



Full wwPDB EM Validation Report ⓘ

Mar 27, 2026 – 01:29 PM UTC

PDB ID : 7PI9 / pdb_00007pi9
EMDB ID : EMD-13433
Title : 70S ribosome with EF-Tu-tRNA and P-site tRNA in spectinomycin-treated
Mycoplasma pneumoniae cells
Authors : Xue, L.; Lenz, S.; Rappsilber, J.; Mahamid, J.
Deposited on : 2021-08-19
Resolution : 6.30 Å (reported)
Based on initial models : 4V7C, 7OOD, 4V5L, 7OOC

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

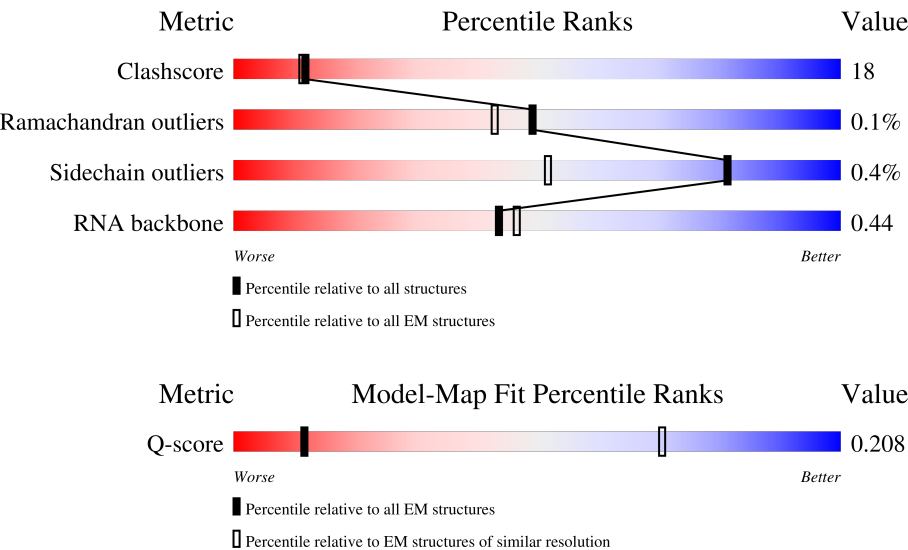
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh &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

1 Overall quality at a glance i

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

The reported resolution of this entry is 6.30 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	550 (5.80 - 6.80)

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

Mol	Chain	Length	Quality of chain
1	0	48	
2	1	59	
3	2	37	

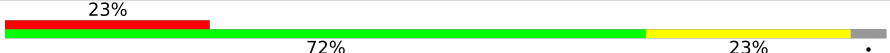
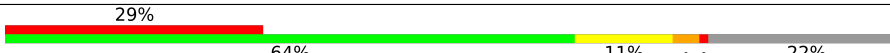
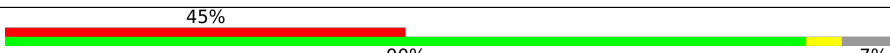
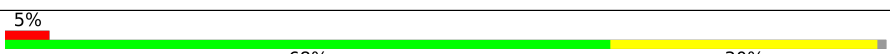
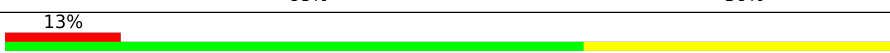
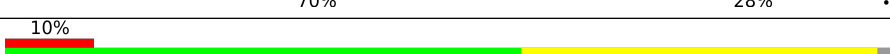
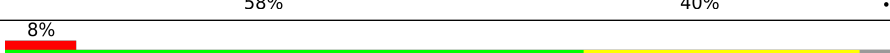
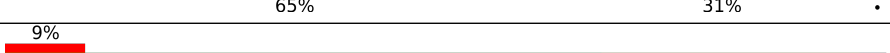
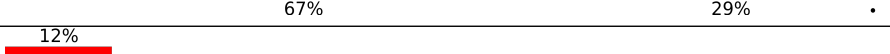
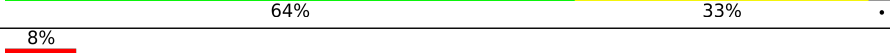
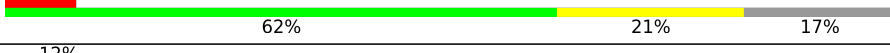
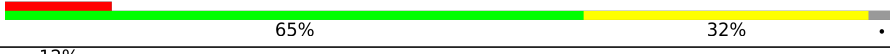
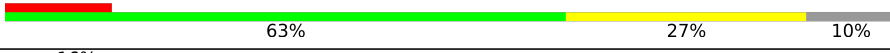
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Mol	Chain	Length	Quality of chain
4	9	394	
5	A	294	
6	B	273	
7	C	205	
8	D	219	
9	E	215	
10	F	155	
11	G	142	
12	H	132	
13	I	108	
14	J	121	
15	K	139	
16	L	124	
17	M	61	
18	N	86	
19	O	94	
20	P	85	
21	Q	104	
22	R	87	
23	S	87	
24	T	60	
25	a	287	
26	b	287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

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

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Mol	Chain	Length	Quality of chain
54	6	76	21% 33% 46% 20%
54	7	76	25% 53% 22%

2 Entry composition

There are 54 unique types of molecules in this entry. The entry contains 149163 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

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

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

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

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

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

- Molecule 4 is a protein called Elongation factor Tu.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
30	f	145	Total	C	N	O	S	0	0
			1182	763	206	210	3		

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

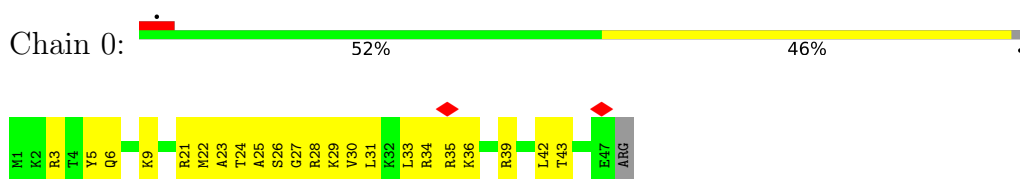
- Molecule 54 is a RNA chain called tRNA-Phe.

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

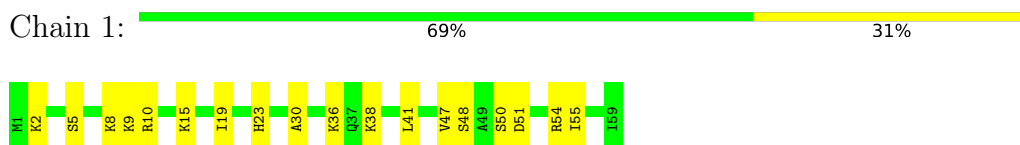
3 Residue-property plots [i](#)

