



Full wwPDB EM Validation Report ⓘ

Mar 8, 2026 – 08:34 PM UTC

PDB ID : 7PAN / pdb_00007pan
EMDB ID : EMD-13278
Title : 70S ribosome with A/P- and P/E-site tRNAs in Mycoplasma pneumoniae cells
Authors : Xue, L.; Lenz, S.; Rappsilber, J.; Mahamid, J.
Deposited on : 2021-07-30
Resolution : 9.70 Å (reported)
Based on initial models : 4V7C, 7OOD, 7OOC

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

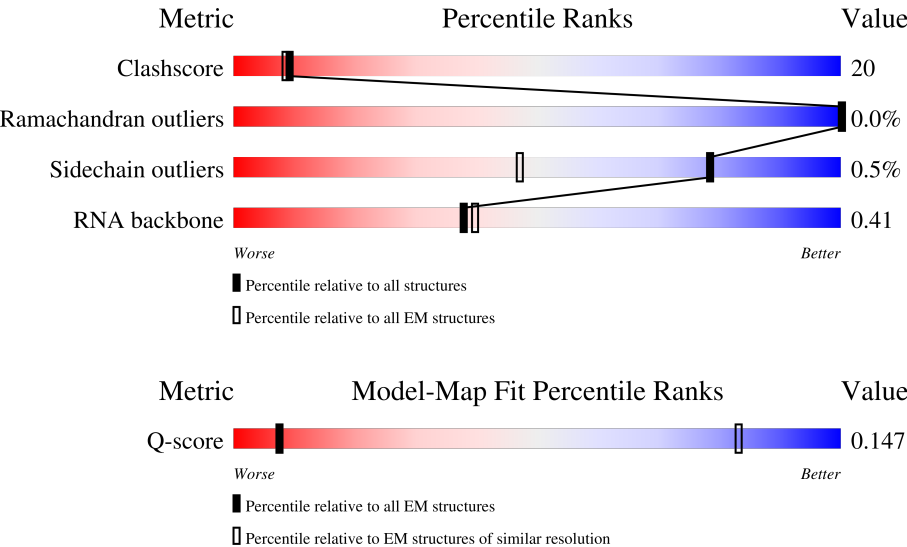
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDb archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh &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

1 Overall quality at a glance

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

The reported resolution of this entry is 9.70 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	165 (9.20 - 10.20)

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

Mol	Chain	Length	Quality of chain
1	0	48	12% 81% 17% .
2	1	59	15% 61% 39%
3	2	37	22% 38% 62%

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Mol	Chain	Length	Quality of chain
4	A	294	
5	B	273	
6	C	205	
7	D	219	
8	E	215	
9	F	155	
10	G	142	
11	H	132	
12	I	108	
13	J	121	
14	K	139	
15	L	124	
16	M	61	
17	N	86	
18	O	94	
19	P	85	
20	Q	104	
21	R	87	
22	S	87	
23	T	60	
24	a	287	
25	b	287	
26	c	212	
27	d	180	
28	e	184	

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Mol	Chain	Length	Quality of chain
29	f	149	
30	g	161	
31	h	137	
32	i	146	
33	j	122	
34	k	151	
35	l	139	
36	m	124	
37	n	116	
38	o	119	
39	p	127	
40	q	100	
41	r	159	
42	s	237	
43	t	111	
44	u	104	
45	v	65	
46	w	111	
47	x	97	
48	y	57	
49	z	53	
50	3	2907	
51	4	108	
52	5	1520	
53	7	76	

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Mol	Chain	Length	Quality of chain
53	8	76	42% 41% 17%

2 Entry composition

There are 53 unique types of molecules in this entry. The entry contains 146120 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called 50S ribosomal protein L34.

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

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

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

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

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

- Molecule 4 is a protein called 30S ribosomal protein S2.

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

- Molecule 5 is a protein called 30S ribosomal protein S3.

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

- Molecule 6 is a protein called 30S ribosomal protein S4.

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

- Molecule 7 is a protein called 30S ribosomal protein S5.

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

- Molecule 8 is a protein called 30S ribosomal protein S6.

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

- Molecule 9 is a protein called 30S ribosomal protein S7.

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

- Molecule 10 is a protein called 30S ribosomal protein S8.

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

- Molecule 11 is a protein called 30S ribosomal protein S9.

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

- Molecule 12 is a protein called 30S ribosomal protein S10.

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

- Molecule 13 is a protein called 30S ribosomal protein S11.

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

- Molecule 14 is a protein called 30S ribosomal protein S12.

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

- Molecule 15 is a protein called 30S ribosomal protein S13.

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

- Molecule 16 is a protein called 30S ribosomal protein S14 type Z.

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

- Molecule 17 is a protein called 30S ribosomal protein S15.

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

- Molecule 18 is a protein called 30S ribosomal protein S16.

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

- Molecule 19 is a protein called 30S ribosomal protein S17.

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

- Molecule 20 is a protein called 30S ribosomal protein S18.

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

- Molecule 21 is a protein called 30S ribosomal protein S19.

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

- Molecule 22 is a protein called 30S ribosomal protein S20.

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

- Molecule 23 is a protein called 30S ribosomal protein S21.

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

- Molecule 24 is a protein called 50S ribosomal protein L2.

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

- Molecule 25 is a protein called 50S ribosomal protein L3.

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

- Molecule 26 is a protein called 50S ribosomal protein L4.

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

- Molecule 27 is a protein called 50S ribosomal protein L5.

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

- Molecule 28 is a protein called 50S ribosomal protein L6.

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

- Molecule 29 is a protein called 50S ribosomal protein L9.

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

- Molecule 30 is a protein called 50S ribosomal protein L10.

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

- Molecule 31 is a protein called 50S ribosomal protein L11.

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

- Molecule 32 is a protein called 50S ribosomal protein L13.

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

- Molecule 33 is a protein called 50S ribosomal protein L14.

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

- Molecule 34 is a protein called 50S ribosomal protein L15.

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

- Molecule 35 is a protein called 50S ribosomal protein L16.

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

- Molecule 36 is a protein called 50S ribosomal protein L17.

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

- Molecule 37 is a protein called 50S ribosomal protein L18.

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

- Molecule 38 is a protein called 50S ribosomal protein L19.

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

- Molecule 39 is a protein called 50S ribosomal protein L20.

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

- Molecule 40 is a protein called 50S ribosomal protein L21.

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

- Molecule 41 is a protein called 50S ribosomal protein L22.

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

- Molecule 42 is a protein called 50S ribosomal protein L23.

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

- Molecule 43 is a protein called 50S ribosomal protein L24.

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

- Molecule 44 is a protein called 50S ribosomal protein L27.

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

- Molecule 45 is a protein called 50S ribosomal protein L28.

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

- Molecule 46 is a protein called 50S ribosomal protein L29.

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

- Molecule 47 is a protein called 50S ribosomal protein L31.

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

- Molecule 48 is a protein called 50S ribosomal protein L32.

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

- Molecule 49 is a protein called 50S ribosomal protein L33 1.

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

- Molecule 50 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	3	2878	Total	C	N	O	P	0	0
			61664	27558	11236	19995	2875		

- Molecule 51 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	4	105	Total	C	N	O	P	0	0
			2239	1003	409	724	103		

- Molecule 52 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	5	1493	Total	C	N	O	P	0	0
			31943	14279	5792	10382	1490		

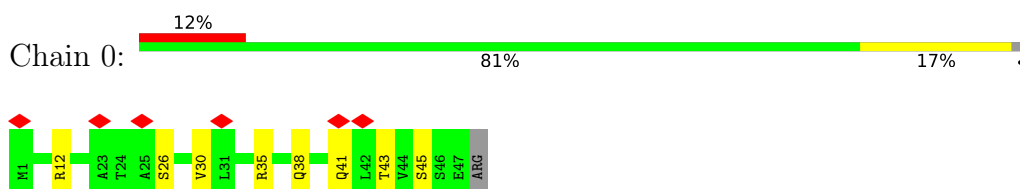
- Molecule 53 is a RNA chain called tRNA-Phe.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	7	76	Total	C	N	O	P	0	0
			1618	723	289	531	75		
53	8	76	Total	C	N	O	P	0	0
			1618	723	289	531	75		

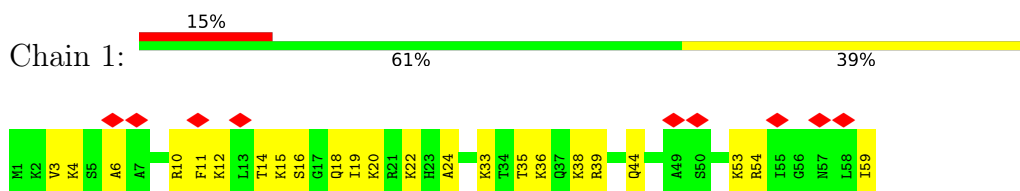
3 Residue-property plots

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

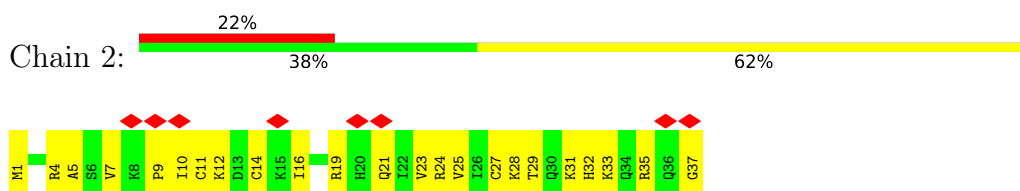
- Molecule 1: 50S ribosomal protein L34



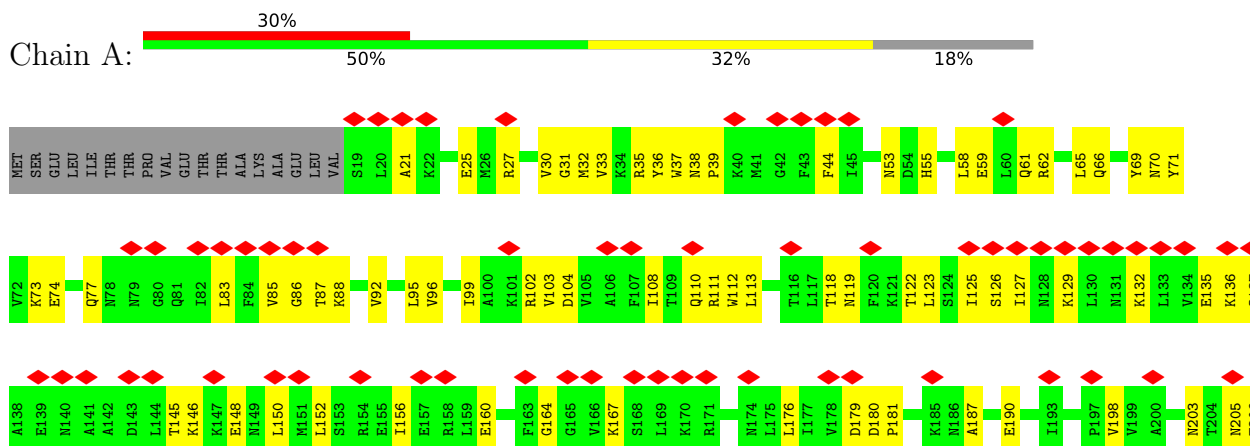
- Molecule 2: 50S ribosomal protein L35



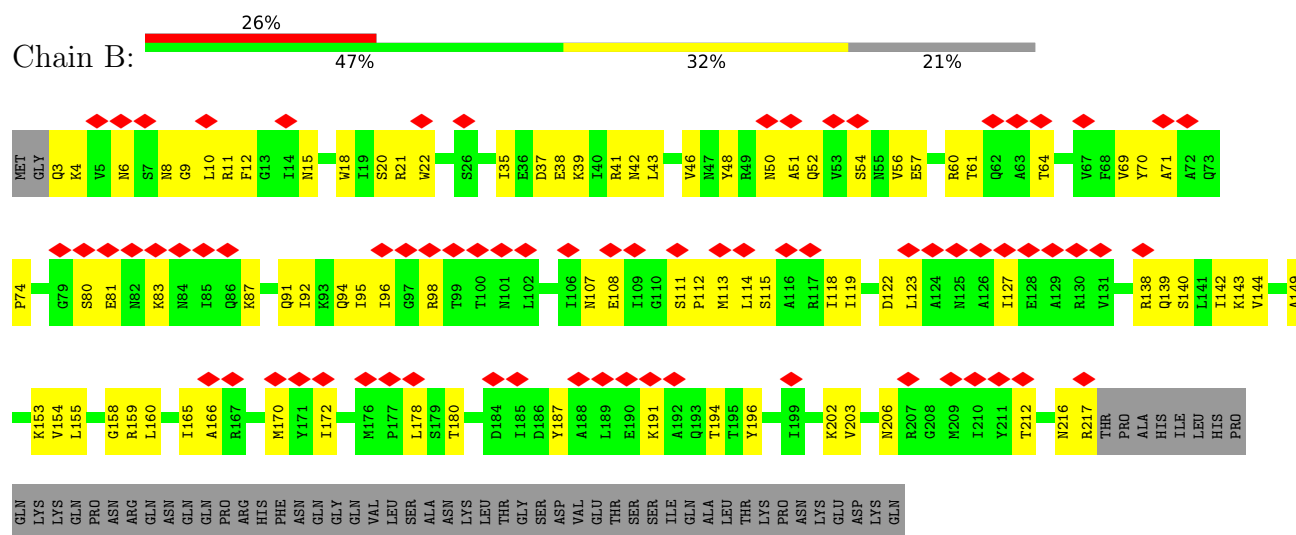
- Molecule 3: 50S ribosomal protein L36



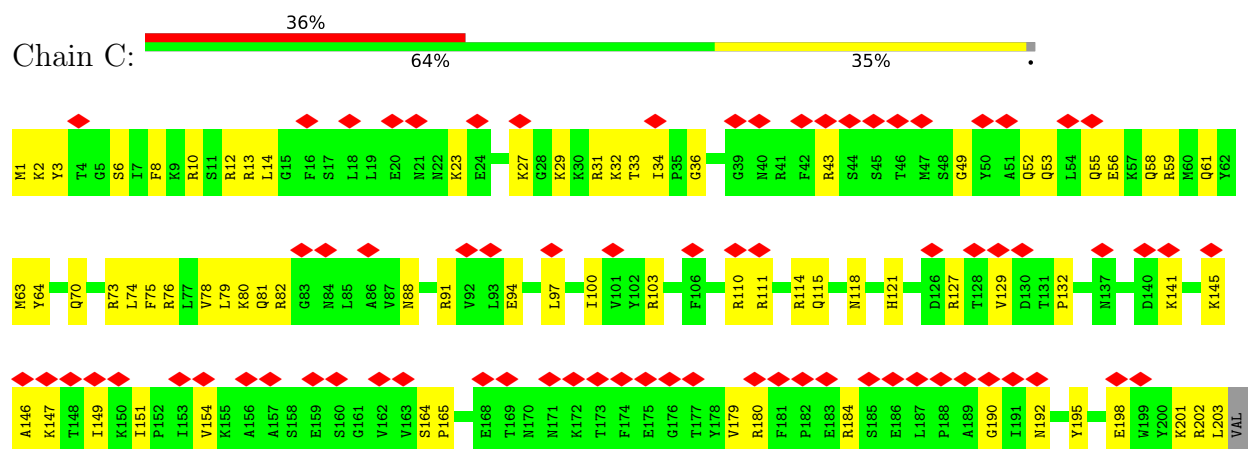
- Molecule 4: 30S ribosomal protein S2



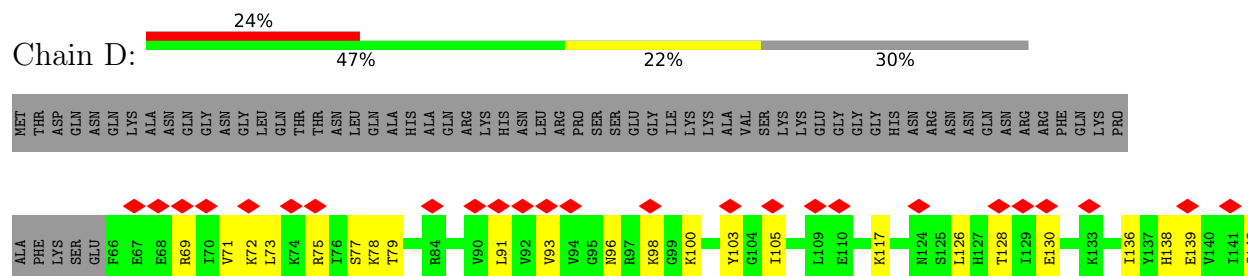
- Molecule 5: 30S ribosomal protein S3



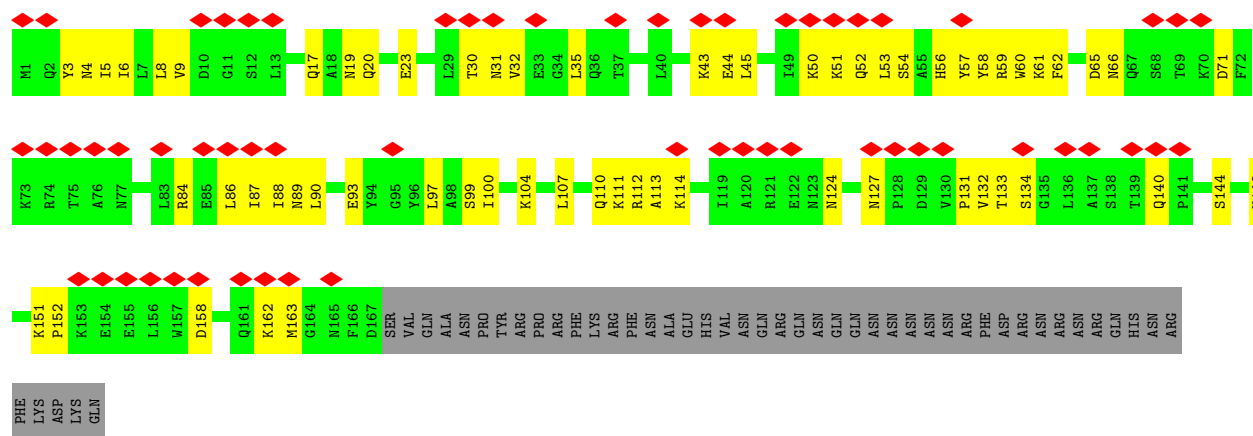
- Molecule 6: 30S ribosomal protein S4



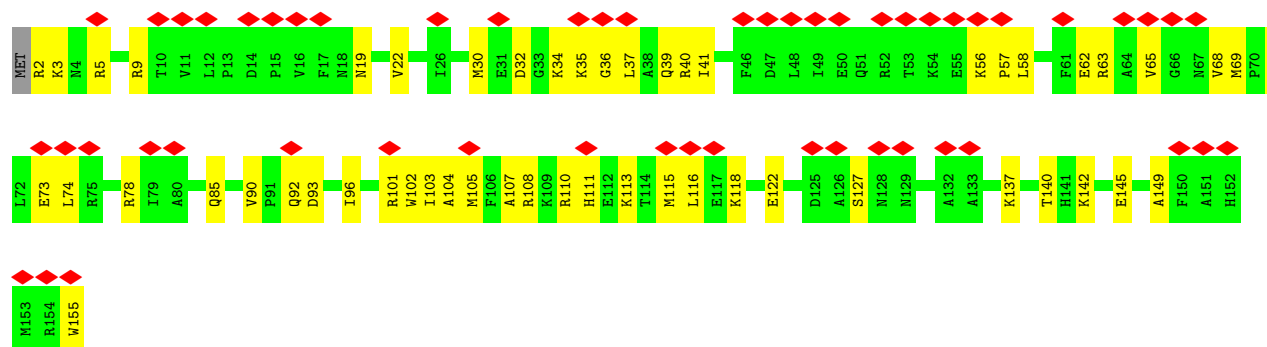
- Molecule 7: 30S ribosomal protein S5



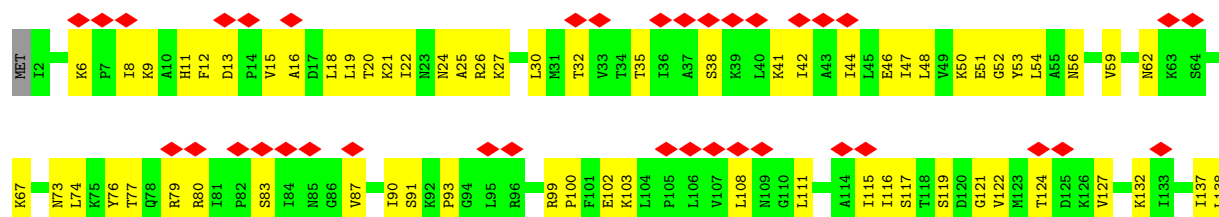
- Molecule 8: 30S ribosomal protein S6



- Molecule 9: 30S ribosomal protein S7

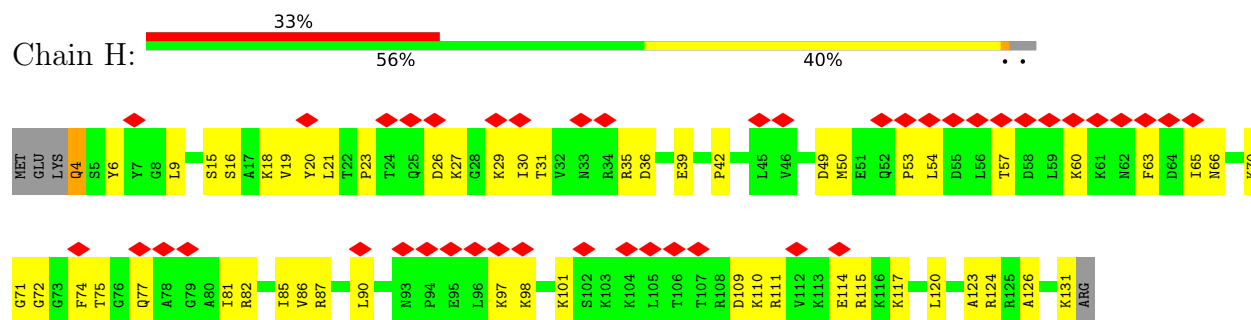


- Molecule 10: 30S ribosomal protein S8

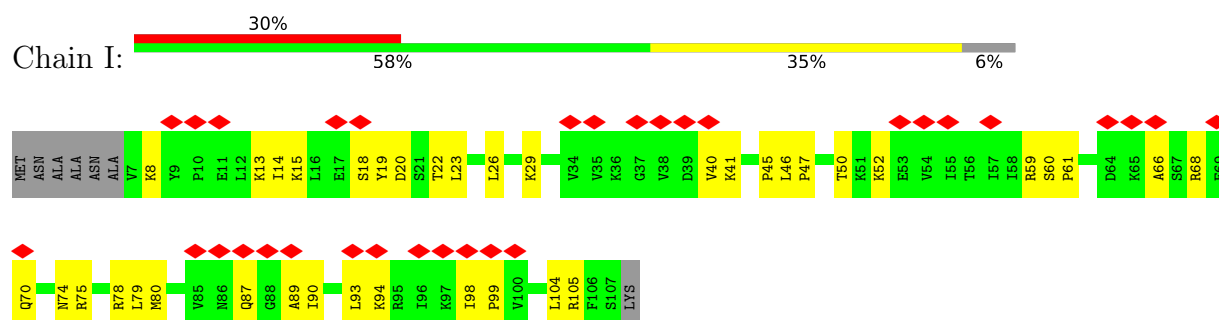


A139
Y140
V141
W142

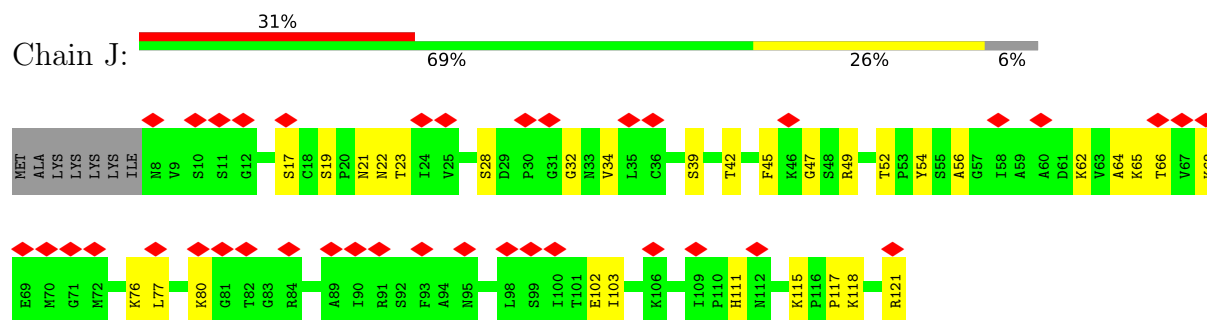
• Molecule 11: 30S ribosomal protein S9



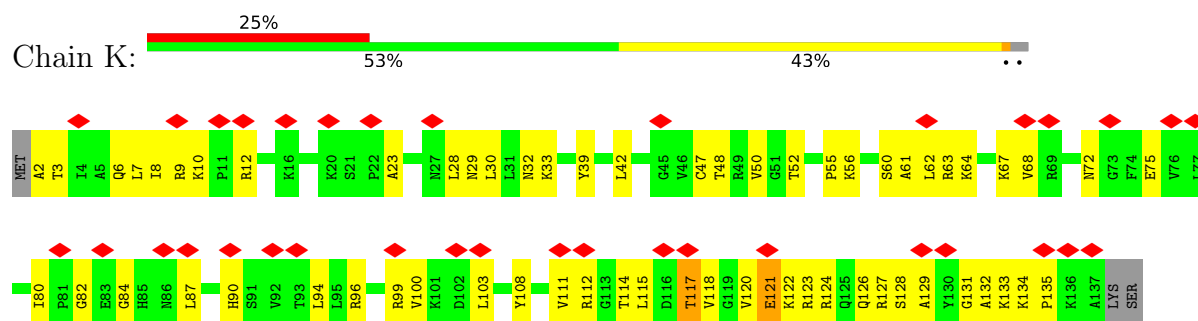
• Molecule 12: 30S ribosomal protein S10



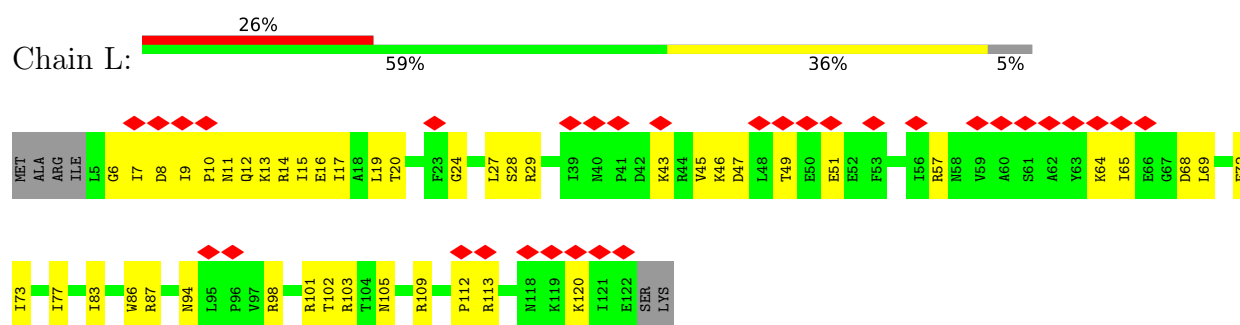
• Molecule 13: 30S ribosomal protein S11



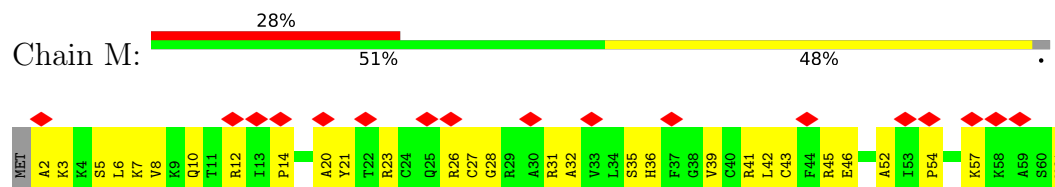
• Molecule 14: 30S ribosomal protein S12



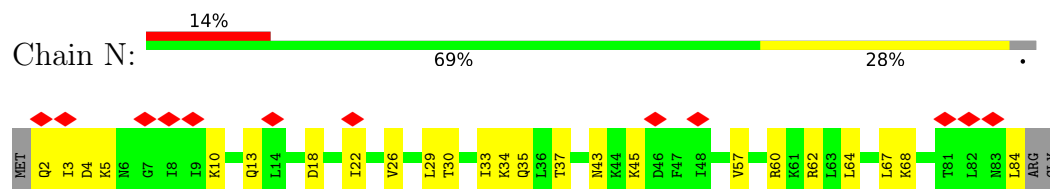
• Molecule 15: 30S ribosomal protein S13



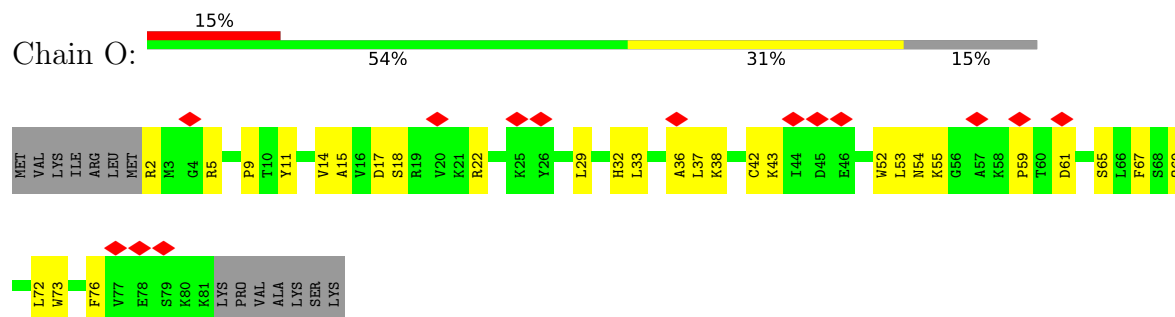
- Molecule 16: 30S ribosomal protein S14 type Z



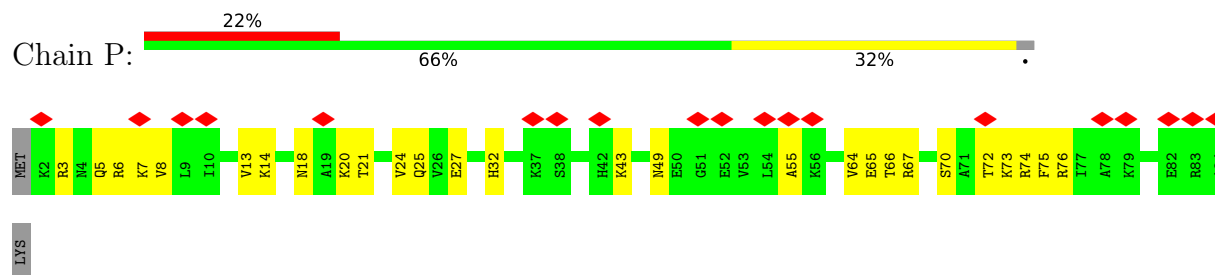
- Molecule 17: 30S ribosomal protein S15



- Molecule 18: 30S ribosomal protein S16

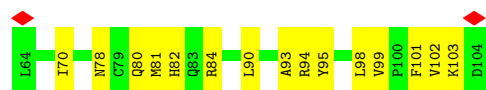


- Molecule 19: 30S ribosomal protein S17

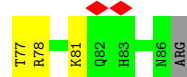


- Molecule 20: 30S ribosomal protein S18

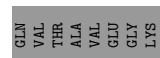




Chain R:



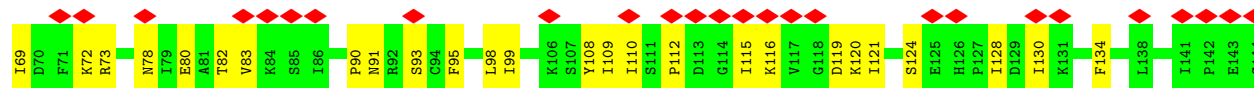
Chain S:

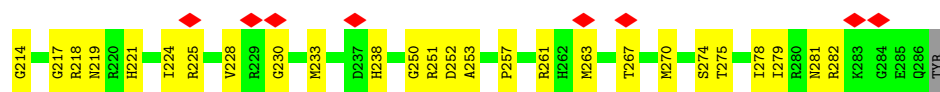


Chain T:

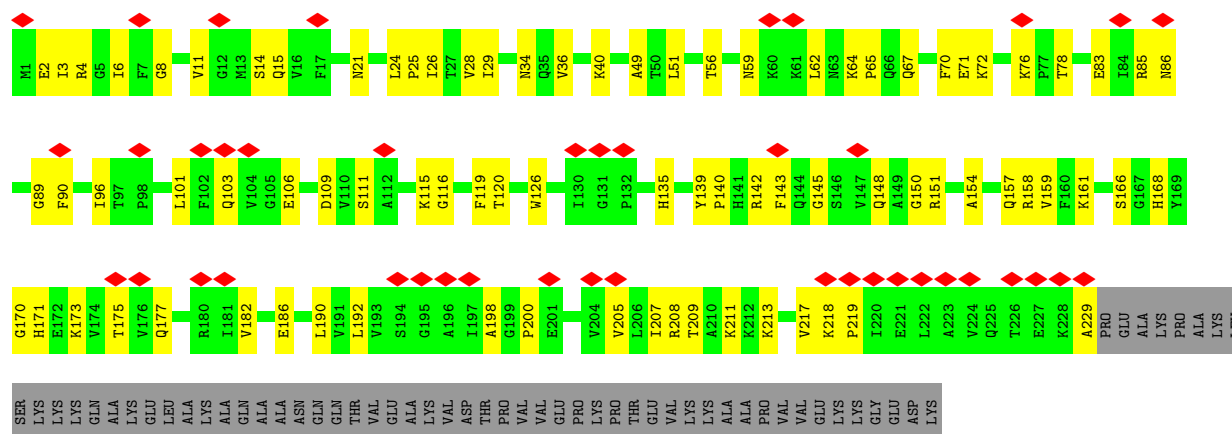


Chain a:

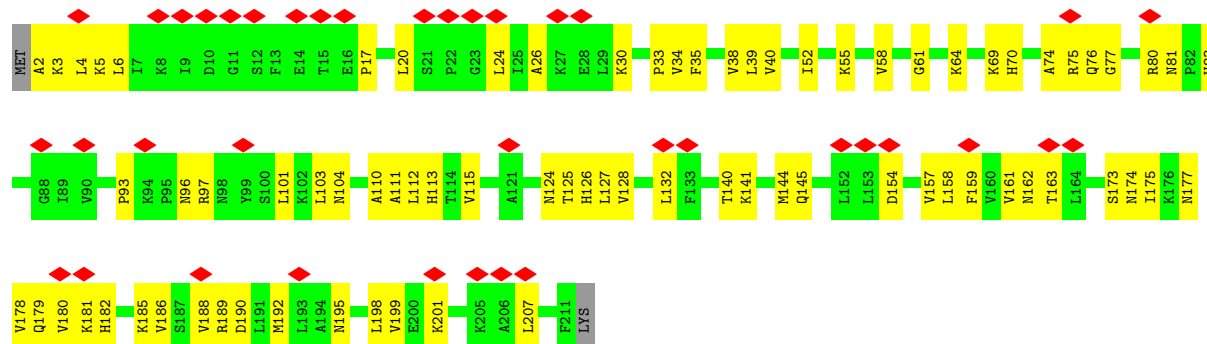




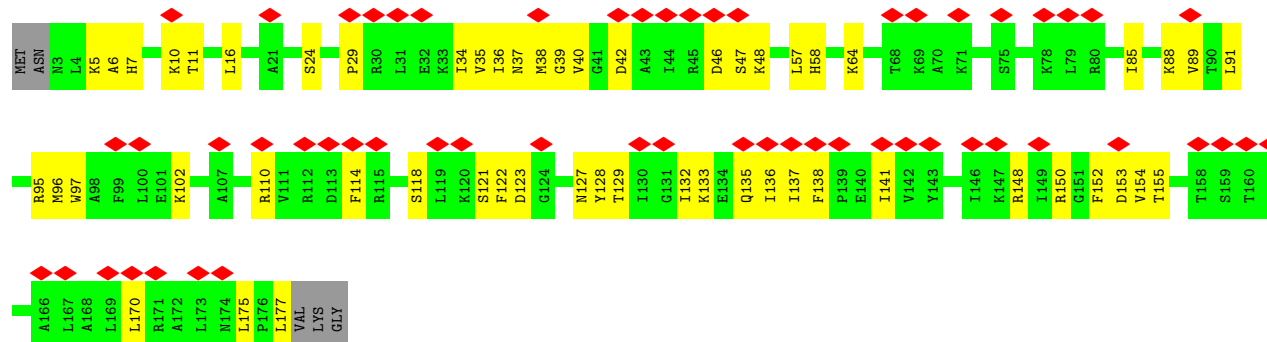
• Molecule 25: 50S ribosomal protein L3



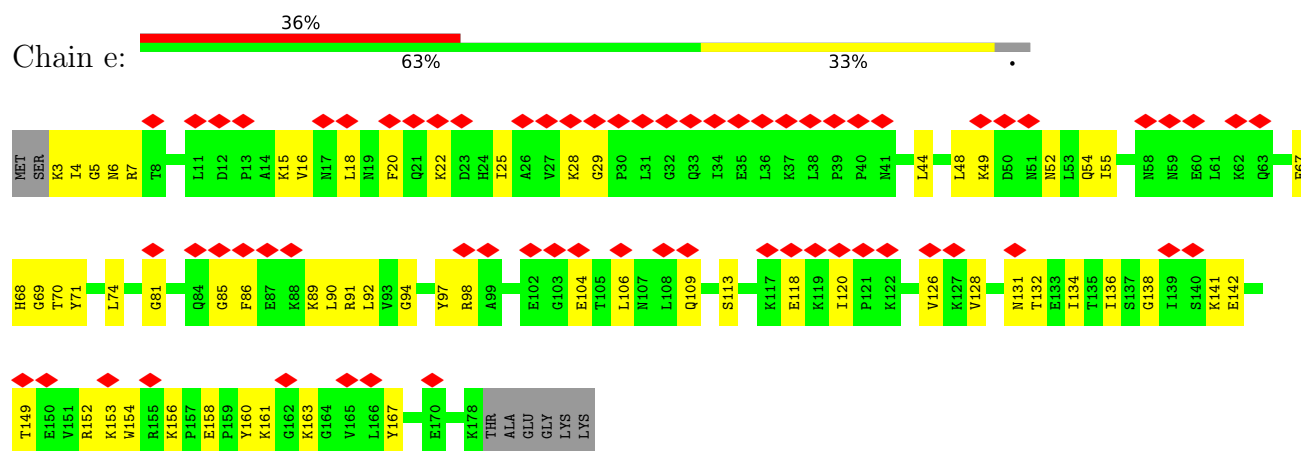
• Molecule 26: 50S ribosomal protein L4



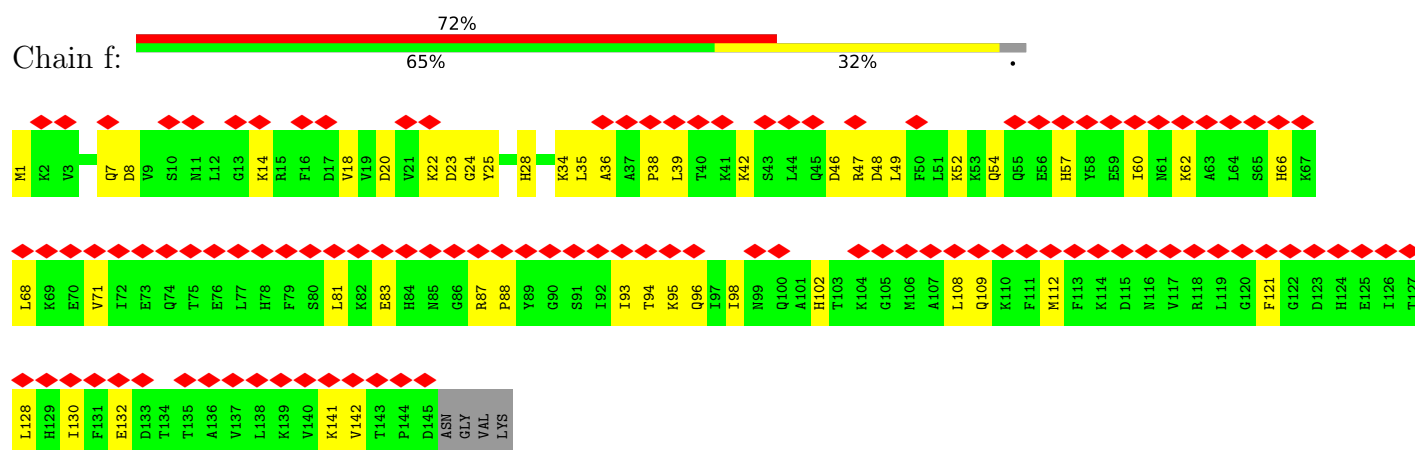
• Molecule 27: 50S ribosomal protein L5



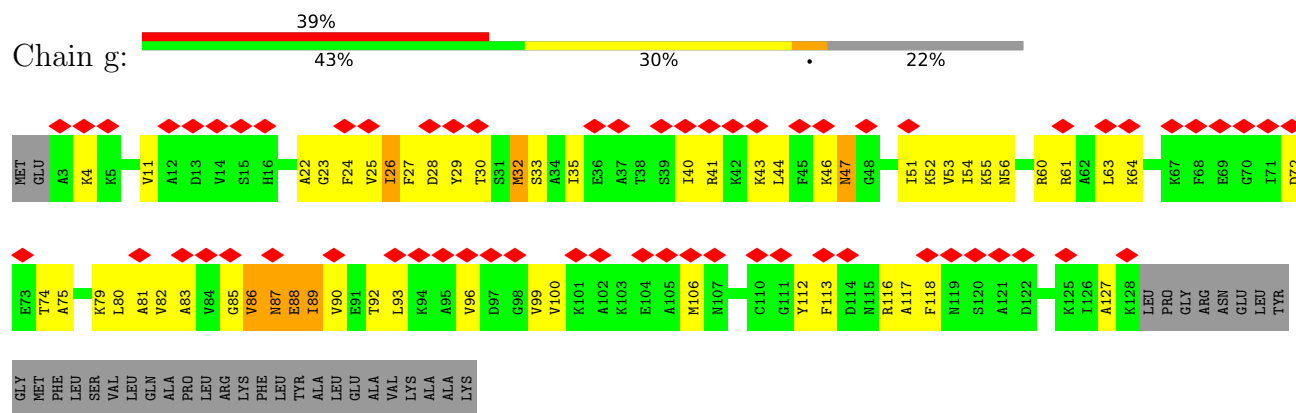
- Molecule 28: 50S ribosomal protein L6



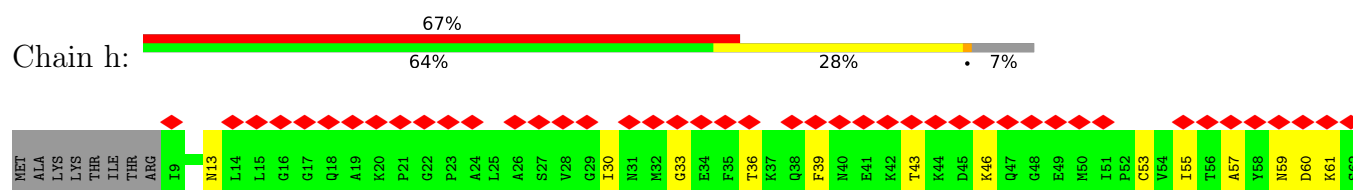
- Molecule 29: 50S ribosomal protein L9

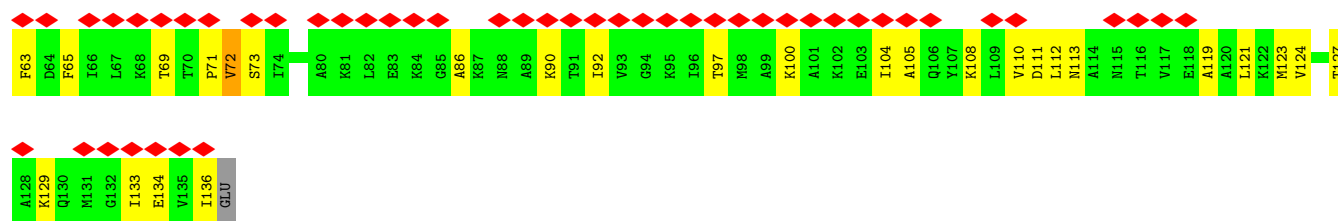


- Molecule 30: 50S ribosomal protein L10

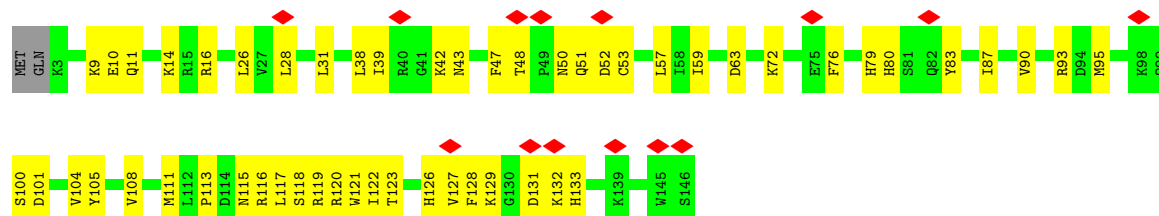


- Molecule 31: 50S ribosomal protein L11

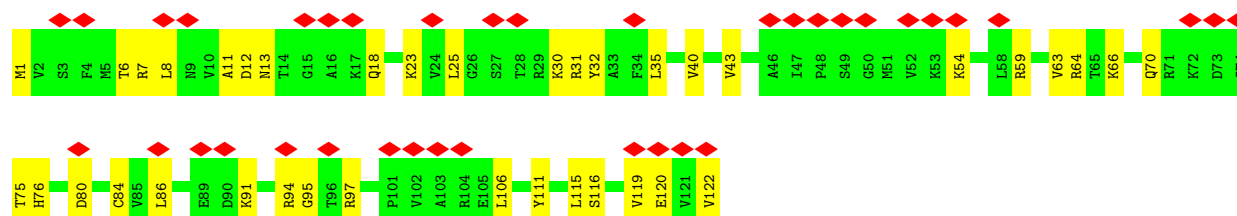




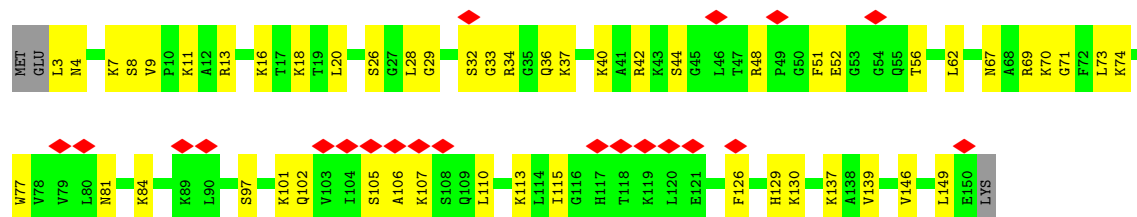
• Molecule 32: 50S ribosomal protein L13



• Molecule 33: 50S ribosomal protein L14

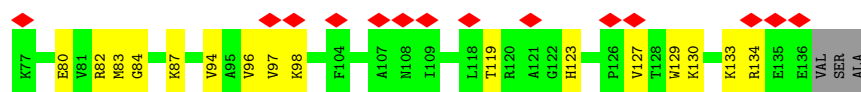


• Molecule 34: 50S ribosomal protein L15

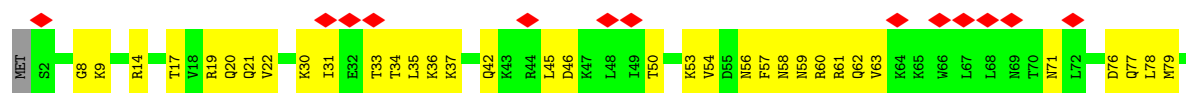


• Molecule 35: 50S ribosomal protein L16

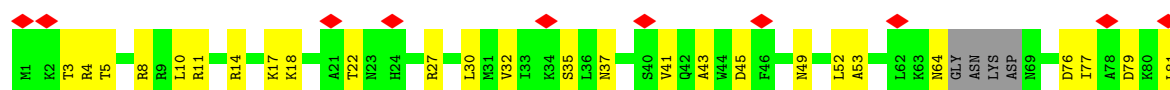




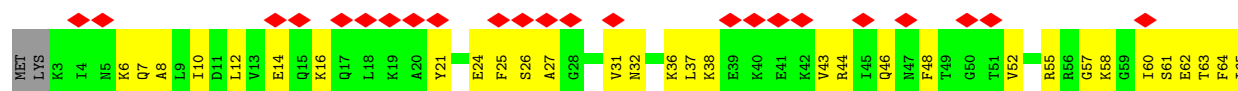
• Molecule 36: 50S ribosomal protein L17



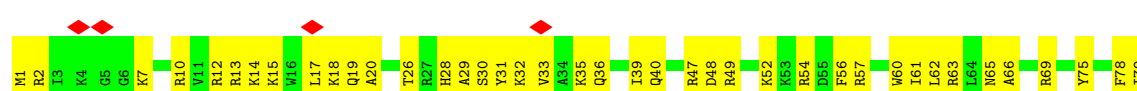
• Molecule 37: 50S ribosomal protein L18



• Molecule 38: 50S ribosomal protein L19

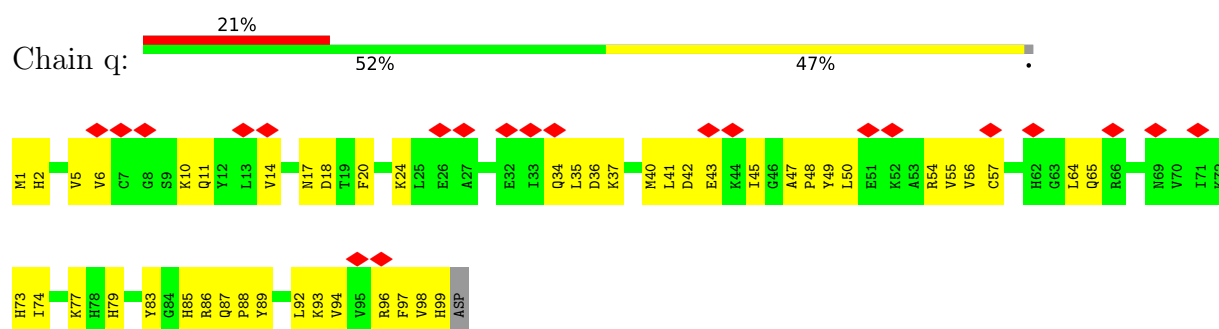


• Molecule 39: 50S ribosomal protein L20

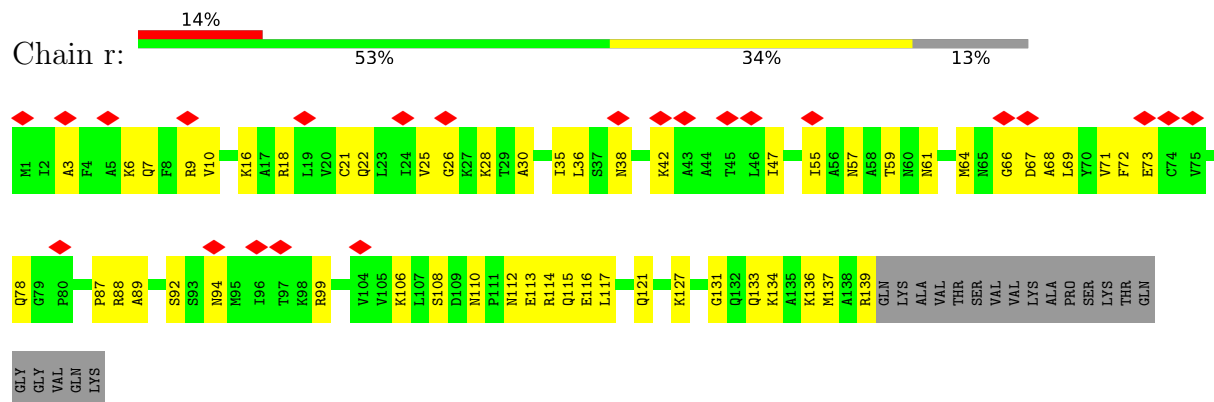


• Molecule 40: 50S ribosomal protein L21

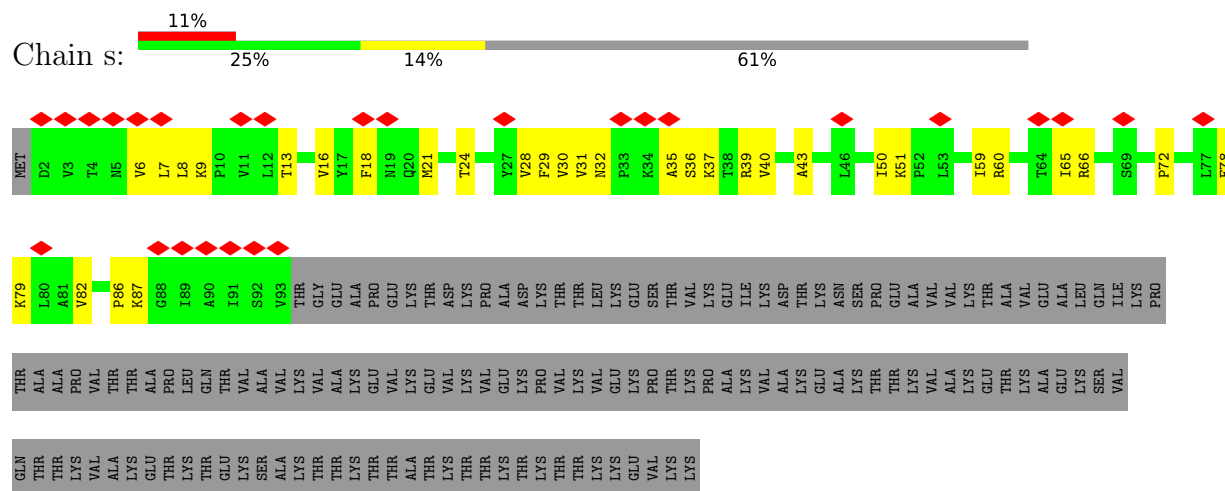




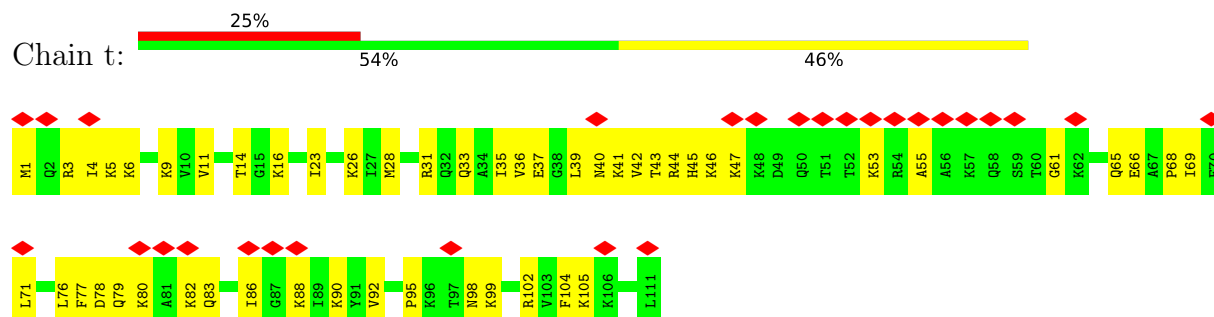
• Molecule 41: 50S ribosomal protein L22



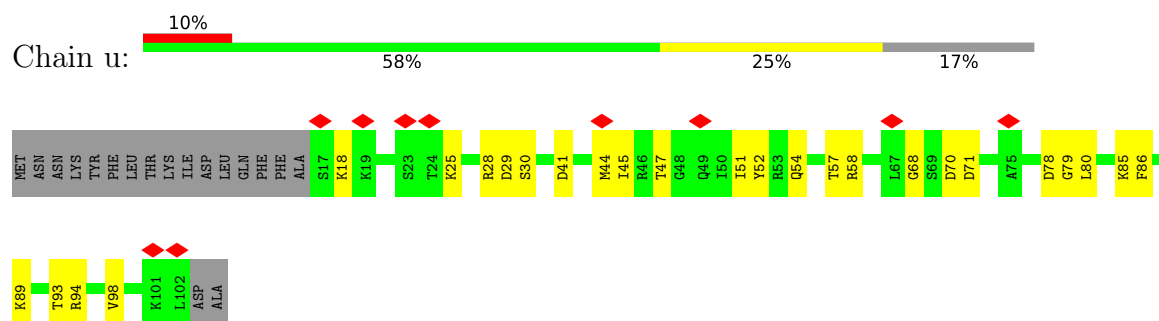
• Molecule 42: 50S ribosomal protein L23



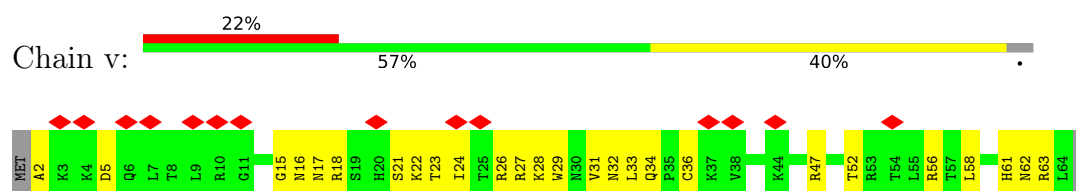
• Molecule 43: 50S ribosomal protein L24



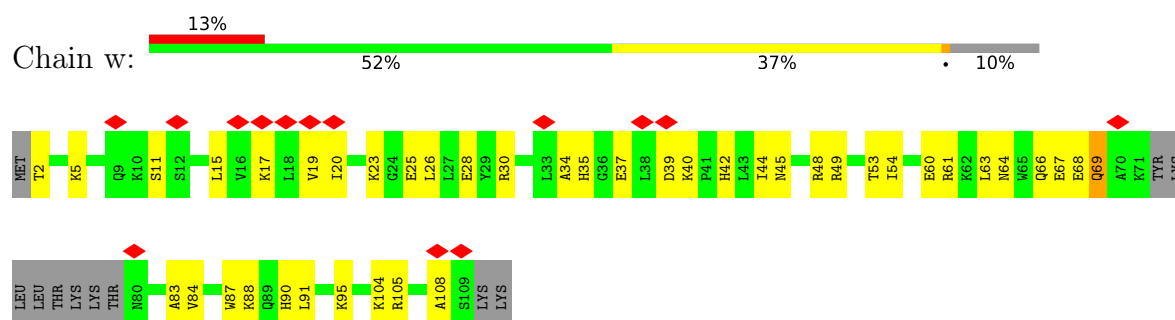
- Molecule 44: 50S ribosomal protein L27



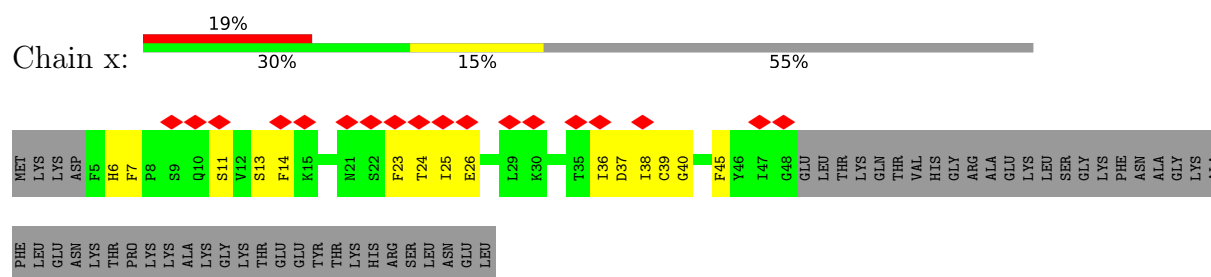
- Molecule 45: 50S ribosomal protein L28



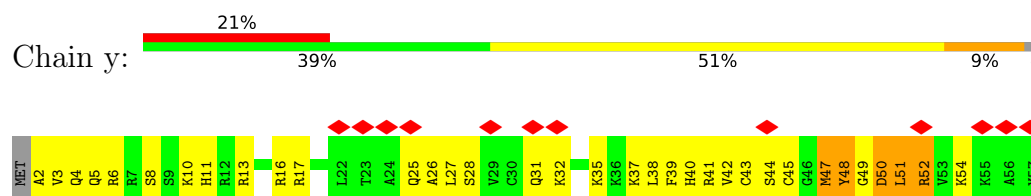
- Molecule 46: 50S ribosomal protein L29



- Molecule 47: 50S ribosomal protein L31



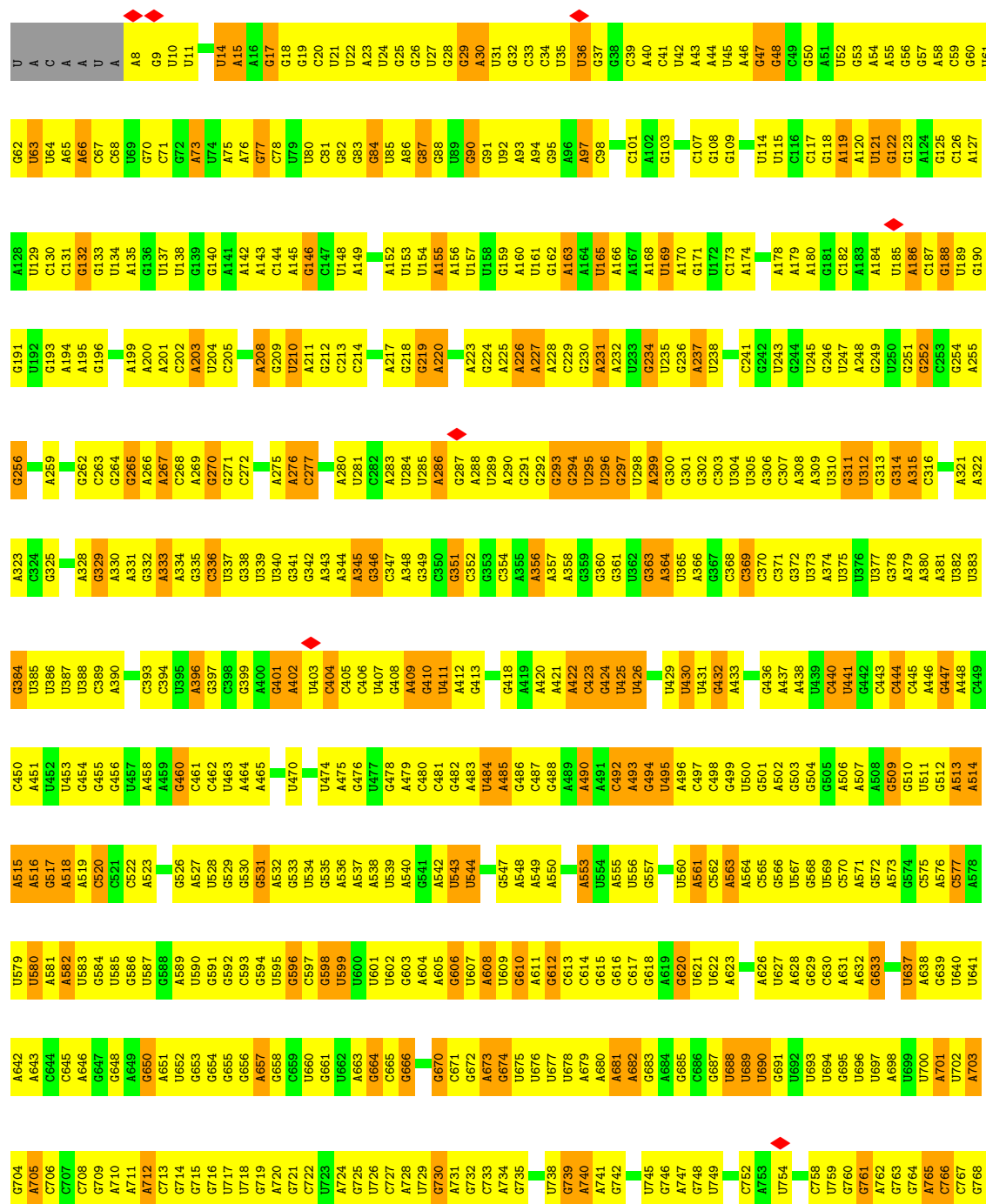
- Molecule 48: 50S ribosomal protein L32



