



Full wwPDB EM Validation Report ⓘ

Aug 18, 2025 – 12:29 PM EDT

PDB ID : 8V03 / pdb_00008v03
EMDB ID : EMD-42852
Title : E. coli 70S ribosome with unmodified P/E-tRNA^{Pro}(GGG) bound to slippery P-site CCC-C codon
Authors : Kimbrough, E.M.; Dunham, C.M.; Nguyen, H.A.
Deposited on : 2023-11-16
Resolution : 4.00 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev126
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0rc1
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.45.1

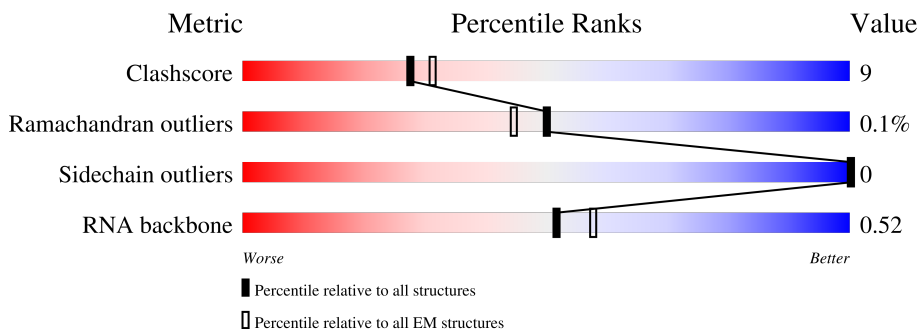
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 4.00 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)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

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

Mol	Chain	Length	Quality of chain
1	1	2904	
2	2	1540	
3	3	120	
4	4	18	
5	5	77	
6	B	273	
7	C	209	

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Mol	Chain	Length	Quality of chain
8	D	201	78% 22%
9	E	179	72% 27%
10	F	177	77% 22%
11	G	149	17% 79% 21%
12	J	142	81% 19%
13	K	123	76% 24%
14	L	144	82% 17%
15	M	136	77% 23%
16	N	127	72% 23% 6%
17	O	117	76% 23%
18	P	115	82% 17%
19	Q	118	83% 16%
20	R	103	85% 14%
21	S	110	73% 26%
22	T	100	82% 11% 7%
23	U	104	76% 22%
24	V	94	79% 21%
25	W	84	74% 15% 11%
26	X	78	85% 14%
27	Y	63	79% 21%
28	Z	59	75% 24%
29	b	57	88% 11%
30	c	55	80% 11% 9%
31	d	46	78% 22%
32	e	65	72% 26%

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Mol	Chain	Length	Quality of chain
33	f	38	76% 24%
34	g	241	64% 26% 10%
35	h	206	74% 26%
36	i	206	69% 30%
37	j	167	70% 23% 6%
38	k	135	49% 25% 26%
39	l	179	59% 25% 16%
40	m	130	80% 19%
41	n	130	53% 44%
42	o	103	72% 23% 5%
43	p	129	72% 18% 10%
44	q	124	77% 21%
45	r	118	71% 25%
46	s	102	75% 25%
47	t	89	79% 20%
48	u	82	79% 21%
49	v	84	74% 21% 5%
50	w	75	79% 8% 13%
51	x	92	57% 29% 14%
52	y	87	77% 21%
53	z	71	86% 6% 8%

2 Entry composition

There are 55 unique types of molecules in this entry. The entry contains 144490 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	1	2900	62262	27774	11460	20128	2900	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
1	747	C	U	conflict	GB 1126835764
1	1847	G	A	conflict	GB 1126835764

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	2	1531	32853	14652	6028	10642	1531	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	3	120	2572	1145	471	836	120	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
3	120	A	U	conflict	GB 1370526515

- Molecule 4 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	4	4	83	37	14	28	4	0	0

- Molecule 5 is a RNA chain called tRNA ProL (GGG).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
5	5	77	1648	733	297	541	77	0	0

- Molecule 6 is a protein called 50S ribosomal protein L2.

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

- Molecule 7 is a protein called 50S ribosomal protein L3.

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

- Molecule 8 is a protein called 50S ribosomal protein L4.

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

- Molecule 9 is a protein called 50S ribosomal protein L5.

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

- Molecule 10 is a protein called 50S ribosomal protein L6.

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

- Molecule 11 is a protein called 50S ribosomal protein L9.

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

- Molecule 12 is a protein called Large ribosomal subunit protein uL13.

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

- Molecule 13 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	K	122	938	587	180	165	6	0	0

- Molecule 14 is a protein called 50S ribosomal protein L15.

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

- Molecule 15 is a protein called 50S ribosomal protein L16.

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

- Molecule 16 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	N	120	960	593	196	166	5	0	0

- Molecule 17 is a protein called Large ribosomal subunit protein uL18.

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

- Molecule 18 is a protein called Large ribosomal subunit protein bL19.

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

- Molecule 19 is a protein called 50S ribosomal protein L20.

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

- Molecule 20 is a protein called Large ribosomal subunit protein bL21.

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

- Molecule 21 is a protein called 50S ribosomal protein L22.

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

- Molecule 22 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	T	93	Total	C	N	O	S	0	0
			738	466	139	131	2		

- Molecule 23 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
23	U	102	Total	C	N	O	0	0
			779	492	146	141		

- Molecule 24 is a protein called Large ribosomal subunit protein bL25.

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

- Molecule 25 is a protein called Large ribosomal subunit protein bL27.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	W	75	Total	C	N	O	S	0	0
			575	356	116	102	1		

- Molecule 26 is a protein called 50S ribosomal protein L28.

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

- Molecule 27 is a protein called Large ribosomal subunit protein uL29.

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

- Molecule 28 is a protein called 50S ribosomal protein L30.

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

- Molecule 29 is a protein called 50S ribosomal protein L32.

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

- Molecule 30 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
30	c	50	Total	C	N	O	0	0
			409	263	75	71		

- Molecule 31 is a protein called 50S ribosomal protein L34.

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

- Molecule 32 is a protein called 50S ribosomal protein L35.

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

- Molecule 33 is a protein called 50S ribosomal protein L36.

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

- Molecule 34 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	g	218	Total	C	N	O	S	0	0
			1704	1081	305	311	7		

- Molecule 35 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	h	206	Total	C	N	O	S	0	0
			1624	1028	305	288	3		

- Molecule 36 is a protein called 30S ribosomal protein S4.

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

- Molecule 37 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	j	157	Total	C	N	O	S	0	0
			1141	709	218	208	6		

- Molecule 38 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	k	100	Total	C	N	O	S	0	0
			817	515	148	148	6		

- Molecule 39 is a protein called 30S ribosomal protein S7.

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

- Molecule 40 is a protein called Small ribosomal subunit protein uS8.

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

- Molecule 41 is a protein called Small ribosomal subunit protein uS9.

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

- Molecule 42 is a protein called Small ribosomal subunit protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	o	98	Total	C	N	O	S	0	0
			786	493	150	142	1		

- Molecule 43 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	p	116	Total	C	N	O	S	0	0
			869	535	173	158	3		

- Molecule 44 is a protein called Small ribosomal subunit protein uS12.

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

- Molecule 45 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	r	114	Total	C	N	O	S	0	0
			883	546	178	156	3		

- Molecule 46 is a protein called Small ribosomal subunit protein uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	s	101	Total	C	N	O	S	0	0
			799	498	165	133	3		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
s	36	ALA	-	insertion	UNP C3SR07

- Molecule 47 is a protein called Small ribosomal subunit protein uS15.

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

- Molecule 48 is a protein called 30S ribosomal protein S16.

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

- Molecule 49 is a protein called Small ribosomal subunit protein uS17.

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

- Molecule 50 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
50	w	65	504	317	96	91	0	0

- Molecule 51 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
51	x	79	637	408	120	107	2	0	0

- Molecule 52 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
52	y	85	665	411	137	114	3	0	0

- Molecule 53 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
53	z	65	495	307	100	87	1	0	0

- Molecule 54 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
54	1	196	Total 196	Mg 196	0
54	2	75	Total 75	Mg 75	0
54	3	1	Total 1	Mg 1	0
54	B	2	Total 2	Mg 2	0
54	D	2	Total 2	Mg 2	0
54	L	2	Total 2	Mg 2	0
54	Q	1	Total 1	Mg 1	0
54	b	1	Total 1	Mg 1	0
54	e	1	Total 1	Mg 1	0

- Molecule 55 is water.

Mol	Chain	Residues	Atoms		AltConf
55	1	479	Total 479	O 479	0
55	2	286	Total 286	O 286	0
55	3	10	Total 10	O 10	0
55	4	2	Total 2	O 2	0
55	5	1	Total 1	O 1	0
55	B	1	Total 1	O 1	0
55	C	1	Total 1	O 1	0
55	E	11	Total 11	O 11	0

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Mol	Chain	Residues	Atoms		AltConf
55	F	15	Total 15	O 15	0
55	G	10	Total 10	O 10	0
55	J	2	Total 2	O 2	0
55	K	1	Total 1	O 1	0
55	L	2	Total 2	O 2	0
55	M	2	Total 2	O 2	0
55	N	1	Total 1	O 1	0
55	O	4	Total 4	O 4	0
55	P	2	Total 2	O 2	0
55	R	1	Total 1	O 1	0
55	T	5	Total 5	O 5	0
55	U	6	Total 6	O 6	0
55	V	4	Total 4	O 4	0
55	W	2	Total 2	O 2	0
55	X	1	Total 1	O 1	0
55	Y	1	Total 1	O 1	0
55	Z	1	Total 1	O 1	0
55	b	1	Total 1	O 1	0
55	c	1	Total 1	O 1	0
55	d	2	Total 2	O 2	0
55	e	1	Total 1	O 1	0

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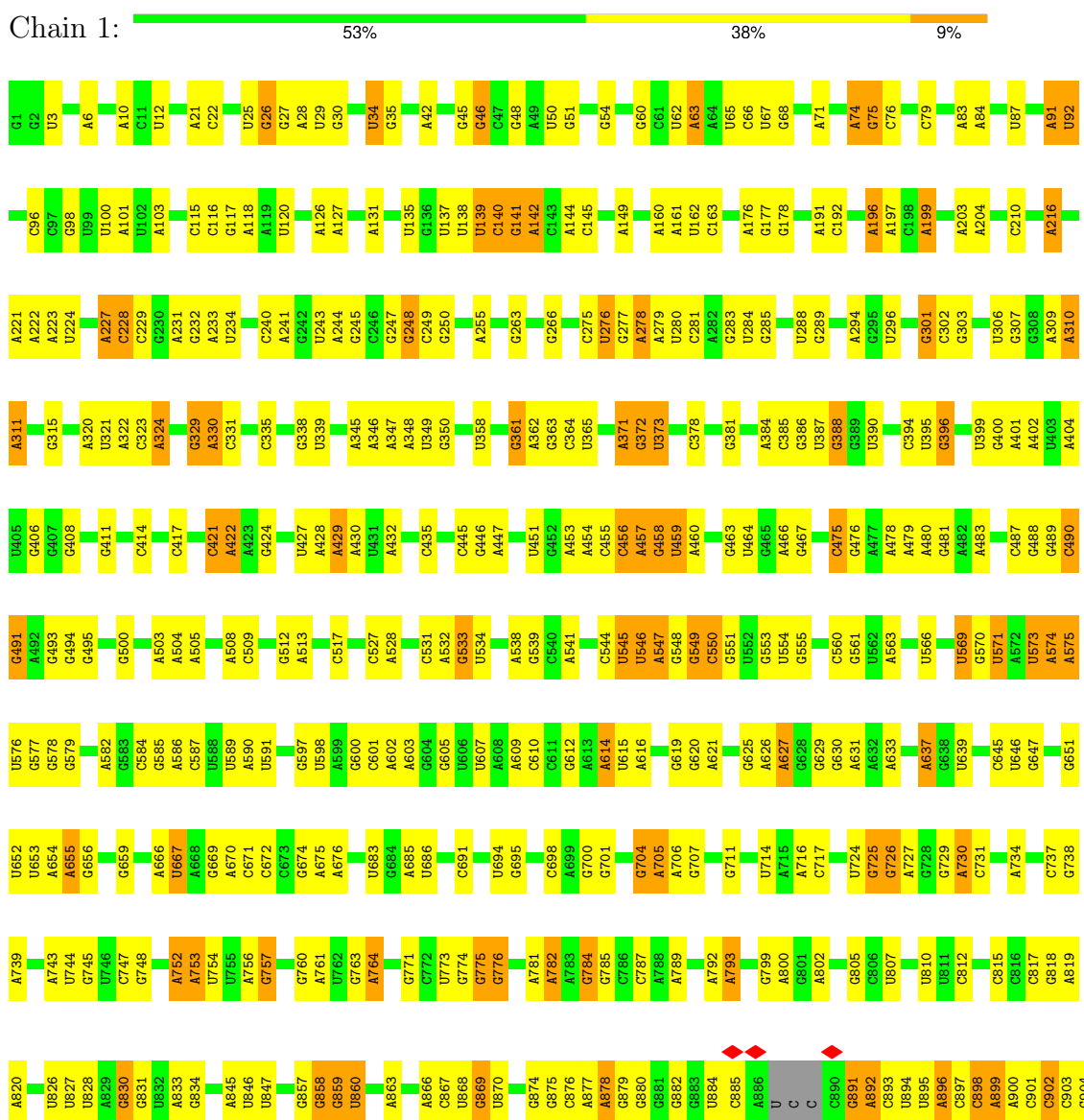
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Mol	Chain	Residues	Atoms		AltConf
55	f	1	Total 1	O 1	0
55	g	23	Total 23	O 23	0
55	h	13	Total 13	O 13	0
55	i	8	Total 8	O 8	0
55	j	8	Total 8	O 8	0
55	k	7	Total 7	O 7	0
55	l	13	Total 13	O 13	0
55	m	5	Total 5	O 5	0
55	n	9	Total 9	O 9	0
55	o	7	Total 7	O 7	0
55	p	6	Total 6	O 6	0
55	r	6	Total 6	O 6	0
55	s	5	Total 5	O 5	0
55	t	4	Total 4	O 4	0
55	v	4	Total 4	O 4	0
55	w	2	Total 2	O 2	0
55	x	8	Total 8	O 8	0
55	y	2	Total 2	O 2	0
55	z	5	Total 5	O 5	0

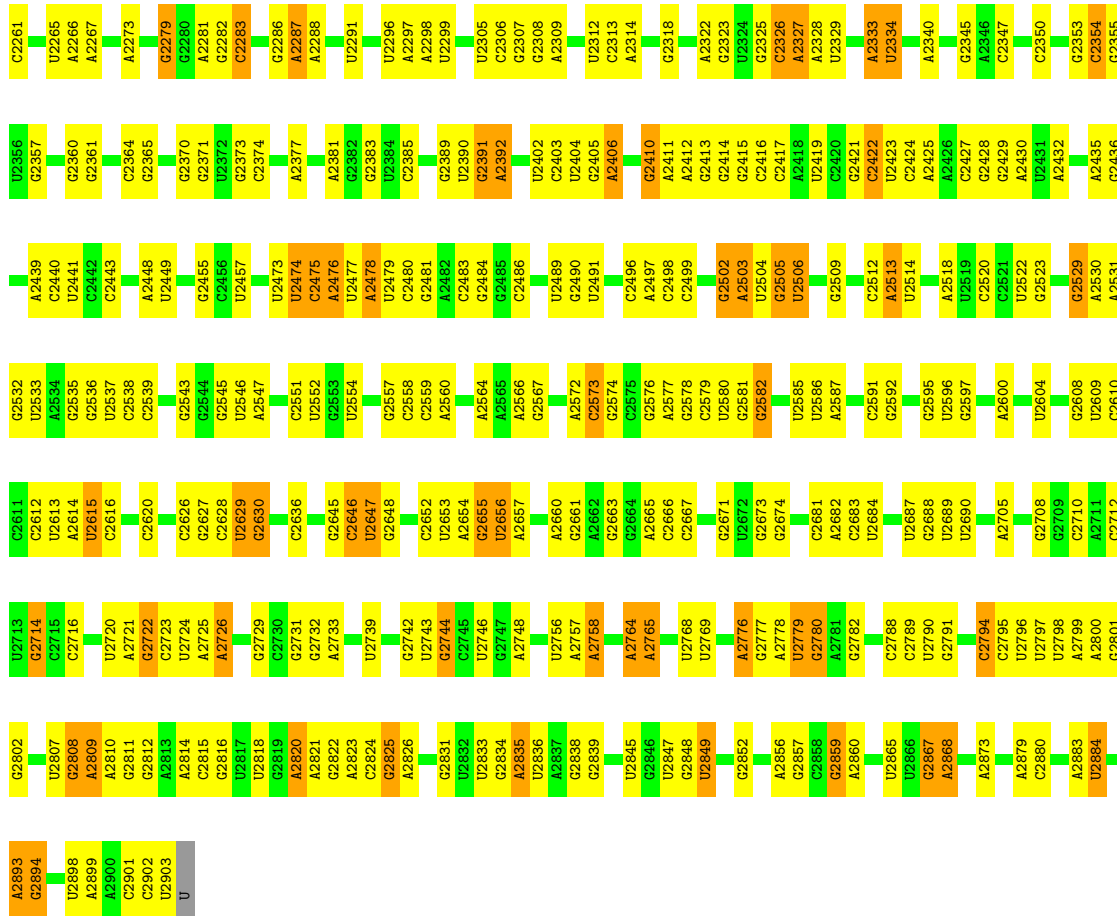
3 Residue-property plots

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

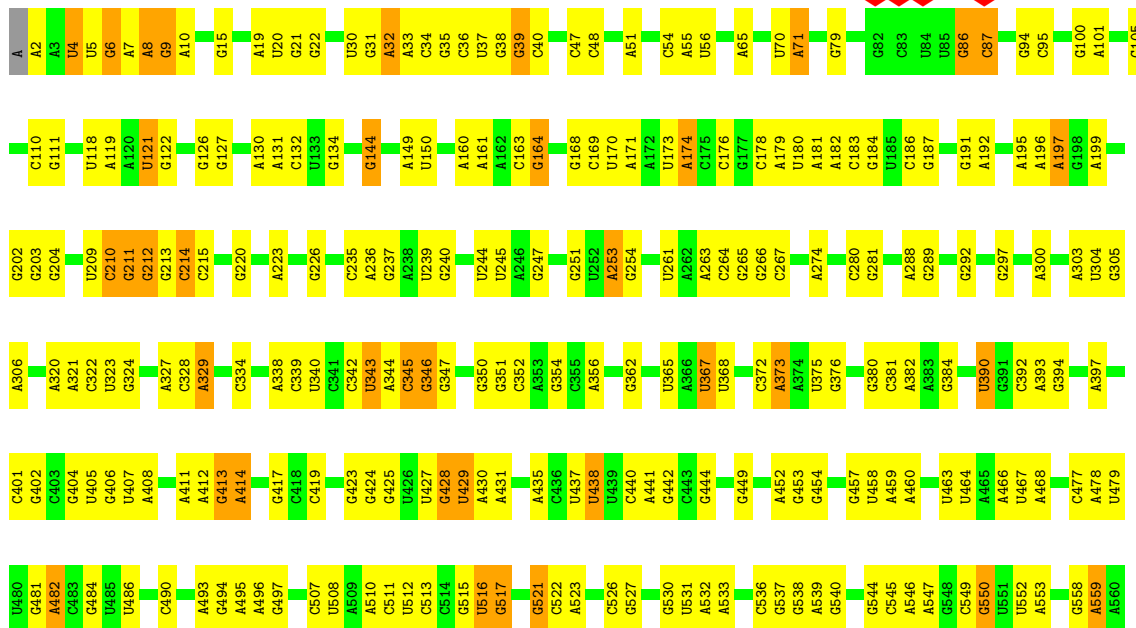
- Molecule 1: 23S ribosomal RNA

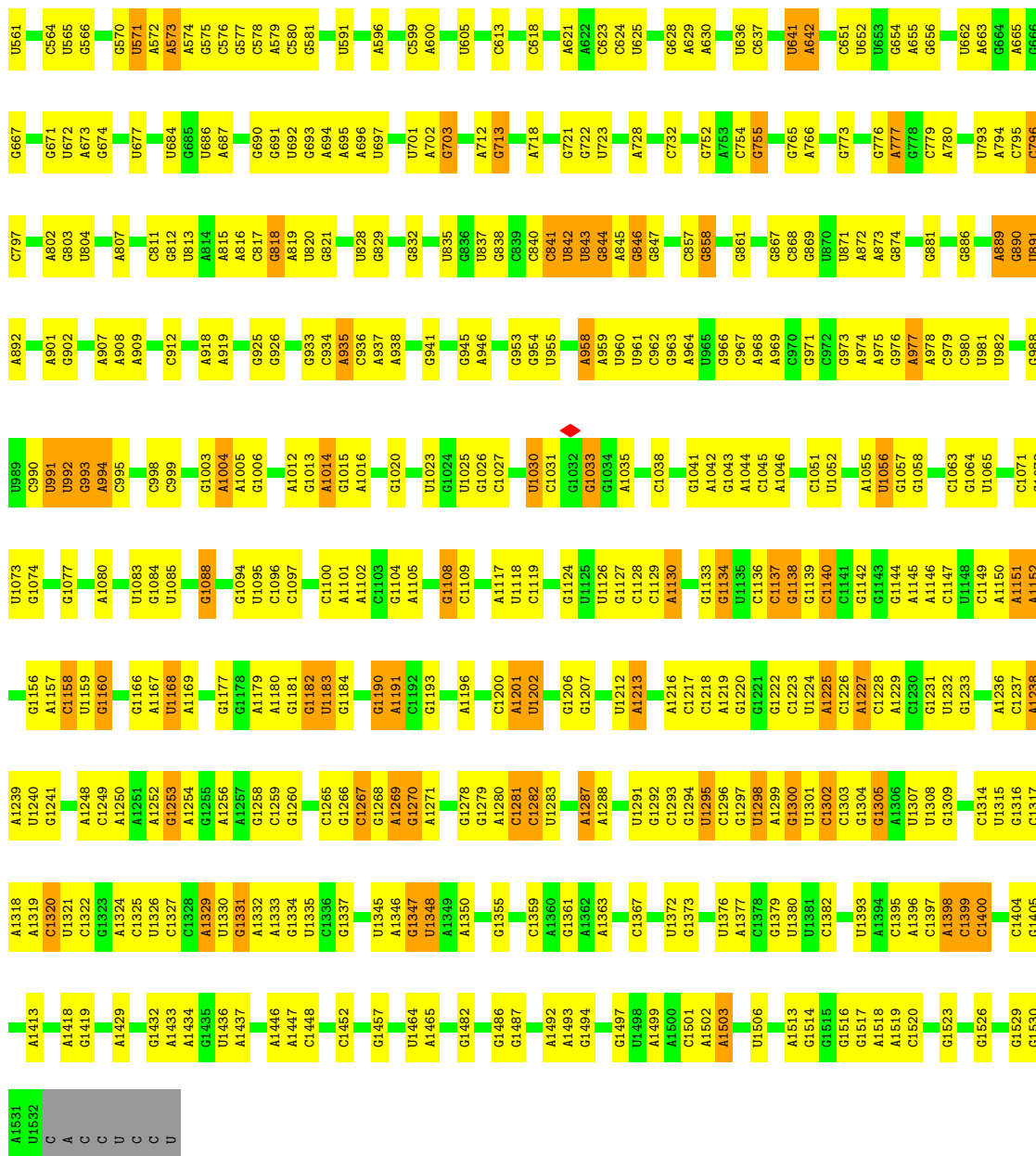


A2176	A2177	C2178	C2179	U2180	U2181	U2182	A2183	U2185	U2189	G2190	A2191	U2192	G2193	U2194	U2195	A2198	A2199	U2202	U2203	G2204	C2207	C2208	G2209	U2210	A2211	U2213	G2223	G2224	A2225	C2226	G2230	G2238	G2239	U2245	C2248	U2249	G2250	G2251	G2252	C2253	G2254	G2255	G2256	U2257	C2258	U2259	C2260									
A2014	A2015	U2022	C2023	G2024	C2025	U2026	A2029	A2030	U2031	A2033	U2034	C2035	C2036	C2043	C2044	C2045	G2049	A2050	A2051	A2052	C2055	C2056	G2057	A2060	G2061	A2062	C2064	G2065	C2066	G2067	U2068	G2069	C2072	C2073	U2074	U2075	U2076	U2079	A2080	U2082	U2083	A2090	U2091	U2092	G2093	C2096										
G2100	A2101	C2104	U2108	U2109	G2110	G2111	U2112	A2114	G2115	G2116	A2117	U2118	G2119	A2120	G2121	U2122	G2127	G2128	C2129	U2130	U2131	U2132	G2133	G2134	A2135	G2136	A2144	C2145	G2152	G2153	G2154	G2155	G2156	G2157	C2158	C2159	C2160	C2161	G2162	A2163	C2164	C2165	U2166	U2167	C2168	A2169	A2170	A2171	U2172	A2173						
U1926	A1927	U1928	G1929	U1930	A1936	A1937	U1938	U1939	U1940	C1942	U1943	U1944	U1945	U1951	A1952	U1953	G1954	U1955	U1956	U1957	C1958	U1959	A1960	C1961	U1962	U1963	U1964	C1965	A1966	C1967	U1968	U1969	U1970	U1971	G1972	G1975	U1976	C1990	U1991	G1992	U1993	C1996	C1997	A1998	C1999	G2002	A2003	U2004	U2005	U2006	A2009	A2013				
C1730	G1731	C1732	G1733	U1734	A1735	U1736	G1737	U1738	G1743	A1744	A1754	A1755	U1756	A1757	U1758	G1763	C1764	A1669	U1670	U1671	U1672	G1673	G1674	C1675	A1676	A1677	U1678	G1681	G1682	U1688	A1689	C1690	C1691	U1692	C1693	U1694	G1695	U1696	G1697	A1698	G1699	A1700	G1710	A1711	U1712	U1713	U1714	U1715	U1716	U1717	G1724	U1725	C1726	U1729		
G1817	U1820	G1823	U1826	U1827	G1828	A1829	C1830	G1831	G1835	C1836	C1837	C1838	G1847	A1848	G1857	A1866	G1867	C1868	G1869	C1870	A1871	A1872	C1873	G1875	A1876	C1879	G1884	A1885	U1886	G1887	G1888	A1900	A1901	G1904	C1905	U1906	G1907	A1912	A1913	C1914	U1917	U1918	A1919	C1920	C1925											
U1996	A1997	U1998	U1999	U2000	U2001	U2002	U2003	U2004	U2005	U2006	U2007	U2008	U2009	U2010	U2011	U2012	U2013	U2014	U2015	U2016	U2017	U2018	U2019	U2020	U2021	U2022	U2023	U2024	U2025	U2026	U2027	U2028	U2029	U2030	U2031	U2032	U2033	U2034	U2035	U2036	U2037	U2038	U2039	U2040	U2041	U2042	U2043	U2044	U2045							
C1076	A1077	U1078	U1079	A1080	U1081	U1082	U1083	A1084	U1085	U1086	G1087	A1088	A1089	A1090	U1019	A1020	A1021	G1022	U1023	G1024	U1025	G1026	A1027	A1028	G1031	A1032	U1033	C1038	A1039	A1046	U1047	A1048	C1049	A1050	G1051	C1052	C1053	A1054	G1055	U1059	U1060	U1061	G1062	G1063	C1064	U1065	U1066	A1067	U1068	A1069	A1070	G1071	C1072	U1073	A1074	C1075
A1165	G1166	G1171	C1172	U1173	U1174	A1175	U1176	U1177	G1178	G1179	U1180	G1186	G1187	U1188	G1202	U1203	A1204	U1209	G1210	C1211	G1212	G1215	G1216	U1217	G1218	U1224	G1225	A1226	G1232	C1233	U1234	G1235	A1232	U1237	G1238	U1242	C1243	A1244	G1248	U1249	U1250	C1251	G1252	A1253	U1254	U1255	G1256	U1257	U1258							
A1262	U1263	A1264	A1265	G1271	A1272	A1275	U1282	G1283	A1284	A1285	A1286	A1287	A1288	C1289	C1290	C1291	G1292	C1295	C1298	G1299	G1300	A1301	C1306	G1310	U1312	U1313	C1314	C1315	C1320	A1321	A1322	A1323	G1324	U1325	A1328	U1329	C1330	G1333	G1338	G1339	A1340	G1341	A1342	G1343	U1344	C1345										
G1346	A1347	C1348	C1349	U1350	C1351	U1352	A1353	A1354	G1358	A1359	C1363	G1364	A1365	G1377	A1378	U1379	A1383	A1384	A1385	C1386	A1387	A1392	A1393	U1394	A1395	U1396	U1397	U1400	G1407	G1416	C1417	G1418	A1419	A1420	G1421	G1425	G1426	A1427	C1428	A1431	G1432	A1433	G1439	A1440	G1441	A1442	A1443	C1153	G1154	A1155	U1258					
G1452	A1453	C1454	U1455	G1456	U1457	U1458	C1461	U1468	A1469	U1475	A1476	U1481	G1482	A1490	G1491	A1496	U1497	C1498	A1504	A1508	A1509	U1510	A1515	U1520	G1521	A1522	U1523	A1524	A1525	C1526	A1527	A1528	G1529	A1532	C1533	U1534	A1535	C1536	G1537	A1542	G1543	A1544	A1552	G1555												
C1556	C1557	U1558	U1559	U1560	C1561	U1562	U1563	U1568	A1569	A1570	A1571	A1572	U1573	C1574	C1575	U1576	C1577	U1578	U1581	A1582	U1583	A1584	C1585	A1586	U1587	C1605	C1606	C1607	C1611	A1614	U1615	A1616	C1617	A1618	G1622	C1625	A1626	A1630	G1631	A1632	G1633	A1634	A1637	A1640												
C1646	U1647	U1648	U1649	A1650	G1651	U1652	U1653	A1654	G1659	U1660	G1661	U1662	G1663	A1664	U1665	G1666	G1667	A1668	U1669	C1670	U1671	A1672	G1673	G1674	C1675	A1676	A1677	G1681	G1682	U1688	C1690	C1691	U1692	C1693	U1694	G1695	U1696	G1697	A1698	G1699	A1700	G1710	A1711	U1712	U1713	U1714	U1715	U1716	U1717	G1724	U1725	C1726	U1729			
C1730	G1731	C1732	G1733	U1734	A1735	U1736	G1737	U1738	G1743	A1744	A1754	A1755	U1756	A1757	U1758	G1763	C1764	A1669	U1670	U1671	U1672	G1673	G1674	C1675	A1676	A1677	G1681	G1682	U1688	C1690	C1691	U1692	C1693	U1694	G1695	U1696	G1697	A1698	G1699	A1700	G1710	A1711	U1712	U1713	U1714	U1715	U1716	U1717	G1724	U1725	C1726	U1729				
G1817	U1820	G1823	U1826	U1827	G1828	A1829	C1830	G1831	G1835	C1836	C1837	C1838	G1847	A1848	G1857	A1866	G1867	C1868	G1869	C1870	A1871	A1872	C1873	G1875	A1876	C1879	G1884	A1885	U1886	G1887	G1888	A1900	A1901	G1904	C1905	U1906	G1907	A1912	A1913	C1914	U1917	U1918	A1919	C1920	C1925											
U1926	A1927	U1928	G1929	U1930	A1936	A1937	U1938	U1939	U1940	C1942	U1943	U1944	U1945	U1951	A1952	U1953	G1954	U1955	U1956	U1957	C1958	U1959	A1960	C1961	U1962	U1963	U1964	C1965	A1966	C1967	U1968	U1969	U1970	U1971	G1972	G1975	U1976	C1990	U1991	G1992	U1993	C1996	C1997	A1998	C1999	G2002	A2003	U2004	U2005	U2006	A2009	A2013				
A2014	A2015	U2022	C2023	G2024	C2025	U2026	A2029	A2030	U2031	A2033	U2034	C2035	C2036	C2043	C2044	C2045	G2049	A2050	A2051	A2052	C2055	C2056	G2057	A2060	G2061	A2062	C2064	G2065	C2066	G2067	U2068	G2069	C2072	C2073	U2074	U2075	U2076	U2079	A2080	U2082	U2083	A2090	U2091	U2092	G2093	C2096										
G2100	A2101	C2104	U2108	U2109	G2110	G2111	U2112	A2114	G2115	G2116	A2117	U2118	G2119	A2120	G2121	U2122	G2127	G2128	C2129	U2130	U2131	U2132	G2133	G2134	A2135	G2136	U2139	U2140	U2141	U2142	U2143	U2144	U2145	G2152	G2153	G2154	C2155	C2156	C2157	U2158	C2159	C2160	C2161	G2162	A2163	C2164	C2165	U2166	U2167	C2168	A2169	U2170	A2171	U2172	A2173	

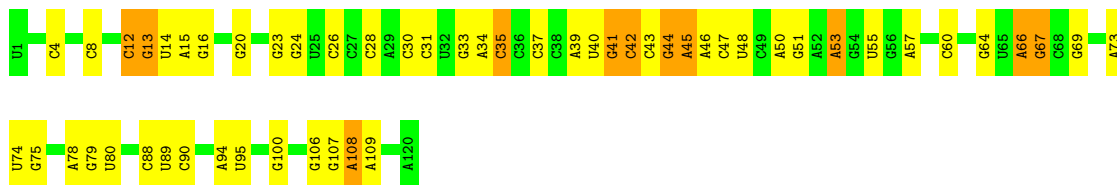


• Molecule 2: 16S ribosomal RNA





● Molecule 3: 5S ribosomal RNA



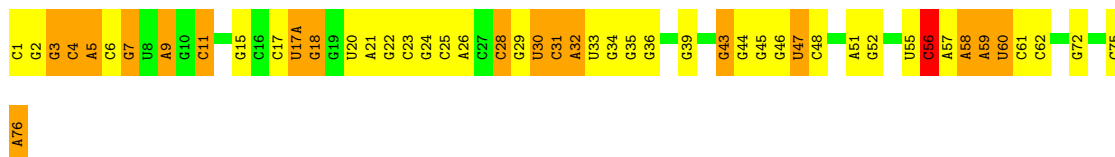
● Molecule 4: mRNA



C A U U A A A A A A U G13 G16 C G U U U A

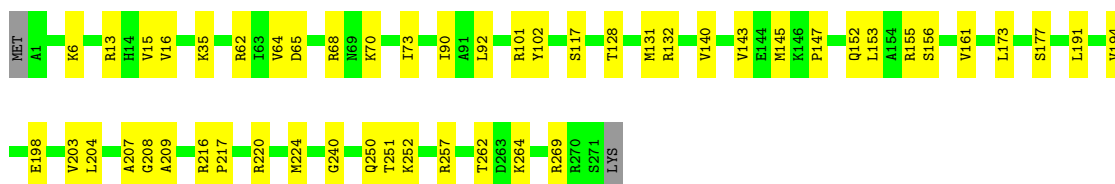
- Molecule 5: tRNA ProL (GGG)

Chain 5: 36% 39% 23%



- Molecule 6: 50S ribosomal protein L2

Chain B: 81% 18%



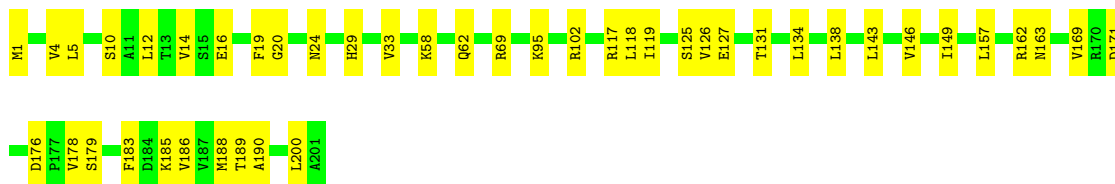
- Molecule 7: 50S ribosomal protein L3

Chain C: 85% 15%



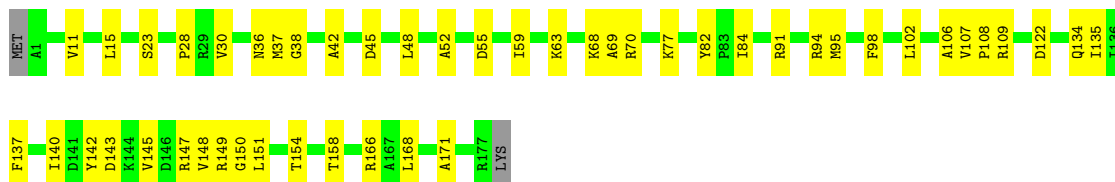
- Molecule 8: 50S ribosomal protein L4

Chain D: 78% 22%

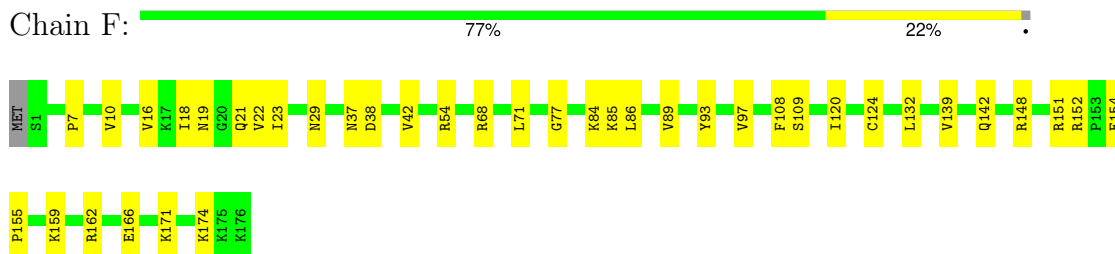


- Molecule 9: 50S ribosomal protein L5

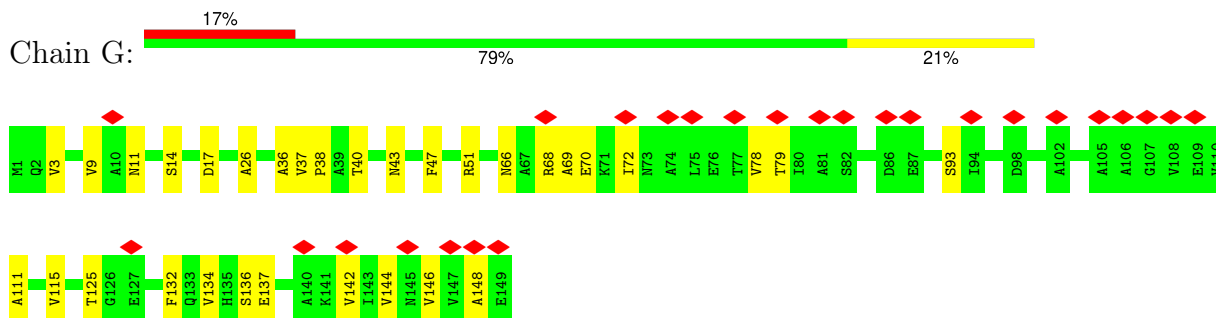
Chain E: 72% 27%



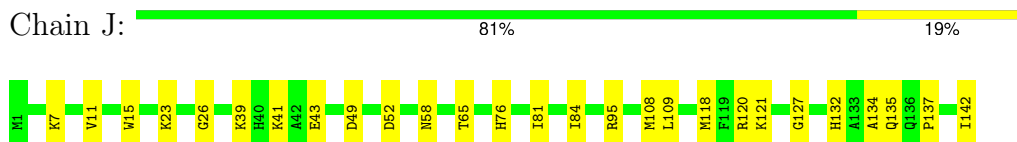
- Molecule 10: 50S ribosomal protein L6



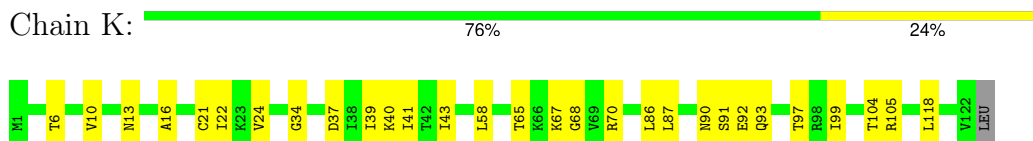
- Molecule 11: 50S ribosomal protein L9



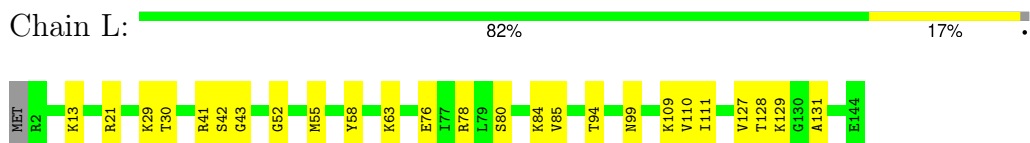
- Molecule 12: Large ribosomal subunit protein uL13



