2005	U1938	A1865	G1795	G1725	C1658	G1594	C1531	A1459	A1315
U2197	U2138	U2075	A2008	G1939	G1866	A1796	U1726	C1659	G1595	A1532	G1460	U1316
G2198	G2076	A2077	U2009	A1941	A1868	C1797	U1727	A1661	U1596	U1533	A1461	C1388
C2199	U2140	U2141	U2142	U2143	U2202	A1798	A1728	A1662	U1597	A1534	A1462	C1390
U2200	U2142	U2143	U2202	U2202	U2202	A1799	G1729	G1662			G1463	

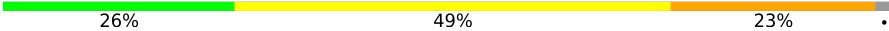


• Molecule 52: 5S ribosomal RNA

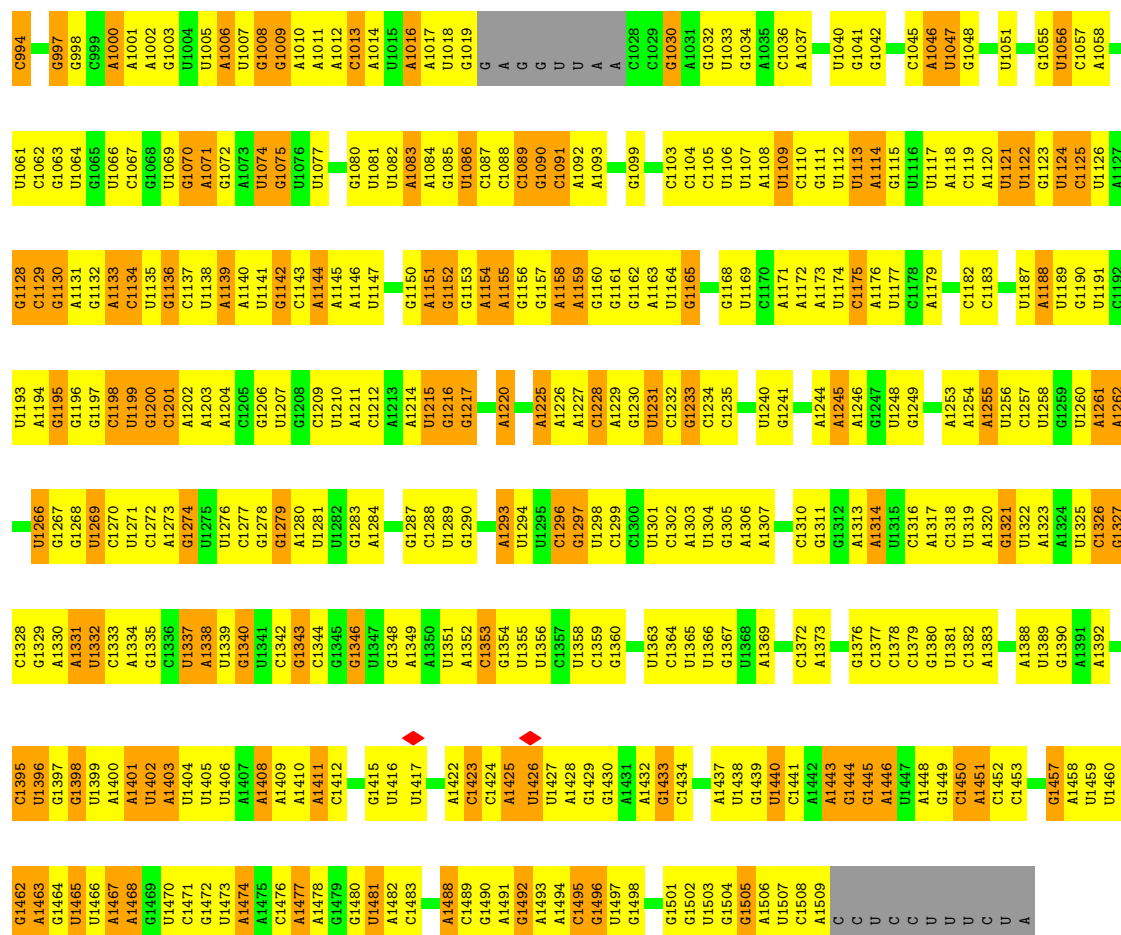
Chain 4: 35% 47% 15%



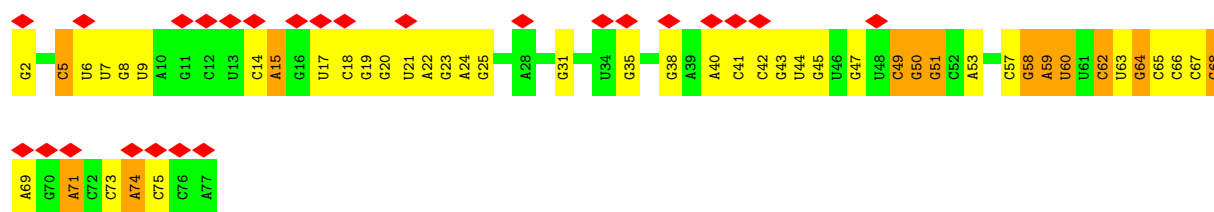
• Molecule 53: 16S ribosomal RNA

Chain 5:  26% 49% 23%

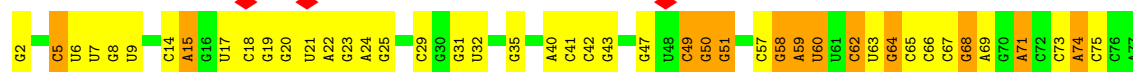
U	U	U	U	U5	U6	U7	U8	A9	G10	A11	G12	U13	U14	U15	G16	C20	U21	G22	G23	G24	U25	G28	G29	A30	U31	A32	A33	A34	C35	G36	C37	U38	G39	C41	G42	C48	C49	U50	A51	A52	C55	A56	A60	U63	G64	G65	A66	U67	C68	G69	A70	A71												
A72	G73	U74	A75	G76	U77	A78	A79	U80	A81	C82	U85	A86	G87	A88	C89	G90	C91	G92	A93	A94	C95	G96	G97	A101	A105	U102	A106	A107	C108	G109	U110	A111	U112	C113	A114	A115	U116	U117	C118	U119	A120	U123	U124	A125	U126	A127	A128	U129	G130	G131	G132	C133	G134	U136	A137									
A138	C139	U140	A141	U144	G145	A146	U147	A148	G149	A150	C151	G154	C155	U156	A157	U158	U159	A160	C161	C162	A227	G163	C164	A165	U166	A167	A168	G169	A170	C171	G172	U173	A174	U175	G176	G177	C180	G	C	A	U	G185	U188	U189	U190	A191	A192	G193	U194	U195	G196	A197	A198	U199	G200	A201								
C204	U205	G206	C207	A208	G209	G210	G211	G212	U213	U214	C215	A219	U220	U221	U222	G223	A224	U225	G226	A227	G228	G229	G230	U231	U232	C233	G234	C235	C236	A237	U240	C241	A242	G243	A246	G247	U248	U249	U252	G253	G254	G255	G256	U257	A258	A259	C260	G261	G262	C263	C264	U265	A266	C267										
A270	G271	U275	A276	G277	A278	C279	U280	U281	G282	G285	C286	G290	C291	U292	G293	A294	A295	A296	A297	G298	U299	G300	A301	A302	A303	U304	A305	C308	A312	G315	G316	C318	U319	G320	A321	G322	A323	C324	A325	G328	C331	A332	U333	A334	C335	U336	C337	C341																
G343	G344	G347	C348	A349	G350	C351	A352	G353	U354	A355	G356	G357	C358	A359	U361	U362	U363	U364	A365	C366	A367	C368	A369	A370	U371	G372	A373	G374	A377	A378	G379	G380	C381	U382	U383	G384	A385	U386	G387	G388	A389	G390	C391	A392	U393	U394	G395	C396	U400	A401	G402	A403	A404	C405										
G406	A407	U408	G409	A410	A411	A412	G413	U414	U417	U418	A419	A420	G421	U422	U423	G425	U426	A427	A428	A429	G430	U431	U432	C433	U434	U435	U436	U437	A438	U441	G442	G443	G444	A445	A446	G447	A448	U449	U450	G451	A452	U455	U456	A457	C458	A459	A460	G461	G462	U463	A464	A465	U466	G467	G468									
C469	U470	A471	G472	A473	G474	U475	U476	U477	G478	A479	U480	A481	G482	U483	A484	C485	C486	A487	U488	U489	U490	U491	G492	A493	A494	U495	A496	A497	U498	U499	G500	A501	C502	G503	A504	U505	U506	A507	A508	C509	U510	A511	U512	G513	U514	G515	C516	C517	A518	G519	C520	U521	A522	G523	U524	C525	U526	G527	A528					
U529	A530	A531	U536	A537	G538	C541	C542	C543	A544	A545	G546	U547	C548	C549	U549	U552	C553	C554	C555	U556	G557	A558	U559	U560	A561	U562	U563	C564	C565	A566	C567	U568	U569	A570	A571	C574	A575	A576	U577	C578	G579	C580	A581	G582	C583	C584	G585	U586	A587	U588	U589	G590	A591	A592	A593									
A594	G595	U596	C597	U598	C599	U599	G600	U601	G602	U603	U604	A605	A606	A607	G608	U609	C610	A611	G612	U613	U614	G615	C616	U617	U618	A619	G620	U621	A622	G623	U624	A628	U629	G630	C631	A632	U633	U634	G635	U636	A637	A638	U639	U640	U641	A642	U643	U644	A645	A646	U647	C648	U649	A650	U651	A652	U653	U654	G655					
U656	G657	U658	U659	A660	G661	G662	G663	A664	G665	U666	U669	G670	U671	A672	A673	U674	G680	U681	G682	U683	A684	G687	U688	U689	C690	A691	G692	A693	U694	G695	U696	A697	G700	U701	U702	A703	U704	A705	U706	G707	A708	A709	U710	G711	A712	U713	U714	U715	U716	A717	U718	U719	U720	U721	G722									
C723	U726	G727	U730	A731	U732	A733	U734	U735	U736	U737	A738	U739	G740	U741	U742	U743	U744	U745	U746	C747	U748	U749	U750	U751	G752	U753	U754	U755	A756	U757	U760	U761	A762	A763	U764	U765	U766	U767	U768	U769	U770	U771	U772	U773	U774	U775	U776	U777	U778	U779	U780	U781	U782	U783	U784	U785	U786	U787	U788	U789	U790	U791	U792	U793
U796	U797	U798	A799	G800	U801	G802	C803	A804	C808	A811	A812	U813	C814	U815	U816	U817	A818	G819	U820	U821	A822	C823	U824	A825	U826	C831	G832	U833	G834	U835	U836	G837	A838	U839	U840	U841	C842	U843	U844	U845	U846	U847	U848	U849	U850	U851	U852	U853	U854	U855	U856	U857	U858	U859	U860									
A861	C862	A863	U864	U865	A866	A867	G868	U869	A870	U871	C874	G875	U876	G877	U878	G879	U880	G881	U882	U883	A884	U885	U886	C887	A888	C891	G892	C893	A894	U895	G896	A897	U898	A900	A901	A902	A903	C904	U905	C906	A907	U908	A909	C910	U911	G912	A913	U914	U915	U916	U917	U918	U919	U920	U921	U922	U923	U924	U925					
C927	G928	C929	A930	C931	U932	A933	G934	U937	U938	G939	U940	A941	C942	U943	A944	U945	U946	U947	U948	G949	C950	U951	A952	A953	U954	U955	A956	U957	U958	U959	U960	U961	U962	U963	A964	C965	U966	U967	U968	A969	U970	U971	U972	U973	U974	U975	U976	U977	U978	U979	U980	U981	U982	U983	U984	U985	U986	U987	U988	U989	U990			



• Molecule 54: tRNA-Phe



• Molecule 54: tRNA-Phe



4 Experimental information

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of subtomograms used	12464	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	3.2	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	3750	Depositor
Magnification	81000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	2.467	Depositor
Minimum map value	-0.851	Depositor
Average map value	0.025	Depositor
Map value standard deviation	0.139	Depositor
Recommended contour level	0.53	Depositor
Map size (Å)	435.328, 435.328, 435.328	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.7005, 1.7005, 1.7005	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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	0.22	0/383	0.55	0/504
2	1	0.13	0/484	0.45	0/637
3	2	0.21	0/306	0.60	0/401
4	9	0.16	0/3071	0.45	0/4147
5	A	0.17	0/1954	0.47	0/2642
6	B	0.16	0/1721	0.47	0/2323
7	C	0.22	0/1691	0.57	1/2267 (0.0%)
8	D	0.19	0/1188	0.47	0/1593
9	E	0.18	0/1384	0.48	0/1867
10	F	0.17	0/1266	0.51	0/1700
11	G	0.18	0/1126	0.46	0/1517
12	H	0.17	0/1044	0.50	0/1395
13	I	0.16	0/820	0.57	0/1103
14	J	0.21	0/844	0.51	0/1136
15	K	0.27	0/1094	0.66	3/1468 (0.2%)
16	L	0.15	0/962	0.43	0/1289
17	M	0.16	0/483	0.49	0/643
18	N	0.18	0/679	0.49	1/907 (0.1%)
19	O	0.13	0/659	0.43	0/885
20	P	0.15	0/684	0.45	0/913
21	Q	0.16	0/545	0.50	0/730
22	R	0.14	0/698	0.44	0/936
23	S	0.14	0/631	0.37	0/838
24	T	0.22	0/475	0.56	0/621
25	a	0.16	0/2267	0.44	0/3044
26	b	0.16	0/1795	0.47	0/2412
27	c	0.17	0/1671	0.51	0/2246
28	d	0.17	0/1409	0.47	0/1894
29	e	0.15	0/1420	0.42	0/1912
30	f	0.17	0/1183	0.46	0/1587
31	g	0.38	0/969	0.72	0/1295
32	h	0.15	0/968	0.44	0/1298
33	i	0.16	0/1186	0.42	0/1592
34	j	0.16	0/953	0.43	0/1275

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	k	0.15	0/1170	0.43	0/1559
36	l	0.18	0/1104	0.51	2/1481 (0.1%)
37	m	0.18	0/973	0.52	0/1309
38	n	0.28	0/897	0.61	0/1198
39	o	0.17	0/948	0.46	0/1262
40	p	0.17	0/961	0.44	0/1278
41	q	0.19	0/828	0.58	0/1111
42	r	0.16	0/1077	0.45	0/1441
43	s	0.15	0/732	0.47	0/988
44	t	0.18	0/879	0.45	0/1165
45	u	0.16	0/665	0.44	0/884
46	v	0.16	0/519	0.45	0/695
47	w	0.14	0/826	0.43	0/1104
48	x	0.14	0/353	0.42	0/474
49	y	0.33	0/457	0.68	0/601
50	z	0.17	0/412	0.46	0/547
51	3	0.10	0/69073	0.26	0/107710
52	4	0.09	0/2505	0.26	0/3902
53	5	0.10	0/35768	0.26	0/55764
54	6	0.10	0/1808	0.25	0/2817
54	7	0.10	0/1808	0.25	0/2817
All	All	0.13	0/161776	0.34	7/241124 (0.0%)

There are no bond length outliers.

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	C	7	ILE	N-CA-C	-7.83	105.13	112.96
15	K	119	GLY	CA-C-N	-7.44	110.43	122.33
15	K	119	GLY	C-N-CA	-7.44	110.43	122.33
15	K	120	VAL	N-CA-C	7.43	118.46	108.27
18	N	19	VAL	N-CA-C	-5.83	108.17	113.71
36	l	88	GLY	CA-C-N	5.09	129.42	121.17
36	l	88	GLY	C-N-CA	5.09	129.42	121.17

There are no chirality outliers.

There are no planarity outliers.

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	380	0	429	22	0
2	1	477	0	530	15	0
3	2	304	0	350	21	0
4	9	3021	0	3050	99	0
5	A	1921	0	1973	54	0
6	B	1698	0	1768	62	0
7	C	1660	0	1719	61	0
8	D	1173	0	1267	36	0
9	E	1362	0	1377	38	0
10	F	1246	0	1308	49	0
11	G	1110	0	1226	42	0
12	H	1028	0	1094	55	0
13	I	809	0	894	44	0
14	J	829	0	855	32	0
15	K	1076	0	1170	47	0
16	L	951	0	1014	32	0
17	M	474	0	509	29	0
18	N	673	0	730	16	0
19	O	646	0	677	12	0
20	P	675	0	728	20	0
21	Q	535	0	562	33	0
22	R	682	0	691	18	0
23	S	629	0	681	22	0
24	T	471	0	522	16	0
25	a	2225	0	2301	76	0
26	b	1762	0	1808	53	0
27	c	1644	0	1731	52	0
28	d	1388	0	1469	45	0
29	e	1396	0	1481	30	0
30	f	1160	0	1172	33	0
31	g	960	0	1014	7	0
32	h	959	0	1039	5	0
33	i	1164	0	1192	35	0
34	j	944	0	1019	30	0
35	k	1153	0	1256	48	0
36	l	1079	0	1134	31	0
37	m	958	0	1011	39	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
38	n	889	0	952	21	0
39	o	938	0	1008	31	0
40	p	947	0	1028	53	0
41	q	811	0	858	29	0
42	r	1068	0	1150	32	0
43	s	720	0	803	27	0
44	t	872	0	972	15	0
45	u	657	0	695	19	0
46	v	513	0	560	21	0
47	w	818	0	870	27	0
48	x	344	0	333	2	0
49	y	452	0	472	24	0
50	z	408	0	440	14	0
51	3	61664	0	30954	1471	0
52	4	2239	0	1137	36	0
53	5	31943	0	16058	864	0
54	6	1618	0	821	35	0
54	7	1618	0	821	33	0
All	All	149141	0	102683	3653	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 15.

All (3653) 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)
53:5:887:C:N4	53:5:888:A:N6	1.83	1.26
53:5:580:C:H42	53:5:756:A:N6	1.47	1.10
53:5:580:C:N4	53:5:756:A:H62	1.50	1.09
51:3:573:A:N6	51:3:588:G:H21	1.53	1.06
51:3:573:A:H62	51:3:588:G:N2	1.55	1.04
51:3:2477:A:H62	51:3:2489:G:N2	1.57	1.03
51:3:2334:U:H3	51:3:2397:G:H1	1.03	1.02
51:3:1071:G:H1	51:3:1154:U:H3	1.08	1.01
51:3:2477:A:N6	51:3:2489:G:H21	1.59	1.00
51:3:633:G:H1	51:3:692:U:H3	1.05	0.98
26:b:40:LYS:O	26:b:48:SER:HA	1.63	0.98
51:3:734:A:H62	51:3:768:G:N2	1.61	0.98
51:3:1869:G:H1	51:3:1887:U:H3	1.08	0.98
15:K:112:ARG:HH21	15:K:119:GLY:HA2	1.29	0.97
15:K:120:VAL:HB	15:K:132:ALA:CB	1.95	0.97