- Molecule 49: 50S ribosomal protein L33 1

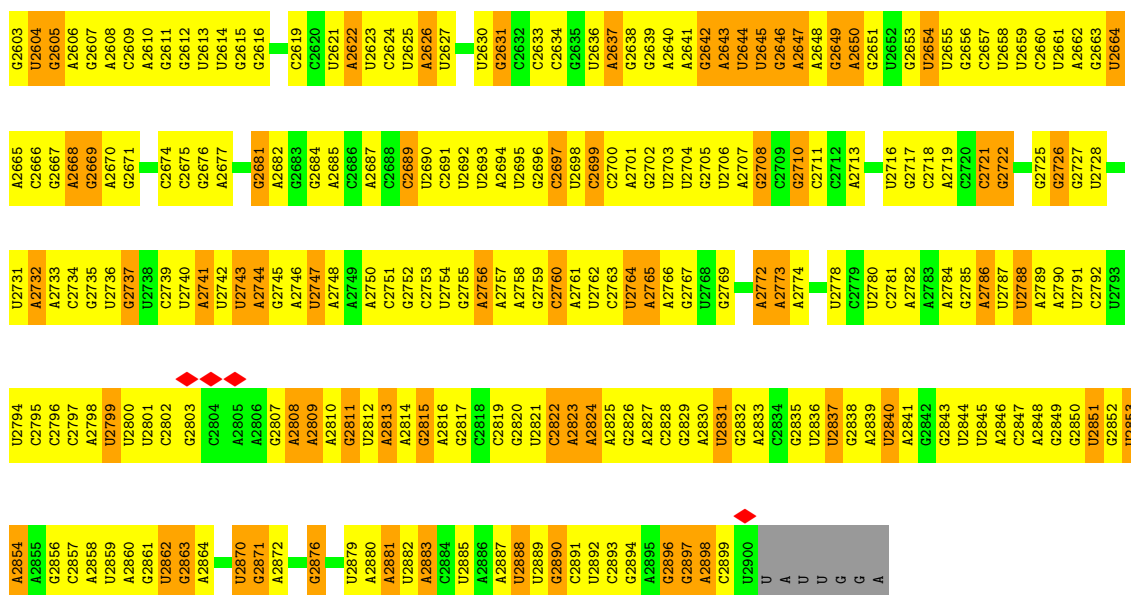


• Molecule 50: 23S ribosomal RNA

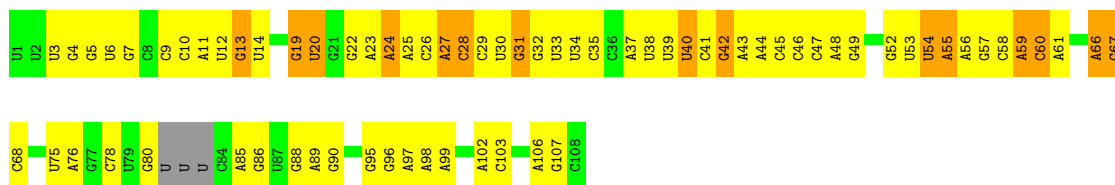




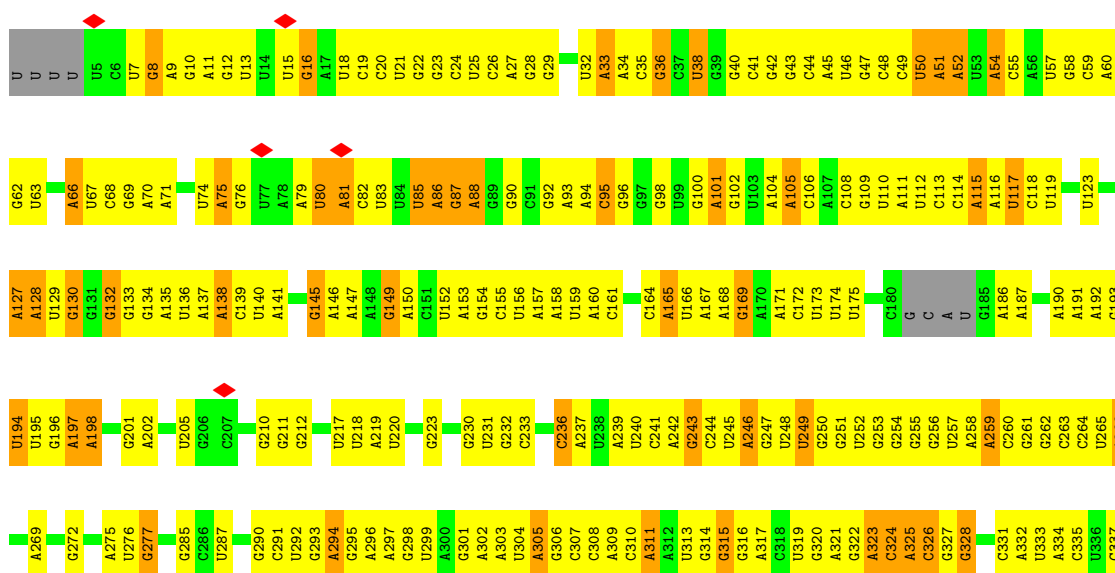
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G2540	C2475	U2414	U2351	C2289	C2223	G2161	U2099	U2036	G1972	C1903	C1836	G1772	G1708
C2541	A2476	A2415	U2352	C2290	A2224	U2162	G2100	A2037	U1973	A1903	C1837	A1773	G1708
A2542	A2477	G2418	G2353	U2291	G2225	U2163	A2101	G2038	G1974	G1904	A1838	G1774	A1710
G2543		A2419	A2354	A2292	U2226	G2164	U2102	G2039	G1975	U1905	C1839	G1775	C1719
G2544		A2420	G2355	C2293	A2231	A2165	C2103	A2040	A1976	G1906	G1840	G1776	A1711
U2545		A2421	U2356	A2294	G2232	U2166	A2104	C2041	U1977	A1907	U1841	G1777	A1712
G2548		G2422	U2357	A2295	G2232	G2105	G2106	C2045	U1978	A1908	U1842	G1778	A1715
A2549		G2423	U2358	A2296	A2233	A2107	A2107	G2046	G1979	C1909	C1843	G1779	A1780
G2550		A2424	U2359	G2297	G2234	G2173	U2110	U2047	U1983	G1911	A1845	G1781	C1719
G2551		G2425	A2360	U2298	A2235	A2171	A2108	A2048	U1984	G1912	A1846	U1782	C1720
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G2553		U2427	G2363		G2238	G2174	U2112	G2050	U1986	G1912	U1848	U1784	
U2554		G2428	A2364	U2303	G2239	U2175	A2111	G2051	U1987	G1913	U1849		
U2555		G2429	G2365	U2304	U2240	G2176	U2113	G2052	U1988	A1920	C1850	A1788	
G2556		C2430	A2366	A2305	A2241	G2177	G2114	C2053	A1989	A1921	C1851	G1789	U1726
G2557		U2431	A2367	G2307	G2242	G2179	C2115	A2055	G1990	U1922	G1852	U1790	U1727
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G2559		A2433		U2309	U2244	A2179	G2117	C2057	U1994	A1924	G1854	G1792	G1729
U2560		A2434	G2373	G2310	G2245	A2180	U2118	G2058	G1995	U1925	A1854	A1793	C1730
G2561		G2435	A2374	G2311	G2246	A2181	A2119	G2059	G1996	A1926	G1855	A1794	
U2562		U2436	G2375	G2312	G2247	U2182	G2120	G2060	A1997		G1857	A1792	
U2563		G2437	A2376	U2313	G2248	U2183	A2121	A2061	C1997	U1930	U1858	G1797	A1732
		A2438	A2377	U2314	A2249	A2184	G2122	C2062	U1998	C1931	U1859	A1798	A1734
G2567		U2439	G2378	G2315	G2250	C2185	A2123	G2063	U1999	U1932	A1860	A1799	A1735
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U2570		A2442	G2381	U2318	U2253	U2188	A2126	A2066	U2002	A1935	G1863	C1802	G1738
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A2572		C2444	G2383	U2320	A2255	G2191	U2128	G2068	C2004	C1937	A1865	A1804	U1740
G2573		G2445	A2384	C2321	C2256	G2192	U2129	A2069	G2005	U1938	G1866	U1805	G1741
A2574		U2446	A2385	G2322	G2257	U2193	A2130	C2070	G2006	A1939	A1867	G1806	C1742
A2575		A2447	A2386	U2323	G2258	U2194	U2131	C2071		G1940	A1868	U1743	
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A2578		G2450	A2389	G2326	G2260	U2197	G2074	G2075	A2011	A1943	U1871	A1810	
G2579		C2451	G2390	U2327		U2198	G2076	A2077	C2015	A1944	U1872		
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G2582		G2454	C2393	A2330	G2267	G2201	C2138	A2078	G2018	C1949	C1877	G1814	U1748
G2583		A2455	A2394	G2331	G2268	G2202	C2139	A2081	A2020	U1950	C1881	U1815	A1750
A2584		U2457	U2395	U2332	C2272	U2203	G2140	U2082	A2021	U1953	C1882	A1816	A1751
A2585		A2458	A2396	G2333	C2271	U2204	A2141	U2083	A2022	G1956	A1883	G1818	G1752
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U2587		C2460	G2399	A2335	U2273	A2206	C2143	C2085	U2023	U1958	G1885	A1822	G1757
G2588		A2461	A2400	U2337	A2274	U2208	A2145	U2086	A1959	A1959	C1886	G1823	C1759
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A2596		A2467	U2406	A2343	U2280	A2214	U2153	U2092	U2029	U1963	A1891	U1829	G1765
A2597		U2468	G2407	A2344	A2281		U2154	C2092	A2030	G1966	A1892	G1830	A1766
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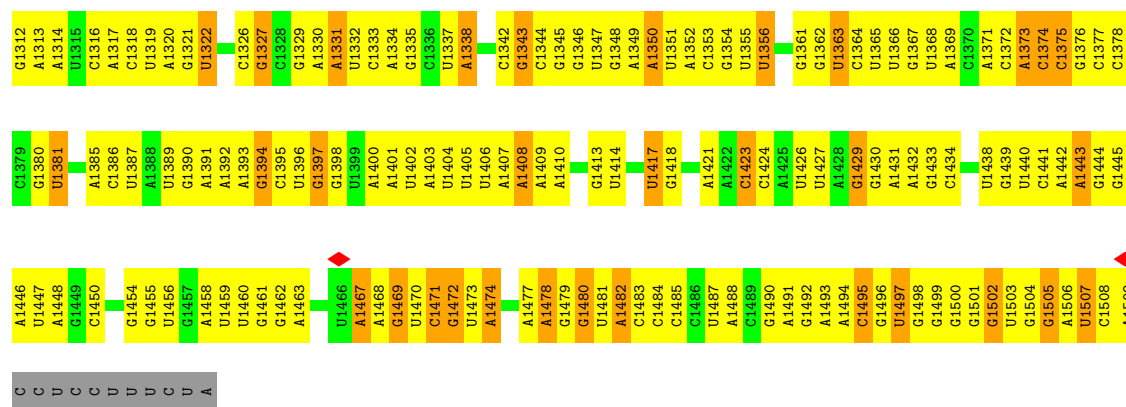
• Molecule 51: 5S ribosomal RNA



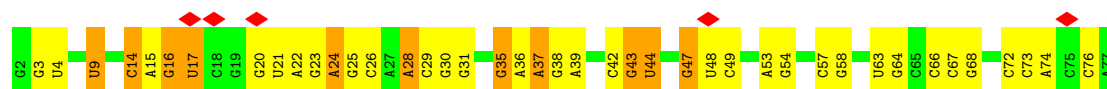
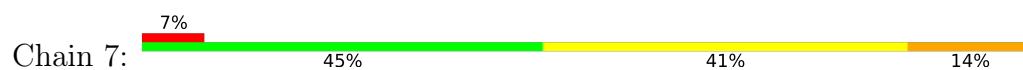
• Molecule 52: 16S ribosomal RNA



A1250	G1251	C1252	U1253	G1254	C1255	U1256	G1257	C1258	U1259	G1260	C1261	U1262	G1263	C1264	U1265	G1266	C1267	U1268	G1269	C1270	U1271	G1272	C1273	U1274	G1275	C1276	U1277	G1278	C1279	U1280	G1281	C1282	U1283	G1284	C1285	U1286	G1287	C1288	U1289	G1290	C1291	U1292	G1293	C1294	U1295	G1296	C1297	U1298	G1299	C1300	U1301	G1302	C1303	U1304	G1305	C1306	U1307	G1308	C1309	U1310	G1311																																																																																																																																																																																																																																																																																	
U1191	C1192	U1193	A1194	G1195	U1196	G1197	U1198	C1199	U1200	G1201	C1202	U1203	G1204	C1205	U1206	G1207	C1208	U1209	G1210	C1211	U1212	G1213	C1214	U1215	G1216	C1217	U1218	G1219	C1220	U1221	G1222	C1223	U1224	G1225	C1226	U1227	G1228	C1229	U1230	G1231	C1232	U1233	G1234	C1235	U1236	G1237	C1238	U1239	G1240	C1241	U1242	G1243	C1244	U1245	G1246	C1247	U1248	G1249																																																																																																																																																																																																																																																																																				
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U1191	C1192	U1193	A1194	G1195	U1196	G1197	U1198	C1199	U1200	G1201	C1202	U1203	G1204	C1205	U1206	G1207	C1208	U1209	G1210	C1211	U1212	G1213	C1214	U1215	G1216	C1217	U1218	G1219	C1220	U1221	G1222	C1223	U1224	G1225	C1226	U1227	G1228	C1229	U1230	G1231	C1232	U1233	G1234	C1235	U1236	G1237	C1238	U1239	G1240	C1241	U1242	G1243	C1244	U1245	G1246	C1247	U1248	G1249																																																																																																																																																																																																																																																																																				
C469	U470	A471	G472	A473	G474	U475	U476	U477	G478	U481	U482	U483	U484	U485	U486	U487	U488	U489	U490	U491	U492	U493	U494	U499	G500	G503	A504	U505	U506	U507	A508	U509	U510	U511	U512	U513	U514	U515	C516	C517	U518	U519	C520	U521	G522	G525	U526	G527	U528	U529	A530	A531	U532	A533	C534																																																																																																																																																																																																																																																																																							
G402	A403	A404	C405	C406	A407	U408	G409	A410	A411	C412	G413	U417	U418	A419	U420	A421	U422	U423	U424	U425	U426	A427	U428	A429	U430	U431	U432	C433	U434	U435	U440	U441	G442	U443	U444	U445	U446	G447	U448	U449	U450	U451	A452	U456	A457	U458	U459	A460	G461	U462	U463	C464	A465	U466	G467	G468																																																																																																																																																																																																																																																																																						
A535	U536	A537	G538	U539	U540	C541	G542	C543	A544	A545	G546	C547	U548	U549	G550	U551	U552	C553	C554	G555	U556	U557	U558	U559	U560	A561	U562	U563	G564	G565	G568	U569	A570	U571	A572	G573	C574	U575	U576	C580	C581	U582	U583	G584	C585	U586	A587	U588	U589	G590	A591	U592	A593	A594	G595	U598																																																																																																																																																																																																																																																																																						
G599	G600	U601	U602	U603	A606	A607	G608	G609	G610	A611	G612	C616	U617	U618	U619	U620	A621	G622	U623	U624	U625	U626	U627	A628	C631	A632	U633	U634	G635	G636	A637	U638	U639	U640	U641	U642	U643	U644	U645	U646	U647	U648	U649	A650	U651	U652	U653	U654	U655	U656	U657	U658	U659	U660	U661	U662	U663	U664	U665																																																																																																																																																																																																																																																																																			
U669	G670	G671	G672	A673	U674	U675	U676	C677	U678	U679	U680	U681	U682	U683	A684	U685	U686	U687	U688	A691	U692	U693	U694	U698	U699	G700	U704	U705	U706	U707	U708	U709	U710	U711	U712	U715	U716	U717	U718	U719	U720	U721	U722	U723	U724	U725	U726	U727	U728	U729	U730	U731	U732	U733																																																																																																																																																																																																																																																																																								
A734	C735	U736	U737	U738	A739	U740	C741	U742	A743	U744	U745	C746	U747	U748	U749	A750	U751	C752	U753	U754	U755	U756	U757	U760	U761	U762	A763	U764	A765	U766	U767	U768	U769	U770	U771	U772	U773	U774	U775	U776	U777	U778	U779	U780	U781	U782	U783	U784	U785	U786	U787	U788	U789	U790	U791	U792	U793	U794																																																																																																																																																																																																																																																																																				
U795	A796	U797	U798	U799	G800	U801	C802	U803	A804	C805	U806	C807	U808	U809	U810	A811	U812	A813	C814	U815	U816	U817	U818	U819	U820	U821	U822	U823	U824	U825	U826	U829	U830	U831	U832	U833	U834	U835	U836	U837	U838	U839	U840	U841	U842	U843	U844	U845	U846	U847	U848	U849	U850	U851	U852	U853	U854	U855																																																																																																																																																																																																																																																																																				
U856	U859	C860	U861	U864	U865	U866	U867	U868	U869	U870	U871	U872	U873	U876	U877	U878	U879	U880	U881	U882	U883	U884	U885	U886	U887	U888	U889	U890	U891	U892	U893	U894	U895	U896	U897	U898	U899	U900	U905	U906	U907	U908	U909	U910	U911	U912	U913	U914	U915	U916	U917	U918	U919	U920	U921	U922	U923	U924	U925	U926	U927	U928	U929	U930	U931	U932	U933	U934	U935	U936	U937	U938	U939	U940	U941	U942	U943	U944	U945	U946	U947	U948	U949	U950	U951	U952	U953	U954	U955	U956	U957	U958	U959	U960	U961	U962	U963	U964	U965	U966	U967	U968	U969	U970	U971	U972	U973	U974	U975	U976	U977	U978	U979	U980	U981	U982	U983	U984	U985	U986	U987	U988	U989	U990	U991	U992	U993	U994	U995	U996	U997	U998	U999	U1000	U1001	U1002	U1003	U1004	U1005	U1006	U1007	U1008	U1009	U1010	U1011	U1012	U1013	U1014	U1015	U1016	U1017	U1018	U1019	U1020	U1021	U1022	U1023	U1024	U1025	U1026	U1027	U1028	U1029	U1030	U1031	U1032	U1033	U1034	U1035	U1036	U1037	U1038	U1039	U1040	U1041	U1042	U1043	U1044	U1045	U1046	U1047	U1048	U1049	U1050	U1051	U1052	U1053	U1054	U1055	U1056	U1057	U1058	U1059	U1060	U1061	U1062	U1063	U1064	U1065	U1066	U1067	U1068	U1069	U1070	U1071	U1072	U1073	U1074	U1075	U1076	U1077	U1078	U1079	U1080	U1081	U1082	U1083	U1084	U1085	U1086	U1087	U1088	U1089	U1090	U1091	U1092	U1093	U1094	U1095	U1096	U1097	U1098	U1099	U1100	U1101	U1102	U1103	U1104	U1105	U1106	U1107	U1108	U1109	U1110	U1111	U1112	U1113	U1114	U1115	U1116	U1117	U1118	U1119	U1120	U1121	U1122	U1123	U1124	U1125	U1126	U1127	U1128	U1129	U1130	U1131	U1132	U1133	U1134	U1135	U1136	U1137	U1138	U1139	U1140	U1141	U1142	U1143	U1144	U1145	U1146	U1147	U1148	U1149	U1150	U1151	U1152	U1153	U1154	U1155	U1156	U1157	U1158	U1159	U1160	U1161	U1162	U1163	U1164	U1165	U1166	U1167	U1168	U1169	U1170	U1171	U1172	U1173	U1174	U1175	U1176	U1177	U1178	U1179	U1180	U1181	U1182	U1183	U1184	U1185	U1186	U1187	U1188	U1189	U1190	U1191	U1192	U1193	U1194	U1195	U1196	U1197	U1198	U1199	U1201



- Molecule 53: tRNA-Phe



- Molecule 53: tRNA-Phe



4 Experimental information

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of subtomograms used	1449	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	3.2	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	3750	Depositor
Magnification	81000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	1.387	Depositor
Minimum map value	-0.395	Depositor
Average map value	0.026	Depositor
Map value standard deviation	0.118	Depositor
Recommended contour level	0.47	Depositor
Map size (Å)	435.328, 435.328, 435.328	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.7005, 1.7005, 1.7005	Depositor

5 Model quality

5.1 Standard geometry

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	0	0.15	0/383	0.42	0/504
2	1	0.16	0/484	0.44	0/637
3	2	0.14	0/306	0.35	0/401
4	A	0.16	0/1954	0.42	0/2642
5	B	0.16	0/1721	0.46	0/2323
6	C	0.16	0/1691	0.43	0/2267
7	D	0.16	0/1188	0.40	0/1593
8	E	0.17	0/1384	0.41	0/1867
9	F	0.17	0/1266	0.42	0/1700
10	G	0.17	0/1126	0.48	0/1517
11	H	0.16	0/1044	0.44	0/1395
12	I	0.17	0/820	0.40	0/1103
13	J	0.15	0/844	0.40	0/1136
14	K	0.29	0/1094	0.60	0/1468
15	L	0.17	0/962	0.42	0/1289
16	M	0.19	0/483	0.52	0/643
17	N	0.14	0/679	0.38	0/907
18	O	0.15	0/659	0.43	0/885
19	P	0.16	0/684	0.47	0/913
20	Q	0.16	0/545	0.42	0/730
21	R	0.17	0/698	0.49	0/936
22	S	0.14	0/631	0.38	0/838
23	T	0.13	0/475	0.34	0/621
24	a	0.17	0/2267	0.45	0/3044
25	b	0.16	0/1795	0.43	0/2412
26	c	0.14	0/1671	0.38	0/2246
27	d	0.16	0/1409	0.42	0/1894
28	e	0.16	0/1420	0.43	0/1912
29	f	0.19	0/1183	0.43	0/1587
30	g	0.42	0/969	0.75	0/1295
31	h	0.16	0/968	0.47	1/1298 (0.1%)
32	i	0.16	0/1186	0.41	0/1592
33	j	0.17	0/953	0.45	0/1275
34	k	0.16	0/1170	0.44	0/1559

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	l	0.16	0/1104	0.40	0/1481
36	m	0.17	0/973	0.47	0/1309
37	n	0.15	0/897	0.42	0/1198
38	o	0.16	0/948	0.43	0/1262
39	p	0.15	0/961	0.40	0/1278
40	q	0.19	0/828	0.49	0/1111
41	r	0.16	0/1077	0.38	0/1441
42	s	0.16	0/732	0.46	0/988
43	t	0.15	0/879	0.41	0/1165
44	u	0.17	0/665	0.47	0/884
45	v	0.23	0/519	0.52	0/695
46	w	0.15	0/826	0.38	0/1104
47	x	0.15	0/353	0.37	0/474
48	y	0.32	0/457	0.65	1/601 (0.2%)
49	z	0.17	0/412	0.47	0/547
50	3	0.11	0/69073	0.27	0/107710
51	4	0.10	0/2505	0.26	0/3902
52	5	0.11	0/35768	0.25	0/55764
53	7	0.12	0/1808	0.30	0/2817
53	8	0.12	0/1808	0.30	0/2817
All	All	0.13	0/158705	0.32	2/236977 (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
21	R	0	1
35	l	0	1
41	r	0	1
42	s	0	1
All	All	0	4

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
31	h	72	VAL	N-CA-C	-7.66	105.09	111.91
48	y	48	TYR	N-CA-C	-6.39	101.92	110.55

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
21	R	25	GLN	Peptide
35	l	13	HIS	Peptide
41	r	9	ARG	Peptide
42	s	65	ILE	Peptide

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	380	0	429	8	0
2	1	477	0	530	22	0
3	2	304	0	350	17	0
4	A	1921	0	1973	62	0
5	B	1698	0	1768	57	0
6	C	1660	0	1719	68	0
7	D	1173	0	1267	40	0
8	E	1362	0	1377	62	0
9	F	1246	0	1308	43	0
10	G	1110	0	1226	54	0
11	H	1028	0	1094	46	0
12	I	809	0	894	30	0
13	J	829	0	855	31	0
14	K	1076	0	1170	55	0
15	L	951	0	1014	42	0
16	M	474	0	509	35	0
17	N	673	0	730	19	0
18	O	646	0	677	22	0
19	P	675	0	728	23	0
20	Q	535	0	562	24	0
21	R	682	0	691	32	0
22	S	629	0	681	25	0
23	T	471	0	522	10	0
24	a	2225	0	2301	105	0
25	b	1762	0	1808	74	0
26	c	1644	0	1731	54	0
27	d	1388	0	1469	52	0
28	e	1396	0	1481	45	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
29	f	1160	0	1172	35	0
30	g	960	0	1014	49	0
31	h	959	0	1039	32	0
32	i	1164	0	1192	42	0
33	j	944	0	1019	33	0
34	k	1153	0	1256	52	0
35	l	1079	0	1134	47	0
36	m	958	0	1011	46	0
37	n	889	0	952	39	0
38	o	938	0	1008	40	0
39	p	947	0	1028	49	0
40	q	811	0	858	33	0
41	r	1068	0	1150	50	0
42	s	720	0	803	26	0
43	t	872	0	972	45	0
44	u	657	0	695	25	0
45	v	513	0	560	43	0
46	w	818	0	870	35	0
47	x	344	0	333	14	0
48	y	452	0	472	35	0
49	z	408	0	440	19	0
50	3	61664	0	30954	2207	0
51	4	2239	0	1137	54	0
52	5	31943	0	16058	1145	0
53	7	1618	0	821	25	0
53	8	1618	0	821	41	0
All	All	146120	0	99633	4756	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 20.

All (4756) 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)
50:3:711:A:N6	50:3:837:A:H2	1.48	1.12
50:3:711:A:N6	50:3:837:A:C2	2.18	1.10
50:3:2400:A:N6	50:3:2430:C:H42	1.53	1.06
50:3:1803:U:H3	50:3:1830:G:H1	1.06	1.02
50:3:2122:G:N2	50:3:2179:A:H61	1.58	1.00
50:3:1698:A:N6	50:3:2003:C:H42	1.61	0.99
50:3:596:G:H1	50:3:611:A:N6	1.59	0.99