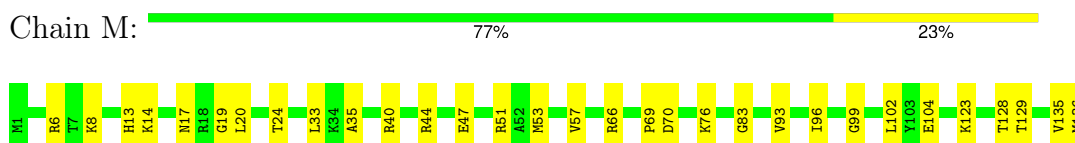
- Molecule 13: 50S ribosomal protein L14



- Molecule 14: 50S ribosomal protein L15



- Molecule 15: 50S ribosomal protein L16



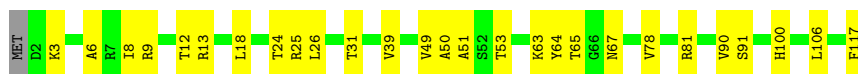
- Molecule 16: 50S ribosomal protein L17

Chain N:  72% 23% 6%




- Molecule 17: Large ribosomal subunit protein uL18

Chain O:  76% 23%




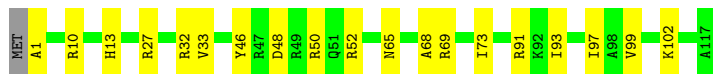
- Molecule 18: Large ribosomal subunit protein bL19

Chain P:  82% 17%




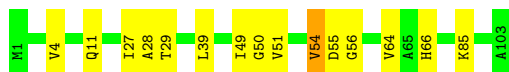
- Molecule 19: 50S ribosomal protein L20

Chain Q:  83% 16%



- Molecule 20: Large ribosomal subunit protein bL21

Chain R:  85% 14%




- Molecule 21: 50S ribosomal protein L22

Chain S:  73% 26%




- Molecule 22: 50S ribosomal protein L23

Chain T:  82% 11% 7%




- Molecule 23: 50S ribosomal protein L24

Chain U:  76% 22%



- Molecule 24: Large ribosomal subunit protein bL25

Chain V:  79% 21%




- Molecule 25: Large ribosomal subunit protein bL27

Chain W:  74% 15% 11%




- Molecule 26: 50S ribosomal protein L28

Chain X:  85% 14%



- Molecule 27: Large ribosomal subunit protein uL29

Chain Y:  79% 21%




- Molecule 28: 50S ribosomal protein L30

Chain Z:  75% 24%




- Molecule 29: 50S ribosomal protein L32

Chain b:  88% 11%




- Molecule 30: 50S ribosomal protein L33

Chain c:  80% 11% 9%



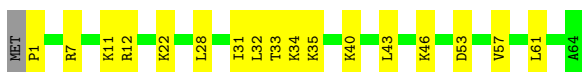
- Molecule 31: 50S ribosomal protein L34

Chain d:  78% 22%



- Molecule 32: 50S ribosomal protein L35

Chain e:  72% 26%



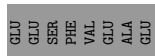
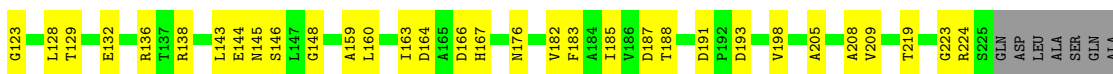
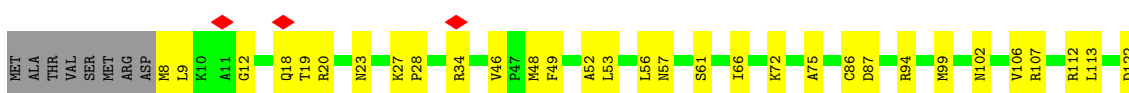
- Molecule 33: 50S ribosomal protein L36

Chain f:  76% 24%



- Molecule 34: 30S ribosomal protein S2

Chain g:  64% 26% 10%

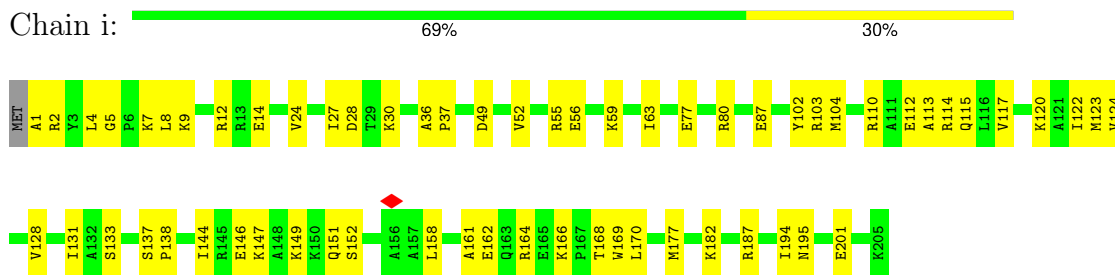


- Molecule 35: Small ribosomal subunit protein uS3

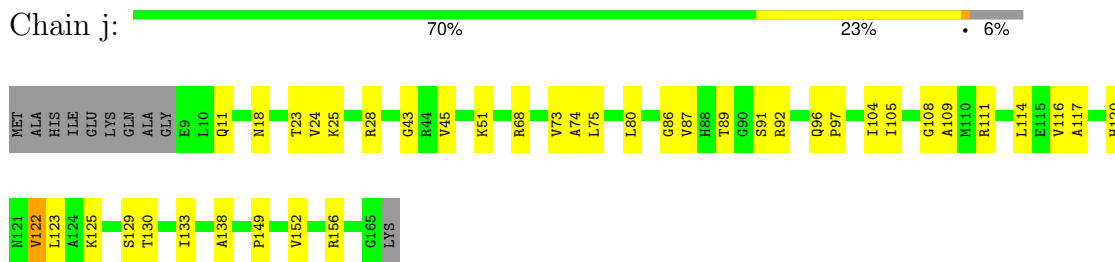
Chain h:  74% 26%



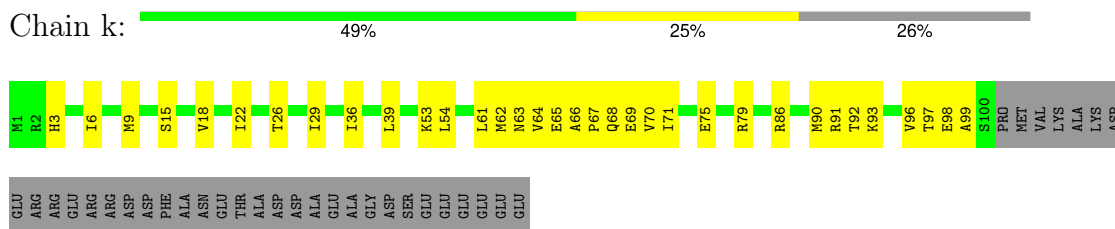
• Molecule 36: 30S ribosomal protein S4



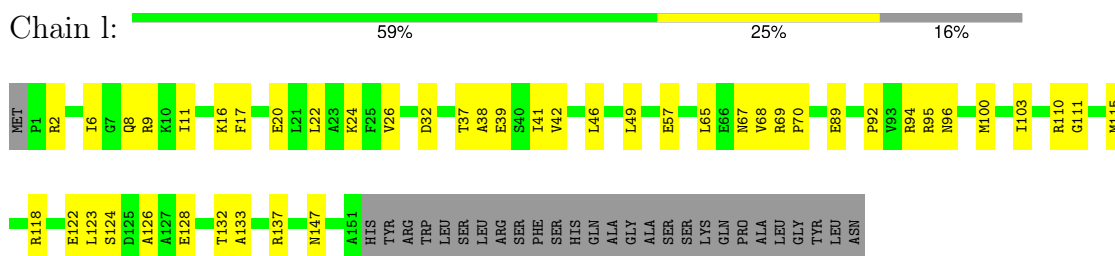
• Molecule 37: 30S ribosomal protein S5



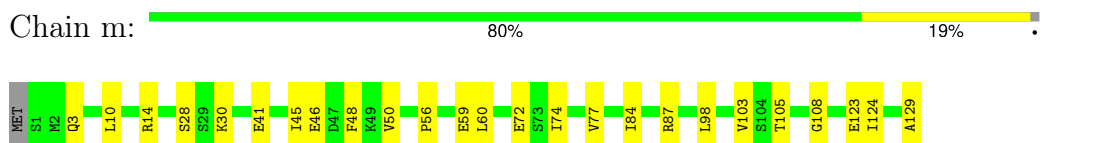
• Molecule 38: 30S ribosomal protein S6



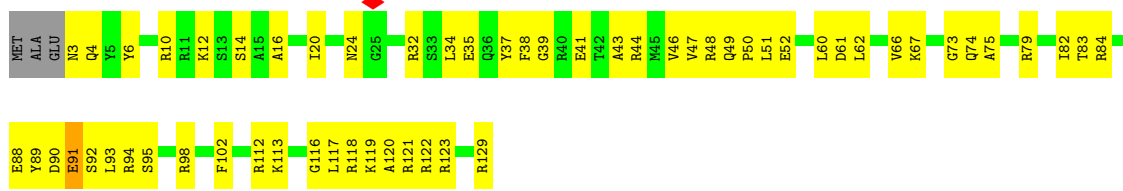
• Molecule 39: 30S ribosomal protein S7



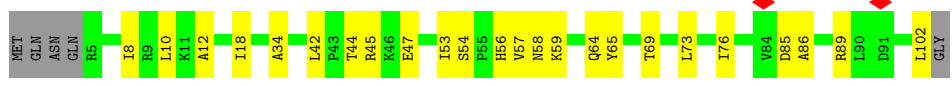
• Molecule 40: Small ribosomal subunit protein uS8



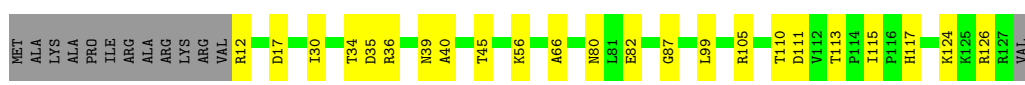
• Molecule 41: Small ribosomal subunit protein uS9



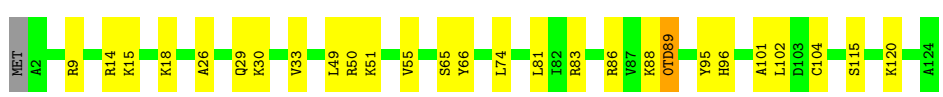
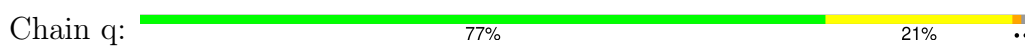
• Molecule 42: Small ribosomal subunit protein uS10



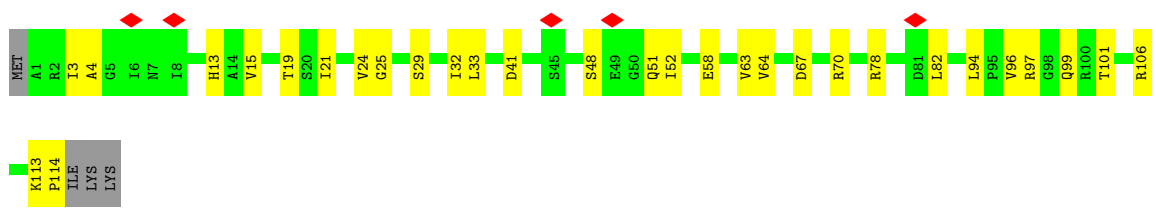
• Molecule 43: 30S ribosomal protein S11



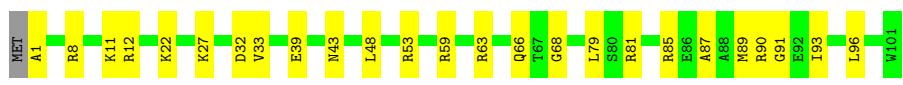
• Molecule 44: Small ribosomal subunit protein uS12




• Molecule 45: 30S ribosomal protein S13

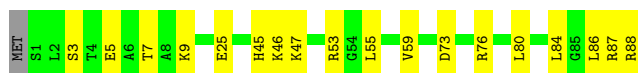


• Molecule 46: Small ribosomal subunit protein uS14




• Molecule 47: Small ribosomal subunit protein uS15

Chain t:  79% 20%




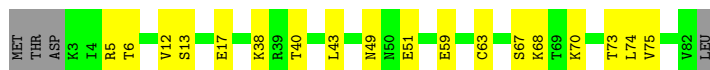
- Molecule 48: 30S ribosomal protein S16

Chain u:  79% 21%




- Molecule 49: Small ribosomal subunit protein uS17

Chain v:  74% 21% 5%



- Molecule 50: 30S ribosomal protein S18

Chain w:  79% 8% 13%




- Molecule 51: Small ribosomal subunit protein uS19

Chain x:  57% 29% 14%




- Molecule 52: 30S ribosomal protein S20

Chain y:  77% 21%



- Molecule 53: 30S ribosomal protein S21

Chain z:  86% 6% 8%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	38062	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TALOS ARCTICA	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	56.07	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.158	Depositor
Minimum map value	-0.039	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.011	Depositor
Recommended contour level	0.0289	Depositor
Map size (Å)	547.3792, 547.3792, 547.3792	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.0691, 1.0691, 1.0691	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 0TD, MG

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	1	0.12	0/69734	0.25	1/108788 (0.0%)
2	2	0.10	0/36787	0.24	0/57389
3	3	0.10	0/2876	0.23	0/4483
4	4	0.37	0/91	0.66	0/139
5	5	0.32	0/1841	0.60	2/2870 (0.1%)
6	B	0.18	0/2121	0.39	0/2852
7	C	0.16	0/1586	0.35	0/2134
8	D	0.16	0/1571	0.34	0/2113
9	E	0.18	0/1434	0.40	0/1926
10	F	0.17	0/1343	0.34	0/1816
11	G	0.15	0/1122	0.34	0/1515
12	J	0.15	0/1152	0.32	0/1551
13	K	0.17	0/947	0.36	0/1268
14	L	0.16	0/1054	0.41	0/1403
15	M	0.16	0/1093	0.36	0/1460
16	N	0.17	0/973	0.41	0/1301
17	O	0.15	0/902	0.33	0/1209
18	P	0.18	0/929	0.36	0/1242
19	Q	0.17	0/960	0.32	0/1278
20	R	0.17	0/829	0.38	0/1107
21	S	0.17	0/864	0.38	0/1156
22	T	0.16	0/744	0.32	0/994
23	U	0.15	0/787	0.35	0/1051
24	V	0.16	0/766	0.31	0/1025
25	W	0.16	0/582	0.35	0/769
26	X	0.16	0/635	0.31	0/848
27	Y	0.14	0/510	0.30	0/677
28	Z	0.17	0/453	0.38	0/605
29	b	0.17	0/450	0.36	0/599
30	c	0.14	0/416	0.32	0/554
31	d	0.18	0/380	0.38	0/498
32	e	0.16	0/513	0.38	0/676

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	f	0.19	0/303	0.37	0/397
34	g	0.15	0/1735	0.37	0/2338
35	h	0.17	0/1651	0.36	0/2225
36	i	0.15	0/1665	0.37	0/2227
37	j	0.17	0/1154	0.43	0/1554
38	k	0.17	0/835	0.42	0/1128
39	l	0.14	0/1195	0.34	0/1602
40	m	0.15	0/989	0.34	0/1326
41	n	0.17	0/1034	0.44	0/1375
42	o	0.17	0/796	0.37	0/1077
43	p	0.16	0/885	0.35	0/1195
44	q	0.16	0/960	0.36	0/1286
45	r	0.17	0/892	0.35	0/1193
46	s	0.16	0/811	0.37	0/1081
47	t	0.18	0/722	0.36	0/964
48	u	0.17	0/659	0.40	0/884
49	v	0.15	0/657	0.35	0/881
50	w	0.15	0/511	0.37	0/689
51	x	0.15	0/652	0.33	0/877
52	y	0.14	0/671	0.31	0/888
53	z	0.18	0/500	0.50	0/668
All	All	0.13	0/155722	0.29	3/233151 (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
37	j	0	1

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	5	56	C	C2'-C3'-O3'	8.13	121.70	109.50
5	5	3	G	C4'-C3'-O3'	7.29	120.33	109.40
1	1	1119	U	C4'-C3'-O3'	-5.07	105.39	113.00

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
37	j	120	HIS	Peptide

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1	62262	0	31313	905	0
2	2	32853	0	16530	477	0
3	3	2572	0	1302	41	0
4	4	83	0	45	0	0
5	5	1648	0	834	36	0
6	B	2082	0	2157	42	0
7	C	1565	0	1616	25	0
8	D	1552	0	1619	38	0
9	E	1410	0	1447	48	0
10	F	1323	0	1374	27	0
11	G	1111	0	1148	21	0
12	J	1129	0	1162	21	0
13	K	938	0	1012	23	0
14	L	1045	0	1117	25	0
15	M	1074	0	1157	24	0
16	N	960	0	1000	24	0
17	O	892	0	923	21	0
18	P	917	0	965	15	0
19	Q	947	0	1022	21	0
20	R	816	0	839	12	0
21	S	857	0	922	20	0
22	T	738	0	807	8	0
23	U	779	0	834	16	0
24	V	753	0	780	14	0
25	W	575	0	592	11	0
26	X	625	0	655	12	0
27	Y	509	0	543	10	0
28	Z	449	0	491	10	0
29	b	444	0	461	5	0
30	c	409	0	440	4	0
31	d	377	0	418	7	0
32	e	504	0	574	17	0
33	f	302	0	343	9	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
34	g	1704	0	1732	47	0
35	h	1624	0	1699	44	0
36	i	1643	0	1710	51	0
37	j	1141	0	1170	34	0
38	k	817	0	808	29	0
39	l	1181	0	1240	38	0
40	m	979	0	1034	22	0
41	n	1022	0	1070	55	0
42	o	786	0	828	21	0
43	p	869	0	878	22	0
44	q	957	0	1017	24	0
45	r	883	0	944	20	0
46	s	799	0	841	23	0
47	t	714	0	737	13	0
48	u	649	0	666	14	0
49	v	648	0	691	17	0
50	w	504	0	502	6	0
51	x	637	0	665	26	0
52	y	665	0	714	16	0
53	z	495	0	486	3	0
54	1	196	0	0	0	0
54	2	75	0	0	0	0
54	3	1	0	0	0	0
54	B	2	0	0	0	0
54	D	2	0	0	0	0
54	L	2	0	0	0	0
54	Q	1	0	0	0	0
54	b	1	0	0	0	0
54	e	1	0	0	0	0
55	1	479	0	0	55	0
55	2	286	0	0	37	0
55	3	10	0	0	0	0
55	4	2	0	0	0	0
55	5	1	0	0	0	0
55	B	1	0	0	0	0
55	C	1	0	0	0	0
55	E	11	0	0	4	0
55	F	15	0	0	0	0
55	G	10	0	0	0	0
55	J	2	0	0	1	0
55	K	1	0	0	0	0
55	L	2	0	0	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
55	M	2	0	0	0	0
55	N	1	0	0	0	0
55	O	4	0	0	1	0
55	P	2	0	0	0	0
55	R	1	0	0	0	0
55	T	5	0	0	1	0
55	U	6	0	0	2	0
55	V	4	0	0	3	0
55	W	2	0	0	1	0
55	X	1	0	0	1	0
55	Y	1	0	0	1	0
55	Z	1	0	0	0	0
55	b	1	0	0	0	0
55	c	1	0	0	0	0
55	d	2	0	0	0	0
55	e	1	0	0	0	0
55	f	1	0	0	1	0
55	g	23	0	0	7	0
55	h	13	0	0	3	0
55	i	8	0	0	2	0
55	j	8	0	0	3	0
55	k	7	0	0	1	0
55	l	13	0	0	4	0
55	m	5	0	0	1	0
55	n	9	0	0	4	0
55	o	7	0	0	1	0
55	p	6	0	0	1	0
55	r	6	0	0	0	0
55	s	5	0	0	1	0
55	t	4	0	0	1	0
55	v	4	0	0	1	0
55	w	2	0	0	0	0
55	x	8	0	0	3	0
55	y	2	0	0	1	0
55	z	5	0	0	0	0
All	All	144490	0	95874	2177	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 9.