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

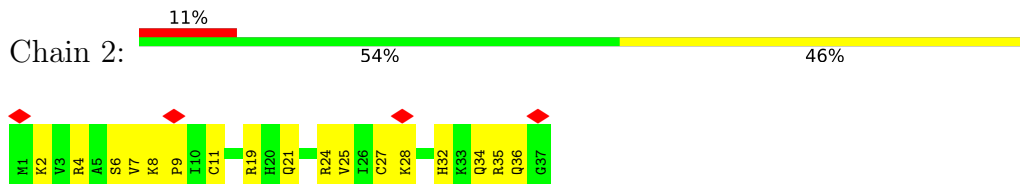
- Molecule 1: 50S ribosomal protein L34



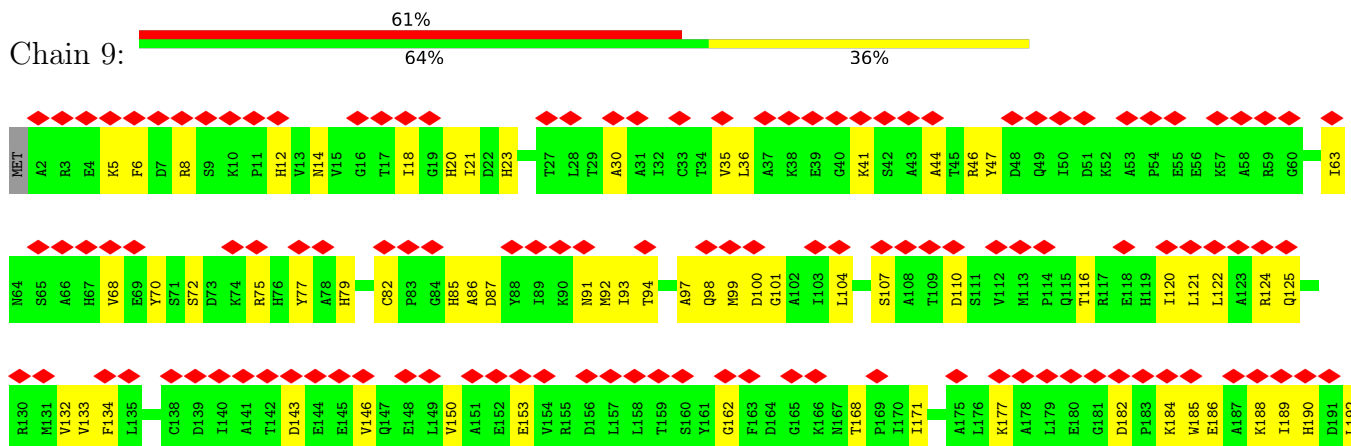
- Molecule 2: 50S ribosomal protein L35

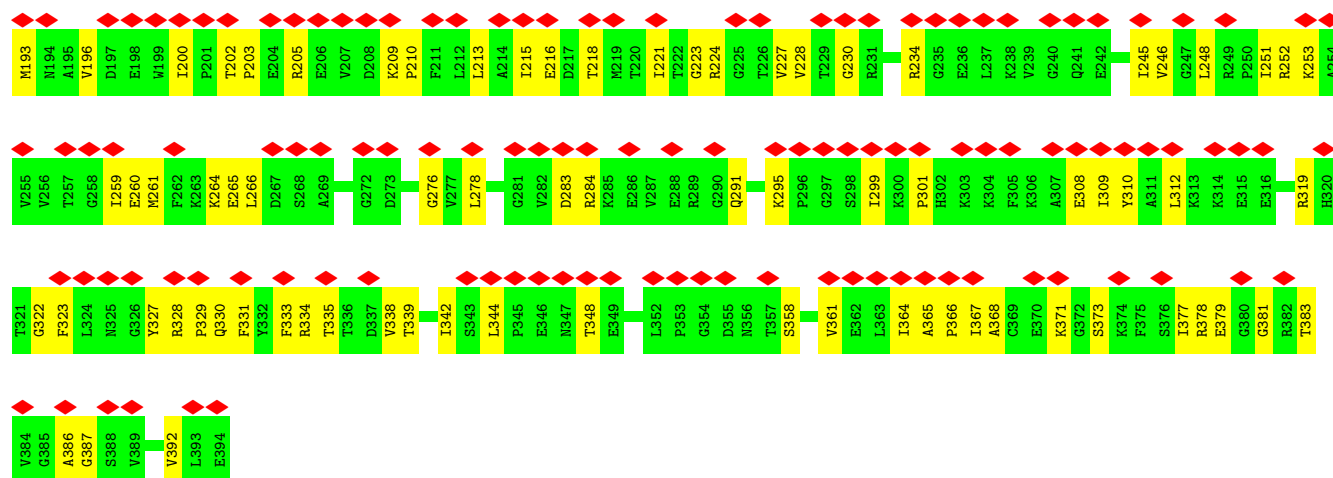


- Molecule 3: 50S ribosomal protein L36

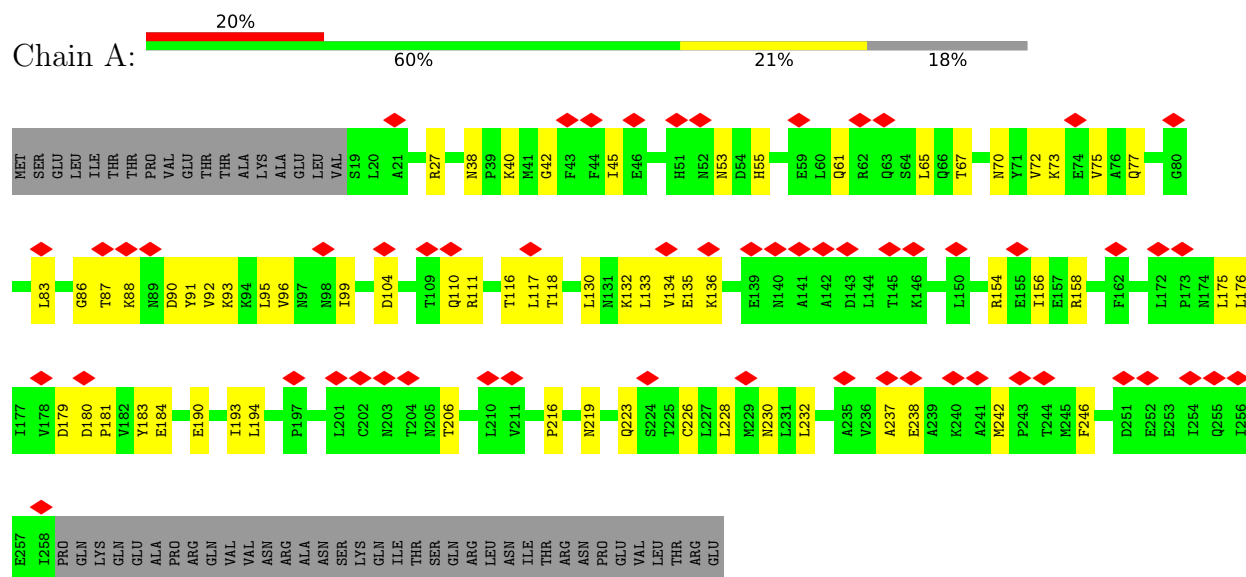


- Molecule 4: Elongation factor Tu

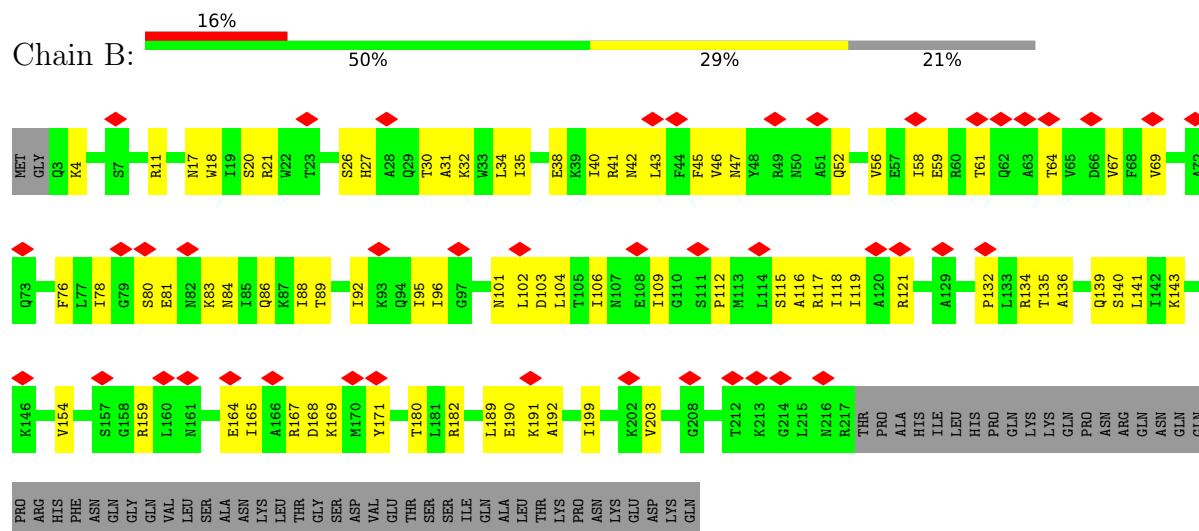




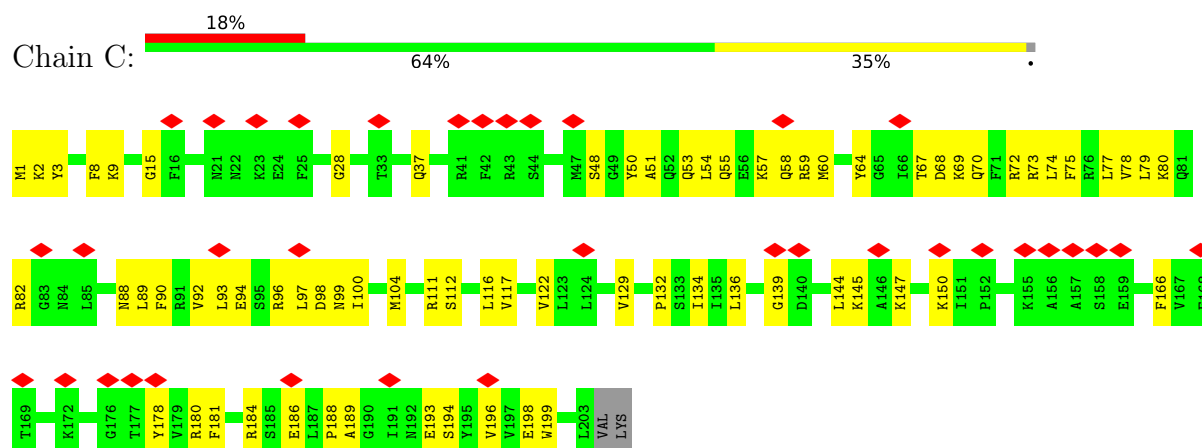
• Molecule 5: 30S ribosomal protein S2



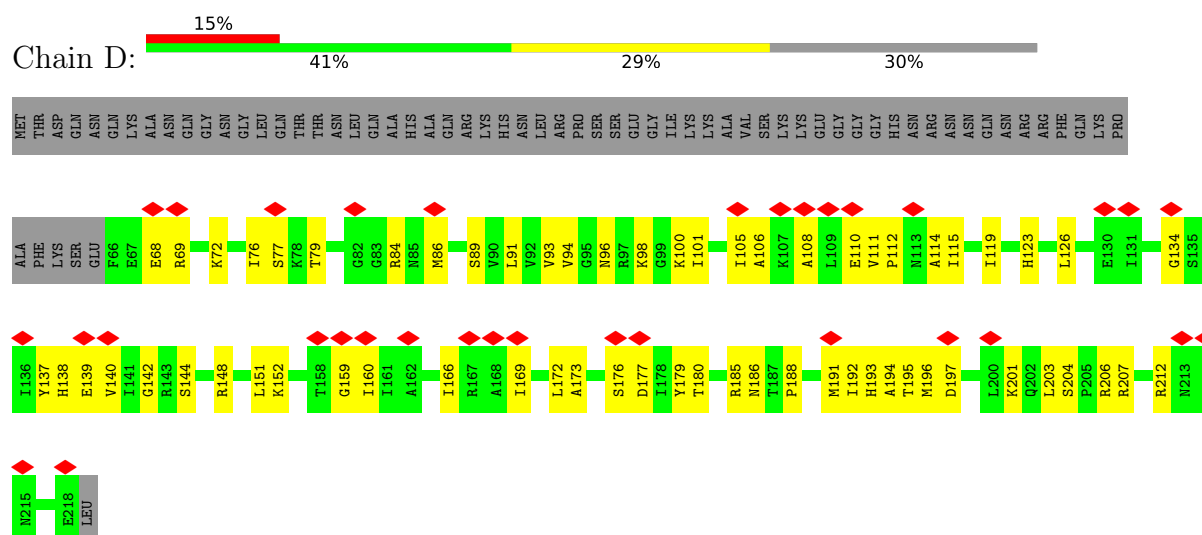
• Molecule 6: 30S ribosomal protein S3



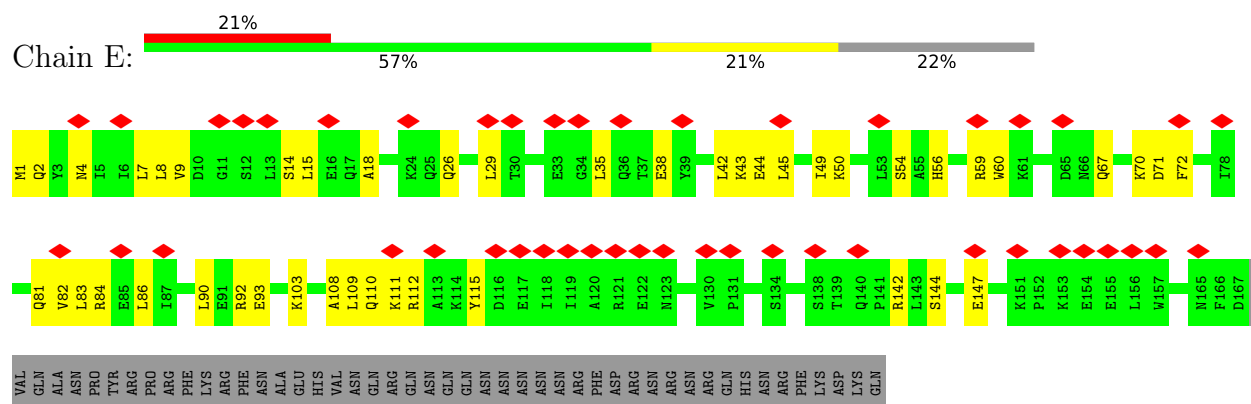
- Molecule 7: 30S ribosomal protein S4



- Molecule 8: 30S ribosomal protein S5

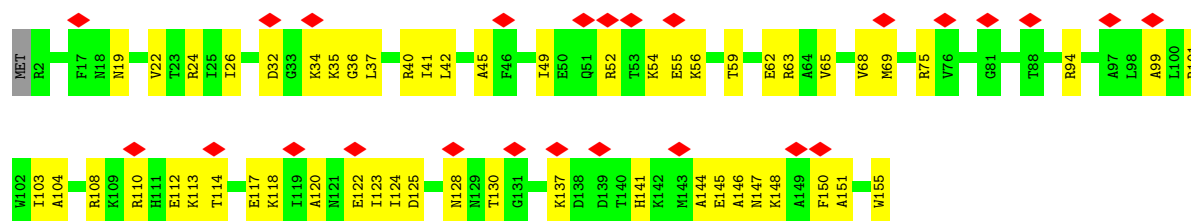


- Molecule 9: 30S ribosomal protein S6

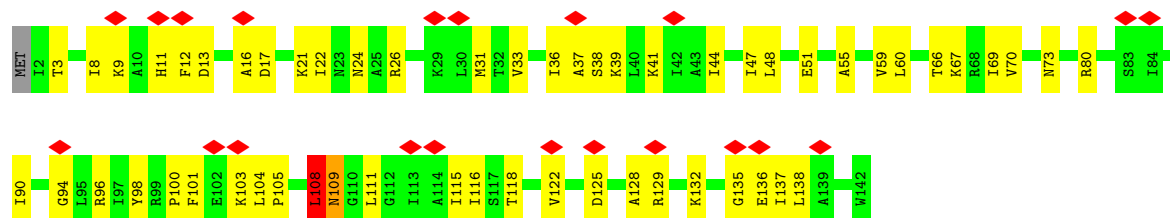


- Molecule 10: 30S ribosomal protein S7

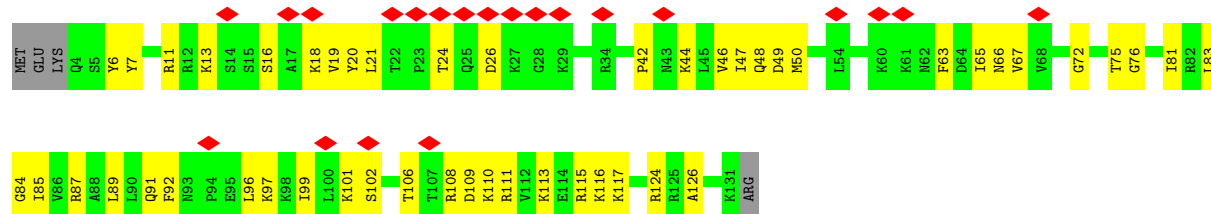




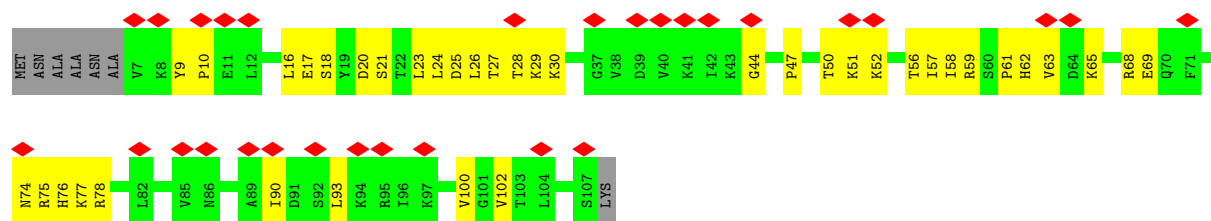
• Molecule 11: 30S ribosomal protein S8



• Molecule 12: 30S ribosomal protein S9

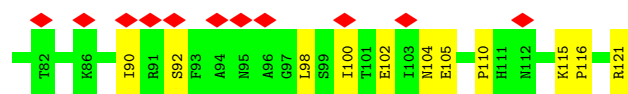


• Molecule 13: 30S ribosomal protein S10

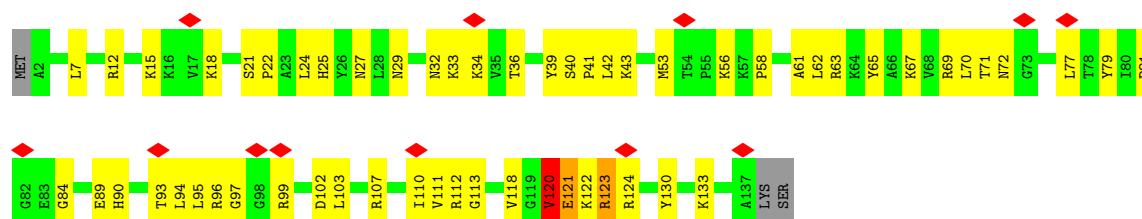


• Molecule 14: 30S ribosomal protein S11

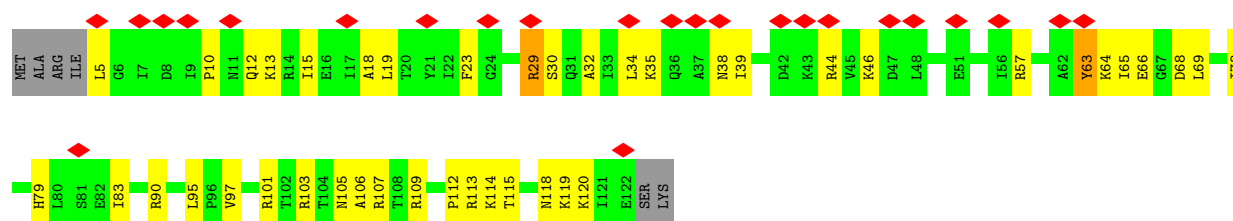




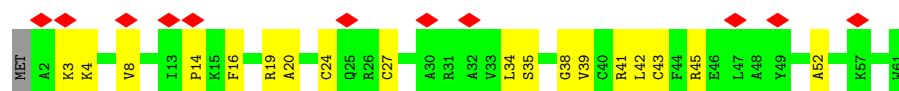
- Molecule 15: 30S ribosomal protein S12



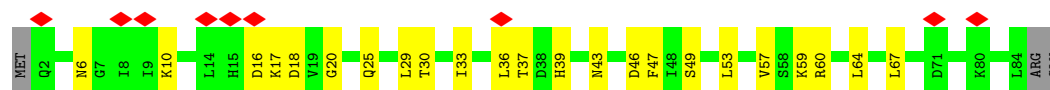
- Molecule 16: 30S ribosomal protein S13



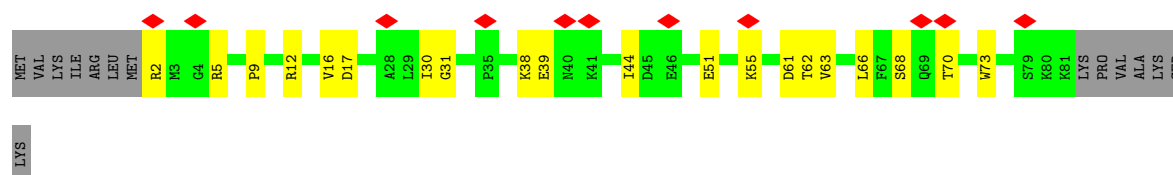
- Molecule 17: 30S ribosomal protein S14 type Z



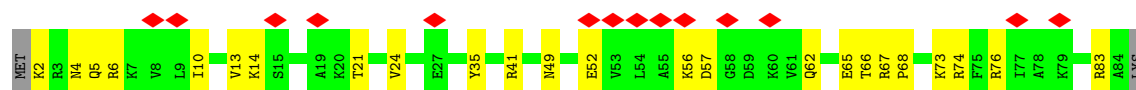
- Molecule 18: 30S ribosomal protein S15



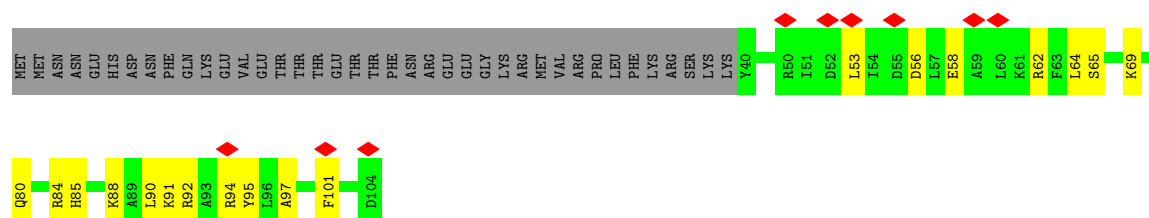
- Molecule 19: 30S ribosomal protein S16



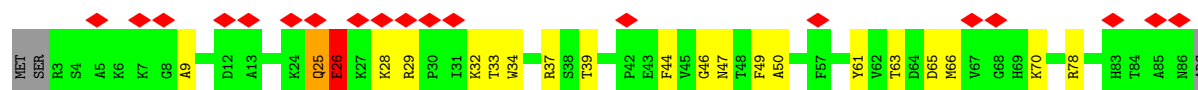
- Molecule 20: 30S ribosomal protein S17



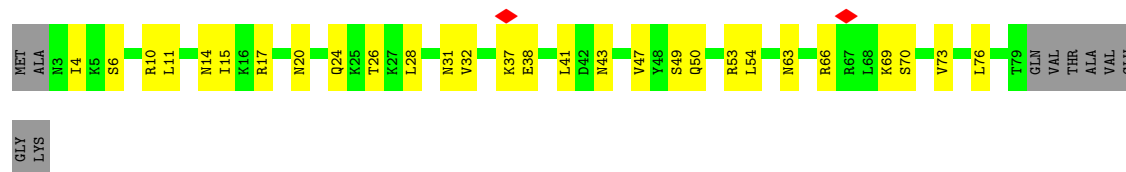
- Molecule 21: 30S ribosomal protein S18



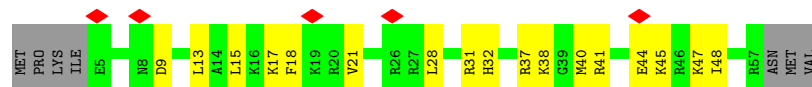
- Molecule 22: 30S ribosomal protein S19



- Molecule 23: 30S ribosomal protein S20

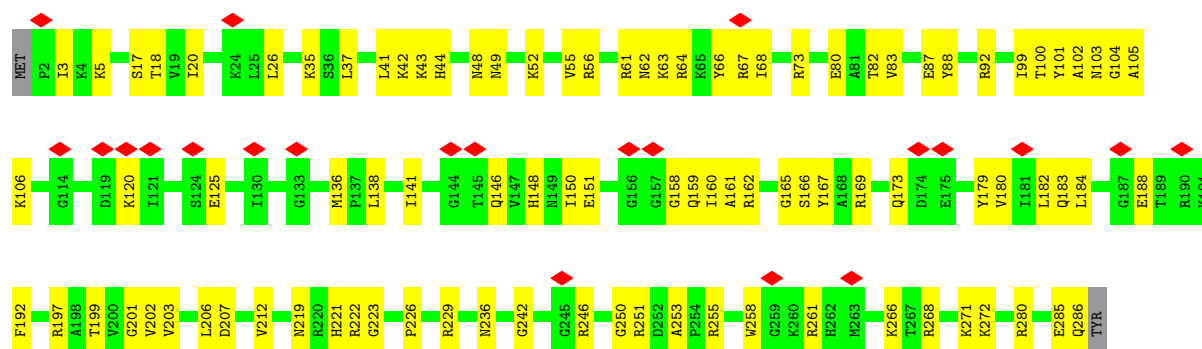


- Molecule 24: 30S ribosomal protein S21

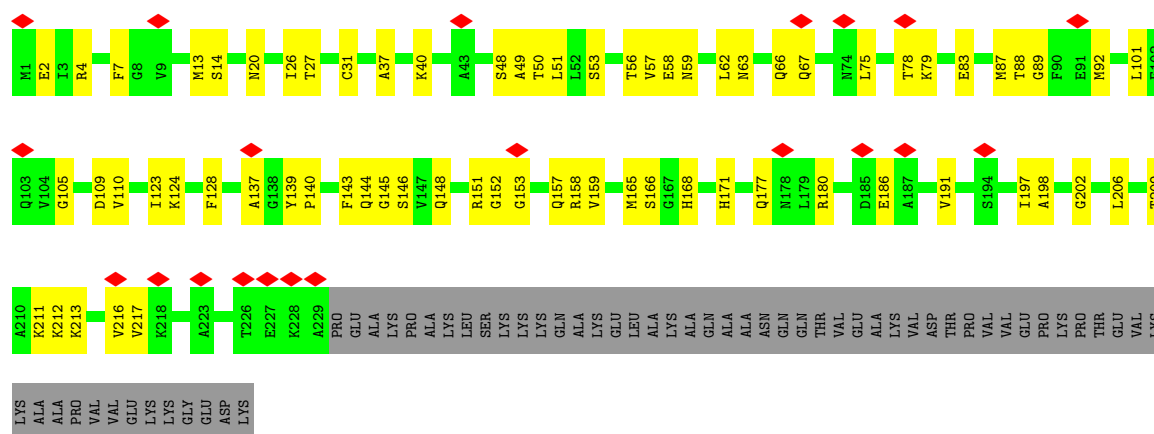


- Molecule 25: 50S ribosomal protein L2

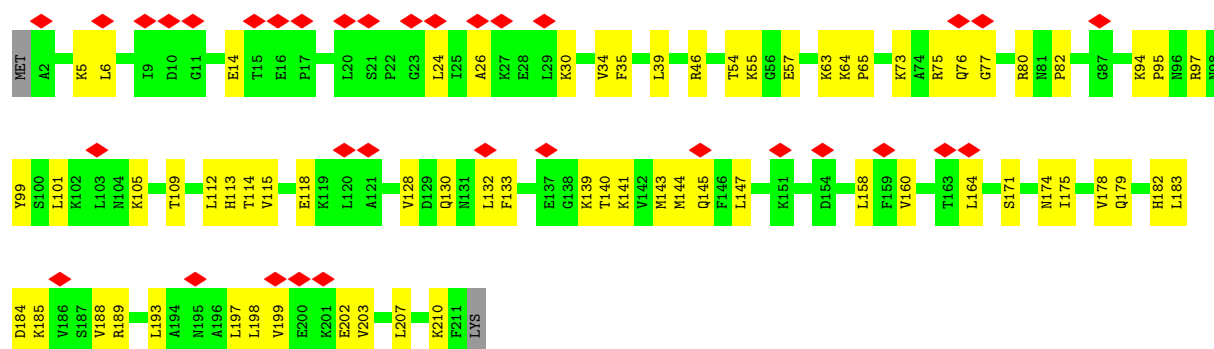




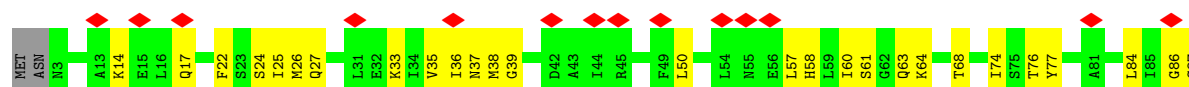
• Molecule 26: 50S ribosomal protein L3

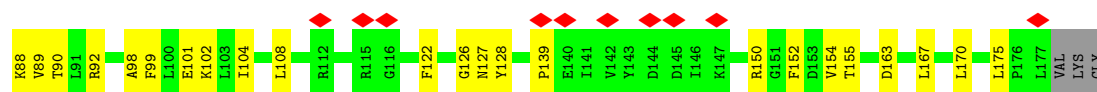


• Molecule 27: 50S ribosomal protein L4

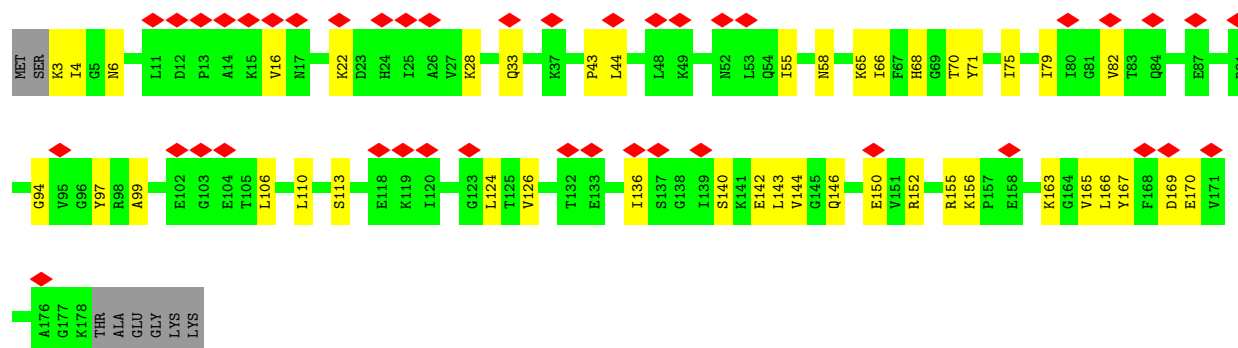
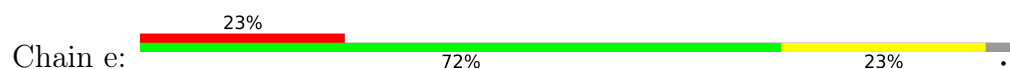


