



Full wwPDB EM Validation Report ⓘ

Jun 25, 2026 – 01:17 PM EDT

PDB ID : 9MQ4 / pdb_00009mq4
EMDB ID : EMD-48513
Title : Damaged 70S ribosome with PrfH bound
Authors : Tian, Y.; Li, Q.; Jin, H.; Fatma, S.; Zeng, F.; Huang, R.H.
Deposited on : 2025-01-01
Resolution : 2.78 Å(reported)

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

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

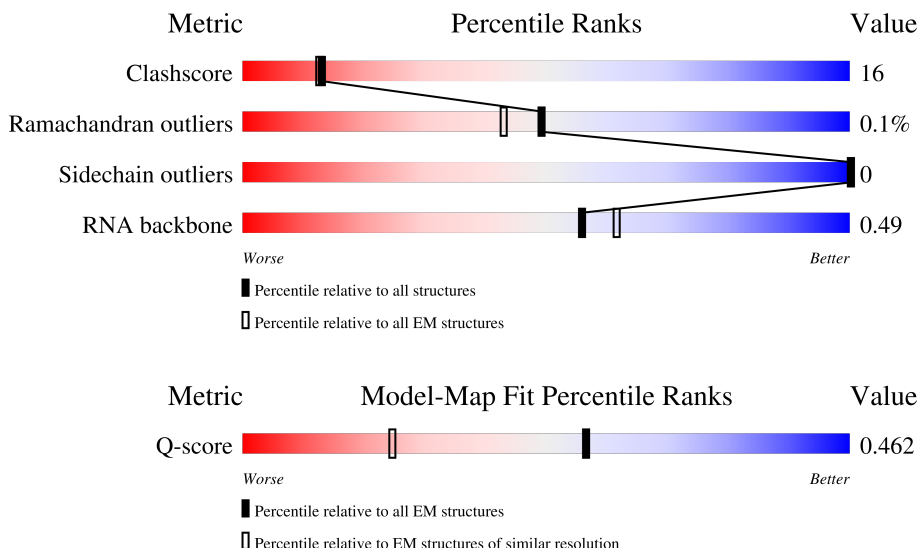
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance

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

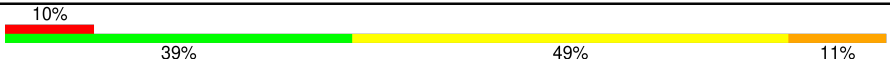
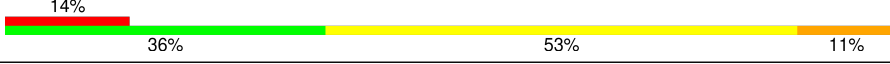
The reported resolution of this entry is 2.78 Å.

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	10754 (2.28 - 3.28)

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	1	2903	
2	2	1534	
3	4	120	

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Mol	Chain	Length	Quality of chain
4	5	77	
4	6	77	
5	7	25	
6	A	231	
7	B	273	
8	C	209	
9	D	201	
10	E	179	
11	F	177	
12	G	149	
13	H	165	
14	I	142	
15	J	142	
16	K	123	
17	L	144	
18	M	136	
19	N	127	
20	O	117	
21	P	115	
22	Q	118	
23	R	103	
24	S	110	
25	T	100	
26	U	104	
27	V	94	

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Mol	Chain	Length	Quality of chain
28	W	85	
29	X	78	
30	Y	63	
31	Z	59	
32	a	70	
33	b	57	
34	c	55	
35	d	46	
36	e	65	
37	f	38	
38	g	241	
39	h	233	
40	i	206	
41	j	167	
42	k	135	
43	l	179	
44	m	130	
45	n	130	
46	o	103	
47	p	129	
48	q	124	
49	r	118	
50	s	101	
51	t	89	
52	u	82	

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Mol	Chain	Length	Quality of chain
53	v	84	
54	w	75	
55	x	92	
56	y	87	
57	z	71	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
1	G7M	1	2069	X	-	-	-

2 Entry composition

There are 60 unique types of molecules in this entry. The entry contains 150154 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	1	2903	Total	C	N	O	P	0	0
			62336	27816	11470	20147	2903		

- Molecule 2 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	2	1534	Total	C	N	O	P	0	0
			32929	14693	6041	10661	1534		

- Molecule 3 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	4	120	Total	C	N	O	P	0	0
			2569	1144	468	837	120		

- Molecule 4 is a RNA chain called P-tRNA, E-tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	5	77	Total	C	N	O	P	0	0
			1643	732	297	537	77		
4	6	77	Total	C	N	O	P	0	0
			1640	732	297	535	76		

- Molecule 5 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	7	6	Total	C	N	O	P	0	0
			131	59	27	39	6		

- Molecule 6 is a protein called Peptide chain release factor H.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	A	229	Total	C	N	O	S	0	0
			1840	1157	337	342	4		

- Molecule 7 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	B	271	Total	C	N	O	S	0	0
			2082	1288	423	364	7		

- Molecule 8 is a protein called 50S ribosomal protein L3.

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

- Molecule 9 is a protein called Large ribosomal subunit protein uL4.

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

- Molecule 10 is a protein called Large ribosomal subunit protein uL5.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	E	177	Total	C	N	O	S	0	0
			1410	899	249	256	6		

- Molecule 11 is a protein called Large ribosomal subunit protein uL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	F	175	Total	C	N	O	S	0	0
			1313	826	241	244	2		

- Molecule 12 is a protein called Large ribosomal subunit protein bL9.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	G	149	Total	C	N	O	S	0	0
			1111	699	197	214	1		

- Molecule 13 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	H	130	Total	C	N	O	S	0	0
			980	620	174	182	4		

- Molecule 14 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	I	135	Total	C	N	O	S	0	0
			984	622	171	185	6		

- Molecule 15 is a protein called Large ribosomal subunit protein uL13.

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

- Molecule 16 is a protein called Large ribosomal subunit protein uL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	K	123	Total	C	N	O	S	0	0
			946	593	181	166	6		

- Molecule 17 is a protein called Large ribosomal subunit protein uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	L	144	Total	C	N	O	S	0	0
			1053	654	207	190	2		

- Molecule 18 is a protein called 50S ribosomal protein L16.

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

- Molecule 19 is a protein called Large ribosomal subunit protein bL17.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	N	119	Total	C	N	O	S	0	0
			951	588	195	163	5		

- Molecule 20 is a protein called Large ribosomal subunit protein uL18.

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

- Molecule 21 is a protein called Large ribosomal subunit protein bL19.

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

- Molecule 22 is a protein called 50S ribosomal protein L20.

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

- Molecule 23 is a protein called Large ribosomal subunit protein bL21.

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

- Molecule 24 is a protein called Large ribosomal subunit protein uL22.

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

- Molecule 25 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms				AltConf	Trace
25	T	94	Total	C	N	O	S	0
			746	470	140	134	2	0

- Molecule 26 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
26	U	103	Total	C	N	O		0
			788	498	148	142		0

- Molecule 27 is a protein called Large ribosomal subunit protein bL25.

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

- Molecule 28 is a protein called Large ribosomal subunit protein bL27.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	W	76	Total	C	N	O	S	0	0
			582	360	117	104	1		

- Molecule 29 is a protein called 50S ribosomal protein L28.

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

- Molecule 30 is a protein called Large ribosomal subunit protein uL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Y	62	Total	C	N	O	S	0	0
			501	308	98	94	1		

- Molecule 31 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	Z	58	Total	C	N	O	S	0	0
			448	281	87	78	2		

- Molecule 32 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	a	66	Total	C	N	O	S	0	0
			522	323	99	94	6		

- Molecule 33 is a protein called 50S ribosomal protein L32.

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

- Molecule 34 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
34	c	52	Total	C	N	O	0	0
			426	275	78	73		

- Molecule 35 is a protein called 50S ribosomal protein L34.

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

- Molecule 36 is a protein called 50S ribosomal protein L35.

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

- Molecule 37 is a protein called 50S ribosomal protein L36.

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

- Molecule 38 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	g	225	Total	C	N	O	S	0	0
			1760	1113	316	323	8		

- Molecule 39 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	h	208	Total	C	N	O	S	0	0
			1636	1036	307	290	3		

- Molecule 40 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	i	205	Total	C	N	O	S	0	0
			1643	1026	315	298	4		

- Molecule 41 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	j	156	Total	C	N	O	S	0	0
			1152	717	217	212	6		

- Molecule 42 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	k	104	Total	C	N	O	S	0	0
			848	536	153	152	7		

- Molecule 43 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	l	151	Total	C	N	O	S	0	0
			1181	735	227	215	4		

- Molecule 44 is a protein called Small ribosomal subunit protein uS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	m	129	Total	C	N	O	S	0	0
			979	616	173	184	6		

- Molecule 45 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	n	127	Total	C	N	O	S	0	0
			1022	634	206	179	3		

- Molecule 46 is a protein called Small ribosomal subunit protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	o	99	Total	C	N	O	S	0	0
			790	495	151	143	1		

- Molecule 47 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	p	117	Total	C	N	O	S	0	0
			877	540	174	160	3		

- Molecule 48 is a protein called Small ribosomal subunit protein uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	q	123	Total	C	N	O	S	0	0
			957	591	196	165	5		

- Molecule 49 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	r	116	Total	C	N	O	S	0	0
			900	558	181	158	3		

- Molecule 50 is a protein called Small ribosomal subunit protein uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	s	100	Total	C	N	O	S	0	0
			805	499	164	139	3		

- Molecule 51 is a protein called Small ribosomal subunit protein uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	t	88	Total	C	N	O	S	0	0
			714	439	144	130	1		

- Molecule 52 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	u	82	Total	C	N	O	S	0	0
			649	406	128	114	1		

- Molecule 53 is a protein called Small ribosomal subunit protein uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	v	80	Total	C	N	O	S	0	0
			648	411	121	113	3		

- Molecule 54 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	w	66	Total	C	N	O	S	0	0
			544	344	102	97	1		

- Molecule 55 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	x	83	Total	C	N	O	S	0	0
			663	424	126	111	2		

- Molecule 56 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	y	86	Total	C	N	O	S	0	0
			669	414	138	114	3		

- Molecule 57 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	z	70	Total	C	N	O	S	0	0
			589	366	125	97	1		

- Molecule 58 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
58	1	292	Total	Mg	0
			292	292	
58	2	125	Total	Mg	0
			125	125	
58	4	8	Total	Mg	0
			8	8	
58	5	5	Total	Mg	0
			5	5	
58	A	2	Total	Mg	0
			2	2	
58	C	1	Total	Mg	0
			1	1	
58	D	1	Total	Mg	0
			1	1	
58	b	2	Total	Mg	0
			2	2	
58	f	1	Total	Mg	0
			1	1	
58	i	1	Total	Mg	0
			1	1	
58	r	1	Total	Mg	0
			1	1	

- Molecule 59 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
59	a	1	Total 1	Zn 1	0
59	f	1	Total 1	Zn 1	0

- Molecule 60 is water.

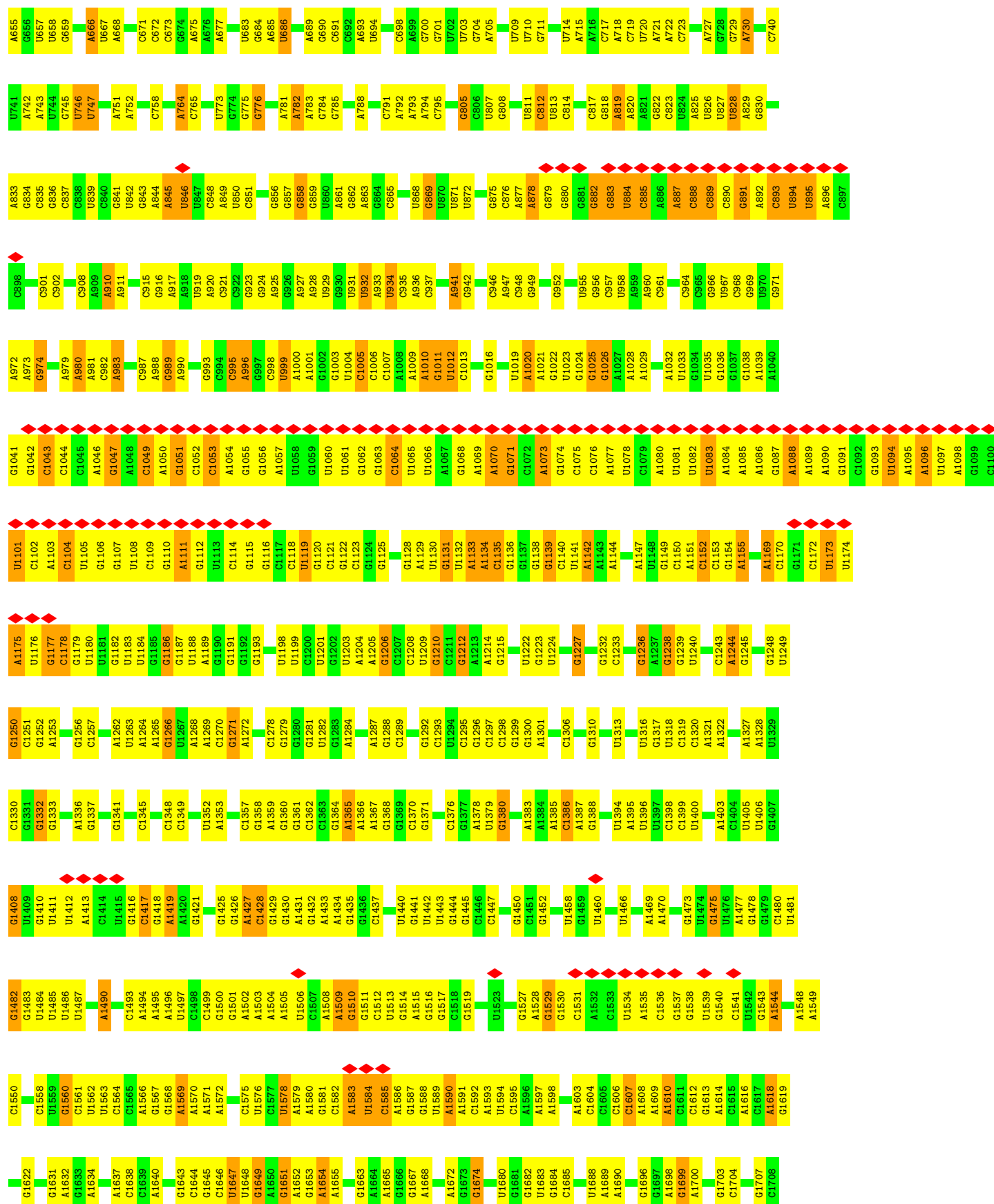
Mol	Chain	Residues	Atoms		AltConf
60	B	2	Total 2	O 2	0

3 Residue-property plots

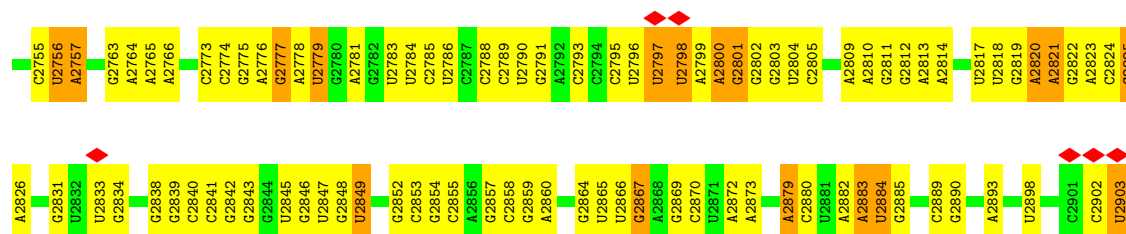
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: 23S ribosomal RNA

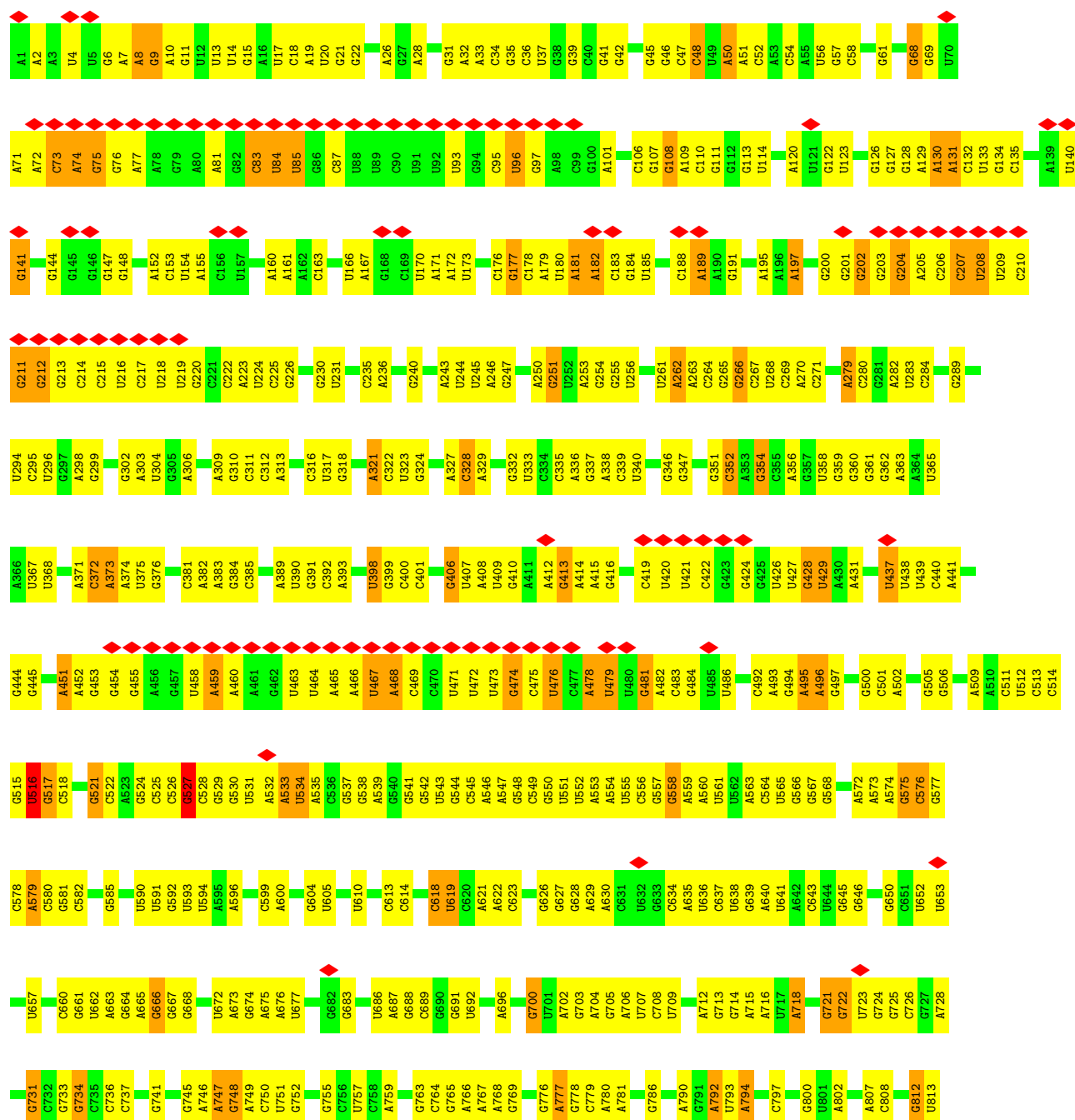


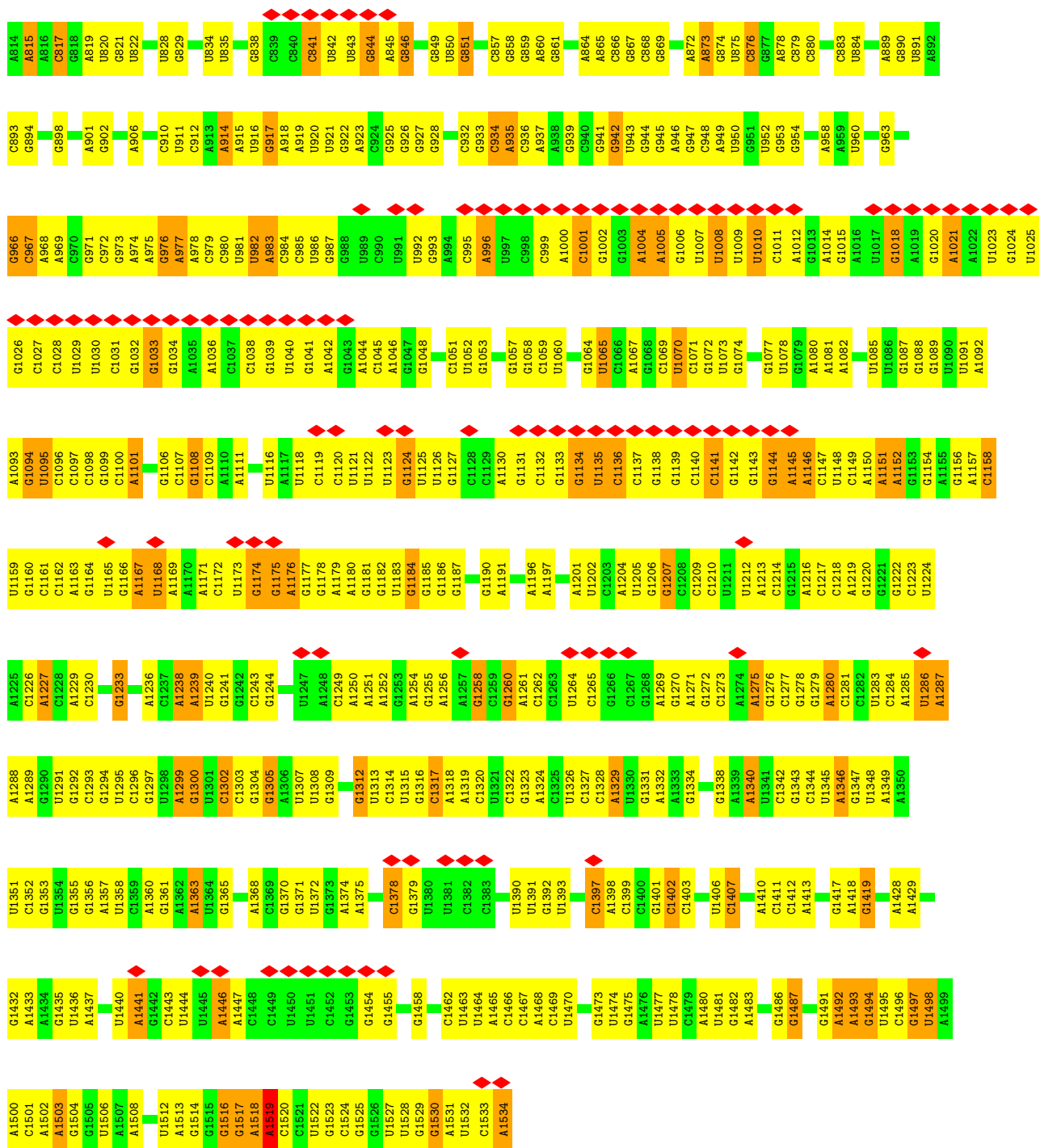


U1709	G1710	A1711	U1712	A1713	U1714	G1715	U1716	U1720	G1721	A1722	G1723	G1724	U1725	C1726	C1727	G1728	U1729	C1730	G1731	C1732	G1733	G1734	U1736	G1737	G1738	A1739	G1743	A1744	A1745	A1746	U1747	C1748	G1753	G1756	C1760	G1763	C1764	G1770	C1771	A1772	A1773	G1774	U1775	U1778	U1779	U1782	A1783	A1784	A1785										
A1786	A1787	C1788	A1789	C1790	A1791	G1792	C1793	A1794	C1795	U1796	G1797	U1798	G1799	C1800	A1801	A1802	A1803	G1807	A1808	A1809	C1810	G1811	U1812	G1813	A1814	A1815	G1816	G1817	U1818	A1819	U1820	A1821	A1822	G1823	G1824	U1827	G1828	A1829	C1833	U1834	G1835	C1836	C1837	C1838	G1846	A1847	A1848	G1849	G1850	U1851	U1852	A1853	A1854	A1858					
U1859	G1862	G1863	U1864	U1865	A1866	G1869	C1870	A1871	A1872	G1873	C1874	G1875	C1881	A1890	G1891	C1892	C1893	C1894	U1898	A1899	C1893	U1898	A1899	G1893	A1901	G1904	C1905	G1906	G1907	C1908	G1909	G1910	U1911	A1912	A1913	C1914	3TD1915	A1916	U1917	G1921	G1922	U1923	C1924	A1927	A1928	G1929	G1930	G1935	A1936	A1937	A1938	U1939							
U1946	C1947	G1948	A1952	G1953	G1954	U1955	U1956	C1962	U1963	G1964	C1967	C1968	A1969	U1970	U1971	G1972	U1976	G1980	A1981	U1982	G1983	A1987	G1988	G1989	C1990	U1991	G1992	C1993	U1993	C1996	C1997	A1998	C1999	C2000	C2001	G2002	A2005	C2006	U2009	G2012	A2013	A2014	G1929	G1930	U2016	U2017	G2018	A2019	A2020	C2021									
U2022	C2023	G2024	C2025	U2026	G2027	U2028	G2029	A2030	A2031	A2032	A2033	U2034	G2035	C2036	A2037	G2038	U2039	G2040	U2041	A2042	C2043	G2046	C2047	G2048	G2049	A2052	C2055	G2056	A2060	G2061	A2062	C2063	C2064	C2065	C2069	A2070	C2072	C2073	U2074	U2075	U2076	U2086	G2087	A2088	U2092	G2093	A2094	A2095	G2096	A2097	U2098								
U2099	G2100	A2101	G2102	C2103	C2104	U2105	U2106	G2107	A2108	U2109	G2110	U2111	G2112	U2113	A2114	G2115	G2116	A2117	U2118	A2119	G2120	G2121	U2122	G2123	G2124	G2125	A2126	G2127	G2128	C2129	U2130	U2131	U2132	G2133	A2134	A2135	G2136	U2137	G2138	U2139	G2140	G2141	A2142	G2143	G2144	C2145	G2146	A2147	U2149	C2150	U2151	G2152	C2153	A2154	U2155	G2156	G2157	A2158	
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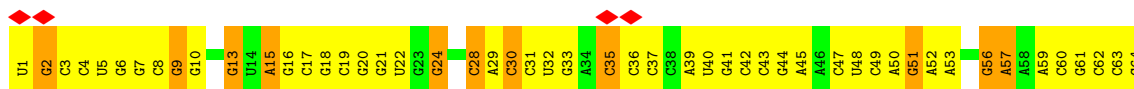


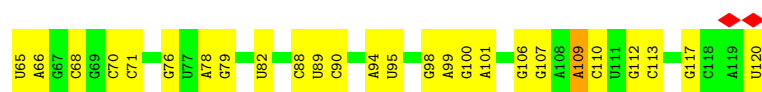
• Molecule 2: 16S ribosomal RNA



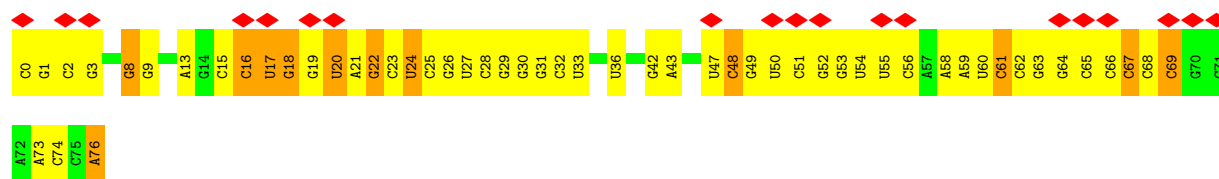


• Molecule 3: 5S ribosomal RNA





• Molecule 4: P-tRNA, E-tRNA



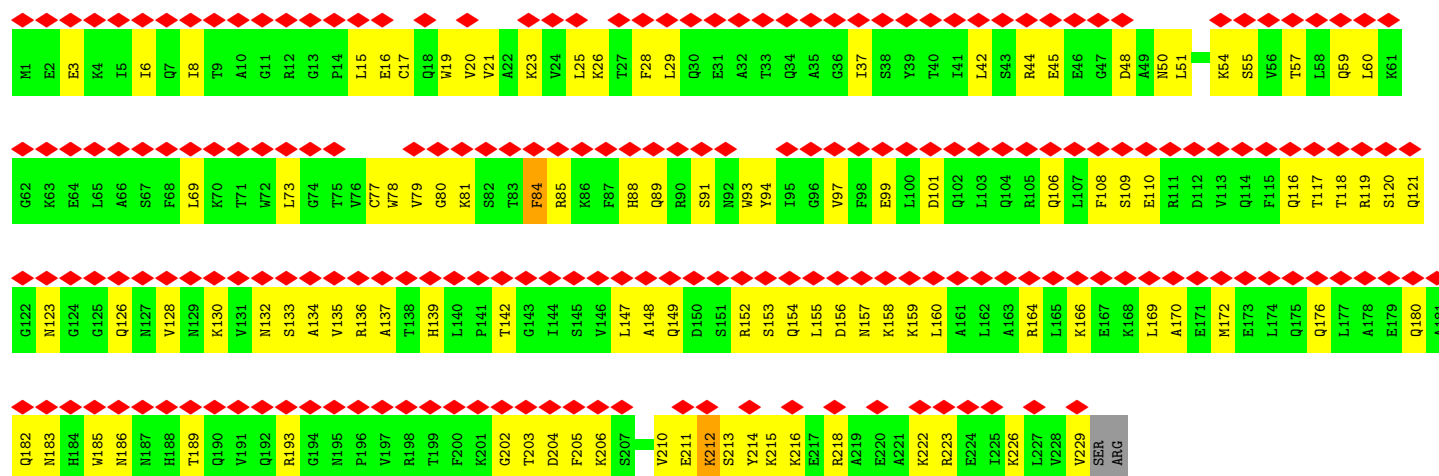
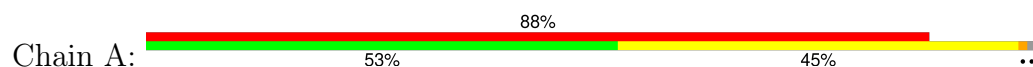
• Molecule 4: P-tRNA, E-tRNA



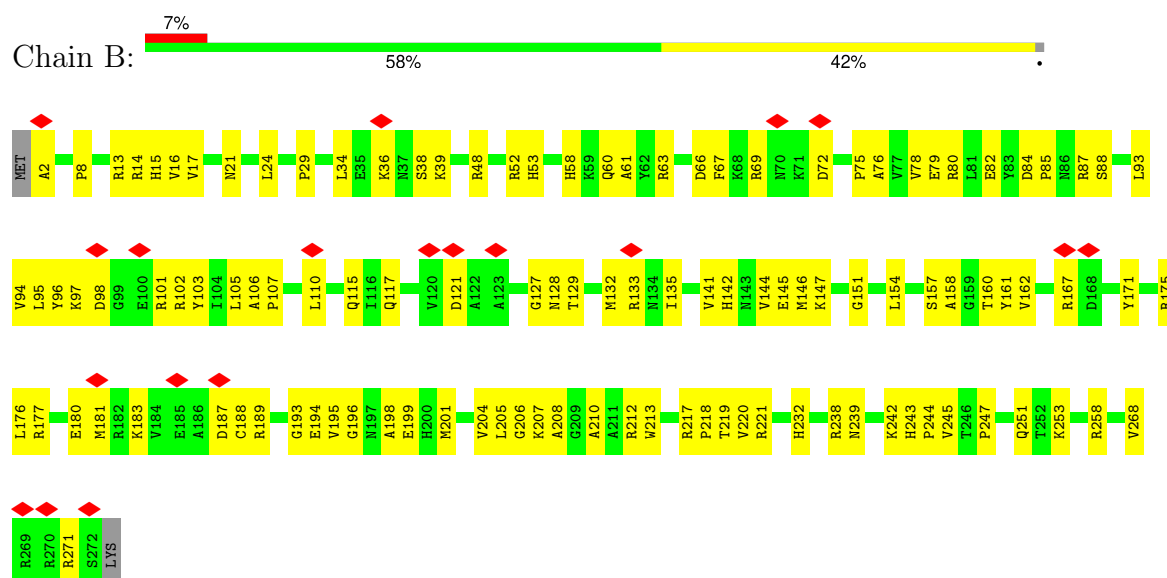
• Molecule 5: mRNA



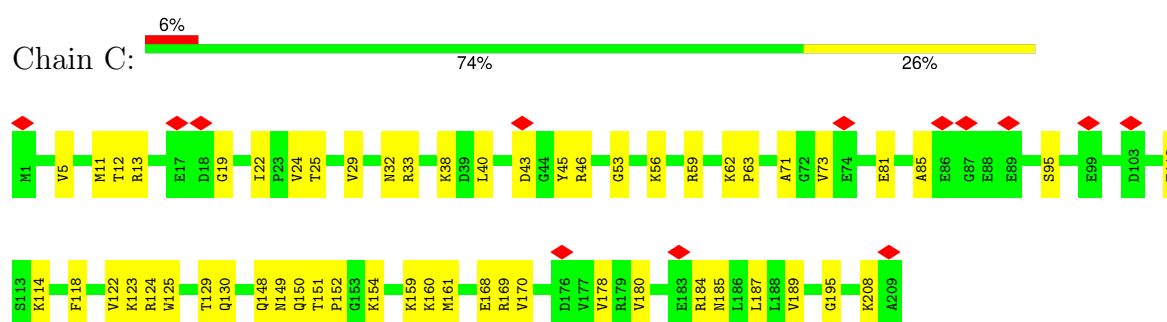
• Molecule 6: Peptide chain release factor H



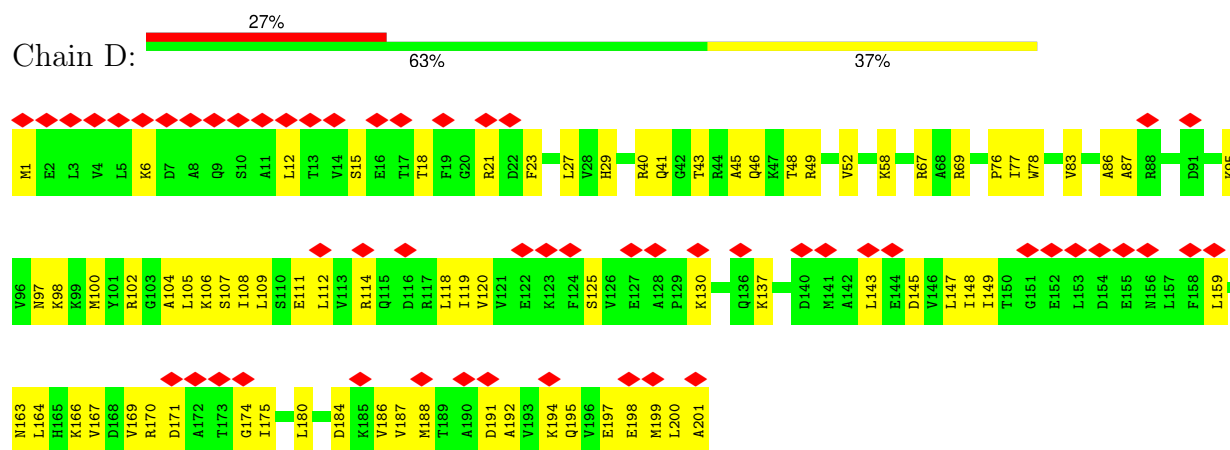
- Molecule 7: 50S ribosomal protein L2



- Molecule 8: 50S ribosomal protein L3

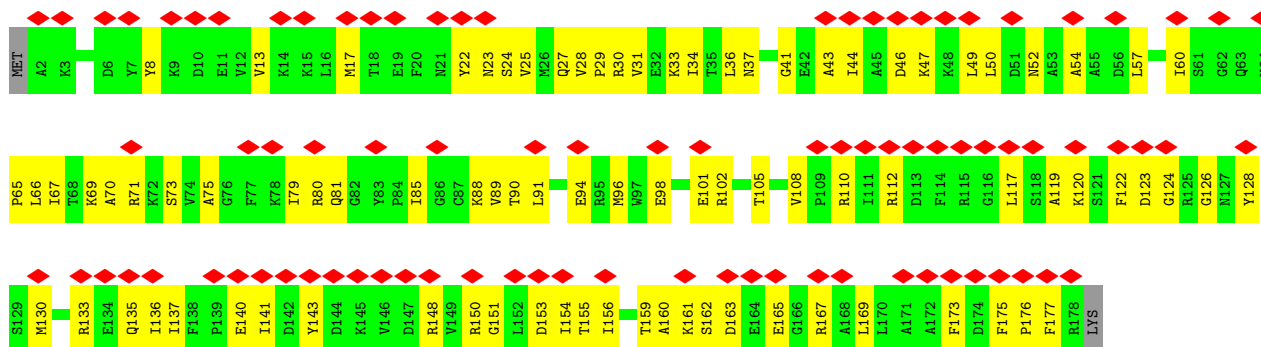


- Molecule 9: Large ribosomal subunit protein uL4

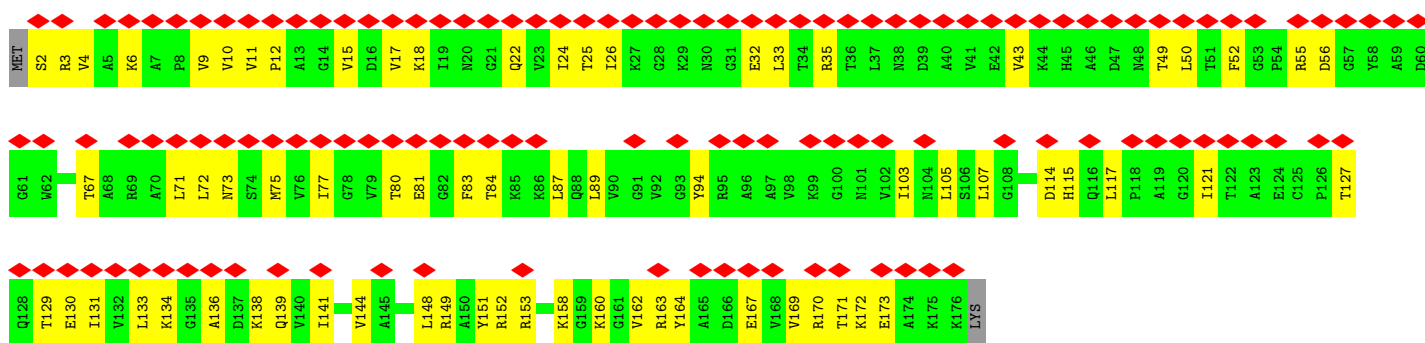


- Molecule 10: Large ribosomal subunit protein uL5

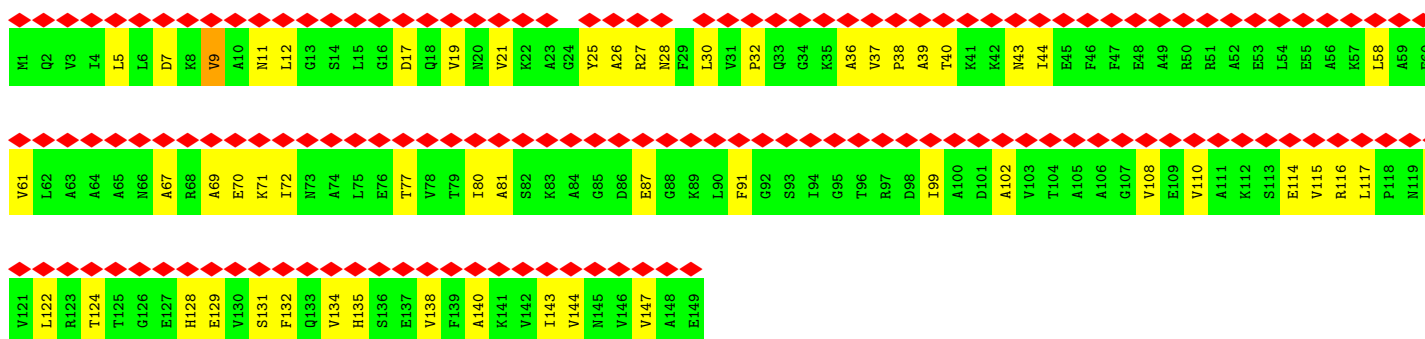




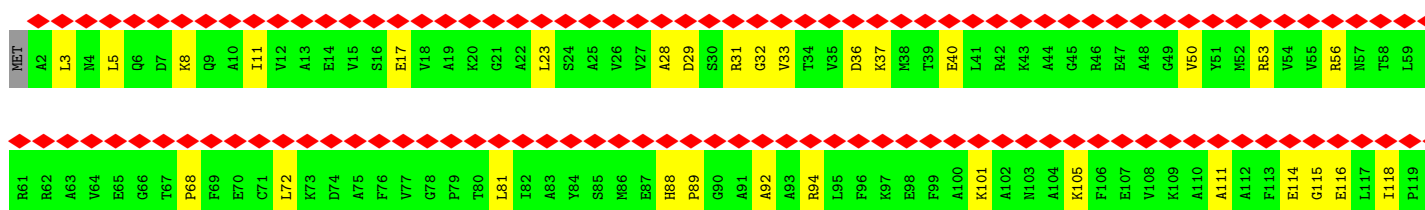
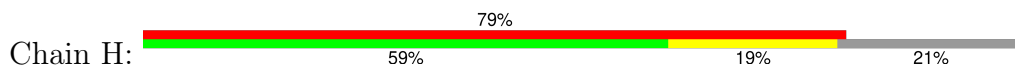
- Molecule 11: Large ribosomal subunit protein uL6

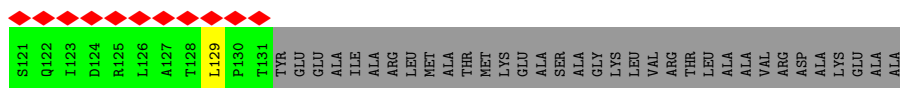


- Molecule 12: Large ribosomal subunit protein bL9

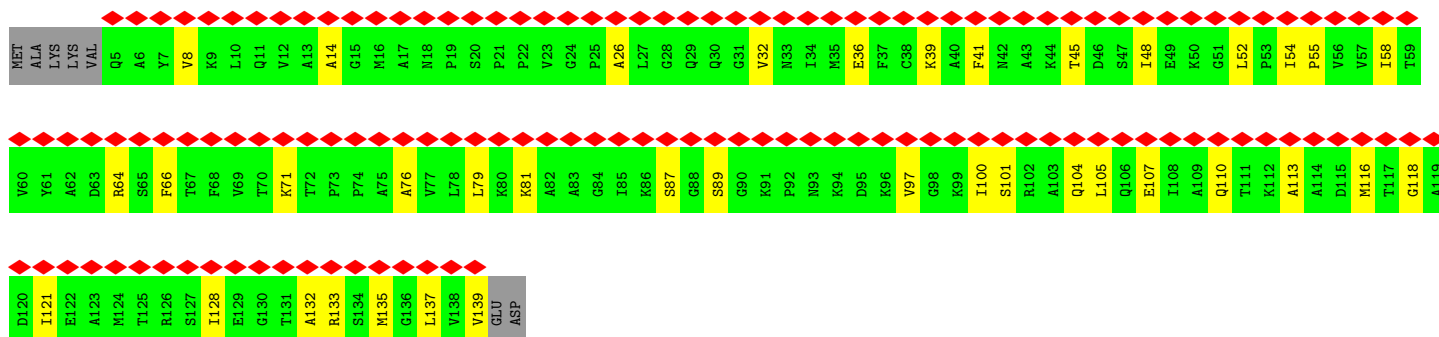


- Molecule 13: 50S ribosomal protein L10

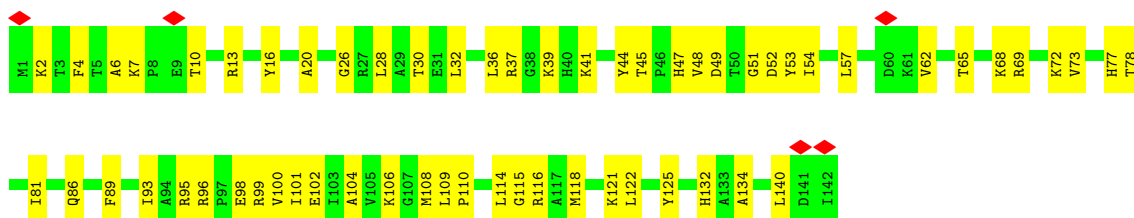




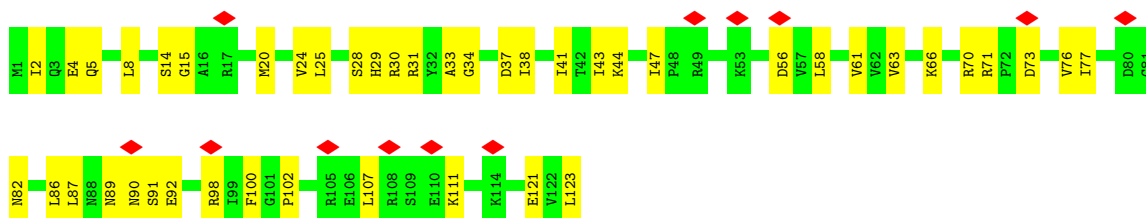
• Molecule 14: 50S ribosomal protein L11



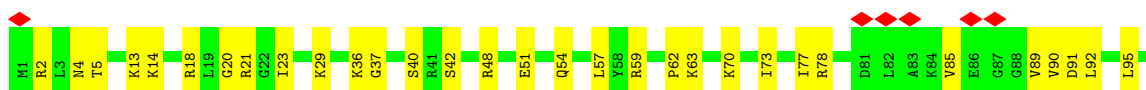
• Molecule 15: Large ribosomal subunit protein uL13

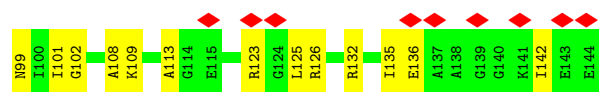


• Molecule 16: Large ribosomal subunit protein uL14

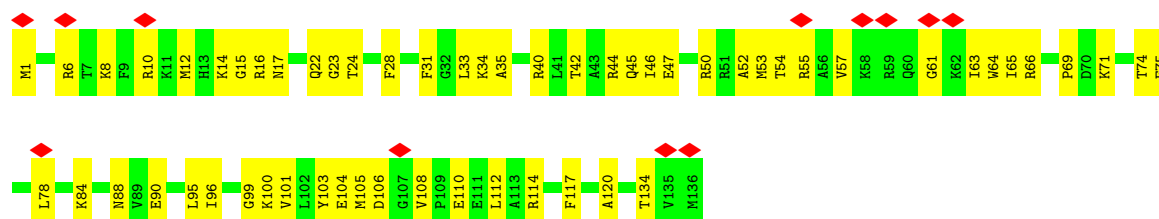


• Molecule 17: Large ribosomal subunit protein uL15

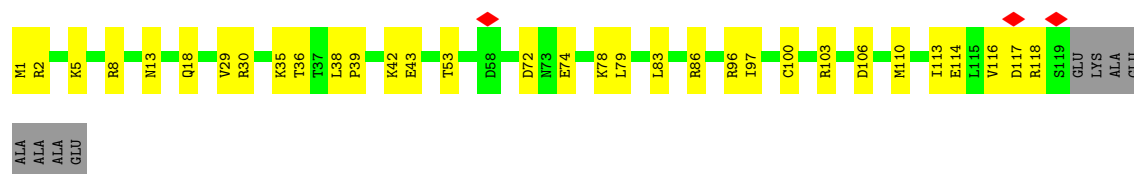




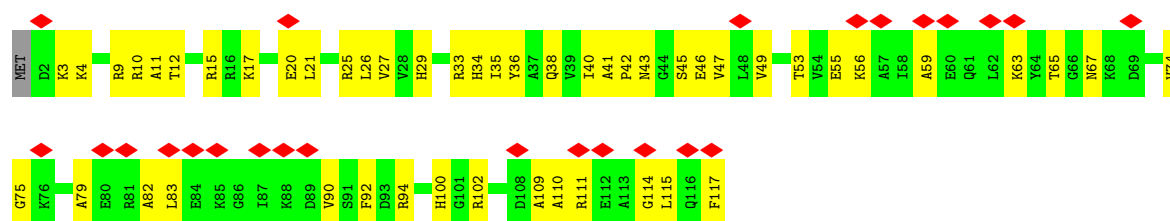
- Molecule 18: 50S ribosomal protein L16



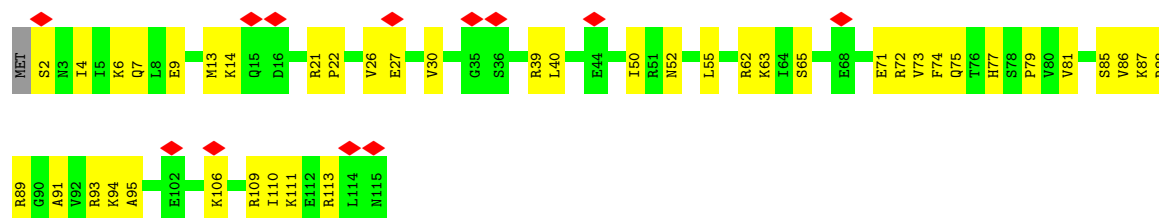
- Molecule 19: Large ribosomal subunit protein bL17



- Molecule 20: Large ribosomal subunit protein uL18

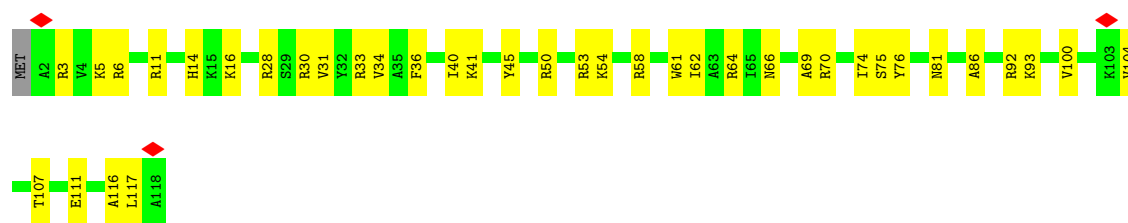


- Molecule 21: Large ribosomal subunit protein bL19

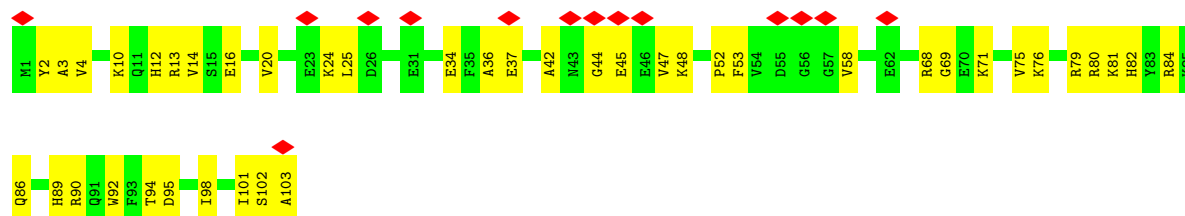


- Molecule 22: 50S ribosomal protein L20

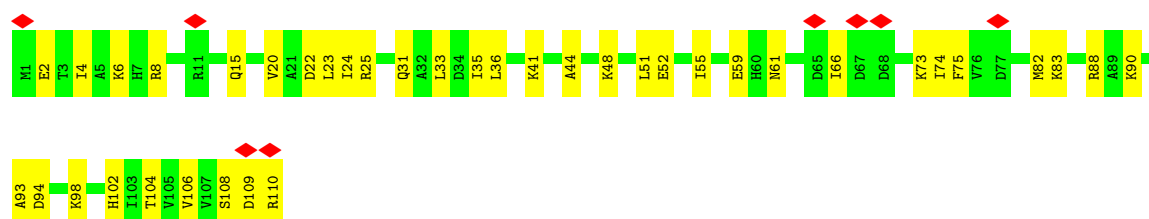




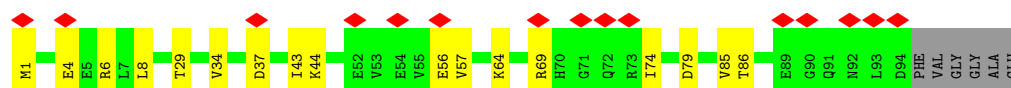
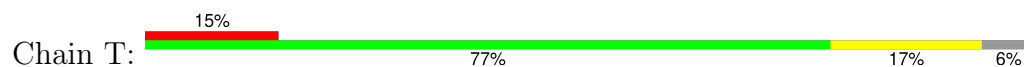
- Molecule 23: Large ribosomal subunit protein bL21



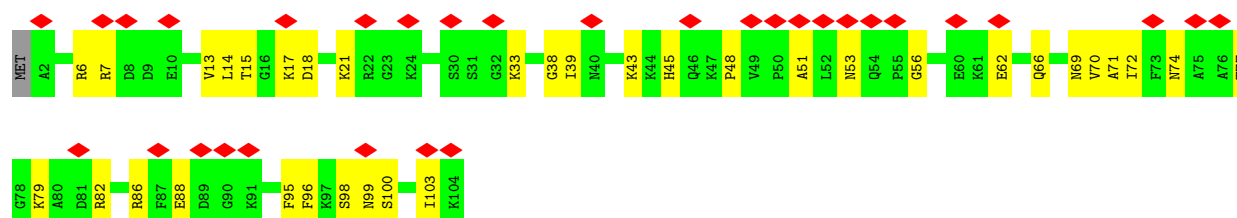
- Molecule 24: Large ribosomal subunit protein uL22



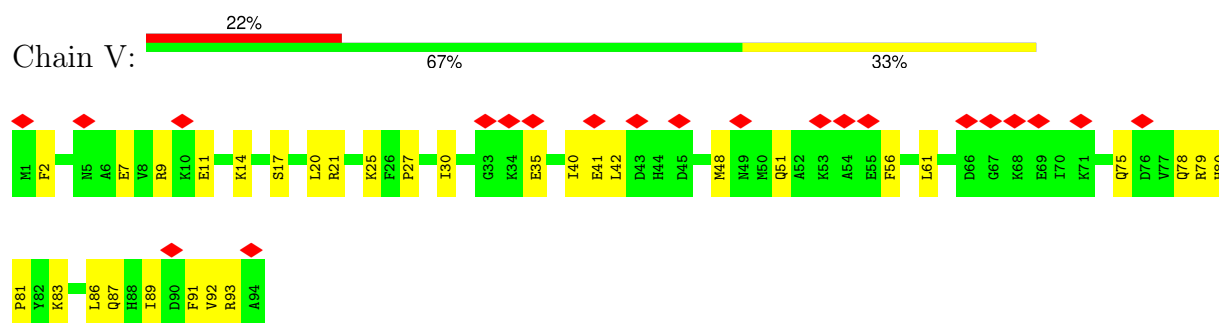
- Molecule 25: 50S ribosomal protein L23



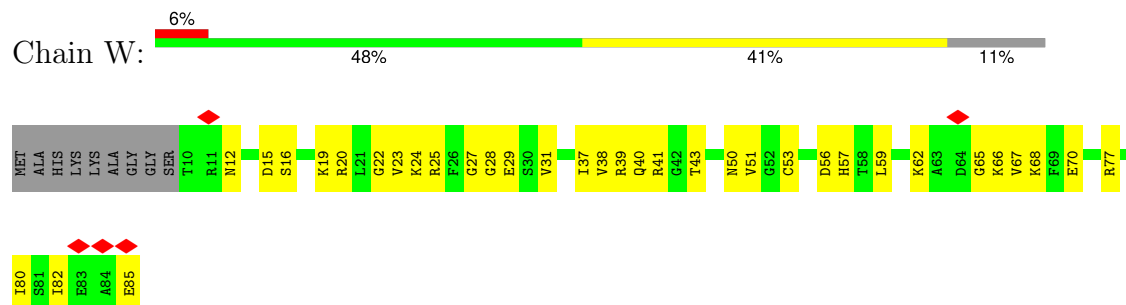
- Molecule 26: 50S ribosomal protein L24



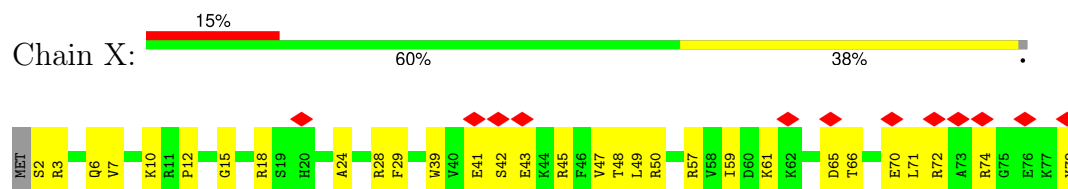
- Molecule 27: Large ribosomal subunit protein bL25



- Molecule 28: Large ribosomal subunit protein bL27



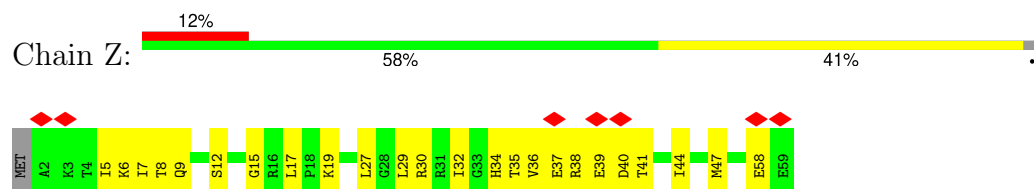
- Molecule 29: 50S ribosomal protein L28



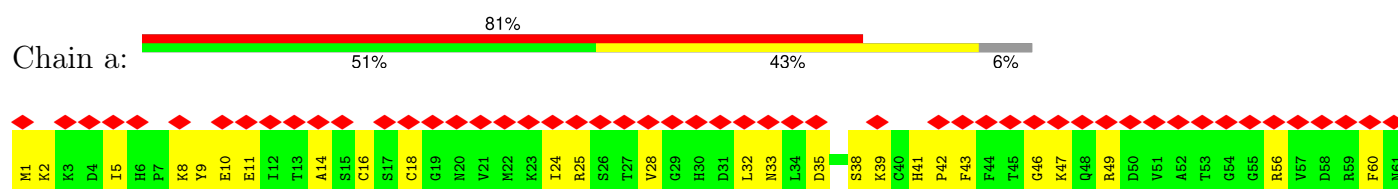
- Molecule 30: Large ribosomal subunit protein uL29



- Molecule 31: 50S ribosomal protein L30

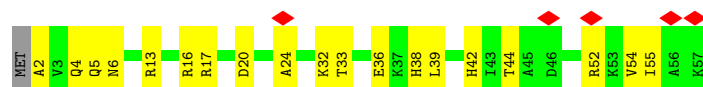


- Molecule 32: 50S ribosomal protein L31

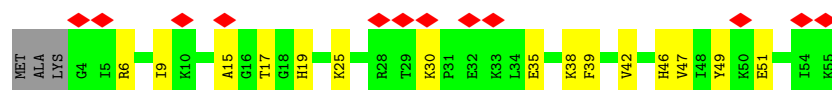




- Molecule 33: 50S ribosomal protein L32



- Molecule 34: 50S ribosomal protein L33



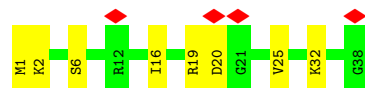
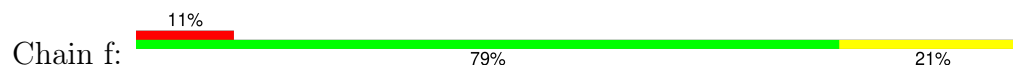
- Molecule 35: 50S ribosomal protein L34



- Molecule 36: 50S ribosomal protein L35

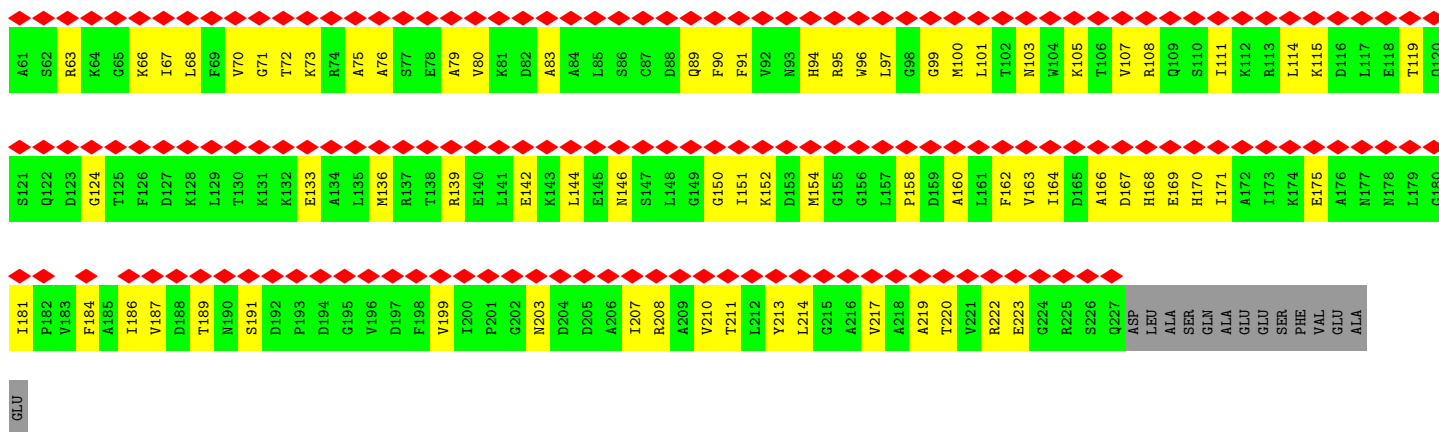


- Molecule 37: 50S ribosomal protein L36

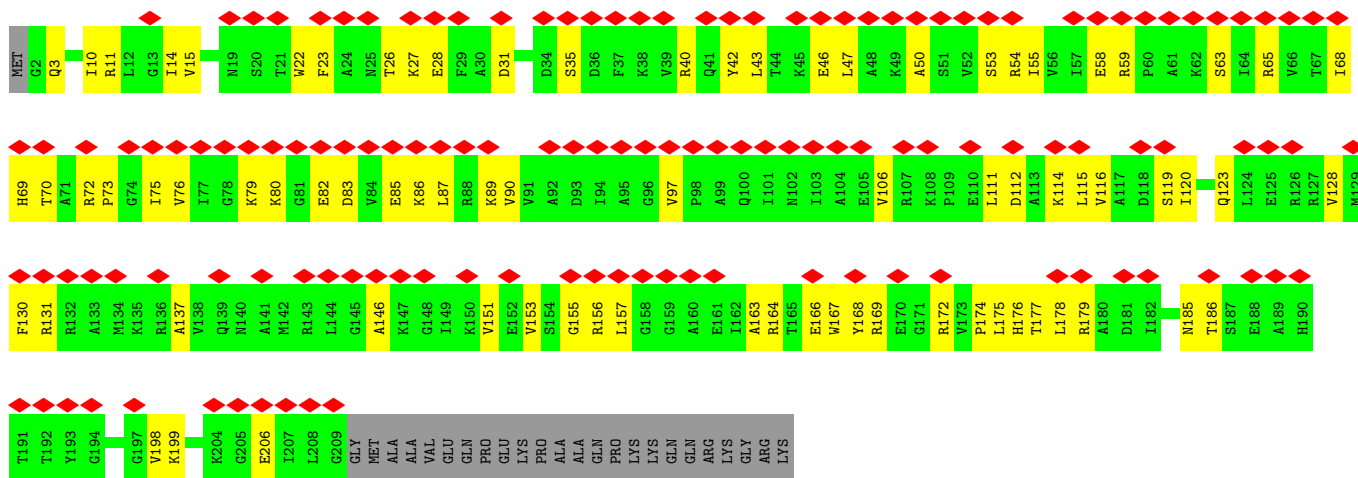


- Molecule 38: 30S ribosomal protein S2

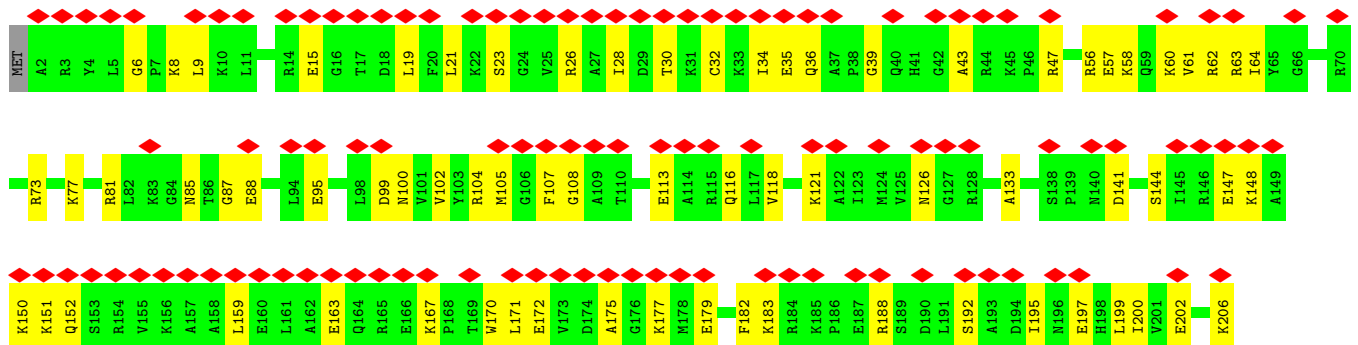




• Molecule 39: 30S ribosomal protein S3

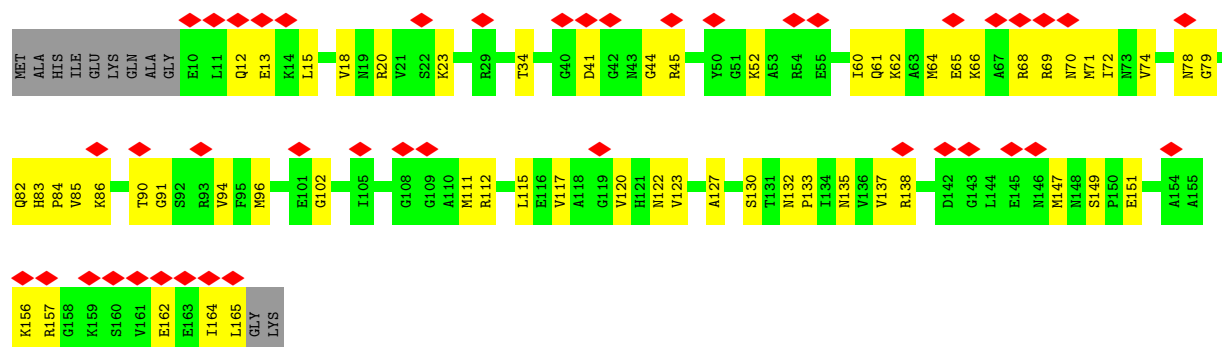


• Molecule 40: 30S ribosomal protein S4

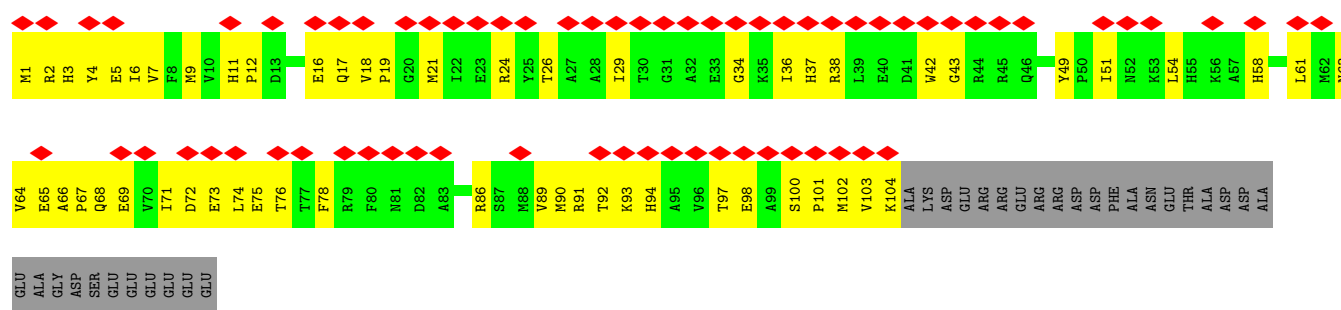


• Molecule 41: Small ribosomal subunit protein uS5

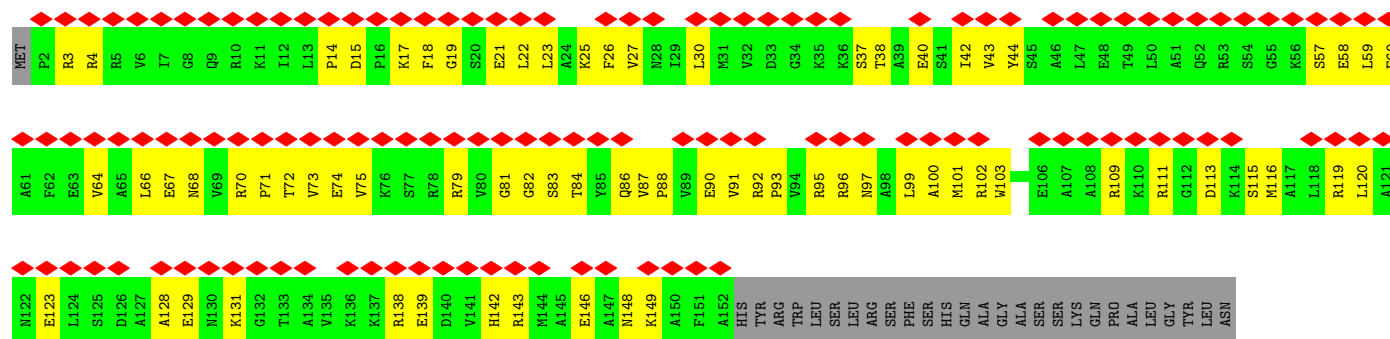
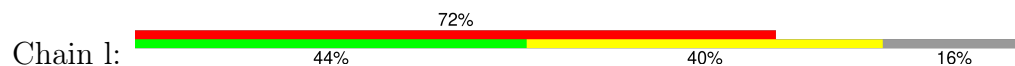