All (2177) 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)
39:l:26:VAL:HG22	39:l:42:VAL:HG21	1.49	0.94
1:1:1322:A:N1	1:1:1333:G:O2'	2.00	0.94
1:1:2258:C:O2'	1:1:2427:C:OP2	1.86	0.92
1:1:2014:A:O2'	1:1:2015:A:O4'	1.88	0.90
1:1:2645:G:OP2	1:1:2645:G:N2	2.03	0.90
2:2:110:C:O2'	48:u:25:ARG:O	1.89	0.89
1:1:2298:A:OP1	9:E:70:ARG:NH2	2.05	0.88
2:2:1006:G:O6	2:2:1023:U:O2	1.89	0.88
2:2:979:C:O2	46:s:59:ARG:NH1	2.07	0.88
51:x:29:PRO:O	51:x:31:ARG:NH1	2.07	0.87
1:1:771:G:OP2	31:d:11:LYS:NZ	2.07	0.87
6:B:250:GLN:NE2	6:B:251:THR:O	2.07	0.87
1:1:177:G:N2	1:1:177:G:OP2	2.07	0.86
1:1:2326:C:O2'	1:1:2327:A:OP1	1.93	0.86
15:M:76:LYS:NZ	15:M:83:GLY:O	2.08	0.86
2:2:945:G:N2	2:2:1334:G:O2'	2.09	0.86
21:S:23:LEU:O	21:S:27:LYS:NZ	2.09	0.86
1:1:1779:U:OP2	1:1:1784:A:N6	2.09	0.85
1:1:994:C:OP1	19:Q:52:ARG:NH2	2.10	0.85
41:n:122:ARG:NH1	41:n:123:ARG:O	2.09	0.85
1:1:248:G:O2'	1:1:2432:A:OP1	1.93	0.85
1:1:227:A:O2'	1:1:228:C:O5'	1.94	0.84
1:1:1363:C:O2'	1:1:1809:A:N3	2.09	0.84
2:2:126:G:OP1	2:2:605:U:O2'	1.95	0.84
2:2:765:G:H1	2:2:812:G:HO2'	0.86	0.84
1:1:1827:U:OP1	1:1:1971:U:O2'	1.94	0.84
2:2:507:C:OP2	2:2:508:U:O2'	1.96	0.84
2:2:356:A:N3	2:2:368:U:O2'	2.09	0.84
10:F:23:ILE:HD11	10:F:42:VAL:HG11	1.58	0.84
1:1:1837:C:O2'	1:1:1927:A:N3	2.10	0.84
1:1:2522:U:O2'	1:1:2647:U:OP1	1.95	0.84
2:2:993:G:O2'	2:2:994:A:N7	2.11	0.84
1:1:2439:A:O2'	1:1:2600:A:OP1	1.94	0.83
2:2:1321:U:OP2	2:2:1322:C:O2'	1.97	0.83
1:1:310:A:O2'	1:1:311:A:O5'	1.96	0.83
2:2:558:G:OP2	2:2:559:A:O2'	1.96	0.83
1:1:320:A:N3	8:D:163:ASN:ND2	2.26	0.83
2:2:794:A:O2'	2:2:795:C:O4'	1.96	0.83
1:1:1225:G:O2'	1:1:1226:A:O4'	1.97	0.83
43:p:17:ASP:OD2	43:p:36:ARG:NH2	2.12	0.83
1:1:79:C:O2'	1:1:346:A:N3	2.12	0.82
2:2:4:U:O2'	2:2:6:G:OP1	1.95	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:j:97:PRO:HA	37:j:122:VAL:HG22	1.60	0.82
1:1:84:A:N1	1:1:98:G:O2'	2.12	0.82
21:S:37:THR:OG1	21:S:48:LYS:NZ	2.11	0.82
2:2:1095:U:OP1	2:2:1108:G:N2	2.12	0.82
1:1:573:U:O4	1:1:2029:G:O2'	1.97	0.82
36:i:12:ARG:NH1	36:i:36:ALA:O	2.13	0.81
1:1:1712:U:OP2	1:1:1713:A:O2'	1.98	0.81
1:1:2620:C:O2'	7:C:162:ALA:O	1.98	0.81
1:1:2859:G:O2'	1:1:2860:A:O4'	1.98	0.81
36:i:144:ILE:O	36:i:149:LYS:NZ	2.13	0.81
2:2:1126:U:O2'	2:2:1281:C:O4'	1.98	0.81
1:1:2181:U:O2'	1:1:2182:U:O5'	1.97	0.81
1:1:2581:G:N2	1:1:2581:G:OP2	2.12	0.81
1:1:2209:G:OP2	1:1:2210:U:O2'	1.98	0.81
2:2:1055:A:O2'	35:h:160:GLU:O	1.99	0.81
1:1:1800:C:O2'	1:1:1801:A:OP2	1.98	0.81
2:2:1259:C:O2'	2:2:1283:U:O2	1.97	0.81
1:1:1264:A:OP2	1:1:1265:A:O2'	1.99	0.80
1:1:1697:G:OP2	1:1:1698:A:O2'	1.99	0.80
2:2:334:C:O2'	2:2:1434:A:O2'	1.93	0.80
2:2:1168:U:O4	55:2:1701:HOH:O	1.99	0.80
1:1:1952:A:N3	1:1:2560:A:O2'	2.14	0.80
1:1:2629:U:O2'	1:1:2630:G:O5'	1.99	0.80
1:1:629:G:N3	1:1:639:U:O2'	2.14	0.80
2:2:407:U:O2'	36:i:112:GLU:OE1	1.99	0.80
2:2:414:A:OP2	2:2:428:G:N2	2.14	0.80
43:p:105:ARG:NH2	53:z:9:GLU:OE1	2.14	0.80
1:1:140:C:O2'	1:1:141:G:O4'	2.00	0.80
2:2:1320:C:N3	51:x:35:ARG:NH1	2.29	0.80
1:1:1354:A:OP1	6:B:35:LYS:NZ	2.15	0.80
2:2:8:A:N6	36:i:201:GLU:O	2.15	0.80
39:l:70:PRO:O	39:l:95:ARG:NH1	2.15	0.80
1:1:381:G:OP1	26:X:17:ARG:NH2	2.15	0.79
2:2:1307:U:OP1	45:r:99:GLN:NE2	2.15	0.79
39:l:147:ASN:ND2	55:l:203:HOH:O	2.15	0.79
1:1:1826:G:O2'	1:1:1971:U:OP2	2.01	0.79
1:1:240:C:OP2	1:1:241:A:O2'	2.01	0.79
1:1:2536:G:O6	55:1:3201:HOH:O	2.01	0.79
1:1:2564:A:OP1	1:1:2648:G:O2'	2.00	0.79
1:1:83:A:O2'	1:1:103:A:N6	2.16	0.78
2:2:867:G:O2'	2:2:873:A:N1	2.17	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:F:7:PRO:O	10:F:68:ARG:NH2	2.15	0.78
1:1:2596:U:O2'	6:B:240:GLY:O	2.01	0.78
2:2:958:A:N6	51:x:76:THR:O	2.16	0.78
2:2:105:G:OP2	52:y:12:GLN:NE2	2.16	0.78
2:2:118:U:O2'	2:2:121:U:O4	2.00	0.78
1:1:2731:G:O3'	7:C:208:LYS:NZ	2.17	0.78
44:q:49:LEU:O	44:q:51:LYS:NZ	2.12	0.78
3:3:55:U:O2'	9:E:23:SER:OG	1.85	0.78
13:K:86:LEU:O	13:K:87:LEU:HD23	1.83	0.78
1:1:626:A:N3	14:L:78:ARG:NH2	2.32	0.78
1:1:1028:A:N3	1:1:2486:C:O2'	2.16	0.78
2:2:35:G:N3	44:q:115:SER:OG	2.17	0.78
1:1:2184:A:O2'	1:1:2185:U:O4'	2.01	0.78
1:1:2835:A:O4'	1:1:2879:A:N6	2.17	0.78
2:2:1064:G:N2	2:2:1191:A:OP1	2.16	0.78
1:1:2031:A:N3	1:1:2455:G:O2'	2.16	0.77
2:2:1058:G:N2	2:2:1202:U:O4	2.16	0.77
1:1:675:A:OP1	8:D:58:LYS:NZ	2.16	0.77
1:1:2283:C:OP1	30:c:3:GLY:N	2.18	0.77
2:2:1248:A:O2'	2:2:1249:C:O4'	2.01	0.77
2:2:671:G:O2'	38:k:79:ARG:NH2	2.17	0.77
2:2:1309:G:O6	2:2:1329:A:N6	2.17	0.77
1:1:1111:A:O2'	1:1:1112:G:OP1	2.01	0.77
49:v:63:CYS:HG	49:v:73:THR:HG1	0.80	0.77
2:2:552:U:O2'	44:q:83:ARG:O	2.03	0.77
39:l:132:THR:OG1	55:l:201:HOH:O	2.02	0.77
1:1:691:C:OP1	6:B:216:ARG:NH1	2.18	0.77
1:1:1900:A:O2'	1:1:1901:A:OP2	2.01	0.77
2:2:1337:G:OP2	55:2:1704:HOH:O	2.03	0.77
2:2:842:U:O2'	2:2:845:A:OP1	2.01	0.77
3:3:8:C:O2'	17:O:25:ARG:NH1	2.17	0.77
1:1:2279:G:O2'	1:1:2327:A:O2'	2.03	0.76
1:1:2816:G:N3	1:1:2883:A:O2'	2.18	0.76
5:5:15:G:N2	5:5:48:C:C2	2.53	0.76
2:2:463:U:OP2	55:2:1703:HOH:O	2.01	0.76
2:2:933:G:N7	39:l:2:ARG:NH2	2.32	0.76
2:2:1300:G:N1	2:2:1335:U:O4'	2.18	0.76
51:x:79:TYR:O	55:x:101:HOH:O	2.03	0.76
41:n:113:LYS:NZ	41:n:117:LEU:O	2.17	0.76
52:y:85:LEU:O	55:y:101:HOH:O	2.03	0.76
2:2:405:U:OP2	36:i:2:ARG:NH1	2.18	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:g:23:ASN:ND2	34:g:191:ASP:OD1	2.18	0.76
43:p:111:ASP:O	50:w:72:ARG:NH2	2.19	0.76
1:1:956:G:N7	15:M:14:LYS:NZ	2.33	0.76
1:1:1125:G:OP2	1:1:1126:A:O2'	2.02	0.76
1:1:1301:A:OP2	55:1:3202:HOH:O	2.03	0.76
1:1:1614:A:N6	21:S:92:ARG:O	2.19	0.76
1:1:2364:C:OP1	25:W:51:ARG:NH1	2.19	0.76
2:2:427:U:OP1	36:i:9:LYS:NZ	2.19	0.76
41:n:123:ARG:NH1	55:n:204:HOH:O	2.17	0.76
1:1:1914:C:O2'	55:1:3203:HOH:O	2.04	0.76
1:1:1315:C:O2'	1:1:1392:A:N3	2.19	0.76
1:1:27:G:O2'	1:1:512:G:N2	2.18	0.75
36:i:164:ARG:O	36:i:166:LYS:NZ	2.19	0.75
43:p:34:THR:HG22	43:p:40:ALA:HA	1.66	0.75
1:1:234:U:O4	1:1:263:G:N2	2.19	0.75
2:2:1157:A:O4'	2:2:1181:G:N2	2.20	0.75
1:1:666:A:O2'	1:1:667:U:O5'	2.04	0.75
1:1:706:A:OP1	6:B:6:LYS:NZ	2.18	0.75
1:1:1954:G:O2'	1:1:1956:U:O4	2.03	0.75
1:1:2573:C:N4	55:1:3243:HOH:O	2.19	0.75
2:2:419:C:OP1	2:2:513:C:O2'	2.03	0.75
11:G:70:GLU:HB2	11:G:134:VAL:HG21	1.67	0.75
37:j:92:ARG:NH1	55:j:202:HOH:O	2.18	0.75
37:j:105:ILE:HD11	37:j:123:LEU:HD22	1.68	0.75
1:1:2849:U:O4	18:P:20:ARG:NH2	2.19	0.75
2:2:690:G:N2	2:2:697:U:O4	2.18	0.75
2:2:1523:G:OP1	43:p:124:LYS:NZ	2.15	0.75
1:1:987:C:O2'	1:1:1000:A:N3	2.20	0.75
1:1:2164:C:N4	55:1:3242:HOH:O	2.19	0.75
2:2:1317:C:OP2	46:s:27:LYS:NZ	2.14	0.75
1:1:161:A:O2'	1:1:2207:C:O2	2.05	0.75
9:E:147:ARG:NH1	55:E:202:HOH:O	2.18	0.75
1:1:1028:A:OP2	1:1:1126:A:N6	2.20	0.75
1:1:1532:A:OP1	55:1:3204:HOH:O	2.05	0.75
2:2:1229:A:O2'	5:5:30:U:OP1	2.05	0.75
2:2:1513:A:OP2	55:2:1706:HOH:O	2.05	0.74
1:1:1637:A:OP1	55:1:3205:HOH:O	2.05	0.74
1:1:569:U:O2'	1:1:983:A:N1	2.19	0.74
2:2:1372:U:OP2	41:n:12:LYS:NZ	2.20	0.74
8:D:1:MET:N	8:D:14:VAL:O	2.19	0.74
11:G:66:ASN:ND2	11:G:134:VAL:O	2.20	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1730:C:O2	1:1:1731:G:N1	2.20	0.74
2:2:237:G:O2'	55:2:1705:HOH:O	2.05	0.74
1:1:371:A:O2'	26:X:60:LYS:NZ	2.18	0.74
1:1:2340:A:OP1	3:3:41:G:N2	2.21	0.74
24:V:43:ASP:OD1	55:V:101:HOH:O	2.03	0.74
1:1:1351:C:O2'	1:1:1571:A:O2'	2.04	0.74
1:1:2646:C:OP2	1:1:2732:G:O2'	2.04	0.74
2:2:1326:U:O4	55:2:1707:HOH:O	2.06	0.74
5:5:25:C:H2'	5:5:26:A:H8	1.51	0.74
1:1:1867:G:N7	55:1:3245:HOH:O	2.21	0.74
35:h:155:ARG:NE	35:h:159:ALA:O	2.20	0.74
1:1:584:C:N4	1:1:585:G:O6	2.20	0.74
2:2:210:C:O3'	2:2:211:G:N2	2.21	0.74
1:1:698:C:O2'	1:1:734:A:N6	2.20	0.73
1:1:2377:A:O2'	17:O:117:PHE:O	2.06	0.73
48:u:1:MET:N	48:u:23:ASP:OD1	2.20	0.73
1:1:2796:U:OP1	55:1:3207:HOH:O	2.06	0.73
1:1:224:U:OP2	1:1:408:G:N2	2.21	0.73
2:2:1096:C:OP2	55:2:1710:HOH:O	2.07	0.73
1:1:1064:C:N4	1:1:1069:A:OP2	2.20	0.73
1:1:2726:A:N3	13:K:67:LYS:NZ	2.36	0.73
2:2:195:A:O2'	2:2:196:A:O4'	2.05	0.73
6:B:257:ARG:NH2	6:B:262:THR:OG1	2.21	0.73
14:L:58:TYR:O	32:e:12:ARG:NH2	2.22	0.73
2:2:1137:C:O2'	2:2:1138:G:N2	2.22	0.73
16:N:77:ALA:O	16:N:81:ASN:ND2	2.22	0.73
1:1:700:G:O2'	1:1:1632:A:N3	2.21	0.73
1:1:1556:C:OP2	55:1:3211:HOH:O	2.07	0.73
1:1:1661:G:OP1	55:1:3206:HOH:O	2.05	0.73
1:1:2536:G:OP2	55:1:3209:HOH:O	2.06	0.73
1:1:2867:G:O2'	1:1:2868:A:O5'	2.06	0.73
2:2:1332:A:O2'	55:2:1708:HOH:O	2.06	0.73
42:o:89:ARG:NH2	55:o:201:HOH:O	2.21	0.73
1:1:1328:A:O2'	1:1:1329:U:O5'	2.06	0.73
1:1:2505:G:O2'	1:1:2506:U:O5'	2.05	0.73
3:3:69:G:O6	3:3:107:G:N2	2.19	0.73
38:k:63:ASN:ND2	38:k:96:VAL:O	2.22	0.72
1:1:1724:G:O6	1:1:1737:G:N2	2.19	0.72
1:1:1066:U:O4	55:1:3208:HOH:O	2.06	0.72
16:N:19:ALA:O	16:N:23:ASN:ND2	2.22	0.72
18:P:59:THR:HG22	18:P:72:VAL:HG22	1.71	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:t:25:GLU:OE2	47:t:76:ARG:NH1	2.23	0.72
1:1:986:C:OP1	55:1:3210:HOH:O	2.06	0.72
33:f:15:LYS:NZ	55:f:101:HOH:O	2.22	0.72
43:p:12:ARG:N	55:p:201:HOH:O	2.21	0.72
1:1:1383:A:O2'	1:1:1384:A:O4'	2.04	0.72
41:n:37:TYR:OH	41:n:74:GLN:OE1	2.08	0.72
1:1:2333:A:O2'	1:1:2334:U:O5'	2.07	0.72
26:X:16:ASN:OD1	55:X:101:HOH:O	2.07	0.72
49:v:51:GLU:OE1	49:v:51:GLU:N	2.23	0.72
1:1:1007:C:OP2	1:1:1008:A:O2'	2.04	0.72
1:1:1299:G:O2'	1:1:1301:A:N7	2.22	0.72
1:1:1490:A:O2'	1:1:1491:G:OP1	2.06	0.72
46:s:22:LYS:O	46:s:22:LYS:NZ	2.19	0.72
1:1:490:C:O2'	1:1:491:G:OP2	2.06	0.72
1:1:1288:G:OP2	1:1:1288:G:N2	2.23	0.72
1:1:2502:G:O2'	1:1:2503:A:OP2	2.06	0.72
2:2:835:U:OP2	55:2:1711:HOH:O	2.07	0.72
35:h:18:ASN:ND2	46:s:90:ARG:O	2.21	0.72
2:2:1249:C:N4	2:2:1288:A:OP2	2.23	0.71
1:1:1032:A:N6	55:1:3250:HOH:O	2.23	0.71
1:1:2163:A:OP1	1:1:2171:A:N6	2.22	0.71
2:2:1269:A:O2'	2:2:1325:C:O2	2.08	0.71
37:j:18:ASN:OD1	55:j:201:HOH:O	2.07	0.71
1:1:953:G:OP1	55:1:3218:HOH:O	2.08	0.71
41:n:89:TYR:O	55:n:201:HOH:O	2.07	0.71
1:1:884:U:O2'	1:1:892:A:N6	2.22	0.71
23:U:46:LYS:NZ	55:U:201:HOH:O	2.22	0.71
38:k:69:GLU:OE2	38:k:69:GLU:N	2.23	0.71
1:1:1872:A:N3	55:1:3246:HOH:O	2.22	0.71
1:1:2167:U:O2	1:1:2168:G:N2	2.23	0.71
13:K:58:LEU:HD11	13:K:86:LEU:HD22	1.73	0.71
2:2:549:C:N4	2:2:550:G:O6	2.23	0.71
1:1:76:C:OP1	27:Y:48:ARG:NH1	2.22	0.71
1:1:2865:U:O2'	55:1:3216:HOH:O	2.08	0.71
1:1:54:G:OP2	55:1:3222:HOH:O	2.09	0.71
2:2:544:G:OP2	55:2:1712:HOH:O	2.08	0.71
12:J:11:VAL:O	55:J:201:HOH:O	2.08	0.71
1:1:62:U:O2'	1:1:63:A:N7	2.20	0.71
1:1:2318:G:OP1	55:1:3223:HOH:O	2.09	0.71
1:1:275:C:O3'	55:1:3224:HOH:O	2.09	0.70
2:2:1265:C:OP1	55:2:1717:HOH:O	2.09	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:O:13:ARG:NH1	55:O:201:HOH:O	2.22	0.70
1:1:1242:U:OP2	55:1:3212:HOH:O	2.07	0.70
36:i:162:GLU:O	36:i:166:LYS:NZ	2.20	0.70
1:1:1400:U:OP2	55:1:3213:HOH:O	2.07	0.70
1:1:2288:A:OP1	55:1:3215:HOH:O	2.08	0.70
3:3:51:G:OP1	17:O:63:LYS:NZ	2.24	0.70
18:P:30:TRP:NE1	18:P:81:ASP:OD1	2.24	0.70
39:l:8:GLN:NE2	55:l:204:HOH:O	2.23	0.70
43:p:17:ASP:OD1	43:p:80:ASN:ND2	2.23	0.70
2:2:964:A:N7	55:2:1730:HOH:O	2.23	0.70
43:p:111:ASP:OD1	43:p:113:THR:HG23	1.91	0.70
1:1:427:U:OP2	55:1:3229:HOH:O	2.10	0.70
1:1:612:G:N2	1:1:614:A:O2'	2.25	0.70
1:1:1666:G:O2'	13:K:6:THR:OG1	2.05	0.70
1:1:2299:U:O4	1:1:2318:G:N2	2.24	0.70
1:1:2502:G:OP2	55:1:3220:HOH:O	2.09	0.70
2:2:192:A:N3	52:y:54:GLN:NE2	2.40	0.70
2:2:517:G:OP2	55:2:1718:HOH:O	2.10	0.70
1:1:589:U:OP2	55:1:3231:HOH:O	2.10	0.70
1:1:754:U:O2'	1:1:1272:A:N1	2.24	0.70
1:1:1808:A:N6	55:1:3253:HOH:O	2.24	0.70
2:2:663:A:OP2	55:2:1714:HOH:O	2.09	0.70
1:1:48:G:H22	1:1:177:G:P	2.14	0.70
1:1:459:U:O2	55:1:3214:HOH:O	2.08	0.70
1:1:1798:U:OP1	6:B:269:ARG:NH2	2.24	0.70
1:1:807:U:OP2	14:L:41:ARG:NH1	2.25	0.70
1:1:896:A:OP2	55:1:3225:HOH:O	2.09	0.70
2:2:1266:G:O2'	2:2:1268:G:N7	2.24	0.70
9:E:36:ASN:OD1	9:E:37:MET:N	2.24	0.70
2:2:5:U:OP2	55:2:1713:HOH:O	2.08	0.70
39:l:128:GLU:OE1	55:l:202:HOH:O	2.09	0.70
1:1:918:A:N3	3:3:80:U:O2'	2.25	0.70
22:T:28:ASN:ND2	22:T:87:LEU:O	2.25	0.70
27:Y:27:ASN:ND2	55:Y:101:HOH:O	2.24	0.70
1:1:893:C:OP1	55:1:3227:HOH:O	2.09	0.69
34:g:72:LYS:O	55:g:301:HOH:O	2.09	0.69
1:1:1654:A:O2'	7:C:118:PHE:O	2.09	0.69
2:2:522:C:OP2	44:q:66:TYR:OH	2.09	0.69
2:2:953:G:OP1	2:2:964:A:N6	2.25	0.69
2:2:1457:G:OP2	55:2:1715:HOH:O	2.09	0.69
1:1:1529:G:OP2	55:1:3219:HOH:O	2.09	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1219:A:OP1	46:s:53:ARG:NE	2.26	0.69
13:K:34:GLY:N	13:K:37:ASP:OD2	2.25	0.69
1:1:998:C:O2'	55:1:3226:HOH:O	2.09	0.69
37:j:156:ARG:NH1	40:m:98:LEU:O	2.25	0.69
38:k:26:THR:HA	38:k:29:ILE:HD12	1.73	0.69
41:n:90:ASP:OD1	55:n:202:HOH:O	2.09	0.69
1:1:2780:G:OP2	12:J:120:ARG:NE	2.23	0.69
2:2:127:G:O3'	49:v:5:ARG:NH2	2.25	0.69
2:2:995:C:N3	2:2:1046:A:O2'	2.20	0.69
2:2:1376:U:O4	39:l:9:ARG:NH1	2.24	0.69
47:t:3:SER:O	47:t:7:THR:HG23	1.93	0.69
1:1:810:U:O4	14:L:30:THR:HG22	1.92	0.69
1:1:2574:G:O6	55:1:3228:HOH:O	2.10	0.69
22:T:4:GLU:HA	22:T:7:LEU:HD12	1.74	0.69
39:l:26:VAL:HG11	39:l:39:GLU:HG2	1.74	0.69
49:v:38:LYS:NZ	55:v:101:HOH:O	2.22	0.69
1:1:2847:U:OP1	18:P:95:LYS:NZ	2.24	0.69
2:2:111:G:OP2	55:2:1720:HOH:O	2.11	0.69
2:2:437:U:OP1	36:i:151:GLN:NE2	2.25	0.69
35:h:10:ARG:NH2	35:h:176:THR:O	2.25	0.69
36:i:104:MET:SD	55:i:305:HOH:O	2.49	0.69
1:1:799:G:OP2	1:1:800:A:O2'	2.06	0.69
38:k:90:MET:SD	50:w:60:ARG:NH2	2.65	0.69
34:g:66:ILE:HD12	34:g:159:ALA:HB3	1.72	0.68
39:l:115:MET:SD	39:l:118:ARG:NH2	2.65	0.68
1:1:160:A:N3	1:1:2208:C:O2'	2.24	0.68
2:2:512:U:O2'	55:2:1709:HOH:O	2.07	0.68
2:2:1372:U:OP1	41:n:73:GLY:N	2.25	0.68
7:C:108:ASP:OD2	7:C:207:VAL:HG12	1.94	0.68
1:1:249:C:O2	32:e:11:LYS:NZ	2.25	0.68
24:V:5:ASN:OD1	55:V:102:HOH:O	2.11	0.68
34:g:166:ASP:OD1	55:g:302:HOH:O	2.10	0.68
1:1:358:U:OP2	55:1:3232:HOH:O	2.10	0.68
1:1:969:G:N2	1:1:984:A:O2'	2.26	0.68
2:2:401:C:O2'	2:2:621:A:N3	2.26	0.68
2:2:687:A:N6	2:2:703:G:O2'	2.26	0.68
2:2:1151:A:O2'	2:2:1152:A:OP1	2.10	0.68
2:2:1304:G:OP2	55:2:1716:HOH:O	2.09	0.68
2:2:978:A:C2	2:2:1316:G:N2	2.62	0.68
9:E:11:VAL:HG13	9:E:171:ALA:HB1	1.75	0.68
38:k:91:ARG:NH2	55:k:201:HOH:O	2.26	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:n:95:SER:O	55:n:203:HOH:O	2.10	0.68
1:1:633:A:O2'	1:1:2404:U:OP1	2.12	0.68
1:1:2478:A:OP2	33:f:2:LYS:NZ	2.27	0.68
1:1:2479:U:OP1	1:1:2537:U:O2'	2.11	0.68
2:2:1270:G:N7	55:2:1732:HOH:O	2.26	0.68
2:2:1298:U:OP2	55:2:1722:HOH:O	2.12	0.68
41:n:41:GLU:OE1	41:n:41:GLU:N	2.26	0.68
1:1:629:G:OP2	55:1:3230:HOH:O	2.10	0.68
31:d:22:MET:O	31:d:28:ARG:NH1	2.25	0.68
1:1:495:G:O2'	21:S:57:ASN:ND2	2.25	0.68
38:k:61:LEU:HD12	38:k:62:MET:H	1.59	0.68
1:1:631:A:OP1	32:e:46:LYS:NZ	2.27	0.67
1:1:2204:G:O2'	6:B:147:PRO:O	2.12	0.67
1:1:981:A:O2'	1:1:2036:C:O2'	2.11	0.67
1:1:1322:A:OP1	21:S:11:ARG:NH2	2.27	0.67
2:2:261:U:N3	2:2:264:C:OP2	2.26	0.67
35:h:155:ARG:NH2	55:h:302:HOH:O	2.28	0.67
2:2:202:G:H21	2:2:466:A:H61	1.42	0.67
20:R:49:ILE:HG22	20:R:54:VAL:HG22	1.76	0.67
47:t:45:HIS:O	47:t:47:LYS:N	2.28	0.67
2:2:843:U:OP2	55:2:1721:HOH:O	2.12	0.67
7:C:183:GLU:OE1	7:C:183:GLU:N	2.27	0.67
35:h:124:GLU:O	35:h:126:ARG:NH1	2.27	0.67
1:1:548:G:O2'	1:1:549:G:O5'	2.11	0.67
1:1:2373:G:O6	55:1:3221:HOH:O	2.09	0.67
2:2:1038:C:OP2	55:2:1719:HOH:O	2.11	0.67
1:1:1469:A:OP2	1:1:1522:A:N6	2.27	0.67
1:1:2857:G:N2	1:1:2860:A:OP2	2.24	0.67
31:d:3:ARG:O	31:d:6:GLN:NE2	2.26	0.67
2:2:263:A:OP1	52:y:73:ARG:NH1	2.28	0.67
2:2:1144:G:O2'	2:2:1145:A:O4'	2.11	0.67
16:N:56:LYS:NZ	16:N:87:PHE:O	2.28	0.67
18:P:61:ARG:NH2	18:P:70:GLU:OE1	2.28	0.67
35:h:120:THR:HG23	35:h:188:ALA:HB2	1.75	0.67
1:1:2265:U:OP2	1:1:2266:A:O2'	2.03	0.67
7:C:30:GLU:OE1	7:C:30:GLU:N	2.28	0.67
20:R:49:ILE:CG2	20:R:54:VAL:HG22	2.25	0.67
35:h:99:GLN:OE1	35:h:99:GLN:N	2.28	0.67
52:y:73:ARG:O	52:y:77:ASN:ND2	2.28	0.67
1:1:1009:A:OP2	12:J:39:LYS:NZ	2.28	0.66
2:2:197:A:N1	2:2:220:G:O2'	2.25	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:774:G:O2'	1:1:775:G:O4'	2.13	0.66
1:1:1447:C:O2'	1:1:1544:A:N3	2.27	0.66
1:1:1475:G:O6	55:1:3217:HOH:O	2.08	0.66
1:1:2788:C:O2'	1:1:2809:A:N3	2.26	0.66
34:g:164:ASP:OD2	34:g:167:HIS:N	2.27	0.66
41:n:60:LEU:HD12	41:n:60:LEU:O	1.96	0.66
1:1:2064:C:O2'	1:1:2251:G:N2	2.28	0.66
1:1:2139:U:O2	1:1:2152:G:O6	2.14	0.66
2:2:1447:A:P	2:2:1448:C:H41	2.18	0.66
1:1:227:A:HO2'	1:1:228:C:P	2.18	0.66
1:1:1450:G:H21	1:1:1452:G:H1	1.43	0.66
2:2:845:A:N1	55:2:1735:HOH:O	2.28	0.66
2:2:1298:U:O2'	2:2:1299:A:OP2	2.13	0.66
1:1:993:G:OP2	19:Q:50:ARG:NH2	2.29	0.66
1:1:2620:C:O2'	7:C:124:ARG:NH1	2.29	0.66
40:m:41:GLU:OE2	55:m:201:HOH:O	2.13	0.66
42:o:85:ASP:OD1	42:o:86:ALA:N	2.29	0.66
1:1:2199:A:OP1	26:X:36:ARG:NH2	2.28	0.66
1:1:2627:G:O2'	1:1:2628:C:O4'	2.12	0.66
2:2:1100:C:O2'	2:2:1102:A:OP1	2.13	0.66
1:1:1453:A:N7	16:N:73:ASN:ND2	2.43	0.65
2:2:881:G:OP2	44:q:9:ARG:NH1	2.29	0.65
11:G:136:SER:OG	11:G:137:GLU:OE2	2.12	0.65
41:n:83:THR:HG21	41:n:102:PHE:O	1.96	0.65
1:1:1011:G:OP2	19:Q:65:ASN:ND2	2.29	0.65
1:1:1790:C:O2'	6:B:207:ALA:HB2	1.96	0.65
2:2:373:A:N3	2:2:482:A:N6	2.43	0.65
8:D:118:LEU:HD11	8:D:188:MET:HG3	1.78	0.65
9:E:135:ILE:HG21	9:E:142:TYR:HD1	1.60	0.65
34:g:8:MET:N	34:g:46:VAL:HG21	2.11	0.65
1:1:139:U:O2'	1:1:140:C:O2	2.12	0.65
1:1:2708:G:O4'	16:N:71:ARG:NH2	2.29	0.65
9:E:143:ASP:OD1	55:E:201:HOH:O	2.14	0.65
23:U:42:LYS:NZ	55:U:203:HOH:O	2.28	0.65
1:1:591:U:O2'	32:e:1:PRO:N	2.30	0.65
1:1:2076:U:OP2	1:1:2238:G:N2	2.27	0.65
2:2:982:U:O2	2:2:1222:G:N1	2.29	0.65
2:2:1279:G:O2'	2:2:1281:C:OP2	2.11	0.65
1:1:34:U:O2'	55:1:3236:HOH:O	2.15	0.65
2:2:202:G:H1	2:2:215:C:H42	1.44	0.65
2:2:1151:A:HO2'	2:2:1152:A:P	2.20	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:f:4:ARG:NH1	33:f:6:SER:O	2.30	0.65
1:1:1021:A:O2'	1:1:1123:C:OP1	2.13	0.64
1:1:1475:G:O2'	1:1:1476:U:O5'	2.15	0.64
1:1:2684:U:O4'	13:K:70:ARG:NH1	2.30	0.64
2:2:890:G:O2'	2:2:891:U:O5'	2.14	0.64
2:2:967:C:OP2	2:2:968:A:O2'	2.07	0.64
9:E:102:LEU:HD12	9:E:106:ALA:HB3	1.78	0.64
1:1:2082:A:O2'	55:1:3235:HOH:O	2.14	0.64
1:1:546:U:O2'	1:1:547:A:OP1	2.15	0.64
1:1:2532:G:O2'	1:1:2657:A:N1	2.30	0.64
1:1:748:G:OP1	21:S:88:ARG:NH1	2.30	0.64
1:1:2666:C:N4	10:F:108:PHE:O	2.29	0.64
2:2:958:A:O2'	2:2:959:A:O4'	2.11	0.64
5:5:25:C:H2'	5:5:26:A:C8	2.33	0.64
1:1:1798:U:O2'	1:1:1802:A:N3	2.24	0.64
1:1:2357:G:N2	1:1:2360:G:OP2	2.31	0.64
2:2:974:A:O2'	55:2:1724:HOH:O	2.15	0.64
8:D:14:VAL:HG21	8:D:19:PHE:HD2	1.62	0.64
33:f:1:MET:HE2	33:f:36:ARG:HB2	1.80	0.64
1:1:674:G:O2'	8:D:62:GLN:NE2	2.29	0.64
1:1:781:A:OP1	6:B:216:ARG:NH2	2.29	0.64
2:2:1080:A:OP1	37:j:51:LYS:NZ	2.30	0.64
24:V:67:GLY:O	55:V:103:HOH:O	2.15	0.64
1:1:981:A:OP2	1:1:982:C:N4	2.28	0.64
1:1:296:U:O3'	23:U:91:LYS:NZ	2.28	0.64
1:1:1800:C:H5'	6:B:145:MET:HE1	1.80	0.64
11:G:3:VAL:HG12	11:G:36:ALA:HB1	1.79	0.64
13:K:10:VAL:HG21	13:K:16:ALA:HB3	1.79	0.64
15:M:24:THR:HG23	15:M:99:GLY:O	1.98	0.64
2:2:15:G:O4'	2:2:1396:A:O2'	2.15	0.64
2:2:405:U:O4	36:i:1:ALA:N	2.26	0.64
33:f:36:ARG:HG2	33:f:37:GLN:H	1.63	0.64
45:r:15:VAL:O	45:r:19:THR:HG23	1.97	0.64
2:2:344:A:O2'	2:2:346:G:N7	2.27	0.63
34:g:193:ASP:OD2	55:g:303:HOH:O	2.15	0.63
35:h:71:ARG:HD3	35:h:74:ILE:HD12	1.80	0.63
40:m:14:ARG:NH2	40:m:74:ILE:O	2.30	0.63
2:2:693:G:OP1	43:p:126:ARG:NH1	2.31	0.63
9:E:42:ALA:O	9:E:82:TYR:OH	2.13	0.63
45:r:3:ILE:HD11	45:r:52:ILE:HG23	1.79	0.63
1:1:1426:G:OP2	1:1:1427:A:O2'	2.09	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2653:U:OP2	1:1:2654:A:O2'	2.13	0.63
16:N:90:ARG:CZ	16:N:116:VAL:HG11	2.28	0.63
1:1:463:G:N2	1:1:466:A:OP2	2.26	0.63
1:1:964:C:O2'	1:1:2273:A:N3	2.27	0.63
1:1:2043:C:OP1	1:1:2777:G:O2'	2.10	0.63
27:Y:8:GLU:OE1	27:Y:8:GLU:N	2.31	0.63
1:1:87:U:O2'	27:Y:44:LYS:NZ	2.32	0.63
1:1:1992:G:N2	1:1:1996:C:O2'	2.32	0.63
1:1:2123:G:C2	1:1:2176:A:N6	2.67	0.63
2:2:565:U:OP2	2:2:566:G:O2'	2.11	0.63
1:1:1320:C:HO2'	1:1:1321:A:P	2.22	0.62
1:1:1682:G:OP1	1:1:1699:G:N1	2.32	0.62
52:y:47:GLN:OE1	52:y:51:ASN:ND2	2.32	0.62
1:1:1847:G:O2'	1:1:1848:A:O5'	2.17	0.62
1:1:2116:G:N2	1:1:2171:A:N1	2.41	0.62
2:2:367:U:OP2	55:2:1725:HOH:O	2.16	0.62
2:2:1073:U:O2'	34:g:102:ASN:OD1	2.14	0.62
1:1:585:G:O2'	1:1:586:A:O4'	2.18	0.62
18:P:32:VAL:HG13	18:P:36:LYS:O	2.00	0.62
1:1:1715:G:O2'	1:1:1716:U:O5'	2.18	0.62
3:3:13:G:H1	3:3:69:G:HO2'	1.47	0.62
48:u:7:ALA:O	48:u:29:ASN:ND2	2.32	0.62
2:2:909:A:O2'	2:2:1413:A:O2'	2.15	0.62
6:B:70:LYS:O	6:B:117:SER:OG	2.17	0.62
8:D:102:ARG:NH1	8:D:200:LEU:O	2.32	0.62
1:1:2312:U:OP1	9:E:70:ARG:N	2.32	0.62
2:2:816:A:OP1	2:2:1526:G:O2'	2.11	0.62
23:U:73:ASN:ND2	23:U:80:ASP:OD2	2.32	0.62
1:1:2245:U:O2'	1:1:2436:G:OP2	2.18	0.62
1:1:2306:C:OP2	1:1:2307:G:O2'	2.11	0.62
2:2:1063:C:OP2	2:2:1064:G:O2'	2.18	0.62
34:g:86:CYS:SG	34:g:224:ARG:NE	2.70	0.62
1:1:1252:G:H21	19:Q:32:ARG:HG2	1.63	0.62
2:2:796:C:O2'	43:p:126:ARG:NH2	2.32	0.62
5:5:9:A:H2'	5:5:11:C:H41	1.65	0.62
18:P:7:LEU:O	18:P:7:LEU:HD23	2.00	0.62
22:T:50:LEU:HD23	27:Y:26:PHE:CE2	2.34	0.62
48:u:74:LEU:O	48:u:78:VAL:HG22	1.99	0.62
1:1:2712:C:OP1	1:1:2714:G:O2'	2.13	0.62
2:2:977:A:N6	2:2:1224:U:O4'	2.32	0.62
2:2:1317:C:H4'	46:s:48:LEU:HD21	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:g:144:GLU:O	34:g:148:GLY:N	2.33	0.62
39:l:110:ARG:NH1	39:l:122:GLU:OE2	2.33	0.62
1:1:1490:A:HO2'	1:1:1491:G:P	2.22	0.61
1:1:2183:A:OP2	55:1:3237:HOH:O	2.16	0.61
1:1:2724:U:OP1	7:C:116:LYS:NZ	2.33	0.61
2:2:955:U:O2'	51:x:80:ARG:NH2	2.33	0.61
2:2:1180:A:OP2	41:n:98:ARG:NH2	2.32	0.61
36:i:117:VAL:HG22	36:i:122:ILE:HG13	1.82	0.61
1:1:29:U:O2	1:1:1215:G:O2'	2.18	0.61
10:F:85:LYS:C	10:F:86:LEU:HD12	2.25	0.61
2:2:36:C:OP1	44:q:120:LYS:NZ	2.33	0.61
31:d:12:ARG:HE	31:d:44:VAL:HG21	1.64	0.61
41:n:46:VAL:HG21	41:n:75:ALA:HB1	1.83	0.61
1:1:1800:C:C5'	6:B:145:MET:HE1	2.29	0.61
22:T:37:ASP:O	22:T:81:LYS:NZ	2.32	0.61
36:i:56:GLU:OE2	36:i:195:ASN:N	2.33	0.61
38:k:9:MET:HE3	38:k:86:ARG:HB3	1.82	0.61
45:r:78:ARG:O	45:r:82:LEU:HD13	2.00	0.61
51:x:10:ILE:HD12	51:x:15:LEU:HB2	1.81	0.61
1:1:330:A:N7	1:1:1210:G:O2'	2.30	0.61
1:1:475:C:O2	1:1:479:A:N6	2.33	0.61
1:1:807:U:OP1	1:1:830:G:N2	2.33	0.61
1:1:2481:G:O6	55:1:3234:HOH:O	2.13	0.61
2:2:993:G:N7	2:2:1213:A:N6	2.48	0.61
1:1:2314:A:H1'	9:E:154:THR:HG21	1.81	0.61
2:2:444:G:N2	55:2:1741:HOH:O	2.32	0.61
1:1:534:U:O2'	19:Q:48:ASP:OD2	2.15	0.61
51:x:34:SER:O	51:x:70:LEU:HD12	2.00	0.61
2:2:1249:C:O3'	41:n:74:GLN:NE2	2.34	0.61
35:h:126:ARG:NH2	55:h:303:HOH:O	2.31	0.61
1:1:2473:U:O2	55:1:3233:HOH:O	2.13	0.60
1:1:2820:A:N6	7:C:197:THR:O	2.34	0.60
34:g:107:ARG:NH1	55:g:304:HOH:O	2.33	0.60
35:h:8:GLY:HA3	46:s:89:MET:HE3	1.82	0.60
1:1:675:A:N3	1:1:2443:C:O2'	2.34	0.60
1:1:1341:G:OP1	1:1:1602:U:O2'	2.19	0.60
9:E:166:ARG:NH2	55:E:203:HOH:O	2.32	0.60
16:N:114:GLU:OE1	16:N:114:GLU:N	2.33	0.60
1:1:2312:U:H5'	9:E:84:ILE:HG21	1.84	0.60
1:1:2723:C:OP1	7:C:114:LYS:NZ	2.28	0.60
2:2:684:U:O2'	43:p:40:ALA:O	2.16	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:C:3:GLY:C	7:C:4:LEU:HD12	2.26	0.60
40:m:59:GLU:OE1	40:m:59:GLU:N	2.34	0.60
2:2:811:C:O2'	2:2:901:A:N1	2.34	0.60
2:2:1229:A:OP2	45:r:106:ARG:NH2	2.33	0.60
1:1:1584:U:O2'	1:1:1585:C:OP1	2.20	0.60
21:S:70:LYS:O	21:S:107:VAL:HG23	2.02	0.60
1:1:891:G:O2'	1:1:892:A:O5'	2.19	0.60
1:1:2266:A:N6	1:1:2273:A:OP2	2.32	0.60
37:j:96:GLN:O	37:j:122:VAL:HG13	2.01	0.60
1:1:2776:A:O2'	1:1:2782:G:N7	2.33	0.60
13:K:10:VAL:HG21	13:K:16:ALA:CB	2.32	0.60
36:i:4:LEU:O	36:i:4:LEU:HD12	2.01	0.60
2:2:203:G:N2	2:2:204:G:O6	2.35	0.60
2:2:886:G:O6	2:2:912:C:N4	2.34	0.60
41:n:3:ASN:OD1	41:n:4:GLN:N	2.33	0.60
45:r:67:ASP:OD1	45:r:70:ARG:NH1	2.35	0.60
1:1:621:A:OP2	14:L:99:ASN:ND2	2.35	0.60
2:2:1088:G:H21	2:2:1167:A:H61	1.50	0.60
8:D:118:LEU:O	8:D:119:ILE:HD13	2.02	0.60
51:x:49:ALA:HB1	51:x:56:HIS:HB3	1.84	0.60
1:1:2006:C:O2'	1:1:2823:A:N3	2.34	0.59
2:2:573:A:O2'	2:2:574:A:O4'	2.10	0.59
51:x:19:GLU:OE2	51:x:42:ASN:ND2	2.35	0.59
1:1:245:G:O2'	1:1:384:A:N1	2.30	0.59
1:1:963:U:O4'	1:1:2250:G:N2	2.35	0.59
1:1:966:G:C1'	1:1:2267:A:H62	2.15	0.59
1:1:1497:U:OP2	1:1:1498:C:N4	2.23	0.59
1:1:2156:G:N7	1:1:2157:G:N2	2.49	0.59
1:1:2419:U:OP1	32:e:40:LYS:NZ	2.23	0.59
39:l:11:ILE:HD13	39:l:24:LYS:HD3	1.85	0.59
1:1:2406:A:OP2	1:1:2411:A:N6	2.35	0.59
37:j:80:LEU:HB2	37:j:122:VAL:HG21	1.84	0.59
41:n:79:ARG:O	41:n:83:THR:HG23	2.02	0.59
52:y:67:HIS:ND1	52:y:67:HIS:O	2.35	0.59
1:1:533:G:O5'	19:Q:27:ARG:NH1	2.36	0.59
1:1:1965:C:OP1	1:1:1966:A:O2'	2.18	0.59
2:2:973:G:OP1	42:o:59:LYS:NZ	2.18	0.59
1:1:283:G:N1	1:1:358:U:O4	2.35	0.59
1:1:2128:G:N1	1:1:2161:C:O2'	2.35	0.59
12:J:135:GLN:OE1	12:J:135:GLN:N	2.36	0.59
32:e:61:LEU:HD12	32:e:61:LEU:O	2.01	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:g:145:ASN:OD1	34:g:146:SER:N	2.36	0.59
1:1:1677:A:O2'	1:1:1993:U:OP1	2.10	0.59
2:2:339:C:OP2	13:K:97:THR:OG1	2.13	0.59
41:n:34:LEU:HD11	41:n:38:PHE:CZ	2.38	0.59
1:1:1209:U:O2	1:1:1210:G:N2	2.36	0.59
1:1:1668:A:N3	1:1:1670:C:N4	2.51	0.59
2:2:1248:A:OP1	41:n:32:ARG:NH2	2.36	0.59
3:3:43:C:O3'	9:E:94:ARG:NH2	2.36	0.59
2:2:1239:A:H62	2:2:1299:A:H61	1.50	0.59
3:3:13:G:N2	3:3:16:G:N3	2.50	0.59
24:V:21:ARG:NH2	24:V:87:GLN:O	2.36	0.59
1:1:1788:C:OP1	6:B:220:ARG:NH2	2.35	0.58
2:2:411:A:N6	2:2:413:G:H21	2.01	0.58
42:o:57:VAL:HG22	42:o:58:ASN:H	1.68	0.58
1:1:2505:G:HO2'	1:1:2506:U:P	2.26	0.58
2:2:1240:U:H5'	39:l:41:ILE:HD11	1.84	0.58
8:D:14:VAL:HG21	8:D:19:PHE:CD2	2.38	0.58
11:G:146:VAL:O	11:G:146:VAL:HG13	2.02	0.58
1:1:1077:A:N6	55:1:3279:HOH:O	2.36	0.58
2:2:132:C:O3'	52:y:67:HIS:NE2	2.36	0.58
2:2:1222:G:OP2	2:2:1322:C:N4	2.36	0.58
34:g:182:VAL:O	34:g:182:VAL:HG12	2.04	0.58
36:i:122:ILE:O	36:i:128:VAL:HG23	2.03	0.58
1:1:877:A:OP2	55:1:3239:HOH:O	2.17	0.58
1:1:1799:G:N7	6:B:177:SER:OG	2.36	0.58
1:1:2313:C:O4'	9:E:36:ASN:ND2	2.36	0.58
2:2:9:G:N7	2:2:558:G:O2'	2.37	0.58
34:g:112:ARG:NH2	55:g:306:HOH:O	2.35	0.58
40:m:103:VAL:HG23	40:m:123:GLU:C	2.28	0.58
8:D:143:LEU:HB3	8:D:146:VAL:HG11	1.85	0.58
1:1:826:U:O2'	14:L:52:GLY:O	2.17	0.58
1:1:876:C:H2'	1:1:877:A:O4'	2.04	0.58
10:F:154:GLU:N	10:F:159:LYS:O	2.36	0.58
35:h:71:ARG:CD	35:h:74:ILE:HD12	2.33	0.58
37:j:105:ILE:HD11	37:j:123:LEU:CD2	2.33	0.58
1:1:2831:G:N2	1:1:2884:U:OP2	2.36	0.58
2:2:1074:G:OP1	37:j:68:ARG:NH2	2.36	0.58
2:2:1097:C:O3'	34:g:138:ARG:NH2	2.37	0.58
9:E:148:VAL:O	9:E:148:VAL:HG12	2.03	0.58
35:h:187:GLU:N	35:h:187:GLU:OE1	2.36	0.58
39:l:57:GLU:OE1	39:l:57:GLU:N	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:701:G:H1	1:1:731:C:H42	1.52	0.58
2:2:721:G:O6	55:2:1723:HOH:O	2.15	0.58
2:2:1516:G:N2	2:2:1520:C:O2	2.37	0.58
37:j:97:PRO:CA	37:j:122:VAL:HG22	2.33	0.58
38:k:97:THR:OG1	38:k:98:GLU:OE2	2.21	0.57
40:m:72:GLU:N	40:m:129:ALA:O	2.37	0.57
1:1:1454:C:O2'	16:N:60:VAL:HG22	2.04	0.57
1:1:1521:G:OP2	1:1:1522:A:O2'	2.18	0.57
3:3:31:C:O2'	3:3:53:A:N1	2.37	0.57
37:j:45:VAL:HG11	37:j:117:ALA:HB2	1.86	0.57
39:l:67:ASN:O	39:l:137:ARG:NE	2.37	0.57
1:1:115:C:HO2'	1:1:127:A:HO2'	1.50	0.57
1:1:1203:U:OP2	1:1:1204:A:O2'	2.07	0.57
2:2:978:A:H61	2:2:1316:G:H1'	1.69	0.57
2:2:1380:U:O2	39:l:2:ARG:NH1	2.37	0.57
2:2:766:A:H62	2:2:813:U:H3	1.52	0.57
2:2:1281:C:O2'	2:2:1282:C:OP1	2.22	0.57
25:W:30:GLY:N	25:W:57:ALA:O	2.38	0.57
32:e:28:LEU:HD11	32:e:43:LEU:HB2	1.86	0.57
1:1:815:C:OP2	20:R:85:LYS:NZ	2.38	0.57
1:1:859:G:O2'	1:1:860:U:O5'	2.21	0.57
1:1:874:G:H2'	1:1:875:G:C8	2.40	0.57
1:1:1130:U:N3	1:1:2025:C:OP1	2.37	0.57
7:C:8:LYS:NZ	7:C:193:VAL:O	2.38	0.57
1:1:48:G:N2	1:1:177:G:OP2	2.37	0.57
1:1:549:G:O2'	1:1:550:C:OP1	2.22	0.57
1:1:1009:A:O2'	1:1:1010:A:O4'	2.10	0.57
1:1:1111:A:HO2'	1:1:1112:G:P	2.28	0.57
1:1:1252:G:N2	19:Q:32:ARG:O	2.37	0.57
1:1:2333:A:OP1	25:W:73:ARG:NH2	2.38	0.57
2:2:1393:U:HO2'	2:2:1501:C:HO2'	1.51	0.57
1:1:659:G:O2'	8:D:95:LYS:O	2.22	0.57
1:1:2116:G:C6	1:1:2165:C:N3	2.73	0.57
2:2:292:G:OP2	2:2:305:G:N2	2.32	0.57
2:2:1266:G:N2	55:2:1732:HOH:O	2.36	0.57
9:E:137:PHE:HB2	9:E:140:ILE:HD13	1.87	0.57
20:R:55:ASP:OD1	20:R:56:GLY:N	2.36	0.57
1:1:2822:G:O2'	1:1:2824:C:OP2	2.08	0.56
2:2:599:C:N4	55:2:1746:HOH:O	2.34	0.56
49:v:74:LEU:HD12	49:v:75:VAL:H	1.70	0.56
1:1:2291:U:O2'	1:1:2374:C:O2	2.22	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2390:U:OP2	32:e:34:LYS:NZ	2.36	0.56
1:1:91:A:O2'	1:1:92:U:O5'	2.23	0.56
1:1:1068:G:N3	1:1:1095:A:O2'	2.39	0.56
1:1:2391:G:O2'	1:1:2392:A:O5'	2.20	0.56
1:1:2629:U:HO2'	1:1:2630:G:P	2.28	0.56
2:2:182:A:N1	2:2:223:A:O2'	2.39	0.56
2:2:991:U:O2'	2:2:992:U:O5'	2.18	0.56
36:i:8:LEU:HD11	55:i:306:HOH:O	2.05	0.56
47:t:9:LYS:NZ	55:t:101:HOH:O	2.16	0.56
51:x:10:ILE:HG21	51:x:40:PHE:CE2	2.41	0.56
1:1:578:G:OP1	1:1:1255:U:O2'	2.24	0.56
1:1:1320:C:O2'	1:1:1321:A:O5'	2.23	0.56
25:W:55:LEU:HD12	25:W:76:ILE:HD12	1.88	0.56
34:g:163:ILE:O	34:g:185:ILE:HG23	2.05	0.56
38:k:92:THR:OG1	38:k:93:LYS:N	2.38	0.56
42:o:47:GLU:OE1	42:o:47:GLU:N	2.38	0.56
52:y:34:VAL:HG11	52:y:78:LEU:HD13	1.88	0.56
1:1:65:U:O2'	1:1:456:C:N3	2.29	0.56
1:1:1117:C:H2'	1:1:1118:C:C6	2.41	0.56
1:1:1568:G:OP2	6:B:62:ARG:NH2	2.38	0.56
34:g:159:ALA:HB1	34:g:183:PHE:CE1	2.40	0.56
1:1:1351:C:HO2'	1:1:1571:A:HO2'	1.47	0.56
1:1:1930:G:O2'	1:1:1931:U:O5'	2.23	0.56
1:1:1999:C:O3'	1:1:2722:G:N2	2.39	0.56
1:1:602:A:O2'	1:1:655:A:N1	2.36	0.56
1:1:1799:G:H21	6:B:153:LEU:HD22	1.71	0.56
41:n:39:GLY:O	41:n:44:ARG:NH1	2.34	0.56
46:s:32:ASP:OD1	46:s:33:VAL:N	2.38	0.56
1:1:2483:C:N3	15:M:123:LYS:NZ	2.49	0.56
1:1:2667:C:N3	10:F:109:SER:OG	2.31	0.56
2:2:765:G:N2	2:2:813:U:OP2	2.38	0.56
21:S:60:HIS:ND1	21:S:61:ASN:OD1	2.38	0.56
1:1:1918:A:O2'	1:1:1920:C:N4	2.39	0.56
11:G:3:VAL:HG21	11:G:26:ALA:HB1	1.87	0.56
1:1:1715:G:N7	55:1:3267:HOH:O	2.33	0.56
2:2:38:G:H22	2:2:397:A:P	2.29	0.56
2:2:536:C:N4	2:2:537:G:O6	2.39	0.56
28:Z:4:ILE:HD11	28:Z:56:VAL:HG23	1.88	0.56
1:1:966:G:H1'	1:1:2267:A:H62	1.71	0.55
1:1:1153:C:OP1	19:Q:91:ARG:NH2	2.38	0.55
2:2:168:G:N2	55:2:1753:HOH:O	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:578:C:O2'	2:2:728:A:N3	2.34	0.55
2:2:667:G:OP1	2:2:732:C:O2'	2.20	0.55
14:L:80:SER:O	14:L:84:LYS:NZ	2.39	0.55
28:Z:23:LEU:HD11	28:Z:53:MET:CE	2.36	0.55
1:1:243:U:OP2	32:e:7:ARG:NH1	2.39	0.55
1:1:2705:A:O2'	1:1:2852:G:OP1	2.15	0.55
2:2:178:C:OP2	52:y:59:ARG:NH2	2.39	0.55
2:2:254:G:N2	49:v:17:GLU:OE1	2.39	0.55
3:3:40:U:N3	3:3:44:G:OP2	2.36	0.55
1:1:2577:A:O4'	1:1:2612:C:N4	2.40	0.55
9:E:77:LYS:NZ	55:E:204:HOH:O	2.37	0.55
1:1:671:C:OP1	14:L:43:GLY:N	2.35	0.55
36:i:102:TYR:O	36:i:164:ARG:NH1	2.39	0.55
40:m:10:LEU:CD2	40:m:74:ILE:HD11	2.37	0.55
2:2:297:G:N2	2:2:300:A:OP2	2.34	0.55
45:r:29:SER:O	45:r:33:LEU:HD13	2.07	0.55
1:1:458:G:O2'	1:1:459:U:P	2.65	0.55
1:1:550:C:N4	1:1:551:G:O6	2.40	0.55
2:2:977:A:O2'	2:2:979:C:OP2	2.24	0.55
12:J:58:ASN:N	12:J:127:GLY:O	2.35	0.55
1:1:1338:G:O2'	1:1:1393:A:N1	2.30	0.55
15:M:35:ALA:HB2	15:M:102:LEU:HD11	1.89	0.55
32:e:31:ILE:O	32:e:31:ILE:HG22	2.07	0.55
36:i:187:ARG:NH2	36:i:194:ILE:O	2.39	0.55
1:1:421:C:HO2'	1:1:422:A:P	2.29	0.55
2:2:1157:A:N7	2:2:1180:A:N6	2.55	0.55
39:l:17:PHE:HZ	39:l:46:LEU:HD21	1.72	0.55
39:l:100:MET:HA	39:l:103:ILE:HD12	1.88	0.55
1:1:2627:G:N2	1:1:2777:G:C2	2.75	0.55
11:G:3:VAL:HG13	11:G:37:VAL:C	2.32	0.55
28:Z:2:LYS:NZ	28:Z:39:ASP:OD2	2.32	0.55
41:n:90:ASP:O	41:n:92:SER:N	2.40	0.55
44:q:101:ALA:O	44:q:102:LEU:HG	2.07	0.55
1:1:345:A:N3	1:1:347:A:N6	2.55	0.54
1:1:863:A:O2'	3:3:100:G:N3	2.38	0.54
5:5:23:C:H2'	5:5:24:G:H8	1.72	0.54
24:V:60:VAL:C	24:V:61:LEU:HD12	2.32	0.54
34:g:48:MET:HE3	34:g:198:VAL:O	2.06	0.54
52:y:53:MET:SD	52:y:54:GLN:N	2.80	0.54
1:1:627:A:O4'	1:1:637:A:N6	2.40	0.54
1:1:666:A:HO2'	1:1:667:U:C5'	2.18	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:K:24:VAL:HA	13:K:39:ILE:HG22	1.89	0.54
2:2:362:G:N2	2:2:365:U:OP2	2.39	0.54