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1932:C:N4	51:3:1936:G:H22	1.63	0.96
53:5:1388:A:H2	53:5:1462:G:H1	1.13	0.96
51:3:748:G:H21	51:3:753:A:N6	1.63	0.96
53:5:887:C:N4	53:5:888:A:H62	1.61	0.96
51:3:482:G:H21	51:3:490:A:N6	1.64	0.95
51:3:1932:C:H42	51:3:1936:G:N2	1.63	0.95
51:3:2136:A:H62	51:3:2167:G:H21	1.12	0.95
53:5:885:U:H3	53:5:901:A:N6	1.64	0.95
51:3:900:G:H21	51:3:903:A:N6	1.65	0.94
51:3:1027:U:H3	51:3:1198:G:H1	0.95	0.94
53:5:885:U:H3	53:5:901:A:H62	1.06	0.93
51:3:900:G:N2	51:3:903:A:H61	1.66	0.92
51:3:2360:A:N6	51:3:2373:G:H21	1.66	0.92
51:3:1387:A:H62	51:3:1400:U:H3	1.11	0.92
15:K:112:ARG:HD2	15:K:119:GLY:N	1.85	0.91
51:3:734:A:N6	51:3:768:G:H21	1.66	0.91
51:3:2360:A:H62	51:3:2373:G:H21	1.11	0.91
51:3:2360:A:H62	51:3:2373:G:N2	1.67	0.91
53:5:603:U:H3	53:5:630:G:H1	1.10	0.91
51:3:80:U:H3	51:3:109:G:H1	1.19	0.90
51:3:900:G:H21	51:3:903:A:H61	0.92	0.90
51:3:2075:U:H3	51:3:2438:A:H62	1.20	0.89
54:6:7:U:H3	54:6:68:G:H1	1.17	0.89
53:5:69:G:H1	53:5:86:A:H61	1.19	0.89
53:5:684:A:H62	53:5:700:G:H21	1.12	0.89
33:i:79:HIS:O	33:i:87:ILE:HA	1.73	0.88
54:7:7:U:H3	54:7:68:G:H1	1.17	0.86
23:S:28:LEU:HD12	23:S:54:LEU:HD21	1.58	0.86
15:K:120:VAL:HB	15:K:132:ALA:HB2	1.56	0.85
53:5:445:A:H62	53:5:483:U:H3	1.24	0.85
14:J:22:ASN:OD1	14:J:50:LYS:NZ	2.09	0.85
51:3:1932:C:H42	51:3:1936:G:H22	0.87	0.85
51:3:482:G:H21	51:3:490:A:H61	1.18	0.85
51:3:990:G:H1	51:3:999:U:H3	1.21	0.84
40:p:94:LEU:HD11	41:q:4:ILE:HD12	1.58	0.84
51:3:748:G:N2	51:3:753:A:H62	1.75	0.84
53:5:317:A:H61	53:5:328:G:H1	1.26	0.84
51:3:1766:A:H2'	51:3:1767:A:H8	1.40	0.84
51:3:2427:U:C4	51:3:2428:C:N4	2.47	0.83
51:3:2477:A:H62	51:3:2489:G:H21	0.85	0.83
4:9:245:ILE:O	4:9:251:ILE:HA	1.78	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:H:106:THR:HG22	12:H:107:THR:H	1.41	0.83
51:3:2709:C:H5'	51:3:2710:G:H5''	1.60	0.82
53:5:684:A:H62	53:5:700:G:N2	1.77	0.82
53:5:445:A:N7	53:5:483:U:O4	2.12	0.82
53:5:986:U:H3	53:5:1190:G:H22	1.25	0.82
51:3:1776:G:H2'	51:3:1777:G:H8	1.45	0.82
39:o:80:GLN:O	39:o:83:ASN:ND2	2.13	0.82
51:3:2427:U:N3	51:3:2428:C:N4	2.29	0.81
31:g:25:VAL:HB	31:g:83:ALA:O	1.80	0.81
21:Q:53:LEU:HG	21:Q:54:ILE:HG12	1.62	0.81
4:9:65:SER:HA	4:9:81:ASP:O	1.81	0.81
51:3:734:A:H62	51:3:768:G:H21	0.85	0.80
51:3:2683:G:H1	51:3:2740:U:H3	1.29	0.79
53:5:85:U:O2'	53:5:86:A:N7	2.16	0.79
37:m:13:TRP:HE1	51:3:1304:U:H4'	1.48	0.79
25:a:15:HIS:NE2	51:3:1781:C:N3	2.31	0.79
35:k:48:ARG:HE	35:k:51:PHE:HB2	1.48	0.79
51:3:2743:U:H2'	51:3:2744:A:H8	1.48	0.79
28:d:132:ILE:HB	28:d:152:PHE:H	1.49	0.78
53:5:434:U:H3	53:5:493:A:H62	1.30	0.78
39:o:34:ALA:HA	39:o:46:GLN:O	1.83	0.78
6:B:9:GLY:O	17:M:58:LYS:NZ	2.15	0.78
25:a:72:LYS:NZ	25:a:74:THR:OG1	2.16	0.78
12:H:110:LYS:NZ	53:5:1159:A:N3	2.32	0.78
4:9:339:THR:HG1	54:6:66:C:HO2'	1.23	0.78
51:3:482:G:N2	51:3:490:A:H61	1.81	0.78
51:3:748:G:N2	51:3:753:A:N6	2.32	0.78
53:5:146:A:N6	53:5:342:G:O6	2.17	0.78
14:J:33:ASN:HB2	53:5:681:U:H1'	1.65	0.77
33:i:50:ASN:OD1	33:i:51:GLN:N	2.17	0.77
51:3:573:A:H62	51:3:588:G:H21	0.80	0.77
34:j:1:MET:HE1	34:j:32:TYR:HB3	1.66	0.77
53:5:169:G:N2	53:5:219:A:N3	2.32	0.77
53:5:1323:A:H62	53:5:1348:G:H21	1.31	0.77
12:H:103:LYS:HG3	12:H:105:LEU:HD23	1.65	0.77
29:e:147:PHE:HA	29:e:150:GLU:HG2	1.65	0.77
38:n:38:HIS:HB2	38:n:57:SER:HB2	1.65	0.77
53:5:1214:A:H61	53:5:1270:C:H2'	1.50	0.76
22:R:13:ALA:HA	22:R:16:LEU:HD13	1.65	0.76
51:3:496:A:H62	51:3:505:G:H21	1.30	0.76
12:H:11:ARG:O	12:H:108:ARG:NH2	2.18	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:317:A:N6	53:5:328:G:H1	1.84	0.76
25:a:138:LEU:HA	25:a:141:ILE:HD12	1.67	0.76
53:5:711:G:H2'	53:5:712:A:H8	1.50	0.76
53:5:887:C:C4	53:5:888:A:N6	2.54	0.76
53:5:1388:A:N1	53:5:1462:G:O6	2.19	0.76
51:3:1473:C:H1'	51:3:1580:G:H22	1.50	0.76
4:9:344:LEU:HD12	4:9:345:PRO:HD2	1.68	0.75
53:5:929:C:O2	53:5:932:A:N6	2.19	0.75
51:3:42:U:H2'	51:3:43:A:H8	1.51	0.75
53:5:1230:G:O2'	53:5:1233:G:N3	2.19	0.75
51:3:2038:A:N3	51:3:2463:G:O2'	2.20	0.75
19:O:12:ARG:HG2	19:O:32:HIS:HB3	1.69	0.75
53:5:684:A:N6	53:5:700:G:H21	1.84	0.75
53:5:1270:C:HO2'	53:5:1276:U:H3	1.35	0.75
51:3:663:A:H61	51:3:673:A:H5''	1.49	0.75
7:C:151:ILE:HB	7:C:154:VAL:HG22	1.68	0.75
51:3:2156:G:H22	51:3:2158:C:H41	1.33	0.75
51:3:2304:U:O2	51:3:2343:A:N7	2.19	0.75
12:H:7:TYR:O	12:H:91:GLN:NE2	2.21	0.74
20:P:66:THR:HG21	20:P:76:ARG:HG2	1.69	0.74
27:c:172:THR:HG23	27:c:178:VAL:HG23	1.69	0.74
35:k:32:SER:OG	35:k:34:ARG:NH2	2.20	0.74
45:u:35:LEU:HD13	45:u:55:ARG:HG2	1.69	0.74
37:m:100:VAL:HG22	37:m:116:LEU:HD13	1.69	0.74
51:3:1067:A:H2	51:3:1157:G:H1	1.33	0.74
53:5:655:G:O6	53:5:744:U:C2	2.41	0.74
9:E:142:ARG:HB2	11:G:5:THR:HA	1.70	0.74
51:3:1414:C:H2'	51:3:1415:A:H8	1.53	0.74
29:e:101:VAL:HG22	29:e:128:VAL:HG12	1.70	0.74
51:3:639:G:N2	51:3:660:U:O2	2.21	0.74
7:C:104:MET:HE1	7:C:167:VAL:HB	1.70	0.73
53:5:372:G:H1	53:5:383:U:H3	1.35	0.73
46:v:4:LYS:HD2	46:v:12:PRO:HD3	1.69	0.73
51:3:1037:A:N6	51:3:1189:G:N2	2.36	0.73
42:r:6:LYS:HB2	51:3:529:G:H4'	1.71	0.73
28:d:38:MET:HE3	28:d:53:ALA:HB1	1.69	0.73
53:5:512:U:H2'	53:5:513:G:H8	1.54	0.73
27:c:59:ARG:NH2	51:3:494:G:N7	2.37	0.73
51:3:2136:A:H62	51:3:2167:G:N2	1.84	0.73
40:p:18:LYS:NZ	51:3:1249:A:OP1	2.22	0.73
12:H:90:LEU:HD22	12:H:97:LYS:HD2	1.71	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:407:A:H61	53:5:427:A:H62	1.37	0.73
53:5:778:A:N7	53:5:798:U:O2	2.21	0.73
40:p:23:SER:HB3	40:p:28:HIS:HB3	1.70	0.72
51:3:2667:G:N2	51:3:2670:A:OP2	2.21	0.72
11:G:11:HIS:ND1	53:5:822:A:OP1	2.22	0.72
18:N:22:ILE:HG21	18:N:67:LEU:HD21	1.72	0.72
36:l:75:THR:HA	36:l:90:PRO:HA	1.70	0.72
7:C:12:ARG:NH1	53:5:426:U:OP2	2.23	0.72
12:H:47:ILE:HA	12:H:50:MET:HE2	1.70	0.72
51:3:359:G:O6	51:3:372:G:N2	2.20	0.72
20:P:8:VAL:HG21	20:P:62:GLN:HE21	1.54	0.72
51:3:407:U:H5''	51:3:408:G:H5'	1.71	0.72
53:5:655:G:O6	53:5:744:U:O2	2.07	0.72
14:J:52:THR:O	14:J:55:SER:OG	2.08	0.72
15:K:112:ARG:HD2	15:K:118:VAL:C	2.14	0.72
37:m:15:VAL:O	37:m:19:ARG:HG2	1.90	0.71
4:9:121:LEU:HG	4:9:125:GLN:HE22	1.55	0.71
51:3:409:A:H62	51:3:438:A:H62	1.37	0.71
33:i:59:ILE:HB	33:i:127:VAL:HG12	1.72	0.71
33:i:80:HIS:NE2	33:i:83:TYR:O	2.23	0.71
53:5:670:G:H2'	53:5:671:G:C8	2.25	0.71
6:B:11:ARG:HH11	6:B:183:ALA:HB3	1.54	0.71
30:f:58:TYR:HD2	30:f:62:LYS:HZ1	1.38	0.71
51:3:1387:A:N7	51:3:1400:U:O4	2.24	0.71
41:q:61:LYS:HG2	41:q:91:LYS:HG2	1.71	0.71
51:3:2455:G:N2	51:3:2458:A:OP2	2.24	0.71
53:5:1225:A:H2'	53:5:1226:A:C8	2.24	0.71
26:b:198:ALA:HA	51:3:2688:C:H5'	1.71	0.71
53:5:979:C:N3	53:5:1197:G:N2	2.38	0.71
53:5:1270:C:O2'	53:5:1276:U:N3	2.22	0.71
8:D:143:ARG:HA	8:D:148:ARG:HG2	1.71	0.71
51:3:624:U:H3	51:3:701:A:H61	1.39	0.71
53:5:887:C:H41	53:5:888:A:N6	1.85	0.71
33:i:115:ASN:ND2	51:3:591:G:OP1	2.24	0.71
51:3:1067:A:N1	51:3:1157:G:O6	2.24	0.71
51:3:1734:A:H61	53:5:1449:G:H4'	1.56	0.71
5:A:58:LEU:HD13	5:A:62:ARG:HH11	1.56	0.71
51:3:1511:C:H2'	51:3:1512:A:C8	2.26	0.71
15:K:120:VAL:HB	15:K:132:ALA:HB1	1.72	0.70
53:5:1290:G:N1	53:5:1293:A:OP2	2.24	0.70
53:5:1216:G:H2'	53:5:1217:G:H8	1.56	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:97:G:H21	53:5:350:G:H5'	1.56	0.70
19:O:25:LYS:NZ	53:5:226:G:OP1	2.24	0.70
28:d:92:ARG:HA	28:d:96:MET:SD	2.31	0.70
53:5:710:G:H2'	53:5:711:G:C8	2.26	0.70
53:5:711:G:H2'	53:5:712:A:C8	2.26	0.70
15:K:113:GLY:HA2	15:K:118:VAL:HA	1.73	0.70
53:5:1405:U:O2	53:5:1445:G:N2	2.24	0.70
51:3:828:A:OP2	51:3:2078:A:O2'	2.10	0.70
51:3:1431:A:O2'	51:3:1497:A:O2'	2.09	0.70
51:3:1665:G:H21	51:3:1669:A:H62	1.39	0.70
53:5:610:C:H2'	53:5:611:A:C8	2.26	0.70
51:3:525:A:H2'	51:3:526:G:C4	2.26	0.70
52:4:3:U:OP1	52:4:59:A:O2'	2.08	0.70
3:2:24:ARG:HH11	3:2:35:ARG:HH22	1.39	0.70
25:a:264:GLY:O	51:3:1850:C:O2'	2.09	0.70
42:r:114:ARG:HH12	51:3:555:A:H4'	1.55	0.70
51:3:802:U:H2'	51:3:803:G:H8	1.57	0.70
17:M:29:ARG:HD3	53:5:1177:U:H4'	1.74	0.69
51:3:224:G:N2	51:3:464:A:N7	2.40	0.69
51:3:1297:U:H2'	51:3:1298:A:H8	1.56	0.69
53:5:1378:C:H1'	53:5:1474:A:H61	1.56	0.69
51:3:499:G:N2	51:3:502:A:OP2	2.25	0.69
51:3:625:G:H2'	51:3:626:A:H8	1.58	0.69
28:d:45:ARG:HG3	28:d:46:ASP:H	1.57	0.69
51:3:2141:A:N7	51:3:2163:U:O2'	2.24	0.69
24:T:24:GLU:OE1	24:T:27:ARG:NH1	2.26	0.69
1:0:24:THR:HG23	1:0:27:GLY:H	1.57	0.69
13:I:64:ASP:OD2	53:5:1051:U:O2'	2.10	0.69
22:R:81:LYS:NZ	53:5:950:C:O2	2.25	0.69
25:a:215:LYS:HG3	25:a:217:GLY:H	1.56	0.69
6:B:180:THR:HA	53:5:1103:C:H42	1.58	0.69
10:F:110:ARG:HE	10:F:111:HIS:H	1.40	0.69
27:c:4:LEU:HB2	27:c:20:LEU:HD11	1.75	0.69
3:2:19:ARG:O	3:2:24:ARG:NH2	2.26	0.69
15:K:127:ARG:NH1	53:5:499:U:OP1	2.26	0.69
49:y:16:ARG:NH2	51:3:1294:G:OP1	2.25	0.69
15:K:81:PRO:HD2	15:K:110:ILE:HG12	1.75	0.68
36:l:30:GLY:HA2	36:l:107:ALA:HB2	1.74	0.68
51:3:2025:C:H2'	51:3:2026:A:H8	1.58	0.68
53:5:69:G:H1	53:5:86:A:N6	1.91	0.68
54:7:9:U:O2'	54:7:22:A:N1	2.26	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:u:52:TYR:HB3	45:u:73:LEU:HD12	1.75	0.68
51:3:840:G:H22	51:3:863:U:H5''	1.57	0.68
53:5:412:G:H2'	53:5:413:G:H8	1.59	0.68
5:A:119:ASN:ND2	53:5:1064:U:O2'	2.27	0.68
28:d:10:LYS:O	28:d:14:LYS:NZ	2.25	0.68
35:k:95:ARG:NH1	35:k:108:SER:O	2.27	0.68
51:3:605:A:H61	51:3:2036:G:H21	1.39	0.68
51:3:914:G:N2	51:3:937:A:OP2	2.27	0.68
51:3:2603:G:N2	51:3:2606:A:OP2	2.26	0.68
26:b:72:LYS:NZ	51:3:2794:U:OP1	2.26	0.68
43:s:59:ILE:HD11	43:s:77:LEU:HD21	1.75	0.68
35:k:69:ARG:NH1	51:3:2412:A:O2'	2.26	0.68
51:3:1582:G:H2'	51:3:1583:G:C8	2.28	0.68
51:3:2694:A:N6	51:3:2731:U:O4	2.27	0.68
33:i:33:VAL:HG12	33:i:111:MET:HE1	1.75	0.68
52:4:104:C:H2'	52:4:105:A:H8	1.59	0.68
53:5:880:G:N2	53:5:906:C:O2	2.27	0.68
53:5:1212:C:O2'	53:5:1274:G:N2	2.25	0.68
5:A:23:LEU:HD11	5:A:62:ARG:HH12	1.59	0.68
51:3:1414:C:H2'	51:3:1415:A:C8	2.28	0.68
7:C:60:MET:HA	7:C:63:MET:HE3	1.75	0.67
51:3:1028:C:H2'	51:3:1029:A:H8	1.59	0.67
51:3:1798:A:OP2	51:3:1835:G:N2	2.26	0.67
53:5:1195:G:H2'	53:5:1196:G:C8	2.29	0.67
4:9:233:GLU:OE2	4:9:234:ARG:NE	2.26	0.67
37:m:16:MET:O	37:m:20:GLN:NE2	2.27	0.67
46:v:13:LEU:HB3	46:v:29:TRP:HB2	1.75	0.67
46:v:18:ARG:NH2	51:3:419:A:OP1	2.28	0.67
51:3:2811:G:N3	51:3:2895:A:C6	2.62	0.67
5:A:49:ARG:HE	5:A:51:HIS:HB2	1.59	0.67
29:e:142:GLU:OE2	51:3:2767:G:N2	2.26	0.67
46:v:33:LEU:HD12	46:v:49:LEU:HG	1.76	0.67
15:K:56:LYS:NZ	15:K:101:LYS:O	2.26	0.67
51:3:1725:G:O6	51:3:1731:G:N2	2.28	0.67
4:9:130:ARG:HB3	4:9:199:TRP:HB3	1.77	0.67
17:M:60:SER:OG	53:5:1105:C:O2	2.11	0.67
43:s:52:PRO:HB3	43:s:83:ILE:HD11	1.77	0.67
51:3:1798:A:N6	51:3:1835:G:O2'	2.28	0.67
12:H:100:LEU:HD21	12:H:106:THR:HG23	1.75	0.67
47:w:62:LYS:NZ	47:w:66:GLN:O	2.26	0.67
51:3:2088:U:H2'	51:3:2089:A:H8	1.57	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:Q:78:ASN:ND2	21:Q:82:HIS:HB2	2.10	0.67
36:l:45:ARG:NH2	51:3:2492:G:OP1	2.27	0.67
53:5:903:A:H1'	53:5:1389:U:H5'	1.76	0.67
53:5:455:U:H3	53:5:472:G:H1	1.43	0.67
9:E:70:LYS:HD3	9:E:74:ARG:HH22	1.59	0.67
12:H:79:GLY:HA2	12:H:82:ARG:HD3	1.76	0.67
53:5:445:A:N6	53:5:483:U:H3	1.92	0.67
43:s:79:LYS:NZ	51:3:1634:A:OP1	2.28	0.66
51:3:1087:C:H2'	51:3:1088:A:H8	1.60	0.66
53:5:854:A:H62	53:5:863:A:H2	1.42	0.66
8:D:165:ALA:O	8:D:169:ILE:HG12	1.95	0.66
13:I:7:VAL:N	13:I:85:VAL:O	2.29	0.66
54:6:9:U:O2'	54:6:22:A:N1	2.26	0.66
4:9:13:VAL:HG21	4:9:75:ARG:HD2	1.76	0.66
14:J:22:ASN:ND2	53:5:687:G:OP2	2.28	0.66
41:q:39:LEU:HA	41:q:50:LEU:HD13	1.78	0.66
26:b:185:ASP:O	26:b:189:MET:N	2.29	0.66
51:3:340:U:O2'	51:3:1241:U:OP1	2.14	0.66
53:5:664:A:H2'	53:5:665:G:C8	2.31	0.66
53:5:1003:G:H1	53:5:1018:U:H2'	1.60	0.66
53:5:1226:A:H2'	53:5:1227:A:C8	2.30	0.66
51:3:490:A:H3'	51:3:491:A:H8	1.59	0.66
6:B:191:LYS:NZ	53:5:1179:A:O2'	2.26	0.66
26:b:36:VAL:HA	26:b:52:LEU:HD13	1.78	0.66
36:l:125:LEU:HD12	36:l:126:PRO:HD2	1.77	0.66
51:3:2085:C:H42	51:3:2251:U:H3	1.43	0.66
53:5:1009:G:N2	53:5:1012:A:OP2	2.28	0.66
16:L:14:ARG:HG2	16:L:44:ARG:H	1.60	0.66
41:q:6:VAL:HG22	41:q:11:GLN:HG3	1.77	0.66
52:4:69:C:N3	52:4:96:G:N2	2.43	0.66
53:5:144:U:O2	53:5:149:G:N2	2.28	0.66
42:r:11:ARG:HH12	42:r:98:LYS:HD2	1.60	0.66
53:5:1230:G:H3'	53:5:1254:A:H61	1.60	0.66
29:e:146:GLN:OE1	51:3:2752:G:N2	2.24	0.66
51:3:2349:G:N2	51:3:2382:A:O3'	2.29	0.66
6:B:182:ARG:HD2	6:B:211:TYR:HA	1.76	0.66
13:I:70:GLN:HE21	17:M:59:ALA:HA	1.61	0.66
21:Q:48:GLN:HE21	21:Q:51:ILE:HD11	1.61	0.66
34:j:71:ARG:HG2	34:j:73:ASP:H	1.60	0.66
4:9:306:LYS:NZ	4:9:360:THR:OG1	2.28	0.65
25:a:268:ARG:HD2	51:3:1805:U:H5'	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:s:51:LYS:HD2	43:s:52:PRO:HD2	1.79	0.65
51:3:1932:C:N3	51:3:1936:G:N1	2.37	0.65
53:5:1106:U:H3	53:5:1160:G:H1	1.44	0.65
28:d:92:ARG:O	28:d:95:ARG:NH1	2.30	0.65
39:o:6:LYS:O	51:3:2879:U:O2'	2.14	0.65
51:3:1037:A:H62	51:3:1189:G:N2	1.94	0.65
53:5:616:C:N4	53:5:619:A:OP2	2.27	0.65
53:5:808:C:O2'	53:5:895:A:N6	2.29	0.65
53:5:985:C:H42	53:5:1191:U:H3	1.44	0.65
46:v:10:ARG:NH1	51:3:432:G:OP2	2.28	0.65
51:3:259:A:O2'	51:3:422:A:OP1	2.13	0.65
51:3:2249:A:H2'	51:3:2250:G:C8	2.31	0.65
6:B:209:MET:HE2	6:B:211:TYR:HB3	1.78	0.65
51:3:633:G:O6	51:3:692:U:O4	2.15	0.65
4:9:10:LYS:HE3	4:9:72:SER:H	1.60	0.65
5:A:38:ASN:ND2	5:A:205:ASN:O	2.28	0.65
12:H:101:LYS:HD2	53:5:1151:A:H5'	1.78	0.65
16:L:90:ARG:NE	16:L:96:PRO:O	2.27	0.65
51:3:2839:A:N6	51:3:2883:A:O5'	2.28	0.65
8:D:79:THR:HG21	53:5:16:G:H1'	1.77	0.65
10:F:86:VAL:HG13	10:F:151:ALA:HA	1.79	0.65
26:b:143:PHE:HD2	26:b:145:GLY:H	1.44	0.65
35:k:42:ARG:HH21	51:3:841:C:H3'	1.61	0.65
51:3:274:A:H3'	51:3:275:A:C8	2.31	0.65
51:3:2310:C:N4	51:3:2311:G:O6	2.29	0.65
51:3:2630:U:H2'	51:3:2631:G:H8	1.61	0.65
15:K:59:ASN:ND2	53:5:527:G:O6	2.29	0.65
51:3:873:G:H2'	51:3:874:U:O4'	1.96	0.65
51:3:892:G:H2'	51:3:893:A:C8	2.32	0.65
53:5:367:A:N3	53:5:369:A:N6	2.44	0.65
4:9:312:LEU:HD13	4:9:385:GLY:HA2	1.79	0.65
6:B:27:HIS:HB3	17:M:36:HIS:HA	1.79	0.65
30:f:112:MET:HB2	30:f:130:ILE:HA	1.79	0.65
36:l:37:THR:HB	36:l:128:THR:HG23	1.78	0.65
51:3:895:G:H4'	51:3:896:U:H5'	1.79	0.65
51:3:1293:U:H2'	51:3:1294:G:C8	2.32	0.65
7:C:31:ARG:HH22	53:5:423:U:H5'	1.62	0.64
23:S:20:ASN:O	23:S:24:GLN:NE2	2.31	0.64
53:5:1266:U:H2'	53:5:1267:G:H8	1.62	0.64
2:1:39:ARG:NH1	51:3:2357:G:OP2	2.18	0.64
4:9:215:ILE:HB	4:9:290:GLY:H	1.61	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:f:47:ARG:O	30:f:47:ARG:NH2	2.30	0.64
51:3:24:U:H2'	51:3:25:G:H8	1.61	0.64
3:2:8:LYS:NZ	51:3:2475:C:OP1	2.30	0.64
7:C:123:LEU:HB3	7:C:143:ARG:HG2	1.80	0.64
25:a:57:HIS:HA	25:a:225:ARG:HB2	1.79	0.64
35:k:114:LEU:HB3	35:k:131:VAL:HG22	1.78	0.64
51:3:2623:U:H2'	51:3:2624:C:H6	1.62	0.64
53:5:715:A:H5'	53:5:716:C:H5	1.62	0.64
53:5:885:U:O4	53:5:901:A:N7	2.31	0.64
1:0:39:ARG:NH1	51:3:495:U:OP2	2.28	0.64
3:2:24:ARG:HE	3:2:35:ARG:CZ	2.10	0.64
32:h:128:ALA:HA	32:h:131:MET:HB2	1.79	0.64
51:3:663:A:H4'	51:3:664:G:H5'	1.79	0.64
51:3:1837:C:H2'	51:3:1838:A:H8	1.61	0.64
5:A:199:VAL:HG12	5:A:213:PHE:HB2	1.79	0.64
47:w:33:LEU:HA	47:w:38:LEU:HD21	1.78	0.64
53:5:1352:A:H4'	53:5:1353:C:H5	1.62	0.64
10:F:76:VAL:HG11	10:F:78:ARG:HH11	1.61	0.64
30:f:42:LYS:HA	30:f:46:ASP:HB3	1.78	0.64
51:3:619:A:N6	51:3:844:G:O2'	2.30	0.64
28:d:125:ARG:NH2	51:3:2324:A:O2'	2.31	0.64
7:C:12:ARG:NH2	53:5:424:U:OP1	2.31	0.64
41:q:6:VAL:HB	41:q:37:LYS:HB3	1.78	0.64
51:3:2298:G:H4'	51:3:2389:A:H4'	1.78	0.64
53:5:133:G:H2'	53:5:134:G:C8	2.33	0.64
24:T:37:ARG:HG2	24:T:40:MET:HG2	1.78	0.64
35:k:28:LEU:HD12	35:k:32:SER:HA	1.80	0.64
39:o:57:GLY:HA3	39:o:62:GLU:HA	1.80	0.64
41:q:86:ARG:NH2	51:3:1253:G:OP2	2.31	0.64
51:3:855:A:N3	51:3:979:U:O2'	2.30	0.64
51:3:2104:A:H2'	51:3:2105:G:C8	2.32	0.64
53:5:320:G:N1	53:5:323:A:N7	2.46	0.64
53:5:492:G:O2'	53:5:494:A:O2'	2.16	0.64
53:5:600:G:H1	53:5:634:U:H3	1.45	0.64
4:9:140:ILE:HG22	4:9:141:ALA:H	1.63	0.64
29:e:36:LEU:HD21	29:e:74:LEU:HD13	1.80	0.64
51:3:735:G:O2'	51:3:1666:A:N7	2.30	0.64
44:t:90:LYS:HE3	44:t:105:LYS:HA	1.79	0.63
51:3:849:C:O2'	51:3:1255:G:N2	2.31	0.63
51:3:1374:U:H3	51:3:1634:A:H61	1.44	0.63
52:4:70:G:H21	52:4:94:A:H62	1.46	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:14:THR:OG1	2:1:17:GLY:O	2.16	0.63
12:H:49:ASP:O	12:H:82:ARG:NH2	2.27	0.63
14:J:102:GLU:HA	24:T:8:ASN:HB3	1.79	0.63
36:l:109:ILE:HB	36:l:114:MET:HE2	1.80	0.63
40:p:7:LYS:NZ	51:3:1246:U:OP2	2.31	0.63
51:3:1017:A:HO2'	51:3:2043:C:HO2'	1.47	0.63
4:9:313:LYS:HD3	4:9:354:GLY:HA2	1.78	0.63
5:A:154:ARG:NH1	53:5:1088:C:O3'	2.32	0.63
25:a:158:GLY:O	25:a:162:ARG:NH1	2.32	0.63
35:k:75:GLN:HE22	35:k:77:TRP:NE1	1.94	0.63
37:m:5:ASN:ND2	51:3:2010:A:O2'	2.28	0.63
46:v:33:LEU:HB3	46:v:49:LEU:HD11	1.81	0.63
51:3:2099:U:OP1	51:3:2207:A:O2'	2.17	0.63
51:3:2112:A:N6	51:3:2192:U:O2	2.32	0.63
53:5:649:U:O4	53:5:749:G:O2'	2.16	0.63
5:A:140:ASN:HD21	5:A:144:LEU:HB2	1.62	0.63
51:3:487:C:N4	51:3:490:A:OP2	2.32	0.63
51:3:2143:G:H2'	51:3:2144:C:H4'	1.80	0.63
53:5:864:U:H4'	53:5:865:U:H5''	1.78	0.63
14:J:103:ILE:HG22	24:T:8:ASN:HB2	1.81	0.63
34:j:76:HIS:HB3	39:o:78:ASN:HB3	1.81	0.63
51:3:1295:A:N6	51:3:2021:A:OP2	2.31	0.63
53:5:823:C:H2'	53:5:824:U:C6	2.33	0.63
28:d:150:ARG:NH1	51:3:2315:G:O6	2.32	0.63
51:3:2036:G:N1	51:3:2040:A:OP2	2.29	0.63
53:5:920:G:H1	53:5:1366:U:H3	1.47	0.63
7:C:16:PHE:HA	7:C:59:ARG:HE	1.62	0.63
36:l:134:ARG:NH1	36:l:135:GLU:O	2.32	0.63
51:3:897:A:H62	51:3:953:G:H21	1.47	0.63
25:a:18:THR:H	25:a:212:VAL:HB	1.63	0.63
49:y:42:VAL:HG23	49:y:48:TYR:HB2	1.80	0.63
51:3:277:C:N3	51:3:293:G:N2	2.47	0.63
51:3:1869:G:N2	51:3:1887:U:O2	2.28	0.63
53:5:368:C:N4	53:5:384:G:OP2	2.29	0.63
53:5:610:C:H2'	53:5:611:A:H8	1.63	0.63
51:3:1080:A:H5''	51:3:1081:A:H3'	1.80	0.63
53:5:612:G:H1	53:5:624:U:H3	1.47	0.63
16:L:104:THR:HG21	53:5:1204:A:H62	1.64	0.62
21:Q:78:ASN:HD22	21:Q:82:HIS:HB2	1.62	0.62
25:a:220:ARG:NH1	51:3:799:A:N3	2.46	0.62
51:3:2720:C:OP1	51:3:2722:G:O2'	2.16	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:F:112:GLU:O	10:F:118:LYS:NZ	2.28	0.62
32:h:128:ALA:HB1	32:h:133:ILE:HB	1.80	0.62
51:3:611:A:C5	51:3:2025:C:H5'	2.35	0.62
51:3:1768:G:H4'	51:3:1769:A:OP1	1.98	0.62
51:3:1511:C:H2'	51:3:1512:A:H8	1.63	0.62
53:5:331:C:H2'	53:5:332:A:C8	2.34	0.62
8:D:108:ALA:HB3	8:D:114:ALA:HB2	1.81	0.62
45:u:73:LEU:HD13	45:u:95:VAL:HG11	1.81	0.62
51:3:990:G:O6	51:3:999:U:O4	2.17	0.62
51:3:1661:A:H2'	51:3:1662:G:H8	1.64	0.62
53:5:403:A:H2'	53:5:404:A:C8	2.33	0.62
14:J:46:LYS:HA	14:J:50:LYS:HD3	1.81	0.62
40:p:45:ALA:O	40:p:49:ARG:HD2	1.98	0.62
4:9:80:VAL:HG23	4:9:99:MET:HE2	1.81	0.62
6:B:121:ARG:HA	6:B:121:ARG:NH2	2.15	0.62
16:L:102:THR:OG1	53:5:1200:G:OP1	2.15	0.62
30:f:5:LEU:HA	30:f:34:LYS:HG3	1.82	0.62
37:m:102:LYS:HB3	49:y:41:ARG:HD3	1.82	0.62
53:5:128:A:O2'	53:5:198:A:N6	2.32	0.62
3:2:13:ASP:OD2	3:2:28:LYS:NZ	2.33	0.62
20:P:41:ARG:NH2	53:5:234:G:OP1	2.32	0.62
53:5:1107:U:H2'	53:5:1108:A:C8	2.34	0.62
21:Q:62:ARG:NH1	21:Q:62:ARG:HA	2.15	0.62
22:R:81:LYS:HE3	22:R:83:HIS:HA	1.81	0.62
39:o:60:ILE:O	39:o:80:GLN:NE2	2.33	0.62
51:3:339:U:O2	51:3:346:G:O6	2.17	0.62
51:3:1927:C:O5'	53:5:1492:G:N2	2.33	0.62
53:5:68:C:H2'	53:5:69:G:C8	2.34	0.62
25:a:72:LYS:HA	25:a:157:GLY:HA2	1.82	0.62
27:c:156:ASN:HB2	27:c:194:ALA:HA	1.82	0.62
37:m:22:VAL:HG23	37:m:45:LEU:HD23	1.80	0.62
40:p:90:ASN:ND2	40:p:95:SER:OG	2.33	0.62
51:3:1054:U:O2'	51:3:1056:A:N7	2.29	0.62
51:3:1502:A:C6	51:3:1540:G:C6	2.87	0.62
53:5:1409:A:H2'	53:5:1410:A:H8	1.63	0.62
4:9:232:VAL:O	4:9:272:GLY:N	2.30	0.62
6:B:73:GLN:HE22	6:B:75:ALA:HB3	1.65	0.62
28:d:54:LEU:HD23	28:d:65:PRO:HG2	1.80	0.62
53:5:858:A:O2'	53:5:1069:U:O4	2.15	0.62
53:5:1241:G:N2	53:5:1244:A:OP2	2.23	0.62
38:n:72:LEU:HA	38:n:75:GLN:HB2	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:284:U:OP2	51:3:286:A:N6	2.33	0.61
53:5:603:U:O2	53:5:630:G:N2	2.32	0.61
1:0:33:LEU:HD23	1:0:36:LYS:HZ1	1.65	0.61
15:K:63:ARG:NH2	15:K:102:ASP:OD2	2.33	0.61
16:L:11:ASN:OD1	16:L:12:GLN:N	2.28	0.61
16:L:117:ALA:HB2	54:7:29:C:H4'	1.81	0.61
27:c:55:LYS:HD2	27:c:82:PRO:HD3	1.83	0.61
38:n:79:ASP:OD1	38:n:112:ARG:NH1	2.34	0.61
51:3:1184:U:H2'	51:3:1185:U:C6	2.35	0.61
51:3:2093:U:H2'	51:3:2094:A:C8	2.35	0.61
53:5:661:G:H1	53:5:738:A:H61	1.46	0.61
53:5:670:G:H2'	53:5:671:G:H8	1.65	0.61
4:9:213:LEU:HD21	4:9:230:GLY:HA3	1.83	0.61
7:C:79:LEU:O	7:C:82:ARG:NH1	2.33	0.61
51:3:496:A:H62	51:3:505:G:N2	1.98	0.61
51:3:989:G:O2'	51:3:2274:A:OP1	2.18	0.61
51:3:2031:C:H2'	51:3:2032:G:H8	1.65	0.61
51:3:2534:G:H1	51:3:2545:U:H3	1.46	0.61
53:5:600:G:N2	53:5:634:U:O2	2.31	0.61
7:C:131:THR:HG21	53:5:618:U:H3	1.65	0.61
9:E:70:LYS:HB2	9:E:74:ARG:NH1	2.16	0.61
11:G:11:HIS:CE1	53:5:822:A:H4'	2.36	0.61
25:a:213:ILE:HA	25:a:218:ARG:HE	1.64	0.61
51:3:733:C:H5''	51:3:734:A:H5'	1.83	0.61
51:3:1037:A:N6	51:3:1189:G:H21	1.97	0.61
53:5:36:G:H2'	53:5:37:C:C6	2.34	0.61
53:5:127:A:H2'	53:5:128:A:C8	2.36	0.61
53:5:590:G:O6	53:5:645:A:N6	2.33	0.61
53:5:712:A:H2'	53:5:713:A:C8	2.35	0.61
53:5:941:A:H61	53:5:1210:U:H3	1.48	0.61
9:E:35:LEU:HB2	9:E:60:TRP:HD1	1.64	0.61
13:I:48:LEU:HD13	13:I:77:LYS:HD2	1.83	0.61
26:b:144:GLN:NE2	51:3:2057:C:O2'	2.33	0.61
35:k:37:LYS:NZ	51:3:842:U:OP1	2.32	0.61
36:l:11:LYS:HD3	36:l:87:LYS:HD2	1.81	0.61
40:p:64:LEU:HD11	40:p:92:LYS:HB3	1.82	0.61
51:3:2023:U:H2'	51:3:2024:C:C6	2.35	0.61
51:3:2292:A:H2'	51:3:2293:C:C6	2.35	0.61
2:1:4:LYS:NZ	51:3:256:G:OP2	2.34	0.61
15:K:86:ASN:HB3	15:K:117:THR:HG22	1.81	0.61
18:N:35:GLN:HE21	53:5:737:U:P	2.23	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:a:182:LEU:HD23	25:a:192:PHE:HE2	1.66	0.61
29:e:4:ILE:HD11	51:3:2759:G:H4'	1.82	0.61
34:j:98:ILE:HG21	34:j:118:ALA:HA	1.83	0.61
42:r:75:VAL:HG22	42:r:77:ASN:HB2	1.80	0.61
53:5:944:A:O2'	53:5:1338:A:OP2	2.16	0.61
53:5:1460:U:H2'	53:5:1461:G:H8	1.66	0.61
9:E:35:LEU:HB2	9:E:60:TRP:CD1	2.35	0.61
10:F:87:PRO:HD2	10:F:151:ALA:HB2	1.83	0.61
12:H:22:THR:H	12:H:64:ASP:H	1.48	0.61
14:J:23:THR:HG21	14:J:56:ALA:HB2	1.83	0.61
15:K:28:LEU:HD22	15:K:72:ASN:HA	1.82	0.61
51:3:2383:G:N2	51:3:2386:A:OP2	2.33	0.61
51:3:2787:U:H4'	51:3:2788:U:H3'	1.81	0.61
52:4:4:G:H4'	52:4:26:C:H5'	1.82	0.61
12:H:116:LYS:NZ	12:H:120:LEU:O	2.33	0.61
25:a:37:LEU:HB3	25:a:68:ILE:HB	1.83	0.61
44:t:70:PHE:HB2	44:t:73:LYS:HG3	1.83	0.61
51:3:1436:C:H2'	51:3:1437:A:H8	1.65	0.61
51:3:2214:A:N6	51:3:2226:U:O4	2.33	0.61
8:D:209:ALA:HB1	8:D:215:ASN:HA	1.83	0.61
51:3:2516:G:O2'	51:3:2562:U:O2'	2.15	0.61
51:3:2637:A:H4'	51:3:2638:G:H5'	1.83	0.61
53:5:170:A:H4'	53:5:220:U:H4'	1.82	0.61
9:E:103:LYS:O	9:E:106:GLN:NE2	2.33	0.61
11:G:118:THR:HA	11:G:135:GLY:HA3	1.82	0.61
22:R:78:ARG:NH2	53:5:1197:G:OP1	2.34	0.61
51:3:196:G:N2	51:3:837:A:O2'	2.34	0.61
51:3:700:U:H2'	51:3:701:A:H8	1.66	0.61
51:3:1855:A:O2'	53:5:699:A:OP1	2.18	0.61
53:5:884:G:O2'	53:5:900:G:O6	2.19	0.61
53:5:1197:G:OP2	53:5:1296:C:N4	2.34	0.61
37:m:19:ARG:HH12	37:m:66:TRP:C	2.09	0.60
51:3:622:U:H2'	51:3:623:A:H8	1.65	0.60
51:3:1605:A:H2'	51:3:1606:A:C8	2.36	0.60
51:3:1852:G:H2'	51:3:1853:G:C8	2.36	0.60
25:a:48:ASN:ND2	25:a:49:ASN:OD1	2.34	0.60
28:d:123:ASP:OD2	28:d:127:ASN:ND2	2.34	0.60
33:i:116:ARG:NH2	51:3:590:U:OP1	2.30	0.60
51:3:513:A:H2'	51:3:514:A:C8	2.37	0.60
51:3:1444:C:O2	51:3:1616:G:N2	2.34	0.60
51:3:2346:G:H2'	51:3:2347:G:C8	2.35	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:117:U:H2'	53:5:118:C:C6	2.36	0.60
7:C:57:LYS:NZ	53:5:543:C:OP1	2.33	0.60
35:k:20:LEU:HD23	35:k:28:LEU:HD21	1.82	0.60
42:r:2:ILE:HG23	42:r:109:ASP:HB2	1.83	0.60
53:5:236:C:H2'	53:5:237:A:C8	2.36	0.60
1:0:34:ARG:NH2	51:3:502:A:OP1	2.33	0.60
53:5:770:G:O6	53:5:804:A:N6	2.34	0.60
42:r:114:ARG:NH2	51:3:555:A:O3'	2.35	0.60
51:3:2856:G:O6	51:3:2869:U:O2	2.18	0.60
53:5:820:A:H61	53:5:871:U:H3	1.46	0.60
5:A:28:THR:O	5:A:224:SER:OG	2.15	0.60
51:3:717:U:H2'	51:3:718:U:C6	2.37	0.60
51:3:1543:U:H2'	51:3:1544:G:H8	1.66	0.60
53:5:230:G:H2'	53:5:231:U:O4'	2.01	0.60
10:F:115:MET:HA	10:F:118:LYS:HB2	1.84	0.60
53:5:785:U:H2'	53:5:786:U:C2	2.37	0.60
11:G:11:HIS:N	11:G:17:ASP:OD2	2.25	0.60
13:I:59:ARG:O	17:M:45:ARG:NH2	2.35	0.60
25:a:64:ARG:NE	51:3:1601:A:OP1	2.32	0.60
26:b:22:GLU:HA	34:j:73:ASP:HA	1.84	0.60
27:c:2:ALA:HB3	27:c:20:LEU:HD12	1.83	0.60
28:d:46:ASP:HA	28:d:49:PHE:CE2	2.37	0.60
51:3:154:U:H2'	51:3:155:A:H8	1.66	0.60
53:5:832:G:H2'	53:5:833:G:H8	1.67	0.60
53:5:1495:C:N4	53:5:1496:G:O6	2.35	0.60
2:1:28:HIS:CD2	2:1:29:LEU:HG	2.36	0.60
5:A:88:LYS:HE2	5:A:92:VAL:HG21	1.84	0.60
37:m:63:VAL:HB	37:m:67:LEU:HD23	1.83	0.60
51:3:2114:C:H2'	51:3:2115:A:C8	2.37	0.60
53:5:406:G:N2	53:5:428:A:N7	2.49	0.60
53:5:680:G:O6	53:5:705:A:N6	2.35	0.60
7:C:57:LYS:HA	7:C:196:VAL:HG12	1.84	0.60
38:n:16:VAL:HA	38:n:19:ILE:HG12	1.84	0.60
49:y:11:HIS:CE1	51:3:19:G:H5''	2.36	0.60
51:3:1932:C:O2	51:3:1936:G:O6	2.20	0.60
53:5:603:U:O4	53:5:630:G:O6	2.20	0.60
53:5:1152:G:H2'	53:5:1153:G:C4	2.37	0.60
51:3:1117:U:H2'	51:3:1118:U:C6	2.37	0.59
51:3:2104:A:H2'	51:3:2105:G:H8	1.66	0.59
51:3:2126:A:H61	51:3:2176:G:H1'	1.67	0.59
53:5:233:C:H2'	53:5:234:G:C8	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:526:C:N4	53:5:527:G:O6	2.35	0.59
51:3:811:G:OP1	51:3:811:G:N2	2.30	0.59
51:3:2136:A:N6	51:3:2167:G:H21	1.93	0.59
53:5:1216:G:H2'	53:5:1217:G:C8	2.37	0.59
2:1:10:ARG:HH12	35:k:60:ARG:HA	1.66	0.59
3:2:19:ARG:HG3	3:2:24:ARG:NH2	2.17	0.59
6:B:151:GLY:HA2	6:B:174:GLY:HA3	1.84	0.59
37:m:64:LYS:HD3	37:m:79:MET:HE1	1.82	0.59
51:3:992:G:H21	51:3:996:A:H62	1.48	0.59
51:3:1119:A:N3	51:3:1140:U:O2'	2.36	0.59
51:3:2892:U:H2'	51:3:2893:C:C6	2.37	0.59
53:5:368:C:H42	53:5:385:A:H62	1.49	0.59
16:L:119:LYS:NZ	53:5:949:G:O2'	2.36	0.59
28:d:40:VAL:HG11	28:d:50:LEU:HD11	1.84	0.59
51:3:686:C:O2'	51:3:687:G:OP1	2.20	0.59
51:3:1837:C:H2'	51:3:1838:A:C8	2.38	0.59
53:5:1425:A:O2'	53:5:1428:A:N6	2.35	0.59
10:F:23:THR:O	10:F:27:ASN:ND2	2.35	0.59
12:H:9:LEU:HD11	53:5:1124:U:H4'	1.85	0.59
31:g:113:PHE:H	31:g:118:PHE:HB2	1.68	0.59
35:k:133:LYS:NZ	51:3:672:G:OP1	2.35	0.59
51:3:464:A:H4'	51:3:465:A:OP1	2.01	0.59
51:3:795:G:H3'	51:3:796:A:H8	1.68	0.59
53:5:580:C:H42	53:5:756:A:H62	0.72	0.59
2:1:42:ARG:NH2	51:3:2357:G:OP1	2.31	0.59
25:a:225:ARG:NH1	51:3:815:G:OP1	2.33	0.59
45:u:38:LYS:NZ	51:3:2363:C:O2'	2.34	0.59
51:3:1606:A:H2'	51:3:1607:G:C8	2.38	0.59
51:3:2640:A:H2'	51:3:2641:A:C8	2.37	0.59
51:3:2700:C:O2'	51:3:2851:U:O2'	2.18	0.59
53:5:943:C:O2'	53:5:1339:U:O4	2.21	0.59
53:5:1005:U:O4	53:5:1006:A:N6	2.36	0.59
53:5:1445:G:O2'	53:5:1446:A:O4'	2.20	0.59
26:b:58:GLU:HG3	26:b:60:LYS:H	1.67	0.59
40:p:89:ILE:HB	41:q:39:LEU:HD11	1.84	0.59
51:3:275:A:N6	51:3:294:G:C4	2.70	0.59
51:3:1702:A:H61	51:3:1710:A:H61	1.50	0.59
51:3:2020:A:H2'	51:3:2021:A:H8	1.67	0.59
53:5:541:C:H2'	53:5:542:G:H8	1.66	0.59
1:0:32:LYS:HG2	1:0:36:LYS:HZ3	1.68	0.59
4:9:243:ILE:HD12	4:9:293:LEU:HD12	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:A:76:ALA:HB1	5:A:239:ALA:HB2	1.85	0.59
5:A:178:VAL:HG21	5:A:188:VAL:HG12	1.83	0.59
23:S:56:ARG:NH2	53:5:197:A:O2'	2.36	0.59
29:e:62:LYS:NZ	51:3:1070:U:OP1	2.35	0.59
51:3:522:C:H2'	51:3:523:A:H8	1.68	0.59
51:3:1670:U:H1'	51:3:1767:A:C2	2.36	0.59
51:3:2744:A:H2'	51:3:2745:G:C8	2.38	0.59
53:5:463:U:H2'	53:5:464:A:H5''	1.85	0.59
53:5:881:G:N1	53:5:905:U:N3	2.50	0.59
6:B:25:ASN:OD1	6:B:29:GLN:NE2	2.35	0.59
13:I:58:ILE:H	17:M:41:ARG:HD2	1.68	0.59
51:3:1051:U:H2'	51:3:1052:A:C8	2.37	0.59
53:5:24:C:OP2	53:5:559:U:N3	2.32	0.59
53:5:880:G:O6	53:5:905:U:O2	2.21	0.59
53:5:1289:U:O2'	53:5:1334:A:N3	2.28	0.59
53:5:1400:A:H2'	53:5:1401:A:C8	2.38	0.59
4:9:125:GLN:HG2	4:9:378:ARG:HH21	1.67	0.59
13:I:71:PHE:HE2	13:I:73:LYS:HB2	1.67	0.59
50:z:36:LYS:NZ	51:3:2355:C:O2'	2.26	0.59
51:3:1516:G:H2'	51:3:1517:G:C8	2.37	0.59
1:0:1:MET:N	51:3:1653:C:O2'	2.35	0.58
26:b:181:ILE:HG22	26:b:193:VAL:HG13	1.85	0.58
51:3:768:G:H2'	51:3:769:A:H5''	1.85	0.58
51:3:892:G:H2'	51:3:893:A:H8	1.65	0.58
51:3:918:G:O6	51:3:932:U:O2'	2.20	0.58
51:3:977:A:H2'	51:3:978:G:C8	2.38	0.58
51:3:1016:A:O2'	51:3:1017:A:O4'	2.20	0.58
39:o:53:LEU:HB2	39:o:65:ILE:HB	1.85	0.58
51:3:428:U:O2'	51:3:429:U:OP1	2.21	0.58
53:5:435:U:H2'	53:5:492:G:H1	1.67	0.58
53:5:447:G:N7	53:5:478:G:N1	2.51	0.58
4:9:21:ILE:HD12	4:9:61:ILE:HG13	1.84	0.58
25:a:137:PRO:HA	25:a:197:ARG:HA	1.84	0.58
27:c:78:SER:O	27:c:81:ASN:ND2	2.33	0.58
30:f:56:GLU:O	30:f:60:ILE:HG12	2.02	0.58
43:s:12:LEU:HD13	43:s:16:VAL:HG11	1.84	0.58
51:3:154:U:H2'	51:3:155:A:C8	2.38	0.58
53:5:885:U:N3	53:5:901:A:N6	2.35	0.58
7:C:123:LEU:HD21	7:C:126:ASP:HA	1.85	0.58
12:H:11:ARG:NH1	53:5:1125:C:OP2	2.35	0.58
24:T:53:ARG:O	24:T:57:ARG:N	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:a:159:GLN:NE2	51:3:1807:C:O2'	2.36	0.58
28:d:130:ILE:HB	28:d:154:VAL:HG23	1.86	0.58
51:3:401:G:O2'	51:3:402:A:OP1	2.21	0.58
51:3:724:A:H2'	51:3:725:G:H8	1.68	0.58
51:3:2639:G:H2'	51:3:2640:A:C8	2.38	0.58
53:5:664:A:H2'	53:5:665:G:H8	1.67	0.58
53:5:1405:U:H2'	53:5:1406:U:H6	1.67	0.58
3:2:14:CYS:HA	3:2:27:CYS:HB2	1.86	0.58
6:B:61:THR:O	6:B:64:THR:OG1	2.21	0.58
6:B:92:ILE:O	6:B:96:ILE:HG12	2.04	0.58
21:Q:94:ARG:HB3	21:Q:101:PHE:HE1	1.68	0.58
25:a:229:ARG:NH1	51:3:1795:C:OP2	2.37	0.58
35:k:13:ARG:HG3	51:3:695:G:H21	1.68	0.58
50:z:35:ASN:HA	50:z:46:VAL:HA	1.85	0.58
51:3:733:C:H4'	51:3:769:A:H61	1.68	0.58
51:3:1167:U:H2'	51:3:1168:A:C5	2.38	0.58
53:5:14:U:O4	53:5:22:G:N2	2.35	0.58
53:5:1226:A:N3	53:5:1344:C:O2'	2.27	0.58
3:2:35:ARG:O	3:2:36:GLN:HG2	2.04	0.58
10:F:115:MET:HA	10:F:118:LYS:HD2	1.86	0.58
12:H:42:PRO:HB2	12:H:44:LYS:HE2	1.85	0.58
15:K:41:PRO:HD2	53:5:359:A:N6	2.18	0.58
28:d:121:SER:HA	51:3:2311:G:H4'	1.85	0.58
51:3:820:U:O2'	51:3:1786:U:OP1	2.21	0.58
51:3:2820:G:N3	51:3:2887:A:O2'	2.37	0.58
53:5:1139:A:H2'	53:5:1140:A:C8	2.39	0.58
6:B:11:ARG:HD2	6:B:185:ILE:HG22	1.85	0.58
29:e:63:GLN:HA	29:e:66:ILE:HG12	1.85	0.58
30:f:79:PHE:HB2	30:f:142:VAL:HG12	1.86	0.58
51:3:842:U:H2'	51:3:843:G:H8	1.69	0.58
51:3:1859:U:O2	51:3:1897:A:N6	2.36	0.58
53:5:126:U:O2'	53:5:127:A:OP1	2.22	0.58
53:5:901:A:O2'	53:5:902:A:O4'	2.20	0.58
54:7:2:G:N2	54:7:74:A:O4'	2.37	0.58
8:D:77:SER:OG	8:D:86:MET:SD	2.60	0.58
8:D:143:ARG:HH22	8:D:145:GLY:H	1.52	0.58
10:F:45:ALA:O	10:F:49:ILE:HG12	2.03	0.58
27:c:102:LYS:O	51:3:694:U:O2'	2.22	0.58
28:d:46:ASP:HA	28:d:49:PHE:HE2	1.68	0.58
54:7:5:C:N3	54:7:71:A:N6	2.52	0.58
26:b:32:GLU:O	26:b:34:ASN:ND2	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:g:33:SER:HA	51:3:1090:G:H4'	1.85	0.58
36:l:24:ASN:OD1	36:l:67:ARG:NE	2.36	0.58
51:3:14:U:H3	51:3:561:A:H62	1.51	0.58
51:3:2635:G:N2	51:3:2785:G:OP2	2.37	0.58
51:3:2695:U:H2'	51:3:2696:G:C8	2.39	0.58
12:H:93:ASN:HB3	12:H:96:LEU:HD23	1.86	0.57
37:m:42:GLN:HA	37:m:45:LEU:HD12	1.85	0.57
39:o:56:ARG:NH2	51:3:2691:C:O3'	2.36	0.57
51:3:596:G:H1	51:3:611:A:H61	1.50	0.57
51:3:700:U:H2'	51:3:701:A:C8	2.39	0.57
51:3:2552:G:H2'	51:3:2553:G:C8	2.38	0.57
53:5:70:A:H2'	53:5:71:A:H8	1.69	0.57
54:6:2:G:N2	54:6:74:A:O4'	2.37	0.57
3:2:22:ILE:HB	3:2:24:ARG:NH2	2.19	0.57
8:D:166:ILE:O	8:D:170:ILE:HG12	2.04	0.57
16:L:26:GLY:N	53:5:1303:A:OP1	2.25	0.57
17:M:10:GLN:NE2	17:M:21:TYR:O	2.37	0.57
29:e:146:GLN:NE2	51:3:2769:G:O2'	2.36	0.57
30:f:119:LEU:HD23	30:f:121:PHE:H	1.68	0.57
40:p:9:THR:OG1	51:3:1281:A:OP1	2.21	0.57
42:r:80:PRO:O	42:r:100:SER:OG	2.20	0.57
51:3:410:G:H4'	51:3:411:U:O5'	2.03	0.57
51:3:1309:G:H2'	51:3:1310:U:H6	1.69	0.57
51:3:2797:C:O2'	51:3:2895:A:N3	2.37	0.57
53:5:1289:U:N3	53:5:1297:G:N1	2.52	0.57
15:K:61:ALA:HB2	53:5:527:G:H22	1.69	0.57
2:1:15:LYS:HG3	51:3:664:G:H5''	1.86	0.57
4:9:20:HIS:HB3	4:9:23:HIS:CD2	2.39	0.57
4:9:52:LYS:N	4:9:56:GLU:OE2	2.36	0.57
8:D:93:VAL:HG12	8:D:172:LEU:HD23	1.85	0.57
18:N:35:GLN:NE2	53:5:737:U:OP2	2.36	0.57
23:S:64:ARG:NH1	53:5:256:G:OP1	2.38	0.57
25:a:136:MET:SD	25:a:140:PHE:HB2	2.44	0.57
25:a:261:ARG:NH1	51:3:2246:G:OP1	2.36	0.57
26:b:223:ALA:O	39:o:17:GLN:NE2	2.37	0.57
45:u:84:GLN:HE22	45:u:86:PHE:HB3	1.69	0.57
51:3:1099:C:N4	51:3:1105:A:OP1	2.37	0.57
51:3:1865:A:N6	51:3:1891:A:O2'	2.37	0.57
53:5:885:U:OP2	53:5:900:G:N1	2.35	0.57
53:5:978:A:O2'	53:5:1041:G:OP2	2.18	0.57
2:1:37:GLN:NE2	51:3:2370:G:OP1	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B:102:LEU:HD12	6:B:103:ASP:N	2.19	0.57
24:T:31:ARG:HG3	24:T:32:HIS:ND1	2.20	0.57
25:a:267:THR:OG1	51:3:1804:A:O2'	2.21	0.57
7:C:103:ARG:HD2	7:C:166:PHE:HZ	1.68	0.57
29:e:156:LYS:NZ	51:3:2534:G:OP1	2.37	0.57
51:3:2681:G:H2'	51:3:2682:A:H8	1.69	0.57
53:5:174:U:H3	53:5:190:A:H61	1.51	0.57
5:A:94:LYS:NZ	5:A:98:ASN:HD21	2.02	0.57
17:M:23:ARG:NH2	17:M:28:GLY:O	2.38	0.57
27:c:90:VAL:HG11	51:3:619:A:H4'	1.86	0.57
33:i:120:ARG:O	33:i:123:THR:OG1	2.15	0.57
34:j:106:LEU:HD21	34:j:115:LEU:HD21	1.86	0.57
37:m:99:ARG:NH2	51:3:2885:U:O3'	2.38	0.57
51:3:69:U:H1'	51:3:90:G:N2	2.20	0.57
51:3:341:G:N1	51:3:344:A:OP2	2.35	0.57
53:5:1298:U:H5'	53:5:1337:U:H5''	1.86	0.57
54:6:5:C:N3	54:6:71:A:N6	2.52	0.57
6:B:15:ASN:ND2	6:B:181:LEU:O	2.38	0.57
12:H:19:VAL:HG21	12:H:84:GLY:HA3	1.87	0.57
16:L:110:LYS:NZ	53:5:1202:A:OP2	2.38	0.57
26:b:146:SER:OG	51:3:2586:G:N7	2.38	0.57
39:o:14:GLU:HG2	39:o:18:LEU:HD11	1.86	0.57
40:p:32:LYS:NZ	51:3:613:C:OP1	2.32	0.57
51:3:333:A:N6	51:3:356:A:O2'	2.29	0.57
51:3:1289:G:H2'	51:3:1290:G:C8	2.39	0.57
53:5:1389:U:H2'	53:5:1390:G:H8	1.69	0.57
10:F:67:ASN:HD21	10:F:129:ASN:HA	1.70	0.57
20:P:65:GLU:HA	20:P:75:PHE:HD1	1.70	0.57
51:3:177:U:H2'	51:3:178:A:C8	2.39	0.57
51:3:342:G:H2'	51:3:343:A:C4	2.40	0.57
51:3:853:G:H21	51:3:1220:A:H62	1.51	0.57
51:3:1504:G:H2'	51:3:1505:G:H8	1.70	0.57
51:3:1524:C:O2'	51:3:1525:G:OP1	2.21	0.57
51:3:2300:A:OP1	51:3:2386:A:N6	2.31	0.57
53:5:430:G:H2'	53:5:431:U:C6	2.40	0.57
53:5:1316:C:H2'	53:5:1317:A:C8	2.40	0.57
3:2:24:ARG:HH11	3:2:35:ARG:NH2	2.03	0.57
12:H:15:SER:HB3	12:H:72:GLY:HA3	1.87	0.57
23:S:10:ARG:O	23:S:14:ASN:ND2	2.38	0.57
34:j:5:MET:HE1	51:3:1702:A:H5''	1.87	0.57
50:z:16:GLU:OE2	50:z:40:ARG:NH1	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1633:C:H2'	51:3:1634:A:H8	1.69	0.57
53:5:447:G:OP2	53:5:448:A:O2'	2.22	0.57
53:5:997:G:N2	53:5:1030:G:OP1	2.38	0.57
7:C:131:THR:HG22	7:C:133:SER:H	1.69	0.56
18:N:50:LYS:HD3	53:5:760:U:H4'	1.85	0.56
32:h:105:ALA:HB1	32:h:120:ALA:HB1	1.87	0.56
44:t:72:SER:OG	51:3:369:C:O2	2.23	0.56
51:3:490:A:H3'	51:3:491:A:C8	2.37	0.56
51:3:718:U:H2'	51:3:719:G:C8	2.40	0.56
51:3:2520:C:H42	51:3:2583:U:H3	1.53	0.56
51:3:2844:U:H2'	51:3:2845:U:H6	1.70	0.56
8:D:168:ALA:HA	8:D:171:GLU:OE2	2.05	0.56
10:F:2:ARG:NE	53:5:930:A:N1	2.51	0.56
13:I:87:GLN:O	13:I:90:ILE:HG22	2.05	0.56
14:J:81:GLY:H	14:J:107:THR:HG23	1.70	0.56
18:N:13:GLN:HG2	18:N:15:HIS:H	1.70	0.56
19:O:21:LYS:HD3	53:5:96:G:H4'	1.87	0.56
21:Q:93:ALA:HB1	21:Q:98:LEU:HB2	1.87	0.56
51:3:43:A:O2'	51:3:44:A:OP1	2.20	0.56
51:3:712:A:H61	51:3:835:U:H3	1.52	0.56
51:3:1495:A:OP2	51:3:1548:A:N6	2.33	0.56
51:3:1723:A:O2'	53:5:1450:C:OP1	2.23	0.56
51:3:1938:U:H2'	51:3:1939:A:H8	1.70	0.56
53:5:711:G:H1'	53:5:774:A:C5	2.41	0.56
53:5:1062:C:H2'	53:5:1063:G:H8	1.70	0.56
53:5:1493:A:H2'	53:5:1494:A:C4	2.40	0.56
1:0:9:LYS:NZ	51:3:1337:G:OP1	2.36	0.56
4:9:20:HIS:HB3	4:9:23:HIS:HD2	1.71	0.56
4:9:83:PRO:HD2	4:9:92:MET:HA	1.88	0.56
4:9:160:SER:OG	4:9:315:GLU:O	2.23	0.56
5:A:119:ASN:ND2	5:A:122:THR:OG1	2.38	0.56
7:C:127:ARG:NH2	7:C:128:THR:O	2.39	0.56
24:T:6:VAL:HG22	24:T:7:LYS:H	1.71	0.56
28:d:51:GLU:O	28:d:55:ASN:ND2	2.38	0.56
50:z:21:THR:HG1	51:3:2294:A:H61	1.50	0.56
51:3:374:A:O2'	51:3:375:U:OP1	2.22	0.56
51:3:611:A:OP1	51:3:1285:U:O2'	2.18	0.56
51:3:686:C:H2'	51:3:687:G:H8	1.70	0.56
51:3:2097:A:N6	51:3:2237:U:O4	2.38	0.56
51:3:2482:U:H5''	51:3:2483:C:H5	1.70	0.56
53:5:7:U:H4'	53:5:294:A:H5'	1.85	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:76:G:N2	53:5:79:A:OP2	2.37	0.56
53:5:246:A:H1'	53:5:248:U:C4	2.40	0.56
53:5:881:G:OP2	53:5:883:A:O2'	2.22	0.56
53:5:1082:U:H2'	53:5:1083:A:H3'	1.86	0.56
53:5:1379:C:H2'	53:5:1380:G:C8	2.41	0.56
53:5:1429:G:H2'	53:5:1430:G:H8	1.69	0.56
8:D:101:ILE:HD11	8:D:173:ALA:HA	1.87	0.56
26:b:4:ARG:HB3	26:b:101:LEU:HD12	1.87	0.56
45:u:29:ASP:OD1	45:u:30:SER:N	2.33	0.56
51:3:506:A:H2'	51:3:507:A:C8	2.40	0.56
51:3:1248:A:O2'	51:3:1249:A:O5'	2.22	0.56
51:3:1508:G:H22	51:3:1532:A:H1'	1.70	0.56
51:3:2292:A:H2'	51:3:2293:C:H6	1.70	0.56
54:7:58:G:H2'	54:7:59:A:H4'	1.87	0.56
6:B:155:LEU:HD23	6:B:170:MET:HE1	1.87	0.56
11:G:63:LYS:H	11:G:63:LYS:HD2	1.70	0.56
13:I:16:LEU:HD13	13:I:24:LEU:HD11	1.86	0.56
40:p:39:ILE:HD11	41:q:73:HIS:CG	2.41	0.56
40:p:111:LYS:HE3	41:q:45:ILE:HD13	1.87	0.56
43:s:39:ARG:HD2	43:s:42:LEU:HD21	1.88	0.56
49:y:6:ARG:NH2	51:3:2026:A:OP2	2.38	0.56
51:3:2589:G:N2	51:3:2589:G:OP2	2.38	0.56
53:5:646:A:H2'	53:5:647:U:O4'	2.06	0.56
16:L:113:ARG:NH1	53:5:941:A:OP2	2.39	0.56
26:b:70:PHE:HZ	26:b:81:LEU:HD11	1.70	0.56
35:k:58:LEU:HA	35:k:61:ARG:HE	1.69	0.56
36:l:35:VAL:HB	36:l:100:GLY:HA2	1.87	0.56
38:n:11:ARG:HH11	51:3:2302:C:H5''	1.70	0.56
51:3:22:U:H2'	51:3:23:A:C8	2.40	0.56
51:3:914:G:O2'	51:3:937:A:N6	2.39	0.56
51:3:1166:G:H21	51:3:1167:U:H5	1.52	0.56
51:3:1694:A:H2'	51:3:1695:G:C8	2.40	0.56
53:5:579:G:N1	53:5:756:A:OP2	2.27	0.56
53:5:1156:G:H4'	53:5:1157:G:H5'	1.88	0.56
53:5:1323:A:H62	53:5:1348:G:N2	2.01	0.56
10:F:70:PRO:HD2	10:F:95:LYS:HB3	1.88	0.56
39:o:30:GLU:HG3	39:o:92:ARG:HB2	1.88	0.56
44:t:28:MET:HE1	44:t:31:ARG:HG3	1.88	0.56
51:3:2745:G:H2'	51:3:2746:A:C8	2.40	0.56
53:5:75:A:O2'	53:5:76:G:OP1	2.23	0.56
53:5:156:U:H2'	53:5:157:A:C8	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:261:G:O2'	53:5:262:G:OP1	2.22	0.56
7:C:47:MET:HB3	7:C:52:GLN:NE2	2.21	0.56
51:3:1587:U:H2'	51:3:1588:A:C8	2.40	0.56
51:3:1588:A:H2'	51:3:1589:A:H8	1.71	0.56
51:3:1665:G:N1	51:3:1668:G:OP2	2.34	0.56
53:5:457:A:H2'	53:5:458:G:C8	2.40	0.56
53:5:788:G:H2'	53:5:789:A:C5	2.41	0.56
1:0:34:ARG:HD3	1:0:39:ARG:HG3	1.87	0.56
10:F:78:ARG:HB2	10:F:83:ASN:OD1	2.06	0.56
14:J:115:LYS:NZ	53:5:776:C:O2'	2.36	0.56
36:l:75:THR:HG21	36:l:87:LYS:HD3	1.88	0.56
51:3:816:A:O2'	51:3:1795:C:O2	2.22	0.56
51:3:1210:A:H2'	51:3:1211:U:C6	2.41	0.56
51:3:1776:G:N2	51:3:1991:U:H3	2.04	0.56
51:3:1889:U:N3	51:3:1890:U:O4	2.39	0.56
51:3:2880:A:H2'	51:3:2881:A:C8	2.40	0.56
53:5:1056:U:H3	53:5:1165:G:H5'	1.71	0.56
51:3:615:G:H2'	51:3:616:G:H8	1.71	0.56
51:3:915:A:H8	51:3:936:G:H21	1.53	0.56
51:3:1510:A:H2'	51:3:1511:C:H6	1.71	0.56
51:3:1524:C:H2'	51:3:1525:G:H8	1.71	0.56
51:3:1640:G:O5'	51:3:1642:G:N2	2.39	0.56
51:3:2854:A:OP2	51:3:2870:U:N3	2.39	0.56
53:5:321:A:H2'	53:5:322:G:C8	2.41	0.56
53:5:943:C:H2'	53:5:944:A:H8	1.69	0.56
6:B:152:ILE:HD12	6:B:205:ILE:HD13	1.88	0.55
10:F:24:ARG:NH1	53:5:1351:U:OP1	2.38	0.55
14:J:16:VAL:HG23	14:J:25:VAL:HG12	1.89	0.55
27:c:168:LEU:HD11	27:c:180:VAL:HG21	1.88	0.55
51:3:31:U:O2	51:3:1245:G:O2'	2.23	0.55
51:3:716:G:O6	51:3:832:C:N4	2.40	0.55
51:3:1298:A:H3'	51:3:1299:A:H8	1.71	0.55
51:3:2567:C:H2'	51:3:2568:G:C8	2.40	0.55
53:5:175:U:N3	53:5:176:G:O6	2.37	0.55
53:5:554:C:H2'	53:5:555:G:H8	1.71	0.55
53:5:682:G:O2'	53:5:683:G:O4'	2.19	0.55
54:7:7:U:O4	54:7:68:G:O6	2.25	0.55
5:A:41:MET:HG3	5:A:205:ASN:H	1.71	0.55
51:3:987:U:H2'	51:3:988:G:C8	2.42	0.55
51:3:2593:U:H4'	51:3:2594:C:H5'	1.86	0.55
53:5:600:G:H2'	53:5:601:U:C6	2.41	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:671:G:H2'	53:5:672:A:C8	2.41	0.55
6:B:155:LEU:HD11	6:B:202:LYS:HD2	1.87	0.55
7:C:121:HIS:HA	7:C:145:LYS:HD2	1.87	0.55
28:d:102:LYS:O	28:d:106:VAL:HB	2.06	0.55
30:f:108:LEU:HD13	30:f:112:MET:HE1	1.89	0.55
34:j:87:ILE:HG22	34:j:93:PRO:HA	1.89	0.55
51:3:308:A:H3'	51:3:309:A:H8	1.71	0.55
51:3:322:A:H2'	51:3:323:A:C8	2.41	0.55
51:3:1979:G:H2'	51:3:1980:G:H8	1.70	0.55
51:3:2152:C:O2'	51:3:2155:G:N2	2.39	0.55
51:3:2704:U:H2'	51:3:2705:G:C8	2.41	0.55
51:3:2810:A:H5'	51:3:2811:G:H8	1.70	0.55
53:5:470:U:O4	53:5:471:A:N6	2.39	0.55
53:5:1490:G:H2'	53:5:1491:A:C8	2.41	0.55
4:9:370:GLU:HG2	4:9:373:SER:HB2	1.87	0.55
5:A:164:GLY:O	5:A:167:LYS:NZ	2.39	0.55
12:H:12:ARG:O	12:H:15:SER:OG	2.18	0.55
12:H:13:LYS:NZ	12:H:111:ARG:O	2.39	0.55
19:O:53:LEU:HD23	19:O:57:ALA:HB3	1.87	0.55
51:3:566:G:OP1	51:3:594:G:N1	2.39	0.55
51:3:1346:G:H2'	51:3:1347:A:C8	2.42	0.55
53:5:394:U:H2'	53:5:395:G:H8	1.71	0.55
53:5:427:A:N1	53:5:428:A:H1'	2.22	0.55
53:5:438:A:H1'	53:5:495:U:C2	2.41	0.55
15:K:112:ARG:NH2	15:K:119:GLY:HA2	2.10	0.55
27:c:46:ARG:HG2	27:c:46:ARG:HH11	1.72	0.55
32:h:16:GLY:HA3	32:h:48:GLY:H	1.72	0.55
46:v:27:ARG:NH1	51:3:2240:U:OP1	2.39	0.55
51:3:966:U:H2'	51:3:967:U:C6	2.42	0.55
51:3:2604:U:HO2'	51:3:2605:G:P	2.30	0.55
53:5:75:A:H2'	53:5:76:G:H8	1.72	0.55
53:5:1445:G:H2'	53:5:1446:A:C8	2.41	0.55
6:B:49:ARG:HG2	6:B:121:ARG:HH11	1.70	0.55
13:I:59:ARG:HB3	53:5:1051:U:H5''	1.88	0.55
20:P:13:VAL:HA	20:P:24:VAL:HA	1.89	0.55
30:f:64:LEU:HA	30:f:67:LYS:HD2	1.89	0.55
42:r:21:CYS:HA	42:r:24:ILE:HG22	1.89	0.55
49:y:7:ARG:HH12	49:y:9:SER:HA	1.72	0.55
51:3:2086:U:O2	51:3:2250:G:N2	2.39	0.55
51:3:2112:A:H62	51:3:2192:U:H1'	1.71	0.55
51:3:2156:G:N2	51:3:2158:C:H41	2.04	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:512:U:H2'	53:5:513:G:C8	2.37	0.55
54:6:58:G:H2'	54:6:59:A:H4'	1.87	0.55
28:d:4:LEU:HB3	28:d:97:TRP:CE3	2.41	0.55
35:k:18:LYS:HD3	51:3:698:A:H4'	1.88	0.55
36:l:124:LYS:HD2	51:3:2492:G:H1'	1.87	0.55
38:n:20:ARG:NH2	52:4:8:C:OP1	2.37	0.55
51:3:347:C:H2'	51:3:348:A:C8	2.41	0.55
51:3:2254:G:H2'	51:3:2255:A:H8	1.72	0.55
51:3:2255:A:H2'	51:3:2256:C:H6	1.71	0.55
51:3:2604:U:O2'	51:3:2605:G:OP1	2.20	0.55
53:5:1161:G:H2'	53:5:1162:G:H8	1.71	0.55
53:5:1337:U:O2'	53:5:1339:U:OP1	2.23	0.55
53:5:1405:U:N3	53:5:1445:G:N1	2.55	0.55
3:2:27:CYS:SG	3:2:28:LYS:N	2.80	0.55
18:N:46:ASP:O	18:N:49:SER:OG	2.20	0.55
23:S:56:ARG:HH22	53:5:198:A:H5'	1.72	0.55
35:k:81:ASN:ND2	35:k:83:ASN:OD1	2.39	0.55
39:o:14:GLU:OE2	39:o:60:ILE:N	2.40	0.55
51:3:1005:G:H2'	51:3:1006:U:C6	2.42	0.55
51:3:1605:A:H2'	51:3:1606:A:H8	1.72	0.55
51:3:2075:U:O4	51:3:2438:A:N7	2.40	0.55
51:3:2552:G:H2'	51:3:2553:G:H8	1.72	0.55
53:5:553:C:H2'	53:5:554:C:C6	2.42	0.55
4:9:215:ILE:O	4:9:335:THR:OG1	2.19	0.55
7:C:118:ASN:ND2	53:5:400:G:O5'	2.40	0.55
41:q:67:LYS:HA	41:q:86:ARG:HG2	1.88	0.55
49:y:28:SER:HB3	49:y:39:PHE:HD1	1.71	0.55
51:3:214:C:H2'	51:3:215:A:C8	2.40	0.55
51:3:919:C:N4	51:3:931:G:O6	2.40	0.55
51:3:2083:U:OP2	51:3:2246:G:N2	2.38	0.55
51:3:2114:C:H2'	51:3:2115:A:H8	1.71	0.55
51:3:2471:U:H1'	51:3:2526:A:H2	1.71	0.55
51:3:2568:G:H2'	51:3:2569:A:C8	2.41	0.55
51:3:2811:G:N3	51:3:2895:A:C5	2.75	0.55
53:5:380:G:H2'	53:5:381:C:C6	2.42	0.55
53:5:656:U:H2'	53:5:657:G:H8	1.72	0.55
53:5:1266:U:H2'	53:5:1267:G:C8	2.42	0.55
23:S:33:LYS:HB3	23:S:37:LYS:HZ2	1.72	0.55
29:e:91:ARG:HH22	29:e:133:GLU:HA	1.71	0.55
40:p:57:ARG:NH1	51:3:1033:A:OP1	2.40	0.55
51:3:719:G:O2'	51:3:823:A:N7	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1324:A:OP1	51:3:2717:G:O2'	2.24	0.55
51:3:2171:A:OP1	51:3:2174:G:N1	2.39	0.55
53:5:1012:A:H3'	53:5:1013:C:C6	2.42	0.55
53:5:1220:A:N6	53:5:1267:G:O6	2.40	0.55
7:C:100:ILE:HD13	7:C:136:LEU:HD12	1.89	0.54
9:E:23:GLU:HG3	9:E:27:GLN:HE22	1.72	0.54
16:L:9:ILE:HD12	16:L:18:ALA:HB1	1.87	0.54
25:a:48:ASN:HB3	25:a:50:GLN:HG2	1.87	0.54
42:r:88:ARG:H	51:3:1648:A:H62	1.55	0.54
49:y:2:ALA:N	51:3:2622:A:O4'	2.40	0.54
51:3:432:G:H2'	51:3:433:A:H8	1.72	0.54
51:3:2812:U:H5'	51:3:2895:A:N7	2.22	0.54
53:5:318:C:H42	53:5:325:A:H62	1.55	0.54
53:5:513:G:O2'	53:5:514:U:OP1	2.24	0.54
21:Q:84:ARG:NH2	53:5:661:G:OP1	2.41	0.54
26:b:115:LYS:HE2	26:b:200:PRO:HB3	1.89	0.54
33:i:118:SER:HA	33:i:121:TRP:HB2	1.89	0.54
43:s:58:LEU:HD11	43:s:80:LEU:HB2	1.89	0.54
51:3:569:U:H2'	51:3:570:C:C6	2.42	0.54
51:3:686:C:H2'	51:3:687:G:C8	2.42	0.54
51:3:1814:G:H2'	51:3:1815:U:H2'	1.89	0.54
51:3:2259:G:C8	51:3:2458:A:H4'	2.43	0.54
53:5:70:A:H2'	53:5:71:A:C8	2.41	0.54
53:5:554:C:H2'	53:5:555:G:C8	2.42	0.54
53:5:942:G:H1	53:5:1209:C:H42	1.54	0.54
53:5:1382:C:H2'	53:5:1383:A:C8	2.41	0.54
54:7:15:A:H1'	54:7:23:G:C2	2.42	0.54
5:A:133:LEU:HB3	5:A:156:ILE:HD11	1.87	0.54
26:b:110:VAL:HG22	26:b:207:ILE:HG12	1.88	0.54
27:c:140:THR:HA	27:c:143:MET:HE2	1.88	0.54
44:t:4:ILE:HG23	44:t:27:ILE:HD13	1.90	0.54
50:z:36:LYS:HD3	50:z:37:PHE:H	1.72	0.54
51:3:39:C:H2'	51:3:40:A:C8	2.42	0.54
51:3:1077:G:H2'	51:3:1078:C:C4	2.41	0.54
53:5:916:U:H2'	53:5:917:G:C8	2.42	0.54
53:5:1075:G:OP1	53:5:1077:U:N3	2.41	0.54
53:5:1154:A:H2'	53:5:1155:A:C8	2.43	0.54
53:5:1405:U:O2	53:5:1445:G:C2	2.59	0.54
54:6:7:U:O4	54:6:68:G:O6	2.25	0.54
54:6:66:C:H2'	54:6:67:C:C6	2.42	0.54
11:G:18:LEU:HD23	11:G:44:ILE:HD11	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:K:123:ARG:NH1	53:5:535:A:O5'	2.40	0.54
51:3:728:A:O2'	51:3:1381:A:N3	2.40	0.54
51:3:1077:G:H2'	51:3:1078:C:C2	2.42	0.54
51:3:2655:U:H3	51:3:2681:G:H1	1.55	0.54
51:3:2811:G:H4'	51:3:2812:U:H5''	1.89	0.54
53:5:499:U:H2'	53:5:500:G:C8	2.42	0.54
54:6:15:A:H1'	54:6:23:G:C2	2.42	0.54
6:B:35:ILE:HD13	17:M:26:ARG:HD2	1.89	0.54
15:K:112:ARG:HD2	15:K:119:GLY:CA	2.37	0.54
17:M:10:GLN:HG3	17:M:23:ARG:HE	1.72	0.54
28:d:66:VAL:O	28:d:88:LYS:N	2.41	0.54
51:3:647:G:N2	51:3:651:A:OP2	2.32	0.54
51:3:1470:C:H2'	51:3:1471:A:C8	2.41	0.54
51:3:1510:A:H2'	51:3:1511:C:C6	2.42	0.54
53:5:63:U:OP1	53:5:374:G:N2	2.40	0.54
53:5:1313:A:HO2'	54:7:41:C:HO2'	1.54	0.54
53:5:1411:A:H2'	53:5:1412:C:C6	2.42	0.54
54:7:66:C:H2'	54:7:67:C:C6	2.42	0.54
9:E:93:GLU:HB2	21:Q:85:HIS:CE1	2.43	0.54
11:G:19:LEU:HD22	11:G:87:VAL:HG21	1.89	0.54
51:3:312:U:H2'	51:3:313:G:H8	1.73	0.54
51:3:488:G:N2	51:3:493:A:N3	2.54	0.54
51:3:1187:C:H2'	51:3:1188:C:C6	2.43	0.54
51:3:2568:G:H2'	51:3:2569:A:H8	1.72	0.54
53:5:518:A:H2	53:5:531:A:H61	1.55	0.54
53:5:1087:C:H2'	53:5:1088:C:C6	2.43	0.54
6:B:50:ASN:O	6:B:52:GLN:NE2	2.41	0.54
12:H:107:THR:HG21	53:5:1154:A:H5''	1.89	0.54
13:I:58:ILE:HA	13:I:68:ARG:HG2	1.89	0.54
16:L:5:LEU:HD13	16:L:57:ARG:HD2	1.88	0.54
16:L:100:GLN:NE2	53:5:1281:U:H5''	2.23	0.54
21:Q:65:SER:OG	21:Q:69:LYS:N	2.34	0.54
33:i:136:GLU:HA	33:i:140:PRO:HG3	1.90	0.54
36:l:34:LEU:HD23	36:l:118:LEU:HD12	1.90	0.54
47:w:50:LEU:O	47:w:53:THR:OG1	2.19	0.54
51:3:450:C:O2'	51:3:1885:G:N2	2.41	0.54
51:3:595:U:H2'	51:3:605:A:H1'	1.89	0.54
51:3:724:A:H2'	51:3:725:G:C8	2.42	0.54
51:3:1512:A:H2'	51:3:1513:A:C8	2.43	0.54
51:3:1588:A:H2'	51:3:1589:A:C8	2.43	0.54
2:1:34:THR:HG23	2:1:37:GLN:H	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:I:18:SER:HB2	13:I:102:VAL:HG22	1.90	0.54
33:i:68:THR:O	33:i:71:LYS:NZ	2.41	0.54
33:i:116:ARG:NH1	51:3:563:A:O3'	2.41	0.54
40:p:12:ARG:HH22	51:3:1281:A:H5''	1.72	0.54
51:3:297:G:H1	51:3:440:C:H5	1.54	0.54
51:3:625:G:H2'	51:3:626:A:C8	2.39	0.54
51:3:1006:U:H2'	51:3:1007:C:C6	2.43	0.54
53:5:89:G:O2'	53:5:159:U:O2'	2.25	0.54
53:5:868:G:H2'	53:5:869:U:C6	2.42	0.54
5:A:201:LEU:HD12	5:A:228:LEU:HD13	1.88	0.54
10:F:112:GLU:OE2	10:F:118:LYS:HA	2.08	0.54
12:H:128:GLN:HE21	53:5:1207:U:P	2.31	0.54
13:I:45:PRO:HA	13:I:80:MET:HE1	1.89	0.54
25:a:190:ARG:HG2	25:a:278:ILE:HA	1.90	0.54
27:c:158:LEU:HD11	27:c:190:ASP:HB3	1.89	0.54
51:3:299:A:H2'	51:3:300:G:C8	2.43	0.54
51:3:312:U:H2'	51:3:313:G:C8	2.43	0.54
51:3:491:A:N6	51:3:508:A:N7	2.54	0.54
51:3:513:A:O2'	51:3:514:A:OP1	2.21	0.54
51:3:899:A:H2'	51:3:900:G:C8	2.43	0.54
51:3:1007:C:H2'	51:3:1008:A:O4'	2.06	0.54
51:3:2299:U:O4	51:3:2300:A:N6	2.40	0.54
51:3:2633:C:H2'	51:3:2634:C:C6	2.43	0.54
53:5:451:G:H2'	53:5:452:A:C8	2.43	0.54
53:5:553:C:H2'	53:5:554:C:H6	1.73	0.54
53:5:656:U:H2'	53:5:657:G:C8	2.43	0.54
53:5:1388:A:C2	53:5:1462:G:N1	2.65	0.54
10:F:90:VAL:HG23	10:F:95:LYS:HE3	1.89	0.54
27:c:128:VAL:HB	27:c:198:LEU:HB3	1.90	0.54
28:d:95:ARG:HA	28:d:98:ALA:HB3	1.90	0.54
30:f:26:ALA:HB3	30:f:28:HIS:CD2	2.43	0.54
47:w:53:THR:O	47:w:56:THR:OG1	2.19	0.54
51:3:1165:U:N3	51:3:2032:G:OP1	2.39	0.54
51:3:1556:U:H3'	51:3:1557:G:H8	1.72	0.54
51:3:2567:C:H2'	51:3:2568:G:H8	1.72	0.54
53:5:1117:U:HO2'	53:5:1255:A:HO2'	1.56	0.54
53:5:1187:U:H4'	53:5:1188:A:N7	2.22	0.54
27:c:181:LYS:NZ	27:c:190:ASP:OD1	2.41	0.53
51:3:1451:A:H2'	51:3:1452:G:C8	2.42	0.53
51:3:2085:C:N4	51:3:2251:U:H3	2.04	0.53
53:5:256:G:H2'	53:5:257:U:C6	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:305:A:O2'	53:5:605:A:N6	2.36	0.53
53:5:1200:G:H8	53:5:1200:G:OP2	1.91	0.53
53:5:1478:A:N6	53:5:1507:U:O2'	2.41	0.53
25:a:38:LEU:HD12	25:a:65:LYS:HG2	1.90	0.53
27:c:102:LYS:NZ	51:3:693:U:O2'	2.42	0.53
34:j:22:ILE:HD11	51:3:1959:A:C5	2.43	0.53
43:s:8:LEU:HB2	43:s:30:VAL:HG13	1.91	0.53
51:3:522:C:H2'	51:3:523:A:C8	2.44	0.53
51:3:1310:U:H3	51:3:1314:A:H62	1.55	0.53
51:3:1616:G:H21	51:3:1619:A:H2	1.56	0.53
51:3:2533:A:H2'	51:3:2534:G:H8	1.73	0.53
14:J:87:ASP:OD1	14:J:91:ARG:NH2	2.41	0.53
39:o:107:ARG:HG2	39:o:111:ALA:HB2	1.89	0.53
40:p:57:ARG:HH12	40:p:92:LYS:HD2	1.73	0.53
51:3:430:U:O2'	51:3:431:U:O4'	2.21	0.53
51:3:841:C:OP1	51:3:865:A:O2'	2.27	0.53
53:5:257:U:O2'	53:5:259:A:N6	2.41	0.53
4:9:378:ARG:HG2	4:9:383:THR:HA	1.90	0.53
25:a:246:ARG:NH2	51:3:1794:A:O5'	2.39	0.53
33:i:93:ARG:NH2	51:3:2747:U:OP1	2.42	0.53
34:j:119:VAL:HG13	34:j:120:GLU:OE1	2.09	0.53
48:x:11:SER:HA	48:x:26:GLU:HA	1.90	0.53
51:3:207:C:H3'	51:3:208:A:H8	1.72	0.53
51:3:266:A:N3	51:3:466:A:O2'	2.28	0.53
51:3:2706:U:H2'	51:3:2707:A:C8	2.43	0.53
53:5:922:G:H1	53:5:1365:U:H3	1.56	0.53
4:9:343:SER:OG	4:9:360:THR:HB	2.08	0.53
9:E:70:LYS:HB2	9:E:74:ARG:HH12	1.70	0.53
23:S:67:ARG:NH2	53:5:257:U:OP2	2.41	0.53
51:3:393:C:H2'	51:3:394:C:H4'	1.89	0.53
51:3:1507:G:H1'	51:3:1508:G:P	2.48	0.53
53:5:108:C:H2'	53:5:109:G:C8	2.44	0.53
53:5:712:A:H2'	53:5:713:A:H8	1.73	0.53
53:5:1432:A:H2'	53:5:1433:G:H8	1.73	0.53
9:E:106:GLN:O	9:E:110:GLN:N	2.38	0.53
26:b:164:LYS:O	26:b:165:MET:HE2	2.09	0.53
33:i:28:LEU:HD13	33:i:67:LEU:HD21	1.90	0.53
51:3:861:U:O2	51:3:866:G:O6	2.27	0.53
51:3:870:A:N6	51:3:871:G:O6	2.42	0.53
51:3:1470:C:H2'	51:3:1471:A:H8	1.74	0.53
51:3:2183:U:N3	51:3:2184:A:N7	2.57	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:9:66:ALA:HB3	4:9:81:ASP:HB3	1.91	0.53
6:B:5:VAL:HG11	53:5:1164:U:H4'	1.91	0.53
9:E:92:ARG:HH11	21:Q:85:HIS:HA	1.74	0.53
10:F:126:ALA:HA	10:F:134:ILE:HD11	1.90	0.53
13:I:70:GLN:NE2	17:M:59:ALA:HA	2.23	0.53
17:M:34:LEU:HD23	17:M:36:HIS:H	1.73	0.53
18:N:70:ASN:OD1	18:N:71:ASP:N	2.42	0.53
20:P:42:HIS:HD2	53:5:276:U:C2	2.27	0.53
23:S:67:ARG:NH1	53:5:259:A:OP1	2.41	0.53
25:a:226:PRO:HB2	51:3:1796:A:H4'	1.89	0.53
36:l:45:ARG:HA	36:l:48:GLU:OE2	2.09	0.53
51:3:229:C:H3'	51:3:230:G:H8	1.74	0.53
51:3:760:G:H2'	51:3:761:G:C4	2.44	0.53
51:3:1077:G:H2'	51:3:1078:C:N3	2.24	0.53
51:3:2334:U:O4	51:3:2397:G:O6	2.26	0.53
51:3:2572:A:N1	51:3:2655:U:O2'	2.42	0.53
53:5:582:G:H1	53:5:754:U:H3	1.56	0.53
11:G:13:ASP:OD1	11:G:16:ALA:HB3	2.09	0.53
12:H:54:LEU:HA	12:H:57:THR:HG22	1.91	0.53
29:e:146:GLN:O	29:e:149:THR:OG1	2.24	0.53
51:3:339:U:H2'	51:3:340:U:C6	2.44	0.53
51:3:2093:U:H2'	51:3:2094:A:H8	1.72	0.53
53:5:169:G:O2'	53:5:220:U:O2'	2.23	0.53
53:5:948:U:C2	53:5:949:G:C8	2.97	0.53
53:5:1046:A:N7	53:5:1175:C:N4	2.56	0.53
53:5:1150:G:H2'	53:5:1151:A:H8	1.74	0.53
53:5:1234:C:O2'	53:5:1258:U:O2	2.26	0.53
53:5:1382:C:H2'	53:5:1383:A:H8	1.72	0.53
53:5:1395:C:O2'	53:5:1396:U:OP1	2.24	0.53
53:5:1505:G:H2'	53:5:1506:A:C8	2.43	0.53
3:2:19:ARG:HG3	3:2:24:ARG:HH21	1.74	0.53
4:9:132:VAL:HG21	4:9:196:VAL:HA	1.91	0.53
9:E:89:ASN:ND2	53:5:735:C:OP1	2.42	0.53
15:K:125:GLN:N	53:5:536:U:OP1	2.42	0.53
29:e:4:ILE:HD13	51:3:2756:A:H5'	1.91	0.53
51:3:964:A:O2'	51:3:965:U:OP1	2.24	0.53
51:3:1037:A:N6	51:3:1189:G:C2	2.76	0.53
51:3:1686:U:H3'	51:3:1687:G:H8	1.73	0.53
51:3:1853:G:H2'	51:3:1854:A:C4	2.44	0.53
51:3:2700:C:H2'	51:3:2701:A:H8	1.73	0.53
53:5:1109:U:H2'	53:5:1110:C:C6	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:7:64:G:H2'	54:7:65:C:C6	2.44	0.53
10:F:47:ASP:O	10:F:51:GLN:OE1	2.27	0.53
15:K:9:ARG:NH1	53:5:875:G:OP2	2.35	0.53
25:a:181:ILE:HG22	25:a:191:LYS:HG2	1.91	0.53
34:j:1:MET:N	51:3:1699:A:O2'	2.41	0.53
45:u:86:PHE:CE1	45:u:94:ARG:HB2	2.44	0.53
51:3:585:U:H2'	51:3:586:G:H8	1.74	0.53
51:3:1976:A:H4'	51:3:1979:G:H1'	1.90	0.53
51:3:2799:U:O4	51:3:2813:A:N6	2.42	0.53
53:5:694:U:H1'	53:5:783:G:H1'	1.90	0.53
53:5:887:C:H42	53:5:888:A:N6	1.98	0.53
53:5:968:G:H3'	53:5:969:A:H8	1.73	0.53
53:5:1489:C:H2'	53:5:1490:G:C8	2.44	0.53
13:I:51:LYS:HB3	53:5:1228:C:H5''	1.90	0.52
26:b:116:GLY:HA2	26:b:170:GLY:HA3	1.91	0.52
40:p:27:ARG:NH1	51:3:2026:A:N3	2.56	0.52
51:3:95:G:O2'	51:3:96:A:O4'	2.16	0.52
51:3:1450:G:H2'	51:3:1451:A:C8	2.44	0.52
51:3:1584:U:O2'	51:3:1586:U:O4	2.27	0.52
51:3:2315:G:N3	51:3:2315:G:H2'	2.24	0.52
51:3:2701:A:H2'	51:3:2702:G:C8	2.44	0.52
5:A:70:ASN:HA	5:A:73:LYS:HE3	1.91	0.52
15:K:99:ARG:HG2	15:K:107:ARG:HG2	1.92	0.52
45:u:62:GLY:N	45:u:95:VAL:O	2.42	0.52
50:z:36:LYS:HD3	50:z:37:PHE:N	2.23	0.52
51:3:676:U:H2'	51:3:677:U:C6	2.44	0.52
53:5:60:A:O2'	53:5:385:A:OP1	2.27	0.52
53:5:458:G:O2'	53:5:459:C:H6	1.91	0.52
53:5:886:A:H2'	53:5:887:C:C6	2.43	0.52
10:F:25:ILE:HD13	10:F:100:LEU:HG	1.92	0.52
22:R:50:ALA:HB1	22:R:57:PHE:HB3	1.91	0.52
26:b:56:THR:HG22	26:b:78:THR:HG22	1.90	0.52
28:d:88:LYS:NZ	51:3:2322:G:OP1	2.39	0.52
49:y:6:ARG:HH12	51:3:2024:C:H4'	1.74	0.52
50:z:19:TYR:CE2	50:z:36:LYS:HD2	2.44	0.52
51:3:801:U:H2'	51:3:802:U:O4'	2.09	0.52
53:5:879:G:O2'	53:5:880:G:O4'	2.27	0.52
4:9:313:LYS:NZ	4:9:354:GLY:O	2.43	0.52
21:Q:69:LYS:HE3	53:5:715:A:H62	1.75	0.52