• Molecule 28: 50S ribosomal protein L5

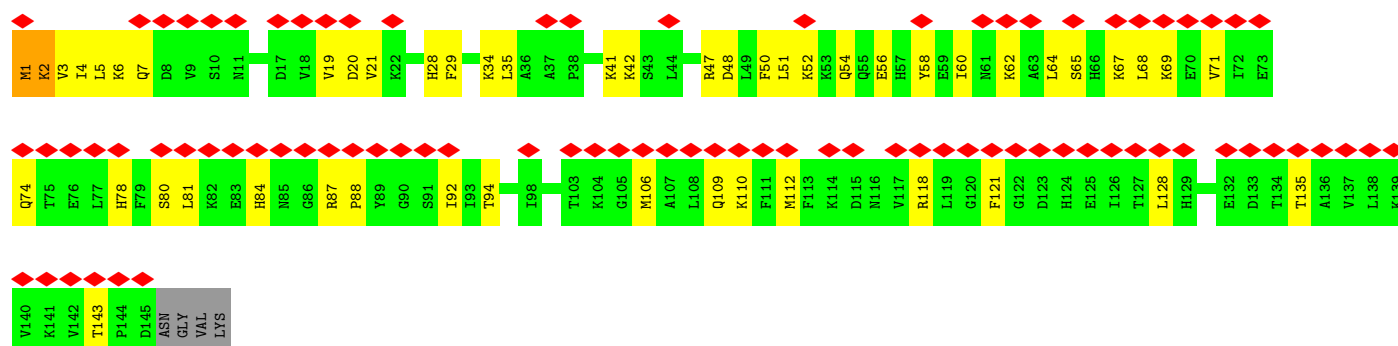




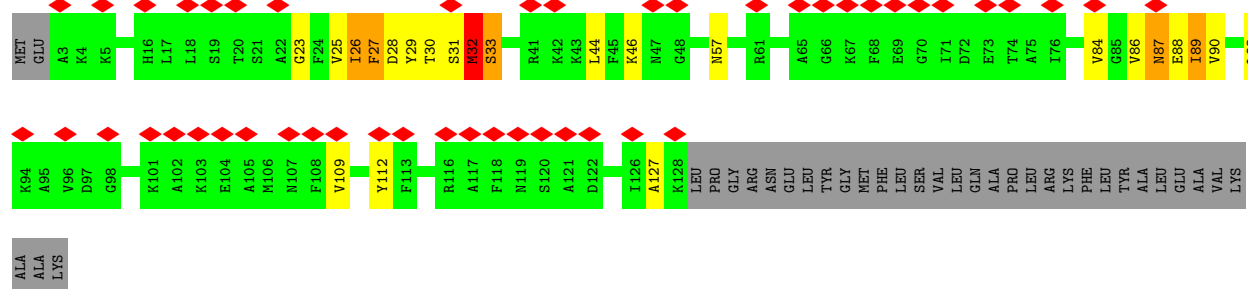
• Molecule 29: 50S ribosomal protein L6



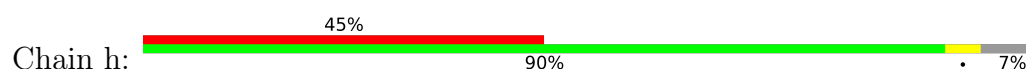
• Molecule 30: 50S ribosomal protein L9

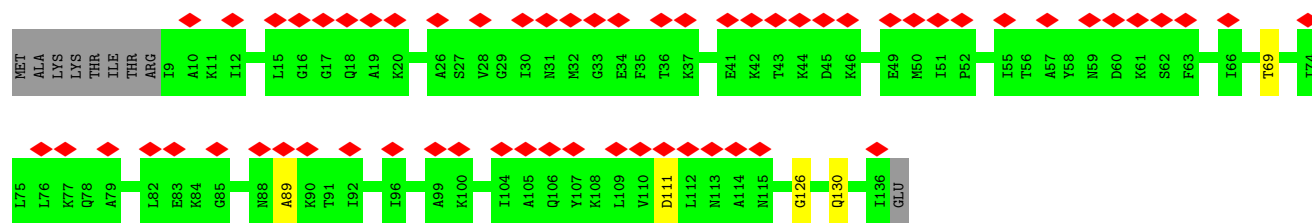


• Molecule 31: 50S ribosomal protein L10

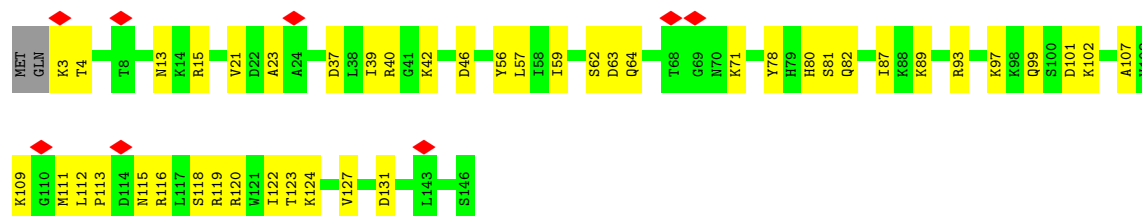


• Molecule 32: 50S ribosomal protein L11

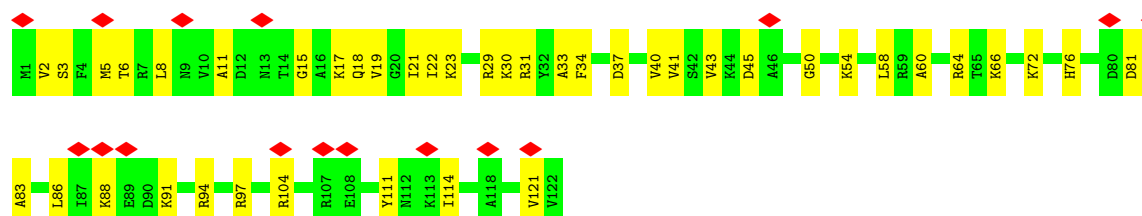




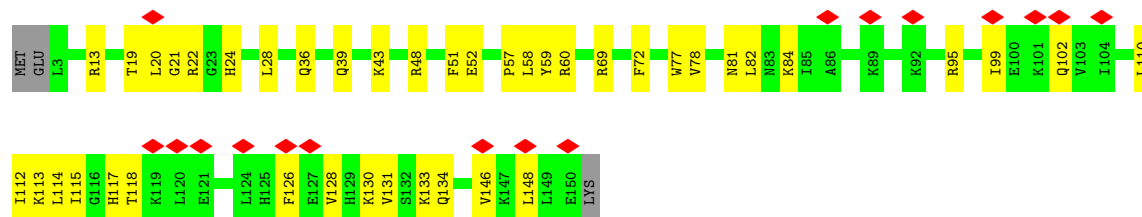
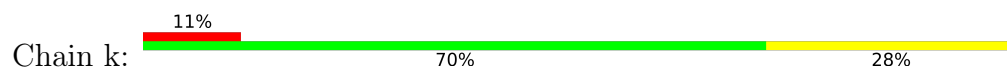
• Molecule 33: 50S ribosomal protein L13



• Molecule 34: 50S ribosomal protein L14

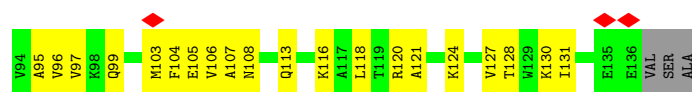


• Molecule 35: 50S ribosomal protein L15

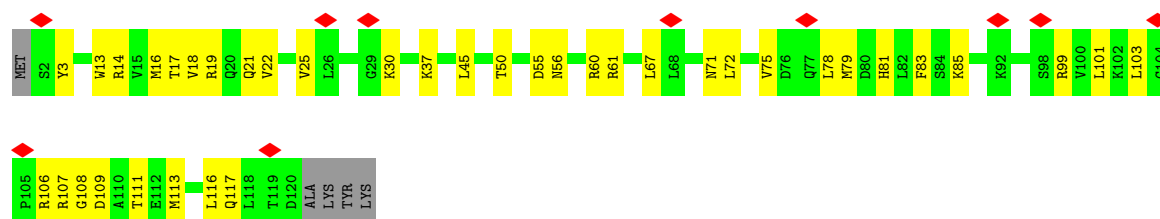


• Molecule 36: 50S ribosomal protein L16

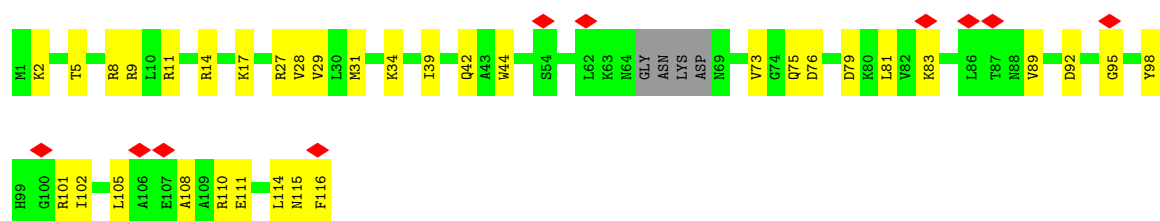




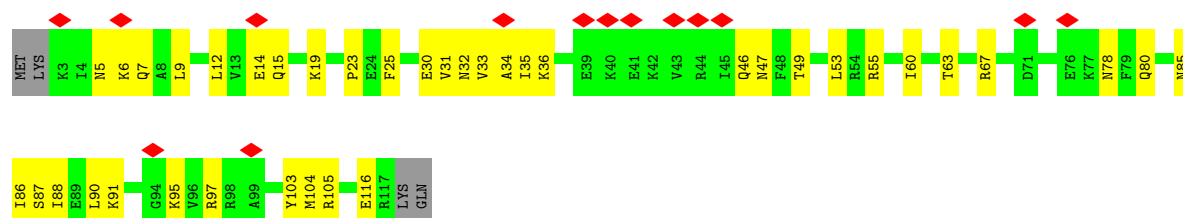
- Molecule 37: 50S ribosomal protein L17



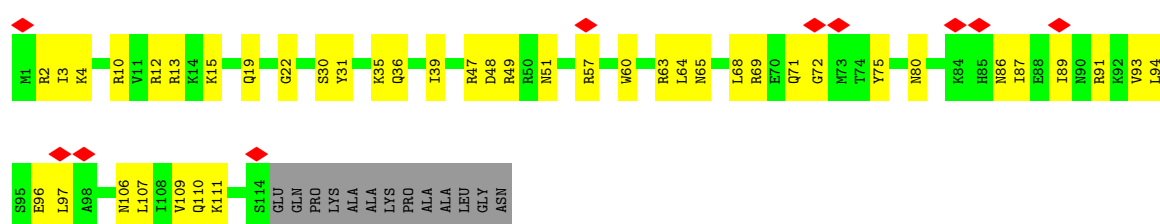
- Molecule 38: 50S ribosomal protein L18



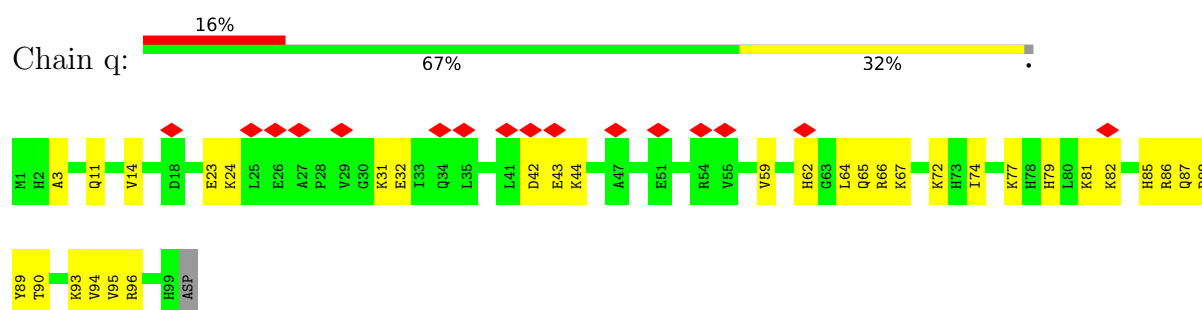
- Molecule 39: 50S ribosomal protein L19



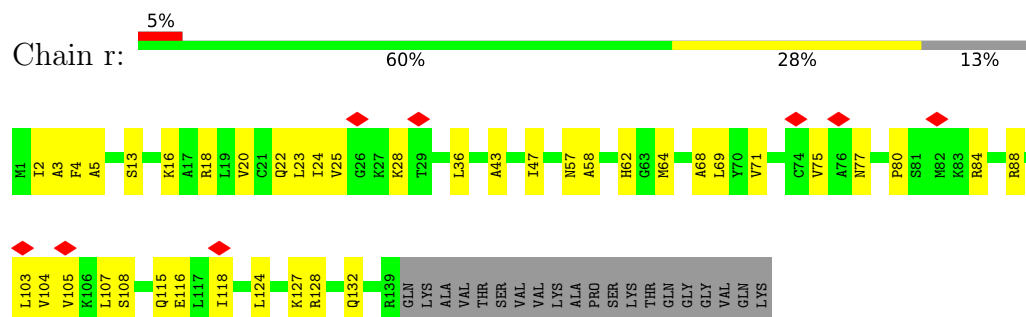
- Molecule 40: 50S ribosomal protein L20



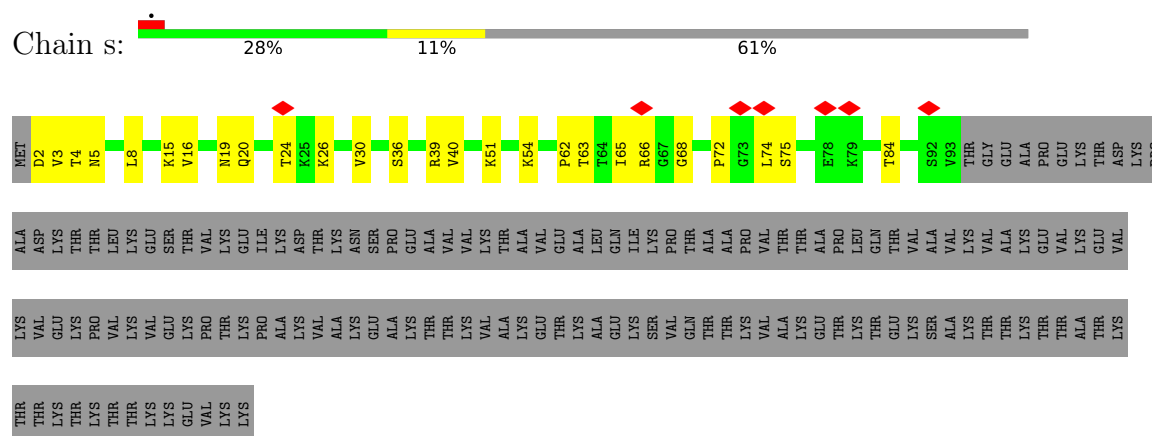
- Molecule 41: 50S ribosomal protein L21



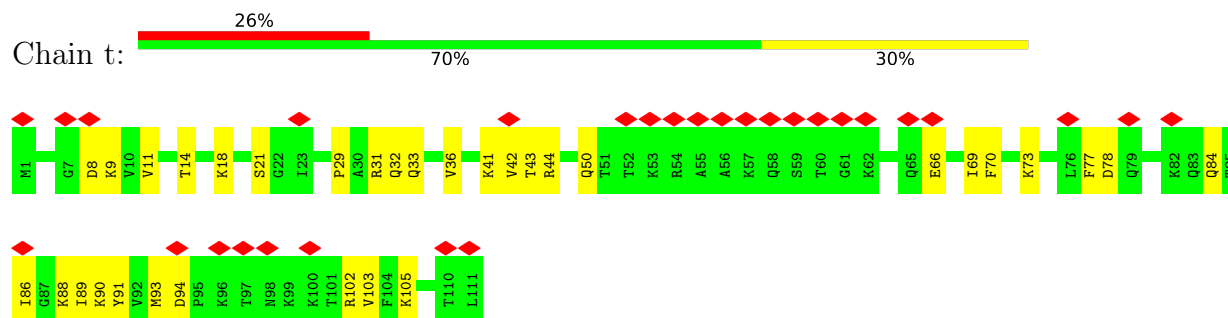
- Molecule 42: 50S ribosomal protein L22



- Molecule 43: 50S ribosomal protein L23

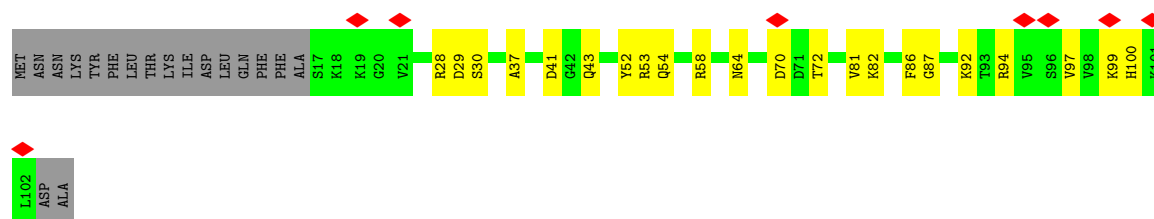


- Molecule 44: 50S ribosomal protein L24

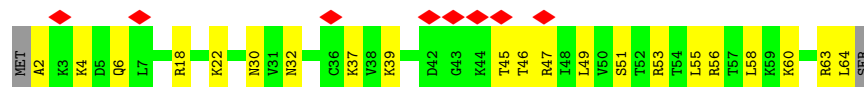


- Molecule 45: 50S ribosomal protein L27

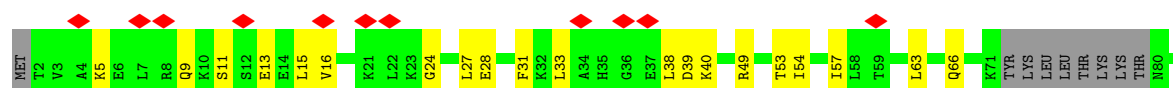




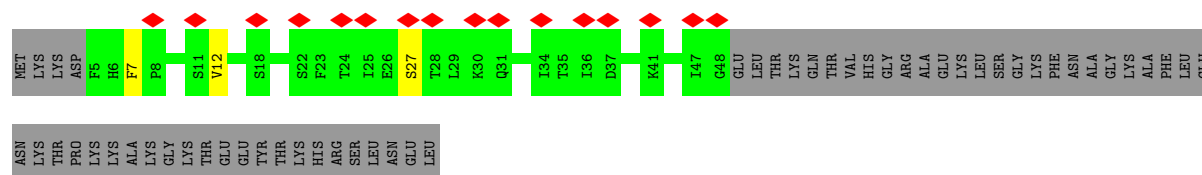
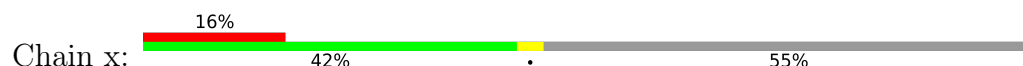
- Molecule 46: 50S ribosomal protein L28



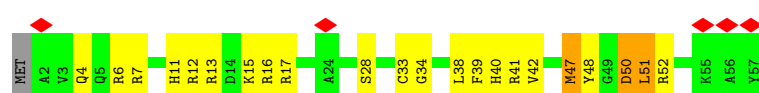
- Molecule 47: 50S ribosomal protein L29