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:880:G:H1	52:5:905:U:H3	1.06	0.99
50:3:2655:U:H3	50:3:2681:G:H1	0.98	0.98
52:5:833:G:H1	52:5:844:U:H3	0.99	0.97
50:3:2122:G:H21	50:3:2179:A:N6	1.60	0.97
50:3:569:U:H3	50:3:592:G:H1	0.97	0.95
50:3:1698:A:H61	50:3:2003:C:N4	1.62	0.95
50:3:730:G:H1	50:3:802:U:H3	1.11	0.94
50:3:989:G:H1	50:3:1000:U:H3	1.00	0.94
50:3:596:G:H1	50:3:611:A:H61	1.13	0.93
50:3:1494:U:H3	50:3:1550:G:H1	1.13	0.93
50:3:1071:G:H1	50:3:1154:U:H3	1.10	0.93
50:3:643:A:H62	50:3:655:G:H21	1.17	0.92
50:3:305:U:H3	50:3:399:G:H1	1.14	0.92
52:5:372:G:H1	52:5:383:U:H3	0.93	0.91
50:3:534:U:H3	50:3:538:A:H62	0.95	0.91
50:3:2703:U:H3	50:3:2722:G:H1	0.91	0.91
50:3:1093:U:H3	50:3:1115:G:H1	1.12	0.90
30:g:24:PHE:HA	30:g:85:GLY:HA3	1.53	0.90
50:3:341:G:H21	50:3:364:A:H61	1.17	0.90
50:3:2122:G:H21	50:3:2179:A:H61	0.94	0.89
50:3:2400:A:H62	50:3:2430:C:H42	1.20	0.89
50:3:2458:A:N6	50:3:2509:C:C4	2.41	0.89
52:5:1237:G:H1	52:5:1248:U:H3	1.11	0.89
50:3:1841:U:H5''	50:3:1842:G:H5'	1.56	0.88
50:3:629:G:H1	50:3:696:U:H3	0.92	0.88
52:5:253:G:H1	52:5:265:U:H3	1.17	0.88
52:5:1394:G:H1	52:5:1456:U:H3	1.21	0.87
52:5:1138:U:H3	52:5:1149:G:H1	1.18	0.87
50:3:1698:A:H61	50:3:2003:C:H42	0.88	0.87
50:3:1940:G:H1	50:3:1974:U:H3	1.19	0.87
50:3:2755:G:H21	50:3:2765:A:N6	1.73	0.87
50:3:2755:G:N2	50:3:2765:A:H62	1.73	0.87
19:P:43:LYS:HE2	52:5:232:G:H5''	1.55	0.86
44:u:29:ASP:OD1	50:3:2272:C:N4	2.08	0.86
45:v:32:ASN:HB2	50:3:433:A:H5''	1.56	0.86
28:e:16:VAL:HA	28:e:28:LYS:O	1.75	0.86
50:3:869:U:H2'	50:3:870:A:H8	1.40	0.86
50:3:2299:U:H3	50:3:2349:G:H1	1.20	0.86
19:P:74:ARG:HG2	52:5:230:G:H4'	1.58	0.86
52:5:136:U:H3	52:5:157:A:H62	1.24	0.86
50:3:345:A:H62	50:3:363:G:H5'	1.41	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:499:U:H3	52:5:542:G:H1	1.22	0.85
50:3:1315:A:N6	50:3:1354:U:N3	2.24	0.85
50:3:2458:A:N6	50:3:2509:C:N4	2.25	0.85
52:5:412:G:H1	52:5:424:U:H3	1.22	0.85
25:b:8:GLY:O	25:b:205:VAL:HB	1.76	0.84
50:3:2400:A:H62	50:3:2430:C:N4	1.74	0.84
52:5:46:U:H5''	52:5:303:A:H1'	1.58	0.84
50:3:2706:U:H3	50:3:2717:G:H1	1.20	0.84
52:5:826:G:H1	52:5:851:U:H3	1.25	0.84
50:3:47:G:H5''	50:3:48:G:H5'	1.60	0.83
24:a:151:GLU:HB3	24:a:158:GLY:HA2	1.59	0.83
6:C:36:GLY:H	52:5:423:U:H5''	1.44	0.82
50:3:202:C:H4'	50:3:2251:U:H4'	1.61	0.82
30:g:41:ARG:HG2	50:3:1117:U:H4'	1.60	0.82
8:E:9:VAL:HG22	8:E:56:HIS:H	1.44	0.82
11:H:4:GLN:N	11:H:4:GLN:HE21	1.77	0.82
50:3:2053:G:H1	50:3:2630:U:H3	1.28	0.82
52:5:1376:G:O6	52:5:1479:G:N2	2.13	0.82
50:3:2483:C:H42	50:3:2537:G:N2	1.77	0.82
36:m:17:THR:HG22	36:m:21:GLN:HE22	1.44	0.81
52:5:1065:G:H1	52:5:1074:U:H3	1.29	0.81
52:5:988:G:H5''	52:5:990:C:H41	1.45	0.81
50:3:865:A:H61	50:3:2453:G:H21	1.28	0.81
21:R:77:THR:HG22	21:R:78:ARG:HG3	1.61	0.81
50:3:1514:U:H3	50:3:1525:G:H1	1.26	0.80
50:3:228:A:OP2	50:3:455:G:N2	2.13	0.80
50:3:2400:A:N6	50:3:2430:C:N4	2.29	0.80
50:3:2727:G:HO2'	50:3:2850:G:HO2'	1.27	0.80
14:K:128:SER:HB3	52:5:548:G:H1'	1.64	0.80
50:3:742:G:H1	50:3:759:U:H3	1.27	0.80
52:5:949:G:H21	52:5:1202:A:H62	1.30	0.80
50:3:843:G:H21	50:3:1284:A:H1'	1.45	0.80
25:b:208:ARG:HH12	50:3:2780:U:H5''	1.47	0.79
34:k:113:LYS:HD2	34:k:130:LYS:HD3	1.63	0.79
50:3:610:G:H4'	50:3:1285:U:H1'	1.64	0.79
50:3:2098:U:O2	50:3:2236:G:O6	2.01	0.79
4:A:203:ASN:ND2	4:A:217:ALA:O	2.16	0.79
50:3:2465:U:H3	50:3:2502:G:H1	0.85	0.79
30:g:22:ALA:HB3	30:g:87:ASN:HA	1.65	0.78
14:K:127:ARG:HG2	14:K:132:ALA:HB3	1.65	0.78
39:p:13:ARG:NH1	50:3:616:G:OP2	2.15	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:8:ILE:HD11	10:G:35:THR:HA	1.65	0.78
50:3:900:G:N2	50:3:903:A:H61	1.81	0.78
50:3:300:G:H2'	50:3:301:G:H8	1.49	0.78
52:5:1139:A:H2'	52:5:1140:A:H8	1.48	0.78
50:3:1509:U:H3	50:3:1530:G:H1	0.81	0.78
27:d:39:GLY:HA3	50:3:2315:G:H22	1.49	0.77
50:3:1772:G:H1	50:3:1994:U:H3	1.33	0.77
52:5:69:G:H1	52:5:86:A:H61	1.29	0.77
35:l:15:VAL:HB	35:l:41:TRP:HE1	1.48	0.77
50:3:1837:C:H2'	50:3:1838:A:H8	1.49	0.77
21:R:78:ARG:HE	52:5:1197:G:H5''	1.49	0.77
24:a:169:ARG:HB2	24:a:183:GLN:HB3	1.65	0.77
23:T:31:ARG:NH2	52:5:715:A:O2'	2.18	0.77
24:a:190:ARG:HH21	24:a:274:SER:HA	1.49	0.77
37:n:101:ARG:HH22	51:4:48:A:H8	1.34	0.76
52:5:63:U:H3	52:5:90:G:H1	1.33	0.76
50:3:641:U:O2	50:3:657:A:N7	2.18	0.76
50:3:366:A:O2'	50:3:369:C:N4	2.17	0.76
50:3:2483:C:H42	50:3:2537:G:H22	1.32	0.76
10:G:116:ILE:HG12	10:G:137:ILE:HG12	1.67	0.76
5:B:94:GLN:HA	5:B:98:ARG:HH11	1.50	0.76
50:3:341:G:N2	50:3:364:A:H61	1.83	0.76
52:5:1139:A:H2'	52:5:1140:A:C8	2.20	0.76
50:3:2266:C:O2'	50:3:2435:C:OP2	2.04	0.76
9:F:68:VAL:HG21	9:F:103:ILE:HD11	1.67	0.76
32:i:26:LEU:HD12	32:i:31:LEU:HD21	1.66	0.76
2:1:15:LYS:NZ	50:3:688:U:OP2	2.19	0.76
52:5:1262:A:N3	52:5:1326:C:O2'	2.19	0.75
18:O:53:LEU:HD21	18:O:59:PRO:HD3	1.68	0.75
50:3:1027:U:H3	50:3:1198:G:H1	0.80	0.75
52:5:1261:A:H2'	52:5:1262:A:C8	2.21	0.75
50:3:1508:G:H21	50:3:1535:A:N6	1.83	0.75
50:3:2400:A:N6	50:3:2432:C:O2	2.20	0.75
52:5:824:U:H2'	52:5:864:U:H3	1.51	0.75
50:3:1315:A:C6	50:3:1354:U:N3	2.54	0.75
50:3:1380:U:O2	50:3:1406:A:N7	2.19	0.75
52:5:959:A:H5''	52:5:1173:A:H4'	1.67	0.75
50:3:602:U:O2'	50:3:1019:A:N6	2.20	0.75
50:3:855:A:OP2	50:3:1009:A:N6	2.20	0.75
41:r:42:LYS:NZ	50:3:1355:C:OP1	2.20	0.75
50:3:67:C:O2'	50:3:492:C:N4	2.19	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1310:U:H3	50:3:1314:A:H62	1.34	0.75
50:3:1973:U:H3	50:3:2600:G:H21	1.35	0.75
50:3:2135:C:H2'	50:3:2136:A:H8	1.51	0.75
50:3:2826:G:O2'	50:3:2828:C:OP2	2.03	0.75
9:F:56:LYS:HZ2	9:F:58:LEU:H	1.33	0.74
36:m:21:GLN:OE1	50:3:1305:G:O2'	2.06	0.74
50:3:1414:C:H2'	50:3:1415:A:C8	2.22	0.74
3:2:1:MET:N	50:3:2534:G:N3	2.35	0.74
36:m:53:LYS:HD2	36:m:91:GLU:HG3	1.69	0.74
38:o:55:ARG:HE	38:o:62:GLU:HB3	1.53	0.74
50:3:2316:G:O6	50:3:2319:A:C6	2.39	0.74
50:3:243:U:H3	50:3:262:G:H1	1.36	0.74
50:3:1858:U:H3	50:3:1898:G:H1	1.36	0.74
52:5:663:G:H1	52:5:737:U:H3	1.33	0.74
52:5:1495:C:H2'	52:5:1496:G:H8	1.52	0.74
26:c:70:HIS:HA	50:3:2066:A:H5''	1.69	0.74
30:g:33:SER:HA	50:3:1090:G:H4'	1.68	0.74
50:3:343:A:N3	50:3:363:G:O2'	2.20	0.74
50:3:61:U:H3	50:3:70:G:H1	1.35	0.74
8:E:89:ASN:ND2	52:5:735:C:OP2	2.21	0.74
52:5:413:G:O6	52:5:423:U:O2	2.06	0.73
52:5:69:G:H1	52:5:86:A:N6	1.85	0.73
36:m:14:ARG:HG3	50:3:2698:U:H3	1.53	0.73
50:3:990:G:N2	50:3:999:U:O2	2.15	0.73
52:5:445:A:OP2	52:5:483:U:N3	2.20	0.73
50:3:2852:G:O2'	50:3:2871:G:N2	2.19	0.73
43:t:88:LYS:HD2	43:t:105:LYS:HE3	1.70	0.73
50:3:1743:U:O2'	50:3:2863:G:N3	2.21	0.73
52:5:1429:G:H2'	52:5:1430:G:C8	2.23	0.73
20:Q:78:ASN:HB3	20:Q:82:HIS:HB2	1.69	0.73
52:5:1462:G:H2'	52:5:1463:A:H8	1.52	0.73
49:z:26:LYS:NZ	50:3:2293:C:OP1	2.21	0.73
50:3:2484:A:O2'	50:3:2488:C:N4	2.21	0.73
8:E:84:ARG:NH1	20:Q:95:TYR:O	2.21	0.73
50:3:341:G:H21	50:3:364:A:N6	1.87	0.73
52:5:1110:C:H2'	52:5:1111:G:H8	1.54	0.73
11:H:30:ILE:HD12	11:H:65:ILE:HG21	1.69	0.73
30:g:100:VAL:HG22	30:g:106:MET:HB2	1.70	0.73
50:3:90:G:H2'	50:3:91:G:C8	2.24	0.73
50:3:1023:C:O2'	50:3:1036:A:N3	2.22	0.73
6:C:70:GLN:NE2	52:5:399:C:OP2	2.21	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:F:30:MET:HG3	9:F:35:LYS:HG2	1.69	0.72
50:3:1076:U:N3	50:3:1149:G:N1	2.36	0.72
5:B:159:ARG:HA	5:B:165:ILE:HG12	1.69	0.72
3:2:5:ALA:HB3	50:3:2474:C:H5'	1.70	0.72
26:c:77:GLY:H	50:3:709:G:H5''	1.54	0.72
50:3:720:A:O2'	50:3:808:U:O4	2.05	0.72
50:3:748:G:N2	50:3:754:U:O4	2.22	0.72
52:5:586:G:O6	52:5:587:A:N6	2.21	0.72
25:b:21:ASN:ND2	38:o:85:ASN:OD1	2.21	0.72
29:f:18:VAL:HG23	29:f:47:ARG:HH21	1.54	0.72
30:g:53:VAL:HG12	30:g:82:VAL:H	1.53	0.72
35:l:39:GLY:HA2	35:l:97:VAL:O	1.89	0.72
44:u:79:GLY:HA3	44:u:98:VAL:O	1.89	0.72
52:5:146:A:N6	52:5:340:A:O2'	2.22	0.72
52:5:1330:A:H2'	52:5:1331:A:C8	2.24	0.72
50:3:1885:G:H2'	50:3:1886:C:C6	2.24	0.72
50:3:2689:C:O2	50:3:2733:A:N6	2.22	0.72
52:5:1266:U:H2'	52:5:1267:G:H8	1.53	0.72
50:3:517:G:H1	50:3:544:U:H3	1.37	0.72
35:l:24:ASN:ND2	50:3:944:U:O2'	2.23	0.72
50:3:534:U:O4	50:3:538:A:N7	2.23	0.72
50:3:774:A:N3	50:3:775:C:N4	2.38	0.72
19:P:73:LYS:HE2	52:5:250:G:H5''	1.71	0.71
47:x:13:SER:HA	47:x:24:THR:HA	1.72	0.71
48:y:31:GLN:HB2	48:y:49:GLY:HA3	1.72	0.71
52:5:720:U:O2'	52:5:829:G:N2	2.23	0.71
26:c:61:GLY:H	50:3:504:G:H5''	1.55	0.71
43:t:61:GLY:O	50:3:519:A:O2'	2.07	0.71
50:3:2483:C:N4	50:3:2537:G:H22	1.87	0.71
52:5:573:G:H4'	52:5:574:C:H5''	1.71	0.71
50:3:534:U:H3	50:3:538:A:N6	1.80	0.71
45:v:16:ASN:HB3	53:8:77:A:C8	2.26	0.71
50:3:1480:A:O2'	50:3:1485:A:N6	2.24	0.71
52:5:747:C:H2'	52:5:748:U:H5	1.56	0.71
15:L:105:ASN:ND2	52:5:944:A:N7	2.39	0.71
41:r:3:ALA:HB2	41:r:64:MET:HE1	1.73	0.71
6:C:94:GLU:OE2	6:C:110:ARG:NH1	2.23	0.71
36:m:42:GLN:NE2	36:m:46:ASP:OD2	2.24	0.71
50:3:1670:U:H1'	50:3:1768:G:H21	1.54	0.71
52:5:100:G:H21	52:5:102:G:H1	1.38	0.71
52:5:212:G:O2'	52:5:465:A:N6	2.20	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2299:U:O2'	50:3:2382:A:N3	2.23	0.71
50:3:283:A:N7	50:3:286:A:N6	2.38	0.71
2:1:15:LYS:NZ	50:3:690:U:OP2	2.24	0.71
4:A:99:ILE:HD12	4:A:233:ALA:HB2	1.73	0.71
50:3:224:G:H1	50:3:463:U:H3'	1.55	0.71
50:3:2461:A:H4'	50:3:2580:A:H1'	1.71	0.70
13:J:115:LYS:HG2	52:5:775:G:H21	1.57	0.70
50:3:2105:G:H2'	50:3:2106:G:H8	1.56	0.70
50:3:2595:A:OP2	50:3:2616:G:N2	2.24	0.70
52:5:298:G:N2	52:5:553:C:O2'	2.24	0.70
52:5:369:A:O2'	52:5:448:A:N7	2.24	0.70
13:J:34:VAL:O	52:5:681:U:O2'	2.08	0.70
21:R:81:LYS:HD2	52:5:1200:G:H21	1.55	0.70
49:z:43:LYS:HE3	49:z:45:VAL:HG22	1.71	0.70
50:3:300:G:H2'	50:3:301:G:C8	2.25	0.70
50:3:893:A:N6	50:3:894:G:O6	2.24	0.70
50:3:1012:G:H21	50:3:1190:A:H1'	1.56	0.70
50:3:2476:A:OP2	50:3:2484:A:N6	2.25	0.70
50:3:2786:A:N3	50:3:2788:U:N3	2.37	0.70
52:5:331:C:O2'	52:5:1408:A:N3	2.24	0.70
25:b:115:LYS:NZ	50:3:2731:U:OP1	2.23	0.70
50:3:2105:G:H2'	50:3:2106:G:C8	2.26	0.70
52:5:672:A:H61	52:5:712:A:H61	1.39	0.70
5:B:80:SER:OG	5:B:83:LYS:NZ	2.24	0.70
50:3:1315:A:N6	50:3:1354:U:C2	2.59	0.70
50:3:2843:G:H1	50:3:2882:U:H3	1.40	0.70
9:F:2:ARG:HG3	52:5:1355:U:H2'	1.73	0.70
50:3:2321:C:H2'	50:3:2322:G:H8	1.56	0.70
50:3:2693:U:H2'	50:3:2694:A:H8	1.57	0.70
52:5:670:G:H2'	52:5:671:G:C8	2.27	0.70
52:5:684:A:H62	52:5:700:G:N2	1.89	0.70
38:o:36:LYS:HB2	38:o:85:ASN:HB3	1.74	0.70
50:3:2291:U:O2	50:3:2333:G:O6	2.09	0.70
4:A:95:LEU:HB3	4:A:229:MET:HG2	1.74	0.70
4:A:102:ARG:HG3	4:A:103:VAL:HG23	1.74	0.70
49:z:15:ARG:HH22	49:z:48:LYS:H	1.37	0.70
12:I:50:THR:HG23	52:5:1127:A:H5''	1.73	0.69
13:J:32:GLY:O	52:5:680:G:N2	2.24	0.69
4:A:234:ASP:HB3	4:A:244:THR:HG23	1.74	0.69
24:a:183:GLN:OE1	24:a:189:THR:OG1	2.09	0.69
45:v:27:ARG:NH1	45:v:28:LYS:O	2.25	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:18:G:H2'	50:3:19:G:C8	2.28	0.69
50:3:665:C:O2'	50:3:675:U:O2	2.10	0.69
50:3:2090:G:H1	50:3:2244:U:H3	1.40	0.69
50:3:2755:G:N2	50:3:2765:A:N6	2.35	0.69
12:I:46:LEU:HB2	12:I:79:LEU:HB3	1.73	0.69
36:m:71:ASN:HB3	50:3:1321:C:H4'	1.75	0.69
41:r:99:ARG:NH2	50:3:1292:A:OP2	2.24	0.69
50:3:1414:C:H2'	50:3:1415:A:H8	1.56	0.69
52:5:691:A:N1	52:5:784:A:O2'	2.25	0.69
50:3:1076:U:N3	50:3:1149:G:C6	2.61	0.69
50:3:2316:G:O6	50:3:2319:A:C5	2.45	0.69
7:D:190:ASN:ND2	52:5:1069:U:O2	2.25	0.69
8:E:66:ASN:ND2	52:5:736:U:OP1	2.25	0.69
10:G:27:LYS:NZ	52:5:868:G:N3	2.41	0.69
24:a:37:LEU:HB3	24:a:68:ILE:HB	1.74	0.69
38:o:24:GLU:HG3	38:o:93:ARG:HH22	1.58	0.69
38:o:27:ALA:HA	38:o:52:VAL:HB	1.75	0.69
50:3:513:A:H2'	50:3:514:A:C8	2.27	0.69
50:3:855:A:N6	50:3:1009:A:OP1	2.26	0.69
50:3:2143:G:H1	50:3:2162:U:H3	1.41	0.69
36:m:106:ARG:NH2	36:m:109:ASP:OD2	2.25	0.69
41:r:42:LYS:HB2	50:3:2017:G:H5''	1.73	0.69
52:5:621:C:H2'	52:5:622:A:H8	1.58	0.69
52:5:711:G:H2'	52:5:712:A:H8	1.58	0.69
2:1:12:LYS:HE2	50:3:666:G:H5''	1.74	0.69
50:3:519:A:OP2	50:3:520:C:N4	2.21	0.69
50:3:702:U:H2'	50:3:703:A:C8	2.27	0.68
50:3:2529:C:H2'	50:3:2530:U:H6	1.59	0.68
52:5:1075:G:H1'	52:5:1094:C:H41	1.56	0.68
30:g:52:LYS:HA	50:3:1118:U:H5''	1.75	0.68
50:3:1261:U:H2'	50:3:1262:G:C8	2.29	0.68
52:5:590:G:N2	52:5:644:U:O2	2.27	0.68
25:b:2:GLU:OE2	25:b:4:ARG:NH1	2.26	0.68
50:3:898:A:O2'	51:4:76:A:N3	2.26	0.68
52:5:688:G:H4'	52:5:794:C:H4'	1.75	0.68
52:5:853:A:H61	52:5:864:U:H5	1.39	0.68
52:5:684:A:H62	52:5:700:G:H21	1.40	0.68
45:v:17:ASN:O	53:8:77:A:N6	2.27	0.68
50:3:509:G:H2'	50:3:510:G:C8	2.28	0.68
50:3:2035:U:H3	50:3:2040:A:H62	1.41	0.68
52:5:52:A:H61	52:5:309:A:H2	1.41	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:304:U:H2'	52:5:305:A:H8	1.58	0.68
52:5:376:G:N2	52:5:379:A:OP2	2.27	0.68
52:5:544:A:H4'	52:5:546:G:H4'	1.75	0.68
18:O:14:VAL:HG23	18:O:29:LEU:HA	1.76	0.68
35:l:39:GLY:CA	35:l:97:VAL:O	2.42	0.68
24:a:190:ARG:NH1	24:a:191:LYS:O	2.26	0.68
45:v:18:ARG:NH2	45:v:23:THR:O	2.26	0.68
50:3:2057:C:H42	50:3:2626:A:H61	1.41	0.68
26:c:124:ASN:ND2	26:c:195:ASN:O	2.27	0.68
48:y:38:LEU:HB3	48:y:41:ARG:HB2	1.76	0.68
50:3:39:C:H2'	50:3:40:A:H8	1.58	0.68
50:3:892:G:N2	50:3:959:C:N3	2.42	0.68
50:3:1848:U:H2'	50:3:1849:G:H8	1.59	0.68
50:3:2534:G:H1	50:3:2545:U:H3	1.42	0.68
52:5:1065:G:N2	52:5:1074:U:O2	2.22	0.68
50:3:1261:U:H2'	50:3:1262:G:H8	1.59	0.68
50:3:2137:A:H5''	50:3:2140:G:H1'	1.76	0.68
52:5:777:A:N6	52:5:798:U:OP2	2.27	0.68
52:5:947:U:O2'	52:5:964:A:N1	2.25	0.68
15:L:6:GLY:H	15:L:57:ARG:HG2	1.57	0.68
20:Q:43:PHE:HD2	20:Q:82:HIS:HB3	1.59	0.68
28:e:49:LYS:HB2	28:e:52:ASN:HB3	1.76	0.68
32:i:119:ARG:NH2	50:3:564:A:OP2	2.26	0.68
36:m:99:ARG:HG3	36:m:117:GLN:HE21	1.59	0.68
37:n:89:VAL:HG23	37:n:116:PHE:HB3	1.75	0.68
50:3:643:A:H62	50:3:655:G:N2	1.90	0.68
52:5:1043:U:H3	52:5:1181:G:H1	1.41	0.68
34:k:26:SER:OG	50:3:849:C:N4	2.25	0.67
50:3:1708:G:H1	50:3:1998:U:H3	1.43	0.67
50:3:2376:C:H2'	50:3:2377:A:H8	1.59	0.67
5:B:74:PRO:HG2	5:B:108:GLU:HG2	1.77	0.67
50:3:1777:G:N2	50:3:1793:A:C5	2.62	0.67
50:3:2013:C:O2'	50:3:2827:A:N3	2.25	0.67
52:5:402:G:N7	52:5:493:A:O2'	2.24	0.67
52:5:561:A:OP1	52:5:564:G:N2	2.27	0.67
50:3:35:U:O4	50:3:482:G:O2'	2.12	0.67
50:3:1002:A:H4'	50:3:2279:G:H22	1.60	0.67
52:5:648:C:N4	52:5:750:A:OP2	2.27	0.67
3:2:33:LYS:NZ	50:3:2534:G:O2'	2.28	0.67
11:H:4:GLN:N	11:H:4:GLN:NE2	2.41	0.67
14:K:67:LYS:HE2	14:K:75:GLU:HG3	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:l:44:ALA:HB2	35:l:70:PRO:HG3	1.75	0.67
51:4:26:C:O2'	51:4:57:G:N2	2.28	0.67
17:N:57:VAL:HG23	17:N:60:ARG:HH11	1.60	0.67
50:3:1864:A:O2'	50:3:1891:A:N6	2.28	0.67
50:3:2604:U:O2'	50:3:2605:G:OP1	2.12	0.67
22:S:41:LEU:HA	22:S:76:LEU:HD21	1.76	0.67
45:v:23:THR:N	53:8:76:C:N3	2.36	0.67
50:3:511:U:O2	50:3:515:A:N7	2.26	0.67
52:5:351:C:H1'	52:5:384:G:H1'	1.76	0.67
21:R:60:VAL:HG11	21:R:74:PHE:HB3	1.76	0.67
50:3:454:G:H2'	50:3:455:G:H8	1.60	0.67
50:3:640:U:O2	50:3:658:G:O6	2.12	0.67
50:3:2655:U:O2	50:3:2681:G:N2	2.25	0.67
5:B:111:SER:HB2	5:B:114:LEU:HB2	1.76	0.67
10:G:19:LEU:HB3	10:G:87:VAL:HG21	1.77	0.67
50:3:276:A:O2'	50:3:301:G:N2	2.28	0.67
50:3:702:U:H2'	50:3:703:A:H8	1.59	0.67
15:L:64:LYS:HE3	15:L:69:LEU:HD12	1.76	0.67
2:1:36:LYS:HA	2:1:39:ARG:HE	1.61	0.67
11:H:20:TYR:HB2	11:H:66:ASN:HB3	1.77	0.67
43:t:16:LYS:NZ	50:3:342:G:O2'	2.28	0.67
44:u:18:LYS:NZ	50:3:2260:G:OP2	2.26	0.67
50:3:1270:C:H2'	50:3:1271:A:H8	1.60	0.67
52:5:63:U:O2	52:5:375:C:O2'	2.11	0.67
5:B:4:LYS:HB3	5:B:178:LEU:HD21	1.76	0.66
32:i:14:LYS:HD3	32:i:52:ASP:HB3	1.77	0.66
52:5:572:A:O2'	52:5:876:C:O2	2.11	0.66
21:R:29:ARG:HD2	21:R:48:THR:HG23	1.76	0.66
24:a:166:SER:H	24:a:203:VAL:HB	1.61	0.66
50:3:1767:A:H2'	50:3:1768:G:C4	2.30	0.66
16:M:21:TYR:HE2	16:M:23:ARG:HE	1.43	0.66
50:3:154:U:H2'	50:3:155:A:H8	1.60	0.66
50:3:296:U:O2'	50:3:299:A:N3	2.28	0.66
50:3:823:A:OP1	50:3:826:C:N4	2.28	0.66
5:B:9:GLY:HA2	5:B:12:PHE:HB2	1.77	0.66
6:C:82:ARG:NH2	52:5:611:A:OP1	2.28	0.66
50:3:299:A:H2'	50:3:300:G:C8	2.30	0.66
50:3:1096:U:O2'	50:3:1105:A:N3	2.28	0.66
50:3:2303:U:H3	50:3:2345:G:H1	1.43	0.66
52:5:136:U:O4	52:5:157:A:N7	2.28	0.66
33:j:8:LEU:HD11	33:j:84:CYS:HB3	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:226:A:H61	50:3:236:G:H1'	1.61	0.66
50:3:259:A:O2'	50:3:422:A:OP1	2.13	0.66
50:3:2533:A:H2'	50:3:2534:G:H8	1.61	0.66
52:5:767:U:H2'	52:5:768:G:H8	1.61	0.66
12:I:66:ALA:HB3	52:5:1052:G:H4'	1.77	0.66
23:T:53:ARG:HH11	23:T:54:ARG:HG2	1.60	0.66
50:3:785:A:OP1	50:3:1649:C:N4	2.29	0.66
50:3:2693:U:H2'	50:3:2694:A:C8	2.30	0.66
52:5:988:G:H21	52:5:990:C:H42	1.43	0.66
14:K:96:ARG:HH22	52:5:548:G:H22	1.42	0.66
16:M:12:ARG:HH12	52:5:1192:C:H5''	1.60	0.66
50:3:114:U:H5''	50:3:115:U:H5'	1.78	0.66
50:3:2223:C:H2'	50:3:2224:A:H8	1.61	0.66
50:3:2548:G:O2'	50:3:2748:A:N3	2.25	0.66
52:5:168:A:N6	52:5:219:A:N3	2.44	0.66
52:5:1043:U:O4	52:5:1181:G:O6	2.14	0.66
6:C:27:LYS:NZ	52:5:407:A:OP2	2.28	0.66
19:P:6:ARG:NH2	52:5:115:A:N7	2.42	0.66
40:q:1:MET:H3	40:q:97:PHE:HZ	1.41	0.66
50:3:82:G:N2	50:3:328:A:O2'	2.28	0.66
8:E:144:SER:HA	10:G:62:ASN:HA	1.77	0.66
44:u:57:THR:OG1	50:3:2344:A:N6	2.29	0.66
50:3:1010:G:H5'	50:3:1026:A:H61	1.61	0.66
50:3:1076:U:C2	50:3:1149:G:N1	2.64	0.66
50:3:1381:A:OP2	50:3:1405:G:N2	2.29	0.66
50:3:1487:U:O2'	50:3:2710:G:N2	2.29	0.66
52:5:129:U:H5'	52:5:130:G:H5''	1.78	0.66
39:p:36:GLN:HG3	50:3:1282:G:H1	1.60	0.65
50:3:39:C:H2'	50:3:40:A:C8	2.31	0.65
50:3:245:U:H4'	50:3:246:G:H4'	1.78	0.65
50:3:2758:A:O2'	50:3:2761:A:N6	2.28	0.65
52:5:1241:G:H21	52:5:1243:A:H8	1.44	0.65
52:5:1244:A:O2'	52:5:1299:C:O2	2.13	0.65
52:5:1266:U:H2'	52:5:1267:G:C8	2.31	0.65
7:D:69:ARG:HD3	7:D:172:LEU:HD11	1.77	0.65
50:3:733:C:O2'	50:3:769:A:N6	2.24	0.65
50:3:995:A:H2'	50:3:996:A:C8	2.31	0.65
50:3:2820:G:N3	50:3:2887:A:O2'	2.29	0.65
52:5:1154:A:H2'	52:5:1155:A:C8	2.32	0.65
35:l:82:ARG:HA	50:3:2503:G:H5''	1.76	0.65
50:3:454:G:H2'	50:3:455:G:C8	2.31	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:488:G:N2	50:3:493:A:O2'	2.28	0.65
50:3:645:C:H2'	50:3:646:A:C8	2.32	0.65
50:3:1468:U:OP2	50:3:1469:C:N4	2.29	0.65
52:5:1118:A:N6	52:5:1124:U:O4	2.29	0.65
4:A:73:LYS:NZ	4:A:77:GLN:OE1	2.25	0.65
35:l:87:LYS:HE3	50:3:991:G:H5''	1.79	0.65
52:5:818:A:H2'	52:5:819:G:H8	1.60	0.65
50:3:1378:C:N3	50:3:1410:A:N6	2.45	0.65
50:3:1902:C:H2'	50:3:1903:A:H8	1.60	0.65
52:5:393:A:N7	52:5:545:A:O2'	2.27	0.65
3:2:24:ARG:HH21	3:2:35:ARG:HG3	1.61	0.65
5:B:39:LYS:HE2	16:M:26:ARG:HG3	1.78	0.65
13:J:111:HIS:HB2	52:5:671:G:H21	1.61	0.65
25:b:213:LYS:NZ	50:3:2739:C:OP1	2.29	0.65
50:3:2189:U:H2'	50:3:2190:G:C8	2.31	0.65
50:3:2700:C:H2'	50:3:2701:A:H8	1.61	0.65
6:C:31:ARG:NH1	52:5:409:G:N7	2.39	0.65
50:3:453:U:H2'	50:3:454:G:H8	1.62	0.65
50:3:711:A:N7	50:3:837:A:N1	2.45	0.65
52:5:1461:G:H2'	52:5:1462:G:C8	2.32	0.65
5:B:38:GLU:O	5:B:42:ASN:ND2	2.29	0.65
8:E:131:PRO:HG2	52:5:837:G:H4'	1.79	0.65
24:a:41:LEU:HD11	24:a:66:TYR:HD1	1.61	0.65
26:c:159:PHE:HB2	26:c:180:VAL:HG12	1.77	0.65
33:j:116:SER:OG	52:5:341:C:O2'	2.12	0.65
35:l:80:GLU:H	50:3:2502:G:H4'	1.60	0.65
43:t:90:LYS:HG3	43:t:105:LYS:HG2	1.78	0.65
50:3:17:G:N2	50:3:560:U:O2	2.29	0.65
50:3:107:C:O2	50:3:328:A:O2'	2.15	0.65
50:3:1778:G:H2'	50:3:1779:G:C8	2.32	0.65
50:3:2074:G:H3'	50:3:2075:U:H4'	1.78	0.65
52:5:771:G:H2'	52:5:772:G:C8	2.32	0.65
34:k:105:SER:OG	50:3:657:A:OP2	2.15	0.65
44:u:47:THR:O	50:3:2361:G:O2'	2.15	0.65
50:3:347:C:H2'	50:3:348:A:H8	1.62	0.65
52:5:108:C:OP1	52:5:307:C:O2'	2.15	0.65
52:5:403:A:H2'	52:5:404:A:C8	2.32	0.65
52:5:460:A:N1	52:5:467:G:O6	2.29	0.65
52:5:815:G:O2'	52:5:817:U:OP2	2.15	0.65
29:f:7:GLN:NE2	29:f:132:GLU:OE2	2.30	0.64
38:o:44:ARG:NH2	38:o:46:GLN:OE1	2.30	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:r:69:LEU:HA	41:r:108:SER:O	1.97	0.64
20:Q:101:PHE:O	52:5:715:A:N6	2.29	0.64
30:g:61:ARG:HG3	30:g:64:LYS:HE2	1.77	0.64
35:l:13:HIS:N	50:3:947:A:N7	2.42	0.64
37:n:3:THR:HG21	51:4:57:G:H4'	1.79	0.64
52:5:460:A:H2	52:5:467:G:H1	1.45	0.64
50:3:195:A:O2'	50:3:713:C:O2	2.16	0.64
50:3:2235:A:H2'	50:3:2236:G:H8	1.63	0.64
11:H:18:LYS:HD3	52:5:1124:U:H1'	1.78	0.64
24:a:225:ARG:HH22	50:3:725:G:H4'	1.62	0.64
28:e:94:GLY:HA2	28:e:163:LYS:HG2	1.79	0.64
52:5:265:U:H2'	52:5:266:A:C8	2.32	0.64
50:3:864:A:N7	50:3:2255:A:O2'	2.30	0.64
50:3:900:G:N2	50:3:903:A:N6	2.45	0.64
50:3:1803:U:H2'	50:3:1804:A:C8	2.33	0.64
33:j:70:GLN:OE1	33:j:76:HIS:ND1	2.31	0.64
4:A:122:THR:O	4:A:126:SER:OG	2.13	0.64
11:H:115:ARG:HE	16:M:61:TRP:HB3	1.62	0.64
13:J:76:LYS:HG3	13:J:102:GLU:HB2	1.79	0.64
37:n:101:ARG:N	51:4:47:C:OP1	2.30	0.64
41:r:38:ASN:OD1	48:y:35:LYS:NZ	2.27	0.64
50:3:343:A:N6	50:3:1240:U:O2'	2.31	0.64
50:3:1766:A:H2'	50:3:1767:A:C8	2.32	0.64
6:C:75:PHE:HE2	6:C:203:LEU:HB3	1.61	0.64
8:E:132:VAL:HG12	8:E:134:SER:H	1.60	0.64
19:P:5:GLN:NE2	52:5:113:C:OP1	2.31	0.64
31:h:72:VAL:HB	31:h:104:ILE:HG23	1.80	0.64
39:p:62:LEU:HD13	50:3:1045:A:H5''	1.79	0.64
45:v:18:ARG:HD3	53:8:76:C:H2'	1.80	0.64
50:3:1837:C:H2'	50:3:1838:A:C8	2.31	0.64
50:3:2857:C:H2'	50:3:2858:A:H8	1.63	0.64
51:4:60:C:H2'	51:4:61:A:H8	1.62	0.64
16:M:61:TRP:HH2	52:5:1343:G:H5'	1.61	0.64
25:b:120:THR:O	25:b:166:SER:OG	2.15	0.64
35:l:133:LYS:HG2	35:l:134:ARG:H	1.62	0.64
43:t:16:LYS:N	50:3:363:G:O6	2.31	0.64
50:3:71:C:O2	50:3:75:A:O2'	2.15	0.64
50:3:2115:A:C2	50:3:2190:G:C2	2.86	0.64
4:A:33:VAL:HB	4:A:36:TYR:HD1	1.62	0.64
34:k:37:LYS:NZ	50:3:841:C:OP1	2.29	0.64
49:z:10:GLY:O	49:z:15:ARG:NH2	2.31	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1465:U:H4'	50:3:1541:A:H2	1.63	0.64
50:3:2380:U:H2'	50:3:2381:G:H8	1.63	0.64
50:3:1508:G:OP2	50:3:1508:G:H4'	1.98	0.63
50:3:1866:G:H1	50:3:1890:U:H3	1.46	0.63
50:3:2295:A:N6	50:3:2354:A:N7	2.45	0.63
50:3:2455:G:O6	50:3:2512:U:O4	2.15	0.63
52:5:669:U:H2'	52:5:670:G:C8	2.32	0.63
52:5:1222:U:O2	52:5:1264:G:O6	2.16	0.63
7:D:100:LYS:HE2	7:D:126:LEU:HD13	1.78	0.63
24:a:219:ASN:HB2	24:a:224:ILE:HB	1.79	0.63
30:g:89:ILE:HB	30:g:93:LEU:HG	1.80	0.63
50:3:992:G:O2'	50:3:995:A:N6	2.27	0.63
52:5:13:U:O2	52:5:23:G:O6	2.16	0.63
52:5:1490:G:H2'	52:5:1491:A:H8	1.64	0.63
4:A:32:MET:O	4:A:53:ASN:ND2	2.31	0.63
14:K:64:LYS:NZ	52:5:519:G:OP2	2.31	0.63
29:f:83:GLU:HG3	29:f:88:PRO:HA	1.81	0.63
40:q:93:LYS:NZ	40:q:94:VAL:O	2.31	0.63
48:y:25:GLN:HB3	48:y:38:LEU:HD11	1.80	0.63
50:3:990:G:H1	50:3:999:U:H3	0.77	0.63
38:o:98:ARG:NE	50:3:2852:G:OP1	2.30	0.63
50:3:1963:U:H5'	50:3:2560:U:H5'	1.79	0.63
15:L:7:ILE:HG22	15:L:8:ASP:H	1.63	0.63
50:3:1076:U:H2'	50:3:1149:G:H22	1.62	0.63
50:3:1301:G:H4'	50:3:1652:A:H62	1.62	0.63
50:3:1957:G:H22	50:3:1963:U:H3	1.46	0.63
52:5:192:A:H2'	52:5:193:G:H8	1.64	0.63
52:5:1241:G:N2	52:5:1244:A:OP2	2.30	0.63
44:u:41:ASP:HB2	50:3:891:G:H21	1.64	0.63
50:3:998:C:H2'	50:3:999:U:H6	1.64	0.63
50:3:1861:A:OP2	50:3:1895:G:N2	2.31	0.63
51:4:11:A:O2'	51:4:67:G:N2	2.31	0.63
10:G:24:ASN:ND2	52:5:823:C:O2	2.31	0.63
47:x:14:PHE:N	47:x:23:PHE:O	2.32	0.63
50:3:347:C:H2'	50:3:348:A:C8	2.34	0.63
50:3:709:G:H2'	50:3:839:A:H61	1.64	0.63
50:3:2039:G:OP2	50:3:2462:G:O2'	2.13	0.63
51:4:11:A:H4'	51:4:13:G:H2'	1.80	0.63
51:4:60:C:H2'	51:4:61:A:C8	2.34	0.63
52:5:598:U:H3	52:5:635:G:H1	1.45	0.63
52:5:1115:G:N2	52:5:1116:U:O4	2.32	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:P:70:SER:O	19:P:74:ARG:NH2	2.31	0.63
27:d:91:LEU:HA	27:d:95:ARG:HH21	1.63	0.63
42:s:13:THR:H	42:s:16:VAL:HB	1.64	0.63
50:3:1016:A:C6	50:3:1171:G:H4'	2.33	0.63
50:3:1860:A:O2'	50:3:2241:A:O2'	2.16	0.63
52:5:70:A:H2'	52:5:71:A:C8	2.34	0.63
7:D:213:ASN:HB2	10:G:52:GLY:HA2	1.80	0.63
50:3:54:A:OP2	50:3:120:A:N6	2.32	0.63
50:3:401:G:O2'	50:3:402:A:OP1	2.16	0.63
50:3:1039:G:N2	50:3:1046:A:O2'	2.32	0.63
50:3:1096:U:O2	50:3:1105:A:O2'	2.17	0.63
50:3:2796:C:H2'	50:3:2797:C:C6	2.34	0.63
50:3:2812:U:H1'	50:3:2813:A:H2'	1.81	0.63
3:2:4:ARG:HG3	3:2:5:ALA:H	1.64	0.62
7:D:130:GLU:O	7:D:175:TYR:OH	2.17	0.62
50:3:1067:A:H2	50:3:1157:G:H22	1.47	0.62
50:3:1473:C:H1'	50:3:1580:G:H22	1.64	0.62
50:3:2696:G:OP1	50:3:2721:C:N4	2.32	0.62
50:3:2716:U:H2'	50:3:2717:G:H8	1.63	0.62
52:5:589:U:H2'	52:5:590:G:H8	1.62	0.62
52:5:920:G:H1	52:5:1366:U:H3	1.47	0.62
50:3:768:G:N2	50:3:769:A:N7	2.47	0.62
50:3:874:U:H2'	50:3:875:G:H8	1.62	0.62
50:3:1027:U:O4	50:3:1198:G:O6	2.16	0.62
50:3:1643:A:H4'	50:3:1650:A:H5'	1.81	0.62
50:3:1677:G:H2'	50:3:1678:U:C6	2.34	0.62
50:3:2306:A:N6	50:3:2326:G:O2'	2.32	0.62
52:5:1001:A:N6	52:5:1029:C:OP1	2.32	0.62
52:5:1046:A:N6	52:5:1175:C:O2	2.32	0.62
15:L:43:LYS:NZ	52:5:1270:C:OP2	2.32	0.62
24:a:64:ARG:NH1	24:a:90:PRO:O	2.32	0.62
27:d:148:ARG:NH1	50:3:2315:G:O6	2.24	0.62
45:v:18:ARG:HD2	53:8:77:A:O4'	1.99	0.62
50:3:421:A:N6	50:3:424:G:OP2	2.30	0.62
50:3:629:G:O6	50:3:696:U:O4	2.17	0.62
50:3:2155:G:H2'	50:3:2156:G:C8	2.35	0.62
52:5:711:G:H2'	52:5:712:A:C8	2.34	0.62
52:5:767:U:H2'	52:5:768:G:C8	2.35	0.62
7:D:138:HIS:HB2	10:G:108:LEU:HB3	1.80	0.62
24:a:61:ARG:HB2	24:a:64:ARG:HH21	1.63	0.62
50:3:389:C:H2'	50:3:390:A:C8	2.34	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1494:U:O4	50:3:1550:G:O6	2.17	0.62
52:5:136:U:H5'	52:5:1421:A:H61	1.63	0.62
52:5:590:G:H1	52:5:644:U:H3	1.46	0.62
12:I:15:LYS:HB3	12:I:105:ARG:HB2	1.81	0.62
21:R:10:PHE:HD2	52:5:1292:A:H5'	1.64	0.62
28:e:141:LYS:HB3	50:3:2754:U:H4'	1.81	0.62
30:g:25:VAL:HG11	30:g:93:LEU:HD21	1.81	0.62
33:j:6:THR:HG23	50:3:1700:G:H4'	1.81	0.62
50:3:219:G:H1'	50:3:220:A:H4'	1.82	0.62
50:3:1137:C:H2'	50:3:1138:A:H8	1.63	0.62
50:3:1587:U:H2'	50:3:1588:A:C8	2.33	0.62
52:5:670:G:H2'	52:5:671:G:H8	1.64	0.62
25:b:26:ILE:HD12	25:b:192:LEU:HB3	1.81	0.62
35:l:27:VAL:O	35:l:134:ARG:NH2	2.32	0.62
36:m:17:THR:O	36:m:21:GLN:NE2	2.33	0.62
40:q:42:ASP:OD2	40:q:43:GLU:HG2	2.00	0.62
50:3:2077:A:H2'	50:3:2078:A:H8	1.64	0.62
5:B:155:LEU:HD11	5:B:202:LYS:HE2	1.82	0.62
41:r:78:GLN:HB2	50:3:26:G:H21	1.65	0.62
50:3:1798:A:H62	50:3:1835:G:H1'	1.63	0.62
52:5:1106:U:H3	52:5:1160:G:H1	1.46	0.62
3:2:19:ARG:HA	50:3:2764:U:H5''	1.79	0.62
4:A:21:ALA:O	4:A:62:ARG:NH2	2.32	0.62
4:A:95:LEU:O	4:A:99:ILE:HG12	2.00	0.62
34:k:74:LYS:NZ	50:3:670:G:O6	2.33	0.62
44:u:85:LYS:NZ	44:u:93:THR:OG1	2.32	0.62
50:3:1436:C:H2'	50:3:1437:A:H8	1.65	0.62
50:3:2465:U:O4	50:3:2502:G:O6	2.17	0.62
50:3:2812:U:O2'	50:3:2814:A:N7	2.28	0.62
11:H:131:LYS:NZ	52:5:1207:U:OP1	2.30	0.62
15:L:49:THR:OG1	15:L:51:GLU:OE1	2.16	0.62
41:r:57:ASN:OD1	41:r:61:ASN:ND2	2.33	0.62
50:3:488:G:N2	50:3:494:G:O4'	2.32	0.62
50:3:932:U:O2'	50:3:934:C:N4	2.33	0.62
52:5:316:G:O2'	52:5:1410:A:N3	2.33	0.62
52:5:550:U:H2'	52:5:551:A:C8	2.35	0.62
52:5:1077:U:H2'	52:5:1078:G:H8	1.65	0.62
6:C:201:LYS:HG3	6:C:202:ARG:HD2	1.80	0.62
36:m:17:THR:HG22	36:m:21:GLN:NE2	2.14	0.62
50:3:1076:U:C4	50:3:1149:G:O6	2.53	0.62
50:3:1815:U:O2'	50:3:1816:A:H8	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1848:U:H3	50:3:1908:A:H61	1.47	0.62
52:5:152:U:H2'	52:5:153:A:C8	2.34	0.62
52:5:680:G:O6	52:5:705:A:N6	2.33	0.62
52:5:843:C:H2'	52:5:844:U:H6	1.65	0.62
52:5:1125:C:O2'	52:5:1255:A:N1	2.33	0.62
12:I:75:ARG:NH1	52:5:1229:A:OP1	2.32	0.61
28:e:158:GLU:HG3	28:e:160:TYR:H	1.63	0.61
50:3:1558:A:OP2	50:3:1571:G:N2	2.33	0.61
50:3:2713:A:O2'	50:3:2856:G:OP1	2.16	0.61
50:3:2847:C:H2'	50:3:2848:A:H8	1.65	0.61
52:5:747:C:H2'	52:5:748:U:C5	2.35	0.61
52:5:1267:G:H2'	52:5:1268:G:H8	1.65	0.61
24:a:48:ASN:ND2	50:3:1813:C:O2	2.33	0.61
48:y:5:GLN:NE2	50:3:2062:C:OP1	2.31	0.61
50:3:641:U:O2	50:3:657:A:C5	2.53	0.61
50:3:741:A:H61	50:3:760:G:H1'	1.66	0.61
11:H:16:SER:HB3	11:H:70:LYS:HE3	1.81	0.61
50:3:984:C:H2'	50:3:985:A:H8	1.65	0.61
50:3:989:G:O2'	50:3:2274:A:OP2	2.18	0.61
50:3:2305:C:H3'	50:3:2326:G:H22	1.64	0.61
52:5:953:A:N3	52:5:980:C:O2'	2.28	0.61
52:5:1501:G:H2'	52:5:1502:G:H8	1.65	0.61
2:1:20:LYS:NZ	50:3:685:G:O2'	2.25	0.61
5:B:37:ASP:HB3	5:B:60:ARG:HH11	1.66	0.61
35:l:82:ARG:NH1	50:3:2259:G:OP2	2.33	0.61
50:3:674:G:N2	50:3:687:G:H1'	2.15	0.61
50:3:2321:C:H2'	50:3:2322:G:C8	2.34	0.61
52:5:340:A:OP2	52:5:341:C:N4	2.33	0.61
52:5:631:C:H2'	52:5:632:A:C8	2.35	0.61
52:5:1288:C:H2'	52:5:1289:U:H6	1.66	0.61
28:e:4:ILE:HG22	28:e:5:GLY:H	1.65	0.61
39:p:104:LYS:HE3	40:q:2:HIS:CE1	2.35	0.61
50:3:154:U:H2'	50:3:155:A:C8	2.36	0.61
50:3:628:A:H2'	50:3:629:G:H8	1.65	0.61
50:3:1507:G:O2'	50:3:1508:G:OP1	2.18	0.61
50:3:1586:U:H2'	50:3:1587:U:C5	2.36	0.61
50:3:1890:U:O2'	50:3:1891:A:N3	2.33	0.61
50:3:2560:U:H2'	50:3:2562:U:H5	1.65	0.61
52:5:1118:A:N6	52:5:1123:G:N2	2.49	0.61
52:5:1244:A:H1'	52:5:1286:G:H21	1.66	0.61
10:G:91:SER:OG	10:G:137:ILE:O	2.17	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:n:8:ARG:HA	37:n:95:GLY:HA3	1.83	0.61
44:u:28:ARG:NH2	50:3:2288:G:N7	2.48	0.61
50:3:768:G:H3'	50:3:796:A:H61	1.66	0.61
50:3:869:U:H2'	50:3:870:A:C8	2.29	0.61
50:3:1076:U:O4	50:3:1149:G:O6	2.18	0.61
50:3:1085:A:O2'	50:3:2760:C:N4	2.33	0.61
50:3:1354:U:H5'	50:3:2017:G:H21	1.65	0.61
50:3:1967:U:H2'	50:3:1968:C:C6	2.35	0.61
52:5:1217:G:O6	52:5:1269:U:O4	2.19	0.61
52:5:1471:C:H2'	52:5:1472:G:C8	2.35	0.61
6:C:111:ARG:HE	52:5:403:A:H5''	1.64	0.61
19:P:20:LYS:HZ2	52:5:251:G:H5''	1.66	0.61
24:a:93:SER:OG	24:a:163:SER:O	2.18	0.61
35:l:15:VAL:HB	35:l:41:TRP:NE1	2.16	0.61
50:3:80:U:H3	50:3:109:G:H1	0.74	0.61
50:3:2822:C:H2'	50:3:2823:A:C8	2.35	0.61
52:5:63:U:O2'	52:5:375:C:O2	2.18	0.61
52:5:807:C:HO2'	52:5:892:G:HO2'	1.41	0.61
52:5:1405:U:H3	52:5:1445:G:H1	1.47	0.61
27:d:64:LYS:HE2	51:4:40:U:H5'	1.82	0.61
42:s:28:VAL:HG12	42:s:82:VAL:HG12	1.83	0.61
50:3:1129:U:N3	50:3:1132:C:OP2	2.33	0.61
50:3:2316:G:C6	50:3:2319:A:C5	2.88	0.61
52:5:1113:U:H2'	52:5:1114:A:C8	2.36	0.61
52:5:1284:A:H2'	52:5:1285:G:H8	1.65	0.61
2:1:10:ARG:NH1	34:k:62:LEU:O	2.34	0.61
13:J:28:SER:HA	13:J:34:VAL:HA	1.83	0.61
13:J:115:LYS:O	52:5:775:G:O2'	2.15	0.61
45:v:21:SER:HB3	53:8:76:C:C4	2.35	0.61
50:3:389:C:H2'	50:3:390:A:H8	1.65	0.61
50:3:710:A:N7	50:3:838:U:O2	2.33	0.61
50:3:1054:U:H2'	50:3:1055:A:C4	2.35	0.61
52:5:403:A:H2'	52:5:404:A:H8	1.64	0.61
52:5:802:C:H2'	52:5:803:C:H5	1.66	0.61
52:5:884:G:H1'	52:5:885:U:H5	1.66	0.61
5:B:194:THR:HG23	5:B:196:TYR:H	1.65	0.61
15:L:9:ILE:HD12	15:L:10:PRO:HD2	1.83	0.61
18:O:36:ALA:O	52:5:446:A:O2'	2.17	0.61
27:d:6:ALA:O	27:d:10:LYS:HG2	2.01	0.61
29:f:7:GLN:NE2	29:f:8:ASP:OD1	2.33	0.61
40:q:41:LEU:HD11	40:q:97:PHE:HB2	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:144:C:H2'	50:3:145:A:C8	2.36	0.61
50:3:500:U:H3	50:3:719:G:H4'	1.66	0.61
50:3:701:A:H2'	50:3:702:U:C6	2.36	0.61
50:3:1885:G:H8	50:3:1885:G:O5'	1.83	0.61
50:3:2857:C:H2'	50:3:2858:A:C8	2.36	0.61
52:5:111:A:OP1	52:5:603:U:O2'	2.19	0.61
52:5:813:A:OP1	52:5:1501:G:O2'	2.18	0.61
52:5:1467:A:N6	53:7:37:A:O2'	2.34	0.61
24:a:153:HIS:NE2	50:3:1808:C:OP2	2.31	0.60
26:c:104:ASN:OD1	50:3:693:U:O2'	2.19	0.60
35:l:41:TRP:HB3	35:l:94:VAL:HG11	1.83	0.60
50:3:1010:G:H1	50:3:1025:G:HO2'	1.46	0.60
50:3:2098:U:O2	50:3:2236:G:C6	2.54	0.60
50:3:2348:U:H2'	50:3:2349:G:C8	2.36	0.60
52:5:516:C:N4	52:5:527:G:OP2	2.34	0.60
7:D:73:LEU:HD12	7:D:75:ARG:HH22	1.66	0.60
8:E:140:GLN:OE1	10:G:6:LYS:NZ	2.34	0.60
29:f:98:ILE:HD12	29:f:108:LEU:HB2	1.83	0.60
46:w:19:VAL:O	46:w:23:LYS:HG2	2.00	0.60
50:3:1182:U:H2'	50:3:1183:A:C8	2.36	0.60
52:5:770:G:O6	52:5:804:A:N6	2.34	0.60
3:2:16:ILE:HG12	3:2:25:VAL:HG12	1.81	0.60
28:e:128:VAL:HG22	28:e:134:ILE:HG12	1.82	0.60
39:p:49:ARG:HA	39:p:52:LYS:HE2	1.82	0.60
50:3:1125:U:H2'	50:3:1126:G:C8	2.36	0.60
52:5:1011:A:N3	52:5:1193:U:O2'	2.33	0.60
52:5:1217:G:H1	52:5:1269:U:H3	1.35	0.60
5:B:11:ARG:NH1	5:B:180:THR:O	2.35	0.60
32:i:80:HIS:NE2	32:i:83:TYR:O	2.34	0.60
50:3:1016:A:H2'	50:3:1017:A:C4	2.35	0.60
50:3:1213:U:H2'	50:3:1214:U:C6	2.36	0.60
50:3:1292:A:H61	50:3:2024:C:H42	1.50	0.60
50:3:1509:U:O4	50:3:1530:G:O6	2.18	0.60
50:3:1702:A:H61	50:3:1710:A:H61	1.49	0.60
50:3:2077:A:H2'	50:3:2078:A:C8	2.37	0.60
52:5:133:G:H2'	52:5:134:G:C8	2.36	0.60
52:5:242:A:N7	52:5:277:G:N2	2.49	0.60
52:5:1062:C:H2'	52:5:1063:G:C8	2.37	0.60
52:5:1390:G:H1	52:5:1460:U:H3	1.47	0.60
9:F:108:ARG:NH2	52:5:1215:U:O4	2.35	0.60
9:F:115:MET:HA	9:F:118:LYS:HE2	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:b:65:PRO:O	50:3:2794:U:O2'	2.20	0.60
30:g:60:ARG:HH12	30:g:72:ASP:HA	1.66	0.60
31:h:39:PHE:O	31:h:43:THR:OG1	2.19	0.60
34:k:71:GLY:O	50:3:248:A:O2'	2.20	0.60
35:l:83:MET:HG2	50:3:2503:G:H4'	1.84	0.60
46:w:49:ARG:NH2	50:3:75:A:OP1	2.34	0.60
50:3:33:C:H2'	50:3:34:C:C6	2.36	0.60
50:3:678:U:N3	50:3:681:A:OP2	2.34	0.60
50:3:711:A:O2'	50:3:2076:G:N2	2.35	0.60
50:3:2021:A:H2'	50:3:2022:A:C8	2.37	0.60
4:A:164:GLY:O	4:A:167:LYS:NZ	2.34	0.60
6:C:14:LEU:HD13	6:C:59:ARG:HG2	1.82	0.60
21:R:3:ARG:NH1	52:5:1287:G:OP2	2.35	0.60
31:h:86:ALA:O	50:3:1098:G:N2	2.28	0.60
40:q:36:ASP:O	40:q:49:TYR:OH	2.15	0.60
42:s:18:PHE:HA	42:s:21:MET:HE2	1.83	0.60
50:3:24:U:H2'	50:3:25:G:C8	2.37	0.60
50:3:787:C:OP2	50:3:1788:A:N6	2.34	0.60
50:3:1723:A:OP2	50:3:1732:A:N6	2.34	0.60
50:3:1870:G:H4'	50:3:2419:A:H4'	1.83	0.60
50:3:2684:G:H2'	50:3:2685:A:H8	1.66	0.60
52:5:370:A:O2'	52:5:448:A:OP2	2.20	0.60
52:5:1413:G:H1	52:5:1438:U:H3	1.47	0.60
10:G:100:PRO:HD2	10:G:103:LYS:HD3	1.84	0.60
16:M:26:ARG:NH1	16:M:27:CYS:SG	2.75	0.60
50:3:1612:U:H2'	50:3:1613:A:H8	1.66	0.60
50:3:2308:U:H2'	50:3:2309:A:H8	1.67	0.60
52:5:661:G:N2	52:5:723:C:O2'	2.32	0.60
14:K:94:LEU:HB3	14:K:111:VAL:HB	1.84	0.60
25:b:154:ALA:N	25:b:157:GLN:OE1	2.35	0.60
50:3:1239:G:H4'	50:3:1242:G:H4'	1.84	0.60
50:3:2093:U:H2'	50:3:2094:A:C8	2.37	0.60
52:5:368:C:O2	52:5:385:A:N6	2.35	0.60
2:1:14:THR:HB	2:1:18:GLN:HB3	1.83	0.60
14:K:61:ALA:HB2	52:5:527:G:H1	1.65	0.60
33:j:30:LYS:NZ	33:j:32:TYR:O	2.30	0.60
50:3:275:A:O2'	50:3:406:C:O2'	2.18	0.60
50:3:596:G:N1	50:3:611:A:N6	2.33	0.60
50:3:1793:A:N6	50:3:1990:C:O2	2.34	0.60
50:3:1961:A:H5''	50:3:2558:G:H21	1.67	0.60
52:5:132:G:H2'	52:5:133:G:C8	2.37	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:169:G:N2	52:5:219:A:O2'	2.35	0.60
52:5:1278:G:N2	52:5:1308:G:O6	2.35	0.60
19:P:18:ASN:HB2	19:P:21:THR:HB	1.84	0.60
27:d:148:ARG:HH11	27:d:150:ARG:HD3	1.67	0.60
41:r:16:LYS:NZ	50:3:2019:G:N7	2.48	0.60
45:v:21:SER:OG	45:v:22:LYS:N	2.35	0.60
50:3:898:A:H3'	50:3:899:A:C8	2.37	0.60
50:3:900:G:H21	50:3:903:A:N6	2.00	0.60
50:3:1089:A:H2'	50:3:1090:G:C8	2.36	0.60
50:3:1412:A:O2'	50:3:1432:C:O2	2.18	0.60
50:3:2038:A:H1'	50:3:2463:G:H1'	1.84	0.60
50:3:2589:G:O2'	50:3:2591:G:O6	2.16	0.60
52:5:442:G:H2'	52:5:443:G:H8	1.67	0.60
52:5:1282:U:N3	52:5:1303:A:N1	2.49	0.60
31:h:33:GLY:HA2	31:h:36:THR:HG22	1.84	0.59
45:v:22:LYS:HA	53:8:76:C:C2	2.37	0.59
50:3:1089:A:H2'	50:3:1090:G:H8	1.67	0.59
50:3:1701:G:O2'	50:3:1998:U:O4	2.19	0.59
50:3:2353:G:H4'	50:3:2354:A:H3'	1.84	0.59
50:3:2698:U:OP1	50:3:2876:G:N2	2.31	0.59
13:J:62:LYS:HA	13:J:65:LYS:HE3	1.84	0.59
14:K:63:ARG:HG3	14:K:103:LEU:HD21	1.83	0.59
19:P:20:LYS:HB2	19:P:49:ASN:HB2	1.83	0.59
24:a:173:GLN:HA	24:a:180:VAL:HA	1.83	0.59
25:b:175:THR:HG21	25:b:208:ARG:HH11	1.66	0.59
33:j:1:MET:HG2	50:3:1699:A:H1'	1.84	0.59
42:s:7:LEU:O	46:w:30:ARG:NH2	2.35	0.59
48:y:17:ARG:NE	50:3:1296:G:OP2	2.35	0.59
50:3:263:C:H2'	50:3:264:G:H8	1.67	0.59
50:3:309:A:N3	50:3:311:G:N2	2.50	0.59
50:3:2297:G:H2'	50:3:2298:G:H8	1.67	0.59
50:3:2334:U:H3	50:3:2397:G:H1	1.50	0.59
50:3:2880:A:H2'	50:3:2881:A:C8	2.37	0.59
14:K:28:LEU:HD22	14:K:33:LYS:HB2	1.85	0.59
18:O:61:ASP:HB2	52:5:451:G:H4'	1.85	0.59
27:d:5:LYS:HB2	27:d:97:TRP:CD1	2.37	0.59
31:h:69:THR:HG21	31:h:110:VAL:HG23	1.83	0.59
52:5:1280:A:H3'	52:5:1281:U:C6	2.38	0.59
7:D:181:LYS:HG3	52:5:8:G:C4	2.36	0.59
24:a:212:VAL:HG12	24:a:214:GLY:H	1.65	0.59
33:j:91:LYS:HD2	33:j:111:TYR:H	1.68	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:k:81:ASN:HB3	34:k:84:LYS:HG2	1.84	0.59
50:3:333:A:H2'	50:3:334:A:C4	2.38	0.59
50:3:724:A:H2'	50:3:725:G:H8	1.66	0.59
50:3:984:C:H2'	50:3:985:A:C8	2.38	0.59
50:3:1101:U:H5''	50:3:1102:A:H5''	1.84	0.59
50:3:2376:C:H2'	50:3:2377:A:C8	2.37	0.59
50:3:2570:U:O2	50:3:2574:A:N7	2.36	0.59
52:5:60:A:H1'	52:5:350:G:C2	2.37	0.59
21:R:18:LYS:NZ	52:5:1009:G:OP1	2.34	0.59
26:c:58:VAL:HG12	26:c:80:ARG:HD2	1.85	0.59
31:h:13:ASN:HB3	50:3:1096:U:H2'	1.85	0.59
50:3:811:G:H5''	50:3:812:G:C8	2.38	0.59
50:3:898:A:H3'	50:3:899:A:H8	1.67	0.59
50:3:1182:U:H2'	50:3:1183:A:H8	1.68	0.59
50:3:2393:C:H2'	50:3:2394:A:C8	2.38	0.59
52:5:75:A:N1	52:5:81:A:N6	2.50	0.59
52:5:789:A:O2'	52:5:792:C:N4	2.36	0.59
52:5:1278:G:N2	52:5:1306:A:OP2	2.36	0.59
9:F:110:ARG:NH1	9:F:122:GLU:OE1	2.35	0.59
25:b:56:THR:HA	25:b:78:THR:HA	1.84	0.59
48:y:28:SER:HB3	48:y:39:PHE:HD1	1.67	0.59
50:3:1924:U:OP2	50:3:1925:A:N6	2.29	0.59
50:3:2126:A:H61	50:3:2176:G:H1'	1.66	0.59
50:3:2169:G:N2	50:3:2171:A:N7	2.51	0.59
51:4:3:U:H2'	51:4:4:G:H8	1.67	0.59
52:5:245:U:O2	52:5:272:G:C2	2.56	0.59
52:5:334:A:H2'	52:5:335:C:C6	2.38	0.59
52:5:369:A:H61	52:5:387:G:H1'	1.67	0.59
52:5:1258:U:H2'	52:5:1259:G:C8	2.37	0.59
53:8:14:C:H42	53:8:47:G:H22	1.51	0.59
6:C:165:PRO:HB2	6:C:180:ARG:HH12	1.67	0.59
8:E:133:THR:HG22	52:5:836:C:O2'	2.03	0.59
27:d:40:VAL:HB	27:d:85:ILE:HB	1.83	0.59
43:t:40:ASN:HD22	43:t:69:ILE:HG13	1.67	0.59
43:t:105:LYS:NZ	50:3:333:A:OP1	2.36	0.59
45:v:23:THR:OG1	53:8:76:C:N4	2.34	0.59
52:5:297:A:H2'	52:5:298:G:C8	2.38	0.59
52:5:1389:U:O2	52:5:1462:G:N2	2.36	0.59
5:B:3:GLN:NE2	52:5:1053:U:O4	2.32	0.59
10:G:9:LYS:HB2	52:5:822:A:H5''	1.85	0.59
24:a:17:SER:HA	24:a:212:VAL:HB	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:a:150:ILE:HD13	24:a:168:ALA:HB2	1.85	0.59
25:b:14:SER:O	25:b:26:ILE:N	2.24	0.59
43:t:6:LYS:HE2	43:t:26:LYS:HA	1.84	0.59
50:3:29:G:OP1	50:3:1289:G:O2'	2.20	0.59
50:3:118:G:OP1	50:3:125:G:N1	2.36	0.59
50:3:223:A:N3	50:3:238:U:O2'	2.31	0.59
50:3:561:A:H1'	50:3:2050:G:H21	1.68	0.59
50:3:1166:G:O2'	50:3:1168:A:N7	2.35	0.59
50:3:2707:A:H2'	50:3:2708:G:O4'	2.02	0.59
52:5:1198:C:OP2	52:5:1296:C:N4	2.35	0.59
9:F:37:LEU:HD13	9:F:40:ARG:HD3	1.85	0.59
10:G:77:THR:HG22	10:G:79:ARG:H	1.67	0.59
11:H:124:ARG:NH1	52:5:1319:U:OP1	2.36	0.59
22:S:56:ARG:NE	52:5:219:A:OP1	2.28	0.59
28:e:6:ASN:O	28:e:54:GLN:NE2	2.35	0.59
38:o:32:ASN:HB2	38:o:91:LYS:HD3	1.85	0.59
41:r:18:ARG:NH2	50:3:553:A:O3'	2.35	0.59
50:3:1460:G:H2'	50:3:1461:A:C8	2.38	0.59
50:3:1738:G:H2'	50:3:1739:G:C8	2.38	0.59
52:5:732:A:H2'	52:5:733:A:H8	1.66	0.59
24:a:253:ALA:HB3	24:a:261:ARG:HH21	1.68	0.59
29:f:14:LYS:NZ	29:f:20:ASP:O	2.36	0.59
40:q:73:HIS:ND1	40:q:79:HIS:O	2.27	0.59
43:t:88:LYS:HG3	43:t:105:LYS:HB2	1.84	0.59
47:x:11:SER:HA	47:x:26:GLU:HB3	1.84	0.59
50:3:1697:C:H4'	50:3:2694:A:H4'	1.85	0.59
50:3:2235:A:H2'	50:3:2236:G:C8	2.37	0.59
50:3:2705:G:H2'	50:3:2706:U:C6	2.38	0.59
52:5:1012:A:O2'	52:5:1192:C:O2	2.18	0.59
9:F:73:GLU:HB2	9:F:90:VAL:HB	1.85	0.58
14:K:55:PRO:HG3	14:K:61:ALA:H	1.68	0.58
24:a:38:LEU:HA	24:a:66:TYR:O	2.02	0.58
25:b:59:ASN:O	25:b:67:GLN:NE2	2.30	0.58
30:g:28:ASP:HA	30:g:81:ALA:HB3	1.84	0.58
48:y:3:VAL:HG22	50:3:2063:G:H21	1.68	0.58
50:3:1363:C:H2'	50:3:1364:A:H8	1.68	0.58
50:3:1670:U:H2'	50:3:1671:C:C6	2.38	0.58
50:3:2420:A:H2'	50:3:2421:U:O4'	2.02	0.58
50:3:2840:U:H2'	50:3:2841:A:C8	2.38	0.58
52:5:710:G:N2	52:5:774:A:O2'	2.36	0.58
52:5:738:A:H2'	52:5:739:G:C8	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:184:ARG:O	6:C:184:ARG:NH2	2.35	0.58
31:h:43:THR:HG22	31:h:46:LYS:HD3	1.85	0.58
34:k:29:GLY:O	34:k:32:SER:OG	2.19	0.58
35:l:43:ASP:HA	35:l:94:VAL:HA	1.85	0.58
50:3:1093:U:O2	50:3:1115:G:N2	2.32	0.58
50:3:2032:G:H2'	50:3:2033:G:H8	1.68	0.58
52:5:880:G:O2'	52:5:910:C:OP1	2.18	0.58
52:5:1198:C:H5	52:5:1296:C:H42	1.49	0.58
52:5:1321:G:HO2'	52:5:1348:G:H1	1.51	0.58
2:1:3:VAL:HG13	2:1:59:ILE:HG22	1.84	0.58
6:C:198:GLU:HG2	7:D:159:GLY:HA3	1.84	0.58
50:3:332:G:N2	50:3:375:U:O4	2.36	0.58
50:3:780:G:O2'	50:3:783:G:H1'	2.03	0.58
52:5:585:G:N2	52:5:751:C:OP2	2.34	0.58
52:5:831:C:H2'	52:5:832:G:C8	2.38	0.58
52:5:836:C:H2'	52:5:837:G:O4'	2.03	0.58
52:5:1178:C:H2'	52:5:1179:A:C8	2.38	0.58
52:5:1351:U:H2'	52:5:1352:A:H8	1.67	0.58
5:B:95:ILE:HG23	5:B:96:ILE:HG22	1.84	0.58
7:D:78:LYS:HA	52:5:16:G:H21	1.67	0.58
7:D:78:LYS:HD3	52:5:1072:G:H5''	1.85	0.58
8:E:35:LEU:HB2	8:E:60:TRP:HB3	1.85	0.58
15:L:94:ASN:HA	15:L:109:ARG:HH11	1.68	0.58
18:O:33:LEU:HD13	18:O:42:CYS:HB3	1.84	0.58
36:m:107:ARG:HD3	50:3:1314:A:H5'	1.85	0.58
50:3:709:G:H21	50:3:2452:G:H4'	1.68	0.58
50:3:2086:U:H2'	50:3:2087:G:C8	2.38	0.58
50:3:2812:U:O2'	50:3:2894:G:N2	2.37	0.58
52:5:149:G:H2'	52:5:150:A:C8	2.38	0.58
52:5:972:A:N6	52:5:1199:U:OP1	2.34	0.58
4:A:65:LEU:HD21	4:A:231:LEU:HD21	1.85	0.58
8:E:104:LYS:O	8:E:107:LEU:HB3	2.02	0.58
21:R:40:ILE:HD13	21:R:69:HIS:HB2	1.84	0.58
26:c:101:LEU:HD22	50:3:695:G:H5''	1.84	0.58
45:v:61:HIS:NE2	50:3:410:G:OP2	2.36	0.58
47:x:25:ILE:HG23	47:x:26:GLU:H	1.68	0.58
50:3:703:A:H2'	50:3:705:A:H62	1.69	0.58
50:3:1816:A:H2'	50:3:1817:A:C8	2.39	0.58
50:3:1841:U:O2'	50:3:1977:A:OP2	2.21	0.58
50:3:2413:G:N1	50:3:2419:A:OP2	2.37	0.58
6:C:6:SER:OG	52:5:426:U:OP1	2.22	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:K:124:ARG:HG2	14:K:127:ARG:HH12	1.67	0.58
14:K:128:SER:N	52:5:500:G:OP1	2.36	0.58
24:a:43:LYS:HB2	50:3:727:C:H5''	1.85	0.58
50:3:433:A:O2'	50:3:2238:G:N2	2.34	0.58
50:3:2082:U:H4'	50:3:2604:U:H3	1.69	0.58
52:5:694:U:H3	52:5:795:U:H1'	1.68	0.58
52:5:1220:A:H2'	52:5:1221:A:C8	2.38	0.58
11:H:31:THR:HG22	11:H:65:ILE:HG22	1.86	0.58
19:P:25:GLN:NE2	19:P:27:GLU:OE2	2.36	0.58
27:d:7:HIS:O	27:d:11:THR:HG22	2.04	0.58
28:e:74:LEU:HD11	50:3:2766:A:H2	1.69	0.58
35:l:58:LEU:HD22	35:l:64:MET:HE3	1.86	0.58
38:o:97:ARG:NE	50:3:1760:G:H5''	2.18	0.58
50:3:144:C:H2'	50:3:145:A:H8	1.66	0.58
50:3:575:C:H2'	50:3:576:A:C8	2.39	0.58
50:3:606:G:O2'	50:3:608:A:OP1	2.18	0.58
50:3:2691:C:H41	50:3:2735:G:H21	1.50	0.58
52:5:108:C:N4	52:5:109:G:O6	2.36	0.58
52:5:612:G:O6	52:5:624:U:O4	2.21	0.58
52:5:1320:A:N6	52:5:1351:U:O4	2.37	0.58
52:5:1474:A:H1'	52:5:1494:A:H2'	1.84	0.58
53:7:14:C:H42	53:7:47:G:H22	1.51	0.58
7:D:212:ARG:NH2	10:G:51:GLU:O	2.32	0.58
8:E:44:GLU:HG3	8:E:54:SER:HB2	1.86	0.58
28:e:55:ILE:O	28:e:68:HIS:NE2	2.37	0.58
31:h:123:MET:HG3	50:3:1115:G:H21	1.69	0.58
44:u:28:ARG:O	50:3:2286:A:N6	2.37	0.58
50:3:189:U:H2'	50:3:190:G:C8	2.39	0.58
50:3:1836:A:N7	50:3:1984:A:N6	2.52	0.58
50:3:1960:A:O2'	50:3:2567:C:O2	2.21	0.58
52:5:386:U:H2'	52:5:387:G:C8	2.39	0.58
27:d:42:ASP:OD2	27:d:148:ARG:NH2	2.37	0.58
32:i:72:LYS:HB3	32:i:93:ARG:HD2	1.86	0.58
39:p:7:LYS:HD3	50:3:32:G:H5'	1.86	0.58
48:y:38:LEU:HD23	48:y:41:ARG:HD3	1.84	0.58
50:3:1154:U:H2'	50:3:1155:G:C8	2.39	0.58
50:3:2637:A:O2'	50:3:2898:A:N6	2.33	0.58
52:5:69:G:N2	52:5:137:A:C2	2.72	0.58
7:D:100:LYS:HB2	7:D:128:THR:HG22	1.85	0.58
8:E:112:ARG:O	8:E:112:ARG:NH1	2.36	0.58
27:d:34:ILE:HG13	27:d:96:MET:HG3	1.83	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1011:A:H2'	50:3:1012:G:H8	1.68	0.58
50:3:2589:G:OP2	50:3:2589:G:N2	2.18	0.58
50:3:2700:C:H2'	50:3:2701:A:C8	2.38	0.58
51:4:68:C:H42	51:4:97:A:H2	1.49	0.58
52:5:943:C:H2'	52:5:944:A:C8	2.38	0.58
5:B:48:TYR:OH	5:B:87:LYS:NZ	2.30	0.57
34:k:56:THR:OG1	50:3:2437:G:N7	2.34	0.57
50:3:226:A:N6	50:3:236:G:H1'	2.18	0.57
50:3:254:G:H2'	50:3:255:A:C8	2.38	0.57
50:3:2380:U:H2'	50:3:2381:G:C8	2.39	0.57
50:3:2653:G:H5'	50:3:2654:U:H5''	1.86	0.57
50:3:2701:A:H2'	50:3:2702:G:H8	1.69	0.57
50:3:2862:U:O2'	50:3:2863:G:OP1	2.20	0.57
52:5:812:A:H1'	52:5:1502:G:H1'	1.85	0.57
5:B:21:ARG:NH1	5:B:57:GLU:OE2	2.37	0.57
6:C:103:ARG:HD2	6:C:164:SER:HB3	1.86	0.57
12:I:14:ILE:HG23	12:I:80:MET:HB2	1.86	0.57
32:i:113:PRO:O	32:i:115:ASN:ND2	2.37	0.57
34:k:4:ASN:H	34:k:7:LYS:HE3	1.69	0.57
36:m:94:PRO:O	50:3:2843:G:N2	2.28	0.57
50:3:746:G:H2'	50:3:747:A:H8	1.69	0.57
50:3:1304:U:H2'	50:3:1305:G:C8	2.39	0.57
50:3:2348:U:H2'	50:3:2349:G:H8	1.68	0.57
50:3:2406:U:H2'	50:3:2407:G:H8	1.69	0.57
22:S:53:ARG:NH1	52:5:196:G:H5''	2.19	0.57
24:a:12:SER:OG	50:3:765:A:OP1	2.22	0.57
37:n:81:LEU:HD13	37:n:84:LEU:HD12	1.85	0.57
50:3:550:A:O2'	50:3:613:C:O2	2.22	0.57
50:3:2345:G:H2'	50:3:2346:G:C8	2.39	0.57
52:5:1477:A:N7	52:5:1480:G:C2	2.72	0.57
6:C:53:GLN:NE2	6:C:195:TYR:O	2.31	0.57
41:r:18:ARG:HA	41:r:21:CYS:HB3	1.84	0.57
48:y:16:ARG:HG3	50:3:2053:G:H5'	1.85	0.57
50:3:360:G:H2'	50:3:361:G:C8	2.38	0.57
50:3:663:A:N6	50:3:673:A:O5'	2.37	0.57
50:3:904:C:N3	50:3:949:C:O2'	2.37	0.57
50:3:1495:A:P	50:3:1548:A:H61	2.27	0.57
50:3:1744:U:O4'	50:3:2863:G:N2	2.36	0.57
50:3:2068:G:O2'	50:3:2071:C:N4	2.37	0.57
50:3:2268:C:H2'	50:3:2269:C:H6	1.69	0.57
52:5:1216:G:H2'	52:5:1217:G:C8	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:F:69:MET:O	9:F:71:ARG:NH2	2.37	0.57
19:P:13:VAL:HG11	19:P:55:ALA:HB1	1.86	0.57
29:f:112:MET:HB3	29:f:130:ILE:HD11	1.85	0.57
40:q:14:VAL:HG13	40:q:18:ASP:HB2	1.84	0.57
46:w:35:HIS:HB2	46:w:37:GLU:HG2	1.86	0.57
50:3:134:U:H2'	50:3:135:A:H8	1.68	0.57
50:3:493:A:N6	50:3:507:A:OP2	2.37	0.57
5:B:92:ILE:HA	5:B:95:ILE:HG22	1.87	0.57
18:O:32:HIS:H	18:O:43:LYS:HB3	1.68	0.57
22:S:52:ASP:OD2	52:5:195:U:O2'	2.20	0.57
25:b:15:GLN:HA	25:b:25:PRO:HA	1.86	0.57
50:3:159:G:H2'	50:3:160:A:H8	1.69	0.57
50:3:161:U:H3	50:3:171:G:H1	1.52	0.57
50:3:331:A:H2'	50:3:332:G:O4'	2.05	0.57
50:3:563:A:N6	50:3:2050:G:OP2	2.37	0.57
50:3:730:G:H2'	50:3:731:A:C8	2.39	0.57
50:3:761:G:H3'	50:3:1460:G:H4'	1.87	0.57
50:3:892:G:H2'	50:3:893:A:C8	2.39	0.57
50:3:1752:A:H3'	50:3:1753:G:H8	1.67	0.57
52:5:684:A:N6	52:5:700:G:H21	2.03	0.57
53:7:26:C:OP2	53:7:28:A:N6	2.38	0.57
53:8:26:C:OP2	53:8:28:A:N6	2.38	0.57
5:B:216:ASN:HB3	12:I:22:THR:HG21	1.85	0.57
44:u:52:TYR:HE2	44:u:54:GLN:HB3	1.70	0.57
45:v:22:LYS:HA	53:8:76:C:O2	2.05	0.57
50:3:1284:A:H5''	50:3:1285:U:H5''	1.85	0.57
50:3:1755:A:H2'	50:3:1756:A:H8	1.70	0.57
50:3:2701:A:H2'	50:3:2702:G:C8	2.40	0.57
52:5:625:U:H2'	52:5:626:G:C8	2.39	0.57
52:5:742:C:OP1	52:5:845:C:O2'	2.22	0.57
38:o:31:VAL:HG12	38:o:90:LEU:HA	1.86	0.57
40:q:54:ARG:HB2	40:q:99:HIS:HA	1.87	0.57
50:3:660:U:H2'	50:3:661:G:H8	1.69	0.57
50:3:1754:U:H2'	50:3:1755:A:H8	1.69	0.57
50:3:1886:C:H2'	50:3:1887:U:O4'	2.03	0.57
50:3:1906:G:O2'	50:3:1909:C:OP2	2.23	0.57
52:5:503:G:H2'	52:5:504:A:C8	2.40	0.57
52:5:599:G:N2	52:5:634:U:O2	2.33	0.57
14:K:94:LEU:HD22	14:K:114:THR:HB	1.85	0.57
24:a:78:ASN:OD1	29:f:87:ARG:NH1	2.38	0.57
32:i:126:HIS:HB3	32:i:128:PHE:CZ	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:k:73:LEU:HD21	50:3:248:A:H5''	1.86	0.57
35:l:24:ASN:HD22	35:l:68:ILE:HG22	1.69	0.57
42:s:6:VAL:HG12	42:s:32:ASN:HD22	1.69	0.57
50:3:289:U:H2'	50:3:290:A:C8	2.40	0.57
50:3:501:G:H21	50:3:718:U:H1'	1.70	0.57
50:3:650:G:H2'	50:3:651:A:C8	2.39	0.57
50:3:2824:A:N6	50:3:2833:A:N3	2.52	0.57
52:5:1267:G:H2'	52:5:1268:G:C8	2.39	0.57
8:E:110:GLN:HA	8:E:113:ALA:HB3	1.87	0.57
9:F:3:LYS:HD3	52:5:931:C:H42	1.69	0.57
10:G:99:ARG:NH2	10:G:140:TYR:OH	2.38	0.57
14:K:99:ARG:NH2	14:K:100:VAL:O	2.38	0.57
24:a:124:SER:HB2	24:a:128:ILE:HD13	1.87	0.57
39:p:89:ILE:HG22	39:p:91:ARG:HH12	1.69	0.57
42:s:7:LEU:HD21	42:s:43:ALA:HB1	1.86	0.57
50:3:1097:G:C8	50:3:1123:A:H8	2.23	0.57
50:3:1754:U:H2'	50:3:1755:A:C8	2.40	0.57
50:3:2406:U:H2'	50:3:2407:G:C8	2.40	0.57
52:5:490:U:H2'	52:5:491:U:C6	2.40	0.57
52:5:537:A:H2'	52:5:538:G:C8	2.40	0.57
52:5:591:A:H2'	52:5:592:A:C8	2.40	0.57
52:5:789:A:N3	52:5:791:A:N6	2.52	0.57
52:5:812:A:O2'	52:5:1501:G:N2	2.33	0.57
53:8:67:C:H2'	53:8:68:G:C8	2.40	0.57
9:F:32:ASP:OD2	9:F:34:LYS:NZ	2.33	0.56
30:g:75:ALA:HB1	30:g:80:LEU:HD21	1.86	0.56
39:p:31:TYR:H	50:3:614:C:H5''	1.70	0.56
48:y:31:GLN:NE2	50:3:2888:U:O2	2.32	0.56
50:3:453:U:H2'	50:3:454:G:C8	2.40	0.56
50:3:1814:G:H2'	50:3:1815:U:H2'	1.86	0.56
52:5:709:A:H2'	52:5:710:G:C8	2.40	0.56
53:7:67:C:H2'	53:7:68:G:C8	2.40	0.56
7:D:166:ILE:HD11	7:D:191:MET:HB3	1.87	0.56
24:a:66:TYR:HA	24:a:91:ASN:ND2	2.20	0.56
26:c:140:THR:HB	50:3:354:C:H2'	1.87	0.56
26:c:174:ASN:ND2	50:3:354:C:O2	2.31	0.56
29:f:48:ASP:O	29:f:52:LYS:HG2	2.05	0.56
30:g:23:GLY:HA3	30:g:89:ILE:CD1	2.35	0.56
34:k:7:LYS:HA	50:3:1273:U:H1'	1.86	0.56
50:3:2137:A:O2'	50:3:2140:G:N2	2.36	0.56
50:3:2604:U:HO2'	50:3:2605:G:P	2.28	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2828:C:H3'	50:3:2829:G:H21	1.70	0.56
52:5:413:G:C6	52:5:423:U:O2	2.58	0.56
52:5:457:A:H2'	52:5:458:G:H8	1.71	0.56
52:5:610:C:H2'	52:5:611:A:H8	1.70	0.56
52:5:612:G:H1	52:5:624:U:H3	0.73	0.56
52:5:892:G:N2	52:5:895:A:OP2	2.31	0.56
4:A:39:PRO:HG3	52:5:825:A:H2'	1.87	0.56
8:E:107:LEU:O	8:E:110:GLN:HG3	2.06	0.56
9:F:78:ARG:O	9:F:155:TRP:NE1	2.39	0.56
14:K:48:THR:HA	14:K:90:HIS:NE2	2.20	0.56
17:N:64:LEU:O	17:N:68:LYS:HG2	2.05	0.56
27:d:153:ASP:OD2	50:3:2312:G:N2	2.37	0.56
32:i:9:LYS:HG3	50:3:572:G:H4'	1.86	0.56
42:s:13:THR:HB	50:3:1366:G:H5''	1.87	0.56
44:u:44:MET:HG2	44:u:80:LEU:HG	1.88	0.56
50:3:186:A:H2'	50:3:187:C:C6	2.40	0.56
50:3:223:A:N6	50:3:464:A:OP2	2.37	0.56
50:3:401:G:H3'	50:3:402:A:H5''	1.87	0.56
50:3:597:C:H2'	50:3:598:G:C8	2.40	0.56
50:3:720:A:H2	50:3:822:C:H1'	1.69	0.56
50:3:1956:G:H2'	50:3:1957:G:H8	1.70	0.56
50:3:2032:G:H2'	50:3:2033:G:C8	2.40	0.56
50:3:2039:G:O6	50:3:2461:A:O2'	2.21	0.56
50:3:2290:G:N2	50:3:2398:U:O2	2.29	0.56
50:3:2297:G:H2'	50:3:2298:G:C8	2.40	0.56
50:3:2310:C:H2'	50:3:2311:G:C8	2.40	0.56
50:3:2625:U:H2'	50:3:2626:A:H8	1.70	0.56
52:5:379:A:OP1	52:5:452:A:O2'	2.19	0.56
52:5:590:G:O6	52:5:591:A:N6	2.38	0.56
52:5:669:U:H2'	52:5:670:G:H8	1.70	0.56
52:5:1429:G:H2'	52:5:1430:G:H8	1.68	0.56
3:2:24:ARG:HG3	3:2:35:ARG:HA	1.87	0.56
10:G:38:SER:O	10:G:42:ILE:HG12	2.05	0.56
44:u:89:LYS:NZ	51:4:68:C:O2'	2.38	0.56
50:3:1805:U:H2'	50:3:1826:A:N1	2.21	0.56
50:3:2111:U:H5'	50:3:2112:A:C8	2.40	0.56
50:3:2299:U:O4	50:3:2349:G:O6	2.23	0.56
52:5:563:U:OP2	52:5:564:G:O2'	2.23	0.56
52:5:649:U:N3	52:5:651:G:O6	2.38	0.56
52:5:727:G:O2'	52:5:811:A:N6	2.39	0.56
52:5:859:A:N3	52:5:913:A:O2'	2.33	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:1389:U:H2'	52:5:1390:G:H8	1.69	0.56
4:A:198:VAL:HG13	4:A:211:VAL:HG23	1.87	0.56
30:g:23:GLY:HA3	30:g:89:ILE:HD11	1.88	0.56
33:j:13:ASN:HB2	33:j:97:ARG:HB2	1.86	0.56
50:3:159:G:H2'	50:3:160:A:C8	2.40	0.56
50:3:227:A:O2'	50:3:456:G:N2	2.37	0.56
50:3:450:C:H2'	50:3:451:A:H8	1.71	0.56
50:3:697:U:H2'	50:3:698:A:C8	2.41	0.56
50:3:2519:U:H2'	50:3:2520:C:C6	2.41	0.56
50:3:2631:G:O5'	50:3:2830:A:O2'	2.22	0.56
52:5:1112:U:H3	52:5:1128:G:H1	1.54	0.56
52:5:1498:G:H2'	52:5:1499:G:H8	1.70	0.56
4:A:30:VAL:HB	4:A:55:HIS:HA	1.88	0.56
6:C:56:GLU:HG2	6:C:192:ASN:H	1.71	0.56
10:G:24:ASN:OD1	52:5:868:G:N2	2.39	0.56
15:L:24:GLY:HA2	15:L:69:LEU:HD13	1.86	0.56
18:O:2:ARG:HD3	18:O:9:PRO:HB3	1.87	0.56
28:e:118:GLU:OE2	28:e:154:TRP:NE1	2.34	0.56
35:l:50:ALA:O	35:l:54:ILE:HG13	2.06	0.56
44:u:30:SER:OG	50:3:2270:U:OP2	2.19	0.56
50:3:515:A:H4'	50:3:516:A:H5'	1.88	0.56
50:3:700:U:H2'	50:3:701:A:H8	1.71	0.56
50:3:1862:A:H2'	50:3:1863:G:C8	2.41	0.56
50:3:2066:A:C8	50:3:2511:A:H5'	2.40	0.56
50:3:2816:A:H2'	50:3:2817:G:H8	1.71	0.56
2:1:54:ARG:HH22	34:k:52:GLU:HA	1.70	0.56
14:K:123:ARG:NH1	14:K:126:GLN:OE1	2.39	0.56
39:p:30:SER:HB3	39:p:33:VAL:HB	1.87	0.56
42:s:60:ARG:HB3	42:s:78:GLU:HG3	1.88	0.56
50:3:714:G:H2'	50:3:715:G:C8	2.41	0.56
50:3:2143:G:O6	50:3:2162:U:O4	2.23	0.56
50:3:2388:C:H2'	50:3:2389:A:C8	2.41	0.56
50:3:2795:C:H2'	50:3:2796:C:C6	2.41	0.56
52:5:132:G:H2'	52:5:133:G:H8	1.71	0.56
52:5:698:U:H5'	52:5:699:A:H2'	1.87	0.56
2:1:33:LYS:HB2	2:1:38:LYS:HE2	1.87	0.56
14:K:112:ARG:HB2	14:K:131:GLY:HA3	1.87	0.56
19:P:3:ARG:HE	19:P:5:GLN:H	1.53	0.56
50:3:163:A:N7	50:3:169:U:O2	2.39	0.56
50:3:953:G:H5'	51:4:90:G:H5'	1.88	0.56
50:3:963:U:H2'	50:3:964:A:H8	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1522:U:OP2	50:3:1523:C:N4	2.37	0.56
50:3:1529:U:H2'	50:3:1530:G:H8	1.70	0.56
50:3:1910:G:H2'	50:3:1911:G:C8	2.41	0.56
50:3:2098:U:H3'	50:3:2099:U:H2'	1.87	0.56
50:3:2273:U:H2'	50:3:2281:A:N6	2.20	0.56
50:3:2836:U:H5''	50:3:2837:U:H2'	1.88	0.56
52:5:51:A:N6	52:5:356:G:O2'	2.38	0.56
52:5:205:U:H3	52:5:210:G:H1	1.54	0.56
52:5:536:U:H2'	52:5:537:A:H8	1.71	0.56
52:5:663:G:H2'	52:5:664:A:H8	1.71	0.56
52:5:693:A:N3	52:5:783:G:O2'	2.34	0.56
52:5:818:A:H2'	52:5:819:G:C8	2.39	0.56
52:5:1182:C:H2'	52:5:1183:C:C6	2.41	0.56
52:5:1262:A:H2'	52:5:1263:A:C8	2.41	0.56
5:B:43:LEU:HA	5:B:46:VAL:HG22	1.88	0.56
10:G:18:LEU:HD22	10:G:41:LYS:HE2	1.88	0.56
28:e:3:LYS:N	50:3:2759:G:OP2	2.39	0.56
35:l:42:ILE:HD12	35:l:97:VAL:HG21	1.87	0.56
39:p:60:TRP:HD1	39:p:63:ARG:HH21	1.54	0.56
50:3:173:C:H2'	50:3:174:A:C8	2.40	0.56
50:3:475:A:H2'	50:3:476:G:C8	2.40	0.56
50:3:727:C:H2'	50:3:728:A:C8	2.41	0.56
50:3:864:A:O2'	50:3:2256:C:OP1	2.24	0.56
50:3:1702:A:O2'	50:3:1704:C:N4	2.38	0.56
52:5:442:G:H2'	52:5:443:G:C8	2.40	0.56
52:5:622:A:H2'	52:5:623:G:H8	1.69	0.56
52:5:1047:U:H2'	52:5:1048:G:H8	1.70	0.56
52:5:1501:G:H2'	52:5:1502:G:C8	2.40	0.56
15:L:101:ARG:HH21	52:5:945:U:H3'	1.71	0.56
16:M:2:ALA:HB1	16:M:5:SER:HB2	1.87	0.56
21:R:3:ARG:HG2	52:5:1288:C:H41	1.71	0.56
33:j:76:HIS:HB3	38:o:78:ASN:HB3	1.88	0.56
34:k:34:ARG:HH12	34:k:44:SER:N	2.04	0.56
36:m:30:LYS:HD3	48:y:54:LYS:HZ1	1.70	0.56
38:o:14:GLU:HG2	38:o:60:ILE:HD13	1.87	0.56
41:r:87:PRO:HB3	50:3:1648:A:C8	2.41	0.56
50:3:716:G:H1	50:3:831:U:H3	1.53	0.56
50:3:1463:G:H2'	50:3:1464:G:H8	1.69	0.56
50:3:1604:A:H2'	50:3:1605:A:C8	2.41	0.56
50:3:1672:C:O2	50:3:2706:U:O2'	2.24	0.56
50:3:1804:A:H2'	50:3:1805:U:C6	2.41	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2197:U:H2'	50:3:2198:G:C8	2.42	0.56
50:3:2455:G:O6	50:3:2512:U:C4	2.59	0.56
52:5:317:A:N6	52:5:324:C:O2'	2.36	0.56
52:5:412:G:N2	52:5:424:U:O2	2.34	0.56
52:5:473:A:H2'	52:5:474:G:C8	2.41	0.56
52:5:659:U:H2'	52:5:660:A:C8	2.41	0.56
52:5:1274:G:N2	52:5:1275:U:O4	2.39	0.56
19:P:21:THR:HG23	19:P:73:LYS:HZ1	1.70	0.55
23:T:10:ASP:HB2	23:T:14:ALA:H	1.71	0.55
26:c:64:LYS:HB2	26:c:77:GLY:HA2	1.87	0.55
50:3:1803:U:O2	50:3:1830:G:N2	2.24	0.55
50:3:2743:U:N3	50:3:2778:U:O2	2.39	0.55
52:5:246:A:H8	52:5:248:U:C2	2.23	0.55
52:5:671:G:H2'	52:5:672:A:C8	2.40	0.55
52:5:674:U:H3	52:5:710:G:H1	1.54	0.55
52:5:1007:U:H2'	52:5:1008:G:C8	2.40	0.55
24:a:43:LYS:HD3	24:a:61:ARG:O	2.07	0.55
32:i:39:ILE:HG21	32:i:121:TRP:HB3	1.88	0.55
36:m:9:LYS:O	36:m:14:ARG:NH2	2.39	0.55
40:q:6:VAL:HG12	40:q:11:GLN:HG2	1.88	0.55
50:3:1048:A:H2'	50:3:1049:U:C6	2.40	0.55
50:3:1077:G:N1	50:3:1148:U:N3	2.55	0.55
50:3:2623:U:H2'	50:3:2624:C:C6	2.40	0.55
52:5:428:A:H3'	52:5:429:A:H8	1.71	0.55
52:5:645:A:H2'	52:5:646:A:C8	2.41	0.55
52:5:1490:G:H2'	52:5:1491:A:C8	2.41	0.55
10:G:32:THR:OG1	10:G:73:ASN:OD1	2.18	0.55
24:a:48:ASN:OD1	24:a:49:ASN:N	2.38	0.55
26:c:128:VAL:HG13	26:c:132:LEU:HD21	1.88	0.55
38:o:52:VAL:HA	38:o:65:ILE:O	2.07	0.55
38:o:100:TYR:CE1	38:o:102:SER:HB3	2.42	0.55
42:s:60:ARG:NH2	50:3:1367:G:N7	2.54	0.55
50:3:766:C:H2'	50:3:767:C:H6	1.70	0.55
50:3:1262:G:H2'	50:3:1263:G:C8	2.41	0.55
50:3:2387:U:H2'	50:3:2388:C:C6	2.41	0.55
52:5:412:G:H2'	52:5:413:G:H8	1.72	0.55
52:5:515:G:N2	52:5:527:G:O2'	2.35	0.55
45:v:29:TRP:HD1	50:3:2239:U:H5''	1.70	0.55
50:3:652:U:H2'	50:3:653:G:C8	2.41	0.55
50:3:890:U:H2'	50:3:891:G:C8	2.41	0.55
50:3:1243:A:H2'	50:3:1244:A:C8	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1355:C:H2'	50:3:1356:G:C8	2.42	0.55
50:3:2072:C:H2'	50:3:2073:C:H6	1.72	0.55
50:3:2353:G:O6	50:3:2379:G:O6	2.25	0.55
52:5:662:G:O6	52:5:721:G:O6	2.25	0.55
52:5:1226:A:H2'	52:5:1227:A:C8	2.41	0.55
52:5:1317:A:H2'	52:5:1318:C:C6	2.41	0.55
4:A:181:PRO:HD2	4:A:206:THR:HG21	1.88	0.55
46:w:25:GLU:O	46:w:28:GLU:HG2	2.06	0.55
50:3:2031:C:H2'	50:3:2032:G:C8	2.41	0.55
50:3:2781:C:H2'	50:3:2782:A:C8	2.42	0.55
50:3:2896:G:H4'	50:3:2897:G:H21	1.70	0.55
52:5:57:U:H2'	52:5:58:G:C8	2.42	0.55
52:5:877:C:O2'	52:5:878:U:O4'	2.18	0.55
52:5:1275:U:O2'	52:5:1277:C:OP2	2.23	0.55
39:p:78:PHE:O	39:p:82:LEU:HG	2.07	0.55
48:y:45:CYS:C	48:y:47:MET:H	2.14	0.55
50:3:307:C:H2'	50:3:308:A:C8	2.42	0.55
50:3:314:G:N1	50:3:394:C:O2	2.40	0.55
50:3:373:U:H2'	50:3:374:A:H8	1.71	0.55
50:3:1229:U:H2'	50:3:1230:U:C6	2.42	0.55
50:3:1265:G:H2'	50:3:1266:G:C4	2.42	0.55
50:3:2145:A:H2'	50:3:2146:A:C8	2.41	0.55
52:5:41:C:H2'	52:5:42:G:C8	2.41	0.55
52:5:311:A:O2'	52:5:326:C:O2'	2.21	0.55
52:5:366:C:H2'	52:5:367:A:C8	2.42	0.55
52:5:512:U:H2'	52:5:513:G:C8	2.41	0.55
5:B:112:PRO:O	5:B:115:SER:OG	2.24	0.55
10:G:11:HIS:CD2	10:G:12:PHE:H	2.24	0.55
38:o:26:SER:OG	50:3:2871:G:O6	2.25	0.55
50:3:231:A:OP2	50:3:446:A:O2'	2.25	0.55
50:3:484:U:N3	50:3:616:G:N3	2.53	0.55
50:3:519:A:N6	50:3:532:A:O2'	2.39	0.55
52:5:157:A:H2'	52:5:158:A:C8	2.41	0.55
52:5:610:C:H2'	52:5:611:A:C8	2.42	0.55
52:5:1413:G:H2'	52:5:1414:U:C6	2.42	0.55
52:5:1470:U:H2'	52:5:1471:C:H5	1.71	0.55
26:c:161:VAL:HG22	26:c:163:THR:H	1.72	0.55
32:i:10:GLU:HB3	32:i:51:GLN:HG3	1.87	0.55
50:3:142:A:H1'	50:3:1437:A:H4'	1.87	0.55
50:3:571:A:H2'	50:3:572:G:O4'	2.07	0.55
50:3:2203:U:H2'	50:3:2204:C:H6	1.70	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2815:G:H2'	50:3:2816:A:C8	2.42	0.55
52:5:28:G:H21	52:5:292:U:H4'	1.72	0.55
52:5:192:A:H2'	52:5:193:G:C8	2.42	0.55
52:5:587:A:H2'	52:5:588:U:C6	2.40	0.55
52:5:1245:A:H2'	52:5:1246:A:C8	2.42	0.55
52:5:1288:C:H2'	52:5:1289:U:C6	2.42	0.55
12:I:70:GLN:NE2	52:5:1343:G:OP1	2.40	0.55
27:d:91:LEU:HD12	27:d:95:ARG:HB3	1.89	0.55
35:l:12:PRO:HA	50:3:947:A:H62	1.71	0.55
38:o:100:TYR:CE1	50:3:2726:G:H4'	2.42	0.55
50:3:14:U:O4	50:3:561:A:N7	2.39	0.55
50:3:628:A:H2'	50:3:629:G:C8	2.42	0.55
50:3:1514:U:O2	50:3:1525:G:N2	2.39	0.55
52:5:606:A:H3'	52:5:607:A:H8	1.72	0.55
52:5:953:A:H2'	52:5:954:A:C8	2.42	0.55
52:5:1010:A:H2'	52:5:1011:A:C8	2.42	0.55
4:A:31:GLY:HA2	4:A:53:ASN:HB3	1.88	0.55
6:C:147:LYS:HG3	52:5:488:U:H4'	1.89	0.55
27:d:36:ILE:HB	27:d:89:VAL:HG12	1.89	0.55
31:h:100:LYS:O	31:h:104:ILE:HG13	2.08	0.55
44:u:45:ILE:HD13	44:u:51:ILE:HD11	1.87	0.55
48:y:37:LYS:HB3	48:y:43:CYS:HB3	1.89	0.55
50:3:1297:U:O2'	50:3:1298:A:OP1	2.24	0.55
50:3:1881:C:H2'	50:3:1882:G:O4'	2.07	0.55
50:3:2642:G:H2'	50:3:2643:A:C8	2.42	0.55
52:5:742:C:H5''	52:5:845:C:H1'	1.89	0.55
52:5:1136:G:O6	52:5:1157:G:O6	2.24	0.55
24:a:207:ASP:HB3	24:a:210:LEU:HD22	1.88	0.54
46:w:49:ARG:O	46:w:53:THR:HG23	2.06	0.54
48:y:31:GLN:HB2	48:y:49:GLY:CA	2.36	0.54
50:3:643:A:N6	50:3:655:G:H21	1.98	0.54
50:3:713:C:H2'	50:3:714:G:C8	2.42	0.54
50:3:1040:U:H1'	50:3:1046:A:H2'	1.89	0.54
50:3:2006:C:H1'	50:3:2695:U:H1'	1.89	0.54
50:3:2345:G:H2'	50:3:2346:G:H8	1.72	0.54
52:5:110:U:H2'	52:5:111:A:C8	2.41	0.54
52:5:305:A:H2'	52:5:306:G:H8	1.71	0.54
52:5:940:G:H1'	52:5:1311:G:H1'	1.89	0.54
52:5:1178:C:H2'	52:5:1179:A:H8	1.72	0.54
15:L:20:THR:HG22	15:L:27:LEU:HA	1.89	0.54
24:a:30:LYS:HD2	50:3:1597:U:H5	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:d:36:ILE:O	27:d:88:LYS:HA	2.07	0.54
43:t:78:ASP:OD2	43:t:80:LYS:NZ	2.39	0.54
50:3:421:A:N6	50:3:423:C:H2'	2.22	0.54
50:3:1100:U:H2'	50:3:1101:U:C5	2.43	0.54
50:3:1158:C:H2'	50:3:1159:C:C6	2.42	0.54
50:3:1158:C:H2'	50:3:1159:C:H6	1.72	0.54
50:3:1363:C:H2'	50:3:1364:A:C8	2.42	0.54
50:3:2568:G:H2'	50:3:2569:A:C8	2.42	0.54
52:5:1248:U:H2'	52:5:1249:G:O4'	2.07	0.54
53:7:63:U:H2'	53:7:64:G:H8	1.72	0.54
8:E:151:LYS:NZ	10:G:54:LEU:O	2.35	0.54
37:n:79:ASP:O	37:n:82:VAL:HG22	2.08	0.54
46:w:60:GLU:N	46:w:60:GLU:OE2	2.39	0.54
50:3:59:C:H2'	50:3:60:G:C8	2.42	0.54
50:3:205:C:O2'	50:3:255:A:N1	2.38	0.54
50:3:475:A:H2'	50:3:476:G:H8	1.72	0.54
50:3:764:G:H8	50:3:799:A:H5''	1.72	0.54
50:3:1352:G:O2'	50:3:1355:C:N4	2.41	0.54
50:3:1662:G:H2'	50:3:1663:G:H8	1.71	0.54
50:3:1776:G:H2'	50:3:1777:G:H8	1.72	0.54
50:3:2378:G:H2'	50:3:2379:G:C8	2.43	0.54
50:3:2744:A:H2'	50:3:2745:G:C8	2.42	0.54
52:5:931:C:H2'	52:5:932:A:H8	1.72	0.54
10:G:22:ILE:HG22	10:G:26:ARG:HE	1.71	0.54
12:I:59:ARG:NH1	52:5:1164:U:OP1	2.37	0.54
19:P:72:THR:OG1	52:5:250:G:OP1	2.25	0.54
21:R:78:ARG:NE	52:5:1197:G:H5''	2.21	0.54
25:b:148:GLN:HG3	25:b:150:GLY:H	1.73	0.54
29:f:93:ILE:HG13	29:f:95:LYS:H	1.72	0.54
40:q:40:MET:HG3	40:q:45:ILE:HB	1.89	0.54
50:3:80:U:O4	50:3:109:G:O6	2.25	0.54
50:3:329:G:O6	50:3:377:U:O2	2.25	0.54
50:3:461:C:H2'	50:3:462:C:C6	2.43	0.54
50:3:2119:A:H5''	53:8:20:G:C2	2.42	0.54
50:3:2815:G:H2'	50:3:2816:A:H8	1.73	0.54
52:5:590:G:O6	52:5:645:A:N6	2.40	0.54
52:5:1286:G:H2'	52:5:1287:G:H8	1.72	0.54
5:B:153:LYS:HD2	5:B:172:ILE:HD13	1.89	0.54
11:H:26:ASP:OD1	11:H:27:LYS:N	2.40	0.54
29:f:25:TYR:O	50:3:2100:G:O2'	2.19	0.54
33:j:106:LEU:HD11	33:j:115:LEU:HD21	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:r:36:LEU:HD21	41:r:47:ILE:HG13	1.88	0.54
50:3:9:G:H2'	50:3:10:U:C6	2.42	0.54
50:3:22:U:H2'	50:3:23:A:C8	2.42	0.54
50:3:340:U:H2'	50:3:341:G:O4'	2.08	0.54
50:3:2251:U:H2'	50:3:2252:U:C2	2.43	0.54
52:5:798:U:H2'	52:5:799:A:C8	2.43	0.54
52:5:802:C:H2'	52:5:803:C:C5	2.41	0.54
52:5:1150:G:H2'	52:5:1151:A:H8	1.73	0.54
52:5:1484:C:H2'	52:5:1485:C:H6	1.72	0.54
26:c:141:LYS:O	26:c:145:GLN:HG2	2.06	0.54
42:s:51:LYS:HB3	46:w:87:TRP:HE1	1.73	0.54
48:y:2:ALA:N	50:3:2585:A:N3	2.56	0.54
50:3:137:U:H3	50:3:146:G:H1	1.56	0.54
50:3:155:A:H2'	50:3:156:A:C8	2.42	0.54
50:3:170:A:H2	50:3:2217:G:H4'	1.73	0.54
50:3:604:A:N6	50:3:2508:U:OP1	2.34	0.54
50:3:823:A:H5''	50:3:825:U:H5	1.72	0.54
50:3:1164:A:H62	50:3:2498:G:H4'	1.73	0.54
50:3:1691:U:H2'	50:3:1692:A:C8	2.43	0.54
50:3:2533:A:H2'	50:3:2534:G:C8	2.41	0.54
50:3:2704:U:H2'	50:3:2705:G:C8	2.42	0.54
52:5:316:G:H2'	52:5:317:A:C8	2.43	0.54
52:5:1284:A:H2'	52:5:1285:G:C8	2.43	0.54
5:B:80:SER:O	5:B:81:GLU:HG3	2.07	0.54
6:C:10:ARG:HE	6:C:14:LEU:HG	1.72	0.54
10:G:16:ALA:O	10:G:20:THR:HG23	2.08	0.54
39:p:91:ARG:HB2	39:p:94:LEU:HB2	1.89	0.54
45:v:58:LEU:HD22	45:v:63:ARG:HB2	1.89	0.54
48:y:11:HIS:CD2	50:3:19:G:H5''	2.43	0.54
50:3:406:C:H2'	50:3:407:U:C6	2.43	0.54
50:3:1344:U:H2'	50:3:1345:G:H8	1.72	0.54
50:3:1361:U:H2'	50:3:1362:C:H6	1.73	0.54
50:3:1944:A:N6	50:3:1946:U:O2'	2.41	0.54
50:3:2614:U:H2'	50:3:2615:G:C8	2.42	0.54
50:3:2825:A:H2	50:3:2830:A:H61	1.55	0.54
51:4:4:G:H2'	51:4:5:G:C8	2.43	0.54
51:4:95:G:H2'	51:4:96:G:C8	2.43	0.54
52:5:295:G:H2'	52:5:296:A:C4	2.42	0.54
52:5:599:G:H1	52:5:634:U:H3	1.54	0.54
52:5:677:C:H2'	52:5:678:A:H8	1.72	0.54
52:5:1487:U:H2'	52:5:1488:A:C8	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:D:100:LYS:HA	7:D:128:THR:HA	1.89	0.54
22:S:64:ARG:HG3	22:S:64:ARG:HH21	1.73	0.54
24:a:12:SER:HB2	50:3:1782:U:H4'	1.90	0.54
24:a:128:ILE:HD12	24:a:134:PHE:HD1	1.72	0.54
29:f:109:GLN:H	29:f:112:MET:HE2	1.73	0.54
36:m:76:ASP:OD1	36:m:77:GLN:N	2.41	0.54
38:o:38:LYS:HG2	38:o:43:VAL:HG22	1.89	0.54
39:p:12:ARG:NH2	50:3:847:C:OP1	2.35	0.54
42:s:35:ALA:HA	42:s:39:ARG:HD3	1.88	0.54
50:3:173:C:H2'	50:3:174:A:H8	1.72	0.54
50:3:266:A:H3'	50:3:267:A:C8	2.43	0.54
50:3:328:A:N6	50:3:378:G:O2'	2.41	0.54
50:3:1026:A:O2'	50:3:1028:C:OP1	2.26	0.54
50:3:1101:U:H2'	50:3:1104:A:N6	2.23	0.54
50:3:1114:C:N4	50:3:1123:A:OP2	2.33	0.54
50:3:1797:C:N4	50:3:1835:G:O2'	2.40	0.54
50:3:2126:A:N6	50:3:2176:G:O2'	2.41	0.54
52:5:168:A:H3'	52:5:169:G:H8	1.70	0.54
52:5:245:U:C2	52:5:272:G:N1	2.76	0.54
52:5:551:A:H2'	52:5:552:U:C6	2.43	0.54
53:8:14:C:N4	53:8:47:G:H22	2.06	0.54
3:2:27:CYS:SG	3:2:28:LYS:N	2.81	0.54
14:K:96:ARG:NH1	14:K:129:ALA:O	2.41	0.54
24:a:183:GLN:NE2	24:a:184:LEU:O	2.40	0.54
32:i:14:LYS:O	32:i:16:ARG:NH1	2.41	0.54
45:v:18:ARG:HB2	53:8:77:A:C8	2.43	0.54
50:3:575:C:H2'	50:3:576:A:H8	1.73	0.54
50:3:603:G:O4'	50:3:1019:A:N6	2.38	0.54
50:3:762:A:OP1	50:3:1459:A:O2'	2.23	0.54
50:3:1772:G:H2'	50:3:1773:A:H8	1.73	0.54
50:3:2006:C:O2	50:3:2695:U:O2'	2.23	0.54
52:5:287:U:O4	52:5:301:G:O2'	2.26	0.54
52:5:484:A:H2'	52:5:485:C:O4'	2.07	0.54
52:5:1320:A:H4'	52:5:1321:G:H4'	1.88	0.54
52:5:1390:G:H2'	52:5:1391:A:H8	1.71	0.54
22:S:14:ASN:HA	22:S:17:ARG:HB2	1.90	0.54
26:c:34:VAL:O	26:c:38:VAL:HG23	2.07	0.54
41:r:88:ARG:HH22	50:3:784:A:H5''	1.72	0.54
46:w:39:ASP:O	46:w:40:LYS:NZ	2.25	0.54
49:z:32:LEU:H	49:z:49:GLU:HG3	1.73	0.54
50:3:379:A:O2'	50:3:381:A:N6	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:610:G:H2'	50:3:611:A:C8	2.43	0.54
50:3:816:A:H2'	50:3:1784:U:H1'	1.89	0.54
50:3:945:U:H2'	50:3:946:A:C8	2.43	0.54
52:5:546:G:H2'	52:5:547:C:C6	2.43	0.54
52:5:1214:A:H62	52:5:1273:A:H62	1.56	0.54
5:B:52:GLN:NE2	5:B:122:ASP:OD1	2.41	0.53
12:I:40:VAL:HG13	12:I:41:LYS:HG2	1.90	0.53
22:S:64:ARG:NH2	52:5:257:U:OP2	2.40	0.53
25:b:36:VAL:HG21	25:b:90:PHE:HB3	1.90	0.53
27:d:57:LEU:HD11	27:d:89:VAL:HG11	1.89	0.53
29:f:38:PRO:HA	45:v:63:ARG:HH12	1.72	0.53
32:i:119:ARG:NH1	50:3:562:C:O3'	2.41	0.53
45:v:15:GLY:HA3	45:v:29:TRP:CZ3	2.43	0.53
45:v:34:GLN:NE2	45:v:52:THR:OG1	2.39	0.53
50:3:81:C:H2'	50:3:82:G:C8	2.42	0.53
50:3:608:A:H2'	50:3:609:U:C6	2.43	0.53
50:3:986:G:H1	50:3:1003:U:H3	1.54	0.53
50:3:2066:A:H8	50:3:2511:A:H5'	1.73	0.53
50:3:2676:G:H2'	50:3:2677:A:H8	1.74	0.53
50:3:2791:U:H2'	50:3:2792:C:C6	2.43	0.53
51:4:12:U:OP2	51:4:68:C:O2'	2.26	0.53
52:5:733:A:H2'	52:5:734:A:H8	1.73	0.53
52:5:1078:G:OP1	52:5:1363:U:O2'	2.18	0.53
52:5:1297:G:H2'	52:5:1298:U:O4'	2.09	0.53
53:7:57:C:H3'	53:7:58:G:H8	1.74	0.53
6:C:76:ARG:HH12	52:5:620:A:H5'	1.72	0.53
27:d:110:ARG:HB3	27:d:137:ILE:HD11	1.90	0.53
29:f:1:MET:HE3	29:f:22:LYS:HA	1.90	0.53
50:3:569:U:O4	50:3:592:G:O6	2.24	0.53
50:3:860:C:H4'	50:3:2436:G:N7	2.23	0.53
50:3:1739:G:H2'	50:3:1740:U:C6	2.43	0.53
50:3:1793:A:H62	50:3:1990:C:H1'	1.72	0.53
50:3:2209:U:H2'	50:3:2210:G:C8	2.43	0.53
50:3:2703:U:O4	50:3:2722:G:O6	2.26	0.53
50:3:2852:G:H1'	50:3:2872:A:H61	1.73	0.53
52:5:27:A:H61	52:5:556:G:H1'	1.73	0.53
6:C:115:GLN:NE2	52:5:403:A:O4'	2.42	0.53
11:H:53:PRO:O	11:H:57:THR:OG1	2.19	0.53
32:i:116:ARG:NE	50:3:564:A:OP1	2.38	0.53
36:m:58:ASN:O	36:m:62:GLN:HG2	2.09	0.53
44:u:28:ARG:NH1	50:3:2288:G:O6	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:715:G:H2'	50:3:716:G:H8	1.74	0.53
50:3:2684:G:H2'	50:3:2685:A:C8	2.43	0.53
52:5:514:U:O2'	52:5:517:C:N3	2.33	0.53
52:5:1389:U:H2'	52:5:1390:G:C8	2.43	0.53
26:c:162:ASN:OD1	26:c:182:HIS:NE2	2.41	0.53
29:f:94:THR:O	29:f:98:ILE:HG12	2.09	0.53
30:g:112:TYR:HB2	30:g:117:ALA:HA	1.89	0.53
34:k:3:LEU:HB3	34:k:8:SER:HA	1.90	0.53
39:p:15:LYS:O	39:p:19:GLN:NE2	2.40	0.53
39:p:60:TRP:CD2	39:p:93:VAL:HB	2.44	0.53
50:3:822:C:H5''	50:3:823:A:H5'	1.90	0.53
50:3:2154:A:H2'	50:3:2155:G:C8	2.42	0.53
50:3:2270:U:H1'	50:3:2336:A:H1'	1.90	0.53
52:5:1380:G:H1'	52:5:1494:A:H4'	1.90	0.53
52:5:1484:C:H2'	52:5:1485:C:C6	2.44	0.53
5:B:54:SER:H	5:B:71:ALA:HA	1.73	0.53
30:g:63:LEU:HD13	30:g:74:THR:HG23	1.91	0.53
37:n:98:TYR:CZ	37:n:103:ALA:HA	2.43	0.53
43:t:47:LYS:NZ	50:3:518:A:O5'	2.36	0.53
46:w:104:LYS:O	46:w:108:ALA:HB3	2.09	0.53
50:3:1069:G:H2'	50:3:1070:U:C6	2.43	0.53
50:3:1465:U:H2'	50:3:1466:U:C6	2.44	0.53
52:5:563:U:H3'	52:5:564:G:H2'	1.91	0.53
52:5:582:G:H2'	52:5:583:G:C8	2.44	0.53
52:5:625:U:H2'	52:5:626:G:H8	1.74	0.53
52:5:976:U:H2'	52:5:977:U:C6	2.43	0.53
52:5:1390:G:N2	52:5:1460:U:O2	2.37	0.53
5:B:160:LEU:HD11	5:B:166:ALA:H	1.72	0.53
6:C:127:ARG:HD3	52:5:617:U:H4'	1.90	0.53
6:C:179:VAL:HG12	6:C:180:ARG:HG2	1.91	0.53
7:D:72:LYS:NZ	7:D:73:LEU:O	2.41	0.53
8:E:110:GLN:HB3	52:5:838:A:H1'	1.91	0.53
19:P:7:LYS:HB2	19:P:65:GLU:HG3	1.89	0.53
23:T:26:ARG:O	23:T:30:GLN:HG2	2.08	0.53
50:3:522:C:H2'	50:3:523:A:C8	2.43	0.53
50:3:1381:A:O2'	50:3:1382:A:O4'	2.20	0.53
50:3:1511:C:H2'	50:3:1512:A:H8	1.74	0.53
50:3:1689:A:H61	50:3:2012:A:H1'	1.74	0.53
50:3:1834:U:O2'	50:3:1977:A:N3	2.41	0.53
50:3:2035:U:H3	50:3:2040:A:N6	2.06	0.53
52:5:23:G:N2	52:5:907:A:O2'	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:87:G:H2'	52:5:88:A:H8	1.73	0.53
52:5:293:G:O6	52:5:297:A:N6	2.41	0.53
4:A:228:LEU:O	4:A:232:LEU:HG	2.09	0.53
6:C:114:ARG:NH2	52:5:400:G:OP2	2.41	0.53
11:H:75:THR:HB	52:5:1347:U:H5''	1.91	0.53
26:c:52:ILE:HB	26:c:93:PRO:HD2	1.89	0.53
27:d:121:SER:HB2	27:d:128:TYR:CZ	2.44	0.53
28:e:6:ASN:H	28:e:68:HIS:CE1	2.27	0.53
38:o:37:LEU:HD12	38:o:46:GLN:HG3	1.90	0.53
44:u:29:ASP:OD2	44:u:30:SER:N	2.40	0.53
50:3:265:G:H2'	50:3:266:A:H8	1.74	0.53
50:3:462:C:H2'	50:3:463:U:C6	2.43	0.53
50:3:880:C:N4	50:3:968:U:O2'	2.41	0.53
50:3:1164:A:H1'	50:3:2577:G:H21	1.73	0.53
50:3:1298:A:H62	50:3:2019:G:H21	1.57	0.53
50:3:1463:G:H2'	50:3:1464:G:C8	2.44	0.53
50:3:2058:G:N2	50:3:2059:G:O6	2.42	0.53
50:3:2458:A:H62	50:3:2509:C:N4	2.04	0.53
52:5:778:A:OP2	52:5:797:G:N1	2.39	0.53
52:5:1470:U:H2'	52:5:1471:C:C5	2.44	0.53
2:1:53:LYS:NZ	50:3:976:C:OP2	2.25	0.53
16:M:35:SER:OG	52:5:1332:U:OP1	2.25	0.53
22:S:20:ASN:O	22:S:24:GLN:HG2	2.09	0.53
24:a:252:ASP:HA	50:3:1909:C:H1'	1.89	0.53
24:a:281:ASN:O	24:a:282:ARG:HG2	2.08	0.53
25:b:109:ASP:HB3	25:b:177:GLN:HA	1.90	0.53
32:i:14:LYS:HD2	32:i:16:ARG:HD2	1.90	0.53
50:3:94:A:H8	50:3:95:G:C8	2.27	0.53
50:3:663:A:O2'	50:3:672:G:N2	2.35	0.53
50:3:674:G:H2'	50:3:675:U:C6	2.44	0.53
50:3:2035:U:O4	50:3:2040:A:N7	2.42	0.53
50:3:2529:C:H2'	50:3:2530:U:C6	2.42	0.53
52:5:320:G:N2	52:5:323:A:OP2	2.42	0.53
52:5:631:C:H2'	52:5:632:A:H8	1.74	0.53
52:5:1130:G:H2'	52:5:1131:A:H8	1.73	0.53
52:5:1294:U:H2'	52:5:1295:U:C6	2.44	0.53
53:7:14:C:N4	53:7:47:G:H22	2.06	0.53
8:E:6:ILE:HB	8:E:86:LEU:HB3	1.91	0.53
11:H:49:ASP:O	11:H:82:ARG:NE	2.41	0.53
16:M:35:SER:H	52:5:1332:U:H5''	1.73	0.53
22:S:64:ARG:NH1	52:5:256:G:OP1	2.32	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:b:28:VAL:HG23	25:b:190:LEU:HD21	1.90	0.53
25:b:64:LYS:NZ	50:3:2795:C:O3'	2.41	0.53
40:q:85:HIS:NE2	40:q:87:GLN:OE1	2.36	0.53
48:y:35:LYS:HD2	48:y:44:SER:H	1.73	0.53