51:3:332:G:N1	51:3:373:U:OP2	2.32	0.52
51:3:410:G:N2	51:3:411:U:O4	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1557:G:O2'	51:3:1573:A:N6	2.41	0.52
51:3:1820:U:O2'	51:3:1821:G:OP1	2.24	0.52
51:3:2781:C:H2'	51:3:2782:A:C8	2.44	0.52
53:5:252:U:H2'	53:5:253:G:H8	1.74	0.52
53:5:731:A:H2'	53:5:732:A:H8	1.73	0.52
53:5:1432:A:H2'	53:5:1433:G:C8	2.45	0.52
6:B:57:GLU:HB2	6:B:68:PHE:HB2	1.92	0.52
14:J:121:ARG:NH2	53:5:1481:U:O2	2.43	0.52
37:m:18:VAL:HA	37:m:41:THR:HG22	1.92	0.52
40:p:30:SER:OG	51:3:614:C:OP1	2.21	0.52
51:3:144:C:H2'	51:3:145:A:C8	2.45	0.52
51:3:195:A:H2'	51:3:196:G:C8	2.45	0.52
51:3:921:C:N4	51:3:929:G:N7	2.50	0.52
51:3:1766:A:H2'	51:3:1767:A:C8	2.32	0.52
51:3:2097:A:O2'	51:3:2098:U:OP1	2.24	0.52
51:3:2515:C:H2'	51:3:2516:G:O4'	2.10	0.52
51:3:2701:A:H2'	51:3:2702:G:H8	1.74	0.52
53:5:1462:G:O2'	53:5:1463:A:OP1	2.24	0.52
4:9:337:ASP:OD2	54:6:66:C:H5''	2.10	0.52
5:A:75:VAL:HG11	5:A:175:LEU:HD22	1.92	0.52
47:w:89:GLN:HA	47:w:92:GLU:HG3	1.91	0.52
51:3:1052:A:H2'	51:3:1053:C:C6	2.44	0.52
51:3:2413:G:O2'	51:3:2419:A:N6	2.43	0.52
51:3:2476:A:H2'	51:3:2484:A:C2	2.45	0.52
51:3:2898:A:H5''	51:3:2899:C:H5	1.74	0.52
52:4:4:G:H2'	52:4:5:G:C8	2.44	0.52
53:5:500:G:H2'	53:5:501:A:C8	2.44	0.52
53:5:744:U:H4'	53:5:745:U:H5	1.73	0.52
53:5:778:A:N7	53:5:798:U:C2	2.77	0.52
4:9:53:ALA:O	4:9:56:GLU:HG2	2.10	0.52
26:b:15:GLN:NE2	39:o:60:ILE:HG23	2.25	0.52
28:d:92:ARG:HD2	52:4:43:A:H5''	1.92	0.52
37:m:75:VAL:O	37:m:79:MET:HG2	2.09	0.52
51:3:1432:C:H2'	51:3:1433:U:C6	2.45	0.52
51:3:2100:G:H21	51:3:2206:A:N6	2.07	0.52
51:3:2235:A:O2'	51:3:2236:G:OP1	2.24	0.52
51:3:2313:U:N3	51:3:2314:U:O4	2.43	0.52
54:6:64:G:H2'	54:6:65:C:C6	2.44	0.52
1:0:40:ALA:N	51:3:495:U:OP1	2.34	0.52
16:L:120:LYS:NZ	54:7:29:C:OP1	2.38	0.52
18:N:40:LEU:HD21	18:N:50:LYS:HA	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:173:C:H2'	51:3:174:A:H8	1.74	0.52
51:3:379:A:N3	51:3:381:A:N6	2.58	0.52
51:3:1461:A:H2'	51:3:1462:A:C8	2.45	0.52
51:3:2188:U:O2'	51:3:2189:U:OP1	2.25	0.52
53:5:673:A:H2'	53:5:674:U:H6	1.73	0.52
53:5:1314:A:HO2'	54:7:32:U:HO2'	1.58	0.52
6:B:137:MET:HE1	6:B:171:TYR:CZ	2.45	0.52
37:m:31:ILE:O	37:m:115:ILE:HA	2.09	0.52
51:3:193:G:O6	51:3:209:G:O2'	2.19	0.52
51:3:697:U:H2'	51:3:698:A:C8	2.44	0.52
51:3:731:A:H2'	51:3:732:G:H8	1.74	0.52
51:3:800:C:H2'	51:3:801:U:C6	2.45	0.52
51:3:1595:C:H2'	51:3:1596:U:C6	2.45	0.52
53:5:156:U:H2'	53:5:157:A:C4	2.45	0.52
53:5:563:U:OP2	53:5:564:G:O2'	2.26	0.52
54:7:6:U:H2'	54:7:7:U:C6	2.45	0.52
11:G:99:ARG:HG3	11:G:105:PRO:HD3	1.91	0.52
16:L:53:PHE:O	16:L:57:ARG:HG2	2.10	0.52
30:f:114:LYS:HE2	30:f:128:LEU:HD22	1.92	0.52
37:m:70:THR:HG22	37:m:71:ASN:H	1.74	0.52
51:3:769:A:C2	51:3:770:A:H1'	2.45	0.52
51:3:1512:A:N6	51:3:1528:G:O6	2.44	0.52
51:3:1671:C:H2'	51:3:1672:C:C6	2.45	0.52
51:3:2638:G:H2'	51:3:2639:G:C8	2.45	0.52
4:9:10:LYS:HE2	4:9:76:HIS:HB2	1.92	0.51
5:A:95:LEU:HD21	5:A:226:CYS:HA	1.93	0.51
10:F:92:GLN:HA	10:F:95:LYS:HG3	1.92	0.51
11:G:87:VAL:HG23	11:G:141:VAL:HG12	1.91	0.51
25:a:213:ILE:HD12	51:3:1798:A:H5''	1.91	0.51
36:l:11:LYS:HD2	51:3:2285:G:H4'	1.92	0.51
51:3:42:U:H2'	51:3:43:A:C8	2.39	0.51
51:3:652:U:H2'	51:3:653:G:C8	2.44	0.51
51:3:1208:A:H62	51:3:1210:A:N6	2.08	0.51
51:3:1665:G:N2	51:3:1669:A:H62	2.07	0.51
51:3:1751:A:H8	51:3:1752:A:C8	2.27	0.51
51:3:1887:U:H2'	51:3:1888:U:C6	2.45	0.51
51:3:1920:A:N1	54:6:38:G:O2'	2.40	0.51
51:3:2223:C:H2'	51:3:2224:A:H8	1.74	0.51
51:3:2524:U:H2'	51:3:2525:C:C6	2.44	0.51
53:5:772:G:H22	53:5:802:C:H42	1.58	0.51
53:5:881:G:C2	53:5:905:U:C2	2.99	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:984:A:N1	53:5:985:C:N4	2.58	0.51
5:A:171:ARG:HG2	5:A:172:LEU:N	2.24	0.51
7:C:100:ILE:O	7:C:104:MET:HG2	2.11	0.51
9:E:18:ALA:O	9:E:22:ASN:ND2	2.43	0.51
34:j:2:VAL:HB	34:j:33:ALA:HB3	1.91	0.51
51:3:159:G:H2'	51:3:160:A:H8	1.74	0.51
51:3:762:A:H2'	51:3:763:G:C8	2.46	0.51
51:3:857:U:H2'	51:3:858:A:H8	1.75	0.51
51:3:1331:G:H2'	51:3:1332:A:C8	2.46	0.51
51:3:1670:U:H1'	51:3:1767:A:H2	1.75	0.51
51:3:2078:A:H2'	51:3:2079:G:C8	2.45	0.51
51:3:2103:C:H2'	51:3:2104:A:C8	2.45	0.51
51:3:2678:A:H2'	51:3:2679:G:C8	2.45	0.51
52:4:47:C:H2'	52:4:48:A:C8	2.45	0.51
53:5:593:A:N6	53:5:638:A:N7	2.48	0.51
53:5:861:A:O2'	53:5:867:A:N1	2.41	0.51
53:5:1322:U:H2'	53:5:1323:A:C8	2.46	0.51
17:M:59:ALA:O	53:5:1162:G:O2'	2.25	0.51
25:a:163:SER:OG	51:3:1825:U:H5''	2.10	0.51
35:k:36:GLN:NE2	51:3:845:U:O4	2.42	0.51
47:w:42:HIS:ND1	51:3:97:A:O2'	2.38	0.51
51:3:39:C:H2'	51:3:40:A:H8	1.75	0.51
51:3:122:G:H2'	51:3:123:G:C8	2.45	0.51
51:3:275:A:N6	51:3:294:G:C2	2.78	0.51
51:3:756:A:H2'	51:3:757:A:H8	1.75	0.51
51:3:2190:G:N1	51:3:2192:U:O4	2.44	0.51
53:5:292:U:O2'	53:5:554:C:O2	2.24	0.51
53:5:435:U:O2'	53:5:437:U:O4	2.28	0.51
53:5:588:U:H2'	53:5:589:U:C6	2.46	0.51
5:A:113:LEU:O	5:A:116:THR:OG1	2.26	0.51
22:R:55:LYS:HE3	53:5:953:A:H5''	1.93	0.51
28:d:38:MET:SD	28:d:150:ARG:HD2	2.50	0.51
51:3:90:G:N1	51:3:91:G:O6	2.44	0.51
51:3:517:G:O2'	51:3:518:A:OP2	2.28	0.51
51:3:1683:G:H2'	51:3:1684:A:H8	1.76	0.51
51:3:1795:C:H2'	51:3:1796:A:C8	2.45	0.51
51:3:1854:A:O2'	51:3:1855:A:H5''	2.11	0.51
51:3:2254:G:H2'	51:3:2255:A:C8	2.46	0.51
52:4:22:G:O2'	52:4:25:A:N6	2.43	0.51
53:5:494:A:H61	53:5:496:A:H62	1.58	0.51
53:5:834:G:H2'	53:5:835:G:C8	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1124:U:H5'	53:5:1125:C:C5	2.45	0.51
53:5:1211:A:H4'	53:5:1278:G:H4'	1.93	0.51
53:5:1245:A:H2'	53:5:1246:A:H8	1.75	0.51
54:6:6:U:H2'	54:6:7:U:C6	2.45	0.51
3:2:1:MET:O	51:3:2534:G:N2	2.44	0.51
4:9:218:THR:OG1	4:9:284:ARG:NE	2.36	0.51
4:9:317:GLY:O	4:9:382:ARG:NH2	2.43	0.51
7:C:47:MET:HB3	7:C:52:GLN:HE22	1.75	0.51
9:E:148:LYS:O	11:G:58:GLN:NE2	2.42	0.51
15:K:101:LYS:HB2	53:5:521:A:H2	1.76	0.51
35:k:52:GLU:OE1	35:k:55:GLN:HB3	2.10	0.51
51:3:159:G:H2'	51:3:160:A:C8	2.45	0.51
51:3:173:C:H2'	51:3:174:A:C8	2.45	0.51
51:3:2823:A:O2'	51:3:2825:A:N7	2.36	0.51
53:5:63:U:H3	53:5:90:G:H1	1.58	0.51
53:5:144:U:H3	53:5:149:G:H1	1.57	0.51
53:5:354:U:H2'	53:5:355:A:H8	1.75	0.51
53:5:1157:G:H4'	53:5:1158:A:H5'	1.93	0.51
4:9:246:VAL:O	4:9:292:VAL:HB	2.10	0.51
5:A:103:VAL:O	5:A:105:VAL:HG12	2.11	0.51
8:D:138:HIS:HB2	11:G:108:LEU:HD12	1.93	0.51
11:G:98:TYR:OH	53:5:595:G:N2	2.44	0.51
40:p:93:VAL:O	40:p:96:GLU:HB2	2.09	0.51
51:3:26:G:O2'	51:3:27:U:OP1	2.28	0.51
51:3:117:C:H2'	51:3:118:G:O4'	2.10	0.51
51:3:2743:U:H2'	51:3:2744:A:C8	2.38	0.51
53:5:156:U:H2'	53:5:157:A:C5	2.45	0.51
53:5:887:C:H41	53:5:888:A:H62	1.52	0.51
6:B:21:ARG:O	13:I:19:TYR:OH	2.24	0.51
15:K:114:THR:HG21	53:5:35:C:H4'	1.92	0.51
21:Q:84:ARG:NH1	53:5:662:G:OP2	2.44	0.51
28:d:51:GLU:HA	28:d:54:LEU:HB2	1.93	0.51
29:e:159:PRO:HB2	29:e:175:LYS:HB2	1.91	0.51
35:k:64:LYS:NZ	51:3:253:C:O2'	2.42	0.51
38:n:27:ARG:NH1	38:n:115:ASN:O	2.44	0.51
51:3:513:A:HO2'	51:3:514:A:P	2.33	0.51
51:3:1699:A:H2'	51:3:1700:G:H8	1.76	0.51
51:3:2075:U:H3	51:3:2438:A:N6	2.00	0.51
51:3:2631:G:H2'	51:3:2632:C:C6	2.46	0.51
53:5:980:C:O2	53:5:1196:G:N2	2.44	0.51
53:5:1153:G:H2'	53:5:1154:A:H3'	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B:169:LYS:HB2	6:B:171:TYR:CE1	2.45	0.51
13:I:59:ARG:NH1	53:5:1164:U:OP1	2.44	0.51
25:a:98:LEU:HD11	25:a:106:LYS:HB2	1.93	0.51
34:j:29:ARG:NH2	51:3:2683:G:O3'	2.44	0.51
40:p:87:ILE:HB	41:q:47:ALA:HB1	1.92	0.51
47:w:95:LYS:NZ	51:3:1628:G:OP2	2.31	0.51
49:y:16:ARG:NH2	51:3:1296:G:OP2	2.44	0.51
51:3:279:U:H3	51:3:290:A:H2	1.58	0.51
51:3:294:G:H4'	51:3:301:G:H4'	1.93	0.51
51:3:829:A:H2'	51:3:830:A:C8	2.46	0.51
51:3:1005:G:N2	51:3:1021:C:OP1	2.40	0.51
51:3:1173:G:C4	51:3:1174:G:HI'	2.46	0.51
53:5:893:C:H2'	53:5:894:A:N3	2.26	0.51
53:5:1329:G:H2'	53:5:1330:A:C8	2.46	0.51
9:E:49:ILE:HG23	9:E:50:LYS:H	1.75	0.51
14:J:28:SER:OG	14:J:29:ASP:N	2.42	0.51
14:J:43:MET:SD	14:J:58:ILE:HG21	2.51	0.51
21:Q:42:ARG:NH2	21:Q:56:ASP:OD2	2.41	0.51
21:Q:73:ARG:NH2	53:5:718:A:OP2	2.44	0.51
25:a:215:LYS:HG3	25:a:217:GLY:N	2.26	0.51
41:q:60:GLU:OE1	41:q:92:LEU:HA	2.11	0.51
45:u:39:LYS:HB2	45:u:51:ILE:HG23	1.93	0.51
51:3:214:C:H2'	51:3:215:A:H8	1.75	0.51
51:3:333:A:H2'	51:3:334:A:C8	2.46	0.51
51:3:1020:G:OP2	51:3:1020:G:N2	2.21	0.51
51:3:1149:G:H2'	51:3:1150:U:H5'	1.92	0.51
51:3:2663:G:O2'	51:3:2672:G:O6	2.23	0.51
51:3:2739:C:N4	51:3:2740:U:O4	2.44	0.51
51:3:2744:A:H2'	51:3:2745:G:H8	1.75	0.51
53:5:621:C:H2'	53:5:622:A:H8	1.76	0.51
53:5:1245:A:H2'	53:5:1246:A:C8	2.46	0.51
53:5:1449:G:H2'	53:5:1450:C:O4'	2.11	0.51
18:N:50:LYS:NZ	53:5:761:U:OP1	2.37	0.51
38:n:7:GLN:O	38:n:11:ARG:NE	2.43	0.51
38:n:8:ARG:HB2	38:n:95:GLY:HA3	1.93	0.51
39:o:62:GLU:O	39:o:80:GLN:NE2	2.44	0.51
41:q:40:MET:HA	41:q:40:MET:HE3	1.92	0.51
51:3:517:G:O6	51:3:544:U:C2	2.65	0.51
51:3:603:G:O2'	51:3:1019:A:N7	2.44	0.51
51:3:731:A:H2'	51:3:732:G:C8	2.46	0.51
53:5:22:G:H2'	53:5:23:G:C8	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:621:C:H2'	53:5:622:A:C8	2.46	0.51
53:5:780:U:O4	53:5:797:G:N2	2.44	0.51
7:C:147:LYS:HE3	53:5:488:U:H1'	1.94	0.50
25:a:113:ASP:CG	25:a:204:SER:HA	2.36	0.50
27:c:174:ASN:ND2	51:3:354:C:O2	2.44	0.50
35:k:22:ARG:NH2	51:3:620:G:OP2	2.40	0.50
39:o:25:PHE:O	39:o:55:ARG:NH1	2.38	0.50
43:s:56:ASN:HB3	51:3:1369:U:H1'	1.93	0.50
51:3:755:C:H2'	51:3:756:A:C8	2.45	0.50
51:3:1670:U:H2'	51:3:1671:C:C6	2.46	0.50
51:3:1754:U:H2'	51:3:1755:A:H8	1.76	0.50
51:3:2080:C:H2'	51:3:2081:U:H6	1.77	0.50
51:3:2094:A:H2'	51:3:2095:A:H8	1.76	0.50
51:3:2757:A:H3'	51:3:2758:A:H8	1.77	0.50
53:5:66:A:H2'	53:5:377:A:H62	1.76	0.50
11:G:48:LEU:HD11	11:G:53:TYR:HD2	1.75	0.50
12:H:106:THR:HG22	12:H:107:THR:N	2.20	0.50
33:i:115:ASN:OD1	51:3:591:G:H5''	2.11	0.50
37:m:10:THR:H	37:m:13:TRP:CB	2.25	0.50
51:3:707:C:N4	51:3:708:C:N4	2.59	0.50
51:3:1087:C:H2'	51:3:1088:A:C8	2.44	0.50
51:3:1523:C:O2'	51:3:1524:C:OP1	2.25	0.50
51:3:1967:U:H2'	51:3:1968:C:C6	2.46	0.50
51:3:2303:U:C2	51:3:2346:G:N1	2.79	0.50
51:3:2693:U:H2'	51:3:2694:A:C8	2.46	0.50
51:3:2726:G:O2'	51:3:2851:U:OP1	2.29	0.50
51:3:2889:U:O2'	51:3:2890:G:OP1	2.30	0.50
53:5:707:G:H2'	53:5:708:A:H8	1.77	0.50
54:6:6:U:H2'	54:6:7:U:H6	1.77	0.50
54:7:22:A:N6	54:7:49:C:O4'	2.44	0.50
2:1:4:LYS:HG3	2:1:58:LEU:HD11	1.94	0.50
9:E:59:ARG:HH12	21:Q:54:ILE:HG13	1.76	0.50
10:F:114:THR:OG1	53:5:1215:U:OP2	2.29	0.50
12:H:72:GLY:H	53:5:1225:A:H4'	1.75	0.50
15:K:120:VAL:CB	15:K:132:ALA:HB1	2.39	0.50
20:P:53:VAL:HG11	20:P:80:ILE:HD13	1.92	0.50
26:b:3:ILE:HA	26:b:209:THR:HB	1.93	0.50
43:s:41:LYS:HB2	43:s:52:PRO:HG3	1.93	0.50
51:3:1309:G:H2'	51:3:1310:U:C6	2.46	0.50
51:3:1794:A:H2'	51:3:1795:C:C6	2.46	0.50
53:5:605:A:H3'	53:5:606:A:H8	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:660:A:H2'	53:5:661:G:C8	2.46	0.50
53:5:692:A:H2'	53:5:693:A:C8	2.46	0.50
53:5:1111:G:H2'	53:5:1112:U:C6	2.46	0.50
53:5:1438:U:H2'	53:5:1439:G:C8	2.46	0.50
54:6:22:A:N6	54:6:49:C:O4'	2.44	0.50
4:9:256:VAL:HG23	4:9:277:VAL:HG13	1.93	0.50
7:C:131:THR:HG21	53:5:618:U:N3	2.26	0.50
10:F:15:PRO:HD2	12:H:45:LEU:HB2	1.92	0.50
28:d:52:SER:HA	28:d:55:ASN:HD21	1.75	0.50
33:i:63:ASP:OD1	33:i:64:GLN:N	2.44	0.50
37:m:113:MET:HA	37:m:113:MET:HE3	1.92	0.50
40:p:80:ASN:OD1	51:3:1186:A:O2'	2.19	0.50
41:q:77:LYS:HE2	51:3:1009:A:H5''	1.93	0.50
47:w:27:LEU:HG	47:w:31:PHE:CE1	2.46	0.50
51:3:622:U:H2'	51:3:623:A:C8	2.46	0.50
51:3:1335:A:N7	51:3:1656:A:N6	2.60	0.50
51:3:1623:U:H2'	51:3:1624:A:H8	1.75	0.50
51:3:1878:A:H3'	51:3:1879:A:C8	2.46	0.50
53:5:458:G:HO2'	53:5:459:C:H6	1.60	0.50
53:5:586:G:O6	53:5:587:A:N6	2.43	0.50
4:9:206:GLU:OE2	4:9:208:ASP:N	2.38	0.50
4:9:223:GLY:HA3	53:5:56:A:C5	2.46	0.50
6:B:153:LYS:HA	6:B:171:TYR:O	2.10	0.50
39:o:58:LYS:HA	51:3:2849:G:H4'	1.93	0.50
39:o:59:GLY:O	39:o:62:GLU:HG2	2.11	0.50
51:3:568:G:H2'	51:3:569:U:C6	2.46	0.50
51:3:755:C:H2'	51:3:756:A:H8	1.76	0.50
51:3:767:C:H2'	51:3:768:G:O4'	2.12	0.50
51:3:891:G:H2'	51:3:892:G:C8	2.46	0.50
51:3:2078:A:H2'	51:3:2079:G:H8	1.77	0.50
51:3:2092:U:H2'	51:3:2093:U:C6	2.47	0.50
51:3:2118:U:OP2	51:3:2150:C:O2'	2.26	0.50
51:3:2125:U:H3	51:3:2150:C:H1'	1.77	0.50
51:3:2378:G:H2'	51:3:2379:G:C8	2.46	0.50
51:3:2411:C:H2'	51:3:2412:A:C8	2.47	0.50
53:5:116:A:O2'	53:5:117:U:H5''	2.12	0.50
53:5:1366:U:H2'	53:5:1367:G:C8	2.47	0.50
6:B:53:VAL:HA	6:B:71:ALA:HA	1.93	0.50
7:C:10:ARG:NH1	53:5:541:C:OP1	2.42	0.50
7:C:63:MET:HG3	7:C:64:TYR:CD1	2.46	0.50
21:Q:73:ARG:HE	21:Q:79:CYS:HA	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:r:84:ARG:NH2	51:3:1351:G:OP1	2.45	0.50
43:s:56:ASN:HB2	43:s:82:VAL:HG12	1.92	0.50
51:3:320:A:H2'	51:3:321:A:H8	1.76	0.50
51:3:729:U:O2'	51:3:1407:U:O2	2.16	0.50
51:3:997:G:OP1	51:3:2464:C:O2'	2.29	0.50
51:3:1603:A:H2'	51:3:1604:A:C8	2.47	0.50
51:3:2630:U:H2'	51:3:2631:G:C8	2.43	0.50
51:3:2656:G:H2'	51:3:2657:C:C6	2.46	0.50
53:5:40:G:H2'	53:5:41:C:C6	2.47	0.50
53:5:1142:G:O2'	53:5:1144:A:N6	2.45	0.50
53:5:1283:G:H2'	53:5:1284:A:C8	2.47	0.50
54:6:60:U:O2	54:6:60:U:H2'	2.12	0.50
54:7:6:U:H2'	54:7:7:U:H6	1.77	0.50
4:9:342:ILE:HD12	4:9:359:ILE:HD12	1.93	0.50
9:E:151:LYS:O	11:G:56:ASN:ND2	2.28	0.50
10:F:68:VAL:HG11	10:F:103:ILE:HD11	1.92	0.50
34:j:24:VAL:HG21	34:j:31:ARG:H	1.77	0.50
51:3:93:A:OP1	51:3:94:A:N6	2.44	0.50
51:3:371:C:H2'	51:3:372:G:O4'	2.12	0.50
51:3:1446:G:N2	51:3:1614:G:O6	2.39	0.50
51:3:1609:U:H2'	51:3:1610:U:C6	2.47	0.50
51:3:2811:G:C2	51:3:2895:A:C6	3.00	0.50
16:L:13:LYS:HE2	53:5:1276:U:C4	2.47	0.50
25:a:62:ASN:ND2	51:3:1600:A:N3	2.49	0.50
42:r:136:LYS:NZ	51:3:581:A:OP1	2.39	0.50
45:u:25:LYS:HG2	45:u:26:ASN:H	1.76	0.50
51:3:161:U:H2'	51:3:162:G:O4'	2.11	0.50
51:3:275:A:OP2	51:3:275:A:H8	1.95	0.50
51:3:660:U:H2'	51:3:661:G:C8	2.47	0.50
51:3:868:C:H2'	51:3:869:U:C6	2.46	0.50
51:3:894:G:N3	51:3:2276:A:H2'	2.27	0.50
51:3:1777:G:O6	51:3:1989:U:O2	2.30	0.50
51:3:2096:U:H2'	51:3:2097:A:C8	2.47	0.50
51:3:2424:C:H2'	51:3:2425:C:C6	2.47	0.50
52:4:104:C:H2'	52:4:105:A:C8	2.42	0.50
7:C:38:HIS:CE1	53:5:509:C:H1'	2.47	0.50
11:G:118:THR:OG1	11:G:119:SER:N	2.45	0.50
27:c:32:GLN:NE2	27:c:33:PRO:HD3	2.27	0.50
37:m:107:ARG:NH2	51:3:1355:C:O2'	2.43	0.50
46:v:35:PRO:HA	46:v:49:LEU:HA	1.93	0.50
51:3:116:C:H2'	51:3:117:C:C6	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:227:A:H5'	51:3:228:A:H5'	1.94	0.50
51:3:320:A:H2'	51:3:321:A:C8	2.47	0.50
51:3:766:C:H2'	51:3:767:C:C6	2.46	0.50
53:5:134:G:H2'	53:5:135:A:C8	2.47	0.50
53:5:134:G:N2	53:5:161:C:O2	2.44	0.50
53:5:657:G:H2'	53:5:658:G:H8	1.77	0.50
53:5:712:A:H5''	53:5:802:C:H1'	1.94	0.50
54:7:7:U:H2'	54:7:8:G:C8	2.47	0.50
54:7:60:U:O2	54:7:60:U:H2'	2.12	0.50
24:T:27:ARG:HA	24:T:30:GLN:HG3	1.94	0.49
35:k:16:LYS:HD2	51:3:1225:A:H62	1.77	0.49
39:o:14:GLU:HG3	39:o:60:ILE:HB	1.94	0.49
39:o:52:VAL:HA	39:o:65:ILE:O	2.12	0.49
39:o:80:GLN:HB3	39:o:83:ASN:HD21	1.75	0.49
41:q:36:ASP:OD1	41:q:36:ASP:N	2.43	0.49
51:3:22:U:H2'	51:3:23:A:H8	1.77	0.49
51:3:1062:A:N6	51:3:1161:A:N3	2.60	0.49
51:3:1640:G:H4'	51:3:1642:G:H22	1.77	0.49
51:3:1778:G:H2'	51:3:1779:G:C8	2.47	0.49
51:3:1884:A:O2'	51:3:1885:G:OP1	2.26	0.49
51:3:1931:C:H2'	51:3:1932:C:C6	2.47	0.49
53:5:205:U:H4'	53:5:464:A:H1'	1.94	0.49
53:5:577:G:H2'	53:5:578:C:C6	2.47	0.49
53:5:1405:U:H2'	53:5:1406:U:C6	2.46	0.49
5:A:37:TRP:HA	5:A:205:ASN:HB3	1.94	0.49
10:F:102:TRP:HA	10:F:105:MET:SD	2.53	0.49
11:G:48:LEU:HG	11:G:54:LEU:HD22	1.95	0.49
12:H:124:ARG:HG3	53:5:1322:U:H4'	1.94	0.49
51:3:23:A:H2'	51:3:24:U:C6	2.47	0.49
51:3:982:G:H2'	51:3:983:A:C8	2.46	0.49
51:3:1475:C:O2'	51:3:1577:A:N3	2.42	0.49
51:3:1551:U:H2'	51:3:1552:C:C6	2.47	0.49
51:3:2496:G:H2'	51:3:2497:U:H6	1.76	0.49
53:5:222:U:H2'	53:5:223:G:C8	2.48	0.49
53:5:1125:C:H2'	53:5:1126:U:C6	2.46	0.49
54:6:40:A:H2'	54:6:41:C:C6	2.47	0.49
54:7:40:A:H2'	54:7:41:C:C6	2.47	0.49
1:0:26:SER:O	1:0:30:VAL:HG23	2.11	0.49
7:C:51:ALA:O	7:C:55:GLN:OE1	2.31	0.49
8:D:110:GLU:OE1	8:D:110:GLU:N	2.45	0.49
9:E:77:ASN:ND2	9:E:85:GLU:OE1	2.44	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:i:47:PHE:O	40:p:63:ARG:NH1	2.44	0.49
38:n:11:ARG:NH1	51:3:2302:C:H5''	2.27	0.49
40:p:8:GLN:NE2	51:3:1257:G:OP2	2.45	0.49
51:3:652:U:H2'	51:3:653:G:H8	1.76	0.49
53:5:145:G:N2	53:5:148:A:OP2	2.45	0.49
53:5:168:A:H3'	53:5:169:G:C8	2.48	0.49
53:5:200:G:H2'	53:5:201:G:H8	1.77	0.49
53:5:265:U:H2'	53:5:266:A:C8	2.47	0.49
5:A:72:VAL:HA	5:A:75:VAL:HG22	1.95	0.49
5:A:83:LEU:HG	5:A:106:ALA:HB3	1.95	0.49
6:B:52:GLN:HE21	6:B:73:GLN:HB2	1.76	0.49
8:D:212:ARG:HH12	11:G:113:ILE:HG13	1.78	0.49
25:a:161:ALA:HB1	25:a:166:SER:HB2	1.94	0.49
35:k:48:ARG:NE	35:k:51:PHE:HB2	2.24	0.49
38:n:28:VAL:HG21	38:n:86:LEU:HD13	1.94	0.49
40:p:108:ILE:O	40:p:112:VAL:HG13	2.12	0.49
51:3:80:U:H2'	51:3:81:C:C6	2.47	0.49
51:3:192:U:H3'	51:3:193:G:H8	1.77	0.49
51:3:507:A:H2'	51:3:508:A:C4	2.48	0.49
51:3:2614:U:H2'	51:3:2615:G:C8	2.47	0.49
51:3:2646:G:H1	51:3:2783:A:H2'	1.77	0.49
53:5:140:U:H2'	53:5:141:A:C8	2.48	0.49
53:5:1182:C:H2'	53:5:1183:C:H6	1.77	0.49
53:5:1492:G:O2'	53:5:1493:A:O4'	2.17	0.49
2:1:35:THR:HB	2:1:39:ARG:HH21	1.78	0.49
4:9:121:LEU:O	4:9:125:GLN:NE2	2.45	0.49
28:d:39:GLY:O	51:3:2315:G:N1	2.44	0.49
28:d:50:LEU:O	28:d:54:LEU:N	2.32	0.49
28:d:101:GLU:HA	28:d:104:ILE:HG12	1.94	0.49
28:d:123:ASP:HB3	51:3:2322:G:H21	1.78	0.49
51:3:428:U:H2'	51:3:429:U:C6	2.47	0.49
51:3:2845:U:H2'	51:3:2846:A:C8	2.48	0.49
53:5:111:A:H5''	53:5:602:G:N2	2.27	0.49
53:5:838:A:O2'	53:5:839:U:OP1	2.28	0.49
54:6:7:U:H2'	54:6:8:G:C8	2.47	0.49
15:K:112:ARG:CD	15:K:119:GLY:N	2.67	0.49
42:r:9:ARG:H	42:r:102:ASN:HA	1.78	0.49
51:3:524:G:O2'	51:3:526:G:O6	2.30	0.49
51:3:1450:G:H2'	51:3:1451:A:H8	1.77	0.49
51:3:1504:G:H2'	51:3:1505:G:C8	2.48	0.49
51:3:2271:C:H2'	51:3:2272:C:C6	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2546:U:H2'	51:3:2547:C:C6	2.47	0.49
53:5:226:G:H2'	53:5:227:A:H8	1.78	0.49
53:5:1200:G:O2'	53:5:1201:C:H5'	2.13	0.49
15:K:47:CYS:HA	15:K:68:VAL:HA	1.94	0.49
42:r:3:ALA:HB3	42:r:107:LEU:HB3	1.94	0.49
51:3:342:G:O2'	51:3:363:G:N2	2.46	0.49
51:3:858:A:H2'	51:3:859:G:C8	2.48	0.49
51:3:1086:G:O2'	51:3:1087:C:OP1	2.31	0.49
51:3:1393:A:O2'	51:3:1394:A:O4'	2.25	0.49
51:3:1816:A:H2'	51:3:1817:A:C8	2.48	0.49
51:3:2031:C:H2'	51:3:2032:G:C8	2.46	0.49
51:3:2176:G:N1	51:3:2179:A:OP2	2.46	0.49
51:3:2334:U:O2	51:3:2397:G:N2	2.33	0.49
53:5:658:G:H2'	53:5:659:U:C6	2.48	0.49
53:5:1133:A:N6	53:5:1155:A:N7	2.60	0.49
4:9:210:PRO:HB3	4:9:295:LYS:HB3	1.95	0.49
6:B:168:ASP:N	6:B:168:ASP:OD1	2.46	0.49
15:K:25:HIS:HA	15:K:39:TYR:HA	1.93	0.49
21:Q:88:LYS:O	21:Q:92:ARG:HG3	2.12	0.49
26:b:50:THR:HB	26:b:87:MET:HB2	1.94	0.49
42:r:78:GLN:OE1	51:3:26:G:N2	2.46	0.49
51:3:1264:U:H2'	51:3:1265:G:C8	2.48	0.49
51:3:1661:A:H2'	51:3:1662:G:C8	2.46	0.49
51:3:1930:U:H2'	51:3:1931:C:H6	1.78	0.49
51:3:2113:U:O2	51:3:2192:U:N3	2.45	0.49
51:3:2467:A:C6	51:3:2502:G:C2	3.01	0.49
53:5:582:G:H2'	53:5:583:G:C8	2.48	0.49
53:5:1016:A:H2'	53:5:1017:A:C8	2.48	0.49
53:5:1088:C:H2'	53:5:1089:C:C5	2.47	0.49
53:5:1109:U:H4'	53:5:1154:A:H5'	1.94	0.49
53:5:1408:A:H2'	53:5:1409:A:C4	2.48	0.49
54:7:64:G:H2'	54:7:65:C:H6	1.78	0.49
4:9:116:THR:O	4:9:120:ILE:HG13	2.13	0.49
6:B:80:SER:O	6:B:81:GLU:HG2	2.12	0.49
8:D:187:THR:OG1	8:D:190:ASN:OD1	2.18	0.49
28:d:38:MET:HB3	28:d:86:GLY:HA2	1.94	0.49
33:i:20:ILE:HD13	33:i:58:ILE:HB	1.95	0.49
41:q:73:HIS:HD2	41:q:80:LEU:HD13	1.77	0.49
51:3:192:U:H3'	51:3:193:G:C8	2.48	0.49
51:3:650:G:H2'	51:3:651:A:C8	2.48	0.49
51:3:784:A:H61	51:3:788:G:H21	1.59	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2094:A:H2'	51:3:2095:A:C8	2.47	0.49
51:3:2794:U:H2'	51:3:2795:C:C6	2.46	0.49
52:4:12:U:O2'	52:4:13:G:N2	2.44	0.49
53:5:280:G:H2'	53:5:281:U:C6	2.48	0.49
53:5:1000:A:O2'	53:5:1001:A:O4'	2.31	0.49
8:D:185:ARG:NH1	53:5:22:G:O6	2.46	0.49
13:I:59:ARG:HE	13:I:69:GLU:HG3	1.77	0.49
15:K:130:TYR:OH	53:5:520:C:O5'	2.31	0.49
28:d:8:TYR:HD2	28:d:12:ILE:HB	1.78	0.49
31:g:44:LEU:O	31:g:45:PHE:C	2.56	0.49
36:l:22:LYS:NZ	51:3:945:U:OP2	2.37	0.49
42:r:4:PHE:CE2	51:3:530:G:H5''	2.48	0.49
51:3:144:C:H2'	51:3:145:A:H8	1.77	0.49
51:3:857:U:H2'	51:3:858:A:C8	2.48	0.49
51:3:947:A:H2'	51:3:948:A:C8	2.48	0.49
51:3:1460:G:H2'	51:3:1461:A:C8	2.47	0.49
51:3:1507:G:O6	51:3:1537:A:N6	2.46	0.49
51:3:1664:A:C5	51:3:1665:G:H1'	2.48	0.49
51:3:2623:U:H2'	51:3:2624:C:C6	2.46	0.49
51:3:2753:C:H2'	51:3:2754:U:C6	2.47	0.49
53:5:1280:A:H2'	53:5:1281:U:C6	2.47	0.49
10:F:26:ILE:HD13	10:F:42:LEU:HD22	1.95	0.48
10:F:99:ALA:O	10:F:103:ILE:HG12	2.13	0.48
29:e:100:ASN:HA	29:e:128:VAL:HG11	1.94	0.48
40:p:24:PHE:H	51:3:568:G:P	2.36	0.48
40:p:57:ARG:O	40:p:61:ILE:HG12	2.14	0.48
51:3:384:G:H2'	51:3:385:U:O2	2.13	0.48
51:3:1205:U:H2'	51:3:1206:U:C6	2.48	0.48
51:3:1422:U:H2'	51:3:1423:A:O4'	2.12	0.48
51:3:1815:U:O2'	51:3:1816:A:O5'	2.24	0.48
51:3:2018:U:H2'	51:3:2019:G:O4'	2.13	0.48
51:3:2325:U:H2'	51:3:2326:G:O4'	2.12	0.48
51:3:2835:G:OP1	51:3:2838:G:O2'	2.31	0.48
53:5:333:U:H2'	53:5:334:A:C8	2.48	0.48
53:5:472:G:H2'	53:5:473:A:H8	1.77	0.48
53:5:856:U:H2'	53:5:857:U:C6	2.48	0.48
7:C:151:ILE:HG22	7:C:153:ILE:H	1.79	0.48
14:J:77:LEU:HD13	14:J:90:ILE:HD12	1.95	0.48
16:L:81:SER:HA	16:L:88:GLY:HA3	1.96	0.48
23:S:63:ASN:HB3	53:5:258:A:H4'	1.95	0.48
33:i:79:HIS:C	33:i:87:ILE:HD13	2.37	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:9:G:O2'	51:3:10:U:O4'	2.29	0.48
51:3:585:U:H2'	51:3:586:G:C8	2.48	0.48
51:3:615:G:H2'	51:3:616:G:C8	2.48	0.48
51:3:912:A:H2'	51:3:913:U:C6	2.49	0.48
51:3:1422:U:H4'	51:3:1637:A:H4'	1.94	0.48
53:5:511:A:H2'	53:5:512:U:C6	2.48	0.48
53:5:659:U:H2'	53:5:660:A:C8	2.48	0.48
53:5:1262:A:N1	53:5:1346:G:H1'	2.28	0.48
53:5:1277:C:H3'	53:5:1278:G:H8	1.77	0.48
54:6:24:A:H2'	54:6:25:G:H8	1.78	0.48
54:6:64:G:H2'	54:6:65:C:H6	1.78	0.48
4:9:343:SER:HG	4:9:360:THR:HB	1.78	0.48
13:I:14:ILE:HG23	13:I:80:MET:HB2	1.94	0.48
29:e:106:LEU:HB2	29:e:120:ILE:HD11	1.96	0.48
49:y:35:LYS:O	49:y:37:LYS:N	2.46	0.48
51:3:30:A:HO2'	51:3:615:G:HO2'	1.54	0.48
51:3:536:A:H2'	51:3:537:A:O4'	2.14	0.48
51:3:784:A:N6	51:3:788:G:H21	2.12	0.48
51:3:2372:C:H2'	51:3:2373:G:C8	2.48	0.48
51:3:2879:U:H2'	51:3:2880:A:C8	2.48	0.48
7:C:166:PHE:HD2	7:C:167:VAL:HG23	1.79	0.48
8:D:167:ARG:O	8:D:170:ILE:N	2.46	0.48
10:F:144:ALA:C	10:F:146:ALA:H	2.21	0.48
17:M:4:LYS:HA	17:M:7:LYS:HE3	1.95	0.48
26:b:126:TRP:CD1	26:b:164:LYS:HB3	2.49	0.48
37:m:3:TYR:HD2	37:m:4:ILE:HG22	1.79	0.48
37:m:10:THR:H	37:m:13:TRP:HB3	1.78	0.48
51:3:116:C:H2'	51:3:117:C:H6	1.79	0.48
51:3:169:U:H2'	51:3:170:A:H8	1.79	0.48
51:3:2067:A:O2'	51:3:2453:G:OP2	2.30	0.48
53:5:63:U:O2	53:5:90:G:N2	2.42	0.48
53:5:537:A:H2'	53:5:538:G:C8	2.48	0.48
53:5:672:A:H61	53:5:712:A:H61	1.62	0.48
53:5:1111:G:H2'	53:5:1112:U:H6	1.78	0.48
16:L:101:ARG:NH1	53:5:946:G:OP2	2.44	0.48
20:P:6:ARG:NH2	53:5:180:C:O3'	2.47	0.48
21:Q:94:ARG:HB3	21:Q:101:PHE:CE1	2.49	0.48
22:R:66:MET:HE1	22:R:69:HIS:H	1.77	0.48
26:b:3:ILE:O	26:b:87:MET:HE1	2.14	0.48
31:g:22:ALA:HB1	31:g:114:ASP:HA	1.95	0.48
35:k:69:ARG:HB3	35:k:72:PHE:HB2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:l:126:PRO:HB3	51:3:2493:G:H4'	1.94	0.48
38:n:23:ASN:HD21	38:n:27:ARG:HB3	1.78	0.48
45:u:34:ARG:HG3	51:3:2279:G:H5'	1.96	0.48
50:z:18:ASN:HB3	50:z:19:TYR:CE1	2.48	0.48
51:3:98:C:H2'	51:3:99:C:C6	2.48	0.48
51:3:898:A:H4'	52:4:77:G:H4'	1.96	0.48
51:3:1071:G:N2	51:3:1154:U:O2	2.32	0.48
51:3:1206:U:O4	51:3:1208:A:N6	2.46	0.48
51:3:1300:C:H5''	51:3:1301:G:H5'	1.96	0.48
51:3:1475:C:H2'	51:3:1476:C:H6	1.77	0.48
51:3:1768:G:H1'	51:3:1769:A:H2'	1.94	0.48
51:3:1937:G:O2'	51:3:1975:G:O6	2.23	0.48
53:5:214:U:H2'	53:5:215:C:C6	2.48	0.48
53:5:1199:U:C2	53:5:1296:C:H5'	2.48	0.48
53:5:1326:C:H2'	53:5:1327:G:C8	2.48	0.48
53:5:1337:U:O5'	53:5:1338:A:H5'	2.13	0.48
54:7:24:A:H2'	54:7:25:G:H8	1.78	0.48
6:B:209:MET:HG2	6:B:211:TYR:HD2	1.79	0.48
14:J:56:ALA:HB1	14:J:89:ALA:HB2	1.96	0.48
16:L:15:ILE:H	16:L:15:ILE:HD12	1.78	0.48
20:P:41:ARG:NH2	53:5:233:C:H5''	2.28	0.48
51:3:337:U:H2'	51:3:338:G:C8	2.49	0.48
51:3:353:G:H2'	51:3:354:C:C6	2.48	0.48
52:4:80:G:O6	52:4:85:A:N6	2.47	0.48
53:5:1301:U:H2'	53:5:1302:C:C6	2.48	0.48
53:5:1388:A:N1	53:5:1462:G:C6	2.82	0.48
1:0:14:LYS:HD2	51:3:126:C:H5'	1.96	0.48
1:0:26:SER:OG	51:3:717:U:O3'	2.30	0.48
5:A:203:ASN:HB2	5:A:219:ASN:HD21	1.78	0.48
6:B:187:TYR:CE1	6:B:204:TRP:CE2	3.02	0.48
7:C:150:LYS:NZ	53:5:434:U:OP1	2.45	0.48
10:F:112:GLU:N	10:F:112:GLU:OE1	2.47	0.48
13:I:71:PHE:CZ	17:M:56:VAL:HG12	2.49	0.48
13:I:78:ARG:HH12	53:5:1128:G:H5''	1.78	0.48
35:k:134:GLN:NE2	51:3:673:A:O5'	2.47	0.48
37:m:21:GLN:HB2	37:m:41:THR:HG21	1.96	0.48
42:r:66:GLY:HA2	42:r:69:LEU:HD12	1.95	0.48
43:s:18:PHE:HA	43:s:21:MET:HG3	1.95	0.48
44:t:45:HIS:HB2	51:3:518:A:OP1	2.13	0.48
51:3:1344:U:H2'	51:3:1345:G:C8	2.49	0.48
51:3:1754:U:H2'	51:3:1755:A:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2084:A:H2'	51:3:2085:C:C6	2.49	0.48
53:5:21:U:H2'	53:5:22:G:O4'	2.13	0.48
53:5:661:G:H1	53:5:738:A:N6	2.12	0.48
53:5:856:U:H1'	53:5:868:G:H5''	1.95	0.48
4:9:12:HIS:O	4:9:205:ARG:NH2	2.46	0.48
4:9:211:PHE:HE1	4:9:232:VAL:HG13	1.79	0.48
5:A:41:MET:HG3	5:A:204:THR:HA	1.95	0.48
24:T:31:ARG:HD2	24:T:41:ARG:HH22	1.78	0.48
40:p:30:SER:HB3	40:p:33:VAL:HG22	1.95	0.48
43:s:7:LEU:HD21	43:s:29:PHE:CD1	2.48	0.48
51:3:293:G:H2'	51:3:294:G:C4	2.48	0.48
51:3:332:G:N2	51:3:375:U:O4	2.47	0.48
51:3:338:G:H2'	51:3:339:U:C6	2.49	0.48
51:3:472:A:N3	51:3:472:A:H2'	2.28	0.48
51:3:1229:U:H2'	51:3:1230:U:C6	2.48	0.48
51:3:1413:A:N7	51:3:1431:A:N6	2.61	0.48
51:3:2419:A:H2'	51:3:2420:A:C8	2.49	0.48
51:3:2537:G:H5''	51:3:2538:A:O5'	2.14	0.48
53:5:132:G:H2'	53:5:133:G:C8	2.49	0.48
53:5:547:C:H2'	53:5:548:G:C8	2.48	0.48
53:5:885:U:O2	53:5:885:U:H2'	2.12	0.48
22:R:42:PRO:HD3	22:R:67:VAL:HG21	1.95	0.48
25:a:88:TYR:OH	51:3:1601:A:N3	2.44	0.48
25:a:169:ARG:O	25:a:182:LEU:HD12	2.14	0.48
51:3:29:G:N2	51:3:547:G:O2'	2.38	0.48
51:3:341:G:H2'	51:3:343:A:OP2	2.14	0.48
51:3:1389:G:H2'	51:3:1390:C:C6	2.48	0.48
51:3:1431:A:H2'	51:3:1432:C:C6	2.49	0.48
51:3:1583:G:H2'	51:3:1584:U:O4'	2.14	0.48
53:5:157:A:H2'	53:5:158:A:C8	2.49	0.48
53:5:369:A:N3	53:5:479:A:N6	2.61	0.48
53:5:427:A:C6	53:5:428:A:H1'	2.49	0.48
53:5:517:C:O2'	53:5:518:A:OP1	2.28	0.48
53:5:671:G:O2'	53:5:672:A:OP1	2.24	0.48
53:5:1107:U:H2'	53:5:1108:A:H8	1.76	0.48
8:D:138:HIS:HB2	11:G:108:LEU:HB2	1.96	0.48
9:E:105:GLN:O	9:E:109:LEU:N	2.40	0.48
26:b:141:HIS:CE1	26:b:142:ARG:HG3	2.48	0.48
35:k:48:ARG:NH1	51:3:199:A:O3'	2.46	0.48
51:3:347:C:H2'	51:3:348:A:H8	1.78	0.48
51:3:448:A:O2'	51:3:449:C:OP1	2.30	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1445:U:H2'	51:3:1446:G:C4	2.49	0.48
51:3:2420:A:H2'	51:3:2421:U:O4'	2.13	0.48
53:5:295:G:O2'	53:5:296:A:O4'	2.27	0.48
53:5:673:A:H2'	53:5:674:U:C6	2.48	0.48
53:5:975:C:H5''	53:5:976:U:C5	2.49	0.48
53:5:1109:U:H2'	53:5:1110:C:H6	1.77	0.48
53:5:1329:G:H2'	53:5:1330:A:H8	1.78	0.48
4:9:134:PHE:CD1	4:9:192:LEU:HD13	2.48	0.47
5:A:185:LYS:HA	5:A:188:VAL:HG22	1.96	0.47
12:H:52:GLN:HG2	12:H:82:ARG:NH1	2.29	0.47
27:c:128:VAL:HG22	27:c:129:ASP:H	1.79	0.47
33:i:42:LYS:NZ	51:3:1043:C:OP1	2.43	0.47
37:m:105:PRO:HD3	49:y:41:ARG:HH12	1.78	0.47
40:p:62:LEU:HD13	51:3:1045:A:H5''	1.96	0.47
46:v:52:THR:HA	46:v:55:LEU:HD12	1.96	0.47
49:y:7:ARG:HB3	51:3:2024:C:H1'	1.95	0.47
51:3:1104:A:C4	51:3:1131:A:H4'	2.49	0.47
51:3:1530:G:H2'	51:3:1531:C:C6	2.49	0.47
51:3:2065:A:H2'	51:3:2066:A:C4	2.49	0.47
51:3:2717:G:H2'	51:3:2718:C:C6	2.49	0.47
51:3:2859:U:H2'	51:3:2860:A:C8	2.49	0.47
53:5:113:C:H2'	53:5:114:C:C6	2.49	0.47
53:5:236:C:H2'	53:5:237:A:H8	1.77	0.47
53:5:691:A:H2'	53:5:692:A:C8	2.48	0.47
53:5:972:A:H2'	53:5:973:A:H5''	1.96	0.47
53:5:1248:U:H2'	53:5:1249:G:O4'	2.14	0.47
6:B:8:ASN:ND2	6:B:187:TYR:HB3	2.29	0.47
6:B:185:ILE:HG13	6:B:206:ASN:HA	1.97	0.47
8:D:136:ILE:HG23	8:D:202:GLN:HE22	1.79	0.47
13:I:24:LEU:O	13:I:28:THR:HG23	2.14	0.47
23:S:10:ARG:NH1	53:5:92:G:O6	2.38	0.47
25:a:57:HIS:NE2	51:3:1831:G:OP2	2.46	0.47
25:a:80:GLU:OE2	25:a:102:ALA:HB2	2.14	0.47
25:a:100:THR:HG22	25:a:106:LYS:HB3	1.96	0.47
25:a:225:ARG:NH1	51:3:725:G:O2'	2.47	0.47
27:c:189:ARG:HE	27:c:193:LEU:HD12	1.78	0.47
30:f:58:TYR:HA	30:f:62:LYS:HZ3	1.79	0.47
37:m:37:LYS:O	37:m:41:THR:HG23	2.14	0.47
37:m:69:ASN:HB3	37:m:75:VAL:HG13	1.96	0.47
44:t:10:VAL:HG22	44:t:74:LEU:HD12	1.95	0.47
51:3:550:A:H1'	51:3:614:C:H1'	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:557:G:H2'	51:3:558:C:C6	2.49	0.47
51:3:714:G:H2'	51:3:715:G:H8	1.78	0.47
51:3:1262:G:C2	51:3:1263:G:N7	2.83	0.47
51:3:1792:A:H2'	51:3:1793:A:H5''	1.96	0.47
51:3:1806:G:OP2	51:3:1826:A:N6	2.45	0.47
51:3:2231:A:H2'	51:3:2232:G:O4'	2.14	0.47
53:5:490:U:H2'	53:5:491:U:C6	2.49	0.47
53:5:507:A:N6	53:5:508:A:N1	2.62	0.47
53:5:711:G:O2'	53:5:774:A:N6	2.47	0.47
53:5:784:A:H61	53:5:793:C:N4	2.12	0.47
4:9:130:ARG:HH22	4:9:167:ASN:HD22	1.63	0.47
10:F:40:ARG:NH1	53:5:1266:U:OP2	2.45	0.47
10:F:143:MET:HE2	10:F:143:MET:N	2.29	0.47
12:H:16:SER:OG	12:H:70:LYS:N	2.47	0.47
25:a:54:THR:HG21	51:3:1820:U:H1'	1.96	0.47
25:a:191:LYS:HD2	25:a:279:ILE:HD11	1.96	0.47
26:b:53:SER:HB2	26:b:78:THR:OG1	2.14	0.47
35:k:126:PHE:HB3	35:k:128:VAL:HG13	1.95	0.47
46:v:37:LYS:HG3	46:v:47:ARG:HB3	1.97	0.47
51:3:419:A:H2'	51:3:420:A:C8	2.49	0.47
51:3:823:A:OP1	51:3:826:C:N4	2.27	0.47
51:3:1633:C:H2'	51:3:1634:A:C8	2.48	0.47
51:3:1794:A:HO2'	51:3:1795:C:P	2.35	0.47
51:3:2034:G:H2'	51:3:2035:U:H6	1.78	0.47
51:3:2100:G:H2'	51:3:2101:A:H8	1.79	0.47
52:4:46:C:O2'	52:4:47:C:H5'	2.14	0.47
53:5:537:A:H2'	53:5:538:G:H8	1.79	0.47
53:5:1411:A:H2'	53:5:1412:C:H6	1.77	0.47
2:1:10:ARG:NH2	51:3:254:G:OP2	2.47	0.47
5:A:30:VAL:HG11	5:A:55:HIS:HA	1.96	0.47
6:B:155:LEU:CD2	6:B:170:MET:HE1	2.43	0.47
6:B:155:LEU:HG	6:B:202:LYS:HB2	1.96	0.47
12:H:106:THR:CG2	12:H:107:THR:H	2.19	0.47
26:b:139:TYR:CG	26:b:140:PRO:HD3	2.49	0.47
27:c:133:PHE:HE1	27:c:168:LEU:HD22	1.79	0.47
35:k:64:LYS:NZ	51:3:253:C:O2	2.46	0.47
37:m:13:TRP:O	37:m:17:THR:HG23	2.14	0.47
39:o:62:GLU:HB3	39:o:81:ILE:HD12	1.95	0.47
51:3:568:G:H2'	51:3:569:U:H6	1.79	0.47
51:3:714:G:H2'	51:3:715:G:C8	2.49	0.47
51:3:864:A:H5'	51:3:866:G:C8	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1654:G:H2'	51:3:1655:U:C6	2.50	0.47
51:3:1702:A:N6	51:3:1710:A:H61	2.11	0.47
51:3:1794:A:O2'	51:3:1795:C:OP1	2.24	0.47
51:3:1801:U:H3	51:3:1832:G:H1	1.62	0.47
51:3:1854:A:H4'	51:3:1855:A:O5'	2.14	0.47
51:3:2381:G:H2'	51:3:2382:A:H8	1.78	0.47
52:4:2:U:H2'	52:4:3:U:C6	2.49	0.47
53:5:11:A:H2'	53:5:12:G:C8	2.50	0.47
53:5:896:G:H2'	53:5:897:A:H8	1.80	0.47
53:5:1161:G:H2'	53:5:1162:G:C8	2.49	0.47
53:5:1415:G:H2'	53:5:1416:U:C6	2.49	0.47
12:H:21:LEU:HA	12:H:64:ASP:O	2.13	0.47
25:a:165:GLY:HA3	51:3:1827:U:C4	2.49	0.47
39:o:33:VAL:O	39:o:48:PHE:N	2.47	0.47
50:z:14:CYS:HB2	50:z:40:ARG:HH21	1.79	0.47
51:3:428:U:H2'	51:3:429:U:H6	1.80	0.47
51:3:749:U:N3	51:3:752:C:OP2	2.47	0.47
51:3:1061:A:H2'	51:3:1062:A:C8	2.49	0.47
51:3:1344:U:H2'	51:3:1345:G:H8	1.79	0.47
51:3:1525:G:H2'	51:3:1526:U:O4'	2.14	0.47
51:3:2014:U:H2'	51:3:2015:C:C6	2.50	0.47
51:3:2195:U:H2'	51:3:2196:G:N7	2.29	0.47
51:3:2411:C:H2'	51:3:2412:A:H8	1.78	0.47
53:5:709:A:H2'	53:5:710:G:C8	2.50	0.47
53:5:1338:A:H1'	53:5:1340:G:H1'	1.96	0.47
54:7:65:C:H2'	54:7:66:C:O4'	2.14	0.47
1:0:34:ARG:HH11	1:0:39:ARG:HG3	1.79	0.47
3:2:1:MET:HE2	3:2:1:MET:HA	1.96	0.47
4:9:324:LEU:HB2	54:6:53:A:OP1	2.14	0.47
6:B:134:ARG:NE	8:D:112:PRO:HG2	2.29	0.47
9:E:40:LEU:HB3	9:E:43:LYS:HE3	1.97	0.47
15:K:124:ARG:N	53:5:536:U:OP1	2.46	0.47
16:L:104:THR:HG21	53:5:1204:A:N6	2.30	0.47
19:O:55:LYS:HD2	53:5:223:G:O2'	2.14	0.47
20:P:54:LEU:HD23	20:P:54:LEU:H	1.80	0.47
25:a:3:ILE:HD13	25:a:210:LEU:HB3	1.96	0.47
28:d:45:ARG:O	28:d:47:SER:N	2.46	0.47
51:3:117:C:O2'	51:3:127:A:N3	2.47	0.47
51:3:848:U:H2'	51:3:849:C:H6	1.79	0.47
51:3:1082:A:H4'	51:3:1083:A:O5'	2.14	0.47
51:3:1214:U:H2'	51:3:1215:G:O4'	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1654:G:O2'	51:3:1655:U:O4'	2.29	0.47
51:3:1927:C:H5'	53:5:1492:G:H1	1.79	0.47
51:3:2235:A:HO2'	51:3:2236:G:P	2.38	0.47
53:5:460:A:N6	53:5:467:G:O6	2.47	0.47
53:5:893:C:H2'	53:5:894:A:C2	2.50	0.47
53:5:1173:A:H2'	53:5:1174:U:C6	2.49	0.47
53:5:1424:C:H2'	53:5:1425:A:H5'	1.96	0.47
54:6:65:C:H2'	54:6:66:C:O4'	2.14	0.47
4:9:97:ALA:HB1	4:9:334:ARG:HG2	1.96	0.47
4:9:331:PHE:HZ	4:9:342:ILE:HD11	1.79	0.47
4:9:341:SER:HB2	4:9:362:GLU:HB3	1.97	0.47
15:K:134:LYS:HB2	53:5:37:C:H4'	1.97	0.47
21:Q:81:MET:HA	21:Q:84:ARG:HG2	1.95	0.47
25:a:229:ARG:HH12	25:a:246:ARG:NH1	2.12	0.47
26:b:46:LYS:O	26:b:46:LYS:HD3	2.15	0.47
28:d:40:VAL:HB	28:d:86:GLY:H	1.80	0.47
34:j:106:LEU:HD23	34:j:106:LEU:H	1.80	0.47
36:l:31:GLU:HA	36:l:134:ARG:HB2	1.95	0.47
36:l:44:ALA:HB2	36:l:93:TRP:HB2	1.95	0.47
38:n:103:ALA:O	38:n:107:GLU:OE2	2.33	0.47
39:o:61:SER:C	39:o:80:GLN:HE22	2.22	0.47
47:w:105:ARG:HH22	51:3:1498:U:H1'	1.80	0.47
48:x:19:CYS:HB3	48:x:42:CYS:HB3	1.97	0.47
51:3:198:G:H2'	51:3:199:A:C8	2.50	0.47
51:3:337:U:H2'	51:3:338:G:H8	1.79	0.47
51:3:789:A:H2'	51:3:790:U:C6	2.49	0.47
51:3:888:A:H2'	51:3:889:G:C8	2.50	0.47
51:3:966:U:H2'	51:3:967:U:H6	1.79	0.47
51:3:1083:A:OP2	51:3:1145:G:N2	2.48	0.47
51:3:1116:U:H2'	51:3:1117:U:C6	2.50	0.47
51:3:1546:U:H2'	51:3:1547:G:O4'	2.15	0.47
51:3:1612:U:C2	51:3:1613:A:C8	3.03	0.47
51:3:1761:C:N4	51:3:2725:G:O4'	2.48	0.47
51:3:2407:G:H2'	51:3:2408:G:C8	2.50	0.47
51:3:2575:G:H2'	51:3:2576:A:C8	2.49	0.47
51:3:2668:A:H2'	51:3:2669:G:C5	2.50	0.47
53:5:94:A:H5''	53:5:323:A:H2	1.78	0.47
53:5:114:C:O2'	53:5:116:A:OP1	2.31	0.47
53:5:266:A:H2'	53:5:267:C:C6	2.50	0.47
53:5:297:A:H2'	53:5:298:G:C8	2.49	0.47
53:5:434:U:O4	53:5:493:A:N7	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:833:G:H1	53:5:844:U:H3	1.61	0.47
53:5:918:A:H2'	53:5:919:C:C6	2.50	0.47
53:5:983:G:H2'	53:5:984:A:C8	2.49	0.47
53:5:1133:A:H4'	53:5:1134:C:C6	2.49	0.47
5:A:23:LEU:HD11	5:A:62:ARG:NH1	2.29	0.47
6:B:121:ARG:HA	6:B:121:ARG:CZ	2.44	0.47
10:F:94:ARG:NH1	53:5:1351:U:O3'	2.47	0.47
10:F:101:ARG:NH2	53:5:934:G:O5'	2.47	0.47
12:H:83:LEU:HA	12:H:86:VAL:HG12	1.97	0.47
14:J:80:LYS:HG2	14:J:81:GLY:N	2.30	0.47
15:K:50:VAL:HG22	15:K:87:LEU:HD23	1.97	0.47
20:P:48:HIS:CE1	20:P:50:GLU:HA	2.49	0.47
25:a:229:ARG:HG3	51:3:1796:A:OP1	2.15	0.47
27:c:139:LYS:HA	51:3:355:A:OP2	2.13	0.47
35:k:42:ARG:NH2	51:3:842:U:OP2	2.48	0.47
38:n:3:THR:O	38:n:3:THR:HG22	2.14	0.47
51:3:1990:C:H2'	51:3:1991:U:C6	2.50	0.47
51:3:2056:A:H2'	51:3:2057:C:C6	2.50	0.47
52:4:37:A:H2'	52:4:38:U:C6	2.50	0.47
53:5:125:A:H2'	53:5:126:U:H6	1.80	0.47
53:5:144:U:H2'	53:5:145:G:H8	1.80	0.47
53:5:815:G:O2'	53:5:817:U:OP2	2.31	0.47
53:5:1321:G:O2'	53:5:1348:G:O6	2.29	0.47
7:C:96:ARG:HG3	7:C:133:SER:HA	1.97	0.47
20:P:14:LYS:NZ	20:P:25:GLN:HB3	2.30	0.47
33:i:81:SER:OG	33:i:82:GLN:N	2.47	0.47
34:j:12:ASP:N	34:j:12:ASP:OD1	2.48	0.47
37:m:16:MET:HG2	37:m:20:GLN:HE22	1.78	0.47
51:3:246:G:N2	51:3:259:A:OP2	2.48	0.47
51:3:1186:A:H2'	51:3:1187:C:C6	2.50	0.47
51:3:1504:G:H1	51:3:1539:U:H3	1.61	0.47
51:3:2653:G:OP2	51:3:2653:G:N2	2.39	0.47
51:3:2814:A:N6	51:3:2894:G:O2'	2.48	0.47
53:5:75:A:H2'	53:5:76:G:C8	2.49	0.47
53:5:126:U:H2'	53:5:127:A:C8	2.49	0.47
53:5:590:G:H2'	53:5:591:A:H8	1.79	0.47
53:5:754:U:H2'	53:5:755:U:O4'	2.15	0.47
53:5:1190:G:H2'	53:5:1191:U:O4'	2.15	0.47
53:5:1406:U:O2	53:5:1444:G:N2	2.47	0.47
4:9:246:VAL:HG12	4:9:368:ALA:HB2	1.95	0.47
6:B:10:LEU:HA	17:M:58:LYS:HE2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:C:66:ILE:HG23	7:C:70:GLN:HG3	1.97	0.47
14:J:10:SER:HA	14:J:72:MET:HA	1.97	0.47
15:K:9:ARG:HH22	53:5:875:G:P	2.37	0.47
30:f:100:GLN:OE1	30:f:100:GLN:HA	2.15	0.47
44:t:48:LYS:HB2	44:t:58:GLN:HA	1.97	0.47
51:3:43:A:H2'	51:3:44:A:C8	2.50	0.47
51:3:247:U:O2	51:3:247:U:H2'	2.15	0.47
51:3:675:U:H2'	51:3:676:U:C6	2.50	0.47
51:3:1026:A:N6	51:3:1217:G:H1'	2.30	0.47
51:3:1133:A:H3'	51:3:1134:G:H8	1.80	0.47
51:3:1692:A:H2'	51:3:1693:U:C6	2.50	0.47
51:3:2054:C:H2'	51:3:2055:A:C8	2.49	0.47
51:3:2475:C:H2'	51:3:2476:A:O4'	2.15	0.47
51:3:2596:A:N6	51:3:2615:G:O6	2.48	0.47
51:3:2764:U:H1'	51:3:2765:A:H5''	1.97	0.47
53:5:91:C:H2'	53:5:92:G:C8	2.50	0.47
53:5:402:G:H2'	53:5:403:A:H8	1.79	0.47
53:5:602:G:C6	53:5:632:A:N6	2.82	0.47
53:5:1452:C:H2'	53:5:1453:C:C6	2.50	0.47
6:B:18:TRP:HB2	6:B:21:ARG:HB3	1.97	0.46
7:C:96:ARG:NH1	7:C:114:ARG:HD2	2.30	0.46
7:C:124:LEU:HD11	7:C:140:ASP:HB3	1.96	0.46
10:F:50:GLU:O	10:F:54:LYS:HD2	2.15	0.46
17:M:29:ARG:HD3	53:5:1177:U:C4'	2.45	0.46
27:c:42:GLN:HG3	27:c:189:ARG:NH2	2.29	0.46
30:f:79:PHE:HD2	30:f:92:ILE:HD12	1.79	0.46
36:l:54:ILE:HD12	36:l:117:ALA:HB1	1.96	0.46
37:m:70:THR:HG22	37:m:71:ASN:N	2.30	0.46
49:y:3:VAL:HG12	51:3:2022:A:N3	2.30	0.46
51:3:978:G:H2'	51:3:979:U:C6	2.50	0.46
51:3:1115:G:C2	51:3:1116:U:C4	3.02	0.46
51:3:1248:A:O2'	51:3:1249:A:O4'	2.30	0.46
51:3:1604:A:H2'	51:3:1605:A:C8	2.50	0.46
51:3:1815:U:O2'	51:3:1816:A:O4'	2.32	0.46
51:3:1820:U:HO2'	51:3:1821:G:P	2.37	0.46
51:3:1854:A:H5''	51:3:1855:A:OP1	2.15	0.46
51:3:2035:U:H2'	51:3:2036:G:C8	2.50	0.46
51:3:2367:C:H2'	51:3:2368:A:O4'	2.15	0.46
53:5:140:U:H2'	53:5:141:A:H8	1.80	0.46
53:5:317:A:N1	53:5:328:G:N2	2.59	0.46
53:5:352:A:N3	53:5:364:U:O2'	2.44	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1086:U:H2'	53:5:1087:C:C6	2.50	0.46
53:5:1401:A:H2'	53:5:1402:U:C6	2.50	0.46
5:A:70:ASN:O	5:A:73:LYS:HG2	2.14	0.46
5:A:117:LEU:HD11	5:A:196:ILE:HD11	1.97	0.46
6:B:37:ASP:OD1	6:B:38:GLU:N	2.48	0.46
15:K:67:LYS:NZ	15:K:75:GLU:HB3	2.30	0.46
35:k:78:VAL:HG13	35:k:110:LEU:HD23	1.97	0.46
51:3:488:G:N2	51:3:493:A:O2'	2.46	0.46
51:3:1117:U:O2'	51:3:1118:U:OP1	2.30	0.46
51:3:1931:C:H2'	51:3:1932:C:H6	1.80	0.46
51:3:2823:A:H2'	51:3:2825:A:H62	1.80	0.46
53:5:125:A:H2'	53:5:126:U:C6	2.50	0.46
53:5:255:G:N1	53:5:264:C:N3	2.63	0.46
53:5:302:A:H3'	53:5:303:A:H8	1.80	0.46
53:5:734:A:H2'	53:5:735:C:C6	2.49	0.46
53:5:832:G:H2'	53:5:833:G:C8	2.49	0.46
53:5:1194:A:H2'	53:5:1195:G:C8	2.50	0.46
53:5:1197:G:H2'	53:5:1198:C:O4'	2.15	0.46
7:C:97:LEU:O	7:C:101:VAL:HG23	2.16	0.46
8:D:92:VAL:HG12	8:D:118:ALA:HB1	1.98	0.46
13:I:55:ILE:HD12	17:M:34:LEU:HD11	1.97	0.46
30:f:7:GLN:NE2	30:f:61:ASN:OD1	2.46	0.46
41:q:72:LYS:NZ	51:3:1218:G:OP1	2.46	0.46
47:w:55:LEU:O	47:w:59:THR:HG23	2.16	0.46
51:3:171:G:O2'	51:3:2217:G:O2'	2.34	0.46
51:3:1414:C:H1'	51:3:1495:A:H2	1.80	0.46
51:3:1476:C:H2'	51:3:1477:A:C8	2.50	0.46
51:3:2652:U:P	51:3:2653:G:H22	2.38	0.46
53:5:144:U:H2'	53:5:145:G:C8	2.50	0.46
53:5:513:G:HO2'	53:5:514:U:P	2.38	0.46
53:5:589:U:H2'	53:5:590:G:H8	1.80	0.46
53:5:937:G:H2'	53:5:938:U:C6	2.50	0.46
53:5:1130:G:H2'	53:5:1131:A:H8	1.80	0.46
53:5:1406:U:H3	53:5:1444:G:H1	1.60	0.46
4:9:89:ILE:HA	4:9:92:MET:SD	2.56	0.46
16:L:23:PHE:HD2	16:L:66:GLU:HB2	1.80	0.46
25:a:41:LEU:HD21	25:a:66:TYR:HB2	1.97	0.46
27:c:102:LYS:HB3	51:3:694:U:H4'	1.97	0.46
28:d:126:GLY:O	28:d:158:THR:OG1	2.31	0.46
33:i:58:ILE:HD13	33:i:135:MET:HE3	1.98	0.46
42:r:77:ASN:HD21	51:3:26:G:H1'	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:s:38:THR:HA	43:s:41:LYS:HD3	1.96	0.46
51:3:419:A:H2'	51:3:420:A:H8	1.80	0.46
51:3:1105:A:H3'	51:3:1107:C:OP2	2.15	0.46
51:3:1508:G:N2	51:3:1532:A:H1'	2.30	0.46
51:3:2122:G:N2	51:3:2126:A:O4'	2.48	0.46
51:3:2308:U:H2'	51:3:2309:A:C8	2.49	0.46
51:3:2589:G:H22	51:3:2618:C:H2'	1.81	0.46
54:6:5:C:H2'	54:6:6:U:C6	2.51	0.46
7:C:12:ARG:HB3	7:C:35:PRO:HD3	1.97	0.46
21:Q:81:MET:SD	21:Q:82:HIS:N	2.88	0.46
33:i:50:ASN:O	51:3:590:U:O2'	2.34	0.46
35:k:134:GLN:HE21	51:3:673:A:P	2.38	0.46
37:m:36:LYS:HD2	51:3:1685:G:H4'	1.97	0.46
46:v:14:TYR:O	46:v:26:ARG:NH1	2.48	0.46
51:3:60:G:H2'	51:3:61:U:C6	2.51	0.46
51:3:175:A:H2'	51:3:176:U:C6	2.51	0.46
51:3:278:U:O2	51:3:292:G:C6	2.68	0.46
51:3:343:A:H1'	51:3:363:G:C4	2.51	0.46
51:3:657:A:H2'	51:3:657:A:N3	2.31	0.46
51:3:2153:U:H5'	51:3:2154:A:C8	2.51	0.46
51:3:2697:C:OP1	51:3:2876:G:N2	2.28	0.46
51:3:2810:A:C8	51:3:2811:G:N7	2.83	0.46
53:5:246:A:H1'	53:5:248:U:N3	2.30	0.46
53:5:419:A:H5''	53:5:420:A:C2	2.48	0.46
53:5:706:U:H2'	53:5:707:G:H8	1.80	0.46
53:5:1066:U:H2'	53:5:1067:C:C6	2.50	0.46
53:5:1363:U:H2'	53:5:1364:C:C6	2.50	0.46
1:0:31:LEU:O	1:0:35:ARG:HG3	2.16	0.46
6:B:124:ALA:O	6:B:127:ILE:N	2.48	0.46
13:I:45:PRO:O	53:5:1114:A:O2'	2.27	0.46
20:P:74:ARG:HD3	53:5:230:G:O2'	2.16	0.46
35:k:58:LEU:HG	35:k:61:ARG:HH21	1.80	0.46
51:3:44:A:H2'	51:3:45:U:H6	1.80	0.46
51:3:528:U:H2'	51:3:529:G:C8	2.51	0.46
51:3:591:G:H2'	51:3:592:G:H8	1.81	0.46
51:3:1415:A:H2'	51:3:1416:G:C8	2.51	0.46
51:3:1768:G:H2'	51:3:1768:G:OP2	2.16	0.46
51:3:2351:U:H2'	51:3:2352:U:C2	2.50	0.46
51:3:2656:G:H2'	51:3:2657:C:H6	1.80	0.46
52:4:94:A:H2'	52:4:95:G:O4'	2.16	0.46
53:5:887:C:N4	53:5:888:A:H61	2.00	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1146:A:H2'	53:5:1147:U:C6	2.50	0.46
53:5:1229:A:H2'	53:5:1230:G:C8	2.50	0.46
53:5:1482:A:H2'	53:5:1483:C:C6	2.51	0.46
4:9:206:GLU:CD	4:9:208:ASP:H	2.24	0.46
7:C:144:LEU:HB2	7:C:174:PHE:HB3	1.98	0.46
12:H:113:LYS:HA	53:5:1321:G:H3'	1.98	0.46
13:I:38:VAL:O	13:I:86:ASN:ND2	2.49	0.46
13:I:52:LYS:O	53:5:1228:C:H5'	2.16	0.46
14:J:40:SER:HB2	14:J:55:SER:HB2	1.97	0.46
17:M:57:LYS:HD3	17:M:57:LYS:HA	1.76	0.46
23:S:11:LEU:HA	23:S:14:ASN:HD21	1.79	0.46
23:S:26:THR:HG21	53:5:1432:A:O3'	2.15	0.46
26:b:25:PRO:O	26:b:195:GLY:N	2.48	0.46
35:k:31:THR:O	35:k:34:ARG:HB2	2.16	0.46
35:k:60:ARG:HH21	51:3:254:G:H4'	1.79	0.46
35:k:130:LYS:NZ	51:3:671:C:OP2	2.36	0.46
36:l:77:LYS:N	51:3:993:A:OP2	2.40	0.46
41:q:73:HIS:HD2	41:q:80:LEU:CD1	2.27	0.46
46:v:7:LEU:HD12	46:v:8:THR:HG22	1.97	0.46
51:3:251:G:HO2'	51:3:424:G:H1	1.62	0.46
51:3:713:C:H2'	51:3:714:G:C8	2.50	0.46
51:3:1597:U:H2'	51:3:1598:U:C6	2.50	0.46
51:3:1610:U:H2'	51:3:1611:C:H6	1.79	0.46
51:3:1763:G:H4'	51:3:1765:G:O4'	2.15	0.46
51:3:1956:G:H2'	51:3:1957:G:C8	2.51	0.46
51:3:2088:U:H2'	51:3:2089:A:C8	2.44	0.46
53:5:523:U:H2'	53:5:524:C:C6	2.51	0.46
53:5:710:G:HO2'	53:5:711:G:P	2.39	0.46
53:5:948:U:C4	53:5:1204:A:N1	2.83	0.46
53:5:1139:A:H2'	53:5:1140:A:H8	1.78	0.46
8:D:161:ILE:HG13	53:5:9:A:H5'	1.98	0.46
11:G:107:VAL:C	11:G:108:LEU:HD23	2.41	0.46
15:K:42:LEU:HD22	15:K:95:LEU:O	2.16	0.46
35:k:82:LEU:HB3	35:k:116:GLY:HA3	1.98	0.46
43:s:10:PRO:HG3	43:s:29:PHE:HE1	1.81	0.46
51:3:339:U:C2	51:3:346:G:O6	2.69	0.46
51:3:567:U:H4'	51:3:568:G:C8	2.51	0.46
51:3:1346:G:H2'	51:3:1347:A:H8	1.81	0.46
51:3:1479:A:H4'	51:3:1480:A:C4	2.51	0.46
51:3:1716:A:H2'	51:3:1717:C:C6	2.50	0.46
51:3:1967:U:O2'	51:3:1968:C:H5'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1979:G:H2'	51:3:1980:G:C8	2.50	0.46
51:3:2353:G:O6	51:3:2379:G:O6	2.34	0.46
51:3:2774:A:N3	51:3:2774:A:H2'	2.31	0.46
51:3:2893:C:H2'	51:3:2894:G:O4'	2.15	0.46
53:5:513:G:C5	53:5:514:U:C4	3.04	0.46
53:5:721:G:H2'	53:5:722:G:C8	2.51	0.46
53:5:782:G:H2'	53:5:783:G:H8	1.81	0.46
6:B:134:ARG:O	6:B:138:ARG:HG2	2.16	0.46
9:E:147:GLU:HB3	11:G:59:VAL:HG13	1.98	0.46
11:G:37:ALA:HB2	11:G:70:VAL:HG23	1.98	0.46
18:N:62:ARG:HH21	18:N:65:LYS:HE2	1.80	0.46
18:N:63:LEU:O	18:N:67:LEU:HD23	2.16	0.46
25:a:99:ILE:HD13	25:a:109:ILE:HD13	1.98	0.46
27:c:40:VAL:HG12	27:c:101:LEU:HB2	1.98	0.46
35:k:80:LEU:HD21	35:k:98:LEU:HD21	1.97	0.46
42:r:124:LEU:O	42:r:127:LYS:HG2	2.16	0.46
47:w:105:ARG:NH2	51:3:1498:U:H1'	2.30	0.46
51:3:940:A:H2'	51:3:941:C:C6	2.50	0.46
51:3:1382:A:H62	51:3:1405:G:N2	2.12	0.46
51:3:1804:A:C6	51:3:1830:G:C6	3.03	0.46
51:3:2626:A:H2'	51:3:2627:U:C6	2.51	0.46
52:4:96:G:H2'	52:4:97:A:C8	2.51	0.46
53:5:1136:G:H1	53:5:1152:G:H22	1.62	0.46
53:5:1317:A:H2'	53:5:1318:C:C6	2.51	0.46
1:0:19:LEU:N	51:3:127:A:OP2	2.43	0.46
4:9:4:GLU:HB3	4:9:264:LYS:HA	1.97	0.46
4:9:137:LYS:H	4:9:174:SER:HA	1.81	0.46
7:C:67:THR:HG22	7:C:70:GLN:HG2	1.96	0.46
12:H:17:ALA:HB2	12:H:80:ALA:HB1	1.98	0.46
13:I:49:PRO:HG3	53:5:1126:U:H4'	1.98	0.46
18:N:9:ILE:HG23	18:N:10:LYS:HG2	1.97	0.46
25:a:213:ILE:HG23	25:a:218:ARG:HD2	1.97	0.46
25:a:255:ARG:HG3	25:a:261:ARG:HG2	1.96	0.46
30:f:23:ASP:C	30:f:28:HIS:HE2	2.22	0.46
33:i:88:LYS:O	33:i:90:VAL:HG23	2.16	0.46
37:m:12:ALA:HA	37:m:15:VAL:HG22	1.98	0.46
41:q:79:HIS:NE2	51:3:1218:G:H5''	2.31	0.46
43:s:38:THR:O	43:s:41:LYS:HG2	2.16	0.46
51:3:587:U:H2'	51:3:588:G:C8	2.51	0.46
51:3:1311:G:N2	51:3:1314:A:OP2	2.49	0.46
51:3:1436:C:H2'	51:3:1437:A:C8	2.47	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1878:A:H3'	51:3:1879:A:H8	1.80	0.46
51:3:2032:G:H2'	51:3:2033:G:C8	2.51	0.46
51:3:2700:C:H2'	51:3:2701:A:C8	2.51	0.46
53:5:90:G:H2'	53:5:91:C:C6	2.50	0.46
53:5:164:C:H2'	53:5:165:A:C8	2.51	0.46
53:5:1130:G:H2'	53:5:1131:A:C8	2.51	0.46
53:5:1502:G:H2'	53:5:1503:U:C6	2.50	0.46
54:7:59:A:H2'	54:7:62:C:H41	1.81	0.46
4:9:89:ILE:HA	4:9:92:MET:HG2	1.98	0.45
4:9:151:ALA:HB1	4:9:155:ARG:HH21	1.81	0.45
4:9:233:GLU:HA	4:9:272:GLY:H	1.80	0.45
6:B:111:SER:O	6:B:113:MET:N	2.47	0.45
7:C:58:GLN:NE2	53:5:542:G:OP1	2.49	0.45
11:G:108:LEU:HD11	11:G:111:LEU:HD23	1.98	0.45
12:H:86:VAL:O	12:H:90:LEU:HG	2.16	0.45
51:3:40:A:H2'	51:3:41:C:C6	2.51	0.45
51:3:739:G:H1'	51:3:762:A:H61	1.81	0.45
51:3:1552:C:H2'	51:3:1553:G:O4'	2.15	0.45
51:3:2004:G:H2'	51:3:2005:G:C8	2.51	0.45
51:3:2072:C:H1'	51:3:2457:U:H3	1.81	0.45
51:3:2153:U:H5'	51:3:2154:A:N7	2.31	0.45
51:3:2311:G:H2'	51:3:2312:G:C8	2.51	0.45
51:3:2436:G:H4'	51:3:2437:G:C4	2.51	0.45
51:3:2821:U:H2'	51:3:2822:C:O4'	2.16	0.45
53:5:248:U:H2'	53:5:249:U:C6	2.51	0.45
53:5:881:G:N1	53:5:905:U:C2	2.84	0.45
53:5:1131:A:H2'	53:5:1132:G:O4'	2.15	0.45
4:9:140:ILE:HG22	4:9:141:ALA:N	2.29	0.45
4:9:211:PHE:HD2	4:9:294:ALA:HA	1.81	0.45
15:K:127:ARG:HH22	53:5:37:C:H4'	1.82	0.45
25:a:50:GLN:HG3	25:a:52:LYS:H	1.81	0.45
25:a:179:TYR:HB3	25:a:191:LYS:HE2	1.97	0.45
29:e:90:LEU:HD23	29:e:90:LEU:H	1.81	0.45
34:j:21:ILE:HD12	34:j:21:ILE:H	1.81	0.45
40:p:109:VAL:O	40:p:112:VAL:HG22	2.16	0.45
42:r:88:ARG:H	51:3:1648:A:N6	2.14	0.45
43:s:13:THR:OG1	43:s:14:GLU:N	2.49	0.45
51:3:428:U:HO2'	51:3:429:U:P	2.40	0.45
51:3:756:A:H2'	51:3:757:A:C8	2.51	0.45
51:3:1698:A:H61	51:3:2003:C:H42	1.64	0.45
51:3:2034:G:H2'	51:3:2035:U:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2257:U:O2'	51:3:2260:G:OP2	2.30	0.45
51:3:2393:C:H2'	51:3:2394:A:C8	2.51	0.45
51:3:2660:C:H2'	51:3:2661:U:O4'	2.16	0.45
53:5:137:A:H3'	53:5:138:A:H8	1.80	0.45
53:5:150:A:H2'	53:5:151:C:O4'	2.16	0.45
53:5:445:A:N7	53:5:483:U:C4	2.83	0.45
53:5:501:A:H2'	53:5:502:C:C6	2.51	0.45
53:5:578:C:C2	53:5:579:G:H1'	2.51	0.45
9:E:59:ARG:HH12	21:Q:54:ILE:CG1	2.29	0.45
9:E:97:LEU:HG	53:5:658:G:H5''	1.98	0.45
10:F:2:ARG:N	53:5:927:C:OP2	2.49	0.45
25:a:256:THR:HG22	25:a:262:HIS:ND1	2.30	0.45
34:j:88:LYS:HB3	34:j:94:ARG:HE	1.81	0.45
51:3:680:A:H2'	51:3:682:A:N7	2.31	0.45
51:3:1452:G:H2'	51:3:1453:U:C6	2.52	0.45
51:3:1502:A:C2	51:3:1540:G:C2	3.04	0.45
51:3:2599:C:H2'	51:3:2600:G:C8	2.51	0.45
51:3:2657:C:H2'	51:3:2658:U:C6	2.51	0.45
53:5:132:G:H2'	53:5:133:G:H8	1.80	0.45
53:5:207:C:N3	53:5:208:A:N6	2.64	0.45
53:5:503:G:H2'	53:5:504:A:C8	2.51	0.45
53:5:665:G:H2'	53:5:666:U:C6	2.52	0.45
53:5:1007:U:H2'	53:5:1008:G:C8	2.52	0.45
53:5:1087:C:H2'	53:5:1088:C:H6	1.80	0.45
53:5:1193:U:H2'	53:5:1194:A:C8	2.52	0.45
53:5:1482:A:H2'	53:5:1483:C:H6	1.81	0.45
3:2:3:VAL:HG23	3:2:36:GLN:CG	2.46	0.45
4:9:302:HIS:ND1	4:9:392:VAL:HG11	2.31	0.45
5:A:126:SER:HA	5:A:129:LYS:HD2	1.98	0.45
7:C:90:PHE:O	7:C:93:LEU:HB2	2.17	0.45
11:G:41:LYS:HA	11:G:44:ILE:HG12	1.99	0.45
12:H:20:TYR:O	12:H:66:ASN:HB2	2.16	0.45
17:M:43:CYS:HA	17:M:46:GLU:HG2	1.99	0.45
23:S:71:ARG:NH2	53:5:255:G:OP2	2.49	0.45
33:i:56:TYR:CE1	33:i:124:LYS:HG2	2.51	0.45
45:u:39:LYS:HD3	45:u:39:LYS:HA	1.71	0.45
51:3:310:U:H4'	51:3:311:G:C8	2.51	0.45
51:3:496:A:N6	51:3:505:G:H21	2.05	0.45
51:3:827:G:N2	51:3:2079:G:O2'	2.49	0.45
51:3:1614:G:H2'	51:3:1615:G:C8	2.52	0.45
51:3:2025:C:H2'	51:3:2026:A:C8	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2812:U:O2'	51:3:2894:G:N2	2.50	0.45
51:3:2841:A:N1	51:3:2886:A:N6	2.65	0.45
53:5:727:G:O2'	53:5:763:A:OP1	2.32	0.45
53:5:822:A:H2'	53:5:823:C:C6	2.51	0.45
53:5:1011:A:H2'	53:5:1012:A:N3	2.32	0.45
53:5:1074:U:H5''	53:5:1075:G:N7	2.32	0.45
53:5:1448:A:H2'	53:5:1449:G:C8	2.51	0.45
1:0:28:ARG:HH21	1:0:31:LEU:HD21	1.82	0.45
12:H:42:PRO:HG2	12:H:46:VAL:HG21	1.98	0.45
13:I:16:LEU:HD11	13:I:78:ARG:HB2	1.98	0.45
16:L:17:ILE:O	16:L:20:THR:OG1	2.22	0.45
29:e:80:ILE:HG23	29:e:86:PHE:CZ	2.52	0.45
30:f:58:TYR:O	30:f:62:LYS:HE2	2.16	0.45
30:f:95:LYS:NZ	51:3:2226:U:H6	2.15	0.45
39:o:103:TYR:CE1	51:3:1761:C:H5''	2.51	0.45
40:p:91:ARG:HA	40:p:91:ARG:CZ	2.47	0.45
51:3:1027:U:O2	51:3:1198:G:N2	2.29	0.45
51:3:1150:U:O2'	51:3:1151:U:O5'	2.34	0.45
51:3:1260:U:H2'	51:3:1261:U:C6	2.51	0.45
51:3:1427:C:H2'	51:3:1428:U:C6	2.51	0.45
51:3:1461:A:H2'	51:3:1462:A:H8	1.81	0.45
51:3:1535:A:H2'	51:3:1536:C:O4'	2.17	0.45
51:3:1634:A:H2'	51:3:1635:G:H5'	1.99	0.45
51:3:2645:U:H2'	51:3:2646:G:O4'	2.16	0.45
51:3:2793:U:H2'	51:3:2794:U:C6	2.52	0.45
52:4:3:U:H2'	52:4:4:G:C8	2.51	0.45
53:5:372:G:H2'	53:5:373:A:C8	2.52	0.45
53:5:392:A:O2'	53:5:394:U:OP1	2.25	0.45
53:5:472:G:H2'	53:5:473:A:C8	2.52	0.45
53:5:500:G:H2'	53:5:501:A:H8	1.82	0.45
53:5:779:A:OP1	53:5:1496:G:N2	2.49	0.45
53:5:1156:G:H1'	53:5:1157:G:C4	2.52	0.45
4:9:218:THR:HG1	4:9:284:ARG:HE	1.60	0.45
4:9:322:GLY:HA3	4:9:350:MET:SD	2.56	0.45
9:E:7:LEU:HB3	9:E:60:TRP:HZ3	1.82	0.45
21:Q:54:ILE:O	21:Q:54:ILE:HG22	2.17	0.45
25:a:34:GLU:O	25:a:38:LEU:HD23	2.16	0.45
27:c:41:GLU:CD	27:c:189:ARG:HB2	2.42	0.45
27:c:71:THR:HB	27:c:74:ALA:HB2	1.97	0.45
51:3:526:G:O2'	51:3:527:A:O4'	2.26	0.45
51:3:771:C:H2'	51:3:772:C:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1144:C:O2'	51:3:1145:G:N3	2.47	0.45
51:3:1487:U:O2'	51:3:1488:U:OP1	2.26	0.45
51:3:1991:U:H2'	51:3:1992:C:H5'	1.99	0.45
51:3:2537:G:H4'	51:3:2538:A:OP2	2.17	0.45
51:3:2639:G:H2'	51:3:2640:A:H8	1.79	0.45
53:5:462:G:H2'	53:5:463:U:H4'	1.98	0.45
53:5:637:A:N6	53:5:638:A:H61	2.15	0.45
53:5:1229:A:H2'	53:5:1230:G:H8	1.82	0.45
53:5:1283:G:H2'	53:5:1284:A:H8	1.81	0.45
53:5:1422:A:O2'	53:5:1423:C:H5'	2.16	0.45
53:5:1501:G:H2'	53:5:1502:G:C8	2.52	0.45
5:A:151:MET:HA	5:A:151:MET:HE2	1.98	0.45
12:H:7:TYR:HD2	12:H:20:TYR:HE2	1.64	0.45
15:K:112:ARG:HH21	15:K:119:GLY:CA	2.15	0.45
16:L:29:ARG:NH1	53:5:1302:C:O2'	2.49	0.45
26:b:132:PRO:HG3	51:3:2518:C:O2'	2.17	0.45
30:f:42:LYS:HZ3	30:f:47:ARG:HA	1.82	0.45
34:j:62:ILE:HD12	34:j:83:ALA:O	2.16	0.45
43:s:44:PHE:HE2	43:s:50:ILE:HB	1.82	0.45
43:s:48:TYR:HB3	43:s:50:ILE:HG12	1.98	0.45
51:3:449:C:H42	51:3:2419:A:H2	1.62	0.45
51:3:759:U:C4	51:3:760:G:C6	3.05	0.45
51:3:1046:A:O2'	51:3:1187:C:H1'	2.16	0.45
51:3:1346:G:O2'	51:3:1347:A:H5'	2.17	0.45
51:3:1406:A:O2'	51:3:1408:G:N7	2.35	0.45
51:3:1449:G:H2'	51:3:1450:G:C8	2.52	0.45
51:3:1665:G:H21	51:3:1669:A:N6	2.09	0.45
51:3:2299:U:O2'	51:3:2382:A:N3	2.49	0.45
51:3:2638:G:C8	51:3:2897:G:C4	3.05	0.45
51:3:2865:U:H2'	51:3:2866:A:C8	2.52	0.45
51:3:2896:G:N3	51:3:2896:G:H2'	2.31	0.45
53:5:412:G:H2'	53:5:413:G:C8	2.47	0.45
53:5:719:G:O2'	53:5:720:U:H4'	2.17	0.45
53:5:923:G:O2'	53:5:1508:C:OP1	2.31	0.45
4:9:223:GLY:O	53:5:353:G:O2'	2.30	0.45
5:A:41:MET:HE1	5:A:208:PRO:HB3	1.99	0.45
7:C:201:LYS:HD2	53:5:9:A:N7	2.32	0.45
13:I:59:ARG:HD2	13:I:67:SER:OG	2.17	0.45
13:I:98:ILE:HD11	13:I:102:VAL:HG12	1.98	0.45
18:N:37:THR:HG22	51:3:750:A:N3	2.32	0.45
26:b:80:HIS:C	26:b:81:LEU:HD12	2.42	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:j:36:GLY:O	34:j:109:ARG:HD2	2.17	0.45
41:q:35:LEU:HB2	41:q:55:VAL:HG23	1.98	0.45
46:v:28:LYS:HB3	46:v:28:LYS:HE3	1.83	0.45
49:y:12:ARG:CZ	49:y:12:ARG:HB3	2.47	0.45
50:z:36:LYS:HB3	50:z:47:HIS:CE1	2.52	0.45
51:3:71:C:H2'	51:3:72:G:C8	2.52	0.45
51:3:545:C:H2'	51:3:546:U:C6	2.52	0.45
51:3:642:A:OP2	51:3:655:G:N1	2.37	0.45
51:3:1082:A:H1'	51:3:1083:A:OP2	2.16	0.45
51:3:1296:G:H22	51:3:2019:G:H2'	1.81	0.45
51:3:1901:C:H2'	51:3:1902:C:C6	2.52	0.45
51:3:2267:G:H2'	51:3:2268:C:C6	2.51	0.45
51:3:2691:C:O2	51:3:2691:C:H2'	2.17	0.45
53:5:407:A:N6	53:5:427:A:H62	2.09	0.45
53:5:463:U:H2'	53:5:463:U:O2	2.16	0.45
53:5:917:G:H2'	53:5:918:A:C8	2.52	0.45
53:5:1313:A:O2'	54:7:41:C:O2'	2.28	0.45
53:5:1380:G:N3	53:5:1493:A:O2'	2.47	0.45
53:5:1389:U:H2'	53:5:1390:G:C8	2.51	0.45
4:9:223:GLY:HA3	53:5:56:A:C6	2.51	0.45
4:9:339:THR:OG1	54:6:67:C:H5'	2.16	0.45
8:D:166:ILE:HD11	8:D:191:MET:HB3	1.99	0.45
11:G:39:LYS:NZ	53:5:588:U:OP1	2.39	0.45
11:G:46:GLU:HA	11:G:49:VAL:HG12	1.99	0.45
21:Q:69:LYS:HE2	53:5:716:C:H1'	1.99	0.45
22:R:19:VAL:HA	22:R:22:MET:HG3	1.99	0.45
42:r:20:VAL:HG11	42:r:43:ALA:HB3	1.97	0.45
42:r:21:CYS:O	42:r:25:VAL:HG23	2.16	0.45
44:t:13:ILE:O	44:t:18:LYS:HE3	2.17	0.45
51:3:336:C:H2'	51:3:337:U:H6	1.82	0.45
51:3:720:A:N3	51:3:724:A:N6	2.65	0.45
51:3:944:U:O2'	51:3:945:U:OP1	2.33	0.45
51:3:994:U:H4'	51:3:995:A:O5'	2.16	0.45
51:3:1077:G:O2'	51:3:1078:C:OP1	2.31	0.45
51:3:1591:C:OP2	51:3:1592:A:H2'	2.17	0.45
51:3:1615:G:H2'	51:3:1616:G:C8	2.51	0.45
51:3:2224:A:H2'	51:3:2225:G:C8	2.52	0.45
51:3:2486:A:O2'	51:3:2487:U:OP1	2.34	0.45
51:3:2615:G:H2'	51:3:2616:G:C8	2.52	0.45
51:3:2844:U:H2'	51:3:2845:U:C6	2.49	0.45
53:5:195:U:H2'	53:5:196:G:C8	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1288:C:H2'	53:5:1289:U:C6	2.52	0.45
53:5:1359:C:H2'	53:5:1360:G:H8	1.82	0.45