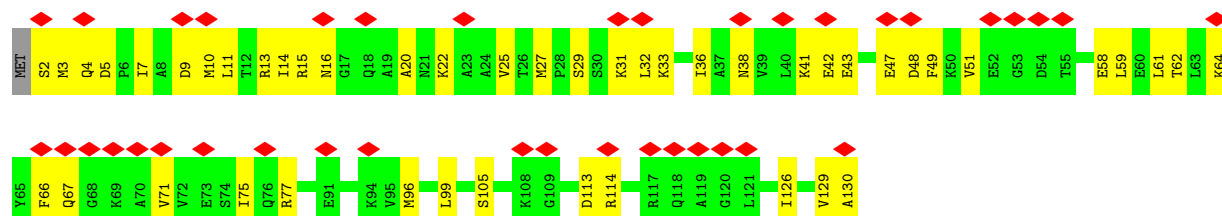
• Molecule 42: 30S ribosomal protein S6



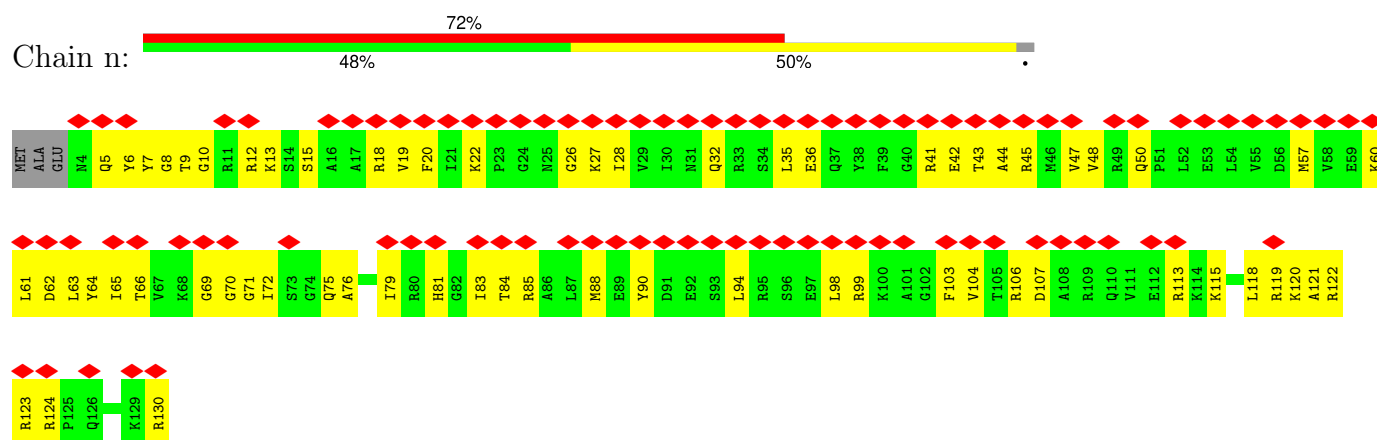
• Molecule 43: 30S ribosomal protein S7



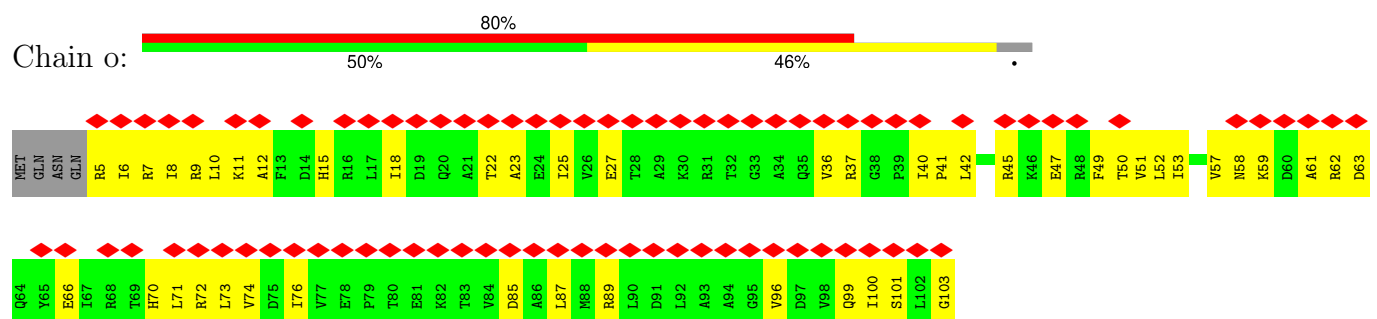
• Molecule 44: Small ribosomal subunit protein uS8



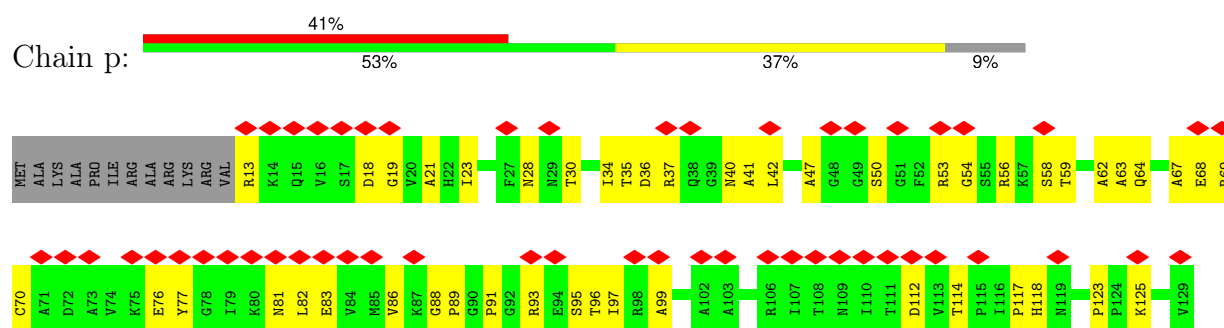
- Molecule 45: Small ribosomal subunit protein uS9



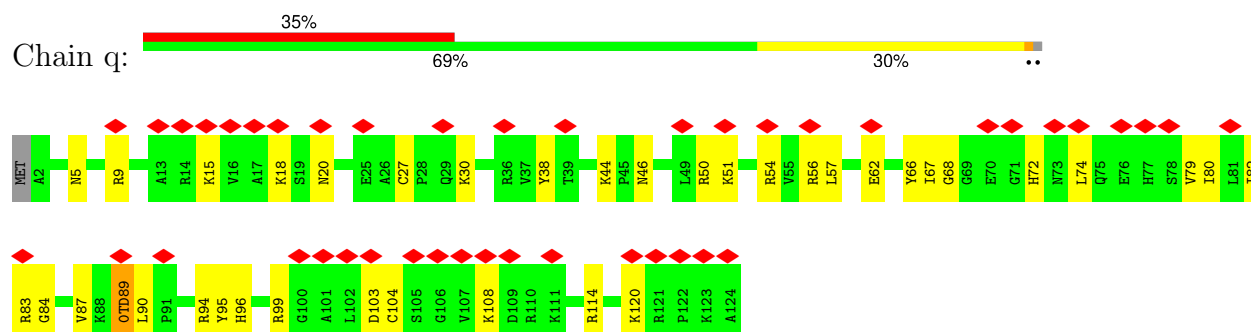
- Molecule 46: Small ribosomal subunit protein uS10



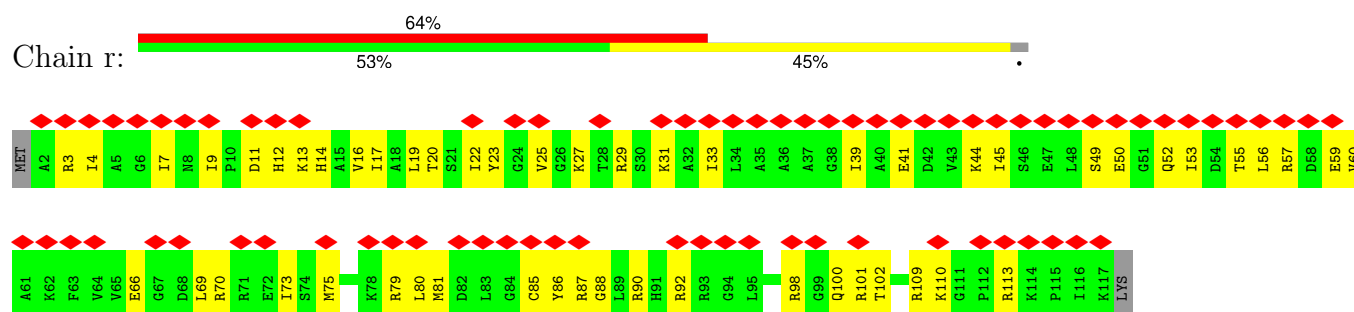
- Molecule 47: 30S ribosomal protein S11



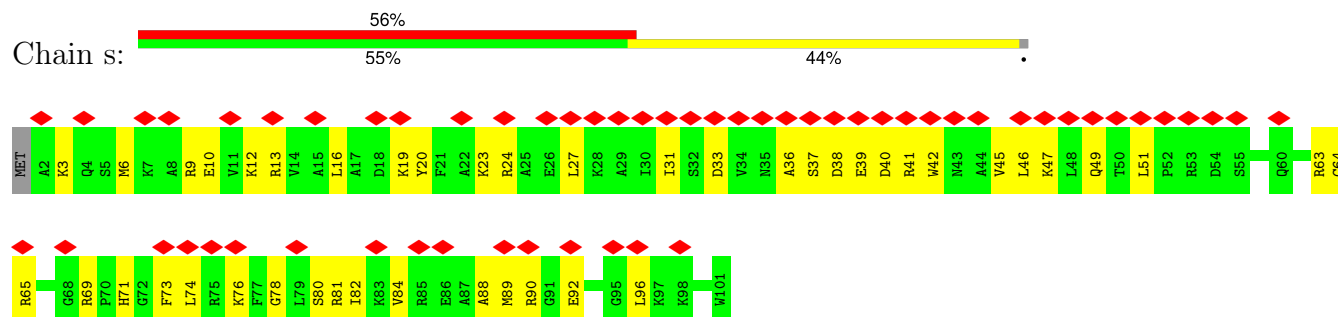
- Molecule 48: Small ribosomal subunit protein uS12



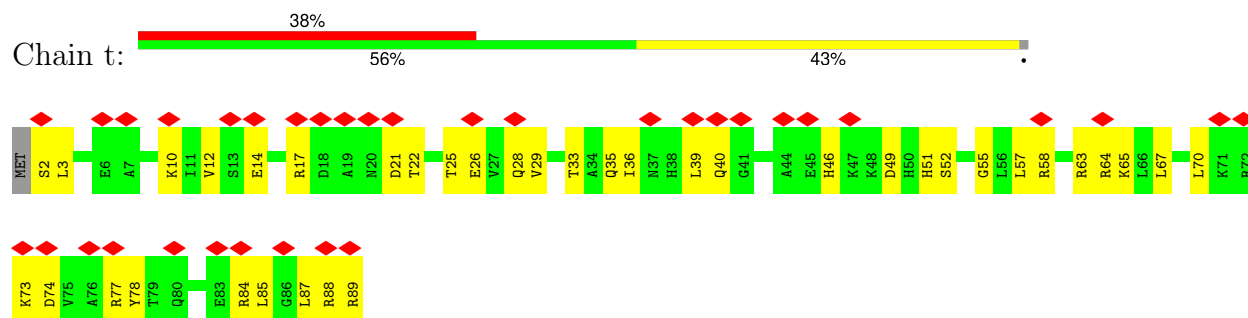
- Molecule 49: 30S ribosomal protein S13



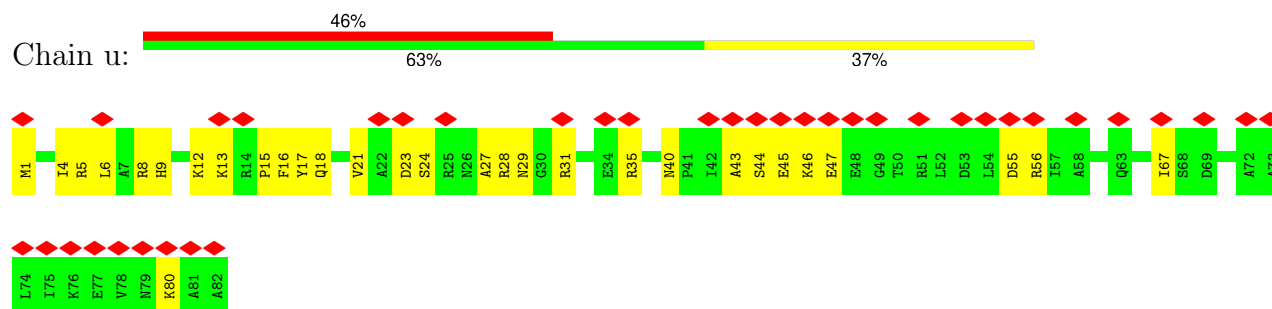
• Molecule 50: Small ribosomal subunit protein uS14



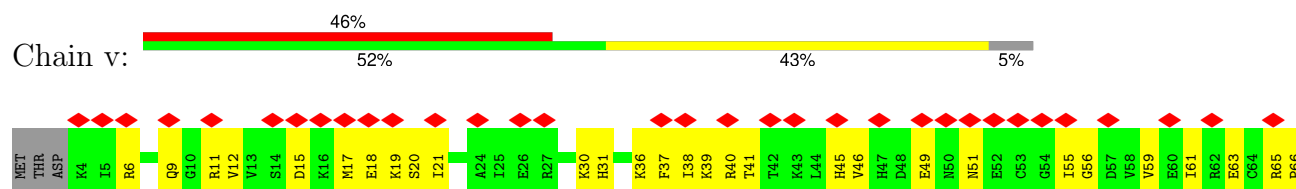
• Molecule 51: Small ribosomal subunit protein uS15



• Molecule 52: 30S ribosomal protein S16

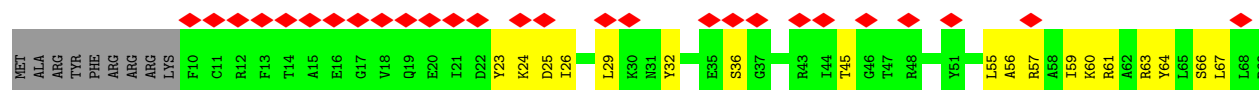
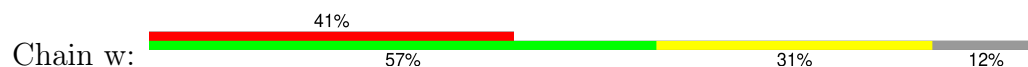


• Molecule 53: Small ribosomal subunit protein uS17

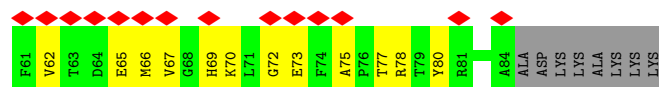




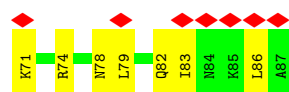
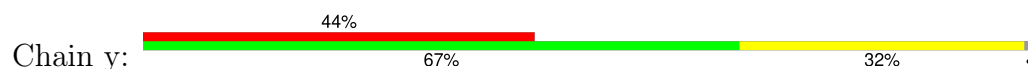
- Molecule 54: 30S ribosomal protein S18



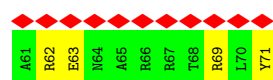
- Molecule 55: Small ribosomal subunit protein uS19



- Molecule 56: 30S ribosomal protein S20



- Molecule 57: 30S ribosomal protein S21



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	104212	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	30.0	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	2.049	Depositor
Minimum map value	-0.537	Depositor
Average map value	0.006	Depositor
Map value standard deviation	0.090	Depositor
Recommended contour level	0.456	Depositor
Map size (Å)	403.19998, 403.19998, 403.19998	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.05, 1.05, 1.05	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 1MG, 0TD, 5MC, OMG, MA6, 6MZ, PSU, G7M, 2MG, MG, 2MA, 4OC, OMC, UR3, OMU, 3TD, ZN, 5MU

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	1	0.51	1/69285 (0.0%)	0.39	0/108083
2	2	0.44	0/36590	0.37	0/57074
3	4	0.41	0/2872	0.35	0/4478
4	5	0.34	0/1835	0.36	0/2859
4	6	0.15	0/1832	0.29	0/2855
5	7	0.42	0/147	0.36	0/227
6	A	0.30	0/1869	0.61	2/2515 (0.1%)
7	B	0.54	0/2121	0.58	0/2852
8	C	0.52	0/1586	0.57	0/2134
9	D	0.47	0/1571	0.55	0/2113
10	E	0.38	0/1434	0.57	0/1926
11	F	0.36	0/1333	0.53	0/1805
12	G	0.22	0/1122	0.55	0/1515
13	H	0.20	0/993	0.52	0/1340
14	I	0.23	0/998	0.46	0/1348
15	J	0.49	0/1152	0.56	0/1551
16	K	0.50	0/955	0.52	0/1279
17	L	0.48	0/1062	0.56	0/1413
18	M	0.52	1/1093 (0.1%)	0.53	0/1460
19	N	0.51	0/964	0.59	0/1289
20	O	0.40	0/902	0.55	0/1209
21	P	0.49	0/929	0.54	0/1242
22	Q	0.53	0/960	0.60	0/1278
23	R	0.48	0/829	0.63	0/1107
24	S	0.50	0/864	0.55	0/1156
25	T	0.44	0/752	0.48	0/1005
26	U	0.41	0/796	0.55	0/1062
27	V	0.39	0/766	0.54	0/1025
28	W	0.50	0/589	0.53	0/779
29	X	0.53	0/635	0.57	0/848
30	Y	0.40	0/502	0.54	0/667

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
31	Z	0.45	0/452	0.61	0/605
32	a	0.28	0/531	0.54	0/709
33	b	0.49	0/450	0.52	0/599
34	c	0.37	0/433	0.43	0/576
35	d	0.52	0/380	0.49	0/498
36	e	0.49	0/513	0.57	0/676
37	f	0.46	0/303	0.56	0/397
38	g	0.24	0/1791	0.54	0/2413
39	h	0.39	0/1663	0.53	0/2241
40	i	0.39	0/1665	0.48	0/2227
41	j	0.44	0/1165	0.58	0/1568
42	k	0.37	0/867	0.59	0/1171
43	l	0.33	0/1195	0.58	0/1602
44	m	0.43	0/989	0.60	0/1326
45	n	0.35	0/1034	0.57	0/1375
46	o	0.37	0/800	0.56	0/1082
47	p	0.40	0/893	0.50	0/1205
48	q	0.46	0/960	0.55	0/1286
49	r	0.36	0/909	0.55	0/1215
50	s	0.38	0/817	0.52	0/1088
51	t	0.42	0/722	0.52	0/964
52	u	0.46	0/659	0.59	0/884
53	v	0.39	0/657	0.56	0/881
54	w	0.39	0/553	0.53	0/743
55	x	0.36	0/680	0.56	0/915
56	y	0.41	0/675	0.46	0/895
57	z	0.21	0/597	0.45	0/792
All	All	0.46	2/161691 (0.0%)	0.43	2/241427 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	1	3	0
6	A	0	1
12	G	0	1
36	e	0	1
All	All	3	3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
18	M	96	ILE	C-N	-6.25	1.22	1.33
1	1	2069	G7M	O3'-P	5.44	1.61	1.56

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	A	84	PHE	CA-C-N	-5.10	113.71	122.79
6	A	84	PHE	C-N-CA	-5.10	113.71	122.79

All (3) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	1	2069	G7M	C2',C4',C3'

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
6	A	106	GLN	Peptide
12	G	9	VAL	Peptide
36	e	31	HIS	Peptide

5.2 Too-close contacts [i](#)

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	1	62336	0	31368	1412	0
2	2	32929	0	16583	862	0
3	4	2569	0	1301	74	0
4	5	1643	0	836	47	0
4	6	1640	0	837	55	0
5	7	131	0	66	1	0
6	A	1840	0	1875	113	0
7	B	2082	0	2154	112	0
8	C	1565	0	1616	47	0
9	D	1552	0	1618	69	0
10	E	1410	0	1444	76	0
11	F	1313	0	1358	61	0
12	G	1111	0	1148	44	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
13	H	980	0	1013	22	0
14	I	984	0	1035	34	0
15	J	1129	0	1162	60	0
16	K	946	0	1023	34	0
17	L	1053	0	1129	39	0
18	M	1074	0	1157	51	0
19	N	951	0	994	31	0
20	O	892	0	923	44	0
21	P	917	0	962	36	0
22	Q	947	0	1019	35	0
23	R	816	0	839	32	0
24	S	857	0	922	31	0
25	T	746	0	811	13	0
26	U	788	0	844	27	0
27	V	753	0	780	30	0
28	W	582	0	599	29	0
29	X	625	0	652	24	0
30	Y	501	0	531	25	0
31	Z	448	0	488	24	0
32	a	522	0	521	30	0
33	b	444	0	458	22	0
34	c	426	0	464	10	0
35	d	377	0	418	10	0
36	e	504	0	572	18	0
37	f	302	0	340	8	0
38	g	1760	0	1787	75	0
39	h	1636	0	1710	59	0
40	i	1643	0	1707	64	0
41	j	1152	0	1196	56	0
42	k	848	0	846	52	0
43	l	1181	0	1238	77	0
44	m	979	0	1031	42	0
45	n	1022	0	1070	58	0
46	o	790	0	831	44	0
47	p	877	0	887	46	0
48	q	957	0	1017	34	0
49	r	900	0	965	46	0
50	s	805	0	844	46	0
51	t	714	0	734	30	0
52	u	649	0	666	26	0
53	v	648	0	691	34	0
54	w	544	0	560	24	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
55	x	663	0	688	49	0
56	y	669	0	719	26	0
57	z	589	0	629	16	0
58	1	292	0	0	0	0
58	2	125	0	0	0	0
58	4	8	0	0	0	0
58	5	5	0	0	0	0
58	A	2	0	0	0	0
58	C	1	0	0	0	0
58	D	1	0	0	0	0
58	b	2	0	0	0	0
58	f	1	0	0	0	0
58	i	1	0	0	0	0
58	r	1	0	0	0	0
59	a	1	0	0	0	0
59	f	1	0	0	0	0
60	B	2	0	0	2	0
All	All	150154	0	101676	4019	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 16.