50:3:665:C:O2	50:3:675:U:O2'	2.26	0.53
50:3:1059:G:OP2	50:3:1060:G:O2'	2.23	0.53
50:3:1180:U:H2'	50:3:1181:A:H8	1.74	0.53
50:3:1304:U:H2'	50:3:1305:G:H8	1.72	0.53
50:3:1348:C:H42	50:3:1359:C:H5	1.57	0.53
50:3:1436:C:H2'	50:3:1437:A:C8	2.43	0.53
50:3:1495:A:N6	50:3:1547:G:O3'	2.40	0.53
50:3:1534:A:H4'	50:3:1535:A:H5'	1.89	0.53
50:3:1766:A:C6	50:3:2705:G:H1'	2.44	0.53
50:3:2667:G:N2	50:3:2669:G:H5''	2.24	0.53
52:5:413:G:O6	52:5:423:U:C2	2.62	0.53
52:5:443:G:H2'	52:5:444:G:O4'	2.08	0.53
53:8:24:A:H3'	53:8:25:G:H8	1.74	0.53
4:A:92:VAL:HG21	4:A:219:ASN:HD22	1.74	0.53
7:D:91:LEU:HD13	7:D:105:ILE:HB	1.90	0.53
15:L:73:ILE:O	15:L:77:ILE:HG13	2.09	0.53
35:l:14:ASN:O	35:l:15:VAL:HG23	2.09	0.53
50:3:301:G:H2'	50:3:302:G:H8	1.74	0.53
50:3:584:G:H2'	50:3:585:U:C6	2.44	0.53
50:3:907:A:H3'	50:3:908:A:H8	1.73	0.53
50:3:1176:U:O2	50:3:1177:A:N6	2.42	0.53
50:3:1187:C:H2'	50:3:1188:C:C6	2.44	0.53
50:3:1974:U:H2'	50:3:1975:G:O4'	2.08	0.53
50:3:2072:C:H2'	50:3:2073:C:C6	2.44	0.53
50:3:2572:A:N1	50:3:2655:U:O2'	2.34	0.53
52:5:26:C:O2'	52:5:506:U:O4	2.27	0.53
52:5:593:A:N6	52:5:638:A:O2'	2.39	0.53
5:B:191:LYS:NZ	52:5:1048:G:H21	2.07	0.52
11:H:30:ILE:H	11:H:60:LYS:HZ3	1.57	0.52
11:H:77:GLN:O	11:H:81:ILE:HG23	2.09	0.52
18:O:5:ARG:NH2	52:5:621:C:O2	2.42	0.52
20:Q:84:ARG:NH2	52:5:661:G:O3'	2.42	0.52
24:a:72:LYS:O	24:a:73:ARG:HG2	2.08	0.52
27:d:58:HIS:CE1	47:x:7:PHE:HB2	2.44	0.52
29:f:57:HIS:HA	29:f:60:ILE:HG12	1.91	0.52
30:g:56:ASN:HB2	50:3:1142:G:H5''	1.90	0.52
41:r:88:ARG:HG3	41:r:89:ALA:H	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:219:G:H21	50:3:220:A:H1'	1.75	0.52
50:3:1123:A:H4'	50:3:1124:G:H8	1.74	0.52
50:3:2188:U:H2'	50:3:2189:U:C6	2.44	0.52
50:3:2213:A:H2'	50:3:2214:A:C8	2.44	0.52
50:3:2745:G:H2'	50:3:2746:A:C8	2.44	0.52
51:4:3:U:OP1	51:4:59:A:O2'	2.27	0.52
52:5:42:G:N2	52:5:397:C:O2	2.20	0.52
52:5:656:U:H2'	52:5:657:G:C8	2.44	0.52
52:5:799:A:H3'	52:5:800:G:H8	1.73	0.52
52:5:834:G:H2'	52:5:835:G:C8	2.44	0.52
52:5:1065:G:H2'	52:5:1066:U:C6	2.43	0.52
52:5:1367:G:H2'	52:5:1368:U:C6	2.44	0.52
26:c:127:LEU:HD11	26:c:201:LYS:HB2	1.90	0.52
29:f:95:LYS:NZ	50:3:165:U:OP1	2.40	0.52
33:j:86:LEU:HG	33:j:94:ARG:HD3	1.90	0.52
45:v:29:TRP:CD1	50:3:2239:U:H5''	2.44	0.52
49:z:14:CYS:SG	49:z:40:ARG:NH1	2.83	0.52
50:3:54:A:OP2	50:3:118:G:N1	2.42	0.52
50:3:596:G:N2	50:3:611:A:N1	2.54	0.52
50:3:609:U:H2'	50:3:610:G:C8	2.44	0.52
50:3:934:C:H2'	50:3:935:U:C6	2.44	0.52
50:3:1310:U:O4	50:3:1314:A:N7	2.42	0.52
50:3:1801:U:H2'	50:3:1802:C:C6	2.44	0.52
50:3:2005:G:O2'	50:3:2732:A:O2'	2.26	0.52
52:5:568:G:H2'	52:5:569:U:C6	2.44	0.52
53:8:63:U:H2'	53:8:64:G:H8	1.73	0.52
16:M:45:ARG:NH1	52:5:1050:U:H4'	2.25	0.52
29:f:68:LEU:HA	29:f:71:VAL:HG22	1.91	0.52
30:g:60:ARG:HH21	30:g:75:ALA:H	1.57	0.52
43:t:28:MET:HE3	43:t:31:ARG:HH11	1.74	0.52
50:3:714:G:H2'	50:3:715:G:H8	1.74	0.52
50:3:745:U:H2'	50:3:746:G:H8	1.72	0.52
50:3:2163:U:H2'	50:3:2164:G:C4	2.44	0.52
50:3:2531:C:H2'	50:3:2532:G:H8	1.74	0.52
50:3:2813:A:OP2	50:3:2894:G:N1	2.42	0.52
51:4:22:G:H2'	51:4:25:A:C6	2.44	0.52
52:5:26:C:H2'	52:5:27:A:C8	2.44	0.52
52:5:511:A:H2'	52:5:512:U:C6	2.44	0.52
52:5:520:C:O2'	52:5:534:C:OP1	2.26	0.52
52:5:536:U:H2'	52:5:537:A:C8	2.44	0.52
52:5:1502:G:H2'	52:5:1503:U:C6	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:J:49:ARG:O	13:J:52:THR:OG1	2.26	0.52
25:b:72:LYS:NZ	50:3:2794:U:OP1	2.42	0.52
28:e:7:ARG:HD3	50:3:2759:G:C8	2.45	0.52
32:i:42:LYS:HD3	39:p:66:ALA:HB2	1.90	0.52
50:3:1187:C:H2'	50:3:1188:C:H6	1.74	0.52
50:3:1702:A:N3	50:3:1704:C:N4	2.56	0.52
50:3:1819:G:H2'	50:3:1820:U:C6	2.45	0.52
50:3:1850:C:H2'	50:3:1851:U:C6	2.44	0.52
50:3:1941:C:H2'	50:3:1942:G:C8	2.45	0.52
50:3:2104:A:H2'	50:3:2105:G:C8	2.44	0.52
50:3:2455:G:H22	50:3:2458:A:H62	1.58	0.52
52:5:11:A:H2'	52:5:12:G:H8	1.75	0.52
52:5:167:A:H2	52:5:197:A:H5'	1.74	0.52
19:P:8:VAL:HG22	19:P:64:VAL:HG12	1.91	0.52
24:a:213:ILE:HG21	24:a:219:ASN:HB3	1.90	0.52
30:g:41:ARG:NH2	30:g:44:LEU:HB3	2.25	0.52
41:r:61:ASN:HB3	50:3:531:G:H1'	1.91	0.52
43:t:31:ARG:HG3	43:t:33:GLN:HB2	1.92	0.52
50:3:155:A:H2'	50:3:156:A:H8	1.72	0.52
50:3:1176:U:H1'	50:3:1177:A:C5	2.44	0.52
50:3:1587:U:H2'	50:3:1588:A:N7	2.25	0.52
50:3:2273:U:H2'	50:3:2281:A:H62	1.74	0.52
50:3:2524:U:H2'	50:3:2525:C:C6	2.45	0.52
50:3:2534:G:O6	50:3:2545:U:O4	2.27	0.52
50:3:2551:G:H2'	50:3:2552:G:C8	2.45	0.52
52:5:554:C:H2'	52:5:555:G:H8	1.74	0.52
53:7:24:A:H3'	53:7:25:G:H8	1.74	0.52
1:0:43:THR:OG1	50:3:127:A:N6	2.43	0.52
6:C:29:LYS:HD3	6:C:31:ARG:HE	1.74	0.52
28:e:113:SER:OG	50:3:2675:C:N3	2.42	0.52
34:k:8:SER:O	50:3:1273:U:O2'	2.19	0.52
49:z:36:LYS:NZ	50:3:2354:A:O2'	2.42	0.52
50:3:450:C:H4'	50:3:1885:G:H21	1.74	0.52
50:3:1430:U:H1'	50:3:1495:A:H61	1.75	0.52
51:4:3:U:HO2'	51:4:24:A:H61	1.53	0.52
52:5:19:C:H2'	52:5:20:C:C6	2.44	0.52
52:5:236:C:H2'	52:5:237:A:C8	2.44	0.52
53:8:57:C:H3'	53:8:58:G:H8	1.73	0.52
10:G:38:SER:HB3	10:G:41:LYS:HB2	1.91	0.52
12:I:13:LYS:HD2	12:I:79:LEU:HD21	1.91	0.52
24:a:230:GLY:HA2	24:a:233:MET:HE2	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:c:24:LEU:HD21	26:c:207:LEU:HG	1.90	0.52
50:3:2146:A:H2'	50:3:2147:G:C8	2.45	0.52
50:3:2231:A:H3'	50:3:2232:G:H8	1.74	0.52
50:3:2237:U:H2'	50:3:2238:G:H8	1.75	0.52
51:4:58:C:H2'	51:4:59:A:C8	2.45	0.52
52:5:350:G:H2'	52:5:351:C:C6	2.45	0.52
52:5:688:G:N2	52:5:693:A:OP2	2.43	0.52
52:5:975:C:H3'	52:5:976:U:C5	2.45	0.52
52:5:1197:G:H3'	52:5:1296:C:N4	2.24	0.52
52:5:1439:G:C2	52:5:1440:U:C4	2.98	0.52
16:M:45:ARG:HH12	52:5:1050:U:H4'	1.74	0.52
24:a:69:ILE:HG23	24:a:109:ILE:HA	1.91	0.52
24:a:90:PRO:HB3	50:3:1601:A:H2'	1.91	0.52
25:b:83:GLU:HG2	50:3:2644:U:P	2.49	0.52
29:f:68:LEU:HD21	29:f:130:ILE:HG21	1.92	0.52
33:j:25:LEU:HD22	33:j:59:ARG:HH22	1.75	0.52
39:p:35:LYS:O	39:p:39:ILE:HG12	2.09	0.52
46:w:48:ARG:HH21	46:w:49:ARG:HH12	1.57	0.52
48:y:45:CYS:C	48:y:47:MET:N	2.65	0.52
50:3:1661:A:C2	50:3:1674:A:C8	2.97	0.52
50:3:1976:A:O2'	50:3:1979:G:N3	2.41	0.52
50:3:2504:C:OP2	50:3:2505:A:N6	2.41	0.52
52:5:19:C:H2'	52:5:20:C:H6	1.75	0.52
52:5:1118:A:C6	52:5:1123:G:N2	2.78	0.52
26:c:74:ALA:HB3	26:c:76:GLN:HG2	1.92	0.52
26:c:158:LEU:HD12	26:c:179:GLN:HG2	1.92	0.52
33:j:11:ALA:HB2	33:j:64:ARG:HH12	1.75	0.52
38:o:58:LYS:HZ3	50:3:2690:U:H5''	1.75	0.52
50:3:512:G:H1'	50:3:516:A:H61	1.75	0.52
50:3:745:U:H2'	50:3:746:G:C8	2.45	0.52
50:3:1012:G:H2'	50:3:1013:G:C8	2.45	0.52
50:3:1077:G:N1	50:3:1148:U:C2	2.78	0.52
50:3:1100:U:O2	50:3:1108:A:N6	2.42	0.52
50:3:1502:A:O2'	50:3:1541:A:N6	2.39	0.52
50:3:2458:A:N6	50:3:2509:C:H42	2.08	0.52
52:5:11:A:H2'	52:5:12:G:C8	2.44	0.52
52:5:94:A:H62	52:5:320:G:H21	1.58	0.52
52:5:528:G:N2	52:5:528:G:OP2	2.43	0.52
52:5:822:A:N6	52:5:870:A:N1	2.58	0.52
52:5:1417:U:H2'	52:5:1418:G:H8	1.73	0.52
7:D:208:VAL:HA	7:D:211:LEU:HG	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:E:4:ASN:HA	8:E:60:TRP:O	2.10	0.52
12:I:8:LYS:HE3	12:I:87:GLN:HB3	1.91	0.52
24:a:233:MET:SD	50:3:817:A:O2'	2.64	0.52
25:b:139:TYR:O	50:3:1691:U:H5''	2.10	0.52
36:m:85:LYS:HG3	36:m:86:VAL:HG13	1.92	0.52
38:o:58:LYS:H	38:o:61:SER:HB2	1.74	0.52
39:p:75:TYR:HE1	50:3:1188:C:H5'	1.75	0.52
41:r:110:ASN:OD1	41:r:113:GLU:N	2.38	0.52
49:z:2:ALA:N	50:3:2429:G:OP1	2.43	0.52
50:3:14:U:H3	50:3:561:A:H62	1.57	0.52
50:3:411:U:OP2	50:3:436:G:N1	2.42	0.52
50:3:533:G:H2'	50:3:534:U:H6	1.75	0.52
50:3:1010:G:N1	50:3:1025:G:O2'	2.40	0.52
50:3:2552:G:H2'	50:3:2553:G:C8	2.45	0.52
50:3:2636:U:H5''	50:3:2637:A:C8	2.45	0.52
52:5:616:C:N4	52:5:619:A:OP2	2.27	0.52
52:5:957:C:H2'	52:5:958:G:C8	2.45	0.52
52:5:1378:C:H2'	52:5:1474:A:H61	1.75	0.52
5:B:113:MET:HA	5:B:118:ILE:HD11	1.91	0.51
24:a:250:GLY:HA3	50:3:2604:U:O2'	2.10	0.51
32:i:120:ARG:HA	32:i:123:THR:HG22	1.92	0.51
36:m:57:PHE:HA	36:m:60:ARG:HG3	1.90	0.51
50:3:163:A:H1'	50:3:2217:G:H5'	1.92	0.51
50:3:255:A:C5	50:3:256:G:H1'	2.45	0.51
50:3:432:G:N2	50:3:2239:U:O2'	2.35	0.51
50:3:712:A:OP1	50:3:2077:A:O2'	2.26	0.51
50:3:853:G:N2	50:3:1219:U:OP2	2.38	0.51
50:3:1036:A:H2'	50:3:1037:A:C8	2.44	0.51
50:3:1046:A:O2'	50:3:1187:C:O2	2.28	0.51
50:3:1748:U:H2'	50:3:1749:A:H8	1.75	0.51
50:3:2189:U:H2'	50:3:2190:G:H8	1.73	0.51
50:3:2407:G:H2'	50:3:2408:G:C8	2.45	0.51
50:3:2548:G:H2'	50:3:2549:A:O4'	2.10	0.51
52:5:924:A:N6	52:5:1364:C:N3	2.58	0.51
52:5:1224:C:N4	52:5:1262:A:OP2	2.42	0.51
36:m:109:ASP:CG	50:3:2016:G:H21	2.18	0.51
41:r:73:GLU:HB3	41:r:106:LYS:HD2	1.92	0.51
50:3:117:C:H2'	50:3:118:G:O4'	2.10	0.51
50:3:306:G:H2'	50:3:307:C:C6	2.45	0.51
50:3:446:A:H5''	50:3:447:G:H5''	1.93	0.51
50:3:720:A:C2	50:3:822:C:H1'	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1010:G:OP1	50:3:1218:G:O2'	2.27	0.51
50:3:1011:A:H2'	50:3:1012:G:C8	2.45	0.51
50:3:1819:G:H2'	50:3:1820:U:H6	1.75	0.51
50:3:2176:G:N1	50:3:2179:A:OP2	2.43	0.51
50:3:2795:C:H2'	50:3:2796:C:H6	1.75	0.51
50:3:2849:G:H2'	50:3:2850:G:H8	1.76	0.51
50:3:2852:G:HO2'	50:3:2871:G:H22	1.58	0.51
52:5:359:A:H2'	52:5:360:A:C8	2.45	0.51
52:5:662:G:H1'	52:5:730:G:H5'	1.92	0.51
52:5:949:G:H1	52:5:1201:C:H42	1.57	0.51
52:5:977:U:H1'	52:5:1197:G:H1	1.75	0.51
52:5:1473:U:H1'	52:5:1474:A:N7	2.25	0.51
1:0:12:ARG:NH2	50:3:501:G:OP1	2.43	0.51
8:E:4:ASN:ND2	8:E:61:LYS:HG2	2.26	0.51
18:O:37:LEU:HD12	18:O:38:LYS:H	1.75	0.51
36:m:35:LEU:HD22	36:m:112:GLU:HG2	1.92	0.51
50:3:265:G:H1'	50:3:643:A:H2	1.76	0.51
50:3:301:G:H2'	50:3:302:G:C8	2.45	0.51
50:3:412:A:O2'	50:3:444:C:OP1	2.27	0.51
50:3:450:C:O2'	50:3:1885:G:N2	2.44	0.51
50:3:914:G:H2'	50:3:915:A:H8	1.74	0.51
50:3:1968:C:H2'	50:3:1969:C:C6	2.45	0.51
50:3:2054:C:H2'	50:3:2055:A:H8	1.74	0.51
51:4:3:U:H2'	51:4:4:G:C8	2.45	0.51
52:5:169:G:HO2'	52:5:220:U:HO2'	1.58	0.51
52:5:1044:G:N1	52:5:1049:G:O6	2.44	0.51
5:B:154:VAL:HG12	5:B:203:VAL:HG13	1.93	0.51
8:E:6:ILE:HG13	8:E:86:LEU:HD23	1.91	0.51
10:G:115:ILE:HD11	10:G:122:VAL:HB	1.92	0.51
11:H:6:TYR:HE2	11:H:23:PRO:HD3	1.75	0.51
16:M:6:LEU:O	16:M:10:GLN:HG2	2.10	0.51
18:O:72:LEU:HD23	18:O:76:PHE:HB2	1.93	0.51
21:R:32:LYS:HA	21:R:50:ALA:HB3	1.91	0.51
27:d:36:ILE:HG23	27:d:152:PHE:HB3	1.93	0.51
33:j:25:LEU:HB3	33:j:59:ARG:HH12	1.74	0.51
38:o:36:LYS:HB3	38:o:43:VAL:HG11	1.92	0.51
39:p:79:ILE:HD13	39:p:82:LEU:HD12	1.92	0.51
41:r:88:ARG:NE	50:3:783:G:OP2	2.44	0.51
44:u:29:ASP:OD1	50:3:2271:C:N4	2.42	0.51
50:3:129:U:H2'	50:3:130:C:C6	2.46	0.51
50:3:294:G:H2'	50:3:295:U:C6	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:322:A:H2'	50:3:323:A:C8	2.45	0.51
50:3:806:A:HO2'	50:3:1383:G:HO2'	1.58	0.51
50:3:1298:A:H2'	50:3:1299:A:C8	2.46	0.51
50:3:2647:A:H2'	50:3:2648:A:O4'	2.10	0.51
50:3:2823:A:H2'	50:3:2825:A:H62	1.75	0.51
52:5:198:A:N3	52:5:218:U:O2'	2.41	0.51
52:5:833:G:O6	52:5:844:U:O4	2.28	0.51
52:5:1160:G:H2'	52:5:1161:G:C8	2.46	0.51
9:F:9:ARG:HD2	52:5:1320:A:N7	2.26	0.51
27:d:118:SER:HB3	27:d:177:LEU:HD22	1.92	0.51
37:n:76:ASP:OD1	37:n:77:ILE:N	2.41	0.51
38:o:80:GLN:HB2	38:o:83:ASN:HB2	1.92	0.51
44:u:52:TYR:CE2	44:u:54:GLN:HB3	2.45	0.51
45:v:2:ALA:N	50:3:1392:G:N7	2.58	0.51
46:w:105:ARG:NH1	50:3:1431:A:O5'	2.41	0.51
50:3:265:G:H2'	50:3:266:A:C8	2.46	0.51
50:3:514:A:N6	50:3:535:G:O2'	2.39	0.51
50:3:1432:C:H2'	50:3:1433:U:C6	2.45	0.51
50:3:2134:G:H2'	50:3:2135:C:C6	2.46	0.51
52:5:1002:A:N6	52:5:1019:G:C4	2.78	0.51
14:K:2:ALA:HB3	52:5:876:C:H41	1.76	0.51
14:K:42:LEU:HD13	14:K:94:LEU:HD11	1.92	0.51
24:a:190:ARG:HG2	24:a:191:LYS:H	1.75	0.51
25:b:34:ASN:HB2	25:b:96:ILE:HD12	1.93	0.51
27:d:127:ASN:HD21	27:d:155:THR:HB	1.75	0.51
41:r:61:ASN:CG	50:3:530:G:H21	2.19	0.51
45:v:18:ARG:CD	53:8:76:C:H2'	2.39	0.51
50:3:289:U:H2'	50:3:290:A:H8	1.75	0.51
50:3:1505:G:H1	50:3:1538:U:H3	1.58	0.51
50:3:1838:A:H2'	50:3:1839:C:C6	2.45	0.51
50:3:2164:G:H2'	50:3:2165:A:C8	2.45	0.51
50:3:2572:A:H2	50:3:2655:U:H4'	1.76	0.51
52:5:368:C:N4	52:5:384:G:OP2	2.21	0.51
52:5:845:C:H2'	52:5:846:G:C8	2.45	0.51
52:5:1371:A:H4'	52:5:1372:C:H5''	1.93	0.51
6:C:82:ARG:NH2	52:5:611:A:H5''	2.26	0.51
13:J:117:PRO:HA	52:5:776:C:H4'	1.92	0.51
24:a:36:SER:OG	24:a:108:TYR:OH	2.27	0.51
25:b:151:ARG:NH2	50:3:2514:U:OP2	2.43	0.51
25:b:158:ARG:NH2	50:3:2626:A:O2'	2.43	0.51
31:h:73:SER:HB2	31:h:108:LYS:HZ2	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:w:48:ARG:HH22	50:3:62:G:H4'	1.76	0.51
50:3:59:C:H2'	50:3:60:G:H8	1.75	0.51
50:3:87:G:H2'	50:3:88:G:C8	2.45	0.51
50:3:612:G:H2'	50:3:613:C:H6	1.75	0.51
50:3:858:A:N6	50:3:870:A:N6	2.58	0.51
50:3:865:A:N6	50:3:2453:G:H21	2.05	0.51
50:3:1012:G:H2'	50:3:1013:G:H8	1.76	0.51
50:3:1431:A:H2'	50:3:1432:C:C6	2.45	0.51
50:3:1949:C:P	50:3:1950:U:H2'	2.51	0.51
50:3:2085:C:H2'	50:3:2086:U:O4'	2.09	0.51
52:5:331:C:H2'	52:5:332:A:H8	1.76	0.51
52:5:842:C:H2'	52:5:843:C:C6	2.46	0.51
52:5:1000:A:H2'	52:5:1019:G:N1	2.26	0.51
52:5:1182:C:H2'	52:5:1183:C:H6	1.76	0.51
52:5:1185:C:O2'	52:5:1188:A:O3'	2.28	0.51
6:C:63:MET:HE3	6:C:64:TYR:CZ	2.45	0.51
9:F:37:LEU:HA	9:F:40:ARG:HD3	1.92	0.51
26:c:140:THR:O	26:c:144:MET:HG2	2.11	0.51
32:i:59:ILE:HB	32:i:127:VAL:HA	1.93	0.51
34:k:16:LYS:NZ	50:3:1225:A:N7	2.58	0.51
38:o:63:THR:OG1	50:3:2692:U:OP1	2.28	0.51
50:3:27:U:H2'	50:3:28:G:C4	2.45	0.51
50:3:1230:U:H2'	50:3:1231:G:C8	2.46	0.51
50:3:2258:G:OP2	50:3:2283:C:O2'	2.24	0.51
50:3:2400:A:N7	50:3:2432:C:N3	2.58	0.51
50:3:2572:A:C2	50:3:2655:U:H4'	2.46	0.51
52:5:257:U:N3	52:5:260:C:OP2	2.41	0.51
52:5:837:G:O2'	52:5:840:C:N4	2.43	0.51
52:5:880:G:H2'	52:5:881:G:C8	2.45	0.51
52:5:986:U:H1'	52:5:988:G:H1'	1.93	0.51
52:5:988:G:N2	52:5:990:C:H42	2.07	0.51
52:5:1432:A:H2'	52:5:1433:G:C8	2.46	0.51
2:1:39:ARG:HH22	50:3:2358:U:H5	1.58	0.51
5:B:18:TRP:HB2	5:B:21:ARG:HG3	1.92	0.51
7:D:207:ARG:HA	7:D:207:ARG:NE	2.26	0.51
9:F:113:LYS:HB2	52:5:1272:C:C4	2.45	0.51
22:S:5:LYS:HB3	52:5:62:G:C8	2.46	0.51
24:a:66:TYR:HA	24:a:91:ASN:HD21	1.76	0.51
28:e:7:ARG:HD3	50:3:2759:G:H8	1.75	0.51
34:k:34:ARG:HH21	50:3:620:G:H1	1.59	0.51
50:3:80:U:O2	50:3:109:G:N2	2.34	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1443:A:N6	50:3:1619:A:N7	2.59	0.51
50:3:1889:U:H2'	50:3:1890:U:C4	2.45	0.51
50:3:2298:G:H2'	50:3:2299:U:C6	2.46	0.51
6:C:1:MET:HG3	6:C:3:TYR:H	1.75	0.51
6:C:151:ILE:HB	6:C:154:VAL:HG12	1.93	0.51
8:E:114:LYS:HZ1	20:Q:42:ARG:HE	1.58	0.51
16:M:2:ALA:HA	52:5:1039:G:H4'	1.93	0.51
16:M:3:LYS:HD2	16:M:28:GLY:HA3	1.92	0.51
21:R:34:TRP:CD2	21:R:57:PHE:HE1	2.28	0.51
24:a:160:ILE:HD11	50:3:1807:C:H2'	1.92	0.51
24:a:191:LYS:HZ2	24:a:279:ILE:HD11	1.75	0.51
25:b:26:ILE:HD11	25:b:182:VAL:HG11	1.92	0.51
26:c:157:VAL:HG23	26:c:178:VAL:HA	1.93	0.51
35:l:129:TRP:CD1	35:l:129:TRP:H	2.29	0.51
45:v:21:SER:HB3	53:8:76:C:N4	2.25	0.51
50:3:263:C:H2'	50:3:264:G:C8	2.46	0.51
50:3:322:A:H2'	50:3:323:A:H8	1.76	0.51
50:3:348:A:H2'	50:3:349:G:C8	2.46	0.51
50:3:358:A:N6	50:3:373:U:O4'	2.44	0.51
50:3:1192:U:H2'	50:3:1193:U:C6	2.45	0.51
50:3:1223:C:H2'	50:3:1224:G:C8	2.46	0.51
50:3:1257:G:H2'	50:3:1258:C:C6	2.46	0.51
50:3:1474:C:O2	50:3:1578:A:O2'	2.28	0.51
50:3:1699:A:H2'	50:3:1700:G:H8	1.76	0.51
50:3:2355:C:H2'	50:3:2356:U:C6	2.46	0.51
52:5:457:A:H2'	52:5:458:G:C8	2.45	0.51
52:5:1365:U:H2'	52:5:1366:U:C6	2.46	0.51
6:C:88:ASN:HA	6:C:91:ARG:HH11	1.75	0.50
15:L:94:ASN:ND2	15:L:109:ARG:O	2.44	0.50
25:b:103:GLN:N	25:b:106:GLU:OE2	2.44	0.50
26:c:75:ARG:HB2	50:3:709:G:H4'	1.92	0.50
31:h:124:VAL:HA	31:h:127:THR:HG22	1.93	0.50
50:3:746:G:H2'	50:3:747:A:C8	2.46	0.50
52:5:580:C:O2	52:5:756:A:N6	2.41	0.50
52:5:1261:A:N3	52:5:1327:G:O2'	2.34	0.50
52:5:1278:G:H1'	52:5:1307:A:H61	1.75	0.50
5:B:158:GLY:HA2	52:5:1048:G:H5'	1.94	0.50
6:C:2:LYS:HD2	6:C:114:ARG:HH22	1.76	0.50
6:C:59:ARG:NH1	6:C:190:GLY:O	2.44	0.50
15:L:43:LYS:NZ	52:5:1269:U:OP1	2.40	0.50
15:L:101:ARG:NH2	52:5:946:G:OP2	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:R:36:ARG:NH2	52:5:1295:U:O2	2.44	0.50
31:h:92:ILE:HG23	31:h:133:ILE:HA	1.93	0.50
43:t:44:ARG:HB2	43:t:65:GLN:HG3	1.91	0.50
46:w:49:ARG:NH2	50:3:77:G:O2'	2.44	0.50
50:3:1902:C:H2'	50:3:1903:A:C8	2.43	0.50
52:5:756:A:H3'	52:5:757:G:H8	1.75	0.50
52:5:1076:U:H5''	52:5:1077:U:H5	1.75	0.50
52:5:1098:C:H2'	52:5:1099:G:H8	1.76	0.50
11:H:49:ASP:OD1	11:H:50:MET:N	2.44	0.50
26:c:6:LEU:HA	26:c:127:LEU:HB3	1.92	0.50
39:p:106:ASN:HA	39:p:109:VAL:HG22	1.93	0.50
50:3:45:U:H2'	50:3:46:A:O4'	2.11	0.50
50:3:209:G:N2	50:3:210:U:O4	2.29	0.50
50:3:275:A:H8	50:3:275:A:O5'	1.93	0.50
50:3:378:G:N2	50:3:379:A:N7	2.58	0.50
50:3:411:U:O2'	50:3:458:A:N1	2.44	0.50
50:3:766:C:H2'	50:3:767:C:C6	2.45	0.50
50:3:1077:G:H2'	50:3:1078:C:C6	2.46	0.50
50:3:1536:C:H2'	50:3:1537:A:C8	2.47	0.50
50:3:1712:A:N3	50:3:1997:C:O2'	2.39	0.50
50:3:2140:G:H2'	50:3:2165:A:H61	1.77	0.50
52:5:314:G:N3	52:5:1443:A:O2'	2.43	0.50
52:5:621:C:H2'	52:5:622:A:C8	2.42	0.50
52:5:766:G:H4'	52:5:1488:A:H4'	1.92	0.50
52:5:809:G:H5'	52:5:897:A:H4'	1.92	0.50
10:G:46:GLU:HG2	10:G:50:LYS:NZ	2.26	0.50
24:a:54:THR:O	24:a:56:ARG:NH1	2.44	0.50
24:a:153:HIS:CE1	50:3:2212:U:H4'	2.47	0.50
26:c:126:HIS:HB2	26:c:198:LEU:HD23	1.92	0.50
37:n:45:ASP:HB2	37:n:52:LEU:HD11	1.93	0.50
39:p:13:ARG:HH21	50:3:1281:A:H2'	1.77	0.50
39:p:47:ARG:NH1	39:p:48:ASP:OD1	2.44	0.50
46:w:68:GLU:HG3	46:w:69:GLN:HG3	1.94	0.50
46:w:91:LEU:O	46:w:95:LYS:HG2	2.11	0.50
50:3:688:U:H4'	50:3:689:U:OP2	2.11	0.50
50:3:694:U:H2'	50:3:695:G:C8	2.47	0.50
50:3:898:A:N6	50:3:953:G:N3	2.58	0.50
50:3:941:C:H2'	50:3:942:A:C8	2.46	0.50
50:3:1085:A:C2	50:3:2759:G:H2'	2.46	0.50
50:3:1295:A:H61	50:3:2020:A:H3'	1.75	0.50
50:3:1589:A:H2'	50:3:1590:U:C6	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2094:A:H2'	50:3:2095:A:H8	1.76	0.50
50:3:2401:U:H2'	50:3:2402:C:H6	1.76	0.50
50:3:2555:U:OP2	50:3:2574:A:O2'	2.27	0.50
50:3:2829:G:H3'	50:3:2830:A:H8	1.75	0.50
52:5:1220:A:N6	52:5:1267:G:O6	2.44	0.50
52:5:1331:A:H2'	52:5:1332:U:C6	2.47	0.50
4:A:86:GLY:HA3	4:A:96:VAL:HG21	1.93	0.50
6:C:13:ARG:HG3	6:C:34:ILE:HG22	1.92	0.50
14:K:23:ALA:HB3	14:K:108:TYR:HE2	1.77	0.50
15:L:65:ILE:HB	15:L:68:ASP:HB3	1.92	0.50
27:d:37:ASN:HA	27:d:88:LYS:HD3	1.93	0.50
33:j:80:ASP:HB2	38:o:74:PRO:HG2	1.94	0.50
34:k:34:ARG:NH1	34:k:42:ARG:O	2.44	0.50
43:t:45:HIS:HB3	50:3:518:A:H4'	1.94	0.50
50:3:597:C:O2'	50:3:1283:A:N6	2.41	0.50
50:3:621:U:H2'	50:3:622:U:C6	2.47	0.50
50:3:652:U:H2'	50:3:653:G:H8	1.77	0.50
50:3:868:C:H2'	50:3:869:U:C6	2.47	0.50
50:3:1199:A:H2'	50:3:1200:U:O4'	2.12	0.50
50:3:1302:C:H2'	50:3:1680:A:N6	2.26	0.50
50:3:1896:A:N3	50:3:2093:U:O2'	2.45	0.50
50:3:2092:U:O2	50:3:2242:G:O6	2.30	0.50
50:3:2106:G:H22	50:3:2198:G:H1	1.59	0.50
52:5:375:C:H2'	52:5:376:G:O4'	2.12	0.50
52:5:672:A:N6	52:5:712:A:H61	2.06	0.50
52:5:1230:G:H2'	52:5:1233:G:H21	1.76	0.50
52:5:1344:C:H2'	52:5:1345:G:C8	2.47	0.50
53:7:23:G:H2'	53:7:24:A:H5''	1.93	0.50
4:A:214:ILE:HG22	4:A:216:PRO:HD3	1.93	0.50
5:B:22:TRP:CD1	5:B:60:ARG:H	2.30	0.50
13:J:19:SER:OG	13:J:21:ASN:O	2.29	0.50
36:m:42:GLN:HG2	36:m:98:SER:HB2	1.92	0.50
41:r:88:ARG:O	50:3:1648:A:N6	2.45	0.50
50:3:381:A:H2'	50:3:382:U:C6	2.47	0.50
50:3:534:U:H2'	50:3:535:G:O4'	2.12	0.50
50:3:779:C:H2'	50:3:780:G:O4'	2.12	0.50
50:3:1329:U:H3	50:3:1660:A:H2	1.59	0.50
50:3:1520:A:H2'	50:3:1521:A:C8	2.47	0.50
50:3:1691:U:H2'	50:3:1692:A:H8	1.77	0.50
50:3:1831:G:H2'	50:3:1832:G:H8	1.77	0.50
50:3:2305:C:N4	50:3:2327:U:O4'	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2609:C:H2'	50:3:2611:G:C8	2.46	0.50
52:5:779:A:H62	52:5:797:G:H21	1.60	0.50
52:5:829:G:O6	52:5:848:U:O2	2.29	0.50
52:5:1265:U:H2'	52:5:1266:U:C6	2.47	0.50
52:5:1385:A:H2'	52:5:1386:C:C6	2.45	0.50
52:5:1386:C:H2'	52:5:1387:U:C6	2.46	0.50
52:5:1469:G:H2'	52:5:1470:U:O4'	2.12	0.50
5:B:191:LYS:HZ2	52:5:1048:G:H21	1.59	0.50
8:E:8:LEU:HB2	8:E:84:ARG:HB2	1.94	0.50
24:a:9:ARG:HH11	50:3:762:A:H61	1.60	0.50
31:h:13:ASN:HB3	50:3:1096:U:H6	1.76	0.50
39:p:32:LYS:HB3	50:3:1282:G:N2	2.27	0.50
41:r:88:ARG:HB2	41:r:94:ASN:OD1	2.11	0.50
41:r:92:SER:H	50:3:1648:A:H61	1.60	0.50
50:3:30:A:H62	50:3:547:G:H21	1.58	0.50
50:3:321:A:H2'	50:3:322:A:C8	2.47	0.50
50:3:917:G:H2'	50:3:918:G:H8	1.77	0.50
50:3:1092:A:H62	50:3:1121:A:H3'	1.76	0.50
50:3:1096:U:H1'	50:3:1105:A:O2'	2.12	0.50
50:3:1180:U:H2'	50:3:1181:A:C8	2.46	0.50
50:3:1487:U:H2'	50:3:1488:U:C6	2.47	0.50
50:3:1836:A:H5'	50:3:1837:C:H5	1.77	0.50
50:3:1956:G:H2'	50:3:1957:G:C8	2.45	0.50
50:3:2323:U:H2'	50:3:2324:A:C8	2.46	0.50
50:3:2825:A:H2'	50:3:2826:G:O4'	2.11	0.50
50:3:2829:G:N2	50:3:2829:G:OP2	2.45	0.50
52:5:20:C:H2'	52:5:21:U:C6	2.47	0.50
52:5:205:U:O2'	52:5:464:A:N7	2.44	0.50
52:5:624:U:H2'	52:5:625:U:C6	2.46	0.50
52:5:1191:U:H2'	52:5:1192:C:C6	2.46	0.50
2:1:36:LYS:HA	2:1:39:ARG:NE	2.26	0.50
8:E:5:ILE:HG12	8:E:87:ILE:HD13	1.94	0.50
8:E:45:LEU:N	8:E:53:LEU:O	2.45	0.50
9:F:35:LYS:O	9:F:39:GLN:HG3	2.12	0.50
9:F:56:LYS:HD2	9:F:57:PRO:HD2	1.93	0.50
9:F:102:TRP:HD1	9:F:105:MET:HE3	1.77	0.50
13:J:118:LYS:HG2	52:5:777:A:H5'	1.93	0.50
35:l:119:THR:O	35:l:123:HIS:ND1	2.44	0.50
50:3:162:G:O2'	50:3:163:A:H5''	2.12	0.50
50:3:234:G:H2'	50:3:235:U:C6	2.47	0.50
50:3:586:G:H2'	50:3:587:U:O4'	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1120:A:H2'	50:3:1121:A:C4	2.47	0.50
50:3:1301:G:H4'	50:3:1652:A:N6	2.25	0.50
50:3:1508:G:H21	50:3:1535:A:H61	1.57	0.50
52:5:45:A:H2'	52:5:46:U:C6	2.47	0.50
52:5:60:A:H1'	52:5:350:G:N2	2.27	0.50
52:5:304:U:H2'	52:5:305:A:C8	2.43	0.50
52:5:780:U:H2'	52:5:781:A:H8	1.77	0.50
52:5:949:G:N2	52:5:1202:A:H62	2.05	0.50
52:5:1139:A:C6	52:5:1140:A:N6	2.79	0.50
52:5:1321:G:N2	52:5:1322:U:O4	2.33	0.50
4:A:132:LYS:O	4:A:136:LYS:HG2	2.11	0.50
7:D:165:ALA:O	7:D:169:ILE:HG12	2.10	0.50
36:m:19:ARG:HA	36:m:22:VAL:HG22	1.93	0.50
50:3:293:G:H2'	50:3:294:G:C4	2.47	0.50
50:3:1531:C:H2'	50:3:1532:A:O4'	2.11	0.50
50:3:1676:G:H2'	50:3:1677:G:C8	2.46	0.50
50:3:1815:U:O2'	50:3:1816:A:O5'	2.27	0.50
50:3:2251:U:O2'	50:3:2442:A:N1	2.42	0.50
50:3:2531:C:H2'	50:3:2532:G:C8	2.47	0.50
52:5:85:U:H1'	52:5:86:A:N7	2.26	0.50
52:5:309:A:H2'	52:5:310:C:C6	2.47	0.50
2:1:11:PHE:HB3	2:1:19:ILE:HG23	1.94	0.49
4:A:118:THR:HB	4:A:190:GLU:HB3	1.93	0.49
15:L:120:LYS:HA	52:5:949:G:H4'	1.93	0.49
27:d:91:LEU:HB2	27:d:95:ARG:HE	1.77	0.49
27:d:110:ARG:HA	47:x:38:ILE:HG12	1.94	0.49
28:e:149:THR:HG21	50:3:2753:C:H5'	1.93	0.49
29:f:54:GLN:HA	29:f:57:HIS:ND1	2.27	0.49
45:v:18:ARG:NH1	53:8:77:A:O4'	2.44	0.49
46:w:15:LEU:O	46:w:19:VAL:HG23	2.11	0.49
50:3:337:U:H2'	50:3:338:G:C8	2.47	0.49
50:3:947:A:N3	50:3:2272:C:O2'	2.33	0.49
50:3:1311:G:H21	50:3:1357:U:H3	1.60	0.49
50:3:1723:A:H2'	50:3:1724:A:H8	1.77	0.49
50:3:2094:A:H2'	50:3:2095:A:C8	2.47	0.49
50:3:2155:G:H2'	50:3:2156:G:H8	1.77	0.49
52:5:832:G:H2'	52:5:833:G:H8	1.76	0.49
52:5:1160:G:H2'	52:5:1161:G:H8	1.76	0.49
52:5:1244:A:H1'	52:5:1286:G:N2	2.26	0.49
3:2:11:CYS:SG	3:2:12:LYS:N	2.85	0.49
27:d:16:LEU:HD13	27:d:29:PRO:HG2	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:h:90:LYS:HE2	50:3:1112:A:H5'	1.95	0.49
45:v:5:ASP:OD1	45:v:5:ASP:N	2.45	0.49
46:w:63:LEU:HD23	46:w:66:GLN:HB2	1.93	0.49
50:3:81:C:H2'	50:3:82:G:H8	1.77	0.49
50:3:346:G:O2'	50:3:365:U:N3	2.43	0.49
50:3:409:A:N6	50:3:438:A:OP2	2.31	0.49
50:3:1639:C:O2	50:3:1644:A:O2'	2.21	0.49
50:3:2135:C:H2'	50:3:2136:A:C8	2.40	0.49
50:3:2154:A:H2'	50:3:2155:G:H8	1.76	0.49
50:3:2388:C:H2'	50:3:2389:A:H8	1.75	0.49
50:3:2587:U:H2'	50:3:2588:U:H6	1.77	0.49
50:3:2660:C:H2'	50:3:2661:U:O4'	2.12	0.49
50:3:2695:U:H2'	50:3:2696:G:O4'	2.12	0.49
51:4:28:C:H3'	51:4:29:C:H6	1.76	0.49
52:5:18:U:O2'	52:5:1070:G:H1'	2.11	0.49
52:5:305:A:H2'	52:5:306:G:C8	2.47	0.49
52:5:463:U:H4'	52:5:464:A:H2	1.77	0.49
52:5:721:G:OP1	52:5:829:G:N2	2.45	0.49
52:5:1279:G:N2	52:5:1305:G:O2'	2.44	0.49
4:A:119:ASN:HB3	52:5:1065:G:H4'	1.94	0.49
9:F:65:VAL:O	9:F:69:MET:HG3	2.12	0.49
18:O:52:TRP:HD1	18:O:55:LYS:HE3	1.77	0.49
25:b:115:LYS:HA	25:b:200:PRO:HD3	1.93	0.49
25:b:116:GLY:HA2	25:b:171:HIS:HB2	1.93	0.49
45:v:58:LEU:O	45:v:63:ARG:N	2.44	0.49
50:3:186:A:H2'	50:3:187:C:H6	1.77	0.49
50:3:429:U:H2'	50:3:430:U:C6	2.48	0.49
50:3:701:A:H2'	50:3:702:U:H6	1.75	0.49
50:3:738:U:H2'	50:3:739:G:O4'	2.11	0.49
50:3:1063:A:N6	50:3:1161:A:OP1	2.35	0.49
50:3:1239:G:O2'	50:3:1267:A:N1	2.40	0.49
50:3:1425:U:OP2	50:3:1426:C:N4	2.38	0.49
50:3:1672:C:O2'	50:3:2706:U:O2	2.30	0.49
50:3:2096:U:H2'	50:3:2097:A:C8	2.48	0.49
50:3:2264:G:H2'	50:3:2265:U:O4'	2.12	0.49
50:3:2268:C:H2'	50:3:2269:C:C6	2.46	0.49
50:3:2458:A:C6	50:3:2509:C:N4	2.80	0.49
52:5:104:A:H4'	52:5:105:A:C8	2.47	0.49
52:5:405:C:H2'	52:5:406:G:O4'	2.12	0.49
52:5:600:G:H2'	52:5:601:U:C6	2.47	0.49
52:5:979:C:H2'	52:5:980:C:C6	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:1180:U:H2'	52:5:1181:G:H8	1.78	0.49
7:D:139:GLU:HA	7:D:151:LEU:O	2.13	0.49
8:E:32:VAL:HG22	8:E:65:ASP:N	2.26	0.49
12:I:46:LEU:HD22	12:I:79:LEU:HD23	1.94	0.49
13:J:45:PHE:HB3	13:J:49:ARG:HG2	1.94	0.49
20:Q:60:LEU:HD11	20:Q:90:LEU:HG	1.93	0.49
26:c:3:LYS:NZ	26:c:17:PRO:O	2.36	0.49
31:h:30:ILE:HG13	31:h:63:PHE:HA	1.93	0.49
45:v:56:ARG:NH2	50:3:436:G:N7	2.56	0.49
50:3:163:A:H8	50:3:169:U:H3	1.55	0.49
50:3:165:U:O2'	50:3:168:A:N6	2.46	0.49
50:3:190:G:H2'	50:3:191:G:H8	1.77	0.49
50:3:1105:A:OP1	50:3:1110:C:N4	2.46	0.49
50:3:1511:C:H2'	50:3:1512:A:C8	2.48	0.49
50:3:1686:U:H3	50:3:2012:A:H61	1.60	0.49
50:3:1779:G:H2'	50:3:1780:A:O3'	2.12	0.49
50:3:1847:G:H2'	50:3:1848:U:O4'	2.12	0.49
50:3:2706:U:O4	50:3:2717:G:O6	2.29	0.49
50:3:2831:U:H2'	50:3:2832:G:C8	2.48	0.49
52:5:18:U:H3	52:5:913:A:H61	1.60	0.49
52:5:357:G:H2'	52:5:358:G:C8	2.47	0.49
52:5:824:U:H2'	52:5:864:U:N3	2.24	0.49
52:5:1077:U:H2'	52:5:1078:G:C8	2.46	0.49
6:C:33:THR:HA	6:C:43:ARG:HG3	1.94	0.49
19:P:66:THR:OG1	19:P:67:ARG:N	2.43	0.49
20:Q:70:ILE:HG13	20:Q:94:ARG:HH22	1.78	0.49
25:b:143:PHE:HD2	25:b:145:GLY:H	1.59	0.49
32:i:38:LEU:HD12	32:i:43:ASN:ND2	2.28	0.49
37:n:98:TYR:CE2	37:n:103:ALA:HA	2.46	0.49
41:r:66:GLY:HA2	41:r:69:LEU:HD12	1.94	0.49
41:r:136:LYS:O	41:r:139:ARG:NE	2.45	0.49
50:3:178:A:H2'	50:3:179:A:C8	2.48	0.49
50:3:387:U:H2'	50:3:388:U:H6	1.77	0.49
50:3:904:C:H42	50:3:949:C:H1'	1.77	0.49
50:3:1344:U:H2'	50:3:1345:G:C8	2.47	0.49
50:3:1396:A:H2'	50:3:1397:G:H8	1.77	0.49
50:3:1508:G:N2	50:3:1535:A:H61	2.11	0.49
50:3:1958:U:HO2'	50:3:1961:A:H8	1.60	0.49
50:3:2185:C:H2'	50:3:2186:C:C6	2.47	0.49
50:3:2223:C:H2'	50:3:2224:A:C8	2.46	0.49
50:3:2333:G:O2'	50:3:2334:U:OP1	2.30	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2405:G:H1	50:3:2427:U:H3	1.59	0.49
50:3:2522:U:H2'	50:3:2523:C:C6	2.47	0.49
50:3:2735:G:H2'	50:3:2736:U:C6	2.47	0.49
52:5:1172:A:H2'	52:5:1173:A:C8	2.47	0.49
52:5:1184:C:H2'	52:5:1185:C:C6	2.48	0.49
52:5:1471:C:H1'	52:5:1492:G:H22	1.77	0.49
8:E:3:TYR:OH	52:5:735:C:OP1	2.19	0.49
24:a:190:ARG:HD3	24:a:192:PHE:HE1	1.77	0.49
34:k:36:GLN:N	50:3:979:U:OP1	2.43	0.49
50:3:1077:G:N2	50:3:1148:U:O2	2.45	0.49
50:3:1111:C:H2'	50:3:1112:A:C8	2.48	0.49
50:3:1326:C:O2'	50:3:1330:U:OP1	2.29	0.49
50:3:1972:C:H3'	50:3:1973:U:H2'	1.94	0.49
50:3:2072:C:C2	50:3:2073:C:C5	3.01	0.49
50:3:2568:G:H2'	50:3:2569:A:H8	1.76	0.49
52:5:612:G:N2	52:5:624:U:O2	2.33	0.49
52:5:933:A:N3	52:5:1351:U:O2'	2.41	0.49
52:5:1112:U:O2	52:5:1128:G:N2	2.37	0.49
52:5:1367:G:O2'	52:5:1368:U:O4'	2.25	0.49
7:D:96:ASN:O	7:D:98:LYS:NZ	2.36	0.49
15:L:101:ARG:HG2	52:5:945:U:OP2	2.12	0.49
29:f:62:LYS:O	29:f:66:HIS:ND1	2.45	0.49
29:f:102:HIS:ND1	50:3:166:A:N7	2.59	0.49
30:g:88:GLU:OE1	30:g:113:PHE:CZ	2.66	0.49
45:v:21:SER:HB2	50:3:2086:U:O3'	2.13	0.49
50:3:140:G:N2	50:3:142:A:H3'	2.28	0.49
50:3:294:G:H2'	50:3:295:U:C5	2.48	0.49
50:3:341:G:N2	50:3:343:A:H3'	2.27	0.49
50:3:710:A:N7	50:3:838:U:C2	2.81	0.49
50:3:840:G:H5'	50:3:841:C:C5	2.47	0.49
50:3:892:G:H1	50:3:958:C:H42	1.59	0.49
50:3:1855:A:H2'	50:3:1856:G:O4'	2.13	0.49
50:3:2705:G:H2'	50:3:2706:U:H6	1.76	0.49
50:3:2828:C:H2'	50:3:2829:G:O4'	2.12	0.49
50:3:2853:U:N3	50:3:2871:G:OP2	2.45	0.49
52:5:22:G:H2'	52:5:23:G:C8	2.47	0.49
52:5:744:U:H5'	52:5:745:U:OP1	2.13	0.49
52:5:1391:A:H2'	52:5:1392:A:O4'	2.13	0.49
9:F:142:LYS:HA	9:F:145:GLU:HG2	1.95	0.49
13:J:111:HIS:CD2	52:5:672:A:H1'	2.47	0.49
17:N:29:LEU:O	17:N:33:ILE:HG12	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:a:14:ILE:HG12	50:3:1780:A:N1	2.27	0.49
25:b:24:LEU:HD21	25:b:182:VAL:HG22	1.95	0.49
25:b:161:LYS:HE2	50:3:2627:U:OP1	2.13	0.49
27:d:123:ASP:N	27:d:127:ASN:O	2.28	0.49
32:i:63:ASP:HB3	32:i:129:LYS:HE2	1.93	0.49
34:k:129:HIS:HA	34:k:149:LEU:HB2	1.94	0.49
36:m:56:ASN:H	36:m:59:ASN:HB2	1.77	0.49
39:p:1:MET:HA	50:3:481:C:H5''	1.94	0.49
48:y:40:HIS:NE2	50:3:2887:A:H4'	2.28	0.49
50:3:130:C:H2'	50:3:131:C:C6	2.48	0.49
50:3:199:A:H2'	50:3:202:C:N4	2.28	0.49
50:3:231:A:H2'	50:3:2415:A:H4'	1.94	0.49
50:3:321:A:H2'	50:3:322:A:H8	1.77	0.49
50:3:460:G:H2'	50:3:461:C:C6	2.48	0.49
50:3:712:A:H2'	50:3:713:C:C6	2.47	0.49
50:3:1317:C:H2'	50:3:1318:U:H6	1.78	0.49
50:3:2119:A:H2'	50:3:2120:G:O4'	2.13	0.49
50:3:2332:U:H3'	50:3:2333:G:H4'	1.94	0.49
50:3:2358:U:H2'	50:3:2359:G:O4'	2.13	0.49
50:3:2870:U:C2	50:3:2872:A:H1'	2.47	0.49
52:5:152:U:H2'	52:5:153:A:H8	1.74	0.49
52:5:598:U:O2	52:5:635:G:N2	2.40	0.49
52:5:694:U:HO2'	52:5:782:G:HO2'	1.60	0.49
52:5:972:A:O2'	52:5:974:C:OP2	2.27	0.49
52:5:1223:A:H2'	52:5:1224:C:C6	2.47	0.49
52:5:1237:G:O6	52:5:1248:U:O4	2.31	0.49
52:5:1477:A:N6	52:5:1480:G:H1	2.10	0.49
53:7:66:C:H2'	53:7:67:C:C6	2.48	0.49
53:8:23:G:H2'	53:8:24:A:H5''	1.93	0.49
32:i:79:HIS:ND1	50:3:2649:G:OP1	2.43	0.49
41:r:26:GLY:H	41:r:71:VAL:HB	1.78	0.49
50:3:311:G:N1	50:3:396:A:N7	2.61	0.49
50:3:871:G:H2'	50:3:872:C:C6	2.47	0.49
50:3:1798:A:N6	50:3:1835:G:O3'	2.43	0.49
50:3:1802:C:H2'	50:3:1803:U:H6	1.78	0.49
50:3:1912:C:H4'	50:3:1936:G:H8	1.78	0.49
50:3:2655:U:H2'	50:3:2656:G:H8	1.78	0.49
50:3:2816:A:H2'	50:3:2817:G:C8	2.47	0.49
52:5:7:U:H5''	52:5:294:A:O4'	2.13	0.49
52:5:896:G:H2'	52:5:897:A:C8	2.47	0.49
52:5:1223:A:N6	52:5:1264:G:N7	2.61	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:45:SER:OG	50:3:127:A:N7	2.34	0.49
8:E:132:VAL:HG22	52:5:836:C:O2	2.13	0.49
10:G:13:ASP:N	10:G:13:ASP:OD1	2.45	0.49
17:N:30:THR:O	17:N:34:LYS:HG2	2.13	0.49
24:a:57:HIS:NE2	50:3:1830:G:OP2	2.45	0.49
24:a:73:ARG:HH22	24:a:121:ILE:HD12	1.77	0.49
24:a:213:ILE:HG23	24:a:218:ARG:HG2	1.95	0.49
26:c:6:LEU:HD13	26:c:127:LEU:HG	1.95	0.49
26:c:112:LEU:O	26:c:115:VAL:HG12	2.13	0.49
39:p:54:ARG:HD3	50:3:1190:A:H5'	1.94	0.49
48:y:4:GLN:HA	50:3:2623:U:C4	2.47	0.49
50:3:137:U:O4	50:3:146:G:O6	2.30	0.49
50:3:293:G:H2'	50:3:294:G:N3	2.27	0.49
50:3:474:U:H2'	50:3:475:A:C8	2.47	0.49
50:3:775:C:H5'	50:3:1791:A:H2'	1.94	0.49
50:3:1162:A:O2'	50:3:2526:A:OP1	2.22	0.49
50:3:1288:C:H2'	50:3:1289:G:H8	1.77	0.49
50:3:2005:G:HO2'	50:3:2732:A:HO2'	1.52	0.49
50:3:2584:G:O2'	50:3:2587:U:OP2	2.29	0.49
50:3:2750:A:H2'	50:3:2751:C:H6	1.78	0.49
52:5:372:G:O6	52:5:383:U:O4	2.31	0.49
52:5:1401:A:H2'	52:5:1402:U:H6	1.77	0.49
52:5:1417:U:H2'	52:5:1418:G:C8	2.47	0.49
7:D:142:GLY:O	7:D:148:ARG:HA	2.13	0.48
9:F:41:ILE:HD12	9:F:116:LEU:HD21	1.93	0.48
11:H:16:SER:OG	52:5:1124:U:O2'	2.26	0.48
21:R:54:GLY:O	52:5:1195:G:N2	2.47	0.48
25:b:159:VAL:O	50:3:2626:A:O2'	2.18	0.48
34:k:20:LEU:HD22	50:3:620:G:C6	2.48	0.48
43:t:42:VAL:HG23	43:t:65:GLN:HE22	1.78	0.48
46:w:26:LEU:O	46:w:30:ARG:HG3	2.13	0.48
50:3:193:G:H1	50:3:209:G:HO2'	1.56	0.48
50:3:410:G:H1'	50:3:411:U:OP2	2.13	0.48
50:3:841:C:OP1	50:3:865:A:O2'	2.27	0.48
50:3:1027:U:H2'	50:3:1028:C:C6	2.48	0.48
50:3:2057:C:H42	50:3:2626:A:N6	2.07	0.48
50:3:2093:U:H2'	50:3:2094:A:H8	1.75	0.48
50:3:2308:U:H2'	50:3:2309:A:C8	2.45	0.48
50:3:2483:C:N4	50:3:2537:G:N2	2.51	0.48
52:5:663:G:H5'	52:5:723:C:H1'	1.95	0.48
52:5:1170:C:H2'	52:5:1172:A:H8	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:111:ARG:NE	52:5:1091:C:OP1	2.37	0.48
6:C:55:GLN:HG2	6:C:59:ARG:HD3	1.96	0.48
8:E:43:LYS:HZ1	20:Q:98:LEU:HA	1.78	0.48
8:E:50:LYS:NZ	8:E:52:GLN:OE1	2.45	0.48
9:F:115:MET:SD	52:5:1214:A:H5'	2.53	0.48
14:K:112:ARG:HD3	14:K:117:THR:HB	1.94	0.48
22:S:28:LEU:HD11	22:S:47:VAL:HG13	1.94	0.48
26:c:83:HIS:HB2	50:3:1286:G:H21	1.78	0.48
37:n:32:VAL:HG12	37:n:41:VAL:HG12	1.93	0.48
42:s:36:SER:O	42:s:40:VAL:HG23	2.14	0.48
50:3:612:G:H2'	50:3:613:C:C6	2.48	0.48
50:3:648:G:OP1	50:3:648:G:N2	2.45	0.48
50:3:730:G:H2'	50:3:731:A:H8	1.78	0.48
50:3:1026:A:H5''	50:3:1192:U:OP1	2.12	0.48
50:3:1058:U:H3'	50:3:1059:G:C8	2.48	0.48
50:3:1361:U:H2'	50:3:1362:C:C6	2.47	0.48
50:3:1697:C:HO2'	50:3:1698:A:H8	1.59	0.48
50:3:2054:C:O2'	50:3:2827:A:N1	2.41	0.48
50:3:2676:G:H2'	50:3:2677:A:C8	2.48	0.48
50:3:2879:U:H2'	50:3:2880:A:C8	2.47	0.48
52:5:360:A:O2'	52:5:361:U:H5'	2.14	0.48
52:5:955:U:H2'	52:5:1200:G:O6	2.12	0.48
52:5:1125:C:H2'	52:5:1126:U:C6	2.47	0.48
52:5:1447:U:H2'	52:5:1448:A:C8	2.48	0.48
8:E:4:ASN:HB3	8:E:88:ILE:HB	1.94	0.48
10:G:99:ARG:HH11	10:G:103:LYS:HB3	1.77	0.48
25:b:4:ARG:HH12	25:b:89:GLY:H	1.62	0.48
41:r:131:GLY:HA2	41:r:134:LYS:HD3	1.94	0.48
42:s:24:THR:HG22	42:s:87:LYS:HG2	1.94	0.48
48:y:31:GLN:HG2	50:3:2889:U:C2	2.48	0.48
50:3:156:A:H2'	50:3:157:U:C6	2.49	0.48
50:3:190:G:H2'	50:3:191:G:C8	2.48	0.48
50:3:495:U:H2'	50:3:496:A:H8	1.78	0.48
50:3:763:G:O2'	50:3:765:A:O4'	2.31	0.48
50:3:843:G:H2'	50:3:844:G:C8	2.48	0.48
50:3:1675:A:H2'	50:3:1676:G:C8	2.49	0.48
50:3:1777:G:H2'	50:3:1778:G:C8	2.48	0.48
50:3:1932:C:H2'	50:3:1933:U:C6	2.48	0.48
50:3:2141:A:N7	50:3:2164:G:C2	2.82	0.48
50:3:2150:C:N3	50:3:2151:G:N2	2.61	0.48
52:5:491:U:H2'	52:5:492:G:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:503:G:H2'	52:5:504:A:H8	1.77	0.48
52:5:764:A:H1'	52:5:1500:G:H1'	1.95	0.48
52:5:1351:U:H2'	52:5:1352:A:C8	2.47	0.48
13:J:64:ALA:O	13:J:68:LYS:HG2	2.13	0.48
21:R:18:LYS:HD2	21:R:18:LYS:HA	1.64	0.48
34:k:77:TRP:HA	34:k:110:LEU:HG	1.94	0.48
40:q:64:LEU:HB3	40:q:86:ARG:HE	1.79	0.48
50:3:291:G:C2	50:3:292:G:N7	2.81	0.48
50:3:687:G:H2'	50:3:687:G:N3	2.28	0.48
50:3:941:C:H2'	50:3:942:A:H8	1.78	0.48
50:3:1008:A:OP1	50:3:1010:G:H3'	2.13	0.48
50:3:2898:A:N3	50:3:2898:A:H2'	2.28	0.48
52:5:298:G:H2'	52:5:299:U:O4'	2.13	0.48
52:5:733:A:H2'	52:5:734:A:C8	2.48	0.48
52:5:766:G:OP1	52:5:800:G:O2'	2.28	0.48
52:5:879:G:H2'	52:5:880:G:H8	1.79	0.48
52:5:1072:G:H2'	52:5:1073:A:C8	2.49	0.48
52:5:1242:U:H2'	52:5:1243:A:C2	2.48	0.48
52:5:1322:U:O2	52:5:1349:A:N7	2.47	0.48
8:E:43:LYS:NZ	20:Q:98:LEU:HA	2.28	0.48
11:H:15:SER:HB2	11:H:72:GLY:HA3	1.94	0.48
14:K:3:THR:HG21	52:5:873:U:C5	2.49	0.48
14:K:12:ARG:HD2	52:5:560:U:H1'	1.94	0.48
22:S:63:ASN:ND2	52:5:259:A:H5'	2.29	0.48
50:3:335:G:O2'	50:3:336:C:O5'	2.30	0.48
50:3:404:C:H2'	50:3:405:C:C6	2.49	0.48
50:3:920:G:H22	50:3:930:C:H2'	1.79	0.48
50:3:1095:U:O4'	50:3:1097:G:H5'	2.13	0.48
50:3:1853:G:H2'	50:3:1854:A:C8	2.48	0.48
50:3:2203:U:H2'	50:3:2204:C:C6	2.48	0.48
50:3:2346:G:H2'	50:3:2347:G:H8	1.78	0.48
50:3:2495:A:H2'	50:3:2496:G:C8	2.48	0.48
50:3:2744:A:H2'	50:3:2745:G:H8	1.79	0.48
51:4:85:A:H2'	51:4:86:G:C8	2.47	0.48
52:5:68:C:O2'	52:5:157:A:N3	2.42	0.48
52:5:232:G:H2'	52:5:233:C:C6	2.48	0.48
52:5:331:C:H2'	52:5:332:A:C8	2.49	0.48
52:5:383:U:H2'	52:5:385:A:C8	2.49	0.48
52:5:445:A:H3'	52:5:446:A:H8	1.78	0.48
52:5:456:U:H2'	52:5:457:A:C8	2.48	0.48
52:5:653:G:H2'	52:5:654:U:C6	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:677:C:H2'	52:5:678:A:C8	2.48	0.48
52:5:1001:A:H62	52:5:1019:G:H21	1.61	0.48
52:5:1043:U:C4	52:5:1181:G:O6	2.65	0.48
4:A:132:LYS:O	4:A:135:GLU:HG2	2.13	0.48
24:a:82:THR:HA	24:a:120:LYS:HG2	1.96	0.48
25:b:29:ILE:HD13	25:b:205:VAL:HG11	1.94	0.48
27:d:148:ARG:NH1	27:d:150:ARG:HD3	2.27	0.48
43:t:41:LYS:NZ	43:t:66:GLU:OE2	2.40	0.48
50:3:204:U:O2	50:3:424:G:N2	2.30	0.48
50:3:650:G:H2'	50:3:651:A:H8	1.79	0.48
50:3:697:U:H2'	50:3:698:A:H8	1.77	0.48
50:3:724:A:H2'	50:3:725:G:C8	2.47	0.48
50:3:1106:G:O2'	50:3:1124:G:N7	2.45	0.48
50:3:1135:C:H2'	50:3:1136:U:O4'	2.13	0.48
50:3:1406:A:O2'	50:3:1408:G:OP2	2.32	0.48
50:3:1444:C:C2	50:3:1616:G:N2	2.82	0.48
50:3:1687:G:OP1	50:3:2826:G:N2	2.41	0.48
50:3:1871:U:OP1	50:3:2418:G:O2'	2.29	0.48
50:3:2068:G:N7	50:3:2511:A:H1'	2.28	0.48
50:3:2120:G:H2'	50:3:2121:A:O4'	2.14	0.48
50:3:2134:G:H2'	50:3:2135:C:H6	1.78	0.48
50:3:2323:U:H2'	50:3:2324:A:H8	1.79	0.48
50:3:2664:U:H2'	50:3:2665:A:C8	2.48	0.48
52:5:69:G:C2	52:5:137:A:N1	2.81	0.48
52:5:201:G:H2'	52:5:202:A:H8	1.78	0.48
52:5:796:A:H2'	52:5:797:G:O4'	2.13	0.48
52:5:922:G:O2'	52:5:1478:A:N7	2.35	0.48
52:5:1390:G:H2'	52:5:1391:A:C8	2.48	0.48
52:5:1454:G:H2'	52:5:1455:G:C8	2.48	0.48
4:A:104:ASP:OD1	4:A:104:ASP:N	2.45	0.48
5:B:50:ASN:OD1	5:B:51:ALA:N	2.43	0.48
9:F:110:ARG:HG2	9:F:111:HIS:H	1.78	0.48
10:G:47:ILE:HA	10:G:50:LYS:HE2	1.95	0.48
16:M:23:ARG:NH1	52:5:977:U:OP2	2.47	0.48
20:Q:80:GLN:HG3	52:5:831:C:H5''	1.95	0.48
20:Q:81:MET:HE1	52:5:660:A:H5''	1.96	0.48
22:S:11:LEU:HA	22:S:14:ASN:ND2	2.29	0.48
32:i:117:LEU:HD21	50:3:590:U:H4'	1.96	0.48
50:3:382:U:H2'	50:3:383:U:O4'	2.13	0.48
50:3:615:G:H2'	50:3:616:G:C8	2.49	0.48
50:3:734:A:H2'	50:3:735:G:O4'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:850:G:H2'	50:3:851:U:C6	2.49	0.48
50:3:1152:U:H2'	50:3:1153:U:H6	1.78	0.48
50:3:1299:A:H2'	50:3:1300:C:C6	2.49	0.48
50:3:2425:C:H2'	50:3:2426:A:C8	2.49	0.48
50:3:2500:U:H2'	50:3:2501:U:C6	2.49	0.48
50:3:2848:A:H2'	50:3:2849:G:H8	1.77	0.48
52:5:420:A:H3'	52:5:421:G:H8	1.76	0.48
52:5:519:G:O2'	52:5:534:C:O2'	2.29	0.48
52:5:708:A:H2'	52:5:709:A:C8	2.49	0.48
52:5:821:U:H2'	52:5:822:A:C8	2.49	0.48
52:5:889:U:H2'	52:5:890:U:C6	2.48	0.48
52:5:1065:G:H2'	52:5:1066:U:H6	1.79	0.48
53:8:66:C:H2'	53:8:67:C:C6	2.48	0.48
6:C:97:LEU:HB3	6:C:132:PRO:HA	1.96	0.48
12:I:68:ARG:HH22	52:5:1342:C:H5'	1.79	0.48
14:K:39:TYR:HB2	52:5:551:A:O2'	2.13	0.48
25:b:139:TYR:HB2	25:b:140:PRO:HD3	1.95	0.48
50:3:60:G:H2'	50:3:61:U:H6	1.78	0.48
50:3:134:U:H2'	50:3:135:A:C8	2.48	0.48
50:3:535:G:N1	50:3:538:A:OP2	2.26	0.48
50:3:597:C:H2'	50:3:598:G:H8	1.78	0.48
50:3:728:A:H2'	50:3:729:U:C6	2.49	0.48
50:3:1082:A:H2'	50:3:1145:G:C5	2.49	0.48
50:3:1475:C:H2'	50:3:1476:C:C6	2.49	0.48
50:3:2087:G:H2'	50:3:2088:U:O4'	2.13	0.48
50:3:2303:U:O2	50:3:2345:G:N2	2.44	0.48
50:3:2850:G:H2'	50:3:2851:U:O4'	2.13	0.48
52:5:512:U:H2'	52:5:513:G:H8	1.79	0.48
52:5:922:G:N2	52:5:1507:U:OP1	2.46	0.48
36:m:50:THR:HG21	50:3:2844:U:H5''	1.94	0.48
37:n:14:ARG:HA	37:n:17:LYS:HE3	1.95	0.48
50:3:152:A:H2'	50:3:153:U:C6	2.48	0.48
50:3:230:G:O2'	50:3:231:A:O4'	2.22	0.48
50:3:1773:A:H2'	50:3:1774:G:C8	2.49	0.48
50:3:1852:G:H2'	50:3:1853:G:H8	1.78	0.48
50:3:2455:G:C8	50:3:2508:U:C5	3.01	0.48
50:3:2596:A:H2'	50:3:2597:A:C8	2.49	0.48
50:3:2861:G:N2	50:3:2864:A:OP2	2.36	0.48
52:5:663:G:H2'	52:5:664:A:C8	2.48	0.48
52:5:1263:A:H2'	52:5:1264:G:H5'	1.95	0.48
52:5:1500:G:H2'	52:5:1501:G:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:8:35:G:H2'	53:8:36:A:C8	2.48	0.48
12:I:61:PRO:O	16:M:41:ARG:NH1	2.47	0.48
17:N:18:ASP:HA	52:5:747:C:H4'	1.96	0.48
22:S:26:THR:HG22	52:5:1432:A:H5''	1.96	0.48
24:a:267:THR:OG1	50:3:1804:A:O2'	2.30	0.48
33:j:30:LYS:O	33:j:31:ARG:HG2	2.13	0.48
33:j:97:ARG:NH1	52:5:333:U:OP2	2.47	0.48
39:p:107:LEU:O	39:p:111:LYS:HB2	2.14	0.48
49:z:31:LYS:HB2	49:z:49:GLU:HB2	1.95	0.48
50:3:276:A:H62	50:3:294:G:H21	1.61	0.48
50:3:1076:U:O2	50:3:1149:G:C2	2.66	0.48
50:3:2073:C:H2'	50:3:2074:G:C8	2.49	0.48
50:3:2224:A:H2'	50:3:2225:G:H8	1.79	0.48
50:3:2353:G:H1'	50:3:2390:G:H5'	1.94	0.48
50:3:2419:A:H2'	50:3:2420:A:C8	2.48	0.48
52:5:197:A:H1'	52:5:218:U:O2'	2.14	0.48
53:7:43:G:H2'	53:7:44:U:H5''	1.96	0.48
4:A:145:THR:HG23	4:A:148:GLU:H	1.78	0.47
4:A:146:LYS:O	4:A:150:LEU:HG	2.14	0.47
8:E:162:LYS:HG2	8:E:163:MET:H	1.78	0.47
14:K:128:SER:OG	52:5:36:G:N2	2.47	0.47
25:b:198:ALA:HB2	50:3:2687:A:H4'	1.95	0.47
33:j:31:ARG:NH2	50:3:2684:G:OP1	2.46	0.47
33:j:43:VAL:HB	33:j:54:LYS:HA	1.96	0.47
38:o:12:LEU:O	38:o:16:LYS:NZ	2.46	0.47
41:r:35:ILE:HD13	48:y:27:LEU:HD21	1.95	0.47
50:3:557:G:N2	50:3:587:U:H4'	2.29	0.47
50:3:648:G:H21	50:3:648:G:P	2.37	0.47
50:3:829:A:H2'	50:3:830:A:C8	2.49	0.47
50:3:1212:C:H2'	50:3:1213:U:C6	2.49	0.47
50:3:2102:U:H2'	50:3:2103:C:C6	2.49	0.47
50:3:2521:A:H2'	50:3:2522:U:C6	2.49	0.47
50:3:2663:G:N2	50:3:2664:U:O4	2.44	0.47
50:3:2832:G:H2'	50:3:2833:A:H8	1.78	0.47
52:5:580:C:N3	52:5:756:A:N7	2.61	0.47
52:5:688:G:N2	52:5:692:A:H3'	2.29	0.47
52:5:778:A:H3'	52:5:779:A:H8	1.78	0.47
52:5:912:G:H2'	52:5:913:A:C8	2.49	0.47
52:5:1180:U:H2'	52:5:1181:G:C8	2.48	0.47
52:5:1361:G:H2'	52:5:1362:G:H8	1.79	0.47
52:5:1492:G:H2'	52:5:1493:A:C8	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:8:43:G:H2'	53:8:44:U:H5''	1.96	0.47
4:A:83:LEU:HD22	4:A:176:LEU:HB2	1.96	0.47
14:K:61:ALA:HB2	52:5:527:G:N1	2.29	0.47
20:Q:57:LEU:O	20:Q:61:LYS:HG3	2.14	0.47
25:b:62:LEU:HB3	25:b:67:GLN:HB2	1.96	0.47
34:k:126:PHE:HE2	34:k:139:VAL:HG21	1.79	0.47
35:l:36:ALA:HB1	35:l:127:VAL:HG21	1.96	0.47
37:n:4:ARG:HD2	51:4:45:C:OP2	2.14	0.47
39:p:54:ARG:HH12	50:3:1013:G:H5'	1.77	0.47
40:q:65:GLN:HG3	40:q:89:TYR:HD1	1.79	0.47
43:t:11:VAL:HG13	43:t:77:PHE:HB2	1.95	0.47
50:3:63:U:N3	50:3:97:A:N3	2.62	0.47
50:3:607:U:H4'	50:3:608:A:H5''	1.95	0.47
50:3:670:G:H2'	50:3:671:C:C6	2.49	0.47
50:3:1341:U:H2'	50:3:1644:A:C2	2.49	0.47
50:3:1470:C:H2'	50:3:1471:A:C8	2.49	0.47
50:3:1772:G:H2'	50:3:1773:A:C8	2.49	0.47
50:3:2023:U:H4'	50:3:2064:G:H4'	1.96	0.47
50:3:2725:G:H2'	50:3:2726:G:O4'	2.13	0.47
50:3:2750:A:H2'	50:3:2751:C:C6	2.49	0.47
52:5:87:G:H2'	52:5:88:A:C8	2.49	0.47
52:5:657:G:O6	52:5:743:A:N6	2.47	0.47
52:5:1234:C:O2'	52:5:1258:U:O2	2.21	0.47
52:5:1279:G:H21	52:5:1306:A:H2	1.61	0.47
52:5:1397:G:H2'	52:5:1398:G:C8	2.49	0.47
52:5:1495:C:H2'	52:5:1496:G:C8	2.39	0.47
18:O:54:ASN:O	52:5:123:U:O2'	2.32	0.47
24:a:13:GLY:C	50:3:764:G:H22	2.22	0.47
24:a:190:ARG:HG3	24:a:278:ILE:HD13	1.96	0.47
28:e:106:LEU:HD21	28:e:126:VAL:HG21	1.97	0.47
30:g:96:VAL:O	30:g:100:VAL:HG23	2.13	0.47
36:m:20:GLN:NE2	50:3:1305:G:N3	2.63	0.47
37:n:5:THR:HG21	51:4:27:A:H4'	1.97	0.47
42:s:9:LYS:HG2	46:w:34:ALA:HB2	1.95	0.47
43:t:23:ILE:H	43:t:37:GLU:HG2	1.79	0.47
50:3:676:U:H2'	50:3:677:U:C6	2.49	0.47
50:3:870:A:C2'	50:3:871:G:H5'	2.45	0.47
50:3:1035:U:H5'	50:3:1189:G:O6	2.14	0.47
50:3:1260:U:H2'	50:3:1261:U:C6	2.49	0.47
50:3:1639:C:H2'	50:3:1642:G:H21	1.80	0.47
50:3:1906:G:H4'	50:3:1908:A:H5''	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2451:C:H2'	50:3:2452:G:C8	2.48	0.47
50:3:2764:U:H1'	50:3:2765:A:H5''	1.95	0.47
51:4:85:A:H2'	51:4:86:G:H8	1.78	0.47
52:5:94:A:C8	52:5:322:G:H2'	2.50	0.47
52:5:314:G:H2'	52:5:315:G:H8	1.79	0.47
52:5:424:U:OP2	52:5:425:G:O2'	2.30	0.47
52:5:715:A:H5''	52:5:717:C:N4	2.29	0.47
52:5:721:G:OP2	52:5:848:U:O2'	2.33	0.47
53:7:35:G:H2'	53:7:36:A:C8	2.48	0.47
4:A:87:THR:HG21	4:A:111:ARG:HB3	1.97	0.47
4:A:179:ASP:OD1	4:A:180:ASP:N	2.48	0.47
13:J:77:LEU:HB3	13:J:103:ILE:HA	1.97	0.47
20:Q:58:GLU:O	20:Q:62:ARG:HG2	2.15	0.47
20:Q:103:LYS:H	20:Q:103:LYS:HD2	1.79	0.47
25:b:209:THR:O	25:b:211:LYS:NZ	2.47	0.47
26:c:189:ARG:NH1	50:3:650:G:O2'	2.45	0.47
41:r:6:LYS:O	50:3:529:G:H4'	2.14	0.47
41:r:131:GLY:O	41:r:134:LYS:HG2	2.14	0.47
50:3:117:C:O2'	50:3:127:A:H1'	2.14	0.47
50:3:590:U:H2'	50:3:591:G:H8	1.78	0.47
50:3:680:A:H2'	50:3:682:A:C8	2.50	0.47
50:3:897:A:C4	50:3:898:A:C8	3.02	0.47
50:3:955:A:O2'	51:4:78:C:O2'	2.29	0.47
50:3:1355:C:O2'	50:3:1356:G:O4'	2.31	0.47
50:3:1380:U:C2	50:3:1406:A:N7	2.83	0.47
50:3:1479:A:H4'	50:3:1480:A:C5	2.50	0.47
50:3:1806:G:N2	50:3:1825:U:O2'	2.45	0.47
50:3:1862:A:H2'	50:3:1863:G:H8	1.80	0.47
50:3:2169:G:H5''	50:3:2170:A:H3'	1.96	0.47
50:3:2640:A:H2'	50:3:2641:A:C8	2.50	0.47
50:3:2696:G:N2	50:3:2728:U:OP2	2.38	0.47
51:4:32:G:N7	51:4:42:G:O2'	2.45	0.47
52:5:905:U:H2'	52:5:906:C:C6	2.49	0.47
52:5:955:U:O2'	52:5:1198:C:H5'	2.14	0.47
52:5:1482:A:H2'	52:5:1483:C:C6	2.50	0.47
53:7:63:U:H2'	53:7:64:G:C8	2.49	0.47
2:1:3:VAL:H	50:3:246:G:H2'	1.79	0.47
4:A:27:ARG:HH12	4:A:254:ILE:HA	1.80	0.47
4:A:108:ILE:HG22	4:A:110:GLN:H	1.80	0.47
8:E:124:ASN:HB3	8:E:127:ASN:HB2	1.95	0.47
9:F:62:GLU:HA	9:F:65:VAL:HG12	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:K:28:LEU:HD12	14:K:72:ASN:HA	1.96	0.47
15:L:12:GLN:H	15:L:46:LYS:HB3	1.79	0.47
25:b:218:LYS:NZ	25:b:219:PRO:O	2.47	0.47
32:i:76:PHE:HA	32:i:90:VAL:O	2.14	0.47
34:k:28:LEU:O	34:k:32:SER:OG	2.32	0.47
50:3:1472:C:H2'	50:3:1473:C:O4'	2.13	0.47
50:3:1833:G:O2'	50:3:1978:U:OP2	2.33	0.47
50:3:1867:G:H2'	50:3:1868:A:O4'	2.14	0.47
50:3:1871:U:H3	50:3:1885:G:H1	1.59	0.47
50:3:1984:A:H2'	50:3:1985:A:H8	1.78	0.47
50:3:2123:A:H2	50:3:2174:G:H21	1.62	0.47
50:3:2337:U:H2'	50:3:2338:G:C8	2.49	0.47
50:3:2422:G:C2	50:3:2423:G:C8	3.03	0.47
50:3:2607:G:H2'	50:3:2608:A:H8	1.80	0.47
50:3:2799:U:H5	50:3:2810:A:C5	2.32	0.47
52:5:98:G:H1'	52:5:350:G:H5''	1.96	0.47
52:5:449:A:H4'	52:5:450:U:H6	1.80	0.47
52:5:450:U:H3'	52:5:451:G:H8	1.79	0.47
52:5:1062:C:H2'	52:5:1063:G:H8	1.78	0.47
52:5:1093:A:H2'	52:5:1094:C:C6	2.49	0.47
5:B:6:ASN:O	5:B:10:LEU:N	2.48	0.47
6:C:79:LEU:O	6:C:82:ARG:NH1	2.47	0.47
10:G:44:ILE:HG13	10:G:122:VAL:HG11	1.96	0.47
16:M:14:PRO:HG3	16:M:20:ALA:HB2	1.96	0.47
24:a:154:PRO:HD2	50:3:2212:U:H1'	1.96	0.47
25:b:111:SER:HB3	25:b:173:LYS:HE3	1.96	0.47
26:c:30:LYS:HG3	26:c:110:ALA:HB1	1.95	0.47
31:h:129:LYS:HG2	50:3:1113:U:OP1	2.14	0.47
36:m:50:THR:HA	36:m:53:LYS:HZ3	1.80	0.47
50:3:248:A:H2'	50:3:249:G:O4'	2.15	0.47
50:3:500:U:H3'	50:3:501:G:H8	1.80	0.47
50:3:618:G:O6	50:3:1281:A:O2'	2.20	0.47
50:3:1507:G:O2'	50:3:1508:G:P	2.72	0.47
50:3:1529:U:H2'	50:3:1530:G:C8	2.50	0.47
50:3:1852:G:H2'	50:3:1853:G:C8	2.50	0.47
50:3:2013:C:H2'	50:3:2014:U:C6	2.48	0.47
50:3:2048:U:H2'	50:3:2049:A:C8	2.50	0.47
50:3:2508:U:O2	50:3:2512:U:N3	2.48	0.47
50:3:2576:A:H2'	50:3:2577:G:H8	1.80	0.47
52:5:186:A:O2'	52:5:187:A:O4'	2.29	0.47
52:5:371:U:H2'	52:5:372:G:C8	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:486:C:H2'	52:5:487:A:C8	2.49	0.47
52:5:554:C:H2'	52:5:555:G:C8	2.49	0.47
52:5:589:U:H2'	52:5:590:G:C8	2.47	0.47
52:5:1193:U:H2'	52:5:1194:A:C8	2.49	0.47
6:C:82:ARG:HH21	52:5:611:A:H5''	1.80	0.47
7:D:208:VAL:HG11	10:G:111:LEU:HD23	1.97	0.47
11:H:115:ARG:O	11:H:117:LYS:NZ	2.36	0.47
15:L:45:VAL:HG12	15:L:47:ASP:H	1.80	0.47
16:M:32:ALA:HB2	52:5:969:A:OP2	2.14	0.47
25:b:109:ASP:OD1	25:b:208:ARG:HG3	2.14	0.47
26:c:175:ILE:HG13	26:c:177:ASN:H	1.79	0.47
27:d:123:ASP:OD1	50:3:2322:G:N2	2.48	0.47
30:g:87:ASN:ND2	30:g:87:ASN:C	2.73	0.47
32:i:131:ASP:OD1	32:i:131:ASP:N	2.46	0.47
39:p:57:ARG:NE	50:3:1033:A:OP2	2.47	0.47
39:p:60:TRP:CD1	39:p:63:ARG:HH21	2.32	0.47
41:r:61:ASN:O	50:3:531:G:O2'	2.32	0.47
44:u:29:ASP:HA	50:3:2270:U:O4	2.15	0.47
44:u:68:GLY:O	44:u:71:ASP:N	2.47	0.47
46:w:48:ARG:HH12	50:3:62:G:H5''	1.79	0.47
50:3:30:A:H62	50:3:547:G:N2	2.12	0.47
50:3:92:U:OP2	50:3:93:A:O2'	2.30	0.47
50:3:161:U:H2'	50:3:162:G:O4'	2.14	0.47
50:3:981:A:N6	50:3:2455:G:OP1	2.48	0.47
50:3:1096:U:C2	50:3:1132:C:H4'	2.50	0.47
50:3:1237:G:H2'	50:3:1238:A:H8	1.79	0.47
50:3:1297:U:HO2'	50:3:1298:A:P	2.38	0.47
50:3:2036:G:N2	50:3:2040:A:OP2	2.45	0.47
50:3:2224:A:H2'	50:3:2225:G:C8	2.49	0.47
50:3:2322:G:H2'	50:3:2323:U:C6	2.50	0.47
50:3:2447:A:N7	50:3:2594:C:H4'	2.29	0.47
50:3:2639:G:H2'	50:3:2640:A:C8	2.49	0.47
51:4:32:G:N2	51:4:34:U:O4	2.48	0.47
52:5:201:G:H2'	52:5:202:A:C8	2.50	0.47
52:5:217:U:H2'	52:5:218:U:O4'	2.15	0.47
52:5:373:A:H2'	52:5:374:G:C8	2.50	0.47
52:5:511:A:H2'	52:5:512:U:H6	1.79	0.47
52:5:687:G:H21	52:5:694:U:H5	1.63	0.47
52:5:717:C:H2'	52:5:718:A:N7	2.30	0.47
52:5:947:U:H3	52:5:1204:A:H61	1.63	0.47
52:5:1347:U:H2'	52:5:1348:G:O4'	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:1505:G:H2'	52:5:1506:A:H8	1.80	0.47
4:A:69:TYR:CE1	4:A:235:ALA:HB2	2.50	0.47
6:C:8:PHE:HE1	6:C:23:LYS:HG3	1.80	0.47
11:H:36:ASP:HB3	11:H:39:GLU:HG2	1.96	0.47
15:L:87:ARG:HH12	15:L:98:ARG:HH11	1.62	0.47
28:e:97:TYR:HA	28:e:109:GLN:O	2.15	0.47
36:m:33:THR:OG1	36:m:34:THR:N	2.48	0.47
39:p:36:GLN:O	39:p:40:GLN:HG2	2.15	0.47
50:3:9:G:H2'	50:3:10:U:C5	2.49	0.47
50:3:195:A:H2'	50:3:196:G:H8	1.79	0.47
50:3:561:A:H1'	50:3:2050:G:N2	2.30	0.47
50:3:604:A:O2'	50:3:606:G:O5'	2.33	0.47
50:3:1662:G:H2'	50:3:1663:G:C8	2.50	0.47
50:3:1702:A:O2'	50:3:1703:A:OP2	2.29	0.47
50:3:1858:U:O4	50:3:1898:G:O6	2.31	0.47
50:3:1864:A:O2'	50:3:1865:A:OP2	2.32	0.47
50:3:2234:C:H3'	50:3:2235:A:H8	1.79	0.47
50:3:2305:C:H41	50:3:2326:G:H2'	1.80	0.47
50:3:2462:G:H2'	50:3:2463:G:H8	1.80	0.47
50:3:2808:A:H2'	50:3:2809:A:C8	2.50	0.47
50:3:2828:C:O5'	50:3:2829:G:N2	2.48	0.47
51:4:29:C:H2'	51:4:30:U:O4'	2.15	0.47
52:5:514:U:H3'	52:5:515:G:C8	2.49	0.47
52:5:608:G:C4	52:5:609:G:C8	3.03	0.47
52:5:762:G:N1	52:5:809:G:O2'	2.46	0.47
52:5:1179:A:H2'	52:5:1180:U:O4'	2.14	0.47
7:D:71:VAL:HG21	7:D:93:VAL:HG12	1.95	0.47
9:F:93:ASP:OD1	9:F:93:ASP:N	2.45	0.47
10:G:48:LEU:HD23	10:G:54:LEU:HD22	1.97	0.47
11:H:26:ASP:OD1	11:H:29:LYS:NZ	2.48	0.47
25:b:25:PRO:HG2	50:3:2737:G:OP1	2.15	0.47
25:b:40:LYS:NZ	25:b:51:LEU:HB2	2.30	0.47
26:c:2:ALA:HB3	26:c:20:LEU:HB2	1.97	0.47
31:h:97:THR:HG23	31:h:100:LYS:H	1.80	0.47
37:n:11:ARG:O	37:n:14:ARG:HG2	2.15	0.47
37:n:110:ARG:NH2	50:3:2385:A:N3	2.58	0.47
50:3:630:C:H2'	50:3:631:A:C8	2.50	0.47
50:3:1260:U:C2	50:3:1261:U:C5	3.02	0.47
50:3:1633:C:H2'	50:3:1634:A:C8	2.50	0.47
50:3:1996:A:C2'	50:3:1997:C:H5'	2.45	0.47
50:3:2097:A:H2'	50:3:2098:U:O4'	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2640:A:H2'	50:3:2641:A:H8	1.79	0.47
50:3:2706:U:H2'	50:3:2707:A:H8	1.79	0.47
52:5:356:G:H2'	52:5:357:G:H8	1.80	0.47
52:5:870:A:H2'	52:5:871:U:C6	2.50	0.47
8:E:93:GLU:O	20:Q:50:ARG:HD2	2.14	0.47
11:H:71:GLY:HA2	52:5:1225:A:H4'	1.96	0.47
13:J:121:ARG:NH1	52:5:792:C:OP1	2.48	0.47
14:K:29:ASN:ND2	14:K:30:LEU:O	2.47	0.47
20:Q:94:ARG:HD3	20:Q:101:PHE:HA	1.97	0.47
21:R:28:LYS:O	21:R:47:ASN:ND2	2.47	0.47
25:b:70:PHE:HE2	25:b:76:LYS:O	1.97	0.47
26:c:55:LYS:HD3	50:3:836:G:C4	2.50	0.47
30:g:25:VAL:HG22	30:g:89:ILE:HG21	1.96	0.47
31:h:127:THR:N	50:3:1094:G:H21	2.13	0.47
33:j:97:ARG:HH21	52:5:334:A:H8	1.63	0.47
37:n:14:ARG:HH12	50:3:2342:U:H1'	1.80	0.47
41:r:7:GLN:NE2	41:r:10:VAL:HG13	2.29	0.47
46:w:84:VAL:O	46:w:88:LYS:HG3	2.15	0.47
48:y:6:ARG:HD2	50:3:2024:C:H4'	1.96	0.47
49:z:31:LYS:HE2	49:z:49:GLU:HB2	1.97	0.47
50:3:440:C:H5'	50:3:441:U:C2	2.49	0.47
50:3:1723:A:H2'	50:3:1724:A:C8	2.49	0.47
50:3:1961:A:O2'	50:3:1963:U:O4	2.26	0.47
50:3:2078:A:H2'	50:3:2079:G:C8	2.50	0.47
50:3:2848:A:H2'	50:3:2849:G:C8	2.50	0.47
52:5:761:U:H2'	52:5:762:G:O4'	2.15	0.47
52:5:949:G:H1	52:5:1201:C:N4	2.13	0.47
52:5:1150:G:H2'	52:5:1151:A:C8	2.50	0.47
52:5:1214:A:H62	52:5:1273:A:N6	2.12	0.47
12:I:14:ILE:HD11	12:I:104:LEU:HD12	1.98	0.46
16:M:21:TYR:HB3	52:5:975:C:O2	2.15	0.46
22:S:66:ARG:HA	22:S:69:LYS:HE3	1.97	0.46
32:i:38:LEU:HD12	32:i:43:ASN:HD22	1.80	0.46
32:i:101:ASP:OD1	32:i:101:ASP:N	2.44	0.46
42:s:79:LYS:NZ	50:3:1634:A:OP1	2.48	0.46
43:t:95:PRO:HG2	43:t:98:ASN:HB3	1.97	0.46
48:y:32:LYS:HG3	48:y:50:ASP:H	1.80	0.46
50:3:351:G:H2'	50:3:352:C:C6	2.50	0.46
50:3:410:G:H4'	50:3:411:U:O5'	2.15	0.46
50:3:764:G:H5'	50:3:765:A:H5''	1.96	0.46
50:3:900:G:C2	50:3:903:A:N6	2.82	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1586:U:H2'	50:3:1587:U:H5	1.79	0.46
50:3:1966:G:O2'	52:5:1393:A:H1'	2.15	0.46
52:5:243:G:H2'	52:5:244:C:C6	2.50	0.46
52:5:469:C:H2'	52:5:470:U:C6	2.50	0.46
52:5:580:C:OP2	52:5:755:U:N3	2.36	0.46
52:5:881:G:H2'	52:5:882:U:O4'	2.15	0.46
4:A:32:MET:HG3	4:A:33:VAL:H	1.80	0.46
4:A:99:ILE:HA	4:A:102:ARG:HG2	1.97	0.46
8:E:43:LYS:HB3	8:E:57:TYR:CE2	2.50	0.46
9:F:92:GLN:O	9:F:96:ILE:HG13	2.15	0.46
11:H:114:GLU:HG3	52:5:1321:G:H3'	1.97	0.46
16:M:43:CYS:HA	16:M:46:GLU:HG2	1.98	0.46
24:a:162:ARG:NH1	50:3:1825:U:OP2	2.47	0.46
27:d:35:VAL:O	27:d:154:VAL:HA	2.16	0.46
36:m:61:ARG:HG2	50:3:1482:U:H3	1.80	0.46
39:p:65:ASN:O	39:p:69:ARG:HG2	2.16	0.46
41:r:112:ASN:O	41:r:114:ARG:HG3	2.15	0.46
43:t:16:LYS:HG3	50:3:363:G:H1	1.80	0.46
46:w:5:LYS:HD3	46:w:5:LYS:HA	1.73	0.46
50:3:212:G:H2'	50:3:213:C:H6	1.80	0.46
50:3:604:A:H1'	50:3:606:G:C8	2.50	0.46
50:3:1042:C:H2'	50:3:1043:C:C6	2.49	0.46
50:3:1414:C:OP1	50:3:1496:A:O2'	2.34	0.46
50:3:1938:U:H2'	50:3:1939:A:H8	1.80	0.46
50:3:2054:C:H2'	50:3:2055:A:C8	2.49	0.46
50:3:2295:A:C5	50:3:2297:G:C8	3.04	0.46
50:3:2455:G:H22	50:3:2509:C:N4	2.13	0.46
50:3:2706:U:H2'	50:3:2707:A:C8	2.50	0.46
50:3:2798:A:H5''	50:3:2799:U:O4'	2.15	0.46
50:3:2849:G:H2'	50:3:2850:G:C8	2.49	0.46
52:5:55:C:OP1	52:5:347:G:H1'	2.14	0.46
52:5:60:A:H2'	52:5:327:G:H22	1.81	0.46
52:5:786:U:O2'	52:5:789:A:N7	2.37	0.46
52:5:956:U:H2'	52:5:957:C:O4'	2.15	0.46
52:5:1173:A:H2'	52:5:1174:U:C6	2.50	0.46
52:5:1203:A:H2'	52:5:1204:A:C8	2.51	0.46
52:5:1281:U:N3	52:5:1304:U:O2	2.48	0.46
52:5:1295:U:OP2	52:5:1296:C:H3'	2.15	0.46
52:5:1329:G:H2'	52:5:1330:A:H8	1.79	0.46
52:5:1444:G:H2'	52:5:1445:G:C8	2.51	0.46
4:A:219:ASN:HA	4:A:225:THR:HB	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:D:146:ALA:HB3	52:5:20:C:H5''	1.98	0.46
8:E:17:GLN:O	8:E:20:GLN:HG2	2.15	0.46
10:G:15:VAL:O	10:G:19:LEU:HG	2.15	0.46
11:H:98:LYS:NZ	52:5:1151:A:H5''	2.30	0.46
16:M:31:ARG:HB3	52:5:969:A:H5'	1.97	0.46
24:a:176:THR:HG23	24:a:178:LYS:HB3	1.98	0.46
24:a:238:HIS:CE1	50:3:1832:G:H5''	2.51	0.46
31:h:13:ASN:H	50:3:1096:U:H5	1.63	0.46
35:l:67:ARG:NH1	50:3:943:A:O2'	2.48	0.46
36:m:82:LEU:HA	36:m:86:VAL:HG22	1.97	0.46
39:p:2:ARG:HB3	50:3:482:G:OP1	2.16	0.46
43:t:5:LYS:HD2	43:t:102:ARG:HH12	1.79	0.46
50:3:11:U:H2'	50:3:2637:A:N1	2.31	0.46
50:3:60:G:H2'	50:3:61:U:C6	2.51	0.46
50:3:142:A:H2'	50:3:143:A:C8	2.50	0.46
50:3:569:U:H2'	50:3:570:C:C6	2.50	0.46
50:3:579:U:O2'	50:3:581:A:OP2	2.31	0.46
50:3:626:A:H2'	50:3:627:U:C6	2.49	0.46
50:3:1493:A:H2'	50:3:1494:U:O4'	2.15	0.46
50:3:1596:U:H2'	50:3:1597:U:C6	2.50	0.46
50:3:2057:C:H3'	50:3:2058:G:C8	2.51	0.46
50:3:2234:C:H3'	50:3:2235:A:C8	2.50	0.46
52:5:1209:C:H2'	52:5:1210:U:C6	2.50	0.46
52:5:1413:G:H2'	52:5:1414:U:H6	1.80	0.46
8:E:140:GLN:HE21	52:5:743:A:P	2.38	0.46
8:E:152:PRO:HA	10:G:56:ASN:HD21	1.80	0.46
12:I:61:PRO:HB3	16:M:42:LEU:HD22	1.97	0.46
15:L:103:ARG:NH1	52:5:949:G:O6	2.46	0.46
17:N:3:ILE:H	17:N:3:ILE:HD12	1.80	0.46
26:c:61:GLY:HA3	50:3:832:C:H5''	1.97	0.46
31:h:92:ILE:HD13	31:h:134:GLU:HB2	1.97	0.46
35:l:84:GLY:HA3	50:3:2258:G:N2	2.31	0.46
37:n:10:LEU:HG	37:n:14:ARG:HH11	1.80	0.46
40:q:74:ILE:H	40:q:79:HIS:HB3	1.78	0.46
50:3:152:A:H2'	50:3:153:U:H6	1.81	0.46
50:3:513:A:O2'	50:3:514:A:OP1	2.34	0.46
50:3:843:G:H2'	50:3:844:G:H8	1.79	0.46
50:3:1027:U:H2'	50:3:1028:C:H6	1.80	0.46
50:3:1728:A:N3	50:3:1729:G:N1	2.64	0.46
50:3:1778:G:H2'	50:3:1779:G:H8	1.79	0.46
50:3:2274:A:H5'	50:3:2275:A:C4	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2811:G:H4'	50:3:2812:U:H5''	1.97	0.46
51:4:43:A:H3'	51:4:44:A:H8	1.79	0.46
52:5:29:G:N2	52:5:291:C:O2'	2.43	0.46
52:5:33:A:H2'	52:5:34:A:C8	2.51	0.46
52:5:896:G:H2'	52:5:897:A:H8	1.80	0.46
52:5:1118:A:N6	52:5:1123:G:C2	2.83	0.46
53:8:63:U:H2'	53:8:64:G:C8	2.50	0.46
8:E:51:LYS:HG3	8:E:52:GLN:NE2	2.30	0.46
8:E:112:ARG:HD2	8:E:112:ARG:HA	1.79	0.46
11:H:126:ALA:HB3	52:5:1317:A:H4'	1.97	0.46
17:N:3:ILE:HD13	17:N:5:LYS:HE3	1.97	0.46
27:d:132:ILE:HG23	27:d:152:PHE:H	1.81	0.46
35:l:27:VAL:HG13	35:l:134:ARG:HH21	1.81	0.46
40:q:45:ILE:HA	40:q:50:LEU:HD13	1.98	0.46
40:q:47:ALA:HB3	40:q:48:PRO:HD3	1.98	0.46
43:t:44:ARG:HH22	50:3:517:G:H5'	1.81	0.46
45:v:31:VAL:HG23	45:v:33:LEU:HG	1.97	0.46
50:3:125:G:OP1	50:3:1404:C:O2'	2.32	0.46
50:3:590:U:H2'	50:3:591:G:C8	2.51	0.46
50:3:863:U:H4'	50:3:866:G:N1	2.31	0.46
50:3:1140:U:H2'	50:3:1141:U:C6	2.50	0.46
50:3:1159:C:H2'	50:3:1160:G:O4'	2.15	0.46
50:3:1161:A:H4'	50:3:1162:A:H5''	1.97	0.46
50:3:2056:A:H2'	50:3:2057:C:H6	1.80	0.46
51:4:4:G:H2'	51:4:5:G:H8	1.79	0.46
52:5:81:A:H2'	52:5:82:C:O4'	2.15	0.46
52:5:126:U:H2'	52:5:127:A:H8	1.80	0.46
52:5:260:C:H2'	52:5:261:G:O4'	2.15	0.46
52:5:1123:G:O3'	52:5:1125:C:N4	2.48	0.46
52:5:1151:A:H2'	52:5:1152:G:C8	2.51	0.46
52:5:1290:G:N2	52:5:1293:A:OP2	2.48	0.46
53:7:16:G:O2'	53:7:17:U:OP1	2.29	0.46
11:H:109:ASP:O	11:H:110:LYS:HG2	2.16	0.46
13:J:22:ASN:HD21	52:5:686:C:H5''	1.81	0.46
25:b:142:ARG:NH1	50:3:2005:G:OP2	2.49	0.46
26:c:173:SER:OG	50:3:356:A:OP1	2.23	0.46
29:f:23:ASP:OD2	50:3:2101:A:H5'	2.16	0.46
34:k:33:GLY:N	50:3:1221:G:OP1	2.43	0.46
34:k:48:ARG:HB2	34:k:51:PHE:HB2	1.98	0.46
34:k:69:ARG:HG3	50:3:2414:U:O4	2.15	0.46
37:n:110:ARG:NH1	50:3:2384:A:N3	2.63	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:v:17:ASN:ND2	50:3:2241:A:OP2	2.48	0.46
49:z:3:VAL:HB	49:z:5:ARG:HH12	1.80	0.46
50:3:163:A:N7	50:3:169:U:C2	2.83	0.46
50:3:189:U:H2'	50:3:190:G:H8	1.81	0.46
50:3:938:A:H2'	50:3:939:U:C6	2.50	0.46
50:3:1001:C:H1'	50:3:2281:A:C2	2.51	0.46
52:5:109:G:H2'	52:5:110:U:C6	2.50	0.46
52:5:321:A:H2'	52:5:322:G:C8	2.50	0.46
52:5:760:U:H2'	52:5:761:U:H6	1.81	0.46
52:5:775:G:H2'	52:5:776:C:C6	2.51	0.46
52:5:977:U:H5''	52:5:978:A:C8	2.51	0.46
53:8:29:C:H2'	53:8:30:G:C8	2.50	0.46
11:H:54:LEU:HD11	11:H:85:ILE:HG21	1.97	0.46
17:N:26:VAL:O	17:N:30:THR:HG23	2.15	0.46
21:R:19:VAL:HG21	21:R:44:PHE:CE1	2.51	0.46
24:a:29:ASN:HD21	50:3:1599:C:H5	1.63	0.46
24:a:112:PRO:HD2	24:a:115:ILE:HD11	1.97	0.46
25:b:119:PHE:HB3	50:3:1688:A:O2'	2.16	0.46
26:c:75:ARG:NH1	50:3:709:G:H1'	2.31	0.46
28:e:161:LYS:HE2	28:e:163:LYS:HD2	1.97	0.46
30:g:54:ILE:HG12	30:g:55:LYS:H	1.80	0.46
30:g:112:TYR:HA	30:g:118:PHE:CD2	2.51	0.46
30:g:112:TYR:HD1	30:g:118:PHE:CG	2.34	0.46
34:k:18:LYS:HG3	50:3:698:A:H5''	1.97	0.46
41:r:115:GLN:OE1	41:r:115:GLN:N	2.43	0.46
50:3:425:U:H4'	50:3:426:U:OP2	2.13	0.46
50:3:732:G:H2'	50:3:733:C:C6	2.50	0.46
50:3:876:A:H2'	50:3:877:G:C8	2.51	0.46
50:3:1106:G:H5''	50:3:1107:C:OP2	2.16	0.46
50:3:1198:G:H2'	50:3:1199:A:H8	1.81	0.46
50:3:1223:C:H2'	50:3:1224:G:H8	1.81	0.46
50:3:1354:U:O3'	50:3:2017:G:O2'	2.30	0.46
50:3:1476:C:H2'	50:3:1477:A:C8	2.50	0.46
50:3:1843:C:H2'	50:3:1844:C:C6	2.51	0.46
51:4:59:A:HO2'	51:4:60:C:P	2.37	0.46
52:5:52:A:O2'	52:5:101:A:O4'	2.33	0.46
52:5:218:U:H2'	52:5:219:A:C8	2.50	0.46
52:5:473:A:H2'	52:5:474:G:H8	1.80	0.46
52:5:539:G:H2'	52:5:540:U:C6	2.51	0.46
52:5:622:A:H2'	52:5:623:G:C8	2.51	0.46
52:5:692:A:H2'	52:5:693:A:C8	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:1487:U:H3	52:5:1498:G:H1	1.64	0.46
53:7:30:G:H2'	53:7:31:G:H8	1.81	0.46
4:A:70:ASN:HA	4:A:73:LYS:HG2	1.97	0.46
14:K:12:ARG:HB3	52:5:560:U:O2'	2.16	0.46
14:K:47:CYS:HB3	14:K:68:VAL:HG22	1.96	0.46
14:K:63:ARG:HB3	14:K:103:LEU:HD11	1.96	0.46
15:L:68:ASP:O	15:L:72:GLU:HG3	2.16	0.46
20:Q:93:ALA:HB1	20:Q:98:LEU:HB2	1.98	0.46
22:S:70:SER:HA	22:S:73:VAL:HG12	1.98	0.46
28:e:6:ASN:OD1	28:e:68:HIS:NE2	2.46	0.46
29:f:35:LEU:HG	29:f:36:ALA:H	1.81	0.46
29:f:93:ILE:O	29:f:96:GLN:HG2	2.15	0.46
32:i:111:MET:HB3	50:3:1042:C:H1'	1.98	0.46
34:k:126:PHE:HB2	34:k:146:VAL:HA	1.97	0.46
43:t:28:MET:HE1	43:t:35:ILE:HG12	1.98	0.46
50:3:275:A:H2'	50:3:276:A:C8	2.51	0.46
50:3:499:G:N2	50:3:502:A:OP2	2.41	0.46
50:3:533:G:H2'	50:3:534:U:C6	2.51	0.46
50:3:850:G:H2'	50:3:851:U:H6	1.80	0.46
50:3:871:G:H8	50:3:871:G:OP2	1.98	0.46
50:3:1446:G:C5	50:3:1612:U:H5	2.33	0.46
50:3:1836:A:H3'	50:3:1837:C:C6	2.51	0.46
50:3:2665:A:H2'	50:3:2666:C:O4'	2.15	0.46
52:5:80:U:H2'	52:5:81:A:C8	2.50	0.46
52:5:205:U:H4'	52:5:464:A:N7	2.30	0.46
52:5:428:A:C4	52:5:429:A:C8	3.04	0.46
52:5:510:U:H2'	52:5:511:A:C8	2.51	0.46
52:5:1187:U:H4'	52:5:1188:A:N7	2.31	0.46
52:5:1430:G:C4	52:5:1431:A:C8	3.04	0.46
52:5:1430:G:H2'	52:5:1431:A:H8	1.80	0.46
53:7:29:C:H2'	53:7:30:G:C8	2.50	0.46
9:F:149:ALA:HB2	13:J:54:TYR:HB2	1.96	0.46
23:T:51:LYS:O	23:T:55:LYS:HB2	2.16	0.46
26:c:69:LYS:NZ	50:3:2069:A:H5''	2.31	0.46
42:s:66:ARG:O	42:s:72:PRO:HA	2.15	0.46
50:3:297:G:H5'	50:3:298:U:C6	2.51	0.46
50:3:526:G:H2'	50:3:527:A:O4'	2.15	0.46
50:3:641:U:C2	50:3:657:A:N7	2.82	0.46
50:3:727:C:H2'	50:3:728:A:H8	1.80	0.46
50:3:772:C:H2'	50:3:773:G:C8	2.51	0.46
50:3:1063:A:C2	50:3:2495:A:H1'	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1077:G:O6	50:3:1148:U:C4	2.69	0.46
50:3:1231:G:H2'	50:3:1232:U:C6	2.51	0.46
50:3:1686:U:H3'	50:3:1687:G:C8	2.51	0.46
50:3:1990:C:H2'	50:3:1991:U:O4'	2.15	0.46
50:3:2237:U:H2'	50:3:2238:G:C8	2.51	0.46
50:3:2334:U:O2	50:3:2397:G:N2	2.41	0.46
52:5:334:A:H2'	52:5:335:C:H6	1.81	0.46
52:5:1009:G:H21	52:5:1012:A:H2	1.64	0.46
7:D:103:TYR:HE1	7:D:196:MET:HE3	1.81	0.46
8:E:32:VAL:HG12	8:E:62:PHE:CE2	2.51	0.46
9:F:101:ARG:NH1	52:5:1350:A:O2'	2.49	0.46
18:O:59:PRO:HG2	18:O:67:PHE:HE2	1.80	0.46
26:c:96:ASN:OD1	26:c:97:ARG:N	2.49	0.46
27:d:46:ASP:N	27:d:46:ASP:OD1	2.49	0.46
27:d:47:SER:O	27:d:48:LYS:HB2	2.16	0.46
28:e:98:ARG:HG2	28:e:131:ASN:HB3	1.98	0.46
33:j:122:VAL:HG22	38:o:46:GLN:HE21	1.80	0.46
40:q:41:LEU:H	40:q:50:LEU:HD22	1.81	0.46
50:3:21:U:O2'	50:3:586:G:O2'	2.20	0.46
50:3:31:U:C2	50:3:32:G:C8	3.04	0.46
50:3:664:G:H2'	50:3:665:C:C6	2.51	0.46
50:3:1085:A:N6	50:3:1144:C:N3	2.64	0.46
50:3:1720:C:N4	50:3:1737:G:O6	2.49	0.46
50:3:2084:A:OP1	50:3:2246:G:N2	2.46	0.46
50:3:2222:C:H2'	50:3:2223:C:O4'	2.16	0.46
50:3:2387:U:H2'	50:3:2388:C:H6	1.77	0.46
50:3:2424:C:H2'	50:3:2425:C:C6	2.51	0.46
52:5:20:C:H2'	52:5:21:U:H6	1.80	0.46
52:5:50:U:O4	52:5:358:G:N2	2.43	0.46
52:5:249:U:H2'	52:5:250:G:C8	2.51	0.46
52:5:297:A:H2'	52:5:298:G:H8	1.78	0.46
52:5:760:U:H2'	52:5:761:U:C6	2.51	0.46
52:5:947:U:H2'	52:5:948:U:H6	1.81	0.46
52:5:1001:A:H62	52:5:1019:G:N2	2.13	0.46
52:5:1224:C:O2	52:5:1262:A:N6	2.49	0.46
6:C:100:ILE:HA	6:C:103:ARG:HB2	1.98	0.45
10:G:99:ARG:HD3	10:G:137:ILE:HD12	1.98	0.45
11:H:50:MET:HB2	11:H:81:ILE:HD11	1.98	0.45
17:N:5:LYS:NZ	52:5:656:U:OP1	2.42	0.45
30:g:41:ARG:HH21	30:g:44:LEU:HB3	1.81	0.45
33:j:7:ARG:HB3	33:j:18:GLN:HE22	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:r:117:LEU:O	41:r:121:GLN:HG3	2.16	0.45
50:3:212:G:H2'	50:3:213:C:C6	2.51	0.45
50:3:292:G:H3'	50:3:293:G:H8	1.80	0.45
50:3:420:A:H2'	50:3:421:A:O4'	2.17	0.45
50:3:934:C:H2'	50:3:935:U:H6	1.81	0.45
50:3:1071:G:O6	50:3:1154:U:O4	2.34	0.45
50:3:1073:A:H2'	50:3:1074:A:C8	2.51	0.45
50:3:1137:C:H2'	50:3:1138:A:C8	2.49	0.45
50:3:1305:G:H2'	50:3:1306:G:H8	1.81	0.45
50:3:1337:G:H21	50:3:1645:C:H5'	1.81	0.45
50:3:1544:G:H2'	50:3:1545:A:C8	2.51	0.45
50:3:2018:U:H2'	50:3:2019:G:O4'	2.15	0.45
50:3:2880:A:H2'	50:3:2881:A:H8	1.80	0.45
51:4:3:U:O2'	51:4:24:A:N6	2.37	0.45
51:4:5:G:H2'	51:4:6:U:O4'	2.15	0.45
52:5:113:C:H1'	52:5:230:G:N2	2.31	0.45
52:5:135:A:H4'	52:5:1421:A:C5	2.51	0.45
52:5:653:G:H2'	52:5:654:U:H6	1.80	0.45
52:5:664:A:H2'	52:5:665:G:C8	2.51	0.45
52:5:1298:U:H5''	52:5:1337:U:H6	1.80	0.45
6:C:31:ARG:NH2	52:5:409:G:O6	2.48	0.45
13:J:62:LYS:O	13:J:66:THR:HG23	2.16	0.45
16:M:3:LYS:HA	16:M:6:LEU:HB2	1.99	0.45
17:N:10:LYS:HA	17:N:13:GLN:HB2	1.99	0.45
22:S:11:LEU:HA	22:S:14:ASN:HD21	1.80	0.45
25:b:49:ALA:HB2	25:b:85:ARG:HD2	1.97	0.45
30:g:86:VAL:HG23	30:g:89:ILE:HA	1.98	0.45
35:l:63:LYS:HE3	35:l:65:TRP:CZ2	2.51	0.45
37:n:49:ASN:HD22	51:4:7:G:H21	1.64	0.45
39:p:54:ARG:NH1	50:3:1013:G:H5'	2.31	0.45
41:r:87:PRO:HB3	50:3:1648:A:N7	2.31	0.45
49:z:15:ARG:NH1	49:z:48:LYS:HE2	2.31	0.45
50:3:140:G:H22	50:3:142:A:H3'	1.81	0.45
50:3:486:G:N1	50:3:490:A:OP2	2.50	0.45
50:3:601:U:H4'	50:3:981:A:C6	2.51	0.45
50:3:715:G:H2'	50:3:716:G:C8	2.51	0.45
50:3:812:G:H2'	50:3:813:G:C8	2.50	0.45
50:3:861:U:H5''	50:3:2437:G:P	2.57	0.45
50:3:1091:G:H5''	50:3:1092:A:H5'	1.98	0.45
50:3:1104:A:H5'	50:3:1105:A:H2'	1.97	0.45
50:3:1433:U:H2'	50:3:1434:U:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1485:A:H4'	50:3:1486:U:C5	2.50	0.45
50:3:2147:G:N1	50:3:2159:U:O4	2.50	0.45
52:5:292:U:H2'	52:5:293:G:C8	2.51	0.45
52:5:308:C:H2'	52:5:309:A:H8	1.81	0.45
52:5:1374:C:H4'	52:5:1375:C:H3'	1.97	0.45
52:5:1500:G:H2'	52:5:1501:G:H8	1.81	0.45
53:8:16:G:O2'	53:8:17:U:OP1	2.29	0.45
53:8:37:A:C2	53:8:38:G:H1'	2.52	0.45
4:A:123:LEU:O	4:A:127:ILE:HG12	2.16	0.45
10:G:90:ILE:HG12	10:G:139:ALA:HA	1.99	0.45
17:N:2:GLN:HG3	17:N:4:ASP:H	1.82	0.45
20:Q:42:ARG:HD2	20:Q:63:PHE:HZ	1.82	0.45
26:c:128:VAL:N	26:c:199:VAL:O	2.49	0.45
27:d:123:ASP:HB3	27:d:127:ASN:HB3	1.96	0.45
37:n:11:ARG:HB3	37:n:95:GLY:HA2	1.98	0.45
50:3:225:A:N7	50:3:463:U:O4	2.49	0.45
50:3:237:A:N6	50:3:268:C:H1'	2.31	0.45
50:3:555:A:H2'	50:3:556:U:C6	2.51	0.45
50:3:740:A:H2'	50:3:741:A:O4'	2.15	0.45
50:3:896:U:C2	50:3:897:A:C8	3.05	0.45
50:3:1227:C:H2'	50:3:1228:G:C8	2.51	0.45
50:3:2465:U:H2'	50:3:2466:G:O4'	2.16	0.45
50:3:2761:A:H2'	50:3:2762:U:N1	2.32	0.45
50:3:2812:U:O2'	50:3:2813:A:H5''	2.17	0.45
52:5:47:G:O2'	52:5:361:U:H1'	2.17	0.45
52:5:1225:A:H2'	52:5:1226:A:C8	2.51	0.45
52:5:1280:A:N3	52:5:1280:A:H2'	2.31	0.45
5:B:35:ILE:HD13	16:M:39:VAL:HG22	1.98	0.45
6:C:36:GLY:HA2	52:5:423:U:H4'	1.97	0.45
8:E:148:LYS:HE3	10:G:59:VAL:HG12	1.99	0.45
9:F:36:GLY:O	9:F:40:ARG:HG3	2.16	0.45
10:G:115:ILE:HG23	10:G:138:LEU:HB2	1.97	0.45
17:N:22:ILE:HG21	17:N:67:LEU:HD13	1.99	0.45
18:O:17:ASP:OD1	18:O:18:SER:N	2.49	0.45
22:S:34:ASN:HA	22:S:37:LYS:HD2	1.98	0.45
30:g:44:LEU:HD11	30:g:92:THR:HA	1.99	0.45
31:h:119:ALA:HB1	50:3:1116:U:O2'	2.16	0.45
32:i:48:THR:HG22	32:i:53:CYS:HB3	1.98	0.45
34:k:3:LEU:HD11	34:k:11:LYS:HE2	1.98	0.45
46:w:17:LYS:HA	46:w:20:ILE:HG12	1.98	0.45
50:3:249:G:O2'	50:3:422:A:N1	2.35	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:671:C:H2'	50:3:672:G:C8	2.51	0.45
50:3:1674:A:N3	50:3:1674:A:H2'	2.32	0.45
50:3:1865:A:H3'	50:3:1866:G:H8	1.80	0.45
50:3:2543:G:H2'	50:3:2544:G:C8	2.51	0.45
50:3:2633:C:H2'	50:3:2634:C:C6	2.52	0.45
52:5:365:U:OP2	52:5:384:G:N2	2.43	0.45
52:5:1082:U:H1'	52:5:1086:U:O4	2.16	0.45
52:5:1198:C:H5''	52:5:1199:U:H5''	1.98	0.45
53:8:38:G:C4	53:8:39:A:C8	3.04	0.45
22:S:19:LEU:HA	22:S:22:LYS:HE2	1.98	0.45
25:b:51:LEU:HD11	50:3:2643:A:H4'	1.99	0.45
27:d:170:LEU:HD13	27:d:175:LEU:HD23	1.98	0.45
28:e:22:LYS:HD3	28:e:22:LYS:C	2.42	0.45
28:e:44:LEU:HD11	28:e:68:HIS:HA	1.97	0.45
32:i:80:HIS:CD2	32:i:87:ILE:HG13	2.52	0.45
32:i:83:TYR:CE2	50:3:2650:A:H5'	2.52	0.45
34:k:107:LYS:NZ	50:3:657:A:OP1	2.49	0.45
40:q:10:LYS:HD2	50:3:1032:A:P	2.56	0.45
41:r:67:ASP:OD1	41:r:68:ALA:N	2.50	0.45
43:t:36:VAL:HG13	43:t:39:LEU:HB2	1.99	0.45
44:u:47:THR:N	44:u:78:ASP:OD1	2.50	0.45
46:w:53:THR:HG22	50:3:78:C:O3'	2.16	0.45
48:y:26:ALA:HB1	50:3:2890:G:N2	2.32	0.45
48:y:31:GLN:OE1	48:y:49:GLY:HA3	2.16	0.45
50:3:271:G:H2'	50:3:272:C:C6	2.52	0.45
50:3:337:U:H2'	50:3:338:G:H8	1.81	0.45
50:3:859:G:N3	50:3:2366:A:N6	2.64	0.45
50:3:1327:G:O2'	50:3:1674:A:N6	2.49	0.45
50:3:1474:C:H2'	50:3:1475:C:C6	2.52	0.45
50:3:1524:C:H2'	50:3:1525:G:O4'	2.17	0.45
50:3:1802:C:H2'	50:3:1803:U:C6	2.51	0.45
50:3:2413:G:H4'	50:3:2414:U:C5	2.52	0.45
50:3:2536:U:H3	50:3:2543:G:H1	1.63	0.45
52:5:171:A:H2'	52:5:172:C:C6	2.51	0.45
52:5:371:U:H2'	52:5:372:G:H8	1.81	0.45
52:5:917:G:H2'	52:5:918:A:C8	2.52	0.45
52:5:1258:U:H2'	52:5:1259:G:H8	1.81	0.45
52:5:1477:A:H5'	52:5:1479:G:N7	2.32	0.45
1:0:35:ARG:HH12	50:3:56:G:H1'	1.82	0.45
5:B:70:TYR:HD1	5:B:107:ASN:HB2	1.82	0.45
17:N:33:ILE:O	17:N:37:THR:HG23	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:T:16:LYS:HG3	23:T:20:ARG:NH2	2.32	0.45
24:a:228:VAL:HG11	50:3:817:A:C5	2.52	0.45
30:g:11:VAL:HG21	30:g:61:ARG:HB3	1.98	0.45
34:k:4:ASN:O	34:k:8:SER:N	2.49	0.45
34:k:13:ARG:NH2	50:3:1275:C:OP1	2.50	0.45
34:k:37:LYS:HE3	50:3:2456:A:N1	2.32	0.45
37:n:43:ALA:HB3	37:n:53:ALA:HB3	1.97	0.45
43:t:43:THR:OG1	50:3:534:U:O2'	2.32	0.45
50:3:73:A:H5''	50:3:75:A:C8	2.52	0.45
50:3:156:A:H2'	50:3:157:U:H6	1.81	0.45
50:3:201:A:H2	50:3:2442:A:N6	2.14	0.45
50:3:218:G:H2'	50:3:219:G:N9	2.32	0.45
50:3:280:A:H2'	50:3:281:U:C6	2.52	0.45
50:3:306:G:H2'	50:3:307:C:H6	1.81	0.45
50:3:431:U:O2'	50:3:432:G:N7	2.44	0.45
50:3:720:A:H1'	50:3:724:A:N6	2.30	0.45
50:3:767:C:H2'	50:3:768:G:O4'	2.15	0.45
50:3:1093:U:H2'	50:3:1094:G:C8	2.52	0.45
50:3:2274:A:N6	50:3:2281:A:OP2	2.50	0.45
50:3:2697:C:OP2	50:3:2876:G:N1	2.45	0.45
50:3:2862:U:HO2'	50:3:2863:G:P	2.39	0.45
52:5:74:U:O4	52:5:75:A:N6	2.49	0.45
52:5:195:U:H2'	52:5:196:G:C8	2.52	0.45
52:5:254:G:H2'	52:5:255:G:C8	2.51	0.45
52:5:422:A:C2'	52:5:423:U:H5'	2.46	0.45
52:5:490:U:H2'	52:5:491:U:H6	1.80	0.45
52:5:1364:C:H2'	52:5:1365:U:C6	2.52	0.45
5:B:42:ASN:O	5:B:46:VAL:HG13	2.16	0.45
18:O:15:ALA:HB1	18:O:52:TRP:CZ2	2.51	0.45
25:b:142:ARG:HH12	50:3:2005:G:P	2.40	0.45
27:d:110:ARG:HE	47:x:38:ILE:HG21	1.81	0.45
34:k:113:LYS:HE2	50:3:672:G:C6	2.52	0.45
36:m:60:ARG:NH1	36:m:79:MET:SD	2.90	0.45
37:n:18:LYS:O	37:n:22:THR:HG22	2.17	0.45
37:n:110:ARG:NH2	50:3:2385:A:H1'	2.32	0.45
49:z:37:PHE:HA	49:z:44:VAL:HA	1.99	0.45
50:3:57:G:H2'	50:3:58:A:C8	2.51	0.45
50:3:694:U:H2'	50:3:695:G:H8	1.80	0.45
50:3:696:U:H2'	50:3:697:U:C6	2.51	0.45
50:3:827:G:N3	50:3:2079:G:O2'	2.45	0.45
50:3:919:C:C2	50:3:920:G:C8	3.04	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1020:G:H2'	50:3:1020:G:N3	2.32	0.45
50:3:1180:U:C2	50:3:1181:A:C8	3.04	0.45
50:3:1455:A:N6	50:3:1605:A:OP2	2.33	0.45
50:3:2463:G:H2'	50:3:2464:C:H6	1.80	0.45
50:3:2741:A:H2'	50:3:2742:U:O4'	2.15	0.45
51:4:54:U:H1'	51:4:55:A:OP2	2.16	0.45
52:5:706:U:H2'	52:5:707:G:C8	2.52	0.45