1:1:91:A:O2'	1:1:92:U:P	2.65	0.54
1:1:307:G:N1	1:1:310:A:OP2	2.38	0.54
1:1:653:U:O2'	55:1:3238:HOH:O	2.16	0.54
2:2:1405:G:N3	2:2:1518:A:O2'	2.41	0.54
18:P:90:ALA:N	18:P:110:LYS:O	2.40	0.54
32:e:33:THR:HG23	32:e:34:LYS:N	2.22	0.54
1:1:2307:G:N1	9:E:38:GLY:O	2.39	0.54
1:1:2671:G:N7	55:1:3269:HOH:O	2.33	0.54
2:2:1347:G:O2'	2:2:1348:U:O5'	2.25	0.54
2:2:1359:C:O2'	2:2:1361:G:N7	2.40	0.54
3:3:37:C:O2	17:O:100:HIS:NE2	2.41	0.54
13:K:90:ASN:OD1	13:K:91:SER:N	2.39	0.54
45:r:94:LEU:HD22	45:r:101:THR:HG21	1.89	0.54
1:1:306:U:H3	1:1:310:A:H62	1.55	0.54
1:1:2168:G:OP2	55:1:3241:HOH:O	2.18	0.54
10:F:23:ILE:HD13	10:F:71:LEU:HD21	1.90	0.54
1:1:310:A:HO2'	1:1:311:A:P	2.30	0.54
1:1:2655:G:O2'	1:1:2656:U:O5'	2.26	0.54
11:G:38:PRO:O	11:G:43:ASN:ND2	2.41	0.54
51:x:46:LEU:HD13	51:x:48:ILE:CG2	2.37	0.54
1:1:2652:C:H2'	1:1:2653:U:O4'	2.08	0.54
3:3:39:A:H2	3:3:46:A:H61	1.55	0.54
8:D:5:LEU:HD13	8:D:10:SER:O	2.08	0.54
10:F:93:TYR:OH	10:F:151:ARG:NH1	2.41	0.54
1:1:324:A:N6	1:1:339:U:O4'	2.41	0.54
1:1:974:G:O2'	1:1:989:G:N2	2.40	0.54
1:1:2194:U:HO2'	1:1:2195:U:P	2.31	0.54
5:5:59:A:O2'	5:5:60:U:O5'	2.19	0.54
17:O:51:ALA:HB3	17:O:78:VAL:CG2	2.38	0.54
1:1:489:G:N7	21:S:49:LYS:NZ	2.56	0.54
1:1:792:A:O2'	1:1:2440:C:N3	2.34	0.54
1:1:2051:A:N6	1:1:2614:A:O2'	2.38	0.54
1:1:2170:A:O2'	1:1:2171:A:O5'	2.26	0.54
35:h:35:ASP:OD1	35:h:58:ARG:NH2	2.40	0.54
1:1:244:A:OP2	32:e:7:ARG:NH2	2.34	0.53
1:1:249:C:O2'	14:L:63:LYS:NZ	2.28	0.53
1:1:2474:U:O2'	1:1:2475:C:OP1	2.26	0.53
1:1:2816:G:O3'	16:N:99:LYS:NZ	2.32	0.53
25:W:29:ALA:N	25:W:60:ASP:OD1	2.40	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:348:A:H2'	1:1:349:U:O4'	2.08	0.53
1:1:1020:A:H1'	1:1:1021:A:OP2	2.09	0.53
8:D:117:ARG:NH2	8:D:183:PHE:O	2.40	0.53
16:N:54:LEU:HD11	16:N:62:ASN:HD22	1.74	0.53
36:i:77:GLU:OE2	36:i:80:ARG:NH1	2.41	0.53
1:1:372:G:O2'	1:1:373:U:P	2.66	0.53
1:1:818:G:N1	1:1:1188:U:OP2	2.39	0.53
2:2:1318:A:H5''	51:x:4:LEU:HD13	1.90	0.53
1:1:2355:G:OP1	25:W:21:ARG:NH2	2.41	0.53
1:1:2419:U:OP2	32:e:32:LEU:HD22	2.09	0.53
2:2:1218:C:H2'	2:2:1219:A:C8	2.43	0.53
25:W:79:GLU:N	25:W:79:GLU:OE1	2.41	0.53
38:k:53:LYS:O	38:k:54:LEU:HD23	2.09	0.53
46:s:33:VAL:O	46:s:33:VAL:HG23	2.08	0.53
1:1:870:U:OP1	15:M:6:ARG:NH1	2.41	0.53
2:2:618:C:O2	48:u:14:ARG:NH1	2.41	0.53
21:S:59:GLU:OE1	21:S:66:ILE:HD11	2.07	0.53
21:S:77:ASP:N	21:S:77:ASP:OD1	2.39	0.53
1:1:140:C:O2'	1:1:141:G:N3	2.34	0.53
1:1:1012:U:OP2	19:Q:69:ARG:NH1	2.39	0.53
28:Z:28:LEU:HD21	28:Z:35:VAL:HG22	1.91	0.53
1:1:2177:C:H2'	1:1:2178:C:O4'	2.09	0.53
2:2:417:G:N2	2:2:540:G:O2'	2.40	0.53
5:5:23:C:H2'	5:5:24:G:C8	2.43	0.53
9:E:145:VAL:HG23	9:E:145:VAL:O	2.08	0.53
12:J:41:LYS:NZ	12:J:52:ASP:OD1	2.26	0.53
16:N:59:SER:HG	16:N:62:ASN:CG	2.13	0.53
21:S:29:VAL:CG1	21:S:55:ILE:HD11	2.39	0.53
44:q:33:VAL:C	44:q:55:VAL:HG23	2.34	0.53
1:1:25:U:C2'	1:1:26:G:O5'	2.56	0.53
1:1:1358:G:O2'	1:1:1359:A:O5'	2.26	0.53
1:1:1817:G:O5'	6:B:155:ARG:NH2	2.42	0.53
1:1:1904:G:H21	1:1:1928:A:H2	1.56	0.53
2:2:1073:U:O2	34:g:102:ASN:ND2	2.42	0.53
1:1:1769:U:O2'	1:1:1958:C:OP1	2.27	0.53
5:5:75:C:N4	26:X:20:ALA:HA	2.23	0.53
15:M:136:MET:O	24:V:77:VAL:HG12	2.09	0.53
44:q:30:LYS:O	44:q:81:LEU:HD12	2.08	0.53
2:2:380:G:N1	2:2:384:G:O6	2.42	0.53
2:2:1253:G:N2	2:2:1355:G:O3'	2.42	0.53
1:1:549:G:HO2'	1:1:550:C:P	2.33	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1951:U:O4	55:1:3240:HOH:O	2.17	0.52
10:F:21:GLN:NE2	10:F:37:ASN:O	2.42	0.52
1:1:371:A:N6	1:1:402:A:OP2	2.41	0.52
1:1:1312:U:O2	1:1:1339:G:N2	2.29	0.52
2:2:1149:C:OP1	41:n:10:ARG:NH2	2.42	0.52
7:C:88:GLU:OE1	7:C:88:GLU:N	2.42	0.52
10:F:148:ARG:NH2	10:F:166:GLU:OE2	2.40	0.52
49:v:6:THR:OG1	49:v:59:GLU:OE1	2.19	0.52
51:x:5:LYS:NZ	55:x:104:HOH:O	2.41	0.52
1:1:1138:G:N2	12:J:108:MET:HE2	2.24	0.52
1:1:2432:A:C5	5:5:75:C:C6	2.97	0.52
2:2:86:G:O2'	2:2:87:C:O5'	2.27	0.52
5:5:9:A:H1'	5:5:46:G:H1'	1.90	0.52
6:B:70:LYS:HD2	6:B:73:ILE:HD12	1.91	0.52
15:M:135:VAL:HG23	15:M:135:VAL:O	2.10	0.52
38:k:29:ILE:HD13	38:k:64:VAL:HG21	1.90	0.52
41:n:88:GLU:OE1	41:n:88:GLU:N	2.36	0.52
1:1:1715:G:HO2'	1:1:1716:U:P	2.32	0.52
1:1:2194:U:O2'	1:1:2195:U:P	2.67	0.52
2:2:652:U:O4	2:2:752:G:O2'	2.27	0.52
14:L:109:LYS:NZ	14:L:128:THR:HG22	2.25	0.52
24:V:75:GLN:HB2	24:V:92:VAL:HG23	1.91	0.52
35:h:39:ARG:HG3	35:h:54:ILE:HD11	1.91	0.52
1:1:6:A:O2'	12:J:132:HIS:ND1	2.39	0.52
1:1:619:G:OP2	1:1:620:G:N2	2.42	0.52
1:1:2580:U:H2'	1:1:2581:G:O4'	2.10	0.52
20:R:50:GLY:O	20:R:51:VAL:HG13	2.10	0.52
46:s:1:ALA:N	55:s:201:HOH:O	2.26	0.52
1:1:247:G:O2'	1:1:250:G:O6	2.27	0.52
1:1:2123:G:C2	1:1:2176:A:C6	2.98	0.52
41:n:14:SER:OG	41:n:67:LYS:O	2.28	0.52
1:1:2312:U:O2	9:E:36:ASN:ND2	2.43	0.52
2:2:477:C:H2'	2:2:478:A:C8	2.44	0.52
12:J:43:GLU:OE1	12:J:43:GLU:N	2.43	0.52
40:m:77:VAL:HG12	40:m:84:ILE:HD12	1.91	0.52
1:1:1695:G:N7	6:B:13:ARG:NH2	2.58	0.52
1:1:2180:U:H4'	5:5:17(A):U:H3	1.75	0.52
2:2:1182:G:H4'	2:2:1183:U:O5'	2.10	0.52
2:2:1229:A:H4'	5:5:29:G:O3'	2.09	0.52
2:2:1367:C:P	41:n:113:LYS:HZ1	2.32	0.52
27:Y:49:ASP:O	27:Y:53:VAL:HG23	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:Z:40:THR:HG23	28:Z:43:ILE:H	1.75	0.52
1:1:1328:A:HO2'	1:1:1329:U:P	2.32	0.52
1:1:1789:A:H2'	1:1:1790:C:O4'	2.09	0.52
1:1:2079:U:H2'	1:1:2080:A:O4'	2.09	0.52
1:1:2168:G:C5	5:5:56:C:C2	2.98	0.52
34:g:187:ASP:OD1	34:g:188:THR:N	2.42	0.52
1:1:776:G:N7	1:1:793:A:O2'	2.32	0.52
2:2:350:G:O2'	2:2:351:G:O4'	2.25	0.52
2:2:1329:A:O5'	45:r:25:GLY:N	2.43	0.52
28:Z:4:ILE:HD11	28:Z:56:VAL:CG2	2.40	0.52
1:1:28:A:O2'	19:Q:10:ARG:NH2	2.42	0.51
1:1:548:G:C2'	1:1:549:G:O4'	2.58	0.51
1:1:2422:C:C6	5:5:76:A:N6	2.78	0.51
1:1:2710:C:OP1	16:N:15:SER:OG	2.18	0.51
2:2:971:G:P	2:2:1231:G:H21	2.33	0.51
2:2:1056:U:OP1	35:h:162:ALA:N	2.40	0.51
2:2:1190:G:OP1	35:h:4:VAL:N	2.36	0.51
23:U:61:GLU:OE1	23:U:61:GLU:N	2.42	0.51
39:l:26:VAL:HG11	39:l:39:GLU:CG	2.39	0.51
1:1:1248:G:OP1	19:Q:1:ALA:N	2.31	0.51
1:1:2898:U:O2'	12:J:134:ALA:O	2.25	0.51
2:2:580:C:H2'	2:2:581:G:O4'	2.10	0.51
25:W:64:LYS:NZ	55:W:101:HOH:O	2.43	0.51
38:k:61:LEU:HD12	38:k:62:MET:N	2.24	0.51
5:5:15:G:N2	5:5:48:C:N3	2.58	0.51
24:V:42:LEU:CD1	24:V:47:VAL:HG21	2.39	0.51
35:h:69:THR:OG1	35:h:70:ALA:N	2.42	0.51
38:k:64:VAL:HG22	38:k:65:GLU:N	2.25	0.51
1:1:2181:U:HO2'	1:1:2182:U:C5'	2.17	0.51
2:2:404:G:OP2	36:i:114:ARG:NH2	2.40	0.51
2:2:1308:U:OP1	45:r:97:ARG:N	2.41	0.51
39:l:22:LEU:O	39:l:26:VAL:HG23	2.10	0.51
1:1:96:C:OP1	27:Y:39:GLN:NE2	2.41	0.51
1:1:388:G:O6	1:1:390:U:O2'	2.16	0.51
1:1:1141:U:P	12:J:65:THR:HG21	2.50	0.51
1:1:1325:U:OP2	1:1:1616:A:O2'	2.14	0.51
1:1:2416:C:C2	1:1:2417:C:C5	2.99	0.51
9:E:109:ARG:NH1	9:E:135:ILE:O	2.43	0.51
29:b:39:ARG:O	29:b:41:HIS:ND1	2.42	0.51
1:1:587:C:OP2	14:L:21:ARG:NH2	2.40	0.51
1:1:1022:G:H1'	1:1:1023:U:OP2	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:66:A:H5''	3:3:67:G:OP1	2.11	0.51
1:1:1141:U:H4'	1:1:1142:A:O4'	2.11	0.51
1:1:2283:C:O5'	1:1:2389:G:O2'	2.26	0.51
1:1:2845:U:O3'	18:P:52:ARG:NH1	2.44	0.51
2:2:1144:G:HO2'	2:2:1145:A:C4'	2.24	0.51
44:q:33:VAL:O	44:q:55:VAL:HG23	2.11	0.51
44:q:86:ARG:O	44:q:96:HIS:NE2	2.43	0.51
1:1:1298:C:H2'	1:1:1299:G:O4'	2.11	0.51
1:1:1353:A:N6	1:1:1379:U:O4	2.41	0.51
1:1:1542:U:H2'	1:1:1543:G:O4'	2.11	0.51
8:D:118:LEU:HD12	8:D:186:VAL:O	2.10	0.51
9:E:30:VAL:HG11	9:E:95:MET:HE1	1.92	0.51
15:M:57:VAL:HG23	15:M:57:VAL:O	2.11	0.51
39:l:49:LEU:HD22	39:l:123:LEU:HB3	1.93	0.51
1:1:453:A:N3	1:1:457:A:O2'	2.44	0.51
1:1:810:U:C4	14:L:30:THR:HG22	2.46	0.51
1:1:2159:G:H2'	1:1:2160:C:C6	2.46	0.51
1:1:2392:A:H2	14:L:55:MET:HE3	1.76	0.51
1:1:2529:G:O2'	10:F:174:LYS:NZ	2.24	0.51
1:1:2899:A:N3	55:1:3274:HOH:O	2.35	0.51
15:M:47:GLU:OE2	15:M:51:ARG:NE	2.38	0.51
36:i:103:ARG:HB3	36:i:170:LEU:HD21	1.92	0.51
1:1:306:U:H2'	1:1:307:G:O4'	2.11	0.50
1:1:858:G:H3'	1:1:859:G:C5	2.46	0.50
1:1:1869:G:H3'	1:1:1870:C:C5'	2.41	0.50
1:1:2123:G:N3	1:1:2176:A:C6	2.80	0.50
35:h:10:ARG:NE	35:h:179:ALA:O	2.44	0.50
37:j:28:ARG:NH1	55:j:204:HOH:O	2.42	0.50
49:v:49:ASN:O	49:v:51:GLU:N	2.42	0.50
2:2:122:G:O6	2:2:239:U:O2	2.30	0.50
2:2:925:G:N2	2:2:1503:A:OP1	2.44	0.50
2:2:1238:A:H2	2:2:1241:G:H21	1.58	0.50
2:2:1324:A:H2'	2:2:1325:C:O4'	2.11	0.50
41:n:20:ILE:HG13	41:n:60:LEU:HD13	1.92	0.50
51:x:10:ILE:HD13	51:x:40:PHE:CE2	2.45	0.50
1:1:428:A:C2'	1:1:429:A:O5'	2.60	0.50
1:1:2523:G:O2'	1:1:2764:A:O2'	2.20	0.50
1:1:2821:A:O2'	1:1:2826:A:N1	2.45	0.50
2:2:673:A:H2'	2:2:674:G:C8	2.46	0.50
38:k:36:ILE:HD11	38:k:62:MET:O	2.10	0.50
41:n:113:LYS:HA	41:n:120:ALA:HB2	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:517:C:OP1	29:b:12:ARG:NH2	2.44	0.50
1:1:2655:G:O2'	1:1:2656:U:P	2.69	0.50
1:1:2683:C:C2	1:1:2684:U:C5	3.00	0.50
2:2:1345:U:OP1	41:n:121:ARG:NH1	2.44	0.50
10:F:29:ASN:ND2	10:F:77:GLY:O	2.39	0.50
51:x:46:LEU:HD13	51:x:48:ILE:HG23	1.93	0.50
51:x:57:VAL:HG13	51:x:57:VAL:O	2.10	0.50
1:1:68:G:N2	1:1:74:A:O5'	2.45	0.50
2:2:1295:U:O2'	2:2:1302:C:N4	2.44	0.50
13:K:86:LEU:C	13:K:87:LEU:HD23	2.35	0.50
14:L:85:VAL:CG1	14:L:94:THR:HG22	2.42	0.50
25:W:55:LEU:CD1	25:W:76:ILE:HD12	2.41	0.50
1:1:116:C:O2'	1:1:126:A:N3	2.39	0.50
1:1:2824:C:OP2	1:1:2825:G:N2	2.45	0.50
2:2:202:G:N2	2:2:466:A:H61	2.07	0.50
2:2:212:G:H2'	2:2:213:G:O4'	2.12	0.50
43:p:87:GLY:H	43:p:113:THR:HG22	1.76	0.50
1:1:631:A:N3	1:1:2415:G:O2'	2.44	0.50
2:2:393:A:C2	2:2:394:G:C8	3.00	0.50
2:2:941:G:OP1	55:2:1726:HOH:O	2.20	0.50
2:2:1201:A:H1'	2:2:1202:U:OP2	2.12	0.50
11:G:14:SER:N	11:G:17:ASP:OD2	2.45	0.50
12:J:23:LYS:NZ	12:J:142:ILE:OXT	2.34	0.50
28:Z:44:ARG:HA	28:Z:47:ILE:HD12	1.94	0.50
1:1:2135:A:H61	1:1:2156:G:C2'	2.23	0.50
2:2:526:C:OP1	44:q:88:LYS:NZ	2.38	0.50
49:v:67:SER:OG	49:v:70:LYS:N	2.45	0.50
1:1:2013:A:N6	1:1:2014:A:N1	2.60	0.50
9:E:142:TYR:O	9:E:145:VAL:HG22	2.11	0.50
20:R:11:GLN:HG3	20:R:39:LEU:HD22	1.93	0.50
35:h:18:ASN:O	35:h:55:VAL:HG13	2.12	0.50
52:y:34:VAL:HG22	52:y:49:ALA:CB	2.42	0.50
1:1:320:A:H2'	8:D:131:THR:HG21	1.93	0.49
1:1:2673:G:C2	1:1:2674:G:C8	3.00	0.49
2:2:1157:A:OP1	2:2:1158:C:N4	2.45	0.49
35:h:72:PRO:HB3	35:h:102:ILE:HD12	1.94	0.49
50:w:21:ASP:OD1	50:w:23:LYS:NZ	2.44	0.49
51:x:17:LYS:HB3	51:x:30:LEU:HD23	1.94	0.49
2:2:841:C:O2'	2:2:843:U:O4'	2.30	0.49
13:K:22:ILE:HD11	13:K:40:LYS:HG3	1.93	0.49
14:L:128:THR:OG1	14:L:129:LYS:N	2.44	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:h:83:VAL:O	35:h:100:ILE:HD11	2.11	0.49
36:i:28:ASP:O	36:i:30:LYS:NZ	2.44	0.49
1:1:247:G:OP2	1:1:249:C:N4	2.45	0.49
1:1:549:G:H2'	1:1:550:C:O4'	2.11	0.49
1:1:716:A:OP2	47:t:88:ARG:NH2	2.45	0.49
1:1:980:A:O2'	1:1:981:A:O4'	2.28	0.49
1:1:1275:A:N1	1:1:1295:C:O2'	2.30	0.49
7:C:151:THR:HB	7:C:152:PRO:HD3	1.94	0.49
21:S:17:VAL:HG12	21:S:76:VAL:HG21	1.95	0.49
1:1:192:C:O2'	1:1:802:A:N3	2.38	0.49
1:1:898:C:O2'	1:1:899:A:OP1	2.26	0.49
12:J:49:ASP:OD1	12:J:121:LYS:NZ	2.45	0.49
39:l:41:ILE:HD13	39:l:115:MET:HB3	1.95	0.49
41:n:91:GLU:OE2	41:n:94:ARG:NH1	2.46	0.49
42:o:57:VAL:O	42:o:58:ASN:ND2	2.44	0.49
51:x:10:ILE:HD13	51:x:40:PHE:HE2	1.78	0.49
1:1:685:A:O2'	1:1:773:U:O4	2.10	0.49
1:1:2013:A:C6	1:1:2014:A:C2	3.00	0.49
1:1:2168:G:N2	1:1:2169:A:N7	2.57	0.49
2:2:692:U:O2'	2:2:694:A:N7	2.41	0.49
41:n:20:ILE:CG1	41:n:60:LEU:HD13	2.42	0.49
1:1:704:G:O2'	1:1:705:A:O5'	2.30	0.49
1:1:1050:A:N6	1:1:1051:G:O6	2.46	0.49
1:1:2091:C:OP2	1:1:2092:U:O2'	2.25	0.49
1:1:2202:U:O2'	1:1:2204:G:OP1	2.23	0.49
2:2:1367:C:OP2	41:n:113:LYS:NZ	2.29	0.49
10:F:97:VAL:HG23	10:F:124:CYS:SG	2.52	0.49
13:K:43:ILE:HD11	13:K:58:LEU:HD21	1.95	0.49
1:1:1349:C:C2	1:1:1350:C:C5	3.00	0.49
1:1:1353:A:OP2	1:1:1377:G:N1	2.44	0.49
1:1:2627:G:N2	1:1:2777:G:N3	2.60	0.49
2:2:797:C:OP1	43:p:126:ARG:N	2.46	0.49
2:2:843:U:O2'	2:2:844:G:OP2	2.28	0.49
2:2:1304:G:N2	2:2:1334:G:C6	2.81	0.49
1:1:666:A:C2'	1:1:667:U:O5'	2.60	0.49
1:1:1124:G:H2'	1:1:1125:G:O4'	2.13	0.49
1:1:2576:G:O2'	1:1:2579:C:OP2	2.24	0.49
1:1:2867:G:O2'	1:1:2868:A:P	2.70	0.49
3:3:42:C:OP2	9:E:63:LYS:NZ	2.23	0.49
34:g:18:GLN:NE2	55:g:305:HOH:O	2.35	0.49
1:1:310:A:OP1	23:U:18:LYS:NZ	2.41	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:898:C:HO2'	1:1:899:A:P	2.36	0.49
1:1:1328:A:O2'	1:1:1329:U:P	2.70	0.49
17:O:50:ALA:O	17:O:81:ARG:NH2	2.46	0.49
35:h:41:TYR:OH	35:h:89:VAL:HG21	2.12	0.49
36:i:169:TRP:NE1	36:i:170:LEU:HD23	2.28	0.49
46:s:39:GLU:O	46:s:43:ASN:ND2	2.46	0.49
1:1:3:U:N3	1:1:2901:C:O2	2.45	0.48
1:1:548:G:O2'	1:1:549:G:O4'	2.31	0.48
1:1:1779:U:O2	1:1:1783:A:N6	2.46	0.48
1:1:2744:G:N2	10:F:142:GLN:OE1	2.46	0.48
3:3:13:G:N1	3:3:69:G:O2'	2.38	0.48
1:1:25:U:H2'	1:1:26:G:O5'	2.13	0.48
1:1:321:U:H5''	8:D:131:THR:HG23	1.93	0.48
1:1:784:G:O6	1:1:2072:C:O2'	2.31	0.48
1:1:2687:U:H2'	1:1:2688:G:O4'	2.12	0.48
2:2:1268:G:O2'	2:2:1269:A:O4'	2.24	0.48
12:J:76:HIS:O	12:J:84:ILE:HD12	2.13	0.48
36:i:113:ALA:O	36:i:117:VAL:HG23	2.13	0.48
1:1:445:C:H2'	1:1:446:G:O4'	2.13	0.48
1:1:582:A:O3'	19:Q:10:ARG:NH1	2.38	0.48
1:1:2838:G:C4	1:1:2839:G:C8	3.01	0.48
2:2:1418:A:N6	2:2:1482:G:O2'	2.40	0.48
13:K:21:CYS:HA	13:K:41:ILE:HG22	1.95	0.48
21:S:29:VAL:HG11	21:S:55:ILE:HD11	1.94	0.48
52:y:34:VAL:HG22	52:y:49:ALA:HB1	1.96	0.48
1:1:891:G:O2'	1:1:892:A:O4'	2.31	0.48
1:1:1288:G:OP1	1:1:1289:C:N4	2.45	0.48
2:2:641:U:H5''	2:2:642:A:OP1	2.13	0.48
2:2:840:C:O2	55:2:1721:HOH:O	2.18	0.48
2:2:890:G:O2'	2:2:891:U:P	2.72	0.48
30:c:42:VAL:O	30:c:42:VAL:HG12	2.13	0.48
36:i:49:ASP:OD1	37:j:111:ARG:NH2	2.44	0.48
36:i:158:LEU:HD13	36:i:177:MET:HE1	1.94	0.48
45:r:94:LEU:HD22	45:r:101:THR:CG2	2.43	0.48
1:1:1386:C:H2'	1:1:1387:A:H8	1.78	0.48
2:2:522:C:H41	44:q:50:ARG:NH1	2.12	0.48
2:2:861:G:O2'	2:2:874:G:O2'	2.27	0.48
5:5:75:C:H42	26:X:20:ALA:HA	1.77	0.48
7:C:116:LYS:HD2	16:N:1:MET:HE1	1.96	0.48
10:F:10:VAL:O	10:F:10:VAL:HG13	2.14	0.48
35:h:133:MET:HE3	35:h:167:TYR:CD1	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:l:92:PRO:O	39:l:96:ASN:ND2	2.47	0.48
1:1:971:G:OP1	1:1:974:G:O2'	2.27	0.48
1:1:1348:C:C5	1:1:1349:C:C5	3.01	0.48
1:1:1496:A:N3	1:1:1577:C:O2'	2.29	0.48
1:1:1782:U:O2	1:1:2608:G:O2'	2.25	0.48
2:2:553:A:O2'	44:q:26:ALA:O	2.32	0.48
2:2:936:C:N3	2:2:937:A:C8	2.82	0.48
9:E:102:LEU:HD13	9:E:137:PHE:CZ	2.49	0.48
9:E:122:ASP:OD1	9:E:122:ASP:N	2.44	0.48
19:Q:99:VAL:O	19:Q:102:LYS:NZ	2.33	0.48
1:1:513:A:O2'	1:1:1217:U:OP1	2.32	0.48
1:1:867:C:C2	1:1:868:U:C5	3.02	0.48
1:1:1038:G:H2'	1:1:1039:A:C8	2.49	0.48
9:E:150:GLY:C	9:E:151:LEU:HD12	2.38	0.48
9:E:158:THR:O	9:E:158:THR:HG22	2.13	0.48
37:j:11:GLN:HG2	37:j:116:VAL:HG12	1.95	0.48
1:1:575:A:OP2	1:1:2499:C:O2'	2.32	0.48
1:1:1681:G:N2	1:1:1763:G:OP2	2.38	0.48
2:2:339:C:O2	2:2:351:G:N2	2.41	0.48
2:2:411:A:H62	2:2:413:G:H21	1.62	0.48
9:E:37:MET:HE2	9:E:151:LEU:HG	1.95	0.48
17:O:18:LEU:HD11	17:O:91:SER:CB	2.44	0.48
48:u:78:VAL:O	48:u:80:LYS:N	2.43	0.48
1:1:2746:U:O2	1:1:2758:A:N6	2.44	0.48
2:2:1030:U:O4	2:2:1033:G:N2	2.47	0.48
2:2:1140:C:O3'	55:2:1727:HOH:O	2.20	0.48
6:B:140:VAL:HG12	6:B:191:LEU:HD23	1.96	0.48
1:1:279:A:H61	1:1:361:G:C2'	2.27	0.48
1:1:554:U:H2'	1:1:555:G:O4'	2.14	0.48
1:1:2184:A:H2'	1:1:2185:U:C6	2.49	0.48
1:1:2682:A:C2	1:1:2683:C:C6	3.02	0.48
5:5:28:C:C2	5:5:43:G:N2	2.82	0.48
13:K:65:THR:OG1	13:K:68:GLY:N	2.47	0.48
39:l:68:VAL:HG11	39:l:133:ALA:HB3	1.96	0.48
42:o:65:TYR:HB3	46:s:96:LEU:HD11	1.96	0.48
1:1:1342:A:N7	1:1:1602:U:O2	2.47	0.47
1:1:1969:A:H2'	1:1:1972:G:H21	1.78	0.47
1:1:2808:G:HO2'	1:1:2809:A:P	2.35	0.47
2:2:375:U:H2'	2:2:376:G:O4'	2.15	0.47
2:2:1077:G:N2	2:2:1080:A:OP2	2.40	0.47
2:2:1350:A:O2'	39:l:32:ASP:OD1	2.18	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:44:G:O4'	3:3:46:A:N6	2.47	0.47
8:D:118:LEU:C	8:D:119:ILE:HD13	2.39	0.47
23:U:96:LYS:O	23:U:97:SER:OG	2.30	0.47
1:1:1651:G:OP1	16:N:40:LYS:NZ	2.46	0.47
2:2:517:G:N2	2:2:530:G:OP1	2.47	0.47
2:2:1347:G:O2'	2:2:1348:U:P	2.72	0.47
10:F:37:ASN:OD1	10:F:38:ASP:N	2.46	0.47
41:n:61:ASP:C	41:n:62:LEU:HD12	2.40	0.47
1:1:1287:A:N1	1:1:1649:G:H4'	2.29	0.47
1:1:1905:C:C4'	1:1:1929:G:H21	2.27	0.47
2:2:342:C:H2'	2:2:343:U:O4'	2.14	0.47
2:2:390:U:O2'	48:u:28:ARG:NH2	2.47	0.47
5:5:4:C:HO2'	5:5:5:A:H8	1.62	0.47
23:U:51:LEU:HD12	23:U:52:ASN:N	2.30	0.47
36:i:87:GLU:OE1	36:i:87:GLU:N	2.47	0.47
1:1:378:C:N4	55:1:3297:HOH:O	2.44	0.47
1:1:458:G:O2'	1:1:459:U:O5'	2.31	0.47
1:1:493:G:H2'	1:1:494:G:O4'	2.15	0.47
1:1:2281:A:O2'	1:1:2282:G:O4'	2.31	0.47
2:2:907:A:H2'	2:2:908:A:O4'	2.14	0.47
2:2:938:A:O2'	39:l:94:ARG:NH2	2.48	0.47
26:X:35:HIS:CG	26:X:55:MET:HE1	2.50	0.47
31:d:10:LEU:HD11	31:d:14:ARG:NE	2.29	0.47
35:h:85:LYS:O	35:h:89:VAL:HG22	2.14	0.47
38:k:64:VAL:HG22	38:k:65:GLU:H	1.78	0.47
1:1:490:C:O2'	1:1:491:G:P	2.72	0.47
1:1:549:G:H2'	1:1:550:C:O5'	2.15	0.47
1:1:1218:G:N1	1:1:1232:G:N7	2.62	0.47
1:1:2181:U:O2'	1:1:2182:U:O4'	2.31	0.47
1:1:2790:U:O5'	1:1:2893:A:N6	2.45	0.47
2:2:1013:G:N2	2:2:1016:A:OP2	2.44	0.47
2:2:1109:C:OP2	35:h:175:HIS:ND1	2.48	0.47
2:2:1464:U:C2	2:2:1465:A:C8	3.03	0.47
5:5:18:G:N3	5:5:58:A:C2	2.83	0.47
19:Q:68:ALA:HB1	19:Q:73:ILE:HG23	1.96	0.47
24:V:43:ASP:O	24:V:47:VAL:HG23	2.13	0.47
34:g:75:ALA:HB2	34:g:209:VAL:HG21	1.96	0.47
35:h:120:THR:HG23	35:h:188:ALA:CB	2.44	0.47
43:p:35:ASP:OD2	43:p:39:ASN:ND2	2.47	0.47
1:1:1031:G:H21	33:f:23:ILE:HD12	1.80	0.47
1:1:1215:G:O6	1:1:1235:G:N2	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1299:G:N1	1:1:1640:A:OP2	2.42	0.47
1:1:1394:U:O2	22:T:19:LYS:NZ	2.46	0.47
2:2:338:A:OP1	13:K:13:ASN:ND2	2.44	0.47
2:2:1347:G:HO2'	2:2:1348:U:P	2.37	0.47
5:5:61:C:C2	5:5:62:C:C5	3.02	0.47
46:s:11:LYS:O	46:s:12:ARG:C	2.56	0.47
47:t:25:GLU:OE1	47:t:25:GLU:N	2.40	0.47
1:1:224:U:O4	1:1:232:G:N2	2.48	0.47
1:1:395:U:H2'	1:1:396:G:C8	2.49	0.47
1:1:458:G:HO2'	1:1:459:U:P	2.38	0.47
1:1:724:U:C2'	1:1:725:G:O5'	2.62	0.47
1:1:989:G:OP2	28:Z:11:SER:OG	2.29	0.47
1:1:2079:U:O2'	26:X:22:ASN:OD1	2.33	0.47
1:1:2199:A:N6	1:1:2224:G:O2'	2.44	0.47
1:1:2814:A:C5	1:1:2815:C:C5	3.03	0.47
2:2:33:A:O2'	44:q:29:GLN:NE2	2.48	0.47
2:2:149:A:N1	2:2:174:A:N1	2.63	0.47
2:2:339:C:OP1	13:K:97:THR:HG21	2.15	0.47
2:2:776:G:N2	2:2:802:A:OP2	2.46	0.47
2:2:818:G:N1	2:2:820:U:O2'	2.46	0.47
2:2:1006:G:C6	2:2:1023:U:O2	2.63	0.47
2:2:1045:C:H2'	2:2:1046:A:O4'	2.14	0.47
2:2:1080:A:P	37:j:51:LYS:HZ2	2.37	0.47
2:2:1128:C:H1'	2:2:1147:C:H42	1.80	0.47
3:3:14:U:O3'	3:3:107:G:O2'	2.33	0.47
10:F:120:ILE:HD11	10:F:139:VAL:HG12	1.96	0.47
18:P:113:LEU:HD12	18:P:113:LEU:O	2.15	0.47
21:S:4:ILE:HG22	21:S:106:VAL:HG22	1.96	0.47
36:i:63:ILE:O	36:i:110:ARG:NE	2.48	0.47
36:i:117:VAL:HG22	36:i:122:ILE:CG1	2.45	0.47
36:i:146:GLU:OE1	36:i:146:GLU:N	2.48	0.47
41:n:24:ASN:O	41:n:61:ASP:N	2.48	0.47
42:o:42:LEU:HD11	42:o:73:LEU:HG	1.97	0.47
45:r:48:SER:HB2	45:r:51:GLN:OE1	2.14	0.47
47:t:55:LEU:O	47:t:59:VAL:HG23	2.14	0.47
1:1:764:A:H5''	6:B:208:GLY:HA2	1.96	0.47
1:1:1048:A:H1'	1:1:1112:G:H21	1.80	0.47
2:2:718:A:N7	43:p:117:HIS:ND1	2.63	0.47
2:2:1042:A:H2'	2:2:1043:G:O4'	2.14	0.47
2:2:1179:A:H5''	41:n:98:ARG:HH12	1.80	0.47
2:2:1254:A:OP2	42:o:45:ARG:NE	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:D:149:ILE:HD11	8:D:171:ASP:O	2.14	0.47
17:O:106:LEU:C	17:O:106:LEU:HD23	2.40	0.47
47:t:86:LEU:HD12	47:t:87:ARG:N	2.30	0.47
1:1:1942:C:OP2	1:1:1943:U:O2'	2.17	0.47
1:1:2090:A:N6	1:1:2230:G:O6	2.48	0.47
2:2:54:C:O2'	2:2:55:A:O5'	2.33	0.47
2:2:1304:G:O3'	2:2:1305:G:O4'	2.33	0.47
10:F:16:VAL:CG1	10:F:18:ILE:HD11	2.45	0.47
45:r:3:ILE:HG22	45:r:4:ALA:H	1.80	0.47
1:1:421:C:O2'	1:1:422:A:O5'	2.28	0.47
1:1:548:G:HO2'	1:1:549:G:P	2.37	0.47
1:1:902:C:H3'	1:1:903:C:C6	2.50	0.47
1:1:2514:U:H5''	12:J:81:ILE:HD11	1.96	0.47
1:1:2801:G:N1	1:1:2802:G:C6	2.83	0.47
2:2:521:G:OP2	44:q:51:LYS:NZ	2.48	0.47
2:2:1317:C:O2	51:x:36:ARG:NH2	2.44	0.47
2:2:1350:A:N7	41:n:119:LYS:NZ	2.56	0.47
9:E:11:VAL:HG13	9:E:171:ALA:CB	2.43	0.47
33:f:1:MET:HE2	33:f:36:ARG:CB	2.44	0.47
35:h:4:VAL:HG22	35:h:5:HIS:N	2.30	0.47
36:i:124:VAL:HG13	36:i:124:VAL:O	2.14	0.47
45:r:13:HIS:ND1	45:r:41:ASP:O	2.47	0.47
1:1:1186:G:H2'	1:1:1187:G:O4'	2.15	0.46
1:1:2545:G:H2'	1:1:2546:U:O4'	2.14	0.46
2:2:119:A:OP2	2:2:288:A:N6	2.42	0.46
2:2:892:A:C2	2:2:907:A:C2	3.02	0.46
3:3:23:G:H1	3:3:60:C:H42	1.62	0.46
8:D:4:VAL:HG12	8:D:5:LEU:N	2.30	0.46
27:Y:42:LEU:O	27:Y:46:VAL:HG23	2.15	0.46
34:g:132:GLU:OE2	34:g:136:ARG:NH1	2.42	0.46
43:p:66:ALA:HB1	43:p:99:LEU:HD12	1.96	0.46
2:2:1399:C:H1'	2:2:1400:C:OP2	2.14	0.46
2:2:1486:G:H2'	2:2:1487:G:O4'	2.15	0.46
15:M:66:ARG:NH1	15:M:104:GLU:OE2	2.40	0.46
19:Q:93:ILE:HG21	20:R:4:VAL:HG11	1.97	0.46
34:g:176:ASN:OD1	34:g:182:VAL:HG21	2.16	0.46
40:m:45:ILE:HG22	40:m:46:GLU:N	2.31	0.46
41:n:118:ARG:N	41:n:122:ARG:O	2.46	0.46
1:1:421:C:O2'	1:1:422:A:P	2.72	0.46
1:1:1083:U:C2	1:1:1085:A:H5''	2.50	0.46
1:1:2742:G:OP2	33:f:24:ARG:NH1	2.45	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2743:U:O2'	10:F:152:ARG:NH1	2.49	0.46
2:2:254:G:OP1	49:v:68:LYS:N	2.49	0.46
2:2:408:A:O2'	36:i:24:VAL:HG23	2.15	0.46
2:2:1228:C:H2'	2:2:1229:A:H8	1.81	0.46
2:2:1315:U:O4	2:2:1319:A:N7	2.48	0.46
35:h:185:THR:HG23	35:h:197:VAL:O	2.15	0.46
46:s:87:ALA:HB3	46:s:93:ILE:HD11	1.97	0.46
1:1:1111:A:O2'	1:1:1112:G:P	2.71	0.46
2:2:65:A:C4	2:2:381:C:N4	2.83	0.46
2:2:523:A:H61	44:q:89:0TD:H6	1.80	0.46
2:2:623:C:C2	2:2:624:C:C5	3.04	0.46
8:D:4:VAL:C	8:D:5:LEU:HD12	2.40	0.46
34:g:19:THR:OG1	34:g:20:ARG:N	2.48	0.46
35:h:184:ASN:OD1	35:h:185:THR:N	2.49	0.46
40:m:105:THR:N	40:m:108:GLY:O	2.39	0.46
51:x:29:PRO:HA	51:x:47:THR:HG23	1.97	0.46
1:1:859:G:O2'	1:1:860:U:P	2.73	0.46
1:1:976:G:HO2'	1:1:1155:A:HO2'	1.61	0.46
1:1:1025:G:N2	1:1:1139:G:O6	2.46	0.46
1:1:1605:C:H2'	1:1:1606:C:O4'	2.15	0.46
1:1:1791:A:N1	1:1:1829:A:H4'	2.30	0.46
1:1:2725:A:H2'	1:1:2726:A:H2'	1.97	0.46
2:2:803:G:H2'	2:2:804:U:O4'	2.16	0.46
2:2:1315:U:H3	2:2:1319:A:H62	1.64	0.46
7:C:46:ARG:NH2	7:C:88:GLU:O	2.49	0.46
8:D:16:GLU:O	8:D:20:GLY:C	2.59	0.46
8:D:157:LEU:HG	8:D:169:VAL:HG21	1.96	0.46
9:E:45:ASP:CB	9:E:48:LEU:HB3	2.46	0.46
34:g:99:MET:HA	34:g:106:VAL:HG21	1.97	0.46
1:1:29:U:C2	1:1:30:G:C8	3.04	0.46
1:1:672:C:OP2	14:L:42:SER:OG	2.21	0.46
1:1:1233:C:C2	1:1:1234:U:C5	3.03	0.46
1:1:1344:U:H3'	1:1:1345:C:H5'	1.96	0.46
1:1:2120:G:H2'	1:1:2121:G:C8	2.50	0.46
1:1:2414:G:C2	1:1:2415:G:C8	3.04	0.46
2:2:236:A:OP1	49:v:43:LEU:HD21	2.15	0.46
2:2:846:G:N2	55:2:1721:HOH:O	2.47	0.46
2:2:1291:U:H2'	2:2:1292:G:H8	1.80	0.46
14:L:29:LYS:C	14:L:30:THR:HG23	2.40	0.46
46:s:66:GLN:OE1	46:s:79:LEU:HD22	2.15	0.46
1:1:464:U:O2'	31:d:12:ARG:NH2	2.44	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1912:A:O2'	2:2:1494:G:O2'	2.05	0.46
1:1:2223:G:O3'	6:B:264:LYS:NZ	2.44	0.46
2:2:322:C:H42	2:2:329:A:H62	1.64	0.46
2:2:408:A:N1	2:2:435:A:N6	2.64	0.46
2:2:1041:G:H2'	2:2:1042:A:C8	2.50	0.46
2:2:1124:G:O6	2:2:1150:A:N6	2.49	0.46
7:C:15:PHE:N	18:P:11:GLN:OE1	2.47	0.46
8:D:189:THR:HG22	8:D:190:ALA:N	2.30	0.46
13:K:97:THR:O	13:K:118:LEU:HD13	2.16	0.46
17:O:106:LEU:HD23	17:O:106:LEU:O	2.15	0.46
18:P:12:MET:HG3	18:P:54:LEU:HD13	1.97	0.46
34:g:205:ALA:HB3	34:g:208:ALA:HB3	1.97	0.46
40:m:50:VAL:HG22	40:m:50:VAL:O	2.16	0.46
40:m:74:ILE:O	40:m:74:ILE:HG23	2.16	0.46
42:o:54:SER:O	46:s:81:ARG:NH1	2.48	0.46
1:1:729:G:O2'	1:1:763:G:H4'	2.16	0.46
1:1:858:G:HO2'	1:1:859:G:P	2.38	0.46
1:1:1799:G:O6	6:B:177:SER:N	2.49	0.46
2:2:628:G:H2'	2:2:629:A:O4'	2.16	0.46
19:Q:93:ILE:HG22	19:Q:97:ILE:CD1	2.45	0.46
1:1:310:A:O2'	1:1:311:A:H2'	2.16	0.46
1:1:781:A:O2'	1:1:1788:C:O2'	2.30	0.46
2:2:407:U:O4'	36:i:115:GLN:NE2	2.49	0.46
2:2:1071:C:H2'	2:2:1072:G:H8	1.81	0.46
7:C:12:THR:HG22	18:P:8:GLU:OE2	2.15	0.46
9:E:59:ILE:HG23	9:E:98:PHE:CE1	2.51	0.46
28:Z:23:LEU:HD11	28:Z:53:MET:HE1	1.96	0.46
40:m:10:LEU:HD22	40:m:74:ILE:HD11	1.97	0.46
1:1:26:G:O2'	1:1:27:G:O4'	2.33	0.46
1:1:83:A:N6	1:1:101:A:N7	2.64	0.46
1:1:1054:A:C6	1:1:1106:G:C6	3.04	0.46
1:1:1062:G:N2	1:1:1088:A:N7	2.63	0.46
2:2:244:U:H4'	2:2:245:U:H5''	1.98	0.46
2:2:1166:G:N1	2:2:1169:A:OP2	2.49	0.46
35:h:72:PRO:CB	35:h:102:ILE:HD12	2.45	0.46
37:j:149:PRO:HA	37:j:152:VAL:HG22	1.98	0.46
39:l:38:ALA:O	39:l:42:VAL:HG23	2.16	0.46
52:y:23:ARG:O	52:y:26:MET:HG3	2.17	0.46
1:1:1271:G:N2	1:1:1617:C:O4'	2.49	0.45
1:1:2530:A:H61	10:F:155:PRO:HG3	1.81	0.45
2:2:946:A:O2'	2:2:1333:A:N3	2.38	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1128:C:H2'	2:2:1129:C:O4'	2.16	0.45
11:G:40:THR:HG23	11:G:40:THR:O	2.16	0.45
14:L:76:GLU:HB2	14:L:111:ILE:HD13	1.97	0.45
26:X:64:ASP:OD1	26:X:65:THR:N	2.49	0.45
34:g:163:ILE:HD11	34:g:209:VAL:HG11	1.98	0.45
42:o:65:TYR:CB	46:s:96:LEU:HD11	2.46	0.45
1:1:429:A:O2'	1:1:430:A:O4'	2.34	0.45
1:1:546:U:HO2'	1:1:547:A:P	2.35	0.45
1:1:579:G:C6	1:1:1262:A:N6	2.84	0.45
1:1:600:G:OP1	8:D:24:ASN:ND2	2.49	0.45
1:1:878:A:C8	1:1:879:G:C8	3.04	0.45
1:1:1999:C:C2'	1:1:2687:U:HO2'	2.29	0.45
2:2:591:U:OP1	40:m:30:LYS:NZ	2.47	0.45
2:2:1057:G:H2'	2:2:1058:G:O4'	2.16	0.45
6:B:152:GLN:O	6:B:153:LEU:HD23	2.16	0.45
8:D:126:VAL:HG22	8:D:127:GLU:H	1.81	0.45
14:L:127:VAL:HG13	14:L:131:ALA:HB3	1.98	0.45
30:c:46:VAL:HG12	30:c:47:ILE:N	2.31	0.45
49:v:74:LEU:HD12	49:v:75:VAL:N	2.30	0.45
1:1:630:G:N2	1:1:633:A:OP2	2.43	0.45
1:1:1418:G:C2	1:1:1581:G:O6	2.69	0.45
1:1:1857:G:H1'	1:1:1885:A:H61	1.81	0.45
1:1:2260:C:C2	1:1:2261:C:C5	3.05	0.45
2:2:452:A:H2'	2:2:453:G:O4'	2.16	0.45
15:M:40:ARG:HD3	15:M:93:VAL:HG21	1.98	0.45
42:o:10:LEU:C	42:o:10:LEU:HD12	2.40	0.45
1:1:1805:A:N6	1:1:1813:G:O6	2.49	0.45
1:1:2250:G:O2'	1:1:2496:C:OP1	2.34	0.45
1:1:2253:G:N2	55:1:3314:HOH:O	2.50	0.45
2:2:1223:C:OP1	51:x:77:ARG:NH1	2.50	0.45
2:2:1254:A:OP2	42:o:45:ARG:NH2	2.49	0.45
2:2:1295:U:H2'	2:2:1296:C:O4'	2.16	0.45
6:B:204:LEU:HD22	6:B:209:ALA:HB1	1.98	0.45
35:h:120:THR:O	35:h:124:GLU:OE1	2.35	0.45
36:i:36:ALA:N	36:i:37:PRO:CD	2.79	0.45
39:l:67:ASN:ND2	39:l:126:ALA:O	2.45	0.45
1:1:321:U:O3'	8:D:162:ARG:NH1	2.49	0.45
1:1:560:C:H2'	1:1:561:G:O4'	2.16	0.45
1:1:817:C:H2'	1:1:818:G:O4'	2.17	0.45
1:1:971:G:H2'	1:1:972:A:O4'	2.16	0.45
2:2:440:C:OP1	36:i:120:LYS:NZ	2.41	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1014:A:H2'	2:2:1015:G:C4	2.51	0.45
2:2:1133:G:H2'	2:2:1134:G:C1'	2.47	0.45
3:3:15:A:OP2	3:3:69:G:N2	2.47	0.45
3:3:30:C:H1'	3:3:57:A:H61	1.81	0.45
5:5:34:G:H5''	41:n:129:ARG:HH21	1.81	0.45
9:E:48:LEU:HD22	9:E:147:ARG:HH12	1.80	0.45
15:M:136:MET:SD	24:V:74:ALA:O	2.74	0.45
16:N:70:THR:O	16:N:71:ARG:C	2.60	0.45
32:e:32:LEU:HD12	32:e:32:LEU:H	1.82	0.45
34:g:87:ASP:OD1	34:g:87:ASP:N	2.49	0.45
38:k:22:ILE:CG2	38:k:39:LEU:HD22	2.46	0.45
39:l:20:GLU:OE1	39:l:20:GLU:N	2.50	0.45
44:q:29:GLN:HG3	44:q:81:LEU:HD11	1.99	0.45
44:q:74:LEU:HD11	44:q:104:CYS:CB	2.46	0.45
1:1:730:A:C2	1:1:731:C:C5	3.04	0.45
1:1:743:A:O2'	1:1:1659:G:OP1	2.28	0.45
1:1:760:G:H2'	1:1:761:A:O4'	2.17	0.45
1:1:1287:A:O2'	1:1:1288:G:H5'	2.16	0.45
1:1:1574:C:C2	1:1:1575:C:C5	3.04	0.45
1:1:2075:U:O2'	1:1:2596:U:O4	2.33	0.45
1:1:2364:C:H2'	1:1:2365:G:O4'	2.16	0.45
1:1:2768:U:O2'	12:J:95:ARG:NH2	2.50	0.45
2:2:429:U:OP1	36:i:12:ARG:NH2	2.50	0.45
2:2:1088:G:H21	2:2:1167:A:N6	2.14	0.45
6:B:132:ARG:NH1	11:G:93:SER:OG	2.49	0.45
9:E:140:ILE:N	9:E:140:ILE:HD12	2.32	0.45
15:M:33:LEU:HD12	15:M:129:THR:O	2.16	0.45
20:R:4:VAL:O	20:R:39:LEU:N	2.46	0.45
34:g:145:ASN:OD1	34:g:145:ASN:C	2.59	0.45
1:1:216:A:C8	1:1:432:A:N6	2.84	0.45
1:1:545:U:H2'	1:1:546:U:O4'	2.17	0.45
1:1:2022:U:HO2'	1:1:2616:C:HO2'	1.65	0.45
2:2:686:U:H2'	2:2:687:A:C8	2.51	0.45
20:R:27:ILE:O	20:R:66:HIS:NE2	2.50	0.45
34:g:53:LEU:HB3	34:g:219:THR:HG21	1.98	0.45
35:h:156:LEU:HD12	35:h:156:LEU:O	2.16	0.45
35:h:205:GLU:O	35:h:205:GLU:CD	2.59	0.45
39:l:89:GLU:OE1	39:l:89:GLU:N	2.47	0.45
41:n:89:TYR:HB3	41:n:93:LEU:HD12	1.99	0.45
46:s:63:ARG:NH1	46:s:68:GLY:O	2.50	0.45
1:1:199:A:O3'	26:X:22:ASN:ND2	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:858:G:O2'	1:1:859:G:OP1	2.32	0.45
1:1:1347:A:H2'	1:1:1348:C:H5'	1.99	0.45
1:1:2287:A:N3	1:1:2287:A:O5'	2.50	0.45
1:1:2720:U:C2	1:1:2721:A:C8	3.04	0.45
2:2:381:C:H2'	2:2:382:A:O4'	2.16	0.45
2:2:977:A:N6	2:2:1224:U:O5'	2.43	0.45
2:2:1232:U:C2	2:2:1233:G:C8	3.05	0.45
3:3:66:A:C5'	3:3:67:G:OP1	2.65	0.45
6:B:143:VAL:HG21	6:B:161:VAL:HG11	1.99	0.45
17:O:8:ILE:O	17:O:12:THR:HG23	2.17	0.45
32:e:31:ILE:O	32:e:35:LYS:NZ	2.47	0.45
34:g:122:ASP:OD2	34:g:123:GLY:N	2.49	0.45
35:h:133:MET:HE1	55:h:310:HOH:O	2.16	0.45
36:i:103:ARG:CB	36:i:170:LEU:HD21	2.47	0.45
1:1:91:A:O2'	1:1:92:U:O4'	2.35	0.45
1:1:310:A:O2'	1:1:311:A:P	2.75	0.45
1:1:414:C:H4'	1:1:1879:C:O2	2.17	0.45
1:1:1378:A:C4'	1:1:1379:U:OP1	2.65	0.45
1:1:2756:U:H4'	1:1:2757:A:OP1	2.17	0.45
3:3:66:A:OP2	3:3:108:A:N6	2.50	0.45
6:B:251:THR:OG1	6:B:252:LYS:N	2.50	0.45
27:Y:16:THR:O	27:Y:20:ASN:ND2	2.45	0.45
47:t:73:ASP:OD2	47:t:76:ARG:N	2.42	0.45
1:1:544:C:O3'	1:1:545:U:O4'	2.35	0.45
1:1:1021:A:N6	1:1:1142:A:H61	2.15	0.45
1:1:1432:G:H2'	1:1:1433:A:C8	2.52	0.45
1:1:1807:G:N2	1:1:1810:A:OP2	2.46	0.45
1:1:2248:C:H2'	1:1:2249:U:O4'	2.18	0.45
1:1:2421:G:N2	5:5:76:A:O4'	2.49	0.45
1:1:2509:G:C2	1:1:2580:U:O4	2.70	0.45
2:2:430:A:C4	2:2:431:A:C8	3.05	0.45
2:2:1012:A:H2'	2:2:1013:G:O4'	2.17	0.45
2:2:1073:U:HO2'	34:g:102:ASN:CG	2.20	0.45
8:D:134:LEU:O	8:D:138:LEU:HG	2.16	0.45
23:U:27:VAL:HG12	23:U:28:LEU:N	2.32	0.45
51:x:80:ARG:O	55:x:101:HOH:O	2.20	0.45
1:1:571:U:N3	1:1:575:A:N7	2.65	0.44
1:1:928:A:H2'	1:1:929:U:O4'	2.17	0.44
1:1:1438:U:OP2	1:1:1552:A:N6	2.50	0.44
1:1:1475:G:O2'	1:1:1476:U:P	2.76	0.44
2:2:20:U:H2'	2:2:21:G:O4'	2.16	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1250:A:C8	2:2:1287:A:N7	2.86	0.44
2:2:1304:G:H2'	2:2:1305:G:C4	2.51	0.44
5:5:28:C:H2'	5:5:29:G:C8	2.52	0.44
23:U:97:SER:O	23:U:98:ASN:HB3	2.17	0.44
24:V:20:LEU:HD11	24:V:41:GLU:HG3	1.99	0.44
1:1:575:A:C2	1:1:576:U:C5	3.04	0.44
1:1:601:C:O2'	1:1:605:G:OP1	2.34	0.44
1:1:724:U:H2'	1:1:725:G:O5'	2.17	0.44
1:1:1225:G:HO2'	1:1:1226:A:C1'	2.28	0.44
1:1:2489:U:H2'	1:1:2490:G:O4'	2.16	0.44
1:1:2576:G:H21	1:1:2576:G:P	2.39	0.44
2:2:1083:U:O2'	2:2:1102:A:OP2	2.35	0.44
2:2:1267:C:N4	2:2:1327:C:O2'	2.50	0.44
5:5:6:C:H2'	5:5:7:G:C8	2.53	0.44
1:1:301:G:C4	1:1:302:C:C5	3.05	0.44
1:1:1282:U:H2'	1:1:1283:G:O4'	2.17	0.44
2:2:1396:A:C2	37:j:23:THR:HG21	2.53	0.44
37:j:133:ILE:H	37:j:133:ILE:HD12	1.82	0.44
1:1:309:A:N3	1:1:329:G:O2'	2.48	0.44
1:1:394:C:H2'	1:1:395:U:O4'	2.16	0.44
1:1:478:A:H61	1:1:500:G:HO2'	1.63	0.44
1:1:782:A:C6	6:B:224:MET:HE2	2.52	0.44
1:1:867:C:N3	1:1:868:U:C5	2.86	0.44
2:2:1218:C:H2'	2:2:1219:A:H8	1.82	0.44
9:E:37:MET:SD	9:E:52:ALA:HB1	2.57	0.44
11:G:69:ALA:O	11:G:72:ILE:HG22	2.17	0.44
13:K:92:GLU:O	13:K:93:GLN:C	2.60	0.44
35:h:105:VAL:HG13	35:h:105:VAL:O	2.17	0.44
36:i:162:GLU:C	36:i:166:LYS:HZ2	2.17	0.44
1:1:528:A:C2	1:1:2043:C:H4'	2.53	0.44
1:1:2306:C:N4	9:E:38:GLY:O	2.51	0.44
1:1:2586:U:H2'	1:1:2587:A:O4'	2.17	0.44
1:1:2591:C:N4	1:1:2592:G:O6	2.51	0.44
1:1:2811:G:H2'	1:1:2812:G:O4'	2.18	0.44
17:O:51:ALA:HB3	17:O:78:VAL:HG23	1.99	0.44
24:V:55:GLU:OE1	24:V:55:GLU:N	2.42	0.44
41:n:35:GLU:HA	41:n:39:GLY:HA3	1.99	0.44
47:t:80:LEU:HD11	47:t:84:LEU:HD11	1.99	0.44
50:w:21:ASP:OD2	50:w:23:LYS:N	2.42	0.44
1:1:203:A:OP2	1:1:204:A:O2'	2.25	0.44
1:1:527:C:HO2'	1:1:2779:U:HO2'	1.63	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:582:A:OP1	19:Q:13:HIS:ND1	2.51	0.44
1:1:1089:A:N6	55:1:3317:HOH:O	2.50	0.44
1:1:1109:C:H2'	1:1:1110:G:O4'	2.17	0.44
1:1:2432:A:C6	5:5:75:C:C4	3.06	0.44
1:1:2768:U:C4	1:1:2769:U:C5	3.06	0.44
2:2:691:G:O6	43:p:56:LYS:NZ	2.51	0.44
2:2:1350:A:OP2	41:n:119:LYS:NZ	2.46	0.44
5:5:31:C:H2'	5:5:32:A:C8	2.53	0.44