All (4019) 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)
1:1:2133:G:N2	1:1:2158:A:C6	2.31	0.98
2:2:1127:G:H1	2:2:1145:A:N6	1.61	0.98
55:x:36:ARG:HH21	55:x:53:ASN:HA	1.22	0.98
1:1:2133:G:C2	1:1:2158:A:N6	2.32	0.96
1:1:284:U:H3	1:1:356:G:H1	1.13	0.96
1:1:1138:G:H21	15:J:108:MET:HE3	1.31	0.95
49:r:23:TYR:HB3	49:r:66:GLU:HG3	1.50	0.93
47:p:88:GLY:H	47:p:114:THR:HG22	1.32	0.92
1:1:1222:U:H3	1:1:1227:G:H1	1.14	0.92
1:1:2133:G:HO2'	1:1:2157:G:H1	1.06	0.91
2:2:74:A:HO2'	2:2:75:G:H8	0.99	0.91
2:2:1342:C:H2'	2:2:1343:G:H8	1.38	0.89
2:2:841:C:H2'	2:2:843:U:H5'	1.54	0.89
2:2:1127:G:H1	2:2:1145:A:H61	1.17	0.89
1:1:1792:G:H5'	7:B:204:VAL:HG23	1.51	0.88
1:1:819:A:OP2	1:1:1187:G:N2	2.07	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2107:G:H1	1:1:2182:U:H3	1.20	0.86
1:1:2394:C:N3	4:6:77:A:O2'	2.09	0.86
2:2:1227:A:OP2	49:r:110:LYS:NZ	2.08	0.86
1:1:2133:G:N2	1:1:2158:A:N6	2.22	0.85
51:t:49:ASP:OD2	51:t:52:SER:OG	1.94	0.85
1:1:1032:A:H61	1:1:1122:G:H1	1.20	0.85
49:r:98:ARG:HB2	49:r:100:GLN:HE22	1.40	0.85
45:n:84:THR:HG23	45:n:98:LEU:HD23	1.56	0.85
1:1:306:U:H3	1:1:310:A:H62	1.23	0.84
4:5:54:U:O2	4:5:58:A:N7	2.11	0.84
1:1:2095:A:H5'	12:G:11:ASN:HD22	1.43	0.83
1:1:1417:C:HO2'	1:1:1587:G:HO2'	1.17	0.83
6:A:139:HIS:HD1	6:A:142:THR:HG1	1.21	0.83
1:1:1590:A:H2'	1:1:1591:A:C8	2.12	0.83
1:1:666:A:H4'	17:L:48:ARG:HD2	1.61	0.83
13:H:3:LEU:HD12	13:H:5:LEU:H	1.44	0.83
1:1:284:U:O2	1:1:356:G:N2	2.10	0.83
1:1:1047:G:N2	1:1:1110:G:O2'	2.13	0.81
24:S:59:GLU:HB2	24:S:66:ILE:HD11	1.61	0.81
1:1:1450:G:N2	1:1:1452:G:O6	2.11	0.81
2:2:545:C:OP1	40:i:58:LYS:NZ	2.14	0.80
38:g:114:LEU:HD13	38:g:144:LEU:HB3	1.62	0.80
1:1:569:U:O2'	1:1:983:A:N1	2.14	0.80
39:h:40:ARG:NH1	39:h:55:ILE:O	2.13	0.80
2:2:530:G:O2'	6:A:84:PHE:O	1.99	0.80
9:D:12:LEU:HD11	9:D:194:LYS:HE2	1.63	0.80
1:1:2100:G:O6	1:1:2189:U:N3	2.13	0.80
2:2:1149:C:H2'	2:2:1150:A:H8	1.47	0.79
2:2:107:G:N7	56:y:10:ARG:NH2	2.30	0.79
2:2:946:A:H2'	2:2:947:G:C8	2.17	0.79
2:2:677:U:H3	2:2:713:G:H22	1.31	0.79
1:1:2773:C:OP1	8:C:169:ARG:NH2	2.16	0.79
1:1:1169:A:N6	1:1:1180:U:O4	2.16	0.79
54:w:71:THR:O	54:w:74:HIS:ND1	2.14	0.79
4:5:0:C:H2'	4:5:1:G:H8	1.48	0.79
2:2:1088:G:H21	2:2:1167:A:H61	1.29	0.79
4:6:8:U:O2'	4:6:22:A:N1	2.15	0.79
15:J:30:THR:HG22	15:J:108:MET:HE1	1.64	0.78
40:i:188:ARG:NH1	40:i:192:SER:O	2.13	0.78
14:I:113:ALA:HA	14:I:116:MET:HG2	1.65	0.78
43:l:113:ASP:HB2	43:l:119:ARG:HD3	1.66	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:882:G:N1	1:1:894:U:N3	2.31	0.78
1:1:2140:G:N2	1:1:2151:U:O2	2.14	0.78
24:S:22:ASP:OD1	24:S:25:ARG:NH2	2.17	0.78
52:u:4:ILE:HG12	52:u:21:VAL:HG22	1.64	0.78
2:2:280:C:H1'	53:v:40:ARG:HH22	1.49	0.78
1:1:2104:C:H41	1:1:2186:G:H21	1.32	0.78
2:2:1077:G:N2	2:2:1080:A:OP2	2.17	0.78
24:S:25:ARG:NH1	24:S:74:ILE:O	2.15	0.77
1:1:482:A:O2'	1:1:497:A:N1	2.17	0.77
1:1:2328:A:H2'	1:1:2329:U:C6	2.20	0.77
1:1:2261:C:OP1	28:W:19:LYS:NZ	2.16	0.77
39:h:164:ARG:NH2	39:h:166:GLU:OE2	2.17	0.77
43:l:75:VAL:HA	43:l:87:VAL:O	1.85	0.77
1:1:72:U:O4	30:Y:58:ASN:ND2	2.17	0.77
1:1:495:G:N3	24:S:61:ASN:ND2	2.32	0.76
3:4:31:C:O2	3:4:53:A:N6	2.19	0.76
20:O:15:ARG:HE	20:O:25:ARG:HH12	1.33	0.76
1:1:1020:A:N1	1:1:1141:U:O2'	2.17	0.76
1:1:781:A:OP1	7:B:217:ARG:NH2	2.19	0.76
1:1:1153:C:OP1	22:Q:92:ARG:NH2	2.18	0.76
2:2:1124:G:O2'	2:2:1145:A:N6	2.19	0.76
2:2:1124:G:N2	2:2:1125:U:O4	2.16	0.76
49:r:98:ARG:HB2	49:r:100:GLN:NE2	1.99	0.76
10:E:105:THR:HA	32:a:38:SER:HB3	1.67	0.76
3:4:40:U:O2	3:4:45:A:N6	2.19	0.76
7:B:96:TYR:HE1	7:B:102:ARG:HD2	1.50	0.75
1:1:2140:G:H1	1:1:2151:U:H3	1.33	0.75
6:A:211:GLU:O	6:A:213:SER:N	2.19	0.75
1:1:2278:A:OP2	28:W:12:ASN:ND2	2.18	0.75
55:x:11:ILE:HG13	55:x:38:SER:HB3	1.66	0.75
1:1:848:C:H2'	1:1:849:A:H8	1.50	0.75
1:1:1964:G:O2'	1:1:1967:C:OP2	2.02	0.75
2:2:501:C:OP1	48:q:114:ARG:NH2	2.16	0.75
2:2:673:A:H2'	2:2:674:G:C8	2.21	0.75
3:4:1:U:HO2'	3:4:2:G:H8	1.33	0.75
1:1:1607:C:N4	1:1:1622:G:OP2	2.20	0.75
9:D:149:ILE:HB	9:D:188:MET:HG2	1.68	0.75
21:P:14:LYS:HD2	21:P:77:HIS:HA	1.69	0.75
14:I:55:PRO:HG2	14:I:71:LYS:HB2	1.69	0.75
20:O:40:ILE:HG12	20:O:47:VAL:HG12	1.69	0.75
55:x:13:LEU:HD21	55:x:17:LYS:HE3	1.69	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:120:SER:OG	6:A:133:SER:OG	2.05	0.74
3:4:51:G:OP1	20:O:63:LYS:NZ	2.19	0.74
41:j:111:MET:HE2	41:j:127:ALA:HB2	1.68	0.74
1:1:1567:G:OP1	7:B:60:GLN:NE2	2.21	0.74
10:E:102:ARG:NH2	32:a:9:TYR:OH	2.20	0.74
32:a:16:CYS:HB3	32:a:18:CYS:SG	2.26	0.74
1:1:1972:G:OP2	7:B:238:ARG:NH1	2.19	0.74
1:1:1869:G:N2	1:1:1871:A:O2'	2.18	0.74
41:j:34:THR:HG22	41:j:52:LYS:HG2	1.69	0.74
1:1:2646:C:OP2	1:1:2732:G:O2'	2.06	0.74
43:l:79:ARG:NH1	43:l:81:GLY:O	2.20	0.74
51:t:85:LEU:HB3	51:t:87:LEU:HD13	1.69	0.74
1:1:247:G:OP2	1:1:249:C:N4	2.20	0.74
1:1:1728:C:O2	1:1:1731:G:N1	2.16	0.74
55:x:37:ARG:O	55:x:70:LYS:NZ	2.21	0.74
2:2:662:U:OP1	42:k:93:LYS:NZ	2.20	0.74
1:1:1251:C:OP2	22:Q:6:ARG:NH2	2.20	0.73
30:Y:32:ALA:HB2	30:Y:37:LEU:HD23	1.70	0.73
40:i:144:SER:HB2	40:i:179:GLU:HG2	1.71	0.73
7:B:121:ASP:HB3	12:G:91:PHE:HE1	1.52	0.73
1:1:1224:U:OP2	23:R:68:ARG:NH1	2.20	0.73
1:1:1270:C:H5''	1:1:1271:G:H5'	1.70	0.73
2:2:438:U:OP1	40:i:148:LYS:NZ	2.20	0.73
39:h:153:VAL:HG22	39:h:198:VAL:HG22	1.71	0.73
1:1:1914:C:O2'	6:A:44:ARG:NH2	2.20	0.73
2:2:1029:U:O2'	2:2:1033:G:N2	2.21	0.73
1:1:444:C:OP1	9:D:40:ARG:NH2	2.21	0.73
1:1:820:A:H4'	1:1:836:G:H22	1.54	0.73
3:4:18:G:O6	3:4:65:U:O4	2.07	0.73
1:1:2134:A:O2'	1:1:2159:G:N3	2.22	0.73
15:J:37:ARG:HA	15:J:118:MET:HE3	1.71	0.73
1:1:2392:A:OP2	36:e:31:HIS:NE2	2.19	0.73
2:2:216:U:H2'	2:2:217:C:C6	2.24	0.73
12:G:132:PHE:HB2	12:G:140:ALA:HB3	1.71	0.73
26:U:15:THR:OG1	26:U:69:ASN:ND2	2.22	0.73
27:V:17:SER:HB3	27:V:21:ARG:HH12	1.53	0.73
47:p:50:SER:HA	47:p:69:ARG:HH22	1.54	0.73
2:2:204:G:H2'	2:2:205:A:C8	2.24	0.72
7:B:146:MET:HE3	7:B:154:LEU:HD21	1.71	0.72
42:k:16:GLU:OE2	42:k:17:GLN:NE2	2.22	0.72
1:1:1264:A:OP1	33:b:16:ARG:NH1	2.22	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:736:C:H2'	2:2:737:C:C6	2.25	0.72
15:J:109:LEU:HD22	15:J:118:MET:HE2	1.71	0.72
1:1:1138:G:H21	15:J:108:MET:CE	2.03	0.72
7:B:107:PRO:HD2	7:B:110:LEU:HD22	1.72	0.72
1:1:868:U:O2	18:M:8:LYS:NZ	2.22	0.72
1:1:476:G:N1	1:1:479:A:OP2	2.23	0.72
4:6:53:G:H2'	4:6:54:G:H8	1.55	0.72
47:p:89:PRO:HG3	57:z:32:VAL:HG11	1.72	0.72
50:s:3:LYS:HB2	50:s:6:MET:HG2	1.72	0.72
2:2:126:G:OP1	2:2:605:U:O2'	2.07	0.72
2:2:280:C:H1'	53:v:40:ARG:NH2	2.05	0.72
2:2:561:U:O2	48:q:15:LYS:NZ	2.23	0.72
49:r:39:ILE:HD12	49:r:56:LEU:HD21	1.71	0.72
2:2:1015:G:N2	2:2:1218:C:O2	2.23	0.72
13:H:29:ASP:HB2	13:H:32:GLY:HA3	1.72	0.72
28:W:19:LYS:O	28:W:39:ARG:NH2	2.22	0.72
42:k:3:HIS:CD2	42:k:65:GLU:HG3	2.25	0.72
50:s:74:LEU:HD12	50:s:84:VAL:HG21	1.72	0.72
2:2:842:U:O2'	2:2:845:A:OP2	2.07	0.72
4:5:0:C:H2'	4:5:1:G:C8	2.24	0.72
51:t:67:LEU:HD11	51:t:87:LEU:HD23	1.71	0.72
1:1:2747:G:H21	1:1:2757:A:H62	1.38	0.71
6:A:222:LYS:HG2	6:A:226:LYS:NZ	2.05	0.71
45:n:27:LYS:HG2	45:n:62:ASP:HB2	1.72	0.71
1:1:1083:U:O2'	1:1:1085:A:OP2	2.06	0.71
1:1:729:G:H5''	1:1:730:A:H5''	1.71	0.71
27:V:21:ARG:NH2	27:V:87:GLN:O	2.24	0.71
2:2:1028:C:O2	2:2:1034:G:N2	2.21	0.71
28:W:28:GLY:O	28:W:66:LYS:NZ	2.19	0.71
1:1:2246:G:H2'	1:1:2247:A:H8	1.56	0.71
1:1:2848:G:O2'	1:1:2867:G:N2	2.20	0.71
1:1:1062:G:H2'	1:1:1063:G:C8	2.26	0.71
1:1:1570:A:H2'	1:1:1571:A:C8	2.26	0.71
2:2:371:A:O2'	2:2:373:A:N7	2.24	0.71
1:1:548:G:H3'	1:1:549:G:O4'	1.90	0.71
34:c:9:ILE:HD12	34:c:51:GLU:HG3	1.72	0.71
45:n:12:ARG:HG3	45:n:13:LYS:H	1.56	0.71
4:5:63:G:H2'	4:5:64:G:H8	1.56	0.70
25:T:56:GLU:HB3	25:T:86:THR:HG23	1.74	0.70
1:1:818:G:N1	1:1:1188:U:OP2	2.21	0.70
1:1:2747:G:OP1	11:F:138:LYS:NZ	2.20	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1005:A:H3'	2:2:1006:G:H8	1.55	0.70
1:1:2566:A:N1	16:K:28:SER:OG	2.22	0.70
2:2:1004:A:OP1	2:2:1024:G:N2	2.24	0.70
24:S:88:ARG:NH2	24:S:94:ASP:OD2	2.24	0.70
40:i:26:ARG:HH21	40:i:30:THR:HG22	1.54	0.70
7:B:75:PRO:HG2	7:B:97:LYS:HD3	1.74	0.70
48:q:99:ARG:NE	48:q:104:CYS:SG	2.63	0.70
56:y:44:LYS:NZ	56:y:83:ILE:O	2.23	0.70
7:B:66:ASP:OD1	7:B:102:ARG:NH1	2.25	0.70
10:E:161:LYS:NZ	10:E:165:GLU:OE2	2.25	0.70
45:n:18:ARG:NH1	45:n:66:THR:OG1	2.23	0.70
4:6:66:C:H2'	4:6:67:C:H6	1.56	0.70
6:A:222:LYS:HZ2	41:j:20:ARG:HE	1.40	0.70
1:1:2523:G:HO2'	1:1:2764:A:HO2'	1.33	0.70
1:1:730:A:OP1	1:1:1775:U:O2'	2.10	0.70
7:B:142:HIS:ND1	7:B:193:GLY:O	2.24	0.70
53:v:17:MET:HG3	53:v:20:SER:HB2	1.73	0.70
2:2:1088:G:H21	2:2:1167:A:N6	1.89	0.69
7:B:79:GLU:CD	7:B:101:ARG:HH12	1.99	0.69
40:i:202:GLU:OE1	41:j:112:ARG:NH2	2.25	0.69
1:1:102:U:H5	30:Y:4:LYS:HB2	1.56	0.69
32:a:65:ASN:OD1	32:a:66:ILE:N	2.25	0.69
45:n:106:ARG:NH1	45:n:107:ASP:O	2.25	0.69
7:B:79:GLU:OE1	7:B:101:ARG:NH1	2.24	0.69
15:J:49:ASP:OD1	15:J:121:LYS:NZ	2.25	0.69
44:m:11:LEU:HD12	44:m:75:ILE:HG12	1.74	0.69
1:1:1365:A:OP1	29:X:28:ARG:NH2	2.26	0.69
2:2:1458:G:OP1	56:y:30:THR:OG1	2.10	0.69
6:A:81:LYS:O	6:A:203:THR:OG1	2.10	0.69
1:1:2674:G:H4'	16:K:30:ARG:HG3	1.74	0.69
10:E:29:PRO:HB2	10:E:169:LEU:HD12	1.74	0.69
13:H:50:VAL:O	13:H:53:ARG:NH1	2.24	0.69
1:1:1631:G:N1	1:1:1634:A:OP2	2.25	0.69
4:6:34:U:O2'	43:l:84:THR:OG1	2.10	0.69
1:1:672:C:OP2	17:L:42:SER:OG	2.11	0.69
1:1:2136:G:H1	1:1:2155:U:H3	1.39	0.69
1:1:2193:G:H2'	1:1:2194:U:C6	2.28	0.69
2:2:958:A:OP1	55:x:55:ARG:NH1	2.26	0.69
2:2:1316:G:N1	2:2:1319:A:OP2	2.25	0.69
17:L:62:PRO:HG2	36:e:25:LYS:HB3	1.75	0.69
40:i:57:GLU:HG3	40:i:199:LEU:HD12	1.73	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:673:C:OP1	9:D:49:ARG:NH2	2.26	0.69
1:1:788:A:OP1	1:1:791:C:N4	2.24	0.69
1:1:2076:U:OP2	1:1:2238:G:N2	2.26	0.69
2:2:568:G:O2'	2:2:574:A:N1	2.25	0.69
2:2:1116:U:O2	2:2:1184:G:O6	2.10	0.69
10:E:108:VAL:HG11	10:E:176:PRO:HG2	1.75	0.69
16:K:43:ILE:HD12	16:K:56:ASP:HB2	1.73	0.69
1:1:882:G:N2	1:1:894:U:O2	2.24	0.69
1:1:1119:U:OP1	27:V:83:LYS:NZ	2.22	0.69
2:2:203:G:O2'	2:2:465:A:N1	2.26	0.69
2:2:1088:G:N2	2:2:1167:A:H61	1.90	0.69
2:2:1492:A:H2'	2:2:1493:A:O4'	1.93	0.69
7:B:61:ALA:O	7:B:63:ARG:NH2	2.22	0.69
15:J:37:ARG:NH1	15:J:44:TYR:OH	2.26	0.69
1:1:1032:A:N6	1:1:1122:G:H1	1.91	0.69
2:2:1149:C:H2'	2:2:1150:A:C8	2.28	0.69
2:2:1255:G:O2'	2:2:1258:G:N3	2.25	0.69
6:A:222:LYS:NZ	41:j:20:ARG:O	2.24	0.69
1:1:1494:A:H2'	1:1:1495:A:C8	2.27	0.68
1:1:2350:C:OP2	36:e:45:ARG:NH2	2.25	0.68
2:2:406:G:H21	40:i:116:GLN:HE22	1.41	0.68
2:2:1133:G:H2'	2:2:1134:G:C8	2.27	0.68
43:l:93:PRO:HA	43:l:96:ARG:HD2	1.75	0.68
2:2:1152:A:OP1	46:o:70:HIS:ND1	2.26	0.68
6:A:45:GLU:OE1	6:A:55:SER:OG	2.11	0.68
6:A:121:GLN:O	6:A:149:GLN:NE2	2.23	0.68
42:k:2:ARG:HH12	42:k:91:ARG:NH1	1.91	0.68
1:1:370:G:O2'	1:1:424:G:OP1	2.11	0.68
18:M:47:GLU:OE2	18:M:50:ARG:NH1	2.22	0.68
2:2:714:G:H2'	2:2:715:A:C8	2.28	0.68
6:A:229:VAL:O	40:i:47:ARG:NH1	2.26	0.68
7:B:29:PRO:HG2	7:B:34:LEU:HD11	1.76	0.68
1:1:602:A:HO2'	1:1:604:G:HO2'	1.37	0.68
2:2:427:U:O2'	2:2:541:G:OP1	2.12	0.68
2:2:713:G:H2'	2:2:714:G:C8	2.28	0.68
6:A:210:VAL:HG23	6:A:212:LYS:HG2	1.76	0.68
1:1:499:U:H5''	26:U:43:LYS:HE3	1.73	0.68
2:2:1351:U:H3	2:2:1371:G:H1	1.40	0.68
27:V:9:ARG:HH11	27:V:27:PRO:HB3	1.59	0.68
45:n:42:GLU:OE1	45:n:45:ARG:NH1	2.26	0.68
1:1:1212:G:O2'	1:1:1236:G:N2	2.27	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:108:PHE:HB2	6:A:169:LEU:HD13	1.76	0.68
26:U:86:ARG:NH2	26:U:100:SER:O	2.25	0.68
50:s:90:ARG:HG3	50:s:92:GLU:OE1	1.93	0.68
1:1:2099:U:H3	1:1:2190:G:H1	1.42	0.67
17:L:51:GLU:OE2	17:L:54:GLN:NE2	2.27	0.67
39:h:27:LYS:NZ	39:h:28:GLU:OE2	2.25	0.67
40:i:9:LEU:HD13	40:i:32:CYS:HB3	1.75	0.67
1:1:2328:A:H2'	1:1:2329:U:H6	1.57	0.67
7:B:117:GLN:N	7:B:128:ASN:OD1	2.28	0.67
38:g:99:GLY:O	38:g:103:ASN:N	2.25	0.67
1:1:1378:A:O2'	1:1:1380:G:N7	2.26	0.67
1:1:1408:G:O6	1:1:1594:U:O2	2.11	0.67
1:1:1638:C:O2	1:1:2698:U:O2'	2.12	0.67
7:B:16:VAL:HG22	7:B:206:GLY:HA3	1.76	0.67
1:1:932:U:O2'	1:1:934:U:O4	2.12	0.67
54:w:32:TYR:HE1	54:w:45:THR:HG21	1.59	0.67
1:1:1789:A:OP2	7:B:221:ARG:NH1	2.26	0.67
2:2:1187:G:H5'	45:n:115:LYS:HZ2	1.59	0.67
12:G:80:ILE:HD13	12:G:102:ALA:HB2	1.76	0.67
38:g:111:ILE:HD12	38:g:152:LYS:HA	1.76	0.67
1:1:1012:U:OP2	22:Q:70:ARG:NH1	2.27	0.67
2:2:842:U:H4'	2:2:846:G:C6	2.29	0.67
6:A:126:GLN:O	6:A:130:LYS:HB2	1.95	0.67
11:F:164:TYR:HB2	11:F:167:GLU:HB2	1.75	0.67
20:O:27:VAL:HG21	20:O:40:ILE:HD12	1.76	0.67
41:j:15:LEU:HD21	41:j:18:VAL:HG23	1.77	0.67
1:1:619:G:O6	9:D:98:LYS:NZ	2.27	0.67
2:2:13:U:OP1	6:A:215:LYS:NZ	2.28	0.67
2:2:101:A:OP1	56:y:5:LYS:NZ	2.28	0.67
2:2:914:A:OP2	6:A:216:LYS:NZ	2.27	0.67
31:Z:27:LEU:HB3	31:Z:29:LEU:HD13	1.77	0.67
1:1:878:A:H3'	1:1:879:G:H8	1.59	0.67
1:1:1263:U:OP1	33:b:13:ARG:NH1	2.27	0.67
1:1:2250:G:H5'	1:1:2250:G:N3	2.10	0.67
2:2:769:G:H4'	2:2:1513:A:H4'	1.77	0.67
11:F:121:ILE:HD11	11:F:133:LEU:HD13	1.77	0.67
1:1:245:G:N7	36:e:8:ARG:NH2	2.36	0.66
1:1:320:A:OP1	9:D:130:LYS:NZ	2.26	0.66
1:1:606:U:O2	1:1:622:G:O6	2.13	0.66
54:w:57:ARG:HD2	54:w:61:ARG:HH11	1.60	0.66
1:1:514:A:N3	1:1:581:C:O2'	2.26	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:R:68:ARG:NH2	23:R:90:ARG:HB2	2.10	0.66
43:l:88:PRO:HG3	43:l:149:LYS:HA	1.77	0.66
1:1:973:A:H5''	23:R:81:LYS:HD2	1.77	0.66
1:1:1006:C:H1'	15:J:108:MET:HE2	1.76	0.66
2:2:19:A:OP1	41:j:135:ASN:ND2	2.28	0.66
2:2:859:G:H2'	2:2:860:A:C8	2.30	0.66
4:6:52:C:H2'	4:6:53:G:C8	2.30	0.66
8:C:33:ARG:HA	8:C:95:SER:HA	1.77	0.66
56:y:67:ILE:HB	56:y:71:LYS:HD3	1.77	0.66
1:1:2658:C:H5''	11:F:158:LYS:HE3	1.78	0.66
2:2:197:A:N1	2:2:220:G:O2'	2.26	0.66
44:m:47:GLU:HB2	44:m:62:THR:HB	1.78	0.66
1:1:1582:C:O2'	1:1:1585:C:N3	2.25	0.66
1:1:2713:U:H3'	1:1:2714:G:H5''	1.78	0.66
40:i:102:VAL:HG13	40:i:107:PHE:HB2	1.78	0.66
1:1:1668:A:O2'	1:1:1674:G:N7	2.25	0.66
1:1:2422:C:O4'	4:6:77:A:N6	2.28	0.66
2:2:1005:A:H3'	2:2:1006:G:C8	2.30	0.66
8:C:56:LYS:HB2	8:C:59:ARG:HB2	1.76	0.66
43:l:27:VAL:HG22	43:l:43:VAL:HG21	1.78	0.66
1:1:309:A:N3	1:1:329:G:O2'	2.27	0.66
1:1:1484:U:H2'	1:1:1485:U:C6	2.31	0.66
1:1:1779:U:H5	1:1:1784:A:N7	1.94	0.66
1:1:2756:U:OP2	37:f:19:ARG:NE	2.28	0.66
2:2:1347:G:O6	45:n:12:ARG:NH2	2.28	0.66
1:1:2063:C:O2'	4:5:76:A:O3'	2.13	0.66
2:2:1317:C:N3	55:x:37:ARG:NH1	2.40	0.66
3:4:79:G:N7	27:V:14:LYS:NZ	2.43	0.66
29:X:6:GLN:OE1	29:X:50:ARG:N	2.27	0.66
42:k:6:ILE:HG12	42:k:89:VAL:HG22	1.78	0.66
1:1:18:U:O2'	1:1:554:U:OP1	2.15	0.65
1:1:45:G:H5''	1:1:46:G:H5'	1.77	0.65
1:1:920:A:OP1	31:Z:19:LYS:NZ	2.30	0.65
1:1:2773:C:P	8:C:169:ARG:HH22	2.18	0.65
2:2:127:G:O3'	53:v:6:ARG:NH2	2.29	0.65
11:F:80:THR:OG1	11:F:81:GLU:OE1	2.09	0.65
27:V:9:ARG:NH1	27:V:27:PRO:HB3	2.11	0.65
39:h:119:SER:O	39:h:123:GLN:HG3	1.96	0.65
48:q:68:GLY:O	48:q:99:ARG:NH1	2.29	0.65
1:1:160:A:N3	1:1:2208:C:O2'	2.28	0.65
1:1:882:G:O6	1:1:894:U:C4	2.49	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1364:G:OP2	29:X:2:SER:N	2.28	0.65
2:2:310:G:H5''	52:u:31:ARG:HB2	1.79	0.65
2:2:677:U:O2	2:2:777:A:O2'	2.13	0.65
2:2:1125:U:OP1	46:o:37:ARG:NH1	2.29	0.65
19:N:2:ARG:NH1	19:N:5:LYS:O	2.28	0.65
41:j:13:GLU:OE1	41:j:68:ARG:NH1	2.30	0.65
49:r:49:SER:N	49:r:52:GLN:OE1	2.29	0.65
1:1:882:G:N1	1:1:894:U:C2	2.63	0.65
1:1:2162:G:OP2	1:1:2164:C:N4	2.29	0.65
2:2:335:C:O2'	2:2:1433:A:N3	2.28	0.65
2:2:1106:G:H5''	39:h:172:ARG:HB3	1.77	0.65
20:O:53:THR:HB	20:O:65:THR:HB	1.79	0.65
27:V:75:GLN:HB2	27:V:92:VAL:HG23	1.78	0.65
45:n:119:ARG:NH2	45:n:123:ARG:HE	1.94	0.65
51:t:26:GLU:OE2	51:t:77:ARG:NE	2.24	0.65
1:1:31:C:O2'	1:1:1238:G:OP1	2.14	0.65
20:O:34:HIS:O	20:O:102:ARG:NH1	2.30	0.65
38:g:56:GLU:HG3	38:g:59:LYS:HD3	1.79	0.65
1:1:84:A:N1	1:1:98:G:O2'	2.30	0.65
1:1:2313:C:H2'	1:1:2314:A:H8	1.62	0.65
1:1:848:C:H2'	1:1:849:A:C8	2.31	0.65
22:Q:50:ARG:O	22:Q:54:LYS:NZ	2.30	0.65
6:A:8:ILE:HG23	6:A:97:VAL:HG22	1.79	0.65
11:F:12:PRO:HD2	11:F:15:VAL:HG21	1.79	0.65
18:M:24:THR:O	18:M:34:LYS:NZ	2.30	0.65
53:v:31:HIS:HB2	53:v:38:ILE:HD11	1.77	0.65
2:2:1275:A:H3'	2:2:1276:G:H8	1.62	0.65
6:A:117:THR:HA	6:A:135:VAL:HA	1.78	0.64
10:E:8:TYR:OH	10:E:29:PRO:O	2.10	0.64
39:h:14:ILE:HG22	39:h:15:VAL:HG23	1.80	0.64
1:1:563:A:OP2	23:R:79:ARG:NH2	2.31	0.64
1:1:2717:C:HO2'	21:P:94:LYS:HZ3	1.44	0.64
2:2:675:A:H1'	47:p:118:HIS:CD2	2.33	0.64
2:2:1041:G:H2'	2:2:1042:A:C8	2.31	0.64
7:B:160:THR:HB	7:B:177:ARG:HG3	1.78	0.64
18:M:1:MET:HE1	18:M:44:ARG:HD3	1.79	0.64
56:y:17:ALA:O	56:y:21:ASN:ND2	2.27	0.64
1:1:927:A:H2'	1:1:928:A:C8	2.32	0.64
2:2:1190:G:H5'	39:h:176:HIS:NE2	2.13	0.64
9:D:106:LYS:HZ3	9:D:200:LEU:HB3	1.62	0.64
39:h:11:ARG:NH2	39:h:175:LEU:O	2.30	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2316:G:H2'	1:1:2317:A:H8	1.61	0.64
40:i:99:ASP:OD1	40:i:100:ASN:N	2.30	0.64
49:r:66:GLU:O	49:r:70:ARG:HB2	1.97	0.64
1:1:1682:G:OP2	1:1:1699:G:N2	2.29	0.64
4:5:19:G:O6	10:E:80:ARG:NH2	2.30	0.64
13:H:33:VAL:HG13	13:H:36:ASP:H	1.62	0.64
26:U:86:ARG:NE	26:U:88:GLU:OE2	2.30	0.64
28:W:37:ILE:HG21	28:W:80:ILE:HG21	1.80	0.64
42:k:3:HIS:NE2	42:k:65:GLU:OE2	2.31	0.64
1:1:2052:A:O2'	8:C:148:GLN:O	2.10	0.64
1:1:2595:G:N2	1:1:2598:A:OP2	2.30	0.64
2:2:384:G:H2'	2:2:385:C:C6	2.33	0.64
2:2:890:G:O2'	2:2:906:A:N6	2.30	0.64
4:6:34:U:O2'	43:l:79:ARG:NH2	2.27	0.64
1:1:630:G:N2	1:1:633:A:OP2	2.26	0.64
1:1:2189:U:HO2'	1:1:2190:G:H8	1.44	0.64
1:1:2498:OMC:HM22	1:1:2499:C:H5'	1.78	0.64
1:1:2500:U:O2'	1:1:2504:PSU:OP1	2.14	0.64
8:C:124:ARG:NH1	8:C:161:MET:O	2.31	0.64
1:1:568:U:O4	23:R:81:LYS:NZ	2.30	0.64
4:6:36:A:N6	43:l:82:GLY:O	2.31	0.64
16:K:76:VAL:HG12	21:P:73:VAL:HB	1.80	0.64
50:s:37:SER:OG	50:s:40:ASP:OD2	2.14	0.64
1:1:1266:G:O2'	1:1:2012:G:O6	2.13	0.64
2:2:401:C:O2'	2:2:621:A:N3	2.25	0.64
2:2:1356:G:H2'	2:2:1357:A:C8	2.33	0.64
3:4:18:G:H1	3:4:65:U:H3	1.44	0.64
41:j:45:ARG:HG3	41:j:71:MET:HG2	1.79	0.64
1:1:52:A:OP2	1:1:117:G:N1	2.25	0.64
1:1:1445:G:O6	1:1:1466:U:O2	2.14	0.64
1:1:2445:2MG:OP1	9:D:69:ARG:NH1	2.25	0.64
1:1:2478:A:H5'	37:f:32:LYS:HE3	1.80	0.64
2:2:279:A:H5''	2:2:280:C:H3'	1.79	0.64
2:2:505:G:H5'	2:2:534:U:H2'	1.79	0.64
39:h:85:GLU:O	39:h:89:LYS:HG2	1.98	0.64
46:o:23:ALA:O	46:o:27:GLU:HG2	1.98	0.64
1:1:1263:U:O2	33:b:4:GLN:NE2	2.31	0.63
6:A:136:ARG:HA	6:A:147:LEU:HB3	1.80	0.63
9:D:106:LYS:NZ	9:D:200:LEU:HB3	2.13	0.63
24:S:36:LEU:HD23	24:S:48:LYS:HA	1.79	0.63
41:j:157:ARG:NH2	44:m:99:LEU:O	2.31	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:L:63:LYS:O	36:e:30:ARG:NH1	2.31	0.63
2:2:563:A:H2'	2:2:567:G:C8	2.33	0.63
6:A:93:TRP:HZ2	6:A:206:LYS:HZ1	1.46	0.63
38:g:100:MET:HA	38:g:107:VAL:HG21	1.79	0.63
40:i:105:MET:HG3	40:i:171:LEU:HD13	1.80	0.63
55:x:18:LYS:HE2	55:x:31:LEU:HD11	1.81	0.63
1:1:201:C:OP1	29:X:18:ARG:NH1	2.31	0.63
1:1:2056:G:H4'	33:b:5:GLN:HE22	1.61	0.63
23:R:68:ARG:NH2	23:R:90:ARG:HD3	2.13	0.63
2:2:407:U:H2'	2:2:408:A:H8	1.64	0.63
12:G:87:GLU:OE2	42:k:21:MET:HG3	1.99	0.63
1:1:30:G:H2'	1:1:31:C:H6	1.63	0.63
2:2:1256:A:O2'	2:2:1278:G:O6	2.14	0.63
2:2:1280:A:OP1	46:o:9:ARG:NH1	2.27	0.63
17:L:20:GLY:O	17:L:21:ARG:NH2	2.30	0.63
1:1:285:G:O6	1:1:355:U:O2	2.16	0.63
1:1:1007:C:H5''	15:J:37:ARG:NH2	2.14	0.63
1:1:2333:A:H5'	1:1:2335:A:H1'	1.81	0.63
2:2:384:G:H2'	2:2:385:C:H6	1.63	0.63
4:5:54:U:C2	4:5:58:A:N7	2.67	0.63
31:Z:37:GLU:O	31:Z:38:ARG:NH1	2.30	0.63
49:r:55:THR:O	49:r:59:GLU:HG2	1.99	0.63
1:1:934:U:H2'	1:1:935:C:C6	2.34	0.63
1:1:2216:G:H2'	1:1:2217:G:H8	1.64	0.63
1:1:2532:G:O2'	1:1:2657:A:N1	2.31	0.63
2:2:1391:U:H2'	2:2:1392:G:C8	2.33	0.63
1:1:1047:G:HO2'	1:1:1110:G:H1	1.48	0.62
1:1:1386:C:H2'	1:1:1387:A:C8	2.34	0.62
1:1:1597:A:H5''	1:1:1598:A:H5'	1.81	0.62
1:1:2291:U:H2'	1:1:2292:U:C6	2.34	0.62
1:1:2298:A:OP1	10:E:71:ARG:NH2	2.30	0.62
2:2:516:PSU:H4'	2:2:517:G:OP1	1.98	0.62
2:2:1149:C:O2'	2:2:1280:A:N1	2.30	0.62
8:C:11:MET:HG2	8:C:25:THR:HA	1.81	0.62
16:K:90:ASN:OD1	16:K:91:SER:N	2.32	0.62
1:1:1327:A:N6	1:1:1647:U:O2	2.31	0.62
2:2:1130:A:H61	2:2:1144:G:H1'	1.63	0.62
8:C:46:ARG:NH1	8:C:85:ALA:O	2.32	0.62
28:W:65:GLY:HA2	28:W:85:GLU:HG3	1.81	0.62
48:q:56:ARG:HG3	48:q:62:GLU:HG2	1.81	0.62
1:1:2056:G:H4'	33:b:5:GLN:NE2	2.15	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:363:A:N6	48:q:27:CYS:SG	2.71	0.62
7:B:76:ALA:HB2	7:B:96:TYR:CD2	2.34	0.62
1:1:1084:A:H61	13:H:37:LYS:HE3	1.63	0.62
1:1:2246:G:H2'	1:1:2247:A:C8	2.34	0.62
2:2:946:A:H2'	2:2:947:G:H8	1.61	0.62
7:B:107:PRO:HG3	7:B:142:HIS:HE1	1.65	0.62
11:F:35:ARG:NH1	11:F:35:ARG:HB3	2.15	0.62
1:1:2063:C:HO2'	4:5:76:A:HO3'	1.48	0.62
1:1:2575:C:H5'	8:C:149:ASN:HB2	1.82	0.62
3:4:48:U:H2'	3:4:49:C:C6	2.34	0.62
50:s:9:ARG:O	50:s:13:ARG:HG2	1.99	0.62
1:1:993:G:OP1	22:Q:50:ARG:NE	2.32	0.62
1:1:2123:G:H2'	1:1:2124:G:H8	1.65	0.62
2:2:45:G:H2'	2:2:46:G:C8	2.34	0.62
2:2:501:C:O2	2:2:549:C:O2'	2.17	0.62
2:2:1463:U:H2'	2:2:1464:U:C6	2.33	0.62
4:5:76:A:H5''	6:A:126:GLN:HE22	1.63	0.62
41:j:69:ARG:HG2	41:j:70:ASN:H	1.63	0.62
1:1:2627:G:O2'	1:1:2781:A:N1	2.30	0.62
33:b:39:LEU:HB2	33:b:42:HIS:HB2	1.82	0.62
1:1:1054:A:H5''	13:H:31:ARG:HH12	1.65	0.62
1:1:1571:A:H2'	1:1:1572:A:C8	2.34	0.62
2:2:337:G:H2'	2:2:338:A:H8	1.64	0.62
2:2:664:G:H22	2:2:741:G:H1	1.48	0.62
4:6:51:U:H2'	4:6:52:C:C6	2.34	0.62
1:1:30:G:H2'	1:1:31:C:C6	2.35	0.62
1:1:219:A:N3	1:1:234:U:O2'	2.29	0.62
1:1:1097:U:H3'	1:1:1098:A:H8	1.65	0.62
2:2:154:U:H2'	2:2:155:A:C8	2.35	0.62
2:2:674:G:H2'	2:2:675:A:H8	1.65	0.62
24:S:15:GLN:OE1	33:b:17:ARG:NH1	2.32	0.62
48:q:5:ASN:HD21	53:v:36:LYS:NZ	1.98	0.62
1:1:1819:A:H5''	7:B:160:THR:HG21	1.81	0.61
1:1:2183:A:H2'	1:1:2184:A:C8	2.34	0.61
2:2:309:A:H2'	2:2:310:G:H8	1.64	0.61
2:2:459:A:H2'	2:2:460:A:C8	2.35	0.61
2:2:867:G:O2'	2:2:873:A:N1	2.29	0.61
6:A:50:ASN:HB3	6:A:51:LEU:HG	1.82	0.61
17:L:132:ARG:O	17:L:136:GLU:HG2	2.00	0.61
33:b:52:ARG:HE	33:b:54:VAL:HG12	1.65	0.61
2:2:294:U:OP1	2:2:610:U:O2'	2.17	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:765:G:H1	2:2:812:G:HO2'	1.45	0.61
10:E:101:GLU:O	10:E:105:THR:OG1	2.17	0.61
42:k:38:ARG:HH22	54:w:24:LYS:HE3	1.65	0.61
1:1:275:C:N3	1:1:362:A:N6	2.48	0.61
1:1:1548:A:H2'	1:1:1549:A:C8	2.36	0.61
1:1:2298:A:H61	1:1:2318:G:H1'	1.63	0.61
1:1:2776:A:H4'	1:1:2777:G:H5''	1.82	0.61
2:2:1305:G:H21	2:2:1332:A:H2	1.48	0.61
11:F:115:HIS:HB2	11:F:151:TYR:HE1	1.65	0.61
1:1:2845:U:H5''	21:P:52:ASN:O	2.00	0.61
1:1:2882:A:OP1	19:N:96:ARG:NH2	2.33	0.61
2:2:736:C:H2'	2:2:737:C:H6	1.63	0.61
2:2:1127:G:N1	2:2:1145:A:N6	2.30	0.61
15:J:13:ARG:NH2	15:J:49:ASP:O	2.33	0.61
30:Y:31:GLN:HB3	30:Y:37:LEU:HB2	1.82	0.61
47:p:50:SER:HA	47:p:69:ARG:NH2	2.15	0.61
1:1:355:U:H2'	1:1:356:G:H8	1.65	0.61
1:1:675:A:OP1	9:D:58:LYS:NZ	2.33	0.61
1:1:843:G:H2'	1:1:844:A:C8	2.35	0.61
1:1:2005:A:O2'	1:1:2049:G:OP1	2.13	0.61
2:2:590:U:O3'	44:m:31:LYS:NZ	2.30	0.61
1:1:742:A:H2'	1:1:743:A:C8	2.36	0.61
2:2:1218:C:H2'	2:2:1219:A:H8	1.65	0.61
17:L:59:ARG:HG2	17:L:59:ARG:HH11	1.65	0.61
26:U:14:LEU:HD11	26:U:71:ALA:HB2	1.82	0.61
32:a:56:ARG:HB3	55:x:67:VAL:HG12	1.82	0.61
2:2:210:C:H4'	2:2:211:G:H5''	1.83	0.61
2:2:842:U:O3'	2:2:844:G:N2	2.33	0.61
7:B:96:TYR:CE1	7:B:102:ARG:HD2	2.35	0.61
18:M:46:ILE:HD12	18:M:69:PRO:HG3	1.81	0.61
41:j:78:ASN:OD1	41:j:79:GLY:N	2.33	0.61
43:l:71:PRO:HA	43:l:142:HIS:HE1	1.65	0.61
1:1:624:C:O2'	1:1:657:U:OP1	2.17	0.61
1:1:996:A:O4'	23:R:10:LYS:HG3	2.01	0.61
2:2:859:G:H2'	2:2:860:A:H8	1.64	0.61
7:B:80:ARG:NE	7:B:82:GLU:OE1	2.33	0.61
7:B:132:MET:HE3	7:B:188:CYS:HB2	1.81	0.61
10:E:122:PHE:HE1	10:E:167:ARG:N	1.98	0.61
19:N:30:ARG:NH1	19:N:74:GLU:OE2	2.33	0.61
1:1:2267:A:H5''	1:1:2268:A:H5'	1.83	0.61
2:2:269:C:H2'	2:2:270:A:H8	1.66	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:182:GLN:NE2	6:A:186:ASN:OD1	2.34	0.61
19:N:8:ARG:HG3	19:N:8:ARG:HH21	1.66	0.61
40:i:85:ASN:ND2	40:i:88:GLU:HG3	2.16	0.61
2:2:356:A:N3	2:2:368:U:O2'	2.29	0.61
2:2:582:C:O2	2:2:759:A:N6	2.34	0.61
2:2:1004:A:O2'	2:2:1005:A:O4'	2.19	0.61
4:5:33:U:OP2	45:n:130:ARG:NH1	2.32	0.61
7:B:8:PRO:HB3	7:B:14:ARG:HG3	1.83	0.61
49:r:9:ILE:HD11	49:r:22:ILE:HD11	1.83	0.61
2:2:13:U:H3	2:2:915:A:N6	1.98	0.60
40:i:150:LYS:NZ	40:i:177:LYS:O	2.34	0.60
1:1:300:A:OP2	26:U:82:ARG:NH1	2.28	0.60
1:1:1062:G:H2'	1:1:1063:G:H8	1.66	0.60
1:1:2798:U:O2	1:1:2799:A:N6	2.33	0.60
2:2:96:U:H2'	2:2:97:G:H8	1.66	0.60
2:2:776:G:N2	2:2:802:A:OP2	2.27	0.60
2:2:1287:A:H2'	2:2:1288:A:C8	2.36	0.60
2:2:1356:G:H2'	2:2:1357:A:H8	1.66	0.60
15:J:62:VAL:HG11	15:J:101:ILE:HD11	1.83	0.60
21:P:14:LYS:NZ	21:P:81:VAL:O	2.29	0.60
1:1:139:U:C4	25:T:1:MET:HE2	2.36	0.60
1:1:291:G:O6	1:1:349:U:O2	2.19	0.60
1:1:1069:A:O2'	1:1:1073:A:N6	2.34	0.60
2:2:131:A:H2'	2:2:132:C:H6	1.66	0.60
2:2:451:A:H61	2:2:481:G:H5'	1.66	0.60
2:2:1171:A:H2'	2:2:1172:C:C6	2.36	0.60
2:2:1530:G:N7	57:z:46:LYS:NZ	2.34	0.60
14:I:105:LEU:HD22	14:I:128:ILE:HG23	1.82	0.60
18:M:44:ARG:HG3	18:M:44:ARG:HH11	1.65	0.60
24:S:4:ILE:HG12	24:S:106:VAL:HG22	1.83	0.60
40:i:197:GLU:HA	40:i:200:ILE:HD12	1.82	0.60
42:k:1:MET:HG2	42:k:67:PRO:HD3	1.83	0.60
1:1:285:G:C6	1:1:356:G:C5	2.89	0.60
1:1:1135:C:N4	1:1:1138:G:OP2	2.32	0.60
1:1:2127:G:H2'	1:1:2128:G:H8	1.65	0.60
2:2:459:A:H2'	2:2:460:A:H8	1.65	0.60
2:2:890:G:N2	2:2:891:U:O4	2.27	0.60
9:D:46:GLN:NE2	9:D:87:ALA:H	2.00	0.60
23:R:69:GLY:O	23:R:90:ARG:NE	2.34	0.60
1:1:2533:U:OP1	1:1:2665:A:O2'	2.17	0.60
1:1:2747:G:N2	1:1:2757:A:H62	1.98	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1091:U:N3	2:2:1094:G:OP2	2.25	0.60
2:2:1493:A:O2'	2:2:1494:G:O5'	2.18	0.60
15:J:41:LYS:NZ	15:J:52:ASP:OD1	2.35	0.60
31:Z:9:GLN:HB2	31:Z:29:LEU:HD23	1.84	0.60
1:1:2362:C:OP1	36:e:40:ARG:NE	2.32	0.60
2:2:932:C:O3'	43:l:4:ARG:NE	2.34	0.60
24:S:20:VAL:HG11	24:S:44:ALA:HA	1.83	0.60
33:b:36:GLU:OE2	33:b:44:THR:OG1	2.07	0.60
1:1:299:A:N3	1:1:319:G:O2'	2.30	0.60
1:1:1044:C:O2'	1:1:1111:A:N1	2.30	0.60
2:2:1118:U:H2'	2:2:1119:C:C6	2.37	0.60
6:A:211:GLU:C	6:A:213:SER:H	2.10	0.60
9:D:148:ILE:HB	9:D:169:VAL:HG22	1.84	0.60
1:1:306:U:O4	1:1:310:A:N7	2.34	0.60
1:1:2821:A:O2'	1:1:2826:A:N1	2.27	0.60
3:4:48:U:H2'	3:4:49:C:H6	1.64	0.60
27:V:48:MET:HE3	27:V:51:GLN:HE21	1.67	0.60
43:l:91:VAL:O	43:l:96:ARG:NE	2.29	0.60
45:n:19:VAL:HG22	45:n:65:ILE:HD12	1.84	0.60
51:t:12:VAL:HG11	51:t:22:THR:HG22	1.82	0.60
1:1:364:C:H2'	1:1:365:U:C6	2.37	0.60
1:1:675:A:N3	1:1:2443:C:O2'	2.34	0.60
2:2:652:U:O4	2:2:752:G:O2'	2.16	0.60
2:2:673:A:H2'	2:2:674:G:H8	1.62	0.60
4:6:29:C:H2'	4:6:30:G:C8	2.37	0.60
15:J:69:ARG:HA	15:J:89:PHE:HD2	1.66	0.60
46:o:52:LEU:HB2	50:s:81:ARG:HD2	1.83	0.60
56:y:39:ILE:HG23	56:y:86:LEU:HD11	1.84	0.60
1:1:2314:A:H1'	10:E:155:THR:HG21	1.84	0.60
2:2:56:U:H2'	2:2:57:G:H8	1.67	0.60
2:2:1250:A:OP1	45:n:69:GLY:N	2.34	0.60
2:2:1270:G:O2'	2:2:1313:U:O2'	2.07	0.60
17:L:2:ARG:H	17:L:5:THR:HG1	1.48	0.60
45:n:113:ARG:HH21	45:n:115:LYS:HA	1.67	0.60
1:1:239:C:O2'	1:1:622:G:O2'	2.20	0.59
1:1:549:G:H2'	1:1:550:C:C6	2.37	0.59
1:1:593:U:H2'	1:1:594:U:C6	2.37	0.59
1:1:1141:U:H4'	1:1:1142:A:O4'	2.01	0.59
8:C:5:VAL:N	8:C:32:ASN:OD1	2.33	0.59
54:w:71:THR:H	54:w:74:HIS:CE1	2.20	0.59
2:2:26:A:H61	2:2:558:G:H1'	1.67	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:382:A:H2'	2:2:383:A:C8	2.37	0.59
10:E:13:VAL:HG11	10:E:25:VAL:HG23	1.82	0.59
32:a:39:LYS:HA	32:a:39:LYS:HE3	1.84	0.59
41:j:61:GLN:O	41:j:65:GLU:HG2	2.02	0.59
1:1:197:A:H62	1:1:2430:A:H2'	1.67	0.59
1:1:372:G:O2'	1:1:400:G:O6	2.17	0.59
1:1:1571:A:H2'	1:1:1572:A:H8	1.64	0.59
1:1:2024:G:H2'	1:1:2025:C:H6	1.67	0.59
1:1:2809:A:H2'	1:1:2810:A:C8	2.37	0.59
12:G:72:ILE:HG13	12:G:108:VAL:HG22	1.83	0.59
18:M:42:THR:HG23	18:M:45:GLN:H	1.67	0.59
24:S:2:GLU:HA	24:S:108:SER:HB3	1.84	0.59
1:1:2184:A:H2'	1:1:2185:U:C6	2.36	0.59
1:1:2233:U:H2'	1:1:2234:G:C8	2.37	0.59
2:2:973:G:OP1	46:o:59:LYS:NZ	2.35	0.59
4:6:9:G:H5'	4:6:47:G:H1'	1.85	0.59
42:k:43:GLY:HA2	42:k:58:HIS:CE1	2.36	0.59
1:1:99:U:O2	26:U:7:ARG:NH2	2.32	0.59
1:1:2682:A:C8	8:C:11:MET:HE3	2.37	0.59
2:2:1095:U:H2'	2:2:1096:C:C6	2.37	0.59
39:h:114:LYS:NZ	39:h:186:THR:O	2.33	0.59
41:j:13:GLU:HB3	41:j:64:MET:HE1	1.85	0.59
1:1:332:A:O2'	1:1:334:C:OP2	2.20	0.59
2:2:521:G:OP2	48:q:51:LYS:NZ	2.34	0.59
2:2:918:A:H2'	2:2:919:A:C8	2.37	0.59
6:A:210:VAL:HG21	6:A:212:LYS:HE2	1.83	0.59
7:B:205:LEU:HD12	7:B:210:ALA:HB1	1.85	0.59
31:Z:7:ILE:O	31:Z:35:THR:HA	2.01	0.59
47:p:36:ASP:OD1	47:p:37:ARG:N	2.36	0.59
52:u:47:GLU:OE1	52:u:47:GLU:N	2.35	0.59
1:1:33:C:N4	1:1:446:G:O2'	2.33	0.59
1:1:2698:U:H2'	1:1:2699:C:C6	2.38	0.59
1:1:929:U:H4'	31:Z:38:ARG:HH21	1.68	0.59
1:1:1432:G:H2'	1:1:1433:A:C8	2.37	0.59
2:2:544:G:OP1	40:i:56:ARG:NH2	2.36	0.59
6:A:214:TYR:O	6:A:218:ARG:HD3	2.01	0.59
32:a:42:PRO:O	32:a:47:LYS:NZ	2.36	0.59
42:k:49:TYR:OH	42:k:86:ARG:NH1	2.33	0.59
47:p:82:LEU:HD23	47:p:83:GLU:N	2.17	0.59
51:t:2:SER:OG	51:t:3:LEU:N	2.34	0.59
51:t:21:ASP:OD1	51:t:22:THR:N	2.34	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1278:C:H2'	1:1:1279:G:H8	1.68	0.59
1:1:1796:U:H2'	1:1:1797:G:H8	1.67	0.59
2:2:552:U:O2'	48:q:83:ARG:O	2.15	0.59
2:2:1323:G:H2'	2:2:1324:A:C8	2.38	0.59
2:2:1378:C:H5''	43:l:92:ARG:NH2	2.18	0.59
40:i:19:LEU:HB2	40:i:21:LEU:HG	1.84	0.59
2:2:296:U:O2'	2:2:556:C:O2	2.21	0.59
1:1:411:G:OP2	1:1:2406:A:O2'	2.21	0.58
1:1:1056:G:H4'	1:1:1086:A:C8	2.38	0.58
1:1:1139:G:H8	1:1:1139:G:OP2	1.86	0.58
2:2:768:A:N3	2:2:1512:U:O2'	2.36	0.58
2:2:780:A:OP1	47:p:125:LYS:HG2	2.03	0.58
8:C:38:LYS:NZ	8:C:81:GLU:OE2	2.21	0.58
18:M:15:GLY:O	18:M:16:ARG:NH1	2.36	0.58
38:g:68:LEU:HA	38:g:90:PHE:O	2.03	0.58
41:j:102:GLY:N	41:j:122:ASN:OD1	2.36	0.58
47:p:93:ARG:NH1	47:p:112:ASP:OD2	2.32	0.58
55:x:12:ASP:OD2	55:x:35:SER:OG	2.13	0.58
1:1:2329:U:H2'	1:1:2330:G:C8	2.38	0.58
8:C:152:PRO:HB2	8:C:154:LYS:HG2	1.83	0.58
34:c:15:ALA:HB2	34:c:47:VAL:HG11	1.84	0.58
43:l:37:SER:HB3	45:n:41:ARG:CZ	2.33	0.58
1:1:2216:G:H2'	1:1:2217:G:C8	2.39	0.58
1:1:2709:G:OP1	19:N:18:GLN:NE2	2.37	0.58
1:1:2824:C:OP2	1:1:2825:G:N2	2.36	0.58
6:A:108:PHE:HA	6:A:139:HIS:NE2	2.18	0.58
7:B:144:VAL:HB	7:B:154:LEU:HB2	1.85	0.58
8:C:33:ARG:NH1	8:C:53:GLY:O	2.27	0.58
44:m:113:ASP:OD1	44:m:114:ARG:N	2.36	0.58
1:1:2175:C:H2'	1:1:2176:A:C8	2.39	0.58
2:2:14:U:N3	2:2:17:U:OP2	2.32	0.58
2:2:328:C:H4'	2:2:329:A:H5'	1.84	0.58
2:2:1156:G:O2'	2:2:1180:A:N1	2.30	0.58
32:a:60:PHE:CE1	55:x:42:PRO:HD3	2.37	0.58
33:b:54:VAL:HG23	33:b:55:ILE:HG23	1.85	0.58
42:k:72:ASP:O	42:k:76:THR:HG23	2.04	0.58
1:1:850:U:O2	31:Z:47:MET:HE1	2.03	0.58
1:1:1915:3TD:H1'	6:A:44:ARG:HD2	1.86	0.58
2:2:592:G:H2'	2:2:593:U:H6	1.69	0.58
2:2:983:A:H5'	2:2:984:C:OP2	2.04	0.58
2:2:1004:A:O2'	2:2:1005:A:O5'	2.21	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1513:A:H2'	2:2:1514:G:C8	2.38	0.58
6:A:213:SER:O	6:A:215:LYS:N	2.32	0.58
39:h:47:LEU:HB3	39:h:50:ALA:HB3	1.84	0.58
42:k:66:ALA:HB3	42:k:71:ILE:HD11	1.86	0.58
46:o:5:ARG:NH2	46:o:103:GLY:O	2.36	0.58
1:1:29:U:O2'	22:Q:11:ARG:NH2	2.36	0.58
1:1:833:A:H2'	1:1:834:G:C8	2.39	0.58
1:1:1475:G:O2'	1:1:1514:G:O6	2.21	0.58
2:2:980:C:O2'	50:s:13:ARG:NH1	2.34	0.58
6:A:77:CYS:HG	6:A:94:TYR:HE1	1.51	0.58
10:E:126:GLY:HA2	10:E:163:ASP:HA	1.83	0.58
11:F:89:LEU:HG	11:F:162:VAL:HG22	1.84	0.58
15:J:68:LYS:HG2	15:J:72:LYS:HB2	1.86	0.58
50:s:10:GLU:HG3	50:s:63:ARG:HD2	1.86	0.58
1:1:645:C:H2'	1:1:647:G:C8	2.38	0.58
1:1:1604:C:O2'	1:1:1610:A:N1	2.36	0.58
1:1:2113:U:O4	1:1:2115:G:N2	2.37	0.58
21:P:88:ARG:HH22	21:P:110:ILE:HG13	1.68	0.58
38:g:94:HIS:ND1	38:g:146:ASN:OD1	2.37	0.58
47:p:35:THR:HG22	47:p:41:ALA:HA	1.86	0.58
1:1:483:A:C8	26:U:45:HIS:HD2	2.22	0.58
1:1:639:U:H2'	1:1:640:C:C6	2.38	0.58
1:1:776:G:N7	1:1:793:A:O2'	2.37	0.58
1:1:1056:G:N1	1:1:1102:C:OP2	2.23	0.58
1:1:1469:A:H2'	1:1:1470:A:C8	2.38	0.58
2:2:18:C:OP1	41:j:132:ASN:ND2	2.36	0.58
2:2:131:A:H2'	2:2:132:C:C6	2.39	0.58
2:2:1491:G:H2'	2:2:1492:A:C8	2.39	0.58
4:6:1:C:H42	4:6:73:A:H61	1.50	0.58
36:e:24:HIS:ND1	36:e:25:LYS:O	2.36	0.58
39:h:26:THR:OG1	50:s:76:LYS:NZ	2.37	0.58
44:m:32:LEU:O	44:m:36:ILE:HG12	2.04	0.58
1:1:729:G:C6	7:B:207:LYS:HB2	2.38	0.58
1:1:1028:A:H2'	1:1:1029:A:C8	2.39	0.58
2:2:1020:G:H2'	2:2:1021:A:C8	2.38	0.58
38:g:166:ALA:HB3	38:g:191:SER:HB3	1.85	0.58
1:1:721:A:H2'	1:1:722:A:C8	2.39	0.58
1:1:1022:G:O6	15:J:68:LYS:NZ	2.25	0.58
3:4:78:A:H2'	3:4:79:G:O4'	2.03	0.58
21:P:91:ALA:HB2	21:P:113:ARG:HB3	1.86	0.58
36:e:8:ARG:O	36:e:12:LYS:HG3	2.04	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:h:157:LEU:HD12	39:h:164:ARG:HG2	1.85	0.58
43:l:146:GLU:OE1	43:l:149:LYS:NZ	2.34	0.58
44:m:105:SER:HB2	44:m:126:ILE:HD11	1.85	0.58
55:x:50:ALA:HB1	55:x:57:HIS:HB3	1.86	0.58
1:1:861:A:H2'	1:1:862:G:O4'	2.04	0.57
1:1:1853:A:N3	1:1:2233:U:O2'	2.35	0.57
1:1:2038:G:H2'	1:1:2039:U:O4'	2.04	0.57
1:1:2422:C:O5'	4:6:77:A:N6	2.37	0.57
23:R:4:VAL:HA	23:R:12:HIS:O	2.03	0.57
29:X:42:SER:OG	29:X:43:GLU:OE1	2.21	0.57
40:i:170:TRP:CD1	40:i:171:LEU:HG	2.39	0.57
47:p:13:ARG:NH2	47:p:76:GLU:HG3	2.19	0.57
1:1:1091:G:N2	1:1:1101:U:H1'	2.19	0.57
1:1:2117:A:O2'	1:1:2119:A:OP2	2.20	0.57
2:2:13:U:H3	2:2:915:A:H62	1.50	0.57
38:g:79:ALA:HB1	38:g:214:LEU:HD21	1.85	0.57
45:n:57:MET:HA	45:n:60:LYS:HE2	1.87	0.57
49:r:4:ILE:HD12	49:r:57:ARG:HG2	1.85	0.57
1:1:307:G:N1	1:1:310:A:OP2	2.33	0.57
1:1:636:G:N7	17:L:109:LYS:HE2	2.19	0.57
1:1:1482:G:H2'	1:1:1483:G:H8	1.69	0.57
2:2:1375:A:OP1	43:l:25:LYS:NZ	2.35	0.57
2:2:1406:U:O2	2:2:1517:G:N2	2.36	0.57
3:4:40:U:O4	32:a:1:MET:N	2.37	0.57
4:5:19:G:OP1	4:5:60:U:N3	2.28	0.57
4:6:66:C:H2'	4:6:67:C:C6	2.39	0.57
40:i:188:ARG:NH2	40:i:195:ILE:O	2.38	0.57
1:1:210:C:OP1	35:d:29:GLN:NE2	2.36	0.57
1:1:856:G:H2'	1:1:857:G:C8	2.38	0.57
2:2:613:C:OP1	40:i:81:ARG:NH2	2.36	0.57
6:A:126:GLN:HB2	6:A:130:LYS:HE3	1.86	0.57
22:Q:66:ASN:O	22:Q:70:ARG:HG3	2.03	0.57
46:o:85:ASP:O	46:o:89:ARG:HG2	2.04	0.57
1:1:1478:G:H1	1:1:1513:U:H3	1.51	0.57
2:2:17:U:H2'	2:2:18:C:C6	2.39	0.57
2:2:74:A:O2'	2:2:75:G:H5''	2.05	0.57
2:2:1530:G:O6	57:z:46:LYS:HE2	2.05	0.57
4:6:10:G:H2'	4:6:11:A:C8	2.40	0.57
6:A:222:LYS:HZ2	41:j:20:ARG:HB3	1.69	0.57
17:L:57:LEU:HD22	36:e:54:ASP:HB3	1.87	0.57
19:N:36:THR:C	19:N:110:MET:HE3	2.29	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:R:75:VAL:HG22	23:R:86:GLN:HG2	1.87	0.57
38:g:167:ASP:OD1	38:g:168:HIS:N	2.38	0.57
50:s:49:GLN:HE22	55:x:12:ASP:HA	1.68	0.57
1:1:1038:G:H2'	1:1:1039:A:C8	2.40	0.57
2:2:41:G:H2'	2:2:42:G:H8	1.70	0.57
2:2:261:U:OP2	56:y:74:ARG:NH1	2.27	0.57
4:5:33:U:N3	4:5:36:U:OP2	2.27	0.57
6:A:172:MET:HG3	6:A:176:GLN:HE22	1.70	0.57
8:C:22:ILE:HG21	8:C:178:VAL:HG21	1.86	0.57
10:E:34:ILE:HG12	10:E:156:ILE:HG12	1.85	0.57
11:F:89:LEU:HD23	11:F:94:TYR:HB3	1.85	0.57
12:G:116:ARG:HB2	12:G:131:SER:HB2	1.87	0.57
18:M:57:VAL:HG11	18:M:105:MET:HE2	1.86	0.57
31:Z:12:SER:HB2	31:Z:32:ILE:HD11	1.85	0.57
32:a:11:GLU:HG3	32:a:25:ARG:HD3	1.87	0.57
38:g:164:ILE:O	38:g:186:ILE:HB	2.04	0.57
42:k:21:MET:HA	42:k:24:ARG:HH12	1.69	0.57
43:l:26:PHE:HZ	43:l:120:LEU:HD11	1.69	0.57
43:l:38:THR:O	43:l:42:ILE:HG13	2.05	0.57
45:n:99:ARG:HD2	45:n:104:VAL:HB	1.86	0.57
47:p:67:ALA:HB2	47:p:96:THR:HG23	1.86	0.57
55:x:14:HIS:O	55:x:18:LYS:HG3	2.03	0.57
1:1:242:G:H5''	36:e:64:TYR:CE1	2.39	0.57
1:1:644:A:H2'	1:1:645:C:O4'	2.04	0.57
1:1:2474:U:OP2	1:1:2475:C:N4	2.34	0.57
2:2:45:G:H2'	2:2:46:G:H8	1.67	0.57
2:2:362:G:N2	2:2:365:U:OP2	2.38	0.57
2:2:628:G:H2'	2:2:629:A:C8	2.40	0.57
2:2:1060:U:O2'	46:o:58:ASN:OD1	2.19	0.57
2:2:1218:C:H2'	2:2:1219:A:C8	2.40	0.57
2:2:1342:C:H2'	2:2:1343:G:C8	2.29	0.57
2:2:1486:G:H2'	2:2:1487:G:O4'	2.04	0.57
4:6:44:A:H2'	4:6:45:A:C8	2.39	0.57
7:B:251:GLN:NE2	7:B:253:LYS:O	2.32	0.57
46:o:11:LYS:HG2	46:o:71:LEU:HD23	1.86	0.57
1:1:889:C:H2'	1:1:890:C:O4'	2.04	0.57
1:1:1548:A:H2'	1:1:1549:A:H8	1.70	0.57
2:2:674:G:H21	47:p:118:HIS:HB2	1.70	0.57
4:6:43:G:H2'	4:6:44:A:H8	1.69	0.57
6:A:85:ARG:HG2	6:A:89:GLN:HA	1.87	0.57
7:B:181:MET:HA	7:B:181:MET:HE3	1.84	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:D:98:LYS:O	9:D:102:ARG:HD3	2.05	0.57
12:G:124:THR:O	12:G:128:HIS:NE2	2.35	0.57
18:M:64:TRP:HB2	18:M:104:GLU:HB2	1.86	0.57
42:k:29:ILE:HG12	42:k:34:GLY:HA3	1.87	0.57
1:1:967:U:H2'	1:1:968:C:C6	2.40	0.57
2:2:668:G:H21	51:t:46:HIS:CE1	2.22	0.57
2:2:1178:G:N2	2:2:1181:G:OP2	2.36	0.57
7:B:17:VAL:HB	7:B:204:VAL:HG12	1.85	0.57
17:L:135:ILE:HB	17:L:142:ILE:HD11	1.87	0.57
43:l:58:GLU:HG2	43:l:59:LEU:N	2.18	0.57
1:1:155:A:H2'	1:1:156:A:C8	2.40	0.57
1:1:2813:A:H2'	1:1:2814:A:H8	1.70	0.57
2:2:696:A:N3	2:2:786:G:O2'	2.33	0.57
2:2:1096:C:H2'	2:2:1097:C:C6	2.40	0.57
10:E:175:PHE:HD2	10:E:177:PHE:CD1	2.23	0.57
13:H:114:GLU:HG3	13:H:116:GLU:H	1.68	0.57
20:O:79:ALA:HB2	20:O:110:ALA:HA	1.87	0.57
43:l:71:PRO:HA	43:l:142:HIS:CE1	2.40	0.57
50:s:64:CYS:HB2	50:s:80:SER:H	1.70	0.57
1:1:1115:G:O2'	1:1:1116:G:H5''	2.04	0.56
1:1:1703:G:H2'	1:1:1704:C:C6	2.40	0.56
1:1:1794:A:H2'	1:1:1795:C:C6	2.40	0.56
1:1:1954:G:O2'	1:1:1956:U:O4	2.22	0.56
1:1:2584:U:H2'	1:1:2585:U:H2'	1.86	0.56
2:2:31:G:O2'	2:2:48:C:N4	2.37	0.56
2:2:215:C:H2'	2:2:216:U:C6	2.39	0.56
2:2:1340:A:HO2'	4:5:31:G:HO2'	1.47	0.56
4:5:33:U:P	45:n:130:ARG:HH12	2.27	0.56
10:E:102:ARG:NH2	32:a:9:TYR:HH	2.02	0.56
12:G:135:HIS:HB3	12:G:138:VAL:HG22	1.87	0.56
1:1:210:C:OP1	35:d:25:LYS:NZ	2.38	0.56
1:1:2645:G:OP2	1:1:2645:G:N2	2.27	0.56
1:1:2803:G:H2'	1:1:2804:U:C6	2.40	0.56
2:2:575:G:H4'	2:2:576:C:H5''	1.88	0.56
2:2:878:A:H2'	2:2:879:C:C6	2.39	0.56
8:C:123:LYS:NZ	19:N:1:MET:HE1	2.18	0.56
15:J:125:TYR:OH	15:J:132:HIS:NE2	2.33	0.56
19:N:8:ARG:HD2	19:N:43:GLU:HG2	1.87	0.56
24:S:35:ILE:HD12	33:b:24:ALA:HB1	1.87	0.56
42:k:51:ILE:O	42:k:54:LEU:HG	2.05	0.56
1:1:272:A:H2'	1:1:273:G:C8	2.41	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:396:G:OP2	29:X:10:LYS:NZ	2.33	0.56
1:1:1078:U:OP1	14:I:133:ARG:NH2	2.38	0.56
1:1:2194:U:H2'	1:1:2195:U:C6	2.39	0.56
1:1:2831:G:N2	1:1:2884:U:OP2	2.38	0.56
2:2:687:A:C2	2:2:704:A:C5	2.93	0.56
2:2:1118:U:H2'	2:2:1119:C:H6	1.70	0.56
2:2:1118:U:H1'	2:2:1179:A:C4	2.39	0.56
2:2:1437:A:OP1	56:y:29:ARG:NH2	2.32	0.56
3:4:37:C:O2	20:O:100:HIS:NE2	2.32	0.56
4:5:63:G:H2'	4:5:64:G:C8	2.38	0.56
4:6:42:C:H4'	43:l:143:ARG:HD2	1.88	0.56
12:G:37:VAL:HG22	12:G:43:ASN:HD21	1.70	0.56
24:S:55:ILE:HG23	24:S:66:ILE:HD12	1.87	0.56
24:S:73:LYS:HB2	24:S:106:VAL:HB	1.86	0.56
29:X:65:ASP:OD1	29:X:66:THR:N	2.38	0.56
50:s:27:LEU:HD21	50:s:47:LYS:HB3	1.87	0.56
1:1:1071:G:N2	1:1:1089:A:O2'	2.39	0.56
1:1:2243:U:H2'	1:1:2244:U:C6	2.41	0.56
1:1:2788:C:H2'	1:1:2789:C:C6	2.40	0.56
2:2:13:U:N3	2:2:915:A:N6	2.52	0.56
2:2:1033:G:H2'	2:2:1034:G:O4'	2.06	0.56
2:2:1227:A:OP1	55:x:80:TYR:OH	2.13	0.56
16:K:63:VAL:HG12	16:K:107:LEU:HD11	1.88	0.56
29:X:39:TRP:NE1	29:X:41:GLU:OE1	2.38	0.56
1:1:84:A:H4'	1:1:85:G:H5'	1.88	0.56
2:2:1410:A:H2'	2:2:1411:C:C6	2.40	0.56
2:2:1477:U:H2'	2:2:1478:U:C6	2.40	0.56
3:4:40:U:H2'	32:a:2:LYS:NZ	2.19	0.56
4:6:1:C:N4	4:6:2:G:O6	2.38	0.56
9:D:21:ARG:HH22	9:D:106:LYS:HD2	1.70	0.56
10:E:57:LEU:HD21	10:E:89:VAL:HG22	1.86	0.56
30:Y:2:LYS:NZ	30:Y:5:GLU:OE2	2.38	0.56
1:1:279:A:H2'	1:1:280:U:O4'	2.04	0.56
1:1:1075:C:H2'	1:1:1076:C:C6	2.41	0.56
1:1:2803:G:H2'	1:1:2804:U:H6	1.70	0.56
1:1:2857:G:N2	1:1:2860:A:OP2	2.21	0.56
39:h:120:ILE:HD11	39:h:137:ALA:HB2	1.86	0.56
1:1:64:A:H2'	1:1:65:U:C6	2.40	0.56
1:1:197:A:H2	1:1:2434:A:H62	1.54	0.56
1:1:1798:U:OP2	7:B:271:ARG:NH2	2.39	0.56
2:2:565:U:OP2	2:2:566:G:O2'	2.22	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1135:U:O2'	2:2:1136:C:O2	2.16	0.56
3:4:9:G:OP2	20:O:15:ARG:NH2	2.38	0.56
13:H:32:GLY:O	13:H:37:LYS:NZ	2.39	0.56
15:J:13:ARG:HD2	15:J:53:TYR:CE1	2.41	0.56
1:1:841:G:H2'	1:1:842:U:C6	2.41	0.56
1:1:987:C:O2'	1:1:1000:A:N3	2.33	0.56
1:1:1469:A:H2'	1:1:1470:A:H8	1.71	0.56
1:1:2502:G:H5'	1:1:2503:2MA:H5''	1.87	0.56
2:2:28:A:O2'	2:2:296:U:OP1	2.23	0.56
2:2:133:U:H1'	2:2:230:G:N2	2.21	0.56
2:2:1401:G:O6	2:2:1504:G:N2	2.39	0.56
6:A:222:LYS:HG3	41:j:20:ARG:NE	2.21	0.56
7:B:232:HIS:HA	7:B:242:LYS:HD2	1.88	0.56
25:T:44:LYS:NZ	25:T:56:GLU:O	2.39	0.56
44:m:3:MET:HA	44:m:3:MET:HE3	1.86	0.56
47:p:64:GLN:O	47:p:68:GLU:HG3	2.06	0.56
1:1:1930:G:O2'	1:1:1968:G:O6	2.21	0.56
2:2:41:G:H2'	2:2:42:G:C8	2.41	0.56
2:2:1498:UR3:O2'	5:7:17:U:OP1	2.21	0.56
10:E:122:PHE:O	10:E:124:GLY:N	2.39	0.56
12:G:38:PRO:O	12:G:43:ASN:ND2	2.36	0.56
14:I:132:ALA:HB1	14:I:137:LEU:HB2	1.88	0.56
1:1:30:G:O2'	1:1:1214:A:N3	2.31	0.56
1:1:171:U:H2'	1:1:172:A:H8	1.71	0.56
1:1:871:U:H2'	1:1:872:U:C6	2.41	0.56
1:1:1056:G:H4'	1:1:1086:A:H8	1.71	0.56
1:1:2030:6MZ:C2	1:1:2499:C:H5''	2.36	0.56
1:1:2864:G:H2'	1:1:2865:U:C6	2.41	0.56
2:2:376:G:H5''	52:u:5:ARG:HB2	1.88	0.56
2:2:407:U:H2'	2:2:408:A:C8	2.40	0.56
2:2:976:G:N2	2:2:1363:A:OP2	2.38	0.56
2:2:1176:A:H2'	2:2:1177:G:O4'	2.06	0.56
2:2:1302:C:C5	49:r:17:ILE:HG13	2.41	0.56
2:2:1308:U:H2'	2:2:1309:G:H8	1.70	0.56
6:A:180:GLN:OE1	6:A:183:ASN:ND2	2.39	0.56
16:K:24:VAL:HG12	16:K:30:ARG:HD3	1.88	0.56
41:j:45:ARG:HG3	41:j:45:ARG:HH21	1.70	0.56
52:u:55:ASP:OD1	52:u:56:ARG:N	2.39	0.56
55:x:36:ARG:HD2	55:x:72:GLY:HA2	1.88	0.56
1:1:635:C:OP2	17:L:109:LYS:NZ	2.39	0.55
1:1:657:U:H2'	1:1:658:U:C6	2.41	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1089:A:O2'	1:1:1090:A:N7	2.38	0.55
1:1:2039:U:H2'	1:1:2040:G:C8	2.42	0.55
2:2:500:G:H2'	2:2:501:C:C6	2.41	0.55
2:2:950:U:OP2	49:r:101:ARG:NH1	2.35	0.55
2:2:1239:A:H62	2:2:1299:A:N6	2.04	0.55
2:2:1532:U:O4	2:2:1533:C:N4	2.39	0.55
12:G:5:LEU:HD12	12:G:17:ASP:HB2	1.88	0.55
16:K:121:GLU:HG2	16:K:123:LEU:HD22	1.88	0.55
27:V:78:GLN:HB3	27:V:87:GLN:HB2	1.87	0.55
38:g:59:LYS:HZ2	38:g:59:LYS:HB3	1.70	0.55
44:m:5:ASP:OD2	44:m:77:ARG:NE	2.38	0.55
44:m:41:LYS:NZ	44:m:48:ASP:OD2	2.22	0.55
1:1:667:U:H2'	1:1:668:A:O4'	2.05	0.55
1:1:1264:A:H1'	1:1:2015:A:N6	2.22	0.55
1:1:1589:U:O2'	1:1:1590:A:O5'	2.23	0.55
1:1:2123:G:H2'	1:1:2124:G:C8	2.41	0.55
1:1:2547:A:H2'	1:1:2548:U:C6	2.41	0.55
2:2:36:C:OP1	48:q:120:LYS:NZ	2.29	0.55
2:2:108:G:C6	56:y:10:ARG:HG2	2.42	0.55
2:2:1378:C:H5''	43:l:92:ARG:HH21	1.69	0.55
2:2:1463:U:H2'	2:2:1464:U:H6	1.71	0.55
26:U:13:VAL:HG22	26:U:70:VAL:HG12	1.87	0.55
41:j:41:ASP:CG	41:j:45:ARG:HB3	2.32	0.55
43:l:22:LEU:O	43:l:101:MET:HE1	2.05	0.55
54:w:36:SER:OG	54:w:72:ASP:OD1	2.19	0.55
1:1:979:A:H2'	1:1:982:C:H42	1.72	0.55
1:1:1485:U:H2'	1:1:1486:U:C6	2.42	0.55
1:1:2571:U:O2'	8:C:151:THR:O	2.23	0.55
2:2:413:G:O3'	2:2:428:G:N2	2.36	0.55
4:6:36:A:H2'	4:6:37:U:C5	2.42	0.55
10:E:130:MET:HG3	10:E:154:ILE:HB	1.88	0.55
26:U:77:THR:HG23	26:U:79:LYS:H	1.71	0.55
40:i:163:GLU:HA	40:i:167:LYS:HE3	1.88	0.55
1:1:1141:U:H2'	15:J:65:THR:HG21	1.88	0.55
1:1:1869:G:N2	1:1:1872:A:OP2	2.39	0.55
1:1:2187:U:H2'	1:1:2188:U:O4'	2.06	0.55
1:1:2817:U:OP1	19:N:42:LYS:NZ	2.32	0.55
2:2:13:U:C4	2:2:915:A:N6	2.75	0.55
2:2:160:A:H2'	2:2:161:A:O4'	2.07	0.55
2:2:599:C:H2'	2:2:600:A:H8	1.71	0.55
48:q:79:VAL:N	48:q:103:ASP:OD2	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:z:4:ILE:HD12	57:z:19:PHE:HD1	1.71	0.55
1:1:614:A:O2'	1:1:615:U:OP2	2.22	0.55
1:1:1136:G:O2'	1:1:2038:G:O2'	2.18	0.55
2:2:453:G:O6	2:2:479:U:N3	2.39	0.55
3:4:5:U:H2'	3:4:6:G:H8	1.71	0.55
46:o:9:ARG:HB2	46:o:99:GLN:HB2	1.86	0.55
52:u:6:LEU:HB3	52:u:17:TYR:HB3	1.89	0.55
1:1:182:A:H2'	1:1:183:C:H6	1.71	0.55
1:1:288:U:H2'	1:1:289:G:C8	2.42	0.55
1:1:479:A:H1'	1:1:480:A:H5''	1.89	0.55
1:1:568:U:H1'	1:1:2030:6MZ:H9C1	1.89	0.55
1:1:1428:C:C5	1:1:1569:A:H5''	2.41	0.55
1:1:2590:A:H2'	1:1:2591:C:C6	2.42	0.55
1:1:2740:A:OP2	1:1:2763:G:N1	2.27	0.55
2:2:1078:U:H4'	41:j:138:ARG:CZ	2.37	0.55
7:B:60:GLN:HG2	7:B:85:PRO:HB2	1.89	0.55
12:G:70:GLU:HG2	12:G:140:ALA:HB2	1.87	0.55
18:M:66:ARG:HB2	18:M:101:VAL:O	2.07	0.55
22:Q:41:LYS:HD2	22:Q:45:TYR:CZ	2.42	0.55
34:c:17:THR:HG21	34:c:42:VAL:HG21	1.89	0.55
34:c:39:PHE:HB2	34:c:46:HIS:CE1	2.42	0.55
44:m:43:GLU:OE1	44:m:114:ARG:NH2	2.40	0.55
46:o:42:LEU:HD11	46:o:73:LEU:HD22	1.89	0.55
47:p:64:GLN:HB2	47:p:99:ALA:HB2	1.87	0.55
1:1:323:C:OP1	1:1:338:G:N2	2.38	0.55
1:1:1385:A:O2'	1:1:1396:U:O2	2.20	0.55
1:1:1922:G:O2'	1:1:1923:U:H5'	2.06	0.55
2:2:56:U:H2'	2:2:57:G:C8	2.42	0.55
2:2:501:C:H2'	2:2:502:A:H8	1.71	0.55
2:2:941:G:H2'	2:2:942:G:O4'	2.07	0.55
7:B:196:GLY:O	7:B:198:ALA:N	2.39	0.55
16:K:34:GLY:N	16:K:37:ASP:OD2	2.37	0.55
17:L:95:LEU:HD11	17:L:125:LEU:HD21	1.89	0.55
30:Y:26:PHE:HE1	30:Y:30:MET:HE3	1.71	0.55
42:k:7:VAL:HG22	42:k:61:LEU:HD13	1.89	0.55
1:1:947:A:H2'	1:1:948:C:C6	2.42	0.55
1:1:1864:U:OP1	1:1:2410:G:O2'	2.21	0.55
1:1:2747:G:O6	1:1:2755:C:H5''	2.05	0.55
2:2:269:C:H2'	2:2:270:A:C8	2.41	0.55
10:E:119:ALA:O	10:E:167:ARG:NH2	2.34	0.55
21:P:22:PRO:HD3	21:P:50:ILE:HD12	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:o:6:ILE:HB	46:o:76:ILE:HB	1.87	0.55
51:t:78:TYR:OH	51:t:89:ARG:O	2.20	0.55
1:1:155:A:H2'	1:1:156:A:H8	1.72	0.55
1:1:397:U:H2'	1:1:398:C:C6	2.42	0.55
1:1:2505:G:O2'	1:1:2506:U:H5''	2.07	0.55
2:2:464:U:O2'	2:2:466:A:N7	2.34	0.55
2:2:657:U:C4'	51:t:28:GLN:HE22	2.20	0.55
2:2:1091:U:O2'	2:2:1093:A:N7	2.37	0.55
2:2:1368:A:OP1	45:n:113:ARG:NH2	2.39	0.55
2:2:1402:4OC:HM22	2:2:1403:C:H5'	1.88	0.55
6:A:19:TRP:CD1	6:A:205:PHE:CE1	2.94	0.55
32:a:56:ARG:HG3	55:x:65:GLU:O	2.06	0.55
38:g:76:ALA:HB1	38:g:210:VAL:HG11	1.89	0.55
38:g:167:ASP:O	38:g:170:HIS:ND1	2.26	0.55
46:o:12:ALA:HB2	46:o:96:VAL:HG22	1.89	0.55
1:1:36:G:N3	1:1:450:G:O2'	2.39	0.55
1:1:288:U:H2'	1:1:289:G:H8	1.71	0.55
1:1:974:G:N2	1:1:989:G:O2'	2.39	0.55
1:1:1060:U:OP2	14:I:76:ALA:N	2.35	0.55
1:1:2014:A:H2'	1:1:2015:A:C8	2.42	0.55
2:2:750:C:H2'	2:2:751:U:H6	1.71	0.55
2:2:880:C:H5''	48:q:9:ARG:HH12	1.72	0.55
2:2:977:A:N6	2:2:1224:U:O5'	2.40	0.55
2:2:1226:C:H2'	49:r:102:THR:HB	1.88	0.55
2:2:1243:C:H2'	2:2:1244:G:H8	1.71	0.55
13:H:23:LEU:HD22	13:H:92:ALA:HA	1.89	0.55
38:g:20:THR:O	38:g:23:TRP:HD1	1.89	0.55
47:p:34:ILE:HG12	47:p:70:CYS:SG	2.47	0.55
1:1:371:A:O2'	29:X:61:LYS:NZ	2.23	0.54
1:1:468:G:N7	35:d:39:ARG:NH2	2.49	0.54
1:1:2298:A:N6	1:1:2318:G:H1'	2.22	0.54
2:2:35:G:H2'	2:2:36:C:C6	2.42	0.54
2:2:230:G:H2'	2:2:231:U:O4'	2.07	0.54
2:2:374:A:H5''	2:2:452:A:C2	2.42	0.54
2:2:1492:A:O5'	2:2:1492:A:H8	1.90	0.54
30:Y:26:PHE:CE1	30:Y:30:MET:HE3	2.42	0.54
42:k:3:HIS:HB3	42:k:92:THR:OG1	2.07	0.54
54:w:56:ALA:O	54:w:60:LYS:HG3	2.07	0.54
57:z:39:GLU:HG2	57:z:43:THR:HB	1.88	0.54
1:1:1824:G:H5''	7:B:52:ARG:HH11	1.73	0.54
2:2:757:U:OP1	2:2:822:U:O2'	2.20	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1029:U:O2	2:2:1033:G:N1	2.31	0.54
6:A:118:THR:HG23	6:A:121:GLN:HE22	1.72	0.54
11:F:71:LEU:O	11:F:75:MET:HG3	2.08	0.54
39:h:123:GLN:HB3	39:h:128:VAL:HB	1.88	0.54
49:r:27:LYS:HD2	49:r:31:LYS:HE2	1.88	0.54
52:u:8:ARG:O	52:u:29:ASN:ND2	2.34	0.54
55:x:36:ARG:HH22	55:x:77:THR:HG22	1.72	0.54
1:1:942:G:O2'	1:1:1189:A:N3	2.36	0.54
1:1:1447:C:O2'	1:1:1544:A:N3	2.32	0.54
2:2:205:A:H2'	2:2:206:C:C6	2.41	0.54
2:2:528:C:N4	48:q:46:ASN:OD1	2.29	0.54
2:2:581:G:N1	2:2:759:A:OP2	2.29	0.54
2:2:1126:U:OP1	46:o:7:ARG:NH2	2.39	0.54
7:B:121:ASP:HB3	12:G:91:PHE:CE1	2.40	0.54
17:L:85:VAL:HG21	17:L:90:VAL:HG22	1.89	0.54
18:M:17:ASN:HD22	18:M:95:LEU:HB3	1.72	0.54
41:j:60:ILE:O	41:j:64:MET:HG2	2.07	0.54
43:l:26:PHE:HD1	43:l:101:MET:SD	2.30	0.54
44:m:29:SER:HA	44:m:33:LYS:HE3	1.89	0.54
1:1:782:A:N7	7:B:220:VAL:HG21	2.23	0.54
1:1:1539:U:H2'	1:1:1540:G:C8	2.42	0.54
1:1:2455:G:H2'	1:1:2456:C:C6	2.42	0.54
1:1:2728:U:O2'	1:1:2729:G:H5''	2.07	0.54
2:2:639:G:C2	2:2:640:A:C8	2.95	0.54
2:2:1183:U:O2'	2:2:1185:G:OP2	2.25	0.54
9:D:118:LEU:HD11	9:D:188:MET:HE2	1.89	0.54
21:P:62:ARG:HG3	21:P:71:GLU:HG3	1.89	0.54
31:Z:8:THR:HA	31:Z:34:HIS:O	2.07	0.54
38:g:9:MET:HB3	38:g:14:VAL:HG11	1.89	0.54
1:1:1140:C:H5'	15:J:26:GLY:HA3	1.90	0.54
1:1:2225:A:H4'	1:1:2226:C:H6	1.73	0.54
1:1:2329:U:H2'	1:1:2330:G:H8	1.72	0.54
1:1:2542:A:H5''	1:1:2766:A:O2'	2.08	0.54
2:2:26:A:N6	2:2:558:G:H1'	2.22	0.54
2:2:864:A:H5'	41:j:90:THR:O	2.08	0.54
9:D:21:ARG:HH22	9:D:106:LYS:HB2	1.73	0.54
30:Y:14:LEU:HD22	30:Y:53:VAL:HG13	1.89	0.54
36:e:29:LEU:HD22	36:e:44:LEU:HB2	1.89	0.54
42:k:18:VAL:HG21	42:k:58:HIS:CD2	2.42	0.54
45:n:50:GLN:HG3	45:n:103:PHE:CZ	2.42	0.54
46:o:8:ILE:HB	46:o:74:VAL:CG2	2.38	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:o:8:ILE:HA	46:o:99:GLN:O	2.07	0.54
49:r:80:LEU:HD22	49:r:87:ARG:HB2	1.89	0.54
1:1:1172:C:O2'	1:1:1173:U:O4'	2.20	0.54
1:1:2146:C:O2'	1:1:2147:A:O5'	2.21	0.54
1:1:2185:U:H2'	1:1:2186:G:C8	2.42	0.54
1:1:2346:A:H3'	1:1:2347:C:H5''	1.89	0.54
1:1:2687:U:H2'	1:1:2688:G:O4'	2.08	0.54
2:2:76:G:H1	2:2:93:U:H3	1.55	0.54
2:2:382:A:H2'	2:2:383:A:H8	1.73	0.54
2:2:745:G:O6	2:2:746:A:N6	2.40	0.54
2:2:999:C:H2'	2:2:1000:A:H8	1.73	0.54
6:A:20:VAL:HG21	6:A:78:TRP:HB2	1.90	0.54
7:B:84:ASP:O	60:B:301:HOH:O	2.18	0.54
34:c:9:ILE:HD13	34:c:25:LYS:HD2	1.90	0.54
40:i:108:GLY:HA2	40:i:113:GLU:OE1	2.07	0.54
41:j:69:ARG:HG2	41:j:70:ASN:N	2.21	0.54
1:1:138:U:O2'	1:1:141:G:O6	2.26	0.54
1:1:282:A:N6	1:1:359:G:O6	2.40	0.54
1:1:562:U:O2	1:1:2035:G:O2'	2.25	0.54
1:1:1709:U:H2'	1:1:1710:G:H8	1.73	0.54
1:1:2636:C:H2'	1:1:2637:U:H6	1.72	0.54
2:2:230:G:OP1	52:u:31:ARG:NH2	2.28	0.54
2:2:496:A:H2'	2:2:496:A:N3	2.22	0.54
2:2:509:A:N3	2:2:543:U:O2'	2.32	0.54
2:2:1243:C:H2'	2:2:1244:G:C8	2.42	0.54
3:4:40:U:O2'	3:4:43:C:OP2	2.15	0.54
4:5:56:C:O2'	10:E:75:ALA:N	2.40	0.54
15:J:4:PHE:CD2	22:Q:100:VAL:HG11	2.42	0.54
38:g:139:ARG:HA	38:g:142:GLU:HG2	1.90	0.54
43:l:30:LEU:HD21	43:l:42:ILE:HD12	1.89	0.54
1:1:2127:G:H2'	1:1:2128:G:C8	2.42	0.54
1:1:2834:G:H2'	1:1:2879:A:H61	1.72	0.54
14:I:116:MET:HE1	14:I:121:ILE:HA	1.89	0.54
27:V:2:PHE:HB2	27:V:61:LEU:HD22	1.90	0.54
34:c:35:GLU:HA	34:c:49:TYR:O	2.08	0.54
1:1:242:G:O2'	1:1:254:G:O6	2.21	0.54
1:1:1709:U:H2'	1:1:1710:G:C8	2.43	0.54
1:1:1735:A:H2'	1:1:1736:U:C6	2.43	0.54
1:1:2469:A:H2'	1:1:2470:G:O4'	2.08	0.54
9:D:106:LYS:NZ	9:D:201:ALA:OXT	2.38	0.54
18:M:17:ASN:HD22	18:M:95:LEU:HD23	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:V:9:ARG:NH2	27:V:11:GLU:O	2.39	0.54
39:h:153:VAL:HG12	39:h:157:LEU:HD21	1.90	0.54
1:1:2233:U:H2'	1:1:2234:G:H8	1.71	0.54
1:1:2757:A:P	37:f:20:ASP:H	2.31	0.54
2:2:216:U:H2'	2:2:217:C:H6	1.69	0.54
2:2:844:G:N1	2:2:846:G:H1'	2.23	0.54
2:2:1088:G:H2'	2:2:1089:G:O4'	2.08	0.54
2:2:1142:G:H3'	2:2:1143:G:H8	1.73	0.54
2:2:1191:A:OP2	39:h:3:GLN:NE2	2.41	0.54
7:B:245:VAL:HG12	7:B:251:GLN:HA	1.90	0.54
15:J:89:PHE:HE1	15:J:100:VAL:HG11	1.73	0.54
17:L:101:ILE:HG13	17:L:102:GLY:H	1.73	0.54
18:M:53:MET:HB3	18:M:120:ALA:HB2	1.89	0.54
20:O:83:LEU:HD11	20:O:114:GLY:HA3	1.89	0.54
25:T:69:ARG:HG3	25:T:74:ILE:HD13	1.90	0.54
38:g:162:PHE:HA	38:g:184:PHE:O	2.08	0.54
48:q:74:LEU:HD21	48:q:80:ILE:HG21	1.88	0.54
53:v:19:LYS:H	53:v:51:ASN:HD21	1.56	0.54
1:1:31:C:HO2'	1:1:32:C:H5'	1.72	0.53
1:1:492:A:H2'	1:1:493:G:O4'	2.07	0.53
1:1:1820:U:C2	7:B:201:MET:HG2	2.43	0.53
1:1:2228:G:H2'	1:1:2229:U:C6	2.43	0.53
2:2:493:A:H2'	2:2:494:G:C8	2.43	0.53
2:2:579:A:H2'	2:2:580:C:C6	2.43	0.53
7:B:161:TYR:O	7:B:177:ARG:HG2	2.07	0.53
30:Y:14:LEU:HB3	30:Y:57:LEU:HD21	1.91	0.53
44:m:31:LYS:H	44:m:31:LYS:HD2	1.73	0.53
47:p:23:ILE:HD12	47:p:96:THR:HG21	1.91	0.53
51:t:29:VAL:HG13	51:t:63:ARG:HG3	1.91	0.53
52:u:18:GLN:OE1	52:u:35:ARG:NE	2.30	0.53
53:v:39:LYS:NZ	53:v:41:THR:OG1	2.24	0.53
1:1:221:A:N1	1:1:265:A:O2'	2.37	0.53
1:1:529:A:OP2	15:J:116:ARG:NH2	2.35	0.53
1:1:783:A:H8	1:1:1778:U:O2'	1.91	0.53
1:1:1799:G:OP1	7:B:258:ARG:NH1	2.34	0.53
2:2:74:A:C4	2:2:75:G:C8	2.97	0.53
2:2:517:G:O2'	2:2:530:G:O3'	2.27	0.53
2:2:1393:U:HO2'	2:2:1501:C:HO2'	1.51	0.53
2:2:1496:C:H2'	2:2:1497:G:O4'	2.08	0.53
18:M:53:MET:HE2	18:M:63:ILE:HD12	1.90	0.53
21:P:26:VAL:HG12	21:P:86:VAL:HG12	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:n:118:LEU:HD22	45:n:124:ARG:HG2	1.91	0.53
47:p:19:GLY:O	47:p:82:LEU:HA	2.09	0.53
47:p:21:ALA:CB	47:p:82:LEU:HD21	2.38	0.53
50:s:73:PHE:CE1	50:s:78:GLY:HA2	2.43	0.53
1:1:77:G:O3'	30:Y:7:ARG:NH2	2.41	0.53
1:1:882:G:C6	1:1:894:U:N3	2.77	0.53
1:1:1366:A:H2'	1:1:1367:A:O4'	2.09	0.53
1:1:1753:G:H5''	21:P:93:ARG:HE	1.72	0.53
1:1:2191:A:H2'	1:1:2192:U:C6	2.43	0.53
2:2:262:A:H2'	2:2:263:A:C8	2.43	0.53
2:2:1275:A:H3'	2:2:1276:G:C8	2.44	0.53
2:2:1327:C:H2'	2:2:1328:C:C6	2.43	0.53
6:A:17:CYS:HA	6:A:20:VAL:HG12	1.89	0.53
16:K:71:ARG:HH11	16:K:71:ARG:HG3	1.74	0.53
21:P:72:ARG:HD3	21:P:74:PHE:CZ	2.44	0.53
26:U:33:LYS:HE2	26:U:66:GLN:NE2	2.23	0.53
1:1:382:A:C2	1:1:393:C:C2	2.96	0.53
1:1:447:A:OP1	22:Q:5:LYS:NZ	2.42	0.53
1:1:888:C:H2'	1:1:889:C:C6	2.43	0.53
1:1:1186:G:H2'	1:1:1187:G:O4'	2.09	0.53
2:2:932:C:H5''	43:l:4:ARG:HG2	1.90	0.53
2:2:1184:G:C2	2:2:1185:G:C8	2.97	0.53
7:B:160:THR:O	7:B:195:VAL:HG12	2.08	0.53
27:V:35:GLU:O	27:V:93:ARG:NH1	2.41	0.53
50:s:49:GLN:NE2	55:x:12:ASP:HA	2.23	0.53
1:1:126:A:OP1	35:d:45:SER:OG	2.11	0.53
1:1:171:U:H2'	1:1:172:A:C8	2.44	0.53
2:2:689:C:HO2'	2:2:705:G:HO2'	1.53	0.53
32:a:33:ASN:ND2	49:r:50:GLU:OE1	2.41	0.53
43:l:79:ARG:NH2	43:l:84:THR:OG1	2.42	0.53
54:w:72:ASP:O	54:w:75:GLN:NE2	2.27	0.53
1:1:671:C:H2'	1:1:672:C:C6	2.44	0.53
1:1:2133:G:N2	1:1:2158:A:C5	2.77	0.53
2:2:501:C:H2'	2:2:502:A:C8	2.44	0.53
2:2:618:C:N4	2:2:621:A:OP2	2.41	0.53
2:2:861:G:HO2'	2:2:874:G:HO2'	1.56	0.53
2:2:952:U:H2'	2:2:953:G:H8	1.73	0.53
4:5:48:C:O2'	4:5:59:A:O2'	2.26	0.53
10:E:25:VAL:O	10:E:28:VAL:HG12	2.07	0.53
26:U:14:LEU:HD21	26:U:71:ALA:HB3	1.89	0.53
30:Y:3:ALA:HA	30:Y:6:LEU:HB2	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:g:72:THR:OG1	38:g:169:GLU:OE2	2.18	0.53
1:1:715:A:H4'	51:t:63:ARG:HH22	1.74	0.53
1:1:1107:G:H5''	13:H:81:LEU:HD11	1.91	0.53
1:1:1243:C:H2'	1:1:1244:A:O4'	2.09	0.53
1:1:1680:U:O2'	1:1:1763:G:N7	2.27	0.53
1:1:2181:U:H2'	1:1:2182:U:O4'	2.09	0.53
1:1:2333:A:OP2	28:W:77:ARG:NH2	2.38	0.53
2:2:337:G:H2'	2:2:338:A:C8	2.44	0.53
2:2:524:G:H2'	2:2:525:C:C6	2.44	0.53
2:2:1133:G:O2'	2:2:1134:G:O4'	2.24	0.53
2:2:1391:U:H2'	2:2:1392:G:H8	1.73	0.53
8:C:125:TRP:CD1	8:C:160:LYS:HB3	2.44	0.53
15:J:45:THR:HB	15:J:48:VAL:HB	1.90	0.53
34:c:17:THR:HG22	34:c:19:HIS:H	1.74	0.53
39:h:10:ILE:HG13	39:h:178:LEU:HD11	1.91	0.53
50:s:12:LYS:O	50:s:16:LEU:HD23	2.09	0.53
1:1:287:G:H2'	1:1:288:U:C6	2.43	0.53
1:1:479:A:N3	1:1:481:G:H5''	2.24	0.53
1:1:1292:G:H2'	1:1:1293:C:C6	2.43	0.53
1:1:1914:C:H3'	6:A:51:LEU:HA	1.91	0.53
2:2:406:G:C8	2:2:495:A:C2	2.97	0.53
2:2:414:A:P	2:2:428:G:H22	2.32	0.53
2:2:639:G:C2	2:2:640:A:N7	2.77	0.53
2:2:875:U:H1'	44:m:16:ASN:HD21	1.73	0.53
11:F:87:LEU:HB2	11:F:131:ILE:CG2	2.39	0.53
41:j:83:HIS:ND1	41:j:84:PRO:O	2.35	0.53
43:l:37:SER:HB3	45:n:41:ARG:NE	2.23	0.53
1:1:610:C:H2'	1:1:611:C:C6	2.44	0.53
1:1:720:U:H2'	1:1:721:A:C8	2.43	0.53
15:J:4:PHE:O	22:Q:64:ARG:NH2	2.41	0.53
46:o:49:PHE:HZ	50:s:76:LYS:HD3	1.74	0.53
50:s:42:TRP:HZ3	55:x:9:PRO:HG2	1.74	0.53
52:u:4:ILE:HB	52:u:67:ILE:HD13	1.90	0.53
1:1:108:G:H2'	1:1:109:C:O4'	2.09	0.53
1:1:1734:G:H2'	1:1:1735:A:H8	1.74	0.53
1:1:2064:C:H2'	1:1:2065:C:C6	2.44	0.53
1:1:2557:G:H2'	1:1:2558:C:C6	2.44	0.53
2:2:928:G:O2'	2:2:1533:C:OP1	2.27	0.53
9:D:145:ASP:HB3	9:D:184:ASP:HB2	1.91	0.53
15:J:47:HIS:CD2	15:J:48:VAL:HG23	2.44	0.53
22:Q:104:VAL:O	22:Q:107:THR:OG1	2.25	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:v:15:ASP:OD1	53:v:55:ILE:N	2.42	0.53
1:1:1386:C:H2'	1:1:1387:A:H8	1.74	0.52
1:1:1539:U:H2'	1:1:1540:G:H8	1.74	0.52
1:1:1901:A:OP2	7:B:253:LYS:HE2	2.09	0.52
1:1:1952:A:OP1	16:K:44:LYS:NZ	2.42	0.52
1:1:2171:A:O2'	1:1:2173:A:OP1	2.27	0.52
2:2:154:U:H2'	2:2:155:A:H8	1.72	0.52
2:2:585:G:O2'	53:v:36:LYS:NZ	2.42	0.52
2:2:592:G:H2'	2:2:593:U:C6	2.44	0.52
7:B:145:GLU:HG2	7:B:151:GLY:C	2.34	0.52
12:G:67:ALA:O	12:G:71:LYS:HG2	2.08	0.52
20:O:29:HIS:HB3	20:O:36:TYR:HB2	1.91	0.52
52:u:44:SER:OG	52:u:47:GLU:OE2	2.20	0.52
55:x:30:PRO:HA	55:x:48:THR:HG23	1.89	0.52
1:1:794:A:H2'	1:1:795:C:C6	2.43	0.52
1:1:2680:U:OP1	8:C:114:LYS:N	2.34	0.52
1:1:2859:G:H2'	1:1:2860:A:C8	2.45	0.52
6:A:137:ALA:HB2	6:A:147:LEU:HD22	1.91	0.52
6:A:185:TRP:HA	6:A:189:THR:HB	1.90	0.52
7:B:98:ASP:OD2	7:B:98:ASP:N	2.43	0.52
18:M:34:LYS:HD3	27:V:81:PRO:O	2.09	0.52
39:h:42:TYR:CZ	39:h:46:GLU:HG3	2.43	0.52
41:j:44:GLY:O	41:j:74:VAL:N	2.40	0.52
43:l:129:GLU:HB3	43:l:131:LYS:HZ3	1.73	0.52
47:p:88:GLY:N	47:p:114:THR:HG22	2.12	0.52
1:1:414:C:H2'	1:1:415:A:H8	1.74	0.52
1:1:1429:G:H2'	1:1:1430:G:H8	1.74	0.52
1:1:2562:U:H4'	16:K:25:LEU:HD23	1.91	0.52
2:2:235:C:H2'	2:2:236:A:C8	2.44	0.52
2:2:500:G:H2'	2:2:501:C:H6	1.74	0.52
2:2:512:U:H2'	2:2:513:C:C6	2.44	0.52
2:2:674:G:H2'	2:2:675:A:C8	2.43	0.52
2:2:1220:G:O2'	55:x:52:HIS:ND1	2.36	0.52
2:2:1222:G:H5''	55:x:78:ARG:HD2	1.92	0.52
3:4:1:U:O2'	3:4:2:G:H8	1.92	0.52
14:I:52:LEU:HD11	14:I:81:LYS:HE2	1.91	0.52
15:J:4:PHE:CG	22:Q:100:VAL:HG11	2.44	0.52
32:a:64:PHE:HE2	55:x:9:PRO:HB3	1.74	0.52
38:g:83:ALA:HB2	38:g:214:LEU:HD13	1.91	0.52
1:1:240:C:OP2	1:1:241:A:O2'	2.27	0.52
1:1:891:G:O6	1:1:892:A:N6	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1000:A:C8	1:1:1155:A:N6	2.78	0.52
1:1:2092:U:OP1	1:1:2199:A:O2'	2.22	0.52
1:1:2726:A:HO2'	1:1:2727:A:P	2.33	0.52
8:C:122:VAL:HG21	8:C:129:THR:HG22	1.92	0.52
10:E:36:LEU:HD22	10:E:154:ILE:HD13	1.91	0.52
12:G:99:ILE:HG21	12:G:115:VAL:HG21	1.91	0.52
32:a:46:GLY:O	32:a:49:ARG:HG3	2.09	0.52
39:h:31:ASP:OD1	50:s:65:ARG:NH2	2.38	0.52
42:k:37:HIS:HB3	42:k:97:THR:HG22	1.92	0.52
42:k:42:TRP:CE2	42:k:102:MET:HG2	2.45	0.52
44:m:114:ARG:NH1	44:m:114:ARG:HB3	2.23	0.52
50:s:88:ALA:HB1	50:s:96:LEU:HD22	1.92	0.52
52:u:9:HIS:O	52:u:16:PHE:HB3	2.09	0.52
1:1:1108:U:C2	1:1:1109:C:C5	2.98	0.52
1:1:1182:G:H2'	1:1:1183:U:O4'	2.10	0.52
1:1:1222:U:O4	1:1:1227:G:O6	2.28	0.52
1:1:1264:A:H1'	1:1:2015:A:H61	1.73	0.52
2:2:346:G:OP1	21:P:39:ARG:NH1	2.39	0.52
2:2:927:G:O2'	2:2:1503:A:N7	2.37	0.52
2:2:1082:A:OP1	41:j:23:LYS:NZ	2.40	0.52
2:2:1145:A:O2'	2:2:1146:A:H8	1.93	0.52
2:2:1319:A:C8	2:2:1323:G:C5	2.98	0.52
10:E:8:TYR:HB2	10:E:173:PHE:HZ	1.75	0.52