52:5:834:G:H2'	52:5:835:G:H8	1.81	0.45
52:5:1009:G:H2'	52:5:1011:A:OP2	2.16	0.45
52:5:1246:A:H2'	52:5:1247:G:C8	2.52	0.45
52:5:1286:G:H2'	52:5:1287:G:C8	2.51	0.45
53:8:30:G:H2'	53:8:31:G:H8	1.81	0.45
3:2:7:VAL:HG22	3:2:37:GLY:HA3	1.99	0.45
4:A:113:LEU:HB3	52:5:1093:A:O2'	2.17	0.45
5:B:37:ASP:CG	5:B:41:ARG:HH11	2.25	0.45
7:D:166:ILE:O	7:D:170:ILE:HG12	2.17	0.45
12:I:47:PRO:HB2	52:5:1126:U:C2	2.52	0.45
25:b:109:ASP:OD1	25:b:109:ASP:N	2.48	0.45
27:d:135:GLN:HA	27:d:138:PHE:HD2	1.81	0.45
32:i:42:LYS:HE3	32:i:47:PHE:HB2	1.98	0.45
35:l:11:LYS:NZ	44:u:25:LYS:HE3	2.32	0.45
40:q:57:CYS:SG	40:q:92:LEU:HD13	2.56	0.45
43:t:14:THR:HG23	50:3:344:A:H5''	1.97	0.45
49:z:14:CYS:SG	50:3:2408:G:H4'	2.56	0.45
50:3:277:C:OP2	50:3:405:C:O2'	2.35	0.45
50:3:944:U:H2'	50:3:945:U:C6	2.52	0.45
50:3:1006:U:O2'	50:3:1020:G:H4'	2.16	0.45
50:3:1036:A:H2'	50:3:1037:A:H8	1.80	0.45
50:3:2267:G:H2'	50:3:2268:C:H6	1.82	0.45
50:3:2657:C:H2'	50:3:2658:U:C6	2.51	0.45
52:5:59:C:H2'	52:5:60:A:O4'	2.16	0.45
52:5:70:A:H2'	52:5:71:A:H8	1.78	0.45
52:5:168:A:H3'	52:5:169:G:C8	2.50	0.45
52:5:412:G:H2'	52:5:413:G:C8	2.51	0.45
52:5:649:U:H1'	52:5:650:A:C8	2.52	0.45
53:7:38:G:C4	53:7:39:A:C8	3.04	0.45
4:A:38:ASN:ND2	4:A:205:ASN:HD22	2.15	0.45
4:A:71:TYR:O	4:A:74:GLU:HG2	2.16	0.45
5:B:61:THR:O	5:B:64:THR:HG22	2.17	0.45
14:K:23:ALA:HB3	14:K:108:TYR:CE2	2.52	0.45
15:L:103:ARG:HG3	52:5:1201:C:N4	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:R:55:LYS:HB2	52:5:953:A:C5	2.52	0.45
24:a:238:HIS:HA	24:a:257:PRO:HA	1.99	0.45
26:c:33:PRO:HB2	26:c:111:ALA:HB2	1.99	0.45
30:g:22:ALA:HB3	30:g:87:ASN:CA	2.43	0.45
31:h:112:LEU:HB2	31:h:123:MET:SD	2.57	0.45
32:i:105:TYR:CZ	32:i:122:ILE:HG13	2.51	0.45
32:i:132:LYS:NZ	32:i:133:HIS:O	2.50	0.45
33:j:25:LEU:HB3	33:j:59:ARG:NH1	2.32	0.45
41:r:28:LYS:HG3	41:r:30:ALA:H	1.81	0.45
48:y:10:LYS:HA	48:y:13:ARG:HG2	1.99	0.45
50:3:47:G:H2'	50:3:219:G:C5	2.52	0.45
50:3:975:G:H2'	50:3:976:C:C6	2.52	0.45
50:3:1146:A:H2	50:3:1147:G:N2	2.15	0.45
50:3:1315:A:OP1	50:3:1316:U:N3	2.43	0.45
50:3:1318:U:H2'	50:3:1319:C:H6	1.82	0.45
50:3:1355:C:H2'	50:3:1356:G:N9	2.32	0.45
50:3:1451:A:H2'	50:3:1452:G:H8	1.82	0.45
50:3:1468:U:H3'	50:3:1469:C:C6	2.52	0.45
50:3:1884:A:C2	50:3:1885:G:C6	3.05	0.45
50:3:2377:A:H2'	50:3:2378:G:C8	2.51	0.45
52:5:166:U:H2'	52:5:167:A:O4'	2.17	0.45
52:5:169:G:O2'	52:5:220:U:O2'	2.31	0.45
52:5:307:C:H2'	52:5:308:C:C6	2.52	0.45
52:5:513:G:C6	52:5:514:U:C4	3.05	0.45
52:5:731:A:H2'	52:5:732:A:C8	2.52	0.45
52:5:1381:U:H3	52:5:1492:G:H21	1.64	0.45
52:5:1406:U:O4	52:5:1407:A:N6	2.50	0.45
5:B:60:ARG:HA	5:B:64:THR:O	2.16	0.45
12:I:18:SER:OG	12:I:19:TYR:N	2.50	0.45
16:M:7:LYS:HA	16:M:10:GLN:HE21	1.82	0.45
17:N:43:ASN:HB3	52:5:665:G:O2'	2.16	0.45
25:b:64:LYS:HB2	50:3:2815:G:P	2.57	0.45
25:b:151:ARG:HB3	50:3:2580:A:N7	2.32	0.45
28:e:153:LYS:HA	28:e:156:LYS:HE2	1.98	0.45
35:l:40:ASN:H	35:l:97:VAL:HB	1.82	0.45
36:m:14:ARG:HH22	50:3:2009:U:P	2.40	0.45
38:o:94:GLY:HA2	38:o:115:LYS:HD3	1.99	0.45
41:r:7:GLN:CD	41:r:10:VAL:HG13	2.41	0.45
45:v:34:GLN:NE2	45:v:52:THR:HG1	2.15	0.45
46:w:44:ILE:HD12	46:w:44:ILE:H	1.80	0.45
50:3:267:A:H2'	50:3:268:C:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1127:C:H2'	50:3:1128:G:O4'	2.17	0.45
50:3:1309:G:H2'	50:3:1310:U:C6	2.52	0.45
50:3:2319:A:H3'	50:3:2320:U:C6	2.52	0.45
50:3:2407:G:H2'	50:3:2408:G:H8	1.82	0.45
50:3:2561:G:H21	50:3:2590:G:N2	2.15	0.45
50:3:2643:A:H2'	50:3:2644:U:O4'	2.17	0.45
50:3:2819:C:C2	50:3:2820:G:C8	3.05	0.45
50:3:2843:G:O6	50:3:2882:U:O4	2.34	0.45
52:5:197:A:O2'	52:5:198:A:O4'	2.30	0.45
52:5:1041:G:H2'	52:5:1042:G:C8	2.52	0.45
52:5:1313:A:OP2	52:5:1314:A:N6	2.50	0.45
6:C:70:GLN:O	6:C:74:LEU:HG	2.17	0.44
9:F:35:LYS:NZ	52:5:1348:G:H5''	2.32	0.44
9:F:63:ARG:NH2	9:F:127:SER:O	2.50	0.44
16:M:61:TRP:CH2	52:5:1343:G:H5'	2.48	0.44
20:Q:93:ALA:O	20:Q:98:LEU:N	2.49	0.44
37:n:37:ASN:O	37:n:64:ASN:ND2	2.44	0.44
37:n:97:LYS:N	51:4:46:C:OP1	2.50	0.44
39:p:61:ILE:HG12	39:p:92:LYS:HG2	1.98	0.44
42:s:16:VAL:HG22	42:s:28:VAL:HG21	1.99	0.44
50:3:805:G:H2'	50:3:806:A:C8	2.52	0.44
50:3:995:A:H1'	50:3:2465:U:O2'	2.17	0.44
50:3:1247:C:H2'	50:3:1248:A:H8	1.82	0.44
50:3:2173:G:C4	50:3:2174:G:C8	3.05	0.44
50:3:2355:C:H2'	50:3:2356:U:H6	1.82	0.44
50:3:2381:G:H2'	50:3:2382:A:H8	1.82	0.44
50:3:2576:A:H2'	50:3:2577:G:C8	2.51	0.44
50:3:2595:A:H8	50:3:2596:A:C8	2.34	0.44
52:5:210:G:H2'	52:5:211:G:H8	1.82	0.44
52:5:379:A:H3'	52:5:380:G:H8	1.82	0.44
52:5:688:G:H1'	52:5:693:A:H62	1.82	0.44
52:5:941:A:H2'	52:5:942:G:C8	2.52	0.44
52:5:1432:A:H2'	52:5:1433:G:H8	1.82	0.44
52:5:1497:U:H2'	52:5:1498:G:C8	2.51	0.44
18:O:11:TYR:O	18:O:33:LEU:HB3	2.17	0.44
33:j:12:ASP:HB2	33:j:95:GLY:HA3	1.99	0.44
35:l:22:LYS:HG3	50:3:899:A:OP2	2.17	0.44
35:l:83:MET:HE3	50:3:995:A:H61	1.82	0.44
37:n:64:ASN:CG	37:n:101:ARG:HE	2.25	0.44
39:p:61:ILE:HG23	39:p:75:TYR:CE2	2.52	0.44
43:t:4:ILE:HG13	43:t:71:LEU:HD12	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:t:76:LEU:O	43:t:86:ILE:HA	2.16	0.44
45:v:34:GLN:HG2	50:3:2098:U:O2'	2.17	0.44
48:y:5:GLN:NE2	50:3:2063:G:O3'	2.50	0.44
50:3:50:G:H22	50:3:179:A:H2'	1.82	0.44
50:3:122:G:H4'	50:3:152:A:H5'	1.99	0.44
50:3:734:A:O2'	50:3:1668:G:N7	2.38	0.44
50:3:764:G:O2'	50:3:798:G:H4'	2.17	0.44
50:3:1413:A:C4	50:3:1414:C:C5	3.06	0.44
50:3:1919:A:H2	52:5:1469:G:H21	1.65	0.44
50:3:1967:U:H5'	52:5:1458:A:H2	1.82	0.44
50:3:1967:U:O2'	52:5:1459:U:H4'	2.16	0.44
50:3:2330:A:H2'	50:3:2331:G:C8	2.52	0.44
50:3:2832:G:H2'	50:3:2833:A:C8	2.51	0.44
52:5:60:A:H2'	52:5:327:G:N2	2.32	0.44
52:5:82:C:H2'	52:5:83:U:H6	1.83	0.44
52:5:576:A:O2'	52:5:725:A:N3	2.42	0.44
52:5:655:G:H2'	52:5:656:U:O4'	2.16	0.44
52:5:693:A:H2'	52:5:694:U:C6	2.53	0.44
52:5:711:G:H1'	52:5:774:A:C8	2.52	0.44
52:5:1057:C:O2	52:5:1166:A:N6	2.50	0.44
11:H:19:VAL:HG11	11:H:85:ILE:HA	1.98	0.44
15:L:28:SER:HB3	52:5:1302:C:OP1	2.16	0.44
24:a:147:VAL:HG22	24:a:200:VAL:HG22	1.98	0.44
25:b:157:GLN:O	50:3:2059:G:N2	2.36	0.44
26:c:4:LEU:HG	26:c:5:LYS:H	1.81	0.44
26:c:81:ASN:OD1	50:3:708:C:H5''	2.17	0.44
32:i:50:ASN:ND2	50:3:589:A:N1	2.65	0.44
39:p:47:ARG:NH1	50:3:593:C:O2'	2.51	0.44
44:u:86:PHE:CD1	44:u:94:ARG:HB2	2.52	0.44
48:y:51:LEU:HD13	48:y:51:LEU:HA	1.80	0.44
50:3:195:A:H2'	50:3:196:G:C8	2.52	0.44
50:3:210:U:H2'	50:3:211:A:H8	1.81	0.44
50:3:341:G:H22	50:3:344:A:P	2.41	0.44
50:3:719:G:O3'	50:3:823:A:N6	2.45	0.44
50:3:1104:A:H5'	50:3:1105:A:C8	2.52	0.44
50:3:1270:C:H2'	50:3:1271:A:C8	2.47	0.44
50:3:1734:A:H3'	50:3:1735:A:H8	1.82	0.44
50:3:1846:A:H2'	50:3:1847:G:H8	1.82	0.44
50:3:2117:G:O2'	50:3:2127:G:OP2	2.21	0.44
50:3:2298:G:H2'	50:3:2299:U:H6	1.81	0.44
50:3:2402:C:H2'	50:3:2403:C:O4'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2657:C:H2'	50:3:2658:U:H6	1.83	0.44
52:5:290:G:H2'	52:5:291:C:C6	2.52	0.44
52:5:452:A:H61	52:5:475:U:H3	1.66	0.44
52:5:715:A:H3'	52:5:716:C:H6	1.82	0.44
52:5:844:U:H2'	52:5:845:C:C6	2.53	0.44
52:5:887:C:H2'	52:5:888:A:H8	1.81	0.44
52:5:944:A:C6	52:5:1208:G:C6	3.05	0.44
52:5:1191:U:H2'	52:5:1192:C:H6	1.83	0.44
52:5:1216:G:H2'	52:5:1217:G:H8	1.81	0.44
52:5:1306:A:H2'	52:5:1307:A:O4'	2.17	0.44
53:7:67:C:H2'	53:7:68:G:H8	1.82	0.44
4:A:58:LEU:HA	4:A:61:GLN:HB3	1.99	0.44
5:B:56:VAL:HG12	5:B:69:VAL:HG22	2.00	0.44
6:C:12:ARG:NH2	52:5:409:G:O6	2.50	0.44
11:H:86:VAL:O	11:H:90:LEU:HG	2.18	0.44
12:I:29:LYS:HD3	12:I:29:LYS:HA	1.74	0.44
13:J:121:ARG:H	13:J:121:ARG:HD3	1.82	0.44
27:d:148:ARG:HH21	50:3:2314:U:H2'	1.82	0.44
29:f:39:LEU:HB3	45:v:62:ASN:ND2	2.32	0.44
35:l:71:HIS:CE1	50:3:945:U:H1'	2.52	0.44
36:m:34:THR:HG22	36:m:36:LYS:H	1.81	0.44
38:o:48:PHE:HA	38:o:68:LYS:HD2	1.99	0.44
40:q:35:LEU:HD22	40:q:37:LYS:HG3	2.00	0.44
41:r:112:ASN:HB3	41:r:115:GLN:OE1	2.18	0.44
50:3:549:A:H2'	50:3:550:A:H8	1.81	0.44
50:3:629:G:H2'	50:3:630:C:C6	2.53	0.44
50:3:700:U:H2'	50:3:701:A:C8	2.51	0.44
50:3:729:U:H3	50:3:803:G:H1	1.65	0.44
50:3:1198:G:H2'	50:3:1199:A:C8	2.53	0.44
50:3:1247:C:H2'	50:3:1248:A:C8	2.51	0.44
50:3:1475:C:H2'	50:3:1476:C:H6	1.82	0.44
50:3:1861:A:H62	50:3:1895:G:H1'	1.81	0.44
50:3:1888:U:O2'	50:3:1889:U:H5'	2.17	0.44
50:3:1903:A:H2'	50:3:1904:G:C8	2.52	0.44
50:3:2325:U:H2'	50:3:2326:G:C8	2.53	0.44
50:3:2329:G:H21	50:3:2330:A:H8	1.64	0.44
50:3:2359:G:H22	50:3:2373:G:H2'	1.82	0.44
50:3:2444:G:H2'	50:3:2445:C:H6	1.83	0.44
50:3:2687:A:N6	50:3:2737:G:O6	2.51	0.44
52:5:140:U:H2'	52:5:141:A:C8	2.51	0.44
52:5:499:U:O2	52:5:542:G:N2	2.38	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:1161:G:H2'	52:5:1162:G:C8	2.52	0.44
2:1:4:LYS:HD3	2:1:4:LYS:HA	1.72	0.44
3:2:21:GLN:NE2	50:3:2765:A:OP2	2.51	0.44
4:A:44:PHE:CE2	4:A:214:ILE:HG21	2.53	0.44
4:A:88:LYS:HD3	4:A:219:ASN:ND2	2.33	0.44
8:E:51:LYS:HG3	8:E:52:GLN:HE22	1.82	0.44
15:L:13:LYS:HD3	15:L:17:ILE:HD11	2.00	0.44
17:N:35:GLN:HG3	52:5:737:U:H5''	2.00	0.44
26:c:181:LYS:NZ	26:c:190:ASP:OD2	2.48	0.44
35:l:49:SER:HG	50:3:2491:C:HO2'	1.62	0.44
39:p:14:LYS:HA	39:p:17:LEU:HG	1.99	0.44
41:r:116:GLU:H	41:r:116:GLU:CD	2.25	0.44
50:3:28:G:H1'	50:3:550:A:H61	1.82	0.44
50:3:241:C:O2	50:3:643:A:O2'	2.35	0.44
50:3:593:C:H2'	50:3:594:G:O4'	2.17	0.44
50:3:861:U:O2	50:3:866:G:O6	2.36	0.44
50:3:968:U:H1'	50:3:969:A:C8	2.53	0.44
50:3:1269:C:H2'	50:3:1270:C:C6	2.52	0.44
50:3:1391:U:H2'	50:3:1392:G:O4'	2.18	0.44
50:3:1550:G:H2'	50:3:1551:U:H6	1.82	0.44
50:3:1703:A:H5''	50:3:2558:G:OP1	2.18	0.44
50:3:2066:A:H1'	50:3:2511:A:C2	2.53	0.44
50:3:2540:G:N2	50:3:2671:G:O2'	2.51	0.44
50:3:2718:C:H2'	50:3:2719:A:C8	2.52	0.44
50:3:2845:U:O4	50:3:2846:A:N6	2.50	0.44
50:3:2851:U:H2'	50:3:2852:G:O4'	2.17	0.44
52:5:1377:C:H2'	52:5:1378:C:O4'	2.18	0.44
5:B:155:LEU:HB2	5:B:170:MET:HG2	1.99	0.44
6:C:146:ALA:O	6:C:149:ILE:HB	2.17	0.44
8:E:19:ASN:O	8:E:23:GLU:HG2	2.17	0.44
24:a:251:ARG:NH1	50:3:2083:U:OP1	2.48	0.44
30:g:52:LYS:O	30:g:82:VAL:HB	2.17	0.44
31:h:108:LYS:HB3	31:h:108:LYS:HE2	1.83	0.44
33:j:111:TYR:O	33:j:115:LEU:HG	2.18	0.44
35:l:12:PRO:HA	50:3:947:A:N6	2.33	0.44
35:l:22:LYS:HD3	35:l:98:LYS:HE2	2.00	0.44
40:q:5:VAL:HG11	40:q:20:PHE:CZ	2.53	0.44
40:q:40:MET:HB2	40:q:45:ILE:HB	1.99	0.44
40:q:55:VAL:HA	40:q:97:PHE:HA	1.99	0.44
43:t:98:ASN:OD1	43:t:99:LYS:N	2.49	0.44
50:3:188:G:C5	50:3:217:A:N6	2.85	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:291:G:H2'	50:3:292:G:H8	1.83	0.44
50:3:604:A:N3	50:3:606:G:H2'	2.32	0.44
50:3:1306:G:H2'	50:3:1307:G:H8	1.82	0.44
50:3:1377:A:H3'	50:3:1378:C:C5'	2.48	0.44
50:3:1447:A:N6	50:3:1612:U:O2	2.50	0.44
50:3:1511:C:C2	50:3:1512:A:C8	3.06	0.44
50:3:1987:C:H3'	50:3:1988:A:H5''	1.99	0.44
50:3:2716:U:H2'	50:3:2717:G:C8	2.48	0.44
52:5:772:G:N2	52:5:802:C:O2	2.50	0.44
52:5:1250:A:H3'	52:5:1251:G:H8	1.82	0.44
53:7:37:A:C2	53:7:38:G:H1'	2.52	0.44
53:8:67:C:H2'	53:8:68:G:H8	1.82	0.44
8:E:140:GLN:NE2	52:5:743:A:OP2	2.50	0.44
30:g:79:LYS:HD2	50:3:1089:A:N3	2.32	0.44
35:l:26:TYR:O	35:l:67:ARG:NH2	2.50	0.44
36:m:99:ARG:HG3	36:m:117:GLN:NE2	2.30	0.44
37:n:27:ARG:HH22	50:3:2386:A:H4'	1.83	0.44
38:o:58:LYS:NZ	50:3:2690:U:H5''	2.32	0.44
41:r:127:LYS:NZ	50:3:1262:G:O3'	2.50	0.44
42:s:29:PHE:HD2	42:s:31:VAL:HG12	1.83	0.44
45:v:26:ARG:HG3	45:v:27:ARG:N	2.33	0.44
50:3:228:A:N7	50:3:455:G:O2'	2.49	0.44
50:3:618:G:H3'	50:3:1281:A:H61	1.82	0.44
50:3:876:A:H2'	50:3:877:G:H8	1.83	0.44
50:3:1069:G:C6	50:3:1157:G:C2	3.05	0.44
50:3:1277:A:O2'	50:3:1279:U:H5'	2.18	0.44
50:3:1326:C:H3'	50:3:1327:G:H8	1.83	0.44
50:3:1356:G:H2'	50:3:1358:C:C5	2.52	0.44
50:3:1417:G:H1	50:3:1423:A:H62	1.66	0.44
50:3:1939:A:H1'	50:3:1976:A:N6	2.32	0.44
50:3:2177:G:N2	53:8:57:C:OP2	2.51	0.44
52:5:23:G:H4'	52:5:879:G:OP2	2.18	0.44
52:5:925:C:H2'	52:5:926:C:C6	2.52	0.44
52:5:1055:G:H1'	52:5:1165:G:N2	2.33	0.44
52:5:1068:G:H2'	52:5:1070:G:N7	2.32	0.44
25:b:126:TRP:HE1	25:b:166:SER:N	2.16	0.44
25:b:229:ALA:HA	38:o:21:TYR:HB2	1.99	0.44
27:d:114:PHE:HB3	47:x:45:PHE:HD2	1.82	0.44
28:e:15:LYS:HG3	28:e:29:GLY:HA2	2.00	0.44
29:f:141:LYS:NZ	29:f:142:VAL:O	2.50	0.44
30:g:29:TYR:HA	30:g:106:MET:HG2	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:h:90:LYS:HG2	50:3:1112:A:H5''	1.99	0.44
39:p:10:ARG:HH22	50:3:548:A:H1'	1.82	0.44
40:q:56:VAL:HG23	40:q:96:ARG:H	1.82	0.44
41:r:72:PHE:HB2	41:r:108:SER:HB2	2.00	0.44
45:v:22:LYS:HD3	50:3:2440:A:H62	1.83	0.44
50:3:67:C:H2'	50:3:68:C:C6	2.52	0.44
50:3:297:G:H4'	50:3:298:U:H3'	2.00	0.44
50:3:714:G:C2	50:3:834:G:C2	3.06	0.44
50:3:895:G:N2	50:3:953:G:H2'	2.32	0.44
50:3:990:G:O6	50:3:999:U:O4	2.36	0.44
50:3:1076:U:C4	50:3:1149:G:C6	3.06	0.44
50:3:1201:A:H2'	50:3:1202:A:C8	2.53	0.44
50:3:1260:U:H2'	50:3:1261:U:H6	1.83	0.44
50:3:1435:A:H2'	50:3:1436:C:C6	2.53	0.44
50:3:1604:A:H2'	50:3:1605:A:H8	1.81	0.44
50:3:2048:U:H2'	50:3:2049:A:H8	1.82	0.44
50:3:2196:G:H2'	50:3:2197:U:C6	2.53	0.44
50:3:2488:C:H2'	50:3:2489:G:O4'	2.17	0.44
50:3:2721:C:H3'	50:3:2722:G:H5''	2.00	0.44
52:5:92:G:C2	52:5:93:A:H1'	2.53	0.44
52:5:126:U:H2'	52:5:127:A:C8	2.52	0.44
52:5:853:A:H2'	52:5:854:A:H8	1.82	0.44
52:5:929:C:H5''	52:5:931:C:H41	1.83	0.44
6:C:36:GLY:HA3	52:5:539:G:O2'	2.18	0.44
6:C:64:TYR:OH	6:C:94:GLU:OE1	2.28	0.44
6:C:88:ASN:OD1	6:C:91:ARG:NH1	2.51	0.44
9:F:37:LEU:O	9:F:41:ILE:HG12	2.18	0.44
9:F:103:ILE:O	9:F:107:ALA:HB2	2.17	0.44
15:L:83:ILE:HD12	21:R:69:HIS:CE1	2.53	0.44
20:Q:49:LEU:O	20:Q:50:ARG:HB3	2.17	0.44
24:a:161:ALA:H	50:3:1806:G:N2	2.16	0.44
25:b:83:GLU:HG2	50:3:2643:A:O3'	2.17	0.44
25:b:135:HIS:NE2	50:3:1705:U:H1'	2.32	0.44
26:c:35:PHE:CE2	26:c:39:LEU:HD11	2.52	0.44
27:d:38:MET:O	27:d:88:LYS:NZ	2.42	0.44
33:j:66:LYS:HE2	50:3:1699:A:OP1	2.18	0.44
36:m:60:ARG:NH2	50:3:1482:U:OP1	2.51	0.44
50:3:210:U:H2'	50:3:211:A:C8	2.53	0.44
50:3:849:C:H2'	50:3:850:G:H8	1.82	0.44
50:3:1048:A:H2'	50:3:1049:U:H6	1.82	0.44
50:3:1301:G:O2'	50:3:1652:A:N7	2.49	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1328:A:P	50:3:1661:A:H62	2.41	0.44
50:3:1437:A:H2'	50:3:1438:G:C8	2.52	0.44
50:3:1550:G:H2'	50:3:1551:U:C6	2.53	0.44
50:3:1846:A:H2'	50:3:1847:G:C8	2.53	0.44
50:3:2759:G:H5''	50:3:2761:A:N6	2.33	0.44
52:5:380:G:H2'	52:5:381:C:C6	2.53	0.44
52:5:680:G:N2	52:5:704:U:O2	2.46	0.44
52:5:775:G:H2'	52:5:776:C:H6	1.82	0.44
52:5:872:C:H2'	52:5:873:U:C6	2.53	0.44
52:5:1262:A:N1	52:5:1346:G:H1'	2.32	0.44
52:5:1413:G:C6	52:5:1439:G:C6	3.05	0.44
52:5:1441:C:H2'	52:5:1442:A:C8	2.52	0.44
6:C:49:GLY:O	6:C:53:GLN:HG3	2.18	0.43
7:D:206:ARG:O	7:D:210:ILE:HG12	2.18	0.43
11:H:115:ARG:H	11:H:115:ARG:HG2	1.66	0.43
14:K:56:LYS:HZ3	52:5:906:C:H5''	1.83	0.43
15:L:16:GLU:O	15:L:20:THR:HG23	2.18	0.43
26:c:75:ARG:CZ	50:3:2452:G:H5''	2.47	0.43
30:g:35:ILE:HD11	31:h:113:ASN:HD22	1.82	0.43
30:g:89:ILE:HD11	30:g:113:PHE:HA	2.00	0.43
34:k:102:GLN:O	50:3:637:U:O2'	2.34	0.43
35:l:35:VAL:HB	35:l:130:LYS:HB2	1.99	0.43
37:n:35:SER:OG	51:4:26:C:OP1	2.26	0.43
50:3:371:C:H2'	50:3:372:G:O4'	2.17	0.43
50:3:519:A:H2'	50:3:519:A:N3	2.33	0.43
50:3:786:A:OP1	50:3:1648:A:N6	2.51	0.43
50:3:854:A:H2'	50:3:855:A:C8	2.53	0.43
50:3:935:U:H3'	50:3:936:G:C8	2.53	0.43
50:3:958:C:H2'	50:3:959:C:C6	2.52	0.43
50:3:1047:A:C6	50:3:1186:A:C6	3.06	0.43
50:3:1134:G:H2'	50:3:1135:C:C6	2.53	0.43
50:3:1534:A:O2'	50:3:1536:C:N4	2.51	0.43
50:3:1670:U:H2'	50:3:1671:C:C5	2.53	0.43
50:3:2177:G:H22	53:8:57:C:P	2.41	0.43
52:5:87:G:N3	52:5:137:A:H2	2.15	0.43
52:5:401:U:OP1	52:5:402:G:O2'	2.32	0.43
52:5:462:G:H2'	52:5:463:U:O4'	2.17	0.43
52:5:1322:U:C2	52:5:1349:A:N7	2.85	0.43
11:H:35:ARG:NH1	11:H:39:GLU:OE1	2.45	0.43
21:R:11:VAL:HG12	21:R:12:ASP:N	2.32	0.43
31:h:57:ALA:HA	31:h:61:LYS:HE2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:l:15:VAL:HG21	35:l:96:VAL:HG22	2.00	0.43
39:p:18:LYS:HD2	39:p:18:LYS:HA	1.79	0.43
43:t:79:GLN:HA	43:t:83:GLN:O	2.18	0.43
45:v:34:GLN:HE22	45:v:52:THR:HG1	1.65	0.43
47:x:36:ILE:HG13	47:x:37:ASP:H	1.83	0.43
50:3:17:G:H2'	50:3:18:G:C8	2.53	0.43
50:3:42:U:H2'	50:3:43:A:C8	2.52	0.43
50:3:108:G:N2	50:3:380:A:N1	2.67	0.43
50:3:292:G:C5	50:3:293:G:C5	3.06	0.43
50:3:339:U:H2'	50:3:340:U:C6	2.53	0.43
50:3:730:G:O6	50:3:802:U:O4	2.35	0.43
50:3:794:G:H2'	50:3:795:G:O4'	2.19	0.43
50:3:899:A:H2'	50:3:900:G:C8	2.53	0.43
50:3:1040:U:H2'	50:3:1047:A:H2'	2.00	0.43
50:3:1076:U:C2	50:3:1149:G:C2	3.06	0.43
50:3:1154:U:H2'	50:3:1155:G:H8	1.82	0.43
50:3:1315:A:N6	50:3:1354:U:C4	2.85	0.43
50:3:1471:A:H2'	50:3:1472:C:H6	1.82	0.43
50:3:1815:U:O2'	50:3:1816:A:C8	2.68	0.43
50:3:2081:U:H2'	50:3:2082:U:H6	1.83	0.43
50:3:2699:C:H2'	50:3:2700:C:H6	1.83	0.43
50:3:2717:G:H2'	50:3:2718:C:C6	2.53	0.43
52:5:325:A:H2'	52:5:328:G:C8	2.53	0.43
52:5:593:A:N3	52:5:594:A:N6	2.66	0.43
52:5:883:A:H5'	52:5:885:U:O4'	2.17	0.43
52:5:1262:A:H2'	52:5:1263:A:H8	1.81	0.43
6:C:118:ASN:ND2	52:5:400:G:O5'	2.51	0.43
8:E:30:THR:OG1	8:E:31:ASN:N	2.51	0.43
9:F:78:ARG:NH2	52:5:1356:U:O2	2.51	0.43
19:P:13:VAL:HA	19:P:24:VAL:HA	1.99	0.43
24:a:43:LYS:CB	50:3:727:C:H5''	2.46	0.43
24:a:80:GLU:HB3	24:a:120:LYS:NZ	2.32	0.43
24:a:155:LYS:HB2	24:a:155:LYS:HE2	1.79	0.43
26:c:26:ALA:HA	26:c:113:HIS:NE2	2.33	0.43
31:h:121:LEU:HD11	31:h:136:ILE:HG12	2.00	0.43
34:k:3:LEU:HD13	34:k:9:VAL:H	1.83	0.43
36:m:89:LYS:HE3	36:m:89:LYS:HB2	1.83	0.43
43:t:23:ILE:HB	43:t:37:GLU:CD	2.43	0.43
49:z:31:LYS:NZ	49:z:48:LYS:HB3	2.33	0.43
50:3:36:U:H3'	50:3:37:G:H8	1.83	0.43
50:3:132:G:C2	50:3:133:G:C8	3.06	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:351:G:H2'	50:3:352:C:H6	1.83	0.43
50:3:527:A:H2'	50:3:528:U:O4'	2.19	0.43
50:3:576:A:H2'	50:3:577:C:O4'	2.18	0.43
50:3:613:C:H2'	50:3:614:C:H6	1.83	0.43
50:3:710:A:H2'	50:3:711:A:O4'	2.18	0.43
50:3:720:A:N6	50:3:813:G:H1'	2.33	0.43
50:3:1495:A:O5'	50:3:1548:A:N6	2.51	0.43
50:3:1513:A:H2'	50:3:1514:U:C6	2.53	0.43
50:3:1520:A:H2'	50:3:1521:A:H8	1.83	0.43
50:3:2055:A:H2'	50:3:2056:A:O4'	2.17	0.43
50:3:2218:U:H4'	50:3:2219:U:H3'	1.99	0.43
50:3:2267:G:H2'	50:3:2268:C:C6	2.53	0.43
50:3:2316:G:C6	50:3:2319:A:N7	2.86	0.43
50:3:2332:U:HO2'	50:3:2333:G:P	2.40	0.43
50:3:2534:G:H2'	50:3:2535:C:C6	2.53	0.43
50:3:2567:C:H2'	50:3:2568:G:H8	1.82	0.43
50:3:2599:C:H2'	50:3:2600:G:H8	1.82	0.43
51:4:13:G:O2'	51:4:14:U:H5'	2.18	0.43
51:4:59:A:H2'	51:4:60:C:C6	2.52	0.43
52:5:194:U:H2'	52:5:195:U:C6	2.53	0.43
52:5:989:A:C4	52:5:1191:U:H4'	2.53	0.43
52:5:1361:G:H2'	52:5:1362:G:C8	2.53	0.43
52:5:1487:U:H2'	52:5:1488:A:H8	1.82	0.43
14:K:52:THR:HG21	14:K:62:LEU:HD21	1.99	0.43
21:R:14:HIS:ND1	52:5:1010:A:H4'	2.33	0.43
21:R:78:ARG:HD3	52:5:1200:G:C8	2.54	0.43
25:b:67:GLN:O	25:b:71:GLU:HG2	2.18	0.43
28:e:81:GLY:HA2	28:e:85:GLY:HA2	2.00	0.43
30:g:40:ILE:HG13	30:g:99:VAL:HG21	2.01	0.43
33:j:23:LYS:HB2	33:j:40:VAL:HB	1.99	0.43
34:k:33:GLY:HA2	50:3:1221:G:H5''	2.00	0.43
41:r:114:ARG:CZ	50:3:555:A:H4'	2.49	0.43
43:t:3:ARG:HG3	43:t:4:ILE:HG12	2.00	0.43
45:v:22:LYS:HB2	50:3:2441:A:N1	2.34	0.43
50:3:308:A:N6	50:3:309:A:H62	2.16	0.43
50:3:641:U:H1'	50:3:657:A:H62	1.83	0.43
50:3:1171:G:H2'	50:3:1172:G:C8	2.53	0.43
50:3:1290:G:H2'	50:3:1291:C:C6	2.53	0.43
50:3:1317:C:H2'	50:3:1318:U:C6	2.53	0.43
50:3:1519:A:H3'	50:3:1520:A:H8	1.83	0.43
50:3:1938:U:H2'	50:3:1939:A:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2061:A:H3'	50:3:2063:G:H5''	1.99	0.43
50:3:2130:A:H2'	50:3:2131:G:C8	2.53	0.43
50:3:2259:G:O2'	50:3:2457:U:O2	2.36	0.43
51:4:35:C:N3	51:4:46:C:O2'	2.38	0.43
51:4:66:A:C2	51:4:67:G:H1'	2.53	0.43
52:5:95:C:H3'	52:5:96:G:H8	1.83	0.43
52:5:1491:A:H2'	52:5:1493:A:OP2	2.18	0.43
52:5:1496:G:H2'	52:5:1497:U:C6	2.54	0.43
15:L:15:ILE:O	15:L:19:LEU:HG	2.18	0.43
24:a:153:HIS:HB3	24:a:156:GLY:HA3	1.99	0.43
28:e:49:LYS:HZ3	28:e:54:GLN:HB2	1.84	0.43
29:f:46:ASP:HA	29:f:49:LEU:HB2	2.00	0.43
34:k:34:ARG:NH2	50:3:620:G:H1	2.15	0.43
36:m:111:THR:HG23	50:3:1684:A:H4'	2.00	0.43
47:x:13:SER:OG	47:x:14:PHE:N	2.52	0.43
49:z:42:ARG:HA	49:z:42:ARG:HD2	1.71	0.43
50:3:338:G:H2'	50:3:339:U:C6	2.53	0.43
50:3:369:C:N3	50:3:370:C:C4	2.87	0.43
50:3:532:A:H2'	50:3:533:G:C8	2.53	0.43
50:3:639:G:H2'	50:3:640:U:O4'	2.18	0.43
50:3:818:A:O2'	50:3:820:U:OP1	2.29	0.43
50:3:852:C:H2'	50:3:853:G:O4'	2.18	0.43
50:3:881:A:H1'	50:3:882:C:OP2	2.18	0.43
50:3:1098:G:H2'	50:3:1099:C:C6	2.54	0.43
50:3:1715:A:O2'	50:3:1769:A:H2'	2.18	0.43
50:3:1759:C:H2'	50:3:1760:G:C8	2.53	0.43
50:3:1797:C:H3'	50:3:1835:G:N2	2.34	0.43
50:3:1889:U:H2'	50:3:1890:U:N3	2.33	0.43
50:3:1984:A:H2'	50:3:1985:A:C8	2.52	0.43
50:3:2341:G:H4'	50:3:2342:U:O5'	2.19	0.43
50:3:2465:U:H3'	50:3:2466:G:C8	2.54	0.43
52:5:25:U:H2'	52:5:26:C:C6	2.53	0.43
52:5:368:C:H4'	52:5:369:A:OP1	2.19	0.43
52:5:1245:A:H2'	52:5:1246:A:H8	1.84	0.43
52:5:1304:U:H3'	52:5:1305:G:C8	2.53	0.43
53:7:14:C:H42	53:7:47:G:N2	2.16	0.43
2:1:6:ALA:HB2	50:3:251:G:H1	1.83	0.43
7:D:139:GLU:CD	7:D:153:PRO:HD2	2.44	0.43
8:E:97:LEU:HD13	52:5:658:G:H5''	2.00	0.43
14:K:124:ARG:HG2	14:K:127:ARG:NH1	2.33	0.43
16:M:41:ARG:HG3	16:M:42:LEU:N	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:R:41:PHE:HB3	21:R:42:PRO:HD2	2.01	0.43
25:b:3:ILE:HG13	25:b:86:ASN:HB2	2.00	0.43
32:i:38:LEU:HD23	32:i:57:LEU:HD22	1.99	0.43
33:j:23:LYS:HG3	50:3:2569:A:O2'	2.18	0.43
36:m:31:ILE:O	36:m:115:ILE:HA	2.17	0.43
43:t:105:LYS:HD2	50:3:334:A:OP1	2.19	0.43
50:3:87:G:H2'	50:3:88:G:H8	1.82	0.43
50:3:445:C:H2'	50:3:446:A:C8	2.53	0.43
50:3:497:C:H2'	50:3:498:C:C6	2.53	0.43
50:3:1219:U:C2	50:3:1220:A:C8	3.06	0.43
50:3:1409:G:H2'	50:3:1410:A:C8	2.54	0.43
50:3:1553:G:H21	50:3:1578:A:H62	1.66	0.43
50:3:1755:A:H2'	50:3:1756:A:C8	2.52	0.43
50:3:2016:G:H2'	50:3:2017:G:H8	1.83	0.43
50:3:2213:A:H2'	50:3:2214:A:H8	1.81	0.43
50:3:2291:U:C2	50:3:2333:G:O6	2.72	0.43
52:5:26:C:H4'	52:5:522:G:N3	2.34	0.43
52:5:66:A:N1	52:5:201:G:N2	2.67	0.43
52:5:395:G:H2'	52:5:396:C:O4'	2.19	0.43
52:5:798:U:H2'	52:5:799:A:H8	1.81	0.43
52:5:1104:C:H2'	52:5:1105:C:C6	2.53	0.43
52:5:1131:A:H2'	52:5:1132:G:O4'	2.19	0.43
52:5:1133:A:O2'	52:5:1159:A:N7	2.45	0.43
52:5:1233:G:H2'	52:5:1234:C:C6	2.53	0.43
52:5:1316:C:H2'	52:5:1317:A:C4	2.53	0.43
4:A:66:GLN:OE1	4:A:70:ASN:ND2	2.49	0.43
6:C:73:ARG:O	6:C:76:ARG:HG2	2.18	0.43
7:D:77:SER:OG	52:5:16:G:O2'	2.34	0.43
7:D:185:ARG:NH2	52:5:22:G:OP2	2.52	0.43
8:E:90:LEU:HD12	20:Q:50:ARG:HH12	1.83	0.43
9:F:74:LEU:HD11	9:F:85:GLN:HB2	2.00	0.43
11:H:9:LEU:H	11:H:87:ARG:HD2	1.82	0.43
13:J:17:SER:HA	13:J:80:LYS:HB2	2.00	0.43
24:a:217:GLY:HA3	50:3:799:A:O5'	2.19	0.43
26:c:188:VAL:O	26:c:192:MET:HG2	2.18	0.43
30:g:44:LEU:HD21	30:g:92:THR:HG23	1.99	0.43
31:h:55:ILE:HB	31:h:65:PHE:HE1	1.83	0.43
32:i:115:ASN:H	32:i:118:SER:HB2	1.82	0.43
37:n:79:ASP:O	37:n:83:LYS:NZ	2.51	0.43
50:3:20:C:O2'	50:3:587:U:OP1	2.27	0.43
50:3:225:A:H61	50:3:464:A:H62	1.66	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:443:C:H2'	50:3:444:C:C6	2.54	0.43
50:3:451:A:O4'	50:3:1871:U:O2'	2.33	0.43
50:3:585:U:H2'	50:3:586:G:C8	2.53	0.43
50:3:632:A:H2'	50:3:633:G:H8	1.83	0.43
50:3:788:G:H2'	50:3:789:A:H8	1.84	0.43
50:3:824:A:H1'	50:3:1788:A:H61	1.84	0.43
50:3:977:A:O2'	50:3:1221:G:O3'	2.34	0.43
50:3:1116:U:H2'	50:3:1117:U:C5	2.53	0.43
50:3:1675:A:C6	50:3:1676:G:C6	3.07	0.43
50:3:1983:U:H2'	50:3:1984:A:C8	2.54	0.43
50:3:2471:U:H2'	50:3:2472:G:C8	2.54	0.43
50:3:2859:U:H2'	50:3:2860:A:C8	2.54	0.43
52:5:1002:A:N6	52:5:1019:G:N3	2.67	0.43
52:5:1246:A:H2'	52:5:1247:G:H8	1.84	0.43
52:5:1376:G:C5	52:5:1377:C:C4	3.07	0.43
6:C:141:LYS:HD2	6:C:141:LYS:HA	1.88	0.43
8:E:56:HIS:HB3	8:E:58:TYR:CE1	2.54	0.43
11:H:97:LYS:NZ	11:H:101:LYS:HD3	2.34	0.43
15:L:43:LYS:HG3	15:L:43:LYS:O	2.19	0.43
24:a:38:LEU:HB3	24:a:65:LYS:HE3	2.01	0.43
25:b:64:LYS:HD3	50:3:2814:A:H5''	2.00	0.43
30:g:46:LYS:HD3	30:g:46:LYS:HA	1.89	0.43
40:q:40:MET:HB2	40:q:45:ILE:HD12	2.00	0.43
50:3:57:G:H2'	50:3:58:A:H8	1.83	0.43
50:3:218:G:H2'	50:3:219:G:C8	2.54	0.43
50:3:749:U:H1'	50:3:752:C:H41	1.84	0.43
50:3:1131:A:H2'	50:3:1132:C:O4'	2.18	0.43
50:3:1400:U:H2'	50:3:1401:A:H8	1.84	0.43
50:3:1413:A:HO2'	50:3:1424:U:H3	1.66	0.43
50:3:1473:C:O2	50:3:1580:G:N1	2.52	0.43
50:3:2029:U:O2'	50:3:2624:C:O2'	2.20	0.43
50:3:2081:U:H2'	50:3:2082:U:C6	2.54	0.43
50:3:2081:U:O2'	50:3:2605:G:H1'	2.18	0.43
50:3:2516:G:C4	50:3:2517:A:C8	3.07	0.43
50:3:2555:U:H2'	50:3:2556:C:C6	2.53	0.43
50:3:2607:G:H2'	50:3:2608:A:C8	2.53	0.43
50:3:2659:U:H2'	50:3:2660:C:C6	2.54	0.43
50:3:2666:C:H3'	50:3:2667:G:H8	1.83	0.43
50:3:2780:U:H2'	50:3:2781:C:C6	2.54	0.43
52:5:92:G:OP1	52:5:321:A:N6	2.51	0.43
52:5:118:C:H2'	52:5:119:U:C6	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:139:C:H2'	52:5:140:U:C6	2.54	0.43
52:5:662:G:N3	52:5:729:C:H2'	2.34	0.43
52:5:764:A:H2'	52:5:765:A:O4'	2.19	0.43
52:5:976:U:H2'	52:5:977:U:C5	2.54	0.43
52:5:978:A:N1	52:5:1197:G:N2	2.66	0.43
52:5:1225:A:H2	52:5:1345:G:H1'	1.84	0.43
53:8:56:U:O2'	53:8:58:G:N7	2.43	0.43
2:1:22:LYS:HG2	2:1:44:GLN:HE22	1.84	0.43
5:B:123:LEU:O	5:B:127:ILE:HG22	2.18	0.43
12:I:23:LEU:O	12:I:26:LEU:HG	2.19	0.43
14:K:84:GLY:HA3	14:K:121:GLU:H	1.84	0.43
23:T:37:ARG:NE	52:5:1501:G:N7	2.67	0.43
31:h:53:CYS:HB3	31:h:65:PHE:CZ	2.53	0.43
38:o:52:VAL:HG13	38:o:64:PHE:HB2	2.00	0.43
47:x:36:ILE:HG23	47:x:38:ILE:H	1.84	0.43
49:z:9:LEU:HD23	49:z:49:GLU:HA	2.00	0.43
50:3:22:U:H2'	50:3:23:A:H8	1.84	0.43
50:3:55:A:H1'	50:3:182:C:O2'	2.19	0.43
50:3:314:G:H2'	50:3:315:A:H3'	2.00	0.43
50:3:381:A:H2'	50:3:382:U:H6	1.82	0.43
50:3:731:A:H2'	50:3:732:G:C8	2.54	0.43
50:3:811:G:H5''	50:3:812:G:H8	1.83	0.43
50:3:1121:A:O2'	50:3:1122:G:N7	2.51	0.43
50:3:1195:A:H2'	50:3:1196:U:C6	2.54	0.43
50:3:1794:A:H4'	50:3:2598:C:H5'	2.00	0.43
50:3:2100:G:N7	50:3:2233:A:H2'	2.34	0.43
50:3:2700:C:O2'	50:3:2851:U:O2'	2.15	0.43
50:3:2796:C:H2'	50:3:2797:C:H6	1.81	0.43
50:3:2835:G:H5'	50:3:2836:U:H5'	2.00	0.43
52:5:155:C:H2'	52:5:156:U:C5	2.54	0.43
52:5:386:U:H2'	52:5:387:G:H8	1.83	0.43
52:5:999:C:N3	52:5:1028:C:O2'	2.49	0.43
52:5:1332:U:H3	52:5:1338:A:H62	1.66	0.43
3:2:4:ARG:HH11	50:3:2474:C:P	2.39	0.43
5:B:216:ASN:ND2	12:I:20:ASP:OD2	2.52	0.43
12:I:98:ILE:HD12	12:I:99:PRO:HD2	2.01	0.43
17:N:62:ARG:NE	52:5:752:G:OP2	2.51	0.43
27:d:136:ILE:HA	27:d:141:ILE:HG12	2.01	0.43
29:f:128:LEU:HD23	29:f:128:LEU:HA	1.88	0.43
34:k:106:ALA:HB3	34:k:107:LYS:HZ2	1.84	0.43
38:o:6:LYS:O	38:o:7:GLN:HG2	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:r:22:GLN:O	41:r:25:VAL:HG12	2.19	0.43
50:3:129:U:H2'	50:3:130:C:H6	1.83	0.43
50:3:276:A:H61	50:3:293:G:H2'	1.83	0.43
50:3:308:A:N1	50:3:309:A:N6	2.66	0.43
50:3:617:C:H2'	50:3:618:G:C8	2.54	0.43
50:3:793:C:H2'	50:3:794:G:C8	2.54	0.43
50:3:857:U:O4	50:3:858:A:N6	2.52	0.43
50:3:915:A:H1'	50:3:937:A:N6	2.34	0.43
50:3:1396:A:H2'	50:3:1397:G:C8	2.54	0.43
50:3:1854:A:O2'	50:3:1855:A:H8	2.02	0.43
50:3:1986:C:H2'	50:3:1987:C:C6	2.54	0.43
50:3:2057:C:H3'	50:3:2058:G:H8	1.84	0.43
50:3:2357:G:O6	50:3:2377:A:N6	2.52	0.43
50:3:2577:G:H2'	50:3:2578:A:C8	2.53	0.43
50:3:2667:G:N2	50:3:2670:A:OP2	2.46	0.43
50:3:2772:A:H2'	50:3:2773:A:H5''	2.01	0.43
52:5:28:G:N2	52:5:292:U:H4'	2.34	0.43
52:5:145:G:N2	52:5:147:A:O5'	2.51	0.43
52:5:264:C:H2'	52:5:265:U:C6	2.54	0.43
52:5:681:U:H3'	52:5:682:G:C8	2.54	0.43
52:5:732:A:H2'	52:5:733:A:C8	2.52	0.43
52:5:802:C:N3	52:5:803:C:N4	2.59	0.43
52:5:836:C:H3'	52:5:837:G:H8	1.83	0.43
52:5:940:G:H22	52:5:1211:A:H2	1.65	0.43
52:5:1003:G:H2'	52:5:1004:U:C6	2.54	0.43
52:5:1036:C:H2'	52:5:1037:A:O4'	2.18	0.43
52:5:1056:U:H5''	52:5:1165:G:H22	1.84	0.43
52:5:1172:A:H3'	52:5:1172:A:OP2	2.19	0.43
52:5:1395:C:H2'	52:5:1396:U:O4'	2.18	0.43
6:C:13:ARG:HH11	52:5:540:U:H4'	1.84	0.42
6:C:121:HIS:HE1	52:5:434:U:H4'	1.84	0.42
9:F:104:ALA:O	9:F:108:ARG:HG2	2.19	0.42
10:G:102:GLU:HG2	10:G:103:LYS:HD2	2.00	0.42
11:H:74:PHE:CZ	52:5:1347:U:H4'	2.53	0.42
14:K:127:ARG:CZ	14:K:135:PRO:HD3	2.49	0.42
15:L:28:SER:OG	52:5:1302:C:H5''	2.19	0.42
15:L:102:THR:HG22	52:5:1201:C:O2'	2.18	0.42
25:b:15:GLN:HE21	38:o:61:SER:HA	1.84	0.42
28:e:18:LEU:HD21	28:e:48:LEU:HD12	2.00	0.42
29:f:121:PHE:HA	29:f:142:VAL:HB	2.01	0.42
30:g:32:MET:HE3	30:g:32:MET:HB3	1.65	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:n:11:ARG:HD2	37:n:95:GLY:HA2	2.01	0.42
38:o:57:GLY:HA3	38:o:61:SER:O	2.19	0.42
47:x:6:HIS:CG	47:x:7:PHE:N	2.86	0.42
50:3:601:U:H4'	50:3:981:A:N6	2.34	0.42
50:3:1070:U:H3	50:3:1155:G:H1	1.67	0.42
50:3:1288:C:H2'	50:3:1289:G:C8	2.54	0.42
50:3:1309:G:H2'	50:3:1310:U:H6	1.84	0.42
50:3:1507:G:H1'	50:3:1508:G:OP2	2.19	0.42
50:3:1801:U:H2'	50:3:1802:C:H6	1.81	0.42
50:3:1865:A:H62	50:3:1891:A:H8	1.67	0.42
50:3:2200:U:H2'	50:3:2201:G:H8	1.84	0.42
50:3:2339:G:O2'	50:3:2344:A:N6	2.52	0.42
50:3:2475:C:H42	50:3:2491:C:N4	2.16	0.42
50:3:2755:G:H2'	50:3:2756:A:C8	2.54	0.42
50:3:2893:C:H2'	50:3:2894:G:O4'	2.18	0.42
52:5:337:C:H2'	52:5:338:C:C6	2.54	0.42
52:5:338:C:H2'	52:5:339:U:C6	2.54	0.42
52:5:751:C:H5'	52:5:752:G:C8	2.54	0.42
52:5:1217:G:H2'	52:5:1218:C:C6	2.55	0.42
52:5:1321:G:O2'	52:5:1348:G:N1	2.31	0.42
2:1:35:THR:HA	2:1:38:LYS:HG3	2.00	0.42
4:A:85:VAL:HG21	4:A:112:TRP:HH2	1.83	0.42
4:A:85:VAL:HA	4:A:108:ILE:O	2.19	0.42
4:A:212:ASP:HB3	8:E:162:LYS:H	1.83	0.42
6:C:70:GLN:HE22	52:5:399:C:P	2.39	0.42
13:J:111:HIS:HB2	52:5:671:G:N2	2.31	0.42
14:K:124:ARG:NH2	52:5:537:A:OP1	2.49	0.42
15:L:103:ARG:HG3	52:5:1201:C:C4	2.54	0.42
21:R:29:ARG:HB3	21:R:30:PRO:HD3	2.01	0.42
24:a:116:LYS:H	24:a:119:ASP:HB2	1.83	0.42
25:b:168:HIS:NE2	25:b:170:GLY:O	2.51	0.42
28:e:142:GLU:CD	50:3:2767:G:H21	2.26	0.42
32:i:11:GLN:HG3	50:3:573:A:O3'	2.19	0.42
38:o:25:PHE:CE1	38:o:52:VAL:HG21	2.53	0.42
50:3:252:G:C4	50:3:2439:U:H4'	2.54	0.42
50:3:572:G:N2	50:3:590:U:O4	2.52	0.42
50:3:900:G:H2'	50:3:901:C:C6	2.54	0.42
50:3:914:G:N2	50:3:915:A:N7	2.66	0.42
50:3:1051:U:H2'	50:3:1052:A:C8	2.55	0.42
50:3:1066:G:H2'	50:3:1067:A:C8	2.54	0.42
50:3:1306:G:H2'	50:3:1307:G:C8	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1406:A:C5	50:3:1408:G:C4	3.07	0.42
50:3:1582:G:H2'	50:3:1583:G:C8	2.54	0.42
50:3:1846:A:C8	50:3:1934:A:C8	3.07	0.42
50:3:2343:A:N6	50:3:2345:G:N3	2.68	0.42
50:3:2465:U:H3'	50:3:2466:G:H8	1.82	0.42
52:5:46:U:H2'	52:5:47:G:O4'	2.18	0.42
52:5:193:G:C2'	52:5:194:U:H5'	2.49	0.42
52:5:508:A:O2'	52:5:540:U:O2	2.35	0.42
52:5:877:C:H2'	52:5:878:U:C6	2.53	0.42
52:5:915:U:H2'	52:5:916:U:C6	2.53	0.42
52:5:1197:G:H3'	52:5:1296:C:H41	1.83	0.42
52:5:1268:G:H2'	52:5:1269:U:C6	2.54	0.42
2:1:20:LYS:HZ1	50:3:685:G:HO2'	1.56	0.42
2:1:24:ALA:HB2	34:k:62:LEU:HD23	2.01	0.42
4:A:112:TRP:CH2	4:A:187:ALA:HB2	2.55	0.42
6:C:32:LYS:HB3	6:C:43:ARG:HH21	1.84	0.42
7:D:139:GLU:OE1	7:D:139:GLU:N	2.44	0.42
8:E:71:ASP:OD2	8:E:71:ASP:N	2.52	0.42
10:G:119:SER:HB3	52:5:637:A:O2'	2.20	0.42
10:G:132:LYS:NZ	52:5:598:U:O3'	2.52	0.42
14:K:50:VAL:HG11	14:K:87:LEU:HD13	2.00	0.42
14:K:56:LYS:NZ	52:5:906:C:H5''	2.34	0.42
24:a:170:ILE:HG22	24:a:172:GLY:H	1.84	0.42
27:d:34:ILE:O	27:d:91:LEU:HD23	2.20	0.42
27:d:122:PHE:HA	27:d:128:TYR:HA	2.01	0.42
28:e:20:PHE:CD1	28:e:25:ILE:HG12	2.54	0.42
28:e:152:ARG:HD3	28:e:167:TYR:CZ	2.54	0.42
30:g:26:ILE:HG13	30:g:82:VAL:HA	2.00	0.42
31:h:105:ALA:HA	31:h:124:VAL:HG21	2.00	0.42
36:m:99:ARG:HH21	50:3:2885:U:H5''	1.83	0.42
39:p:52:LYS:HB2	39:p:56:PHE:CE2	2.54	0.42
40:q:77:LYS:NZ	50:3:1009:A:OP2	2.52	0.42
41:r:99:ARG:HA	41:r:99:ARG:HD3	1.73	0.42
47:x:39:CYS:SG	47:x:40:GLY:N	2.93	0.42
50:3:28:G:O6	50:3:547:G:O2'	2.36	0.42
50:3:454:G:C2	50:3:455:G:C5	3.07	0.42
50:3:496:A:C4	50:3:506:A:N6	2.87	0.42
50:3:799:A:N7	50:3:1783:G:H1'	2.34	0.42
50:3:840:G:N3	50:3:866:G:H1'	2.35	0.42
50:3:1157:G:C2'	50:3:1158:C:H5'	2.50	0.42
50:3:1244:A:H4'	50:3:1269:C:H4'	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1647:A:H3'	50:3:1648:A:H5''	2.01	0.42
50:3:1719:C:N4	50:3:1738:G:O6	2.53	0.42
50:3:1996:A:H3'	50:3:1997:C:C6	2.54	0.42
50:3:2072:C:H5'	50:3:2259:G:H21	1.85	0.42
50:3:2463:G:H2'	50:3:2464:C:C6	2.55	0.42
50:3:2483:C:H2'	50:3:2485:U:OP1	2.19	0.42
50:3:2497:U:H3'	50:3:2498:G:C8	2.54	0.42
50:3:2516:G:H5'	50:3:2563:U:O2	2.18	0.42
50:3:2650:A:H2'	50:3:2651:G:C8	2.54	0.42
52:5:190:A:H2'	52:5:191:A:H8	1.84	0.42
52:5:649:U:O4	52:5:749:G:O2'	2.26	0.42
52:5:656:U:H2'	52:5:657:G:H8	1.84	0.42
52:5:683:G:O2'	52:5:700:G:N2	2.52	0.42
52:5:763:A:H3'	52:5:764:A:H8	1.84	0.42
52:5:819:G:H2'	52:5:820:A:C8	2.55	0.42
52:5:1239:U:C2'	52:5:1240:U:H5'	2.49	0.42
3:2:29:THR:HG22	3:2:31:LYS:H	1.84	0.42
4:A:156:ILE:O	4:A:160:GLU:HG2	2.19	0.42
14:K:30:LEU:C	14:K:32:ASN:H	2.27	0.42
14:K:128:SER:HA	52:5:36:G:N3	2.34	0.42
15:L:11:ASN:HA	15:L:46:LYS:HD3	2.01	0.42
15:L:29:ARG:HG2	52:5:1303:A:OP1	2.19	0.42
16:M:36:HIS:NE2	52:5:1331:A:O3'	2.47	0.42
22:S:24:GLN:HA	22:S:27:LYS:HG2	2.01	0.42
28:e:91:ARG:HE	28:e:91:ARG:HB3	1.65	0.42
31:h:71:PRO:HB3	31:h:111:ASP:OD1	2.19	0.42
41:r:61:ASN:ND2	50:3:530:G:H21	2.18	0.42
43:t:99:LYS:HD3	50:3:84:G:OP1	2.19	0.42
50:3:562:C:H42	50:3:2787:U:P	2.40	0.42
50:3:679:A:H61	50:3:2377:A:H1'	1.84	0.42
50:3:747:A:H2'	50:3:748:G:O4'	2.19	0.42
50:3:873:G:H2'	50:3:874:U:C6	2.54	0.42
50:3:1076:U:O2	50:3:1149:G:N2	2.53	0.42
50:3:1123:A:H4'	50:3:1124:G:C8	2.53	0.42
50:3:1292:A:C5	50:3:1293:U:C4	3.06	0.42
50:3:1356:G:O2'	50:3:1357:U:H2'	2.20	0.42
50:3:1372:U:O2'	50:3:1413:A:O2'	2.37	0.42
50:3:1552:C:H2'	50:3:1553:G:O4'	2.19	0.42
50:3:1896:A:H2'	50:3:1897:A:O4'	2.20	0.42
50:3:2084:A:H2'	50:3:2085:C:H6	1.85	0.42
50:3:2335:A:N7	50:3:2396:A:N6	2.67	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2353:G:O2'	50:3:2389:A:N3	2.38	0.42
50:3:2403:C:H2'	50:3:2404:G:C8	2.54	0.42
50:3:2408:G:H2'	50:3:2409:U:O4'	2.19	0.42
50:3:2462:G:N3	50:3:2463:G:C8	2.87	0.42
50:3:2587:U:H2'	50:3:2588:U:C6	2.55	0.42
50:3:2594:C:H41	50:3:2616:G:H2'	1.84	0.42
50:3:2625:U:H2'	50:3:2626:A:C8	2.52	0.42
50:3:2863:G:H2'	50:3:2864:A:C8	2.54	0.42
51:4:19:G:C2'	51:4:20:U:H5'	2.49	0.42
52:5:693:A:H2'	52:5:694:U:H6	1.84	0.42
52:5:950:C:H2'	52:5:951:U:C6	2.54	0.42
52:5:1064:U:H2'	52:5:1065:G:O4'	2.20	0.42
52:5:1220:A:H2'	52:5:1221:A:H8	1.82	0.42
52:5:1444:G:H2'	52:5:1445:G:H8	1.85	0.42
5:B:15:ASN:O	5:B:217:ARG:NH1	2.52	0.42
6:C:78:VAL:O	6:C:81:GLN:HG2	2.19	0.42
9:F:137:LYS:HA	9:F:140:THR:HG22	2.01	0.42
10:G:27:LYS:HE3	52:5:854:A:H2	1.84	0.42
10:G:46:GLU:HG2	10:G:50:LYS:HZ3	1.83	0.42
12:I:19:TYR:CE2	16:M:54:PRO:HB2	2.54	0.42
12:I:60:SER:O	16:M:41:ARG:NH1	2.50	0.42
14:K:99:ARG:NH2	14:K:103:LEU:O	2.53	0.42
19:P:14:LYS:HE2	19:P:14:LYS:HB3	1.85	0.42
25:b:135:HIS:CE1	50:3:1705:U:H1'	2.55	0.42
25:b:186:GLU:H	25:b:186:GLU:CD	2.27	0.42
27:d:136:ILE:HA	27:d:141:ILE:HG21	2.01	0.42
32:i:104:VAL:O	32:i:108:VAL:HG23	2.18	0.42
35:l:41:TRP:CH2	50:3:994:U:H5'	2.53	0.42
36:m:17:THR:HG22	36:m:37:LYS:HZ2	1.84	0.42
43:t:80:LYS:C	43:t:82:LYS:H	2.26	0.42
43:t:92:VAL:HB	50:3:331:A:O3'	2.19	0.42
50:3:224:G:H22	50:3:463:U:H2'	1.85	0.42
50:3:814:U:H2'	50:3:815:G:O4'	2.20	0.42
50:3:1240:U:H5'	50:3:1242:G:C4	2.55	0.42
50:3:1245:G:C6	50:3:1246:U:C4	3.07	0.42
50:3:2255:A:H2'	50:3:2256:C:C6	2.54	0.42
50:3:2295:A:O2'	50:3:2296:A:H3'	2.19	0.42
50:3:2559:C:H2'	50:3:2560:U:O4'	2.19	0.42
50:3:2706:U:O4	50:3:2707:A:N6	2.52	0.42
52:5:43:G:H2'	52:5:44:C:C6	2.55	0.42
52:5:139:C:H2'	52:5:140:U:H6	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:866:A:O2'	52:5:867:A:H3'	2.20	0.42
52:5:1136:G:C6	52:5:1137:C:C4	3.08	0.42
52:5:1299:C:H2'	52:5:1300:C:C6	2.55	0.42
3:2:9:PRO:HB3	3:2:14:CYS:HB2	2.01	0.42
6:C:103:ARG:HA	6:C:103:ARG:HD3	1.79	0.42
6:C:129:VAL:HG12	52:5:617:U:H1'	2.01	0.42
8:E:32:VAL:HG22	8:E:65:ASP:H	1.84	0.42
22:S:8:GLU:CD	22:S:8:GLU:H	2.27	0.42
24:a:83:VAL:HG22	24:a:99:ILE:HG22	2.00	0.42
25:b:157:GLN:HG2	50:3:2060:G:H4'	2.02	0.42
28:e:86:PHE:O	28:e:138:GLY:N	2.53	0.42
33:j:119:VAL:HG23	33:j:120:GLU:HG2	2.01	0.42
50:3:28:G:H5''	50:3:29:G:OP2	2.20	0.42
50:3:235:U:H2'	50:3:236:G:O4'	2.20	0.42
50:3:370:C:H2'	50:3:371:C:C6	2.53	0.42
50:3:582:A:C8	50:3:584:G:H1'	2.54	0.42
50:3:1724:A:C6	50:3:1725:G:C6	3.07	0.42
50:3:2332:U:O2'	50:3:2333:G:OP1	2.30	0.42
50:3:2444:G:H2'	50:3:2445:C:C6	2.55	0.42
50:3:2598:C:H2'	50:3:2599:C:C6	2.55	0.42
52:5:493:A:H4'	52:5:494:A:OP1	2.19	0.42
52:5:752:G:H2'	52:5:753:C:C6	2.54	0.42
52:5:785:U:H2'	52:5:786:U:O4'	2.20	0.42
52:5:1214:A:H2'	52:5:1272:C:H5	1.84	0.42
4:A:125:ILE:O	4:A:129:LYS:HG2	2.20	0.42
5:B:52:GLN:HB3	5:B:118:ILE:HG22	2.02	0.42
13:J:111:HIS:HE1	20:Q:102:VAL:HG13	1.85	0.42
15:L:86:TRP:H	21:R:73:GLU:HG2	1.84	0.42
17:N:26:VAL:HA	17:N:29:LEU:HD12	2.02	0.42
17:N:84:LEU:HD22	50:3:749:U:C5	2.55	0.42
18:O:5:ARG:HD2	52:5:621:C:O2'	2.19	0.42
18:O:22:ARG:NH1	52:5:386:U:O2'	2.53	0.42
24:a:263:MET:HA	50:3:1803:U:O2'	2.20	0.42
28:e:67:PHE:HA	28:e:70:THR:HG22	2.01	0.42
45:v:18:ARG:HG3	53:8:77:A:C4	2.55	0.42
50:3:25:G:H2'	50:3:26:G:C8	2.55	0.42
50:3:61:U:O4	50:3:70:G:O6	2.37	0.42
50:3:292:G:C6	50:3:293:G:C6	3.07	0.42
50:3:311:G:O2'	50:3:312:U:OP1	2.33	0.42
50:3:450:C:H4'	50:3:1885:G:N2	2.32	0.42
50:3:494:G:N2	50:3:506:A:O5'	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:599:U:H5''	50:3:844:G:OP1	2.20	0.42
50:3:764:G:C8	50:3:799:A:H5''	2.54	0.42
50:3:1104:A:OP1	50:3:1105:A:O2'	2.34	0.42
50:3:1171:G:HO2'	50:3:2045:C:HO2'	1.64	0.42
50:3:1305:G:H2'	50:3:1306:G:C8	2.55	0.42
50:3:1575:C:H2'	50:3:1576:G:O4'	2.20	0.42
50:3:2122:G:H1	50:3:2126:A:P	2.42	0.42
50:3:2175:U:H2'	50:3:2176:G:C8	2.55	0.42
50:3:2190:G:H2'	50:3:2191:G:H8	1.85	0.42
50:3:2366:A:H2'	50:3:2367:C:C6	2.54	0.42
50:3:2560:U:H2'	50:3:2562:U:C5	2.51	0.42
50:3:2838:G:H1'	50:3:2887:A:H61	1.83	0.42
50:3:2838:G:H2'	50:3:2883:A:H62	1.84	0.42
51:4:22:G:H2'	51:4:25:A:N1	2.34	0.42
52:5:94:A:N6	52:5:320:G:H21	2.17	0.42
52:5:344:G:H2'	52:5:345:A:C8	2.55	0.42
52:5:500:G:C6	52:5:542:G:C6	3.08	0.42
52:5:510:U:H2'	52:5:511:A:H8	1.84	0.42
52:5:659:U:H4'	52:5:833:G:H5''	2.01	0.42
52:5:784:A:N6	52:5:790:U:OP1	2.39	0.42
52:5:807:C:H2'	52:5:808:C:O4'	2.20	0.42
52:5:1156:G:H1'	52:5:1157:G:C4	2.54	0.42
52:5:1462:G:H2'	52:5:1463:A:C8	2.43	0.42
4:A:25:GLU:HA	4:A:252:GLU:HG3	2.00	0.42
8:E:17:GLN:HA	8:E:20:GLN:CD	2.44	0.42
11:H:21:LEU:HD22	11:H:63:PHE:HB3	2.01	0.42
14:K:6:GLN:HA	14:K:9:ARG:HG3	2.02	0.42
14:K:8:ILE:HG23	19:P:32:HIS:HD2	1.84	0.42
23:T:24:GLU:HG2	23:T:27:ARG:HH11	1.84	0.42
24:a:69:ILE:HD13	24:a:110:ILE:HG13	2.02	0.42
27:d:121:SER:O	27:d:129:THR:OG1	2.37	0.42
28:e:104:GLU:C	28:e:120:ILE:HD12	2.43	0.42
37:n:10:LEU:HD21	50:3:2342:U:C2	2.54	0.42
40:q:56:VAL:HG22	40:q:98:VAL:H	1.85	0.42
42:s:50:ILE:HD12	46:w:83:ALA:HB2	2.02	0.42
43:t:1:MET:HA	50:3:85:U:H4'	2.01	0.42
48:y:8:SER:O	50:3:1293:U:H4'	2.20	0.42
50:3:83:G:H2'	50:3:84:G:C8	2.55	0.42
50:3:201:A:H62	50:3:2438:A:H2'	1.85	0.42
50:3:851:U:H2'	50:3:852:C:C6	2.55	0.42
50:3:1237:G:H2'	50:3:1238:A:C8	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1296:G:N2	50:3:2019:G:H2'	2.34	0.42
50:3:1298:A:H62	50:3:2019:G:N2	2.18	0.42
50:3:1302:C:H2'	50:3:1680:A:H62	1.85	0.42
50:3:1454:G:H3'	50:3:1455:A:H2'	2.02	0.42
50:3:1464:G:N3	50:3:1503:A:H2	2.18	0.42
50:3:1480:A:H2'	50:3:1480:A:N3	2.34	0.42
50:3:1633:C:N3	50:3:1634:A:N6	2.65	0.42
50:3:1800:C:H2'	50:3:1801:U:C6	2.54	0.42
50:3:2191:G:H2'	50:3:2192:U:C6	2.55	0.42
50:3:2316:G:N1	50:3:2319:A:C8	2.88	0.42
50:3:2329:G:N2	50:3:2330:A:H8	2.18	0.42
50:3:2459:A:O2'	50:3:2460:C:OP1	2.37	0.42
50:3:2473:C:H2'	50:3:2474:C:C6	2.55	0.42
50:3:2840:U:H2'	50:3:2841:A:H8	1.84	0.42
52:5:128:A:O2'	52:5:198:A:N1	2.46	0.42
52:5:308:C:H2'	52:5:309:A:C8	2.55	0.42
52:5:1441:C:H2'	52:5:1442:A:O4'	2.19	0.42
53:8:66:C:H2'	53:8:67:C:H6	1.85	0.42
6:C:49:GLY:O	6:C:52:GLN:HG2	2.19	0.42
9:F:2:ARG:HB2	52:5:1355:U:C4	2.54	0.42
12:I:89:ALA:O	12:I:93:LEU:HG	2.20	0.42
15:L:83:ILE:HD12	21:R:69:HIS:NE2	2.35	0.42
19:P:76:ARG:NH1	52:5:115:A:O2'	2.52	0.42
22:S:10:ARG:NH1	52:5:92:G:N7	2.68	0.42
24:a:80:GLU:HB3	24:a:120:LYS:HZ3	1.85	0.42
27:d:114:PHE:HB3	47:x:45:PHE:CD2	2.55	0.42
28:e:4:ILE:HG13	50:3:2757:A:OP1	2.20	0.42
29:f:39:LEU:HD21	29:f:42:LYS:HB3	2.01	0.42
31:h:59:ASN:OD1	31:h:60:ASP:N	2.52	0.42
37:n:11:ARG:NH1	37:n:95:GLY:O	2.53	0.42
39:p:86:ASN:ND2	39:p:112:VAL:O	2.53	0.42
46:w:15:LEU:HD21	46:w:54:ILE:HG23	2.02	0.42
50:3:62:G:H1'	50:3:64:U:C4	2.55	0.42
50:3:137:U:H2'	50:3:138:U:C6	2.55	0.42
50:3:202:C:O2'	50:3:203:A:H5'	2.20	0.42
50:3:1084:C:H42	50:3:2759:G:H1	1.67	0.42
50:3:1257:G:H2'	50:3:1258:C:H6	1.83	0.42
50:3:1337:G:H2'	50:3:1338:G:H8	1.85	0.42
50:3:1539:U:H2'	50:3:1540:G:C8	2.55	0.42
50:3:2265:U:H2'	50:3:2266:C:C6	2.55	0.42
50:3:2462:G:C2	50:3:2463:G:C8	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:94:A:H5'	52:5:95:C:H5	1.85	0.42
52:5:169:G:H1	52:5:196:G:N2	2.17	0.42
52:5:175:U:O4	52:5:191:A:N6	2.53	0.42
52:5:537:A:H2'	52:5:538:G:H8	1.82	0.42
52:5:556:G:H2'	52:5:557:A:C5	2.55	0.42
52:5:561:A:H4'	52:5:562:U:OP1	2.20	0.42
52:5:974:C:O2	52:5:974:C:H2'	2.19	0.42
52:5:1227:A:H2	52:5:1329:G:H1'	1.85	0.42
52:5:1291:C:H3'	52:5:1292:A:C8	2.54	0.42
52:5:1362:G:O2'	52:5:1363:U:H5'	2.20	0.42
53:7:66:C:H2'	53:7:67:C:H6	1.85	0.42
1:0:26:SER:OG	50:3:717:U:O3'	2.36	0.42
6:C:80:LYS:O	6:C:82:ARG:NH2	2.52	0.42
10:G:25:ALA:HA	10:G:30:LEU:HD12	2.02	0.42
14:K:3:THR:O	14:K:7:LEU:HG	2.20	0.42
14:K:10:LYS:HA	14:K:10:LYS:HD2	1.76	0.42
19:P:75:PHE:HZ	52:5:231:U:H4'	1.84	0.42
24:a:4:LYS:HE3	24:a:21:ASP:HA	2.02	0.42
25:b:106:GLU:HA	25:b:217:VAL:HA	2.01	0.42
28:e:70:THR:HG23	28:e:71:TYR:CD1	2.54	0.42
28:e:92:LEU:HB3	28:e:132:THR:HA	2.01	0.42
43:t:9:LYS:HE3	43:t:77:PHE:HD1	1.83	0.42
50:3:8:A:H2'	50:3:9:G:C8	2.54	0.42
50:3:385:U:H2'	50:3:386:U:C6	2.54	0.42
50:3:976:C:O2'	50:3:1222:A:OP1	2.28	0.42
50:3:1001:C:H2'	50:3:1002:A:H8	1.85	0.42
50:3:1005:G:H2'	50:3:1006:U:C6	2.55	0.42
50:3:1451:A:H2'	50:3:1452:G:C8	2.54	0.42
50:3:1509:U:C2	50:3:1510:A:C8	3.07	0.42
50:3:1587:U:O2'	50:3:1588:A:OP1	2.33	0.42
51:4:31:G:H2'	51:4:32:G:C8	2.55	0.42
52:5:86:A:C2	52:5:138:A:H4'	2.55	0.42
52:5:248:U:H2'	52:5:249:U:C6	2.55	0.42
52:5:660:A:C2	52:5:740:G:C2	3.08	0.42
52:5:672:A:H61	52:5:712:A:N6	2.13	0.42
52:5:681:U:H2'	52:5:682:G:C4	2.55	0.42
52:5:982:A:H2'	52:5:983:G:C8	2.55	0.42
52:5:1101:A:H3'	52:5:1102:A:C8	2.55	0.42
52:5:1208:G:H2'	52:5:1209:C:C6	2.55	0.42
52:5:1240:U:H2'	52:5:1241:G:C8	2.55	0.42
11:H:19:VAL:HG21	11:H:85:ILE:HG13	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:I:74:ASN:ND2	16:M:57:LYS:HG3	2.35	0.41
16:M:8:VAL:HG12	16:M:12:ARG:NE	2.35	0.41
24:a:45:GLY:HA3	50:3:726:U:O2'	2.20	0.41
24:a:179:TYR:HB3	24:a:191:LYS:HB3	2.01	0.41
27:d:133:LYS:HA	50:3:2313:U:O2	2.19	0.41
28:e:90:LEU:HD22	28:e:167:TYR:HA	2.02	0.41
30:g:51:ILE:HG13	30:g:83:ALA:HA	2.02	0.41
34:k:115:ILE:HD11	50:3:672:G:C2	2.54	0.41
36:m:78:LEU:O	36:m:82:LEU:HG	2.19	0.41
37:n:11:ARG:HG3	37:n:14:ARG:HD2	2.02	0.41
42:s:59:ILE:HD12	50:3:1634:A:O3'	2.19	0.41
48:y:6:ARG:HH21	50:3:2026:A:P	2.42	0.41
50:3:251:G:H22	50:3:254:G:H3'	1.85	0.41
50:3:369:C:H2'	50:3:370:C:O4'	2.20	0.41
50:3:383:U:H2'	50:3:384:G:H8	1.85	0.41
50:3:894:G:N3	50:3:2277:A:H5'	2.35	0.41
50:3:1082:A:H2'	50:3:1145:G:C4	2.55	0.41
50:3:1318:U:H2'	50:3:1319:C:C6	2.55	0.41
50:3:1336:A:H2'	50:3:1337:G:O4'	2.20	0.41
50:3:1444:C:C2	50:3:1445:U:C4	3.08	0.41
50:3:1483:G:O2'	50:3:2856:G:O3'	2.37	0.41
50:3:1551:U:H2'	50:3:1552:C:O4'	2.19	0.41
50:3:1734:A:C2	50:3:1773:A:H5''	2.55	0.41
50:3:2035:U:H2'	50:3:2036:G:O4'	2.20	0.41
50:3:2272:C:H2'	50:3:2273:U:O4'	2.20	0.41
50:3:2367:C:H2'	50:3:2368:A:C8	2.54	0.41
50:3:2381:G:H2'	50:3:2382:A:C8	2.55	0.41
50:3:2530:U:O2'	50:3:2655:U:H5''	2.20	0.41
51:4:29:C:H1'	51:4:52:G:H1	1.85	0.41
52:5:1031:A:H2'	52:5:1032:G:H8	1.85	0.41
52:5:1180:U:O2'	52:5:1181:G:H5'	2.20	0.41
53:7:9:U:H2'	53:7:47:G:H21	1.85	0.41
3:2:10:ILE:HD11	3:2:32:HIS:HB3	2.03	0.41
4:A:234:ASP:CG	4:A:245:MET:H	2.28	0.41
5:B:119:ILE:O	5:B:123:LEU:HD23	2.20	0.41
7:D:181:LYS:HG3	52:5:8:G:N3	2.35	0.41
8:E:111:LYS:HA	8:E:111:LYS:HD2	1.79	0.41
11:H:60:LYS:O	11:H:60:LYS:HD2	2.20	0.41
12:I:52:LYS:HB2	12:I:52:LYS:HE3	1.81	0.41
32:i:93:ARG:NH1	50:3:2746:A:H4'	2.35	0.41
32:i:95:MET:HB3	32:i:100:SER:HA	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:j:75:THR:HG22	38:o:79:PHE:HA	2.03	0.41
34:k:67:ASN:HB3	34:k:70:LYS:HZ2	1.85	0.41
37:n:30:LEU:O	37:n:92:ASP:HB3	2.20	0.41
37:n:76:ASP:O	37:n:79:ASP:HB2	2.20	0.41
38:o:115:LYS:HD3	38:o:115:LYS:HA	1.90	0.41
41:r:55:ILE:O	41:r:59:THR:HG23	2.19	0.41
44:u:70:ASP:OD1	50:3:2394:A:O2'	2.38	0.41
45:v:17:ASN:N	53:8:77:A:N7	2.68	0.41
50:3:14:U:O2	50:3:2634:C:H4'	2.21	0.41
50:3:119:A:H2'	50:3:121:U:O4	2.20	0.41
50:3:330:A:H2'	50:3:331:A:H8	1.85	0.41
50:3:909:U:H2'	50:3:910:G:C8	2.55	0.41
50:3:1261:U:C2	50:3:1262:G:N7	2.88	0.41
50:3:1830:G:H2'	50:3:1831:G:C8	2.56	0.41
50:3:2571:U:H2'	50:3:2572:A:H8	1.84	0.41
50:3:2645:U:H3'	50:3:2646:G:C8	2.54	0.41
52:5:34:A:H2'	52:5:35:C:O4'	2.19	0.41
52:5:68:C:H2'	52:5:69:G:C8	2.55	0.41
52:5:324:C:H4'	52:5:325:A:H5''	2.01	0.41
52:5:684:A:N3	52:5:685:G:H1'	2.35	0.41
52:5:781:A:H2'	52:5:782:G:C8	2.55	0.41
52:5:934:G:N3	52:5:1350:A:H2	2.17	0.41
52:5:1012:A:H1'	52:5:1193:U:H1'	2.02	0.41
52:5:1333:C:H2'	52:5:1335:G:OP2	2.20	0.41
1:0:30:VAL:HG11	50:3:502:A:H5''	2.03	0.41
11:H:111:ARG:HB3	52:5:1321:G:C8	2.55	0.41
11:H:120:LEU:HD13	11:H:123:ALA:HA	2.01	0.41
13:J:23:THR:HG21	13:J:56:ALA:HB2	2.03	0.41
14:K:64:LYS:HB3	14:K:80:ILE:HD12	2.03	0.41
18:O:2:ARG:NH1	52:5:388:G:OP1	2.52	0.41
18:O:65:SER:OG	52:5:450:U:O3'	2.37	0.41
21:R:32:LYS:HE3	21:R:32:LYS:HB3	1.89	0.41
24:a:61:ARG:HA	24:a:221:HIS:O	2.19	0.41
24:a:171:LEU:HB2	24:a:181:ILE:HB	2.02	0.41
25:b:6:ILE:HG22	25:b:207:ILE:HB	2.01	0.41
26:c:125:THR:O	26:c:126:HIS:ND1	2.53	0.41
30:g:4:LYS:HE3	50:3:1081:A:C5	2.55	0.41
42:s:66:ARG:HH21	50:3:66:A:H1'	1.84	0.41
43:t:44:ARG:NE	43:t:46:LYS:HD3	2.35	0.41
44:u:58:ARG:NH1	50:3:2339:G:OP1	2.54	0.41
50:3:14:U:O2	50:3:14:U:H2'	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:561:A:H4'	50:3:2050:G:O2'	2.20	0.41
50:3:562:C:N3	50:3:2787:U:H2'	2.35	0.41
50:3:664:G:H2'	50:3:665:C:H6	1.85	0.41
50:3:758:C:H2'	50:3:759:U:C6	2.55	0.41
50:3:1058:U:H3'	50:3:1059:G:H8	1.85	0.41
50:3:1251:G:C2	50:3:1259:A:C4	3.08	0.41
50:3:1415:A:H2'	50:3:1416:G:C8	2.55	0.41
50:3:2200:U:H2'	50:3:2201:G:C8	2.56	0.41
50:3:2246:G:N7	50:3:2249:A:N6	2.65	0.41
50:3:2359:G:O2'	50:3:2374:A:N6	2.51	0.41
50:3:2364:A:H2'	50:3:2365:U:O4'	2.21	0.41
50:3:2381:G:C6	50:3:2389:A:N1	2.87	0.41
50:3:2466:G:H1'	50:3:2467:A:N7	2.34	0.41
50:3:2469:A:H2'	50:3:2470:C:C6	2.55	0.41
52:5:173:U:H2'	52:5:174:U:O4'	2.20	0.41
52:5:371:U:C2	52:5:372:G:C8	3.08	0.41
52:5:561:A:H5'	52:5:564:G:N3	2.35	0.41
52:5:1000:A:H2'	52:5:1019:G:H1	1.84	0.41
52:5:1044:G:H21	52:5:1047:U:H3'	1.85	0.41
52:5:1139:A:N6	52:5:1149:G:C6	2.88	0.41
6:C:76:ARG:NH1	52:5:619:A:O2'	2.53	0.41
9:F:102:TRP:HA	9:F:105:MET:HG2	2.02	0.41
11:H:42:PRO:HA	52:5:1264:G:H21	1.85	0.41
11:H:54:LEU:HD23	11:H:60:LYS:HB2	2.02	0.41
13:J:103:ILE:HG12	23:T:8:ASN:HB2	2.01	0.41
24:a:23:LYS:NZ	50:3:1597:U:H5''	2.36	0.41
24:a:146:GLN:O	24:a:201:GLY:N	2.42	0.41
26:c:182:HIS:O	26:c:186:VAL:HG23	2.20	0.41
28:e:97:TYR:CE2	28:e:163:LYS:HB3	2.55	0.41
29:f:28:HIS:HA	29:f:34:LYS:HG3	2.02	0.41
37:n:98:TYR:HE2	37:n:106:ALA:HB3	1.85	0.41
38:o:6:LYS:HG3	38:o:8:ALA:HB3	2.02	0.41
39:p:89:ILE:HG22	39:p:91:ARG:HH22	1.85	0.41
50:3:194:A:H2	50:3:714:G:N3	2.19	0.41
50:3:208:A:H4'	50:3:209:G:H4'	2.02	0.41
50:3:223:A:H3'	50:3:224:G:H8	1.85	0.41
50:3:1063:A:N6	50:3:1160:G:H2'	2.35	0.41
50:3:1289:G:H2'	50:3:1290:G:C8	2.55	0.41
50:3:1372:U:O2	50:3:1413:A:H2'	2.21	0.41
50:3:1471:A:H2'	50:3:1472:C:C6	2.56	0.41
50:3:1541:A:H3'	50:3:1542:G:H8	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:1758:C:H2'	50:3:1759:C:C6	2.55	0.41
50:3:2159:U:H2'	50:3:2160:U:C6	2.55	0.41
50:3:2613:U:H2'	50:3:2614:U:C6	2.55	0.41
52:5:54:A:N1	52:5:355:A:C6	2.88	0.41
52:5:137:A:C8	52:5:138:A:C8	3.08	0.41
52:5:250:G:C6	52:5:269:A:N1	2.88	0.41
52:5:688:G:O2'	52:5:692:A:N6	2.41	0.41
52:5:748:U:H2'	52:5:749:G:O4'	2.20	0.41
52:5:748:U:H3'	52:5:749:G:C8	2.56	0.41
52:5:749:G:H1'	52:5:751:C:H41	1.85	0.41
5:B:149:ALA:HB1	5:B:206:ASN:O	2.20	0.41
6:C:58:GLN:OE1	6:C:61:GLN:NE2	2.46	0.41
10:G:99:ARG:NH1	10:G:103:LYS:O	2.53	0.41
15:L:17:ILE:HA	15:L:20:THR:HG23	2.03	0.41
17:N:45:LYS:HB2	52:5:665:G:H4'	2.03	0.41
24:a:26:LEU:HD13	24:a:95:PHE:HE1	1.85	0.41
24:a:130:ILE:HG21	24:a:145:THR:HG21	2.03	0.41
25:b:11:VAL:HG13	38:o:10:ILE:HD11	2.03	0.41
26:c:154:ASP:OD1	26:c:154:ASP:N	2.53	0.41
28:e:126:VAL:HG12	28:e:136:ILE:HG12	2.01	0.41
35:l:4:PRO:HB3	50:3:907:A:H4'	2.03	0.41
35:l:6:ARG:H	50:3:907:A:C5'	2.33	0.41
40:q:83:TYR:CE1	40:q:85:HIS:HB2	2.55	0.41
42:s:9:LYS:HE2	42:s:9:LYS:HB2	1.81	0.41
43:t:45:HIS:HB2	50:3:517:G:OP2	2.20	0.41
46:w:40:LYS:HD2	46:w:42:HIS:HE1	1.85	0.41
49:z:42:ARG:HG3	50:3:679:A:H8	1.86	0.41
50:3:503:G:H2'	50:3:504:G:H8	1.85	0.41
50:3:580:U:C6	50:3:1249:A:H2'	2.55	0.41
50:3:642:A:OP2	50:3:655:G:N1	2.44	0.41
50:3:763:G:C4	50:3:765:A:C8	3.08	0.41
50:3:800:C:H2'	50:3:801:U:C6	2.55	0.41
50:3:862:U:H5''	50:3:863:U:OP1	2.21	0.41
50:3:1219:U:H2'	50:3:1220:A:O4'	2.21	0.41
50:3:1265:G:OP2	50:3:1265:G:H8	2.03	0.41
50:3:1311:G:N1	50:3:1314:A:OP2	2.53	0.41
50:3:1422:U:H2'	50:3:1423:A:O4'	2.20	0.41
50:3:1508:G:N2	50:3:1535:A:N6	2.58	0.41
50:3:1996:A:H3'	50:3:1997:C:H6	1.86	0.41
50:3:2655:U:H2'	50:3:2656:G:C8	2.54	0.41
50:3:2754:U:H2'	50:3:2755:G:O4'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2794:U:H2'	50:3:2795:C:C6	2.55	0.41
50:3:2891:C:H2'	50:3:2892:U:C6	2.56	0.41
51:4:3:U:HO2'	51:4:24:A:N6	2.16	0.41
52:5:12:G:H2'	52:5:13:U:O4'	2.20	0.41
52:5:672:A:C4	52:5:673:A:C8	3.08	0.41
52:5:673:A:H2'	52:5:674:U:H6	1.85	0.41
52:5:791:A:H4'	52:5:1496:G:O2'	2.20	0.41
52:5:940:G:H2'	52:5:940:G:N3	2.34	0.41
52:5:1002:A:N7	52:5:1019:G:C2	2.89	0.41
52:5:1002:A:H3'	52:5:1003:G:H8	1.85	0.41
52:5:1099:G:H3'	52:5:1100:C:H6	1.84	0.41
52:5:1234:C:H3'	52:5:1235:C:H5''	2.02	0.41
52:5:1409:A:H2'	52:5:1410:A:C8	2.55	0.41
5:B:140:SER:O	5:B:144:VAL:HG22	2.20	0.41
7:D:163:GLY:O	7:D:167:ARG:HG3	2.20	0.41
8:E:97:LEU:HG	8:E:99:SER:H	1.84	0.41
9:F:110:ARG:HH12	9:F:122:GLU:HB2	1.86	0.41
14:K:47:CYS:HA	14:K:68:VAL:HA	2.02	0.41
14:K:60:SER:HB2	52:5:516:C:O2'	2.20	0.41
16:M:21:TYR:HE2	16:M:23:ARG:NE	2.15	0.41
24:a:38:LEU:HD22	24:a:65:LYS:HB3	2.03	0.41
24:a:51:GLY:HA3	50:3:808:U:H4'	2.03	0.41
24:a:270:MET:HA	24:a:275:THR:HG21	2.02	0.41
28:e:4:ILE:HD12	50:3:2756:A:H4'	2.02	0.41
35:l:133:LYS:HG2	35:l:134:ARG:N	2.31	0.41
40:q:34:GLN:HG2	40:q:56:VAL:HG12	2.03	0.41
45:v:36:CYS:O	45:v:47:ARG:HA	2.20	0.41
50:3:122:G:H2'	50:3:123:G:C8	2.55	0.41
50:3:589:A:H2'	50:3:590:U:O4'	2.21	0.41
50:3:853:G:H4'	50:3:873:G:H4'	2.03	0.41
50:3:936:G:H8	50:3:936:G:OP2	2.03	0.41
50:3:1425:U:N3	50:3:1636:U:O2'	2.53	0.41
50:3:1748:U:H2'	50:3:1749:A:C8	2.54	0.41
50:3:1804:A:H2'	50:3:1805:U:H6	1.84	0.41
50:3:1999:G:H5'	50:3:2001:C:H41	1.84	0.41
50:3:2208:U:H2'	50:3:2209:U:C6	2.55	0.41
50:3:2494:C:H2'	50:3:2495:A:C8	2.56	0.41
50:3:2670:A:H3'	50:3:2671:G:H8	1.86	0.41
50:3:2757:A:N6	50:3:2762:U:H3	2.18	0.41
51:4:55:A:H2'	51:4:56:A:O4'	2.20	0.41
52:5:753:C:H2'	52:5:754:U:O4'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:899:U:H2'	52:5:900:G:O4'	2.20	0.41
52:5:957:C:H2'	52:5:958:G:H8	1.84	0.41
52:5:1008:G:H2'	52:5:1009:G:O4'	2.21	0.41
4:A:83:LEU:HB3	4:A:176:LEU:HB2	2.03	0.41
7:D:100:LYS:HG2	7:D:126:LEU:HD22	2.02	0.41
8:E:44:GLU:HA	8:E:54:SER:HA	2.03	0.41
11:H:124:ARG:O	52:5:1318:C:H4'	2.20	0.41
12:I:45:PRO:HB2	12:I:78:ARG:NH1	2.35	0.41
14:K:115:LEU:HD23	14:K:115:LEU:HA	1.89	0.41
22:S:29:LYS:HE3	22:S:29:LYS:HB2	1.80	0.41
23:T:39:GLY:O	23:T:42:LEU:HG	2.21	0.41
24:a:43:LYS:HG2	24:a:61:ARG:HD2	2.02	0.41
24:a:205:ASN:C	24:a:207:ASP:H	2.29	0.41
25:b:90:PHE:CD1	25:b:96:ILE:HG12	2.56	0.41
26:c:40:VAL:HG11	26:c:103:LEU:HD21	2.02	0.41
32:i:16:ARG:HD3	32:i:16:ARG:N	2.36	0.41
33:j:63:VAL:HG23	33:j:64:ARG:HG3	2.02	0.41
40:q:17:ASN:HA	40:q:93:LYS:HZ1	1.86	0.41
50:3:312:U:H2'	50:3:313:G:O4'	2.21	0.41
50:3:348:A:H2'	50:3:349:G:H8	1.84	0.41
50:3:429:U:O2'	50:3:430:U:H5'	2.21	0.41
50:3:453:U:C2	50:3:454:G:C8	3.09	0.41
50:3:805:G:H2'	50:3:806:A:H8	1.86	0.41
50:3:1094:G:C6	50:3:1115:G:N1	2.89	0.41
50:3:1343:C:H2'	50:3:1344:U:C6	2.55	0.41
50:3:1803:U:H2'	50:3:1804:A:H8	1.84	0.41
50:3:1860:A:H2'	50:3:1861:A:C8	2.56	0.41
50:3:1919:A:N6	50:3:1924:U:O4	2.51	0.41
50:3:2130:A:O2'	50:3:2131:G:H5'	2.20	0.41
50:3:2171:A:C4	50:3:2172:A:C8	3.08	0.41
50:3:2267:G:N7	50:3:2435:C:N4	2.69	0.41
50:3:2335:A:H3'	50:3:2335:A:OP2	2.21	0.41
50:3:2399:G:C6	50:3:2435:C:H1'	2.55	0.41
50:3:2624:C:H2'	50:3:2625:U:C6	2.55	0.41
50:3:2667:G:H2'	50:3:2668:A:H2'	2.03	0.41
52:5:82:C:H2'	52:5:83:U:C6	2.54	0.41
52:5:421:G:H2'	52:5:422:A:C8	2.55	0.41
52:5:808:C:H5'	52:5:895:A:H61	1.86	0.41
52:5:938:U:H2'	52:5:939:G:O4'	2.21	0.41
52:5:1045:C:C4	53:7:35:G:H1'	2.56	0.41
52:5:1197:G:O5'	52:5:1296:C:N4	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:209:GLU:OE1	10:G:80:ARG:NH2	2.54	0.41
5:B:8:ASN:HD21	5:B:187:TYR:H	1.68	0.41
8:E:97:LEU:O	8:E:100:ILE:HG22	2.21	0.41
10:G:67:LYS:HZ1	52:5:650:A:P	2.44	0.41
10:G:74:LEU:HB3	10:G:76:TYR:CE2	2.56	0.41
14:K:134:LYS:HD3	52:5:38:U:OP1	2.21	0.41
18:O:67:PHE:HB3	18:O:73:TRP:NE1	2.36	0.41
24:a:153:HIS:ND1	50:3:2212:U:H4'	2.35	0.41
27:d:38:MET:HE2	27:d:38:MET:HB3	1.95	0.41
30:g:47:ASN:HD22	30:g:47:ASN:HA	1.60	0.41
30:g:93:LEU:HB3	30:g:127:ALA:HA	2.02	0.41
36:m:50:THR:O	36:m:54:VAL:HG23	2.20	0.41
36:m:53:LYS:HB2	36:m:53:LYS:HE2	1.89	0.41
36:m:59:ASN:O	36:m:63:VAL:HG23	2.21	0.41
39:p:54:ARG:NH2	50:3:1191:A:OP1	2.48	0.41
42:s:8:LEU:HB2	42:s:30:VAL:O	2.21	0.41
42:s:86:PRO:HA	46:w:90:HIS:CE1	2.55	0.41
46:w:2:THR:HG22	46:w:5:LYS:HG2	2.02	0.41
49:z:15:ARG:HA	49:z:15:ARG:HD3	1.81	0.41
50:3:330:A:H2'	50:3:331:A:C8	2.55	0.41
50:3:344:A:H1'	50:3:346:G:C8	2.56	0.41
50:3:432:G:H2'	50:3:433:A:H8	1.86	0.41
50:3:512:G:H1'	50:3:516:A:N6	2.36	0.41
50:3:682:A:N6	50:3:2357:G:O2'	2.50	0.41
50:3:802:U:H2'	50:3:803:G:H8	1.86	0.41
50:3:1084:C:H41	50:3:1145:G:N2	2.18	0.41
50:3:1152:U:H2'	50:3:1153:U:C6	2.55	0.41
50:3:1310:U:H2'	50:3:1311:G:O4'	2.20	0.41
50:3:1381:A:H62	50:3:1405:G:C2'	2.33	0.41
50:3:1971:G:C6	50:3:1974:U:C4	3.08	0.41
50:3:2119:A:H4'	53:8:20:G:C5	2.56	0.41
50:3:2160:U:H2'	50:3:2161:G:C8	2.56	0.41
50:3:2440:A:H8	50:3:2441:A:C8	2.39	0.41
50:3:2699:C:H2'	50:3:2700:C:C6	2.55	0.41
50:3:2747:U:O2	50:3:2772:A:N7	2.54	0.41
52:5:332:A:H4'	52:5:1443:A:H2	1.86	0.41
52:5:344:G:H2'	52:5:345:A:H8	1.85	0.41
52:5:379:A:H2'	52:5:380:G:O4'	2.20	0.41
52:5:790:U:H5''	52:5:791:A:H5''	2.03	0.41
1:0:38:GLN:HG3	50:3:494:G:H5''	2.03	0.41
2:1:15:LYS:HD2	2:1:16:SER:N	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:2:23:VAL:O	3:2:24:ARG:HD3	2.21	0.41
4:A:59:GLU:HA	4:A:62:ARG:HE	1.86	0.41
4:A:137:GLN:HA	4:A:152:LEU:HD21	2.03	0.41
5:B:138:ARG:O	5:B:142:ILE:HG12	2.21	0.41
5:B:139:GLN:O	5:B:143:LYS:HG2	2.21	0.41
7:D:181:LYS:HD3	52:5:8:G:H1'	2.03	0.41
8:E:35:LEU:HA	8:E:62:PHE:HB3	2.02	0.41
8:E:84:ARG:HH22	52:5:670:G:C4'	2.34	0.41
10:G:93:PRO:HG2	52:5:872:C:H5'	2.03	0.41
13:J:39:SER:OG	13:J:42:THR:HG23	2.21	0.41
13:J:121:ARG:NE	52:5:792:C:H5''	2.36	0.41
13:J:121:ARG:HH11	52:5:1497:U:H5''	1.86	0.41
15:L:12:GLN:N	15:L:46:LYS:HB3	2.35	0.41
15:L:14:ARG:HB2	15:L:17:ILE:HG12	2.03	0.41
15:L:112:PRO:O	15:L:113:ARG:HD3	2.21	0.41
20:Q:94:ARG:HA	20:Q:99:VAL:O	2.21	0.41
21:R:78:ARG:HD3	52:5:1200:G:H8	1.86	0.41
24:a:151:GLU:HG3	24:a:153:HIS:HB2	2.02	0.41
25:b:151:ARG:HH22	50:3:2584:G:N2	2.19	0.41
26:c:185:LYS:O	50:3:650:G:N2	2.53	0.41
27:d:5:LYS:HB2	27:d:97:TRP:CG	2.56	0.41
29:f:81:LEU:HG	29:f:142:VAL:HG11	2.03	0.41
30:g:89:ILE:H	30:g:89:ILE:HG12	1.47	0.41
33:j:23:LYS:HD3	33:j:23:LYS:HA	1.84	0.41
33:j:35:LEU:HD23	33:j:35:LEU:HA	1.92	0.41
34:k:97:SER:O	34:k:101:LYS:HG2	2.21	0.41
35:l:72:MET:HE1	50:3:946:A:H4'	2.03	0.41
36:m:8:GLY:HA3	50:3:2010:A:H5'	2.03	0.41
37:n:4:ARG:HH21	51:4:28:C:P	2.43	0.41
39:p:20:ALA:HB1	39:p:28:HIS:HB2	2.03	0.41
39:p:26:THR:HA	39:p:29:ALA:HB3	2.02	0.41
40:q:55:VAL:HG23	40:q:97:PHE:HB3	2.02	0.41
43:t:78:ASP:HB3	43:t:104:PHE:CE1	2.55	0.41
46:w:40:LYS:HA	46:w:40:LYS:HD3	1.89	0.41
50:3:15:A:H1'	50:3:17:G:C6	2.56	0.41
50:3:210:U:C2	50:3:211:A:C8	3.08	0.41
50:3:219:G:N2	50:3:220:A:H1'	2.35	0.41
50:3:241:C:O2'	50:3:643:A:H4'	2.20	0.41
50:3:537:A:N7	50:3:540:A:N6	2.69	0.41
50:3:542:A:H5''	50:3:543:U:H3'	2.02	0.41
50:3:626:A:H2'	50:3:627:U:H6	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:683:G:N3	50:3:2358:U:O2'	2.54	0.41
50:3:853:G:N2	50:3:1221:G:C6	2.89	0.41
50:3:959:C:H2'	50:3:960:A:C8	2.55	0.41
50:3:1047:A:H1'	50:3:1048:A:C8	2.55	0.41
50:3:1142:G:H2'	50:3:1143:U:C6	2.55	0.41
50:3:1469:C:N4	50:3:1583:G:H1	2.18	0.41
50:3:1541:A:H3'	50:3:1542:G:C8	2.55	0.41
50:3:1747:G:N2	50:3:1753:G:O6	2.54	0.41
50:3:1930:U:H2'	50:3:1931:C:C6	2.56	0.41
50:3:2058:G:H2'	50:3:2622:A:N6	2.36	0.41
50:3:2083:U:OP2	50:3:2246:G:N2	2.38	0.41
50:3:2088:U:H2'	50:3:2089:A:C8	2.56	0.41
50:3:2182:C:H2'	50:3:2183:U:O4'	2.21	0.41
50:3:2267:G:C8	50:3:2435:C:C4	3.08	0.41
50:3:2394:A:H2'	50:3:2395:U:O4'	2.20	0.41
50:3:2445:C:H2'	50:3:2446:U:C6	2.56	0.41
50:3:2599:C:H2'	50:3:2600:G:C8	2.56	0.41
50:3:2603:G:N2	50:3:2606:A:OP2	2.26	0.41
50:3:2630:U:C2	50:3:2631:G:C8	3.09	0.41
50:3:2681:G:C2	50:3:2682:A:C5	3.09	0.41
50:3:2704:U:C4	50:3:2722:G:C2	3.09	0.41
50:3:2799:U:H6	50:3:2799:U:H2'	1.65	0.41
50:3:2854:A:H5'	50:3:2872:A:C2	2.56	0.41
51:4:53:U:O2'	51:4:55:A:N7	2.48	0.41
52:5:76:G:N2	52:5:79:A:OP2	2.48	0.41
52:5:94:A:H62	52:5:320:G:N2	2.19	0.41
52:5:118:C:H5'	52:5:258:A:H1'	2.03	0.41
52:5:429:A:H2'	52:5:430:G:O4'	2.20	0.41
52:5:430:G:H2'	52:5:431:U:C6	2.56	0.41
52:5:485:C:H2'	52:5:486:C:C6	2.55	0.41
52:5:710:G:H2'	52:5:711:G:C8	2.56	0.41
52:5:843:C:H2'	52:5:844:U:C6	2.49	0.41
52:5:976:U:H5''	52:5:977:U:OP2	2.21	0.41
52:5:1011:A:H1'	52:5:1194:A:H5'	2.03	0.41
52:5:1068:G:N2	52:5:1071:A:OP2	2.22	0.41
52:5:1175:C:OP1	52:5:1176:A:O2'	2.35	0.41
52:5:1206:G:H2'	52:5:1207:U:C6	2.56	0.41
52:5:1279:G:O2'	52:5:1280:A:O4'	2.37	0.41
52:5:1330:A:O2'	52:5:1331:A:H5'	2.21	0.41
52:5:1401:A:H2'	52:5:1402:U:C6	2.56	0.41
52:5:1402:U:H2'	52:5:1403:A:C8	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:87:LYS:O	5:B:91:GLN:HG2	2.20	0.41
6:C:2:LYS:H	6:C:2:LYS:HG2	1.62	0.41
9:F:19:ASN:HB2	9:F:22:VAL:HG23	2.02	0.41
10:G:117:SER:HA	10:G:121:GLY:O	2.21	0.41
10:G:124:THR:HB	10:G:127:VAL:HG12	2.03	0.41
15:L:101:ARG:HH11	15:L:103:ARG:HD3	1.86	0.41
21:R:81:LYS:NZ	52:5:1202:A:N7	2.60	0.41
24:a:21:ASP:OD2	24:a:24:LYS:HE2	2.21	0.41
25:b:218:LYS:HE2	25:b:218:LYS:HB2	1.94	0.41
36:m:103:LEU:HD23	48:y:42:VAL:HG21	2.03	0.41
43:t:33:GLN:HB3	43:t:68:PRO:HB3	2.03	0.41
50:3:225:A:O2'	50:3:270:G:N7	2.47	0.41
50:3:501:G:N3	50:3:718:U:O2'	2.52	0.41
50:3:513:A:H61	50:3:536:A:P	2.42	0.41
50:3:1730:C:H2'	50:3:1731:G:O4'	2.20	0.41
50:3:2433:A:OP2	50:3:2434:A:O2'	2.28	0.41
50:3:2436:G:H4'	50:3:2437:G:C6	2.56	0.41
52:5:427:A:N1	52:5:428:A:H1'	2.36	0.41
52:5:779:A:H62	52:5:797:G:N2	2.19	0.41
52:5:920:G:C2	52:5:1367:G:N2	2.89	0.41
52:5:926:C:N4	52:5:1362:G:O6	2.54	0.41
52:5:1214:A:H1'	52:5:1216:G:C5	2.55	0.41
52:5:1433:G:H2'	52:5:1434:C:C6	2.56	0.41
1:0:41:GLN:HE21	1:0:41:GLN:HB3	1.66	0.40
4:A:35:ARG:HH21	4:A:37:TRP:NE1	2.18	0.40
5:B:212:THR:HG22	5:B:212:THR:O	2.21	0.40
6:C:76:ARG:HA	6:C:79:LEU:HB2	2.01	0.40
7:D:79:THR:HG21	52:5:1373:A:N1	2.35	0.40
10:G:53:TYR:HD1	10:G:83:SER:HB2	1.85	0.40
28:e:89:LYS:HZ1	28:e:91:ARG:HG2	1.85	0.40
39:p:54:ARG:HG3	50:3:1190:A:OP1	2.21	0.40
39:p:60:TRP:CH2	50:3:1031:U:H4'	2.56	0.40
46:w:11:SER:OG	46:w:61:ARG:NH2	2.53	0.40
46:w:45:ASN:O	46:w:49:ARG:HG2	2.20	0.40
50:3:42:U:O4	50:3:43:A:N6	2.54	0.40
50:3:387:U:H2'	50:3:388:U:C6	2.55	0.40
50:3:485:A:H8	50:3:485:A:OP2	2.04	0.40
50:3:511:U:C2	50:3:515:A:N7	2.89	0.40
50:3:513:A:O2'	50:3:514:A:P	2.79	0.40
50:3:816:A:H5''	50:3:817:A:N7	2.36	0.40
50:3:1246:U:H2'	50:3:1247:C:C6	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:3:2009:U:O4	50:3:2010:A:N6	2.54	0.40
50:3:2179:A:H1'	50:3:2180:U:C6	2.55	0.40
50:3:2190:G:H2'	50:3:2191:G:C8	2.56	0.40
50:3:2201:G:C6	50:3:2202:U:C5	3.10	0.40
50:3:2269:C:H1'	50:3:2396:A:N3	2.36	0.40
52:5:50:U:O4	52:5:361:U:N3	2.53	0.40
52:5:325:A:H2'	52:5:328:G:N7	2.36	0.40
52:5:582:G:N2	52:5:754:U:O2	2.54	0.40
52:5:788:G:O6	52:5:789:A:N6	2.54	0.40
52:5:1058:A:H2'	52:5:1084:A:H4'	2.03	0.40
52:5:1101:A:H5''	52:5:1158:A:H61	1.86	0.40
52:5:1281:U:H2'	52:5:1282:U:C6	2.56	0.40
52:5:1290:G:H5'	52:5:1334:A:H1'	2.03	0.40
52:5:1497:U:H2'	52:5:1498:G:H8	1.86	0.40
53:7:30:G:H2'	53:7:31:G:C8	2.56	0.40
53:8:9:U:H2'	53:8:47:G:H21	1.85	0.40
53:8:14:C:H42	53:8:47:G:N2	2.16	0.40
5:B:8:ASN:ND2	5:B:187:TYR:H	2.20	0.40
7:D:136:ILE:H	7:D:178:ILE:HD13	1.86	0.40
8:E:6:ILE:CD1	8:E:59:ARG:HG3	2.51	0.40
8:E:158:ASP:O	10:G:80:ARG:NH1	2.48	0.40
9:F:5:ARG:HA	52:5:1353:C:P	2.61	0.40
11:H:27:LYS:HB3	11:H:29:LYS:NZ	2.36	0.40
14:K:133:LYS:HD2	14:K:134:LYS:H	1.86	0.40
21:R:34:TRP:CD1	21:R:34:TRP:H	2.38	0.40
24:a:187:GLY:O	24:a:282:ARG:N	2.53	0.40
24:a:206:LEU:H	24:a:206:LEU:HD12	1.86	0.40
25:b:4:ARG:HD3	25:b:101:LEU:HD23	2.03	0.40
39:p:65:ASN:HD21	39:p:69:ARG:NH2	2.19	0.40
41:r:133:GLN:HB3	41:r:137:MET:HE2	2.02	0.40
43:t:44:ARG:NH1	43:t:46:LYS:HB3	2.36	0.40
45:v:24:ILE:HD12	50:3:205:C:OP2	2.22	0.40
48:y:13:ARG:HD2	48:y:17:ARG:NH2	2.37	0.40
50:3:291:G:C2	50:3:292:G:C5	3.09	0.40
50:3:898:A:H61	50:3:952:U:H3	1.68	0.40
50:3:2761:A:H2'	50:3:2762:U:C2	2.56	0.40
52:5:117:U:O2'	52:5:258:A:N3	2.42	0.40
52:5:251:G:H2'	52:5:252:U:H6	1.86	0.40
52:5:573:G:O2'	52:5:818:A:H5''	2.21	0.40
52:5:719:G:H2'	52:5:719:G:N3	2.36	0.40
52:5:1130:G:H2'	52:5:1131:A:C8	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:20:SER:HB2	16:M:52:ALA:O	2.22	0.40
6:C:58:GLN:HE22	52:5:543:C:P	2.45	0.40
7:D:117:LYS:HA	7:D:117:LYS:HD2	1.86	0.40
12:I:90:ILE:O	12:I:94:LYS:HG2	2.21	0.40
13:J:47:GLY:HA2	52:5:688:G:C6	2.56	0.40
13:J:103:ILE:O	13:J:103:ILE:HG13	2.21	0.40
14:K:82:GLY:HA2	52:5:519:G:H5'	2.03	0.40
16:M:42:LEU:HD23	52:5:1177:U:C2	2.56	0.40
22:S:29:LYS:HD3	52:5:1413:G:OP1	2.21	0.40
24:a:98:LEU:HD13	24:a:108:TYR:HE1	1.85	0.40
24:a:250:GLY:O	50:3:1909:C:O2'	2.40	0.40
27:d:24:SER:HA	51:4:53:U:H4'	2.04	0.40
27:d:102:LYS:HB2	27:d:102:LYS:HE2	1.92	0.40
27:d:150:ARG:HB3	50:3:2314:U:H3	1.85	0.40
28:e:4:ILE:HG21	28:e:69:GLY:HA2	2.03	0.40
30:g:112:TYR:HD2	30:g:116:ARG:H	1.68	0.40
34:k:67:ASN:HB3	34:k:70:LYS:NZ	2.37	0.40
34:k:81:ASN:ND2	50:3:663:A:OP2	2.54	0.40
39:p:7:LYS:HD2	39:p:7:LYS:HA	1.93	0.40
40:q:24:LYS:HE3	40:q:88:PRO:HG2	2.02	0.40
42:s:59:ILE:N	50:3:1635:G:OP1	2.54	0.40
48:y:47:MET:HE2	48:y:47:MET:HB2	1.78	0.40
50:3:303:C:H2'	50:3:304:U:C6	2.56	0.40
50:3:485:A:H2'	50:3:486:G:O4'	2.22	0.40
50:3:1103:G:H5''	50:3:1104:A:OP2	2.21	0.40
50:3:1227:C:H2'	50:3:1228:G:H8	1.85	0.40
50:3:1315:A:H2'	50:3:1315:A:N3	2.37	0.40
50:3:1553:G:H1'	50:3:1579:G:N2	2.36	0.40
50:3:1725:G:N2	50:3:1985:A:H5'	2.37	0.40
50:3:2068:G:H4'	50:3:2069:A:H5'	2.02	0.40
50:3:2361:G:C2	50:3:2362:A:H1'	2.57	0.40
50:3:2747:U:H2'	50:3:2748:A:H8	1.87	0.40
50:3:2764:U:H4'	50:3:2765:A:OP1	2.20	0.40
52:5:772:G:N2	52:5:802:C:C2	2.89	0.40
52:5:1183:C:H2'	52:5:1184:C:H6	1.87	0.40
52:5:1279:G:H2'	52:5:1305:G:H21	1.87	0.40
52:5:1423:C:H2'	52:5:1424:C:C6	2.56	0.40
4:A:102:ARG:HD2	4:A:233:ALA:HB1	2.03	0.40
10:G:8:ILE:HG21	10:G:21:LYS:NZ	2.36	0.40
18:O:65:SER:O	18:O:69:GLN:HG2	2.21	0.40
24:a:175:GLU:H	24:a:175:GLU:HG2	1.75	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:f:1:MET:N	29:f:24:GLY:O	2.54	0.40
29:f:39:LEU:HB3	45:v:62:ASN:CG	2.46	0.40
30:g:29:TYR:CG	30:g:32:MET:HB2	2.55	0.40
32:i:28:LEU:HD13	32:i:104:VAL:HG22	2.03	0.40
34:k:34:ARG:NE	34:k:40:LYS:O	2.55	0.40
34:k:56:THR:OG1	50:3:2436:G:O2'	2.38	0.40
34:k:137:LYS:HB3	34:k:137:LYS:HE3	1.90	0.40
35:l:38:LYS:NZ	35:l:40:ASN:HB2	2.36	0.40
35:l:48:GLU:O	35:l:52:ILE:HG12	2.21	0.40
36:m:45:LEU:HD12	36:m:45:LEU:HA	1.95	0.40
38:o:97:ARG:HD3	50:3:1760:G:OP1	2.21	0.40
50:3:276:A:N6	50:3:294:G:N3	2.70	0.40
50:3:1071:G:H2'	50:3:1072:A:C8	2.57	0.40
50:3:1183:A:H2'	50:3:1184:U:C6	2.57	0.40
50:3:1356:G:H4'	50:3:1357:U:C5	2.56	0.40
50:3:1588:A:H2'	50:3:1589:A:C4	2.56	0.40
50:3:1654:G:H2'	50:3:1655:U:O4'	2.22	0.40
50:3:1999:G:H5'	50:3:2001:C:N4	2.36	0.40
50:3:2217:G:C6	50:3:2224:A:C6	3.10	0.40
50:3:2220:A:O2'	50:3:2222:C:N4	2.51	0.40
50:3:2400:A:N6	50:3:2432:C:C2	2.79	0.40
50:3:2551:G:H2'	50:3:2552:G:H8	1.86	0.40
52:5:24:C:H2'	52:5:25:U:C6	2.56	0.40
52:5:165:A:H2'	52:5:166:U:C6	2.57	0.40
52:5:557:A:H4'	52:5:558:U:H5''	2.03	0.40
52:5:632:A:H2'	52:5:633:U:O4'	2.22	0.40
52:5:917:G:H2'	52:5:918:A:H8	1.87	0.40
52:5:947:U:H3	52:5:1204:A:N6	2.18	0.40
52:5:958:G:C4	52:5:968:G:N2	2.89	0.40
52:5:1110:C:H2'	52:5:1111:G:C8	2.44	0.40
52:5:1125:C:O2'	52:5:1126:U:O4'	2.18	0.40
52:5:1477:A:C6	52:5:1479:G:C2	3.09	0.40
53:7:14:C:N4	53:7:47:G:N2	2.69	0.40
6:C:14:LEU:HB3	6:C:59:ARG:HD2	2.02	0.40
6:C:145:LYS:O	6:C:147:LYS:N	2.55	0.40
19:P:21:THR:HG23	19:P:73:LYS:NZ	2.37	0.40
21:R:36:ARG:HH22	21:R:77:THR:HG1	1.63	0.40
22:S:56:ARG:NH1	52:5:197:A:O2'	2.55	0.40
24:a:5:LYS:HB3	24:a:5:LYS:HE3	1.90	0.40
32:i:63:ASP:OD1	32:i:63:ASP:N	2.54	0.40
34:k:28:LEU:HB3	34:k:32:SER:HA	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:r:133:GLN:O	41:r:137:MET:HG2	2.21	0.40
42:s:36:SER:OG	42:s:37:LYS:N	2.55	0.40
43:t:53:LYS:HB2	43:t:55:ALA:O	2.22	0.40
46:w:64:ASN:O	46:w:67:GLU:HG3	2.22	0.40
50:3:143:A:H2'	50:3:144:C:O4'	2.22	0.40
50:3:148:U:H2'	50:3:149:A:C8	2.56	0.40
50:3:245:U:H5'	50:3:247:U:O4'	2.21	0.40
50:3:251:G:H4'	50:3:424:G:C4	2.56	0.40
50:3:495:U:O2	50:3:507:A:N6	2.55	0.40
50:3:784:A:H5'	50:3:1301:G:H1'	2.03	0.40
50:3:894:G:N3	50:3:2276:A:H2'	2.36	0.40
50:3:904:C:N4	50:3:949:C:HO2'	2.20	0.40
50:3:963:U:H2'	50:3:964:A:C8	2.54	0.40
50:3:1029:A:H2'	50:3:1030:U:C6	2.56	0.40
50:3:1364:A:H2'	50:3:1365:G:C8	2.56	0.40
50:3:1371:G:N3	50:3:1371:G:H2'	2.37	0.40
50:3:1521:A:H2'	50:3:1523:C:N4	2.36	0.40
50:3:1609:U:H2'	50:3:1610:U:O4'	2.22	0.40
50:3:2073:C:H2'	50:3:2074:G:H8	1.87	0.40
50:3:2353:G:C2	50:3:2389:A:C5	3.09	0.40
50:3:2515:C:H4'	50:3:2581:C:H41	1.87	0.40
50:3:2538:A:O2'	50:3:2542:A:N6	2.55	0.40
50:3:2612:G:H2'	50:3:2613:U:O4'	2.21	0.40
50:3:2656:G:H2'	50:3:2657:C:H6	1.87	0.40
51:4:43:A:C2	51:4:44:A:H1'	2.57	0.40
52:5:311:A:H4'	52:5:313:U:OP2	2.22	0.40
52:5:352:A:H2'	52:5:353:G:O4'	2.22	0.40
52:5:373:A:H2'	52:5:374:G:H8	1.86	0.40
52:5:448:A:N6	52:5:478:G:OP2	2.45	0.40
52:5:676:U:H2'	52:5:677:C:C6	2.57	0.40
52:5:972:A:H2'	52:5:1296:C:O2	2.20	0.40
52:5:1072:G:H2'	52:5:1073:A:H8	1.87	0.40
52:5:1228:C:H2'	52:5:1229:A:C8	2.57	0.40
52:5:1362:G:H2'	52:5:1363:U:C6	2.56	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	0	45/48 (94%)	44 (98%)	1 (2%)	0	100	100
2	1	57/59 (97%)	52 (91%)	5 (9%)	0	100	100
3	2	35/37 (95%)	33 (94%)	2 (6%)	0	100	100
4	A	238/294 (81%)	213 (90%)	25 (10%)	0	100	100
5	B	213/273 (78%)	197 (92%)	16 (8%)	0	100	100
6	C	201/205 (98%)	189 (94%)	12 (6%)	0	100	100
7	D	151/219 (69%)	145 (96%)	6 (4%)	0	100	100
8	E	165/215 (77%)	143 (87%)	22 (13%)	0	100	100
9	F	152/155 (98%)	140 (92%)	12 (8%)	0	100	100
10	G	139/142 (98%)	123 (88%)	16 (12%)	0	100	100
11	H	126/132 (96%)	113 (90%)	13 (10%)	0	100	100
12	I	99/108 (92%)	94 (95%)	5 (5%)	0	100	100
13	J	112/121 (93%)	102 (91%)	10 (9%)	0	100	100
14	K	134/139 (96%)	121 (90%)	13 (10%)	0	100	100
15	L	116/124 (94%)	103 (89%)	13 (11%)	0	100	100
16	M	58/61 (95%)	49 (84%)	9 (16%)	0	100	100
17	N	81/86 (94%)	80 (99%)	1 (1%)	0	100	100
18	O	78/94 (83%)	72 (92%)	6 (8%)	0	100	100
19	P	81/85 (95%)	78 (96%)	3 (4%)	0	100	100
20	Q	63/104 (61%)	53 (84%)	10 (16%)	0	100	100
21	R	82/87 (94%)	67 (82%)	15 (18%)	0	100	100
22	S	75/87 (86%)	75 (100%)	0	0	100	100
23	T	51/60 (85%)	50 (98%)	1 (2%)	0	100	100
24	a	283/287 (99%)	247 (87%)	36 (13%)	0	100	100
25	b	227/287 (79%)	207 (91%)	20 (9%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
26	c	208/212 (98%)	202 (97%)	6 (3%)	0	100	100
27	d	173/180 (96%)	168 (97%)	5 (3%)	0	100	100
28	e	174/184 (95%)	163 (94%)	11 (6%)	0	100	100
29	f	143/149 (96%)	131 (92%)	12 (8%)	0	100	100
30	g	124/161 (77%)	113 (91%)	11 (9%)	0	100	100
31	h	126/137 (92%)	117 (93%)	9 (7%)	0	100	100
32	i	142/146 (97%)	134 (94%)	8 (6%)	0	100	100
33	j	120/122 (98%)	115 (96%)	5 (4%)	0	100	100
34	k	146/151 (97%)	133 (91%)	13 (9%)	0	100	100
35	l	134/139 (96%)	131 (98%)	2 (2%)	1 (1%)	18	56
36	m	117/124 (94%)	112 (96%)	5 (4%)	0	100	100
37	n	108/116 (93%)	101 (94%)	7 (6%)	0	100	100
38	o	113/119 (95%)	101 (89%)	12 (11%)	0	100	100
39	p	112/127 (88%)	107 (96%)	5 (4%)	0	100	100
40	q	97/100 (97%)	87 (90%)	10 (10%)	0	100	100
41	r	137/159 (86%)	130 (95%)	7 (5%)	0	100	100
42	s	90/237 (38%)	84 (93%)	6 (7%)	0	100	100
43	t	109/111 (98%)	98 (90%)	11 (10%)	0	100	100
44	u	84/104 (81%)	80 (95%)	4 (5%)	0	100	100
45	v	61/65 (94%)	56 (92%)	5 (8%)	0	100	100
46	w	96/111 (86%)	93 (97%)	3 (3%)	0	100	100
47	x	42/97 (43%)	37 (88%)	5 (12%)	0	100	100
48	y	54/57 (95%)	49 (91%)	4 (7%)	1 (2%)	6	32
49	z	48/53 (91%)	46 (96%)	2 (4%)	0	100	100
All	All	5820/6670 (87%)	5378 (92%)	440 (8%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
48	y	52	ARG
35	l	14	ASN