6:B:198:GLU:OE1	6:B:198:GLU:N	2.47	0.44
16:N:37:THR:HG22	16:N:110:MET:HE1	1.97	0.44
21:S:73:LYS:HB2	21:S:106:VAL:HB	2.00	0.44
35:h:42:LEU:HD11	35:h:46:LEU:HD12	2.00	0.44
38:k:3:HIS:O	38:k:92:THR:HA	2.17	0.44
1:1:60:G:H2'	1:1:62:U:OP2	2.18	0.44
1:1:116:C:H2'	1:1:117:G:O4'	2.18	0.44
1:1:569:U:H2'	1:1:570:G:O4'	2.18	0.44
1:1:1217:U:N3	1:1:1218:G:N7	2.65	0.44
1:1:1257:C:C2	1:1:1258:U:C5	3.06	0.44
1:1:1520:U:H2'	1:1:1521:G:O4'	2.18	0.44
1:1:1791:A:O2'	6:B:203:VAL:O	2.35	0.44
1:1:2100:G:H2'	1:1:2101:A:O4'	2.17	0.44
2:2:988:G:N1	2:2:1218:C:N3	2.66	0.44
2:2:1157:A:H4'	2:2:1158:C:O5'	2.17	0.44
6:B:131:MET:CE	6:B:173:LEU:HD21	2.48	0.44
8:D:125:SER:OG	8:D:126:VAL:N	2.51	0.44
8:D:146:VAL:HG12	8:D:185:LYS:HB2	1.99	0.44
10:F:89:VAL:HG21	10:F:162:ARG:NE	2.33	0.44
11:G:111:ALA:O	11:G:115:VAL:HG23	2.17	0.44
17:O:53:THR:HB	17:O:65:THR:HG22	1.99	0.44
38:k:3:HIS:HB2	38:k:92:THR:HA	1.99	0.44
1:1:1323:C:O2'	1:1:1324:G:H5'	2.17	0.44
2:2:2:A:N3	2:2:613:C:O2'	2.45	0.44
2:2:10:A:OP2	37:j:130:THR:HG21	2.18	0.44
2:2:127:G:O2'	49:v:5:ARG:NH2	2.36	0.44
2:2:936:C:O2'	2:2:1382:C:N3	2.51	0.44
5:5:9:A:H8	5:5:9:A:OP2	2.01	0.44
5:5:51:A:H2'	5:5:52:G:C8	2.52	0.44
6:B:15:VAL:HG12	6:B:16:VAL:N	2.33	0.44
32:e:53:ASP:O	32:e:57:VAL:HG23	2.17	0.44
34:g:205:ALA:O	34:g:209:VAL:HG13	2.18	0.44
37:j:108:GLY:O	37:j:109:ALA:HB3	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:m:77:VAL:HG12	40:m:84:ILE:CD1	2.48	0.44
1:1:144:A:H2'	1:1:145:C:O4'	2.18	0.44
1:1:607:U:O2	1:1:607:U:H2'	2.18	0.44
1:1:866:A:C6	1:1:867:C:C5	3.05	0.44
1:1:868:U:C4	1:1:869:G:N7	2.85	0.44
1:1:1234:U:H2'	1:1:1235:G:O4'	2.17	0.44
1:1:2168:G:C8	5:5:56:C:C1'	3.01	0.44
1:1:2688:G:N1	1:1:2720:U:OP2	2.40	0.44
2:2:235:C:H2'	2:2:236:A:C8	2.53	0.44
2:2:909:A:P	44:q:18:LYS:HZ2	2.40	0.44
2:2:954:G:H21	2:2:1227:A:N6	2.16	0.44
2:2:1181:G:H1'	2:2:1182:G:C4	2.51	0.44
2:2:1216:A:C2	2:2:1217:C:C5	3.06	0.44
6:B:68:ARG:HB2	6:B:128:THR:HG21	2.00	0.44
36:i:158:LEU:HA	36:i:161:ALA:HB3	1.99	0.44
1:1:548:G:H2'	1:1:549:G:O4'	2.18	0.43
1:1:868:U:O2'	15:M:8:LYS:NZ	2.50	0.43
1:1:1022:G:H4'	1:1:1023:U:O5'	2.17	0.43
1:1:1347:A:C5	1:1:1348:C:C6	3.06	0.43
1:1:1526:C:H2'	1:1:1527:G:O4'	2.18	0.43
1:1:1532:A:H2'	1:1:1533:C:C5	2.53	0.43
1:1:1675:C:H42	7:C:133:THR:HG21	1.83	0.43
1:1:1905:C:H4'	1:1:1929:G:H21	1.83	0.43
1:1:2177:C:H2'	1:1:2178:C:C6	2.53	0.43
1:1:2581:G:H4'	1:1:2582:G:OP1	2.16	0.43
2:2:37:U:H2'	2:2:38:G:O4'	2.18	0.43
2:2:402:G:O3'	36:i:133:SER:OG	2.31	0.43
2:2:1006:G:O6	2:2:1023:U:C2	2.69	0.43
2:2:1200:C:H5''	2:2:1201:A:H3'	2.00	0.43
16:N:12:ARG:NE	16:N:20:MET:SD	2.91	0.43
37:j:75:LEU:C	37:j:75:LEU:HD12	2.43	0.43
39:l:111:GLY:HA2	39:l:118:ARG:CD	2.48	0.43
41:n:112:ARG:NH2	42:o:64:GLN:OE1	2.51	0.43
53:z:23:GLU:O	53:z:24:LYS:C	2.61	0.43
1:1:631:A:OP2	32:e:22:LYS:NZ	2.47	0.43
1:1:1625:C:H2'	1:1:1626:A:O4'	2.17	0.43
1:1:1688:U:O2'	1:1:1700:A:N7	2.47	0.43
1:1:2066:C:O2'	1:1:2067:G:H5'	2.18	0.43
1:1:2801:G:N2	1:1:2802:G:C2	2.87	0.43
1:1:2883:A:OP1	29:b:48:TYR:OH	2.34	0.43
2:2:170:U:H2'	2:2:171:A:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:179:A:H61	2:2:195:A:H8	1.66	0.43
2:2:340:U:C2	2:2:350:G:N2	2.86	0.43
2:2:954:G:H21	2:2:1227:A:H61	1.66	0.43
2:2:1051:C:H2'	2:2:1052:U:C6	2.54	0.43
5:5:18:G:H1'	5:5:58:A:H2	1.83	0.43
9:E:134:GLN:N	9:E:134:GLN:OE1	2.51	0.43
13:K:104:THR:HG22	13:K:105:ARG:N	2.33	0.43
16:N:59:SER:OG	16:N:62:ASN:OD1	2.24	0.43
16:N:65:LEU:HD23	16:N:69:ARG:HH22	1.83	0.43
34:g:61:SER:OG	34:g:223:GLY:O	2.20	0.43
37:j:105:ILE:HG13	37:j:105:ILE:O	2.18	0.43
38:k:6:ILE:HD11	38:k:71:ILE:HD11	2.00	0.43
39:l:41:ILE:HG21	39:l:115:MET:HG3	2.00	0.43
1:1:67:U:N3	1:1:68:G:N7	2.66	0.43
1:1:177:G:H3'	1:1:178:G:H8	1.83	0.43
1:1:307:G:C4	1:1:309:A:OP2	2.71	0.43
1:1:549:G:C2'	1:1:550:C:O5'	2.67	0.43
1:1:820:A:OP2	1:1:973:A:N6	2.36	0.43
1:1:833:A:N6	1:1:834:G:O6	2.52	0.43
1:1:1653:G:O6	16:N:11:ASN:N	2.51	0.43
1:1:2131:U:OP1	1:1:2133:G:H4'	2.17	0.43
1:1:2191:A:H2'	1:1:2192:U:O4'	2.18	0.43
1:1:2533:U:OP1	1:1:2665:A:O2'	2.36	0.43
1:1:2660:A:H3'	1:1:2661:G:C8	2.53	0.43
2:2:31:G:O2'	2:2:32:A:O5'	2.29	0.43
2:2:651:C:H2'	2:2:652:U:C6	2.53	0.43
2:2:755:G:H21	40:m:3:GLN:HE22	1.65	0.43
2:2:779:C:H2'	2:2:780:A:O4'	2.19	0.43
2:2:820:U:H4'	2:2:821:G:OP2	2.18	0.43
2:2:980:C:O2'	46:s:12:ARG:NH2	2.51	0.43
2:2:1293:C:H2'	2:2:1294:G:O4'	2.19	0.43
3:3:78:A:H2'	3:3:79:G:O4'	2.18	0.43
5:5:75:C:OP1	26:X:19:HIS:CE1	2.71	0.43
15:M:57:VAL:O	15:M:57:VAL:CG2	2.66	0.43
28:Z:44:ARG:NH1	28:Z:58:GLU:OE2	2.51	0.43
36:i:168:THR:O	36:i:182:LYS:NZ	2.44	0.43
38:k:3:HIS:N	38:k:92:THR:HG22	2.32	0.43
42:o:10:LEU:HD12	42:o:18:ILE:HD11	2.01	0.43
1:1:932:U:O2'	1:1:934:U:O4	2.26	0.43
1:1:962:G:H21	1:1:2250:G:H1	1.64	0.43
1:1:1558:C:O4'	1:1:1560:G:C8	2.71	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:253:A:N6	2:2:274:A:N1	2.67	0.43
11:G:3:VAL:HA	11:G:38:PRO:HA	1.98	0.43
35:h:31:ASN:OD1	35:h:58:ARG:NH1	2.51	0.43
1:1:231:A:H2'	1:1:232:G:O4'	2.18	0.43
1:1:310:A:HO2'	1:1:311:A:C5'	2.28	0.43
1:1:322:A:OP1	8:D:162:ARG:NE	2.49	0.43
1:1:753:A:H8	1:1:753:A:OP2	2.01	0.43
1:1:1086:A:H3'	1:1:1086:A:N3	2.34	0.43
1:1:1202:G:O6	1:1:1244:A:C6	2.71	0.43
1:1:1396:U:H4'	1:1:1397:U:OP1	2.19	0.43
1:1:2345:G:C8	1:1:2347:C:C5	3.06	0.43
1:1:2627:G:H2'	1:1:2628:C:C6	2.54	0.43
2:2:515:G:H2'	2:2:516:U:O4'	2.19	0.43
2:2:999:C:O2'	55:2:1728:HOH:O	2.21	0.43
2:2:1308:U:OP1	45:r:96:VAL:N	2.39	0.43
8:D:12:LEU:HD23	8:D:12:LEU:C	2.43	0.43
14:L:110:VAL:O	14:L:110:VAL:HG12	2.19	0.43
34:g:49:PHE:CZ	34:g:53:LEU:HD11	2.53	0.43
35:h:11:LEU:HD11	46:s:91:GLY:CA	2.49	0.43
36:i:122:ILE:HG22	36:i:123:MET:N	2.33	0.43
37:j:80:LEU:HD13	37:j:122:VAL:HG21	2.01	0.43
39:l:111:GLY:HA2	39:l:118:ARG:HD3	1.99	0.43
1:1:278:A:C2	1:1:362:A:H1'	2.54	0.43
1:1:868:U:H2'	1:1:869:G:O4'	2.19	0.43
1:1:1286:A:H1'	1:1:1288:G:P	2.59	0.43
1:1:2043:C:C2	1:1:2044:C:C5	3.07	0.43
1:1:2130:U:H1'	1:1:2159:G:N1	2.34	0.43
1:1:2296:U:OP2	17:O:9:ARG:NH2	2.52	0.43
1:1:2327:A:H2'	1:1:2328:A:C8	2.54	0.43
1:1:2353:G:H2'	1:1:2354:C:O4'	2.19	0.43
2:2:214:C:C2	2:2:215:C:C5	3.07	0.43
2:2:303:A:H2'	2:2:304:U:O4'	2.18	0.43
2:2:404:G:H2'	2:2:405:U:O4'	2.19	0.43
2:2:408:A:C6	2:2:435:A:N6	2.86	0.43
2:2:457:G:H2'	2:2:458:U:O4'	2.19	0.43
2:2:1084:G:H21	2:2:1102:A:N6	2.16	0.43
2:2:1239:A:H62	2:2:1299:A:N6	2.15	0.43
5:5:18:G:H1'	5:5:58:A:C2	2.54	0.43
9:E:69:ALA:N	9:E:82:TYR:O	2.52	0.43
9:E:107:VAL:HB	9:E:108:PRO:HD3	1.99	0.43
36:i:27:ILE:H	36:i:27:ILE:HD12	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:o:8:ILE:HD12	42:o:76:ILE:HD12	2.00	0.43
1:1:975:A:N1	1:1:1156:A:O2'	2.51	0.43
1:1:1235:G:O3'	1:1:1236:G:O4'	2.37	0.43
1:1:1942:C:OP2	1:1:1943:U:C2'	2.66	0.43
1:1:2134:A:N6	1:1:2157:G:O2'	2.51	0.43
1:1:2326:C:HO2'	1:1:2327:A:P	2.32	0.43
1:1:2757:A:C2	1:1:2758:A:C8	3.07	0.43
1:1:2794:C:H2'	1:1:2795:C:C1'	2.48	0.43
2:2:71:A:C6	2:2:100:G:C8	3.07	0.43
2:2:163:C:H2'	2:2:164:G:O4'	2.18	0.43
2:2:323:U:H2'	2:2:324:G:O4'	2.19	0.43
2:2:765:G:N1	2:2:812:G:O2'	2.31	0.43
2:2:1177:G:N2	55:2:1769:HOH:O	2.52	0.43
3:3:12:C:O2	3:3:12:C:O4'	2.36	0.43
3:3:45:A:C4	3:3:46:A:C8	3.06	0.43
7:C:196:ALA:O	7:C:199:SER:OG	2.17	0.43
9:E:11:VAL:HG12	9:E:15:LEU:HD12	2.00	0.43
37:j:43:GLY:O	37:j:73:VAL:N	2.49	0.43
45:r:32:ILE:HG23	45:r:58:GLU:HB3	1.99	0.43
49:v:63:CYS:SG	49:v:73:THR:OG1	2.32	0.43
1:1:1663:G:O2'	1:1:1664:A:O5'	2.36	0.43
1:1:1837:C:H2'	1:1:1838:C:H5'	2.00	0.43
1:1:2496:C:H2'	1:1:2497:A:O4'	2.18	0.43
1:1:2564:A:N1	1:1:2647:U:H4'	2.33	0.43
2:2:9:G:OP2	37:j:125:LYS:NZ	2.52	0.43
2:2:254:G:O3'	49:v:70:LYS:NZ	2.47	0.43
2:2:1151:A:O2'	2:2:1152:A:P	2.75	0.43
15:M:69:PRO:O	15:M:70:ASP:OD1	2.35	0.43
16:N:110:MET:HE2	16:N:110:MET:HA	2.01	0.43
34:g:113:LEU:HD13	34:g:143:LEU:CB	2.49	0.43
1:1:793:A:N6	1:1:2073:C:OP1	2.52	0.43
1:1:1283:G:N1	1:1:1286:A:OP2	2.52	0.43
1:1:1940:U:C4'	1:1:1941:C:OP2	2.67	0.43
1:1:2266:A:H4'	1:1:2267:A:N3	2.33	0.43
1:1:2345:G:H1'	1:1:2381:A:H2'	1.99	0.43
2:2:712:A:H2'	2:2:713:G:C1'	2.49	0.43
2:2:773:G:O6	2:2:807:A:N6	2.52	0.43
2:2:1270:G:H2'	2:2:1271:A:C8	2.54	0.43
2:2:1298:U:HO2'	2:2:1299:A:P	2.42	0.43
11:G:144:VAL:HG23	11:G:144:VAL:O	2.18	0.43
14:L:94:THR:HG22	14:L:94:THR:O	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:M:17:ASN:ND2	15:M:96:ILE:O	2.49	0.43
21:S:64:ALA:O	21:S:65:ASP:HB3	2.19	0.43
35:h:150:VAL:HG22	35:h:199:VAL:HG22	1.99	0.43
38:k:90:MET:SD	50:w:60:ARG:NH1	2.91	0.43
1:1:483:A:O2'	23:U:56:GLY:N	2.52	0.43
1:1:1737:G:O3'	1:1:1738:G:O4'	2.36	0.43
1:1:2328:A:H2'	1:1:2329:U:C6	2.53	0.43
2:2:918:A:H2'	2:2:919:A:O4'	2.18	0.43
2:2:1003:G:N2	2:2:1005:A:OP1	2.35	0.43
2:2:1129:C:O2'	2:2:1130:A:C8	2.71	0.43
3:3:47:C:H2'	3:3:48:U:O4'	2.18	0.43
21:S:15:GLN:O	21:S:19:LEU:HD13	2.19	0.43
34:g:52:ALA:O	34:g:56:LEU:HD13	2.18	0.43
34:g:159:ALA:C	34:g:160:LEU:HD12	2.44	0.43
38:k:98:GLU:O	38:k:99:ALA:HB3	2.19	0.43
1:1:590:A:H2'	1:1:591:U:O4'	2.18	0.42
1:1:630:G:N1	1:1:633:A:OP2	2.49	0.42
1:1:1048:A:OP2	1:1:1110:G:N2	2.42	0.42
1:1:1103:A:C2'	1:1:1104:C:OP1	2.67	0.42
1:1:1138:G:H21	12:J:108:MET:HE2	1.82	0.42
1:1:1291:C:C2	1:1:1292:G:C8	3.06	0.42
1:1:1794:A:H2'	1:1:1795:C:C6	2.54	0.42
1:1:2045:C:O2	29:b:18:HIS:NE2	2.52	0.42
2:2:1118:U:H2'	2:2:1119:C:O4'	2.19	0.42
3:3:28:C:OP1	17:O:31:THR:HG21	2.19	0.42
3:3:106:G:H2'	3:3:107:G:O4'	2.18	0.42
22:T:14:PRO:O	55:T:201:HOH:O	2.22	0.42
48:u:5:ARG:NH2	48:u:23:ASP:O	2.51	0.42
48:u:78:VAL:O	48:u:78:VAL:HG23	2.19	0.42
1:1:463:G:N1	1:1:467:G:C6	2.88	0.42
1:1:737:C:N3	1:1:760:G:N1	2.67	0.42
1:1:1011:G:H1'	1:1:1013:C:O4'	2.19	0.42
1:1:1959:G:H2'	1:1:1960:A:O4'	2.20	0.42
1:1:2110:G:N1	1:1:2180:U:C4	2.87	0.42
1:1:2410:G:H2'	1:1:2411:A:O4'	2.19	0.42
1:1:2810:A:H2'	1:1:2811:G:O4'	2.19	0.42
2:2:600:A:OP2	40:m:87:ARG:NH1	2.51	0.42
2:2:1330:U:O3'	2:2:1331:G:O4'	2.37	0.42
2:2:1398:A:N6	37:j:25:LYS:O	2.53	0.42
2:2:1513:A:N6	2:2:1523:G:O6	2.52	0.42
3:3:74:U:H2'	3:3:75:G:O4'	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:D:29:HIS:O	8:D:33:VAL:HG23	2.18	0.42
9:E:55:ASP:OD2	9:E:149:ARG:NH2	2.52	0.42
9:E:59:ILE:HG23	9:E:98:PHE:HE1	1.83	0.42
41:n:49:GLN:N	41:n:50:PRO:HD2	2.34	0.42
1:1:141:G:O2'	1:1:142:A:OP1	2.29	0.42
1:1:210:C:OP1	31:d:29:GLN:NE2	2.52	0.42
1:1:548:G:C2'	1:1:549:G:O5'	2.67	0.42
1:1:1457:U:H5''	1:1:1458:U:OP1	2.20	0.42
1:1:1668:A:N1	1:1:1676:A:N6	2.66	0.42
1:1:1866:A:H2'	1:1:1867:G:O4'	2.18	0.42
1:1:2116:G:O6	1:1:2165:C:N3	2.52	0.42
1:1:2720:U:OP1	18:P:52:ARG:NH2	2.52	0.42
2:2:160:A:H2'	2:2:161:A:O4'	2.18	0.42
2:2:721:G:H4'	2:2:722:G:O4'	2.19	0.42
2:2:1228:C:H2'	2:2:1229:A:C8	2.54	0.42
6:B:156:SER:O	6:B:194:VAL:HG11	2.19	0.42
34:g:8:MET:N	34:g:8:MET:HE2	2.35	0.42
41:n:34:LEU:HD21	41:n:47:VAL:CG2	2.49	0.42
1:1:739:A:OP2	55:1:3244:HOH:O	2.21	0.42
1:1:874:G:C6	1:1:904:G:C6	3.08	0.42
1:1:2893:A:H4'	1:1:2894:G:O5'	2.19	0.42
2:2:100:G:C4	2:2:101:A:C8	3.07	0.42
2:2:686:U:O2'	2:2:687:A:O4'	2.32	0.42
2:2:847:G:O2'	34:g:34:ARG:NH1	2.51	0.42
2:2:868:C:H2'	2:2:869:G:O4'	2.19	0.42
2:2:1206:G:H2'	2:2:1207:G:O4'	2.19	0.42
2:2:1219:A:H2'	2:2:1220:G:O4'	2.19	0.42
2:2:1303:C:H3'	2:2:1304:G:C8	2.54	0.42
9:E:68:LYS:HA	9:E:82:TYR:O	2.20	0.42
34:g:94:ARG:NE	55:g:310:HOH:O	2.52	0.42
35:h:56:ILE:HD12	35:h:65:VAL:HG22	2.01	0.42
49:v:12:VAL:O	49:v:13:SER:OG	2.30	0.42
1:1:21:A:O2'	1:1:22:C:H5'	2.20	0.42
1:1:100:U:O2	23:U:90:LYS:NZ	2.51	0.42
1:1:527:C:O2'	1:1:2779:U:O2'	2.29	0.42
1:1:676:A:H62	1:1:802:A:H61	1.67	0.42
1:1:725:G:O2'	1:1:726:G:O4'	2.33	0.42
1:1:1730:C:O2'	1:1:1731:G:O5'	2.35	0.42
1:1:1797:G:C6	1:1:1823:G:C6	3.08	0.42
1:1:1827:U:H2'	1:1:1828:G:O4'	2.20	0.42
1:1:2033:A:O2'	1:1:2035:G:OP1	2.29	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2322:A:H2'	1:1:2323:G:O4'	2.18	0.42
1:1:2531:A:C2	1:1:2532:G:C8	3.07	0.42
1:1:2595:G:O2'	1:1:2597:G:O6	2.36	0.42
2:2:213:G:C8	2:2:214:C:C5	3.07	0.42
2:2:320:A:H2'	2:2:321:A:C8	2.54	0.42
2:2:624:C:H2'	2:2:625:U:O4'	2.19	0.42
2:2:998:C:H2'	2:2:999:C:C6	2.54	0.42
2:2:1119:C:OP1	41:n:84:ARG:NH2	2.53	0.42
2:2:1149:C:C2	2:2:1150:A:C8	3.07	0.42
8:D:176:ASP:OD1	8:D:176:ASP:N	2.53	0.42
40:m:45:ILE:HG21	40:m:60:LEU:HD22	2.01	0.42
1:1:625:G:H2'	1:1:626:A:O4'	2.19	0.42
1:1:903:C:H2'	1:1:904:G:H8	1.84	0.42
1:1:1754:A:N1	1:1:2716:C:O2'	2.50	0.42
1:1:1794:A:N6	1:1:1826:G:O6	2.52	0.42
1:1:1830:C:H2'	1:1:1831:G:H8	1.83	0.42
1:1:1975:G:H2'	1:1:1976:U:O4'	2.20	0.42
1:1:2162:G:H2'	1:1:2163:A:O4'	2.20	0.42
1:1:2457:U:O2	1:1:2457:U:O4'	2.37	0.42
1:1:2530:A:N7	10:F:171:LYS:NZ	2.56	0.42
3:3:66:A:P	3:3:108:A:H61	2.41	0.42
10:F:19:ASN:OD1	10:F:22:VAL:HB	2.20	0.42
40:m:124:ILE:O	40:m:124:ILE:HG13	2.18	0.42
51:x:34:SER:O	51:x:37:SER:OG	2.32	0.42
1:1:45:G:H5''	1:1:46:G:H5'	2.01	0.42
1:1:579:G:C5	1:1:1262:A:N6	2.88	0.42
1:1:1081:U:H2'	1:1:1082:U:C6	2.55	0.42
1:1:2168:G:H2'	1:1:2168:G:N3	2.35	0.42
2:2:55:A:H2'	2:2:56:U:O4'	2.20	0.42
2:2:324:G:N2	2:2:327:A:OP2	2.52	0.42
3:3:34:A:H62	3:3:44:G:H2'	1.84	0.42
36:i:14:GLU:OE2	36:i:55:ARG:NH1	2.53	0.42
36:i:131:ILE:N	36:i:131:ILE:HD12	2.35	0.42
41:n:51:LEU:HD21	41:n:82:ILE:HG21	2.01	0.42
45:r:113:LYS:HB2	45:r:114:PRO:HD3	2.02	0.42
1:1:67:U:C2	1:1:68:G:C8	3.07	0.42
1:1:541:A:N6	1:1:553:G:O6	2.53	0.42
1:1:756:A:H2'	1:1:757:G:O4'	2.19	0.42
1:1:866:A:C2	1:1:867:C:C6	3.07	0.42
1:1:1593:A:H2'	1:1:1594:U:O4'	2.20	0.42
1:1:2144:G:HO2'	1:1:2145:C:H5	1.66	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2543:G:C6	1:1:2765:A:C5	3.08	0.42
1:1:2757:A:H2'	1:1:2757:A:N3	2.35	0.42
2:2:181:A:H1'	2:2:195:A:H61	1.84	0.42
2:2:280:C:N4	49:v:40:THR:OG1	2.53	0.42
2:2:978:A:OP1	2:2:1361:G:N1	2.48	0.42
3:3:47:C:OP1	17:O:3:LYS:HD2	2.20	0.42
13:K:105:ARG:NH2	18:P:33:GLU:OE2	2.50	0.42
17:O:64:TYR:O	17:O:67:ASN:ND2	2.51	0.42
23:U:3:LYS:O	23:U:93:ARG:NH2	2.52	0.42
23:U:23:LYS:O	23:U:35:VAL:HG13	2.20	0.42
25:W:34:VAL:HG11	25:W:41:PHE:CD2	2.55	0.42
46:s:48:LEU:HD23	51:x:9:PHE:CE1	2.55	0.42
1:1:196:A:H61	1:1:831:G:H21	1.67	0.42
1:1:487:C:H2'	1:1:488:G:O4'	2.20	0.42
1:1:571:U:C4	1:1:2030:A:C6	3.08	0.42
1:1:941:A:H2'	1:1:942:G:O4'	2.20	0.42
1:1:967:U:C2	1:1:968:C:C5	3.07	0.42
1:1:1313:U:O2	1:1:1313:U:H2'	2.20	0.42
1:1:1715:G:N2	1:1:1744:A:OP2	2.53	0.42
1:1:1790:C:O3'	1:1:1791:A:H8	2.03	0.42
2:2:179:A:C4	2:2:180:U:C5	3.08	0.42
2:2:857:C:H2'	2:2:858:G:O4'	2.20	0.42
2:2:1137:C:HO2'	2:2:1138:G:N2	2.17	0.42
2:2:1182:G:H5'	2:2:1183:U:OP1	2.20	0.42
2:2:1372:U:H2'	2:2:1373:G:O4'	2.18	0.42
3:3:20:G:C6	3:3:64:G:N1	2.88	0.42
9:E:28:PRO:HB2	9:E:168:LEU:HD22	2.02	0.42
12:J:26:GLY:O	12:J:108:MET:HE1	2.19	0.42
35:h:205:GLU:O	35:h:206:ILE:HB	2.19	0.42
41:n:60:LEU:HD12	41:n:60:LEU:C	2.45	0.42
43:p:110:THR:HG22	53:z:4:LYS:HB2	2.02	0.42
48:u:68:SER:OG	48:u:71:VAL:HG23	2.20	0.42
1:1:278:A:H2'	1:1:278:A:N3	2.34	0.42
1:1:364:C:C2	1:1:365:U:C5	3.08	0.42
1:1:894:U:H2'	1:1:895:U:O4'	2.20	0.42
1:1:1652:A:OP1	16:N:8:ARG:NE	2.48	0.42
1:1:1715:G:H22	1:1:1743:G:H3'	1.84	0.42
1:1:2076:U:O2	1:1:2076:U:O4'	2.38	0.42
1:1:2629:U:O2'	1:1:2630:G:P	2.78	0.42
2:2:264:C:H2'	2:2:265:G:O4'	2.20	0.42
2:2:522:C:H2'	2:2:523:A:O4'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:654:G:H2'	2:2:655:A:O4'	2.20	0.42
2:2:963:G:N2	2:2:964:A:H1'	2.35	0.42
36:i:151:GLN:O	36:i:152:SER:HB2	2.20	0.42
44:q:14:ARG:NH2	44:q:15:LYS:O	2.46	0.42
47:t:87:ARG:HG3	47:t:87:ARG:O	2.20	0.42
1:1:858:G:H1'	1:1:859:G:OP1	2.20	0.41
1:1:2537:U:C2	1:1:2538:C:C5	3.08	0.41
2:2:186:C:H2'	2:2:187:G:O4'	2.20	0.41
2:2:413:G:N2	2:2:428:G:O3'	2.43	0.41
2:2:1004:A:N6	2:2:1025:U:O4'	2.53	0.41
2:2:1269:A:H4'	2:2:1325:C:O2'	2.19	0.41
7:C:46:ARG:HB2	7:C:84:LEU:HD12	2.00	0.41
7:C:105:LYS:O	7:C:177:VAL:HG12	2.19	0.41
12:J:15:TRP:HB3	12:J:137:PRO:HB3	2.02	0.41
36:i:49:ASP:O	36:i:52:VAL:HG22	2.20	0.41
37:j:87:VAL:HG23	37:j:91:SER:O	2.19	0.41
41:n:16:ALA:HB2	41:n:66:VAL:HG23	2.02	0.41
43:p:82:GLU:OE1	43:p:82:GLU:N	2.53	0.41
44:q:29:GLN:CG	44:q:81:LEU:HD11	2.49	0.41
1:1:1289:C:C2	1:1:1290:C:C5	3.08	0.41
1:1:1425:G:H2'	1:1:1426:G:O4'	2.20	0.41
1:1:2025:C:H2'	1:1:2026:U:C6	2.55	0.41
1:1:2120:G:H2'	1:1:2121:G:O4'	2.19	0.41
1:1:2558:C:C2	1:1:2559:C:C6	3.08	0.41
2:2:459:A:H2'	2:2:460:A:O4'	2.19	0.41
2:2:1237:C:O3'	2:2:1300:G:N2	2.53	0.41
34:g:9:LEU:HD21	34:g:12:GLY:C	2.46	0.41
34:g:57:ASN:ND2	34:g:219:THR:O	2.53	0.41
36:i:59:LYS:NZ	36:i:194:ILE:HG22	2.35	0.41
41:n:46:VAL:HG23	41:n:47:VAL:N	2.35	0.41
48:u:67:ILE:HG23	48:u:71:VAL:CG1	2.50	0.41
1:1:372:G:HO2'	1:1:373:U:P	2.42	0.41
1:1:500:G:N1	1:1:503:A:OP2	2.42	0.41
1:1:574:A:N6	1:1:2034:U:OP1	2.51	0.41
1:1:727:A:OP2	1:1:1431:A:O2'	2.32	0.41
1:1:2539:C:O2'	33:f:36:ARG:NH1	2.42	0.41
2:2:34:C:O4'	44:q:29:GLN:NE2	2.53	0.41
2:2:144:G:N1	2:2:179:A:C8	2.88	0.41
2:2:424:G:H2'	2:2:425:G:H8	1.85	0.41
2:2:570:G:C2'	2:2:571:U:O5'	2.68	0.41
2:2:1117:A:N6	2:2:1156:G:H22	2.18	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1225:A:H5'	2:2:1226:C:OP2	2.21	0.41
2:2:1301:U:O2'	2:2:1302:C:O5'	2.33	0.41
3:3:43:C:O2	9:E:91:ARG:NE	2.42	0.41
5:5:47:U:OP2	5:5:47:U:C6	2.73	0.41
9:E:45:ASP:HB3	9:E:48:LEU:HB3	2.00	0.41
10:F:84:LYS:HB2	10:F:132:LEU:HD11	2.02	0.41
11:G:78:VAL:HG12	11:G:79:THR:N	2.35	0.41
11:G:125:THR:HG21	11:G:148:ALA:HB2	2.02	0.41
13:K:99:ILE:HD12	13:K:118:LEU:HB2	2.02	0.41
15:M:33:LEU:HD11	15:M:128:THR:HB	2.01	0.41
15:M:53:MET:O	15:M:57:VAL:HG22	2.20	0.41
17:O:24:THR:OG1	17:O:90:VAL:HG12	2.20	0.41
20:R:29:THR:HG23	20:R:64:VAL:O	2.21	0.41
38:k:67:PRO:HG2	38:k:70:VAL:HG23	2.02	0.41
38:k:68:GLN:O	38:k:71:ILE:HG22	2.20	0.41
38:k:75:GLU:OE2	38:k:79:ARG:NE	2.51	0.41
40:m:10:LEU:HD23	40:m:74:ILE:HD11	2.02	0.41
44:q:65:SER:HA	44:q:95:TYR:O	2.20	0.41
1:1:75:G:H2'	1:1:75:G:N3	2.34	0.41
1:1:362:A:C4	1:1:363:G:C8	3.08	0.41
1:1:707:G:O6	1:1:725:G:C2	2.73	0.41
1:1:738:G:H2'	1:1:739:A:O4'	2.20	0.41
1:1:975:A:H1'	1:1:990:A:C6	2.55	0.41
1:1:1252:G:H21	19:Q:32:ARG:CG	2.32	0.41
1:1:1990:C:H2'	1:1:1991:U:C1'	2.51	0.41
2:2:454:G:H1	2:2:478:A:H61	1.69	0.41
2:2:1318:A:C5'	51:x:4:LEU:HD13	2.50	0.41
2:2:1329:A:O2'	2:2:1330:U:H5'	2.21	0.41
2:2:1513:A:H2'	2:2:1514:G:H8	1.84	0.41
8:D:178:VAL:HG13	8:D:179:SER:N	2.36	0.41
12:J:109:LEU:HD13	12:J:118:MET:HG3	2.02	0.41
22:T:7:LEU:HD22	22:T:46:ALA:N	2.35	0.41
25:W:34:VAL:HG11	25:W:41:PHE:HD2	1.84	0.41
34:g:128:LEU:O	34:g:129:THR:OG1	2.36	0.41
41:n:117:LEU:HD12	41:n:117:LEU:N	2.35	0.41
50:w:22:TYR:HA	50:w:57:ALA:HB1	2.02	0.41
52:y:2:ASN:OD1	52:y:3:ILE:N	2.53	0.41
1:1:1068:G:C2	1:1:1095:A:O2'	2.74	0.41
1:1:1076:C:H2'	1:1:1077:A:O4'	2.19	0.41
1:1:1481:U:H2'	1:1:1482:G:H4'	2.03	0.41
1:1:1509:A:H2'	1:1:1510:G:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1693:U:O2'	6:B:13:ARG:NH2	2.54	0.41
1:1:1795:C:H2'	1:1:1796:U:O4'	2.21	0.41
1:1:2821:A:H2'	1:1:2822:G:O4'	2.19	0.41
1:1:2847:U:H2'	1:1:2848:G:O4'	2.21	0.41
2:2:30:U:H4'	2:2:31:G:OP2	2.19	0.41
2:2:673:A:H2'	2:2:674:G:H8	1.83	0.41
2:2:1088:G:N2	2:2:1167:A:H61	2.14	0.41
3:3:13:G:O2'	3:3:15:A:H2'	2.21	0.41
10:F:85:LYS:O	10:F:86:LEU:HD12	2.20	0.41
15:M:70:ASP:OD1	15:M:70:ASP:C	2.63	0.41
24:V:30:ILE:HG12	24:V:91:PHE:HB2	2.02	0.41
37:j:86:GLY:O	37:j:138:ALA:HB1	2.21	0.41
37:j:104:ILE:CD1	37:j:114:LEU:HD23	2.51	0.41
40:m:48:PHE:CD2	40:m:48:PHE:C	2.98	0.41
42:o:12:ALA:N	42:o:18:ILE:HD12	2.36	0.41
43:p:36:ARG:NH1	43:p:82:GLU:OE2	2.54	0.41
1:1:66:C:C2	1:1:67:U:C6	3.09	0.41
1:1:196:A:O2'	1:1:197:A:H5'	2.21	0.41
1:1:447:A:N1	1:1:454:A:O2'	2.45	0.41
1:1:549:G:O2'	1:1:550:C:P	2.77	0.41
1:1:609:A:H2'	1:1:610:C:O4'	2.21	0.41
1:1:1118:C:H2'	1:1:1119:U:O4'	2.20	0.41
1:1:1202:G:H2'	1:1:1203:U:O4'	2.20	0.41
1:1:1426:G:O2'	1:1:1572:A:N6	2.48	0.41
1:1:1710:G:H1'	1:1:2859:G:H21	1.85	0.41
1:1:2049:G:C2'	1:1:2050:C:O5'	2.68	0.41
1:1:2405:G:N1	1:1:2411:A:OP2	2.53	0.41
1:1:2476:A:H2'	1:1:2477:U:O4'	2.20	0.41
1:1:2484:G:OP1	15:M:44:ARG:NH2	2.53	0.41
1:1:2538:C:N3	1:1:2539:C:C5	2.89	0.41
1:1:2557:G:H2'	1:1:2558:C:C6	2.56	0.41
1:1:2626:C:N4	1:1:2627:G:O6	2.53	0.41
2:2:39:G:O2'	2:2:40:C:H5'	2.21	0.41
2:2:438:U:C4	2:2:494:G:C5	3.08	0.41
2:2:493:A:H2'	2:2:494:G:N9	2.36	0.41
2:2:655:A:C6	2:2:656:G:C5	3.09	0.41
2:2:662:U:H2'	2:2:663:A:C8	2.55	0.41
2:2:889:A:O4'	2:2:891:U:C6	2.74	0.41
2:2:936:C:C4	2:2:937:A:N7	2.89	0.41
2:2:1269:A:OP2	2:2:1270:G:C8	2.73	0.41
8:D:5:LEU:N	8:D:5:LEU:HD12	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:Q:93:ILE:HG22	19:Q:97:ILE:HD11	2.02	0.41
37:j:24:VAL:O	37:j:25:LYS:C	2.64	0.41
37:j:91:SER:OG	37:j:129:SER:O	2.36	0.41
40:m:28:SER:HB3	40:m:56:PRO:HB2	2.03	0.41
41:n:48:ARG:O	41:n:52:GLU:OE1	2.38	0.41
1:1:100:U:H4'	1:1:101:A:O4'	2.21	0.41
1:1:347:A:C6	1:1:348:A:N6	2.88	0.41
1:1:744:U:H2'	1:1:745:G:O4'	2.20	0.41
1:1:1814:G:OP2	1:1:1815:A:O2'	2.14	0.41
1:1:2281:A:H2'	1:1:2282:G:C8	2.56	0.41
1:1:2415:G:C4	1:1:2416:C:C5	3.09	0.41
2:2:39:G:C2	2:2:404:G:C2	3.08	0.41
2:2:545:C:H2'	2:2:546:A:O4'	2.21	0.41
2:2:695:A:H2'	2:2:696:A:O4'	2.20	0.41
2:2:1026:G:H2'	2:2:1027:C:C6	2.55	0.41
2:2:1158:C:N4	2:2:1160:G:O4'	2.53	0.41
2:2:1249:C:H4'	41:n:37:TYR:OH	2.20	0.41
2:2:1405:G:O2'	2:2:1518:A:O3'	2.34	0.41
3:3:33:G:H2'	3:3:34:A:O4'	2.20	0.41
9:E:143:ASP:OD2	45:r:70:ARG:NH2	2.53	0.41
11:G:9:VAL:HG12	11:G:11:ASN:H	1.86	0.41
17:O:6:ALA:O	17:O:9:ARG:HG3	2.20	0.41
26:X:35:HIS:CD2	26:X:55:MET:HE1	2.56	0.41
30:c:4:ILE:HG21	30:c:27:ARG:NH2	2.35	0.41
37:j:73:VAL:HG12	37:j:74:ALA:N	2.35	0.41
38:k:15:SER:HA	38:k:18:VAL:HG23	2.03	0.41
41:n:43:ALA:O	41:n:46:VAL:HG22	2.20	0.41
1:1:1019:U:H2'	1:1:1021:A:N7	2.36	0.41
1:1:1019:U:H3	1:1:1142:A:H62	1.69	0.41
1:1:1023:U:OP2	1:1:1024:G:N7	2.53	0.41
1:1:1906:G:H2'	1:1:1907:G:O4'	2.21	0.41
1:1:2002:G:C2	1:1:2003:A:C5	3.08	0.41
1:1:2056:G:C2	1:1:2057:G:C8	3.09	0.41
1:1:2412:A:H2'	1:1:2413:G:O4'	2.21	0.41
1:1:2656:U:N3	1:1:2665:A:C8	2.84	0.41
2:2:636:U:C2	2:2:637:C:C5	3.09	0.41
2:2:935:A:C5	2:2:936:C:C5	3.08	0.41
7:C:179:ARG:HB3	7:C:188:LEU:HD12	2.03	0.41
35:h:129:PHE:CD2	35:h:156:LEU:HD13	2.56	0.41
48:u:2:VAL:HG23	48:u:2:VAL:O	2.21	0.41
1:1:275:C:H2'	1:1:276:U:C4'	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:288:U:C2	1:1:289:G:C8	3.09	0.41
1:1:303:G:C6	1:1:315:G:C6	3.09	0.41
1:1:476:G:C2	1:1:479:A:C8	3.09	0.41
1:1:619:G:O5'	1:1:620:G:N2	2.54	0.41
1:1:1320:C:O2'	1:1:1321:A:P	2.74	0.41
1:1:1417:C:H4'	1:1:1587:G:H21	1.85	0.41
1:1:1525:A:H2'	1:1:1526:C:O4'	2.21	0.41
1:1:1671:U:N3	1:1:1674:G:OP2	2.48	0.41
1:1:1805:A:C6	1:1:1813:G:C6	3.09	0.41
1:1:1847:G:O2'	1:1:1848:A:H8	2.04	0.41
1:1:1887:C:H2'	1:1:1888:G:O4'	2.20	0.41
1:1:2143:C:H5''	1:1:2144:G:P	2.61	0.41
1:1:2328:A:H2'	1:1:2329:U:H6	1.86	0.41
1:1:2370:G:H2'	1:1:2371:G:O4'	2.21	0.41
1:1:2794:C:H3'	1:1:2795:C:C6	2.54	0.41
2:2:191:G:O6	2:2:192:A:N6	2.54	0.41
2:2:579:A:O2'	47:t:53:ARG:NH2	2.53	0.41
2:2:629:A:H2'	2:2:630:A:O4'	2.21	0.41
2:2:837:U:H2'	2:2:838:G:H8	1.85	0.41
2:2:978:A:N1	2:2:1316:G:N3	2.69	0.41
2:2:1314:C:C2	2:2:1315:U:C5	3.09	0.41
2:2:1377:A:C2	39:l:6:ILE:HD11	2.56	0.41
2:2:1404:C:H2'	2:2:1405:G:C8	2.56	0.41
6:B:64:VAL:HG12	6:B:65:ASP:N	2.35	0.41
6:B:92:LEU:HD12	6:B:101:ARG:O	2.20	0.41
8:D:16:GLU:O	8:D:20:GLY:N	2.54	0.41
8:D:118:LEU:HD11	8:D:188:MET:CG	2.49	0.41
14:L:13:LYS:NZ	55:L:301:HOH:O	2.53	0.41
17:O:49:VAL:HG12	17:O:50:ALA:N	2.36	0.41
21:S:4:ILE:HD12	21:S:6:LYS:HE3	2.03	0.41
23:U:11:ILE:N	23:U:70:ALA:O	2.49	0.41
34:g:113:LEU:HD13	34:g:143:LEU:HB3	2.03	0.41
36:i:5:GLY:O	36:i:7:LYS:N	2.54	0.41
38:k:9:MET:HE3	38:k:86:ARG:CB	2.48	0.41
38:k:66:ALA:HB1	38:k:67:PRO:HD2	2.03	0.41
43:p:113:THR:OG1	43:p:115:ILE:HD11	2.20	0.41
48:u:23:ASP:OD2	48:u:25:ARG:NE	2.54	0.41
48:u:53:ASP:O	48:u:57:ILE:HD12	2.21	0.41
1:1:68:G:N2	1:1:74:A:O4'	2.54	0.41
1:1:399:U:H2'	1:1:400:G:O4'	2.21	0.41
1:1:729:G:H5'	1:1:730:A:H5''	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1095:A:H2'	1:1:1096:A:C8	2.56	0.41
1:1:1351:C:H2'	1:1:1352:U:O4'	2.21	0.41
1:1:1726:C:N4	1:1:1735:A:H61	2.19	0.41
1:1:1774:C:O2	1:1:1774:C:H2'	2.20	0.41
1:1:2551:C:H2'	1:1:2552:U:O4'	2.20	0.41
2:2:149:A:O2'	2:2:150:U:H5'	2.21	0.41
2:2:176:C:OP1	52:y:63:LYS:NZ	2.37	0.41
2:2:373:A:C2	2:2:482:A:N6	2.89	0.41
2:2:981:U:OP1	46:s:8:ARG:NH1	2.53	0.41
2:2:1147:C:O2'	41:n:6:TYR:CZ	2.74	0.41
3:3:34:A:C2'	3:3:35:C:OP2	2.69	0.41
7:C:168:GLU:HG2	7:C:169:ARG:H	1.85	0.41
17:O:26:LEU:HD13	17:O:39:VAL:HG23	2.03	0.41
39:l:16:LYS:O	39:l:17:PHE:C	2.63	0.41
43:p:30:ILE:HG12	43:p:45:THR:HG22	2.02	0.41
1:1:651:G:O2'	1:1:652:U:H5'	2.21	0.40
1:1:1233:C:N3	1:1:1234:U:C5	2.89	0.40
1:1:1288:G:OP1	1:1:1289:C:C5	2.75	0.40
1:1:1346:G:H2'	1:1:1347:A:O4'	2.21	0.40
1:1:1562:U:H2'	1:1:1563:U:O4'	2.21	0.40
1:1:2194:U:H2'	1:1:2195:U:H6	1.86	0.40
1:1:2255:G:C6	1:1:2256:G:C5	3.09	0.40
1:1:2723:C:H2'	1:1:2724:U:O4'	2.22	0.40
2:2:338:A:O2'	2:2:339:C:H5'	2.21	0.40
2:2:672:U:H2'	2:2:673:A:C8	2.56	0.40
2:2:1073:U:H2'	2:2:1074:G:O4'	2.21	0.40
2:2:1083:U:H3'	2:2:1084:G:C8	2.56	0.40
2:2:1144:G:H2'	2:2:1145:A:C8	2.56	0.40
5:5:58:A:H2	5:5:60:U:HO2'	1.66	0.40
6:B:90:ILE:HD12	6:B:102:TYR:CD1	2.56	0.40
10:F:21:GLN:OE1	10:F:54:ARG:NH2	2.48	0.40
11:G:47:PHE:HA	11:G:51:ARG:HB2	2.03	0.40
11:G:68:ARG:HA	11:G:68:ARG:NE	2.35	0.40
14:L:29:LYS:O	14:L:30:THR:HG23	2.20	0.40
15:M:19:GLY:O	15:M:20:LEU:HD22	2.21	0.40
20:R:49:ILE:HG23	20:R:54:VAL:HG22	2.02	0.40
36:i:137:SER:OG	36:i:138:PRO:HD2	2.20	0.40
45:r:21:ILE:HB	45:r:24:VAL:HG12	2.02	0.40
1:1:191:A:OP2	1:1:204:A:N6	2.47	0.40
1:1:306:U:O4	1:1:310:A:N7	2.54	0.40
1:1:566:U:H5''	14:L:29:LYS:HE3	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:674:G:H1'	8:D:69:ARG:HD3	2.03	0.40
1:1:752:A:C1'	1:1:753:A:OP2	2.69	0.40
1:1:910:A:H62	15:M:13:HIS:N	2.20	0.40
1:1:1209:U:H2'	1:1:1210:G:H21	1.86	0.40
1:1:1630:A:N6	1:1:1637:A:N6	2.70	0.40
1:1:1649:G:O6	1:1:2009:A:N6	2.54	0.40
1:1:1799:G:N2	6:B:153:LEU:HD22	2.35	0.40
1:1:1900:A:O2'	1:1:1901:A:P	2.79	0.40
1:1:2788:C:H2'	1:1:2789:C:C6	2.56	0.40
2:2:19:A:H2'	2:2:20:U:O4'	2.22	0.40
2:2:794:A:H2'	2:2:795:C:C6	2.56	0.40
2:2:1248:A:N6	2:2:1288:A:OP2	2.54	0.40
2:2:1252:A:H2'	2:2:1253:G:O4'	2.20	0.40
10:F:132:LEU:C	10:F:132:LEU:HD12	2.46	0.40
14:L:111:ILE:HD12	14:L:111:ILE:H	1.85	0.40
39:l:65:LEU:HD21	39:l:69:ARG:NH2	2.36	0.40
42:o:44:THR:HG23	42:o:69:THR:O	2.21	0.40
1:1:335:C:O2	23:U:67:SER:HB2	2.21	0.40
1:1:490:C:HO2'	1:1:491:G:P	2.31	0.40
1:1:538:A:H2'	1:1:539:G:O4'	2.20	0.40
1:1:576:U:H2'	1:1:577:G:C8	2.56	0.40
1:1:879:G:C4	1:1:880:G:C8	3.10	0.40
1:1:891:G:HO2'	1:1:892:A:C5'	2.34	0.40
1:1:1054:A:C2	1:1:1055:G:C5	3.09	0.40
1:1:1153:C:H2'	1:1:1154:G:O4'	2.22	0.40
1:1:2252:G:C4	1:1:2253:G:C8	3.09	0.40
1:1:2512:C:H2'	1:1:2513:A:O4'	2.21	0.40
1:1:2636:C:O2'	7:C:45:TYR:OH	2.24	0.40
1:1:2856:A:H2'	1:1:2857:G:O4'	2.21	0.40
2:2:490:C:OP1	36:i:147:LYS:NZ	2.42	0.40
2:2:1241:G:P	39:l:37:THR:HG21	2.61	0.40
2:2:1367:C:OP1	41:n:116:GLY:N	2.44	0.40
2:2:1436:U:C2	2:2:1437:A:C8	3.10	0.40
19:Q:33:VAL:O	19:Q:33:VAL:HG12	2.21	0.40
37:j:89:THR:O	37:j:89:THR:HG22	2.21	0.40
42:o:56:HIS:CG	42:o:57:VAL:H	2.39	0.40
42:o:102:LEU:N	42:o:102:LEU:HD12	2.36	0.40
47:t:5:GLU:OE1	47:t:5:GLU:N	2.46	0.40
1:1:176:A:O2'	1:1:177:G:H5'	2.21	0.40
1:1:371:A:H61	1:1:401:A:H3'	1.85	0.40
1:1:685:A:N1	1:1:787:C:H1'	2.37	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:877:A:H2'	1:1:878:A:C8	2.57	0.40
1:1:898:C:O2'	1:1:899:A:P	2.79	0.40
1:1:1165:A:H2'	1:1:1166:G:H8	1.86	0.40
1:1:1284:A:H2'	1:1:1285:A:O4'	2.21	0.40
1:1:1454:C:O2'	16:N:60:VAL:HG13	2.20	0.40
1:1:1528:A:OP2	1:1:1543:G:N2	2.53	0.40
1:1:1926:U:H4'	1:1:1927:A:H5''	2.04	0.40
1:1:1936:A:OP2	1:1:1962:C:N4	2.54	0.40
1:1:2194:U:O2'	1:1:2195:U:O5'	2.39	0.40
1:1:2815:C:C2	1:1:2816:G:C8	3.09	0.40
2:2:35:G:H2'	2:2:36:C:C6	2.57	0.40
2:2:538:G:H2'	2:2:539:A:H8	1.86	0.40
2:2:677:U:O2	2:2:777:A:O2'	2.25	0.40
2:2:933:G:C2	2:2:935:A:O4'	2.75	0.40
2:2:990:C:H2'	2:2:991:U:N1	2.37	0.40
2:2:1193:G:OP1	35:h:166:TRP:NE1	2.51	0.40
3:3:94:A:H2'	3:3:95:U:O4'	2.21	0.40
20:R:27:ILE:HG22	20:R:28:ALA:N	2.36	0.40
21:S:58:ALA:HA	21:S:62:ASP:HB2	2.03	0.40
34:g:27:LYS:N	34:g:28:PRO:CD	2.84	0.40
39:l:124:SER:O	39:l:128:GLU:CD	2.64	0.40
42:o:53:ILE:O	46:s:85:ARG:NH2	2.55	0.40
1:1:538:A:H4'	12:J:7:LYS:HG2	2.04	0.40
1:1:597:G:O2'	1:1:598:U:H5'	2.22	0.40
1:1:1202:G:O6	1:1:1244:A:N6	2.55	0.40
1:1:1224:U:C4	1:1:1225:G:O6	2.75	0.40
1:1:1691:C:N4	1:1:1697:G:N2	2.70	0.40
1:1:1789:A:O2'	6:B:217:PRO:HB3	2.22	0.40
1:1:2579:C:N3	1:1:2580:U:O4	2.55	0.40
1:1:2615:U:C2	29:b:3:GLN:HA	2.56	0.40
2:2:36:C:H2'	2:2:37:U:O4'	2.21	0.40
2:2:345:C:O2'	2:2:346:G:N2	2.53	0.40
2:2:962:C:H2'	2:2:963:G:O4'	2.21	0.40
2:2:1104:G:H2'	2:2:1105:A:O4'	2.22	0.40
3:3:50:A:C6	3:3:51:G:C5	3.09	0.40
5:5:1:C:H5	5:5:72:G:H1	1.69	0.40
11:G:132:PHE:CE2	11:G:142:VAL:HG21	2.56	0.40
16:N:66:ALA:O	16:N:69:ARG:O	2.40	0.40
19:Q:46:TYR:O	19:Q:50:ARG:NH1	2.46	0.40
22:T:13:ALA:HB1	27:Y:33:ALA:HB1	2.03	0.40
24:V:44:HIS:NE2	24:V:85:LYS:CB	2.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:n:61:ASP:N	41:n:61:ASP:OD1	2.51	0.40
45:r:63:VAL:HG12	45:r:64:VAL:N	2.37	0.40
51:x:29:PRO:CA	51:x:47:THR:HG23	2.51	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
6	B	269/273 (98%)	246 (91%)	23 (9%)	0	100	100
7	C	207/209 (99%)	187 (90%)	20 (10%)	0	100	100
8	D	199/201 (99%)	184 (92%)	15 (8%)	0	100	100
9	E	175/179 (98%)	154 (88%)	21 (12%)	0	100	100
10	F	174/177 (98%)	166 (95%)	8 (5%)	0	100	100
11	G	147/149 (99%)	132 (90%)	15 (10%)	0	100	100
12	J	140/142 (99%)	131 (94%)	9 (6%)	0	100	100
13	K	120/123 (98%)	109 (91%)	11 (9%)	0	100	100
14	L	141/144 (98%)	113 (80%)	28 (20%)	0	100	100
15	M	134/136 (98%)	125 (93%)	9 (7%)	0	100	100
16	N	118/127 (93%)	108 (92%)	10 (8%)	0	100	100
17	O	114/117 (97%)	107 (94%)	7 (6%)	0	100	100
18	P	112/115 (97%)	107 (96%)	5 (4%)	0	100	100
19	Q	115/118 (98%)	112 (97%)	3 (3%)	0	100	100
20	R	101/103 (98%)	92 (91%)	8 (8%)	1 (1%)	13	47
21	S	108/110 (98%)	99 (92%)	8 (7%)	1 (1%)	14	49
22	T	91/100 (91%)	85 (93%)	6 (7%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
23	U	100/104 (96%)	91 (91%)	9 (9%)	0	100	100
24	V	92/94 (98%)	87 (95%)	5 (5%)	0	100	100
25	W	73/84 (87%)	68 (93%)	5 (7%)	0	100	100
26	X	75/78 (96%)	70 (93%)	5 (7%)	0	100	100
27	Y	61/63 (97%)	59 (97%)	2 (3%)	0	100	100
28	Z	56/59 (95%)	52 (93%)	4 (7%)	0	100	100
29	b	54/57 (95%)	52 (96%)	2 (4%)	0	100	100
30	c	48/55 (87%)	44 (92%)	4 (8%)	0	100	100
31	d	44/46 (96%)	43 (98%)	1 (2%)	0	100	100
32	e	62/65 (95%)	56 (90%)	6 (10%)	0	100	100
33	f	36/38 (95%)	33 (92%)	3 (8%)	0	100	100
34	g	216/241 (90%)	199 (92%)	17 (8%)	0	100	100
35	h	204/206 (99%)	198 (97%)	6 (3%)	0	100	100
36	i	203/206 (98%)	182 (90%)	21 (10%)	0	100	100
37	j	155/167 (93%)	135 (87%)	19 (12%)	1 (1%)	22	58
38	k	98/135 (73%)	83 (85%)	15 (15%)	0	100	100
39	l	149/179 (83%)	138 (93%)	11 (7%)	0	100	100
40	m	127/130 (98%)	122 (96%)	5 (4%)	0	100	100
41	n	125/130 (96%)	102 (82%)	22 (18%)	1 (1%)	16	53
42	o	96/103 (93%)	80 (83%)	15 (16%)	1 (1%)	13	47
43	p	114/129 (88%)	100 (88%)	14 (12%)	0	100	100
44	q	120/124 (97%)	108 (90%)	12 (10%)	0	100	100
45	r	112/118 (95%)	99 (88%)	13 (12%)	0	100	100
46	s	99/102 (97%)	85 (86%)	14 (14%)	0	100	100
47	t	86/89 (97%)	80 (93%)	5 (6%)	1 (1%)	11	43
48	u	80/82 (98%)	72 (90%)	8 (10%)	0	100	100
49	v	78/84 (93%)	68 (87%)	10 (13%)	0	100	100
50	w	63/75 (84%)	54 (86%)	9 (14%)	0	100	100
51	x	77/92 (84%)	72 (94%)	5 (6%)	0	100	100
52	y	83/87 (95%)	80 (96%)	3 (4%)	0	100	100
53	z	63/71 (89%)	48 (76%)	15 (24%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
All	All	5514/5816 (95%)	5017 (91%)	491 (9%)	6 (0%)	50	81