10:E:60:ILE:HG13	10:E:141:ILE:HD11	1.92	0.52
12:G:129:GLU:OE1	12:G:129:GLU:N	2.38	0.52
28:W:23:VAL:HA	28:W:38:VAL:HG23	1.92	0.52
43:l:64:VAL:HA	43:l:67:GLU:HG2	1.91	0.52
54:w:32:TYR:CD1	54:w:55:LEU:HD11	2.44	0.52
1:1:78:U:H2'	1:1:79:C:C6	2.45	0.52
1:1:2649:C:H2'	1:1:2650:U:C6	2.45	0.52
2:2:34:C:H2'	2:2:35:G:H8	1.74	0.52
2:2:1060:U:H4'	46:o:53:ILE:HG13	1.91	0.52
2:2:1201:A:H4'	2:2:1202:U:H5''	1.92	0.52
3:4:60:C:H2'	3:4:61:G:H8	1.75	0.52
6:A:116:GLN:N	6:A:136:ARG:O	2.43	0.52
6:A:147:LEU:HD21	6:A:158:LYS:HA	1.91	0.52
9:D:23:PHE:HB2	9:D:111:GLU:OE2	2.10	0.52
20:O:90:VAL:O	20:O:117:PHE:HB3	2.10	0.52
39:h:70:THR:HG21	39:h:76:VAL:HG21	1.90	0.52
47:p:42:LEU:HD22	47:p:77:TYR:CE1	2.44	0.52
49:r:33:ILE:HD13	49:r:60:VAL:HG22	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:v:20:SER:OG	53:v:71:LYS:HE2	2.09	0.52
56:y:35:VAL:HG21	56:y:79:LEU:HD11	1.91	0.52
1:1:1060:U:H4'	1:1:1061:U:H2'	1.90	0.52
1:1:1095:A:O2'	1:1:1096:A:O5'	2.24	0.52
1:1:1443:U:H2'	1:1:1444:G:H8	1.75	0.52
1:1:2096:C:H2'	1:1:2097:A:C8	2.45	0.52
1:1:2229:U:H2'	1:1:2230:G:H8	1.74	0.52
1:1:2365:G:N7	36:e:39:LYS:NZ	2.37	0.52
2:2:84:U:O2'	2:2:85:U:O5'	2.27	0.52
2:2:1269:A:H2	2:2:1312:G:N3	2.08	0.52
2:2:1533:C:H4'	2:2:1534:A:C8	2.45	0.52
4:6:19:G:N2	4:6:59:A:O5'	2.42	0.52
11:F:115:HIS:HB2	11:F:151:TYR:CE1	2.45	0.52
12:G:87:GLU:OE2	42:k:17:GLN:HB3	2.10	0.52
1:1:700:G:O2'	1:1:1632:A:N3	2.33	0.52
1:1:1077:A:O2'	14:I:133:ARG:NH1	2.40	0.52
1:1:1094:U:H1'	1:1:1097:U:H5	1.75	0.52
1:1:1906:G:H2'	1:1:1907:G:H5''	1.92	0.52
1:1:2581:G:OP2	1:1:2581:G:N2	2.40	0.52
2:2:1151:A:O2'	2:2:1152:A:O4'	2.28	0.52
4:6:22:A:H62	4:6:47:G:H2'	1.75	0.52
6:A:94:TYR:HE2	6:A:193:ARG:HE	1.57	0.52
8:C:38:LYS:HG2	8:C:43:ASP:OD2	2.09	0.52
21:P:93:ARG:HG2	21:P:93:ARG:HH11	1.74	0.52
24:S:31:GLN:O	24:S:35:ILE:HG12	2.10	0.52
33:b:38:HIS:ND1	33:b:39:LEU:O	2.43	0.52
41:j:52:LYS:HZ2	41:j:52:LYS:HB3	1.73	0.52
43:l:72:THR:O	43:l:91:VAL:HG12	2.10	0.52
1:1:936:A:H2'	1:1:937:C:C6	2.45	0.52
1:1:1477:A:N6	1:1:1514:G:O2'	2.36	0.52
1:1:1808:A:H3'	1:1:1809:A:C8	2.45	0.52
1:1:2302:U:N3	1:1:2303:G:N7	2.57	0.52
2:2:96:U:H2'	2:2:97:G:C8	2.44	0.52
2:2:166:U:H2'	2:2:167:A:C8	2.45	0.52
2:2:1004:A:N7	2:2:1024:G:O2'	2.42	0.52
2:2:1186:G:O3'	45:n:115:LYS:NZ	2.42	0.52
20:O:11:ALA:O	20:O:15:ARG:HG2	2.10	0.52
1:1:742:A:H2'	1:1:743:A:H8	1.74	0.52
1:1:1408:G:O6	1:1:1594:U:C2	2.63	0.52
1:1:2698:U:H2'	1:1:2699:C:H6	1.75	0.52
2:2:254:G:N2	53:v:18:GLU:OE2	2.39	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:Q:81:ASN:ND2	22:Q:117:LEU:HD21	2.25	0.52
41:j:45:ARG:HH21	41:j:71:MET:HG2	1.74	0.52
42:k:49:TYR:HB3	54:w:74:HIS:NE2	2.25	0.52
43:l:79:ARG:HH12	43:l:82:GLY:C	2.18	0.52
53:v:59:VAL:HG12	53:v:78:VAL:HG13	1.91	0.52
1:1:67:U:C2	1:1:68:G:C8	2.98	0.51
1:1:1332:G:N7	1:1:1609:A:O2'	2.34	0.51
1:1:1485:U:H2'	1:1:1486:U:H6	1.74	0.51
1:1:1999:C:H4'	1:1:2723:C:O2	2.10	0.51
1:1:2006:C:O2'	1:1:2823:A:N3	2.41	0.51
1:1:2564:A:OP1	1:1:2648:G:O2'	2.22	0.51
2:2:1304:G:N1	2:2:1332:A:OP2	2.32	0.51
2:2:1428:A:H2'	2:2:1429:A:O4'	2.10	0.51
4:5:18:G:H1	4:5:55:U:H1'	1.75	0.51
6:A:3:GLU:HA	6:A:60:LEU:O	2.10	0.51
6:A:15:LEU:HD21	6:A:48:ASP:HB2	1.92	0.51
6:A:222:LYS:HG2	6:A:226:LYS:HZ2	1.74	0.51
15:J:4:PHE:HB3	22:Q:64:ARG:HH12	1.75	0.51
18:M:134:THR:HG21	27:V:79:ARG:HH12	1.76	0.51
19:N:114:GLU:OE1	19:N:118:ARG:NH1	2.43	0.51
26:U:72:ILE:HD13	26:U:103:ILE:HD13	1.91	0.51
45:n:72:ILE:HD12	45:n:72:ILE:H	1.75	0.51
52:u:16:PHE:HE1	52:u:18:GLN:HE21	1.58	0.51
1:1:600:G:N2	1:1:605:G:O3'	2.42	0.51
1:1:1746:A:H2'	1:1:1747:U:C6	2.46	0.51
2:2:429:U:H5'	40:i:9:LEU:HD12	1.92	0.51
2:2:559:A:H4'	2:2:560:A:H3'	1.92	0.51
2:2:1518:MA6:H92	2:2:1519:MA6:N6	2.25	0.51
43:l:15:ASP:OD2	43:l:18:PHE:HB2	2.11	0.51
43:l:74:GLU:O	43:l:88:PRO:HA	2.10	0.51
1:1:621:A:OP2	17:L:99:ASN:ND2	2.43	0.51
1:1:643:A:N1	1:1:2369:A:O2'	2.43	0.51
1:1:2394:C:H5''	17:L:63:LYS:HD3	1.92	0.51
1:1:2491:U:H5''	1:1:2570:G:H5''	1.93	0.51
1:1:2513:A:H2'	1:1:2514:U:C6	2.45	0.51
1:1:2540:C:O2'	1:1:2740:A:N3	2.32	0.51
1:1:2812:G:H2'	1:1:2813:A:C8	2.45	0.51
4:6:44:A:H2'	4:6:45:A:H8	1.75	0.51
7:B:82:GLU:OE2	7:B:103:TYR:OH	2.13	0.51
7:B:107:PRO:HG3	7:B:142:HIS:CE1	2.43	0.51
13:H:36:ASP:O	13:H:40:GLU:HG2	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:U:86:ARG:HD3	26:U:95:PHE:CD1	2.45	0.51
30:Y:3:ALA:HA	30:Y:6:LEU:HD12	1.92	0.51
1:1:500:G:N1	1:1:503:A:OP2	2.43	0.51
1:1:1177:G:O2'	1:1:1178:C:O5'	2.28	0.51
1:1:1417:C:O2'	1:1:1587:G:O2'	1.99	0.51
1:1:1425:G:H2'	1:1:1426:G:C8	2.46	0.51
1:1:1682:G:H2'	1:1:1683:U:C6	2.46	0.51
1:1:1779:U:OP2	1:1:1784:A:N6	2.44	0.51
2:2:865:A:H2'	2:2:866:C:C6	2.46	0.51
3:4:18:G:O6	3:4:65:U:C4	2.63	0.51
3:4:42:C:C6	10:E:66:LEU:HB2	2.45	0.51
4:6:15:G:N2	4:6:49:C:C2	2.78	0.51
44:m:15:ARG:HB2	44:m:15:ARG:HH11	1.76	0.51
47:p:86:VAL:HG11	47:p:93:ARG:HG3	1.90	0.51
55:x:12:ASP:HB3	55:x:14:HIS:CE1	2.46	0.51
1:1:120:U:H4'	1:1:121:G:H5''	1.93	0.51
1:1:577:G:H2'	1:1:578:G:C8	2.45	0.51
1:1:640:C:H2'	1:1:641:U:C6	2.46	0.51
1:1:957:C:N4	1:1:2459:A:C8	2.79	0.51
1:1:1032:A:N1	1:1:1122:G:N2	2.50	0.51
1:1:2655:G:O2'	1:1:2664:G:O6	2.26	0.51
1:1:2657:A:O3'	11:F:160:LYS:NZ	2.43	0.51
2:2:73:C:H2'	2:2:74:A:H5'	1.93	0.51
2:2:147:G:H2'	2:2:148:G:C8	2.46	0.51
2:2:1286:U:H2'	2:2:1287:A:H5'	1.92	0.51
2:2:1345:U:H4'	2:2:1346:A:H5'	1.92	0.51
12:G:25:TYR:CE2	12:G:30:LEU:HD11	2.46	0.51
21:P:91:ALA:HB3	21:P:111:LYS:HG3	1.92	0.51
23:R:3:ALA:O	23:R:13:ARG:HA	2.11	0.51
45:n:26:GLY:HA2	45:n:61:LEU:O	2.10	0.51
1:1:494:G:H4'	24:S:6:LYS:HB2	1.93	0.51
1:1:813:U:H2'	1:1:814:C:C6	2.45	0.51
1:1:1041:G:H2'	1:1:1042:G:H8	1.75	0.51
1:1:1281:G:H2'	1:1:1282:U:C6	2.46	0.51
1:1:2031:A:N3	1:1:2455:G:O2'	2.35	0.51
2:2:554:A:H2'	2:2:555:U:C6	2.45	0.51
3:4:28:C:H2'	3:4:29:A:O4'	2.11	0.51
8:C:40:LEU:HD23	8:C:45:TYR:HA	1.92	0.51
19:N:35:LYS:NZ	19:N:100:CYS:SG	2.84	0.51
20:O:15:ARG:HE	20:O:25:ARG:NH1	2.06	0.51
39:h:114:LYS:HB2	39:h:185:ASN:ND2	2.26	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:k:86:ARG:NH1	54:w:64:TYR:O	2.42	0.51
48:q:20:ASN:O	48:q:94:ARG:HD2	2.10	0.51
1:1:704:G:O2'	1:1:705:A:OP2	2.29	0.51
1:1:805:G:N2	1:1:829:A:OP1	2.42	0.51
1:1:1913:A:N7	2:2:1492:A:O2'	2.41	0.51
9:D:27:LEU:HD11	9:D:100:MET:HB3	1.93	0.51
9:D:108:ILE:O	9:D:112:LEU:HG	2.11	0.51
20:O:43:ASN:ND2	20:O:46:GLU:OE1	2.35	0.51
22:Q:86:ALA:HB2	22:Q:116:ALA:HB2	1.92	0.51
43:l:148:ASN:CG	47:p:56:ARG:HH21	2.19	0.51
50:s:24:ARG:HG2	50:s:51:LEU:HD13	1.93	0.51
1:1:48:G:N2	1:1:49:A:N1	2.56	0.51
1:1:208:C:H2'	1:1:209:C:C6	2.45	0.51
1:1:964:C:O2'	1:1:2273:A:N3	2.31	0.51
1:1:1808:A:O2'	29:X:3:ARG:NH1	2.44	0.51
1:1:1914:C:H42	6:A:26:LYS:HD2	1.76	0.51
1:1:2526:G:HO2'	1:1:2527:C:H5'	1.76	0.51
2:2:1130:A:H5'	45:n:20:PHE:HE2	1.76	0.51
2:2:1417:G:O2'	2:2:1483:A:N6	2.39	0.51
4:6:15:G:N2	4:6:49:C:O2	2.44	0.51
9:D:46:GLN:HG3	9:D:83:VAL:HG21	1.92	0.51
10:E:41:GLY:O	10:E:44:ILE:HG12	2.11	0.51
15:J:30:THR:CG2	15:J:108:MET:HE1	2.38	0.51
38:g:15:HIS:CE1	38:g:16:PHE:CE1	2.99	0.51
41:j:62:LYS:O	41:j:66:LYS:HG3	2.10	0.51
41:j:156:LYS:HG2	44:m:71:VAL:HG23	1.91	0.51
45:n:6:TYR:CD2	45:n:90:TYR:HD1	2.29	0.51
1:1:150:U:H2'	1:1:151:C:C6	2.46	0.51
1:1:1085:A:H2'	1:1:1086:A:N3	2.25	0.51
1:1:1239:G:H2'	1:1:1240:U:O4'	2.10	0.51
1:1:2316:G:N3	1:1:2317:A:C8	2.79	0.51
1:1:2590:A:H2'	1:1:2591:C:H6	1.76	0.51
2:2:604:G:H2'	2:2:605:U:O4'	2.10	0.51
2:2:1120:C:H2'	2:2:1121:U:C6	2.46	0.51
7:B:106:ALA:O	7:B:196:GLY:N	2.43	0.51
9:D:41:GLN:NE2	9:D:43:THR:OG1	2.42	0.51
12:G:81:ALA:HA	12:G:147:VAL:HB	1.93	0.51
45:n:28:ILE:HG21	45:n:35:LEU:HD12	1.93	0.51
1:1:208:C:H2'	1:1:209:C:H6	1.76	0.51
1:1:727:A:OP1	1:1:1431:A:O2'	2.29	0.51
1:1:2022:U:O2'	1:1:2617:U:H5'	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:68:G:O6	2:2:101:A:N1	2.44	0.51
2:2:768:A:H4'	2:2:1523:G:N2	2.25	0.51
2:2:1493:A:OP2	48:q:44:LYS:NZ	2.44	0.51
21:P:85:SER:OG	21:P:87:LYS:NZ	2.23	0.51
28:W:68:LYS:HZ2	28:W:70:GLU:HB2	1.76	0.51
39:h:42:TYR:OH	39:h:90:VAL:HG11	2.11	0.51
53:v:21:ILE:HG13	53:v:46:VAL:HB	1.93	0.51
1:1:2024:G:H2'	1:1:2025:C:C6	2.45	0.50
1:1:2287:A:C8	1:1:2289:G:C8	2.99	0.50
1:1:2849:U:O4	21:P:21:ARG:NH2	2.43	0.50
2:2:200:G:H2'	2:2:201:G:H8	1.75	0.50
2:2:1074:G:O2'	2:2:1101:A:N1	2.37	0.50
2:2:1351:U:O2	2:2:1371:G:N2	2.37	0.50
4:6:24:C:H2'	4:6:25:U:C6	2.46	0.50
6:A:155:LEU:HD12	18:M:78:LEU:HG	1.93	0.50
10:E:36:LEU:HB2	10:E:89:VAL:HG22	1.93	0.50
12:G:58:LEU:HA	12:G:61:VAL:HG22	1.93	0.50
41:j:12:GLN:OE1	41:j:117:VAL:HA	2.11	0.50
49:r:79:ARG:NH1	55:x:65:GLU:OE2	2.35	0.50
49:r:85:CYS:HB2	55:x:73:GLU:HB3	1.92	0.50
1:1:1996:C:OP1	16:K:31:ARG:NH2	2.43	0.50
1:1:2303:G:C6	1:1:2314:A:C6	2.99	0.50
1:1:2700:A:H2'	1:1:2701:U:C6	2.47	0.50
2:2:674:G:N2	47:p:118:HIS:HB2	2.26	0.50
2:2:751:U:OP1	51:t:17:ARG:NH2	2.44	0.50
2:2:939:G:OP1	43:l:102:ARG:NH2	2.44	0.50
2:2:1014:A:C2	2:2:1219:A:H1'	2.46	0.50
2:2:1296:C:H5'	49:r:14:HIS:CE1	2.46	0.50
6:A:25:LEU:O	6:A:29:LEU:HG	2.10	0.50
10:E:50:LEU:HD21	10:E:67:ILE:HD12	1.93	0.50
10:E:122:PHE:HE2	10:E:128:TYR:CD1	2.29	0.50
15:J:104:ALA:O	15:J:108:MET:HG3	2.11	0.50
38:g:207:ILE:HG13	38:g:208:ARG:N	2.25	0.50
1:1:639:U:H2'	1:1:640:C:H6	1.74	0.50
1:1:974:G:O2'	1:1:989:G:N2	2.44	0.50
1:1:1107:G:H4'	13:H:81:LEU:HD21	1.92	0.50
1:1:1827:U:OP2	7:B:221:ARG:NE	2.38	0.50
1:1:1989:G:H2'	1:1:1990:C:O4'	2.11	0.50
2:2:945:G:C2	2:2:946:A:C8	2.99	0.50
2:2:1465:A:H2'	2:2:1466:C:C6	2.46	0.50
7:B:21:ASN:HB3	7:B:24:LEU:HG	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:E:46:ASP:OD1	10:E:49:LEU:HG	2.12	0.50
10:E:91:LEU:C	10:E:96:MET:HB2	2.36	0.50
10:E:140:GLU:HA	32:a:28:VAL:HG22	1.94	0.50
19:N:38:LEU:HB3	19:N:39:PRO:HD3	1.94	0.50
28:W:27:GLY:HA2	28:W:67:VAL:HG13	1.94	0.50
38:g:3:THR:OG1	38:g:4:VAL:N	2.38	0.50
39:h:23:PHE:CZ	46:o:11:LYS:HB3	2.47	0.50
42:k:49:TYR:CE1	54:w:66:SER:HA	2.46	0.50
1:1:1000:A:H2'	1:1:1001:A:C8	2.47	0.50
1:1:1080:A:H2'	1:1:1081:U:H6	1.75	0.50
1:1:1562:U:H2'	1:1:1563:U:C6	2.47	0.50
1:1:1589:U:HO2'	1:1:1590:A:P	2.35	0.50
1:1:1794:A:H2'	1:1:1795:C:H6	1.77	0.50
1:1:2101:A:H2'	1:1:2102:G:C8	2.47	0.50
1:1:2305:U:O2	10:E:151:GLY:HA3	2.11	0.50
2:2:444:G:H2'	2:2:445:G:H8	1.77	0.50
2:2:705:G:C5	2:2:706:A:C8	2.99	0.50
11:F:9:VAL:HG23	11:F:50:LEU:HB2	1.94	0.50
16:K:14:SER:OG	16:K:86:LEU:HD12	2.11	0.50
26:U:48:PRO:HG3	26:U:56:GLY:HA3	1.92	0.50
38:g:23:TRP:CZ3	38:g:25:PRO:HA	2.47	0.50
1:1:458:G:O2'	1:1:469:G:O6	2.23	0.50
2:2:253:A:H2'	2:2:254:G:H8	1.77	0.50
2:2:1100:C:OP2	38:g:95:ARG:HD2	2.11	0.50
2:2:1204:A:H2'	2:2:1205:U:O4'	2.11	0.50
2:2:1294:G:H2'	2:2:1295:U:C6	2.47	0.50
2:2:1307:U:O3'	49:r:109:ARG:HD3	2.11	0.50
4:6:41:C:H2'	4:6:42:C:C6	2.47	0.50
11:F:127:THR:HG22	11:F:130:GLU:HB3	1.94	0.50
18:M:44:ARG:HG3	18:M:44:ARG:NH1	2.25	0.50
28:W:50:ASN:O	28:W:82:ILE:HD13	2.12	0.50
38:g:42:ASN:O	38:g:46:THR:OG1	2.19	0.50
41:j:52:LYS:O	41:j:62:LYS:HE2	2.11	0.50
1:1:1871:A:O2'	1:1:1872:A:N7	2.32	0.50
1:1:2101:A:H2'	1:1:2102:G:H8	1.75	0.50
1:1:2204:G:OP2	7:B:147:LYS:NZ	2.25	0.50
1:1:2620:C:O2'	8:C:124:ARG:NH1	2.38	0.50
1:1:2823:A:OP1	8:C:118:PHE:HB2	2.11	0.50
2:2:235:C:H2'	2:2:236:A:H8	1.77	0.50
2:2:323:U:H2'	2:2:324:G:O4'	2.12	0.50
7:B:72:ASP:OD1	7:B:189:ARG:NH2	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:L:91:ASP:OD1	17:L:92:LEU:N	2.38	0.50
38:g:171:ILE:O	38:g:175:GLU:HG3	2.12	0.50
42:k:4:TYR:CE2	42:k:71:ILE:HG13	2.46	0.50
44:m:29:SER:HB2	44:m:59:LEU:HB2	1.93	0.50
51:t:64:ARG:HH12	51:t:89:ARG:HG2	1.77	0.50
1:1:857:G:N2	1:1:2269:G:O4'	2.44	0.50
1:1:861:A:N3	3:4:79:G:O2'	2.45	0.50
1:1:2189:U:O2'	1:1:2190:G:H8	1.94	0.50
1:1:2192:U:H2'	1:1:2193:G:C8	2.47	0.50
1:1:2292:U:H2'	1:1:2293:G:H8	1.76	0.50
2:2:1072:G:H2'	2:2:1073:U:C6	2.46	0.50
2:2:1226:C:H4'	55:x:80:TYR:CZ	2.47	0.50
2:2:1288:A:N1	2:2:1371:G:H1'	2.27	0.50
9:D:18:THR:HG22	9:D:106:LYS:HZ2	1.77	0.50
9:D:125:SER:H	9:D:137:LYS:NZ	2.09	0.50
1:1:2:G:H2'	1:1:3:U:C6	2.47	0.50
1:1:576:U:H2'	1:1:577:G:C8	2.47	0.50
1:1:693:A:O2'	1:1:1353:A:N3	2.36	0.50
1:1:1203:U:OP2	1:1:1204:A:O2'	2.23	0.50
1:1:1504:A:H2'	1:1:1505:A:C8	2.47	0.50
1:1:1534:U:O2'	1:1:1537:G:O6	2.20	0.50
1:1:2650:U:H2'	1:1:2651:C:H6	1.77	0.50
2:2:178:C:C2	2:2:179:A:C8	3.00	0.50
2:2:195:A:H1'	2:2:222:C:O2'	2.12	0.50
2:2:360:G:H2'	2:2:361:G:C8	2.46	0.50
2:2:640:A:H2'	2:2:641:U:C6	2.47	0.50
2:2:708:C:H2'	2:2:709:U:C6	2.47	0.50
2:2:977:A:O2'	2:2:979:C:OP2	2.28	0.50
2:2:1299:A:O2'	2:2:1300:G:H4'	2.12	0.50
2:2:1327:C:H2'	2:2:1328:C:H6	1.77	0.50
4:6:17:C:H4'	4:6:18:U:H5''	1.94	0.50
4:6:56:U:HO2'	4:6:58:A:H62	1.60	0.50
6:A:139:HIS:ND1	6:A:142:THR:OG1	2.24	0.50
11:F:115:HIS:HE1	11:F:144:VAL:HG13	1.77	0.50
23:R:2:TYR:CZ	23:R:42:ALA:HB3	2.47	0.50
32:a:43:PHE:HD1	32:a:47:LYS:HE2	1.77	0.50
32:a:60:PHE:HE1	55:x:42:PRO:HD3	1.75	0.50
38:g:15:HIS:HB2	38:g:40:ILE:HG23	1.94	0.50
41:j:41:ASP:OD2	41:j:45:ARG:HB3	2.12	0.50
1:1:356:G:H2'	1:1:357:C:C6	2.46	0.50
1:1:415:A:H2'	1:1:416:U:C6	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:817:C:H2'	1:1:818:G:O4'	2.12	0.50
1:1:1022:G:N2	1:1:1023:U:O4	2.24	0.50
1:1:1789:A:H2'	1:1:1790:C:O4'	2.11	0.50
1:1:1796:U:H2'	1:1:1797:G:C8	2.46	0.50
1:1:2425:A:H4'	1:1:2426:A:O5'	2.12	0.50
2:2:910:C:OP2	48:q:18:LYS:NZ	2.42	0.50
2:2:945:G:H21	2:2:1334:G:H4'	1.77	0.50
2:2:1371:G:H2'	2:2:1372:U:C6	2.47	0.50
4:5:9:G:N2	4:5:26:G:H1'	2.26	0.50
10:E:117:LEU:HD12	10:E:175:PHE:CZ	2.46	0.50
39:h:54:ARG:HB2	39:h:69:HIS:HB2	1.93	0.50
49:r:52:GLN:O	49:r:56:LEU:HG	2.12	0.50
1:1:1:G:H2'	1:1:2:G:H8	1.77	0.49
1:1:22:C:H2'	1:1:23:G:O4'	2.12	0.49
1:1:272:A:H2'	1:1:273:G:H8	1.74	0.49
1:1:638:G:H2'	1:1:639:U:C6	2.47	0.49
1:1:721:A:H2'	1:1:722:A:H8	1.75	0.49
1:1:1007:C:OP1	15:J:39:LYS:NZ	2.36	0.49
1:1:1319:C:O2'	1:1:1320:C:H5'	2.12	0.49
1:1:1387:A:H2'	1:1:1388:G:C8	2.46	0.49
1:1:2514:U:H4'	15:J:81:ILE:HG21	1.94	0.49
1:1:2570:G:H2'	1:1:2571:U:O4'	2.11	0.49
1:1:2742:G:H5''	37:f:1:MET:HE3	1.94	0.49
1:1:2783:U:H2'	1:1:2784:U:H6	1.76	0.49
2:2:255:G:H2'	2:2:256:U:C6	2.46	0.49
2:2:312:C:H2'	2:2:313:A:C8	2.47	0.49
2:2:338:A:H61	2:2:351:G:H1	1.57	0.49
2:2:413:G:H1'	2:2:428:G:H21	1.77	0.49
2:2:419:C:H2'	2:2:420:U:O4'	2.12	0.49
2:2:807:A:H2'	2:2:808:C:C6	2.47	0.49
2:2:1493:A:HO2'	2:2:1494:G:P	2.34	0.49
4:5:65:C:C2	4:5:66:C:C5	3.00	0.49
6:A:134:ALA:HB2	6:A:149:GLN:HB3	1.94	0.49
8:C:159:LYS:NZ	8:C:160:LYS:O	2.44	0.49
10:E:23:ASN:OD1	10:E:24:SER:N	2.45	0.49
40:i:159:LEU:HD13	40:i:175:ALA:HB1	1.92	0.49
42:k:4:TYR:CD2	42:k:71:ILE:HG13	2.47	0.49
49:r:16:VAL:O	49:r:20:THR:HG23	2.12	0.49
52:u:5:ARG:NH2	52:u:27:ALA:O	2.45	0.49
53:v:61:ILE:HA	53:v:75:LEU:HA	1.94	0.49
1:1:1:G:H2'	1:1:2:G:C8	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:248:G:H5'	1:1:250:G:N7	2.27	0.49
1:1:839:U:H1'	1:1:1191:G:H1'	1.95	0.49
1:1:2001:C:H4'	1:1:2689:U:H2'	1.94	0.49
1:1:2846:G:H2'	1:1:2847:U:C6	2.47	0.49
2:2:68:G:N2	2:2:152:A:N3	2.60	0.49
2:2:217:C:H2'	2:2:218:U:C6	2.47	0.49
2:2:778:G:H2'	2:2:779:C:O4'	2.12	0.49
2:2:977:A:C8	2:2:1223:C:C4	3.00	0.49
4:6:43:G:H2'	4:6:44:A:C8	2.47	0.49
6:A:135:VAL:O	6:A:135:VAL:HG12	2.12	0.49
11:F:152:ARG:HH21	11:F:152:ARG:HG3	1.77	0.49
52:u:16:PHE:HE1	52:u:18:GLN:NE2	2.10	0.49
1:1:1115:G:C4	1:1:1116:G:C8	3.00	0.49
1:1:2037:A:C6	1:1:2038:G:C6	3.01	0.49
1:1:2114:A:H61	1:1:2119:A:H62	1.60	0.49
1:1:2572:A:N7	8:C:150:GLN:NE2	2.58	0.49
1:1:2683:C:O2	16:K:70:ARG:NH2	2.40	0.49
1:1:2748:A:H5'	11:F:4:VAL:HG21	1.94	0.49
1:1:2813:A:H2'	1:1:2814:A:C8	2.45	0.49
2:2:943:U:C2	2:2:944:G:C8	3.01	0.49
2:2:977:A:N6	2:2:1224:U:O4'	2.45	0.49
2:2:1107:C:C4	2:2:1108:G:C8	3.00	0.49
3:4:98:G:H1	27:V:14:LYS:HB2	1.76	0.49
10:E:140:GLU:CD	10:E:140:GLU:H	2.20	0.49
39:h:79:LYS:HB2	39:h:82:GLU:CD	2.36	0.49
43:l:40:GLU:HA	43:l:43:VAL:HG22	1.92	0.49
1:1:1923:U:H5''	4:5:24:U:O2'	2.12	0.49
2:2:389:A:H3'	2:2:390:U:H6	1.77	0.49
2:2:618:C:H5''	2:2:619:U:H5''	1.94	0.49
2:2:834:U:H2'	2:2:835:U:C6	2.47	0.49
3:4:20:G:C6	3:4:64:G:C6	3.00	0.49
6:A:119:ARG:HE	6:A:130:LYS:HA	1.76	0.49
16:K:61:VAL:HB	16:K:87:LEU:HD11	1.94	0.49
43:l:74:GLU:OE1	43:l:91:VAL:HB	2.13	0.49
55:x:36:ARG:NH2	55:x:75:ALA:O	2.46	0.49
1:1:1078:U:P	14:I:133:ARG:HH22	2.36	0.49
1:1:1527:G:N1	1:1:1544:A:OP2	2.44	0.49
1:1:2071:A:H2'	1:1:2072:C:C6	2.47	0.49
1:1:2393:U:H5''	17:L:62:PRO:HB3	1.94	0.49
2:2:645:G:C2	2:2:646:G:C8	3.01	0.49
2:2:868:C:H2'	2:2:869:G:O4'	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1352:C:N3	2:2:1371:G:C6	2.81	0.49
3:4:5:U:H2'	3:4:6:G:C8	2.47	0.49
7:B:53:HIS:CD2	7:B:219:THR:HA	2.47	0.49
9:D:15:SER:HB2	9:D:18:THR:OG1	2.12	0.49
11:F:10:VAL:HA	11:F:49:THR:HG22	1.94	0.49
11:F:103:ILE:O	11:F:114:ASP:HA	2.11	0.49
15:J:95:ARG:HE	15:J:96:ARG:HB3	1.77	0.49
38:g:20:THR:HA	38:g:39:HIS:CE1	2.48	0.49
39:h:27:LYS:HG3	39:h:28:GLU:OE1	2.12	0.49
40:i:61:VAL:HG21	40:i:200:ILE:HD11	1.94	0.49
43:l:95:ARG:CZ	43:l:99:LEU:HD11	2.42	0.49
50:s:33:ASP:O	50:s:41:ARG:NH1	2.32	0.49
50:s:92:GLU:OE1	50:s:92:GLU:N	2.46	0.49
1:1:127:A:H5''	1:1:128:C:C6	2.48	0.49
1:1:610:C:H2'	1:1:611:C:H6	1.78	0.49
1:1:1203:U:H1'	17:L:4:ASN:HB3	1.93	0.49
1:1:1568:G:OP1	7:B:63:ARG:NH2	2.39	0.49
1:1:2048:G:H21	8:C:118:PHE:HZ	1.61	0.49
1:1:2303:G:O6	1:1:2314:A:N6	2.45	0.49
2:2:337:G:C2	2:2:338:A:C5	3.01	0.49
2:2:464:U:N3	2:2:467:U:OP2	2.42	0.49
2:2:978:A:C4	2:2:1319:A:C2	3.01	0.49
2:2:1096:C:H2'	2:2:1097:C:H6	1.76	0.49
2:2:1402:4OC:H2'	2:2:1403:C:O4'	2.13	0.49
7:B:132:MET:HE2	7:B:144:VAL:HG13	1.95	0.49
7:B:145:GLU:HB2	7:B:188:CYS:HB3	1.94	0.49
12:G:70:GLU:HB2	12:G:134:VAL:HG21	1.95	0.49
15:J:7:LYS:HB2	15:J:10:THR:HG22	1.93	0.49
19:N:86:ARG:HH21	19:N:117:ASP:HB2	1.77	0.49
20:O:41:ALA:HB1	20:O:42:PRO:HD2	1.95	0.49
29:X:72:ARG:HD3	29:X:78:TYR:OH	2.13	0.49
48:q:50:ARG:NH1	48:q:89:0TD:OD1	2.33	0.49
53:v:49:GLU:C	53:v:51:ASN:H	2.21	0.49
1:1:729:G:H5''	1:1:730:A:C5'	2.40	0.49
1:1:729:G:OP1	7:B:13:ARG:HG2	2.13	0.49
1:1:1036:G:C6	1:1:1120:G:C6	3.01	0.49
1:1:1208:C:C2	1:1:1239:G:C2	3.00	0.49
1:1:1722:A:H2'	1:1:1723:G:O4'	2.12	0.49
2:2:492:C:H2'	2:2:493:A:C8	2.47	0.49
2:2:662:U:H2'	2:2:663:A:C8	2.47	0.49
2:2:692:U:OP2	47:p:28:ASN:ND2	2.37	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:F:17:VAL:HG11	11:F:50:LEU:HD21	1.95	0.49
14:I:76:ALA:O	14:I:79:LEU:HG	2.13	0.49
29:X:42:SER:HG	29:X:43:GLU:H	1.61	0.49
35:d:34:ARG:NE	35:d:42:LEU:O	2.45	0.49
38:g:60:ILE:HD13	38:g:160:ALA:HB2	1.95	0.49
38:g:187:VAL:HG13	38:g:191:SER:HB2	1.95	0.49
40:i:85:ASN:HD22	40:i:88:GLU:HG3	1.77	0.49
41:j:91:GLY:O	41:j:130:SER:N	2.33	0.49
42:k:12:PRO:HD2	42:k:54:LEU:HD22	1.95	0.49
43:l:91:VAL:HG13	43:l:96:ARG:HG3	1.95	0.49
1:1:859:G:O2'	1:1:916:G:O6	2.24	0.49
1:1:1049:C:H2'	1:1:1050:A:C8	2.48	0.49
2:2:223:A:H2'	2:2:224:U:C6	2.47	0.49
2:2:1120:C:H2'	2:2:1121:U:H6	1.78	0.49
2:2:1315:U:H2'	2:2:1316:G:O4'	2.12	0.49
21:P:89:ARG:HG3	21:P:113:ARG:CZ	2.42	0.49
27:V:48:MET:CE	27:V:51:GLN:HE21	2.26	0.49
31:Z:58:GLU:OE1	31:Z:58:GLU:N	2.46	0.49
32:a:10:GLU:C	32:a:25:ARG:HD2	2.38	0.49
35:d:18:PHE:HA	35:d:43:THR:HG21	1.93	0.49
38:g:14:VAL:HG23	38:g:213:TYR:OH	2.12	0.49
38:g:15:HIS:HE1	38:g:16:PHE:CE1	2.31	0.49
42:k:74:LEU:HG	42:k:78:PHE:CE2	2.48	0.49
50:s:89:MET:HE2	50:s:89:MET:HA	1.94	0.49
55:x:3:ARG:CZ	55:x:7:LYS:HE2	2.43	0.49
1:1:414:C:H2'	1:1:415:A:C8	2.48	0.49
1:1:971:G:H2'	1:1:972:A:O4'	2.13	0.49
1:1:1427:A:N6	1:1:1571:A:OP2	2.30	0.49
1:1:1587:G:C2	1:1:1588:G:C8	3.01	0.49
1:1:2144:G:N2	1:1:2146:C:O2	2.46	0.49
2:2:398:U:H2'	2:2:399:G:H8	1.76	0.49
2:2:718:A:C8	47:p:118:HIS:ND1	2.81	0.49
4:6:29:C:H2'	4:6:30:G:H8	1.75	0.49
6:A:73:LEU:HD21	6:A:99:GLU:HB2	1.94	0.49
7:B:76:ALA:HB2	7:B:96:TYR:CE2	2.47	0.49
10:E:110:ARG:HD3	10:E:137:ILE:O	2.12	0.49
20:O:110:ALA:HB1	20:O:115:LEU:HD12	1.95	0.49
29:X:71:LEU:HA	29:X:74:ARG:HD3	1.94	0.49
39:h:179:ARG:HD2	39:h:206:GLU:OE2	2.13	0.49
43:l:129:GLU:HB3	43:l:131:LYS:NZ	2.26	0.49
1:1:257:C:H2'	1:1:258:G:O4'	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:570:G:H2'	1:1:2030:6MZ:N7	2.28	0.49
1:1:1252:G:C2	22:Q:33:ARG:HG2	2.48	0.49
1:1:2316:G:H2'	1:1:2317:A:C8	2.46	0.49
1:1:2375:G:N2	1:1:2378:A:OP2	2.38	0.49
2:2:514:C:H2'	2:2:515:G:H8	1.77	0.49
2:2:1152:A:P	46:o:72:ARG:HH22	2.35	0.49
2:2:1271:A:H2'	2:2:1272:G:H8	1.77	0.49
3:4:8:C:H5''	20:O:15:ARG:NH2	2.28	0.49
4:6:41:C:H2'	4:6:42:C:H6	1.78	0.49
9:D:77:ILE:HG13	9:D:78:TRP:HD1	1.77	0.49
9:D:111:GLU:HG2	9:D:114:ARG:HH21	1.77	0.49
13:H:101:LYS:O	13:H:105:LYS:HG2	2.12	0.49
16:K:33:ALA:HB1	16:K:37:ASP:HB2	1.95	0.49
18:M:23:GLY:H	18:M:100:LYS:NZ	2.11	0.49
26:U:98:SER:C	26:U:100:SER:H	2.21	0.49
38:g:119:THR:O	38:g:124:GLY:N	2.46	0.49
50:s:19:LYS:HE3	50:s:20:TYR:HE2	1.78	0.49
50:s:45:VAL:HG12	50:s:46:LEU:HD22	1.95	0.49
1:1:1152:C:H2'	1:1:1153:C:H6	1.78	0.48
1:1:1651:G:H4'	19:N:39:PRO:HG2	1.94	0.48
1:1:1910:G:C2	1:1:1921:G:C2	3.01	0.48
1:1:2032:G:N2	1:1:2572:A:OP2	2.43	0.48
1:1:2783:U:H2'	1:1:2784:U:C6	2.48	0.48
2:2:33:A:H2'	2:2:34:C:C6	2.48	0.48
2:2:440:C:C2	2:2:441:A:C8	3.01	0.48
2:2:622:A:C8	2:2:623:C:C6	3.00	0.48
2:2:1098:C:O2'	57:z:71:TYR:O	2.28	0.48
2:2:1480:A:H2'	2:2:1481:U:O4'	2.13	0.48
6:A:45:GLU:O	6:A:54:LYS:N	2.44	0.48
10:E:122:PHE:CE2	10:E:128:TYR:CD1	3.00	0.48
12:G:110:VAL:HG13	12:G:114:GLU:HB3	1.93	0.48
14:I:100:ILE:HB	14:I:139:VAL:HA	1.95	0.48
15:J:69:ARG:HD3	15:J:89:PHE:CD2	2.48	0.48
21:P:4:ILE:H	21:P:4:ILE:HD12	1.77	0.48
26:U:96:PHE:CZ	26:U:103:ILE:HG12	2.48	0.48
38:g:56:GLU:HA	38:g:59:LYS:HD3	1.95	0.48
39:h:155:GLY:HA2	39:h:163:ALA:HB1	1.94	0.48
43:l:14:PRO:HB3	43:l:21:GLU:OE2	2.12	0.48
43:l:138:ARG:HD2	43:l:142:HIS:HD1	1.78	0.48
44:m:7:ILE:O	44:m:11:LEU:HD23	2.13	0.48
46:o:8:ILE:HD13	46:o:100:ILE:HA	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:81:G:HO2'	1:1:295:G:HO2'	1.59	0.48
1:1:1266:G:OP2	33:b:17:ARG:NH1	2.41	0.48
1:1:1563:U:H2'	1:1:1564:C:C6	2.48	0.48
1:1:1730:C:OP1	1:1:1730:C:H4'	2.13	0.48
1:1:1992:G:N2	1:1:1996:C:O2'	2.46	0.48
1:1:2193:G:H2'	1:1:2194:U:H6	1.78	0.48
2:2:1031:C:H1'	2:2:1033:G:H22	1.79	0.48
2:2:1356:G:C2	2:2:1357:A:C5	3.00	0.48
6:A:133:SER:O	6:A:157:ASN:ND2	2.45	0.48
15:J:20:ALA:HB1	15:J:62:VAL:HG12	1.95	0.48
15:J:110:PRO:O	15:J:115:GLY:HA3	2.13	0.48
17:L:23:ILE:HG12	23:R:82:HIS:CE1	2.49	0.48
18:M:17:ASN:ND2	18:M:95:LEU:HB3	2.28	0.48
23:R:34:GLU:OE2	23:R:36:ALA:HB2	2.13	0.48
39:h:58:GLU:OE1	39:h:65:ARG:NH1	2.46	0.48
47:p:97:ILE:HG22	57:z:12:PHE:HZ	1.78	0.48
1:1:146:A:H2'	1:1:147:C:C6	2.49	0.48
1:1:633:A:O2'	1:1:2404:U:OP1	2.30	0.48
1:1:752:A:H3'	35:d:1:MET:SD	2.53	0.48
1:1:833:A:H2'	1:1:834:G:H8	1.77	0.48
1:1:917:A:H5''	1:1:2268:A:H61	1.78	0.48
1:1:1141:U:O2	1:1:1142:A:N6	2.47	0.48
1:1:1980:G:O2'	1:1:1982:U:OP2	2.29	0.48
2:2:202:G:O2'	2:2:468:A:H8	1.95	0.48
11:F:33:LEU:HD11	11:F:136:ALA:HB1	1.95	0.48
21:P:72:ARG:HD3	21:P:74:PHE:CE2	2.47	0.48
29:X:45:ARG:NH2	29:X:47:VAL:HG22	2.29	0.48
38:g:9:MET:HE3	38:g:47:VAL:HG22	1.96	0.48
38:g:90:PHE:HB3	38:g:151:ILE:HG22	1.95	0.48
51:t:36:ILE:O	51:t:40:GLN:HG2	2.14	0.48
55:x:17:LYS:O	55:x:21:LYS:HG2	2.13	0.48
57:z:6:VAL:HA	57:z:18:ARG:HH22	1.78	0.48
1:1:247:G:N7	1:1:249:C:C2	2.81	0.48
1:1:471:A:H2'	1:1:472:A:O4'	2.13	0.48
1:1:1484:U:H2'	1:1:1485:U:H6	1.74	0.48
1:1:1817:G:OP1	7:B:87:ARG:NH2	2.46	0.48
1:1:2107:G:H2'	1:1:2108:A:C8	2.48	0.48
2:2:883:C:O2'	2:2:884:U:H5'	2.13	0.48
2:2:935:A:H2'	2:2:936:C:H6	1.78	0.48
6:A:137:ALA:H	6:A:147:LEU:HB2	1.79	0.48
7:B:162:VAL:HG12	7:B:176:LEU:HA	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:X:18:ARG:CZ	29:X:24:ALA:HB2	2.43	0.48
48:q:67:ILE:HG21	48:q:72:HIS:CD2	2.48	0.48
49:r:12:HIS:CD2	49:r:13:LYS:HG3	2.49	0.48
52:u:8:ARG:HG3	52:u:17:TYR:CE1	2.49	0.48
52:u:23:ASP:OD1	52:u:24:SER:N	2.47	0.48
55:x:62:VAL:HA	55:x:66:MET:SD	2.54	0.48
1:1:280:U:H2'	1:1:281:C:C6	2.47	0.48
1:1:518:G:H2'	1:1:519:U:C6	2.48	0.48
1:1:1000:A:N6	1:1:1155:A:C8	2.82	0.48
1:1:1129:A:N6	1:1:2491:U:OP1	2.46	0.48
1:1:2069:G7M:H4'	1:1:2070:A:OP2	2.13	0.48
1:1:2726:A:O2'	1:1:2727:A:O5'	2.22	0.48
2:2:911:U:H2'	2:2:912:C:C6	2.48	0.48
4:5:18:G:H8	4:5:18:G:OP1	1.95	0.48
4:5:65:C:H2'	4:5:66:C:H6	1.79	0.48
9:D:27:LEU:HG	9:D:104:ALA:HB2	1.95	0.48
11:F:2:SER:O	11:F:6:LYS:HG2	2.14	0.48
11:F:22:GLN:HE22	11:F:55:ARG:HH21	1.60	0.48
19:N:2:ARG:HG2	19:N:5:LYS:HB2	1.94	0.48
1:1:1914:C:N3	6:A:26:LYS:HB2	2.28	0.48
1:1:2225:A:H4'	1:1:2226:C:C6	2.49	0.48
1:1:2799:A:O2'	1:1:2800:A:H5''	2.14	0.48
2:2:10:A:H2'	2:2:11:G:H8	1.79	0.48
2:2:246:A:C2	2:2:282:A:C5	3.02	0.48
2:2:270:A:H2'	2:2:271:C:C6	2.48	0.48
2:2:688:G:C5	2:2:700:G:C2	3.01	0.48
2:2:922:G:H2'	2:2:923:A:C8	2.48	0.48
2:2:984:C:H2'	2:2:985:C:H6	1.79	0.48
2:2:1005:A:H8	2:2:1006:G:C8	2.32	0.48
2:2:1166:G:O2'	2:2:1169:A:N6	2.47	0.48
3:4:60:C:C2	3:4:61:G:C8	3.01	0.48
6:A:135:VAL:HG11	6:A:158:LYS:HB2	1.96	0.48
10:E:136:ILE:HD11	10:E:143:TYR:HB2	1.94	0.48
11:F:17:VAL:HG22	11:F:26:ILE:HD12	1.95	0.48
16:K:15:GLY:O	16:K:47:ILE:HG23	2.12	0.48
20:O:17:LYS:O	20:O:20:GLU:HG2	2.13	0.48
26:U:38:GLY:H	26:U:62:GLU:CD	2.21	0.48
43:l:115:SER:C	43:l:119:ARG:HE	2.21	0.48
53:v:30:LYS:HA	53:v:37:PHE:HD1	1.78	0.48
1:1:249:C:O2'	17:L:63:LYS:NZ	2.33	0.48
1:1:1654:A:N1	1:1:2048:G:O2'	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2285:C:OP2	34:c:6:ARG:HD2	2.14	0.48
1:1:2298:A:H2'	1:1:2299:U:O4'	2.13	0.48
1:1:2333:A:P	28:W:77:ARG:HH22	2.36	0.48
1:1:2554:U:H2'	1:1:2555:U:C6	2.49	0.48
1:1:2700:A:H2'	1:1:2701:U:H6	1.79	0.48
1:1:2739:U:C2	1:1:2740:A:C8	3.02	0.48
2:2:750:C:H2'	2:2:751:U:C6	2.49	0.48
2:2:1516:2MG:N1	2:2:1519:MA6:OP2	2.47	0.48
10:E:122:PHE:HD1	10:E:163:ASP:HB2	1.78	0.48
50:s:46:LEU:HD12	55:x:13:LEU:HD12	1.94	0.48
52:u:1:MET:HB2	52:u:1:MET:HE3	1.67	0.48
1:1:282:A:C6	1:1:359:G:C6	3.02	0.48
1:1:632:A:H2'	1:1:633:A:C8	2.49	0.48
1:1:635:C:H2'	1:1:636:G:O4'	2.13	0.48
1:1:888:C:C6	49:r:92:ARG:HD3	2.49	0.48
1:1:1591:A:H2'	1:1:1592:C:O4'	2.14	0.48
1:1:1928:A:H2'	1:1:1929:G:O4'	2.13	0.48
1:1:2209:G:H2'	1:1:2210:U:C5	2.49	0.48
1:1:2228:G:H2'	1:1:2229:U:H6	1.77	0.48
1:1:2552:OMU:C2	1:1:2554:U:H5'	2.44	0.48
1:1:2584:U:O2'	6:A:126:GLN:HB3	2.14	0.48
2:2:731:G:H5'	2:2:766:A:H4'	1.96	0.48
2:2:1314:C:H2'	2:2:1315:U:H6	1.78	0.48
15:J:98:GLU:OE1	15:J:98:GLU:N	2.46	0.48
25:T:34:VAL:HG21	25:T:43:ILE:HD11	1.95	0.48
28:W:59:LEU:HD12	28:W:80:ILE:HD12	1.95	0.48
40:i:26:ARG:NH2	40:i:30:THR:O	2.47	0.48
43:l:74:GLU:OE1	43:l:74:GLU:N	2.46	0.48
46:o:49:PHE:CZ	50:s:76:LYS:HD3	2.49	0.48
1:1:1096:A:N1	14:I:26:ALA:HB2	2.28	0.48
1:1:1651:G:C4	1:1:1652:A:C8	3.01	0.48
1:1:1703:G:H2'	1:1:1704:C:H6	1.79	0.48
1:1:1807:G:H5'	1:1:1808:A:OP2	2.13	0.48
1:1:2649:C:H2'	1:1:2650:U:H6	1.78	0.48
1:1:2653:U:OP2	1:1:2654:A:O2'	2.26	0.48
2:2:130:A:H5'	53:v:65:ARG:HD3	1.94	0.48
2:2:203:G:H1'	2:2:465:A:H61	1.79	0.48
2:2:522:C:OP2	48:q:66:TYR:OH	2.21	0.48
2:2:676:A:H1'	47:p:117:PRO:HB3	1.95	0.48
2:2:734:G:O2'	54:w:60:LYS:HD3	2.14	0.48
2:2:842:U:O2	2:2:844:G:H5'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1254:A:P	46:o:45:ARG:HH11	2.37	0.48
2:2:1410:A:H2'	2:2:1411:C:H6	1.78	0.48
11:F:138:LYS:HA	11:F:141:ILE:HG22	1.95	0.48
12:G:77:THR:HA	12:G:143:ILE:O	2.13	0.48
38:g:158:PRO:HG2	38:g:181:ILE:HD13	1.95	0.48
40:i:95:GLU:HA	40:i:100:ASN:ND2	2.28	0.48
48:q:50:ARG:HB3	48:q:66:TYR:HE1	1.78	0.48
1:1:322:A:H3'	9:D:163:ASN:HD21	1.79	0.48
1:1:358:U:H2'	1:1:359:G:H8	1.78	0.48
1:1:524:G:H5'	1:1:539:G:N2	2.29	0.48
1:1:596:U:C2	1:1:597:G:C8	3.02	0.48
1:1:740:C:N4	1:1:758:C:O2	2.47	0.48
1:1:746:PSU:O2'	1:1:2611:C:O2'	2.29	0.48
1:1:924:G:H2'	1:1:925:A:H8	1.79	0.48
1:1:1645:G:H5''	1:1:1646:C:H5'	1.96	0.48
1:1:2788:C:H2'	1:1:2789:C:H6	1.77	0.48
2:2:1130:A:H2'	2:2:1131:G:H8	1.79	0.48
6:A:42:LEU:HD11	6:A:59:GLN:HB2	1.96	0.48
8:C:184:ARG:NH2	21:P:7:GLN:OE1	2.47	0.48
9:D:195:GLN:O	9:D:199:MET:HG3	2.14	0.48
11:F:105:LEU:HB3	11:F:107:LEU:HD11	1.96	0.48
41:j:45:ARG:HG3	41:j:45:ARG:NH2	2.28	0.48
50:s:46:LEU:HB3	55:x:13:LEU:HD12	1.96	0.48
53:v:11:ARG:NH2	53:v:11:ARG:HB3	2.29	0.48
57:z:62:ARG:NH2	57:z:63:GLU:HB2	2.28	0.48
1:1:606:U:C2	1:1:622:G:O6	2.66	0.47
1:1:820:A:H4'	1:1:836:G:N2	2.27	0.47
1:1:1025:G:H4'	1:1:1026:G:OP2	2.13	0.47
1:1:1055:G:H2'	1:1:1056:G:O4'	2.14	0.47
1:1:1998:A:O2'	1:1:2724:U:O2'	2.29	0.47
1:1:2305:U:N3	10:E:151:GLY:O	2.47	0.47
2:2:860:A:N6	2:2:869:G:O2'	2.47	0.47
2:2:878:A:O4'	44:m:4:GLN:HG3	2.13	0.47
2:2:1116:U:O2	2:2:1184:G:C6	2.67	0.47
2:2:1473:G:H2'	2:2:1474:U:O4'	2.14	0.47
6:A:8:ILE:O	6:A:55:SER:HA	2.14	0.47
15:J:6:ALA:O	15:J:48:VAL:HG21	2.13	0.47
18:M:71:LYS:HD2	18:M:95:LEU:HD11	1.96	0.47
38:g:67:ILE:O	38:g:89:GLN:HB3	2.13	0.47
46:o:7:ARG:HB2	46:o:101:SER:OG	2.15	0.47
50:s:46:LEU:HD12	55:x:13:LEU:HB2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:t:74:ASP:OD1	51:t:77:ARG:HG3	2.13	0.47
1:1:58:G:O2'	1:1:73:A:N1	2.42	0.47
1:1:274:C:H2'	1:1:275:C:C6	2.48	0.47
1:1:851:C:H1'	31:Z:47:MET:HE2	1.96	0.47
1:1:869:G:H4'	18:M:6:ARG:HH12	1.78	0.47
1:1:958:U:O4'	18:M:14:LYS:NZ	2.44	0.47
1:1:1016:G:O6	1:1:1147:A:N6	2.47	0.47
1:1:1499:C:H2'	1:1:1500:G:H8	1.78	0.47
1:1:2009:A:OP1	24:S:41:LYS:HE2	2.13	0.47
1:1:2469:A:H4'	18:M:55:ARG:CD	2.44	0.47
2:2:765:G:N2	2:2:813:U:OP2	2.46	0.47
2:2:820:U:H4'	2:2:821:G:OP2	2.15	0.47
2:2:1100:C:P	57:z:69:ARG:HH11	2.37	0.47
2:2:1316:G:N2	2:2:1318:A:H3'	2.29	0.47
4:5:61:C:H2'	4:5:62:C:C6	2.49	0.47
34:c:38:LYS:HB2	34:c:49:TYR:CD1	2.50	0.47
43:l:14:PRO:HB2	43:l:19:GLY:HA2	1.96	0.47
1:1:18:U:OP1	22:Q:30:ARG:NH2	2.47	0.47
1:1:445:C:H2'	1:1:446:G:O4'	2.13	0.47
1:1:534:U:N3	1:1:535:G:N7	2.63	0.47
1:1:580:U:O3'	22:Q:31:VAL:HG13	2.14	0.47
1:1:952:G:C6	1:1:966:G:C6	3.02	0.47
1:1:1387:A:H2'	1:1:1388:G:H8	1.78	0.47
1:1:2115:G:H2'	1:1:2117:A:OP2	2.14	0.47
1:1:2302:U:C2	1:1:2303:G:C8	3.03	0.47
1:1:2424:C:O2	1:1:2429:G:O2'	2.29	0.47
1:1:2802:G:H2'	1:1:2803:G:C8	2.49	0.47
2:2:302:G:N3	2:2:556:C:H4'	2.30	0.47
2:2:691:G:O2'	2:2:797:C:H4'	2.14	0.47
2:2:949:A:C6	2:2:1233:G:C6	3.02	0.47
2:2:986:U:H2'	2:2:987:G:O4'	2.14	0.47
7:B:67:PHE:HE2	7:B:105:LEU:HD11	1.79	0.47
22:Q:69:ALA:HB1	22:Q:74:ILE:HG23	1.96	0.47
38:g:71:GLY:HA3	38:g:80:VAL:HG21	1.96	0.47
44:m:51:VAL:HA	44:m:58:GLU:O	2.14	0.47
52:u:45:GLU:OE1	52:u:46:LYS:HD3	2.14	0.47
1:1:301:G:C6	1:1:317:G:C6	3.02	0.47
1:1:329:G:O6	26:U:17:LYS:N	2.43	0.47
1:1:2852:G:H2'	1:1:2853:C:O4'	2.14	0.47
2:2:483:C:O2	52:u:13:LYS:NZ	2.48	0.47
2:2:515:G:C6	2:2:516:PSU:C2	3.02	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1371:G:O3'	45:n:71:GLY:HA3	2.14	0.47
2:2:1446:A:O2'	2:2:1447:A:H5'	2.14	0.47
4:5:23:C:H2'	4:5:24:U:C6	2.49	0.47
6:A:16:GLU:OE1	6:A:16:GLU:N	2.40	0.47
19:N:29:VAL:O	19:N:78:LYS:NZ	2.44	0.47
26:U:18:ASP:HB3	26:U:21:LYS:HD2	1.96	0.47
43:l:66:LEU:HB3	43:l:70:ARG:CZ	2.43	0.47
50:s:33:ASP:CG	50:s:36:ALA:HB2	2.40	0.47
54:w:57:ARG:O	54:w:61:ARG:HG3	2.15	0.47
1:1:917:A:H5''	1:1:2268:A:N6	2.29	0.47
1:1:1214:A:H4'	1:1:1239:G:H4'	1.96	0.47
1:1:2313:C:H5''	10:E:88:LYS:HD2	1.95	0.47
1:1:2514:U:H2'	1:1:2515:C:C6	2.49	0.47
1:1:2746:U:H1'	11:F:139:GLN:HG2	1.95	0.47
2:2:106:C:H2'	2:2:107:G:O4'	2.13	0.47
2:2:475:C:H2'	2:2:476:U:C6	2.49	0.47
2:2:554:A:H2'	2:2:555:U:H6	1.79	0.47
2:2:718:A:O2'	57:z:31:GLU:OE2	2.32	0.47
2:2:1260:G:OP1	2:2:1284:C:O2'	2.26	0.47
2:2:1402:4OC:O5'	2:2:1402:4OC:H6	2.14	0.47
3:4:50:A:OP1	20:O:67:ASN:HB2	2.14	0.47
12:G:28:ASN:O	12:G:32:PRO:HG2	2.15	0.47
38:g:163:VAL:O	38:g:186:ILE:HD12	2.14	0.47
40:i:36:GLN:HE21	40:i:43:ALA:N	2.13	0.47
44:m:9:ASP:OD2	44:m:13:ARG:NH1	2.47	0.47
1:1:93:G:H2'	1:1:94:A:C8	2.49	0.47
1:1:709:U:H2'	1:1:710:U:O4'	2.14	0.47
1:1:882:G:O6	1:1:894:U:O4	2.31	0.47
1:1:884:U:O2'	1:1:885:C:O4'	2.32	0.47
1:1:2418:A:H2'	1:1:2419:U:O4'	2.13	0.47
1:1:2543:G:C6	1:1:2765:A:C5	3.03	0.47
2:2:427:U:H4'	2:2:541:G:H5''	1.97	0.47
2:2:1229:A:H2'	2:2:1230:C:H6	1.80	0.47
7:B:133:ARG:HA	7:B:167:ARG:HE	1.77	0.47
9:D:21:ARG:HH22	9:D:106:LYS:CD	2.27	0.47
11:F:83:PHE:CE2	11:F:138:LYS:HD3	2.49	0.47
14:I:133:ARG:NH1	14:I:133:ARG:O	2.44	0.47
19:N:106:ASP:C	19:N:106:ASP:OD1	2.58	0.47
27:V:35:GLU:C	27:V:93:ARG:HH12	2.22	0.47
37:f:16:ILE:CD1	37:f:25:VAL:HG22	2.44	0.47
45:n:10:GLY:HA2	45:n:81:HIS:ND1	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3:U:H2'	1:1:4:U:C6	2.50	0.47
1:1:78:U:P	30:Y:7:ARG:HH22	2.37	0.47
1:1:553:G:H2'	1:1:554:U:O4'	2.15	0.47
1:1:594:U:H2'	1:1:595:C:C6	2.50	0.47
1:1:684:G:N2	1:1:788:A:OP2	2.42	0.47
1:1:701:G:H5'	1:1:1632:A:H1'	1.96	0.47
1:1:807:U:C2	1:1:808:G:C8	3.03	0.47
1:1:1341:G:OP2	1:1:1394:U:O2'	2.27	0.47
1:1:1394:U:H4'	1:1:1603:A:H4'	1.97	0.47
1:1:1434:A:H2'	1:1:1435:G:H8	1.79	0.47
1:1:1537:G:C2	1:1:1538:G:C8	3.02	0.47
1:1:1716:U:OP2	1:1:1743:G:N1	2.32	0.47
1:1:1999:C:O2	1:1:2687:U:O2'	2.29	0.47
1:1:2280:G:N3	1:1:2388:A:H2	2.13	0.47
2:2:409:U:OP1	40:i:23:SER:OG	2.20	0.47
2:2:438:U:C4	2:2:494:G:C5	3.03	0.47
2:2:444:G:H2'	2:2:445:G:C8	2.48	0.47
2:2:1051:C:H2'	2:2:1052:U:C6	2.50	0.47
2:2:1130:A:C8	2:2:1146:A:C6	3.03	0.47
2:2:1168:U:O5'	2:2:1168:U:H6	1.98	0.47
3:4:64:G:C6	3:4:65:U:C4	3.02	0.47
6:A:223:ARG:HA	6:A:226:LYS:NZ	2.30	0.47
7:B:132:MET:HG3	7:B:188:CYS:O	2.14	0.47
12:G:7:ASP:O	12:G:9:VAL:HG13	2.15	0.47
12:G:72:ILE:HD11	12:G:108:VAL:HG13	1.97	0.47
14:I:101:SER:O	14:I:104:GLN:HG3	2.14	0.47
16:K:2:ILE:HG21	16:K:8:LEU:HD21	1.96	0.47
21:P:13:MET:HE2	21:P:13:MET:HB3	1.76	0.47
23:R:20:VAL:O	23:R:95:ASP:HA	2.14	0.47
28:W:53:CYS:SG	28:W:57:HIS:HA	2.55	0.47
36:e:9:GLY:O	36:e:13:ARG:HG3	2.14	0.47
39:h:151:VAL:O	39:h:167:TRP:HA	2.14	0.47
42:k:102:MET:SD	42:k:103:VAL:N	2.87	0.47
44:m:14:ILE:HD11	44:m:61:LEU:HD13	1.97	0.47
56:y:35:VAL:O	56:y:39:ILE:HG13	2.15	0.47
1:1:39:G:H2'	1:1:40:U:C6	2.50	0.47
1:1:493:G:H2'	1:1:494:G:O4'	2.14	0.47
1:1:580:U:H2'	1:1:581:C:C6	2.50	0.47
1:1:1064:C:OP1	14:I:87:SER:OG	2.31	0.47
1:1:1064:C:N4	1:1:1070:A:OP2	2.43	0.47
1:1:1549:A:H2'	1:1:1550:C:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2135:A:H4'	1:1:2160:C:O4'	2.15	0.47
1:1:2230:G:H2'	1:1:2231:U:C6	2.50	0.47
2:2:109:A:C6	2:2:327:A:C6	3.03	0.47
2:2:766:A:H2'	2:2:767:A:O4'	2.14	0.47
2:2:1229:A:H2'	2:2:1230:C:C6	2.50	0.47
10:E:135:GLN:HE21	10:E:141:ILE:HG21	1.80	0.47
18:M:28:PHE:HD2	18:M:64:TRP:CD1	2.33	0.47
20:O:49:VAL:HG21	20:O:82:ALA:HB2	1.96	0.47
31:Z:8:THR:HG22	31:Z:35:THR:OG1	2.14	0.47
49:r:79:ARG:HD2	55:x:65:GLU:OE2	2.15	0.47
50:s:42:TRP:O	50:s:46:LEU:HD23	2.15	0.47
1:1:5:A:H2'	1:1:6:A:H8	1.79	0.47
1:1:598:U:H2'	1:1:599:A:H8	1.80	0.47
1:1:868:U:C4	1:1:869:G:N7	2.83	0.47
1:1:1709:U:O2'	1:1:2859:G:H1'	2.15	0.47
1:1:2190:G:H2'	1:1:2191:A:C8	2.50	0.47
1:1:2515:C:H2'	1:1:2516:A:H8	1.79	0.47
1:1:2602:A:OP2	4:5:74:C:H4'	2.15	0.47
1:1:2602:A:H4'	1:1:2603:G:OP2	2.15	0.47
2:2:171:A:H2'	2:2:172:A:C8	2.50	0.47
2:2:521:G:N7	48:q:50:ARG:NH2	2.63	0.47
2:2:552:U:C2	2:2:553:A:C8	3.03	0.47
2:2:1095:U:H2'	2:2:1096:C:H6	1.79	0.47
4:5:42:G:C6	4:5:43:A:C5	3.03	0.47
7:B:2:ALA:N	7:B:199:GLU:OE2	2.48	0.47
11:F:152:ARG:HG3	11:F:152:ARG:NH2	2.30	0.47
16:K:77:ILE:HG12	21:P:72:ARG:HG3	1.97	0.47
22:Q:107:THR:O	22:Q:111:GLU:OE1	2.33	0.47
24:S:88:ARG:HD2	24:S:88:ARG:HA	1.79	0.47
26:U:74:ASN:ND2	26:U:99:ASN:HD21	2.13	0.47
38:g:20:THR:O	38:g:22:TYR:N	2.47	0.47
49:r:53:ILE:O	49:r:57:ARG:HG3	2.15	0.47
49:r:81:MET:HE3	49:r:92:ARG:HG2	1.96	0.47
49:r:88:GLY:O	49:r:92:ARG:HG3	2.15	0.47
55:x:13:LEU:CD2	55:x:17:LYS:HE3	2.42	0.47
1:1:35:G:H1'	1:1:454:A:C4	2.49	0.47
1:1:82:U:H2'	1:1:83:A:O4'	2.15	0.47
1:1:296:U:H2'	1:1:297:G:H8	1.80	0.47
1:1:1078:U:O2'	1:1:1088:A:OP1	2.32	0.47
1:1:1245:G:OP1	17:L:13:LYS:HE2	2.14	0.47
1:1:1494:A:H2'	1:1:1495:A:H8	1.75	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:110:C:H2'	2:2:111:G:O4'	2.15	0.47
2:2:224:U:H2'	2:2:225:C:C6	2.50	0.47
2:2:721:G:H4'	2:2:722:G:O4'	2.15	0.47
2:2:1305:G:N2	2:2:1331:G:H1'	2.30	0.47
6:A:148:ALA:HB2	6:A:164:ARG:HH12	1.79	0.47
7:B:36:LYS:HZ3	7:B:38:SER:HB2	1.79	0.47
14:I:45:THR:HA	14:I:48:ILE:HG12	1.96	0.47
43:l:139:GLU:HA	43:l:139:GLU:OE2	2.14	0.47
50:s:80:SER:O	50:s:84:VAL:HG23	2.15	0.47
1:1:303:G:H2'	1:1:304:U:C6	2.50	0.46
1:1:598:U:H2'	1:1:599:A:C8	2.49	0.46
1:1:1109:C:H2'	1:1:1110:G:O4'	2.15	0.46
1:1:1434:A:H2'	1:1:1435:G:C8	2.50	0.46
1:1:1486:U:H2'	1:1:1487:U:H6	1.79	0.46
1:1:2604:U:OP1	6:A:123:ASN:HB3	2.14	0.46
1:1:2683:C:H4'	8:C:13:ARG:HH12	1.78	0.46
2:2:218:U:H2'	2:2:219:U:C6	2.50	0.46
2:2:579:A:C6	2:2:763:G:C6	3.03	0.46
2:2:963:G:N2	46:o:57:VAL:HG11	2.30	0.46
2:2:1080:A:OP1	41:j:52:LYS:HD2	2.15	0.46
2:2:1216:A:H2'	2:2:1217:C:C6	2.50	0.46
2:2:1260:G:H4'	2:2:1283:U:O2'	2.15	0.46
3:4:117:G:OP1	20:O:56:LYS:NZ	2.40	0.46
9:D:21:ARG:NH2	9:D:106:LYS:HB2	2.30	0.46
9:D:83:VAL:HB	9:D:86:ALA:HB2	1.96	0.46
10:E:122:PHE:CD2	10:E:128:TYR:HD1	2.33	0.46
12:G:30:LEU:HB3	12:G:36:ALA:HB3	1.97	0.46
38:g:70:VAL:HG21	38:g:96:TRP:HZ3	1.79	0.46
39:h:111:LEU:HD11	39:h:146:ALA:HB2	1.97	0.46
50:s:20:TYR:CD1	50:s:51:LEU:HD22	2.50	0.46
1:1:355:U:H2'	1:1:356:G:C8	2.46	0.46
1:1:419:U:H2'	1:1:420:C:C6	2.51	0.46
1:1:1004:U:H1'	1:1:1010:A:H2'	1.98	0.46
1:1:1568:G:P	7:B:63:ARG:HH12	2.38	0.46
1:1:1612:C:O2'	35:d:5:PHE:O	2.30	0.46
1:1:1684:G:C6	1:1:1685:C:C4	3.03	0.46
1:1:1707:G:C8	1:1:1756:G:C5	3.03	0.46
1:1:2505:G:H2'	1:1:2576:G:H1	1.80	0.46
1:1:2567:G:H2'	1:1:2568:U:C6	2.50	0.46
2:2:31:G:C8	2:2:306:A:H1'	2.50	0.46
2:2:215:C:H2'	2:2:216:U:H6	1.78	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:399:G:H2'	2:2:400:C:C6	2.51	0.46
2:2:634:C:H2'	2:2:635:A:C8	2.50	0.46
2:2:1343:G:H2'	2:2:1344:C:H6	1.80	0.46
3:4:62:C:H2'	3:4:63:C:H6	1.80	0.46
8:C:148:GLN:HB2	8:C:152:PRO:HD2	1.98	0.46
9:D:67:ARG:HB3	9:D:67:ARG:HH11	1.81	0.46
9:D:149:ILE:HG22	9:D:192:ALA:HB1	1.97	0.46
11:F:56:ASP:N	11:F:56:ASP:OD1	2.48	0.46
16:K:2:ILE:CD1	16:K:82:ASN:HD22	2.29	0.46
16:K:92:GLU:OE2	16:K:111:LYS:NZ	2.49	0.46
22:Q:41:LYS:HD2	22:Q:45:TYR:CE1	2.51	0.46
28:W:51:VAL:C	28:W:62:LYS:HZ1	2.22	0.46
36:e:6:THR:HG22	36:e:63:PRO:HD2	1.95	0.46
37:f:1:MET:HE2	37:f:1:MET:HB2	1.81	0.46
42:k:21:MET:HA	42:k:24:ARG:NH1	2.30	0.46
44:m:49:PHE:HB2	44:m:59:LEU:HD11	1.97	0.46
46:o:59:LYS:HD2	46:o:62:ARG:HH21	1.80	0.46
51:t:33:THR:HG21	51:t:85:LEU:HD13	1.97	0.46
1:1:4:U:H2'	1:1:5:A:H8	1.79	0.46
1:1:822:G:H2'	1:1:823:C:C6	2.51	0.46
1:1:1292:G:H2'	1:1:1293:C:H6	1.80	0.46
1:1:1655:A:C2	1:1:2049:G:H4'	2.50	0.46
1:1:1814:G:OP2	1:1:1815:A:O2'	2.32	0.46
1:1:2030:6MZ:N3	1:1:2499:C:H5''	2.30	0.46
1:1:2092:U:OP2	12:G:27:ARG:NH2	2.40	0.46
1:1:2822:G:H2'	1:1:2823:A:H5''	1.97	0.46
2:2:410:G:N1	2:2:431:A:OP2	2.29	0.46
2:2:638:U:C4	2:2:639:G:N7	2.84	0.46
2:2:844:G:H3'	2:2:844:G:N3	2.31	0.46
2:2:976:G:OP2	2:2:1358:U:O2'	2.34	0.46
2:2:1145:A:HO2'	2:2:1146:A:P	2.39	0.46
2:2:1240:U:OP1	43:l:116:MET:HB2	2.15	0.46
2:2:1315:U:O2'	2:2:1360:A:N3	2.44	0.46
4:5:65:C:H2'	4:5:66:C:C6	2.50	0.46
6:A:109:SER:OG	6:A:110:GLU:N	2.48	0.46
9:D:109:LEU:HA	9:D:112:LEU:HD12	1.97	0.46
10:E:160:ALA:HB1	10:E:165:GLU:HB2	1.97	0.46
43:l:138:ARG:HD2	43:l:142:HIS:ND1	2.29	0.46
45:n:94:LEU:HB3	45:n:98:LEU:HD13	1.97	0.46
46:o:47:GLU:OE1	50:s:76:LYS:HE2	2.16	0.46
53:v:9:GLN:HE21	53:v:79:VAL:HG21	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:911:A:H2	1:1:2277:G:N3	2.13	0.46
1:1:966:G:O4'	1:1:2267:A:N6	2.49	0.46
1:1:2047:C:H2'	1:1:2048:G:H8	1.79	0.46
1:1:2278:A:OP1	18:M:10:ARG:NH1	2.49	0.46
1:1:2292:U:H2'	1:1:2293:G:C8	2.50	0.46
1:1:2295:C:OP2	20:O:10:ARG:HD3	2.15	0.46
1:1:2686:G:H2'	1:1:2687:U:C6	2.50	0.46
2:2:17:U:H2'	2:2:18:C:H6	1.79	0.46
2:2:189:A:H8	2:2:189:A:OP2	1.99	0.46
2:2:522:C:H41	48:q:50:ARG:NH1	2.14	0.46
3:4:106:G:H2'	3:4:107:G:O4'	2.15	0.46
6:A:153:SER:OG	6:A:156:ASP:HB2	2.15	0.46
13:H:116:GLU:HG2	13:H:118:ILE:HG12	1.97	0.46
14:I:89:SER:HB2	14:I:97:VAL:HG21	1.97	0.46
21:P:2:SER:O	21:P:6:LYS:HG3	2.15	0.46
28:W:51:VAL:C	28:W:62:LYS:NZ	2.73	0.46
39:h:22:TRP:HB3	39:h:59:ARG:H	1.79	0.46
41:j:82:GLN:HG3	41:j:149:SER:HA	1.97	0.46
51:t:73:LYS:HD2	51:t:73:LYS:HA	1.72	0.46
1:1:78:U:H5'	30:Y:7:ARG:HH22	1.81	0.46
1:1:167:A:H2'	1:1:168:G:O4'	2.15	0.46
1:1:191:A:H2'	1:1:192:C:C6	2.50	0.46
1:1:250:G:H2'	1:1:251:A:C8	2.51	0.46
1:1:659:G:O2'	9:D:95:LYS:O	2.31	0.46
1:1:1174:U:H4'	1:1:1177:G:N2	2.30	0.46
1:1:1209:U:H2'	1:1:1210:G:H21	1.81	0.46
1:1:1511:G:H2'	1:1:1512:C:C6	2.50	0.46
1:1:1838:C:N4	1:1:1898:U:H2'	2.30	0.46
1:1:1987:A:H2'	1:1:1988:G:H8	1.80	0.46
1:1:2641:G:H5''	15:J:78:THR:HB	1.97	0.46
2:2:643:C:H4'	44:m:32:LEU:HD22	1.97	0.46
2:2:672:U:H2'	2:2:673:A:C8	2.51	0.46
2:2:1271:A:H2'	2:2:1272:G:C8	2.50	0.46
2:2:1454:G:H2'	2:2:1455:G:H8	1.80	0.46
6:A:213:SER:C	6:A:215:LYS:H	2.22	0.46
15:J:99:ARG:HD2	15:J:99:ARG:HA	1.67	0.46
19:N:79:LEU:HD23	19:N:83:LEU:HD12	1.98	0.46
24:S:33:LEU:HD23	24:S:51:LEU:HD23	1.98	0.46
40:i:60:LYS:O	40:i:64:ILE:HG13	2.15	0.46
43:l:91:VAL:HG21	43:l:95:ARG:HG2	1.96	0.46
46:o:10:LEU:HB2	46:o:72:ARG:HB2	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:128:C:H2'	1:1:129:C:C6	2.51	0.46
1:1:184:C:O2'	1:1:217:A:N3	2.47	0.46
1:1:1042:G:O2'	1:1:1043:C:H6	1.99	0.46
1:1:1080:A:H2'	1:1:1081:U:C6	2.49	0.46
1:1:1108:U:H2'	1:1:1109:C:C6	2.51	0.46
1:1:1322:A:N1	1:1:1333:G:O2'	2.36	0.46
1:1:1399:C:H2'	1:1:1400:U:C6	2.51	0.46
1:1:1696:G:OP2	1:1:1696:G:H8	1.99	0.46
1:1:1734:G:H2'	1:1:1735:A:C8	2.50	0.46
1:1:2150:C:H2'	1:1:2151:U:C6	2.51	0.46
1:1:2615:U:C2	33:b:4:GLN:HA	2.51	0.46
2:2:578:C:O2	2:2:728:A:H2	1.99	0.46
2:2:591:U:P	44:m:31:LYS:HZ1	2.38	0.46
2:2:1130:A:C8	2:2:1146:A:N1	2.84	0.46
7:B:210:ALA:HA	7:B:213:TRP:CE3	2.51	0.46
8:C:19:GLY:HA2	21:P:79:PRO:HG2	1.97	0.46
10:E:30:ARG:NH1	10:E:159:THR:HG21	2.31	0.46
11:F:43:VAL:HG22	11:F:52:PHE:CD1	2.51	0.46
12:G:99:ILE:HD12	12:G:144:VAL:HG21	1.97	0.46
22:Q:61:TRP:CZ3	22:Q:93:LYS:HB2	2.51	0.46
33:b:32:LYS:HG3	33:b:33:THR:HG23	1.97	0.46
41:j:115:LEU:HD22	41:j:120:VAL:HG21	1.97	0.46
50:s:27:LEU:O	50:s:31:ILE:HG12	2.16	0.46
1:1:956:G:O6	18:M:14:LYS:NZ	2.29	0.46
1:1:980:A:N7	1:1:1136:G:H5'	2.30	0.46
1:1:2114:A:H61	1:1:2119:A:N6	2.13	0.46
1:1:2813:A:C4	1:1:2814:A:C8	3.04	0.46
2:2:264:C:H2'	2:2:265:G:O4'	2.16	0.46
2:2:371:A:H2'	2:2:372:C:O4'	2.15	0.46
2:2:552:U:N3	2:2:553:A:N7	2.64	0.46
2:2:1308:U:H2'	2:2:1309:G:C8	2.50	0.46
2:2:1524:C:H2'	2:2:1525:G:H8	1.79	0.46
4:6:4:G:H2'	4:6:5:G:C8	2.50	0.46
23:R:44:GLY:O	23:R:45:GLU:HB2	2.15	0.46
28:W:51:VAL:HG22	28:W:82:ILE:HD12	1.97	0.46
30:Y:49:ASP:OD1	30:Y:52:ARG:NH2	2.49	0.46
39:h:79:LYS:O	39:h:82:GLU:HG2	2.15	0.46
47:p:56:ARG:O	47:p:59:THR:OG1	2.17	0.46
51:t:14:GLU:HG2	51:t:84:ARG:HH21	1.81	0.46
1:1:388:G:N7	1:1:390:U:H2'	2.31	0.46
1:1:579:G:O2'	1:1:2019:A:OP1	2.34	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:595:C:H2'	1:1:596:U:C6	2.51	0.46
1:1:714:U:H1'	1:1:717:C:H5	1.81	0.46
1:1:807:U:OP1	17:L:36:LYS:NZ	2.41	0.46
1:1:812:C:H5''	1:1:1250:G:O2'	2.16	0.46
1:1:1263:U:H2'	1:1:1264:A:C8	2.51	0.46
1:1:2226:C:C2	1:1:2227:A:C8	3.04	0.46
1:1:2745:C:O2	11:F:139:GLN:NE2	2.49	0.46
1:1:2869:G:H2'	1:1:2870:C:O4'	2.16	0.46
2:2:8:A:N7	40:i:206:LYS:HA	2.30	0.46
2:2:253:A:H2'	2:2:254:G:C8	2.50	0.46
2:2:455:G:C2	2:2:478:A:C2	3.03	0.46
2:2:971:G:H4'	2:2:972:C:H5''	1.98	0.46
2:2:1072:G:H2'	2:2:1073:U:H6	1.79	0.46
6:A:159:LYS:HG3	6:A:160:LEU:N	2.31	0.46
12:G:117:LEU:HD23	12:G:122:LEU:HG	1.96	0.46
14:I:107:GLU:OE1	14:I:110:GLN:NE2	2.49	0.46
20:O:35:ILE:HG23	20:O:74:VAL:HG21	1.98	0.46
48:q:5:ASN:HD21	53:v:36:LYS:HZ3	1.64	0.46
1:1:2:G:H2'	1:1:3:U:H6	1.79	0.46
1:1:84:A:OP1	26:U:6:ARG:NH1	2.49	0.46
1:1:358:U:H2'	1:1:359:G:C8	2.51	0.46
1:1:501:A:H8	1:1:501:A:O5'	1.98	0.46
1:1:781:A:C8	7:B:218:PRO:HG3	2.51	0.46
1:1:981:A:N1	1:1:2027:G:O2'	2.47	0.46
1:1:1720:U:H2'	1:1:1721:G:O4'	2.16	0.46
1:1:2086:U:H2'	1:1:2087:G:C8	2.51	0.46
1:1:2493:U:C4	1:1:2494:G:C8	3.03	0.46
2:2:266:G:H1'	2:2:268:U:OP2	2.15	0.46
2:2:322:C:O2'	56:y:18:ARG:HB2	2.15	0.46
2:2:745:G:OP1	2:2:851:G:O2'	2.32	0.46
2:2:1326:U:H2'	2:2:1327:C:H6	1.80	0.46
2:2:1397:C:C4	6:A:212:LYS:HB3	2.51	0.46
3:4:3:C:H2'	3:4:4:C:H6	1.80	0.46
10:E:33:LYS:HD2	10:E:90:THR:HG23	1.98	0.46
11:F:149:ARG:NH1	11:F:153:ARG:HG3	2.30	0.46
15:J:110:PRO:HD2	15:J:118:MET:HE1	1.98	0.46
23:R:76:LYS:O	23:R:84:ARG:HA	2.15	0.46
42:k:29:ILE:HD11	42:k:66:ALA:HB2	1.97	0.46
42:k:69:GLU:O	42:k:73:GLU:HG2	2.16	0.46
46:o:15:HIS:HA	46:o:18:ILE:HG22	1.96	0.46
46:o:50:THR:HG22	46:o:62:ARG:HH11	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:p:18:ASP:HA	47:p:81:ASN:O	2.16	0.46
1:1:5:A:H2'	1:1:6:A:C8	2.50	0.46
1:1:138:U:H4'	25:T:1:MET:SD	2.56	0.46
1:1:362:A:C4	1:1:363:G:C8	3.04	0.46
1:1:671:C:H2'	1:1:672:C:H6	1.80	0.46
1:1:1107:G:C6	1:1:1108:U:C4	3.04	0.46
1:1:1432:G:H2'	1:1:1433:A:H8	1.77	0.46
1:1:1509:A:O2'	1:1:1510:G:OP2	2.29	0.46
1:1:1530:G:C6	1:1:1531:C:C4	3.04	0.46
1:1:2094:A:H5'	12:G:25:TYR:CD1	2.51	0.46
1:1:2133:G:C2	1:1:2158:A:C6	2.94	0.46
1:1:2303:G:H2'	1:1:2304:G:H8	1.81	0.46
1:1:2663:G:H2'	1:1:2664:G:O4'	2.15	0.46
2:2:42:G:O2'	2:2:622:A:N1	2.42	0.46
2:2:280:C:O2	53:v:40:ARG:NH2	2.49	0.46
2:2:542:G:H5'	40:i:39:GLY:HA3	1.98	0.46
2:2:553:A:H2'	2:2:554:A:C8	2.50	0.46
2:2:683:G:H21	47:p:40:ASN:HA	1.81	0.46
2:2:725:G:H2'	2:2:726:C:C6	2.51	0.46
2:2:1141:C:O2'	2:2:1142:G:H8	1.98	0.46
3:4:76:G:H5''	27:V:17:SER:OG	2.16	0.46
4:6:51:U:H3	4:6:65:G:H1	1.62	0.46
12:G:5:LEU:HD22	12:G:9:VAL:HG21	1.98	0.46
22:Q:62:ILE:HG23	22:Q:76:TYR:CZ	2.51	0.46
38:g:83:ALA:HB2	38:g:214:LEU:HB2	1.98	0.46
38:g:211:THR:HA	38:g:214:LEU:HG	1.98	0.46
39:h:157:LEU:HA	39:h:157:LEU:HD23	1.73	0.46
55:x:15:LEU:O	55:x:19:VAL:HG23	2.17	0.46
56:y:78:ASN:O	56:y:82:GLN:HG2	2.16	0.46
1:1:519:U:C2	1:1:520:G:C8	3.04	0.45
1:1:715:A:H62	51:t:57:LEU:HD21	1.80	0.45
1:1:794:A:H2'	1:1:795:C:H6	1.81	0.45
1:1:998:C:H2'	1:1:999:U:O4'	2.16	0.45
1:1:1024:G:O2'	1:1:1144:A:O2'	2.33	0.45
1:1:1050:A:C6	1:1:1051:G:N1	2.83	0.45
1:1:2070:A:H2'	1:1:2071:A:O4'	2.16	0.45
1:1:2131:U:H5'	1:1:2132:U:OP1	2.16	0.45
2:2:338:A:H2'	2:2:339:C:H6	1.80	0.45
2:2:579:A:H2'	2:2:580:C:H6	1.80	0.45
2:2:933:G:OP2	43:l:3:ARG:HB2	2.16	0.45
2:2:1328:C:H2'	2:2:1329:A:O4'	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:40:U:H2'	32:a:2:LYS:HZ1	1.79	0.45
9:D:147:LEU:HD11	9:D:170:ARG:HD2	1.99	0.45
53:v:17:MET:HE3	53:v:20:SER:HB3	1.98	0.45
1:1:58:G:H2'	1:1:59:U:C6	2.50	0.45
1:1:134:G:H2'	1:1:135:U:C6	2.52	0.45
1:1:613:A:H4'	1:1:614:A:OP1	2.17	0.45
1:1:1505:A:H2'	1:1:1506:U:O4'	2.16	0.45
1:1:2350:C:P	36:e:45:ARG:HH21	2.39	0.45
1:1:2533:U:H2'	1:1:2534:A:O4'	2.15	0.45
1:1:2902:C:N4	1:1:2903:U:O4	2.49	0.45
2:2:35:G:H2'	2:2:36:C:H6	1.81	0.45
2:2:177:G:C5	2:2:178:C:C5	3.05	0.45
2:2:352:C:O2'	2:2:354:G:OP1	2.24	0.45
2:2:426:U:H2'	2:2:427:U:C6	2.51	0.45
2:2:439:U:H4'	40:i:121:LYS:HG3	1.97	0.45
2:2:481:G:O2'	2:2:483:C:N4	2.48	0.45
2:2:978:A:O2'	2:2:1322:C:H5	1.99	0.45
2:2:1006:G:H2'	2:2:1007:U:C6	2.51	0.45
2:2:1399:C:O2	2:2:1502:A:N6	2.48	0.45
2:2:1497:G:H21	2:2:1519:MA6:C2	2.28	0.45
3:4:18:G:N1	3:4:65:U:N3	2.55	0.45
8:C:180:VAL:HG22	8:C:187:LEU:HD12	1.98	0.45
10:E:43:ALA:HB2	10:E:50:LEU:HB2	1.98	0.45
14:I:107:GLU:O	14:I:110:GLN:HG2	2.17	0.45
18:M:12:MET:HE2	18:M:12:MET:HB3	1.81	0.45
18:M:33:LEU:HD23	18:M:103:TYR:HD1	1.80	0.45
21:P:27:GLU:OE1	21:P:87:LYS:HE2	2.16	0.45
23:R:42:ALA:HA	23:R:47:VAL:HA	1.98	0.45
30:Y:39:GLN:OE1	30:Y:41:HIS:CE1	2.69	0.45
31:Z:5:ILE:HG13	31:Z:7:ILE:HD11	1.99	0.45
38:g:220:THR:O	38:g:223:GLU:HB2	2.16	0.45
40:i:85:ASN:HB3	40:i:88:GLU:HB2	1.97	0.45
46:o:40:ILE:N	46:o:73:LEU:O	2.47	0.45
50:s:23:LYS:HD3	50:s:51:LEU:HD21	1.98	0.45
1:1:271:G:HO2'	1:1:272:A:H8	1.64	0.45
1:1:287:G:H2'	1:1:288:U:H6	1.82	0.45
1:1:367:G:H3'	1:1:368:A:H8	1.80	0.45
1:1:607:U:N3	1:1:608:A:N7	2.64	0.45
1:1:776:G:N2	1:1:2241:A:OP1	2.45	0.45
1:1:782:A:C8	7:B:220:VAL:HG21	2.51	0.45
1:1:1096:A:H2'	1:1:1097:U:O4'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1444:G:C6	1:1:1548:A:C6	3.05	0.45
1:1:1490:A:H2'	7:B:98:ASP:HB3	1.98	0.45
1:1:1710:G:H4'	1:1:2858:C:O2	2.16	0.45
1:1:2469:A:C6	1:1:2482:A:C8	3.04	0.45
2:2:599:C:H2'	2:2:600:A:C8	2.52	0.45
2:2:1519:MA6:H93	2:2:1520:C:O2'	2.15	0.45
3:4:3:C:H2'	3:4:4:C:C6	2.51	0.45
7:B:88:SER:HB2	7:B:158:ALA:HB2	1.98	0.45
7:B:161:TYR:CD1	7:B:194:GLU:HG2	2.52	0.45
10:E:54:ALA:HB1	10:E:65:PRO:HG2	1.99	0.45
11:F:73:ASN:O	11:F:77:ILE:HG13	2.17	0.45
11:F:163:ARG:HH11	11:F:169:VAL:HG11	1.80	0.45
17:L:59:ARG:HG2	17:L:59:ARG:NH1	2.30	0.45
18:M:53:MET:HE1	18:M:117:PHE:HE1	1.82	0.45
33:b:38:HIS:CD2	33:b:44:THR:HG22	2.51	0.45
38:g:73:LYS:C	38:g:75:ALA:H	2.24	0.45
45:n:12:ARG:HG3	45:n:13:LYS:N	2.27	0.45
46:o:22:THR:O	46:o:25:ILE:HG22	2.17	0.45
49:r:25:VAL:HG13	49:r:29:ARG:HG2	1.98	0.45
52:u:8:ARG:CZ	52:u:15:PRO:HB3	2.46	0.45
1:1:373:U:H4'	1:1:423:A:O2'	2.16	0.45
1:1:764:A:O4'	7:B:212:ARG:HG3	2.17	0.45
1:1:966:G:C5	1:1:967:U:C4	3.05	0.45
1:1:1278:C:H2'	1:1:1279:G:C8	2.51	0.45
1:1:1482:G:N3	1:1:1483:G:C8	2.84	0.45
1:1:1710:G:H2'	1:1:1711:A:C8	2.52	0.45
1:1:1725:U:H2'	1:1:1726:C:C6	2.51	0.45
1:1:2554:U:C2	1:1:2555:U:C5	3.04	0.45
2:2:1412:C:H2'	2:2:1413:A:C8	2.52	0.45
10:E:8:TYR:O	10:E:13:VAL:HG23	2.16	0.45
12:G:40:THR:OG1	12:G:43:ASN:HB2	2.16	0.45
18:M:61:GLY:HA3	18:M:106:ASP:O	2.16	0.45
23:R:58:VAL:HG12	23:R:102:SER:HB3	1.99	0.45
33:b:38:HIS:CG	33:b:44:THR:HG22	2.51	0.45
38:g:219:ALA:HA	38:g:222:ARG:NH1	2.31	0.45
40:i:19:LEU:HD13	40:i:63:ARG:HB3	1.99	0.45
46:o:53:ILE:HD11	46:o:61:ALA:HB1	1.97	0.45
1:1:1007:C:H5''	15:J:37:ARG:HH22	1.82	0.45
1:1:1102:C:C2	1:1:1103:A:C8	3.05	0.45
1:1:1104:C:H2'	1:1:1105:U:C6	2.50	0.45
1:1:1930:G:H22	1:1:1969:A:P	2.39	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2250:G:O2'	1:1:2496:C:OP1	2.24	0.45
1:1:2262:U:H2'	1:1:2263:C:H6	1.80	0.45
2:2:946:A:C2	2:2:947:G:C5	3.05	0.45
2:2:995:C:H2'	2:2:996:A:H5''	1.97	0.45
14:I:41:PHE:HE1	14:I:54:ILE:HB	1.82	0.45
23:R:14:VAL:HB	23:R:98:ILE:HG13	1.98	0.45
24:S:109:ASP:OD1	24:S:110:ARG:HD3	2.16	0.45
40:i:15:GLU:OE2	40:i:15:GLU:HA	2.16	0.45
45:n:20:PHE:O	45:n:63:LEU:HB2	2.16	0.45
1:1:392:U:H2'	1:1:393:C:C6	2.52	0.45
1:1:633:A:H1'	1:1:2403:C:O3'	2.17	0.45
1:1:812:C:H1'	1:1:1250:G:C2	2.51	0.45
1:1:1359:A:OP2	1:1:1371:G:N2	2.39	0.45
1:1:1361:G:H2'	1:1:1362:C:C6	2.52	0.45
1:1:1486:U:H2'	1:1:1487:U:C6	2.51	0.45
1:1:1501:G:H4'	7:B:95:LEU:HD11	1.99	0.45
1:1:1799:G:N1	1:1:1819:A:OP2	2.36	0.45
1:1:2287:A:N7	1:1:2289:G:C8	2.84	0.45
1:1:2313:C:H2'	1:1:2314:A:C8	2.48	0.45
1:1:2497:A:N3	1:1:2498:OMC:N4	2.64	0.45
1:1:2751:G:C2	11:F:3:ARG:NH2	2.85	0.45
2:2:50:A:O2'	2:2:360:G:N2	2.49	0.45
2:2:505:G:H2'	2:2:506:G:H8	1.82	0.45
2:2:527:G7M:P	6:A:216:LYS:NZ	2.89	0.45
2:2:792:A:O2'	2:2:794:A:N7	2.31	0.45
2:2:949:A:C6	2:2:1233:G:N1	2.85	0.45
2:2:1005:A:C8	2:2:1006:G:C8	3.05	0.45
2:2:1163:A:H2'	2:2:1164:G:H8	1.82	0.45
2:2:1319:A:C8	2:2:1323:G:C6	3.05	0.45
4:5:51:C:H2'	4:5:52:G:O4'	2.17	0.45
6:A:79:VAL:HA	6:A:91:SER:O	2.16	0.45
6:A:80:GLY:O	6:A:203:THR:HA	2.16	0.45
16:K:98:ARG:HH21	16:K:100:PHE:HE1	1.65	0.45
30:Y:12:GLU:O	30:Y:16:THR:HG23	2.17	0.45
30:Y:60:LYS:HE3	30:Y:60:LYS:HB2	1.75	0.45
39:h:42:TYR:CZ	39:h:90:VAL:HG11	2.51	0.45
43:l:26:PHE:HE2	43:l:120:LEU:HD21	1.81	0.45
45:n:19:VAL:HG22	45:n:65:ILE:CD1	2.46	0.45
45:n:115:LYS:HD2	45:n:121:ALA:O	2.17	0.45
1:1:83:A:N6	1:1:101:A:C4	2.84	0.45
1:1:595:C:H2'	1:1:596:U:H6	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:710:U:N3	1:1:711:G:N7	2.64	0.45
1:1:1019:U:OP1	1:1:1035:U:O2'	2.23	0.45
1:1:1120:G:C6	1:1:1121:C:C4	3.04	0.45
1:1:2386:A:H4'	28:W:56:ASP:HA	1.98	0.45
1:1:2563:U:N3	1:1:2566:A:OP2	2.43	0.45
1:1:2733:A:C6	8:C:208:LYS:HG2	2.52	0.45
2:2:309:A:H2'	2:2:310:G:C8	2.48	0.45
2:2:580:C:H2'	2:2:581:G:O4'	2.16	0.45
2:2:672:U:H2'	2:2:673:A:H8	1.81	0.45
2:2:935:A:H2'	2:2:936:C:C6	2.51	0.45
2:2:1065:U:H5	2:2:1190:G:C8	2.34	0.45
2:2:1163:A:C6	2:2:1174:G:C6	3.05	0.45
2:2:1293:C:H2'	2:2:1294:G:C8	2.52	0.45
2:2:1440:U:O2'	2:2:1441:A:H5''	2.17	0.45
3:4:82:U:H5''	31:Z:17:LEU:HD11	1.98	0.45
4:5:58:A:H4'	4:5:59:A:OP1	2.16	0.45
4:5:61:C:H2'	4:5:62:C:H6	1.82	0.45
7:B:66:ASP:OD2	7:B:69:ARG:N	2.35	0.45
28:W:15:ASP:OD1	28:W:16:SER:N	2.43	0.45
31:Z:41:THR:HG22	31:Z:44:ILE:HG12	1.99	0.45
38:g:35:ARG:O	38:g:38:VAL:HG12	2.16	0.45
41:j:86:LYS:HA	41:j:94:VAL:O	2.16	0.45
1:1:1042:G:O2'	1:1:1043:C:O5'	2.35	0.45
1:1:2311:A:C2	10:E:85:ILE:HD11	2.52	0.45
2:2:636:U:H2'	2:2:637:C:C6	2.52	0.45
2:2:838:G:C4	2:2:849:G:C2	3.05	0.45
3:4:35:C:H2'	3:4:36:C:O4'	2.16	0.45
3:4:62:C:H2'	3:4:63:C:C6	2.51	0.45
3:4:112:G:N2	20:O:45:SER:O	2.30	0.45
9:D:143:LEU:HD11	9:D:187:VAL:HG21	1.98	0.45
19:N:72:ASP:OD2	19:N:74:GLU:HG3	2.17	0.45
26:U:66:GLN:HB2	26:U:69:ASN:OD1	2.17	0.45
27:V:86:LEU:HD13	27:V:89:ILE:HD11	1.98	0.45
39:h:174:PRO:HB2	39:h:177:THR:HG23	1.98	0.45
45:n:15:SER:OG	45:n:70:GLY:HA3	2.17	0.45
1:1:289:G:H2'	1:1:290:U:O4'	2.17	0.45
1:1:587:C:H3'	1:1:588:U:H5'	1.99	0.45
1:1:865:C:N3	1:1:908:C:N4	2.64	0.45
1:1:1802:A:H2'	1:1:1803:A:C8	2.52	0.45
1:1:2135:A:C2	1:1:2136:G:H1'	2.52	0.45
1:1:2250:G:OP1	18:M:84:LYS:HE3	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:201:G:H1	2:2:216:U:H3	1.64	0.45
2:2:482:A:H2'	2:2:483:C:O4'	2.17	0.45
2:2:748:G:O6	2:2:749:A:N6	2.49	0.45
4:6:11:A:H2'	4:6:12:G:C8	2.52	0.45
6:A:6:ILE:HD11	6:A:28:PHE:CZ	2.52	0.45
10:E:122:PHE:CE2	10:E:128:TYR:HD1	2.34	0.45
16:K:5:GLN:HA	16:K:20:MET:HE3	1.99	0.45
18:M:35:ALA:O	18:M:99:GLY:N	2.42	0.45
18:M:50:ARG:O	18:M:54:THR:HG23	2.17	0.45
26:U:33:LYS:HE2	26:U:66:GLN:HE21	1.82	0.45
27:V:30:ILE:HG13	27:V:91:PHE:HB2	1.99	0.45
28:W:38:VAL:HG12	28:W:59:LEU:HB2	1.97	0.45
42:k:38:ARG:HG2	42:k:63:ASN:HB3	1.99	0.45
45:n:20:PHE:HB2	45:n:64:TYR:HB3	1.99	0.45
1:1:95:A:H2'	1:1:96:C:O4'	2.16	0.45
1:1:216:A:C8	1:1:432:A:C6	3.05	0.45
1:1:311:A:H5'	1:1:332:A:C2	2.52	0.45
1:1:929:U:H4'	31:Z:38:ARG:NH2	2.32	0.45
1:1:1746:A:H2'	1:1:1747:U:H6	1.83	0.45
1:1:1747:U:H2'	1:1:1748:C:C6	2.52	0.45
1:1:1846:G:O2'	1:1:1847:A:H5'	2.16	0.45
1:1:2625:G:H2'	1:1:2626:C:O4'	2.17	0.45
1:1:2650:U:H2'	1:1:2651:C:C6	2.51	0.45
1:1:2692:G:H1'	1:1:2847:U:H1'	1.99	0.45
2:2:212:G:C4	2:2:213:G:C8	3.05	0.45
2:2:745:G:C6	2:2:746:A:N6	2.85	0.45
2:2:1419:G:C6	2:2:1482:G:C2	3.05	0.45
4:5:50:U:H2'	4:5:51:C:C6	2.52	0.45
7:B:175:ARG:HB2	7:B:181:MET:HE1	1.98	0.45
9:D:18:THR:HG22	9:D:106:LYS:NZ	2.32	0.45
10:E:17:MET:SD	10:E:22:TYR:HB2	2.57	0.45
10:E:148:ARG:HE	10:E:148:ARG:HB3	1.57	0.45
11:F:115:HIS:CE1	11:F:144:VAL:HG13	2.52	0.45
15:J:32:LEU:HD22	15:J:54:ILE:HG21	1.99	0.45
15:J:36:LEU:HD11	15:J:122:LEU:HB2	1.98	0.45
21:P:93:ARG:HG2	21:P:93:ARG:NH1	2.32	0.45
24:S:98:LYS:HB3	24:S:98:LYS:HE2	1.69	0.45
26:U:13:VAL:HG21	26:U:39:ILE:HG21	1.99	0.45
40:i:15:GLU:HB3	40:i:60:LYS:HG3	1.98	0.45
40:i:28:ILE:HD13	40:i:34:ILE:HD12	1.99	0.45
49:r:69:LEU:O	49:r:73:ILE:HG12	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:64:A:H2'	1:1:65:U:H6	1.81	0.44
1:1:65:U:H2'	1:1:66:C:H6	1.82	0.44
1:1:197:A:H2	1:1:2434:A:N6	2.14	0.44
1:1:366:C:H2'	1:1:367:G:O4'	2.17	0.44
1:1:367:G:C4	1:1:368:A:C8	3.05	0.44
1:1:608:A:H2'	1:1:609:A:H8	1.81	0.44
1:1:857:G:H2'	1:1:858:G:O4'	2.17	0.44
1:1:883:G:O2'	1:1:884:U:H5'	2.17	0.44
1:1:1198:U:H2'	1:1:1199:U:C6	2.52	0.44
1:1:1725:U:H2'	1:1:1726:C:H6	1.83	0.44
1:1:2025:C:H2'	1:1:2026:U:C6	2.52	0.44
1:1:2134:A:H4'	1:1:2159:G:N2	2.31	0.44
1:1:2864:G:C5	1:1:2865:U:C4	3.05	0.44
2:2:180:U:C2'	2:2:181:A:H5'	2.47	0.44
2:2:1158:C:C4	2:2:1160:G:C8	3.05	0.44
4:5:66:C:H2'	4:5:67:C:H6	1.81	0.44
6:A:85:ARG:HB3	6:A:89:GLN:HG3	1.98	0.44
6:A:120:SER:HB2	6:A:128:VAL:O	2.16	0.44
22:Q:58:ARG:O	22:Q:62:ILE:HG13	2.16	0.44
28:W:22:GLY:N	28:W:39:ARG:O	2.43	0.44
40:i:107:PHE:CD1	40:i:159:LEU:HD21	2.52	0.44
44:m:38:ASN:O	44:m:42:GLU:HG2	2.17	0.44
44:m:64:LYS:O	44:m:71:VAL:HG12	2.16	0.44
1:1:631:A:N3	1:1:2415:G:O2'	2.38	0.44
1:1:686:U:H2'	1:1:788:A:N1	2.32	0.44
1:1:705:A:C2	1:1:727:A:H1'	2.52	0.44
1:1:1028:A:N3	1:1:2486:C:O2'	2.38	0.44
1:1:1316:U:H2'	1:1:1317:G:H8	1.82	0.44
1:1:1318:U:H2'	1:1:1319:C:C6	2.52	0.44
1:1:1348:C:H2'	1:1:1349:C:H5'	2.00	0.44
1:1:1638:C:O3'	1:1:2709:G:N2	2.49	0.44
1:1:1812:U:H2'	1:1:1813:G:H8	1.83	0.44
1:1:2854:G:C6	1:1:2864:G:C6	3.05	0.44
2:2:471:U:H2'	2:2:472:U:C6	2.53	0.44
2:2:538:G:H2'	2:2:539:A:H8	1.83	0.44
2:2:942:G:C2	2:2:943:U:C6	3.05	0.44
4:6:63:C:H2'	4:6:64:G:C8	2.52	0.44
4:6:68:C:C2	4:6:69:C:C5	3.04	0.44
8:C:71:ALA:HB3	8:C:73:VAL:HG12	1.99	0.44
14:I:36:GLU:HA	14:I:39:LYS:HD3	1.99	0.44
18:M:74:THR:HA	18:M:88:ASN:O	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:g:16:PHE:HB2	38:g:203:ASN:HD22	1.83	0.44
38:g:115:LYS:NZ	38:g:152:LYS:O	2.35	0.44
38:g:219:ALA:O	38:g:223:GLU:HG2	2.17	0.44
51:t:88:ARG:NH1	51:t:88:ARG:HB2	2.32	0.44
52:u:40:ASN:OD1	52:u:43:ALA:N	2.50	0.44
54:w:23:TYR:HA	54:w:29:LEU:HD11	1.99	0.44
54:w:26:ILE:HD11	54:w:67:LEU:HB3	1.99	0.44
1:1:4:U:H2'	1:1:5:A:C8	2.51	0.44
1:1:182:A:H2'	1:1:183:C:C6	2.51	0.44
1:1:298:G:H1'	1:1:340:A:H61	1.82	0.44
1:1:1049:C:C2	1:1:1050:A:N7	2.86	0.44
1:1:1288:G:OP1	1:1:1289:C:N4	2.42	0.44
1:1:1364:G:OP2	29:X:50:ARG:NH2	2.48	0.44
1:1:1613:G:O2'	35:d:3:ARG:NE	2.40	0.44
1:1:1649:G:O2'	19:N:106:ASP:OD2	2.21	0.44
1:1:1821:A:H2'	1:1:1822:C:C6	2.52	0.44
1:1:1858:A:H2'	1:1:1859:U:O4'	2.16	0.44
1:1:2070:A:H2'	1:1:2071:A:C8	2.52	0.44
1:1:2591:C:N4	1:1:2592:G:O6	2.50	0.44
2:2:73:C:C2'	2:2:74:A:H5'	2.48	0.44
2:2:321:A:H2'	2:2:322:C:C6	2.53	0.44
2:2:579:A:N1	2:2:763:G:C6	2.85	0.44
2:2:1180:A:P	45:n:99:ARG:HH12	2.40	0.44
2:2:1262:C:N4	2:2:1273:C:H42	2.15	0.44
2:2:1390:U:H2'	2:2:1391:U:C6	2.52	0.44
4:6:65:G:H2'	4:6:66:C:C6	2.52	0.44
6:A:166:LYS:HA	6:A:169:LEU:HG	2.00	0.44
12:G:25:TYR:CZ	12:G:30:LEU:HD21	2.53	0.44
22:Q:28:ARG:HA	22:Q:34:VAL:HG12	1.98	0.44
38:g:57:LEU:HD13	38:g:217:VAL:HG13	1.99	0.44
38:g:96:TRP:NE1	38:g:175:GLU:OE2	2.50	0.44
38:g:133:GLU:HA	38:g:136:MET:HB2	2.00	0.44
40:i:34:ILE:HG23	40:i:35:GLU:HG2	1.99	0.44