53:5:1481:U:O2'	53:5:1482:A:H5'	2.17	0.45
4:9:4:GLU:OE2	4:9:6:PHE:HB2	2.17	0.45
14:J:75:VAL:O	14:J:101:THR:OG1	2.31	0.45
17:M:42:LEU:HA	17:M:45:ARG:HG2	1.98	0.45
24:T:15:LEU:C	24:T:19:LYS:HZ2	2.25	0.45
25:a:265:VAL:HG12	51:3:1850:C:H4'	1.99	0.45
51:3:633:G:N2	51:3:692:U:O2	2.40	0.45
51:3:758:C:H2'	51:3:759:U:H6	1.82	0.45
51:3:763:G:O2'	51:3:765:A:O4'	2.35	0.45
51:3:1187:C:H2'	51:3:1188:C:H6	1.81	0.45
51:3:1294:G:H8	51:3:1294:G:OP2	2.00	0.45
51:3:1399:G:H2'	51:3:1400:U:H5''	1.99	0.45
51:3:1716:A:H2'	51:3:1717:C:H6	1.82	0.45
51:3:1938:U:H2'	51:3:1939:A:C8	2.50	0.45
51:3:2625:U:C2	51:3:2626:A:C8	3.05	0.45
51:3:2647:A:H2'	51:3:2648:A:O4'	2.16	0.45
53:5:29:G:H1	53:5:553:C:H42	1.65	0.45
53:5:111:A:OP1	53:5:603:U:O2'	2.34	0.45
53:5:194:U:H3'	53:5:195:U:H5''	1.99	0.45
53:5:1333:C:O2'	53:5:1335:G:N7	2.39	0.45
54:6:59:A:H2'	54:6:62:C:H41	1.81	0.45
54:7:5:C:H2'	54:7:6:U:C6	2.51	0.45
4:9:152:GLU:HA	4:9:155:ARG:HD2	1.99	0.44
4:9:307:ALA:HA	4:9:390:THR:HG22	1.99	0.44
9:E:106:GLN:NE2	21:Q:46:ILE:O	2.49	0.44
10:F:120:ALA:O	10:F:124:ILE:HG12	2.17	0.44
22:R:19:VAL:HG21	22:R:44:PHE:CE1	2.52	0.44
26:b:18:THR:OG1	26:b:19:THR:N	2.50	0.44
27:c:38:VAL:HA	27:c:41:GLU:CD	2.42	0.44
27:c:105:LYS:O	27:c:109:THR:HG23	2.16	0.44
51:3:528:U:H2'	51:3:529:G:H8	1.81	0.44
51:3:684:A:H2'	51:3:685:G:H8	1.81	0.44
51:3:832:C:H2'	51:3:833:C:C6	2.52	0.44
51:3:862:U:H4'	51:3:863:U:C5	2.51	0.44
51:3:869:U:H2'	51:3:870:A:C8	2.51	0.44
51:3:1524:C:HO2'	51:3:1525:G:P	2.40	0.44
51:3:1619:A:H2'	51:3:1620:A:C8	2.52	0.44
51:3:2514:U:OP2	51:3:2584:G:N1	2.49	0.44
53:5:536:U:H2'	53:5:537:A:H8	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:R:34:TRP:HB3	22:R:50:ALA:O	2.17	0.44
27:c:169:GLU:O	27:c:173:SER:OG	2.34	0.44
42:r:34:ASN:OD1	42:r:35:ILE:N	2.50	0.44
47:w:23:LYS:HE2	47:w:51:LEU:HD21	1.99	0.44
51:3:575:C:H2'	51:3:576:A:C8	2.52	0.44
51:3:645:C:H2'	51:3:646:A:H8	1.83	0.44
51:3:717:U:H2'	51:3:718:U:H6	1.81	0.44
53:5:67:U:H2'	53:5:68:C:C6	2.53	0.44
53:5:514:U:H2'	53:5:515:G:C8	2.52	0.44
53:5:1359:C:H2'	53:5:1360:G:C8	2.52	0.44
53:5:1403:A:H2'	53:5:1404:U:C6	2.52	0.44
4:9:8:ARG:HD3	4:9:8:ARG:H	1.81	0.44
5:A:46:GLU:HB2	5:A:47:PRO:HD3	2.00	0.44
5:A:59:GLU:O	5:A:62:ARG:HG2	2.17	0.44
5:A:117:LEU:HD21	5:A:196:ILE:HD11	2.00	0.44
13:I:18:SER:OG	13:I:19:TYR:N	2.50	0.44
14:J:104:ASN:OD1	14:J:105:GLU:N	2.50	0.44
26:b:65:PRO:HB3	51:3:2794:U:O2	2.17	0.44
26:b:151:ARG:HG3	51:3:2060:G:OP2	2.17	0.44
38:n:30:LEU:HD23	38:n:89:VAL:HG21	1.99	0.44
45:u:86:PHE:HE1	45:u:94:ARG:HB2	1.82	0.44
51:3:69:U:N3	51:3:70:G:N7	2.65	0.44
51:3:80:U:O4	51:3:109:G:O6	2.35	0.44
51:3:426:U:O2	51:3:426:U:H2'	2.17	0.44
51:3:503:G:H2'	51:3:504:G:H8	1.83	0.44
51:3:511:U:H2'	51:3:512:G:O4'	2.17	0.44
51:3:1834:U:H2'	51:3:1835:G:O4'	2.17	0.44
51:3:1926:A:N1	53:5:1470:U:O2'	2.49	0.44
51:3:2224:A:H2'	51:3:2225:G:H8	1.82	0.44
51:3:2269:C:H2'	51:3:2270:U:H6	1.82	0.44
53:5:672:A:N6	53:5:712:A:H61	2.15	0.44
53:5:692:A:O2'	53:5:693:A:O5'	2.29	0.44
53:5:706:U:H2'	53:5:707:G:C8	2.52	0.44
53:5:912:G:H2'	53:5:913:A:C8	2.52	0.44
53:5:1070:G:H2'	53:5:1071:A:O4'	2.17	0.44
53:5:1378:C:H1'	53:5:1474:A:N6	2.28	0.44
6:B:18:TRP:CH2	17:M:56:VAL:HG22	2.53	0.44
9:E:92:ARG:HH22	21:Q:84:ARG:HH12	1.65	0.44
11:G:34:THR:HG22	11:G:71:THR:HB	1.99	0.44
13:I:58:ILE:HG12	17:M:41:ARG:NE	2.32	0.44
13:I:79:LEU:HD22	53:5:1117:U:C4	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:b:157:GLN:OE1	51:3:2060:G:O2'	2.33	0.44
27:c:33:PRO:HA	27:c:36:ASP:OD1	2.17	0.44
51:3:164:A:H1'	51:3:2216:U:H1'	1.99	0.44
51:3:880:C:H4'	51:3:881:A:C5	2.52	0.44
51:3:984:C:H2'	51:3:985:A:C8	2.53	0.44
51:3:1045:A:N3	51:3:1188:C:O2'	2.50	0.44
51:3:1069:G:H2'	51:3:1070:U:O4'	2.18	0.44
51:3:1159:C:H2'	51:3:1160:G:O4'	2.18	0.44
51:3:1459:A:H2'	51:3:1460:G:C8	2.53	0.44
51:3:1494:U:O2	51:3:1550:G:N2	2.50	0.44
51:3:1544:G:H2'	51:3:1545:A:H8	1.82	0.44
51:3:1603:A:H2'	51:3:1604:A:H8	1.82	0.44
51:3:1653:C:N4	51:3:1654:G:O6	2.50	0.44
51:3:2279:G:H2'	51:3:2280:U:C6	2.53	0.44
51:3:2678:A:H2'	51:3:2679:G:H8	1.83	0.44
52:4:71:A:H3'	52:4:72:A:H8	1.82	0.44
53:5:543:C:H2'	53:5:544:A:H8	1.83	0.44
53:5:651:G:N7	53:5:749:G:N2	2.65	0.44
53:5:949:G:H2'	53:5:950:C:C6	2.52	0.44
6:B:11:ARG:NE	6:B:183:ALA:O	2.48	0.44
6:B:132:PRO:HG2	6:B:135:THR:HG22	2.00	0.44
7:C:171:ASN:OD1	7:C:171:ASN:N	2.50	0.44
21:Q:73:ARG:HA	21:Q:76:THR:HG22	1.99	0.44
21:Q:89:ALA:HA	21:Q:92:ARG:HD3	2.00	0.44
24:T:31:ARG:NH2	53:5:715:A:O2'	2.51	0.44
26:b:70:PHE:CZ	26:b:81:LEU:HD11	2.50	0.44
29:e:22:LYS:HD2	29:e:22:LYS:HA	1.75	0.44
51:3:44:A:H2'	51:3:45:U:C6	2.53	0.44
51:3:422:A:O2'	51:3:423:C:OP1	2.31	0.44
51:3:503:G:H2'	51:3:504:G:C8	2.52	0.44
51:3:597:C:C2	51:3:598:G:N7	2.85	0.44
51:3:893:A:H2'	51:3:894:G:C8	2.52	0.44
51:3:1551:U:H2'	51:3:1552:C:H6	1.80	0.44
51:3:1635:G:H2'	51:3:1636:U:C6	2.51	0.44
51:3:2032:G:C2	51:3:2033:G:C5	3.06	0.44
53:5:541:C:H2'	53:5:542:G:C8	2.50	0.44
53:5:962:G:OP2	53:5:963:U:H2'	2.18	0.44
53:5:1010:A:H8	53:5:1010:A:OP1	2.01	0.44
53:5:1298:U:H2'	53:5:1299:C:H6	1.82	0.44
54:6:51:G:H1	54:6:65:C:H42	1.65	0.44
7:C:11:SER:OG	7:C:16:PHE:O	2.30	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:E:22:ASN:O	9:E:26:GLN:HG2	2.18	0.44
12:H:34:ARG:HG2	53:5:1121:U:H3	1.83	0.44
15:K:115:LEU:HG	15:K:116:ASP:H	1.83	0.44
26:b:126:TRP:CG	26:b:164:LYS:HB3	2.53	0.44
35:k:96:ALA:HA	35:k:99:ILE:HG12	1.98	0.44
42:r:17:ALA:HA	42:r:20:VAL:HG22	1.99	0.44
43:s:64:THR:HA	43:s:74:LEU:HA	2.00	0.44
51:3:319:G:O6	51:3:390:A:N6	2.51	0.44
51:3:1249:A:O3'	51:3:1250:A:H8	2.01	0.44
51:3:2079:G:H2'	51:3:2080:C:C6	2.52	0.44
51:3:2233:A:H4'	51:3:2234:C:H6	1.82	0.44
51:3:2342:U:H1'	51:3:2343:A:OP2	2.17	0.44
51:3:2438:A:H2'	51:3:2438:A:N3	2.33	0.44
51:3:2484:A:H2'	51:3:2485:U:C6	2.52	0.44
52:4:61:A:H2'	52:4:62:G:C8	2.52	0.44
53:5:91:C:H2'	53:5:92:G:H8	1.83	0.44
53:5:335:C:H2'	53:5:336:U:C6	2.53	0.44
53:5:368:C:N4	53:5:385:A:H62	2.15	0.44
53:5:943:C:H2'	53:5:944:A:C8	2.52	0.44
53:5:1402:U:H2'	53:5:1403:A:C8	2.53	0.44
54:6:63:U:H2'	54:6:64:G:C8	2.53	0.44
54:7:24:A:H2'	54:7:25:G:C8	2.53	0.44
3:2:11:CYS:HB3	3:2:14:CYS:SG	2.58	0.44
7:C:54:LEU:HD23	7:C:54:LEU:HA	1.78	0.44
9:E:103:LYS:HE3	53:5:837:G:C6	2.53	0.44
11:G:120:ASP:H	11:G:123:MET:HE1	1.82	0.44
14:J:25:VAL:HG22	14:J:59:ALA:HB1	2.00	0.44
15:K:25:HIS:ND1	15:K:39:TYR:HB3	2.33	0.44
16:L:79:HIS:ND1	16:L:80:LEU:HD22	2.32	0.44
23:S:25:LYS:O	23:S:29:LYS:HG3	2.17	0.44
29:e:83:THR:HG1	29:e:84:GLN:CD	2.24	0.44
30:f:94:THR:O	30:f:98:ILE:HG12	2.18	0.44
34:j:5:MET:HA	34:j:21:ILE:O	2.18	0.44
46:v:29:TRP:CE3	51:3:432:G:H1'	2.52	0.44
51:3:191:G:H2'	51:3:192:U:O4'	2.18	0.44
51:3:707:C:C4	51:3:708:C:N4	2.86	0.44
51:3:915:A:OP2	51:3:936:G:N2	2.50	0.44
51:3:1505:G:HO2'	51:3:1594:G:HO2'	1.58	0.44
51:3:1691:U:H2'	51:3:1692:A:C8	2.53	0.44
51:3:1797:C:H5''	51:3:1835:G:N2	2.33	0.44
51:3:2750:A:H2'	51:3:2751:C:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:123:U:C2	53:5:223:G:N2	2.86	0.44
53:5:319:U:O4	53:5:325:A:N6	2.51	0.44
53:5:457:A:H2'	53:5:458:G:H8	1.83	0.44
53:5:818:A:H2'	53:5:819:G:C8	2.53	0.44
53:5:1047:U:H2'	53:5:1048:G:H8	1.83	0.44
53:5:1408:A:H2'	53:5:1409:A:N9	2.32	0.44
11:G:67:LYS:HG2	53:5:650:A:C5	2.53	0.44
25:a:48:ASN:HD21	51:3:1819:G:H1'	1.82	0.44
27:c:182:HIS:O	27:c:186:VAL:HG13	2.18	0.44
30:f:42:LYS:HZ2	30:f:47:ARG:HD2	1.83	0.44
30:f:79:PHE:CZ	30:f:96:GLN:HG3	2.53	0.44
35:k:71:GLY:C	35:k:72:PHE:HD2	2.26	0.44
37:m:3:TYR:OH	51:3:784:A:N7	2.50	0.44
40:p:57:ARG:HH22	40:p:92:LYS:NZ	2.14	0.44
40:p:75:TYR:O	40:p:79:ILE:HG12	2.18	0.44
51:3:445:C:H2'	51:3:446:A:C8	2.52	0.44
51:3:1061:A:H2'	51:3:1062:A:H8	1.82	0.44
51:3:1310:U:O4	51:3:1314:A:N7	2.51	0.44
51:3:2532:G:H2'	51:3:2533:A:C8	2.53	0.44
51:3:2564:C:H5''	51:3:2565:G:C8	2.53	0.44
53:5:473:A:H2'	53:5:474:G:C8	2.53	0.44
53:5:831:C:N3	53:5:847:G:N1	2.66	0.44
53:5:858:A:H2'	53:5:859:A:C8	2.53	0.44
53:5:1448:A:O2'	53:5:1449:G:O4'	2.31	0.44
6:B:40:ILE:HD11	6:B:44:PHE:CZ	2.53	0.44
12:H:116:LYS:HG2	53:5:1343:G:H5''	2.00	0.44
25:a:231:SER:N	51:3:1833:G:OP1	2.51	0.44
33:i:30:LYS:HA	33:i:33:VAL:HG22	1.99	0.44
34:j:72:LYS:NZ	51:3:2737:G:OP2	2.51	0.44
37:m:103:LEU:HG	37:m:114:ALA:HA	2.00	0.44
40:p:82:LEU:HB3	40:p:88:GLU:OE2	2.18	0.44
42:r:42:LYS:HE3	51:3:2017:G:H4'	1.99	0.44
46:v:22:LYS:HD3	46:v:22:LYS:HA	1.89	0.44
51:3:24:U:H2'	51:3:25:G:C8	2.47	0.44
51:3:43:A:HO2'	51:3:44:A:P	2.38	0.44
51:3:192:U:H2'	51:3:193:G:O4'	2.18	0.44
51:3:1137:C:H2'	51:3:1138:A:C8	2.53	0.44
51:3:1323:A:H2'	51:3:1324:A:C8	2.53	0.44
51:3:2295:A:C8	51:3:2297:G:C8	3.06	0.44
51:3:2321:C:H2'	51:3:2322:G:C8	2.53	0.44
51:3:2572:A:H2'	51:3:2573:A:O4'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2738:U:H2'	51:3:2739:C:C6	2.53	0.44
53:5:688:G:H2'	53:5:689:U:C6	2.53	0.44
53:5:932:A:H1'	53:5:1354:G:H1	1.83	0.44
53:5:1471:C:H2'	53:5:1472:G:C8	2.53	0.44
53:5:1497:U:H2'	53:5:1498:G:H8	1.82	0.44
5:A:169:LEU:HD23	5:A:169:LEU:H	1.83	0.43
6:B:134:ARG:O	6:B:137:MET:HG2	2.18	0.43
7:C:7:ILE:CG1	7:C:111:ARG:HH22	2.31	0.43
8:D:195:THR:O	8:D:199:ILE:HG12	2.17	0.43
10:F:3:LYS:NZ	53:5:1352:A:N3	2.64	0.43
10:F:23:THR:O	10:F:26:ILE:HG22	2.17	0.43
10:F:45:ALA:N	10:F:116:LEU:HD11	2.33	0.43
23:S:43:ASN:O	23:S:47:VAL:HG23	2.18	0.43
24:T:43:ARG:NH2	53:5:1505:G:O6	2.51	0.43
30:f:94:THR:O	30:f:97:ILE:HG12	2.17	0.43
35:k:113:LYS:HZ2	35:k:130:LYS:HD2	1.83	0.43
37:m:19:ARG:NH2	37:m:68:LEU:HG	2.33	0.43
40:p:64:LEU:CD1	40:p:92:LYS:HB3	2.48	0.43
47:w:100:LYS:O	47:w:104:LYS:HG3	2.18	0.43
51:3:575:C:H2'	51:3:576:A:H8	1.83	0.43
51:3:1213:U:H2'	51:3:1214:U:C6	2.53	0.43
51:3:1862:A:H2'	51:3:1863:G:C8	2.53	0.43
51:3:2011:G:C4	51:3:2012:A:C8	3.06	0.43
51:3:2858:A:H2'	51:3:2859:U:C6	2.53	0.43
53:5:657:G:H2'	53:5:658:G:C8	2.52	0.43
54:7:51:G:H1	54:7:65:C:H42	1.65	0.43
4:9:261:MET:HB3	4:9:264:LYS:HB2	2.00	0.43
40:p:93:VAL:HA	40:p:96:GLU:OE2	2.18	0.43
43:s:13:THR:HG22	43:s:16:VAL:HG23	1.99	0.43
47:w:49:ARG:HH21	51:3:77:G:H5'	1.83	0.43
49:y:28:SER:N	49:y:37:LYS:O	2.51	0.43
51:3:79:U:H2'	51:3:80:U:C6	2.53	0.43
51:3:240:C:H2'	51:3:241:C:C6	2.54	0.43
51:3:1330:U:H5'	51:3:1642:G:P	2.58	0.43
51:3:1500:A:H2'	51:3:1501:U:C6	2.53	0.43
51:3:1852:G:O6	51:3:1903:A:N6	2.52	0.43
51:3:1972:C:H3'	51:3:1973:U:H2'	2.00	0.43
51:3:2126:A:N6	51:3:2176:G:H1'	2.33	0.43
51:3:2384:A:H2'	51:3:2385:A:O4'	2.18	0.43
51:3:2727:G:H4'	51:3:2850:G:H4'	1.99	0.43
53:5:23:G:H2'	53:5:24:C:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:615:G:H2'	53:5:616:C:C6	2.53	0.43
53:5:1182:C:H2'	53:5:1183:C:C6	2.53	0.43
3:2:5:ALA:N	51:3:2474:C:OP1	2.51	0.43
4:9:20:HIS:CG	4:9:21:ILE:N	2.86	0.43
4:9:35:VAL:HG12	4:9:186:GLU:HG2	1.99	0.43
4:9:279:LEU:HD12	4:9:282:VAL:HG21	2.01	0.43
22:R:81:LYS:HB2	53:5:1201:C:H4'	1.98	0.43
25:a:149:ASN:ND2	25:a:199:THR:OG1	2.51	0.43
26:b:5:GLY:HA2	26:b:208:ARG:HA	2.01	0.43
27:c:188:VAL:O	27:c:192:MET:HG3	2.18	0.43
38:n:8:ARG:HA	38:n:11:ARG:HE	1.83	0.43
41:q:22:VAL:O	41:q:89:TYR:HB2	2.18	0.43
43:s:13:THR:H	43:s:16:VAL:HB	1.82	0.43
51:3:230:G:H1'	51:3:232:A:H61	1.82	0.43
51:3:586:G:C6	51:3:587:U:C4	3.06	0.43
51:3:610:G:H2'	51:3:611:A:C8	2.53	0.43
51:3:1028:C:H2'	51:3:1029:A:C8	2.44	0.43
51:3:1332:A:H2'	51:3:1333:C:C6	2.53	0.43
51:3:1833:G:H2'	51:3:1834:U:C6	2.53	0.43
51:3:2081:U:H2'	51:3:2082:U:C6	2.54	0.43
53:5:165:A:H2'	53:5:166:U:O4'	2.19	0.43
53:5:249:U:H1'	53:5:271:G:H21	1.83	0.43
53:5:447:G:N1	53:5:481:U:O4	2.50	0.43
53:5:448:A:N6	53:5:477:U:H2'	2.33	0.43
53:5:747:C:H2'	53:5:748:U:C6	2.53	0.43
53:5:1462:G:HO2'	53:5:1463:A:P	2.40	0.43
54:7:63:U:H2'	54:7:64:G:C8	2.53	0.43
4:9:331:PHE:HB2	4:9:338:VAL:HG23	1.99	0.43
7:C:47:MET:N	7:C:47:MET:SD	2.91	0.43
14:J:113:GLY:HA2	53:5:712:A:H2	1.84	0.43
15:K:3:THR:O	15:K:6:GLN:HG2	2.17	0.43
26:b:180:ARG:N	26:b:194:SER:OG	2.51	0.43
27:c:6:LEU:HA	27:c:127:LEU:HB2	2.01	0.43
29:e:12:ASP:H	29:e:16:VAL:HB	1.83	0.43
40:p:50:ARG:NH2	51:3:1029:A:OP2	2.52	0.43
42:r:3:ALA:CB	42:r:107:LEU:HB3	2.49	0.43
51:3:244:G:H5''	51:3:245:U:H2'	2.00	0.43
51:3:251:G:O2'	51:3:424:G:N1	2.46	0.43
51:3:450:C:H4'	51:3:1885:G:H21	1.83	0.43
51:3:450:C:H2'	51:3:451:A:H8	1.83	0.43
51:3:710:A:O2'	51:3:711:A:O4'	2.26	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1382:A:H62	51:3:1405:G:H21	1.67	0.43
51:3:1387:A:H3'	51:3:1388:G:H5''	2.00	0.43
51:3:1695:G:H2'	51:3:1696:C:O4'	2.18	0.43
51:3:2572:A:C2	51:3:2656:G:H5'	2.53	0.43
53:5:358:G:N2	53:5:361:U:OP2	2.43	0.43
53:5:1154:A:O2'	53:5:1155:A:O5'	2.36	0.43
53:5:1440:U:H2'	53:5:1441:C:C6	2.53	0.43
4:9:126:VAL:HG23	4:9:128:VAL:HG23	1.99	0.43
7:C:84:ASN:HD21	7:C:86:ALA:HB3	1.83	0.43
8:D:186:ASN:C	8:D:191:MET:HE1	2.44	0.43
9:E:88:ILE:HG13	21:Q:92:ARG:HH12	1.83	0.43
11:G:38:SER:HB2	11:G:41:LYS:HE2	2.00	0.43
22:R:84:THR:H	53:5:1202:A:H2	1.66	0.43
25:a:98:LEU:HB2	25:a:108:TYR:CE1	2.53	0.43
27:c:159:PHE:CE1	27:c:198:LEU:HD12	2.53	0.43
34:j:8:LEU:HD11	34:j:84:CYS:SG	2.58	0.43
36:l:36:ALA:HB3	36:l:98:LYS:O	2.19	0.43
40:p:12:ARG:HH12	51:3:1281:A:H3'	1.83	0.43
49:y:40:HIS:NE2	51:3:2888:U:OP2	2.52	0.43
51:3:103:G:H4'	51:3:104:A:H5'	1.99	0.43
51:3:118:G:OP2	51:3:120:A:O2'	2.35	0.43
51:3:266:A:OP2	51:3:266:A:H8	2.01	0.43
51:3:985:A:N6	51:3:986:G:O6	2.52	0.43
51:3:1254:U:H2'	51:3:1255:G:C4	2.53	0.43
51:3:1762:A:N1	51:3:2724:U:H1'	2.33	0.43
51:3:1886:C:H2'	51:3:1887:U:H6	1.83	0.43
51:3:2599:C:H2'	51:3:2600:G:H8	1.82	0.43
53:5:48:C:O4'	53:5:361:U:N3	2.52	0.43
53:5:255:G:O6	53:5:264:C:N4	2.52	0.43
53:5:513:G:C6	53:5:535:A:N1	2.86	0.43
53:5:1112:U:H2'	53:5:1113:U:C6	2.53	0.43
53:5:1269:U:H2'	53:5:1270:C:C6	2.53	0.43
4:9:90:LYS:HE2	54:6:66:C:OP1	2.19	0.43
6:B:128:GLU:HG3	6:B:193:GLN:O	2.19	0.43
7:C:117:VAL:O	7:C:130:ASP:HA	2.18	0.43
9:E:101:ASN:O	9:E:103:LYS:N	2.49	0.43
10:F:35:LYS:HE3	10:F:35:LYS:HB3	1.92	0.43
12:H:9:LEU:HD12	12:H:9:LEU:HA	1.86	0.43
13:I:59:ARG:NH1	13:I:69:GLU:OE2	2.51	0.43
14:J:28:SER:HB2	14:J:34:VAL:HA	2.00	0.43
14:J:34:VAL:HG12	53:5:681:U:O2	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:L:64:LYS:HA	16:L:64:LYS:HE3	2.01	0.43
25:a:135:SER:HB3	25:a:199:THR:HG22	2.00	0.43
30:f:77:LEU:HD21	30:f:79:PHE:CE1	2.54	0.43
30:f:95:LYS:HZ1	51:3:2226:U:H6	1.66	0.43
33:i:80:HIS:HB2	33:i:87:ILE:HG12	2.00	0.43
34:j:3:SER:OG	34:j:4:PHE:N	2.52	0.43
34:j:31:ARG:NH1	51:3:2003:C:OP2	2.51	0.43
35:k:137:LYS:O	35:k:140:GLU:HG3	2.18	0.43
38:n:78:ALA:O	38:n:82:VAL:HG13	2.18	0.43
43:s:53:LEU:HD23	43:s:54:LYS:HG3	2.00	0.43
45:u:30:SER:HB2	51:3:2269:C:C5	2.54	0.43
47:w:13:GLU:O	47:w:16:VAL:HG12	2.19	0.43
49:y:4:GLN:HG2	51:3:2623:U:H1'	2.01	0.43
51:3:515:A:H1'	51:3:517:G:H5''	2.01	0.43
51:3:608:A:H2'	51:3:609:U:O4'	2.19	0.43
51:3:729:U:O2	51:3:803:G:O6	2.37	0.43
51:3:858:A:H2'	51:3:859:G:H8	1.83	0.43
51:3:1727:U:O4	51:3:1983:U:O2'	2.28	0.43
51:3:2268:C:H2'	51:3:2269:C:H6	1.83	0.43
51:3:2613:U:H2'	51:3:2614:U:C6	2.54	0.43
51:3:2841:A:C6	51:3:2886:A:N6	2.87	0.43
53:5:597:C:H2'	53:5:598:U:C6	2.54	0.43
53:5:606:A:H2'	53:5:607:A:O4'	2.18	0.43
53:5:989:A:N6	53:5:1191:U:H4'	2.33	0.43
53:5:1136:G:N1	53:5:1152:G:N2	2.64	0.43
53:5:1141:U:O2'	53:5:1142:G:O5'	2.36	0.43
53:5:1323:A:N6	53:5:1348:G:H21	2.08	0.43
2:1:25:TYR:HB3	2:1:33:LYS:HE2	2.00	0.43
2:1:36:LYS:O	2:1:39:ARG:HG2	2.19	0.43
5:A:111:ARG:HE	53:5:1091:C:P	2.41	0.43
11:G:23:ASN:O	11:G:26:ARG:HG3	2.19	0.43
26:b:177:GLN:HG3	26:b:212:LYS:HG3	1.99	0.43
26:b:181:ILE:HA	26:b:193:VAL:HA	2.00	0.43
28:d:163:ASP:OD1	28:d:164:SER:N	2.52	0.43
34:j:68:GLY:HA3	34:j:78:LYS:HA	2.00	0.43
51:3:40:A:H2'	51:3:41:C:H6	1.84	0.43
51:3:84:G:N1	51:3:104:A:OP2	2.42	0.43
51:3:657:A:H3'	51:3:658:G:C8	2.53	0.43
51:3:1429:G:H2'	51:3:1430:U:C6	2.53	0.43
51:3:1700:G:H3'	51:3:1701:G:H8	1.83	0.43
51:3:1794:A:H2'	51:3:1795:C:H6	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2750:A:H2'	51:3:2751:C:H6	1.84	0.43
52:4:7:G:H1	52:4:101:C:H42	1.67	0.43
52:4:23:A:H2'	52:4:24:A:H8	1.84	0.43
53:5:111:A:H5''	53:5:602:G:H21	1.84	0.43
53:5:976:U:H2'	53:5:977:U:C5	2.54	0.43
53:5:1261:A:H2'	53:5:1262:A:C8	2.54	0.43
53:5:1399:U:O4	53:5:1400:A:N6	2.51	0.43
53:5:1488:A:H2'	53:5:1489:C:C6	2.53	0.43
54:6:41:C:H2'	54:6:42:C:C6	2.54	0.43
4:9:16:GLY:HA3	4:9:99:MET:SD	2.58	0.43
5:A:25:GLU:OE2	5:A:253:GLU:N	2.51	0.43
7:C:9:LYS:HE2	7:C:9:LYS:HB3	1.88	0.43
15:K:43:LYS:HA	53:5:359:A:OP1	2.19	0.43
23:S:11:LEU:HA	23:S:14:ASN:ND2	2.34	0.43
30:f:79:PHE:HZ	30:f:97:ILE:HG22	1.84	0.43
40:p:47:ARG:HH12	51:3:594:G:H4'	1.83	0.43
45:u:88:PRO:HB2	45:u:89:LYS:HD3	2.00	0.43
51:3:156:A:H2'	51:3:157:U:C6	2.53	0.43
51:3:275:A:C6	51:3:294:G:N3	2.87	0.43
51:3:497:C:H2'	51:3:498:C:C6	2.54	0.43
51:3:973:U:H2'	51:3:974:C:C6	2.53	0.43
51:3:987:U:H2'	51:3:988:G:H8	1.83	0.43
51:3:1095:U:N3	51:3:1123:A:N7	2.67	0.43
51:3:1130:A:O2'	51:3:1132:C:N4	2.46	0.43
51:3:1345:G:H2'	51:3:1346:G:H8	1.84	0.43
51:3:1624:A:H2'	51:3:1625:G:H8	1.84	0.43
51:3:2376:C:H2'	51:3:2377:A:C8	2.54	0.43
53:5:1133:A:C6	53:5:1155:A:N7	2.87	0.43
53:5:1153:G:HO2'	53:5:1154:A:H8	1.63	0.43
53:5:1233:G:H2'	53:5:1234:C:C6	2.53	0.43
53:5:1408:A:OP2	53:5:1408:A:H3'	2.18	0.43
6:B:186:ASP:OD1	6:B:187:TYR:N	2.52	0.43
7:C:50:TYR:HE1	7:C:199:TRP:HE1	1.67	0.43
9:E:49:ILE:HG23	9:E:50:LYS:N	2.34	0.43
11:G:17:ASP:O	11:G:20:THR:OG1	2.35	0.43
19:O:27:ILE:HD12	19:O:52:TRP:CZ3	2.54	0.43
19:O:33:LEU:HD23	19:O:34:ASN:N	2.34	0.43
20:P:71:ALA:O	20:P:72:THR:OG1	2.32	0.43
23:S:11:LEU:O	23:S:15:ILE:HG12	2.19	0.43
25:a:13:GLY:HA3	51:3:1781:C:O2	2.19	0.43
26:b:152:GLY:HA3	51:3:2039:G:C2	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:c:40:VAL:HA	27:c:43:ALA:HB3	2.01	0.43
29:e:147:PHE:O	29:e:150:GLU:HG2	2.19	0.43
40:p:78:PHE:CE2	40:p:82:LEU:HD11	2.54	0.43
41:q:73:HIS:CE1	41:q:75:SER:HA	2.54	0.43
41:q:74:ILE:HG22	41:q:77:LYS:HB2	2.01	0.43
41:q:84:GLY:H	51:3:1254:U:H4'	1.84	0.43
45:u:99:LYS:HB3	45:u:99:LYS:HE2	1.81	0.43
47:w:28:GLU:O	47:w:32:LYS:HG2	2.19	0.43
51:3:21:U:H2'	51:3:22:U:C6	2.53	0.43
51:3:169:U:H2'	51:3:170:A:C8	2.54	0.43
51:3:758:C:H2'	51:3:759:U:C6	2.53	0.43
51:3:787:C:O2'	51:3:1788:A:H5'	2.18	0.43
51:3:2100:G:H2'	51:3:2101:A:C8	2.53	0.43
51:3:2181:A:H2'	51:3:2182:C:H5	1.84	0.43
51:3:2336:A:H8	51:3:2336:A:O5'	2.02	0.43
51:3:2502:G:C2	51:3:2503:G:C8	3.07	0.43
53:5:285:G:H2'	53:5:286:C:C6	2.54	0.43
53:5:434:U:H3	53:5:493:A:N6	2.07	0.43
53:5:570:A:O2'	53:5:571:A:OP1	2.34	0.43
53:5:748:U:H2'	53:5:749:G:O4'	2.19	0.43
53:5:1463:A:H2'	53:5:1464:G:H8	1.84	0.43
54:6:24:A:H2'	54:6:25:G:C8	2.53	0.43
3:2:36:GLN:OE1	3:2:36:GLN:HA	2.19	0.43
4:9:206:GLU:OE2	4:9:209:LYS:HG2	2.18	0.43
13:I:72:GLU:HB2	17:M:57:LYS:HB2	2.00	0.43
14:J:93:PHE:CE2	14:J:98:LEU:HD23	2.54	0.43
16:L:14:ARG:HB3	16:L:16:GLU:OE1	2.19	0.43
22:R:55:LYS:HB2	53:5:953:A:C2	2.53	0.43
27:c:5:LYS:HG3	27:c:13:PHE:CE2	2.54	0.43
27:c:133:PHE:CE1	27:c:168:LEU:HD13	2.54	0.43
27:c:165:ASN:OD1	27:c:166:THR:N	2.52	0.43
37:m:19:ARG:HH22	37:m:66:TRP:C	2.27	0.43
40:p:36:GLN:NE2	51:3:597:C:O4'	2.52	0.43
47:w:48:ARG:HA	47:w:48:ARG:HD3	1.82	0.43
47:w:104:LYS:HZ3	51:3:1430:U:H5''	1.83	0.43
50:z:47:HIS:O	50:z:48:LYS:HE2	2.18	0.43
51:3:1248:A:C2	51:3:1262:G:C2	3.06	0.43
51:3:1254:U:H2'	51:3:1255:G:C5	2.53	0.43
51:3:2110:U:OP1	51:3:2110:U:H4'	2.18	0.43
51:3:2342:U:H4'	51:3:2343:A:O5'	2.19	0.43
51:3:2691:C:H42	51:3:2735:G:H1'	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:226:G:H2'	53:5:227:A:C8	2.54	0.43
53:5:457:A:H61	53:5:471:A:N6	2.17	0.43
53:5:820:A:N6	53:5:871:U:H3	2.15	0.43
53:5:1425:A:H4'	53:5:1426:U:H5	1.84	0.43
53:5:1491:A:H2'	53:5:1493:A:OP2	2.19	0.43
4:9:153:GLU:HA	4:9:156:ASP:OD2	2.19	0.42
9:E:23:GLU:OE1	9:E:27:GLN:NE2	2.52	0.42
11:G:24:ASN:ND2	53:5:823:C:O2'	2.52	0.42
11:G:57:PHE:HB2	11:G:71:THR:O	2.19	0.42
12:H:34:ARG:HA	12:H:34:ARG:HD3	1.86	0.42
12:H:93:ASN:ND2	12:H:95:GLU:OE1	2.51	0.42
13:I:98:ILE:HG13	13:I:99:PRO:HD2	1.99	0.42
14:J:86:LYS:HE2	24:T:26:ARG:HH11	1.84	0.42
18:N:62:ARG:NH1	53:5:580:C:OP2	2.52	0.42
20:P:41:ARG:HH22	53:5:233:C:H5''	1.84	0.42
20:P:48:HIS:HB3	20:P:73:LYS:HE2	2.01	0.42
25:a:248:PRO:HB2	51:3:1910:G:OP2	2.19	0.42
34:j:23:LYS:NZ	51:3:2556:C:H1'	2.34	0.42
41:q:40:MET:SD	41:q:45:ILE:HG13	2.59	0.42
47:w:95:LYS:HD2	51:3:1628:G:OP1	2.18	0.42
51:3:79:U:H2'	51:3:80:U:H6	1.84	0.42
51:3:370:C:N3	51:3:371:C:N4	2.67	0.42
51:3:1514:U:H4'	51:3:1515:A:C2	2.53	0.42
51:3:1524:C:H2'	51:3:1525:G:C8	2.53	0.42
51:3:2244:U:H2'	51:3:2245:G:O4'	2.18	0.42
51:3:2636:U:H5''	51:3:2637:A:H8	1.84	0.42
53:5:29:G:H2'	53:5:30:A:H8	1.84	0.42
53:5:204:C:H1'	53:5:465:A:C2	2.54	0.42
53:5:335:C:H2'	53:5:336:U:H6	1.84	0.42
53:5:491:U:H2'	53:5:492:G:C8	2.54	0.42
53:5:589:U:H2'	53:5:590:G:C8	2.54	0.42
53:5:1287:G:H2'	53:5:1288:C:C6	2.54	0.42
5:A:178:VAL:N	5:A:199:VAL:O	2.51	0.42
6:B:92:ILE:HA	6:B:95:ILE:HG22	2.01	0.42
6:B:185:ILE:HD11	6:B:204:TRP:HB3	2.00	0.42
9:E:71:ASP:N	9:E:71:ASP:OD1	2.52	0.42
10:F:91:PRO:HB2	10:F:93:ASP:OD1	2.20	0.42
12:H:34:ARG:H	12:H:34:ARG:HH21	1.67	0.42
17:M:21:TYR:OH	17:M:23:ARG:NH1	2.48	0.42
33:i:109:LYS:O	33:i:112:LEU:HG	2.19	0.42
36:l:69:PHE:HB3	36:l:71:HIS:CE1	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:225:A:C4	51:3:237:A:H1'	2.54	0.42
51:3:597:C:N4	51:3:598:G:O6	2.52	0.42
51:3:984:C:H2'	51:3:985:A:H8	1.84	0.42
51:3:1010:G:O2'	51:3:1011:A:OP2	2.33	0.42
51:3:1557:G:H3'	51:3:1571:G:H22	1.83	0.42
51:3:2009:U:H2'	51:3:2010:A:H8	1.84	0.42
51:3:2097:A:HO2'	51:3:2098:U:P	2.41	0.42
51:3:2610:A:H4'	51:3:2611:G:H5'	2.01	0.42
51:3:2631:G:H2'	51:3:2632:C:H6	1.81	0.42
52:4:38:U:N3	52:4:42:G:OP2	2.52	0.42
53:5:334:A:H2'	53:5:335:C:C6	2.54	0.42
53:5:618:U:H2'	53:5:619:A:O4'	2.19	0.42
53:5:1055:G:N2	53:5:1165:G:O3'	2.53	0.42
53:5:1057:C:H3'	53:5:1058:A:H8	1.83	0.42
53:5:1120:A:H5'	53:5:1122:U:H1'	2.01	0.42
6:B:36:GLU:OE2	6:B:96:ILE:HA	2.18	0.42
7:C:108:PRO:HD3	7:C:157:ALA:HB2	2.00	0.42
9:E:88:ILE:HG13	21:Q:92:ARG:NH1	2.34	0.42
10:F:134:ILE:HG23	10:F:137:LYS:HE3	2.01	0.42
11:G:15:VAL:O	11:G:19:LEU:HG	2.19	0.42
12:H:71:GLY:HA2	53:5:1225:A:O5'	2.18	0.42
24:T:6:VAL:HG22	24:T:7:LYS:N	2.34	0.42
26:b:61:LYS:NZ	51:3:2835:G:OP2	2.34	0.42
32:h:76:LEU:O	32:h:80:ALA:N	2.48	0.42
33:i:78:TYR:CD1	51:3:1167:U:H1'	2.54	0.42
35:k:32:SER:HG	35:k:34:ARG:NH2	2.17	0.42
36:l:45:ARG:HA	36:l:48:GLU:CD	2.44	0.42
39:o:32:ASN:OD1	39:o:33:VAL:N	2.52	0.42
46:v:47:ARG:O	46:v:47:ARG:HG3	2.19	0.42
51:3:595:U:N3	51:3:605:A:N7	2.67	0.42
51:3:766:C:H2'	51:3:767:C:H6	1.83	0.42
51:3:1117:U:O2'	51:3:1118:U:P	2.78	0.42
51:3:1398:C:H2'	51:3:1399:G:C8	2.54	0.42
53:5:536:U:H2'	53:5:537:A:C8	2.55	0.42
53:5:581:A:N6	53:5:755:U:O2'	2.52	0.42
53:5:915:U:H2'	53:5:916:U:C6	2.54	0.42
53:5:972:A:H8	53:5:1198:C:C6	2.37	0.42
4:9:97:ALA:HA	4:9:126:VAL:HG11	2.02	0.42
5:A:171:ARG:HG2	5:A:172:LEU:H	1.84	0.42
6:B:19:ILE:O	6:B:57:GLU:HA	2.20	0.42
11:G:21:LYS:HB3	11:G:33:VAL:HG11	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:H:78:ALA:O	12:H:82:ARG:HG3	2.19	0.42
18:N:54:TYR:HA	18:N:57:VAL:HG12	2.01	0.42
24:T:40:MET:O	24:T:44:GLU:OE1	2.37	0.42
25:a:162:ARG:NH2	51:3:1825:U:OP2	2.53	0.42
25:a:238:HIS:CE1	25:a:240:HIS:HB2	2.54	0.42
26:b:160:PHE:CE1	33:i:84:ILE:HG13	2.54	0.42
27:c:128:VAL:O	27:c:200:GLU:HA	2.19	0.42
33:i:78:TYR:HD1	51:3:1167:U:H1'	1.84	0.42
35:k:18:LYS:HB2	51:3:698:A:H5''	2.02	0.42
37:m:65:LYS:HG2	51:3:2715:C:O2'	2.20	0.42
40:p:78:PHE:O	40:p:82:LEU:HG	2.19	0.42
41:q:27:ALA:HB1	41:q:59:VAL:HG21	2.01	0.42
43:s:59:ILE:HD12	43:s:79:LYS:HD2	2.00	0.42
46:v:53:ARG:O	46:v:57:THR:HG23	2.18	0.42
49:y:37:LYS:HE2	49:y:43:CYS:HB3	2.01	0.42
51:3:329:G:H1	51:3:377:U:H3	1.67	0.42
51:3:674:G:H2'	51:3:675:U:C6	2.54	0.42
51:3:1532:A:H3'	51:3:1533:U:C6	2.55	0.42
51:3:1698:A:H61	51:3:2003:C:N4	2.16	0.42
51:3:1972:C:OP1	51:3:1973:U:O2'	2.24	0.42
51:3:2057:C:H2'	51:3:2058:G:C8	2.54	0.42
51:3:2358:U:H2'	51:3:2359:G:O4'	2.19	0.42
51:3:2407:G:H2'	51:3:2408:G:H8	1.83	0.42
51:3:2886:A:H2'	51:3:2887:A:C8	2.54	0.42
52:4:69:C:H2'	52:4:70:G:O4'	2.19	0.42
53:5:443:G:H2'	53:5:444:G:H1'	2.01	0.42
53:5:503:G:H2'	53:5:504:A:H8	1.85	0.42
53:5:993:C:N3	53:5:994:C:N4	2.67	0.42
54:7:41:C:H2'	54:7:42:C:C6	2.54	0.42
5:A:34:LYS:H	5:A:34:LYS:HD2	1.83	0.42
6:B:176:MET:HE3	6:B:185:ILE:HD13	2.01	0.42
7:C:73:ARG:HD2	53:5:619:A:O2'	2.20	0.42
7:C:97:LEU:HB2	7:C:134:ILE:HB	2.02	0.42
13:I:30:LYS:O	13:I:33:GLU:HG2	2.19	0.42
26:b:126:TRP:HB2	26:b:128:PHE:HD2	1.84	0.42
34:j:12:ASP:HB3	34:j:85:VAL:HG22	2.02	0.42
36:l:64:MET:SD	36:l:66:ILE:HG13	2.60	0.42
37:m:63:VAL:O	37:m:67:LEU:N	2.52	0.42
42:r:77:ASN:ND2	51:3:26:G:H1'	2.34	0.42
46:v:5:ASP:OD1	46:v:5:ASP:N	2.51	0.42
49:y:8:SER:OG	51:3:1293:U:O2'	2.15	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:235:U:H2'	51:3:236:G:O4'	2.18	0.42
51:3:274:A:C2'	51:3:275:A:H5'	2.49	0.42
51:3:335:G:O2'	51:3:336:C:H5''	2.19	0.42
51:3:390:A:H2'	51:3:391:U:C6	2.55	0.42
51:3:658:G:H2'	51:3:659:C:C6	2.54	0.42
51:3:707:C:H2'	51:3:708:C:C6	2.54	0.42
51:3:1410:A:O2'	51:3:1411:C:O4'	2.31	0.42
51:3:1669:A:H2'	51:3:1669:A:N3	2.35	0.42
51:3:1686:U:H3'	51:3:1687:G:C8	2.54	0.42
51:3:2447:A:O2'	51:3:2608:A:OP1	2.30	0.42
52:4:96:G:OP2	52:4:96:G:H8	2.02	0.42
53:5:71:A:H2'	53:5:72:A:H8	1.84	0.42
53:5:356:G:H2'	53:5:357:G:H8	1.84	0.42
53:5:1133:A:N7	53:5:1155:A:N6	2.68	0.42
53:5:1366:U:H2'	53:5:1367:G:H8	1.83	0.42
53:5:1409:A:H2'	53:5:1410:A:C8	2.49	0.42
4:9:215:ILE:HD11	4:9:293:LEU:HD22	2.01	0.42
8:D:109:LEU:HD23	8:D:109:LEU:H	1.84	0.42
10:F:22:VAL:HA	10:F:25:ILE:HG22	2.02	0.42
16:L:103:ARG:HG2	16:L:104:THR:HG23	2.00	0.42
28:d:67:ALA:HB3	28:d:84:LEU:HD13	2.00	0.42
28:d:96:MET:O	28:d:100:LEU:HG	2.20	0.42
29:e:136:ILE:HG22	29:e:144:VAL:HG12	2.02	0.42
30:f:131:PHE:CE2	30:f:132:GLU:HG2	2.54	0.42
40:p:91:ARG:HB3	40:p:93:VAL:HG12	2.01	0.42
44:t:16:LYS:NZ	51:3:342:G:H4'	2.35	0.42
47:w:48:ARG:NH1	51:3:75:A:OP2	2.53	0.42
50:z:19:TYR:HE2	50:z:36:LYS:HD2	1.84	0.42
51:3:192:U:H4'	51:3:1393:A:C2	2.55	0.42
51:3:275:A:C6	51:3:294:G:C2	3.07	0.42
51:3:730:G:H2'	51:3:731:A:H8	1.84	0.42
51:3:808:U:O2'	51:3:813:G:H4'	2.19	0.42
51:3:1282:G:O2'	51:3:1283:A:N7	2.46	0.42
51:3:1437:A:N6	51:3:1628:G:C2	2.88	0.42
51:3:2496:G:H2'	51:3:2497:U:C6	2.55	0.42
51:3:2867:U:H2'	51:3:2868:G:C8	2.55	0.42
52:4:71:A:C4	52:4:72:A:C8	3.08	0.42
53:5:162:C:H2'	53:5:163:G:N3	2.35	0.42
53:5:386:U:H2'	53:5:387:G:C8	2.55	0.42
53:5:784:A:N6	53:5:793:C:H42	2.17	0.42
53:5:895:A:N7	53:5:896:G:O2'	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1133:A:O2'	53:5:1134:C:OP2	2.37	0.42
53:5:1217:G:O6	53:5:1269:U:O2	2.37	0.42
1:0:19:LEU:HD22	51:3:126:C:OP2	2.20	0.42
4:9:70:TYR:CZ	4:9:77:TYR:HB2	2.55	0.42
4:9:86:ALA:C	4:9:88:TYR:H	2.28	0.42
4:9:342:ILE:HG23	4:9:359:ILE:HB	2.02	0.42
5:A:104:ASP:OD1	5:A:104:ASP:N	2.53	0.42
6:B:32:LYS:O	6:B:36:GLU:HG3	2.20	0.42
10:F:2:ARG:NH2	53:5:928:G:O6	2.47	0.42
26:b:79:LYS:NZ	51:3:2834:C:OP2	2.40	0.42
36:l:24:ASN:N	51:3:944:U:OP1	2.47	0.42
44:t:3:ARG:O	44:t:102:ARG:NH2	2.44	0.42
51:3:133:G:H2'	51:3:134:U:C6	2.54	0.42
51:3:275:A:N6	51:3:294:G:N3	2.68	0.42
51:3:292:G:H3'	51:3:293:G:C8	2.55	0.42
51:3:549:A:N3	51:3:614:C:O2'	2.50	0.42
51:3:650:G:H2'	51:3:651:A:H8	1.85	0.42
51:3:830:A:H2'	51:3:831:U:C6	2.55	0.42
51:3:903:A:O2'	51:3:904:C:OP1	2.36	0.42
51:3:1350:A:H2'	51:3:1351:G:C8	2.55	0.42
51:3:1363:C:H2'	51:3:1364:A:H8	1.85	0.42
51:3:1410:A:H2'	51:3:1411:C:C6	2.54	0.42
51:3:1475:C:H2'	51:3:1476:C:C6	2.54	0.42
51:3:1683:G:H2'	51:3:1684:A:C8	2.53	0.42
51:3:1730:C:H2'	51:3:1731:G:O4'	2.20	0.42
51:3:2733:A:C4	51:3:2735:G:N7	2.88	0.42
52:4:22:G:H1'	52:4:25:A:H61	1.85	0.42
53:5:223:G:H2'	53:5:224:A:C4	2.54	0.42
53:5:858:A:H2	53:5:913:A:H1'	1.84	0.42
53:5:862:C:H2'	53:5:863:A:C8	2.55	0.42
53:5:887:C:N4	53:5:888:A:C6	2.76	0.42
53:5:1451:A:H2'	53:5:1452:C:C6	2.55	0.42
54:7:5:C:H2'	54:7:6:U:H6	1.85	0.42
3:2:4:ARG:HD3	3:2:34:GLN:HE22	1.83	0.42
5:A:58:LEU:HA	5:A:61:GLN:OE1	2.20	0.42
8:D:136:ILE:HG23	8:D:202:GLN:NE2	2.34	0.42
9:E:140:GLN:O	11:G:5:THR:OG1	2.38	0.42
16:L:65:ILE:HG22	16:L:66:GLU:H	1.85	0.42
26:b:103:GLN:NE2	26:b:104:VAL:HG12	2.35	0.42
30:f:7:GLN:HE22	30:f:62:LYS:HD3	1.84	0.42
37:m:9:LYS:O	51:3:2009:U:H5''	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:545:C:H2'	51:3:546:U:H6	1.85	0.42
51:3:553:A:H2'	51:3:554:U:C6	2.55	0.42
51:3:852:C:H2'	51:3:853:G:C8	2.55	0.42
51:3:1114:C:H2'	51:3:1115:G:O4'	2.20	0.42
51:3:1480:A:H2'	51:3:1480:A:N3	2.35	0.42
51:3:1500:A:C6	51:3:1544:G:C6	3.08	0.42
51:3:1589:A:H2'	51:3:1590:U:C6	2.55	0.42
51:3:1917:G:H2'	51:3:1918:U:O4'	2.19	0.42
51:3:1924:U:O4	51:3:1925:A:N6	2.52	0.42
51:3:2004:G:H2'	51:3:2005:G:H8	1.85	0.42
51:3:2629:G:H2'	51:3:2630:U:C6	2.54	0.42
51:3:2733:A:O2'	51:3:2734:C:H2'	2.20	0.42
53:5:41:C:H2'	53:5:42:G:H8	1.84	0.42
53:5:51:A:N6	53:5:356:G:O2'	2.52	0.42
53:5:1433:G:H2'	53:5:1434:C:C6	2.55	0.42
3:2:19:ARG:NH2	51:3:2764:U:OP2	2.53	0.42
8:D:94:VAL:HG12	8:D:122:ALA:HB1	2.02	0.42
10:F:14:ASP:OD1	10:F:14:ASP:N	2.52	0.42
12:H:43:ASN:C	12:H:44:LYS:HD3	2.45	0.42
12:H:50:MET:HB2	12:H:81:ILE:HD11	2.02	0.42
14:J:25:VAL:HG23	14:J:63:VAL:HG11	2.02	0.42
25:a:131:LYS:HB2	25:a:134:PHE:CZ	2.55	0.42
26:b:16:VAL:HB	26:b:26:ILE:HG13	2.02	0.42
27:c:36:ASP:HA	27:c:39:LEU:HD12	2.02	0.42
27:c:52:ILE:HG21	27:c:89:ILE:HG12	2.01	0.42
36:l:15:VAL:HG21	36:l:72:MET:HE3	2.01	0.42
41:q:72:LYS:HG3	41:q:81:LYS:HB2	2.01	0.42
42:r:83:LYS:HE3	42:r:97:THR:HG22	2.01	0.42
42:r:119:LYS:HD3	42:r:119:LYS:HA	1.76	0.42
47:w:19:VAL:HG11	47:w:64:ASN:HD21	1.83	0.42
47:w:39:ASP:C	47:w:40:LYS:HG2	2.44	0.42
51:3:41:C:H2'	51:3:42:U:C6	2.55	0.42
51:3:155:A:N6	51:3:178:A:H61	2.17	0.42
51:3:548:A:H2'	51:3:549:A:C8	2.55	0.42
51:3:694:U:H2'	51:3:695:G:C8	2.54	0.42
51:3:910:G:H2'	51:3:911:U:C6	2.54	0.42
51:3:913:U:H3	51:3:938:A:H61	1.68	0.42
51:3:1797:C:H5''	51:3:1835:G:H22	1.85	0.42
51:3:2079:G:H2'	51:3:2080:C:H6	1.85	0.42
51:3:2399:G:N1	51:3:2433:A:OP1	2.50	0.42
51:3:2533:A:H2'	51:3:2534:G:C8	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:351:C:C2	53:5:352:A:C8	3.08	0.42
53:5:426:U:H4'	53:5:427:A:OP1	2.19	0.42
53:5:632:A:H3'	53:5:633:U:C6	2.55	0.42
4:9:121:LEU:HG	4:9:125:GLN:NE2	2.31	0.42
4:9:249:ARG:HA	4:9:249:ARG:NE	2.35	0.42
10:F:25:ILE:HA	10:F:28:VAL:HG12	2.01	0.42
14:J:19:SER:O	14:J:21:ASN:N	2.53	0.42
29:e:80:ILE:HG23	29:e:86:PHE:HZ	1.84	0.42
30:f:39:LEU:HD13	30:f:42:LYS:HB3	2.01	0.42
35:k:83:ASN:HB3	35:k:118:THR:HG21	2.02	0.42
42:r:6:LYS:HE3	51:3:529:G:H5''	2.02	0.42
43:s:9:LYS:O	43:s:30:VAL:HG12	2.19	0.42
51:3:146:G:C2'	51:3:147:C:H5'	2.50	0.42
51:3:156:A:H2'	51:3:157:U:H6	1.84	0.42
51:3:374:A:HO2'	51:3:375:U:P	2.43	0.42
51:3:498:C:N4	51:3:499:G:O6	2.53	0.42
51:3:906:G:H2'	51:3:907:A:H8	1.84	0.42
51:3:1226:G:H5'	51:3:1227:C:OP2	2.20	0.42
51:3:1257:G:H2'	51:3:1258:C:C6	2.55	0.42
51:3:1507:G:O2'	51:3:1508:G:OP1	2.28	0.42
51:3:1721:G:N2	51:3:1736:G:O6	2.53	0.42
51:3:1881:C:H2'	51:3:1882:G:O4'	2.20	0.42
51:3:1916:C:H2'	51:3:1917:G:C8	2.55	0.42
51:3:2429:G:O2'	51:3:2430:C:OP1	2.36	0.42
51:3:2472:G:H2'	51:3:2473:C:C6	2.55	0.42
51:3:2474:C:H2'	51:3:2475:C:H6	1.84	0.42
52:4:61:A:H2'	52:4:62:G:H8	1.85	0.42
53:5:231:U:H5'	53:5:232:G:OP1	2.19	0.42
53:5:265:U:H2'	53:5:266:A:H8	1.85	0.42
53:5:388:G:H2'	53:5:389:A:C8	2.55	0.42
53:5:891:C:H2'	53:5:892:G:C8	2.54	0.42
53:5:1109:U:C2	53:5:1154:A:C6	3.08	0.42
53:5:1128:G:H2'	53:5:1129:C:O4'	2.20	0.42
53:5:1321:G:H1	53:5:1349:A:P	2.42	0.42
53:5:1322:U:H2'	53:5:1323:A:H8	1.85	0.42
53:5:1367:G:O2'	53:5:1477:A:O5'	2.34	0.42
4:9:104:LEU:HD11	4:9:116:THR:HG23	2.01	0.41
7:C:131:THR:HB	7:C:134:ILE:HD11	2.01	0.41
7:C:170:ASN:HB3	7:C:173:THR:OG1	2.19	0.41
20:P:12:ILE:HB	20:P:14:LYS:NZ	2.35	0.41
21:Q:48:GLN:HE21	21:Q:51:ILE:CD1	2.32	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:a:256:THR:HG22	25:a:262:HIS:CE1	2.55	0.41
27:c:32:GLN:N	27:c:33:PRO:HD2	2.35	0.41
28:d:125:ARG:HD2	51:3:2323:U:O2'	2.20	0.41
31:g:52:LYS:O	31:g:82:VAL:HB	2.19	0.41
40:p:60:TRP:CD1	40:p:96:GLU:OE2	2.72	0.41
44:t:44:ARG:HA	44:t:44:ARG:HD2	1.77	0.41
51:3:43:A:H2'	51:3:44:A:H8	1.85	0.41
51:3:69:U:C2	51:3:70:G:C8	3.07	0.41
51:3:606:G:O2'	51:3:608:A:OP1	2.26	0.41
51:3:764:G:O2'	51:3:798:G:H4'	2.20	0.41
51:3:1140:U:H2'	51:3:1141:U:C6	2.55	0.41
51:3:1991:U:C2'	51:3:1992:C:H5'	2.49	0.41
51:3:2764:U:H4'	51:3:2765:A:OP1	2.20	0.41
53:5:8:G:C2	53:5:294:A:N1	2.88	0.41
53:5:390:G:H2'	53:5:391:C:C6	2.55	0.41
53:5:791:A:O2'	53:5:1481:U:O4	2.20	0.41
53:5:1397:G:H2'	53:5:1398:G:C8	2.55	0.41
53:5:1463:A:H2'	53:5:1464:G:C8	2.55	0.41
54:6:5:C:H2'	54:6:6:U:H6	1.85	0.41
10:F:13:PRO:HG3	10:F:20:THR:HG22	2.02	0.41
12:H:56:LEU:H	12:H:56:LEU:HD23	1.85	0.41
13:I:12:LEU:HD11	13:I:85:VAL:HB	2.02	0.41
15:K:95:LEU:HD23	15:K:108:TYR:HB3	2.02	0.41
19:O:48:VAL:O	19:O:52:TRP:HD1	2.03	0.41
20:P:19:ALA:O	20:P:20:LYS:HG2	2.21	0.41
27:c:32:GLN:HG2	35:k:11:LYS:HE2	2.02	0.41
27:c:182:HIS:HB3	27:c:185:LYS:HG2	2.02	0.41
36:l:62:GLY:HA2	36:l:108:ASN:HB2	2.02	0.41
40:p:89:ILE:O	40:p:89:ILE:HG22	2.20	0.41
50:z:11:CYS:HB3	50:z:14:CYS:SG	2.60	0.41
51:3:299:A:H2'	51:3:300:G:H8	1.83	0.41
51:3:300:G:H2'	51:3:301:G:C8	2.55	0.41
51:3:713:C:H2'	51:3:714:G:H8	1.85	0.41
51:3:1315:A:N7	51:3:1316:U:N3	2.68	0.41
51:3:1745:A:H2'	51:3:1746:U:C6	2.55	0.41
51:3:1957:G:N2	51:3:1964:C:N3	2.68	0.41
51:3:2050:G:H2'	51:3:2051:G:C8	2.56	0.41
51:3:2393:C:H2'	51:3:2394:A:H8	1.84	0.41
51:3:2557:G:H2'	51:3:2558:G:H8	1.85	0.41
53:5:372:G:H2'	53:5:373:A:H8	1.84	0.41
53:5:707:G:H2'	53:5:708:A:C8	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1231:U:C2	53:5:1253:A:H2	2.38	0.41
53:5:1298:U:H2'	53:5:1299:C:C6	2.54	0.41
53:5:1437:A:H2'	53:5:1438:U:O4'	2.20	0.41
2:1:10:ARG:NH1	35:k:59:TYR:O	2.53	0.41
5:A:83:LEU:HB2	5:A:176:LEU:HG	2.02	0.41
9:E:22:ASN:HB3	9:E:60:TRP:CZ2	2.56	0.41
10:F:75:ARG:NH1	53:5:1353:C:O2	2.53	0.41
12:H:13:LYS:HE2	53:5:1321:G:H8	1.85	0.41
13:I:29:LYS:HE3	13:I:29:LYS:HB3	1.82	0.41
14:J:109:ILE:O	14:J:109:ILE:HG23	2.20	0.41
15:K:9:ARG:NE	53:5:874:C:OP1	2.53	0.41
21:Q:61:LYS:HB3	21:Q:61:LYS:HE2	1.93	0.41
27:c:35:PHE:CE2	35:k:10:PRO:HG3	2.55	0.41
27:c:75:ARG:HH11	51:3:709:G:H1'	1.85	0.41
28:d:122:PHE:HA	28:d:127:ASN:O	2.19	0.41
29:e:112:TYR:HA	51:3:2674:C:H42	1.85	0.41
33:i:7:LEU:HD11	40:p:93:VAL:HG23	2.02	0.41
38:n:8:ARG:HG3	38:n:9:ARG:N	2.34	0.41
40:p:32:LYS:HG2	51:3:1282:G:N3	2.35	0.41
45:u:39:LYS:NZ	45:u:43:GLN:HE21	2.18	0.41
49:y:16:ARG:HH22	51:3:1295:A:H3'	1.85	0.41
51:3:517:G:O6	51:3:544:U:O2	2.37	0.41
51:3:1026:A:H62	51:3:1217:G:H1'	1.85	0.41
51:3:1276:A:H2'	51:3:1277:A:O4'	2.21	0.41
51:3:1435:A:H2'	51:3:1436:C:C6	2.55	0.41
51:3:1610:U:H2'	51:3:1611:C:C6	2.55	0.41
51:3:1778:G:H2'	51:3:1779:G:H8	1.85	0.41
51:3:2271:C:H2'	51:3:2272:C:O4'	2.20	0.41
51:3:2306:A:H3'	51:3:2307:G:H8	1.85	0.41
51:3:2842:G:C4	51:3:2843:G:C8	3.08	0.41
52:4:4:G:H2'	52:4:5:G:H8	1.84	0.41
52:4:54:U:H1'	52:4:55:A:H5'	2.02	0.41
53:5:441:U:N3	53:5:489:U:O2	2.41	0.41
53:5:968:G:H3'	53:5:969:A:C8	2.54	0.41
8:D:70:ILE:HD12	8:D:73:LEU:HD11	2.02	0.41
10:F:78:ARG:HB2	10:F:83:ASN:CG	2.45	0.41
12:H:51:GLU:HB2	12:H:54:LEU:HB2	2.01	0.41
19:O:67:PHE:HA	19:O:70:THR:OG1	2.20	0.41
30:f:79:PHE:HE2	30:f:92:ILE:HG23	1.86	0.41
38:n:34:LYS:HB2	38:n:102:ILE:HD11	2.01	0.41
51:3:45:U:H2'	51:3:46:A:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:60:G:O2'	51:3:75:A:N1	2.43	0.41
51:3:98:C:H2'	51:3:99:C:H6	1.84	0.41
51:3:344:A:H1'	51:3:345:A:H2'	2.02	0.41
51:3:873:G:C6	51:3:977:A:N6	2.88	0.41
51:3:934:C:H2'	51:3:935:U:C6	2.55	0.41
51:3:986:G:H2'	51:3:987:U:H6	1.85	0.41
51:3:986:G:N2	51:3:1003:U:O2	2.50	0.41
51:3:1008:A:OP2	51:3:1009:A:O2'	2.29	0.41
51:3:1457:A:H2'	51:3:1458:A:C8	2.55	0.41
51:3:1886:C:H2'	51:3:1887:U:C6	2.55	0.41
51:3:2009:U:H2'	51:3:2010:A:C8	2.56	0.41
51:3:2541:C:H2'	51:3:2542:A:O4'	2.20	0.41
53:5:128:A:H2'	53:5:129:U:C6	2.55	0.41
53:5:204:C:H1'	53:5:465:A:H2	1.84	0.41
53:5:609:G:H2'	53:5:609:G:N3	2.35	0.41
53:5:1279:G:H2'	53:5:1280:A:N7	2.36	0.41
53:5:1331:A:O2'	53:5:1332:U:OP1	2.31	0.41
53:5:1395:C:HO2'	53:5:1396:U:P	2.43	0.41
5:A:130:LEU:HD12	5:A:159:LEU:HB3	2.02	0.41
29:e:3:LYS:HE3	51:3:1147:G:H4'	2.03	0.41
29:e:17:ASN:HD21	29:e:28:LYS:HB2	1.86	0.41
33:i:76:PHE:CD1	33:i:91:SER:HA	2.55	0.41
39:o:95:LYS:HB3	39:o:95:LYS:HE2	1.86	0.41
40:p:7:LYS:HA	40:p:7:LYS:HD2	1.89	0.41
47:w:89:GLN:HA	47:w:92:GLU:CG	2.50	0.41
51:3:207:C:H3'	51:3:208:A:C8	2.54	0.41
51:3:401:G:O2'	51:3:402:A:O4'	2.26	0.41
51:3:579:U:H1'	51:3:1250:A:C2	2.56	0.41
51:3:668:A:H2	51:3:2411:C:H4'	1.85	0.41
51:3:771:C:H2'	51:3:772:C:H6	1.86	0.41
51:3:1114:C:C2	51:3:1115:G:C8	3.08	0.41
51:3:1357:U:H3'	51:3:1358:C:C6	2.56	0.41
52:4:79:U:H5	52:4:85:A:H61	1.68	0.41
53:5:704:U:H2'	53:5:705:A:C8	2.56	0.41
53:5:1012:A:H5''	53:5:1013:C:C5	2.55	0.41
54:7:50:G:N3	54:7:50:G:H2'	2.36	0.41
1:0:33:LEU:HA	1:0:36:LYS:HE2	2.02	0.41
5:A:35:ARG:HG2	5:A:52:ASN:OD1	2.20	0.41
7:C:14:LEU:O	7:C:59:ARG:HD2	2.21	0.41
13:I:28:THR:HA	13:I:31:ILE:HG12	2.03	0.41
13:I:54:VAL:HG13	13:I:70:GLN:OE1	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:R:48:THR:HB	22:R:59:ASN:OD1	2.21	0.41
25:a:219:ASN:HA	25:a:222:ARG:NE	2.36	0.41
28:d:37:ASN:ND2	51:3:2320:U:O2	2.52	0.41
29:e:116:ILE:HD13	29:e:116:ILE:HA	1.95	0.41
30:f:42:LYS:NZ	30:f:47:ARG:HA	2.35	0.41
33:i:19:TYR:HA	33:i:141:THR:O	2.21	0.41
37:m:9:LYS:N	51:3:2010:A:OP1	2.51	0.41
40:p:97:LEU:O	40:p:100:LYS:HB2	2.21	0.41
46:v:10:ARG:HH12	51:3:432:G:P	2.43	0.41
51:3:61:U:H1'	51:3:75:A:H2'	2.03	0.41
51:3:222:A:H2'	51:3:223:A:C8	2.56	0.41
51:3:1296:G:N2	51:3:1297:U:O4	2.52	0.41
51:3:1658:U:H2'	51:3:1659:C:C6	2.55	0.41
51:3:1819:G:H2'	51:3:1820:U:C6	2.56	0.41
51:3:1954:C:N4	51:3:1955:G:O6	2.53	0.41
51:3:2234:C:H2'	51:3:2235:A:O4'	2.20	0.41
51:3:2747:U:H2'	51:3:2748:A:H8	1.86	0.41
53:5:318:C:N4	53:5:325:A:H62	2.18	0.41
53:5:429:A:C5	53:5:430:G:C8	3.08	0.41
53:5:543:C:H2'	53:5:544:A:C8	2.55	0.41
53:5:944:A:H2'	53:5:945:U:C6	2.56	0.41
53:5:1162:G:C2	53:5:1163:A:C5	3.08	0.41
53:5:1408:A:H2'	53:5:1409:A:C8	2.55	0.41
54:7:8:G:O2'	54:7:50:G:O4'	2.36	0.41
4:9:56:GLU:HB2	4:9:61:ILE:O	2.21	0.41
7:C:113:ALA:O	7:C:117:VAL:HG23	2.21	0.41
8:D:140:VAL:HG23	8:D:151:LEU:HB2	2.03	0.41
8:D:188:PRO:HA	8:D:191:MET:HE2	2.02	0.41
11:G:38:SER:O	11:G:42:ILE:HG12	2.20	0.41
15:K:40:SER:OG	53:5:359:A:N6	2.52	0.41
15:K:107:ARG:NH1	53:5:904:C:O3'	2.50	0.41
19:O:55:LYS:HA	19:O:55:LYS:HD3	1.92	0.41
23:S:14:ASN:HA	23:S:17:ARG:HB2	2.02	0.41
25:a:9:ARG:HD3	51:3:740:A:H4'	2.02	0.41
27:c:130:GLN:HA	27:c:133:PHE:HB2	2.03	0.41
33:i:42:LYS:HE2	40:p:62:LEU:HD21	2.02	0.41
42:r:13:SER:HB3	42:r:16:LYS:HG3	2.02	0.41
47:w:86:ALA:HA	47:w:89:GLN:CD	2.45	0.41
49:y:38:LEU:HD23	49:y:38:LEU:H	1.86	0.41
51:3:448:A:H62	51:3:2420:A:H1'	1.84	0.41
51:3:659:C:H2'	51:3:660:U:C4	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:664:G:H2'	51:3:665:C:H6	1.86	0.41
51:3:886:U:H2'	51:3:887:A:H8	1.85	0.41
51:3:889:G:H2'	51:3:890:U:C6	2.56	0.41
51:3:1050:A:H2'	51:3:1051:U:C6	2.55	0.41
51:3:1349:C:O2'	51:3:1350:A:OP1	2.27	0.41
51:3:1670:U:H2'	51:3:1671:C:H6	1.85	0.41
51:3:1691:U:H2'	51:3:1692:A:H8	1.85	0.41
51:3:2263:G:H2'	51:3:2264:G:C8	2.55	0.41
51:3:2734:C:O2'	51:3:2735:G:H5'	2.21	0.41
51:3:2891:C:H2'	51:3:2892:U:C6	2.56	0.41
53:5:168:A:H3'	53:5:169:G:H8	1.84	0.41
53:5:372:G:N2	53:5:383:U:O2	2.48	0.41
53:5:665:G:H2'	53:5:666:U:H6	1.85	0.41
54:6:44:U:O2'	54:6:45:G:O4'	2.35	0.41
7:C:13:ARG:HG2	7:C:14:LEU:HD23	2.03	0.41
13:I:19:TYR:HA	13:I:75:ARG:HA	2.02	0.41
17:M:40:CYS:O	17:M:44:PHE:N	2.40	0.41
23:S:66:ARG:HD3	53:5:171:A:H4'	2.02	0.41
28:d:123:ASP:HB3	51:3:2322:G:N2	2.35	0.41
35:k:82:LEU:O	35:k:85:ILE:HG22	2.20	0.41
40:p:7:LYS:HD3	51:3:1245:G:H5''	2.02	0.41
40:p:47:ARG:HG2	40:p:51:ASN:HD22	1.86	0.41
51:3:274:A:H2'	51:3:275:A:H5'	2.02	0.41
51:3:412:A:C2	51:3:413:G:H1'	2.56	0.41
51:3:585:U:H4'	51:3:1250:A:C4	2.56	0.41
51:3:917:G:H2'	51:3:918:G:H8	1.85	0.41
51:3:1297:U:O2'	51:3:1298:A:O5'	2.36	0.41
51:3:1302:C:O2'	51:3:1303:U:OP1	2.32	0.41
51:3:1314:A:N1	51:3:1357:U:O2'	2.44	0.41
51:3:1334:U:H5''	51:3:1640:G:O6	2.21	0.41
51:3:1628:G:H2'	51:3:1629:U:C6	2.56	0.41
51:3:1819:G:H2'	51:3:1820:U:H6	1.86	0.41
51:3:1872:U:O2'	51:3:1882:G:N2	2.52	0.41
51:3:2176:G:H22	51:3:2179:A:H5''	1.86	0.41
51:3:2295:A:N1	51:3:2352:U:C4	2.89	0.41
51:3:2400:A:H2'	51:3:2401:U:C6	2.55	0.41
53:5:205:U:H3'	53:5:206:G:C8	2.56	0.41
3:2:6:SER:HB3	51:3:2474:C:H5''	2.03	0.41
4:9:304:LYS:HA	4:9:304:LYS:HD3	1.93	0.41
5:A:202:CYS:SG	5:A:211:VAL:HG11	2.61	0.41
6:B:102:LEU:HD12	6:B:103:ASP:H	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:C:63:MET:O	7:C:110:ARG:NH1	2.41	0.41
8:D:168:ALA:HA	8:D:171:GLU:CD	2.46	0.41
9:E:163:MET:O	9:E:165:ASN:N	2.53	0.41
13:I:8:LYS:O	13:I:9:TYR:CD1	2.74	0.41
16:L:103:ARG:HG3	53:5:1201:C:N4	2.36	0.41
18:N:20:GLY:HA3	53:5:747:C:O2	2.21	0.41
20:P:2:LYS:HB3	53:5:115:A:C4	2.56	0.41
25:a:127:PRO:HG3	25:a:140:PHE:HB3	2.03	0.41
26:b:163:LYS:HA	26:b:163:LYS:HD2	1.89	0.41
28:d:36:ILE:HB	28:d:89:VAL:HB	2.03	0.41
29:e:147:PHE:CA	29:e:150:GLU:HG2	2.44	0.41
30:f:79:PHE:CZ	30:f:97:ILE:HG22	2.56	0.41
34:j:76:HIS:HB3	39:o:78:ASN:CB	2.47	0.41
36:l:36:ALA:O	36:l:100:GLY:N	2.54	0.41
36:l:67:ARG:NH1	51:3:943:A:O2'	2.54	0.41
38:n:11:ARG:HG3	38:n:14:ARG:NH1	2.36	0.41
39:o:7:GLN:NE2	51:3:2879:U:O3'	2.53	0.41
39:o:36:LYS:HG2	39:o:45:ILE:CD1	2.51	0.41
41:q:78:HIS:NE2	51:3:599:U:OP1	2.54	0.41
42:r:94:ASN:ND2	51:3:2021:A:H4'	2.35	0.41
43:s:85:LEU:HB3	43:s:89:ILE:HG21	2.03	0.41
46:v:18:ARG:CZ	46:v:24:ILE:HG12	2.50	0.41
47:w:21:LYS:HG3	47:w:25:GLU:OE2	2.20	0.41
47:w:86:ALA:HA	47:w:89:GLN:NE2	2.35	0.41
49:y:47:MET:HE3	49:y:47:MET:HB3	1.75	0.41
50:z:23:LYS:NZ	50:z:28:ASN:HB2	2.35	0.41
51:3:80:U:H2'	51:3:81:C:H6	1.85	0.41
51:3:125:G:OP1	51:3:1404:C:O2'	2.25	0.41
51:3:276:A:H5'	51:3:277:C:OP2	2.21	0.41
51:3:496:A:C6	51:3:506:A:N6	2.89	0.41
51:3:513:A:O2'	51:3:514:A:P	2.78	0.41
51:3:596:G:H2'	51:3:597:C:C6	2.56	0.41
51:3:610:G:O2'	51:3:1284:A:OP1	2.39	0.41
51:3:612:G:H2'	51:3:613:C:C6	2.56	0.41
51:3:758:C:C2	51:3:759:U:C5	3.09	0.41
51:3:762:A:OP1	51:3:1459:A:O2'	2.32	0.41
51:3:1071:G:H2'	51:3:1072:A:C8	2.56	0.41
51:3:1073:A:C6	51:3:1074:A:N1	2.89	0.41
51:3:1623:U:H2'	51:3:1624:A:C8	2.54	0.41
51:3:1777:G:H2'	51:3:1778:G:C8	2.56	0.41
51:3:1795:C:H2'	51:3:1796:A:H8	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1920:A:N6	53:5:1468:A:H1'	2.35	0.41
51:3:2284:G:C6	51:3:2285:G:C6	3.09	0.41
51:3:2381:G:H2'	51:3:2382:A:C8	2.56	0.41
51:3:2529:C:H2'	51:3:2530:U:O4'	2.21	0.41
51:3:2589:G:N2	51:3:2618:C:H2'	2.36	0.41
51:3:2640:A:H2'	51:3:2641:A:H8	1.85	0.41
51:3:2770:U:H2'	51:3:2771:G:O4'	2.20	0.41
51:3:2892:U:H2'	51:3:2893:C:H6	1.83	0.41
53:5:24:C:H2'	53:5:25:U:C6	2.55	0.41
53:5:248:U:O2'	53:5:249:U:O4'	2.37	0.41
53:5:443:G:H2'	53:5:444:G:C1'	2.51	0.41
53:5:649:U:H3	53:5:750:A:H62	1.68	0.41
53:5:663:G:C6	53:5:738:A:C5	3.08	0.41
53:5:702:U:H2'	53:5:703:A:O4'	2.21	0.41
53:5:761:U:H3'	53:5:762:G:H8	1.85	0.41
53:5:885:U:C2	53:5:901:A:N6	2.88	0.41
53:5:1392:A:H2'	53:5:1457:G:N2	2.35	0.41
53:5:1465:U:H2'	53:5:1466:U:O4'	2.21	0.41
54:7:42:C:H2'	54:7:43:G:C8	2.56	0.41
1:0:10:LEU:HD23	1:0:10:LEU:HA	1.85	0.41
4:9:206:GLU:H	4:9:271:ALA:HB3	1.85	0.41
7:C:169:THR:OG1	7:C:175:GLU:O	2.39	0.41
8:D:72:LYS:HA	8:D:72:LYS:HD2	1.89	0.41
10:F:2:ARG:HD3	53:5:930:A:H61	1.86	0.41
25:a:4:LYS:HE3	25:a:21:ASP:HA	2.02	0.41
26:b:158:ARG:NH1	51:3:2031:C:O2'	2.53	0.41
28:d:52:SER:HA	28:d:55:ASN:ND2	2.36	0.41
38:n:90:VAL:HG23	51:3:2386:A:O2'	2.21	0.41
39:o:12:LEU:HD23	39:o:12:LEU:HA	1.79	0.41
49:y:7:ARG:NH2	51:3:2027:G:OP1	2.53	0.41
51:3:699:U:H2'	51:3:700:U:O4'	2.21	0.41
51:3:803:G:N3	51:3:803:G:H2'	2.35	0.41
51:3:1005:G:H2'	51:3:1006:U:H6	1.86	0.41
51:3:2335:A:H2'	51:3:2336:A:C8	2.56	0.41
51:3:2451:C:H2'	51:3:2452:G:C8	2.56	0.41
53:5:106:C:H41	53:5:231:U:H5''	1.86	0.41
53:5:252:U:H2'	53:5:253:G:C8	2.55	0.41
53:5:356:G:H2'	53:5:357:G:C8	2.56	0.41
53:5:384:G:H5''	53:5:386:U:O4	2.21	0.41
53:5:429:A:C4	53:5:430:G:C8	3.09	0.41
53:5:616:C:N3	53:5:620:A:N6	2.68	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:827:C:H2'	53:5:828:U:H6	1.85	0.41
53:5:841:C:N4	53:5:842:C:H41	2.19	0.41
53:5:1137:C:H2'	53:5:1138:U:C6	2.56	0.41
54:6:42:C:H2'	54:6:43:G:C8	2.56	0.41
11:G:11:HIS:O	53:5:821:U:O2'	2.38	0.40
15:K:7:LEU:HB3	20:P:35:TYR:CZ	2.56	0.40
16:L:15:ILE:HD13	16:L:41:PRO:HA	2.04	0.40
17:M:8:VAL:HG23	17:M:12:ARG:HH22	1.86	0.40
22:R:16:LEU:O	22:R:20:ILE:HG13	2.21	0.40
25:a:134:PHE:O	25:a:199:THR:HA	2.21	0.40
26:b:182:VAL:HB	26:b:192:LEU:HB3	2.03	0.40
35:k:77:TRP:CE3	35:k:113:LYS:HD3	2.56	0.40
36:l:34:LEU:CD2	36:l:118:LEU:HD12	2.51	0.40
40:p:32:LYS:HG2	51:3:1282:G:C2	2.56	0.40
51:3:404:C:H2'	51:3:405:C:C6	2.56	0.40
51:3:576:A:C6	51:3:586:G:C6	3.09	0.40
51:3:609:U:O2'	51:3:2510:G:N7	2.54	0.40
51:3:881:A:N6	51:3:968:U:H3	2.19	0.40
51:3:937:A:H2'	51:3:938:A:O4'	2.21	0.40
51:3:1019:A:H3'	51:3:1020:G:N2	2.37	0.40
51:3:1230:U:H2'	51:3:1231:G:C8	2.55	0.40
51:3:1312:A:H8	51:3:1312:A:OP1	2.03	0.40
51:3:1578:A:H2'	51:3:1579:G:O4'	2.20	0.40
51:3:1828:A:H2'	51:3:1829:U:C6	2.56	0.40
51:3:2123:A:H5''	51:3:2124:A:C8	2.56	0.40
51:3:2201:G:H2'	51:3:2202:U:O4'	2.21	0.40
51:3:2463:G:C6	51:3:2464:C:N4	2.89	0.40
51:3:2642:G:C2	51:3:2643:A:C2	3.08	0.40
51:3:2757:A:H3'	51:3:2758:A:C8	2.57	0.40
52:4:46:C:H2'	52:4:47:C:C6	2.55	0.40
53:5:126:U:HO2'	53:5:127:A:P	2.43	0.40
53:5:293:G:H2'	53:5:295:G:OP2	2.21	0.40
53:5:355:A:H2'	53:5:356:G:H8	1.86	0.40
53:5:895:A:H8	53:5:896:G:H4'	1.86	0.40
53:5:901:A:H2'	53:5:902:A:C8	2.56	0.40
1:0:39:ARG:HD3	1:0:39:ARG:HA	1.96	0.40
4:9:218:THR:HB	4:9:226:THR:HG23	2.03	0.40
8:D:111:VAL:O	8:D:115:ILE:HG12	2.22	0.40
11:G:98:TYR:CE1	11:G:136:GLU:HB2	2.57	0.40
12:H:56:LEU:HG	12:H:99:ILE:HD12	2.02	0.40
14:J:119:ARG:HA	24:T:34:TYR:HB2	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:L:110:LYS:NZ	53:5:1202:A:H5'	2.36	0.40
22:R:4:SER:HB2	53:5:1287:G:OP2	2.22	0.40
23:S:48:TYR:CZ	23:S:69:LYS:HB2	2.57	0.40
25:a:179:TYR:HA	25:a:192:PHE:O	2.21	0.40
26:b:144:GLN:N	26:b:144:GLN:OE1	2.54	0.40
27:c:111:ALA:O	27:c:115:VAL:HG22	2.20	0.40
29:e:107:ASN:OD1	29:e:107:ASN:N	2.54	0.40
37:m:59:ASN:O	37:m:63:VAL:HG22	2.21	0.40
40:p:52:LYS:HG3	40:p:53:LYS:N	2.36	0.40
42:r:14:PRO:HG3	42:r:101:SER:HB2	2.02	0.40
43:s:42:LEU:O	43:s:46:LEU:HD23	2.21	0.40
44:t:102:ARG:H	44:t:102:ARG:HG3	1.72	0.40
45:u:59:VAL:HG11	45:u:73:LEU:HD11	2.03	0.40
51:3:71:C:H2'	51:3:72:G:H8	1.86	0.40
51:3:128:A:H5''	51:3:129:U:O5'	2.21	0.40
51:3:273:C:C2	51:3:274:A:C8	3.09	0.40
51:3:598:G:C6	51:3:599:U:C4	3.10	0.40
51:3:1804:A:H2'	51:3:1805:U:C6	2.56	0.40
51:3:1855:A:H1'	53:5:699:A:C8	2.57	0.40
51:3:2117:G:H5''	51:3:2150:C:H4'	2.02	0.40
51:3:2382:A:H2'	51:3:2383:G:C8	2.55	0.40
51:3:2399:G:C6	51:3:2435:C:H1'	2.57	0.40
53:5:951:U:H2'	53:5:952:U:C2	2.56	0.40
53:5:1086:U:OP2	53:5:1099:G:N1	2.54	0.40
53:5:1090:G:H3'	53:5:1091:C:C5	2.56	0.40
53:5:1216:G:H8	53:5:1216:G:OP2	2.04	0.40
53:5:1351:U:H2'	53:5:1352:A:C8	2.57	0.40
53:5:1408:A:N6	53:5:1443:A:N7	2.69	0.40
54:6:50:G:H2'	54:6:50:G:N3	2.36	0.40
1:0:6:GLN:H	51:3:721:G:H21	1.70	0.40
1:0:39:ARG:HH11	51:3:495:U:P	2.43	0.40
6:B:140:SER:O	6:B:143:LYS:HG2	2.21	0.40
6:B:154:VAL:HG22	6:B:203:VAL:HG23	2.03	0.40
8:D:94:VAL:HG21	8:D:123:HIS:NE2	2.37	0.40
8:D:192:ILE:O	8:D:196:MET:HG2	2.21	0.40
9:E:84:ARG:HD2	9:E:84:ARG:HA	1.89	0.40
12:H:46:VAL:HA	12:H:49:ASP:HB2	2.02	0.40
15:K:60:SER:OG	53:5:516:C:O2'	2.35	0.40
19:O:63:VAL:HG13	19:O:67:PHE:CD2	2.56	0.40
27:c:69:LYS:HG2	27:c:70:HIS:ND1	2.36	0.40
27:c:166:THR:O	27:c:169:GLU:HG3	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:d:59:LEU:HD23	28:d:59:LEU:HA	1.94	0.40
31:g:120:SER:O	31:g:123:LEU:HB2	2.22	0.40
46:v:31:VAL:HG12	51:3:432:G:O3'	2.21	0.40
47:w:101:SER:O	47:w:105:ARG:HG2	2.21	0.40
51:3:172:U:H2'	51:3:173:C:C6	2.57	0.40
51:3:498:C:H2'	51:3:499:G:C8	2.57	0.40
51:3:627:U:H2'	51:3:628:A:C8	2.57	0.40
51:3:739:G:N2	51:3:761:G:O2'	2.55	0.40
51:3:2023:U:O2'	51:3:2024:C:P	2.79	0.40
51:3:2050:G:H2'	51:3:2051:G:H8	1.87	0.40
51:3:2121:A:O2'	51:3:2176:G:H4'	2.21	0.40
51:3:2157:A:O2'	51:3:2158:C:O5'	2.32	0.40
51:3:2821:U:O2'	51:3:2841:A:H1'	2.20	0.40
52:4:70:G:H1'	52:4:95:G:H22	1.86	0.40
53:5:69:G:H2'	53:5:70:A:O4'	2.21	0.40
53:5:299:U:H2'	53:5:300:A:C8	2.56	0.40
53:5:318:C:N3	53:5:328:G:N2	2.69	0.40
53:5:979:C:H2'	53:5:980:C:C6	2.57	0.40
53:5:1467:A:H3'	53:5:1468:A:O4'	2.20	0.40
4:9:215:ILE:HG13	4:9:291:GLN:HG2	2.03	0.40
5:A:111:ARG:NH1	53:5:1091:C:H5''	2.37	0.40
5:A:227:LEU:O	5:A:231:LEU:HD23	2.21	0.40
11:G:124:THR:HG23	11:G:126:LYS:HG2	2.04	0.40
13:I:8:LYS:O	13:I:9:TYR:HD1	2.04	0.40
17:M:53:ILE:O	17:M:55:GLY:N	2.55	0.40
19:O:33:LEU:HD23	19:O:34:ASN:C	2.47	0.40
21:Q:54:ILE:HD12	21:Q:54:ILE:HG23	1.89	0.40
23:S:66:ARG:O	23:S:69:LYS:HG2	2.21	0.40
25:a:20:ILE:H	25:a:20:ILE:HD12	1.85	0.40
25:a:131:LYS:HB2	25:a:134:PHE:CE2	2.57	0.40
40:p:10:ARG:HH22	51:3:616:G:P	2.44	0.40
45:u:39:LYS:HB2	45:u:51:ILE:HA	2.04	0.40
51:3:17:G:H1	51:3:560:U:H3	1.68	0.40
51:3:215:A:H2'	51:3:216:C:C6	2.56	0.40
51:3:358:A:N6	51:3:359:G:N3	2.69	0.40
51:3:659:C:H2'	51:3:660:U:C5	2.57	0.40
51:3:887:A:H2'	51:3:888:A:C8	2.57	0.40
51:3:900:G:H2'	51:3:901:C:C6	2.57	0.40
51:3:1067:A:N1	51:3:1157:G:C6	2.89	0.40
51:3:1363:C:H2'	51:3:1364:A:C8	2.57	0.40
51:3:2305:C:H5'	51:3:2306:A:OP2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:6:63:U:H2'	54:6:64:G:H8	1.85	0.40
4:9:217:ASP:N	4:9:229:THR:OG1	2.53	0.40
4:9:345:PRO:HG2	4:9:357:THR:HB	2.04	0.40
12:H:52:GLN:HG3	12:H:53:PRO:HD3	2.04	0.40
16:L:55:ALA:O	16:L:59:VAL:HG12	2.21	0.40
22:R:25:GLN:H	22:R:25:GLN:HG3	1.76	0.40
27:c:38:VAL:HA	27:c:41:GLU:HG2	2.03	0.40
28:d:63:GLN:NE2	52:4:41:C:OP1	2.55	0.40
34:j:64:ARG:O	34:j:82:ASN:HA	2.22	0.40
41:q:51:GLU:C	41:q:53:ALA:H	2.30	0.40
44:t:38:GLY:N	44:t:66:GLU:OE2	2.54	0.40
44:t:93:MET:HG3	44:t:101:THR:HB	2.02	0.40
51:3:242:G:C6	51:3:264:G:O6	2.74	0.40
51:3:332:G:H5'	51:3:333:A:OP1	2.21	0.40
51:3:515:A:H4'	51:3:516:A:H5'	2.04	0.40
51:3:735:G:H2'	51:3:736:G:C8	2.57	0.40
51:3:867:G:H2'	51:3:868:C:C6	2.56	0.40
51:3:1495:A:N6	51:3:1547:G:O2'	2.55	0.40
51:3:1852:G:C6	51:3:1853:G:C6	3.10	0.40
51:3:2266:C:O2'	51:3:2435:C:OP2	2.39	0.40
51:3:2532:G:H2'	51:3:2533:A:H8	1.87	0.40
51:3:2843:G:O2'	51:3:2844:U:OP1	2.37	0.40
53:5:275:A:OP1	53:5:276:U:O2'	2.40	0.40
53:5:722:G:H2'	53:5:723:C:C6	2.57	0.40
53:5:783:G:H2'	53:5:784:A:H8	1.87	0.40
53:5:986:U:H3	53:5:1190:G:N2	2.05	0.40
53:5:1075:G:H5'	53:5:1093:A:C8	2.56	0.40
53:5:1137:C:H2'	53:5:1138:U:H6	1.87	0.40
53:5:1390:G:C6	53:5:1461:G:C6	3.09	0.40
53:5:1408:A:C6	53:5:1443:A:N7	2.89	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	0	45/48 (94%)	44 (98%)	1 (2%)	0	100	100
2	1	57/59 (97%)	52 (91%)	5 (9%)	0	100	100
3	2	35/37 (95%)	34 (97%)	1 (3%)	0	100	100
4	9	391/394 (99%)	368 (94%)	23 (6%)	0	100	100
5	A	238/294 (81%)	222 (93%)	16 (7%)	0	100	100
6	B	213/273 (78%)	193 (91%)	20 (9%)	0	100	100
7	C	201/205 (98%)	189 (94%)	12 (6%)	0	100	100
8	D	151/219 (69%)	143 (95%)	8 (5%)	0	100	100
9	E	165/215 (77%)	141 (86%)	23 (14%)	1 (1%)	21	58
10	F	152/155 (98%)	135 (89%)	17 (11%)	0	100	100
11	G	139/142 (98%)	125 (90%)	14 (10%)	0	100	100
12	H	126/132 (96%)	115 (91%)	11 (9%)	0	100	100
13	I	99/108 (92%)	91 (92%)	8 (8%)	0	100	100
14	J	112/121 (93%)	106 (95%)	6 (5%)	0	100	100
15	K	134/139 (96%)	123 (92%)	11 (8%)	0	100	100
16	L	116/124 (94%)	103 (89%)	13 (11%)	0	100	100
17	M	58/61 (95%)	54 (93%)	4 (7%)	0	100	100
18	N	81/86 (94%)	79 (98%)	2 (2%)	0	100	100
19	O	78/94 (83%)	74 (95%)	4 (5%)	0	100	100
20	P	81/85 (95%)	76 (94%)	5 (6%)	0	100	100
21	Q	63/104 (61%)	57 (90%)	6 (10%)	0	100	100
22	R	82/87 (94%)	78 (95%)	4 (5%)	0	100	100
23	S	75/87 (86%)	73 (97%)	2 (3%)	0	100	100
24	T	51/60 (85%)	46 (90%)	5 (10%)	0	100	100
25	a	283/287 (99%)	270 (95%)	13 (5%)	0	100	100
26	b	227/287 (79%)	210 (92%)	17 (8%)	0	100	100
27	c	208/212 (98%)	192 (92%)	16 (8%)	0	100	100
28	d	173/180 (96%)	159 (92%)	14 (8%)	0	100	100
29	e	174/184 (95%)	168 (97%)	6 (3%)	0	100	100
30	f	143/149 (96%)	127 (89%)	16 (11%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
31	g	124/161 (77%)	116 (94%)	7 (6%)	1 (1%)	16	52
32	h	126/137 (92%)	116 (92%)	10 (8%)	0	100	100
33	i	142/146 (97%)	128 (90%)	14 (10%)	0	100	100
34	j	120/122 (98%)	116 (97%)	4 (3%)	0	100	100
35	k	146/151 (97%)	130 (89%)	16 (11%)	0	100	100
36	l	134/139 (96%)	127 (95%)	7 (5%)	0	100	100
37	m	117/124 (94%)	108 (92%)	9 (8%)	0	100	100
38	n	108/116 (93%)	102 (94%)	6 (6%)	0	100	100
39	o	113/119 (95%)	101 (89%)	12 (11%)	0	100	100
40	p	112/127 (88%)	110 (98%)	2 (2%)	0	100	100
41	q	97/100 (97%)	87 (90%)	10 (10%)	0	100	100
42	r	137/159 (86%)	127 (93%)	10 (7%)	0	100	100
43	s	90/237 (38%)	86 (96%)	4 (4%)	0	100	100
44	t	109/111 (98%)	99 (91%)	10 (9%)	0	100	100
45	u	84/104 (81%)	76 (90%)	8 (10%)	0	100	100
46	v	61/65 (94%)	54 (88%)	7 (12%)	0	100	100
47	w	96/111 (86%)	88 (92%)	8 (8%)	0	100	100
48	x	42/97 (43%)	39 (93%)	3 (7%)	0	100	100
49	y	54/57 (95%)	51 (94%)	3 (6%)	0	100	100
50	z	48/53 (91%)	47 (98%)	1 (2%)	0	100	100
All	All	6211/7064 (88%)	5755 (93%)	454 (7%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
31	g	45	PHE
9	E	164	GLY