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
47	t	46	LYS
37	j	122	VAL
41	n	91	GLU
42	o	34	ALA
21	S	64	ALA
20	R	54	VAL

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
6	B	216/218 (99%)	216 (100%)	0	100	100
7	C	164/164 (100%)	164 (100%)	0	100	100
8	D	165/165 (100%)	165 (100%)	0	100	100
9	E	148/150 (99%)	148 (100%)	0	100	100
10	F	137/138 (99%)	137 (100%)	0	100	100
11	G	114/114 (100%)	114 (100%)	0	100	100
12	J	116/116 (100%)	116 (100%)	0	100	100
13	K	103/104 (99%)	103 (100%)	0	100	100
14	L	102/103 (99%)	102 (100%)	0	100	100
15	M	109/109 (100%)	109 (100%)	0	100	100
16	N	100/103 (97%)	100 (100%)	0	100	100
17	O	86/87 (99%)	86 (100%)	0	100	100
18	P	99/100 (99%)	99 (100%)	0	100	100
19	Q	89/90 (99%)	89 (100%)	0	100	100
20	R	84/84 (100%)	84 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
21	S	93/93 (100%)	93 (100%)	0	100	100
22	T	80/84 (95%)	80 (100%)	0	100	100
23	U	83/85 (98%)	83 (100%)	0	100	100
24	V	78/78 (100%)	78 (100%)	0	100	100
25	W	57/62 (92%)	57 (100%)	0	100	100
26	X	67/68 (98%)	67 (100%)	0	100	100
27	Y	55/55 (100%)	55 (100%)	0	100	100
28	Z	48/49 (98%)	48 (100%)	0	100	100
29	b	47/48 (98%)	47 (100%)	0	100	100
30	c	45/49 (92%)	45 (100%)	0	100	100
31	d	38/38 (100%)	38 (100%)	0	100	100
32	e	51/52 (98%)	51 (100%)	0	100	100
33	f	34/34 (100%)	34 (100%)	0	100	100
34	g	180/199 (90%)	180 (100%)	0	100	100
35	h	170/170 (100%)	170 (100%)	0	100	100
36	i	172/173 (99%)	172 (100%)	0	100	100
37	j	114/126 (90%)	114 (100%)	0	100	100
38	k	87/116 (75%)	87 (100%)	0	100	100
39	l	124/147 (84%)	124 (100%)	0	100	100
40	m	104/105 (99%)	104 (100%)	0	100	100
41	n	105/107 (98%)	105 (100%)	0	100	100
42	o	86/90 (96%)	86 (100%)	0	100	100
43	p	89/99 (90%)	89 (100%)	0	100	100
44	q	102/103 (99%)	102 (100%)	0	100	100
45	r	92/96 (96%)	92 (100%)	0	100	100
46	s	79/84 (94%)	79 (100%)	0	100	100
47	t	76/77 (99%)	76 (100%)	0	100	100
48	u	65/65 (100%)	65 (100%)	0	100	100
49	v	74/78 (95%)	74 (100%)	0	100	100
50	w	48/65 (74%)	48 (100%)	0	100	100
51	x	70/79 (89%)	70 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
52	y	65/66 (98%)	65 (100%)	0	100	100
53	z	44/61 (72%)	44 (100%)	0	100	100
All	All	4554/4746 (96%)	4554 (100%)	0	100	100