- Molecule 48: 50S ribosomal protein L31

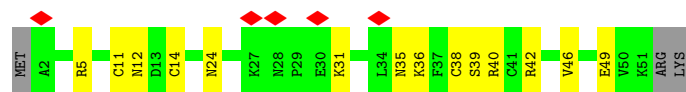


- Molecule 49: 50S ribosomal protein L32

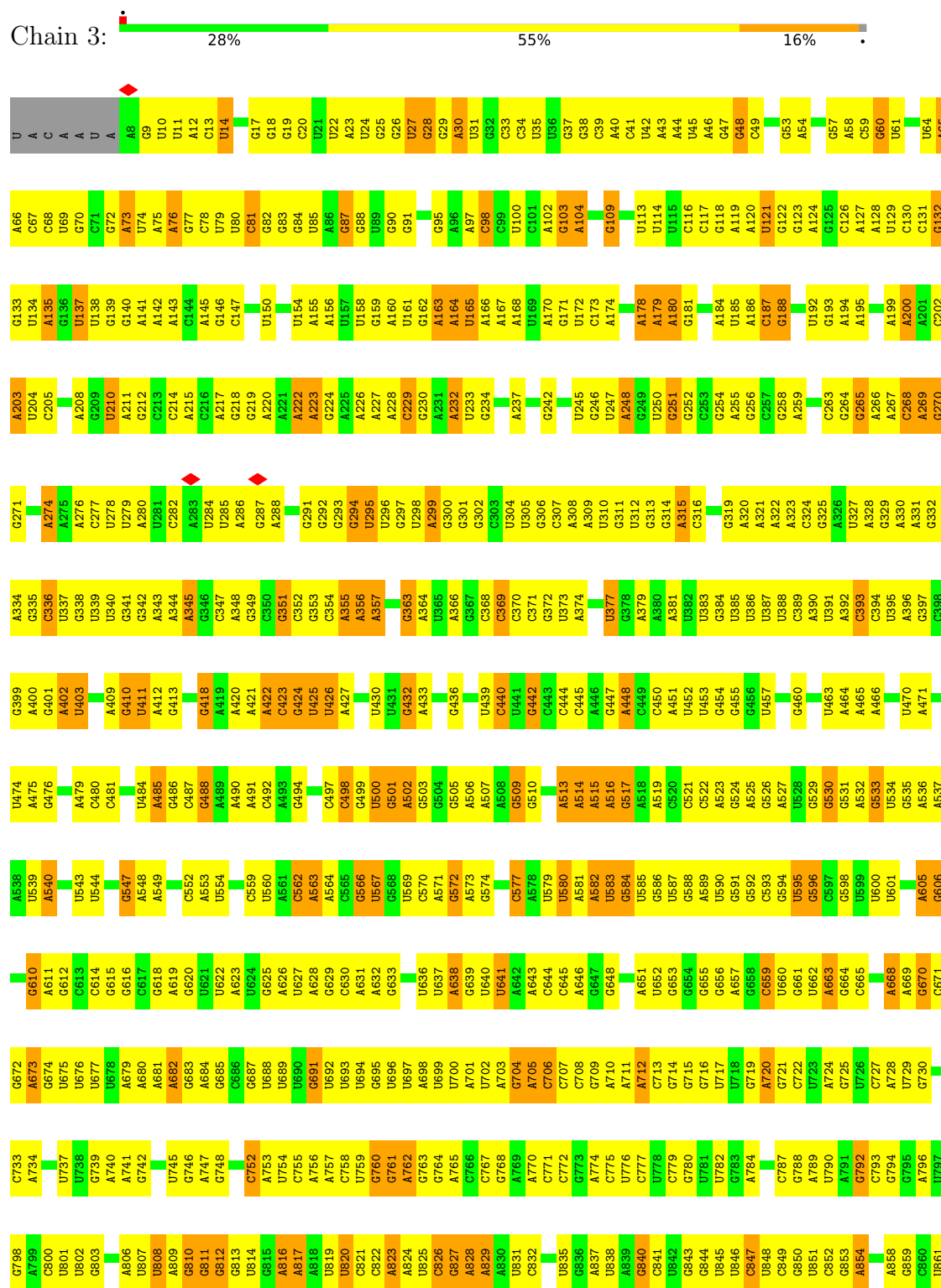


- Molecule 50: 50S ribosomal protein L33 1



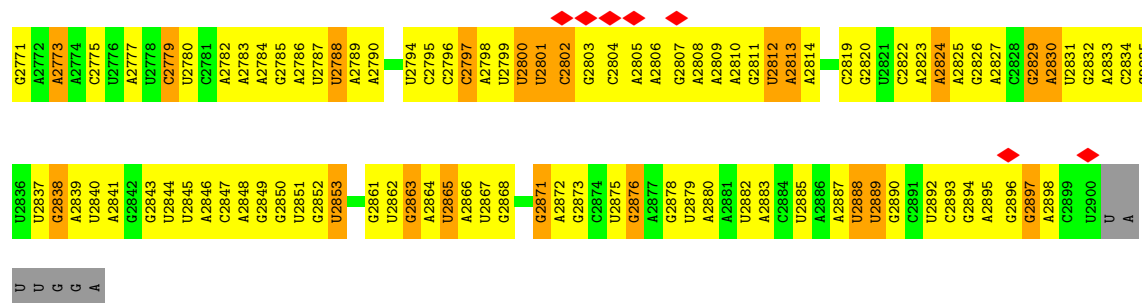


• Molecule 51: 23S ribosomal RNA



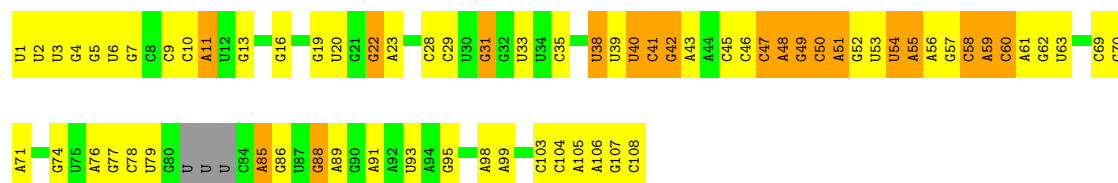
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G1738	G1663	U1596	U1529	U1464	A1395	A1266	G1198	A1132	G1069	U1004	U864
A1665	A1664	U1597	C1531	U1465	A1396	G1267	G1199	A1133	U1070	G1005	A865
G1741	G1665	U1598	G1532	U1466	G1397	U1268	A1201	G1137	G1071	U1006	G866
C1742	G1668	U1599	U1533	U1467	U1400	U1269	A1202	A1138	A1072	C1007	G867
C1743	A1600	C1599	U1534	U1468	A1401	G1338	A1203	C1139	A1073	A1008	C968
U1744	A1601	A1600	A1535	C1469	G1402	G1339	U1205	U1140	A1074	A1009	U869
U1745	A1602	C1602	C1536	C1470	G1403	U1340	U1206	U1141	G1075	G1010	A870
U1746	G1603	A1603	A1537	U1471	G1405	U1341	U1207	U1142	U1076	G1013	G873
G1747	A1604	A1604	U1538	C1472	A1406	C1342	A1208	G1143	U1077	U1014	U874
U1748	U1673	A1605	U1539	C1474	A1407	C1343	U1209	U1144	G1078	G1015	G875
A1749	G1676	A1606	G1540	C1475	G1408	U1344	U1210	G1145	A1080	A1016	A876
A1750	G1677	A1607	A1541	C1476	A1412	G1345	U1211	A1146	A1081	A1017	G877
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A1752	U1680	U1612	U1543	U1478	A1414	A1347	U1213	U1148	A1083	A1019	U879
A1753	G1681	G1613	G1544	A1479	G1414	C1348	U1214	U1149	A1084	G1020	U880
U1754	G1682	G1614	A1545	A1480	A1415	U1349	U1215	U1150	G1023	G1023	A881
A1755	C1682	G1615	G1546	U1481	G1416	C1287	U1216	U1151	A1088	A1024	C882
A1756	G1683	G1616	U1547	U1482	G1417	G1288	G1217	U1152	A1089	U1025	A883
G1757	A1684	U1617	U1548	G1483	A1418	G1289	G1218	U1153	G1090	G1026	A887
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C1759	U1686	A1619	U1551	A1485	A1420	U1353	U1220	G1155	A1092	A1028	G889
G1760	G1687	A1620	C1552	U1486	A1421	C1291	U1221	C1156	U1093	C1028	U890
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U1765	A1692	G1625	G1557	G1491	C1426	U1296	U1230	A1161	G1098	A1033	U899
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U2096	A2097	U2098	U2099	G2100	A2101	U2102	C2103	A2104	G2105	C2106	A2107	C2108	A2109	U2110	U2111	A2112	U2113	C2114	A2115	U2116	G2117	A2121	G2122	A2123	A2124	U2125	A2126	G2127	A2130	G2131	G2132	A2133	G2134	C2135	U2138	C2139	G2140	A2141	U2142	G2143	C2144	A2145	A2146	G2147	U2148	U2149	C2150	G2151	C2152	U2153	A2154	U2155	G2156	A2157	U2160									
G2161	U2162	U2163	G2164	C2228	U2165	U2166	G2167	A2170	A2171	A2172	G2173	G2174	U2175	U2176	G2177	A2178	A2179	U2180	A2181	C2182	U2183	A2184	C2185	U2186	C2187	U2188	U2189	G2190	G2191	U2192	U2193	G2194	U2195	G2196	U2197	C2198	C2199	U2200	G2201	U2202	U2203	A2206	U2207	U2208	U2209	G2210	G2211	U2212	U2216	G2217	U2218	A2219	U2220	U2221	C2222	C2223	A2224							
G2225	U2226	U2227	C2228	U2229	A2230	A2231	G2232	A2233	C2234	A2235	G2238	U2239	U2240	A2241	G2246	C2247	G2248	A2249	C2250	U2251	U2252	U2253	G2254	C2255	U2256	U2257	G2258	G2259	G2260	G2264	U2265	C2269	C2272	U2273	A2274	A2275	A2276	A2277	A2281	G2284	G2285	A2286	G2287	G2288	C2289	G2290	U2291	A2292	C2293	A2294	A2295	A2296												
G2297	G2298	A2299	A2300	U2303	U2304	C2305	A2306	G2307	U2308	A2309	C2310	G2311	G2312	U2313	U2314	G2315	G2316	A2317	A2318	A2319	U2320	C2321	G2322	U2323	A2324	U2325	G2326	U2327	G2328	C2329	A2330	G2333	U2334	A2335	A2336	U2337	G2338	G2341	U2342	U2343	A2344	G2345	G2346	G2347	U2348	G2349	C2350	U2351	G2352	G2353	A2354	C2355	U2358	G2359										
A2362	C2363	U2364	U2365	A2366	G2369	U2370	U2371	C2372	G2373	C2376	A2377	G2378	U2379	U2380	G2381	A2382	G2383	A2384	A2385	A2386	U2387	C2388	G2391	U2392	G2393	A2394	U2395	A2396	U2397	U2398	G2399	C2402	C2403	G2404	U2406	G2407	U2408	U2409	C2410	G2413	U2414	A2415	U2416	G2417	A2418	A2419	G2420	U2421	G2422	G2423	C2424	C2425												
U2431	C2432	A2433	A2434	C2435	G2436	U2437	A2438	U2439	U2440	A2441	A2442	A2443	G2444	C2445	U2448	U2449	C2450	C2451	G2452	G2453	A2454	A2455	A2456	U2457	A2458	A2459	C2460	A2461	G2462	G2463	C2464	U2465	G2466	A2469	C2473	U2474	A2475	A2476	A2477	G2478	A2479	G2480	U2481	C2483	A2484	U2485	U2486	U2487	G2488	G2489	A2490	C2491	G2492	G2493	C2494									
A2495	G2496	U2497	G2498	U2499	G2502	G2503	C2504	A2505	C2506	C2507	U2508	G2509	C2510	A2511	U2512	G2513	U2514	G2515	G2516	A2521	U2522	G2523	U2524	G2525	A2526	U2527	C2528	G2529	U2530	C2531	G2532	A2533	G2534	G2537	A2538	A2539	G2540	C2541	A2542	G2543	G2544	U2545	U2546	U2547	G2548	A2549	G2550	U2551	G2552	G2553	G2558	U2562	U2563	C2564										
G2565	C2566	G2567	G2568	A2569	U2570	U2571	A2574	G2575	A2576	G2577	A2578	U2579	A2580	C2581	U2582	G2583	G2584	A2585	U2586	U2587	U2588	G2589	G2590	G2591	U2592	U2593	A2596	G2599	G2600	U2601	G2602	U2603	U2604	G2605	A2606	G2607	A2608	C2609	A2610	G2611	G2612	G2613	G2614	A2615	A2616	U2617	U2618	C2619	U2620	U2621	A2622	U2623	U2624	U2625	U2626	A2627	U2628	U2629	U2630	U2631	C2632	U2633	C2634	G2635
U2636	A2637	G2638	G2639	G2642	A2643	U2644	U2645	G2646	G2649	A2650	G2651	U2652	U2653	U2654	U2655	G2656	G2657	U2658	U2659	C2660	U2661	G2662	G2663	U2664	G2667	A2668	G2669	U2670	G2671	G2672	G2675	G2676	A2677	G2681	A2682	G2683	G2684	A2685	C2686	A2687	C2688	U2689	U2690	C2691	A2694	U2695	U2696	G2697	U2698	C2699	C2700	A2701	G2702											
U2703	U2704	G2705	U2706	A2707	G2708	C2709	G2710	A2713	G2714	G2717	C2718	A2719	C2720	G2721	G2722	C2723	U2724	G2727	U2728	A2729	U2730	U2731	A2732	A2733	G2734	G2735	U2736	U2737	U2738	U2739	U2740	A2741	U2742	U2743	A2744	G2745	A2746	U2750	G2752	C2753	U2754	G2755	A2756	A2757	U2758	U2759	G2760	G2761	U2762	G2763	U2764	A2765	U2770											



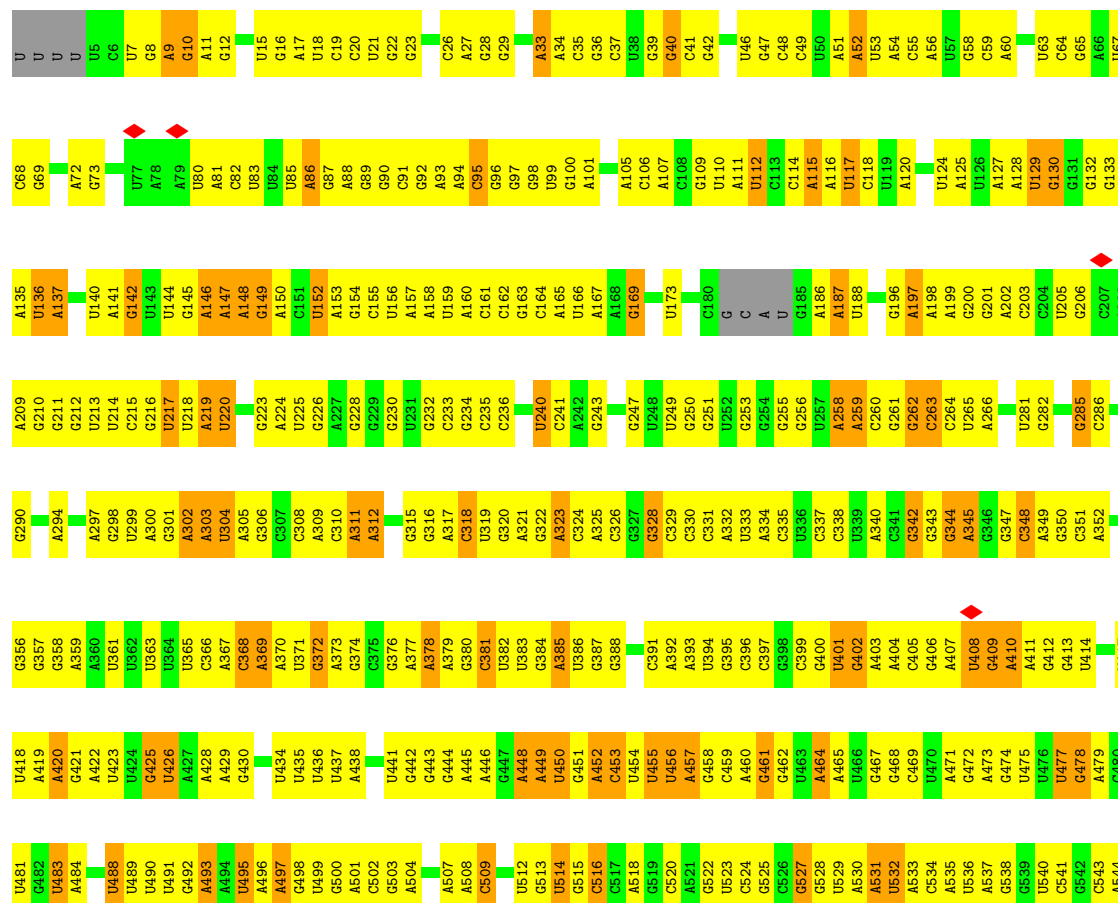
• Molecule 52: 5S ribosomal RNA

Chain 4: 33% 46% 18%



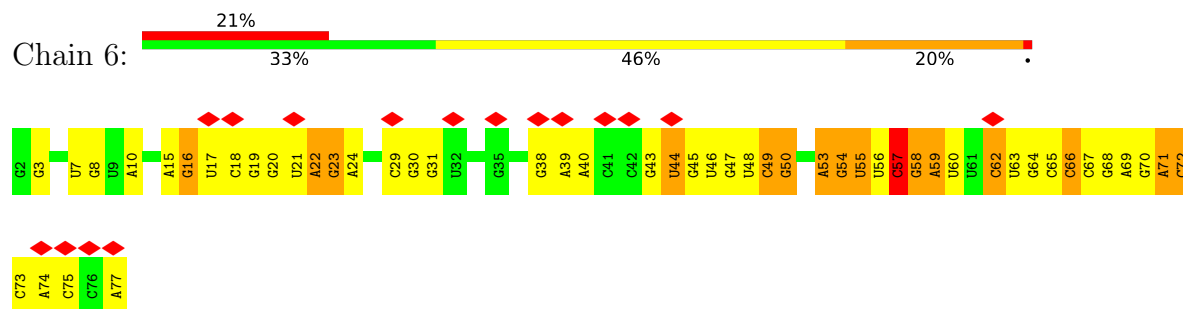
• Molecule 53: 16S ribosomal RNA

Chain 5: 28% 57% 13%

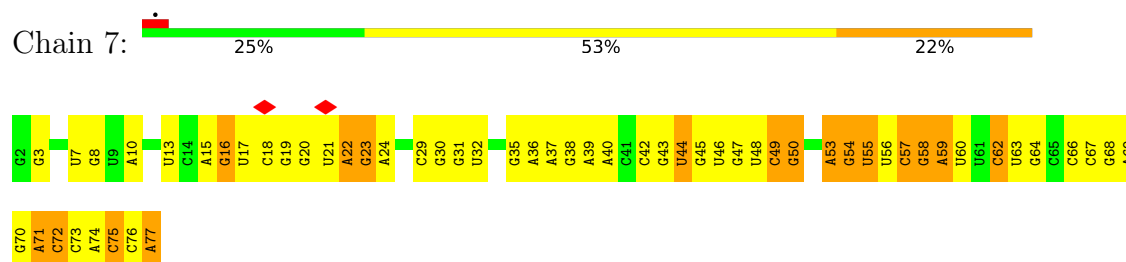




● Molecule 54: tRNA-Phe



● Molecule 54: tRNA-Phe



4 Experimental information

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of subtomograms used	2239	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	3.2	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	3750	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.410	Depositor
Minimum map value	-1.114	Depositor
Average map value	0.026	Depositor
Map value standard deviation	0.144	Depositor
Recommended contour level	0.5	Depositor
Map size (Å)	435.328, 435.328, 435.328	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.7005, 1.7005, 1.7005	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	0	0.14	0/383	0.43	0/504
2	1	0.14	0/484	0.43	0/637
3	2	0.16	0/306	0.41	0/401
4	9	0.15	0/3071	0.42	0/4147
5	A	0.14	0/1954	0.39	0/2642
6	B	0.15	0/1721	0.44	0/2323
7	C	0.14	0/1691	0.42	0/2267
8	D	0.14	0/1188	0.42	0/1593
9	E	0.14	0/1384	0.40	0/1867
10	F	0.14	0/1266	0.44	0/1700
11	G	0.21	0/1126	0.49	1/1517 (0.1%)
12	H	0.15	0/1044	0.41	0/1395
13	I	0.15	0/820	0.49	0/1103
14	J	0.16	0/844	0.39	0/1136
15	K	0.26	0/1094	0.55	0/1468
16	L	2.18	8/962 (0.8%)	0.83	3/1289 (0.2%)
17	M	0.14	0/483	0.44	0/643
18	N	0.12	0/679	0.39	0/907
19	O	0.15	0/659	0.48	0/885
20	P	0.15	0/684	0.43	0/913
21	Q	0.14	0/545	0.41	0/730
22	R	0.21	0/698	0.61	1/936 (0.1%)
23	S	0.13	0/631	0.41	0/838
24	T	0.12	0/475	0.41	0/621
25	a	0.15	0/2267	0.43	0/3044
26	b	0.14	0/1795	0.44	0/2412
27	c	0.14	0/1671	0.44	0/2246
28	d	0.14	0/1409	0.43	0/1894
29	e	0.14	0/1420	0.39	0/1912
30	f	0.16	0/1205	0.42	0/1616
31	g	0.40	0/969	0.75	1/1295 (0.1%)
32	h	0.17	0/968	0.45	0/1298
33	i	0.13	0/1186	0.38	0/1592
34	j	0.14	0/953	0.43	0/1275