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	40/41 (98%)	40 (100%)	0	100	100
2	1	51/51 (100%)	51 (100%)	0	100	100
3	2	35/35 (100%)	35 (100%)	0	100	100
4	A	212/262 (81%)	212 (100%)	0	100	100
5	B	180/232 (78%)	180 (100%)	0	100	100
6	C	181/183 (99%)	181 (100%)	0	100	100
7	D	123/178 (69%)	123 (100%)	0	100	100
8	E	150/196 (76%)	150 (100%)	0	100	100
9	F	131/132 (99%)	131 (100%)	0	100	100
10	G	123/124 (99%)	123 (100%)	0	100	100
11	H	111/115 (96%)	110 (99%)	1 (1%)	70	79
12	I	95/99 (96%)	95 (100%)	0	100	100
13	J	91/97 (94%)	91 (100%)	0	100	100
14	K	117/120 (98%)	112 (96%)	5 (4%)	26	47
15	L	100/105 (95%)	100 (100%)	0	100	100
16	M	47/48 (98%)	47 (100%)	0	100	100
17	N	76/78 (97%)	76 (100%)	0	100	100
18	O	69/82 (84%)	69 (100%)	0	100	100
19	P	73/75 (97%)	73 (100%)	0	100	100
20	Q	56/94 (60%)	56 (100%)	0	100	100
21	R	74/77 (96%)	74 (100%)	0	100	100
22	S	70/77 (91%)	70 (100%)	0	100	100
23	T	49/56 (88%)	49 (100%)	0	100	100
24	a	241/243 (99%)	241 (100%)	0	100	100
25	b	186/233 (80%)	186 (100%)	0	100	100
26	c	182/184 (99%)	182 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
27	d	150/154 (97%)	150 (100%)	0	100	100
28	e	153/159 (96%)	153 (100%)	0	100	100
29	f	123/134 (92%)	123 (100%)	0	100	100
30	g	101/129 (78%)	90 (89%)	11 (11%)	6	21
31	h	102/110 (93%)	102 (100%)	0	100	100
32	i	126/128 (98%)	126 (100%)	0	100	100
33	j	103/103 (100%)	103 (100%)	0	100	100
34	k	123/126 (98%)	123 (100%)	0	100	100
35	l	113/115 (98%)	113 (100%)	0	100	100
36	m	105/109 (96%)	105 (100%)	0	100	100
37	n	96/99 (97%)	96 (100%)	0	100	100
38	o	101/105 (96%)	101 (100%)	0	100	100
39	p	100/108 (93%)	100 (100%)	0	100	100
40	q	90/91 (99%)	90 (100%)	0	100	100
41	r	116/132 (88%)	116 (100%)	0	100	100
42	s	82/208 (39%)	82 (100%)	0	100	100
43	t	96/96 (100%)	96 (100%)	0	100	100
44	u	69/85 (81%)	69 (100%)	0	100	100
45	v	58/60 (97%)	58 (100%)	0	100	100
46	w	87/98 (89%)	86 (99%)	1 (1%)	65	76
47	x	41/86 (48%)	41 (100%)	0	100	100
48	y	48/49 (98%)	43 (90%)	5 (10%)	7	22
49	z	47/50 (94%)	47 (100%)	0	100	100
All	All	5093/5751 (89%)	5070 (100%)	23 (0%)	78	83