40:i:172:GLU:OE1	40:i:183:LYS:HD3	2.18	0.44
41:j:115:LEU:HD13	41:j:123:VAL:HG11	1.99	0.44
41:j:157:ARG:HH11	44:m:43:GLU:HB3	1.81	0.44
45:n:84:THR:O	45:n:88:MET:HG3	2.17	0.44
47:p:18:ASP:OD1	47:p:18:ASP:N	2.51	0.44
1:1:429:A:H8	1:1:429:A:O5'	2.01	0.44
1:1:995:C:OP2	22:Q:53:ARG:NH1	2.51	0.44
1:1:1152:C:H2'	1:1:1153:C:C6	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1418:G:N2	1:1:1579:A:C8	2.85	0.44
1:1:1713:A:N6	1:1:1745:A:H61	2.14	0.44
1:1:2854:G:H2'	1:1:2855:C:C6	2.53	0.44
2:2:581:G:OP1	51:t:65:LYS:NZ	2.31	0.44
2:2:1038:C:N4	2:2:1039:G:O6	2.49	0.44
2:2:1108:G:OP2	39:h:175:LEU:N	2.51	0.44
3:4:57:A:O2'	10:E:27:GLN:HG3	2.17	0.44
4:6:10:G:H2'	4:6:11:A:H8	1.82	0.44
10:E:112:ARG:NH2	49:r:7:ILE:HG22	2.33	0.44
14:I:32:VAL:HG12	14:I:64:ARG:HH12	1.82	0.44
25:T:64:LYS:HA	25:T:79:ASP:OD1	2.17	0.44
43:l:30:LEU:O	43:l:109:ARG:NH2	2.50	0.44
50:s:38:ASP:OD1	50:s:39:GLU:N	2.51	0.44
51:t:25:THR:HG21	51:t:70:LEU:HB2	2.00	0.44
1:1:300:A:H2'	1:1:334:C:H1'	1.99	0.44
1:1:441:U:H2'	1:1:442:G:C8	2.52	0.44
1:1:483:A:O4'	26:U:45:HIS:HB3	2.18	0.44
1:1:603:A:N1	1:1:625:G:O2'	2.49	0.44
1:1:677:A:O2'	1:1:2071:A:H5'	2.18	0.44
1:1:1038:G:C2	1:1:1118:C:C2	3.06	0.44
1:1:1122:G:C2	1:1:1123:C:C6	3.06	0.44
1:1:1133:A:H4'	1:1:1134:A:H5''	2.00	0.44
1:1:1232:G:C6	1:1:1233:C:C4	3.06	0.44
1:1:1262:A:C6	1:1:1263:U:C4	3.05	0.44
1:1:1528:A:N6	1:1:1529:G:N3	2.65	0.44
1:1:1575:C:H2'	1:1:1576:U:O4'	2.18	0.44
1:1:1614:A:P	1:1:1614:A:H8	2.40	0.44
1:1:2055:C:H5'	1:1:2056:G:OP1	2.17	0.44
1:1:2819:G:O2'	1:1:2820:A:H5''	2.17	0.44
2:2:222:C:H2'	2:2:223:A:H8	1.82	0.44
2:2:327:A:H1'	2:2:329:A:O4'	2.18	0.44
2:2:746:A:H2'	2:2:747:A:C8	2.53	0.44
2:2:921:U:H4'	41:j:23:LYS:NZ	2.33	0.44
2:2:1162:C:N4	2:2:1175:G:O6	2.50	0.44
6:A:135:VAL:O	6:A:136:ARG:C	2.61	0.44
9:D:164:LEU:HB2	9:D:167:VAL:HB	2.00	0.44
11:F:35:ARG:HB3	11:F:35:ARG:HH11	1.83	0.44
11:F:117:LEU:HB3	11:F:121:ILE:CG2	2.47	0.44
18:M:90:GLU:HA	18:M:90:GLU:OE2	2.16	0.44
38:g:101:LEU:HB2	38:g:175:GLU:HB3	1.99	0.44
1:1:61:C:H2'	1:1:62:U:H5'	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:487:C:H2'	1:1:488:G:O4'	2.17	0.44
1:1:538:A:H2'	1:1:539:G:O4'	2.18	0.44
1:1:729:G:OP2	7:B:207:LYS:NZ	2.43	0.44
1:1:923:G:H2'	1:1:924:G:H8	1.83	0.44
2:2:393:A:OP2	52:u:12:LYS:HD2	2.17	0.44
2:2:1116:U:C2	2:2:1184:G:O6	2.70	0.44
3:4:2:G:H2'	3:4:3:C:H6	1.82	0.44
4:6:68:C:H2'	4:6:69:C:H6	1.83	0.44
10:E:130:MET:HB2	10:E:130:MET:HE3	1.85	0.44
15:J:102:GLU:O	15:J:106:LYS:HB2	2.18	0.44
38:g:48:PRO:O	38:g:52:GLU:HG3	2.17	0.44
38:g:70:VAL:O	38:g:164:ILE:HG12	2.17	0.44
40:i:126:ASN:ND2	40:i:141:ASP:OD1	2.51	0.44
45:n:19:VAL:HG11	45:n:83:ILE:HA	1.99	0.44
46:o:51:VAL:HG22	46:o:63:ASP:HB2	2.00	0.44
52:u:80:LYS:HE3	52:u:80:LYS:HB3	1.86	0.44
54:w:25:ASP:O	54:w:29:LEU:HG	2.18	0.44
56:y:54:MET:O	56:y:57:ILE:HG22	2.18	0.44
1:1:244:A:H2'	1:1:245:G:O4'	2.18	0.44
1:1:582:A:H2'	1:1:583:G:H8	1.83	0.44
1:1:1049:C:H2'	1:1:1050:A:H8	1.82	0.44
1:1:1204:A:O4'	1:1:1206:G:C8	2.71	0.44
1:1:1442:U:H2'	1:1:1443:U:C6	2.52	0.44
1:1:1651:G:H5'	19:N:39:PRO:HG2	1.98	0.44
1:1:1914:C:N4	6:A:26:LYS:HD2	2.32	0.44
2:2:6:G:H4'	2:2:298:A:H4'	2.00	0.44
2:2:107:G:H1	56:y:6:SER:HB2	1.83	0.44
2:2:626:G:H2'	2:2:627:G:C8	2.53	0.44
2:2:1178:G:O6	45:n:99:ARG:NH2	2.51	0.44
2:2:1305:G:O2'	2:2:1332:A:N6	2.50	0.44
2:2:1320:C:H42	55:x:36:ARG:HB2	1.83	0.44
2:2:1343:G:H2'	2:2:1344:C:C6	2.52	0.44
2:2:1352:C:H2'	2:2:1353:G:C8	2.53	0.44
2:2:1524:C:H2'	2:2:1525:G:C8	2.52	0.44
3:4:49:C:OP1	20:O:102:ARG:N	2.41	0.44
6:A:78:TRP:CZ2	6:A:202:GLY:HA3	2.52	0.44
7:B:133:ARG:NE	7:B:187:ASP:OD1	2.49	0.44
11:F:170:ARG:NH2	11:F:171:THR:O	2.50	0.44
14:I:116:MET:HE3	14:I:118:GLY:O	2.18	0.44
31:Z:6:LYS:HA	31:Z:36:VAL:O	2.18	0.44
38:g:105:LYS:HA	38:g:108:ARG:HE	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:k:5:GLU:OE2	54:w:23:TYR:OH	2.18	0.44
43:l:57:SER:OG	43:l:60:GLU:OE1	2.32	0.44
43:l:73:VAL:HG12	43:l:90:GLU:HA	1.99	0.44
44:m:64:LYS:HB3	44:m:71:VAL:HG11	1.99	0.44
45:n:6:TYR:HD2	45:n:90:TYR:HD1	1.66	0.44
45:n:120:LYS:HB3	45:n:120:LYS:HE2	1.64	0.44
46:o:25:ILE:HD11	46:o:87:LEU:HD22	1.98	0.44
48:q:38:TYR:HE2	48:q:54:ARG:HG3	1.83	0.44
49:r:33:ILE:HG23	49:r:59:GLU:HB2	1.99	0.44
56:y:79:LEU:O	56:y:83:ILE:HG12	2.17	0.44
57:z:39:GLU:OE1	57:z:47:ARG:NH2	2.48	0.44
1:1:704:G:HO2'	1:1:705:A:P	2.40	0.44
1:1:764:A:N3	7:B:212:ARG:NH2	2.60	0.44
1:1:783:A:O2'	1:1:1779:U:O2	2.35	0.44
1:1:894:U:O2'	1:1:895:U:H2'	2.18	0.44
1:1:1085:A:H2'	1:1:1086:A:C4	2.53	0.44
1:1:1561:C:H2'	1:1:1562:U:C6	2.52	0.44
1:1:2389:G:H5''	1:1:2390:U:O4'	2.18	0.44
1:1:2394:C:H5'	36:e:13:ARG:NH1	2.33	0.44
1:1:2689:U:OP2	1:1:2719:G:N2	2.25	0.44
1:1:2795:C:H2'	1:1:2796:U:C6	2.52	0.44
2:2:1006:G:H2'	2:2:1007:U:H6	1.83	0.44
2:2:1314:C:H2'	2:2:1315:U:C6	2.53	0.44
2:2:1533:C:H4'	2:2:1534:A:N7	2.33	0.44
7:B:135:ILE:HD13	7:B:141:VAL:HG11	1.99	0.44
10:E:17:MET:HE1	10:E:24:SER:C	2.43	0.44
10:E:44:ILE:HG21	10:E:79:ILE:HG22	2.00	0.44
11:F:89:LEU:HB2	11:F:129:THR:HB	2.00	0.44
11:F:105:LEU:HD12	11:F:151:TYR:HD1	1.83	0.44
12:G:37:VAL:CG2	12:G:43:ASN:HD21	2.30	0.44
16:K:25:LEU:HD12	16:K:38:ILE:HG22	1.99	0.44
20:O:55:GLU:O	20:O:59:ALA:HB2	2.17	0.44
27:V:2:PHE:HB2	27:V:61:LEU:CD2	2.48	0.44
29:X:66:THR:O	29:X:70:GLU:HG2	2.18	0.44
41:j:149:SER:OG	41:j:151:GLU:OE1	2.34	0.44
47:p:97:ILE:H	47:p:97:ILE:HD12	1.83	0.44
50:s:69:ARG:HB3	50:s:80:SER:OG	2.18	0.44
53:v:30:LYS:HB2	53:v:37:PHE:CE1	2.53	0.44
1:1:858:G:N3	1:1:2268:A:H2'	2.33	0.44
1:1:888:C:C5	49:r:92:ARG:HD3	2.53	0.44
1:1:1193:G:OP1	17:L:14:LYS:HE2	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1613:G:C2	1:1:1619:G:C5	3.06	0.44
1:1:1689:A:H2'	1:1:1690:A:H8	1.83	0.44
1:1:1824:G:OP1	7:B:52:ARG:NH1	2.50	0.44
1:1:2105:U:H2'	1:1:2106:U:C2	2.53	0.44
1:1:2193:G:HO2'	1:1:2194:U:P	2.40	0.44
1:1:2740:A:H2'	1:1:2741:A:C8	2.52	0.44
2:2:81:A:OP2	2:2:83:C:N4	2.51	0.44
2:2:318:G:C6	2:2:336:A:C6	3.06	0.44
2:2:579:A:C4	2:2:580:C:C5	3.06	0.44
2:2:898:G:N2	2:2:901:A:OP2	2.50	0.44
2:2:1067:A:H3'	2:2:1094:G:OP1	2.18	0.44
2:2:1251:A:H2'	2:2:1252:A:C8	2.53	0.44
2:2:1288:A:C6	2:2:1289:A:C6	3.06	0.44
8:C:184:ARG:NH1	21:P:7:GLN:HE22	2.15	0.44
17:L:70:LYS:HA	17:L:73:ILE:HG12	2.00	0.44
17:L:78:ARG:NH1	17:L:113:ALA:HB1	2.32	0.44
18:M:52:ALA:HA	18:M:55:ARG:HH22	1.82	0.44
18:M:65:ILE:HG12	18:M:103:TYR:CE2	2.53	0.44
31:Z:39:GLU:OE1	31:Z:40:ASP:N	2.51	0.44
38:g:66:LYS:NZ	38:g:154:MET:O	2.37	0.44
38:g:101:LEU:HD12	38:g:175:GLU:HB2	1.99	0.44
39:h:68:ILE:HG22	39:h:70:THR:HB	1.98	0.44
46:o:57:VAL:HG23	46:o:57:VAL:O	2.17	0.44
47:p:21:ALA:HB2	47:p:82:LEU:HD21	1.98	0.44
1:1:96:C:H4'	30:Y:41:HIS:CE1	2.53	0.43
1:1:458:G:C8	35:d:37:LYS:HG2	2.53	0.43
1:1:538:A:H4'	15:J:7:LYS:HG2	2.00	0.43
1:1:614:A:HO2'	1:1:615:U:P	2.38	0.43
1:1:995:C:N4	15:J:2:LYS:HD2	2.33	0.43
1:1:1005:C:H2'	1:1:1006:C:C6	2.53	0.43
1:1:1050:A:O2'	1:1:1051:G:O5'	2.33	0.43
1:1:1071:G:H1	1:1:1090:A:N6	2.16	0.43
1:1:1360:G:C8	1:1:1361:G:C8	3.06	0.43
1:1:2183:A:C6	1:1:2184:A:C6	3.06	0.43
1:1:2318:G:O2'	1:1:2321:U:O4	2.33	0.43
1:1:2485:G:H5''	18:M:45:GLN:OE1	2.18	0.43
1:1:2688:G:N1	1:1:2720:U:OP2	2.22	0.43
1:1:2898:U:O2	15:J:134:ALA:HB1	2.18	0.43
2:2:140:U:H2'	2:2:141:G:O4'	2.17	0.43
2:2:390:U:H2'	2:2:391:G:C8	2.53	0.43
2:2:529:G:H4'	2:2:533:A:C2	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:660:C:H2'	2:2:661:G:O4'	2.17	0.43
2:2:1048:G:C6	2:2:1210:C:N4	2.86	0.43
3:4:39:A:C2	3:4:44:G:C6	3.06	0.43
4:5:22:G:H2'	4:5:23:C:H6	1.83	0.43
7:B:75:PRO:HB2	7:B:115:GLN:OE1	2.17	0.43
8:C:184:ARG:HH12	21:P:7:GLN:HE22	1.66	0.43
12:G:69:ALA:HA	12:G:72:ILE:HG12	2.00	0.43
13:H:114:GLU:HG3	13:H:115:GLY:N	2.33	0.43
14:I:133:ARG:HH11	14:I:133:ARG:C	2.25	0.43
24:S:24:ILE:HG21	24:S:36:LEU:CD1	2.48	0.43
27:V:7:GLU:HB2	27:V:41:GLU:HG3	2.00	0.43
28:W:25:ARG:HD3	28:W:31:VAL:HG12	2.00	0.43
32:a:41:HIS:C	32:a:43:PHE:H	2.26	0.43
42:k:101:PRO:HA	42:k:104:LYS:HG2	1.99	0.43
49:r:16:VAL:CG1	49:r:41:GLU:HG2	2.48	0.43
1:1:102:U:C5	30:Y:4:LYS:HB2	2.45	0.43
1:1:323:C:H6	1:1:1205:A:N1	2.16	0.43
1:1:822:G:H2'	1:1:823:C:H6	1.83	0.43
1:1:858:G:N2	1:1:2269:G:OP2	2.32	0.43
1:1:920:A:C6	1:1:921:C:C4	3.07	0.43
1:1:1153:C:H2'	1:1:1154:G:O4'	2.18	0.43
1:1:1297:C:OP1	1:1:2710:C:H4'	2.17	0.43
1:1:1948:G:N3	2:2:1418:A:H2	2.17	0.43
1:1:2134:A:H4'	1:1:2159:G:H21	1.82	0.43
1:1:2720:U:C2	1:1:2721:A:C8	3.06	0.43
1:1:2812:G:H2'	1:1:2813:A:H8	1.83	0.43
2:2:429:U:H3'	40:i:9:LEU:HD12	2.00	0.43
2:2:715:A:H2'	2:2:716:A:C8	2.53	0.43
2:2:1147:C:H2'	2:2:1148:U:C6	2.53	0.43
2:2:1162:C:H2'	2:2:1163:A:H8	1.82	0.43
2:2:1462:C:H2'	2:2:1463:U:H6	1.82	0.43
3:4:2:G:H2'	3:4:3:C:C6	2.53	0.43
3:4:13:G:H4'	3:4:15:A:H2'	2.00	0.43
7:B:107:PRO:HG2	7:B:127:GLY:HA2	2.00	0.43
8:C:12:THR:OG1	8:C:13:ARG:N	2.50	0.43
13:H:68:PRO:HA	13:H:72:LEU:HG	1.99	0.43
20:O:17:LYS:HE3	20:O:21:LEU:HD11	1.99	0.43
26:U:51:ALA:C	26:U:53:ASN:H	2.25	0.43
41:j:45:ARG:HA	41:j:72:ILE:O	2.18	0.43
53:v:75:LEU:HD23	53:v:75:LEU:H	1.83	0.43
54:w:32:TYR:CG	54:w:55:LEU:HD11	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:184:C:H2'	1:1:185:G:H8	1.83	0.43
1:1:319:G:C5	1:1:333:G:C2	3.06	0.43
1:1:630:G:N2	1:1:632:A:H3'	2.33	0.43
1:1:751:A:O4'	24:S:90:LYS:HA	2.18	0.43
1:1:1098:A:H4'	14:I:8:VAL:HG11	2.00	0.43
1:1:1198:U:C2	1:1:1199:U:C5	3.06	0.43
1:1:1405:U:H2'	1:1:1406:U:C6	2.53	0.43
1:1:1560:G:C4	1:1:1561:C:C5	3.07	0.43
1:1:2047:C:O2'	1:1:2823:A:N1	2.43	0.43
1:1:2160:C:H2'	1:1:2161:C:O4'	2.18	0.43
1:1:2162:G:O2'	1:1:2163:A:N7	2.48	0.43
1:1:2308:G:O2'	1:1:2309:A:OP1	2.31	0.43
1:1:2376:A:N1	20:O:92:PHE:HD2	2.17	0.43
1:1:2723:C:H2'	1:1:2724:U:O4'	2.18	0.43
2:2:181:A:N6	2:2:195:A:N7	2.67	0.43
2:2:407:U:C2	2:2:408:A:C8	3.07	0.43
2:2:556:C:H2'	2:2:557:G:O4'	2.18	0.43
2:2:613:C:H2'	2:2:614:C:C6	2.53	0.43
2:2:1024:G:H2'	2:2:1025:U:C6	2.53	0.43
10:E:31:VAL:HG23	10:E:96:MET:HE1	2.00	0.43
10:E:102:ARG:HG2	32:a:24:ILE:HD12	2.01	0.43
11:F:32:GLU:C	11:F:33:LEU:HD12	2.44	0.43
11:F:77:ILE:HG23	11:F:81:GLU:OE2	2.19	0.43
24:S:20:VAL:O	24:S:23:LEU:HB2	2.19	0.43
38:g:54:LEU:HD23	38:g:220:THR:OG1	2.18	0.43
41:j:45:ARG:CG	41:j:71:MET:HG2	2.46	0.43
44:m:15:ARG:HB2	44:m:15:ARG:NH1	2.33	0.43
49:r:19:LEU:HD23	49:r:19:LEU:HA	1.76	0.43
53:v:12:VAL:O	53:v:56:GLY:N	2.33	0.43
55:x:36:ARG:NH2	55:x:77:THR:HG22	2.33	0.43
56:y:64:LYS:NZ	56:y:64:LYS:HB2	2.33	0.43
1:1:572:A:OP2	23:R:80:ARG:NH2	2.44	0.43
1:1:2804:U:H2'	1:1:2805:C:H6	1.83	0.43
1:1:2854:G:H2'	1:1:2855:C:H6	1.83	0.43
2:2:763:G:H2'	2:2:764:C:C6	2.53	0.43
2:2:1318:A:H5''	55:x:3:ARG:NH1	2.34	0.43
6:A:169:LEU:HD12	6:A:170:ALA:N	2.34	0.43
9:D:171:ASP:OD1	9:D:174:GLY:N	2.52	0.43
12:G:32:PRO:HA	29:X:39:TRP:CD1	2.53	0.43
12:G:39:ALA:HB1	12:G:44:ILE:HD11	1.99	0.43
13:H:94:ARG:HA	13:H:129:LEU:HD22	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:I:58:ILE:HD11	14:I:66:PHE:HB2	2.01	0.43
19:N:97:ILE:HD11	19:N:113:ILE:HD12	2.00	0.43
27:V:21:ARG:HE	27:V:87:GLN:HA	1.83	0.43
27:V:80:HIS:CD2	27:V:81:PRO:HD2	2.54	0.43
38:g:20:THR:HG22	38:g:39:HIS:CE1	2.53	0.43
43:l:68:ASN:HD22	43:l:128:ALA:HA	1.83	0.43
50:s:69:ARG:NH2	50:s:71:HIS:O	2.50	0.43
1:1:35:G:H2'	1:1:36:G:O4'	2.19	0.43
1:1:192:C:N4	1:1:203:A:O2'	2.51	0.43
1:1:231:A:H2'	1:1:232:G:O4'	2.18	0.43
1:1:718:A:H2'	1:1:719:C:O4'	2.18	0.43
1:1:1114:C:O2'	1:1:1115:G:H5'	2.19	0.43
1:1:1295:C:H2'	1:1:1296:G:H8	1.83	0.43
1:1:2407:A:H2'	1:1:2408:U:C6	2.53	0.43
2:2:214:C:H2'	2:2:215:C:H6	1.83	0.43
2:2:408:A:C6	2:2:409:U:C4	3.07	0.43
2:2:657:U:H4'	51:t:28:GLN:OE1	2.18	0.43
2:2:842:U:H3'	2:2:843:U:C5'	2.49	0.43
2:2:927:G:H21	2:2:1532:U:H5''	1.83	0.43
2:2:1179:A:H2'	2:2:1180:A:O4'	2.18	0.43
2:2:1278:G:H4'	2:2:1279:G:C8	2.54	0.43
3:4:28:C:C2	3:4:29:A:C8	3.07	0.43
6:A:81:LYS:HE2	6:A:206:LYS:HB2	1.99	0.43
6:A:94:TYR:HE2	6:A:193:ARG:HH21	1.66	0.43
6:A:218:ARG:HH12	41:j:20:ARG:NH2	2.17	0.43
9:D:105:LEU:HD12	9:D:105:LEU:HA	1.84	0.43
9:D:175:ILE:HD12	9:D:180:LEU:HD11	1.99	0.43
10:E:8:TYR:HB2	10:E:173:PHE:CZ	2.53	0.43
10:E:47:LYS:HA	10:E:47:LYS:HD3	1.86	0.43
15:J:28:LEU:O	15:J:32:LEU:HG	2.18	0.43
20:O:49:VAL:HG11	20:O:82:ALA:HA	2.01	0.43
23:R:68:ARG:HH22	23:R:90:ARG:HD3	1.84	0.43
27:V:51:GLN:HA	27:V:56:PHE:CG	2.53	0.43
1:1:171:U:C2	1:1:172:A:C8	3.06	0.43
1:1:399:U:H2'	1:1:400:G:C8	2.53	0.43
1:1:638:G:H2'	1:1:639:U:H6	1.81	0.43
1:1:1509:A:N3	1:1:1510:G:C8	2.87	0.43
1:1:1829:A:N3	7:B:15:HIS:NE2	2.53	0.43
1:1:2087:G:H2'	1:1:2088:A:H8	1.84	0.43
1:1:2552:OMU:HM23	1:1:2554:U:C6	2.54	0.43
2:2:550:G:H2'	2:2:551:U:H6	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:688:G:O2'	2:2:704:A:N1	2.48	0.43
2:2:741:G:OP1	51:t:35:GLN:NE2	2.51	0.43
2:2:1238:A:N3	2:2:1238:A:H2'	2.33	0.43
2:2:1512:U:H2'	2:2:1513:A:C8	2.54	0.43
4:5:15:C:H5'	4:5:16:C:H5''	1.99	0.43
4:6:34:U:HO2'	43:l:79:ARG:NH2	2.17	0.43
10:E:37:ASN:HB3	10:E:153:ASP:OD2	2.18	0.43
20:O:55:GLU:O	20:O:59:ALA:CB	2.67	0.43
38:g:170:HIS:CD2	38:g:171:ILE:HG13	2.54	0.43
39:h:70:THR:O	39:h:106:VAL:HG23	2.19	0.43
42:k:36:ILE:HG12	42:k:64:VAL:HG12	2.00	0.43
45:n:41:ARG:HD3	45:n:41:ARG:HA	1.82	0.43
48:q:57:LEU:HD21	48:q:82:ILE:CD1	2.48	0.43
49:r:86:TYR:O	49:r:90:ARG:HG2	2.18	0.43
56:y:34:LYS:NZ	56:y:34:LYS:HB2	2.33	0.43
1:1:195:A:H61	1:1:198:C:H3'	1.83	0.43
1:1:320:A:H4'	1:1:322:A:C8	2.54	0.43
1:1:332:A:C5	1:1:335:C:C4	3.07	0.43
1:1:397:U:O5'	1:1:397:U:H6	2.01	0.43
1:1:566:U:OP1	17:L:29:LYS:HD3	2.19	0.43
1:1:875:G:H2'	1:1:876:C:O4'	2.18	0.43
1:1:1050:A:N6	1:1:2751:G:C6	2.87	0.43
1:1:1175:A:OP1	1:1:1177:G:H1'	2.19	0.43
1:1:1370:C:H2'	1:1:1371:G:O4'	2.18	0.43
1:1:1419:A:O2'	1:1:1421:G:N7	2.38	0.43
1:1:1473:G:C6	1:1:1519:G:C6	3.06	0.43
1:1:1799:G:O2'	7:B:180:GLU:OE2	2.29	0.43
1:1:2840:C:H2'	1:1:2841:C:H6	1.84	0.43
2:2:283:U:H2'	2:2:284:C:C6	2.53	0.43
2:2:303:A:H2'	2:2:304:U:O4'	2.19	0.43
2:2:525:C:H2'	2:2:526:C:O4'	2.17	0.43
2:2:725:G:H2'	2:2:726:C:H6	1.84	0.43
2:2:864:A:H3'	2:2:865:A:C8	2.54	0.43
2:2:1059:C:OP2	39:h:199:LYS:NZ	2.39	0.43
2:2:1127:G:C6	2:2:1145:A:N6	2.79	0.43
2:2:1160:G:C2	2:2:1161:C:C6	3.06	0.43
2:2:1164:G:H2'	2:2:1165:U:C6	2.53	0.43
3:4:47:C:P	20:O:3:LYS:HE2	2.59	0.43
6:A:81:LYS:CE	6:A:206:LYS:HB2	2.49	0.43
6:A:84:PHE:HZ	6:A:210:VAL:HG12	1.83	0.43
6:A:135:VAL:HB	6:A:147:LEU:HD23	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:J:57:LEU:HA	15:J:125:TYR:O	2.19	0.43
20:O:9:ARG:O	20:O:12:THR:HG22	2.19	0.43
36:e:49:MET:HE3	36:e:49:MET:HB3	1.86	0.43
40:i:118:VAL:HG11	40:i:133:ALA:HA	2.01	0.43
40:i:147:GLU:HA	40:i:150:LYS:HD3	2.00	0.43
41:j:151:GLU:H	41:j:151:GLU:CD	2.26	0.43
44:m:2:SER:OG	44:m:4:GLN:NE2	2.52	0.43
53:v:46:VAL:HG22	53:v:73:TRP:HB2	2.00	0.43
1:1:330:A:H2'	1:1:330:A:N3	2.34	0.43
1:1:361:G:H8	1:1:361:G:OP2	2.02	0.43
1:1:606:U:O2	1:1:622:G:C6	2.72	0.43
1:1:673:C:H5'	9:D:76:PRO:HD2	2.01	0.43
1:1:1073:A:H2'	1:1:1074:G:C8	2.53	0.43
1:1:1336:A:H2'	1:1:1337:G:O4'	2.19	0.43
1:1:1443:U:C2	1:1:1444:G:C8	3.07	0.43
1:1:1587:G:N3	1:1:1588:G:C8	2.87	0.43
1:1:1637:A:H5'	1:1:1760:C:O2'	2.18	0.43
1:1:1837:C:N4	1:1:1899:A:N7	2.66	0.43
1:1:1852:U:OP1	4:6:72:C:O2'	2.37	0.43
1:1:1893:C:H2'	1:1:1894:C:H5'	2.00	0.43
1:1:2099:U:H2'	1:1:2100:G:O4'	2.19	0.43
1:1:2450:A:N6	1:1:2501:C:O2	2.51	0.43
2:2:20:U:H2'	2:2:21:G:O4'	2.19	0.43
2:2:390:U:H2'	2:2:391:G:H8	1.81	0.43
2:2:505:G:H2'	2:2:506:G:C8	2.54	0.43
2:2:555:U:H2'	2:2:556:C:C6	2.54	0.43
2:2:751:U:P	51:t:17:ARG:HH21	2.41	0.43
2:2:860:A:H2'	2:2:861:G:O4'	2.19	0.43
2:2:963:G:H21	46:o:57:VAL:HG11	1.82	0.43
2:2:1070:U:H2'	2:2:1071:C:H6	1.82	0.43
2:2:1315:U:O2	2:2:1360:A:H2	2.01	0.43
2:2:1527:U:H2'	2:2:1528:U:C6	2.54	0.43
3:4:109:A:H2'	3:4:110:C:C6	2.54	0.43
4:6:14:A:C5	4:6:15:G:C8	3.06	0.43
4:6:30:G:H2'	4:6:31:G:H8	1.84	0.43
10:E:73:SER:HB3	10:E:81:GLN:H	1.84	0.43
19:N:96:ARG:NH1	19:N:116:VAL:HG13	2.34	0.43
28:W:24:LYS:HA	28:W:24:LYS:HD3	1.68	0.43
29:X:70:GLU:O	29:X:74:ARG:HG2	2.18	0.43
42:k:75:GLU:HA	42:k:78:PHE:HD2	1.84	0.43
49:r:75:MET:O	49:r:79:ARG:HB2	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:122:G:H2'	1:1:123:G:O4'	2.18	0.43
1:1:627:A:P	17:L:78:ARG:HH11	2.42	0.43
1:1:689:A:H2'	1:1:690:G:C8	2.53	0.43
1:1:882:G:C6	1:1:894:U:C4	3.07	0.43
1:1:1028:A:N6	1:1:1125:G:H2'	2.34	0.43
1:1:1795:C:H2'	1:1:1796:U:O4'	2.18	0.43
1:1:2357:G:N2	1:1:2360:G:OP2	2.45	0.43
1:1:2603:G:H2'	1:1:2604:U:O4'	2.19	0.43
1:1:2809:A:H2'	1:1:2810:A:H8	1.81	0.43
2:2:358:U:H2'	2:2:359:G:C8	2.54	0.43
2:2:1292:G:C6	2:2:1293:C:C4	3.07	0.43
2:2:1318:A:H5''	55:x:3:ARG:HH12	1.84	0.43
3:4:8:C:H2'	3:4:9:G:O4'	2.19	0.43
4:5:73:A:O2'	6:A:152:ARG:NH2	2.52	0.43
4:6:48:U:N3	4:6:51:U:H5''	2.34	0.43
15:J:13:ARG:HG2	15:J:51:GLY:O	2.19	0.43
23:R:16:GLU:OE2	23:R:101:ILE:N	2.48	0.43
25:T:6:ARG:HA	25:T:6:ARG:HD2	1.74	0.43
27:V:20:LEU:HD21	27:V:41:GLU:OE1	2.19	0.43
41:j:52:LYS:HB3	41:j:52:LYS:NZ	2.33	0.43
53:v:19:LYS:H	53:v:51:ASN:ND2	2.15	0.43
1:1:828:U:O2'	1:1:829:A:O4'	2.29	0.43
1:1:1051:G:H2'	1:1:1052:C:C6	2.54	0.43
1:1:1104:C:H2'	1:1:1105:U:H6	1.84	0.43
1:1:1310:G:N2	1:1:1313:U:C4	2.87	0.43
1:1:1726:C:H2'	1:1:1727:C:H6	1.83	0.43
1:1:1862:G:C6	1:1:1881:C:C4	3.07	0.43
1:1:2041:U:C2	1:1:2042:A:C8	3.07	0.43
1:1:2202:U:O2'	1:1:2204:G:OP1	2.34	0.43
1:1:2466:C:H5''	37:f:6:SER:HB2	2.00	0.43
1:1:2469:A:H4'	18:M:55:ARG:HD3	2.01	0.43
2:2:15:G:O3'	6:A:218:ARG:NH2	2.51	0.43
2:2:129:A:H1'	2:2:130:A:C8	2.53	0.43
2:2:262:A:H5'	56:y:68:HIS:HB3	2.00	0.43
2:2:550:G:H2'	2:2:551:U:C6	2.54	0.43
2:2:590:U:H2'	2:2:591:U:C6	2.53	0.43
2:2:593:U:H2'	2:2:594:U:H6	1.84	0.43
2:2:842:U:H3'	2:2:843:U:H5''	2.00	0.43
2:2:1058:G:OP1	39:h:199:LYS:HE2	2.19	0.43
2:2:1162:C:N3	2:2:1175:G:C6	2.87	0.43
2:2:1264:U:H2'	2:2:1265:C:C6	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1346:A:OP1	45:n:122:ARG:NH1	2.52	0.43
2:2:1357:A:H2'	2:2:1358:U:O4'	2.19	0.43
2:2:1493:A:O2'	2:2:1494:G:P	2.76	0.43
2:2:1518:MA6:H103	2:2:1519:MA6:H102	2.01	0.43
3:4:30:C:O2	3:4:30:C:H2'	2.18	0.43
4:5:66:C:H2'	4:5:67:C:C6	2.53	0.43
6:A:210:VAL:CG2	6:A:212:LYS:HG2	2.45	0.43
6:A:211:GLU:C	6:A:213:SER:N	2.71	0.43
9:D:111:GLU:OE2	9:D:114:ARG:NE	2.50	0.43
9:D:191:ASP:O	9:D:195:GLN:HG3	2.18	0.43
11:F:55:ARG:HG2	11:F:55:ARG:HH11	1.83	0.43
23:R:24:LYS:HA	23:R:94:THR:OG1	2.17	0.43
32:a:2:LYS:HB2	32:a:5:ILE:HG12	2.01	0.43
38:g:67:ILE:N	38:g:89:GLN:OE1	2.27	0.43
40:i:87:GLY:HA3	40:i:197:GLU:HG3	2.01	0.43
41:j:147:MET:HE2	41:j:147:MET:HB3	1.91	0.43
42:k:100:SER:O	42:k:103:VAL:HG12	2.19	0.43
47:p:47:ALA:HB1	47:p:62:ALA:HB1	2.01	0.43
55:x:77:THR:OG1	55:x:78:ARG:HD3	2.18	0.43
1:1:194:G:H2'	1:1:195:A:O4'	2.18	0.42
1:1:535:G:C5	1:1:559:G:C6	3.07	0.42
1:1:584:C:OP1	22:Q:6:ARG:HG2	2.19	0.42
1:1:608:A:H2'	1:1:609:A:C8	2.53	0.42
1:1:849:A:H2'	1:1:850:U:C6	2.54	0.42
1:1:1077:A:H61	1:1:1088:A:C2'	2.32	0.42
1:1:1298:C:C2	1:1:1643:G:N2	2.87	0.42
1:1:1594:U:H2'	1:1:1595:C:C6	2.54	0.42
1:1:1653:G:H3'	19:N:2:ARG:HB2	2.01	0.42
1:1:2247:A:H2'	1:1:2248:C:H6	1.84	0.42
1:1:2788:C:O2'	1:1:2809:A:N3	2.40	0.42
2:2:123:U:H5''	2:2:311:C:O2'	2.19	0.42
2:2:263:A:H2'	2:2:264:C:C5	2.54	0.42
2:2:453:G:C4	2:2:454:G:C8	3.07	0.42
2:2:849:G:H2'	2:2:850:U:O4'	2.19	0.42
2:2:1142:G:H2'	2:2:1143:G:O4'	2.19	0.42
2:2:1219:A:H2'	2:2:1220:G:C8	2.54	0.42
4:5:53:G:C4	4:5:54:U:C5	3.07	0.42
9:D:118:LEU:HD12	9:D:186:VAL:O	2.18	0.42
11:F:83:PHE:CZ	11:F:138:LYS:HD3	2.54	0.42
16:K:66:LYS:HE3	16:K:66:LYS:HB2	1.79	0.42
18:M:22:GLN:O	18:M:24:THR:N	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:X:3:ARG:O	29:X:12:PRO:HD3	2.19	0.42
33:b:13:ARG:HG3	33:b:16:ARG:HH12	1.84	0.42
42:k:3:HIS:ND1	42:k:94:HIS:C	2.77	0.42
43:l:70:ARG:HA	43:l:100:ALA:HB2	2.00	0.42
43:l:111:ARG:HH21	43:l:123:GLU:HA	1.84	0.42
44:m:75:ILE:HG13	44:m:129:VAL:HG22	2.01	0.42
47:p:53:ARG:HD3	47:p:54:GLY:H	1.84	0.42
1:1:173:A:H2'	1:1:174:U:C6	2.53	0.42
1:1:279:A:N6	1:1:361:G:H1'	2.33	0.42
1:1:383:C:H5'	1:1:384:A:H5''	2.01	0.42
1:1:392:U:H2'	1:1:393:C:H6	1.83	0.42
1:1:463:G:N2	1:1:466:A:OP2	2.51	0.42
1:1:924:G:H2'	1:1:925:A:C8	2.53	0.42
1:1:1083:U:N3	1:1:1086:A:OP2	2.26	0.42
1:1:1567:G:H3'	7:B:85:PRO:HG3	2.01	0.42
1:1:1726:C:H2'	1:1:1727:C:C6	2.53	0.42
1:1:1871:A:H1'	1:1:1872:A:C8	2.55	0.42
1:1:2226:C:H2'	1:1:2227:A:O4'	2.19	0.42
1:1:2316:G:C2	1:1:2317:A:C8	3.06	0.42
1:1:2638:G:O2'	1:1:2775:G:N2	2.43	0.42
1:1:2718:G:C6	1:1:2719:G:C5	3.07	0.42
2:2:61:G:N7	56:y:6:SER:HB3	2.35	0.42
2:2:294:U:H2'	2:2:295:C:C6	2.54	0.42
2:2:471:U:H2'	2:2:472:U:H6	1.84	0.42
2:2:978:A:C6	2:2:1318:A:C6	3.07	0.42
2:2:1202:U:N3	50:s:82:ILE:HG21	2.34	0.42
2:2:1206:G:H2'	2:2:1207:2MG:O4'	2.19	0.42
7:B:243:HIS:O	7:B:245:VAL:HG13	2.18	0.42
9:D:145:ASP:HA	9:D:166:LYS:HB3	2.01	0.42
12:G:12:LEU:HD12	12:G:19:VAL:HG21	2.00	0.42
19:N:8:ARG:HG3	19:N:8:ARG:NH2	2.31	0.42
38:g:30:PHE:HE2	38:g:199:VAL:HG21	1.83	0.42
38:g:43:LEU:O	38:g:47:VAL:HG23	2.19	0.42
39:h:80:LYS:HE2	39:h:80:LYS:HA	2.00	0.42
40:i:105:MET:CG	40:i:171:LEU:HD13	2.49	0.42
42:k:18:VAL:N	42:k:19:PRO:HD2	2.33	0.42
47:p:123:PRO:HD2	57:z:38:TYR:CD1	2.53	0.42
1:1:139:U:H5'	1:1:140:C:O2	2.19	0.42
1:1:365:U:H2'	1:1:366:C:C6	2.54	0.42
1:1:565:C:P	23:R:80:ARG:H	2.43	0.42
1:1:693:A:H2'	1:1:694:U:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:811:U:H2'	17:L:21:ARG:HA	2.00	0.42
1:1:845:A:O3'	1:1:846:U:H4'	2.18	0.42
1:1:1689:A:H2'	1:1:1690:A:C8	2.54	0.42
1:1:2098:U:H2'	1:1:2099:U:C6	2.54	0.42
1:1:2249:U:O2'	1:1:2252:G:OP2	2.26	0.42
1:1:2578:G:N2	8:C:130:GLN:OE1	2.51	0.42
1:1:2849:U:N3	1:1:2867:G:O4'	2.47	0.42
2:2:283:U:H2'	2:2:284:C:H6	1.84	0.42
2:2:590:U:H5''	44:m:31:LYS:NZ	2.34	0.42
2:2:1010:U:H2'	2:2:1011:C:C6	2.54	0.42
2:2:1347:G:N7	45:n:13:LYS:HE2	2.34	0.42
3:4:51:G:OP2	20:O:67:ASN:ND2	2.52	0.42
6:A:135:VAL:HG22	6:A:154:GLN:HG2	2.02	0.42
7:B:78:VAL:HA	7:B:94:VAL:HG12	2.01	0.42
7:B:208:ALA:O	7:B:212:ARG:HG2	2.19	0.42
10:E:36:LEU:HB2	10:E:89:VAL:CG2	2.49	0.42
16:K:58:LEU:HA	16:K:89:ASN:OD1	2.19	0.42
18:M:16:ARG:HA	18:M:16:ARG:HD3	1.67	0.42
21:P:30:VAL:O	21:P:40:LEU:HD12	2.20	0.42
42:k:3:HIS:HD2	42:k:65:GLU:HG3	1.78	0.42
47:p:30:THR:HG21	47:p:63:ALA:HB2	2.01	0.42
54:w:59:ILE:O	54:w:63:ARG:HG3	2.19	0.42
57:z:23:CYS:HA	57:z:26:ALA:HB3	2.00	0.42
1:1:224:U:H2'	1:1:225:C:O4'	2.19	0.42
1:1:451:U:C2	1:1:453:A:N7	2.87	0.42
1:1:703:U:H2'	1:1:704:G:O4'	2.19	0.42
1:1:1152:C:C2	1:1:1153:C:C5	3.06	0.42
1:1:1183:U:H2'	1:1:1184:U:C6	2.55	0.42
1:1:1321:A:C5	1:1:1322:A:C8	3.07	0.42
1:1:1421:G:O2'	1:1:1494:A:N6	2.52	0.42
1:1:1707:G:C5	1:1:1756:G:C6	3.08	0.42
1:1:1735:A:C6	1:1:1736:U:C4	3.07	0.42
1:1:1914:C:H41	6:A:23:LYS:NZ	2.17	0.42
1:1:2266:A:H4'	1:1:2267:A:N3	2.34	0.42
1:1:2273:A:H2'	1:1:2274:A:C8	2.54	0.42
1:1:2636:C:C2	1:1:2637:U:C5	3.08	0.42
1:1:2774:C:H2'	1:1:2775:G:O4'	2.20	0.42
1:1:2883:A:H5'	1:1:2884:U:H5'	2.01	0.42
2:2:36:C:H2'	2:2:37:U:O4'	2.20	0.42
2:2:243:A:H4'	2:2:244:U:H3'	2.00	0.42
2:2:298:A:H2'	2:2:299:G:O4'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:546:A:H4'	2:2:548:G:O3'	2.20	0.42
2:2:978:A:C2	2:2:1319:A:C4	3.08	0.42
2:2:999:C:H2'	2:2:1000:A:C8	2.52	0.42
2:2:1513:A:H2'	2:2:1514:G:H8	1.83	0.42
7:B:157:SER:OG	7:B:158:ALA:N	2.42	0.42
8:C:29:VAL:N	8:C:185:ASN:O	2.51	0.42
9:D:6:LYS:HB3	9:D:6:LYS:HE3	1.76	0.42
11:F:87:LEU:HD12	11:F:148:LEU:HD12	2.00	0.42
11:F:172:LYS:HG2	11:F:173:GLU:H	1.84	0.42
15:J:13:ARG:HD3	15:J:121:LYS:HE3	2.01	0.42
15:J:16:TYR:HB3	15:J:140:LEU:HB2	2.02	0.42
18:M:23:GLY:H	18:M:100:LYS:HZ2	1.67	0.42
32:a:16:CYS:CB	32:a:18:CYS:SG	2.97	0.42
40:i:144:SER:CB	40:i:179:GLU:HG2	2.45	0.42
43:l:86:GLN:HB2	43:l:148:ASN:OD1	2.19	0.42
43:l:148:ASN:ND2	47:p:56:ARG:HH21	2.18	0.42
47:p:123:PRO:HD2	57:z:38:TYR:HD1	1.85	0.42
1:1:177:G:H3'	1:1:178:G:H8	1.85	0.42
1:1:354:A:H2'	1:1:355:U:O4'	2.19	0.42
1:1:373:U:H2'	1:1:374:A:H8	1.84	0.42
1:1:582:A:OP1	22:Q:14:HIS:ND1	2.42	0.42
1:1:837:C:N3	1:1:941:A:N6	2.67	0.42
1:1:878:A:H3'	1:1:879:G:C8	2.47	0.42
1:1:892:A:C6	1:1:893:C:C4	3.08	0.42
1:1:1107:G:C4	1:1:1108:U:C5	3.07	0.42
1:1:1248:G:O2'	22:Q:3:ARG:HA	2.20	0.42
1:1:1357:C:H2'	1:1:1358:G:O4'	2.20	0.42
1:1:1827:U:H2'	1:1:1828:G:O4'	2.20	0.42
1:1:2218:G:C6	1:1:2219:U:C4	3.07	0.42
1:1:2229:U:H2'	1:1:2230:G:C8	2.54	0.42
1:1:2842:G:H2'	1:1:2843:G:O4'	2.19	0.42
2:2:152:A:H2'	2:2:153:C:H5'	2.01	0.42
2:2:208:U:H3'	2:2:210:C:N3	2.35	0.42
2:2:398:U:H2'	2:2:399:G:C8	2.53	0.42
2:2:934:C:N4	2:2:1345:U:C4	2.88	0.42
2:2:1190:G:O2'	39:h:3:GLN:HB2	2.19	0.42
6:A:108:PHE:CD2	6:A:169:LEU:HD13	2.55	0.42
6:A:185:TRP:O	6:A:189:THR:HB	2.20	0.42
10:E:52:ASN:HB2	10:E:150:ARG:NH2	2.35	0.42
11:F:103:ILE:HD11	11:F:117:LEU:HD21	2.02	0.42
13:H:17:GLU:HG3	13:H:88:HIS:NE2	2.33	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:K:102:PRO:HB2	16:K:123:LEU:HD23	2.00	0.42
19:N:103:ARG:NH1	19:N:106:ASP:OD2	2.52	0.42
20:O:111:ARG:NH2	20:O:117:PHE:O	2.51	0.42
38:g:55:ALA:O	38:g:59:LYS:HG3	2.19	0.42
41:j:85:VAL:HG13	41:j:96:MET:HE3	2.00	0.42
47:p:13:ARG:HH22	47:p:76:GLU:C	2.27	0.42
53:v:63:GLU:HB3	53:v:73:TRP:CZ2	2.55	0.42
57:z:58:LYS:O	57:z:62:ARG:HD2	2.19	0.42
1:1:17:G:H2'	1:1:18:U:C6	2.54	0.42
1:1:357:C:H2'	1:1:358:U:C6	2.54	0.42
1:1:1003:G:O2'	1:1:1010:A:N1	2.48	0.42
1:1:1041:G:H2'	1:1:1042:G:C8	2.53	0.42
1:1:1412:U:C2	1:1:1413:A:C8	3.07	0.42
1:1:1731:G:C2	1:1:1733:G:C4	3.07	0.42
1:1:1914:C:C3'	6:A:51:LEU:HA	2.50	0.42
1:1:2577:A:H2'	1:1:2614:A:N6	2.33	0.42
1:1:2755:C:O2'	1:1:2756:U:H6	2.01	0.42
2:2:437:U:H5''	40:i:152:GLN:HG2	2.00	0.42
2:2:592:G:C6	2:2:593:U:C4	3.07	0.42
2:2:776:G:H22	2:2:802:A:P	2.39	0.42
2:2:932:C:H4'	43:l:4:ARG:NH1	2.35	0.42
2:2:947:G:C6	2:2:948:C:C4	3.08	0.42
2:2:1057:G:H2'	2:2:1058:G:O4'	2.19	0.42
2:2:1144:G:H2'	2:2:1145:A:C8	2.55	0.42
2:2:1147:C:H2'	2:2:1148:U:H6	1.85	0.42
2:2:1291:U:N3	2:2:1292:G:N7	2.68	0.42
2:2:1319:A:H4'	2:2:1320:C:OP1	2.19	0.42
2:2:1518:MA6:H2'	2:2:1519:MA6:C8	2.49	0.42
4:6:51:U:H2'	4:6:52:C:H6	1.84	0.42
6:A:42:LEU:HB2	6:A:57:THR:OG1	2.20	0.42
7:B:36:LYS:NZ	7:B:38:SER:HB2	2.35	0.42
7:B:158:ALA:O	7:B:195:VAL:HG13	2.20	0.42
8:C:11:MET:SD	8:C:25:THR:OG1	2.75	0.42
9:D:23:PHE:HA	9:D:107:SER:OG	2.20	0.42
14:I:14:ALA:HA	14:I:41:PHE:HE2	1.85	0.42
17:L:77:ILE:CD1	17:L:108:ALA:HB1	2.50	0.42
18:M:1:MET:HE1	18:M:44:ARG:CD	2.49	0.42
18:M:75:GLU:OE1	18:M:90:GLU:HG3	2.20	0.42
18:M:108:VAL:HB	18:M:112:LEU:HD23	2.00	0.42
31:Z:30:ARG:HH21	31:Z:30:ARG:HG3	1.84	0.42
38:g:14:VAL:HG13	38:g:43:LEU:HD21	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:l:60:GLU:O	43:l:64:VAL:HG13	2.20	0.42
44:m:96:MET:SD	44:m:130:ALA:HB1	2.60	0.42
55:x:36:ARG:HD2	55:x:72:GLY:CA	2.50	0.42
1:1:532:A:H4'	1:1:533:G:C8	2.54	0.42
1:1:535:G:C6	1:1:559:G:C6	3.07	0.42
1:1:729:G:C5	7:B:207:LYS:HB2	2.55	0.42
1:1:969:G:H4'	31:Z:15:GLY:O	2.20	0.42
1:1:1364:G:N2	1:1:1367:A:OP2	2.44	0.42
1:1:1398:C:H2'	1:1:1399:C:C6	2.54	0.42
1:1:1583:A:O2'	1:1:1584:U:N3	2.52	0.42
1:1:1824:G:O3'	7:B:247:PRO:HD3	2.20	0.42
1:1:1910:G:H2'	1:1:1911:PSU:O4'	2.19	0.42
1:1:2002:G:H5'	19:N:13:ASN:HA	2.01	0.42
1:1:2070:A:H2'	1:1:2071:A:H8	1.84	0.42
1:1:2287:A:OP1	34:c:30:LYS:NZ	2.50	0.42
1:1:2411:A:H2'	1:1:2412:A:H8	1.85	0.42
2:2:75:G:C4	2:2:76:G:C8	3.07	0.42
2:2:815:A:H4'	2:2:817:C:C4	2.54	0.42
2:2:980:C:HO2'	50:s:13:ARG:HH12	1.66	0.42
2:2:1001:C:H5''	2:2:1002:G:OP2	2.19	0.42
2:2:1012:A:C6	2:2:1018:G:C6	3.07	0.42
2:2:1069:C:H2'	2:2:1070:U:O4'	2.19	0.42
2:2:1070:U:H2'	2:2:1071:C:C6	2.54	0.42
2:2:1087:G:C6	2:2:1099:G:N1	2.88	0.42
2:2:1124:G:HO2'	2:2:1145:A:N6	2.15	0.42
2:2:1419:G:C5	2:2:1482:G:C2	3.07	0.42
8:C:24:VAL:HA	8:C:189:VAL:O	2.19	0.42
15:J:89:PHE:HE1	15:J:100:VAL:CG1	2.32	0.42
31:Z:7:ILE:HG22	31:Z:29:LEU:HD21	2.00	0.42
36:e:51:SER:O	36:e:55:LEU:HG	2.19	0.42
38:g:97:LEU:H	38:g:100:MET:CE	2.32	0.42
39:h:53:SER:HB3	39:h:115:LEU:CD1	2.50	0.42
42:k:90:MET:SD	54:w:61:ARG:NH2	2.93	0.42
43:l:70:ARG:NH2	43:l:97:ASN:OD1	2.46	0.42
43:l:129:GLU:N	43:l:129:GLU:OE2	2.53	0.42
44:m:25:VAL:HG22	44:m:61:LEU:HB2	2.01	0.42
48:q:99:ARG:HE	48:q:104:CYS:HG	1.61	0.42
50:s:19:LYS:HE3	50:s:20:TYR:CE2	2.54	0.42
50:s:39:GLU:OE1	50:s:39:GLU:HA	2.18	0.42
53:v:11:ARG:HB3	53:v:11:ARG:CZ	2.50	0.42
54:w:70:TYR:N	54:w:74:HIS:CE1	2.88	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:26:G:C6	1:1:27:G:N1	2.88	0.42
1:1:217:A:H2'	1:1:218:A:O4'	2.20	0.42
1:1:379:G:N1	1:1:396:G:C6	2.88	0.42
1:1:617:G:OP1	9:D:102:ARG:NE	2.39	0.42
1:1:690:G:H2'	1:1:691:C:C6	2.54	0.42
1:1:1299:G:N2	1:1:1640:A:C8	2.88	0.42
1:1:2019:A:N7	33:b:6:ASN:ND2	2.67	0.42
1:1:2496:C:H2'	1:1:2497:A:O4'	2.19	0.42
2:2:317:U:N3	2:2:318:G:N7	2.68	0.42
2:2:1007:U:H2'	2:2:1008:U:C6	2.55	0.42
2:2:1151:A:O2'	2:2:1152:A:C8	2.72	0.42
2:2:1239:A:H62	2:2:1299:A:H61	1.66	0.42
2:2:1522:U:H2'	2:2:1523:G:H8	1.84	0.42
4:5:19:G:H4'	4:5:20:U:OP2	2.18	0.42
6:A:77:CYS:SG	6:A:94:TYR:HE1	2.41	0.42
11:F:18:LYS:O	11:F:24:ILE:HD12	2.19	0.42
15:J:93:ILE:HD13	15:J:93:ILE:HA	1.87	0.42
23:R:71:LYS:HA	23:R:89:HIS:O	2.20	0.42
24:S:83:LYS:HB2	24:S:83:LYS:HE2	1.89	0.42
32:a:14:ALA:HA	32:a:32:LEU:O	2.20	0.42
39:h:43:LEU:HD23	39:h:87:LEU:HD11	2.02	0.42
40:i:6:GLY:O	40:i:8:LYS:HD2	2.20	0.42
46:o:47:GLU:O	46:o:66:GLU:HA	2.19	0.42
48:q:87:VAL:HG22	48:q:96:HIS:CE1	2.55	0.42
1:1:132:G:H2'	1:1:133:U:C6	2.55	0.42
1:1:291:G:O6	1:1:349:U:C2	2.73	0.42
1:1:299:A:C8	1:1:322:A:N1	2.88	0.42
1:1:593:U:H2'	1:1:594:U:H6	1.80	0.42
1:1:858:G:N1	1:1:919:U:O4	2.53	0.42
1:1:956:G:N2	1:1:960:A:OP2	2.47	0.42
1:1:1106:G:O2'	13:H:56:ARG:NE	2.52	0.42
1:1:1249:U:O4	17:L:18:ARG:HD2	2.19	0.42
1:1:2026:U:H2'	1:1:2027:G:O4'	2.20	0.42
1:1:2104:C:H41	1:1:2186:G:N2	2.09	0.42
1:1:2325:G:O2'	1:1:2326:C:H5'	2.19	0.42
1:1:2505:G:H2'	1:1:2576:G:N1	2.35	0.42
1:1:2514:U:H2'	1:1:2515:C:H6	1.84	0.42
1:1:2865:U:OP2	1:1:2866:U:O2'	2.26	0.42
2:2:629:A:H2'	2:2:630:A:O4'	2.19	0.42
2:2:920:U:H2'	2:2:921:U:C6	2.55	0.42
2:2:1312:G:C2	2:2:1326:U:C2	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1346:A:N1	2:2:1374:A:H5''	2.35	0.42
2:2:1355:G:H2'	2:2:1356:G:H8	1.85	0.42
2:2:1464:U:C2	2:2:1465:A:C8	3.08	0.42
6:A:119:ARG:HA	6:A:132:ASN:HA	2.01	0.42
6:A:222:LYS:NZ	41:j:20:ARG:HE	2.14	0.42
9:D:97:ASN:CG	9:D:100:MET:HE2	2.45	0.42
12:G:21:VAL:CG2	12:G:26:ALA:HB2	2.49	0.42
13:H:28:ALA:HB3	13:H:111:ALA:HA	2.02	0.42
16:K:4:GLU:O	16:K:5:GLN:HB2	2.19	0.42
20:O:33:ARG:O	20:O:65:THR:OG1	2.33	0.42
21:P:9:GLU:HB3	21:P:55:LEU:HB2	2.01	0.42
25:T:57:VAL:O	25:T:86:THR:HG22	2.20	0.42
27:V:40:ILE:HD12	27:V:42:LEU:HD21	2.02	0.42
42:k:11:HIS:ND1	42:k:12:PRO:HD2	2.35	0.42
45:n:9:THR:O	45:n:85:ARG:HG3	2.19	0.42
45:n:32:GLN:OE1	45:n:64:TYR:OH	2.15	0.42
49:r:44:LYS:HB3	49:r:44:LYS:HE2	1.86	0.42
1:1:581:C:OP1	22:Q:33:ARG:HB2	2.19	0.42
1:1:653:U:H3'	1:1:654:A:H8	1.84	0.42
1:1:711:G:C6	1:1:721:A:C6	3.08	0.42
1:1:862:G:H2'	1:1:863:A:O4'	2.19	0.42
1:1:933:A:H5'	1:1:934:U:OP2	2.19	0.42
1:1:948:C:H2'	1:1:949:G:H8	1.84	0.42
1:1:1095:A:O2'	1:1:1096:A:C8	2.73	0.42
1:1:1268:A:H2'	1:1:1269:A:O4'	2.20	0.42
1:1:1643:G:H2'	1:1:1644:C:O4'	2.20	0.42
1:1:2577:A:H2	33:b:2:ALA:N	2.18	0.42
1:1:2644:G:O2'	1:1:2645:G:H5'	2.20	0.42
1:1:2838:G:C4	1:1:2839:G:C8	3.08	0.42
2:2:316:C:C5	2:2:351:G:C5	3.08	0.42
2:2:374:A:C6	2:2:375:U:C4	3.08	0.42
2:2:664:G:H22	2:2:741:G:H22	1.68	0.42
2:2:704:A:C4	2:2:705:G:C8	3.07	0.42
2:2:1111:A:N1	39:h:177:THR:HG22	2.35	0.42
2:2:1275:A:H5'	2:2:1276:G:OP2	2.20	0.42
2:2:1293:C:H2'	2:2:1294:G:H8	1.85	0.42
3:4:21:G:C2	3:4:22:U:C2	3.08	0.42
4:5:68:C:H2'	4:5:69:C:C6	2.55	0.42
4:6:9:G:OP2	4:6:47:G:N2	2.50	0.42
4:6:35:C:H41	43:l:79:ARG:NH2	2.18	0.42
7:B:39:LYS:NZ	7:B:58:HIS:O	2.48	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:B:171:TYR:HB3	7:B:183:LYS:HE2	2.01	0.42
7:B:177:ARG:HD2	7:B:177:ARG:HA	1.84	0.42
9:D:120:VAL:HG23	9:D:188:MET:O	2.20	0.42
23:R:52:PRO:C	23:R:53:PHE:HD1	2.28	0.42
24:S:24:ILE:HG21	24:S:36:LEU:HD13	2.02	0.42
25:T:4:GLU:O	25:T:8:LEU:HG	2.19	0.42
25:T:6:ARG:NH1	25:T:37:ASP:OD1	2.49	0.42
29:X:48:THR:O	29:X:49:LEU:HD23	2.20	0.42
30:Y:12:GLU:H	30:Y:12:GLU:CD	2.28	0.42
38:g:20:THR:O	38:g:23:TRP:CD1	2.71	0.42
39:h:63:SER:HA	39:h:97:VAL:HG22	2.02	0.42
39:h:73:PRO:HA	39:h:76:VAL:HB	2.02	0.42
42:k:98:GLU:H	42:k:98:GLU:CD	2.28	0.42
48:q:30:LYS:HA	48:q:30:LYS:HD2	1.86	0.42
1:1:684:G:C2	1:1:794:A:C2	3.08	0.41
1:1:825:A:H2'	1:1:826:U:O4'	2.20	0.41
1:1:980:A:N3	1:1:2037:A:O2'	2.33	0.41
1:1:1043:C:C4	1:1:1044:C:C4	3.08	0.41
1:1:1153:C:C4	1:1:1154:G:C5	3.08	0.41
1:1:1297:C:H2'	1:1:1298:C:H6	1.85	0.41
1:1:1772:A:O4'	1:1:1786:A:H4'	2.20	0.41
1:1:1975:G:H2'	1:1:1976:U:O4'	2.20	0.41
1:1:2114:A:N6	1:1:2167:U:O2'	2.53	0.41
1:1:2204:G:O6	1:1:2220:U:O2	2.37	0.41
1:1:2230:G:H2'	1:1:2231:U:H6	1.84	0.41
1:1:2257:U:O2'	1:1:2258:C:H5'	2.20	0.41
1:1:2376:A:N6	20:O:94:ARG:HD3	2.35	0.41
1:1:2399:G:C6	1:1:2418:A:N1	2.88	0.41
1:1:2411:A:H2'	1:1:2412:A:C8	2.55	0.41
1:1:2840:C:H5''	19:N:53:THR:OG1	2.20	0.41
1:1:2847:U:H2'	1:1:2848:G:O4'	2.20	0.41
2:2:857:C:H2'	2:2:858:G:O4'	2.20	0.41
2:2:1175:G:N3	2:2:1176:A:C8	2.88	0.41
2:2:1277:C:O2'	2:2:1279:G:H8	2.03	0.41
2:2:1296:C:N4	2:2:1297:G:O6	2.53	0.41
2:2:1496:C:C2	2:2:1497:G:C8	3.08	0.41
4:6:22:A:N6	4:6:47:G:H2'	2.34	0.41
4:6:69:C:H2'	4:6:70:C:C6	2.55	0.41
6:A:37:ILE:HG21	6:A:60:LEU:HB3	2.01	0.41
6:A:69:LEU:HD23	6:A:69:LEU:HA	1.92	0.41
8:C:62:LYS:HB2	8:C:63:PRO:HD3	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:D:1:MET:HE2	9:D:1:MET:HB2	1.97	0.41
9:D:102:ARG:O	9:D:106:LYS:HG3	2.20	0.41
12:G:21:VAL:HG23	12:G:26:ALA:HB2	2.02	0.41
16:K:71:ARG:HG3	16:K:71:ARG:NH1	2.34	0.41
41:j:133:PRO:O	41:j:137:VAL:HG23	2.19	0.41
42:k:9:MET:SD	42:k:86:ARG:HB3	2.59	0.41
1:1:1214:A:H2'	1:1:1215:G:O4'	2.20	0.41
1:1:1495:A:H2	1:1:1578:U:O2	2.02	0.41
1:1:1511:G:H2'	1:1:1512:C:H6	1.84	0.41
1:1:1713:A:N6	1:1:1746:A:N1	2.68	0.41
1:1:1788:C:C2	1:1:1789:A:C8	3.08	0.41
1:1:2529:G:H5''	1:1:2530:A:H5''	2.01	0.41
1:1:2741:A:H2'	1:1:2742:G:O4'	2.20	0.41
2:2:408:A:H2'	2:2:409:U:H6	1.85	0.41
2:2:781:A:OP2	2:2:800:G:N1	2.38	0.41
2:2:984:C:H2'	2:2:985:C:C6	2.54	0.41
2:2:1443:C:H2'	2:2:1444:U:O4'	2.20	0.41
2:2:1469:C:H2'	2:2:1470:U:O4'	2.20	0.41
3:4:7:G:H5'	20:O:29:HIS:CE1	2.54	0.41
8:C:152:PRO:HG2	8:C:154:LYS:H	1.85	0.41
11:F:11:VAL:HG11	11:F:17:VAL:HG21	2.02	0.41
11:F:75:MET:HE2	11:F:75:MET:HB3	1.85	0.41
14:I:89:SER:HB3	14:I:135:MET:O	2.20	0.41
16:K:76:VAL:CG1	21:P:73:VAL:HB	2.49	0.41
20:O:75:GLY:HA3	20:O:109:ALA:HB3	2.02	0.41
23:R:52:PRO:O	23:R:53:PHE:HD1	2.03	0.41
24:S:8:ARG:HG2	24:S:102:HIS:ND1	2.36	0.41
30:Y:28:LEU:HD21	30:Y:42:LEU:HB3	2.02	0.41
39:h:112:ASP:O	39:h:116:VAL:HG23	2.19	0.41
39:h:130:PHE:CZ	39:h:157:LEU:HB3	2.55	0.41
43:l:18:PHE:HD2	43:l:23:LEU:HD23	1.85	0.41
45:n:41:ARG:HG3	45:n:43:THR:HB	2.02	0.41
1:1:575:A:OP2	1:1:2499:C:O2'	2.36	0.41
1:1:588:U:H2'	1:1:589:U:C6	2.56	0.41
1:1:1223:G:C6	1:1:1227:G:C6	3.08	0.41
1:1:1257:C:O5'	1:1:1257:C:H6	2.03	0.41
1:1:1782:U:O2	1:1:2608:G:O2'	2.34	0.41
1:1:2086:U:H2'	1:1:2087:G:H8	1.86	0.41
1:1:2087:G:H2'	1:1:2088:A:C8	2.55	0.41
1:1:2544:G:H5'	1:1:2645:G:C2	2.55	0.41
2:2:75:G:H2'	2:2:76:G:H8	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:553:A:H2'	2:2:554:A:H8	1.85	0.41
2:2:1150:A:O2'	46:o:41:PRO:O	2.27	0.41
2:2:1173:U:C4	2:2:1174:G:N7	2.88	0.41
2:2:1360:A:C6	2:2:1361:G:C5	3.08	0.41
4:6:9:G:H1'	4:6:46:G:H2'	2.03	0.41
6:A:101:ASP:OD1	6:A:101:ASP:N	2.54	0.41
11:F:33:LEU:HB2	11:F:75:MET:HE3	2.02	0.41
23:R:24:LYS:HD3	23:R:92:TRP:HB3	2.02	0.41
24:S:36:LEU:HD23	24:S:48:LYS:CA	2.48	0.41
25:T:29:THR:HG23	25:T:85:VAL:C	2.45	0.41
32:a:66:ILE:H	32:a:66:ILE:HD12	1.85	0.41
38:g:73:LYS:HA	38:g:73:LYS:HD2	1.72	0.41
44:m:105:SER:HB2	44:m:126:ILE:CD1	2.50	0.41
45:n:27:LYS:HE2	45:n:27:LYS:HB3	1.89	0.41
56:y:27:MET:SD	56:y:57:ILE:HD11	2.60	0.41
1:1:26:G:H2'	1:1:27:G:O4'	2.20	0.41
1:1:424:G:C6	1:1:425:G:N7	2.88	0.41
1:1:910:A:H1'	1:1:2264:C:O2'	2.19	0.41
1:1:995:C:H42	15:J:2:LYS:HB3	1.84	0.41
1:1:1244:A:O2'	9:D:29:HIS:NE2	2.46	0.41
1:1:1441:G:H2'	1:1:1442:U:C6	2.55	0.41
1:1:1853:A:H2'	1:1:1854:A:C8	2.56	0.41
1:1:1874:C:H2'	1:1:1875:G:O4'	2.20	0.41
1:1:1910:G:N2	1:1:1921:G:C4	2.88	0.41
1:1:2017:U:O2'	1:1:2019:A:OP2	2.32	0.41
1:1:2205:A:H2'	1:1:2206:C:C6	2.56	0.41
1:1:2270:A:O3'	28:W:20:ARG:HA	2.21	0.41
1:1:2615:U:H1'	33:b:4:GLN:HB3	2.02	0.41
1:1:2622:U:O2'	1:1:2825:G:N7	2.52	0.41
1:1:2715:C:H6	1:1:2715:C:O5'	2.03	0.41
1:1:2820:A:OP2	19:N:2:ARG:NH2	2.54	0.41
2:2:358:U:H2'	2:2:359:G:H8	1.85	0.41
2:2:666:G:H5'	2:2:726:C:H1'	2.02	0.41
2:2:996:A:N1	2:2:1045:C:O2'	2.31	0.41
2:2:1150:A:H5''	2:2:1151:A:OP2	2.20	0.41
2:2:1181:G:O2'	2:2:1182:G:N7	2.47	0.41
2:2:1209:C:N4	2:2:1210:C:H41	2.17	0.41
3:4:9:G:C2	3:4:10:G:C8	3.09	0.41
3:4:94:A:H2'	3:4:95:U:C6	2.56	0.41
3:4:100:G:H2'	3:4:101:A:O4'	2.20	0.41
4:5:23:C:H2'	4:5:24:U:H6	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:19:TRP:HE1	6:A:23:LYS:HE2	1.85	0.41
6:A:80:GLY:HA3	6:A:202:GLY:O	2.21	0.41
7:B:78:VAL:HG22	7:B:94:VAL:HG12	2.02	0.41
9:D:130:LYS:HA	9:D:130:LYS:HD2	1.82	0.41
12:G:12:LEU:HD23	12:G:12:LEU:H	1.85	0.41
15:J:73:VAL:CG1	15:J:86:GLN:HG3	2.50	0.41
21:P:63:LYS:HE2	21:P:65:SER:HB3	2.02	0.41
27:V:25:LYS:HD2	27:V:42:LEU:O	2.20	0.41
32:a:35:ASP:OD2	49:r:3:ARG:HB3	2.20	0.41
39:h:43:LEU:CD2	39:h:87:LEU:HD11	2.51	0.41
45:n:47:VAL:HG23	45:n:76:ALA:HB1	2.02	0.41
45:n:124:ARG:HB3	45:n:124:ARG:CZ	2.51	0.41
48:q:66:TYR:HB2	48:q:87:VAL:HG21	2.03	0.41
48:q:90:LEU:HD23	48:q:90:LEU:HA	1.89	0.41
50:s:51:LEU:HD23	50:s:51:LEU:HA	1.86	0.41
1:1:44:A:H2'	1:1:45:G:O4'	2.20	0.41
1:1:63:A:H2'	1:1:64:A:C8	2.55	0.41
1:1:280:U:H2'	1:1:281:C:H6	1.84	0.41
1:1:382:A:C2	1:1:393:C:N3	2.88	0.41
1:1:417:C:O5'	1:1:417:C:H6	2.03	0.41
1:1:545:U:O2'	1:1:547:A:H5''	2.21	0.41
1:1:581:C:H2'	1:1:582:A:H8	1.86	0.41
1:1:869:G:O3'	18:M:6:ARG:NH1	2.53	0.41
1:1:988:A:P	31:Z:12:SER:HB3	2.61	0.41
1:1:1480:C:H2'	1:1:1481:U:O4'	2.21	0.41
1:1:1516:G:C4	1:1:1517:G:C8	3.08	0.41
1:1:1904:G:H2'	1:1:1905:C:O4'	2.20	0.41
1:1:2728:U:O2'	1:1:2729:G:H8	2.03	0.41
1:1:2790:U:H5'	1:1:2893:A:N7	2.35	0.41
1:1:2848:G:C8	21:P:95:ALA:HB2	2.56	0.41
2:2:206:C:H3'	2:2:207:C:C6	2.56	0.41
2:2:250:A:H4'	2:2:251:G:O5'	2.21	0.41
2:2:473:U:C2	2:2:474:G:C8	3.08	0.41
2:2:1157:A:C2	2:2:1181:G:C5	3.09	0.41
2:2:1467:C:H2'	2:2:1468:A:C8	2.55	0.41
10:E:70:ALA:HB3	10:E:81:GLN:HA	2.02	0.41
17:L:89:VAL:HG11	17:L:123:ARG:HH22	1.85	0.41
22:Q:70:ARG:NH1	22:Q:75:SER:HB2	2.35	0.41
28:W:40:GLN:HE22	28:W:43:THR:HA	1.85	0.41
31:Z:41:THR:HG23	31:Z:44:ILE:H	1.85	0.41
39:h:156:ARG:H	39:h:163:ALA:CB	2.33	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:i:88:GLU:HG2	40:i:188:ARG:HB2	2.03	0.41
41:j:162:GLU:O	41:j:165:LEU:HD22	2.21	0.41
42:k:2:ARG:O	42:k:65:GLU:HA	2.21	0.41
45:n:7:TYR:CG	45:n:8:GLY:N	2.88	0.41
45:n:36:GLU:H	45:n:36:GLU:CD	2.28	0.41
46:o:36:VAL:HG22	46:o:76:ILE:HD12	2.02	0.41
51:t:39:LEU:HD23	51:t:39:LEU:HA	1.90	0.41
53:v:6:ARG:NH1	53:v:6:ARG:HB2	2.36	0.41
1:1:48:G:N1	1:1:177:G:OP2	2.51	0.41
1:1:433:C:O2'	1:1:434:U:H5'	2.20	0.41
1:1:885:C:O2	1:1:892:A:C6	2.74	0.41
1:1:1328:A:H2'	1:1:1330:C:C5	2.56	0.41
1:1:1495:A:H2'	1:1:1496:A:O4'	2.21	0.41
1:1:1513:U:H2'	1:1:1514:G:O4'	2.20	0.41
1:1:1775:U:O4	1:1:1789:A:H2	2.02	0.41
1:1:1939:5MU:OP1	1:1:2604:U:O2'	2.33	0.41
1:1:2251:OMG:H1'	1:1:2251:OMG:HM23	1.79	0.41
1:1:2364:C:H2'	1:1:2365:G:O4'	2.20	0.41
1:1:2799:A:C6	1:1:2801:G:C5	3.09	0.41
1:1:2889:C:H2'	1:1:2890:G:O4'	2.20	0.41
2:2:2:A:O2'	2:2:613:C:H4'	2.21	0.41
2:2:9:G:N7	2:2:558:G:O2'	2.53	0.41
2:2:181:A:H1'	2:2:182:A:C8	2.56	0.41
2:2:294:U:H2'	2:2:295:C:H6	1.86	0.41
2:2:333:U:OP1	56:y:2:ALA:N	2.53	0.41
2:2:517:G:N2	2:2:530:G:OP1	2.47	0.41
2:2:767:A:H2'	2:2:768:A:O4'	2.20	0.41
2:2:916:U:H2'	2:2:917:G:C8	2.55	0.41
2:2:947:G:C2	2:2:948:C:C2	3.08	0.41
3:4:18:G:H2'	3:4:19:C:C6	2.55	0.41
4:5:8:G:O2'	4:5:9:G:N7	2.52	0.41
8:C:38:LYS:O	8:C:46:ARG:HA	2.21	0.41
11:F:67:THR:O	11:F:71:LEU:HG	2.21	0.41
14:I:36:GLU:O	14:I:39:LYS:HG2	2.21	0.41
14:I:100:ILE:HD11	14:I:137:LEU:HD23	2.01	0.41
15:J:114:LEU:HA	15:J:114:LEU:HD12	1.77	0.41
16:K:41:ILE:HD11	16:K:86:LEU:CD2	2.50	0.41
17:L:37:GLY:O	17:L:40:SER:OG	2.30	0.41
21:P:106:LYS:HD3	21:P:109:ARG:HE	1.84	0.41
23:R:48:LYS:NZ	23:R:103:ALA:HB1	2.36	0.41
28:W:40:GLN:NE2	28:W:43:THR:HA	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:W:51:VAL:HG22	28:W:82:ILE:CD1	2.51	0.41
38:g:59:LYS:NZ	38:g:63:ARG:HH12	2.19	0.41
40:i:62:ARG:HE	40:i:62:ARG:HB3	1.75	0.41
40:i:73:ARG:HD2	40:i:73:ARG:HA	1.81	0.41
42:k:26:THR:O	42:k:29:ILE:HG22	2.21	0.41
42:k:49:TYR:HB3	54:w:74:HIS:CD2	2.56	0.41
49:r:23:TYR:CZ	49:r:70:ARG:HD3	2.56	0.41
52:u:18:GLN:HE22	52:u:35:ARG:HH21	1.69	0.41
54:w:32:TYR:CE1	54:w:45:THR:HG21	2.46	0.41
55:x:56:GLN:HG2	55:x:57:HIS:H	1.86	0.41
56:y:35:VAL:HG21	56:y:79:LEU:CD1	2.51	0.41
1:1:527:C:H42	1:1:2779:U:P	2.42	0.41
1:1:587:C:H4'	1:1:588:U:C6	2.55	0.41
1:1:1062:G:O2'	14:I:135:MET:HG2	2.21	0.41
1:1:1540:G:H2'	1:1:1541:C:C6	2.56	0.41
1:1:1810:A:H8	1:1:1810:A:O5'	2.04	0.41
1:1:2543:G:H2'	1:1:2544:G:O4'	2.21	0.41
1:1:2739:U:O2	1:1:2740:A:C8	2.73	0.41
2:2:268:U:C2	2:2:269:C:C5	3.08	0.41
2:2:339:C:H2'	2:2:340:U:C6	2.56	0.41
2:2:359:G:C6	2:2:360:G:C5	3.09	0.41
2:2:524:G:H2'	2:2:525:C:C5	2.56	0.41
2:2:635:A:H2'	2:2:636:U:C6	2.56	0.41
2:2:706:A:C6	2:2:707:U:C4	3.09	0.41
2:2:936:C:C4	2:2:937:A:N7	2.89	0.41
2:2:1122:U:H2'	2:2:1123:U:C6	2.55	0.41
3:4:24:G:N2	3:4:28:C:O2	2.53	0.41
3:4:61:G:H2'	3:4:62:C:H6	1.86	0.41
7:B:239:ASN:O	60:B:302:HOH:O	2.22	0.41
8:C:168:GLU:O	8:C:170:VAL:HG23	2.21	0.41
22:Q:16:LYS:HB3	22:Q:16:LYS:HE2	1.69	0.41
33:b:17:ARG:HA	33:b:20:ASP:OD1	2.20	0.41
40:i:9:LEU:HD23	40:i:9:LEU:HA	1.90	0.41
45:n:44:ALA:O	45:n:48:VAL:HG23	2.21	0.41
48:q:84:GLY:HA2	48:q:95:TYR:HD1	1.86	0.41
49:r:79:ARG:HH22	55:x:69:HIS:CE1	2.39	0.41
1:1:221:A:C8	1:1:266:G:O6	2.74	0.41
1:1:227:A:C2	1:1:2407:A:H1'	2.55	0.41
1:1:594:U:H2'	1:1:595:C:H6	1.85	0.41
1:1:1528:A:OP2	1:1:1543:G:N2	2.52	0.41
1:1:2074:U:H2'	1:1:2075:U:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2454:G:C4	1:1:2455:G:C8	3.09	0.41
2:2:211:G:C6	2:2:212:G:H1'	2.56	0.41
2:2:426:U:H4'	40:i:39:GLY:O	2.20	0.41
2:2:622:A:H2'	2:2:623:C:H5'	2.03	0.41
2:2:686:U:O4	2:2:703:G:O2'	2.29	0.41
2:2:781:A:O2'	2:2:1522:U:O2	2.35	0.41
2:2:1151:A:O2'	2:2:1152:A:H8	2.04	0.41
2:2:1291:U:C2	2:2:1292:G:N7	2.89	0.41
3:4:24:G:N7	3:4:56:G:O2'	2.52	0.41
3:4:47:C:OP2	20:O:3:LYS:HE2	2.21	0.41
4:5:25:C:H2'	4:5:26:G:O4'	2.21	0.41
7:B:79:GLU:CD	7:B:101:ARG:NH1	2.75	0.41
13:H:8:LYS:HA	13:H:11:ILE:HG22	2.02	0.41
18:M:110:GLU:OE2	18:M:114:ARG:NE	2.43	0.41
27:V:78:GLN:CB	27:V:87:GLN:HB2	2.49	0.41
28:W:41:ARG:HD3	28:W:41:ARG:HA	1.74	0.41
29:X:7:VAL:HG21	29:X:59:ILE:HD11	2.03	0.41
39:h:83:ASP:HA	39:h:86:LYS:HG2	2.02	0.41
42:k:9:MET:HE1	42:k:51:ILE:HD12	2.02	0.41
43:l:129:GLU:O	43:l:131:LYS:NZ	2.51	0.41
45:n:75:GLN:O	45:n:79:ILE:HG13	2.21	0.41
46:o:22:THR:HA	46:o:25:ILE:HG22	2.02	0.41
56:y:36:TYR:CE1	56:y:79:LEU:HD21	2.56	0.41
56:y:68:HIS:CE1	56:y:70:ASN:OD1	2.73	0.41
1:1:139:U:H3	25:T:1:MET:HG2	1.86	0.41
1:1:308:G:N2	1:1:477:A:C8	2.89	0.41
1:1:358:U:N3	1:1:359:G:N7	2.69	0.41
1:1:526:A:O2'	1:1:2043:C:O2	2.32	0.41
1:1:607:U:H5'	9:D:98:LYS:NZ	2.36	0.41
1:1:722:A:H2'	1:1:723:C:H6	1.86	0.41
1:1:1053:C:N4	1:1:1107:G:C6	2.89	0.41
1:1:1264:A:H8	1:1:1264:A:O5'	2.03	0.41
1:1:1299:G:N1	1:1:1640:A:OP2	2.32	0.41
1:1:1444:G:C4	1:1:1445:G:C8	3.08	0.41
1:1:1663:G:C6	1:1:1998:A:C6	3.09	0.41
1:1:1733:G:H2'	1:1:1734:G:H8	1.86	0.41
1:1:1862:G:C2	1:1:1863:G:C8	3.09	0.41
1:1:1875:G:O5'	1:1:1875:G:H8	2.04	0.41
1:1:1909:C:N3	1:1:1922:G:C6	2.89	0.41
1:1:1952:A:N3	1:1:2560:A:O2'	2.38	0.41
1:1:2028:U:H2'	1:1:2029:G:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2178:C:O2'	1:1:2179:C:H5'	2.21	0.41
1:1:2236:U:H2'	1:1:2237:G:O4'	2.21	0.41
1:1:2286:G:H4'	1:1:2287:A:O4'	2.21	0.41
1:1:2425:A:H5''	1:1:2427:C:O4'	2.21	0.41
1:1:2454:G:C6	1:1:2499:C:N4	2.88	0.41
1:1:2461:A:H2'	1:1:2462:C:C6	2.56	0.41
1:1:2785:C:H2'	1:1:2786:U:H6	1.85	0.41
1:1:2796:U:O2'	1:1:2797:U:H5''	2.21	0.41
1:1:2804:U:H2'	1:1:2805:C:C6	2.56	0.41
2:2:8:A:N6	40:i:202:GLU:O	2.41	0.41
2:2:219:U:C2	2:2:220:G:C8	3.08	0.41
2:2:381:C:H2'	2:2:382:A:O4'	2.21	0.41
2:2:415:A:C4	2:2:416:G:C8	3.08	0.41
2:2:953:G:H2'	2:2:954:G:O4'	2.21	0.41
2:2:1029:U:H2'	2:2:1031:C:O2	2.20	0.41
2:2:1039:G:H2'	2:2:1040:U:H6	1.86	0.41
2:2:1078:U:O3'	41:j:138:ARG:NH2	2.54	0.41
2:2:1146:A:C6	2:2:1147:C:C5	3.09	0.41
2:2:1148:U:H2'	2:2:1149:C:O4'	2.21	0.41
2:2:1238:A:H2	2:2:1241:G:N3	2.19	0.41
2:2:1261:A:O2'	2:2:1283:U:H5''	2.21	0.41
2:2:1320:C:N3	55:x:36:ARG:HB3	2.36	0.41
2:2:1348:U:H2'	2:2:1349:A:C8	2.56	0.41
3:4:59:A:H2'	3:4:60:C:C6	2.56	0.41
3:4:70:C:H2'	3:4:71:C:H6	1.86	0.41
3:4:113:C:H1'	20:O:46:GLU:HA	2.02	0.41
4:6:53:G:C4	4:6:54:G:C8	3.09	0.41
4:6:76:C:O2'	4:6:77:A:N7	2.48	0.41
7:B:135:ILE:O	7:B:167:ARG:NH1	2.54	0.41
7:B:205:LEU:HB3	7:B:210:ALA:HB3	2.03	0.41
7:B:232:HIS:NE2	7:B:244:PRO:HA	2.35	0.41
8:C:112:THR:O	8:C:195:GLY:HA2	2.21	0.41
9:D:15:SER:N	9:D:197:GLU:OE1	2.53	0.41
9:D:198:GLU:HA	9:D:198:GLU:OE2	2.21	0.41
10:E:112:ARG:HH21	10:E:112:ARG:HG3	1.86	0.41
10:E:133:ARG:CB	10:E:133:ARG:HH11	2.34	0.41
10:E:162:SER:OG	10:E:163:ASP:N	2.54	0.41
11:F:87:LEU:HD23	11:F:164:TYR:HA	2.03	0.41
13:H:88:HIS:HB2	13:H:89:PRO:HD3	2.02	0.41
17:L:101:ILE:HG13	17:L:102:GLY:N	2.35	0.41
23:R:24:LYS:O	23:R:25:LEU:HD23	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:R:37:GLU:HB3	23:R:53:PHE:CE2	2.56	0.41
27:V:80:HIS:CE1	27:V:83:LYS:HD2	2.56	0.41
30:Y:10:SER:OG	30:Y:12:GLU:OE2	2.25	0.41
40:i:104:ARG:HA	40:i:104:ARG:HD3	1.77	0.41
40:i:151:LYS:HD3	40:i:151:LYS:HA	1.94	0.41
42:k:2:ARG:HD2	42:k:68:GLN:HG3	2.01	0.41
43:l:99:LEU:HB3	43:l:103:TRP:CE2	2.56	0.41
47:p:13:ARG:HH22	47:p:77:TYR:HA	1.86	0.41
47:p:64:GLN:HB3	47:p:95:SER:HB2	2.03	0.41
48:q:89:OTD:H8	48:q:89:OTD:H4	1.84	0.41
53:v:79:VAL:C	53:v:80:GLU:HG3	2.46	0.41
1:1:31:C:O3'	1:1:1238:G:H5'	2.20	0.41
1:1:184:C:H2'	1:1:185:G:C8	2.57	0.41
1:1:285:G:C6	1:1:356:G:C6	3.08	0.41
1:1:321:U:C2	9:D:159:LEU:HD13	2.56	0.41
1:1:349:U:H2'	1:1:350:G:H8	1.86	0.41
1:1:644:A:C2	1:1:2369:A:H1'	2.55	0.41
1:1:783:A:H2'	1:1:783:A:N3	2.35	0.41
1:1:887:A:H5'	49:r:92:ARG:NH1	2.36	0.41
1:1:1021:A:N3	1:1:1021:A:H3'	2.36	0.41
1:1:1287:A:O2'	1:1:1288:G:H5'	2.21	0.41
1:1:1770:G:C5	1:1:1983:G:C6	3.09	0.41
1:1:2785:C:H2'	1:1:2786:U:C6	2.56	0.41
2:2:113:G:H1'	2:2:354:G:H5'	2.02	0.41
2:2:113:G:H2'	2:2:114:U:C6	2.56	0.41
2:2:415:A:C6	2:2:416:G:C5	3.09	0.41
2:2:590:U:OP1	44:m:31:LYS:HD2	2.21	0.41
2:2:667:G:H4'	51:t:51:HIS:ND1	2.35	0.41
2:2:979:C:C6	2:2:1318:A:N1	2.89	0.41
2:2:1073:U:C2	2:2:1074:G:C8	3.09	0.41
2:2:1249:C:O2'	45:n:75:GLN:OE1	2.21	0.41
2:2:1435:G:H2'	2:2:1436:U:C6	2.55	0.41
2:2:1531:A:H8	2:2:1531:A:O5'	2.03	0.41
3:4:112:G:H2'	3:4:113:C:H6	1.85	0.41
4:5:16:C:H4'	4:5:17:U:C6	2.56	0.41
4:5:27:U:H2'	4:5:28:C:H6	1.86	0.41
6:A:17:CYS:O	6:A:21:VAL:HG23	2.21	0.41
9:D:46:GLN:HG2	9:D:86:ALA:HB1	2.03	0.41
10:E:94:GLU:HG2	10:E:98:GLU:OE1	2.21	0.41
11:F:25:THR:O	11:F:26:ILE:HD13	2.21	0.41
11:F:84:THR:HG22	11:F:134:LYS:CD	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:K:73:ASP:OD1	16:K:73:ASP:C	2.63	0.41
24:S:75:PHE:CE2	24:S:104:THR:HB	2.56	0.41
43:l:68:ASN:O	43:l:138:ARG:NH1	2.53	0.41
46:o:12:ALA:HB3	46:o:18:ILE:HB	2.03	0.41
48:q:108:LYS:HD3	48:q:108:LYS:HA	1.76	0.41
49:r:11:ASP:HA	49:r:45:ILE:HB	2.02	0.41
1:1:121:G:H4'	1:1:149:A:H5'	2.03	0.40
1:1:169:G:C6	1:1:170:U:C4	3.09	0.40
1:1:538:A:N1	1:1:556:A:C8	2.89	0.40
1:1:683:U:H6	1:1:683:U:O5'	2.04	0.40
1:1:960:A:C2	1:1:2495:G:N3	2.89	0.40
1:1:1232:G:C5	1:1:1233:C:C5	3.08	0.40
1:1:1440:U:H2'	1:1:1441:G:C8	2.55	0.40
1:1:1738:G:O2'	1:1:1739:A:H8	2.05	0.40
1:1:1792:G:H5'	7:B:204:VAL:CG2	2.37	0.40
1:1:1817:G:H2'	1:1:1818:U:H5'	2.03	0.40
1:1:1912:A:N1	2:2:1407:5MC:O2'	2.39	0.40
1:1:1946:U:H2'	1:1:1947:C:H6	1.87	0.40
1:1:2162:G:O3'	1:1:2163:A:H8	2.05	0.40
1:1:2697:G:C6	1:1:2711:A:N1	2.89	0.40
2:2:132:C:H5'	2:2:262:A:O2'	2.21	0.40
2:2:203:G:N1	2:2:215:C:C4	2.89	0.40
2:2:390:U:O2'	52:u:28:ARG:NH2	2.53	0.40
2:2:925:G:O2'	2:2:927:G:O5'	2.32	0.40
2:2:1130:A:N7	2:2:1146:A:C6	2.89	0.40
2:2:1157:A:C2	2:2:1181:G:C4	3.10	0.40
3:4:7:G:OP1	20:O:4:LYS:NZ	2.38	0.40
3:4:32:U:C2	3:4:33:G:C8	3.09	0.40
3:4:52:A:C5	20:O:33:ARG:NH2	2.89	0.40
6:A:137:ALA:HB3	6:A:147:LEU:HD13	2.02	0.40
6:A:203:THR:O	6:A:204:ASP:OD1	2.39	0.40
7:B:183:LYS:HG2	7:B:268:VAL:HG23	2.03	0.40
9:D:21:ARG:HH21	9:D:21:ARG:HD2	1.71	0.40
9:D:67:ARG:HB3	9:D:67:ARG:NH1	2.35	0.40
14:I:100:ILE:HG23	14:I:104:GLN:HE21	1.86	0.40
14:I:113:ALA:CA	14:I:116:MET:HG2	2.44	0.40
22:Q:36:PHE:O	22:Q:40:ILE:HG12	2.21	0.40
24:S:82:MET:HG2	24:S:98:LYS:HB2	2.03	0.40
28:W:25:ARG:HE	28:W:29:GLU:CD	2.28	0.40
29:X:15:GLY:HA3	29:X:29:PHE:HE2	1.85	0.40
40:i:26:ARG:NH2	40:i:30:THR:HG22	2.28	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:i:104:ARG:HG3	40:i:104:ARG:HH11	1.86	0.40
43:l:139:GLU:HG3	43:l:143:ARG:NH2	2.34	0.40
53:v:45:HIS:HB2	53:v:70:THR:O	2.21	0.40
55:x:28:LYS:HB3	55:x:28:LYS:HE2	1.84	0.40
1:1:85:G:C5	1:1:98:G:C2	3.09	0.40
1:1:172:A:H2'	1:1:173:A:C8	2.56	0.40
1:1:488:G:H1'	1:1:492:A:N6	2.36	0.40
1:1:563:A:C6	1:1:564:C:C4	3.09	0.40
1:1:818:G:N7	1:1:1187:G:C6	2.90	0.40
1:1:1131:G:O4'	15:J:77:HIS:HD2	2.04	0.40
1:1:1411:U:H2'	1:1:1412:U:C6	2.55	0.40
1:1:2109:U:OP1	1:1:2149:U:O2'	2.39	0.40
1:1:2498:OMC:CM2	1:1:2499:C:H5'	2.47	0.40
1:1:2549:G:C2	1:1:2550:G:N7	2.89	0.40
2:2:76:G:C4	2:2:77:A:C8	3.09	0.40
2:2:170:U:O2'	2:2:171:A:H5'	2.20	0.40
2:2:184:G:H2'	2:2:185:U:C6	2.57	0.40
2:2:264:C:O2'	53:v:66:PRO:O	2.39	0.40
2:2:338:A:H2'	2:2:339:C:C6	2.55	0.40
2:2:920:U:O2'	2:2:1081:A:O2'	2.33	0.40
2:2:981:U:OP1	50:s:6:MET:HE1	2.21	0.40
2:2:1107:C:O4'	39:h:169:ARG:NH1	2.54	0.40
2:2:1127:G:N2	2:2:1145:A:N1	2.67	0.40
2:2:1181:G:H1'	2:2:1182:G:C4	2.57	0.40
2:2:1500:A:H5''	2:2:1508:A:H5''	2.02	0.40
3:4:41:G:O6	10:E:69:LYS:NZ	2.37	0.40
4:6:72:C:H2'	4:6:73:A:C8	2.55	0.40
7:B:69:ARG:NH1	7:B:129:THR:OG1	2.55	0.40
7:B:79:GLU:N	7:B:93:LEU:O	2.52	0.40
8:C:13:ARG:NH1	21:P:75:GLN:OE1	2.54	0.40
9:D:48:THR:O	9:D:52:VAL:HG23	2.22	0.40
9:D:119:ILE:HB	9:D:187:VAL:HG22	2.02	0.40
10:E:120:LYS:N	10:E:120:LYS:HD3	2.36	0.40
18:M:31:PHE:O	18:M:104:GLU:HA	2.21	0.40
19:N:35:LYS:NZ	19:N:110:MET:HG2	2.35	0.40
32:a:63:ARG:NH1	32:a:64:PHE:HE1	2.19	0.40
38:g:27:MET:HG3	38:g:189:THR:HA	2.04	0.40
39:h:35:SER:HB3	39:h:59:ARG:NH2	2.36	0.40
39:h:131:ARG:HD2	39:h:168:TYR:OH	2.21	0.40
42:k:34:GLY:HA2	42:k:65:GLU:O	2.21	0.40
43:l:23:LEU:O	43:l:27:VAL:HG23	2.20	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:m:66:PHE:CD2	44:m:67:GLN:OE1	2.74	0.40
50:s:31:ILE:HD12	50:s:45:VAL:HG23	2.02	0.40
51:t:55:GLY:O	51:t:58:ARG:HG2	2.21	0.40
1:1:79:C:O2'	1:1:346:A:N3	2.49	0.40
1:1:600:G:H2'	1:1:601:C:C6	2.55	0.40
1:1:834:G:H2'	1:1:835:C:O4'	2.21	0.40
1:1:888:C:C2	49:r:81:MET:HE2	2.56	0.40
1:1:1249:U:C4	17:L:18:ARG:HD2	2.56	0.40
1:1:1306:C:N4	1:1:1606:C:H2'	2.36	0.40
1:1:1935:G:H1'	1:1:1964:G:N2	2.36	0.40
1:1:2047:C:H2'	1:1:2048:G:C8	2.56	0.40
1:1:2407:A:C4	1:1:2408:U:C5	3.10	0.40
2:2:188:C:H2'	2:2:189:A:C8	2.57	0.40
2:2:560:A:H5'	2:2:566:G:N2	2.36	0.40
2:2:683:G:N2	47:p:40:ASN:HA	2.35	0.40
2:2:893:C:C4	2:2:894:G:N7	2.90	0.40
2:2:932:C:N4	43:l:3:ARG:HH12	2.19	0.40
2:2:977:A:H1'	2:2:982:U:O4	2.20	0.40
2:2:1012:A:N6	2:2:1018:G:O6	2.54	0.40
2:2:1024:G:H2'	2:2:1025:U:H6	1.86	0.40
2:2:1229:A:P	49:r:113:ARG:HH21	2.45	0.40
2:2:1313:U:H2'	2:2:1314:C:C6	2.57	0.40
2:2:1462:C:H2'	2:2:1463:U:C6	2.56	0.40
2:2:1495:U:C2	2:2:1496:C:C5	3.09	0.40
3:4:94:A:H2'	3:4:95:U:H6	1.87	0.40
4:5:31:G:H2'	4:5:32:C:C6	2.56	0.40
7:B:101:ARG:HG2	7:B:101:ARG:HH11	1.86	0.40
11:F:24:ILE:HG21	11:F:72:LEU:HD11	2.02	0.40
12:G:117:LEU:HD22	12:G:120:GLY:O	2.21	0.40
18:M:40:ARG:HE	18:M:40:ARG:HB3	1.59	0.40
19:N:83:LEU:HA	19:N:86:ARG:HB2	2.03	0.40
20:O:26:LEU:HD12	20:O:38:GLN:O	2.22	0.40
29:X:57:ARG:HH21	29:X:57:ARG:HD3	1.77	0.40
39:h:72:ARG:HG2	39:h:75:ILE:HG22	2.02	0.40
40:i:73:ARG:O	40:i:77:LYS:HG3	2.21	0.40
41:j:164:ILE:O	41:j:165:LEU:HB2	2.21	0.40
44:m:10:MET:HG3	44:m:27:MET:SD	2.61	0.40
45:n:12:ARG:HA	45:n:106:ARG:HH12	1.85	0.40
47:p:58:SER:O	47:p:91:PRO:HG3	2.22	0.40
1:1:38:A:H5'	9:D:45:ALA:HB3	2.03	0.40
1:1:236:C:H2'	1:1:237:C:H6	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:391:A:H1'	1:1:411:G:O4'	2.21	0.40
1:1:474:G:C6	1:1:510:C:N4	2.89	0.40
1:1:773:U:O2'	7:B:48:ARG:HD3	2.21	0.40
1:1:901:C:C2	1:1:902:C:C6	3.09	0.40
1:1:1005:C:OP2	1:1:1011:G:O2'	2.23	0.40
1:1:1131:G:OP1	15:J:77:HIS:NE2	2.35	0.40
1:1:1252:G:N2	22:Q:33:ARG:HG2	2.37	0.40
1:1:1410:G:C6	1:1:1593:A:C6	3.10	0.40
1:1:1667:G:O2'	1:1:1991:U:O4	2.32	0.40
1:1:1688:U:O2'	1:1:1700:A:N7	2.40	0.40
1:1:1849:G:H2'	1:1:1850:G:H8	1.87	0.40
1:1:1890:A:H2'	1:1:1891:G:O4'	2.21	0.40
1:1:2194:U:H2'	1:1:2195:U:H6	1.83	0.40
1:1:2537:U:H2'	1:1:2538:C:C6	2.56	0.40
1:1:2586:U:OP2	1:1:2608:G:N1	2.48	0.40
2:2:134:G:H2'	2:2:135:C:O4'	2.21	0.40
2:2:322:C:H2'	2:2:323:U:C6	2.56	0.40
2:2:858:G:O2'	2:2:859:G:H5'	2.20	0.40
2:2:976:G:H5'	2:2:977:A:OP1	2.21	0.40
2:2:978:A:C8	2:2:979:C:H5	2.39	0.40
2:2:1027:C:N4	2:2:1034:G:C5	2.89	0.40
2:2:1171:A:H2'	2:2:1172:C:H6	1.86	0.40
2:2:1220:G:H1'	55:x:52:HIS:CE1	2.56	0.40
2:2:1348:U:H2'	2:2:1349:A:H8	1.87	0.40
2:2:1486:G:C6	2:2:1487:G:C6	3.09	0.40
4:5:29:G:C4	4:5:30:G:C8	3.09	0.40
10:E:167:ARG:HE	10:E:177:PHE:HE2	1.69	0.40
24:S:52:GLU:HA	24:S:55:ILE:HD12	2.02	0.40
30:Y:31:GLN:CB	30:Y:37:LEU:HB2	2.48	0.40
31:Z:39:GLU:O	31:Z:41:THR:N	2.54	0.40
37:f:2:LYS:HA	37:f:2:LYS:HD2	1.89	0.40
43:l:17:LYS:HD3	43:l:44:TYR:CE2	2.56	0.40
46:o:15:HIS:HB3	46:o:70:HIS:CE1	2.56	0.40
47:p:67:ALA:HB3	47:p:99:ALA:HB3	2.03	0.40
1:1:123:G:H4'	1:1:1376:C:O5'	2.21	0.40
1:1:288:U:C2	1:1:289:G:C8	3.10	0.40
1:1:303:G:H2'	1:1:304:U:H6	1.84	0.40
1:1:479:A:H4'	1:1:480:A:OP1	2.22	0.40
1:1:543:G:H2'	1:1:544:C:C6	2.57	0.40
1:1:1108:U:H2'	1:1:1109:C:H6	1.86	0.40
1:1:1149:G:H2'	1:1:1150:C:C6	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1614:A:C2	24:S:93:ALA:HB2	2.57	0.40
1:1:2097:A:H2'	1:1:2098:U:C6	2.57	0.40
1:1:2138:G:H2'	1:1:2139:U:O4'	2.21	0.40
1:1:2250:G:C8	1:1:2496:C:H5''	2.57	0.40
1:1:2317:A:C4	1:1:2318:G:C8	3.10	0.40
1:1:2547:A:H4'	16:K:29:HIS:CE1	2.57	0.40
1:1:2661:G:OP2	1:1:2661:G:H8	2.05	0.40
2:2:176:C:H2'	2:2:177:G:N3	2.36	0.40
2:2:527:G7M:O2'	2:2:535:A:N1	2.31	0.40
2:2:593:U:H2'	2:2:594:U:C6	2.55	0.40
2:2:876:C:H4'	44:m:15:ARG:NH2	2.37	0.40
2:2:878:A:H2'	2:2:879:C:H6	1.82	0.40
2:2:932:C:H4'	43:l:4:ARG:CZ	2.52	0.40
2:2:1133:G:C6	2:2:1134:G:C6	3.09	0.40
3:4:61:G:H2'	3:4:62:C:C6	2.57	0.40
3:4:100:G:C6	3:4:101:A:C5	3.09	0.40
11:F:33:LEU:CB	11:F:75:MET:HE3	2.52	0.40
17:L:126:ARG:HE	17:L:126:ARG:HB2	1.77	0.40
30:Y:32:ALA:HA	30:Y:37:LEU:HB3	2.03	0.40
32:a:8:LYS:HG2	32:a:10:GLU:OE1	2.22	0.40
38:g:91:PHE:CE1	38:g:150:GLY:HA2	2.56	0.40
40:i:171:LEU:HD23	40:i:182:PHE:HA	2.02	0.40
43:l:79:ARG:NH1	43:l:83:SER:O	2.55	0.40
44:m:20:ALA:HB3	44:m:22:LYS:HG3	2.03	0.40
45:n:5:GLN:NE2	45:n:22:LYS:HE3	2.37	0.40
51:t:10:LYS:HE3	51:t:10:LYS:HB3	1.87	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
6	A	227/231 (98%)	201 (88%)	24 (11%)	2 (1%)	14	37
7	B	269/273 (98%)	252 (94%)	17 (6%)	0	100	100
8	C	207/209 (99%)	195 (94%)	12 (6%)	0	100	100
9	D	199/201 (99%)	187 (94%)	12 (6%)	0	100	100
10	E	175/179 (98%)	164 (94%)	10 (6%)	1 (1%)	21	47
11	F	173/177 (98%)	160 (92%)	13 (8%)	0	100	100
12	G	147/149 (99%)	136 (92%)	11 (8%)	0	100	100
13	H	128/165 (78%)	111 (87%)	17 (13%)	0	100	100
14	I	133/142 (94%)	122 (92%)	11 (8%)	0	100	100
15	J	140/142 (99%)	133 (95%)	7 (5%)	0	100	100
16	K	121/123 (98%)	116 (96%)	5 (4%)	0	100	100
17	L	142/144 (99%)	135 (95%)	7 (5%)	0	100	100
18	M	134/136 (98%)	129 (96%)	5 (4%)	0	100	100
19	N	117/127 (92%)	113 (97%)	4 (3%)	0	100	100
20	O	114/117 (97%)	109 (96%)	5 (4%)	0	100	100
21	P	112/115 (97%)	108 (96%)	4 (4%)	0	100	100
22	Q	115/118 (98%)	113 (98%)	2 (2%)	0	100	100
23	R	101/103 (98%)	92 (91%)	9 (9%)	0	100	100
24	S	108/110 (98%)	103 (95%)	5 (5%)	0	100	100
25	T	92/100 (92%)	89 (97%)	3 (3%)	0	100	100
26	U	101/104 (97%)	92 (91%)	9 (9%)	0	100	100
27	V	92/94 (98%)	88 (96%)	4 (4%)	0	100	100
28	W	74/85 (87%)	72 (97%)	2 (3%)	0	100	100
29	X	75/78 (96%)	72 (96%)	3 (4%)	0	100	100
30	Y	60/63 (95%)	59 (98%)	1 (2%)	0	100	100
31	Z	56/59 (95%)	53 (95%)	3 (5%)	0	100	100
32	a	64/70 (91%)	59 (92%)	5 (8%)	0	100	100
33	b	54/57 (95%)	52 (96%)	2 (4%)	0	100	100
34	c	50/55 (91%)	47 (94%)	3 (6%)	0	100	100
35	d	44/46 (96%)	42 (96%)	2 (4%)	0	100	100
36	e	62/65 (95%)	57 (92%)	4 (6%)	1 (2%)	7	23
37	f	36/38 (95%)	35 (97%)	1 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
38	g	223/241 (92%)	207 (93%)	16 (7%)	0	100	100
39	h	206/233 (88%)	196 (95%)	10 (5%)	0	100	100
40	i	203/206 (98%)	197 (97%)	6 (3%)	0	100	100
41	j	154/167 (92%)	143 (93%)	11 (7%)	0	100	100
42	k	102/135 (76%)	97 (95%)	5 (5%)	0	100	100
43	l	149/179 (83%)	141 (95%)	8 (5%)	0	100	100
44	m	127/130 (98%)	123 (97%)	4 (3%)	0	100	100
45	n	125/130 (96%)	114 (91%)	11 (9%)	0	100	100
46	o	97/103 (94%)	89 (92%)	8 (8%)	0	100	100
47	p	115/129 (89%)	107 (93%)	8 (7%)	0	100	100
48	q	120/124 (97%)	110 (92%)	10 (8%)	0	100	100
49	r	114/118 (97%)	106 (93%)	8 (7%)	0	100	100
50	s	98/101 (97%)	94 (96%)	4 (4%)	0	100	100
51	t	86/89 (97%)	81 (94%)	5 (6%)	0	100	100
52	u	80/82 (98%)	78 (98%)	2 (2%)	0	100	100
53	v	78/84 (93%)	70 (90%)	8 (10%)	0	100	100
54	w	64/75 (85%)	62 (97%)	2 (3%)	0	100	100
55	x	81/92 (88%)	77 (95%)	4 (5%)	0	100	100
56	y	84/87 (97%)	83 (99%)	1 (1%)	0	100	100
57	z	68/71 (96%)	67 (98%)	1 (2%)	0	100	100
All	All	6096/6451 (94%)	5738 (94%)	354 (6%)	4 (0%)	49	75