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	k	0.12	0/1170	0.37	0/1559
36	l	0.15	0/1104	0.44	0/1481
37	m	0.15	0/973	0.44	0/1309
38	n	0.15	0/897	0.44	0/1198
39	o	0.13	0/948	0.41	0/1262
40	p	0.14	0/961	0.45	0/1278
41	q	0.15	0/828	0.43	0/1111
42	r	0.15	0/1077	0.44	0/1441
43	s	0.15	0/732	0.44	0/988
44	t	0.13	0/879	0.38	0/1165
45	u	0.14	0/665	0.42	0/884
46	v	0.13	0/519	0.37	0/695
47	w	0.13	0/826	0.35	0/1104
48	x	0.15	0/353	0.41	0/474
49	y	0.32	0/457	0.67	1/601 (0.2%)
50	z	0.14	0/412	0.43	0/547
51	3	0.22	6/69073 (0.0%)	0.25	0/107710
52	4	0.09	0/2505	0.23	0/3902
53	5	0.09	0/35768	0.23	0/55764
54	6	0.45	2/1808 (0.1%)	0.48	2/2817 (0.1%)
54	7	0.45	2/1808 (0.1%)	0.48	2/2817 (0.1%)
All	All	0.25	18/161798 (0.0%)	0.32	11/241153 (0.0%)

All (18) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
16	L	63	TYR	CD1-CE1	31.84	2.34	1.38
16	L	63	TYR	CD2-CE2	29.37	2.26	1.38
16	L	29	ARG	CD-NE	28.09	1.85	1.46
51	3	1130	A	N3-C4	24.29	1.83	1.34
51	3	1130	A	C6-N1	23.29	1.82	1.35
51	3	1130	A	N1-C2	22.82	1.79	1.34
51	3	1130	A	C2-N3	21.76	1.77	1.33
16	L	63	TYR	CE1-CZ	21.55	1.90	1.38
16	L	63	TYR	CE2-CZ	21.39	1.89	1.38
51	3	1130	A	C5-C6	20.57	1.82	1.41
16	L	63	TYR	CG-CD2	19.07	1.79	1.39
51	3	1130	A	C5-C4	17.93	1.74	1.38
16	L	63	TYR	CG-CD1	17.76	1.76	1.39
16	L	29	ARG	NE-CZ	16.64	1.51	1.33
54	7	57	C	P-O5'	14.32	1.81	1.59
54	6	57	C	P-O5'	14.32	1.81	1.59

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
54	7	57	C	O5'-C5'	11.32	1.59	1.42
54	6	57	C	O5'-C5'	11.30	1.59	1.42

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
16	L	29	ARG	CD-NE-CZ	20.98	153.77	124.40
54	6	57	C	P-O5'-C5'	15.38	143.97	120.90
54	7	57	C	P-O5'-C5'	15.36	143.94	120.90
16	L	29	ARG	NE-CZ-NH2	12.53	130.48	119.20
22	R	26	GLU	N-CA-C	-7.37	95.11	110.80
16	L	29	ARG	NH1-CZ-NH2	-5.52	112.13	119.30
31	g	27	PHE	CB-CA-C	-5.23	101.62	110.19
11	G	109	ASN	N-CA-C	-5.10	105.53	112.26
54	7	57	C	O5'-P-OP1	5.01	123.03	108.00
49	y	50	ASP	N-CA-C	-5.01	104.73	111.54
54	6	57	C	O5'-P-OP1	5.00	123.02	108.00

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	380	0	429	22	0
2	1	477	0	530	15	0
3	2	304	0	350	17	0
4	9	3021	0	3050	89	0
5	A	1921	0	1973	41	0
6	B	1698	0	1768	55	0
7	C	1660	0	1719	63	0
8	D	1173	0	1267	47	0
9	E	1362	0	1377	35	0
10	F	1246	0	1308	46	0
11	G	1110	0	1226	47	0
12	H	1028	0	1094	42	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
13	I	809	0	894	27	0
14	J	829	0	855	27	0
15	K	1076	0	1170	53	0
16	L	951	0	1014	67	0
17	M	474	0	509	15	0
18	N	673	0	730	18	0
19	O	646	0	677	17	0
20	P	675	0	728	26	0
21	Q	535	0	562	14	0
22	R	682	0	691	16	0
23	S	629	0	681	19	0
24	T	471	0	522	11	0
25	a	2225	0	2301	79	0
26	b	1762	0	1808	65	0
27	c	1644	0	1731	51	0
28	d	1388	0	1469	41	0
29	e	1396	0	1481	35	0
30	f	1182	0	1228	43	0
31	g	960	0	1014	9	0
32	h	959	0	1039	4	0
33	i	1164	0	1192	37	0
34	j	944	0	1019	34	0
35	k	1153	0	1256	39	0
36	l	1079	0	1134	41	0
37	m	958	0	1011	26	0
38	n	889	0	952	32	0
39	o	938	0	1008	26	0
40	p	947	0	1028	45	0
41	q	811	0	858	27	0
42	r	1068	0	1150	35	0
43	s	720	0	803	19	0
44	t	872	0	972	26	0
45	u	657	0	695	14	0
46	v	513	0	560	20	0
47	w	818	0	870	22	0
48	x	344	0	333	2	0
49	y	452	0	472	25	0
50	z	408	0	440	10	0
51	3	61664	0	30954	1811	0
52	4	2239	0	1137	51	0
53	5	31943	0	16058	985	0
54	6	1618	0	821	72	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
54	7	1618	0	821	47	0
All	All	149163	0	102739	4132	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 18.

All (4132) 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)
16:L:63:TYR:CD2	16:L:63:TYR:CG	1.79	1.69
51:3:1130:A:C5	51:3:1130:A:C6	1.82	1.63
16:L:63:TYR:CG	16:L:63:TYR:CD1	1.76	1.62
16:L:63:TYR:CE1	16:L:63:TYR:CZ	1.90	1.60
16:L:63:TYR:CZ	16:L:63:TYR:CE2	1.89	1.58
51:3:1130:A:C5	51:3:1130:A:C4	1.74	1.57
51:3:1130:A:N3	51:3:1130:A:C2	1.77	1.52
51:3:1130:A:C2	51:3:1130:A:N1	1.80	1.46
51:3:1130:A:C4	51:3:1130:A:N3	1.83	1.45
51:3:1130:A:C6	51:3:1130:A:N1	1.82	1.44
51:3:1130:A:C6	54:6:57:C:O5'	1.69	1.42
16:L:29:ARG:NE	16:L:63:TYR:CE2	1.87	1.38
16:L:29:ARG:NE	16:L:29:ARG:CD	1.85	1.37
16:L:29:ARG:NE	16:L:63:TYR:CD2	1.93	1.36
16:L:29:ARG:NE	16:L:63:TYR:CZ	1.96	1.31
51:3:1130:A:C2	54:6:57:C:O5'	1.80	1.29
51:3:1130:A:C4	54:6:57:C:P	2.26	1.28
51:3:1130:A:C4	54:6:57:C:C5'	2.17	1.27
16:L:29:ARG:NE	16:L:63:TYR:CE1	2.05	1.24
16:L:63:TYR:CD2	16:L:63:TYR:CE2	2.26	1.23
51:3:1130:A:C4	54:6:57:C:H5''	1.72	1.22
51:3:1130:A:C5	54:6:57:C:O5'	1.92	1.21
16:L:29:ARG:NE	16:L:63:TYR:CD1	2.11	1.17
53:5:684:A:N6	53:5:700:G:C2	2.13	1.17
51:3:1130:A:C4	54:6:57:C:O5'	1.97	1.16
16:L:63:TYR:CD1	16:L:63:TYR:CE1	2.34	1.16
16:L:29:ARG:NE	16:L:63:TYR:CG	2.13	1.16
51:3:1130:A:N3	54:6:57:C:C5'	2.14	1.11
51:3:1130:A:N3	54:6:57:C:P	2.25	1.09
51:3:1130:A:C5	54:6:57:C:P	2.46	1.09
16:L:29:ARG:CD	16:L:63:TYR:CD1	2.37	1.06
51:3:1128:G:N2	51:3:1133:A:H62	1.53	1.05

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1130:A:C2	54:6:57:C:P	2.50	1.05
51:3:1130:A:N3	54:6:57:C:O5'	1.91	1.04
16:L:29:ARG:CD	16:L:63:TYR:CE1	2.40	1.04
53:5:406:G:N2	53:5:429:A:H62	1.55	1.04
51:3:248:A:H62	51:3:258:G:N2	1.56	1.03
53:5:514:U:H3	53:5:531:A:H62	1.03	1.02
16:L:29:ARG:HD2	16:L:63:TYR:CE1	1.95	1.02
51:3:1130:A:C2	54:6:57:C:C5'	2.42	1.02
16:L:29:ARG:CZ	16:L:63:TYR:CE1	2.43	1.01
51:3:2303:U:H3	51:3:2345:G:H1	1.08	1.00
16:L:29:ARG:CZ	16:L:63:TYR:CD1	2.45	1.00
51:3:1932:C:H42	51:3:1936:G:H22	1.00	1.00
51:3:1418:U:H3	51:3:1423:A:H62	1.04	0.99
51:3:248:A:N6	51:3:258:G:H21	1.61	0.99
51:3:986:G:H1	51:3:1003:U:H3	1.00	0.98
53:5:372:G:H1	53:5:383:U:H3	1.11	0.98
53:5:661:G:H1	53:5:738:A:H61	1.02	0.98
8:D:142:GLY:O	8:D:148:ARG:HA	1.63	0.98
51:3:1807:C:H42	51:3:1824:G:H22	1.10	0.97
30:f:2:LYS:H	30:f:2:LYS:HD3	1.29	0.97
53:5:406:G:H21	53:5:429:A:N6	1.62	0.97
53:5:612:G:H1	53:5:624:U:H3	0.99	0.97
51:3:574:G:H1	51:3:587:U:H3	1.02	0.96
53:5:1394:G:H1	53:5:1456:U:H3	0.99	0.96
51:3:1130:A:C6	54:6:57:C:P	2.59	0.95
53:5:660:A:H61	53:5:739:G:H1	1.02	0.95
51:3:1128:G:H21	51:3:1133:A:N6	1.63	0.95
51:3:1807:C:H42	51:3:1824:G:N2	1.64	0.95
51:3:1130:A:C5	54:6:57:C:C5'	2.50	0.95
51:3:643:A:H62	51:3:655:G:H21	0.98	0.95
51:3:17:G:H1	51:3:560:U:H3	1.11	0.94
51:3:2706:U:H3	51:3:2717:G:H1	1.05	0.94
51:3:1803:U:H3	51:3:1830:G:H1	1.17	0.93
51:3:2455:G:H1	51:3:2458:A:N6	1.65	0.93
51:3:137:U:H3	51:3:146:G:H1	1.04	0.93
51:3:1932:C:H42	51:3:1936:G:N2	1.66	0.93
53:5:1065:G:H1	53:5:1074:U:H3	1.06	0.92
53:5:137:A:N6	53:5:156:U:C2	2.38	0.92
51:3:80:U:H3	51:3:109:G:H1	1.10	0.91
51:3:569:U:H3	51:3:592:G:H1	1.11	0.91
51:3:2150:C:O2	51:3:2155:G:N2	2.03	0.91