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	40/41 (98%)	40 (100%)	0	100	100
2	1	51/51 (100%)	51 (100%)	0	100	100
3	2	35/35 (100%)	35 (100%)	0	100	100
4	9	324/325 (100%)	324 (100%)	0	100	100
5	A	212/262 (81%)	212 (100%)	0	100	100
6	B	180/232 (78%)	180 (100%)	0	100	100
7	C	181/183 (99%)	181 (100%)	0	100	100
8	D	123/178 (69%)	123 (100%)	0	100	100
9	E	150/196 (76%)	150 (100%)	0	100	100
10	F	131/132 (99%)	131 (100%)	0	100	100
11	G	123/124 (99%)	123 (100%)	0	100	100
12	H	111/115 (96%)	111 (100%)	0	100	100
13	I	95/99 (96%)	95 (100%)	0	100	100
14	J	91/97 (94%)	91 (100%)	0	100	100
15	K	117/120 (98%)	115 (98%)	2 (2%)	53	67
16	L	100/105 (95%)	100 (100%)	0	100	100
17	M	47/48 (98%)	47 (100%)	0	100	100
18	N	76/78 (97%)	76 (100%)	0	100	100
19	O	69/82 (84%)	69 (100%)	0	100	100
20	P	73/75 (97%)	73 (100%)	0	100	100
21	Q	56/94 (60%)	56 (100%)	0	100	100
22	R	74/77 (96%)	74 (100%)	0	100	100
23	S	70/77 (91%)	70 (100%)	0	100	100
24	T	49/56 (88%)	49 (100%)	0	100	100
25	a	241/243 (99%)	241 (100%)	0	100	100
26	b	186/233 (80%)	186 (100%)	0	100	100
27	c	182/184 (99%)	182 (100%)	0	100	100
28	d	150/154 (97%)	150 (100%)	0	100	100
29	e	153/159 (96%)	153 (100%)	0	100	100
30	f	123/134 (92%)	123 (100%)	0	100	100
31	g	101/129 (78%)	93 (92%)	8 (8%)	11	31