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

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (34) such sidechains are listed below:

Mol	Chain	Res	Type
6	B	199	HIS
6	B	242	HIS
7	C	130	GLN
8	D	62	GLN
9	E	22	ASN
13	K	93	GLN
16	N	9	GLN
16	N	31	HIS
16	N	73	ASN
17	O	104	GLN
18	P	14	GLN
21	S	9	HIS
22	T	92	ASN
23	U	73	ASN
24	V	75	GLN
25	W	42	HIS
27	Y	15	ASN
30	c	44	GLN
30	c	45	HIS
34	g	88	GLN
34	g	93	HIS
35	h	189	HIS
36	i	73	ASN
36	i	119	HIS
36	i	139	ASN
38	k	11	HIS
40	m	3	GLN
41	n	109	GLN
42	o	58	ASN
44	q	77	HIS
45	r	104	ASN
46	s	43	ASN

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Mol	Chain	Res	Type
51	x	51	HIS
52	y	81	GLN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	2898/2904 (99%)	547 (18%)	58 (2%)
2	2	1530/1540 (99%)	233 (15%)	14 (0%)
3	3	119/120 (99%)	17 (14%)	4 (3%)
4	4	3/18 (16%)	0	0
5	5	76/77 (98%)	31 (40%)	5 (6%)
All	All	4626/4659 (99%)	828 (17%)	81 (1%)

All (828) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	10	A
1	1	12	U
1	1	26	G
1	1	34	U
1	1	35	G
1	1	42	A
1	1	46	G
1	1	50	U
1	1	51	G
1	1	63	A
1	1	71	A
1	1	74	A
1	1	75	G
1	1	91	A
1	1	92	U
1	1	118	A
1	1	120	U
1	1	131	A
1	1	135	U
1	1	137	U
1	1	138	U
1	1	139	U
1	1	140	C
1	1	141	G
1	1	142	A

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Mol	Chain	Res	Type
1	1	149	A
1	1	162	U
1	1	163	C
1	1	196	A
1	1	199	A
1	1	216	A
1	1	221	A
1	1	222	A
1	1	223	A
1	1	228	C
1	1	229	C
1	1	233	A
1	1	248	G
1	1	255	A
1	1	266	G
1	1	276	U
1	1	277	G
1	1	278	A
1	1	280	U
1	1	281	C
1	1	284	U
1	1	285	G
1	1	294	A
1	1	301	G
1	1	311	A
1	1	323	C
1	1	324	A
1	1	329	G
1	1	330	A
1	1	331	C
1	1	338	G
1	1	350	G
1	1	361	G
1	1	371	A
1	1	373	U
1	1	385	C
1	1	386	G
1	1	387	U
1	1	388	G
1	1	396	G
1	1	404	A
1	1	406	G

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Mol	Chain	Res	Type
1	1	411	G
1	1	417	C
1	1	422	A
1	1	424	G
1	1	429	A
1	1	435	C
1	1	451	U
1	1	455	C
1	1	456	C
1	1	457	A
1	1	458	G
1	1	459	U
1	1	460	A
1	1	475	C
1	1	480	A
1	1	481	G
1	1	490	C
1	1	491	G
1	1	504	A
1	1	505	A
1	1	508	A
1	1	509	C
1	1	531	C
1	1	532	A
1	1	533	G
1	1	545	U
1	1	547	A
1	1	550	C
1	1	563	A
1	1	569	U
1	1	571	U
1	1	573	U
1	1	574	A
1	1	575	A
1	1	603	A
1	1	614	A
1	1	615	U
1	1	616	A
1	1	627	A
1	1	637	A
1	1	645	C
1	1	646	U

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Mol	Chain	Res	Type
1	1	647	G
1	1	654	A
1	1	655	A
1	1	656	G
1	1	667	U
1	1	669	G
1	1	670	A
1	1	683	U
1	1	686	U
1	1	694	U
1	1	695	G
1	1	705	A
1	1	711	G
1	1	714	U
1	1	717	C
1	1	725	G
1	1	726	G
1	1	730	A
1	1	747	C
1	1	752	A
1	1	753	A
1	1	757	G
1	1	764	A
1	1	775	G
1	1	776	G
1	1	782	A
1	1	784	G
1	1	785	G
1	1	789	A
1	1	793	A
1	1	805	G
1	1	812	C
1	1	819	A
1	1	827	U
1	1	828	U
1	1	830	G
1	1	845	A
1	1	846	U
1	1	847	U
1	1	857	G
1	1	858	G
1	1	859	G

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Mol	Chain	Res	Type
1	1	860	U
1	1	869	G
1	1	878	A
1	1	882	G
1	1	885	C
1	1	891	G
1	1	892	A
1	1	896	A
1	1	897	C
1	1	899	A
1	1	900	A
1	1	901	C
1	1	902	C
1	1	907	G
1	1	910	A
1	1	914	G
1	1	931	U
1	1	941	A
1	1	946	C
1	1	953	G
1	1	959	A
1	1	961	C
1	1	973	A
1	1	974	G
1	1	980	A
1	1	983	A
1	1	995	C
1	1	996	A
1	1	999	U
1	1	1009	A
1	1	1012	U
1	1	1013	C
1	1	1020	A
1	1	1021	A
1	1	1023	U
1	1	1026	G
1	1	1027	A
1	1	1033	U
1	1	1039	A
1	1	1046	A
1	1	1048	A
1	1	1053	C

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Mol	Chain	Res	Type
1	1	1059	G
1	1	1060	U
1	1	1061	U
1	1	1062	G
1	1	1064	C
1	1	1065	U
1	1	1066	U
1	1	1068	G
1	1	1070	A
1	1	1071	G
1	1	1072	C
1	1	1073	A
1	1	1075	C
1	1	1076	C
1	1	1079	C
1	1	1081	U
1	1	1083	U
1	1	1084	A
1	1	1085	A
1	1	1086	A
1	1	1088	A
1	1	1090	A
1	1	1097	U
1	1	1101	U
1	1	1104	C
1	1	1106	G
1	1	1112	G
1	1	1118	C
1	1	1119	U
1	1	1131	G
1	1	1132	U
1	1	1133	A
1	1	1135	C
1	1	1136	G
1	1	1142	A
1	1	1143	A
1	1	1171	G
1	1	1172	C
1	1	1173	U
1	1	1174	U
1	1	1175	A
1	1	1176	U

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Mol	Chain	Res	Type
1	1	1177	G
1	1	1179	G
1	1	1180	U
1	1	1211	C
1	1	1212	G
1	1	1225	G
1	1	1238	G
1	1	1248	G
1	1	1249	U
1	1	1251	C
1	1	1253	A
1	1	1255	U
1	1	1256	G
1	1	1271	G
1	1	1272	A
1	1	1300	G
1	1	1301	A
1	1	1306	C
1	1	1310	G
1	1	1314	C
1	1	1321	A
1	1	1325	U
1	1	1329	U
1	1	1330	C
1	1	1341	G
1	1	1345	C
1	1	1359	A
1	1	1365	A
1	1	1378	A
1	1	1379	U
1	1	1383	A
1	1	1395	A
1	1	1396	U
1	1	1397	U
1	1	1407	G
1	1	1416	G
1	1	1419	A
1	1	1420	A
1	1	1421	G
1	1	1427	A
1	1	1428	C
1	1	1437	C

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Mol	Chain	Res	Type
1	1	1456	G
1	1	1458	U
1	1	1461	C
1	1	1468	U
1	1	1476	U
1	1	1482	G
1	1	1490	A
1	1	1491	G
1	1	1504	A
1	1	1508	A
1	1	1509	A
1	1	1515	A
1	1	1524	G
1	1	1532	A
1	1	1533	C
1	1	1535	A
1	1	1536	C
1	1	1537	G
1	1	1555	G
1	1	1559	U
1	1	1560	G
1	1	1569	A
1	1	1578	U
1	1	1581	G
1	1	1582	C
1	1	1584	U
1	1	1585	C
1	1	1607	C
1	1	1611	C
1	1	1618	A
1	1	1622	G
1	1	1634	A
1	1	1646	C
1	1	1647	U
1	1	1648	U
1	1	1664	A
1	1	1665	A
1	1	1672	A
1	1	1674	G
1	1	1677	A
1	1	1699	G
1	1	1715	G

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Mol	Chain	Res	Type
1	1	1716	U
1	1	1729	U
1	1	1730	C
1	1	1731	G
1	1	1732	C
1	1	1733	G
1	1	1735	A
1	1	1738	G
1	1	1744	A
1	1	1756	G
1	1	1758	U
1	1	1764	C
1	1	1773	A
1	1	1780	A
1	1	1781	U
1	1	1782	U
1	1	1784	A
1	1	1800	C
1	1	1801	A
1	1	1807	G
1	1	1808	A
1	1	1816	C
1	1	1820	U
1	1	1829	A
1	1	1835	G
1	1	1838	C
1	1	1848	A
1	1	1871	A
1	1	1876	A
1	1	1884	G
1	1	1900	A
1	1	1901	A
1	1	1907	G
1	1	1913	A
1	1	1917	U
1	1	1919	A
1	1	1925	C
1	1	1926	U
1	1	1930	G
1	1	1931	U
1	1	1937	A
1	1	1938	A

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Mol	Chain	Res	Type
1	1	1940	U
1	1	1941	C
1	1	1943	U
1	1	1955	U
1	1	1963	U
1	1	1967	C
1	1	1970	A
1	1	1971	U
1	1	1972	G
1	1	1991	U
1	1	1992	G
1	1	1997	C
1	1	2013	A
1	1	2022	U
1	1	2023	C
1	1	2030	A
1	1	2031	A
1	1	2043	C
1	1	2050	C
1	1	2052	A
1	1	2055	C
1	1	2056	G
1	1	2060	A
1	1	2061	G
1	1	2062	A
1	1	2069	G
1	1	2080	A
1	1	2093	G
1	1	2096	C
1	1	2100	G
1	1	2104	C
1	1	2108	A
1	1	2110	G
1	1	2111	U
1	1	2112	G
1	1	2114	A
1	1	2116	G
1	1	2118	U
1	1	2119	A
1	1	2127	G
1	1	2130	U
1	1	2131	U

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Mol	Chain	Res	Type
1	1	2132	U
1	1	2133	G
1	1	2134	A
1	1	2136	G
1	1	2140	G
1	1	2144	G
1	1	2145	C
1	1	2162	G
1	1	2164	C
1	1	2166	U
1	1	2167	U
1	1	2169	A
1	1	2171	A
1	1	2172	U
1	1	2173	A
1	1	2178	C
1	1	2181	U
1	1	2182	U
1	1	2183	A
1	1	2189	U
1	1	2195	U
1	1	2198	A
1	1	2199	A
1	1	2204	G
1	1	2211	A
1	1	2213	U
1	1	2225	A
1	1	2226	C
1	1	2238	G
1	1	2239	G
1	1	2251	G
1	1	2279	G
1	1	2283	C
1	1	2286	G
1	1	2287	A
1	1	2297	A
1	1	2305	U
1	1	2308	G
1	1	2309	A
1	1	2325	G
1	1	2327	A
1	1	2333	A

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Mol	Chain	Res	Type
1	1	2334	U
1	1	2350	C
1	1	2354	C
1	1	2361	G
1	1	2383	G
1	1	2385	C
1	1	2392	A
1	1	2402	U
1	1	2403	C
1	1	2406	A
1	1	2410	G
1	1	2422	C
1	1	2423	U
1	1	2424	C
1	1	2425	A
1	1	2428	G
1	1	2429	G
1	1	2430	A
1	1	2435	A
1	1	2441	U
1	1	2448	A
1	1	2449	U
1	1	2475	C
1	1	2476	A
1	1	2478	A
1	1	2480	C
1	1	2491	U
1	1	2498	C
1	1	2503	A
1	1	2504	U
1	1	2506	U
1	1	2513	A
1	1	2518	A
1	1	2520	C
1	1	2529	G
1	1	2535	G
1	1	2547	A
1	1	2554	U
1	1	2566	A
1	1	2567	G
1	1	2572	A
1	1	2573	C

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Mol	Chain	Res	Type
1	1	2578	G
1	1	2582	G
1	1	2585	U
1	1	2604	U
1	1	2609	U
1	1	2610	C
1	1	2613	U
1	1	2615	U
1	1	2629	U
1	1	2630	G
1	1	2646	C
1	1	2647	U
1	1	2655	G
1	1	2656	U
1	1	2663	G
1	1	2681	C
1	1	2689	U
1	1	2690	U
1	1	2714	G
1	1	2722	G
1	1	2726	A
1	1	2729	G
1	1	2733	A
1	1	2739	U
1	1	2744	G
1	1	2748	A
1	1	2758	A
1	1	2764	A
1	1	2765	A
1	1	2776	A
1	1	2778	A
1	1	2779	U
1	1	2780	G
1	1	2791	G
1	1	2794	C
1	1	2797	U
1	1	2798	U
1	1	2799	A
1	1	2800	A
1	1	2807	U
1	1	2808	G
1	1	2809	A

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Mol	Chain	Res	Type
1	1	2818	U
1	1	2820	A
1	1	2825	G
1	1	2833	U
1	1	2834	G
1	1	2835	A
1	1	2836	U
1	1	2849	U
1	1	2859	G
1	1	2867	G
1	1	2868	A
1	1	2873	A
1	1	2880	C
1	1	2884	U
1	1	2893	A
1	1	2894	G
1	1	2902	C
1	1	2903	U
2	2	4	U
2	2	6	G
2	2	7	A
2	2	8	A
2	2	9	G
2	2	22	G
2	2	32	A
2	2	39	G
2	2	47	C
2	2	48	C
2	2	51	A
2	2	71	A
2	2	79	G
2	2	86	G
2	2	87	C
2	2	94	G
2	2	95	C
2	2	121	U
2	2	130	A
2	2	131	A
2	2	134	G
2	2	144	G
2	2	164	G
2	2	169	C

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Mol	Chain	Res	Type
2	2	173	U
2	2	174	A
2	2	183	C
2	2	184	G
2	2	197	A
2	2	199	A
2	2	209	U
2	2	210	C
2	2	211	G
2	2	212	G
2	2	214	C
2	2	226	G
2	2	240	G
2	2	247	G
2	2	251	G
2	2	253	A
2	2	266	G
2	2	267	C
2	2	281	G
2	2	289	G
2	2	306	A
2	2	328	C
2	2	329	A
2	2	343	U
2	2	345	C
2	2	346	G
2	2	347	G
2	2	352	C
2	2	354	G
2	2	367	U
2	2	372	C
2	2	373	A
2	2	390	U
2	2	392	C
2	2	406	G
2	2	412	A
2	2	413	G
2	2	414	A
2	2	423	G
2	2	428	G
2	2	429	U
2	2	438	U

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Mol	Chain	Res	Type
2	2	441	A
2	2	442	G
2	2	449	G
2	2	464	U
2	2	467	U
2	2	468	A
2	2	479	U
2	2	481	G
2	2	482	A
2	2	484	G
2	2	486	U
2	2	495	A
2	2	496	A
2	2	497	G
2	2	510	A
2	2	511	C
2	2	516	U
2	2	517	G
2	2	521	G
2	2	527	G
2	2	531	U
2	2	532	A
2	2	533	A
2	2	547	A
2	2	550	G
2	2	559	A
2	2	561	U
2	2	564	C
2	2	571	U
2	2	572	A
2	2	573	A
2	2	575	G
2	2	576	C
2	2	577	G
2	2	596	A
2	2	642	A
2	2	665	A
2	2	701	U
2	2	702	A
2	2	703	G
2	2	713	G
2	2	723	U

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Mol	Chain	Res	Type
2	2	754	C
2	2	755	G
2	2	777	A
2	2	793	U
2	2	796	C
2	2	815	A
2	2	817	C
2	2	818	G
2	2	819	A
2	2	828	U
2	2	829	G
2	2	832	G
2	2	841	C
2	2	842	U
2	2	843	U
2	2	844	G
2	2	846	G
2	2	858	G
2	2	871	U
2	2	872	A
2	2	889	A
2	2	890	G
2	2	891	U
2	2	902	G
2	2	926	G
2	2	934	C
2	2	935	A
2	2	958	A
2	2	960	U
2	2	961	U
2	2	966	G
2	2	969	A
2	2	975	A
2	2	976	G
2	2	977	A
2	2	992	U
2	2	993	G
2	2	994	A
2	2	1004	A
2	2	1014	A
2	2	1020	G
2	2	1030	U

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Mol	Chain	Res	Type
2	2	1031	C
2	2	1033	G
2	2	1035	A
2	2	1044	A
2	2	1056	U
2	2	1065	U
2	2	1085	U
2	2	1088	G
2	2	1094	G
2	2	1101	A
2	2	1108	G
2	2	1127	G
2	2	1130	A
2	2	1134	G
2	2	1136	C
2	2	1137	C
2	2	1138	G
2	2	1139	G
2	2	1140	C
2	2	1142	G
2	2	1146	A
2	2	1152	A
2	2	1158	C
2	2	1159	U
2	2	1160	G
2	2	1168	U
2	2	1182	G
2	2	1183	U
2	2	1184	G
2	2	1191	A
2	2	1196	A
2	2	1202	U
2	2	1212	U
2	2	1213	A
2	2	1225	A
2	2	1227	A
2	2	1236	A
2	2	1238	A
2	2	1253	G
2	2	1256	A
2	2	1258	G
2	2	1260	G

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Mol	Chain	Res	Type
2	2	1267	C
2	2	1269	A
2	2	1270	G
2	2	1278	G
2	2	1280	A
2	2	1281	C
2	2	1282	C
2	2	1287	A
2	2	1295	U
2	2	1297	G
2	2	1298	U
2	2	1300	G
2	2	1302	C
2	2	1305	G
2	2	1320	C
2	2	1329	A
2	2	1331	G
2	2	1346	A
2	2	1348	U
2	2	1363	A
2	2	1379	G
2	2	1395	C
2	2	1397	C
2	2	1398	A
2	2	1400	C
2	2	1419	G
2	2	1429	A
2	2	1433	A
2	2	1446	A
2	2	1452	C
2	2	1492	A
2	2	1493	A
2	2	1497	G
2	2	1499	A
2	2	1502	A
2	2	1503	A
2	2	1506	U
2	2	1517	G
2	2	1519	A
2	2	1529	G
2	2	1530	G
3	3	4	C

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Mol	Chain	Res	Type
3	3	12	C
3	3	13	G
3	3	24	G
3	3	26	C
3	3	35	C
3	3	41	G
3	3	42	C
3	3	44	G
3	3	45	A
3	3	53	A
3	3	67	G
3	3	73	A
3	3	88	C
3	3	89	U
3	3	90	C
3	3	109	A
5	5	2	G
5	5	3	G
5	5	4	C
5	5	5	A
5	5	7	G
5	5	9	A
5	5	11	C
5	5	17	C
5	5	17(A)	U
5	5	18	G
5	5	20	U
5	5	21	A
5	5	22	G
5	5	28	C
5	5	30	U
5	5	31	C
5	5	32	A
5	5	33	U
5	5	35	G
5	5	36	G
5	5	39	G
5	5	43	G
5	5	44	G
5	5	45	G
5	5	47	U
5	5	55	U

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Mol	Chain	Res	Type
5	5	56	C
5	5	57	A
5	5	58	A
5	5	60	U
5	5	76	A

All (81) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	91	A
1	1	140	C
1	1	141	G
1	1	227	A
1	1	310	A
1	1	372	G
1	1	421	C
1	1	458	G
1	1	490	C
1	1	546	U
1	1	549	G
1	1	615	U
1	1	704	G
1	1	752	A
1	1	858	G
1	1	859	G
1	1	891	G
1	1	898	C
1	1	960	A
1	1	1020	A
1	1	1022	G
1	1	1072	C
1	1	1111	A
1	1	1130	U
1	1	1320	C
1	1	1328	A
1	1	1358	G
1	1	1378	A
1	1	1396	U
1	1	1475	G
1	1	1490	A
1	1	1584	U
1	1	1663	G

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Mol	Chain	Res	Type
1	1	1715	G
1	1	1730	C
1	1	1847	G
1	1	1875	G
1	1	1900	A
1	1	1930	G
1	1	1940	U
1	1	2143	C
1	1	2170	A
1	1	2181	U
1	1	2194	U
1	1	2308	G
1	1	2326	C
1	1	2333	A
1	1	2391	G
1	1	2428	G
1	1	2474	U
1	1	2502	G
1	1	2505	G
1	1	2566	A
1	1	2629	U
1	1	2655	G
1	1	2808	G
1	1	2867	G
1	1	2893	A
2	2	70	U
2	2	86	G
2	2	641	U
2	2	843	U
2	2	890	G
2	2	991	U
2	2	1151	A
2	2	1182	G
2	2	1190	G
2	2	1201	A
2	2	1281	C
2	2	1347	G
2	2	1399	C
2	2	1432	G
3	3	44	G
3	3	66	A
3	3	88	C

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Mol	Chain	Res	Type
3	3	108	A
5	5	2	G
5	5	3	G
5	5	4	C
5	5	56	C
5	5	59	A

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
44	0TD	q	89	44	8,9,10	1.54	1 (12%)	6,11,13	1.14	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
44	0TD	q	89	44	-	3/7/12/14	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
44	q	89	0TD	CB-CA	-2.14	1.54	1.54

There are no bond angle outliers.

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
44	q	89	0TD	CG-CB-SB-CSB
44	q	89	0TD	SB-CB-CG-OD1
44	q	89	0TD	SB-CB-CG-OD2

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
44	q	89	0TD	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 281 ligands modelled in this entry, 281 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

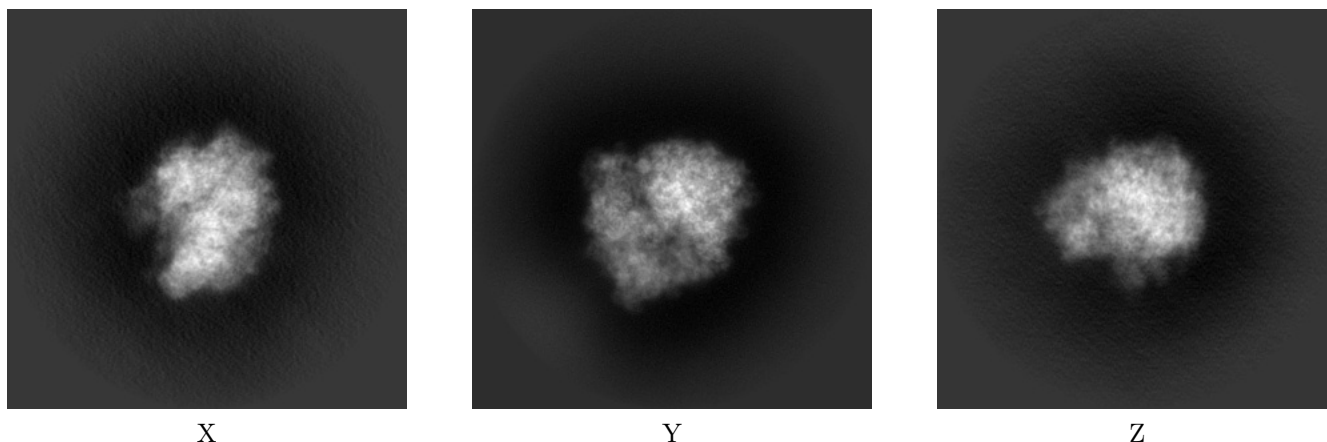
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-42852. These allow visual inspection of the internal detail of the map and identification of artifacts.