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1807:C:N4	51:3:1824:G:H22	1.68	0.91
51:3:1128:G:H21	51:3:1133:A:H62	0.90	0.90
53:5:616:C:O2	53:5:620:A:N6	2.04	0.90
51:3:2534:G:H1	51:3:2545:U:H3	0.92	0.90
51:3:1932:C:N4	51:3:1936:G:H22	1.70	0.89
51:3:1494:U:H3	51:3:1550:G:H1	1.15	0.89
53:5:833:G:H1	53:5:844:U:H3	1.20	0.89
51:3:1130:A:N3	54:6:57:C:H5'	1.86	0.88
51:3:742:G:H1	51:3:759:U:H3	0.93	0.88
51:3:329:G:H1	51:3:377:U:H3	1.22	0.87
51:3:47:G:H5''	51:3:48:G:H5'	1.54	0.87
51:3:1785:U:H3	51:3:1792:A:H62	1.23	0.87
51:3:2307:G:H1	51:3:2325:U:H3	0.89	0.87
53:5:144:U:H3	53:5:149:G:H1	1.22	0.87
51:3:2849:G:H1	51:3:2875:U:H3	1.22	0.87
51:3:2480:G:H21	51:3:2486:A:H62	1.22	0.87
53:5:1138:U:H3	53:5:1149:G:H1	0.89	0.87
51:3:161:U:H3	51:3:171:G:H1	1.19	0.86
51:3:643:A:H62	51:3:655:G:N2	1.71	0.86
53:5:671:G:O6	53:5:713:A:N1	2.08	0.86
16:L:29:ARG:HD3	16:L:63:TYR:CD1	2.08	0.86
51:3:133:G:H1	51:3:150:U:H3	1.21	0.85
53:5:365:U:H3	53:5:388:G:H1	0.86	0.85
51:3:1130:A:C4	54:6:57:C:OP1	2.29	0.85
53:5:455:U:H3	53:5:472:G:H22	1.20	0.85
16:L:29:ARG:CD	16:L:63:TYR:CG	2.60	0.85
16:L:29:ARG:CZ	16:L:63:TYR:CZ	2.60	0.84
53:5:684:A:C6	53:5:700:G:N2	2.44	0.84
25:a:251:ARG:HE	51:3:2082:U:H5''	1.41	0.84
53:5:1077:U:H3	53:5:1090:G:H22	1.21	0.84
53:5:1398:G:N2	53:5:1453:C:C2	2.46	0.84
53:5:134:G:H1	53:5:160:A:H61	1.23	0.83
53:5:1112:U:H3	53:5:1128:G:H1	1.26	0.83
53:5:406:G:H21	53:5:429:A:H62	0.86	0.83
51:3:1130:A:C2	54:6:57:C:H5'	2.14	0.83
51:3:1814:G:H2'	51:3:1815:U:H2'	1.61	0.82
51:3:1418:U:H3	51:3:1423:A:N6	1.76	0.82
16:L:29:ARG:CD	16:L:63:TYR:CZ	2.63	0.82
53:5:661:G:H1	53:5:738:A:N6	1.78	0.81
51:3:1869:G:H1	51:3:1887:U:H3	1.25	0.81
53:5:599:G:H1	53:5:634:U:H3	0.85	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:643:A:N6	51:3:655:G:H21	1.77	0.81
53:5:1217:G:H1	53:5:1269:U:H3	0.85	0.81
51:3:1104:A:H4'	51:3:1105:A:H2'	1.61	0.81
51:3:1130:A:N1	54:6:56:U:H3'	1.96	0.80
51:3:1252:C:O2	51:3:1257:G:N2	2.14	0.80
51:3:1536:C:N4	51:3:1537:A:H62	1.80	0.80
53:5:660:A:N6	53:5:739:G:H1	1.77	0.80
16:L:29:ARG:HD3	16:L:63:TYR:CG	2.17	0.80
51:3:605:A:H61	51:3:2036:G:H21	1.31	0.79
4:9:330:GLN:NE2	54:6:65:C:O2'	2.16	0.79
51:3:2529:C:C2	51:3:2553:G:N2	2.51	0.79
51:3:2589:G:N2	51:3:2589:G:OP2	2.15	0.79
45:u:86:PHE:O	45:u:92:LYS:HB2	1.83	0.79
51:3:577:C:N3	51:3:584:G:N1	2.31	0.79
51:3:1093:U:H3	51:3:1115:G:H1	1.31	0.79
53:5:1398:G:C2	53:5:1453:C:C2	2.71	0.79
16:L:32:ALA:HA	16:L:35:LYS:HE2	1.65	0.78
26:b:4:ARG:HH12	26:b:89:GLY:HA3	1.47	0.78
18:N:36:LEU:HD22	18:N:53:LEU:HB2	1.64	0.78
51:3:1261:U:H2'	51:3:1262:G:H8	1.47	0.78
8:D:79:THR:HG23	53:5:917:G:H1'	1.64	0.78
53:5:880:G:H1	53:5:905:U:H3	1.31	0.78
53:5:885:U:O2	53:5:901:A:N7	2.17	0.78
15:K:56:LYS:HG3	15:K:58:PRO:HD2	1.65	0.78
16:L:29:ARG:CZ	16:L:63:TYR:CG	2.66	0.77
53:5:514:U:H3	53:5:531:A:N6	1.81	0.77
16:L:29:ARG:NH2	16:L:63:TYR:CD1	2.53	0.77
34:j:21:ILE:HA	34:j:41:VAL:HG12	1.67	0.77
51:3:1300:C:H5''	51:3:1301:G:H5''	1.67	0.77
53:5:598:U:H3	53:5:635:G:H1	1.32	0.77
53:5:1413:G:H1	53:5:1438:U:H3	1.31	0.77
8:D:138:HIS:HB2	11:G:108:LEU:HB3	1.67	0.77
51:3:625:G:H1	51:3:700:U:H3	1.32	0.77
51:3:2376:C:H2'	51:3:2377:A:H8	1.49	0.77
53:5:1402:U:H2'	53:5:1403:A:H8	1.50	0.77
51:3:1435:A:H61	51:3:1629:U:H3	1.34	0.76
51:3:418:G:H1	51:3:430:U:H3	1.33	0.76
53:5:1398:G:C2	53:5:1453:C:O2	2.38	0.76
42:r:20:VAL:HA	42:r:23:LEU:HD12	1.66	0.76
51:3:2455:G:N1	51:3:2458:A:N6	2.32	0.76
46:v:32:ASN:HB2	51:3:433:A:H5''	1.67	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1396:U:H3	53:5:1454:G:H1	1.34	0.76
25:a:43:LYS:HD2	51:3:727:C:H5''	1.67	0.75
29:e:28:LYS:HD2	29:e:33:GLN:HB3	1.66	0.75
24:T:47:LYS:NZ	53:5:1509:A:N7	2.34	0.75
53:5:1388:A:H61	53:5:1462:G:H1	1.35	0.75
51:3:342:G:H21	51:3:363:G:H21	1.35	0.75
38:n:101:ARG:HH21	52:4:47:C:H5''	1.50	0.75
38:n:110:ARG:NH2	51:3:2384:A:N3	2.33	0.75
18:N:18:ASP:HA	53:5:747:C:H4'	1.67	0.75
27:c:128:VAL:HB	27:c:198:LEU:HG	1.68	0.75
4:9:186:GLU:O	4:9:190:HIS:ND1	2.20	0.75
51:3:577:C:O2	51:3:584:G:N2	2.18	0.75
53:5:1331:A:N1	53:5:1340:G:O6	2.20	0.75
51:3:1246:U:H2'	51:3:1247:C:C6	2.21	0.75
52:4:58:C:H2'	52:4:59:A:C8	2.21	0.74
25:a:63:LYS:NZ	51:3:729:U:OP2	2.19	0.74
53:5:1225:A:H2'	53:5:1226:A:C8	2.22	0.74
53:5:1405:U:H3	53:5:1445:G:H1	0.82	0.74
51:3:2223:C:H2'	51:3:2224:A:H8	1.51	0.74
52:4:53:U:O2'	52:4:55:A:N7	2.19	0.74
53:5:684:A:N6	53:5:698:U:C2	2.56	0.74
53:5:616:C:C2	53:5:620:A:N6	2.54	0.74
51:3:904:C:N4	51:3:949:C:O2	2.20	0.74
16:L:29:ARG:CD	16:L:63:TYR:CD2	2.71	0.74
51:3:2141:A:OP2	51:3:2164:G:N2	2.21	0.74
53:5:52:A:N6	53:5:310:C:O2	2.20	0.74
53:5:1406:U:H3	53:5:1444:G:H1	1.34	0.73
25:a:136:MET:HE3	25:a:141:ILE:HG12	1.69	0.73
23:S:26:THR:HG23	53:5:1432:A:H5''	1.70	0.73
44:t:9:LYS:HZ1	44:t:21:SER:HB3	1.54	0.73
8:D:212:ARG:HH21	11:G:51:GLU:HB3	1.54	0.73
45:u:28:ARG:NH2	51:3:2288:G:N7	2.36	0.73
53:5:1237:G:H1	53:5:1248:U:H3	1.37	0.73
53:5:1487:U:H3	53:5:1498:G:H1	1.36	0.73
4:9:246:VAL:HG22	4:9:251:ILE:HD12	1.69	0.73
51:3:1130:A:C6	54:6:57:C:C5'	2.71	0.73
51:3:2031:C:H2'	51:3:2032:G:H8	1.54	0.73
51:3:989:G:H1	51:3:1000:U:H3	1.33	0.73
53:5:1266:U:H2'	53:5:1267:G:H8	1.53	0.73
53:5:317:A:N1	53:5:328:G:O6	2.21	0.73
37:m:17:THR:HG22	37:m:21:GLN:HE21	1.53	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:k:21:GLY:O	35:k:22:ARG:NH2	2.22	0.72
51:3:2058:G:N2	51:3:2059:G:O6	2.21	0.72
52:4:79:U:O4	52:4:85:A:N6	2.20	0.72
53:5:664:A:H2'	53:5:665:G:C8	2.23	0.72
44:t:9:LYS:HB3	44:t:77:PHE:HB3	1.70	0.72
38:n:2:LYS:NZ	51:3:2342:U:O4	2.21	0.72
5:A:154:ARG:NH1	53:5:1144:A:O2'	2.22	0.72
16:L:29:ARG:CZ	16:L:63:TYR:CD2	2.73	0.72
53:5:1193:U:H2'	53:5:1194:A:H8	1.51	0.72
8:D:77:SER:HB2	8:D:86:MET:HA	1.71	0.72
51:3:2274:A:N7	51:3:2281:A:N6	2.37	0.72
13:I:28:THR:HG21	13:I:78:ARG:HD2	1.72	0.72
42:r:77:ASN:HB2	42:r:102:ASN:HB2	1.72	0.72
42:r:88:ARG:O	51:3:1648:A:N6	2.22	0.71
54:7:7:U:H3	54:7:68:G:H1	1.38	0.71
53:5:1398:G:N2	53:5:1453:C:O2	2.23	0.71
51:3:1063:A:OP2	51:3:1161:A:N6	2.22	0.71
51:3:1702:A:H62	51:3:1998:U:H3	1.38	0.71
52:4:38:U:O3'	52:4:43:A:N6	2.24	0.71
53:5:663:G:N1	53:5:737:U:C2	2.58	0.71
51:3:625:G:C6	51:3:701:A:N6	2.59	0.71
28:d:63:GLN:HG3	52:4:41:C:H5'	1.72	0.71
51:3:2100:G:N2	51:3:2206:A:N1	2.39	0.71
53:5:684:A:N6	53:5:700:G:N2	2.37	0.71
40:p:91:ARG:HH11	51:3:1033:A:H4'	1.55	0.71
51:3:1870:G:H4'	51:3:2419:A:H4'	1.73	0.71
53:5:134:G:H1	53:5:160:A:N6	1.88	0.71
53:5:1322:U:O2	53:5:1349:A:N7	2.24	0.71
51:3:585:U:H2'	51:3:586:G:H8	1.55	0.71
53:5:674:U:H3	53:5:710:G:H22	1.39	0.71
7:C:57:LYS:HG2	7:C:196:VAL:HG13	1.73	0.70
16:L:29:ARG:CZ	16:L:63:TYR:CE2	2.74	0.70
53:5:514:U:O4	53:5:531:A:N7	2.23	0.70
9:E:8:LEU:HB2	9:E:83:LEU:HB2	1.73	0.70
16:L:12:GLN:H	16:L:46:LYS:HB2	1.56	0.70
16:L:29:ARG:NH2	16:L:63:TYR:CE1	2.58	0.70
50:z:35:ASN:ND2	51:3:2352:U:OP1	2.24	0.70
51:3:1252:C:N3	51:3:1257:G:N1	2.33	0.70
51:3:1631:A:H5''	51:3:1632:C:H5'	1.74	0.70
53:5:733:A:C6	53:5:734:A:N6	2.59	0.70
53:5:1110:C:H2'	53:5:1111:G:H8	1.56	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1130:A:C5	54:6:57:C:H5''	2.27	0.70
20:P:66:THR:HG22	20:P:67:ARG:H	1.55	0.70
51:3:2667:G:N2	51:3:2670:A:OP2	2.20	0.70
53:5:664:A:H2'	53:5:665:G:H8	1.55	0.70
51:3:85:U:O2	51:3:104:A:N7	2.25	0.70
51:3:1388:G:H3'	51:3:1389:G:H8	1.56	0.70
11:G:109:ASN:HB3	11:G:111:LEU:HD13	1.74	0.70
51:3:1766:A:N6	51:3:2704:U:O2'	2.22	0.70
51:3:1777:G:H1	51:3:1989:U:H3	1.38	0.70
53:5:21:U:O2'	53:5:571:A:N6	2.22	0.70
6:B:59:GLU:HB3	13:I:100:VAL:HG11	1.73	0.70
51:3:1075:G:H1	51:3:1150:U:H3	1.38	0.70
51:3:1334:U:O2	51:3:1656:A:N6	2.21	0.70
4:9:93:ILE:HB	4:9:122:LEU:HD11	1.74	0.70
19:O:2:ARG:NH1	19:O:5:ARG:O	2.25	0.70
22:R:78:ARG:NH1	53:5:1198:C:OP1	2.25	0.70
43:s:65:ILE:HG23	43:s:66:ARG:HG2	1.73	0.70
51:3:1063:A:N6	51:3:1161:A:OP1	2.25	0.70
51:3:2409:U:H3	51:3:2423:G:H1	1.38	0.70
53:5:565:G:H2'	53:5:566:G:O4'	1.92	0.70
5:A:88:LYS:HB2	5:A:92:VAL:HB	1.73	0.69
5:A:61:GLN:NE2	5:A:216:PRO:O	2.24	0.69
7:C:139:GLY:N	7:C:178:TYR:O	2.24	0.69
8:D:193:HIS:NE2	53:5:1069:U:O2'	2.20	0.69
39:o:34:ALA:HB3	39:o:87:SER:HB3	1.74	0.69
51:3:1725:G:O6	51:3:1731:G:N2	2.25	0.69
26:b:144:GLN:NE2	51:3:2057:C:O2'	2.25	0.69
53:5:376:G:N2	53:5:379:A:OP2	2.25	0.69
25:a:73:ARG:O	25:a:197:ARG:NH1	2.24	0.69
30:f:5:LEU:HD23	30:f:20:ASP:OD2	1.91	0.69
51:3:1925:A:O2'	51:3:1927:C:N4	2.25	0.69
1:0:21:ARG:NH1	1:0:42:LEU:O	2.25	0.69
9:E:92:ARG:HH12	21:Q:85:HIS:HA	1.58	0.69
53:5:186:A:N7	53:5:187:A:N6	2.41	0.69
3:2:25:VAL:HG22	3:2:34:GLN:HB2	1.73	0.69
6:B:182:ARG:HH11	53:5:1103:C:H1'	1.58	0.69
53:5:368:C:H42	53:5:384:G:H5'	1.58	0.69
8:D:137:TYR:OH	8:D:203:LEU:O	2.11	0.69
36:l:62:GLY:HA2	36:l:108:ASN:HB2	1.73	0.69
51:3:1418:U:O4	51:3:1423:A:N7	2.26	0.69
54:6:7:U:H3	54:6:68:G:H1	1.37	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:9:18:ILE:HD11	4:9:99:MET:HE1	1.73	0.69
4:9:36:LEU:HD21	4:9:193:MET:HG3	1.75	0.69
51:3:843:G:H2'	51:3:844:G:C8	2.28	0.69
51:3:1460:G:N2	51:3:1596:U:O2	2.25	0.69
51:3:1701:G:N1	51:3:1999:G:OP2	2.22	0.69
53:5:137:A:N6	53:5:156:U:N3	2.41	0.69
53:5:593:A:N6	53:5:638:A:O2'	2.26	0.69
30:f:21:VAL:O	30:f:28:HIS:NE2	2.25	0.69
44:t:11:VAL:HG13	44:t:77:PHE:HB2	1.75	0.69
53:5:1448:A:H2'	53:5:1449:G:C8	2.28	0.69
23:S:14:ASN:ND2	53:5:318:C:O2	2.26	0.69
34:j:18:GLN:HB3	34:j:45:ASP:HB2	1.74	0.69
35:k:84:LYS:NZ	51:3:662:U:O2	2.25	0.69
51:3:2083:U:OP2	51:3:2246:G:N2	2.25	0.69
53:5:1214:A:N6	53:5:1271:U:C2	2.61	0.69
53:5:1398:G:N1	53:5:1453:C:N3	2.40	0.68
28:d:33:LYS:HB3	28:d:92:ARG:HG2	1.74	0.68
51:3:725:G:H1	51:3:807:U:H3	1.39	0.68
51:3:2248:C:H2'	51:3:2249:A:H8	1.58	0.68
51:3:2691:C:H41	51:3:2735:G:H21	1.42	0.68
51:3:341:G:N1	51:3:344:A:OP2	2.25	0.68
51:3:2274:A:N6	51:3:2281:A:N7	2.42	0.68
53:5:21:U:HO2'	53:5:571:A:H61	1.41	0.68
53:5:200:G:N2	53:5:215:C:O2	2.18	0.68
8:D:84:ARG:HH22	53:5:16:G:H1'	1.59	0.68
23:S:17:ARG:NH1	53:5:320:G:OP1	2.26	0.68
26:b:212:LYS:HE2	51:3:2779:C:H4'	1.73	0.68
29:e:110:LEU:HD12	29:e:155:ARG:HE	1.59	0.68
53:5:1068:G:O2'	53:5:1070:G:N7	2.22	0.68
12:H:108:ARG:NH1	53:5:1109:U:OP1	2.26	0.68
12:H:116:LYS:NZ	12:H:117:LYS:O	2.27	0.68
33:i:109:LYS:NZ	51:3:2047:U:OP1	2.26	0.68
41:q:65:GLN:HB2	41:q:87:GLN:HB3	1.76	0.68
45:u:87:GLY:HA3	45:u:92:LYS:HD3	1.75	0.68
50:z:5:ARG:HD2	50:z:24:ASN:HA	1.74	0.68
16:L:29:ARG:CD	16:L:63:TYR:CE2	2.77	0.68
4:9:342:ILE:HA	4:9:361:VAL:HG12	1.76	0.68
12:H:83:LEU:HD11	12:H:87:ARG:HH11	1.56	0.68
51:3:80:U:O4	51:3:109:G:O6	2.12	0.68
4:9:338:VAL:HG11	4:9:367:ILE:HD11	1.76	0.68
53:5:603:U:O2	53:5:630:G:N2	2.26	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:a:268:ARG:HE	25:a:272:LYS:HZ3	1.39	0.68
30:f:5:LEU:CD2	30:f:20:ASP:OD2	2.41	0.68
40:p:2:ARG:HE	40:p:4:LYS:HD2	1.59	0.68
40:p:10:ARG:HH21	51:3:548:A:HO2'	1.41	0.68
53:5:304:U:H2'	53:5:305:A:H8	1.57	0.68
53:5:418:U:OP1	53:5:420:A:N6	2.26	0.68
4:9:227:VAL:HG22	4:9:278:LEU:HB2	1.76	0.68
51:3:1645:C:H2'	51:3:1646:G:C8	2.29	0.68
16:L:109:ARG:NH1	53:5:1281:U:O3'	2.27	0.67
25:a:61:ARG:HG3	25:a:64:ARG:HH12	1.59	0.67
39:o:25:PHE:O	39:o:55:ARG:NH1	2.27	0.67
51:3:947:A:N3	51:3:2272:C:O2'	2.28	0.67
51:3:1141:U:H2'	51:3:1142:G:H8	1.60	0.67
53:5:344:G:H2'	53:5:345:A:H8	1.58	0.67
6:B:180:THR:HA	53:5:1103:C:H42	1.60	0.67
11:G:115:ILE:HD11	11:G:122:VAL:HB	1.75	0.67
51:3:2803:G:O5'	51:3:2806:A:N6	2.26	0.67
30:f:3:VAL:O	30:f:3:VAL:HG12	1.94	0.67
36:l:73:SER:HA	36:l:93:TRP:HA	1.75	0.67
51:3:1182:U:H2'	51:3:1183:A:H8	1.59	0.67
51:3:1697:C:N4	51:3:1999:G:O2'	2.26	0.67
52:4:60:C:H2'	52:4:61:A:H8	1.60	0.67
38:n:73:VAL:HG23	38:n:105:LEU:HD11	1.75	0.67
4:9:97:ALA:HB1	4:9:335:THR:HG22	1.75	0.67
15:K:29:ASN:HD21	15:K:34:LYS:HE3	1.59	0.67
36:l:14:ASN:O	36:l:15:VAL:HG23	1.95	0.67
36:l:77:LYS:HD3	36:l:81:VAL:HG11	1.77	0.67
51:3:383:U:H2'	51:3:384:G:H8	1.59	0.67
53:5:580:C:O2	53:5:756:A:N6	2.28	0.67
8:D:152:LYS:HB3	8:D:179:TYR:HB2	1.77	0.67
12:H:46:VAL:HA	12:H:49:ASP:HB3	1.77	0.67