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
32	h	102/110 (93%)	102 (100%)	0	100	100
33	i	126/128 (98%)	126 (100%)	0	100	100
34	j	103/103 (100%)	103 (100%)	0	100	100
35	k	123/126 (98%)	123 (100%)	0	100	100
36	l	113/115 (98%)	113 (100%)	0	100	100
37	m	105/109 (96%)	105 (100%)	0	100	100
38	n	96/99 (97%)	94 (98%)	2 (2%)	47	64
39	o	101/105 (96%)	101 (100%)	0	100	100
40	p	100/108 (93%)	100 (100%)	0	100	100
41	q	90/91 (99%)	90 (100%)	0	100	100
42	r	116/132 (88%)	116 (100%)	0	100	100
43	s	82/208 (39%)	82 (100%)	0	100	100
44	t	96/96 (100%)	96 (100%)	0	100	100
45	u	69/85 (81%)	69 (100%)	0	100	100
46	v	58/60 (97%)	58 (100%)	0	100	100
47	w	87/98 (89%)	87 (100%)	0	100	100
48	x	41/86 (48%)	41 (100%)	0	100	100
49	y	48/49 (98%)	47 (98%)	1 (2%)	47	64
50	z	47/50 (94%)	47 (100%)	0	100	100
All	All	5417/6076 (89%)	5404 (100%)	13 (0%)	85	85