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
6	A	212	LYS
6	A	88	HIS
10	E	123	ASP
36	e	32	ILE

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	
6	A	199/201 (99%)	199 (100%)	0	100	100
7	B	216/218 (99%)	216 (100%)	0	100	100
8	C	164/164 (100%)	164 (100%)	0	100	100
9	D	165/165 (100%)	165 (100%)	0	100	100
10	E	148/150 (99%)	148 (100%)	0	100	100
11	F	136/138 (99%)	136 (100%)	0	100	100
12	G	114/114 (100%)	114 (100%)	0	100	100
13	H	99/123 (80%)	99 (100%)	0	100	100
14	I	104/110 (94%)	104 (100%)	0	100	100
15	J	116/116 (100%)	116 (100%)	0	100	100
16	K	104/104 (100%)	104 (100%)	0	100	100
17	L	103/103 (100%)	103 (100%)	0	100	100
18	M	109/109 (100%)	109 (100%)	0	100	100
19	N	99/103 (96%)	99 (100%)	0	100	100
20	O	86/87 (99%)	86 (100%)	0	100	100
21	P	99/100 (99%)	99 (100%)	0	100	100
22	Q	89/90 (99%)	89 (100%)	0	100	100
23	R	84/84 (100%)	84 (100%)	0	100	100
24	S	93/93 (100%)	93 (100%)	0	100	100
25	T	81/84 (96%)	81 (100%)	0	100	100
26	U	84/85 (99%)	84 (100%)	0	100	100
27	V	78/78 (100%)	78 (100%)	0	100	100
28	W	58/63 (92%)	58 (100%)	0	100	100
29	X	67/68 (98%)	67 (100%)	0	100	100
30	Y	54/55 (98%)	54 (100%)	0	100	100
31	Z	48/49 (98%)	48 (100%)	0	100	100
32	a	59/62 (95%)	59 (100%)	0	100	100
33	b	47/48 (98%)	47 (100%)	0	100	100
34	c	47/49 (96%)	47 (100%)	0	100	100
35	d	38/38 (100%)	38 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
36	e	51/52 (98%)	51 (100%)	0	100	100
37	f	34/34 (100%)	34 (100%)	0	100	100
38	g	187/199 (94%)	187 (100%)	0	100	100
39	h	171/190 (90%)	171 (100%)	0	100	100
40	i	172/173 (99%)	172 (100%)	0	100	100
41	j	119/126 (94%)	119 (100%)	0	100	100
42	k	91/116 (78%)	91 (100%)	0	100	100
43	l	124/147 (84%)	124 (100%)	0	100	100
44	m	104/105 (99%)	104 (100%)	0	100	100
45	n	105/107 (98%)	105 (100%)	0	100	100
46	o	86/90 (96%)	86 (100%)	0	100	100
47	p	90/99 (91%)	90 (100%)	0	100	100
48	q	102/103 (99%)	102 (100%)	0	100	100
49	r	94/96 (98%)	94 (100%)	0	100	100
50	s	83/84 (99%)	83 (100%)	0	100	100
51	t	76/77 (99%)	76 (100%)	0	100	100
52	u	65/65 (100%)	65 (100%)	0	100	100
53	v	74/78 (95%)	74 (100%)	0	100	100
54	w	57/65 (88%)	57 (100%)	0	100	100
55	x	72/79 (91%)	72 (100%)	0	100	100
56	y	65/66 (98%)	65 (100%)	0	100	100
57	z	60/61 (98%)	60 (100%)	0	100	100
All	All	5070/5263 (96%)	5070 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (50) such sidechains are listed below:

Mol	Chain	Res	Type
6	A	7	GLN
6	A	18	GLN
6	A	121	GLN
6	A	182	GLN
6	A	183	ASN

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Mol	Chain	Res	Type
6	A	186	ASN
7	B	53	HIS
8	C	126	ASN
9	D	90	GLN
11	F	38	ASN
11	F	64	GLN
11	F	88	GLN
12	G	11	ASN
12	G	43	ASN
17	L	54	GLN
18	M	17	ASN
18	M	45	GLN
18	M	97	GLN
20	O	38	GLN
20	O	61	GLN
21	P	52	ASN
21	P	66	ASN
22	Q	44	GLN
25	T	70	HIS
26	U	69	ASN
26	U	74	ASN
28	W	57	HIS
31	Z	20	HIS
32	a	33	ASN
34	c	19	HIS
35	d	6	GLN
38	g	15	HIS
38	g	39	HIS
38	g	93	ASN
39	h	102	ASN
39	h	123	GLN
40	i	36	GLN
40	i	136	GLN
42	k	37	HIS
44	m	4	GLN
44	m	16	ASN
45	n	5	GLN
45	n	110	GLN
46	o	35	GLN
48	q	5	ASN
49	r	100	GLN
53	v	9	GLN

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Mol	Chain	Res	Type
56	y	48	GLN
56	y	52	ASN
56	y	84	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	2901/2903 (99%)	531 (18%)	13 (0%)
2	2	1532/1534 (99%)	280 (18%)	6 (0%)
3	4	119/120 (99%)	21 (17%)	0
4	5	76/77 (98%)	18 (23%)	1 (1%)
4	6	76/77 (98%)	17 (22%)	1 (1%)
5	7	5/25 (20%)	1 (20%)	0
All	All	4709/4736 (99%)	868 (18%)	21 (0%)

All (868) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	10	A
1	1	13	A
1	1	15	G
1	1	23	G
1	1	34	U
1	1	36	G
1	1	46	G
1	1	55	G
1	1	60	G
1	1	63	A
1	1	71	A
1	1	74	A
1	1	75	G
1	1	80	G
1	1	85	G
1	1	101	A
1	1	102	U
1	1	103	A
1	1	110	G
1	1	118	A
1	1	119	A
1	1	120	U
1	1	125	A

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Mol	Chain	Res	Type
1	1	127	A
1	1	137	U
1	1	139	U
1	1	140	C
1	1	143	C
1	1	162	U
1	1	163	C
1	1	171	U
1	1	181	A
1	1	196	A
1	1	199	A
1	1	204	A
1	1	215	G
1	1	216	A
1	1	221	A
1	1	222	A
1	1	225	C
1	1	233	A
1	1	248	G
1	1	249	C
1	1	265	A
1	1	266	G
1	1	267	C
1	1	273	G
1	1	275	C
1	1	276	U
1	1	277	G
1	1	278	A
1	1	279	A
1	1	285	G
1	1	311	A
1	1	329	G
1	1	330	A
1	1	343	C
1	1	352	A
1	1	353	C
1	1	361	G
1	1	371	A
1	1	372	G
1	1	373	U
1	1	385	C
1	1	386	G

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Mol	Chain	Res	Type
1	1	396	G
1	1	403	U
1	1	405	U
1	1	411	G
1	1	412	A
1	1	424	G
1	1	435	C
1	1	455	C
1	1	457	A
1	1	459	U
1	1	477	A
1	1	480	A
1	1	481	G
1	1	483	A
1	1	489	G
1	1	491	G
1	1	496	G
1	1	501	A
1	1	505	A
1	1	509	C
1	1	510	C
1	1	513	A
1	1	519	U
1	1	529	A
1	1	530	G
1	1	531	C
1	1	532	A
1	1	533	G
1	1	544	C
1	1	546	U
1	1	547	A
1	1	549	G
1	1	550	C
1	1	563	A
1	1	573	U
1	1	575	A
1	1	578	G
1	1	586	A
1	1	603	A
1	1	609	A
1	1	613	A
1	1	614	A

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Mol	Chain	Res	Type
1	1	615	U
1	1	627	A
1	1	637	A
1	1	645	C
1	1	646	U
1	1	647	G
1	1	654	A
1	1	655	A
1	1	666	A
1	1	685	A
1	1	686	U
1	1	698	C
1	1	730	A
1	1	747	5MU
1	1	764	A
1	1	765	C
1	1	775	G
1	1	776	G
1	1	782	A
1	1	784	G
1	1	785	G
1	1	792	A
1	1	805	G
1	1	812	C
1	1	819	A
1	1	827	U
1	1	828	U
1	1	830	G
1	1	845	A
1	1	846	U
1	1	858	G
1	1	869	G
1	1	877	A
1	1	878	A
1	1	880	G
1	1	882	G
1	1	883	G
1	1	884	U
1	1	885	C
1	1	887	A
1	1	888	C
1	1	889	C

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Mol	Chain	Res	Type
1	1	891	G
1	1	893	C
1	1	894	U
1	1	895	U
1	1	896	A
1	1	910	A
1	1	915	C
1	1	931	U
1	1	932	U
1	1	934	U
1	1	941	A
1	1	946	C
1	1	961	C
1	1	974	G
1	1	980	A
1	1	983	A
1	1	989	G
1	1	990	A
1	1	995	C
1	1	996	A
1	1	999	U
1	1	1005	C
1	1	1009	A
1	1	1010	A
1	1	1011	G
1	1	1012	U
1	1	1013	C
1	1	1020	A
1	1	1025	G
1	1	1026	G
1	1	1033	U
1	1	1043	C
1	1	1046	A
1	1	1047	G
1	1	1049	C
1	1	1051	G
1	1	1053	C
1	1	1057	A
1	1	1064	C
1	1	1065	U
1	1	1066	U
1	1	1068	G

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Mol	Chain	Res	Type
1	1	1070	A
1	1	1071	G
1	1	1073	A
1	1	1082	U
1	1	1083	U
1	1	1087	G
1	1	1088	A
1	1	1093	G
1	1	1094	U
1	1	1096	A
1	1	1101	U
1	1	1104	C
1	1	1111	A
1	1	1112	G
1	1	1119	U
1	1	1128	G
1	1	1130	U
1	1	1131	G
1	1	1132	U
1	1	1133	A
1	1	1134	A
1	1	1135	C
1	1	1139	G
1	1	1142	A
1	1	1151	A
1	1	1152	C
1	1	1155	A
1	1	1169	A
1	1	1170	C
1	1	1173	U
1	1	1175	A
1	1	1176	U
1	1	1177	G
1	1	1178	C
1	1	1179	G
1	1	1186	G
1	1	1201	U
1	1	1206	G
1	1	1210	G
1	1	1212	G
1	1	1227	G
1	1	1236	G

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Mol	Chain	Res	Type
1	1	1238	G
1	1	1244	A
1	1	1250	G
1	1	1253	A
1	1	1256	G
1	1	1265	A
1	1	1266	G
1	1	1271	G
1	1	1272	A
1	1	1284	A
1	1	1300	G
1	1	1301	A
1	1	1332	G
1	1	1345	C
1	1	1352	U
1	1	1365	A
1	1	1368	G
1	1	1379	U
1	1	1380	G
1	1	1383	A
1	1	1386	C
1	1	1395	A
1	1	1403	A
1	1	1408	G
1	1	1416	G
1	1	1417	C
1	1	1419	A
1	1	1427	A
1	1	1428	C
1	1	1437	C
1	1	1458	U
1	1	1460	U
1	1	1475	G
1	1	1482	G
1	1	1490	A
1	1	1493	C
1	1	1497	U
1	1	1502	A
1	1	1503	A
1	1	1508	A
1	1	1509	A
1	1	1510	G

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Mol	Chain	Res	Type
1	1	1515	A
1	1	1529	G
1	1	1535	A
1	1	1536	C
1	1	1544	A
1	1	1558	C
1	1	1560	G
1	1	1566	A
1	1	1569	A
1	1	1578	U
1	1	1580	A
1	1	1581	G
1	1	1583	A
1	1	1584	U
1	1	1585	C
1	1	1586	A
1	1	1590	A
1	1	1607	C
1	1	1608	A
1	1	1610	A
1	1	1616	A
1	1	1618	6MZ
1	1	1647	U
1	1	1648	U
1	1	1649	G
1	1	1651	G
1	1	1654	A
1	1	1665	A
1	1	1672	A
1	1	1674	G
1	1	1698	A
1	1	1699	G
1	1	1715	G
1	1	1729	U
1	1	1730	C
1	1	1732	C
1	1	1735	A
1	1	1738	G
1	1	1764	C
1	1	1773	A
1	1	1786	A
1	1	1787	A

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Mol	Chain	Res	Type
1	1	1800	C
1	1	1801	A
1	1	1802	A
1	1	1808	A
1	1	1816	C
1	1	1821	A
1	1	1828	G
1	1	1829	A
1	1	1833	C
1	1	1835	2MG
1	1	1847	A
1	1	1848	A
1	1	1858	A
1	1	1862	G
1	1	1864	U
1	1	1866	A
1	1	1870	C
1	1	1871	A
1	1	1905	C
1	1	1906	G
1	1	1907	G
1	1	1913	A
1	1	1924	C
1	1	1927	A
1	1	1929	G
1	1	1930	G
1	1	1937	A
1	1	1938	A
1	1	1955	U
1	1	1967	C
1	1	1970	A
1	1	1971	U
1	1	1972	G
1	1	1991	U
1	1	1992	G
1	1	1993	U
1	1	1996	C
1	1	1997	C
1	1	2002	G
1	1	2020	A
1	1	2022	U
1	1	2023	C

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Mol	Chain	Res	Type
1	1	2030	6MZ
1	1	2031	A
1	1	2033	A
1	1	2043	C
1	1	2046	G
1	1	2049	G
1	1	2055	C
1	1	2056	G
1	1	2060	A
1	1	2061	G
1	1	2062	A
1	1	2069	G7M
1	1	2070	A
1	1	2072	C
1	1	2093	G
1	1	2100	G
1	1	2105	U
1	1	2106	U
1	1	2110	G
1	1	2111	U
1	1	2113	U
1	1	2115	G
1	1	2117	A
1	1	2118	U
1	1	2125	G
1	1	2126	A
1	1	2128	G
1	1	2131	U
1	1	2132	U
1	1	2133	G
1	1	2134	A
1	1	2140	G
1	1	2144	G
1	1	2146	C
1	1	2147	A
1	1	2157	G
1	1	2158	A
1	1	2159	G
1	1	2162	G
1	1	2163	A
1	1	2164	C
1	1	2170	A

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Mol	Chain	Res	Type
1	1	2171	A
1	1	2172	U
1	1	2174	C
1	1	2180	U
1	1	2182	U
1	1	2183	A
1	1	2186	G
1	1	2189	U
1	1	2190	G
1	1	2191	A
1	1	2194	U
1	1	2198	A
1	1	2204	G
1	1	2210	U
1	1	2211	A
1	1	2225	A
1	1	2226	C
1	1	2229	U
1	1	2238	G
1	1	2239	G
1	1	2250	G
1	1	2273	A
1	1	2279	G
1	1	2283	C
1	1	2286	G
1	1	2287	A
1	1	2288	A
1	1	2305	U
1	1	2309	A
1	1	2319	G
1	1	2322	A
1	1	2325	G
1	1	2327	A
1	1	2333	A
1	1	2334	U
1	1	2336	A
1	1	2344	U
1	1	2345	G
1	1	2347	C
1	1	2350	C
1	1	2357	G
1	1	2361	G

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Mol	Chain	Res	Type
1	1	2383	G
1	1	2385	C
1	1	2396	G
1	1	2402	U
1	1	2403	C
1	1	2423	U
1	1	2424	C
1	1	2425	A
1	1	2426	A
1	1	2429	G
1	1	2430	A
1	1	2431	U
1	1	2435	A
1	1	2440	C
1	1	2441	U
1	1	2445	2MG
1	1	2448	A
1	1	2469	A
1	1	2474	U
1	1	2475	C
1	1	2476	A
1	1	2480	C
1	1	2491	U
1	1	2494	G
1	1	2502	G
1	1	2504	PSU
1	1	2505	G
1	1	2506	U
1	1	2513	A
1	1	2518	A
1	1	2520	C
1	1	2529	G
1	1	2547	A
1	1	2548	U
1	1	2554	U
1	1	2566	A
1	1	2567	G
1	1	2573	C
1	1	2602	A
1	1	2603	G
1	1	2609	U
1	1	2613	U

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Mol	Chain	Res	Type
1	1	2615	U
1	1	2629	U
1	1	2630	G
1	1	2660	A
1	1	2661	G
1	1	2663	G
1	1	2675	A
1	1	2689	U
1	1	2690	U
1	1	2714	G
1	1	2716	C
1	1	2718	G
1	1	2725	A
1	1	2726	A
1	1	2727	A
1	1	2733	A
1	1	2739	U
1	1	2744	G
1	1	2746	U
1	1	2748	A
1	1	2757	A
1	1	2777	G
1	1	2778	A
1	1	2779	U
1	1	2791	G
1	1	2793	C
1	1	2797	U
1	1	2798	U
1	1	2800	A
1	1	2801	G
1	1	2811	G
1	1	2818	U
1	1	2820	A
1	1	2821	A
1	1	2825	G
1	1	2833	U
1	1	2849	U
1	1	2867	G
1	1	2872	A
1	1	2873	A
1	1	2879	A
1	1	2880	C

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Mol	Chain	Res	Type
1	1	2883	A
1	1	2884	U
1	1	2885	G
1	1	2903	U
2	2	4	U
2	2	7	A
2	2	8	A
2	2	9	G
2	2	22	G
2	2	32	A
2	2	39	G
2	2	47	C
2	2	48	C
2	2	50	A
2	2	51	A
2	2	52	C
2	2	54	C
2	2	58	C
2	2	68	G
2	2	69	G
2	2	71	A
2	2	72	A
2	2	73	C
2	2	74	A
2	2	75	G
2	2	83	C
2	2	84	U
2	2	85	U
2	2	87	C
2	2	95	C
2	2	96	U
2	2	108	G
2	2	120	A
2	2	122	G
2	2	128	G
2	2	130	A
2	2	131	A
2	2	141	G
2	2	144	G
2	2	163	C
2	2	173	U
2	2	177	G

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Mol	Chain	Res	Type
2	2	181	A
2	2	182	A
2	2	183	C
2	2	189	A
2	2	191	G
2	2	197	A
2	2	202	G
2	2	204	G
2	2	207	C
2	2	208	U
2	2	209	U
2	2	211	G
2	2	212	G
2	2	226	G
2	2	240	G
2	2	245	U
2	2	247	G
2	2	251	G
2	2	262	A
2	2	266	G
2	2	267	C
2	2	279	A
2	2	289	G
2	2	321	A
2	2	328	C
2	2	332	G
2	2	347	G
2	2	352	C
2	2	354	G
2	2	367	U
2	2	372	C
2	2	373	A
2	2	392	C
2	2	398	U
2	2	406	G
2	2	412	A
2	2	413	G
2	2	421	U
2	2	422	C
2	2	424	G
2	2	428	G
2	2	429	U

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Mol	Chain	Res	Type
2	2	437	U
2	2	451	A
2	2	458	U
2	2	459	A
2	2	463	U
2	2	467	U
2	2	468	A
2	2	469	C
2	2	474	G
2	2	476	U
2	2	478	A
2	2	479	U
2	2	481	G
2	2	484	G
2	2	486	U
2	2	495	A
2	2	496	A
2	2	497	G
2	2	511	C
2	2	517	G
2	2	518	C
2	2	521	G
2	2	527	G7M
2	2	531	U
2	2	532	A
2	2	533	A
2	2	534	U
2	2	537	G
2	2	547	A
2	2	558	G
2	2	564	C
2	2	572	A
2	2	573	A
2	2	575	G
2	2	576	C
2	2	577	G
2	2	579	A
2	2	596	A
2	2	618	C
2	2	619	U
2	2	650	G
2	2	653	U

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Mol	Chain	Res	Type
2	2	665	A
2	2	666	G
2	2	700	G
2	2	702	A
2	2	712	A
2	2	718	A
2	2	721	G
2	2	722	G
2	2	723	U
2	2	724	G
2	2	731	G
2	2	733	G
2	2	734	G
2	2	747	A
2	2	748	G
2	2	755	G
2	2	777	A
2	2	790	A
2	2	792	A
2	2	793	U
2	2	794	A
2	2	812	G
2	2	815	A
2	2	817	C
2	2	819	A
2	2	828	U
2	2	829	G
2	2	841	C
2	2	844	G
2	2	846	G
2	2	851	G
2	2	872	A
2	2	873	A
2	2	876	C
2	2	889	A
2	2	902	G
2	2	914	A
2	2	917	G
2	2	926	G
2	2	934	C
2	2	935	A
2	2	942	G

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Mol	Chain	Res	Type
2	2	960	U
2	2	966	2MG
2	2	967	5MC
2	2	968	A
2	2	969	A
2	2	974	A
2	2	975	A
2	2	976	G
2	2	977	A
2	2	982	U
2	2	983	A
2	2	992	U
2	2	993	G
2	2	996	A
2	2	1001	C
2	2	1004	A
2	2	1005	A
2	2	1008	U
2	2	1009	U
2	2	1010	U
2	2	1018	G
2	2	1021	A
2	2	1023	U
2	2	1026	G
2	2	1030	U
2	2	1032	G
2	2	1033	G
2	2	1036	A
2	2	1044	A
2	2	1046	A
2	2	1053	G
2	2	1064	G
2	2	1065	U
2	2	1070	U
2	2	1085	U
2	2	1092	A
2	2	1094	G
2	2	1095	U
2	2	1101	A
2	2	1108	G
2	2	1124	G
2	2	1132	C

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Mol	Chain	Res	Type
2	2	1134	G
2	2	1135	U
2	2	1136	C
2	2	1137	C
2	2	1138	G
2	2	1139	G
2	2	1140	C
2	2	1141	C
2	2	1144	G
2	2	1145	A
2	2	1146	A
2	2	1151	A
2	2	1152	A
2	2	1154	G
2	2	1158	C
2	2	1159	U
2	2	1167	A
2	2	1168	U
2	2	1174	G
2	2	1175	G
2	2	1176	A
2	2	1184	G
2	2	1196	A
2	2	1197	A
2	2	1212	U
2	2	1213	A
2	2	1214	C
2	2	1227	A
2	2	1233	G
2	2	1236	A
2	2	1238	A
2	2	1239	A
2	2	1258	G
2	2	1260	G
2	2	1275	A
2	2	1280	A
2	2	1281	C
2	2	1285	A
2	2	1286	U
2	2	1287	A
2	2	1299	A
2	2	1300	G

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Mol	Chain	Res	Type
2	2	1302	C
2	2	1303	C
2	2	1305	G
2	2	1312	G
2	2	1317	C
2	2	1329	A
2	2	1338	G
2	2	1340	A
2	2	1346	A
2	2	1363	A
2	2	1365	G
2	2	1370	G
2	2	1378	C
2	2	1379	G
2	2	1397	C
2	2	1398	A
2	2	1419	G
2	2	1432	G
2	2	1441	A
2	2	1446	A
2	2	1475	G
2	2	1487	G
2	2	1492	A
2	2	1494	G
2	2	1497	G
2	2	1503	A
2	2	1506	U
2	2	1517	G
2	2	1519	MA6
2	2	1529	G
2	2	1530	G
2	2	1534	A
3	4	2	G
3	4	9	G
3	4	13	G
3	4	15	A
3	4	16	G
3	4	17	C
3	4	24	G
3	4	28	C
3	4	30	C
3	4	35	C

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Mol	Chain	Res	Type
3	4	51	G
3	4	56	G
3	4	57	A
3	4	66	A
3	4	68	C
3	4	88	C
3	4	89	U
3	4	90	C
3	4	99	A
3	4	109	A
3	4	120	U
4	5	2	C
4	5	3	G
4	5	8	G
4	5	13	A
4	5	16	C
4	5	17	U
4	5	18	G
4	5	20	U
4	5	21	A
4	5	22	G
4	5	24	U
4	5	47	U
4	5	48	C
4	5	49	G
4	5	61	C
4	5	67	C
4	5	69	C
4	5	76	A
4	6	10	G
4	6	17	C
4	6	18	U
4	6	19	G
4	6	21	U
4	6	22	A
4	6	23	G
4	6	26	C
4	6	35	C
4	6	38	A
4	6	47	G
4	6	48	U
4	6	49	C

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Mol	Chain	Res	Type
4	6	50	G
4	6	51	U
4	6	75	C
4	6	77	A
5	7	15	A

All (21) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	404	A
1	1	479	A
1	1	613	A
1	1	784	G
1	1	858	G
1	1	894	U
1	1	1379	U
1	1	2146	C
1	1	2162	G
1	1	2193	G
1	1	2308	G
1	1	2425	A
1	1	2756	U
2	2	516	PSU
2	2	1004	A
2	2	1109	C
2	2	1145	A
2	2	1167	A
2	2	1493	A
4	5	17	U
4	6	18	U

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
1	OMG	1	2251	1,4	23,26,27	1.30	3 (13%)	32,38,41	2.08	7 (21%)
2	2MG	2	966	2	23,26,27	1.31	3 (13%)	33,38,41	2.25	10 (30%)
1	2MA	1	2503	58,1	22,25,26	1.44	6 (27%)	32,37,40	2.21	9 (28%)
2	PSU	2	516	58,2	18,21,22	1.06	2 (11%)	21,30,33	1.77	4 (19%)
1	PSU	1	746	58,1	18,21,22	1.13	3 (16%)	21,30,33	1.84	4 (19%)
1	PSU	1	2605	1	18,21,22	1.04	2 (11%)	21,30,33	1.89	3 (14%)
1	6MZ	1	2030	58,1	22,25,26	1.45	6 (27%)	29,36,39	2.45	10 (34%)
2	MA6	2	1519	2	23,26,27	1.41	5 (21%)	33,38,41	2.45	14 (42%)
1	PSU	1	1911	1	18,21,22	1.11	3 (16%)	21,30,33	2.04	5 (23%)
2	4OC	2	1402	2	20,23,24	0.83	1 (5%)	25,32,35	0.92	1 (4%)
1	OMC	1	2498	58,1	19,22,23	0.96	2 (10%)	25,31,34	1.01	1 (4%)
1	PSU	1	2504	1	18,21,22	1.12	2 (11%)	21,30,33	1.86	4 (19%)
1	PSU	1	2457	1	18,21,22	1.13	3 (16%)	21,30,33	2.25	6 (28%)
1	OMU	1	2552	1	19,22,23	1.35	4 (21%)	25,31,34	1.98	5 (20%)
2	2MG	2	1516	2	23,26,27	1.30	4 (17%)	33,38,41	2.28	10 (30%)
1	2MG	1	1835	1	23,26,27	1.29	4 (17%)	33,38,41	2.28	11 (33%)
1	2MG	1	2445	1	23,26,27	1.34	4 (17%)	33,38,41	2.17	10 (30%)
2	2MG	2	1207	2	23,26,27	1.29	3 (13%)	33,38,41	2.26	11 (33%)
2	UR3	2	1498	2	19,22,23	0.97	2 (10%)	26,32,35	1.73	4 (15%)
2	5MC	2	967	2	19,22,23	1.36	3 (15%)	26,32,35	1.09	2 (7%)
1	PSU	1	1917	1	18,21,22	1.03	2 (11%)	21,30,33	1.99	4 (19%)
1	1MG	1	745	1	23,26,27	1.17	3 (13%)	33,39,42	1.74	5 (15%)
2	5MC	2	1407	2	19,22,23	1.31	3 (15%)	26,32,35	1.20	2 (7%)
1	3TD	1	1915	58,1	19,22,23	2.93	4 (21%)	23,32,35	7.31	6 (26%)
1	5MU	1	1939	1	19,22,23	1.47	4 (21%)	27,32,35	2.44	6 (22%)
1	5MU	1	747	1	19,22,23	1.40	4 (21%)	27,32,35	2.31	6 (22%)
1	5MC	1	1962	1	19,22,23	1.25	2 (10%)	26,32,35	1.18	2 (7%)
48	0TD	q	89	48	8,9,10	2.25	2 (25%)	6,11,13	2.10	2 (33%)
1	6MZ	1	1618	1	22,25,26	1.43	6 (27%)	29,36,39	2.70	10 (34%)
2	MA6	2	1518	2	23,26,27	1.46	5 (21%)	33,38,41	2.54	14 (42%)
1	PSU	1	955	1	18,21,22	1.13	2 (11%)	21,30,33	2.18	4 (19%)
2	G7M	2	527	2	23,26,27	2.33	5 (21%)	34,39,42	3.16	11 (32%)
1	PSU	1	2580	58,1	18,21,22	1.18	3 (16%)	21,30,33	1.89	5 (23%)
1	G7M	1	2069	1	23,26,27	1.76	3 (13%)	34,39,42	1.86	5 (14%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	OMG	1	2251	1,4	-	0/9/27/28	0/3/3/3
2	2MG	2	966	2	-	2/9/27/28	0/3/3/3
1	2MA	1	2503	58,1	-	2/7/25/26	0/3/3/3
2	PSU	2	516	58,2	-	4/7/25/26	0/2/2/2
1	PSU	1	746	58,1	-	4/7/25/26	0/2/2/2
1	PSU	1	2605	1	-	0/7/25/26	0/2/2/2
1	6MZ	1	2030	58,1	-	2/9/27/28	0/3/3/3
2	MA6	2	1519	2	-	5/11/29/30	0/3/3/3
1	PSU	1	1911	1	-	2/7/25/26	0/2/2/2
2	4OC	2	1402	2	-	0/9/29/30	0/2/2/2
1	OMC	1	2498	58,1	-	0/9/27/28	0/2/2/2
1	PSU	1	2504	1	-	2/7/25/26	0/2/2/2
1	PSU	1	2457	1	-	0/7/25/26	0/2/2/2
1	OMU	1	2552	1	-	0/9/27/28	0/2/2/2
2	2MG	2	1516	2	-	0/9/27/28	0/3/3/3
1	2MG	1	1835	1	-	2/9/27/28	0/3/3/3
1	2MG	1	2445	1	-	2/9/27/28	0/3/3/3
2	2MG	2	1207	2	-	0/9/27/28	0/3/3/3
2	UR3	2	1498	2	-	0/7/25/26	0/2/2/2
2	5MC	2	967	2	-	2/7/25/26	0/2/2/2
1	PSU	1	1917	1	-	0/7/25/26	0/2/2/2
1	1MG	1	745	1	-	0/7/25/26	0/3/3/3
2	5MC	2	1407	2	-	0/7/25/26	0/2/2/2
1	3TD	1	1915	58,1	-	4/7/25/26	0/2/2/2
1	5MU	1	1939	1	-	0/7/25/26	0/2/2/2
1	5MU	1	747	1	-	1/7/25/26	0/2/2/2
1	5MC	1	1962	1	-	2/7/25/26	0/2/2/2
48	0TD	q	89	48	-	1/7/12/14	-
1	6MZ	1	1618	1	-	2/9/27/28	0/3/3/3
2	MA6	2	1518	2	-	2/11/29/30	0/3/3/3
1	PSU	1	955	1	-	0/7/25/26	0/2/2/2
2	G7M	2	527	2	-	2/7/25/26	0/3/3/3
1	PSU	1	2580	58,1	-	0/7/25/26	0/2/2/2
1	G7M	1	2069	1	3/3/5/5	2/7/25/26	0/3/3/3

All (113) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	1915	3TD	C6-C5	-9.13	1.25	1.35
2	2	527	G7M	C8-N7	7.00	1.45	1.33
1	1	2069	G7M	C5-N7	-6.51	1.31	1.39
1	1	1915	3TD	C6-N1	-6.50	1.25	1.36
2	2	527	G7M	C5-N7	-5.65	1.32	1.39
48	q	89	0TD	CB-CA	-4.72	1.53	1.54
1	1	1915	3TD	C4-C5	-4.70	1.36	1.47
2	2	967	5MC	C5-C4	4.41	1.47	1.44
2	2	1518	MA6	C5-C4	4.21	1.46	1.39
2	2	1407	5MC	C5-C4	4.08	1.47	1.44
2	2	1519	MA6	C5-C4	3.92	1.46	1.39
1	1	1962	5MC	C5-C4	3.82	1.47	1.44
2	2	527	G7M	C8-N9	3.75	1.45	1.35
1	1	2503	2MA	C5-C4	3.69	1.45	1.39
1	1	1618	6MZ	C5-C4	3.56	1.45	1.39
1	1	1939	5MU	C4-N3	-3.49	1.32	1.38
1	1	2030	6MZ	C5-C4	3.43	1.45	1.39
1	1	2552	OMU	C4-N3	-3.23	1.33	1.38
2	2	527	G7M	C5-C4	3.19	1.46	1.38
1	1	747	5MU	C4-N3	-3.17	1.32	1.38
1	1	747	5MU	C6-N1	-3.17	1.32	1.38
1	1	2030	6MZ	C5-N7	-3.13	1.33	1.39
1	1	2251	OMG	C6-N1	-3.11	1.33	1.38
1	1	2504	PSU	C6-C5	3.05	1.38	1.35
2	2	966	2MG	C6-N1	-3.04	1.33	1.38
2	2	1518	MA6	C5-N7	-3.04	1.33	1.39
2	2	1516	2MG	C6-N1	-2.95	1.33	1.38
1	1	1939	5MU	C6-N1	-2.95	1.33	1.38
2	2	516	PSU	C6-C5	2.94	1.38	1.35
1	1	2445	2MG	C6-N1	-2.94	1.33	1.38
2	2	1207	2MG	C6-N1	-2.93	1.33	1.38
1	1	1962	5MC	C6-N1	-2.92	1.33	1.38
1	1	1911	PSU	C6-C5	2.91	1.38	1.35
1	1	1835	2MG	C6-N1	-2.89	1.33	1.38
1	1	2552	OMU	C2-N3	-2.89	1.32	1.38
1	1	2069	G7M	C6-N1	-2.87	1.33	1.38
1	1	2251	OMG	C5-N7	-2.85	1.33	1.39
2	2	966	2MG	C5-C4	2.84	1.46	1.38
1	1	745	1MG	C5-C4	2.82	1.46	1.38
2	2	1519	MA6	C5-N7	-2.81	1.34	1.39
1	1	2251	OMG	C5-C4	2.81	1.46	1.38
1	1	2503	2MA	C5-N7	-2.81	1.34	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	967	5MC	C6-N1	-2.80	1.33	1.38
1	1	1939	5MU	C2-N3	-2.80	1.33	1.38
2	2	527	G7M	C6-N1	-2.75	1.33	1.38
1	1	1835	2MG	C5-N7	-2.74	1.33	1.39
1	1	2580	PSU	C6-C5	2.72	1.38	1.35
1	1	1618	6MZ	C5-N7	-2.72	1.34	1.39
2	2	1407	5MC	C6-N1	-2.71	1.33	1.38
1	1	2030	6MZ	C4-N9	-2.70	1.32	1.37
1	1	745	1MG	C5-N7	-2.68	1.33	1.39
2	2	1207	2MG	C5-C4	2.68	1.46	1.38
1	1	2069	G7M	C5-C4	2.66	1.44	1.38
2	2	1516	2MG	C5-C4	2.65	1.46	1.38
1	1	746	PSU	C6-C5	2.65	1.38	1.35
1	1	1618	6MZ	C4-N9	-2.64	1.32	1.37
2	2	966	2MG	C5-N7	-2.60	1.33	1.39
2	2	1519	MA6	C4-N9	-2.59	1.32	1.37
1	1	1917	PSU	C6-C5	2.58	1.38	1.35
1	1	747	5MU	C2-N3	-2.58	1.33	1.38
1	1	2605	PSU	C6-C5	2.57	1.38	1.35
1	1	2445	2MG	C5-N7	-2.55	1.34	1.39
1	1	2580	PSU	C4-C5	-2.54	1.37	1.44
1	1	2498	OMC	C6-N1	-2.53	1.32	1.38
1	1	955	PSU	C4-C5	-2.50	1.37	1.44
1	1	1835	2MG	C5-C4	2.49	1.45	1.38
1	1	2445	2MG	C5-C4	2.48	1.45	1.38
1	1	746	PSU	C4-C5	-2.48	1.37	1.44
1	1	955	PSU	C6-C5	2.47	1.38	1.35
1	1	2030	6MZ	C8-N9	-2.47	1.33	1.37
1	1	2580	PSU	O4'-C1'	-2.45	1.40	1.43
2	2	1518	MA6	C4-N9	-2.44	1.32	1.37
1	1	2503	2MA	C4-N9	-2.44	1.32	1.37
1	1	2457	PSU	O4'-C1'	-2.43	1.40	1.43
1	1	2445	2MG	C4-N9	-2.42	1.31	1.38
1	1	1618	6MZ	C5-C6	2.42	1.47	1.41
1	1	1618	6MZ	C8-N9	-2.38	1.33	1.37
2	2	1207	2MG	C5-N7	-2.36	1.34	1.39
1	1	2457	PSU	C6-C5	2.36	1.37	1.35
1	1	2605	PSU	C4-C5	-2.35	1.37	1.44
1	1	2457	PSU	C4-C5	-2.32	1.37	1.44
2	2	1516	2MG	C5-N7	-2.31	1.34	1.39
1	1	1835	2MG	C4-N9	-2.31	1.32	1.38
2	2	1407	5MC	C6-C5	2.31	1.38	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	745	1MG	C4-N9	-2.30	1.32	1.38
2	2	967	5MC	C6-C5	2.29	1.38	1.34
1	1	1939	5MU	C6-C5	2.29	1.38	1.34
1	1	2498	OMC	C5-C4	-2.29	1.37	1.42
1	1	2503	2MA	C5-C6	2.27	1.47	1.41
1	1	2503	2MA	C8-N7	2.26	1.36	1.31
1	1	2504	PSU	C4-C5	-2.26	1.38	1.44
2	2	1498	UR3	C5-C4	-2.24	1.38	1.43
1	1	2552	OMU	C5-C4	-2.24	1.38	1.43
1	1	1911	PSU	C4-C5	-2.22	1.38	1.44
2	2	1516	2MG	C4-N9	-2.22	1.32	1.38
1	1	2552	OMU	C6-N1	-2.21	1.32	1.38
2	2	1518	MA6	C8-N9	-2.19	1.33	1.37
48	q	89	0TD	CSB-SB	-2.18	1.75	1.79
1	1	1915	3TD	C2-N3	2.16	1.43	1.38
2	2	516	PSU	C4-C5	-2.15	1.38	1.44
1	1	1911	PSU	O4'-C1'	-2.15	1.40	1.43
1	1	746	PSU	O4'-C1'	-2.15	1.40	1.43
1	1	747	5MU	C6-C5	2.14	1.38	1.34
2	2	1519	MA6	C8-N9	-2.11	1.34	1.37
1	1	1917	PSU	C4-C5	-2.10	1.38	1.44
2	2	1498	UR3	C6-N1	-2.09	1.33	1.38
1	1	2503	2MA	C8-N9	-2.08	1.34	1.37
2	2	1402	4OC	C6-N1	-2.08	1.33	1.38
1	1	2030	6MZ	C5-C6	2.07	1.46	1.41
1	1	2030	6MZ	C8-N7	2.06	1.35	1.31
2	2	1519	MA6	C5-C6	2.05	1.46	1.41
2	2	1518	MA6	C5-C6	2.02	1.46	1.41
1	1	1618	6MZ	C8-N7	2.02	1.35	1.31