40:p:36:GLN:HE22	51:3:596:G:H21	1.43	0.67
51:3:67:C:O2'	51:3:492:C:N3	2.27	0.67
53:5:169:G:H22	53:5:196:G:H22	1.41	0.67
49:y:40:HIS:O	49:y:41:ARG:NH1	2.28	0.67
51:3:319:G:O6	51:3:320:A:N6	2.28	0.67
51:3:2697:C:OP2	51:3:2876:G:N1	2.26	0.67
53:5:663:G:O6	53:5:737:U:C4	2.46	0.67
6:B:164:GLU:HB3	6:B:167:ARG:HG2	1.77	0.67
7:C:69:LYS:HE3	53:5:544:A:H5''	1.77	0.67
11:G:115:ILE:HG23	11:G:138:LEU:HB2	1.77	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:P:66:THR:HG21	20:P:76:ARG:HD3	1.77	0.67
53:5:765:A:N3	53:5:1487:U:O2'	2.28	0.67
51:3:716:G:H1	51:3:831:U:H3	1.40	0.67
51:3:813:G:N2	51:3:822:C:C2	2.63	0.67
51:3:2480:G:N2	51:3:2486:A:H62	1.92	0.67
40:p:65:ASN:HD22	51:3:1046:A:H5''	1.59	0.66
51:3:713:C:H2'	51:3:714:G:H8	1.60	0.66
7:C:184:ARG:HH22	7:C:189:ALA:HA	1.60	0.66
51:3:1245:G:O6	51:3:1265:G:N2	2.28	0.66
4:9:209:LYS:HB3	4:9:234:ARG:HD2	1.75	0.66
30:f:2:LYS:HG3	30:f:35:LEU:HB3	1.77	0.66
51:3:1130:A:C2	54:6:56:U:O3'	2.48	0.66
51:3:2575:G:H2'	51:3:2576:A:C8	2.30	0.66
53:5:1230:G:H3'	53:5:1254:A:H61	1.60	0.66
12:H:66:ASN:HD21	53:5:1121:U:H2'	1.59	0.66
51:3:299:A:N6	51:3:440:C:O2'	2.29	0.66
53:5:733:A:N6	53:5:734:A:N6	2.43	0.66
8:D:140:VAL:HG22	8:D:151:LEU:HB2	1.77	0.66
15:K:39:TYR:O	53:5:551:A:O2'	2.13	0.66
15:K:63:ARG:NH1	15:K:102:ASP:OD2	2.26	0.66
51:3:811:G:H4'	51:3:812:G:H5''	1.76	0.66
51:3:1141:U:H2'	51:3:1142:G:C8	2.30	0.66
51:3:2081:U:HO2'	51:3:2605:G:HO2'	1.42	0.66
51:3:1414:C:O2'	51:3:1495:A:N3	2.26	0.66
53:5:656:U:H2'	53:5:657:G:C8	2.31	0.66
53:5:1389:U:H2'	53:5:1390:G:H8	1.59	0.66
51:3:2031:C:H2'	51:3:2032:G:C8	2.30	0.66
53:5:1230:G:O2'	53:5:1233:G:N3	2.25	0.66
53:5:1402:U:H2'	53:5:1403:A:C8	2.30	0.66
32:h:89:ALA:HB2	51:3:1112:A:H1'	1.78	0.66
51:3:31:U:O2	51:3:1245:G:O2'	2.14	0.66
10:F:75:ARG:NH1	53:5:932:A:O2'	2.29	0.65
51:3:1298:A:H62	51:3:2019:G:H21	1.45	0.65
51:3:2093:U:H2'	51:3:2094:A:H8	1.61	0.65
53:5:1328:C:H2'	53:5:1329:G:H8	1.61	0.65
8:D:185:ARG:NH1	53:5:22:G:O6	2.29	0.65
20:P:66:THR:HG22	20:P:67:ARG:HG2	1.78	0.65
28:d:24:SER:HB3	28:d:27:GLN:HE21	1.62	0.65
51:3:500:U:C2	51:3:823:A:N6	2.64	0.65
51:3:1406:A:O2'	51:3:1408:G:OP2	2.15	0.65
18:N:6:ASN:OD1	18:N:10:LYS:NZ	2.30	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:b:152:GLY:O	26:b:157:GLN:NE2	2.29	0.65
51:3:1807:C:N3	51:3:1824:G:N1	2.44	0.65
53:5:63:U:H2'	53:5:64:C:C6	2.31	0.65
53:5:407:A:N6	53:5:426:U:C2	2.64	0.65
2:1:36:LYS:NZ	51:3:2391:G:OP2	2.24	0.65
51:3:1973:U:H1'	51:3:2601:U:H4'	1.76	0.65
53:5:536:U:H2'	53:5:537:A:H8	1.62	0.65
51:3:1020:G:OP2	51:3:1020:G:N2	2.27	0.65
51:3:853:G:N1	51:3:1219:U:OP2	2.25	0.65
51:3:1023:C:O2'	51:3:1036:A:N3	2.30	0.65
53:5:448:A:N6	53:5:478:G:OP2	2.30	0.65
54:6:53:A:H2'	54:6:54:G:H8	1.62	0.65
25:a:179:TYR:HA	25:a:192:PHE:O	1.97	0.65
26:b:213:LYS:HE3	26:b:216:VAL:HG21	1.79	0.65
51:3:742:G:O6	51:3:759:U:O4	2.15	0.65
51:3:1969:C:O2'	51:3:1971:G:OP1	2.15	0.65
51:3:2036:G:N1	51:3:2040:A:OP2	2.27	0.65
51:3:2829:G:H3'	51:3:2830:A:H8	1.61	0.65
53:5:1150:G:H2'	53:5:1151:A:H8	1.62	0.65
26:b:158:ARG:NH2	51:3:1165:U:O2	2.30	0.65
29:e:16:VAL:HA	29:e:28:LYS:O	1.97	0.65
51:3:1052:A:H61	51:3:1181:A:N6	1.95	0.65
51:3:1422:U:H4'	51:3:1637:A:H4'	1.77	0.65
54:7:53:A:H2'	54:7:54:G:H8	1.62	0.65
6:B:78:ILE:HD11	6:B:106:ILE:HG21	1.79	0.65
7:C:78:VAL:HG11	7:C:89:LEU:HD22	1.76	0.65
15:K:29:ASN:ND2	53:5:51:A:OP1	2.30	0.65
49:y:42:VAL:HG12	49:y:48:TYR:HB2	1.79	0.65
51:3:675:U:H3	51:3:685:G:H1	1.43	0.65
51:3:1182:U:H2'	51:3:1183:A:C8	2.31	0.65
51:3:2229:C:H2'	51:3:2230:A:H8	1.62	0.65
51:3:2552:G:H2'	51:3:2553:G:C8	2.32	0.65
53:5:590:G:H1	53:5:644:U:H3	1.45	0.65
53:5:87:G:H2'	53:5:88:A:H8	1.61	0.65
53:5:1046:A:N7	53:5:1175:C:N3	2.44	0.65
54:6:23:G:H2'	54:6:24:A:H8	1.63	0.64
46:v:58:LEU:HB2	46:v:63:ARG:HB2	1.78	0.64
47:w:105:ARG:NH2	51:3:1431:A:OP1	2.30	0.64
51:3:1289:G:H2'	51:3:1290:G:C8	2.32	0.64
16:L:107:ARG:HH12	53:5:1203:A:H5''	1.62	0.64
30:f:6:LYS:H	30:f:34:LYS:HZ2	1.45	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:l:37:THR:OG1	36:l:128:THR:OG1	2.14	0.64
44:t:50:GLN:HB2	51:3:519:A:H5''	1.79	0.64
25:a:62:ASN:ND2	25:a:221:HIS:O	2.31	0.64
36:l:1:MET:HE1	36:l:45:ARG:HG2	1.80	0.64
49:y:28:SER:HB2	49:y:39:PHE:HD1	1.61	0.64
51:3:1866:G:H22	51:3:1890:U:H3	1.46	0.64
53:5:290:G:H1	53:5:299:U:H3	0.74	0.64
6:B:20:SER:OG	17:M:52:ALA:O	2.16	0.64
6:B:21:ARG:NH2	6:B:59:GLU:OE2	2.26	0.64
51:3:665:C:O2	51:3:675:U:O2'	2.15	0.64
51:3:1392:G:N2	51:3:1395:A:OP2	2.29	0.64
52:4:16:G:N2	52:4:63:U:O2	2.30	0.64
52:4:22:G:N1	52:4:57:G:O6	2.30	0.64
7:C:73:ARG:NH1	53:5:619:A:O2'	2.30	0.64
7:C:180:ARG:NH2	7:C:181:PHE:O	2.31	0.64
14:J:77:LEU:HB2	14:J:100:ILE:HD13	1.79	0.64
38:n:101:ARG:NE	52:4:47:C:OP1	2.31	0.64
51:3:1000:U:O2'	51:3:2281:A:N3	2.30	0.64
51:3:2259:G:N2	54:7:76:C:OP1	2.17	0.64
51:3:2849:G:H2'	51:3:2850:G:H8	1.63	0.64
3:2:21:GLN:NE2	51:3:2765:A:OP2	2.30	0.64
51:3:154:U:H2'	51:3:155:A:H8	1.63	0.64
51:3:248:A:H62	51:3:258:G:H21	0.78	0.64
53:5:1417:U:O2	53:5:1435:G:N2	2.30	0.64
27:c:24:LEU:HB3	27:c:207:LEU:HD13	1.79	0.64
51:3:680:A:H2'	51:3:682:A:H8	1.63	0.64
51:3:2321:C:H2'	51:3:2322:G:H8	1.62	0.64
53:5:708:A:H2'	53:5:709:A:C8	2.33	0.64
53:5:1087:C:O2	53:5:1145:A:O2'	2.15	0.64
16:L:83:ILE:HD12	22:R:63:THR:HG21	1.80	0.63
27:c:94:LYS:HE3	27:c:95:PRO:HD2	1.80	0.63
36:l:77:LYS:NZ	36:l:87:LYS:O	2.29	0.63
51:3:816:A:N1	51:3:1783:G:O2'	2.28	0.63
52:4:71:A:N6	52:4:93:U:O2	2.31	0.63
53:5:1290:G:N1	53:5:1293:A:OP2	2.31	0.63
28:d:22:PHE:O	28:d:27:GLN:NE2	2.31	0.63
31:g:57:ASN:HB3	51:3:1081:A:H1'	1.80	0.63
51:3:1065:G:O6	51:3:1160:G:N2	2.32	0.63
51:3:2604:U:O2'	51:3:2605:G:OP1	2.15	0.63
53:5:949:G:H21	53:5:1202:A:H62	1.44	0.63
53:5:1412:C:H2'	53:5:1413:G:H8	1.63	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:25:ALA:HA	1:0:28:ARG:HE	1.63	0.63
9:E:92:ARG:NH2	9:E:93:GLU:OE1	2.29	0.63
11:G:90:ILE:HG21	11:G:137:ILE:HB	1.81	0.63
25:a:52:LYS:NZ	51:3:1813:C:O2'	2.21	0.63
35:k:126:PHE:HB2	35:k:146:VAL:HG12	1.80	0.63
43:s:62:PRO:HB3	43:s:74:LEU:HD21	1.79	0.63
44:t:90:LYS:HG3	44:t:105:LYS:HG2	1.79	0.63
46:v:53:ARG:NH1	51:3:410:G:O2'	2.31	0.63
51:3:343:A:N3	51:3:363:G:O2'	2.32	0.63
51:3:2229:C:H2'	51:3:2230:A:C8	2.34	0.63
53:5:834:G:H2'	53:5:835:G:C8	2.33	0.63
51:3:224:G:H1	51:3:463:U:H3'	1.62	0.63
51:3:612:G:O2'	51:3:2026:A:OP1	2.14	0.63
51:3:998:C:O2'	51:3:2505:A:OP1	2.17	0.63
51:3:1942:G:H3'	51:3:1969:C:H42	1.63	0.63
51:3:1947:U:O2	51:3:1949:C:N4	2.32	0.63
51:3:2745:G:H2'	51:3:2746:A:H8	1.64	0.63
13:I:50:THR:HG23	53:5:1127:A:H5''	1.80	0.63
51:3:840:G:N2	51:3:864:A:OP1	2.32	0.63
51:3:1772:G:H1	51:3:1994:U:H3	1.47	0.63
53:5:56:A:OP2	53:5:348:C:N4	2.32	0.63
6:B:11:ARG:NH1	6:B:180:THR:O	2.32	0.63
25:a:162:ARG:HG2	51:3:1825:U:H2'	1.81	0.63
51:3:1051:U:O4	51:3:1052:A:N6	2.32	0.63
51:3:1391:U:O2'	51:3:1816:A:N3	2.30	0.63
53:5:663:G:C6	53:5:737:U:C4	2.87	0.63
53:5:1382:C:H2'	53:5:1383:A:H8	1.63	0.63
53:5:1384:A:H2'	53:5:1385:A:H8	1.64	0.63
53:5:1497:U:H2'	53:5:1498:G:H8	1.64	0.63
51:3:2312:G:H22	51:3:2320:U:H3	1.47	0.63
51:3:2549:A:H2	51:3:2773:A:H61	1.47	0.63
53:5:920:G:H1	53:5:1366:U:H3	1.45	0.63
53:5:1387:U:H2'	53:5:1388:A:C8	2.34	0.63
54:7:23:G:H2'	54:7:24:A:H8	1.62	0.63
12:H:67:VAL:HG11	12:H:81:ILE:HG22	1.80	0.63
43:s:3:VAL:HG13	43:s:5:ASN:H	1.62	0.63
46:v:47:ARG:NH2	51:3:2209:U:OP1	2.31	0.63
50:z:31:LYS:HG3	50:z:49:GLU:HG2	1.81	0.63
51:3:566:G:H1	51:3:2025:C:H42	1.44	0.63
51:3:762:A:H2'	51:3:763:G:C8	2.34	0.63
51:3:1067:A:N1	51:3:1157:G:O6	2.31	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2896:G:H4'	51:3:2897:G:H21	1.64	0.63
23:S:37:LYS:HD2	23:S:38:GLU:HG3	1.80	0.62
31:g:93:LEU:HB3	31:g:127:ALA:HA	1.79	0.62
51:3:134:U:H2'	51:3:135:A:C8	2.34	0.62
51:3:2291:U:C2	51:3:2333:G:O6	2.52	0.62
51:3:2820:G:N3	51:3:2887:A:O2'	2.32	0.62
13:I:57:ILE:HG23	17:M:41:ARG:HB2	1.81	0.62
45:u:41:ASP:HA	45:u:81:VAL:HG23	1.80	0.62
51:3:163:A:N3	51:3:2216:U:O2'	2.27	0.62
51:3:2745:G:H2'	51:3:2746:A:C8	2.34	0.62
53:5:598:U:H2'	53:5:599:G:H8	1.64	0.62
12:H:16:SER:OG	53:5:1124:U:O3'	2.17	0.62
38:n:34:LYS:HD3	38:n:102:ILE:HD11	1.79	0.62
48:x:12:VAL:HB	48:x:27:SER:HB2	1.81	0.62
51:3:1746:U:H3	51:3:1753:G:H1	1.46	0.62
51:3:1764:U:H3	51:3:1769:A:H62	1.47	0.62
53:5:290:G:O6	53:5:299:U:O4	2.18	0.62
53:5:499:U:H2'	53:5:500:G:C8	2.34	0.62
16:L:65:ILE:HB	16:L:68:ASP:HB3	1.81	0.62
40:p:60:TRP:O	40:p:64:LEU:HG	1.99	0.62
53:5:522:G:H2'	53:5:523:U:C6	2.34	0.62
4:9:261:MET:HB2	4:9:266:LEU:HD21	1.80	0.62
15:K:43:LYS:HB2	15:K:70:LEU:HD11	1.80	0.62
26:b:50:THR:OG1	26:b:87:MET:O	2.16	0.62
26:b:137:ALA:O	51:3:2587:U:O2'	2.17	0.62
38:n:27:ARG:NH2	38:n:89:VAL:O	2.33	0.62
51:3:509:G:H2'	51:3:510:G:C8	2.34	0.62
51:3:1114:C:H5	51:3:1123:A:H5''	1.65	0.62
51:3:2253:U:H5''	51:3:2254:G:H5''	1.80	0.62
51:3:2291:U:O2	51:3:2333:G:O6	2.17	0.62
51:3:2603:G:N2	51:3:2606:A:OP2	2.33	0.62
6:B:134:ARG:HH11	8:D:110:GLU:HB3	1.65	0.62
29:e:66:ILE:HG12	51:3:2757:A:H1'	1.82	0.62
40:p:10:ARG:NH2	51:3:548:A:O2'	2.20	0.62
43:s:15:LYS:HD2	51:3:1367:G:H5'	1.82	0.62
50:z:24:ASN:ND2	51:3:2293:C:OP1	2.32	0.62
51:3:200:A:N6	51:3:866:G:O2'	2.32	0.62
53:5:1331:A:H2	53:5:1340:G:H1	1.47	0.62
1:0:26:SER:HA	1:0:29:LYS:HE3	1.81	0.62
10:F:144:ALA:O	10:F:145:GLU:HG2	2.00	0.62
11:G:109:ASN:C	11:G:111:LEU:H	2.08	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:f:128:LEU:O	30:f:135:THR:OG1	2.17	0.62
51:3:355:A:O2'	51:3:374:A:N3	2.31	0.62
51:3:659:C:H2'	51:3:660:U:C6	2.34	0.62
51:3:733:C:H5''	51:3:734:A:H5'	1.82	0.62
51:3:1918:U:O2	51:3:1926:A:N6	2.31	0.62
51:3:2105:G:H2'	51:3:2106:G:C8	2.34	0.62
53:5:818:A:H2'	53:5:819:G:H8	1.65	0.62
10:F:37:LEU:HA	10:F:40:ARG:HH21	1.65	0.62
25:a:5:LYS:HA	25:a:18:THR:HG22	1.80	0.62
25:a:236:ASN:OD1	51:3:828:A:N6	2.33	0.62
26:b:62:LEU:HG	26:b:66:GLN:HE21	1.65	0.62
51:3:1296:G:O2'	51:3:2019:G:O6	2.15	0.62
51:3:2527:U:O4'	51:3:2550:A:N6	2.32	0.62
53:5:69:G:H21	53:5:137:A:H2	1.45	0.62
20:P:49:ASN:ND2	20:P:52:GLU:OE2	2.32	0.62
51:3:812:G:H2'	51:3:813:G:H8	1.65	0.62
51:3:1130:A:N3	54:6:57:C:OP1	2.33	0.62
25:a:35:LYS:NZ	51:3:1455:A:N3	2.43	0.62
25:a:100:THR:HG22	25:a:106:LYS:HG2	1.82	0.62
51:3:138:U:H2'	51:3:139:G:H8	1.63	0.62
53:5:836:C:H42	53:5:842:C:H42	1.47	0.62
6:B:92:ILE:HA	6:B:95:ILE:HG22	1.81	0.61
12:H:24:THR:HG22	12:H:26:ASP:H	1.65	0.61
51:3:1927:C:H5'	53:5:1492:G:H1	1.65	0.61
53:5:818:A:H2'	53:5:819:G:C8	2.34	0.61
12:H:72:GLY:O	53:5:1224:C:O2'	2.17	0.61
35:k:113:LYS:HG3	35:k:130:LYS:HB2	1.80	0.61
51:3:325:G:H1	51:3:383:U:H3	1.48	0.61
51:3:352:C:H2'	51:3:353:G:C8	2.35	0.61
51:3:939:U:H2'	51:3:940:A:H8	1.64	0.61
51:3:1130:A:C6	54:6:57:C:OP2	2.52	0.61
53:5:1106:U:O2	53:5:1160:G:O6	2.18	0.61
53:5:1272:C:H4'	53:5:1273:A:C4	2.36	0.61
4:9:328:ARG:NH2	54:6:66:C:O2	2.33	0.61
44:t:41:LYS:NZ	44:t:66:GLU:OE1	2.34	0.61
51:3:1536:C:N4	51:3:1537:A:N6	2.47	0.61
51:3:549:A:N3	51:3:614:C:O2'	2.32	0.61
51:3:1340:U:O2	51:3:1367:G:N2	2.32	0.61
53:5:206:G:N2	53:5:209:A:OP2	2.23	0.61
53:5:406:G:O6	53:5:426:U:O2'	2.18	0.61
46:v:56:ARG:NH2	51:3:436:G:N7	2.37	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2106:G:N2	51:3:2199:C:O2	2.34	0.61
53:5:1051:U:H2'	53:5:1052:G:H8	1.65	0.61
6:B:159:ARG:NH2	53:5:1046:A:O2'	2.33	0.61
15:K:12:ARG:NH1	53:5:562:U:OP2	2.33	0.61
51:3:802:U:H2'	51:3:803:G:H8	1.66	0.61
51:3:869:U:H2'	51:3:870:A:H8	1.64	0.61
51:3:1873:A:H62	51:3:1882:G:H21	1.48	0.61
51:3:2254:G:H2'	51:3:2255:A:C8	2.36	0.61
51:3:2406:U:H2'	51:3:2407:G:C8	2.36	0.61
52:4:79:U:O2	52:4:86:G:N2	2.34	0.61
53:5:763:A:OP2	53:5:809:G:N2	2.33	0.61
53:5:1222:U:O2	53:5:1264:G:O6	2.18	0.61
1:0:42:LEU:HD23	1:0:43:THR:HG23	1.82	0.61
6:B:76:PHE:O	6:B:84:ASN:ND2	2.34	0.61
41:q:95:VAL:HG13	41:q:96:ARG:HG3	1.81	0.61
51:3:28:G:O6	51:3:547:G:O2'	2.17	0.61
51:3:1103:G:N2	51:3:1130:A:N3	2.42	0.61
51:3:1232:U:H2'	51:3:1233:A:H8	1.64	0.61
51:3:1494:U:O2	51:3:1550:G:N2	2.27	0.61
51:3:1942:G:N2	51:3:1971:G:O5'	2.33	0.61
42:r:132:GLN:OE1	51:3:1260:U:O2'	2.17	0.61