All (13) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
15	K	118	VAL
15	K	122	LYS
31	g	26	ILE
31	g	28	ASP
31	g	30	THR
31	g	32	MET
31	g	42	LYS
31	g	43	LYS
31	g	46	LYS
31	g	89	ILE
38	n	61	LYS

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Mol	Chain	Res	Type
38	n	63	LYS
49	y	47	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (74) such sidechains are listed below:

Mol	Chain	Res	Type
2	1	18	GLN
2	1	28	HIS
2	1	37	GLN
3	2	20	HIS
3	2	30	GLN
4	9	125	GLN
4	9	330	GLN
5	A	51	HIS
5	A	98	ASN
5	A	119	ASN
5	A	192	ASN
6	B	193	GLN
7	C	37	GLN
7	C	115	GLN
7	C	119	HIS
7	C	125	ASN
7	C	192	ASN
9	E	25	GLN
9	E	27	GLN
9	E	79	ASN
9	E	106	GLN
10	F	121	ASN
11	G	24	ASN
12	H	91	GLN
12	H	93	ASN
12	H	128	GLN
14	J	21	ASN
16	L	38	ASN
20	P	49	ASN
20	P	62	GLN
21	Q	83	GLN
23	S	3	ASN
23	S	7	ASN
23	S	14	ASN
25	a	149	ASN
25	a	153	HIS

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Mol	Chain	Res	Type
25	a	159	GLN
26	b	34	ASN
26	b	80	HIS
26	b	100	ASN
26	b	171	HIS
27	c	47	GLN
27	c	83	HIS
27	c	124	ASN
27	c	174	ASN
28	d	55	ASN
29	e	6	ASN
29	e	21	GLN
30	f	84	HIS
30	f	96	GLN
35	k	75	GLN
35	k	134	GLN
35	k	141	ASN
37	m	20	GLN
37	m	58	ASN
37	m	62	GLN
38	n	23	ASN
39	o	15	GLN
39	o	46	GLN
39	o	80	GLN
39	o	85	ASN
40	p	8	GLN
40	p	51	ASN
41	q	73	HIS
41	q	79	HIS
41	q	99	HIS
42	r	112	ASN
44	t	109	ASN
45	u	26	ASN
45	u	43	GLN
45	u	84	GLN
47	w	85	ASN
49	y	25	GLN
50	z	47	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
51	3	2875/2907 (98%)	1067 (37%)	77 (2%)
52	4	103/108 (95%)	41 (39%)	1 (0%)
53	5	1490/1520 (98%)	564 (37%)	35 (2%)
54	6	75/76 (98%)	26 (34%)	0
54	7	75/76 (98%)	26 (34%)	0
All	All	4618/4687 (98%)	1724 (37%)	113 (2%)

All (1724) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
51	3	11	U
51	3	12	A
51	3	13	C
51	3	16	A
51	3	26	G
51	3	27	U
51	3	28	G
51	3	29	G
51	3	39	C
51	3	44	A
51	3	48	G
51	3	52	U
51	3	53	G
51	3	58	A
51	3	62	G
51	3	64	U
51	3	65	A
51	3	73	A
51	3	75	A
51	3	77	G
51	3	81	C
51	3	85	U
51	3	86	A
51	3	92	U
51	3	93	A
51	3	95	G
51	3	98	C
51	3	99	C
51	3	102	A
51	3	103	G
51	3	107	C
51	3	111	G
51	3	114	U

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Mol	Chain	Res	Type
51	3	115	U
51	3	119	A
51	3	120	A
51	3	121	U
51	3	122	G
51	3	123	G
51	3	126	C
51	3	129	U
51	3	132	G
51	3	140	G
51	3	141	A
51	3	146	G
51	3	147	C
51	3	152	A
51	3	163	A
51	3	167	A
51	3	171	G
51	3	172	U
51	3	177	U
51	3	180	A
51	3	184	A
51	3	185	U
51	3	187	C
51	3	188	G
51	3	191	G
51	3	192	U
51	3	194	A
51	3	198	G
51	3	200	A
51	3	203	A
51	3	205	C
51	3	208	A
51	3	209	G
51	3	210	U
51	3	211	A
51	3	220	A
51	3	226	A
51	3	227	A
51	3	229	C
51	3	232	A
51	3	234	G
51	3	237	A

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Mol	Chain	Res	Type
51	3	245	U
51	3	252	G
51	3	253	C
51	3	254	G
51	3	256	G
51	3	259	A
51	3	266	A
51	3	268	C
51	3	269	A
51	3	270	G
51	3	275	A
51	3	276	A
51	3	277	C
51	3	278	U
51	3	283	A
51	3	284	U
51	3	286	A
51	3	287	G
51	3	288	A
51	3	289	U
51	3	292	G
51	3	293	G
51	3	294	G
51	3	295	U
51	3	296	U
51	3	297	G
51	3	299	A
51	3	308	A
51	3	311	G
51	3	315	A
51	3	316	C
51	3	319	G
51	3	335	G
51	3	341	G
51	3	343	A
51	3	345	A
51	3	348	A
51	3	354	C
51	3	356	A
51	3	357	A
51	3	359	G
51	3	363	G

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Mol	Chain	Res	Type
51	3	364	A
51	3	366	A
51	3	372	G
51	3	375	U
51	3	379	A
51	3	382	U
51	3	384	G
51	3	386	U
51	3	393	C
51	3	394	C
51	3	395	U
51	3	397	G
51	3	402	A
51	3	403	U
51	3	404	C
51	3	406	C
51	3	409	A
51	3	410	G
51	3	411	U
51	3	422	A
51	3	423	C
51	3	424	G
51	3	425	U
51	3	426	U
51	3	428	U
51	3	429	U
51	3	430	U
51	3	432	G
51	3	434	G
51	3	436	G
51	3	437	A
51	3	438	A
51	3	439	U
51	3	440	C
51	3	441	U
51	3	442	G
51	3	445	C
51	3	446	A
51	3	447	G
51	3	448	A
51	3	449	C
51	3	460	G

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Mol	Chain	Res	Type
51	3	464	A
51	3	465	A
51	3	466	A
51	3	468	A
51	3	471	A
51	3	473	U
51	3	476	G
51	3	478	G
51	3	481	C
51	3	484	U
51	3	485	A
51	3	487	C
51	3	490	A
51	3	491	A
51	3	492	C
51	3	494	G
51	3	495	U
51	3	496	A
51	3	503	G
51	3	506	A
51	3	508	A
51	3	509	G
51	3	514	A
51	3	515	A
51	3	517	G
51	3	518	A
51	3	520	C
51	3	526	G
51	3	531	G
51	3	538	A
51	3	539	U
51	3	540	A
51	3	543	U
51	3	544	U
51	3	545	C
51	3	547	G
51	3	548	A
51	3	553	A
51	3	555	A
51	3	562	C
51	3	564	A
51	3	565	C

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Mol	Chain	Res	Type
51	3	566	G
51	3	567	U
51	3	573	A
51	3	579	U
51	3	580	U
51	3	581	A
51	3	582	A
51	3	583	U
51	3	589	A
51	3	596	G
51	3	597	C
51	3	605	A
51	3	606	G
51	3	607	U
51	3	608	A
51	3	609	U
51	3	619	A
51	3	622	U
51	3	627	U
51	3	628	A
51	3	633	G
51	3	635	G
51	3	638	A
51	3	641	U
51	3	649	A
51	3	656	G
51	3	657	A
51	3	658	G
51	3	659	C
51	3	660	U
51	3	673	A
51	3	678	U
51	3	681	A
51	3	682	A
51	3	687	G
51	3	689	U
51	3	691	G
51	3	692	U
51	3	695	G
51	3	697	U
51	3	701	A
51	3	703	A

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Mol	Chain	Res	Type
51	3	705	A
51	3	712	A
51	3	716	G
51	3	717	U
51	3	719	G
51	3	721	G
51	3	722	C
51	3	723	U
51	3	730	G
51	3	739	G
51	3	740	A
51	3	754	U
51	3	761	G
51	3	762	A
51	3	765	A
51	3	769	A
51	3	771	C
51	3	775	C
51	3	780	G
51	3	782	U
51	3	783	G
51	3	784	A
51	3	792	G
51	3	794	G
51	3	795	G
51	3	797	U
51	3	800	C
51	3	803	G
51	3	806	A
51	3	810	G
51	3	812	G
51	3	814	U
51	3	815	G
51	3	817	A
51	3	819	U
51	3	820	U
51	3	824	A
51	3	827	G
51	3	832	C
51	3	836	G
51	3	840	G
51	3	841	C

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Mol	Chain	Res	Type
51	3	842	U
51	3	846	U
51	3	847	C
51	3	849	C
51	3	854	A
51	3	862	U
51	3	869	U
51	3	871	G
51	3	873	G
51	3	874	U
51	3	877	G
51	3	878	A
51	3	880	C
51	3	882	C
51	3	883	A
51	3	893	A
51	3	896	U
51	3	904	C
51	3	906	G
51	3	908	A
51	3	914	G
51	3	916	U
51	3	920	G
51	3	921	C
51	3	922	C
51	3	932	U
51	3	933	A
51	3	936	G
51	3	943	A
51	3	945	U
51	3	947	A
51	3	949	C
51	3	952	U
51	3	953	G
51	3	954	A
51	3	962	U
51	3	965	U
51	3	970	U
51	3	973	U
51	3	978	G
51	3	980	C
51	3	981	A

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Mol	Chain	Res	Type
51	3	982	G
51	3	989	G
51	3	993	A
51	3	994	U
51	3	995	A
51	3	996	A
51	3	997	G
51	3	999	U
51	3	1000	U
51	3	1009	A
51	3	1011	A
51	3	1016	A
51	3	1018	G
51	3	1024	A
51	3	1025	G
51	3	1026	A
51	3	1031	U
51	3	1032	A
51	3	1033	A
51	3	1034	A
51	3	1036	A
51	3	1037	A
51	3	1040	U
51	3	1045	A
51	3	1048	A
51	3	1051	U
51	3	1054	U
51	3	1055	A
51	3	1057	G
51	3	1061	A
51	3	1068	U
51	3	1069	G
51	3	1073	A
51	3	1074	A
51	3	1076	U
51	3	1077	G
51	3	1078	C
51	3	1079	U
51	3	1081	A
51	3	1082	A
51	3	1083	A
51	3	1087	C

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Mol	Chain	Res	Type
51	3	1089	A
51	3	1090	G
51	3	1093	U
51	3	1096	U
51	3	1097	G
51	3	1098	G
51	3	1100	U
51	3	1101	U
51	3	1102	A
51	3	1103	G
51	3	1105	A
51	3	1108	A
51	3	1109	G
51	3	1113	U
51	3	1114	C
51	3	1115	G
51	3	1116	U
51	3	1118	U
51	3	1120	A
51	3	1122	G
51	3	1123	A
51	3	1125	U
51	3	1128	G
51	3	1130	A
51	3	1131	A
51	3	1132	C
51	3	1133	A
51	3	1144	C
51	3	1145	G
51	3	1146	A
51	3	1147	G
51	3	1150	U
51	3	1151	U
51	3	1152	U
51	3	1157	G
51	3	1162	A
51	3	1165	U
51	3	1166	G
51	3	1167	U
51	3	1168	A
51	3	1169	A
51	3	1170	C

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Mol	Chain	Res	Type
51	3	1171	G
51	3	1174	G
51	3	1177	A
51	3	1178	A
51	3	1181	A
51	3	1182	U
51	3	1184	U
51	3	1186	A
51	3	1197	G
51	3	1199	A
51	3	1204	A
51	3	1205	U
51	3	1207	U
51	3	1209	U
51	3	1210	A
51	3	1211	U
51	3	1212	C
51	3	1213	U
51	3	1216	U
51	3	1217	G
51	3	1222	A
51	3	1227	C
51	3	1234	U
51	3	1240	U
51	3	1248	A
51	3	1249	A
51	3	1250	A
51	3	1254	U
51	3	1257	G
51	3	1260	U
51	3	1263	G
51	3	1267	A
51	3	1268	U
51	3	1276	A
51	3	1277	A
51	3	1279	U
51	3	1280	G
51	3	1281	A
51	3	1282	G
51	3	1284	A
51	3	1285	U
51	3	1286	G

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Mol	Chain	Res	Type
51	3	1293	U
51	3	1294	G
51	3	1295	A
51	3	1298	A
51	3	1301	G
51	3	1302	C
51	3	1303	U
51	3	1307	G
51	3	1318	U
51	3	1319	C
51	3	1323	A
51	3	1325	C
51	3	1328	A
51	3	1329	U
51	3	1335	A
51	3	1337	G
51	3	1339	U
51	3	1340	U
51	3	1342	C
51	3	1343	C
51	3	1344	U
51	3	1347	A
51	3	1350	A
51	3	1351	G
51	3	1352	G
51	3	1353	G
51	3	1354	U
51	3	1356	G
51	3	1357	U
51	3	1365	G
51	3	1367	G
51	3	1369	U
51	3	1372	U
51	3	1373	C
51	3	1375	G
51	3	1377	A
51	3	1382	A
51	3	1388	G
51	3	1390	C
51	3	1395	A
51	3	1396	A
51	3	1400	U

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Mol	Chain	Res	Type
51	3	1402	G
51	3	1406	A
51	3	1407	U
51	3	1409	G
51	3	1410	A
51	3	1412	A
51	3	1413	A
51	3	1422	U
51	3	1423	A
51	3	1428	U
51	3	1431	A
51	3	1434	U
51	3	1435	A
51	3	1440	U
51	3	1444	C
51	3	1445	U
51	3	1449	G
51	3	1456	C
51	3	1465	U
51	3	1467	U
51	3	1472	C
51	3	1478	U
51	3	1479	A
51	3	1480	A
51	3	1481	U
51	3	1482	U
51	3	1483	G
51	3	1487	U
51	3	1488	U
51	3	1497	A
51	3	1502	A
51	3	1507	G
51	3	1508	G
51	3	1509	U
51	3	1510	A
51	3	1513	A
51	3	1515	A
51	3	1523	C
51	3	1524	C
51	3	1525	G
51	3	1527	U
51	3	1530	G

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Mol	Chain	Res	Type
51	3	1533	U
51	3	1534	A
51	3	1539	U
51	3	1541	A
51	3	1542	G
51	3	1548	A
51	3	1550	G
51	3	1559	A
51	3	1571	G
51	3	1580	G
51	3	1582	G
51	3	1585	A
51	3	1586	U
51	3	1587	U
51	3	1589	A
51	3	1591	C
51	3	1592	A
51	3	1594	G
51	3	1603	A
51	3	1612	U
51	3	1615	G
51	3	1618	U
51	3	1619	A
51	3	1621	U
51	3	1634	A
51	3	1635	G
51	3	1640	G
51	3	1641	A
51	3	1642	G
51	3	1643	A
51	3	1644	A
51	3	1646	G
51	3	1647	A
51	3	1651	C
51	3	1653	C
51	3	1655	U
51	3	1656	A
51	3	1663	G
51	3	1665	G
51	3	1666	A
51	3	1667	G
51	3	1673	U

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Mol	Chain	Res	Type
51	3	1677	G
51	3	1678	U
51	3	1680	A
51	3	1681	G
51	3	1682	C
51	3	1688	A
51	3	1694	A
51	3	1696	C
51	3	1706	C
51	3	1708	G
51	3	1714	U
51	3	1716	A
51	3	1720	C
51	3	1723	A
51	3	1729	G
51	3	1734	A
51	3	1736	G
51	3	1741	G
51	3	1747	G
51	3	1748	U
51	3	1749	A
51	3	1750	A
51	3	1751	A
51	3	1756	A
51	3	1761	C
51	3	1762	A
51	3	1763	G
51	3	1764	U
51	3	1766	A
51	3	1768	G
51	3	1769	A
51	3	1770	A
51	3	1771	C
51	3	1772	G
51	3	1775	G
51	3	1776	G
51	3	1780	A
51	3	1781	C
51	3	1782	U
51	3	1784	U
51	3	1787	A
51	3	1788	A

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Mol	Chain	Res	Type
51	3	1789	C
51	3	1791	A
51	3	1793	A
51	3	1794	A
51	3	1795	C
51	3	1797	C
51	3	1798	A
51	3	1799	A
51	3	1803	U
51	3	1806	G
51	3	1807	C
51	3	1808	C
51	3	1816	A
51	3	1821	G
51	3	1822	A
51	3	1823	U
51	3	1824	G
51	3	1826	A
51	3	1828	A
51	3	1832	G
51	3	1836	A
51	3	1841	U
51	3	1842	G
51	3	1845	C
51	3	1847	G
51	3	1848	U
51	3	1854	A
51	3	1855	A
51	3	1859	U
51	3	1865	A
51	3	1866	G
51	3	1868	A
51	3	1876	G
51	3	1878	A
51	3	1879	A
51	3	1880	G
51	3	1884	A
51	3	1885	G
51	3	1889	U
51	3	1891	A
51	3	1893	C
51	3	1894	U

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Mol	Chain	Res	Type
51	3	1906	G
51	3	1907	A
51	3	1910	G
51	3	1913	G
51	3	1919	A
51	3	1920	A
51	3	1926	A
51	3	1934	A
51	3	1936	G
51	3	1937	G
51	3	1941	C
51	3	1943	A
51	3	1944	A
51	3	1945	A
51	3	1947	U
51	3	1948	C
51	3	1950	U
51	3	1951	A
51	3	1962	U
51	3	1964	C
51	3	1966	G
51	3	1968	C
51	3	1969	C
51	3	1970	C
51	3	1972	C
51	3	1974	U
51	3	1975	G
51	3	1976	A
51	3	1977	A
51	3	1979	G
51	3	1986	C
51	3	1987	C
51	3	1988	A
51	3	1989	U
51	3	1990	C
51	3	1992	C
51	3	1996	A
51	3	1997	C
51	3	1999	G
51	3	2000	U
51	3	2004	G
51	3	2008	A

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Mol	Chain	Res	Type
51	3	2022	A
51	3	2023	U
51	3	2024	C
51	3	2025	C
51	3	2030	A
51	3	2032	G
51	3	2037	A
51	3	2038	A
51	3	2040	A
51	3	2041	C
51	3	2050	G
51	3	2052	C
51	3	2057	C
51	3	2059	G
51	3	2060	G
51	3	2062	C
51	3	2063	G
51	3	2064	G
51	3	2066	A
51	3	2067	A
51	3	2068	G
51	3	2069	A
51	3	2076	G
51	3	2077	A
51	3	2083	U
51	3	2084	A
51	3	2098	U
51	3	2099	U
51	3	2100	G
51	3	2103	C
51	3	2104	A
51	3	2110	U
51	3	2111	U
51	3	2112	A
51	3	2114	C
51	3	2115	A
51	3	2117	G
51	3	2118	U
51	3	2119	A
51	3	2121	A
51	3	2122	G
51	3	2123	A

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Mol	Chain	Res	Type
51	3	2124	A
51	3	2125	U
51	3	2126	A
51	3	2127	G
51	3	2128	G
51	3	2132	G
51	3	2134	G
51	3	2135	C
51	3	2136	A
51	3	2137	A
51	3	2139	C
51	3	2140	G
51	3	2141	A
51	3	2142	U
51	3	2143	G
51	3	2144	C
51	3	2145	A
51	3	2146	A
51	3	2148	U
51	3	2150	C
51	3	2151	G
51	3	2152	C
51	3	2153	U
51	3	2154	A
51	3	2156	G
51	3	2157	A
51	3	2158	C
51	3	2160	U
51	3	2163	U
51	3	2164	G
51	3	2165	A
51	3	2168	C
51	3	2170	A
51	3	2171	A
51	3	2172	A
51	3	2174	G
51	3	2176	G
51	3	2177	G
51	3	2178	A
51	3	2179	A
51	3	2180	U
51	3	2181	A

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Mol	Chain	Res	Type
51	3	2183	U
51	3	2188	U
51	3	2189	U
51	3	2190	G
51	3	2191	G
51	3	2192	U
51	3	2193	U
51	3	2194	G
51	3	2195	U
51	3	2196	G
51	3	2198	G
51	3	2200	U
51	3	2202	U
51	3	2206	A
51	3	2207	A
51	3	2211	G
51	3	2217	G
51	3	2218	U
51	3	2219	U
51	3	2220	A
51	3	2221	U
51	3	2222	C
51	3	2226	U
51	3	2227	U
51	3	2231	A
51	3	2233	A
51	3	2236	G
51	3	2237	U
51	3	2246	G
51	3	2247	G
51	3	2253	U
51	3	2254	G
51	3	2258	G
51	3	2259	G
51	3	2274	A
51	3	2276	A
51	3	2283	C
51	3	2284	G
51	3	2286	A
51	3	2287	G
51	3	2288	G
51	3	2290	G

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Mol	Chain	Res	Type
51	3	2291	U
51	3	2294	A
51	3	2295	A
51	3	2305	C
51	3	2306	A
51	3	2313	U
51	3	2314	U
51	3	2315	G
51	3	2316	G
51	3	2317	A
51	3	2322	G
51	3	2324	A
51	3	2327	U
51	3	2328	A
51	3	2329	G
51	3	2331	G
51	3	2332	U
51	3	2333	G
51	3	2334	U
51	3	2335	A
51	3	2341	G
51	3	2342	U
51	3	2343	A
51	3	2344	A
51	3	2348	U
51	3	2352	U
51	3	2353	G
51	3	2354	A
51	3	2355	C
51	3	2358	U
51	3	2362	A
51	3	2369	G
51	3	2380	U
51	3	2381	G
51	3	2382	A
51	3	2387	U
51	3	2391	G
51	3	2393	C
51	3	2396	A
51	3	2397	G
51	3	2398	U
51	3	2400	A

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Mol	Chain	Res	Type
51	3	2405	G
51	3	2410	C
51	3	2411	C
51	3	2414	U
51	3	2415	A
51	3	2418	G
51	3	2422	G
51	3	2424	C
51	3	2427	U
51	3	2428	C
51	3	2429	G
51	3	2430	C
51	3	2431	U
51	3	2432	C
51	3	2433	A
51	3	2436	G
51	3	2437	G
51	3	2438	A
51	3	2439	U
51	3	2440	A
51	3	2442	A
51	3	2443	A
51	3	2448	C
51	3	2449	U
51	3	2452	G
51	3	2454	G
51	3	2455	G
51	3	2456	A
51	3	2457	U
51	3	2458	A
51	3	2461	A
51	3	2467	A
51	3	2472	G
51	3	2473	C
51	3	2475	C
51	3	2477	A
51	3	2478	G
51	3	2482	U
51	3	2483	C
51	3	2486	A
51	3	2487	U
51	3	2488	C

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Mol	Chain	Res	Type
51	3	2489	G
51	3	2497	U
51	3	2499	U
51	3	2502	G
51	3	2507	C
51	3	2509	C
51	3	2510	G
51	3	2511	A
51	3	2512	U
51	3	2513	G
51	3	2519	U
51	3	2520	C
51	3	2521	A
51	3	2522	U
51	3	2526	A
51	3	2528	C
51	3	2530	U
51	3	2531	C
51	3	2538	A
51	3	2550	A
51	3	2555	U
51	3	2564	C
51	3	2565	G
51	3	2568	G
51	3	2571	U
51	3	2572	A
51	3	2575	G
51	3	2577	G
51	3	2580	A
51	3	2581	C
51	3	2582	G
51	3	2584	G
51	3	2585	A
51	3	2586	G
51	3	2588	U
51	3	2589	G
51	3	2593	U
51	3	2598	C
51	3	2605	G
51	3	2609	C
51	3	2610	A
51	3	2611	G

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Mol	Chain	Res	Type
51	3	2613	U
51	3	2621	U
51	3	2626	A
51	3	2634	C
51	3	2635	G
51	3	2637	A
51	3	2638	G
51	3	2639	G
51	3	2641	A
51	3	2643	A
51	3	2644	U
51	3	2645	U
51	3	2647	A
51	3	2649	G
51	3	2655	U
51	3	2658	U
51	3	2668	A
51	3	2669	G
51	3	2673	A
51	3	2674	C
51	3	2675	C
51	3	2676	G
51	3	2686	C
51	3	2690	U
51	3	2692	U
51	3	2697	C
51	3	2698	U
51	3	2707	A
51	3	2709	C
51	3	2716	U
51	3	2722	G
51	3	2729	A
51	3	2731	U
51	3	2732	A
51	3	2735	G
51	3	2737	G
51	3	2740	U
51	3	2741	A
51	3	2742	U
51	3	2743	U
51	3	2745	G
51	3	2747	U

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Mol	Chain	Res	Type
51	3	2748	A
51	3	2752	G
51	3	2756	A
51	3	2757	A
51	3	2758	A
51	3	2759	G
51	3	2760	C
51	3	2765	A
51	3	2769	G
51	3	2772	A
51	3	2773	A
51	3	2774	A
51	3	2778	U
51	3	2779	C
51	3	2780	U
51	3	2786	A
51	3	2787	U
51	3	2790	A
51	3	2791	U
51	3	2793	U
51	3	2799	U
51	3	2800	U
51	3	2801	U
51	3	2804	C
51	3	2805	A
51	3	2806	A
51	3	2807	G
51	3	2808	A
51	3	2810	A
51	3	2812	U
51	3	2813	A
51	3	2814	A
51	3	2815	G
51	3	2822	C
51	3	2824	A
51	3	2825	A
51	3	2829	G
51	3	2833	A
51	3	2834	C
51	3	2836	U
51	3	2837	U
51	3	2840	U

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Mol	Chain	Res	Type
51	3	2841	A
51	3	2843	G
51	3	2844	U
51	3	2847	C
51	3	2853	U
51	3	2854	A
51	3	2862	U
51	3	2863	G
51	3	2865	U
51	3	2866	A
51	3	2869	U
51	3	2870	U
51	3	2871	G
51	3	2872	A
51	3	2874	C
51	3	2876	G
51	3	2877	A
51	3	2883	A
51	3	2884	C
51	3	2886	A
51	3	2888	U
51	3	2890	G
51	3	2896	G
51	3	2897	G
51	3	2898	A
51	3	2899	C
52	4	3	U
52	4	4	G
52	4	7	G
52	4	10	C
52	4	11	A
52	4	14	U
52	4	16	G
52	4	17	C
52	4	19	G
52	4	21	G
52	4	23	A
52	4	26	C
52	4	27	A
52	4	29	C
52	4	30	U
52	4	38	U

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Mol	Chain	Res	Type
52	4	39	U
52	4	40	U
52	4	41	C
52	4	42	G
52	4	44	A
52	4	45	C
52	4	47	C
52	4	48	A
52	4	49	G
52	4	54	U
52	4	55	A
52	4	60	C
52	4	61	A
52	4	63	U
52	4	64	G
52	4	65	G
52	4	71	A
52	4	78	C
52	4	86	G
52	4	88	G
52	4	89	A
52	4	96	G
52	4	99	A
52	4	100	G
52	4	102	A
53	5	8	G
53	5	9	A
53	5	10	G
53	5	20	C
53	5	23	G
53	5	25	U
53	5	28	G
53	5	29	G
53	5	31	U
53	5	33	A
53	5	36	G
53	5	38	U
53	5	39	G
53	5	40	G
53	5	48	C
53	5	49	C
53	5	52	A

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Mol	Chain	Res	Type
53	5	55	C
53	5	63	U
53	5	65	G
53	5	66	A
53	5	73	G
53	5	76	G
53	5	77	U
53	5	78	A
53	5	80	U
53	5	82	C
53	5	85	U
53	5	86	A
53	5	88	A
53	5	94	A
53	5	96	G
53	5	97	G
53	5	101	A
53	5	105	A
53	5	106	C
53	5	113	C
53	5	115	A
53	5	116	A
53	5	117	U
53	5	120	A
53	5	124	U
53	5	127	A
53	5	130	G
53	5	137	A
53	5	140	U
53	5	149	G
53	5	154	G
53	5	159	U
53	5	160	A
53	5	167	A
53	5	169	G
53	5	172	C
53	5	174	U
53	5	176	G
53	5	177	G
53	5	188	U
53	5	189	C
53	5	190	A

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Mol	Chain	Res	Type
53	5	191	A
53	5	192	A
53	5	195	U
53	5	197	A
53	5	204	C
53	5	205	U
53	5	206	G
53	5	208	A
53	5	210	G
53	5	212	G
53	5	222	U
53	5	223	G
53	5	224	A
53	5	229	G
53	5	230	G
53	5	231	U
53	5	232	G
53	5	234	G
53	5	236	C
53	5	240	U
53	5	241	C
53	5	242	A
53	5	243	G
53	5	248	U
53	5	254	G
53	5	255	G
53	5	256	G
53	5	259	A
53	5	261	G
53	5	262	G
53	5	263	C
53	5	270	A
53	5	277	G
53	5	278	A
53	5	282	G
53	5	285	G
53	5	286	C
53	5	290	G
53	5	292	U
53	5	293	G
53	5	294	A
53	5	301	G

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Mol	Chain	Res	Type
53	5	302	A
53	5	304	U
53	5	308	C
53	5	312	A
53	5	315	G
53	5	316	G
53	5	317	A
53	5	320	G
53	5	321	A
53	5	323	A
53	5	324	C
53	5	325	A
53	5	328	G
53	5	332	A
53	5	334	A
53	5	337	C
53	5	341	C
53	5	342	G
53	5	344	G
53	5	347	G
53	5	348	C
53	5	362	U
53	5	363	U
53	5	364	U
53	5	365	U
53	5	367	A
53	5	368	C
53	5	369	A
53	5	371	U
53	5	374	G
53	5	378	A
53	5	380	G
53	5	383	U
53	5	384	G
53	5	388	G
53	5	389	A
53	5	396	C
53	5	402	G
53	5	403	A
53	5	404	A
53	5	407	A
53	5	408	U

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Mol	Chain	Res	Type
53	5	410	A
53	5	411	A
53	5	414	U
53	5	417	U
53	5	418	U
53	5	419	A
53	5	420	A
53	5	421	G
53	5	425	G
53	5	426	U
53	5	427	A
53	5	432	U
53	5	435	U
53	5	436	U
53	5	437	U
53	5	444	G
53	5	446	A
53	5	447	G
53	5	448	A
53	5	449	A
53	5	452	A
53	5	456	U
53	5	457	A
53	5	458	G
53	5	459	C
53	5	461	G
53	5	463	U
53	5	464	A
53	5	465	A
53	5	468	G
53	5	469	C
53	5	470	U
53	5	471	A
53	5	472	G
53	5	476	U
53	5	477	U
53	5	479	A
53	5	481	U
53	5	482	G
53	5	483	U
53	5	485	C
53	5	486	C

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Mol	Chain	Res	Type
53	5	488	U
53	5	493	A
53	5	494	A
53	5	495	U
53	5	496	A
53	5	497	A
53	5	506	U
53	5	509	C
53	5	511	A
53	5	514	U
53	5	515	G
53	5	516	C
53	5	517	C
53	5	518	A
53	5	519	G
53	5	520	C
53	5	523	U
53	5	524	C
53	5	525	G
53	5	527	G
53	5	529	U
53	5	530	A
53	5	531	A
53	5	535	A
53	5	542	G
53	5	545	A
53	5	548	G
53	5	549	U
53	5	552	U
53	5	553	C
53	5	557	A
53	5	558	U
53	5	559	U
53	5	560	U
53	5	561	A
53	5	562	U
53	5	565	G
53	5	566	G
53	5	568	G
53	5	570	A
53	5	571	A
53	5	574	C

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Mol	Chain	Res	Type
53	5	575	A
53	5	576	A
53	5	579	G
53	5	582	G
53	5	584	C
53	5	586	G
53	5	592	A
53	5	593	A
53	5	594	A
53	5	596	U
53	5	599	G
53	5	600	G
53	5	605	A
53	5	610	C
53	5	614	U
53	5	618	U
53	5	628	A
53	5	630	G
53	5	632	A
53	5	634	U
53	5	635	G
53	5	636	G
53	5	639	A
53	5	641	U
53	5	642	A
53	5	644	U
53	5	645	A
53	5	648	C
53	5	653	G
53	5	662	G
53	5	669	U
53	5	672	A
53	5	682	G
53	5	684	A
53	5	687	G
53	5	690	G
53	5	691	A
53	5	692	A
53	5	693	A
53	5	695	G
53	5	698	U
53	5	699	A

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Mol	Chain	Res	Type
53	5	700	G
53	5	708	A
53	5	711	G
53	5	715	A
53	5	716	C
53	5	717	C
53	5	718	A
53	5	719	G
53	5	720	U
53	5	721	G
53	5	730	G
53	5	733	A
53	5	737	U
53	5	738	A
53	5	740	G
53	5	744	U
53	5	745	U
53	5	752	G
53	5	755	U
53	5	757	G
53	5	760	U
53	5	761	U
53	5	763	A
53	5	772	G
53	5	774	A
53	5	779	A
53	5	780	U
53	5	784	A
53	5	785	U
53	5	786	U
53	5	787	A
53	5	788	G
53	5	789	A
53	5	790	U
53	5	791	A
53	5	793	C
53	5	796	A
53	5	798	U
53	5	799	A
53	5	800	G
53	5	802	C
53	5	804	A

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Mol	Chain	Res	Type
53	5	811	A
53	5	812	A
53	5	814	C
53	5	815	G
53	5	817	U
53	5	818	A
53	5	821	U
53	5	822	A
53	5	825	A
53	5	826	G
53	5	838	A
53	5	839	U
53	5	840	C
53	5	841	C
53	5	842	C
53	5	846	G
53	5	849	A
53	5	853	A
53	5	855	G
53	5	864	U
53	5	865	U
53	5	866	A
53	5	867	A
53	5	868	G
53	5	870	A
53	5	878	U
53	5	879	G
53	5	884	G
53	5	886	A
53	5	888	A
53	5	893	C
53	5	894	A
53	5	896	G
53	5	903	A
53	5	904	C
53	5	905	U
53	5	906	C
53	5	907	A
53	5	908	A
53	5	910	C
53	5	911	G
53	5	917	G

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Mol	Chain	Res	Type
53	5	920	G
53	5	921	G
53	5	922	G
53	5	929	C
53	5	930	A
53	5	932	A
53	5	934	G
53	5	937	G
53	5	938	U
53	5	939	G
53	5	948	U
53	5	950	C
53	5	952	U
53	5	953	A
53	5	955	U
53	5	959	A
53	5	962	G
53	5	963	U
53	5	964	A
53	5	966	A
53	5	969	A
53	5	970	A
53	5	971	A
53	5	972	A
53	5	975	C
53	5	976	U
53	5	977	U
53	5	978	A
53	5	983	G
53	5	987	U
53	5	988	G
53	5	989	A
53	5	994	C
53	5	997	G
53	5	998	G
53	5	1000	A
53	5	1002	A
53	5	1006	A
53	5	1008	G
53	5	1009	G
53	5	1013	C
53	5	1014	A

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Mol	Chain	Res	Type
53	5	1016	A
53	5	1019	G
53	5	1030	G
53	5	1032	G
53	5	1034	G
53	5	1036	C
53	5	1037	A
53	5	1040	U
53	5	1042	G
53	5	1045	C
53	5	1046	A
53	5	1047	U
53	5	1056	U
53	5	1061	U
53	5	1070	G
53	5	1071	A
53	5	1072	G
53	5	1074	U
53	5	1075	G
53	5	1080	G
53	5	1081	U
53	5	1083	A
53	5	1084	A
53	5	1085	G
53	5	1086	U
53	5	1089	C
53	5	1090	G
53	5	1091	C
53	5	1092	A
53	5	1104	C
53	5	1109	U
53	5	1113	U
53	5	1114	A
53	5	1115	G
53	5	1118	A
53	5	1119	C
53	5	1121	U
53	5	1122	U
53	5	1123	G
53	5	1124	U
53	5	1125	C
53	5	1128	G

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Mol	Chain	Res	Type
53	5	1129	C
53	5	1130	G
53	5	1133	A
53	5	1134	C
53	5	1135	U
53	5	1136	G
53	5	1139	A
53	5	1142	G
53	5	1143	C
53	5	1144	A
53	5	1145	A
53	5	1151	A
53	5	1152	G
53	5	1155	A
53	5	1158	A
53	5	1159	A
53	5	1165	G
53	5	1169	U
53	5	1171	A
53	5	1172	A
53	5	1175	C
53	5	1176	A
53	5	1188	A
53	5	1189	U
53	5	1195	G
53	5	1198	C
53	5	1199	U
53	5	1200	G
53	5	1201	C
53	5	1203	A
53	5	1206	G
53	5	1215	U
53	5	1216	G
53	5	1217	G
53	5	1220	A
53	5	1225	A
53	5	1228	C
53	5	1231	U
53	5	1232	C
53	5	1233	G
53	5	1235	C
53	5	1240	U

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Mol	Chain	Res	Type
53	5	1245	A
53	5	1255	A
53	5	1256	U
53	5	1257	C
53	5	1260	U
53	5	1261	A
53	5	1262	A
53	5	1266	U
53	5	1268	G
53	5	1269	U
53	5	1271	U
53	5	1272	C
53	5	1273	A
53	5	1274	G
53	5	1279	G
53	5	1293	A
53	5	1294	U
53	5	1296	C
53	5	1297	G
53	5	1304	U
53	5	1305	G
53	5	1306	A
53	5	1307	A
53	5	1310	C
53	5	1311	G
53	5	1314	A
53	5	1319	U
53	5	1320	A
53	5	1321	G
53	5	1325	U
53	5	1326	C
53	5	1328	C
53	5	1332	U
53	5	1337	U
53	5	1338	A
53	5	1340	G
53	5	1342	C
53	5	1343	G
53	5	1346	G
53	5	1353	C
53	5	1355	U
53	5	1356	U

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Mol	Chain	Res	Type
53	5	1358	U
53	5	1369	A
53	5	1372	C
53	5	1373	A
53	5	1377	C
53	5	1381	U
53	5	1396	U
53	5	1398	G
53	5	1402	U
53	5	1403	A
53	5	1408	A
53	5	1411	A
53	5	1417	U
53	5	1423	C
53	5	1425	A
53	5	1426	U
53	5	1427	U
53	5	1433	G
53	5	1440	U
53	5	1443	A
53	5	1444	G
53	5	1446	A
53	5	1450	C
53	5	1451	A
53	5	1458	A
53	5	1459	U
53	5	1463	A
53	5	1465	U
53	5	1467	A
53	5	1468	A
53	5	1473	U
53	5	1474	A
53	5	1476	C
53	5	1477	A
53	5	1480	G
53	5	1481	U
53	5	1488	A
53	5	1492	G
53	5	1495	C
53	5	1496	G
53	5	1504	G
53	5	1505	G

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Mol	Chain	Res	Type
53	5	1509	A
54	6	5	C
54	6	14	C
54	6	15	A
54	6	17	U
54	6	18	C
54	6	19	G
54	6	20	G
54	6	21	U
54	6	31	G
54	6	35	G
54	6	47	G
54	6	49	C
54	6	50	G
54	6	51	G
54	6	57	C
54	6	58	G
54	6	59	A
54	6	60	U
54	6	62	C
54	6	64	G
54	6	68	G
54	6	69	A
54	6	71	A
54	6	73	C
54	6	74	A
54	6	75	C
54	7	5	C
54	7	14	C
54	7	15	A
54	7	17	U
54	7	18	C
54	7	19	G
54	7	20	G
54	7	21	U
54	7	31	G
54	7	35	G
54	7	47	G
54	7	49	C
54	7	50	G
54	7	51	G
54	7	57	C

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Mol	Chain	Res	Type
54	7	58	G
54	7	59	A
54	7	60	U
54	7	62	C
54	7	64	G
54	7	68	G
54	7	69	A
54	7	71	A
54	7	73	C
54	7	74	A
54	7	75	C

All (113) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
51	3	26	G
51	3	27	U
51	3	43	A
51	3	171	G
51	3	374	A
51	3	410	G
51	3	422	A
51	3	427	A
51	3	428	U
51	3	431	U
51	3	448	A
51	3	464	A
51	3	465	A
51	3	513	A
51	3	659	C
51	3	686	C
51	3	794	G
51	3	903	A
51	3	944	U
51	3	952	U
51	3	964	A
51	3	994	U
51	3	996	A
51	3	1047	A
51	3	1077	G
51	3	1082	A
51	3	1086	G

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Mol	Chain	Res	Type
51	3	1107	C
51	3	1114	C
51	3	1117	U
51	3	1124	G
51	3	1130	A
51	3	1143	U
51	3	1248	A
51	3	1297	U
51	3	1302	C
51	3	1349	C
51	3	1350	A
51	3	1355	C
51	3	1464	G
51	3	1487	U
51	3	1507	G
51	3	1523	C
51	3	1524	C
51	3	1585	A
51	3	1586	U
51	3	1588	A
51	3	1713	U
51	3	1735	A
51	3	1768	G
51	3	1794	A
51	3	1820	U
51	3	1854	A
51	3	1884	A
51	3	2022	A
51	3	2023	U
51	3	2036	G
51	3	2097	A
51	3	2118	U
51	3	2135	C
51	3	2157	A
51	3	2188	U
51	3	2235	A
51	3	2342	U
51	3	2347	G
51	3	2429	G
51	3	2486	A
51	3	2506	C
51	3	2520	C

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Mol	Chain	Res	Type
51	3	2537	G
51	3	2587	U
51	3	2604	U
51	3	2642	G
51	3	2696	G
51	3	2764	U
51	3	2843	G
51	3	2889	U
52	4	25	A
53	5	22	G
53	5	24	C
53	5	75	A
53	5	126	U
53	5	205	U
53	5	240	U
53	5	261	G
53	5	341	C
53	5	403	A
53	5	406	G
53	5	426	U
53	5	513	G
53	5	517	C
53	5	570	A
53	5	581	A
53	5	591	A
53	5	599	G
53	5	671	G
53	5	710	G
53	5	716	C
53	5	838	A
53	5	921	G
53	5	938	U
53	5	971	A
53	5	1033	U
53	5	1154	A
53	5	1168	G
53	5	1327	G
53	5	1331	A
53	5	1376	G
53	5	1395	C
53	5	1401	A
53	5	1445	G

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Mol	Chain	Res	Type
53	5	1457	G
53	5	1462	G

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

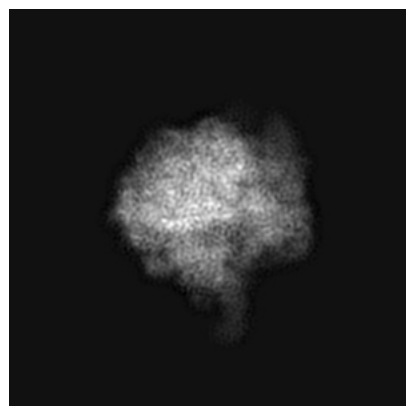
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-13275. These allow visual inspection of the internal detail of the map and identification of artifacts.