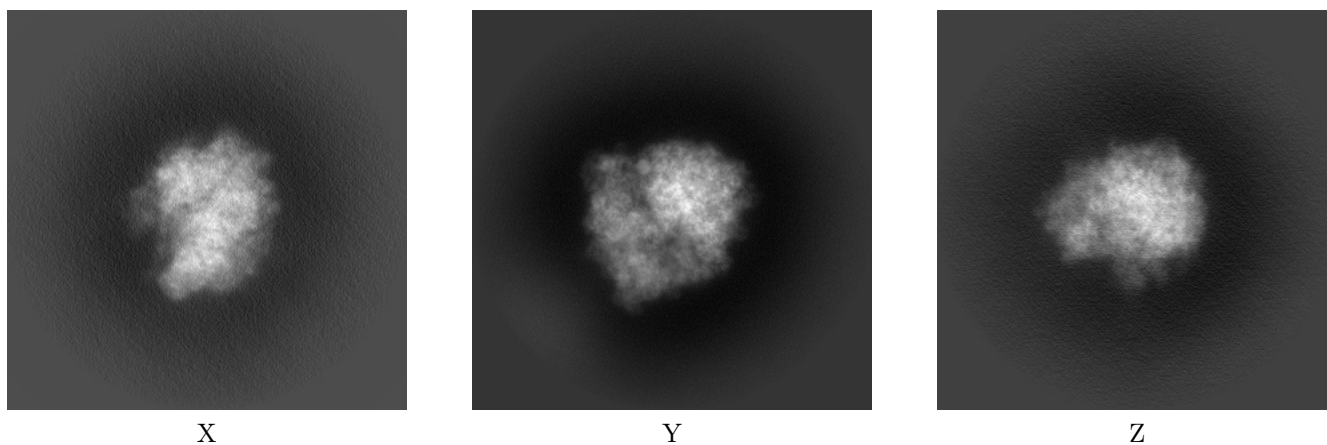
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

6.1.1 Primary map



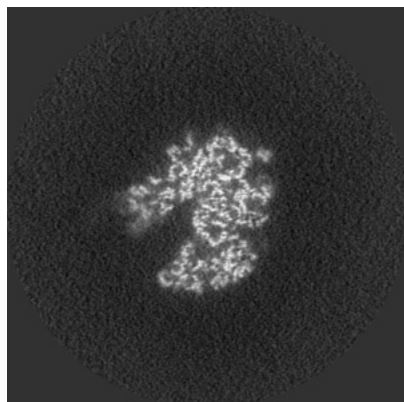
6.1.2 Raw map



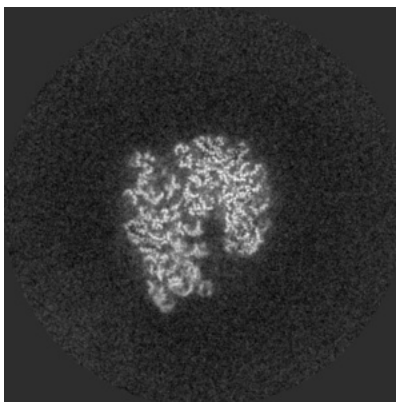
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

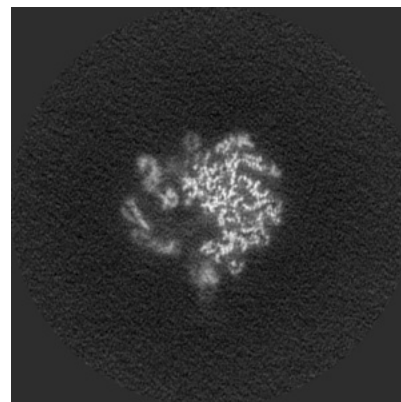
6.2.1 Primary map



X Index: 256

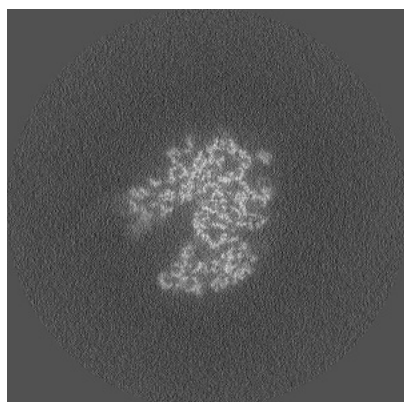


Y Index: 256

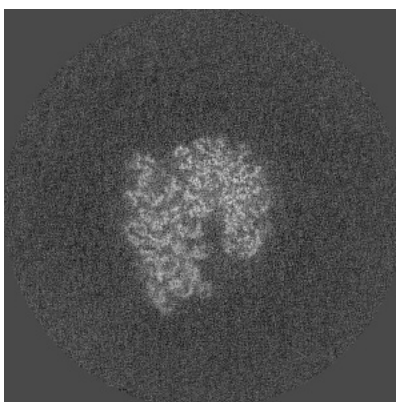


Z Index: 256

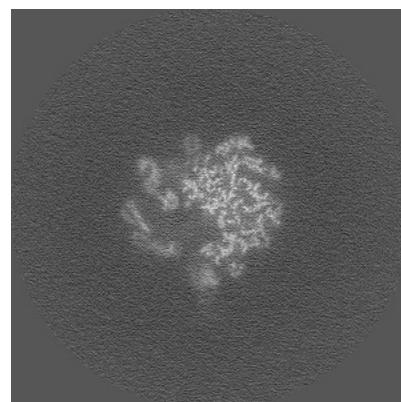
6.2.2 Raw map



X Index: 256



Y Index: 256

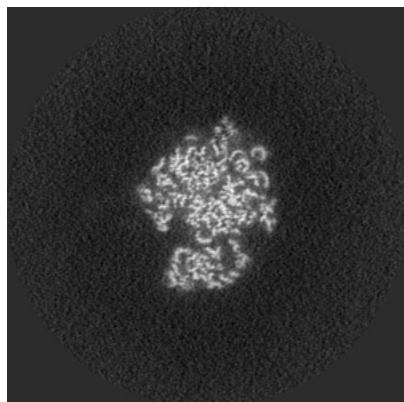


Z Index: 256

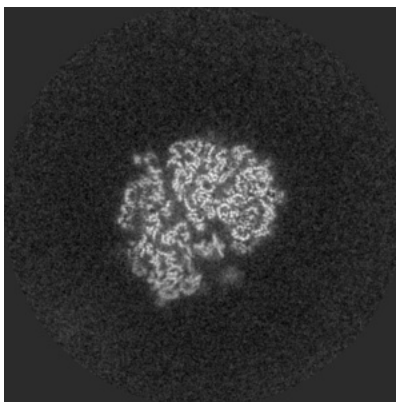
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

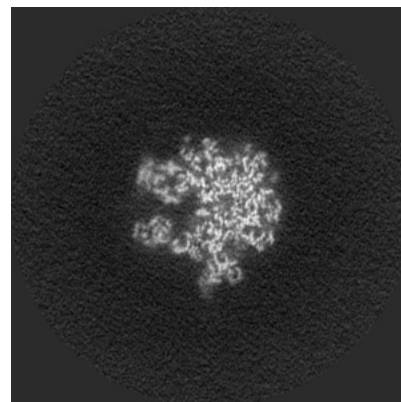
6.3.1 Primary map



X Index: 271

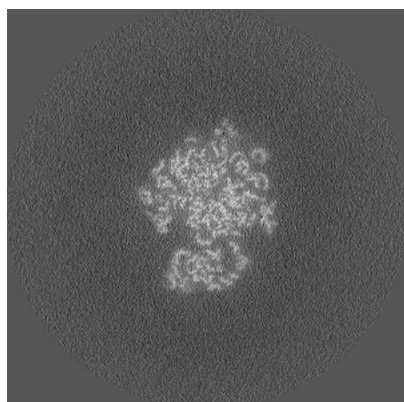


Y Index: 267

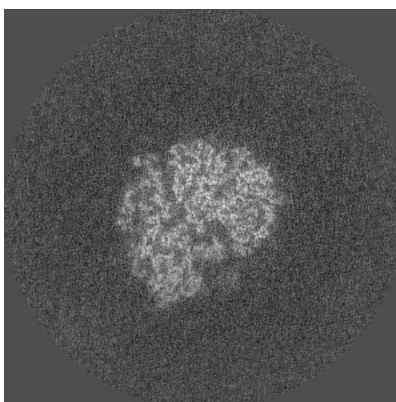


Z Index: 274

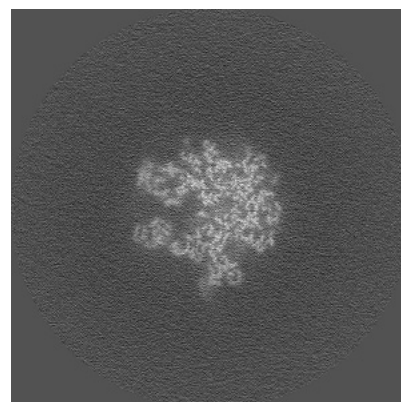
6.3.2 Raw map



X Index: 271



Y Index: 266

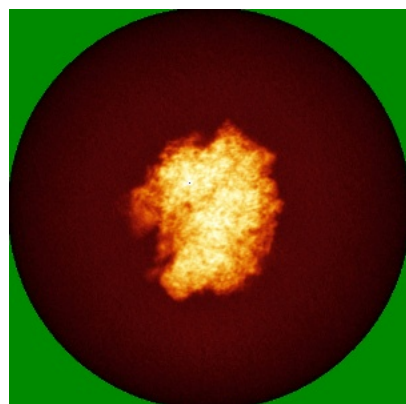


Z Index: 273

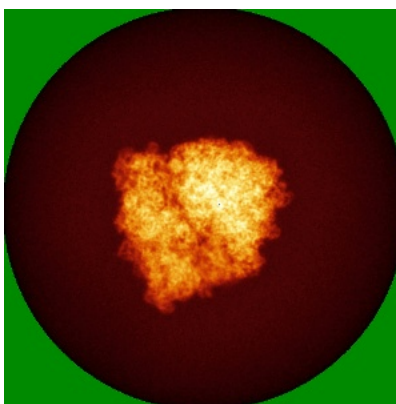
The images above show the largest variance slices of the map in three orthogonal directions.

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

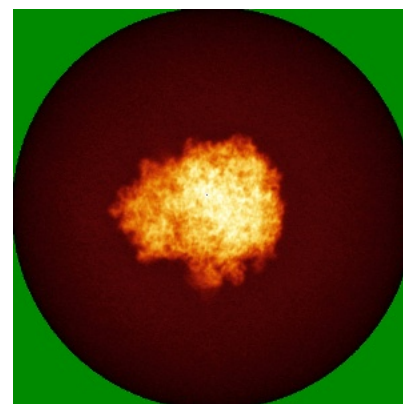
6.4.1 Primary map



X

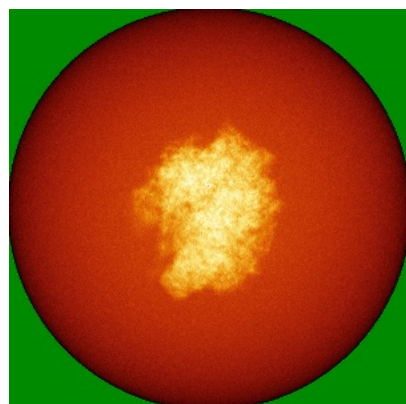


Y

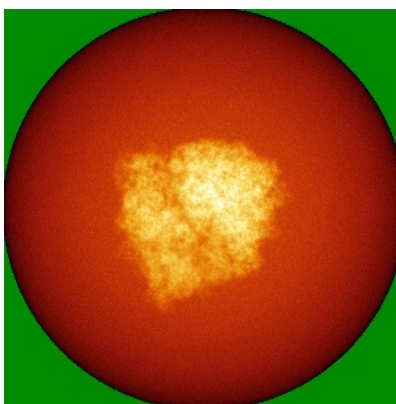


Z

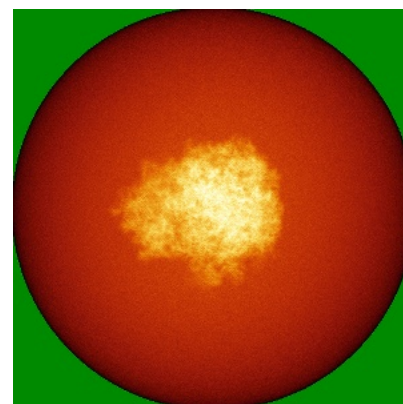
6.4.2 Raw map



X



Y

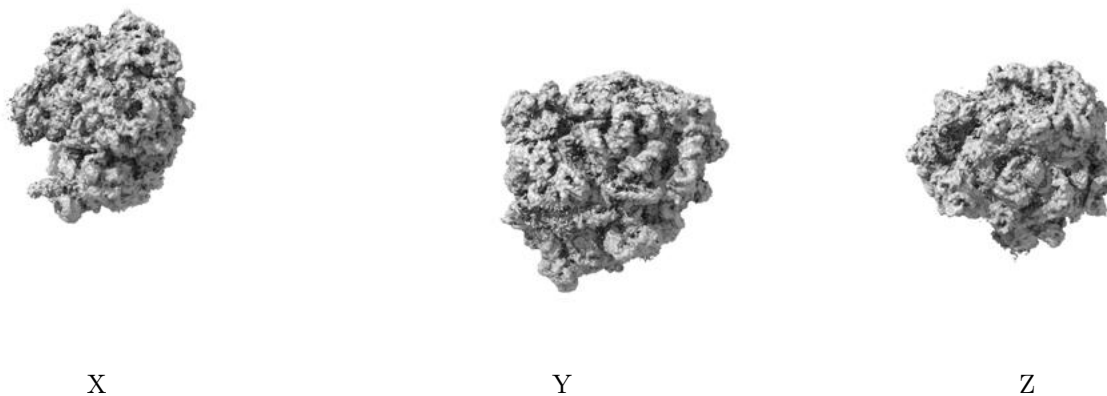


Z

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.

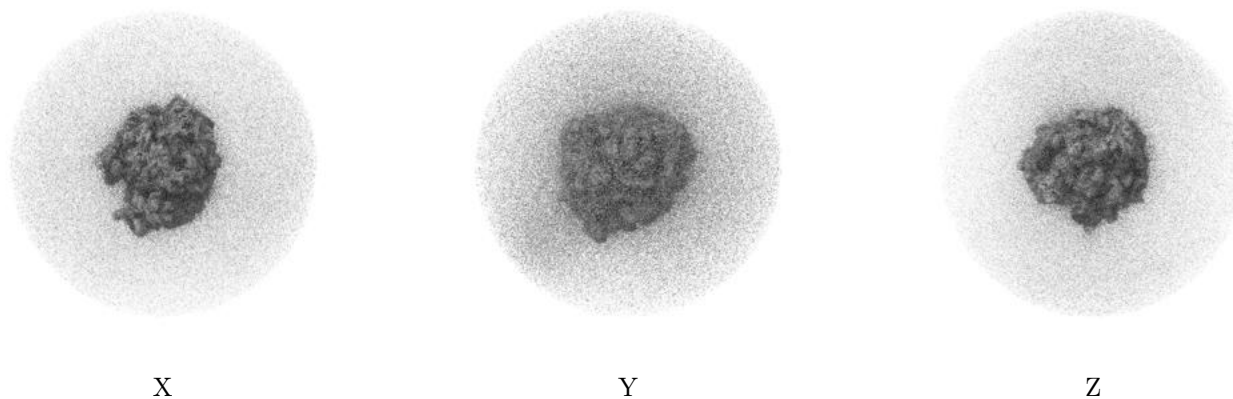
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0289. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

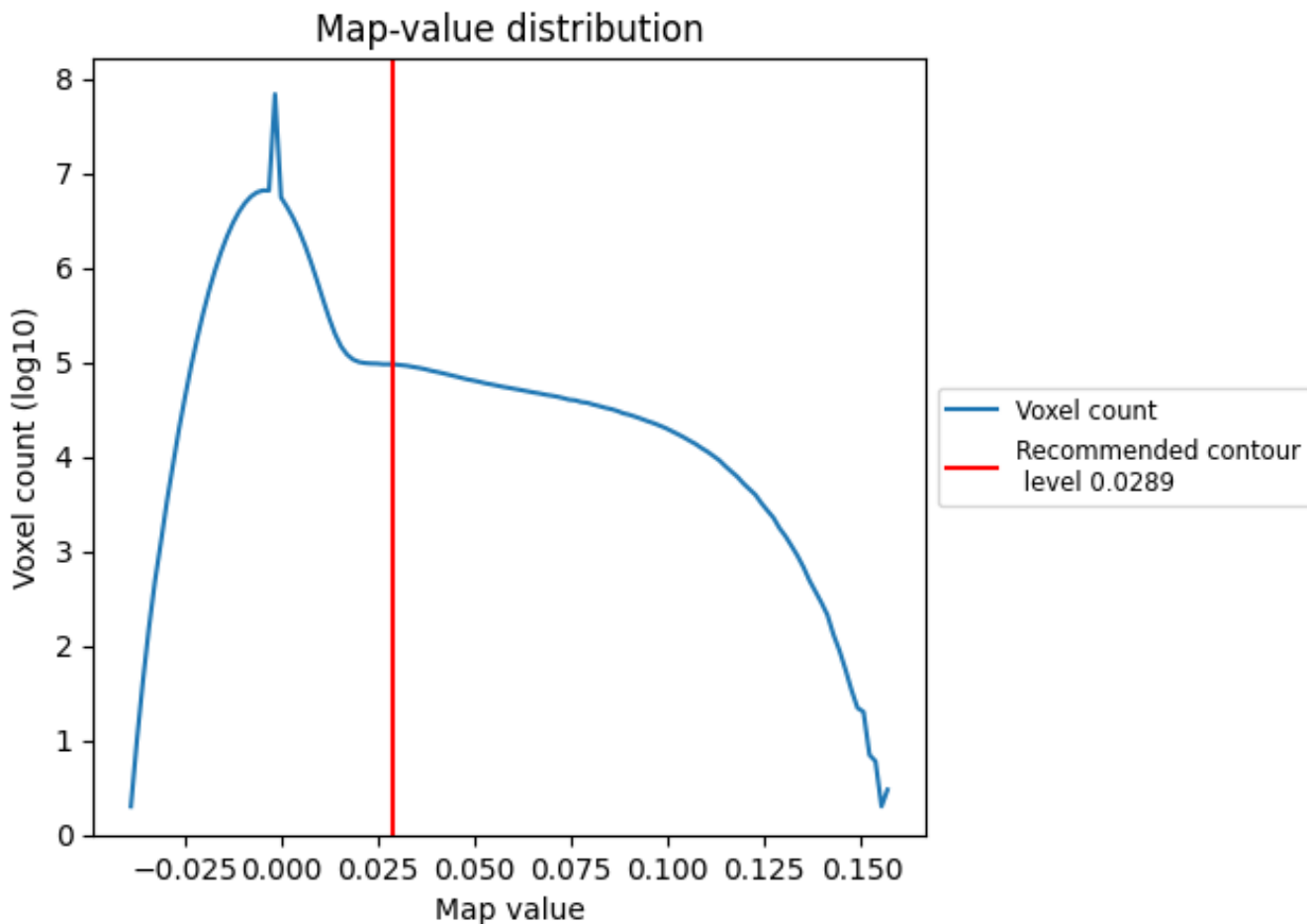
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

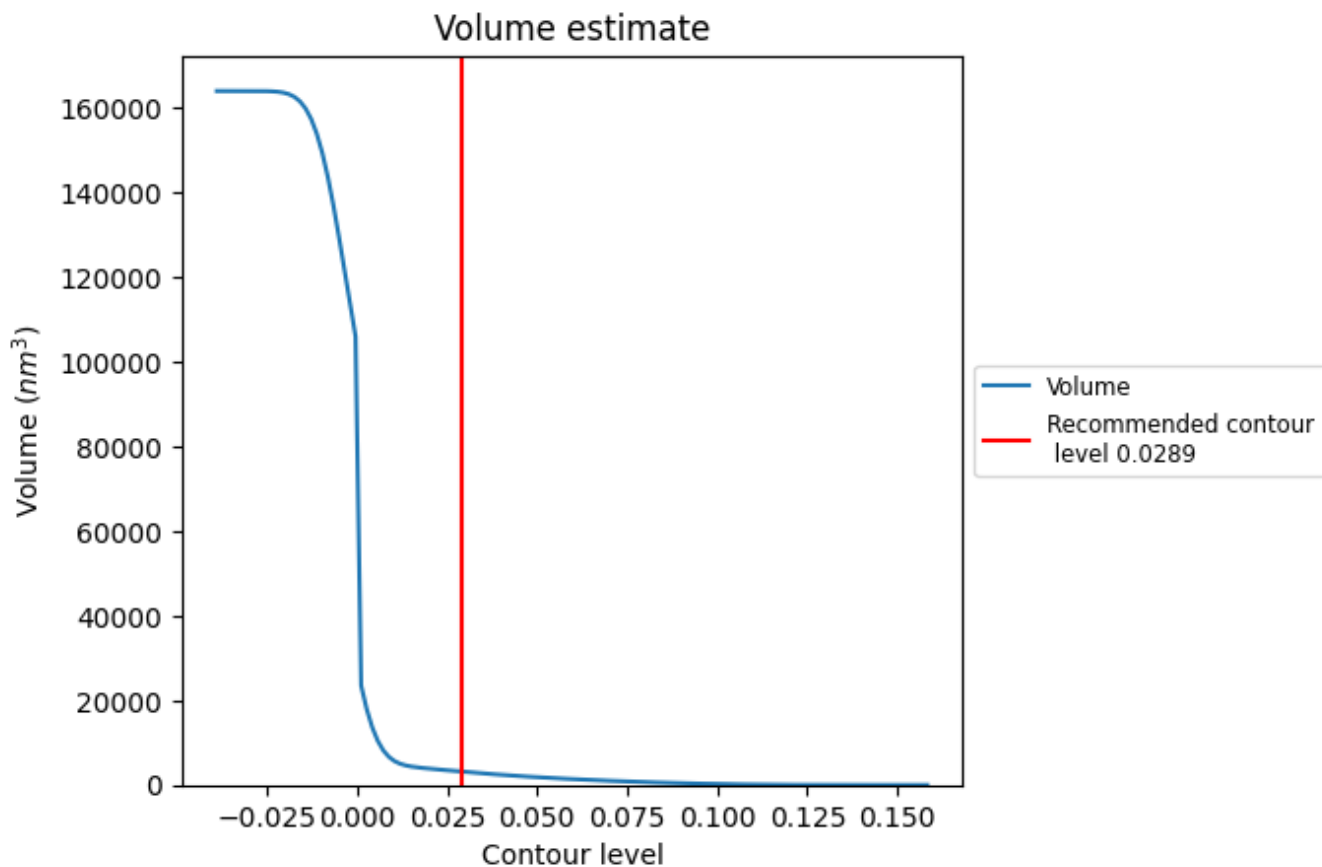
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

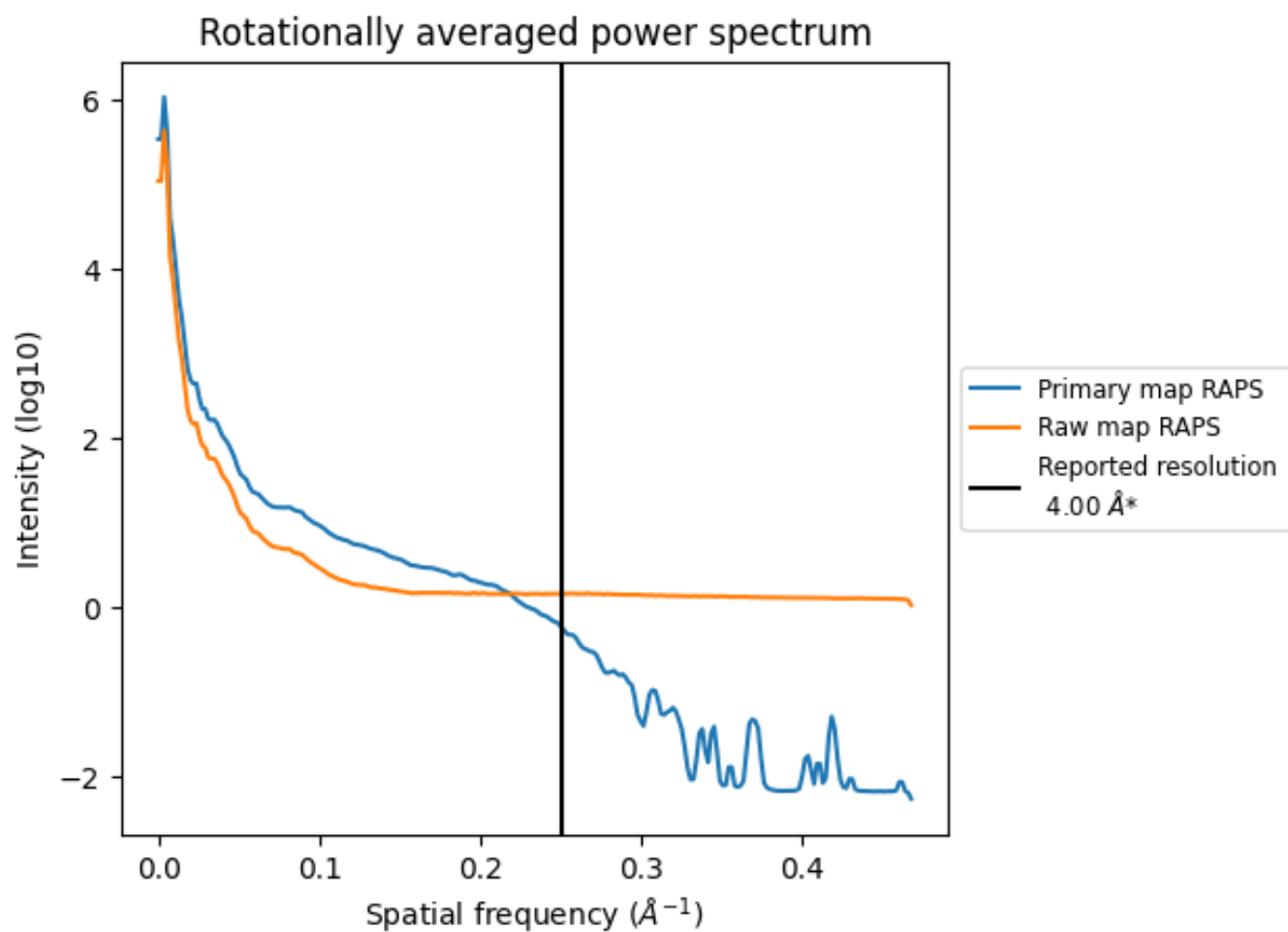
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 31777 nm^3 ; this corresponds to an approximate mass of 2870 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 [i](#)

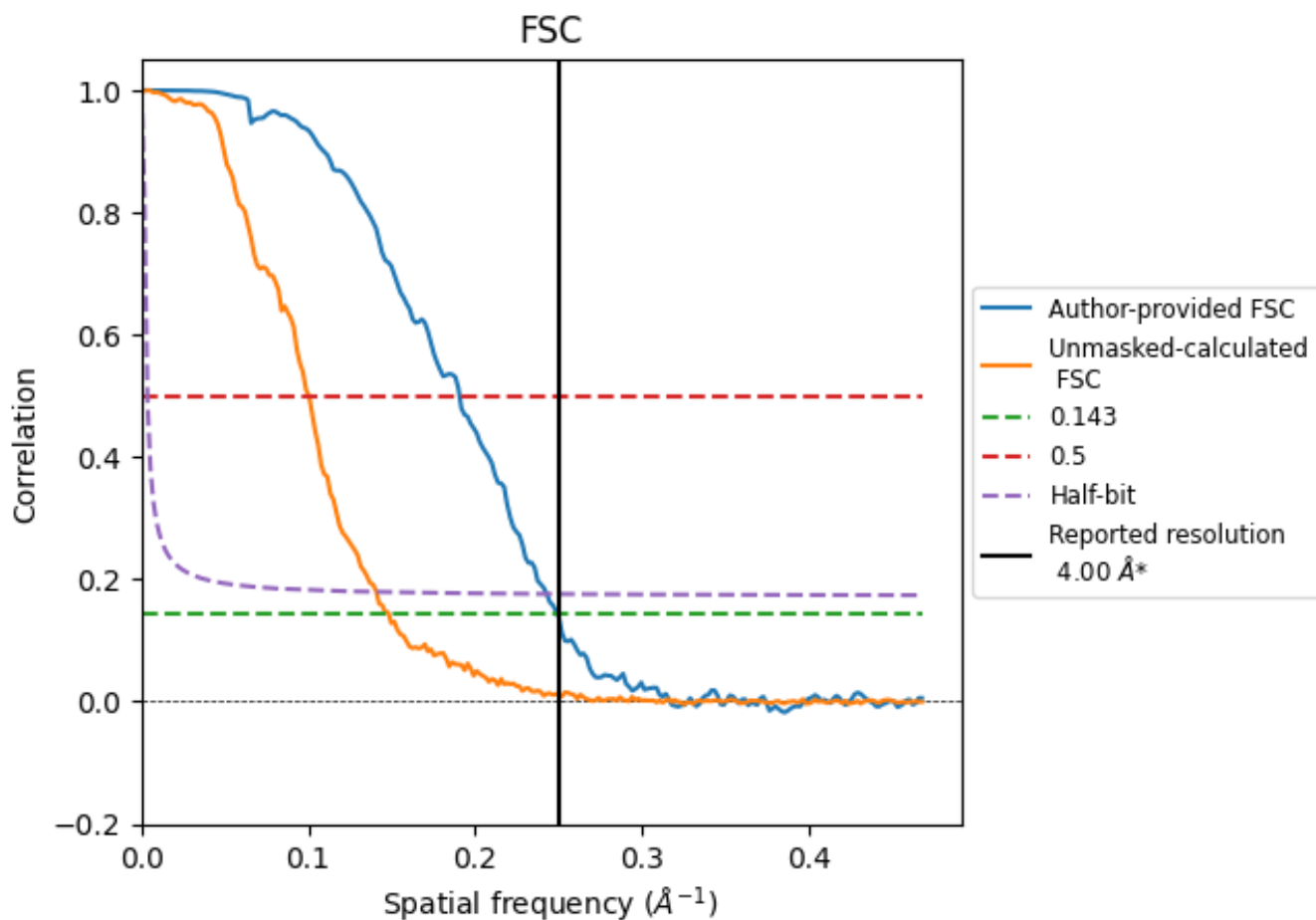


*Reported resolution corresponds to spatial frequency of 0.250 Å⁻¹

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 0.250 Å⁻¹

8.2 Resolution estimates [i](#)

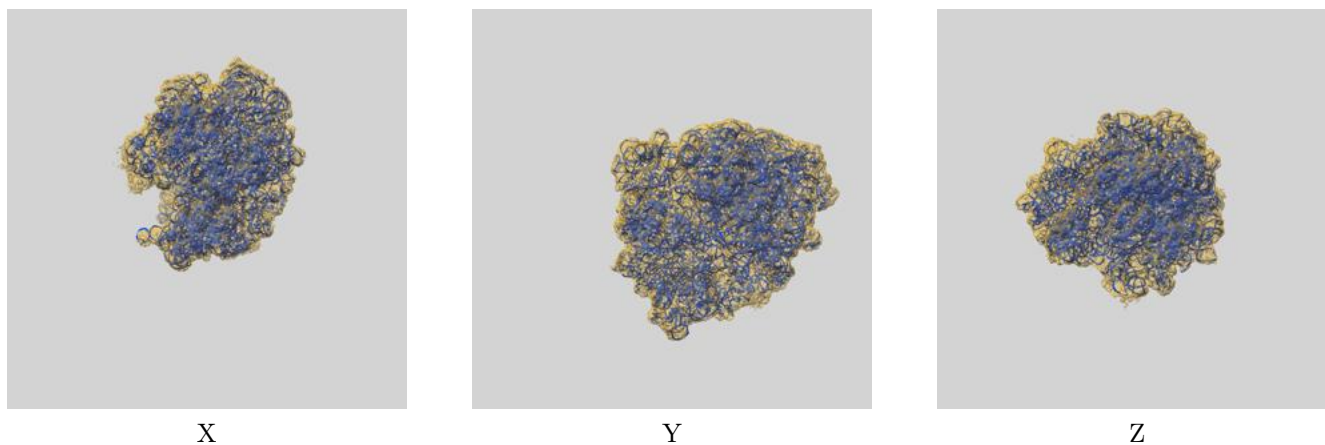
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.00	-	-
Author-provided FSC curve	4.01	5.24	4.12
Unmasked-calculated*	6.75	9.95	7.10

*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 6.75 differs from the reported value 4.0 by more than 10 %

9 Map-model fit [i](#)

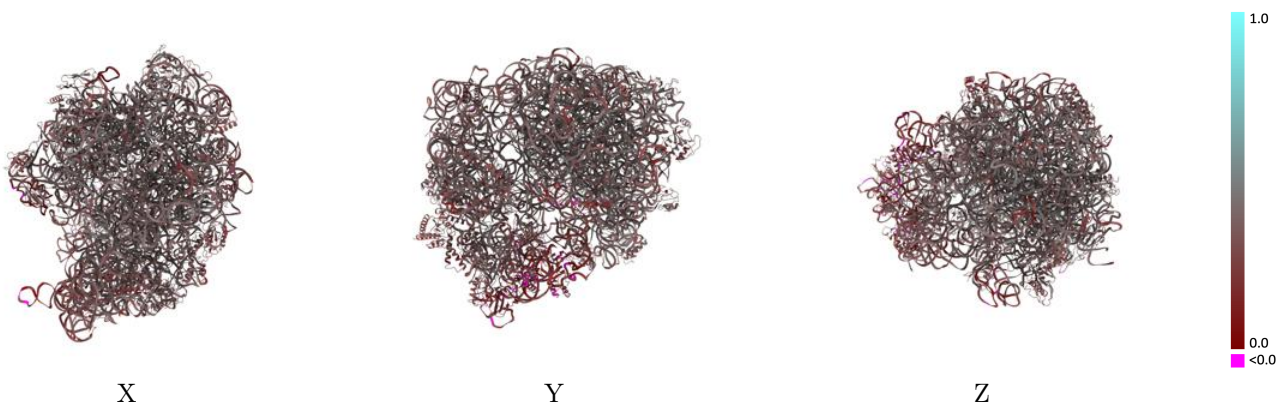
This section contains information regarding the fit between EMDB map EMD-42852 and PDB model 8V03. Per-residue inclusion information can be found in section 3 on page 16.

9.1 Map-model overlay [i](#)



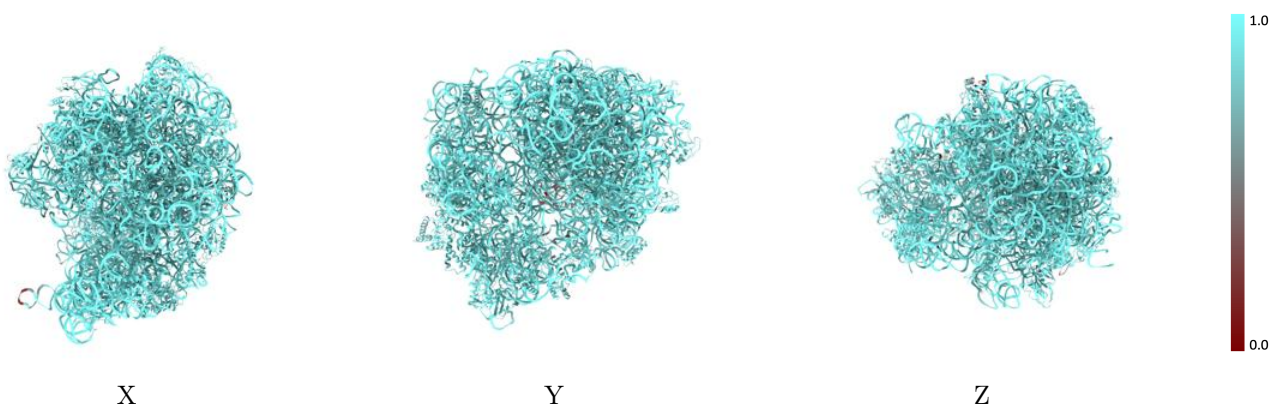
The images above show the 3D surface view of the map at the recommended contour level 0.0289 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



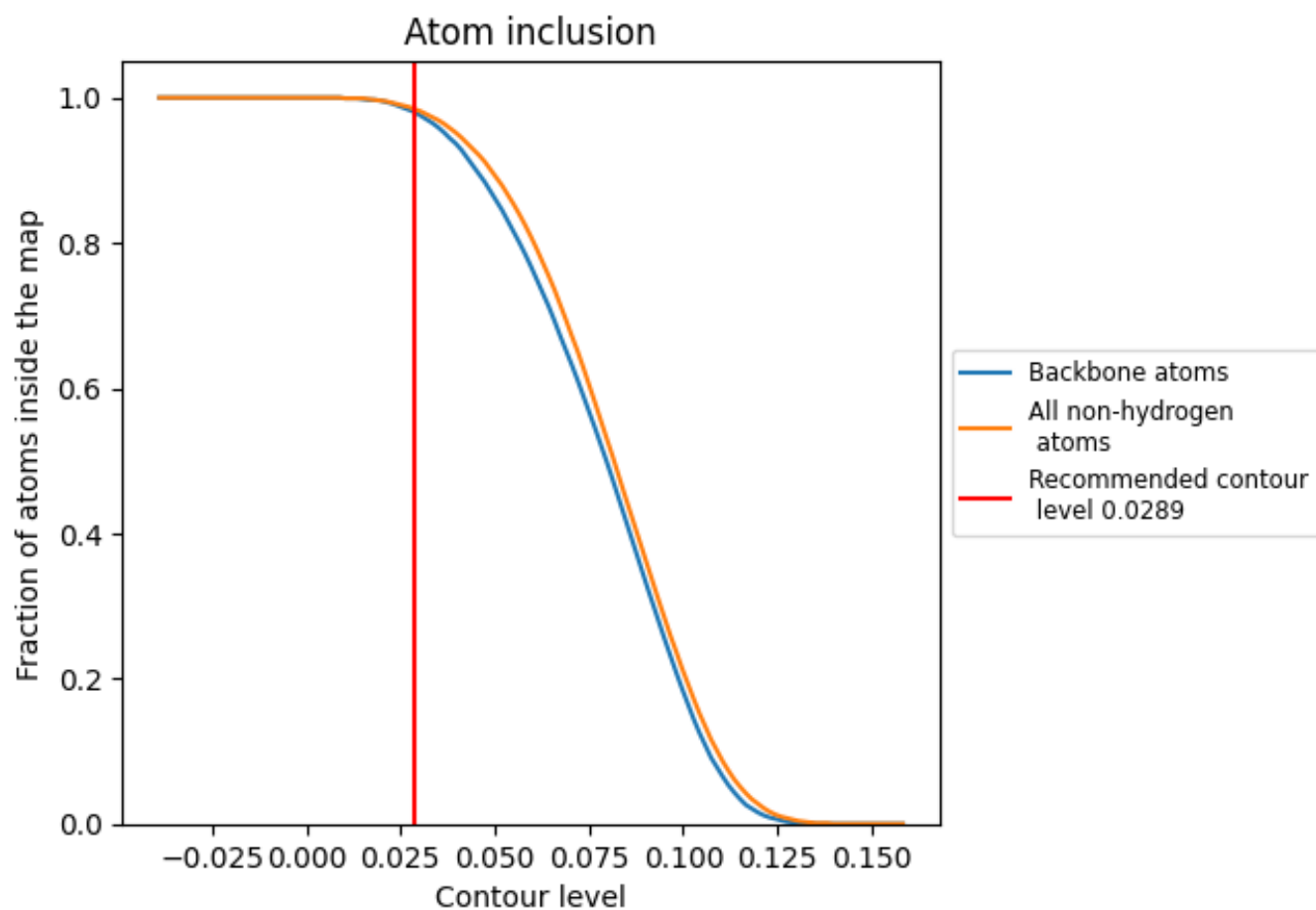
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0289).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 98% of all backbone atoms, 98% 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 (0.0289) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9840	 0.3570
1	 0.9950	 0.3800
2	 0.9920	 0.3390
3	 0.9980	 0.3640
4	 1.0000	 0.3340
5	 0.9990	 0.3320
B	 0.9990	 0.4220
C	 0.9830	 0.4060
D	 0.9670	 0.3840
E	 0.9580	 0.2610
F	 0.9430	 0.3390
G	 0.6990	 0.2460
J	 0.9900	 0.3830
K	 0.9900	 0.4080
L	 0.9690	 0.3940
M	 0.9950	 0.3990
N	 0.9980	 0.3910
O	 0.9640	 0.3510
P	 0.9790	 0.3850
Q	 0.9870	 0.3610
R	 0.9590	 0.4000
S	 0.9830	 0.3830
T	 0.9790	 0.3840
U	 0.9820	 0.3700
V	 0.9550	 0.3560
W	 0.9960	 0.4070
X	 0.9820	 0.3750
Y	 0.9440	 0.3040
Z	 0.9680	 0.3950
b	 0.9930	 0.3910
c	 0.9800	 0.3940
d	 1.0000	 0.4050
e	 1.0000	 0.4010
f	 0.9970	 0.3840
g	 0.8600	 0.2800



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Chain	Atom inclusion	Q-score
h	 0.9690	 0.2970
i	 0.9760	 0.2620
j	 0.9920	 0.3660
k	 0.9330	 0.3190
l	 0.9440	 0.1630
m	 0.9620	 0.3710
n	 0.9400	 0.2020
o	 0.9380	 0.2790
p	 0.9860	 0.3710
q	 0.9860	 0.3580
r	 0.9150	 0.1870
s	 0.9870	 0.2780
t	 0.9840	 0.3400
u	 0.9860	 0.3540
v	 0.9730	 0.3450
w	 0.9900	 0.3310
x	 0.9470	 0.1700
y	 0.9880	 0.2890
z	 0.9600	 0.2670