All (23) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
11	H	4	GLN
14	K	117	THR
14	K	118	VAL
14	K	120	VAL
14	K	121	GLU
14	K	122	LYS

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Mol	Chain	Res	Type
30	g	26	ILE
30	g	27	PHE
30	g	30	THR
30	g	32	MET
30	g	43	LYS
30	g	47	ASN
30	g	86	VAL
30	g	87	ASN
30	g	88	GLU
30	g	89	ILE
30	g	90	VAL
46	w	69	GLN
48	y	47	MET
48	y	48	TYR
48	y	50	ASP
48	y	51	LEU
48	y	52	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (75) such sidechains are listed below:

Mol	Chain	Res	Type
4	A	38	ASN
4	A	78	ASN
4	A	131	ASN
4	A	149	ASN
4	A	219	ASN
4	A	221	GLN
4	A	223	GLN
5	B	29	GLN
5	B	42	ASN
5	B	73	GLN
5	B	107	ASN
6	C	37	GLN
6	C	121	HIS
7	D	156	GLN
7	D	213	ASN
8	E	36	GLN
8	E	77	ASN
8	E	79	ASN
8	E	101	ASN
8	E	105	GLN
9	F	4	ASN

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Mol	Chain	Res	Type
10	G	11	HIS
10	G	23	ASN
11	H	43	ASN
11	H	62	ASN
13	J	95	ASN
15	L	76	ASN
15	L	94	ASN
16	M	10	GLN
17	N	2	GLN
17	N	6	ASN
17	N	25	GLN
18	O	54	ASN
18	O	69	GLN
21	R	79	ASN
22	S	7	ASN
24	a	29	ASN
24	a	91	ASN
24	a	126	HIS
24	a	234	ASN
24	a	238	HIS
25	b	127	ASN
25	b	135	HIS
25	b	177	GLN
25	b	188	ASN
25	b	225	GLN
26	c	31	GLN
26	c	167	ASN
26	c	170	GLN
27	d	7	HIS
27	d	58	HIS
28	e	54	GLN
28	e	114	HIS
29	f	7	GLN
30	g	9	GLN
30	g	87	ASN
32	i	13	ASN
33	j	69	GLN
34	k	5	GLN
34	k	55	GLN
34	k	67	ASN
34	k	141	ASN
36	m	21	GLN

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Mol	Chain	Res	Type
37	n	26	ASN
37	n	49	ASN
40	q	34	GLN
41	r	7	GLN
41	r	61	ASN
41	r	102	ASN
41	r	121	GLN
42	s	56	ASN
43	t	2	GLN
43	t	64	GLN
44	u	64	ASN
46	w	66	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
50	3	2875/2907 (98%)	829 (28%)	31 (1%)
51	4	103/108 (95%)	33 (32%)	2 (1%)
52	5	1490/1520 (98%)	393 (26%)	6 (0%)
53	7	75/76 (98%)	25 (33%)	1 (1%)
53	8	75/76 (98%)	25 (33%)	1 (1%)
All	All	4618/4687 (98%)	1305 (28%)	41 (0%)

All (1305) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
50	3	14	U
50	3	15	A
50	3	17	G
50	3	29	G
50	3	30	A
50	3	36	U
50	3	41	C
50	3	44	A
50	3	47	G
50	3	48	G
50	3	52	U
50	3	53	G
50	3	63	U
50	3	65	A
50	3	66	A

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Mol	Chain	Res	Type
50	3	73	A
50	3	76	A
50	3	77	G
50	3	84	G
50	3	86	A
50	3	87	G
50	3	90	G
50	3	97	A
50	3	98	C
50	3	101	C
50	3	103	G
50	3	119	A
50	3	121	U
50	3	122	G
50	3	126	C
50	3	132	G
50	3	146	G
50	3	155	A
50	3	163	A
50	3	165	U
50	3	169	U
50	3	180	A
50	3	184	A
50	3	185	U
50	3	186	A
50	3	188	G
50	3	200	A
50	3	203	A
50	3	208	A
50	3	210	U
50	3	214	C
50	3	219	G
50	3	220	A
50	3	226	A
50	3	227	A
50	3	229	C
50	3	231	A
50	3	232	A
50	3	234	G
50	3	237	A
50	3	252	G
50	3	256	G

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Mol	Chain	Res	Type
50	3	265	G
50	3	267	A
50	3	269	A
50	3	270	G
50	3	276	A
50	3	277	C
50	3	284	U
50	3	285	U
50	3	286	A
50	3	287	G
50	3	288	A
50	3	293	G
50	3	294	G
50	3	295	U
50	3	296	U
50	3	297	G
50	3	299	A
50	3	310	U
50	3	312	U
50	3	314	G
50	3	315	A
50	3	316	C
50	3	325	G
50	3	329	G
50	3	333	A
50	3	336	C
50	3	345	A
50	3	346	G
50	3	351	G
50	3	356	A
50	3	357	A
50	3	363	G
50	3	364	A
50	3	368	C
50	3	369	C
50	3	384	G
50	3	393	C
50	3	396	A
50	3	397	G
50	3	401	G
50	3	402	A
50	3	403	U