All (213) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	1915	3TD	C5-C6-N1	25.17	157.09	122.14
1	1	1915	3TD	C6-C5-C4	-20.35	104.56	118.19
1	1	1915	3TD	C1'-C5-C4	8.45	130.44	117.61
1	1	1915	3TD	C6-N1-C2	-8.28	100.70	121.80
2	2	527	G7M	CN7-N7-C8	-7.97	112.72	124.79
1	1	2503	2MA	C5-C4-N3	-7.79	118.98	127.18
1	1	1618	6MZ	C9-N6-C6	-7.71	115.70	122.85
1	1	1835	2MG	C2-N3-C4	7.33	121.17	112.00
2	2	1207	2MG	C2-N3-C4	7.11	120.89	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	2	1516	2MG	C2-N3-C4	7.08	120.86	112.00
2	2	966	2MG	C2-N3-C4	7.07	120.85	112.00
2	2	527	G7M	N9-C8-N7	-7.03	95.42	112.48
1	1	2251	OMG	C5-C4-N3	-6.97	117.30	128.39
2	2	527	G7M	N9-C4-N3	6.92	139.78	125.95
1	1	2445	2MG	C2-N3-C4	6.68	120.35	112.00
2	2	1498	UR3	C4-N3-C2	-6.57	119.29	124.58
2	2	966	2MG	C5-C4-N3	-6.42	118.17	128.39
2	2	527	G7M	C8-N7-C5	6.38	115.75	107.78
2	2	1207	2MG	C5-C4-N3	-6.18	118.55	128.39
1	1	1939	5MU	C4-N3-C2	-6.14	119.29	127.34
2	2	1518	MA6	C5-C4-N3	-6.13	118.28	126.72
2	2	1516	2MG	C5-C4-N3	-6.04	118.77	128.39
1	1	1835	2MG	C5-C4-N3	-6.03	118.80	128.39
1	1	1618	6MZ	C5-C4-N3	-6.03	118.42	126.72
1	1	2030	6MZ	C5-C4-N3	-5.83	118.69	126.72
1	1	1939	5MU	N3-C2-N1	5.80	122.44	114.89
1	1	2503	2MA	N3-C4-N9	5.79	134.34	126.99
1	1	2445	2MG	C5-C4-N3	-5.73	119.27	128.39
1	1	747	5MU	C4-N3-C2	-5.72	119.84	127.34
1	1	2069	G7M	C5-C4-N3	-5.68	117.41	128.15
1	1	2030	6MZ	C9-N6-C6	-5.59	117.67	122.85
1	1	955	PSU	N1-C2-N3	5.53	121.00	115.17
2	2	527	G7M	C5-C4-N3	-5.51	117.75	128.15
1	1	2552	OMU	C4-N3-C2	-5.44	119.86	126.61
1	1	955	PSU	C4-N3-C2	-5.40	118.94	126.37
1	1	745	1MG	C5-C4-N3	-5.36	119.86	128.39
1	1	2069	G7M	N9-C4-N3	5.36	136.66	125.95
2	2	1519	MA6	C5-C4-N3	-5.33	119.37	126.72
1	1	2457	PSU	N1-C2-N3	5.26	120.71	115.17
2	2	1519	MA6	C10-N6-C6	-5.25	107.17	120.52
1	1	2457	PSU	C4-N3-C2	-5.24	119.15	126.37
1	1	747	5MU	N3-C2-N1	5.22	121.68	114.89
1	1	2251	OMG	N9-C4-N3	5.16	136.27	125.95
1	1	2251	OMG	C2-N3-C4	5.15	121.16	112.30
1	1	1939	5MU	C5-C4-N3	5.14	119.79	115.32
1	1	2605	PSU	C4-N3-C2	-5.06	119.40	126.37
1	1	1911	PSU	C4-N3-C2	-5.06	119.40	126.37
1	1	1917	PSU	N1-C2-N3	5.05	120.50	115.17
2	2	516	PSU	C4-N3-C2	-5.03	119.44	126.37
1	1	2552	OMU	N3-C2-N1	5.03	121.44	114.89
2	2	1518	MA6	N3-C4-N9	5.03	135.72	127.17

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	1911	PSU	N1-C2-N3	5.00	120.44	115.17
1	1	746	PSU	C4-N3-C2	-4.94	119.56	126.37
1	1	2069	G7M	C2-N3-C4	4.88	120.71	112.30
1	1	2504	PSU	N1-C2-N3	4.87	120.31	115.17
1	1	747	5MU	O4-C4-C5	-4.86	119.35	124.92
1	1	1917	PSU	C4-N3-C2	-4.85	119.69	126.37
2	2	527	G7M	C1'-N9-C8	-4.80	110.53	126.74
1	1	1939	5MU	C5-C6-N1	-4.78	118.12	123.31
2	2	527	G7M	C8-N9-C4	4.71	118.75	107.09
1	1	747	5MU	C5-C4-N3	4.70	119.41	115.32
2	2	1518	MA6	N1-C6-N6	4.69	122.57	116.86
2	2	966	2MG	N9-C4-N3	4.69	135.33	125.95
1	1	1915	3TD	N1-C2-N3	4.64	119.51	116.13
2	2	1519	MA6	C9-N6-C6	-4.64	108.72	120.52
2	2	1518	MA6	C10-N6-C6	-4.61	108.78	120.52
2	2	527	G7M	C2-N3-C4	4.58	120.20	112.30
1	1	1835	2MG	N9-C4-N3	4.56	135.07	125.95
1	1	2580	PSU	N1-C2-N3	4.55	119.97	115.17
1	1	1618	6MZ	C6-C5-N7	4.52	137.36	132.43
1	1	2580	PSU	C4-N3-C2	-4.52	120.15	126.37
1	1	2605	PSU	N1-C2-N3	4.47	119.88	115.17
1	1	2504	PSU	C4-N3-C2	-4.46	120.23	126.37
2	2	1519	MA6	N3-C4-N9	4.40	134.65	127.17
1	1	747	5MU	C5-C6-N1	-4.35	118.59	123.31
2	2	1207	2MG	N9-C4-N3	4.34	134.64	125.95
1	1	746	PSU	N1-C2-N3	4.32	119.73	115.17
1	1	2445	2MG	N9-C4-N3	4.32	134.58	125.95
1	1	1618	6MZ	N3-C4-N9	4.29	134.46	127.17
2	2	516	PSU	N1-C2-N3	4.29	119.69	115.17
2	2	1518	MA6	C9-N6-C6	-4.28	109.63	120.52
1	1	2030	6MZ	N3-C4-N9	4.25	134.40	127.17
1	1	745	1MG	C2-N3-C4	4.22	121.47	111.98
2	2	1516	2MG	N9-C4-N3	4.18	134.30	125.95
1	1	1618	6MZ	C4-C5-N7	-4.17	105.81	110.58
1	1	745	1MG	N9-C4-N3	4.14	134.23	125.95
1	1	1939	5MU	O4-C4-C5	-4.10	120.23	124.92
48	q	89	0TD	OD2-CG-CB	4.06	121.92	113.15
2	2	1519	MA6	C2-N1-C6	4.01	121.61	111.83
1	1	1618	6MZ	C2-N3-C4	4.00	121.59	111.83
1	1	2457	PSU	C6-C5-C4	3.97	120.86	118.17
1	1	1939	5MU	O2-C2-N1	-3.94	117.66	122.80
1	1	2030	6MZ	C4-C5-N7	-3.88	106.15	110.58

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	2030	6MZ	C6-C5-N7	3.87	136.64	132.43
1	1	2552	OMU	C5-C4-N3	3.84	120.17	114.80
2	2	1518	MA6	C2-N1-C6	3.81	121.14	111.83
2	2	527	G7M	CN7-N7-C5	3.79	131.52	126.80
2	2	1407	5MC	C5-C6-N1	-3.75	119.23	123.31
1	1	2030	6MZ	C2-N3-C4	3.72	120.92	111.83
2	2	1516	2MG	C6-C5-N7	3.59	136.82	130.29
2	2	1518	MA6	C5-C6-N6	-3.56	119.70	125.33
2	2	1518	MA6	C2-N3-C4	3.55	120.50	111.83
1	1	1962	5MC	C5-C6-N1	-3.55	119.46	123.31
2	2	1207	2MG	C6-C5-N7	3.45	136.58	130.29
2	2	1519	MA6	C2-N3-C4	3.45	120.25	111.83
2	2	1498	UR3	C5-C4-N3	3.45	119.58	115.04
1	1	1618	6MZ	N1-C2-N3	-3.35	123.52	128.58
1	1	2503	2MA	C4-C5-N7	-3.31	106.80	110.58
2	2	1519	MA6	N1-C6-N6	3.31	120.89	116.86
1	1	1917	PSU	O2-C2-N1	-3.26	119.43	122.79
2	2	967	5MC	C5-C6-N1	-3.26	119.78	123.31
1	1	2580	PSU	C6-N1-C2	-3.23	119.69	122.69
1	1	2030	6MZ	N1-C2-N3	-3.22	123.72	128.58
1	1	2457	PSU	O2-C2-N1	-3.21	119.48	122.79
1	1	2445	2MG	C6-C5-N7	3.19	136.10	130.29
2	2	1519	MA6	N1-C2-N3	-3.19	123.75	128.58
1	1	2504	PSU	C6-N1-C2	-3.19	119.73	122.69
2	2	1519	MA6	C4-N9-C8	3.11	109.00	105.74
2	2	1519	MA6	C4-C5-N7	-3.06	107.08	110.58
1	1	955	PSU	O2-C2-N1	-3.05	119.64	122.79
1	1	1835	2MG	C6-C5-N7	3.05	135.84	130.29
1	1	955	PSU	C6-N1-C2	-2.97	119.93	122.69
2	2	1516	2MG	C4-C5-N7	-2.92	106.04	110.67
2	2	1519	MA6	C10-N6-C9	-2.92	106.80	116.18
2	2	1518	MA6	C4-C5-N7	-2.91	107.26	110.58
1	1	1917	PSU	C6-N1-C2	-2.91	119.99	122.69
1	1	2552	OMU	O4-C4-C5	-2.90	120.17	125.16
1	1	1618	6MZ	C5-N7-C8	2.88	107.98	103.45
1	1	1835	2MG	N1-C2-N2	2.88	119.50	116.56
1	1	1911	PSU	O2-C2-N1	-2.88	119.82	122.79
2	2	1518	MA6	N1-C2-N3	-2.87	124.24	128.58
1	1	2030	6MZ	C4-N9-C8	2.85	108.73	105.74
1	1	2030	6MZ	C5-N7-C8	2.83	107.90	103.45
2	2	527	G7M	O6-C6-C5	-2.83	121.69	128.01
1	1	2552	OMU	O2-C2-N1	-2.83	119.11	122.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	1618	6MZ	C4-N9-C8	2.81	108.69	105.74
2	2	1207	2MG	C4-C5-N7	-2.78	106.27	110.67
2	2	966	2MG	C6-C5-N7	2.76	135.31	130.29
1	1	1911	PSU	C6-N1-C2	-2.74	120.14	122.69
2	2	1516	2MG	N1-C2-N2	2.71	119.33	116.56
1	1	2580	PSU	O2-C2-N1	-2.71	120.00	122.79
2	2	1519	MA6	C5-C6-N6	-2.69	121.07	125.33
2	2	967	5MC	C5-C4-N3	-2.69	119.00	121.75
2	2	966	2MG	CM2-N2-C2	-2.66	117.93	123.65
2	2	1407	5MC	C5-C4-N3	-2.62	119.07	121.75
1	1	1835	2MG	O6-C6-C5	-2.61	119.64	126.53
1	1	2445	2MG	N1-C2-N2	2.60	119.22	116.56
1	1	2503	2MA	C2-N1-C6	2.60	122.09	118.10
1	1	2503	2MA	C4-N9-C8	2.58	108.45	105.74
1	1	747	5MU	O2-C2-N1	-2.58	119.44	122.80
2	2	1518	MA6	C10-N6-C9	-2.58	107.89	116.18
1	1	2498	OMC	O2-C2-N3	-2.57	118.27	122.33
1	1	2030	6MZ	N9-C8-N7	-2.56	110.31	113.94
1	1	745	1MG	C6-C5-N7	2.56	135.04	129.36
1	1	746	PSU	C6-C5-C4	2.53	119.88	118.17
1	1	2503	2MA	N6-C6-N1	2.52	120.43	117.03
2	2	1207	2MG	CM2-N2-C2	-2.50	118.28	123.65
1	1	2457	PSU	C6-N1-C2	-2.50	120.37	122.69
1	1	1618	6MZ	N9-C8-N7	-2.49	110.40	113.94
1	1	2445	2MG	C4-C5-N7	-2.48	106.75	110.67
2	2	1518	MA6	C4-N9-C8	2.47	108.33	105.74
1	1	1962	5MC	C5-C4-N3	-2.46	119.23	121.75
2	2	1516	2MG	N2-C2-N3	-2.45	117.39	120.51
2	2	1207	2MG	C2-N1-C6	-2.44	121.60	124.55
1	1	2069	G7M	O6-C6-C5	-2.44	122.58	128.01
1	1	1911	PSU	C6-C5-C4	2.42	119.80	118.17
1	1	2445	2MG	N2-C2-N3	-2.41	117.44	120.51
2	2	966	2MG	N1-C2-N2	2.38	118.99	116.56
1	1	2504	PSU	O2-C2-N1	-2.38	120.34	122.79
1	1	1835	2MG	CM2-N2-C2	-2.37	118.55	123.65
1	1	1835	2MG	C2-N1-C6	-2.37	121.69	124.55
1	1	2503	2MA	C6-C5-N7	2.36	136.64	132.09
1	1	745	1MG	C4-C5-N7	-2.36	106.93	110.67
1	1	2251	OMG	C6-C5-N7	2.35	134.57	130.29
1	1	2580	PSU	O4'-C1'-C2'	2.35	108.40	105.15
1	1	2457	PSU	O4'-C1'-C2'	2.35	108.40	105.15
1	1	2445	2MG	CM2-N2-C2	-2.34	118.61	123.65

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	2503	2MA	C5-N7-C8	2.33	107.12	103.45
2	2	966	2MG	C4-C5-N7	-2.31	107.00	110.67
2	2	527	G7M	C5-C6-N1	2.29	116.58	111.84
2	2	1516	2MG	CM2-N2-C2	-2.28	118.74	123.65
48	q	89	0TD	OD1-CG-CB	-2.27	117.68	122.44
2	2	1519	MA6	C5-N7-C8	2.27	107.02	103.45
2	2	966	2MG	N2-C2-N3	-2.27	117.62	120.51
1	1	2251	OMG	C4-C5-N7	-2.26	107.09	110.67
2	2	966	2MG	C2-N1-C6	-2.26	121.82	124.55
2	2	966	2MG	O6-C6-C5	-2.25	120.60	126.53
1	1	2445	2MG	O6-C6-C5	-2.24	120.62	126.53
1	1	1835	2MG	C4-C5-N7	-2.20	107.19	110.67
1	1	2605	PSU	O2-C2-N1	-2.20	120.52	122.79
2	2	1498	UR3	C1'-N1-C2	2.16	120.58	117.04
2	2	1516	2MG	C2-N1-C6	-2.15	121.95	124.55
1	1	1835	2MG	C5-C6-N1	2.15	118.72	113.25
2	2	516	PSU	C5-C4-N3	2.15	121.27	116.55
2	2	1518	MA6	C4-C5-C6	2.14	118.13	115.91
2	2	1519	MA6	N9-C8-N7	-2.13	110.91	113.94
1	1	746	PSU	O2-C2-N1	-2.13	120.59	122.79
2	2	1207	2MG	N1-C2-N2	2.11	118.72	116.56
2	2	1207	2MG	N2-C2-N3	-2.11	117.83	120.51
1	1	2503	2MA	N9-C8-N7	-2.10	110.95	113.94
1	1	1835	2MG	N2-C2-N3	-2.09	117.84	120.51
1	1	2069	G7M	C5-C6-N1	2.09	116.17	111.84
2	2	1402	4OC	CM4-N4-C4	-2.09	118.37	122.45
1	1	2251	OMG	O6-C6-C5	-2.09	121.02	126.53
1	1	2251	OMG	C2-N1-C6	-2.08	121.34	125.11
2	2	1516	2MG	O6-C6-C5	-2.05	121.11	126.53
1	1	2445	2MG	C2-N1-C6	-2.05	122.08	124.55
2	2	1207	2MG	O6-C6-C5	-2.04	121.14	126.53
2	2	516	PSU	C6-N1-C2	-2.03	120.81	122.69
2	2	1518	MA6	C5-N7-C8	2.02	106.63	103.45
2	2	1498	UR3	C3U-N3-C4	2.02	120.68	117.87
1	1	1915	3TD	O4'-C1'-C2'	2.00	107.92	105.15
2	2	1207	2MG	C5-C6-N1	2.00	118.35	113.25

All (3) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	1	2069	G7M	C2'
1	1	2069	G7M	C4'

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Mol	Chain	Res	Type	Atom
1	1	2069	G7M	C3'

All (45) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	2	516	PSU	O4'-C1'-C5-C4
2	2	516	PSU	O4'-C1'-C5-C6
2	2	967	5MC	O4'-C4'-C5'-O5'
2	2	967	5MC	C3'-C4'-C5'-O5'
2	2	1518	MA6	C5-C6-N6-C9
2	2	1519	MA6	O4'-C4'-C5'-O5'
2	2	1519	MA6	C5-C6-N6-C9
2	2	1519	MA6	N1-C6-N6-C9
1	1	746	PSU	C2'-C1'-C5-C4
1	1	746	PSU	C2'-C1'-C5-C6
1	1	746	PSU	O4'-C1'-C5-C6
1	1	1915	3TD	O4'-C1'-C5-C4
1	1	1915	3TD	O4'-C1'-C5-C6
1	1	2504	PSU	O4'-C4'-C5'-O5'
2	2	527	G7M	C3'-C4'-C5'-O5'
1	1	1618	6MZ	O4'-C4'-C5'-O5'
1	1	1915	3TD	C3'-C4'-C5'-O5'
1	1	2445	2MG	C3'-C4'-C5'-O5'
1	1	2504	PSU	C3'-C4'-C5'-O5'
2	2	527	G7M	O4'-C4'-C5'-O5'
1	1	1915	3TD	O4'-C4'-C5'-O5'
2	2	1519	MA6	C3'-C4'-C5'-O5'
1	1	1835	2MG	C3'-C4'-C5'-O5'
1	1	2030	6MZ	O4'-C4'-C5'-O5'
1	1	2445	2MG	O4'-C4'-C5'-O5'
2	2	1518	MA6	N1-C6-N6-C9
2	2	966	2MG	C3'-C4'-C5'-O5'
1	1	1835	2MG	O4'-C4'-C5'-O5'
1	1	2030	6MZ	C3'-C4'-C5'-O5'
1	1	2503	2MA	O4'-C4'-C5'-O5'
1	1	1618	6MZ	C3'-C4'-C5'-O5'
1	1	2503	2MA	C3'-C4'-C5'-O5'
1	1	2069	G7M	O4'-C4'-C5'-O5'
48	q	89	0TD	CG-CB-SB-CSB
2	2	966	2MG	O4'-C4'-C5'-O5'
1	1	746	PSU	O4'-C1'-C5-C4
1	1	1911	PSU	O4'-C1'-C5-C4

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Mol	Chain	Res	Type	Atoms
2	2	516	PSU	C3'-C4'-C5'-O5'
2	2	1519	MA6	C5-C6-N6-C10
1	1	747	5MU	C4'-C5'-O5'-P
1	1	1911	PSU	O4'-C4'-C5'-O5'
1	1	2069	G7M	C3'-C4'-C5'-O5'
1	1	1962	5MC	C2'-C1'-N1-C6
1	1	1962	5MC	O4'-C1'-N1-C6
2	2	516	PSU	O4'-C4'-C5'-O5'

There are no ring outliers.

22 monomers are involved in 36 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	1	2251	OMG	1	0
1	1	2503	2MA	1	0
2	2	516	PSU	2	0
1	1	746	PSU	1	0
1	1	2030	6MZ	4	0
2	2	1519	MA6	6	0
1	1	1911	PSU	1	0
2	2	1402	4OC	3	0
1	1	2498	OMC	3	0
1	1	2504	PSU	1	0
1	1	2552	OMU	2	0
2	2	1516	2MG	1	0
1	1	2445	2MG	1	0
2	2	1207	2MG	1	0
2	2	1498	UR3	1	0
2	2	1407	5MC	1	0
1	1	1915	3TD	1	0
1	1	1939	5MU	1	0
48	q	89	0TD	2	0
2	2	1518	MA6	3	0
2	2	527	G7M	2	0
1	1	2069	G7M	1	0

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 441 ligands modelled in this entry, 441 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	1	2

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	1	1914:C	O3'	1915:3TD	P	7.81
1	1	2314:A	O3'	2315:G	P	3.31

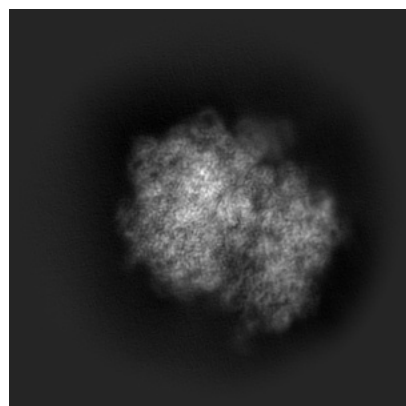
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-48513. These allow visual inspection of the internal detail of the map and identification of artifacts.

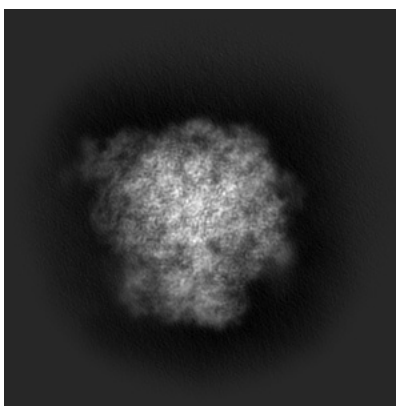
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

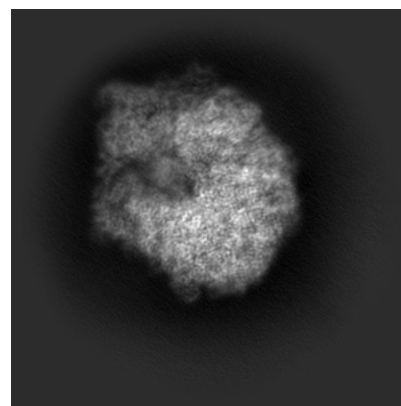
6.1.1 Primary map



X

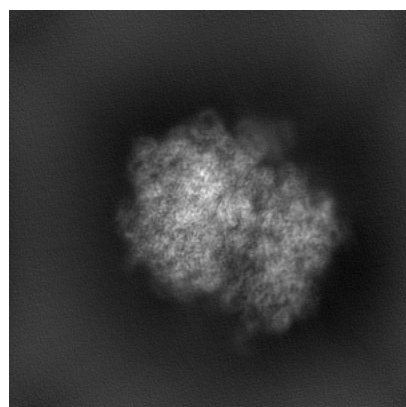


Y

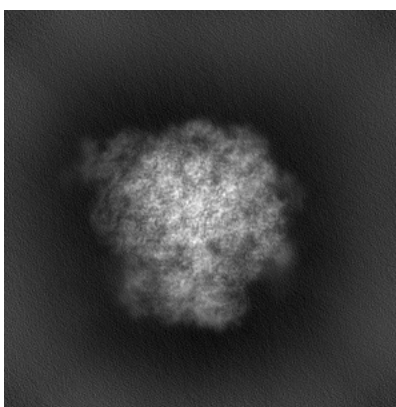


Z

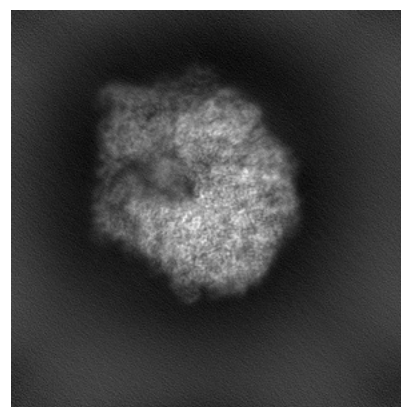
6.1.2 Raw map



X



Y

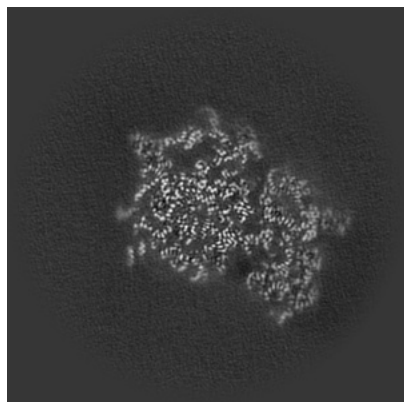


Z

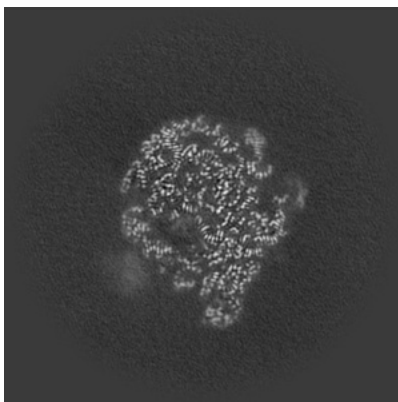
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

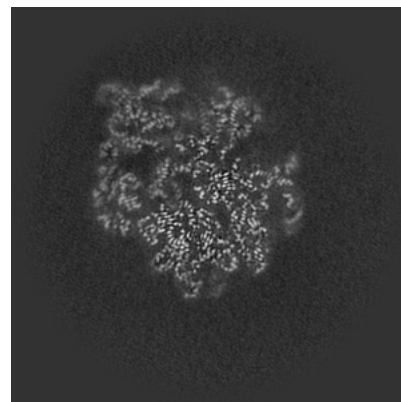
6.2.1 Primary map



X Index: 192

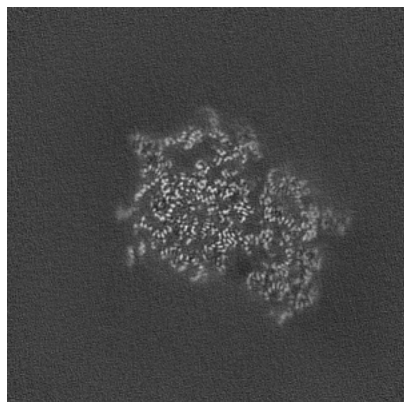


Y Index: 192

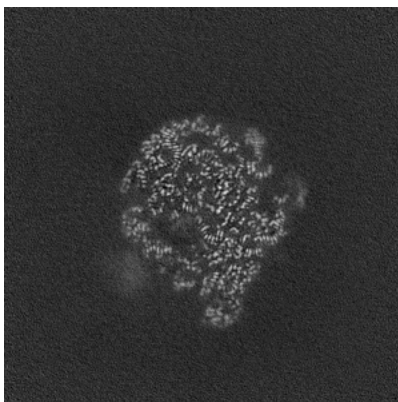


Z Index: 192

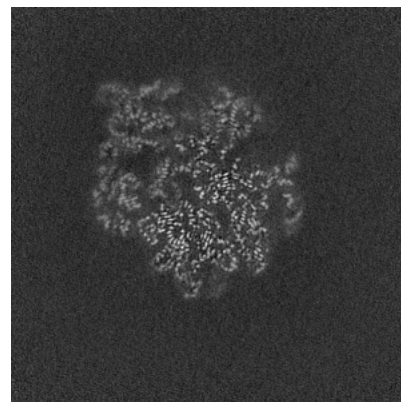
6.2.2 Raw map



X Index: 192



Y Index: 192

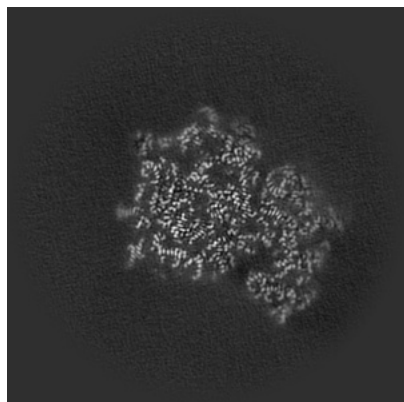


Z Index: 192

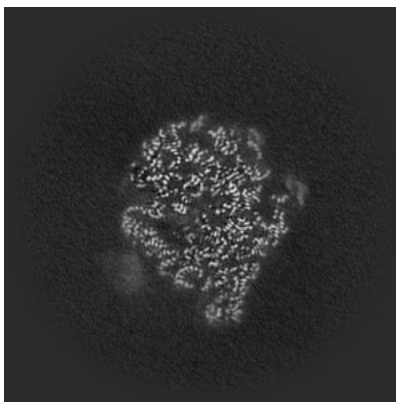
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

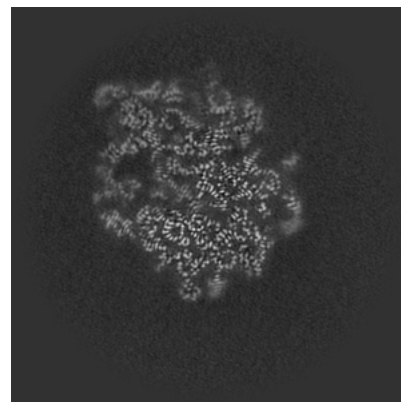
6.3.1 Primary map



X Index: 195

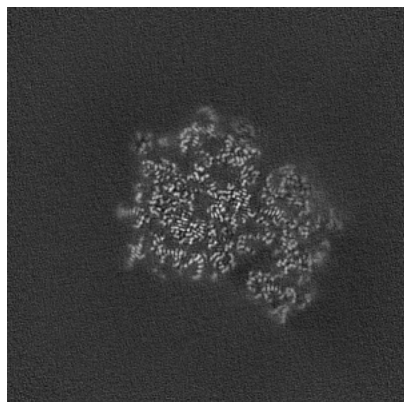


Y Index: 189

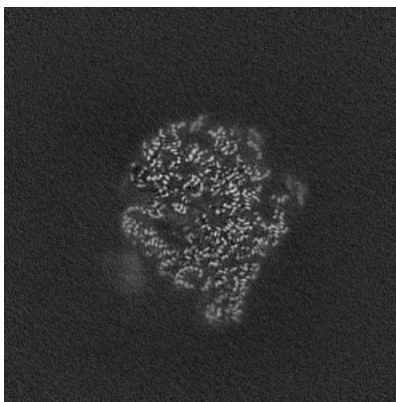


Z Index: 187

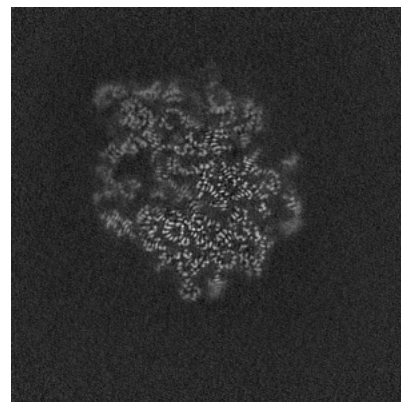
6.3.2 Raw map



X Index: 196



Y Index: 189

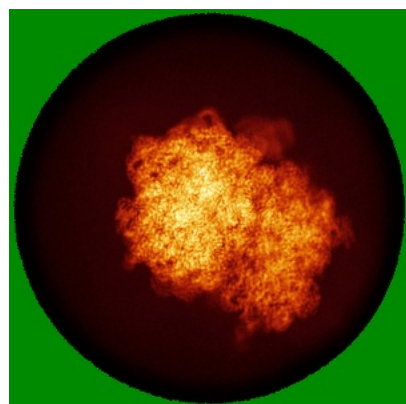


Z Index: 187

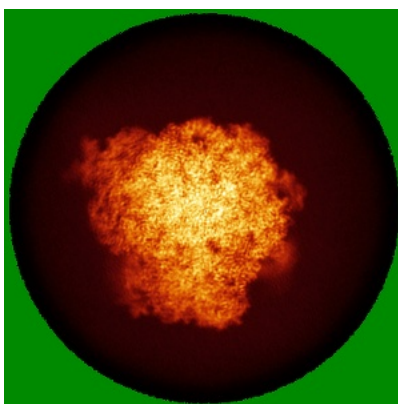
The images above show the largest variance slices of the map in three orthogonal directions.

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

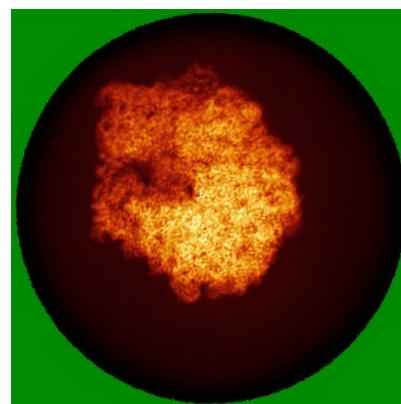
6.4.1 Primary map



X

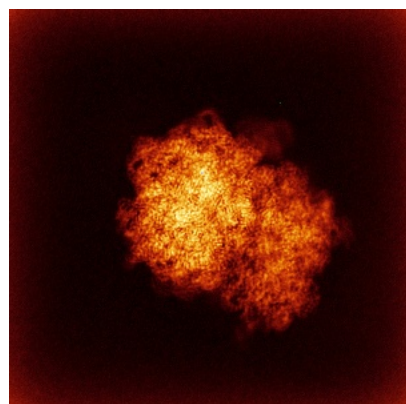


Y

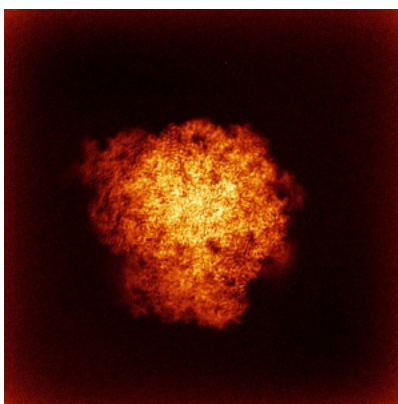


Z

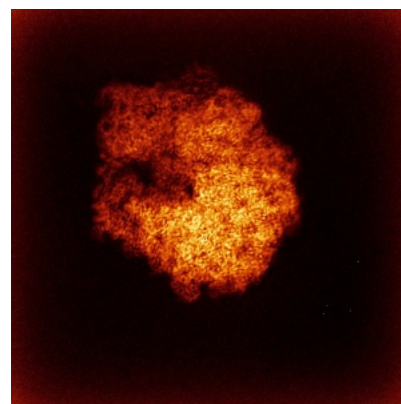
6.4.2 Raw map



X



Y

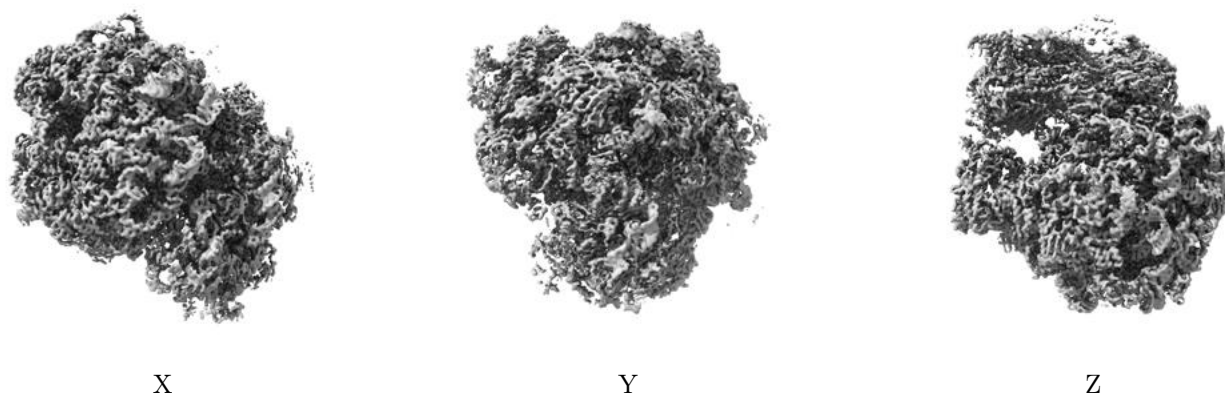


Z

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.

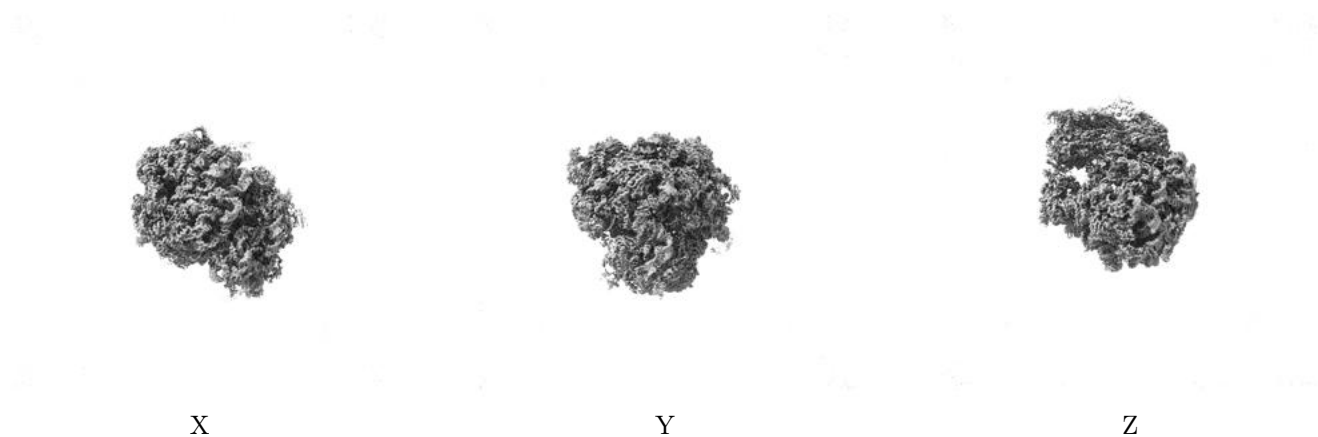
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.456. 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.

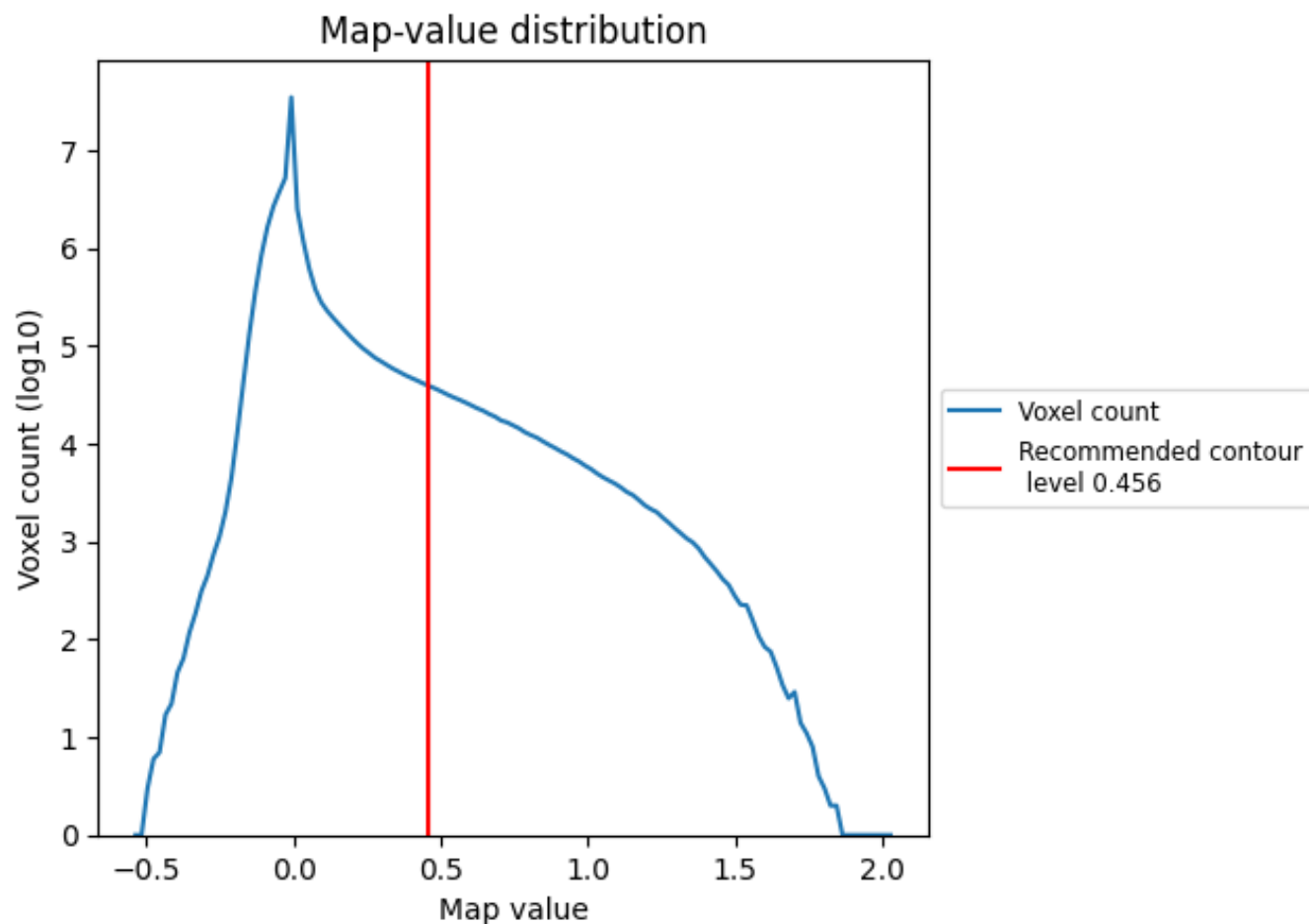
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

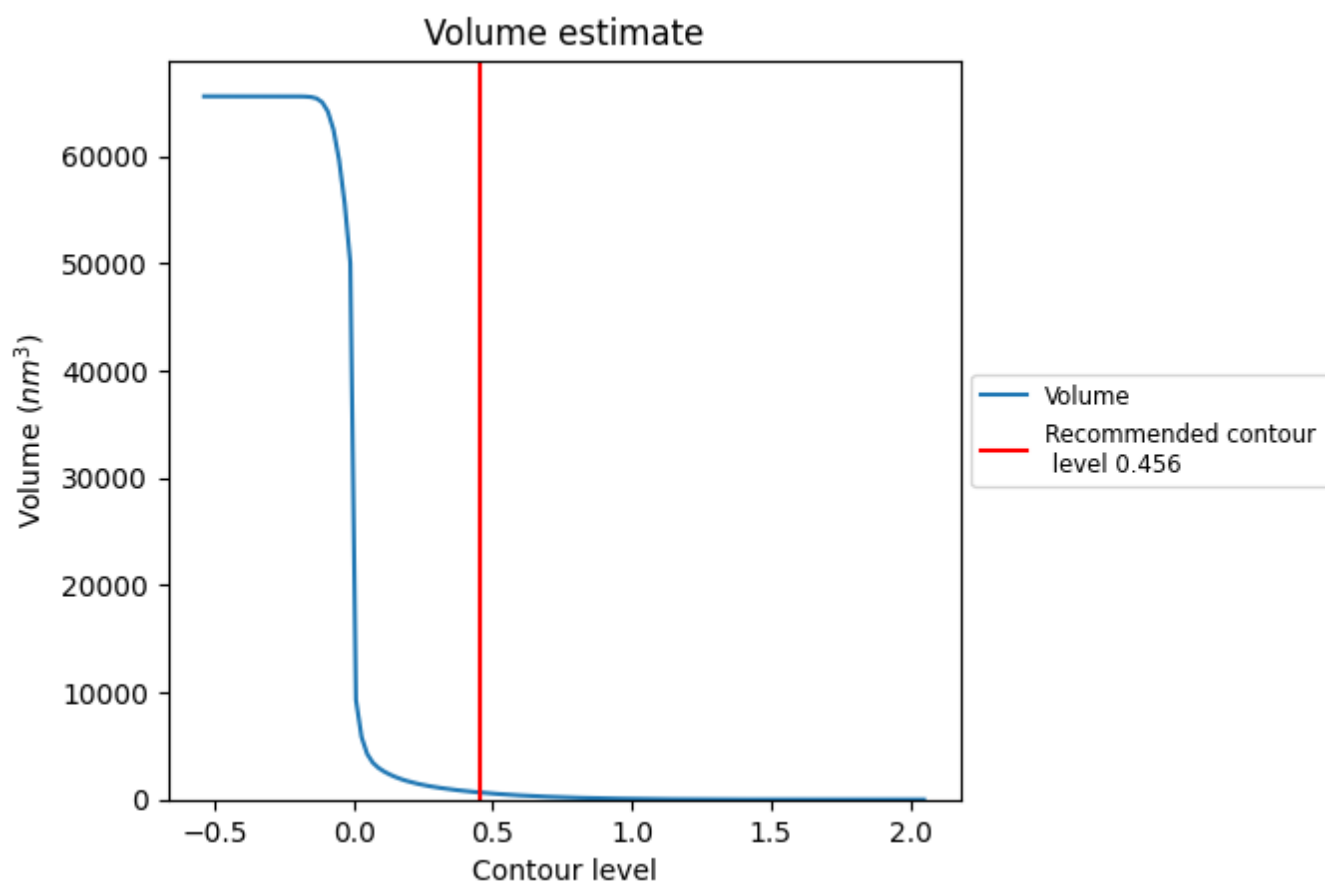
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

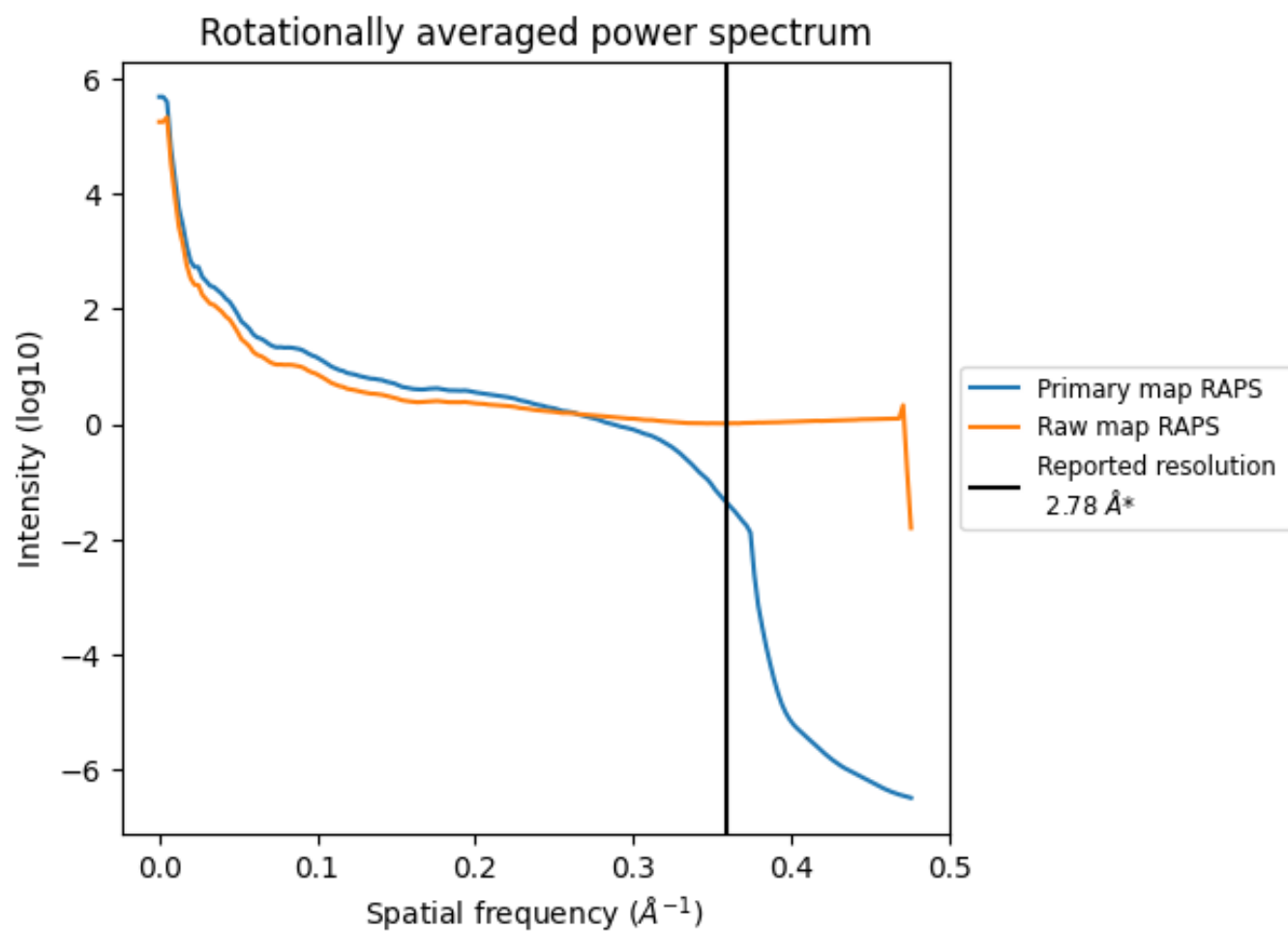
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 654 nm³; this corresponds to an approximate mass of 591 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 ⓘ

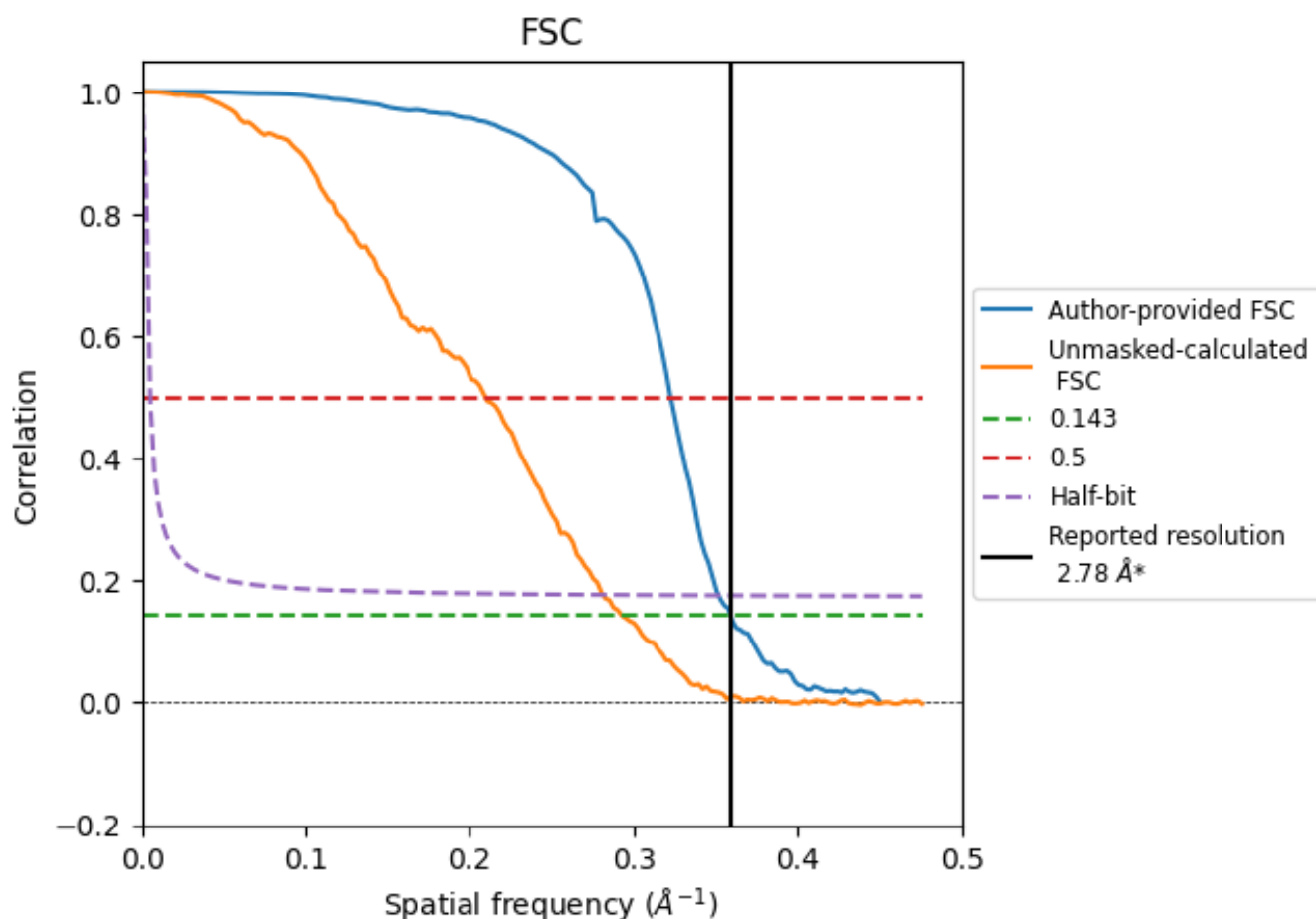


*Reported resolution corresponds to spatial frequency of 0.360 Å⁻¹

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 $0.360 \text{ \AA}^{-1}$

8.2 Resolution estimates [i](#)

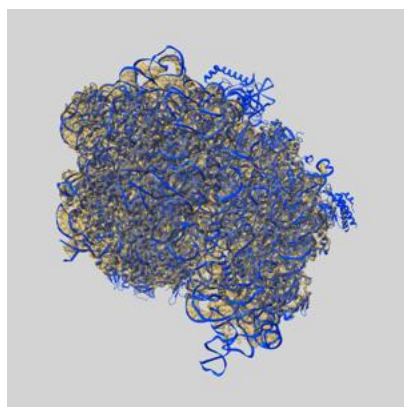
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.78	-	-
Author-provided FSC curve	2.78	3.10	2.84
Unmasked-calculated*	3.42	4.77	3.55

*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 3.42 differs from the reported value 2.78 by more than 10 %

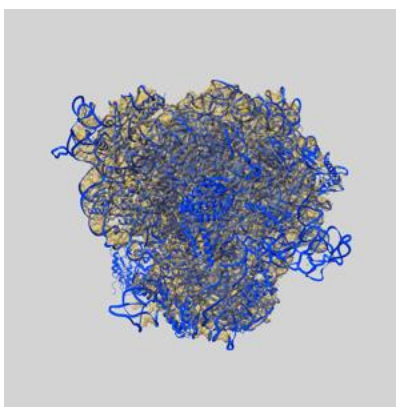
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-48513 and PDB model 9MQ4. Per-residue inclusion information can be found in section 3 on page 16.

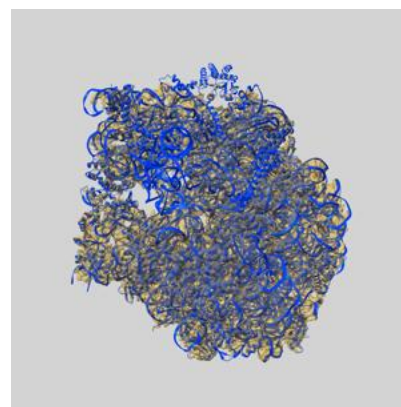
9.1 Map-model overlay [i](#)



X



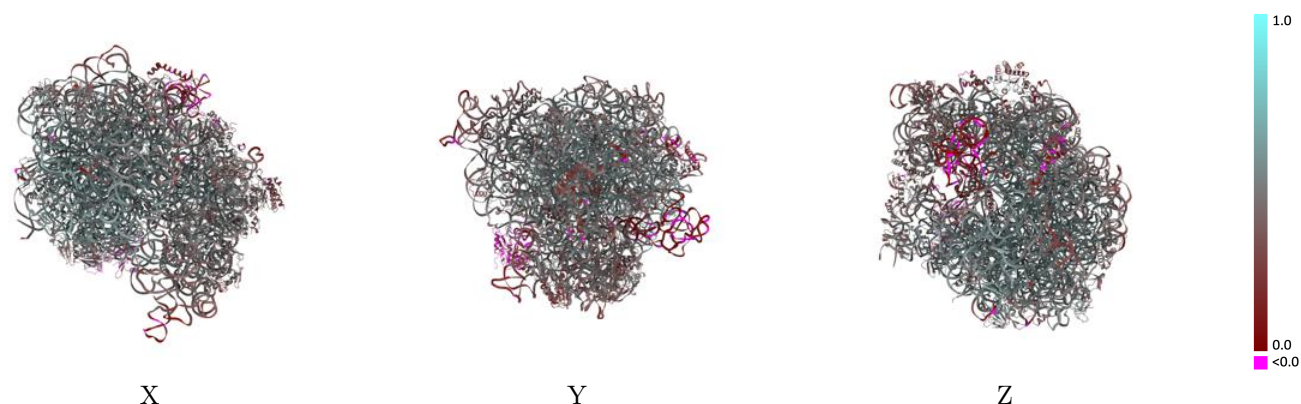
Y



Z

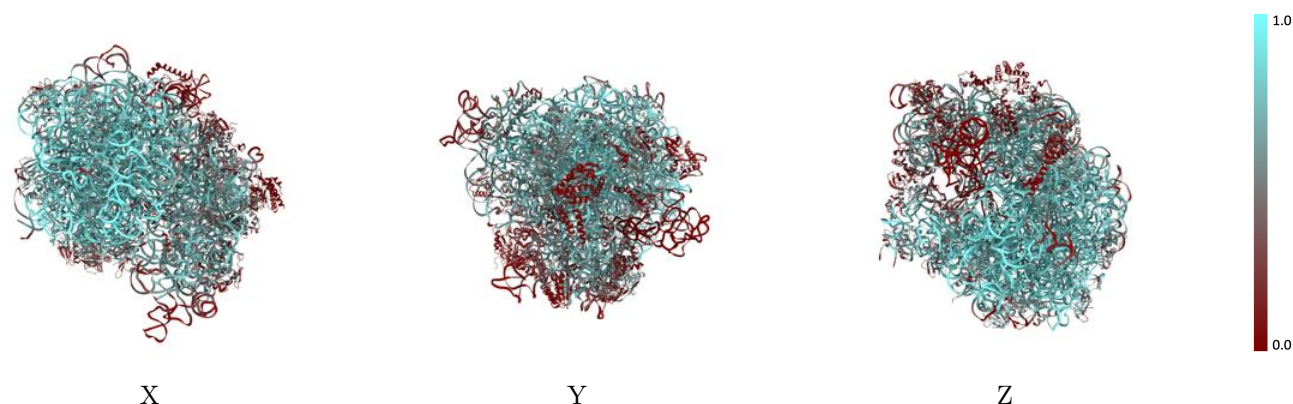
The images above show the 3D surface view of the map at the recommended contour level 0.456 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



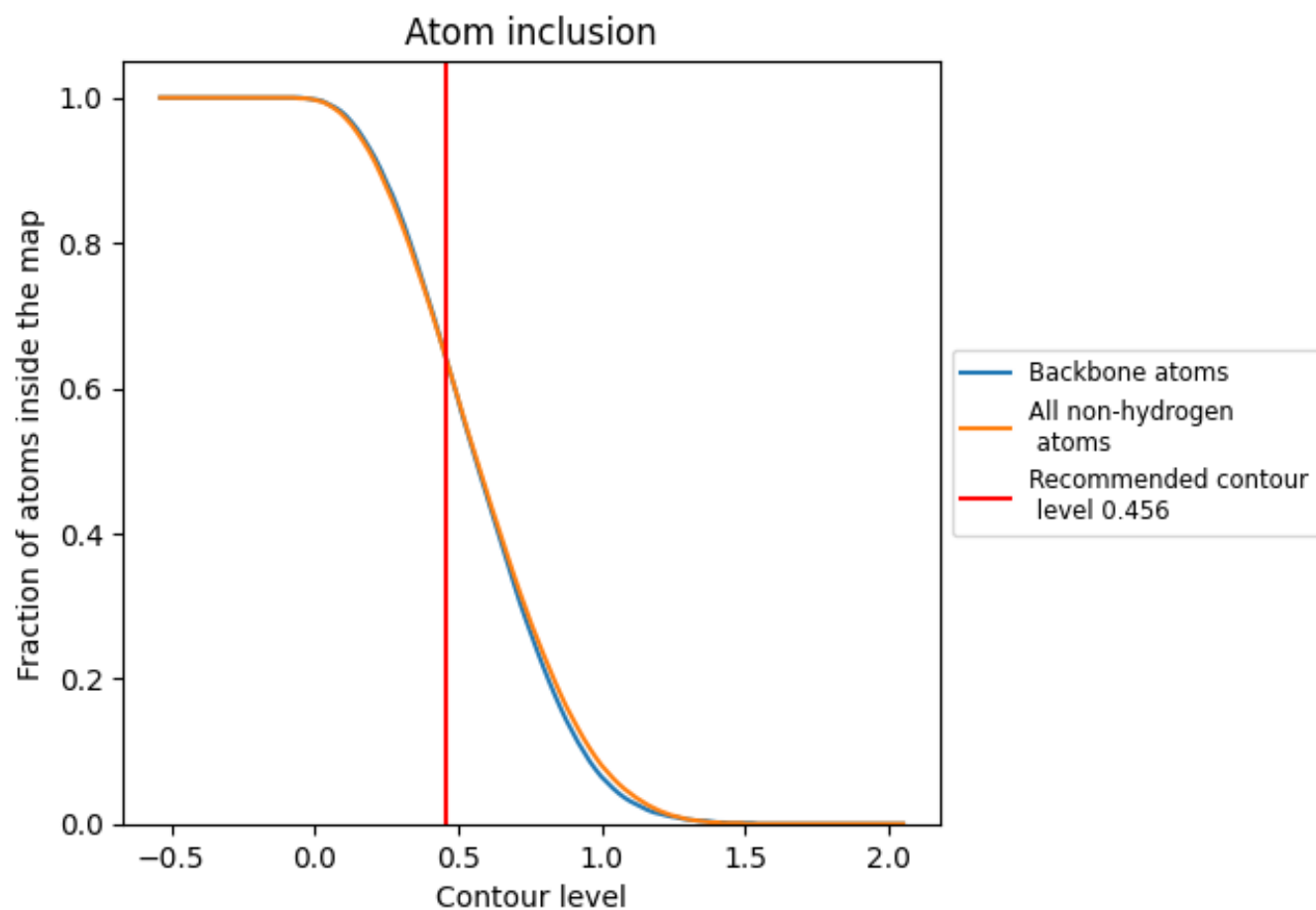
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.456).

9.4 Atom inclusion [i](#)



At the recommended contour level, 64% of all backbone atoms, 64% 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 (0.456) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6430	 0.4620
1	 0.8080	 0.5000
2	 0.6650	 0.4590
4	 0.7880	 0.4770
5	 0.5690	 0.4450
6	 0.0090	 0.1280
7	 0.6110	 0.5150
A	 0.1290	 0.2710
B	 0.7040	 0.5240
C	 0.7190	 0.5240
D	 0.5430	 0.4760
E	 0.3950	 0.4040
F	 0.2630	 0.3890
G	 0.0210	 0.2140
H	 0.0000	 0.0060
I	 0.0000	 0.0390
J	 0.7260	 0.5160
K	 0.6530	 0.5250
L	 0.6630	 0.5120
M	 0.6770	 0.5130
N	 0.7540	 0.5430
O	 0.5620	 0.4560
P	 0.6340	 0.5150
Q	 0.7650	 0.5350
R	 0.6260	 0.4970
S	 0.6790	 0.5270
T	 0.5780	 0.4530
U	 0.4810	 0.4410
V	 0.5530	 0.4580
W	 0.7090	 0.5270
X	 0.6640	 0.4970
Y	 0.5190	 0.4010
Z	 0.6610	 0.5040
a	 0.1500	 0.3340
b	 0.6950	 0.5290



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Chain	Atom inclusion	Q-score
c	 0.5550	 0.4710
d	 0.7550	 0.5340
e	 0.7540	 0.5600
f	 0.6430	 0.4920
g	 0.0580	 0.3330
h	 0.3410	 0.4390
i	 0.3630	 0.4250
j	 0.5070	 0.4710
k	 0.3020	 0.4070
l	 0.2090	 0.3670
m	 0.4850	 0.4530
n	 0.2710	 0.3790
o	 0.1920	 0.3570
p	 0.4140	 0.4390
q	 0.4640	 0.4720
r	 0.3270	 0.4180
s	 0.3860	 0.4230
t	 0.4880	 0.4280
u	 0.4390	 0.4460
v	 0.4050	 0.3980
w	 0.3940	 0.3960
x	 0.2940	 0.3890
y	 0.4390	 0.4120
z	 0.0570	 0.3520