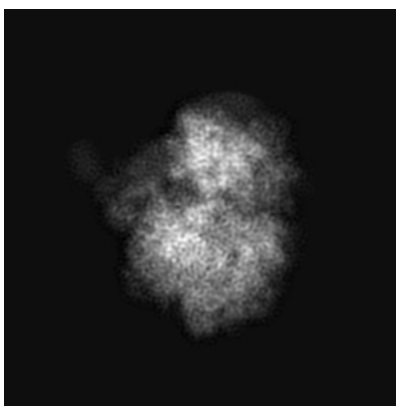
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

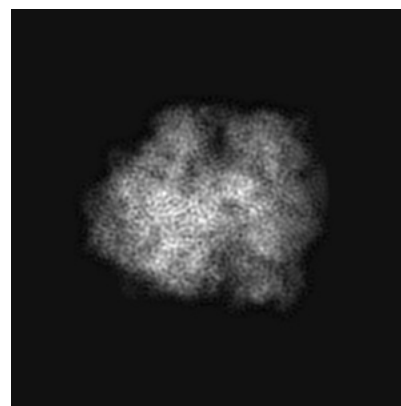
6.1.1 Primary map



X

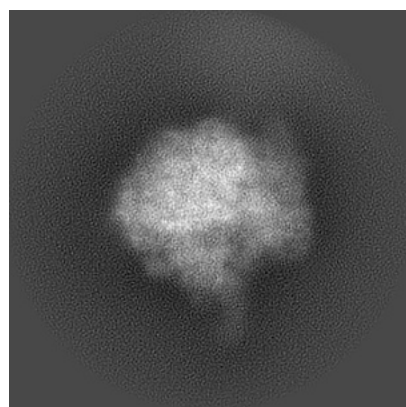


Y

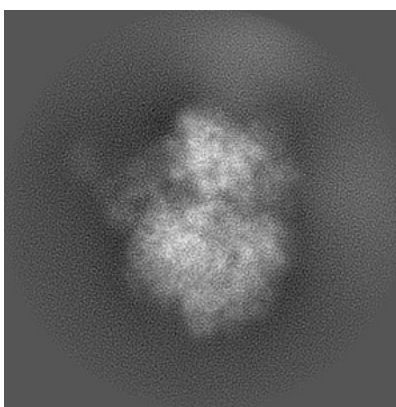


Z

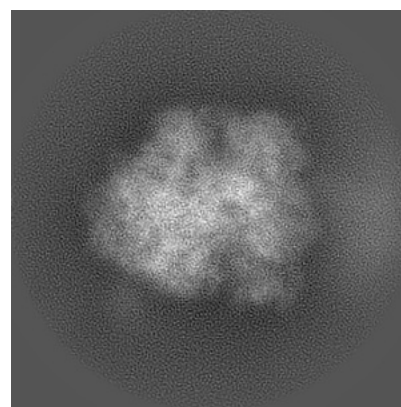
6.1.2 Raw map



X



Y

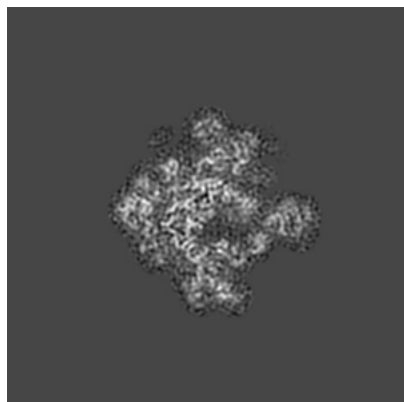


Z

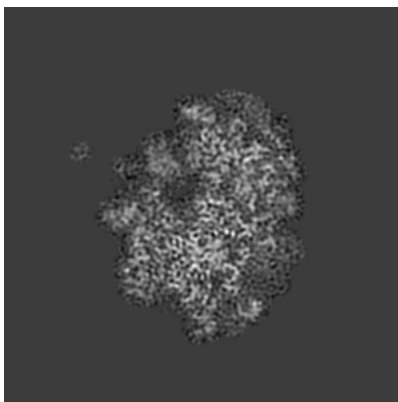
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

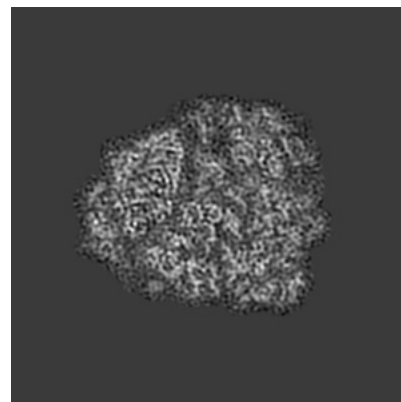
6.2.1 Primary map



X Index: 128

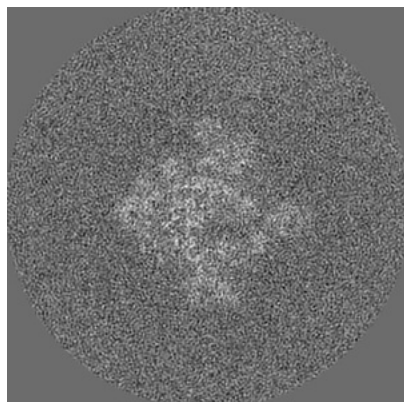


Y Index: 128

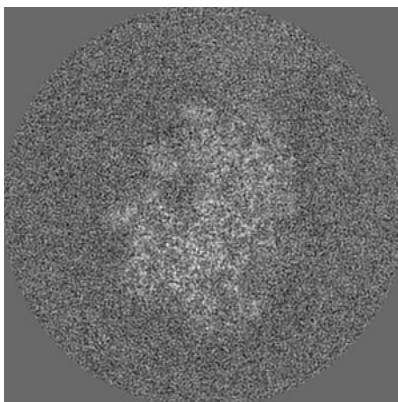


Z Index: 128

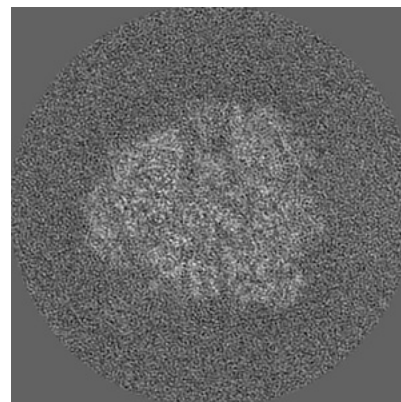
6.2.2 Raw map



X Index: 128



Y Index: 128

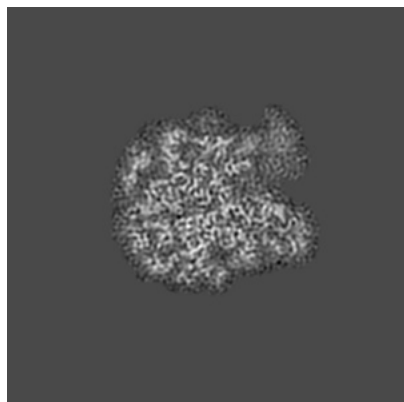


Z Index: 128

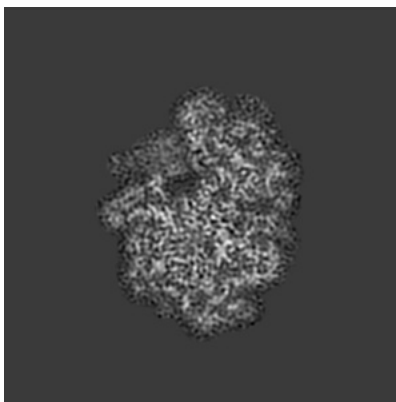
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

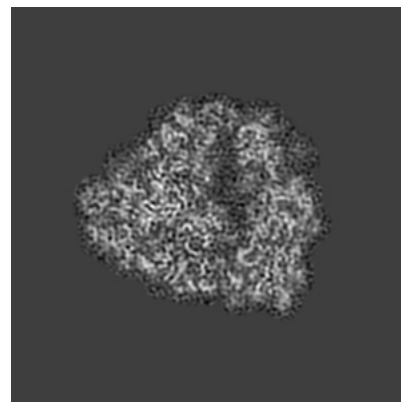
6.3.1 Primary map



X Index: 104

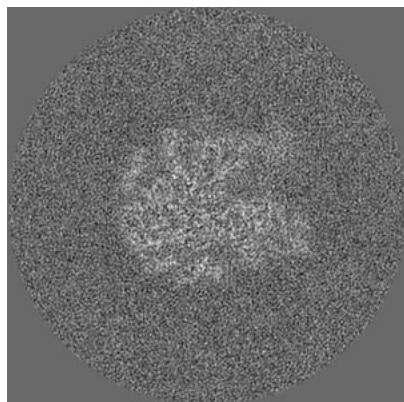


Y Index: 120

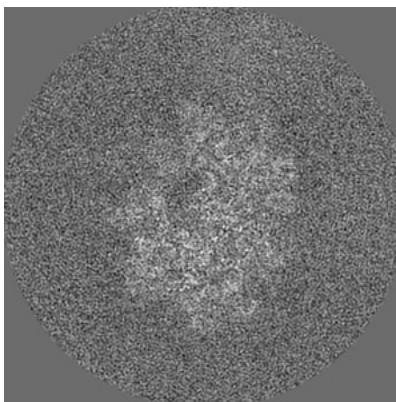


Z Index: 122

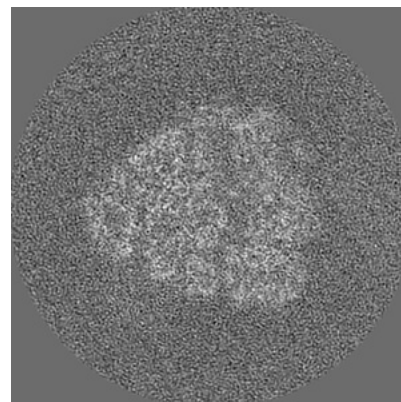
6.3.2 Raw map



X Index: 106



Y Index: 125

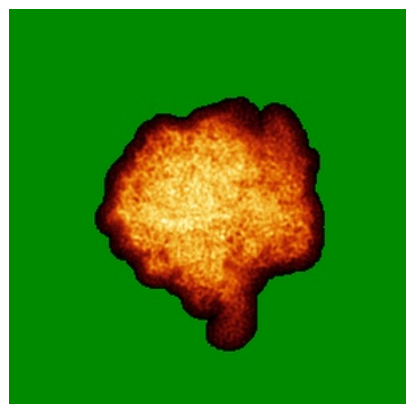


Z Index: 125

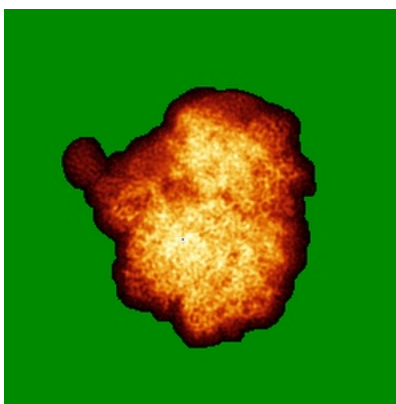
The images above show the largest variance slices of the map in three orthogonal directions.

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

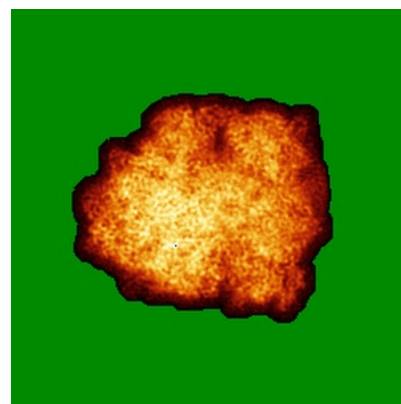
6.4.1 Primary map



X

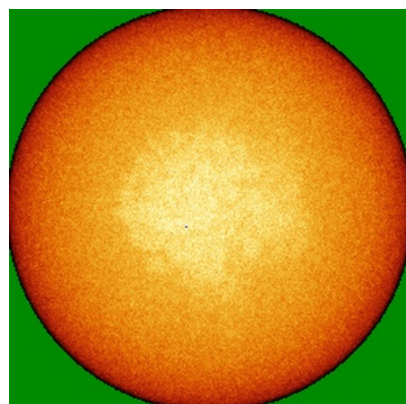


Y

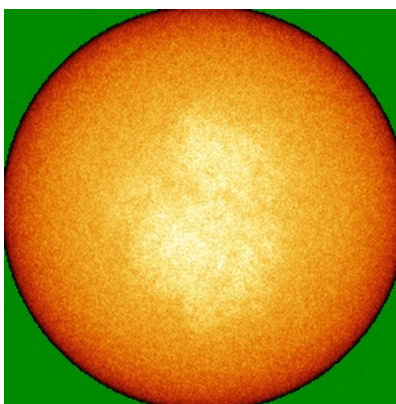


Z

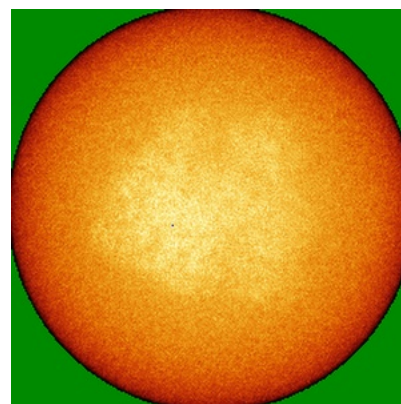
6.4.2 Raw map



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.

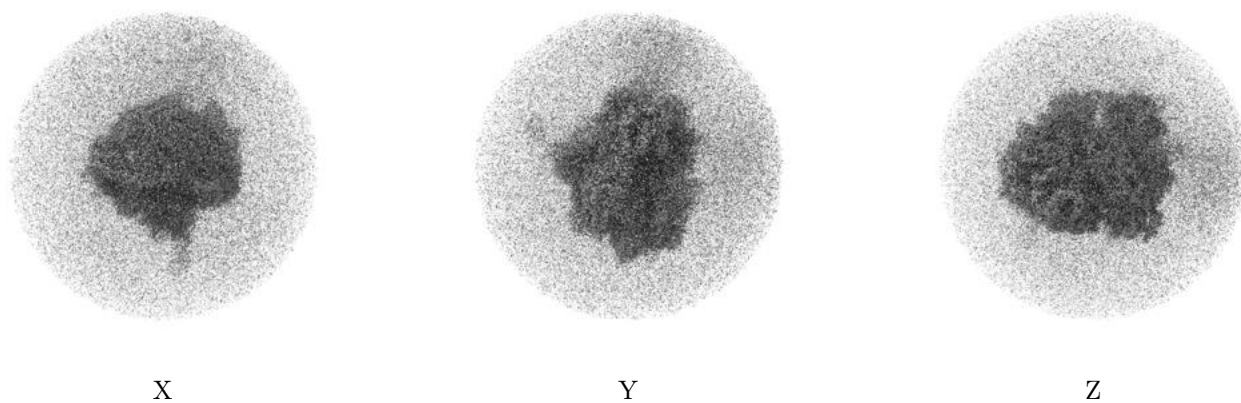
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.53. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

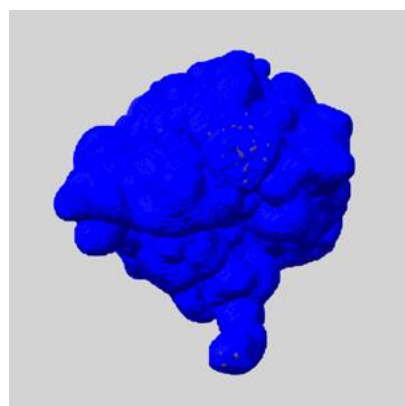
6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

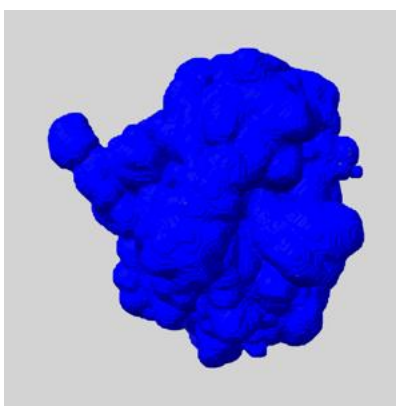
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

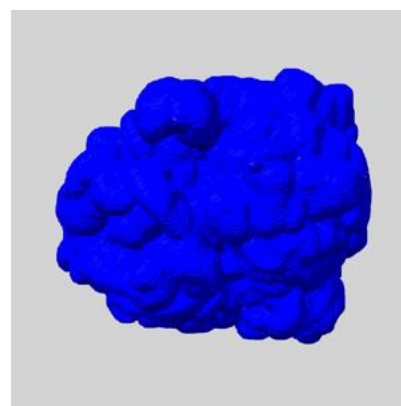
6.6.1 emd_13275_msk_1.map [i](#)



X



Y

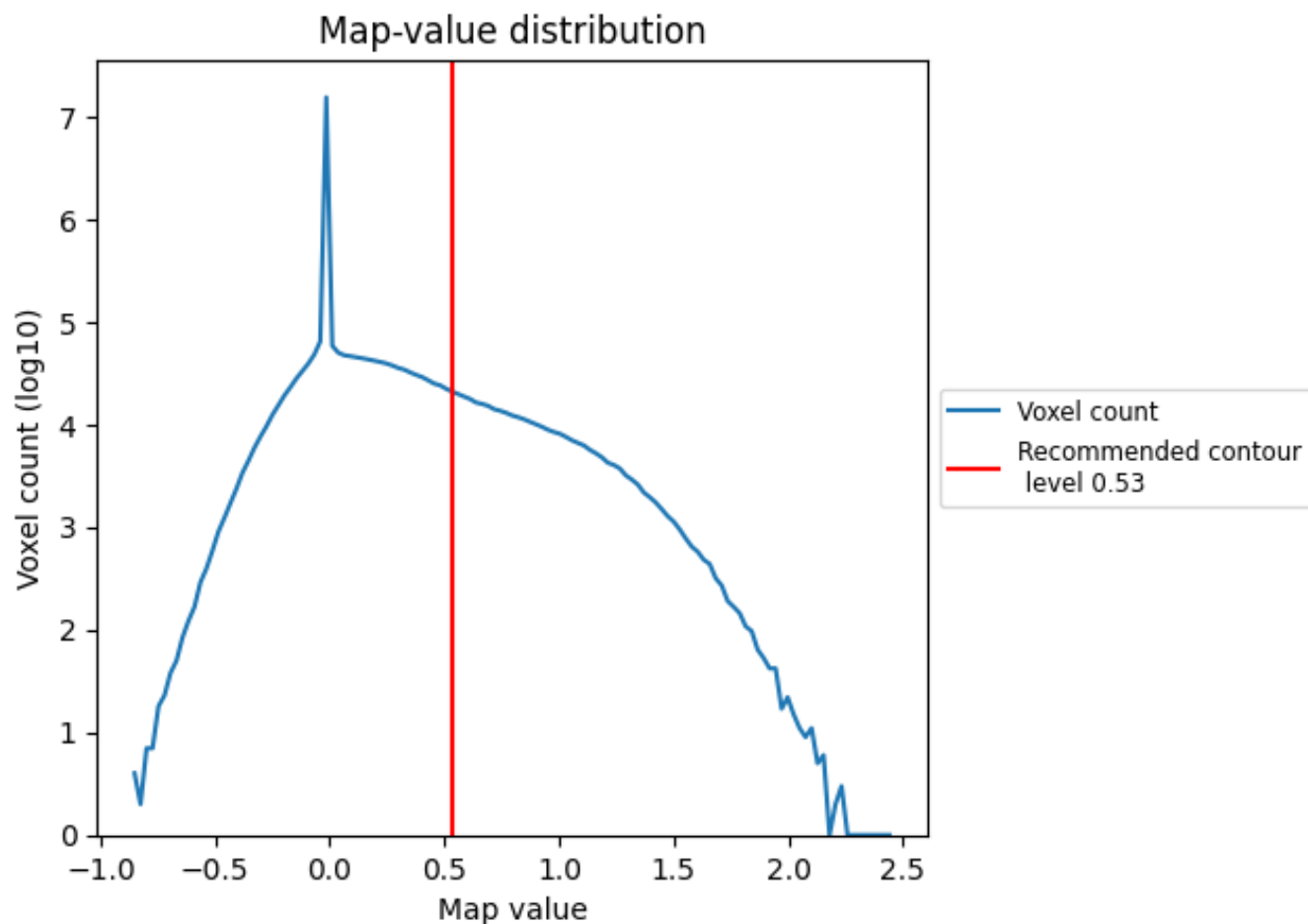


Z

7 Map analysis [i](#)

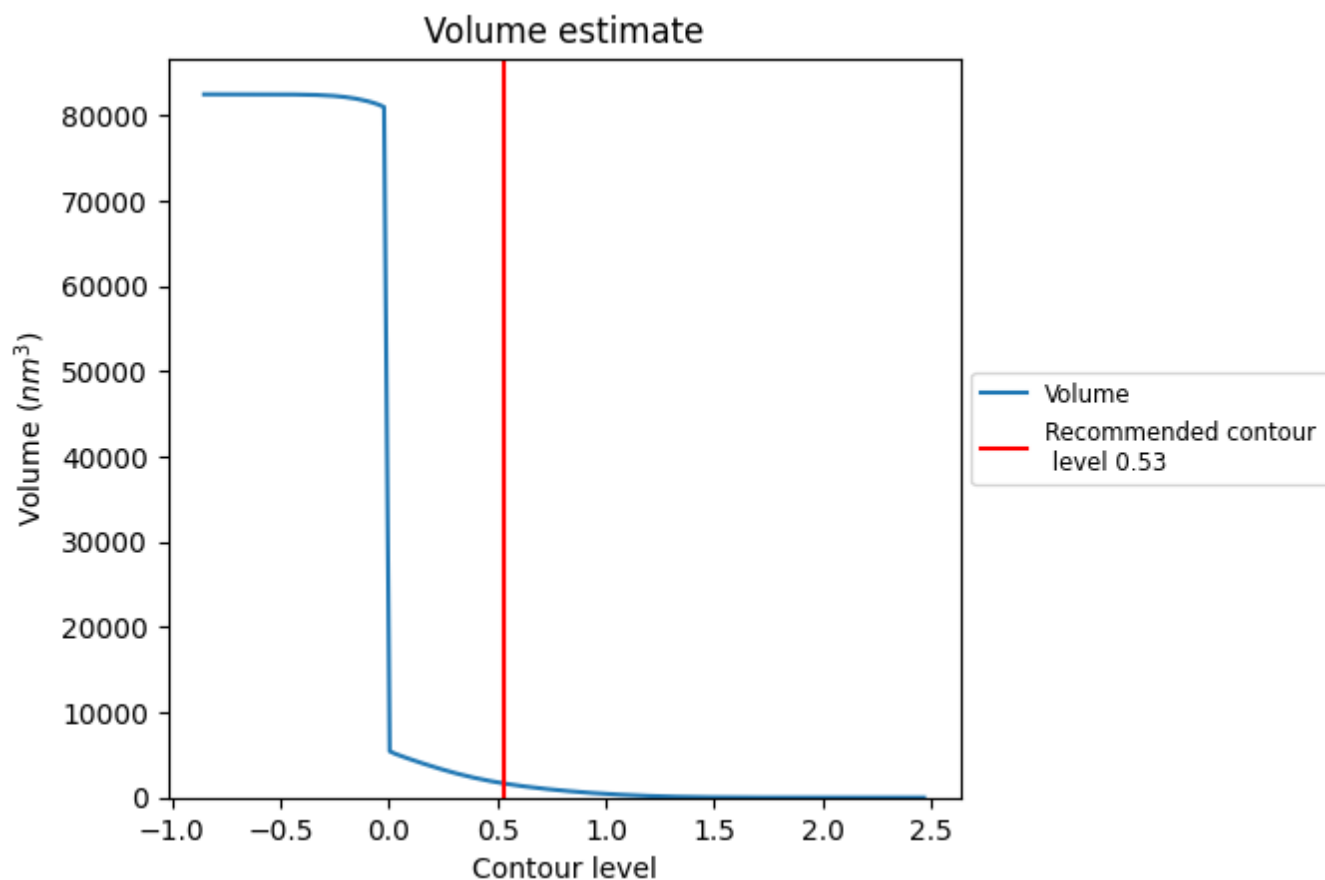
This section contains the results of statistical analysis of the map.

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.

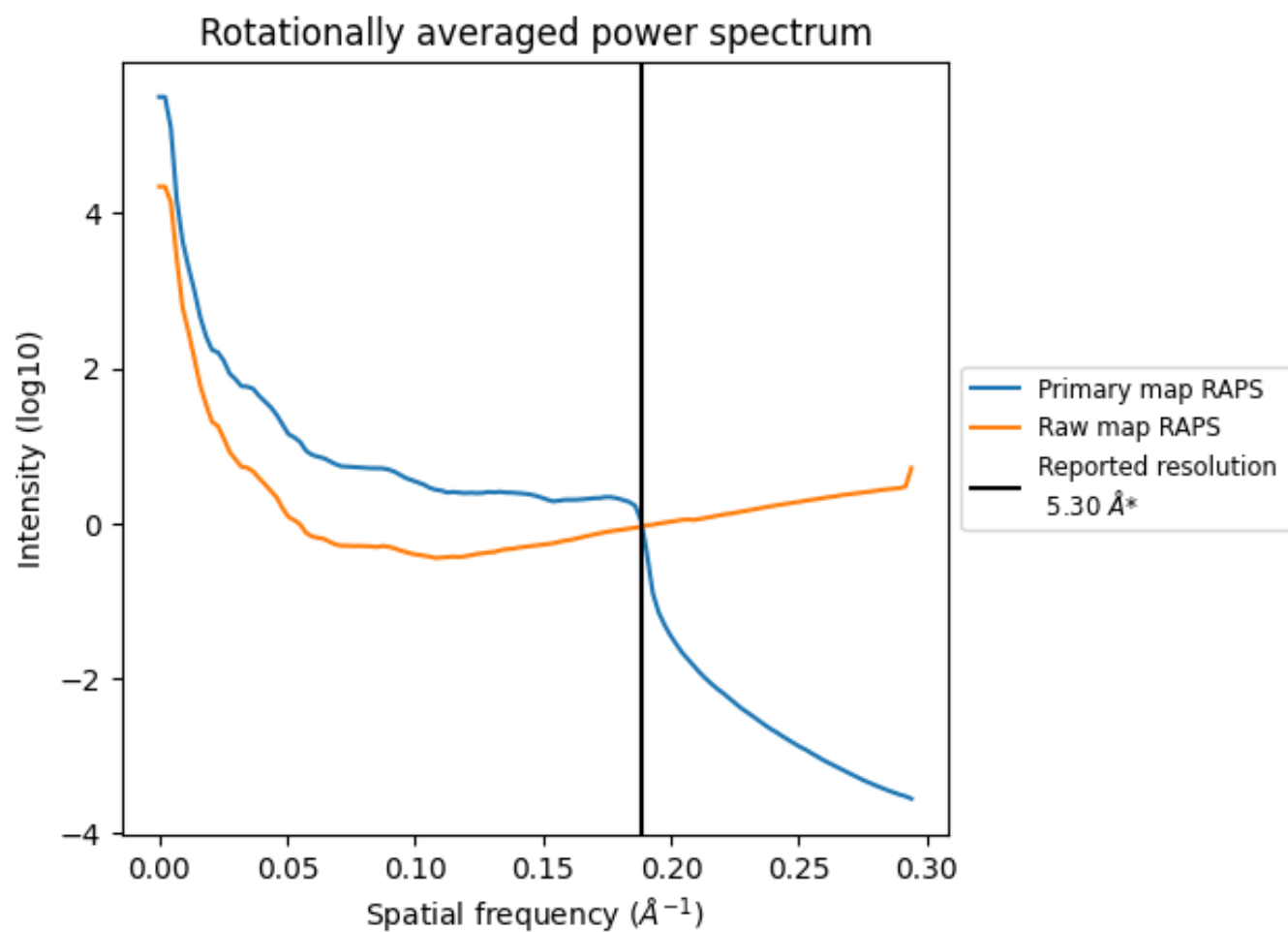
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1661 nm³; this corresponds to an approximate mass of 1501 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 ⓘ

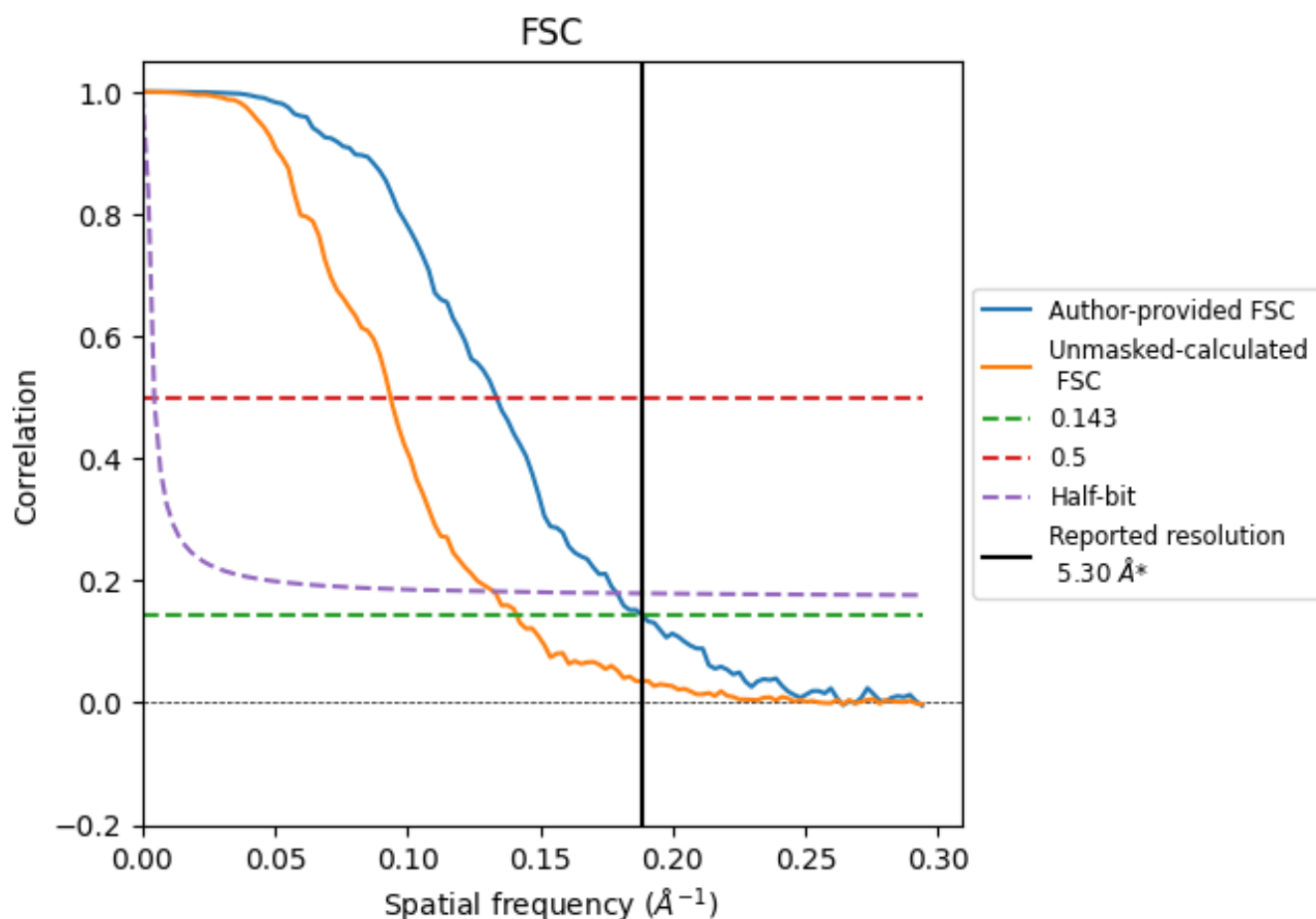


*Reported resolution corresponds to spatial frequency of $0.189 \text{ \AA}^{-1}$

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.189 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

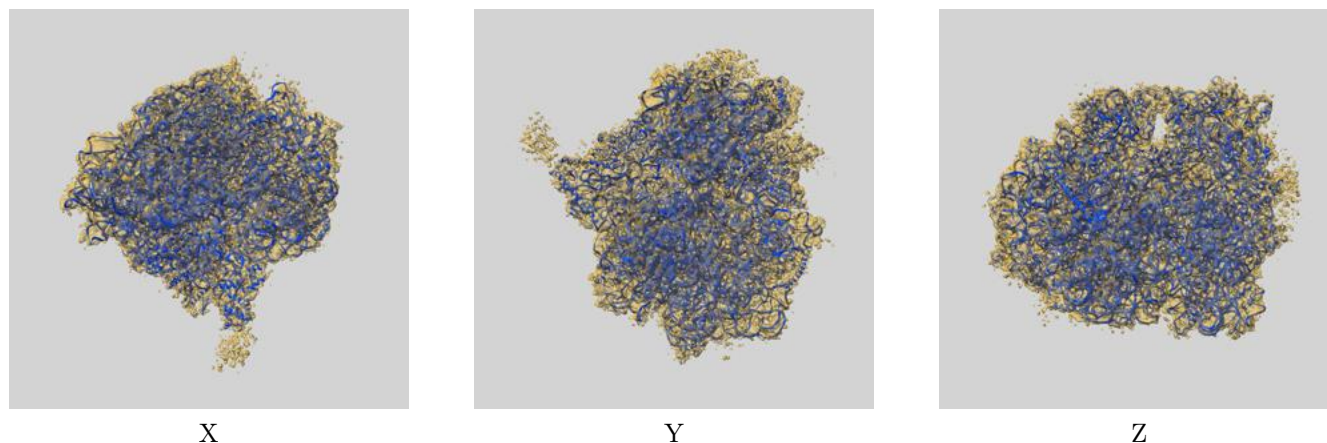
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	5.30	-	-
Author-provided FSC curve	5.31	7.49	5.59
Unmasked-calculated*	7.08	10.68	7.55

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 7.08 differs from the reported value 5.3 by more than 10 %

9 Map-model fit [i](#)

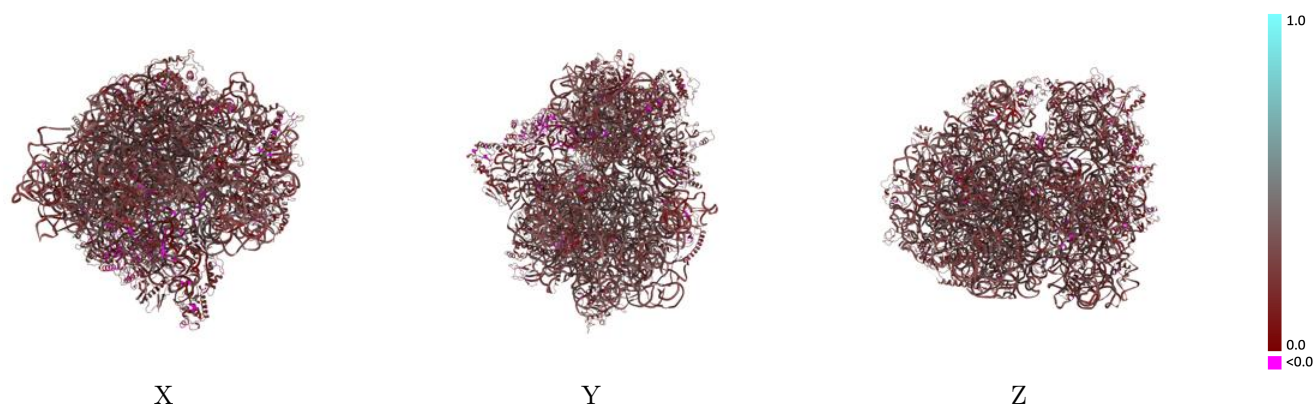
This section contains information regarding the fit between EMDB map EMD-13275 and PDB model 7PAK. Per-residue inclusion information can be found in section 3 on page 14.

9.1 Map-model overlay [i](#)



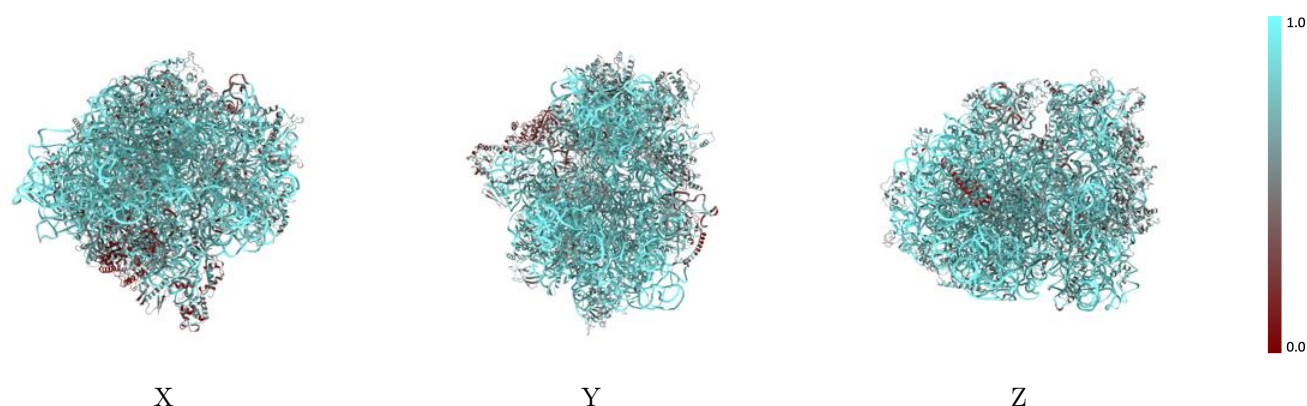
The images above show the 3D surface view of the map at the recommended contour level 0.53 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



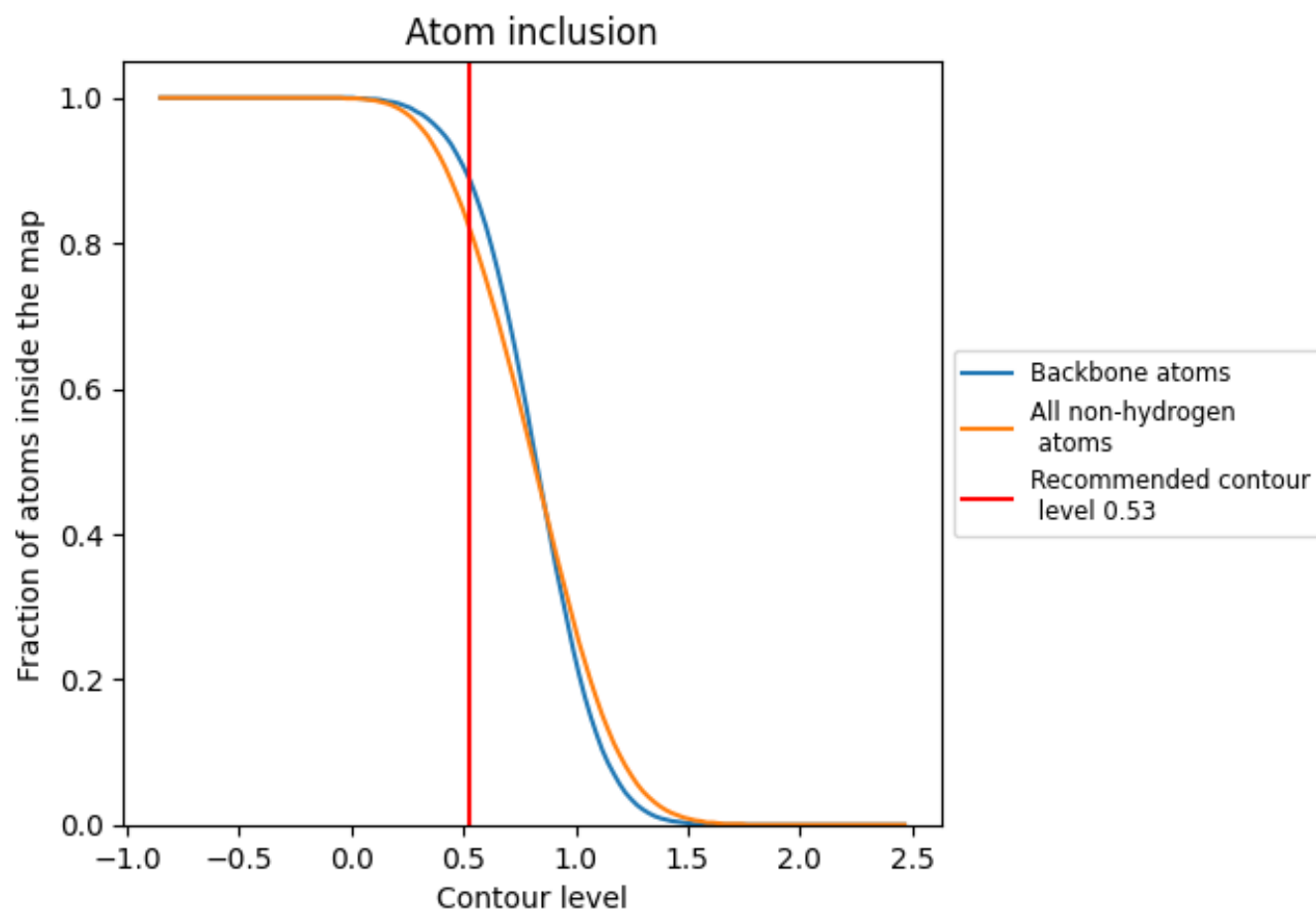
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.53).

9.4 Atom inclusion [i](#)



At the recommended contour level, 89% of all backbone atoms, 82% 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 (0.53) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8180	 0.2750
0	 0.7970	 0.2880
1	 0.7340	 0.2870
2	 0.7160	 0.2640
3	 0.9210	 0.2920
4	 0.9270	 0.2910
5	 0.9240	 0.2830
6	 0.5180	 0.0740
7	 0.8380	 0.2340
9	 0.2150	 0.1850
A	 0.6080	 0.2560
B	 0.6330	 0.2560
C	 0.6170	 0.2390
D	 0.6600	 0.2570
E	 0.5830	 0.2700
F	 0.6080	 0.2550
G	 0.6380	 0.2430
H	 0.6260	 0.2360
I	 0.5990	 0.2410
J	 0.6760	 0.2590
K	 0.6940	 0.2810
L	 0.6390	 0.2540
M	 0.6950	 0.2570
N	 0.6330	 0.2380
O	 0.7010	 0.2820
P	 0.6730	 0.2480
Q	 0.6820	 0.2590
R	 0.6370	 0.2470
S	 0.7100	 0.2520
T	 0.6120	 0.2330
a	 0.7320	 0.2860
b	 0.7050	 0.2670
c	 0.6730	 0.2730
d	 0.6140	 0.2260
e	 0.6070	 0.2740



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Chain	Atom inclusion	Q-score
f	 0.2590	 0.1870
g	 0.4790	 0.2030
h	 0.3890	 0.1950
i	 0.7210	 0.2710
j	 0.6810	 0.2930
k	 0.7260	 0.2840
l	 0.7240	 0.2880
m	 0.7180	 0.2680
n	 0.6640	 0.2550
o	 0.6920	 0.2860
p	 0.7310	 0.2490
q	 0.6830	 0.2860
r	 0.7230	 0.2700
s	 0.6980	 0.2920
t	 0.5660	 0.2680
u	 0.7230	 0.2790
v	 0.7390	 0.2790
w	 0.6920	 0.2640
x	 0.6120	 0.2650
y	 0.7740	 0.2980
z	 0.7610	 0.2920