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Mol	Chain	Res	Type
50	3	404	C
50	3	408	G
50	3	409	A
50	3	411	U
50	3	413	G
50	3	418	G
50	3	422	A
50	3	423	C
50	3	424	G
50	3	425	U
50	3	426	U
50	3	430	U
50	3	432	G
50	3	437	A
50	3	440	C
50	3	441	U
50	3	444	C
50	3	447	G
50	3	448	A
50	3	460	G
50	3	465	A
50	3	470	U
50	3	478	G
50	3	479	A
50	3	480	C
50	3	483	A
50	3	484	U
50	3	485	A
50	3	487	C
50	3	490	A
50	3	492	C
50	3	493	A
50	3	494	G
50	3	495	U
50	3	509	G
50	3	514	A
50	3	515	A
50	3	516	A
50	3	517	G
50	3	518	A
50	3	520	C
50	3	531	G

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Mol	Chain	Res	Type
50	3	539	U
50	3	543	U
50	3	544	U
50	3	553	A
50	3	561	A
50	3	563	A
50	3	565	C
50	3	566	G
50	3	567	U
50	3	568	G
50	3	577	C
50	3	580	U
50	3	582	A
50	3	583	U
50	3	595	U
50	3	596	G
50	3	598	G
50	3	599	U
50	3	605	A
50	3	606	G
50	3	608	A
50	3	610	G
50	3	612	G
50	3	620	G
50	3	623	A
50	3	633	G
50	3	637	U
50	3	638	A
50	3	650	G
50	3	654	G
50	3	656	G
50	3	657	A
50	3	664	G
50	3	666	G
50	3	670	G
50	3	673	A
50	3	674	G
50	3	681	A
50	3	682	A
50	3	689	U
50	3	690	U
50	3	691	G

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Mol	Chain	Res	Type
50	3	701	A
50	3	703	A
50	3	704	G
50	3	705	A
50	3	706	C
50	3	712	A
50	3	721	G
50	3	722	C
50	3	730	G
50	3	739	G
50	3	740	A
50	3	761	G
50	3	765	A
50	3	766	C
50	3	778	U
50	3	780	G
50	3	782	U
50	3	792	G
50	3	795	G
50	3	797	U
50	3	799	A
50	3	808	U
50	3	810	G
50	3	811	G
50	3	812	G
50	3	816	A
50	3	817	A
50	3	818	A
50	3	819	U
50	3	823	A
50	3	824	A
50	3	825	U
50	3	827	G
50	3	829	A
50	3	836	G
50	3	837	A
50	3	840	G
50	3	841	C
50	3	842	U
50	3	847	C
50	3	854	A
50	3	855	A

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Mol	Chain	Res	Type
50	3	862	U
50	3	863	U
50	3	865	A
50	3	866	G
50	3	871	G
50	3	872	C
50	3	873	G
50	3	880	C
50	3	881	A
50	3	882	C
50	3	887	A
50	3	894	G
50	3	899	A
50	3	902	U
50	3	903	A
50	3	904	C
50	3	912	A
50	3	914	G
50	3	917	G
50	3	930	C
50	3	932	U
50	3	933	A
50	3	934	C
50	3	936	G
50	3	943	A
50	3	944	U
50	3	945	U
50	3	947	A
50	3	949	C
50	3	952	U
50	3	953	G
50	3	968	U
50	3	977	A
50	3	978	G
50	3	981	A
50	3	982	G
50	3	989	G
50	3	990	G
50	3	994	U
50	3	995	A
50	3	997	G
50	3	998	C

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Mol	Chain	Res	Type
50	3	1000	U
50	3	1005	G
50	3	1007	C
50	3	1008	A
50	3	1009	A
50	3	1012	G
50	3	1016	A
50	3	1017	A
50	3	1020	G
50	3	1026	A
50	3	1027	U
50	3	1031	U
50	3	1032	A
50	3	1035	U
50	3	1049	U
50	3	1052	A
50	3	1054	U
50	3	1055	A
50	3	1056	A
50	3	1057	G
50	3	1061	A
50	3	1068	U
50	3	1069	G
50	3	1072	A
50	3	1081	A
50	3	1082	A
50	3	1083	A
50	3	1092	A
50	3	1095	U
50	3	1096	U
50	3	1097	G
50	3	1099	C
50	3	1101	U
50	3	1102	A
50	3	1103	G
50	3	1104	A
50	3	1105	A
50	3	1106	G
50	3	1107	C
50	3	1113	U
50	3	1114	C
50	3	1122	G

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Mol	Chain	Res	Type
50	3	1123	A
50	3	1124	G
50	3	1125	U
50	3	1126	G
50	3	1130	A
50	3	1132	C
50	3	1145	G
50	3	1147	G
50	3	1151	U
50	3	1154	U
50	3	1158	C
50	3	1165	U
50	3	1166	G
50	3	1167	U
50	3	1168	A
50	3	1170	C
50	3	1176	U
50	3	1177	A
50	3	1179	G
50	3	1186	A
50	3	1191	A
50	3	1192	U
50	3	1195	A
50	3	1202	A
50	3	1204	A
50	3	1208	A
50	3	1209	U
50	3	1210	A
50	3	1212	C
50	3	1215	G
50	3	1216	U
50	3	1217	G
50	3	1218	G
50	3	1219	U
50	3	1229	U
50	3	1234	U
50	3	1235	U
50	3	1240	U
50	3	1241	U
50	3	1242	G
50	3	1243	A
50	3	1250	A

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Mol	Chain	Res	Type
50	3	1251	G
50	3	1253	G
50	3	1257	G
50	3	1259	A
50	3	1264	U
50	3	1265	G
50	3	1266	G
50	3	1267	A
50	3	1268	U
50	3	1271	A
50	3	1277	A
50	3	1278	G
50	3	1279	U
50	3	1281	A
50	3	1282	G
50	3	1283	A
50	3	1285	U
50	3	1286	G
50	3	1292	A
50	3	1293	U
50	3	1295	A
50	3	1297	U
50	3	1298	A
50	3	1301	G
50	3	1302	C
50	3	1304	U
50	3	1308	A
50	3	1314	A
50	3	1317	C
50	3	1322	A
50	3	1328	A
50	3	1329	U
50	3	1341	U
50	3	1342	C
50	3	1349	C
50	3	1354	U
50	3	1357	U
50	3	1360	U
50	3	1361	U
50	3	1369	U
50	3	1372	U
50	3	1378	C

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Mol	Chain	Res	Type
50	3	1381	A
50	3	1388	G
50	3	1389	G
50	3	1393	A
50	3	1402	G
50	3	1406	A
50	3	1407	U
50	3	1408	G
50	3	1412	A
50	3	1413	A
50	3	1420	A
50	3	1422	U
50	3	1423	A
50	3	1424	U
50	3	1426	C
50	3	1431	A
50	3	1435	A
50	3	1436	C
50	3	1444	C
50	3	1445	U
50	3	1448	U
50	3	1455	A
50	3	1456	C
50	3	1457	A
50	3	1463	G
50	3	1466	U
50	3	1467	U
50	3	1480	A
50	3	1481	U
50	3	1483	G
50	3	1486	U
50	3	1487	U
50	3	1493	A
50	3	1494	U
50	3	1507	G
50	3	1508	G
50	3	1513	A
50	3	1520	A
50	3	1522	U
50	3	1534	A
50	3	1535	A
50	3	1541	A

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Mol	Chain	Res	Type
50	3	1542	G
50	3	1546	U
50	3	1548	A
50	3	1549	U
50	3	1550	G
50	3	1558	A
50	3	1559	A
50	3	1571	G
50	3	1579	G
50	3	1580	G
50	3	1585	A
50	3	1586	U
50	3	1587	U
50	3	1588	A
50	3	1589	A
50	3	1592	A
50	3	1594	G
50	3	1600	A
50	3	1603	A
50	3	1612	U
50	3	1618	U
50	3	1619	A
50	3	1637	A
50	3	1640	G
50	3	1641	A
50	3	1642	G
50	3	1644	A
50	3	1648	A
50	3	1651	C
50	3	1652	A
50	3	1655	U
50	3	1660	A
50	3	1668	G
50	3	1669	A
50	3	1675	A
50	3	1676	G
50	3	1679	U
50	3	1680	A
50	3	1681	G
50	3	1682	C
50	3	1688	A
50	3	1690	C

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Mol	Chain	Res	Type
50	3	1694	A
50	3	1695	G
50	3	1699	A
50	3	1702	A
50	3	1703	A
50	3	1704	C
50	3	1708	G
50	3	1709	C
50	3	1720	C
50	3	1727	U
50	3	1732	A
50	3	1741	G
50	3	1747	G
50	3	1748	U
50	3	1751	A
50	3	1752	A
50	3	1753	G
50	3	1758	C
50	3	1761	C
50	3	1763	G
50	3	1764	U
50	3	1766	A
50	3	1768	G
50	3	1769	A
50	3	1770	A
50	3	1780	A
50	3	1784	U
50	3	1790	U
50	3	1791	A
50	3	1792	A
50	3	1804	A
50	3	1806	G
50	3	1807	C
50	3	1808	C
50	3	1809	A
50	3	1810	A
50	3	1816	A
50	3	1821	G
50	3	1822	A
50	3	1823	U
50	3	1826	A
50	3	1827	U

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Mol	Chain	Res	Type
50	3	1828	A
50	3	1831	G
50	3	1836	A
50	3	1837	C
50	3	1842	G
50	3	1863	G
50	3	1869	G
50	3	1873	A
50	3	1876	G
50	3	1890	U
50	3	1891	A
50	3	1892	A
50	3	1906	G
50	3	1907	A
50	3	1908	A
50	3	1910	G
50	3	1913	G
50	3	1920	A
50	3	1921	C
50	3	1923	A
50	3	1926	A
50	3	1936	G
50	3	1938	U
50	3	1943	A
50	3	1945	A
50	3	1946	U
50	3	1950	U
50	3	1953	U
50	3	1959	A
50	3	1960	A
50	3	1961	A
50	3	1962	U
50	3	1963	U
50	3	1970	C
50	3	1971	G
50	3	1974	U
50	3	1977	A
50	3	1978	U
50	3	1979	G
50	3	1984	A
50	3	1997	C
50	3	1998	U

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Mol	Chain	Res	Type
50	3	1999	G
50	3	2000	U
50	3	2004	G
50	3	2009	U
50	3	2011	G
50	3	2020	A
50	3	2028	G
50	3	2030	A
50	3	2037	A
50	3	2038	A
50	3	2039	G
50	3	2040	A
50	3	2041	C
50	3	2046	G
50	3	2050	G
50	3	2055	A
50	3	2058	G
50	3	2062	C
50	3	2063	G
50	3	2067	A
50	3	2068	G
50	3	2069	A
50	3	2070	C
50	3	2071	C
50	3	2076	G
50	3	2087	G
50	3	2099	U
50	3	2100	G
50	3	2106	G
50	3	2107	A
50	3	2109	A
50	3	2110	U
50	3	2111	U
50	3	2112	A
50	3	2114	C
50	3	2115	A
50	3	2117	G
50	3	2119	A
50	3	2123	A
50	3	2124	A
50	3	2126	A
50	3	2127	G

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Mol	Chain	Res	Type
50	3	2129	U
50	3	2131	G
50	3	2138	U
50	3	2139	C
50	3	2140	G
50	3	2152	C
50	3	2153	U
50	3	2154	A
50	3	2163	U
50	3	2166	U
50	3	2171	A
50	3	2180	U
50	3	2187	C
50	3	2188	U
50	3	2191	G
50	3	2193	U
50	3	2195	U
50	3	2198	G
50	3	2199	C
50	3	2200	U
50	3	2201	G
50	3	2202	U
50	3	2203	U
50	3	2204	C
50	3	2206	A
50	3	2212	U
50	3	2214	A
50	3	2219	U
50	3	2220	A
50	3	2221	U
50	3	2222	C
50	3	2226	U
50	3	2231	A
50	3	2233	A
50	3	2235	A
50	3	2246	G
50	3	2247	G
50	3	2253	U
50	3	2254	G
50	3	2257	U
50	3	2258	G
50	3	2259	G

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Mol	Chain	Res	Type
50	3	2266	C
50	3	2274	A
50	3	2275	A
50	3	2276	A
50	3	2278	G
50	3	2280	U
50	3	2281	A
50	3	2286	A
50	3	2291	U
50	3	2294	A
50	3	2295	A
50	3	2305	C
50	3	2312	G
50	3	2313	U
50	3	2315	G
50	3	2316	G
50	3	2317	A
50	3	2318	A
50	3	2319	A
50	3	2320	U
50	3	2330	A
50	3	2331	G
50	3	2333	G
50	3	2334	U
50	3	2335	A
50	3	2341	G
50	3	2342	U
50	3	2343	A
50	3	2351	U
50	3	2352	U
50	3	2355	C
50	3	2358	U
50	3	2362	A
50	3	2366	A
50	3	2380	U
50	3	2381	G
50	3	2391	G
50	3	2393	C
50	3	2396	A
50	3	2397	G
50	3	2410	C
50	3	2411	C

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Mol	Chain	Res	Type
50	3	2414	U
50	3	2415	A
50	3	2422	G
50	3	2424	C
50	3	2431	U
50	3	2432	C
50	3	2433	A
50	3	2436	G
50	3	2438	A
50	3	2440	A
50	3	2442	A
50	3	2443	A
50	3	2449	U
50	3	2453	G
50	3	2455	G
50	3	2456	A
50	3	2458	A
50	3	2460	C
50	3	2477	A
50	3	2484	A
50	3	2485	U
50	3	2486	A
50	3	2488	C
50	3	2492	G
50	3	2495	A
50	3	2498	G
50	3	2499	U
50	3	2501	U
50	3	2505	A
50	3	2509	C
50	3	2510	G
50	3	2511	A
50	3	2512	U
50	3	2513	G
50	3	2514	U
50	3	2515	C
50	3	2517	A
50	3	2519	U
50	3	2521	A
50	3	2526	A
50	3	2528	C
50	3	2537	G

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Mol	Chain	Res	Type
50	3	2539	A
50	3	2543	G
50	3	2557	G
50	3	2574	A
50	3	2575	G
50	3	2581	C
50	3	2582	G
50	3	2586	G
50	3	2594	C
50	3	2595	A
50	3	2597	A
50	3	2605	G
50	3	2610	A
50	3	2619	C
50	3	2621	U
50	3	2622	A
50	3	2626	A
50	3	2631	G
50	3	2637	A
50	3	2638	G
50	3	2642	G
50	3	2643	A
50	3	2644	U
50	3	2645	U
50	3	2646	G
50	3	2647	A
50	3	2649	G
50	3	2650	A
50	3	2654	U
50	3	2662	A
50	3	2664	U
50	3	2668	A
50	3	2669	G
50	3	2674	C
50	3	2681	G
50	3	2689	C
50	3	2697	C
50	3	2699	C
50	3	2708	G
50	3	2710	G
50	3	2711	C
50	3	2721	C

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Mol	Chain	Res	Type
50	3	2722	G
50	3	2726	G
50	3	2732	A
50	3	2734	C
50	3	2737	G
50	3	2740	U
50	3	2741	A
50	3	2743	U
50	3	2744	A
50	3	2747	U
50	3	2752	G
50	3	2756	A
50	3	2760	C
50	3	2763	C
50	3	2765	A
50	3	2769	G
50	3	2772	A
50	3	2773	A
50	3	2774	A
50	3	2784	A
50	3	2785	G
50	3	2786	A
50	3	2788	U
50	3	2789	A
50	3	2790	A
50	3	2799	U
50	3	2800	U
50	3	2801	U
50	3	2802	C
50	3	2803	G
50	3	2808	A
50	3	2809	A
50	3	2811	G
50	3	2813	A
50	3	2815	G
50	3	2821	U
50	3	2822	C
50	3	2824	A
50	3	2831	U
50	3	2837	U
50	3	2839	A
50	3	2840	U

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Mol	Chain	Res	Type
50	3	2851	U
50	3	2853	U
50	3	2854	A
50	3	2862	U
50	3	2863	G
50	3	2870	U
50	3	2871	G
50	3	2876	G
50	3	2881	A
50	3	2883	A
50	3	2888	U
50	3	2890	G
50	3	2896	G
50	3	2897	G
50	3	2898	A
50	3	2899	C
51	4	9	C
51	4	10	C
51	4	13	G
51	4	19	G
51	4	20	U
51	4	23	A
51	4	24	A
51	4	27	A
51	4	28	C
51	4	31	G
51	4	33	U
51	4	37	A
51	4	38	U
51	4	39	U
51	4	40	U
51	4	41	C
51	4	42	G
51	4	49	G
51	4	54	U
51	4	55	A
51	4	60	C
51	4	66	A
51	4	67	G
51	4	75	U
51	4	80	G
51	4	88	G

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Mol	Chain	Res	Type
51	4	89	A
51	4	98	A
51	4	99	A
51	4	102	A
51	4	103	C
51	4	106	A
51	4	107	G
52	5	8	G
52	5	9	A
52	5	10	G
52	5	15	U
52	5	16	G
52	5	32	U
52	5	33	A
52	5	36	G
52	5	38	U
52	5	40	G
52	5	48	C
52	5	49	C
52	5	50	U
52	5	51	A
52	5	52	A
52	5	54	A
52	5	61	A
52	5	66	A
52	5	67	U
52	5	75	A
52	5	80	U
52	5	81	A
52	5	85	U
52	5	86	A
52	5	87	G
52	5	88	A
52	5	95	C
52	5	101	A
52	5	105	A
52	5	106	C
52	5	112	U
52	5	114	C
52	5	115	A
52	5	116	A
52	5	117	U

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Mol	Chain	Res	Type
52	5	127	A
52	5	128	A
52	5	130	G
52	5	132	G
52	5	138	A
52	5	145	G
52	5	149	G
52	5	154	G
52	5	159	U
52	5	160	A
52	5	161	C
52	5	164	C
52	5	165	A
52	5	169	G
52	5	194	U
52	5	197	A
52	5	198	A
52	5	223	G
52	5	236	C
52	5	239	A
52	5	240	U
52	5	241	C
52	5	243	G
52	5	246	A
52	5	247	G
52	5	249	U
52	5	259	A
52	5	262	G
52	5	263	C
52	5	266	A
52	5	275	A
52	5	276	U
52	5	277	G
52	5	285	G
52	5	294	A
52	5	302	A
52	5	305	A
52	5	311	A
52	5	315	G
52	5	319	U
52	5	323	A
52	5	324	C

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Mol	Chain	Res	Type
52	5	325	A
52	5	326	C
52	5	328	G
52	5	341	C
52	5	342	G
52	5	347	G
52	5	348	C
52	5	349	A
52	5	350	G
52	5	352	A
52	5	359	A
52	5	361	U
52	5	363	U
52	5	364	U
52	5	365	U
52	5	366	C
52	5	367	A
52	5	368	C
52	5	374	G
52	5	381	C
52	5	385	A
52	5	393	A
52	5	394	U
52	5	395	G
52	5	400	G
52	5	402	G
52	5	403	A
52	5	407	A
52	5	408	U
52	5	409	G
52	5	410	A
52	5	411	A
52	5	417	U
52	5	418	U
52	5	419	A
52	5	420	A
52	5	421	G
52	5	423	U
52	5	426	U
52	5	428	A
52	5	429	A
52	5	432	U

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Mol	Chain	Res	Type
52	5	435	U
52	5	440	U
52	5	441	U
52	5	442	G
52	5	445	A
52	5	448	A
52	5	450	U
52	5	452	A
52	5	456	U
52	5	465	A
52	5	469	C
52	5	471	A
52	5	473	A
52	5	476	U
52	5	478	G
52	5	481	U
52	5	482	G
52	5	483	U
52	5	488	U
52	5	493	A
52	5	494	A
52	5	500	G
52	5	508	A
52	5	509	C
52	5	515	G
52	5	516	C
52	5	519	G
52	5	525	G
52	5	526	C
52	5	529	U
52	5	530	A
52	5	531	A
52	5	532	U
52	5	533	A
52	5	534	C
52	5	535	A
52	5	545	A
52	5	548	G
52	5	557	A
52	5	558	U
52	5	559	U
52	5	560	U

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Mol	Chain	Res	Type
52	5	562	U
52	5	565	G
52	5	570	A
52	5	571	A
52	5	573	G
52	5	574	C
52	5	575	A
52	5	586	G
52	5	589	U
52	5	595	G
52	5	616	C
52	5	617	U
52	5	618	U
52	5	619	A
52	5	628	A
52	5	638	A
52	5	639	A
52	5	647	U
52	5	648	C
52	5	650	A
52	5	652	A
52	5	653	G
52	5	660	A
52	5	662	G
52	5	672	A
52	5	680	G
52	5	684	A
52	5	699	A
52	5	700	G
52	5	710	G
52	5	715	A
52	5	718	A
52	5	721	G
52	5	724	G
52	5	725	A
52	5	745	U
52	5	774	A
52	5	784	A
52	5	790	U
52	5	806	A
52	5	809	G
52	5	812	A

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Mol	Chain	Res	Type
52	5	813	A
52	5	814	C
52	5	815	G
52	5	817	U
52	5	818	A
52	5	825	A
52	5	829	G
52	5	838	A
52	5	840	C
52	5	845	C
52	5	849	A
52	5	856	U
52	5	861	A
52	5	865	U
52	5	870	A
52	5	877	C
52	5	883	A
52	5	885	U
52	5	896	G
52	5	897	A
52	5	908	A
52	5	910	C
52	5	911	G
52	5	912	G
52	5	921	G
52	5	922	G
52	5	929	C
52	5	930	A
52	5	934	G
52	5	938	U
52	5	941	A
52	5	953	A
52	5	955	U
52	5	961	G
52	5	962	G
52	5	964	A
52	5	966	A
52	5	969	A
52	5	970	A
52	5	971	A
52	5	972	A
52	5	975	C

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Mol	Chain	Res	Type
52	5	976	U
52	5	977	U
52	5	987	U
52	5	988	G
52	5	989	A
52	5	997	G
52	5	999	C
52	5	1003	G
52	5	1004	U
52	5	1014	A
52	5	1018	U
52	5	1037	A
52	5	1041	G
52	5	1044	G
52	5	1045	C
52	5	1046	A
52	5	1047	U
52	5	1054	C
52	5	1056	U
52	5	1058	A
52	5	1061	U
52	5	1070	G
52	5	1072	G
52	5	1075	G
52	5	1078	G
52	5	1079	G
52	5	1085	G
52	5	1086	U
52	5	1092	A
52	5	1095	G
52	5	1096	A
52	5	1113	U
52	5	1117	U
52	5	1118	A
52	5	1119	C
52	5	1121	U
52	5	1122	U
52	5	1123	G
52	5	1124	U
52	5	1125	C
52	5	1128	G
52	5	1134	C

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Mol	Chain	Res	Type
52	5	1135	U
52	5	1136	G
52	5	1141	U
52	5	1142	G
52	5	1153	G
52	5	1154	A
52	5	1158	A
52	5	1159	A
52	5	1165	G
52	5	1166	A
52	5	1168	G
52	5	1170	C
52	5	1171	A
52	5	1172	A
52	5	1173	A
52	5	1175	C
52	5	1176	A
52	5	1177	U
52	5	1179	A
52	5	1181	G
52	5	1186	U
52	5	1187	U
52	5	1188	A
52	5	1195	G
52	5	1197	G
52	5	1199	U
52	5	1200	G
52	5	1202	A
52	5	1211	A
52	5	1213	A
52	5	1215	U
52	5	1216	G
52	5	1217	G
52	5	1225	A
52	5	1226	A
52	5	1232	C
52	5	1233	G
52	5	1235	C
52	5	1240	U
52	5	1242	U
52	5	1243	A
52	5	1254	A

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Mol	Chain	Res	Type
52	5	1255	A
52	5	1260	U
52	5	1261	A
52	5	1264	G
52	5	1271	U
52	5	1273	A
52	5	1274	G
52	5	1276	U
52	5	1277	C
52	5	1278	G
52	5	1279	G
52	5	1280	A
52	5	1281	U
52	5	1291	C
52	5	1294	U
52	5	1296	C
52	5	1299	C
52	5	1303	A
52	5	1310	C
52	5	1312	G
52	5	1322	U
52	5	1327	G
52	5	1331	A
52	5	1338	A
52	5	1343	G
52	5	1350	A
52	5	1354	G
52	5	1356	U
52	5	1363	U
52	5	1369	A
52	5	1373	A
52	5	1374	C
52	5	1375	C
52	5	1381	U
52	5	1394	G
52	5	1397	G
52	5	1400	A
52	5	1404	U
52	5	1408	A
52	5	1417	U
52	5	1423	C
52	5	1426	U

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Mol	Chain	Res	Type
52	5	1427	U
52	5	1429	G
52	5	1443	A
52	5	1446	A
52	5	1450	C
52	5	1467	A
52	5	1468	A
52	5	1469	G
52	5	1471	C
52	5	1472	G
52	5	1474	A
52	5	1478	A
52	5	1480	G
52	5	1481	U
52	5	1482	A
52	5	1495	C
52	5	1497	U
52	5	1502	G
52	5	1504	G
52	5	1505	G
52	5	1508	C
52	5	1509	A
53	7	3	G
53	7	4	U
53	7	9	U
53	7	14	C
53	7	15	A
53	7	17	U
53	7	20	G
53	7	21	U
53	7	22	A
53	7	24	A
53	7	28	A
53	7	35	G
53	7	37	A
53	7	42	C
53	7	43	G
53	7	44	U
53	7	47	G
53	7	48	U
53	7	49	C
53	7	53	A

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Mol	Chain	Res	Type
53	7	54	G
53	7	72	C
53	7	73	C
53	7	74	A
53	7	76	C
53	8	3	G
53	8	4	U
53	8	9	U
53	8	14	C
53	8	15	A
53	8	17	U
53	8	20	G
53	8	21	U
53	8	22	A
53	8	24	A
53	8	28	A
53	8	35	G
53	8	37	A
53	8	42	C
53	8	43	G
53	8	44	U
53	8	47	G
53	8	48	U
53	8	49	C
53	8	53	A
53	8	54	G
53	8	72	C
53	8	73	C
53	8	74	A
53	8	76	C

All (41) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
50	3	311	G
50	3	315	A
50	3	410	G
50	3	425	U
50	3	513	A
50	3	688	U
50	3	881	A
50	3	952	U

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Mol	Chain	Res	Type
50	3	1048	A
50	3	1124	G
50	3	1209	U
50	3	1216	U
50	3	1297	U
50	3	1507	G
50	3	1587	U
50	3	1588	A
50	3	1820	U
50	3	1872	U
50	3	2219	U
50	3	2318	A
50	3	2333	G
50	3	2341	G
50	3	2342	U
50	3	2459	A
50	3	2604	U
50	3	2668	A
50	3	2764	U
50	3	2807	G
50	3	2823	A
50	3	2862	U
50	3	2897	G
51	4	54	U
51	4	59	A
52	5	197	A
52	5	419	A
52	5	425	G
52	5	561	A
52	5	1133	A
52	5	1507	U
53	7	16	G
53	8	16	G

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

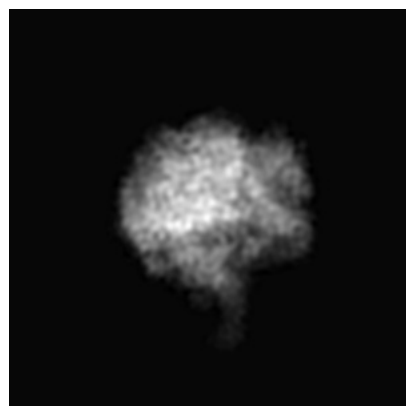
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-13278. These allow visual inspection of the internal detail of the map and identification of artifacts.

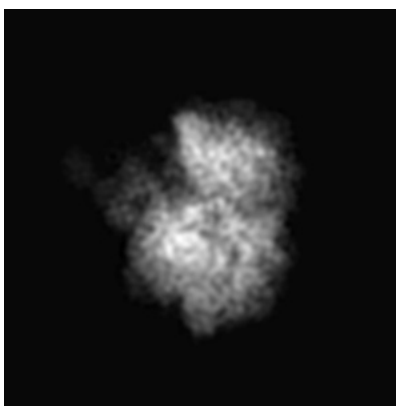
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

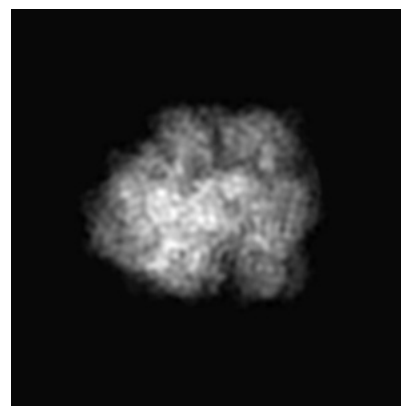
6.1.1 Primary map



X

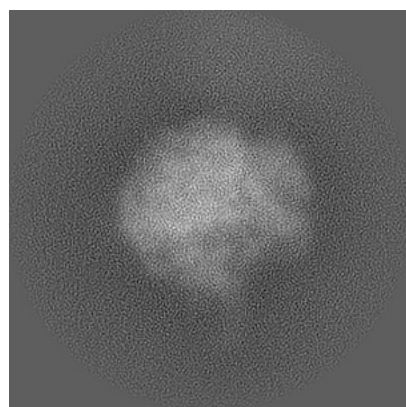


Y

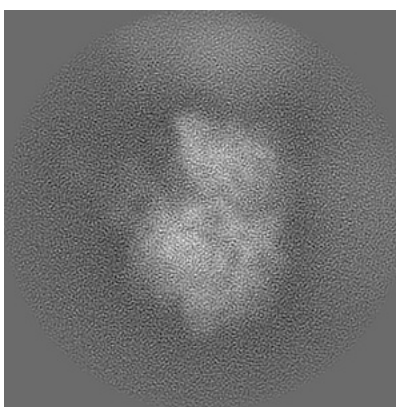


Z

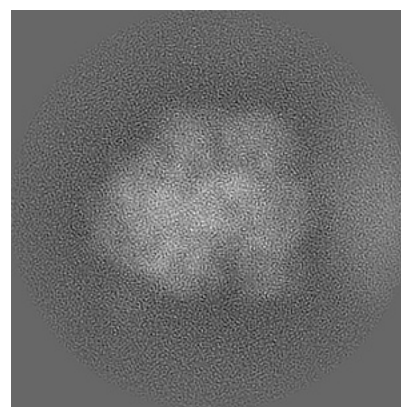
6.1.2 Raw map



X



Y

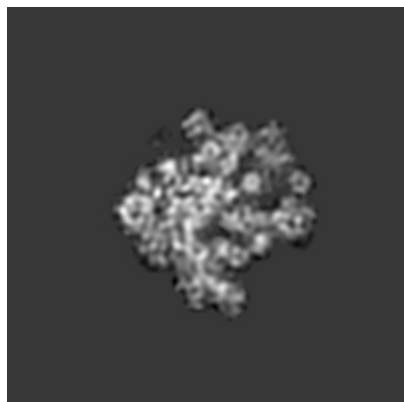


Z

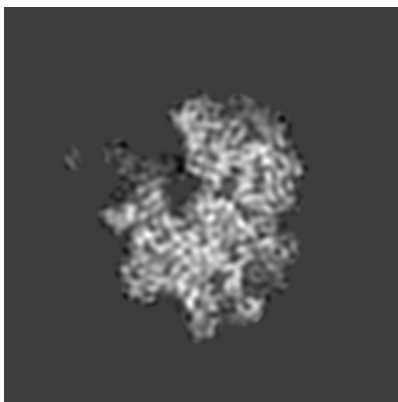
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

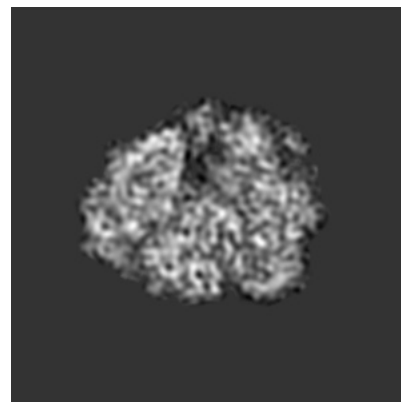
6.2.1 Primary map



X Index: 128

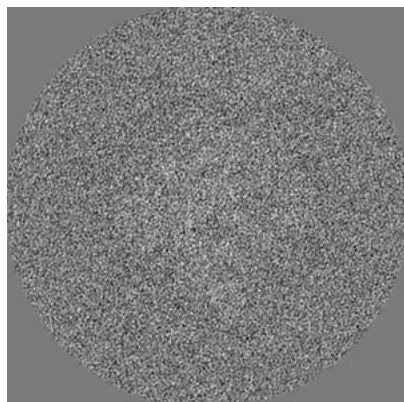


Y Index: 128

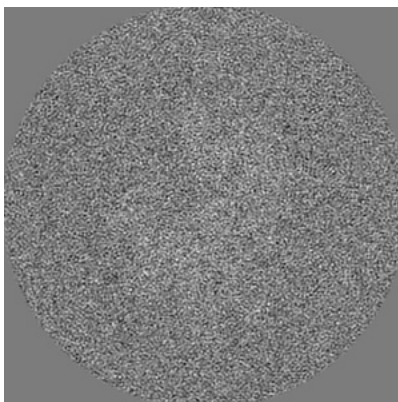


Z Index: 128

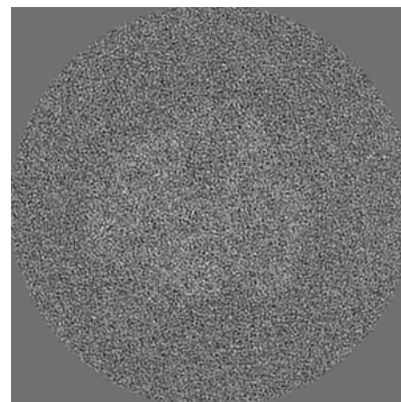
6.2.2 Raw map



X Index: 128



Y Index: 128

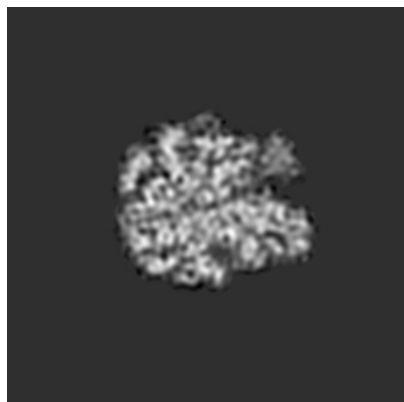


Z Index: 128

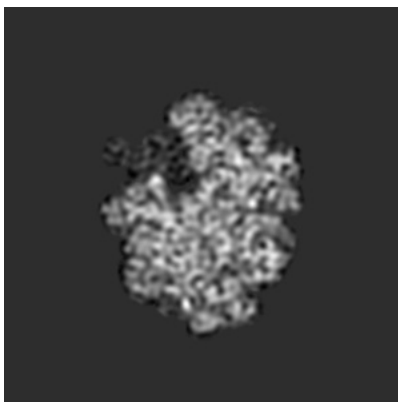
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

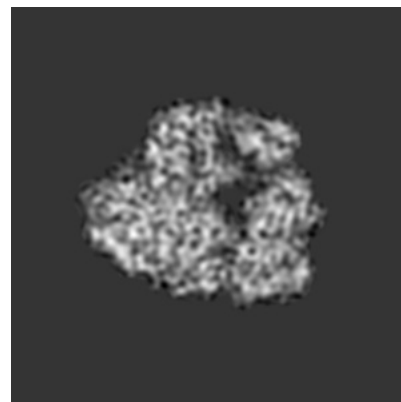
6.3.1 Primary map



X Index: 105

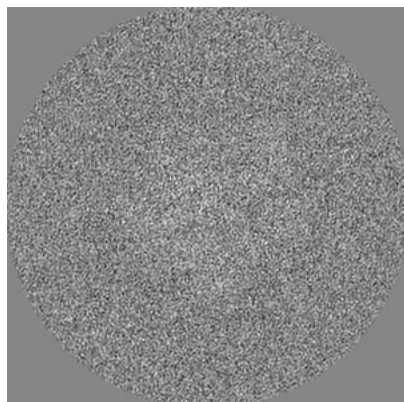


Y Index: 121

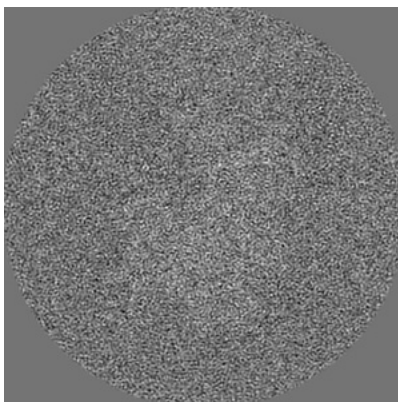


Z Index: 120

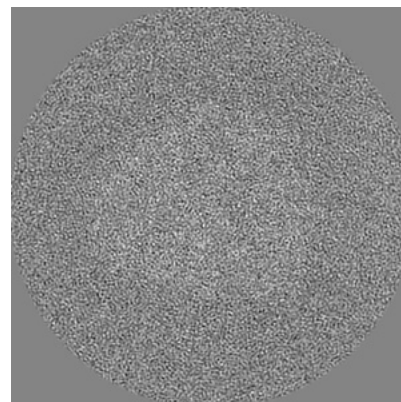
6.3.2 Raw map



X Index: 121



Y Index: 129



Z Index: 125

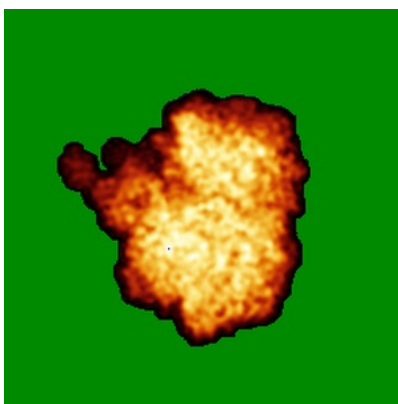
The images above show the largest variance slices of the map in three orthogonal directions.

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

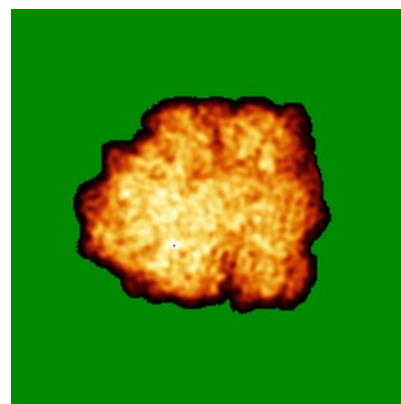
6.4.1 Primary map



X

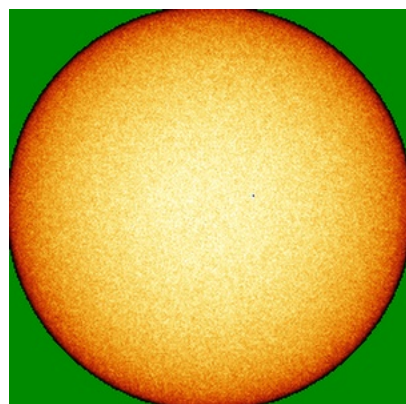


Y

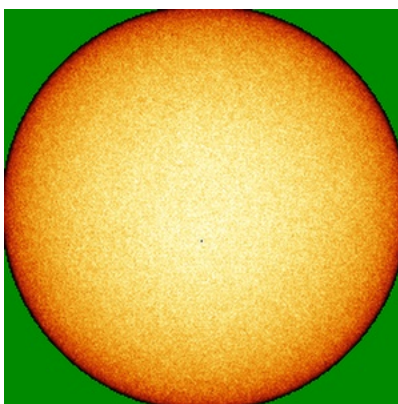


Z

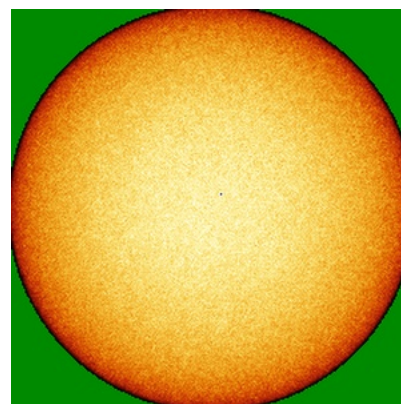
6.4.2 Raw map



X



Y



Z

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

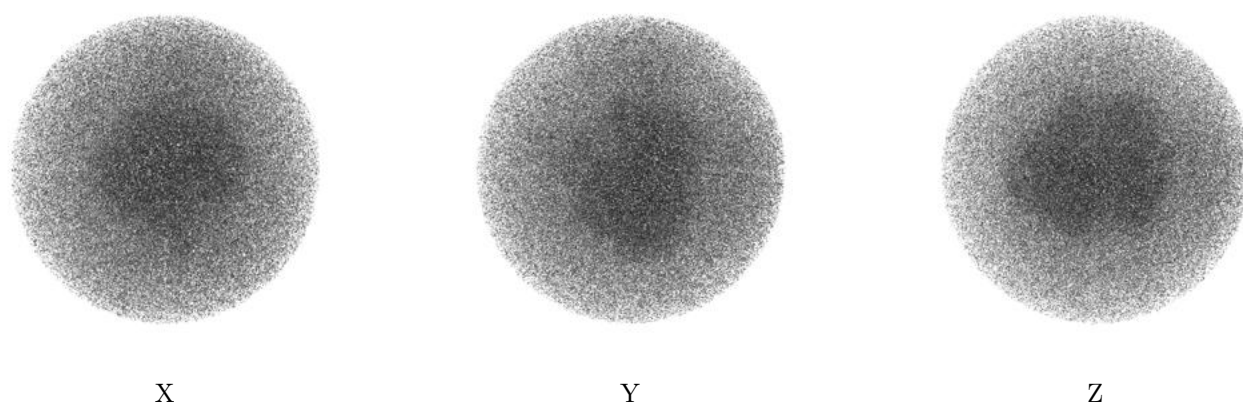
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.47. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

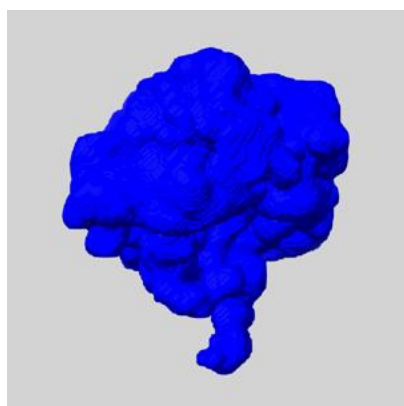
6.6 Mask visualisation [i](#)

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

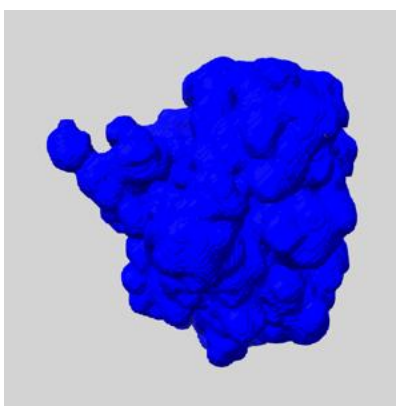
A mask typically either:

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

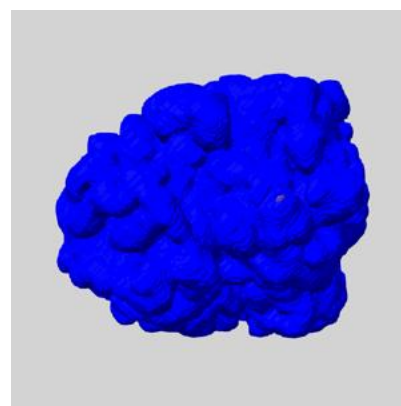
6.6.1 emd_13278_msk_1.map [i](#)



X



Y

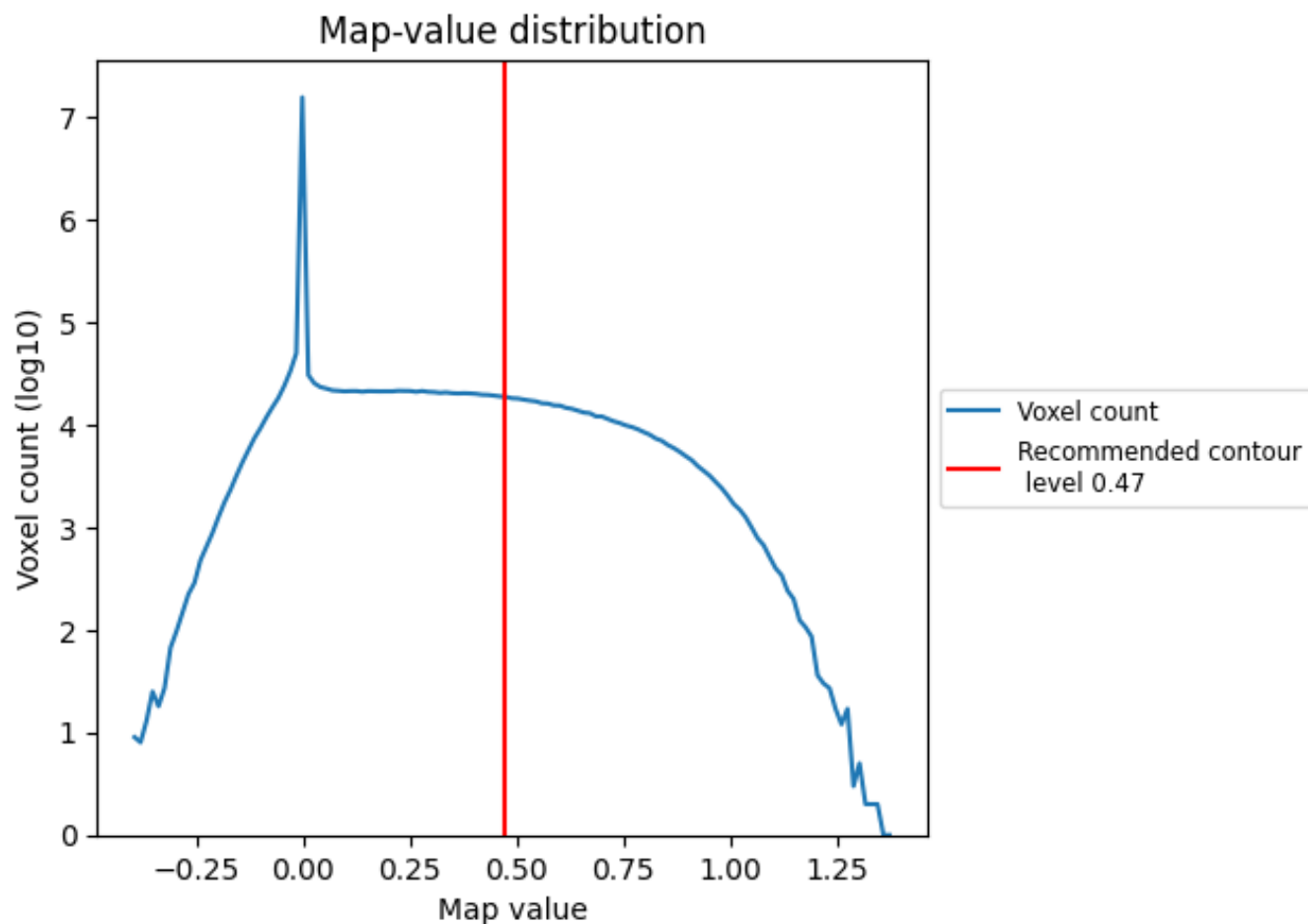


Z

7 Map analysis [i](#)

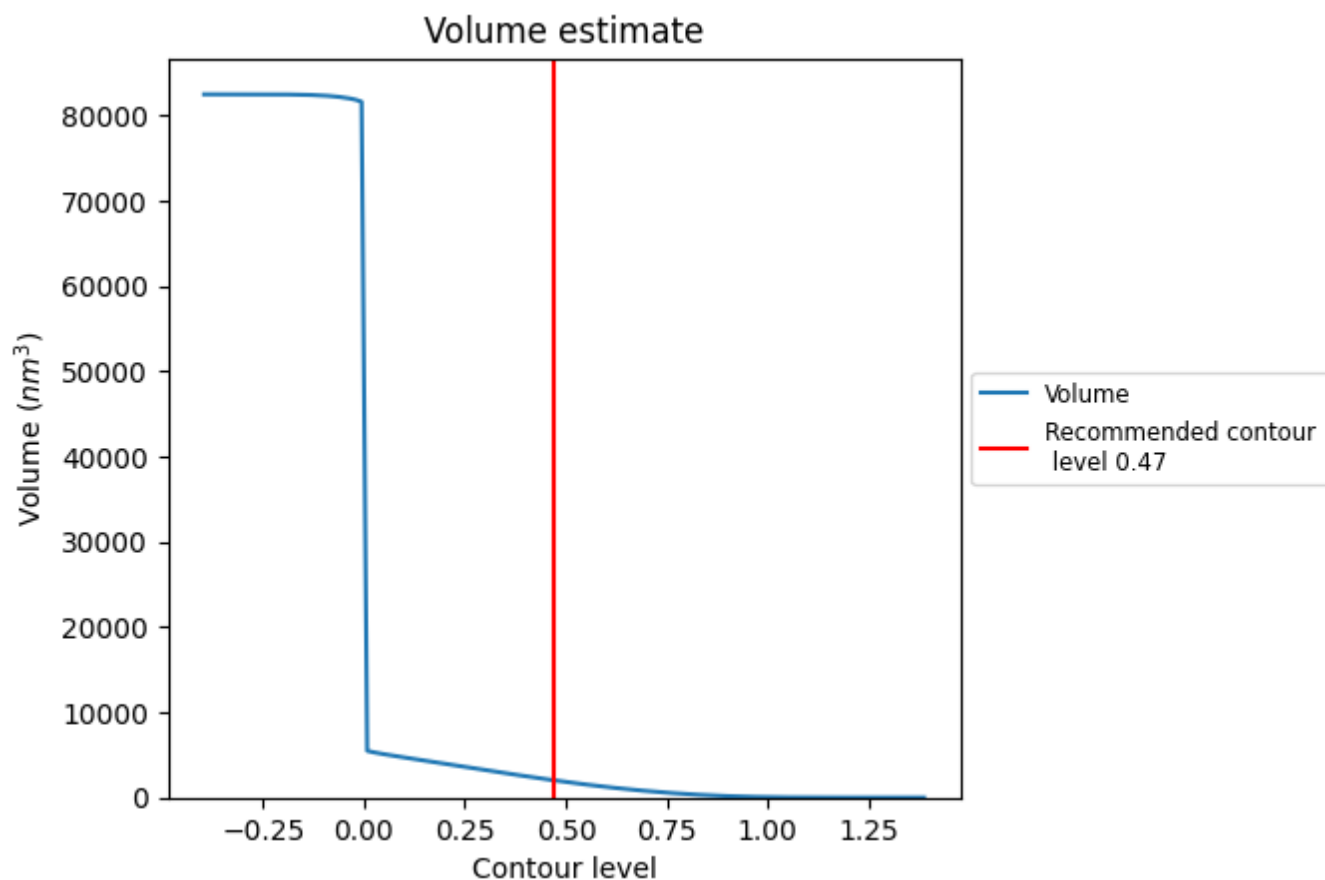
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

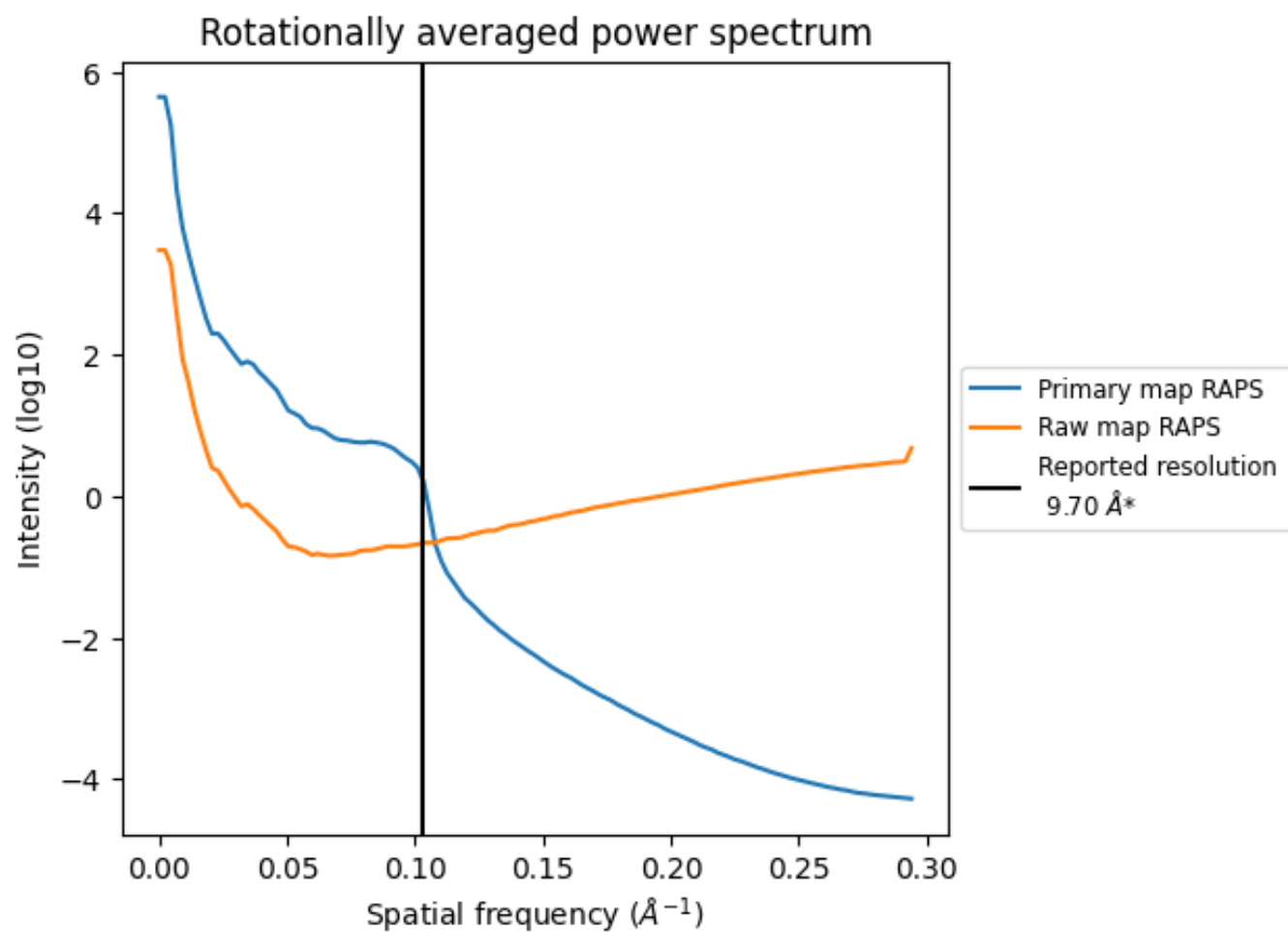
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2033 nm³; this corresponds to an approximate mass of 1837 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 ⓘ

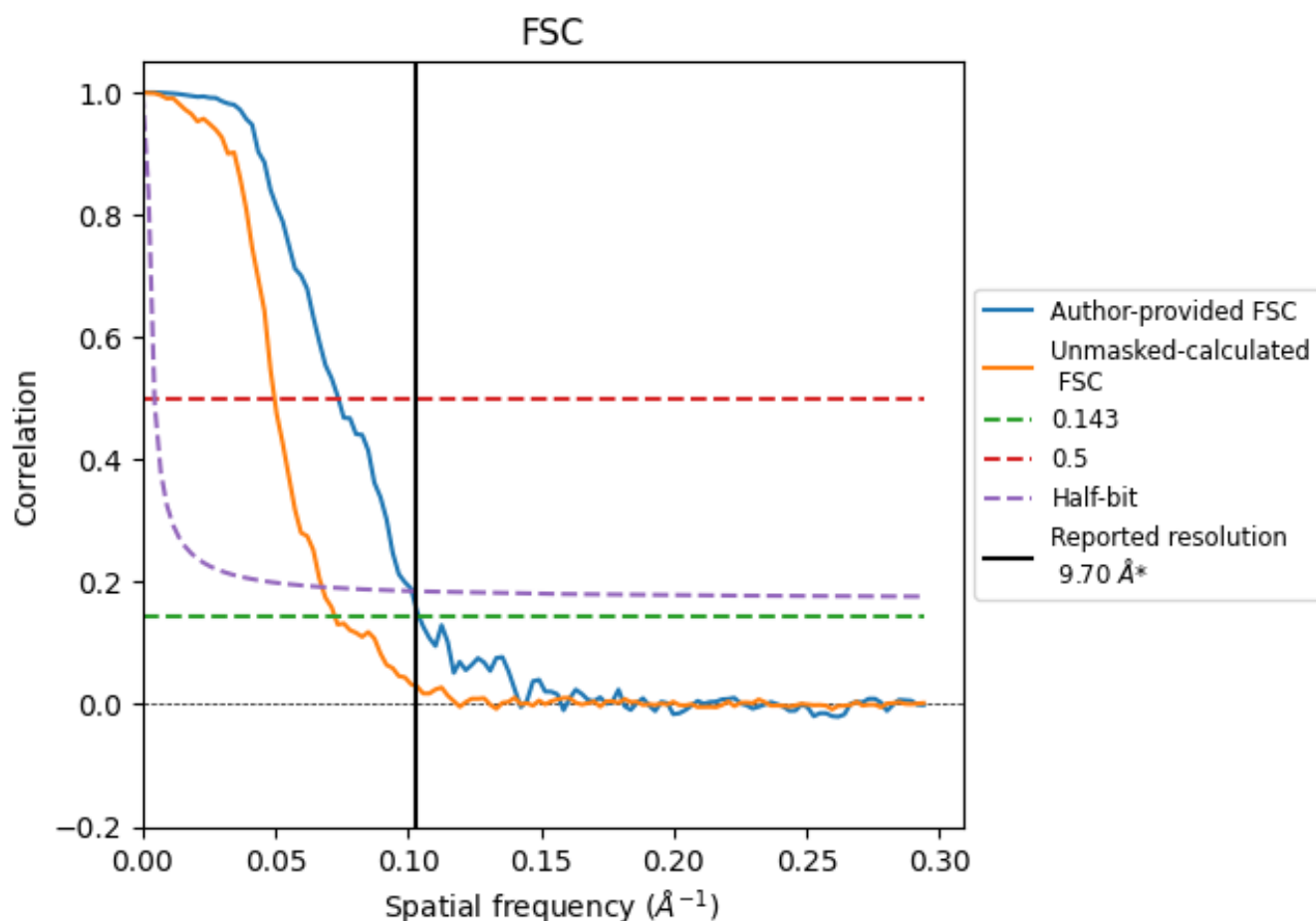


*Reported resolution corresponds to spatial frequency of 0.103 Å⁻¹

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 0.103 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

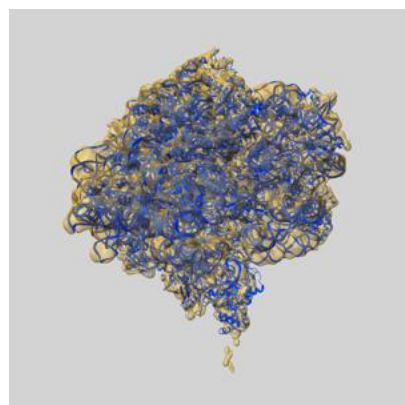
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	9.70	-	-
Author-provided FSC curve	9.61	13.57	9.87
Unmasked-calculated*	13.79	20.12	14.79

*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 13.79 differs from the reported value 9.7 by more than 10 %

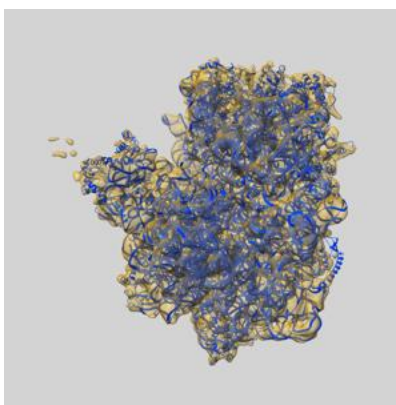
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-13278 and PDB model 7PAN. Per-residue inclusion information can be found in section 3 on page 14.

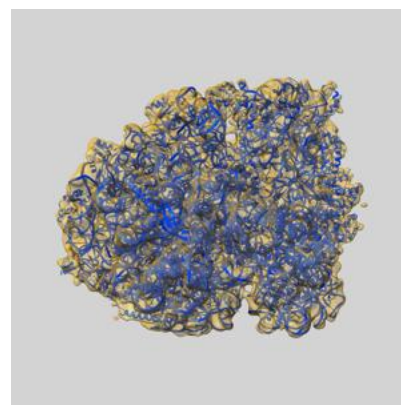
9.1 Map-model overlay [i](#)



X



Y



Z

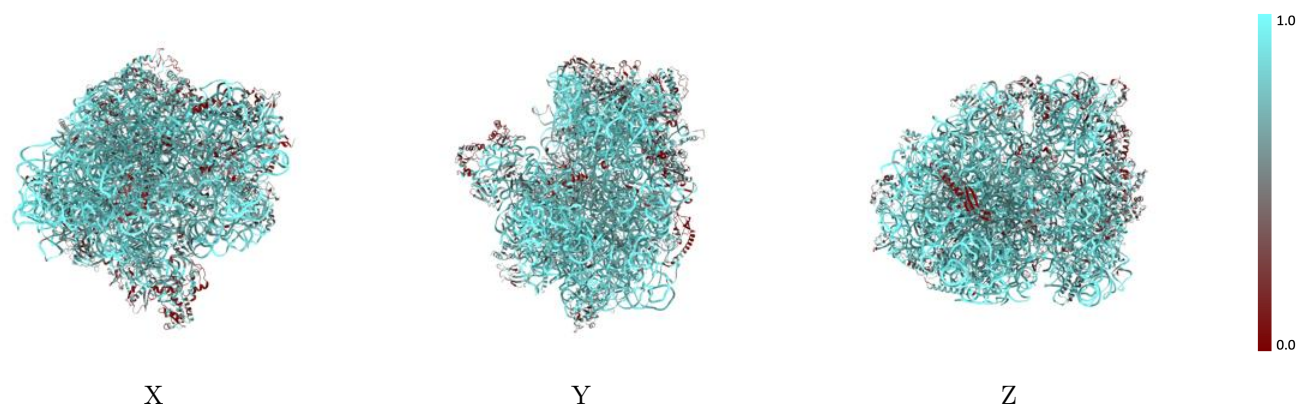
The images above show the 3D surface view of the map at the recommended contour level 0.47 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



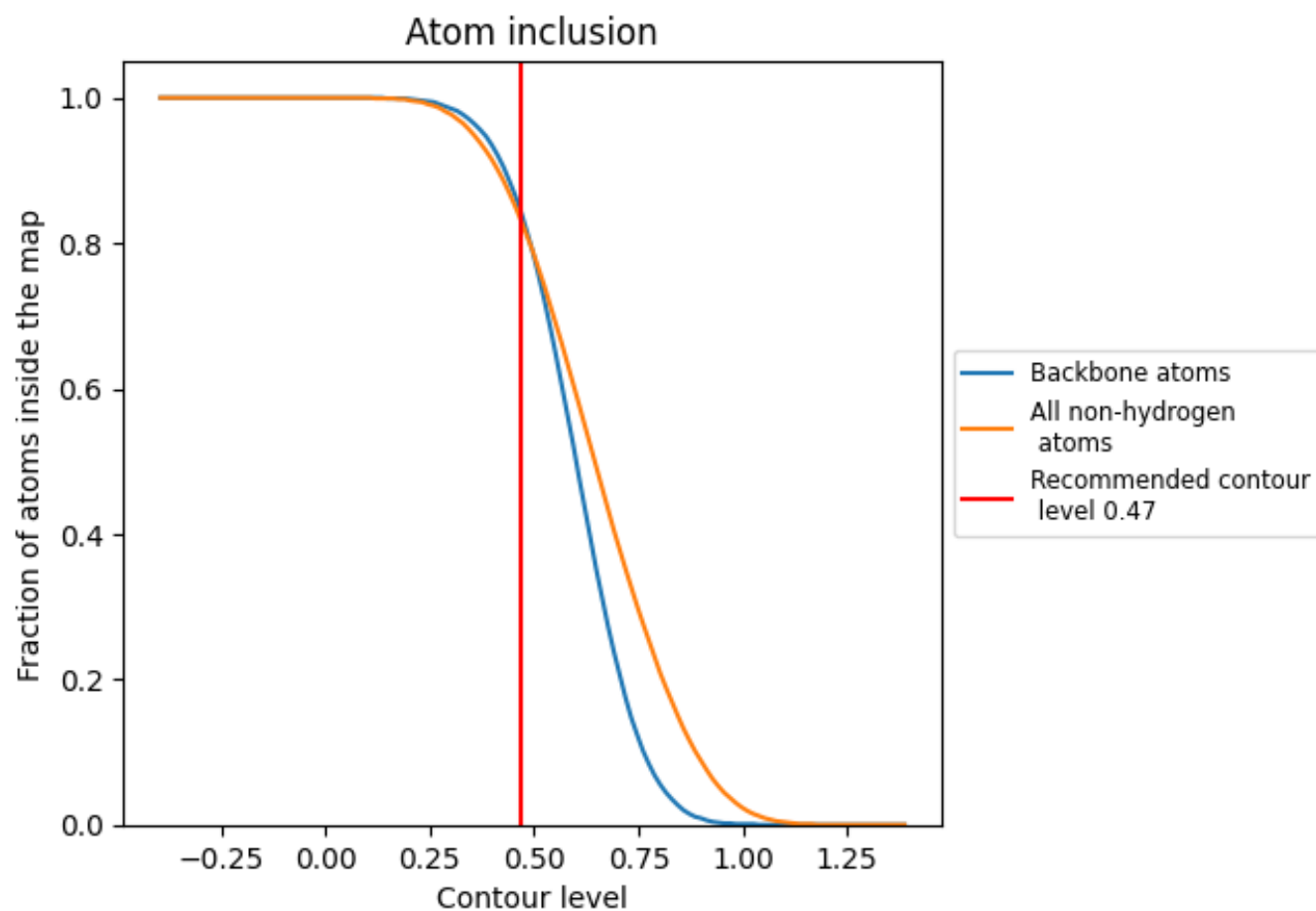
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.47).

9.4 Atom inclusion [i](#)



At the recommended contour level, 84% of all backbone atoms, 83% 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 (0.47) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8290	 0.1470
0	 0.7530	 0.1220
1	 0.7060	 0.1230
2	 0.6450	 0.0820
3	 0.9400	 0.1570
4	 0.9440	 0.1640
5	 0.9350	 0.1570
7	 0.7490	 0.1370
8	 0.8830	 0.1570
A	 0.5060	 0.1420
B	 0.5400	 0.1360
C	 0.5640	 0.1210
D	 0.5660	 0.1190
E	 0.5190	 0.1510
F	 0.5090	 0.1280
G	 0.6040	 0.1200
H	 0.5600	 0.1100
I	 0.5380	 0.1290
J	 0.5920	 0.1180
K	 0.6300	 0.1150
L	 0.5990	 0.1220
M	 0.6370	 0.0800
N	 0.6600	 0.1710
O	 0.6690	 0.1390
P	 0.6710	 0.1360
Q	 0.6670	 0.1260
R	 0.6280	 0.0970
S	 0.7120	 0.1280
T	 0.6500	 0.1670
a	 0.6750	 0.0960
b	 0.6580	 0.1160
c	 0.6790	 0.1350
d	 0.5600	 0.1310
e	 0.5200	 0.1290
f	 0.2320	 0.1430



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Chain	Atom inclusion	Q-score
g	 0.4320	 0.1160
h	 0.2510	 0.0830
i	 0.7380	 0.1360
j	 0.5920	 0.1140
k	 0.7110	 0.1120
l	 0.6760	 0.1180
m	 0.6840	 0.1210
n	 0.7110	 0.1370
o	 0.5720	 0.1390
p	 0.7570	 0.1250
q	 0.6470	 0.1450
r	 0.6760	 0.1330
s	 0.6160	 0.1360
t	 0.5920	 0.1150
u	 0.7530	 0.1110
v	 0.6790	 0.1040
w	 0.7040	 0.1740
x	 0.5040	 0.1390
y	 0.7010	 0.1110
z	 0.7510	 0.1370