51:3:675:U:O4	51:3:685:G:O6	2.18	0.61
51:3:1722:U:O2'	51:3:1734:A:N7	2.32	0.61
52:4:105:A:N1	52:4:106:A:N6	2.48	0.61
53:5:1388:A:N6	53:5:1462:G:H1	1.98	0.61
54:7:16:G:N2	54:7:49:C:O2	2.33	0.61
10:F:32:ASP:OD1	53:5:1325:U:O2'	2.19	0.61
26:b:165:MET:HE3	26:b:166:SER:H	1.65	0.61
51:3:389:C:H2'	51:3:390:A:C8	2.36	0.61
51:3:1070:U:O2	51:3:1155:G:O6	2.18	0.61
51:3:1588:A:O2'	51:3:1589:A:O4'	2.18	0.61
12:H:101:LYS:NZ	53:5:1153:G:N7	2.44	0.61
23:S:63:ASN:ND2	53:5:259:A:OP1	2.30	0.61
28:d:35:VAL:HG12	28:d:155:THR:HG22	1.83	0.61
37:m:99:ARG:HH21	51:3:2885:U:H5''	1.65	0.61
39:o:103:TYR:HE1	39:o:104:MET:HE2	1.66	0.61
42:r:116:GLU:N	42:r:116:GLU:OE1	2.34	0.61
51:3:1168:A:HO2'	51:3:2033:G:HO2'	1.49	0.61
51:3:2122:G:O2'	51:3:2179:A:N6	2.34	0.61
51:3:2861:G:N2	51:3:2864:A:OP2	2.34	0.61
53:5:333:U:O4	53:5:334:A:N6	2.34	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:684:A:C5	53:5:700:G:N2	2.68	0.61
51:3:1816:A:H2'	51:3:1817:A:C8	2.35	0.60
4:9:378:ARG:NH2	4:9:381:GLY:O	2.34	0.60
26:b:151:ARG:NH1	51:3:2512:U:O2'	2.34	0.60
30:f:42:LYS:HZ1	30:f:50:PHE:HB2	1.67	0.60
44:t:70:PHE:HB2	44:t:73:LYS:HE2	1.81	0.60
51:3:1009:A:H5'	51:3:1219:U:H1'	1.83	0.60
51:3:1691:U:H2'	51:3:1692:A:H8	1.66	0.60
51:3:2668:A:H61	54:6:62:C:HO2'	1.49	0.60
53:5:885:U:C2	53:5:901:A:N7	2.69	0.60
53:5:1138:U:H2'	53:5:1139:A:H8	1.66	0.60
41:q:67:LYS:NZ	51:3:1255:G:OP1	2.24	0.60
51:3:858:A:H2'	51:3:859:G:C8	2.36	0.60
51:3:1070:U:H2'	51:3:1071:G:C8	2.37	0.60
51:3:1077:G:N1	51:3:1148:U:N3	2.48	0.60
51:3:1414:C:H5''	51:3:1424:U:H3	1.66	0.60
51:3:1663:G:H21	51:3:2706:U:H4'	1.66	0.60
51:3:1756:A:H2'	51:3:1757:G:H8	1.64	0.60
51:3:2254:G:H2'	51:3:2255:A:H8	1.67	0.60
51:3:2652:U:H2'	51:3:2653:G:C4	2.37	0.60
53:5:1320:A:N6	53:5:1350:A:N7	2.49	0.60
8:D:160:ILE:HB	8:D:177:ASP:HA	1.82	0.60
9:E:112:ARG:NH1	9:E:112:ARG:O	2.34	0.60
33:i:123:THR:HG22	51:3:2788:U:H5'	1.83	0.60
42:r:13:SER:HB3	42:r:16:LYS:HG3	1.84	0.60
51:3:1490:G:H2'	51:3:1491:G:H8	1.67	0.60
51:3:1837:C:H2'	51:3:1838:A:H8	1.67	0.60
51:3:2307:G:H2'	51:3:2308:U:C6	2.36	0.60
53:5:22:G:H21	53:5:908:A:H62	1.49	0.60
53:5:41:C:H2'	53:5:42:G:H8	1.67	0.60
53:5:537:A:H2'	53:5:538:G:C8	2.35	0.60
53:5:831:C:H2'	53:5:832:G:C8	2.37	0.60
53:5:1154:A:H2'	53:5:1155:A:C8	2.37	0.60
6:B:117:ARG:NH1	6:B:189:LEU:O	2.34	0.60
51:3:498:C:N4	51:3:499:G:O6	2.35	0.60
51:3:618:G:H3'	51:3:1281:A:H61	1.67	0.60
51:3:684:A:H2'	51:3:685:G:C8	2.36	0.60
51:3:1491:G:H2'	51:3:1492:G:C8	2.36	0.60
10:F:63:ARG:NH1	10:F:128:ASN:OD1	2.34	0.60
33:i:80:HIS:HB2	33:i:87:ILE:HD13	1.82	0.60
51:3:1679:U:H4'	51:3:1680:A:H5'	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:253:G:H1	53:5:265:U:H3	1.47	0.60
2:1:15:LYS:NZ	51:3:662:U:OP1	2.34	0.60
28:d:126:GLY:HA2	28:d:163:ASP:HB3	1.84	0.60
51:3:813:G:C2	51:3:822:C:C2	2.90	0.60
51:3:1801:U:H3	51:3:1832:G:H1	1.48	0.60
53:5:250:G:H2'	53:5:251:G:H8	1.66	0.60
53:5:1505:G:H2'	53:5:1506:A:C8	2.36	0.60
36:l:38:LYS:HB3	36:l:127:VAL:HG23	1.84	0.60
39:o:14:GLU:HG3	39:o:60:ILE:HB	1.84	0.60
41:q:87:GLN:NE2	41:q:88:PRO:O	2.35	0.60
44:t:29:PRO:O	44:t:32:GLN:NE2	2.33	0.60
51:3:2409:U:O4	51:3:2423:G:O6	2.18	0.60
51:3:2888:U:H1'	51:3:2889:U:H5	1.67	0.60
53:5:265:U:H2'	53:5:266:A:C8	2.36	0.60
25:a:173:GLN:HG2	25:a:180:VAL:HG12	1.84	0.60
29:e:44:LEU:HD12	29:e:55:ILE:HB	1.84	0.60
46:v:39:LYS:HA	46:v:45:THR:HG22	1.83	0.60
51:3:500:U:N3	51:3:823:A:C6	2.70	0.60
51:3:989:G:O2'	51:3:2274:A:OP2	2.20	0.60
53:5:1261:A:H2'	53:5:1262:A:C8	2.37	0.60
4:9:14:ASN:O	4:9:100:ASP:N	2.24	0.60
8:D:152:LYS:HE2	53:5:7:U:H3	1.67	0.60
16:L:29:ARG:HG2	16:L:63:TYR:CE2	2.37	0.60
19:O:12:ARG:NH1	19:O:31:GLY:O	2.35	0.60
25:a:41:LEU:HD11	25:a:66:TYR:HB2	1.84	0.60
32:h:69:THR:HB	32:h:111:ASP:HB3	1.84	0.60
45:u:70:ASP:HB2	51:3:2372:C:H5'	1.83	0.60
51:3:332:G:N1	51:3:373:U:OP2	2.34	0.60
51:3:1961:A:O2'	51:3:1964:C:N4	2.35	0.60
51:3:2093:U:H2'	51:3:2094:A:C8	2.36	0.60
8:D:139:GLU:HG2	8:D:152:LYS:HA	1.84	0.59
16:L:105:ASN:ND2	53:5:944:A:OP2	2.35	0.59
51:3:217:A:H2'	51:3:218:G:C8	2.36	0.59
5:A:132:LYS:O	5:A:136:LYS:HG2	2.02	0.59
26:b:13:MET:HG2	51:3:2690:U:H5''	1.84	0.59
37:m:3:TYR:OH	51:3:784:A:N6	2.34	0.59
51:3:247:U:C2	51:3:259:A:N7	2.70	0.59
52:4:35:C:N3	52:4:46:C:O2'	2.36	0.59
53:5:205:U:H4'	53:5:464:A:H1'	1.83	0.59
53:5:371:U:H2'	53:5:372:G:C8	2.37	0.59
16:L:35:LYS:O	16:L:38:ASN:ND2	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:a:183:GLN:NE2	25:a:184:LEU:O	2.35	0.59
51:3:2058:G:H5'	51:3:2586:G:H5''	1.82	0.59
2:1:54:ARG:NH2	51:3:868:C:O2'	2.35	0.59
15:K:40:SER:HB3	15:K:43:LYS:HZ2	1.66	0.59
40:p:47:ARG:NH2	51:3:593:C:O2'	2.36	0.59
51:3:1101:U:N3	51:3:1108:A:N7	2.50	0.59
51:3:1363:C:H2'	51:3:1364:A:H8	1.68	0.59
51:3:1495:A:OP2	51:3:1548:A:N6	2.35	0.59
51:3:1785:U:O4	51:3:1792:A:N7	2.35	0.59
52:4:106:A:H2'	52:4:107:G:C8	2.37	0.59
53:5:87:G:H2'	53:5:88:A:C8	2.37	0.59
53:5:344:G:H2'	53:5:345:A:C8	2.38	0.59
53:5:402:G:N7	53:5:493:A:O2'	2.32	0.59
53:5:1417:U:N3	53:5:1435:G:N1	2.50	0.59
15:K:84:GLY:O	15:K:112:ARG:NH1	2.36	0.59
25:a:138:LEU:HD23	25:a:180:VAL:HG21	1.83	0.59
25:a:266:LYS:NZ	51:3:1852:G:OP1	2.31	0.59
40:p:13:ARG:NH2	51:3:1282:G:OP2	2.36	0.59
51:3:566:G:OP1	51:3:594:G:N2	2.36	0.59
51:3:1130:A:C5	54:6:57:C:OP2	2.56	0.59
53:5:299:U:H2'	53:5:300:A:C8	2.37	0.59
53:5:712:A:OP1	53:5:802:C:O2'	2.17	0.59
53:5:951:U:H2'	53:5:952:U:C6	2.38	0.59
53:5:1062:C:H2'	53:5:1063:G:H8	1.67	0.59
54:6:10:A:N7	54:6:47:G:N2	2.51	0.59
25:a:42:LYS:NZ	51:3:1383:G:OP2	2.35	0.59
51:3:352:C:H2'	51:3:353:G:H8	1.68	0.59
51:3:891:G:H2'	51:3:892:G:H8	1.66	0.59
51:3:1701:G:O2'	51:3:1998:U:O4	2.20	0.59
51:3:2652:U:O2'	51:3:2653:G:O4'	2.18	0.59
53:5:129:U:H5''	53:5:130:G:H5''	1.85	0.59
54:6:53:A:N6	54:6:64:G:O6	2.36	0.59
17:M:35:SER:OG	53:5:1332:U:OP1	2.18	0.59
27:c:80:ARG:NH1	51:3:505:G:OP1	2.36	0.59
40:p:94:LEU:HA	40:p:97:LEU:HG	1.83	0.59
51:3:535:G:H21	51:3:540:A:H62	1.50	0.59
51:3:919:C:H2'	51:3:920:G:H8	1.68	0.59
51:3:2481:U:OP1	51:3:2537:G:N2	2.36	0.59
51:3:2696:G:N1	51:3:2728:U:OP2	2.28	0.59
53:5:885:U:H2'	53:5:886:A:H8	1.68	0.59
54:7:53:A:N6	54:7:64:G:O6	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:D:72:LYS:HG3	8:D:188:PRO:HG3	1.84	0.59
25:a:246:ARG:NH1	51:3:1979:G:OP2	2.35	0.59
36:l:87:LYS:HE3	51:3:991:G:H5''	1.83	0.59
51:3:656:G:H4'	51:3:657:A:H5'	1.83	0.59
51:3:1261:U:H2'	51:3:1262:G:C8	2.35	0.59
51:3:1414:C:H2'	51:3:1415:A:C8	2.38	0.59
51:3:1876:G:N2	51:3:1879:A:OP2	2.36	0.59
51:3:2299:U:H2'	51:3:2300:A:C8	2.37	0.59
51:3:2700:C:H2'	51:3:2701:A:H8	1.68	0.59
53:5:27:A:H61	53:5:556:G:H1'	1.66	0.59
51:3:339:U:H2'	51:3:340:U:C6	2.38	0.59
51:3:562:C:H4'	51:3:563:A:H5'	1.84	0.59
51:3:2843:G:O6	51:3:2882:U:O2	2.21	0.59
53:5:1059:G:N7	53:5:1085:G:O2'	2.30	0.59
25:a:219:ASN:O	25:a:223:GLY:N	2.35	0.59
30:f:2:LYS:HD3	30:f:2:LYS:N	2.09	0.59
36:l:8:LYS:NZ	51:3:949:C:OP1	2.33	0.59
51:3:165:U:O2	51:3:167:A:N6	2.35	0.59
51:3:582:A:H2'	51:3:584:G:H5''	1.84	0.59
51:3:779:C:N4	51:3:780:G:O6	2.36	0.59
51:3:877:G:H1	51:3:972:C:H42	1.50	0.59
51:3:1501:U:O2	51:3:1542:G:O6	2.20	0.59
51:3:2103:C:H2'	51:3:2104:A:H8	1.67	0.59
53:5:454:U:H2'	53:5:455:U:C6	2.38	0.59
53:5:1384:A:H2'	53:5:1385:A:C8	2.37	0.59
54:7:10:A:N7	54:7:47:G:N2	2.51	0.59
12:H:124:ARG:N	53:5:1323:A:OP1	2.36	0.58
44:t:93:MET:HE2	44:t:103:VAL:HB	1.85	0.58
51:3:401:G:O2'	51:3:402:A:O4'	2.19	0.58
51:3:713:C:H2'	51:3:714:G:C8	2.37	0.58
51:3:2483:C:N4	51:3:2537:G:N2	2.51	0.58
53:5:358:G:N2	53:5:361:U:OP2	2.36	0.58
5:A:110:GLN:HG3	5:A:111:ARG:H	1.68	0.58
46:v:18:ARG:NH2	51:3:205:C:OP1	2.36	0.58
51:3:247:U:N3	51:3:259:A:C8	2.71	0.58
51:3:1018:G:O2'	51:3:1020:G:OP2	2.21	0.58
53:5:80:U:H2'	53:5:81:A:H8	1.67	0.58
53:5:233:C:H2'	53:5:234:G:C4	2.38	0.58
6:B:101:ASN:ND2	6:B:103:ASP:OD2	2.35	0.58
34:j:11:ALA:HB2	34:j:83:ALA:HB1	1.85	0.58
34:j:64:ARG:NH1	34:j:81:ASP:OD2	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:559:C:O2'	51:3:589:A:OP1	2.21	0.58
53:5:366:C:H2'	53:5:367:A:C8	2.38	0.58
53:5:1214:A:C6	53:5:1271:U:C2	2.91	0.58
19:O:2:ARG:HE	19:O:9:PRO:HA	1.67	0.58
25:a:67:ARG:NH2	25:a:88:TYR:O	2.36	0.58
37:m:81:HIS:O	37:m:85:LYS:HG2	2.03	0.58
51:3:1230:U:H2'	51:3:1231:G:C8	2.38	0.58
51:3:1414:C:H2'	51:3:1415:A:H8	1.67	0.58
51:3:2529:C:C2	51:3:2553:G:C2	2.92	0.58
51:3:2847:C:H2'	51:3:2848:A:H8	1.68	0.58
53:5:133:G:H2'	53:5:134:G:C8	2.38	0.58
22:R:9:ALA:HA	22:R:39:THR:HG21	1.84	0.58
25:a:159:GLN:HA	25:a:162:ARG:HD3	1.86	0.58
30:f:2:LYS:H	30:f:2:LYS:CD	2.11	0.58
42:r:80:PRO:HD3	51:3:27:U:H5''	1.86	0.58
51:3:70:G:N2	51:3:76:A:O4'	2.36	0.58
51:3:606:G:N1	51:3:2038:A:OP1	2.35	0.58
51:3:813:G:C2	51:3:822:C:O2	2.57	0.58
51:3:1007:C:OP1	51:3:1010:G:O2'	2.21	0.58
53:5:149:G:H2'	53:5:150:A:H8	1.69	0.58
53:5:1055:G:H1'	53:5:1165:G:H21	1.67	0.58
14:J:19:SER:OG	14:J:22:ASN:O	2.20	0.58
34:j:34:PHE:N	34:j:37:ASP:OD2	2.36	0.58
38:n:27:ARG:NH2	38:n:115:ASN:O	2.35	0.58
53:5:536:U:H2'	53:5:537:A:C8	2.38	0.58
53:5:662:G:O6	53:5:721:G:O6	2.22	0.58
53:5:1000:A:N6	53:5:1019:G:OP2	2.36	0.58
53:5:1217:G:O6	53:5:1269:U:O4	2.20	0.58
11:G:105:PRO:O	11:G:129:ARG:NH1	2.29	0.58
25:a:48:ASN:OD1	25:a:49:ASN:N	2.35	0.58
36:l:82:ARG:NH1	51:3:2503:G:O5'	2.37	0.58
49:y:11:HIS:CE1	51:3:19:G:H5''	2.38	0.58
12:H:101:LYS:NZ	53:5:1152:G:OP2	2.36	0.58
27:c:175:ILE:HB	27:c:178:VAL:HG12	1.85	0.58
47:w:101:SER:OG	47:w:105:ARG:NH2	2.37	0.58
51:3:134:U:H2'	51:3:135:A:H8	1.67	0.58
51:3:1446:G:O2'	51:3:1613:A:N6	2.37	0.58
5:A:181:PRO:HG2	5:A:206:THR:HG23	1.85	0.58
11:G:125:ASP:OD1	11:G:129:ARG:NE	2.36	0.58
12:H:44:LYS:HZ1	53:5:1265:U:H5''	1.68	0.58
30:f:48:ASP:OD2	30:f:52:LYS:NZ	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:o:53:LEU:HD11	39:o:67:ARG:HB2	1.85	0.58
51:3:87:G:H2'	51:3:88:G:C8	2.38	0.58
51:3:2115:A:N1	51:3:2190:G:C6	2.71	0.58
51:3:2406:U:H2'	51:3:2407:G:H8	1.68	0.58
52:4:11:A:H1'	52:4:13:G:H2'	1.84	0.58
53:5:111:A:H2'	53:5:112:U:C6	2.38	0.58
53:5:1382:C:H2'	53:5:1383:A:C8	2.38	0.58
26:b:123:ILE:HA	26:b:128:PHE:H	1.68	0.58
26:b:158:ARG:NH1	51:3:2031:C:O3'	2.37	0.58
51:3:2826:G:O2'	51:3:2829:G:N2	2.36	0.58
4:9:334:ARG:NH1	4:9:373:SER:OG	2.37	0.57
6:B:45:PHE:O	6:B:121:ARG:NH1	2.36	0.57
7:C:132:PRO:HD2	53:5:399:C:H5''	1.86	0.57
15:K:21:SER:O	15:K:25:HIS:NE2	2.37	0.57
27:c:63:LYS:HE2	51:3:831:U:H5''	1.86	0.57
33:i:71:LYS:NZ	51:3:1176:U:OP2	2.36	0.57
43:s:26:LYS:HG2	43:s:84:THR:HG22	1.86	0.57
51:3:1116:U:H2'	51:3:1117:U:C6	2.38	0.57
51:3:1691:U:H2'	51:3:1692:A:C8	2.39	0.57
51:3:2588:U:H2'	51:3:2589:G:C4	2.39	0.57
53:5:228:G:O2'	53:5:259:A:N1	2.37	0.57
54:6:53:A:H2'	54:6:54:G:C8	2.39	0.57
17:M:45:ARG:HH22	53:5:1050:U:H4'	1.69	0.57
41:q:89:TYR:OH	51:3:583:U:OP1	2.21	0.57
51:3:724:A:N3	51:3:814:U:O2'	2.36	0.57
51:3:874:U:H2'	51:3:875:G:H8	1.69	0.57
51:3:1009:A:O3'	51:3:1217:G:N2	2.36	0.57
51:3:1159:C:H2'	51:3:1160:G:O4'	2.03	0.57
51:3:2094:A:H2'	51:3:2095:A:H8	1.69	0.57
51:3:2100:G:H2'	51:3:2101:A:C8	2.39	0.57
53:5:149:G:H2'	53:5:150:A:C8	2.39	0.57
53:5:715:A:H5''	53:5:716:C:H5	1.69	0.57
53:5:979:C:N3	53:5:1197:G:N2	2.52	0.57
53:5:1161:G:H2'	53:5:1162:G:C8	2.38	0.57
4:9:82:CYS:HB3	4:9:92:MET:HB2	1.87	0.57
15:K:133:LYS:HA	53:5:37:C:H5''	1.86	0.57
26:b:151:ARG:NH2	51:3:2580:A:O2'	2.37	0.57
51:3:727:C:H2'	51:3:728:A:C8	2.39	0.57
51:3:1379:C:H4'	51:3:1606:A:H4'	1.85	0.57
51:3:1820:U:O2'	51:3:1821:G:OP1	2.20	0.57
2:1:50:SER:O	2:1:54:ARG:HG3	2.03	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B:154:VAL:HG22	6:B:171:TYR:HB2	1.85	0.57
16:L:109:ARG:HH12	53:5:1282:U:H5'	1.70	0.57
51:3:12:A:N7	51:3:2637:A:N6	2.52	0.57
51:3:22:U:H2'	51:3:23:A:C8	2.40	0.57
51:3:87:G:C2	51:3:100:U:O2	2.57	0.57
51:3:1298:A:H3'	51:3:1299:A:H8	1.69	0.57
51:3:2291:U:O4	51:3:2292:A:N6	2.37	0.57
53:5:1316:C:H2'	53:5:1317:A:C8	2.39	0.57
54:6:16:G:N2	54:6:49:C:O2	2.33	0.57
5:A:88:LYS:HE2	5:A:179:ASP:HB2	1.87	0.57
6:B:92:ILE:O	6:B:96:ILE:N	2.35	0.57
15:K:93:THR:HB	15:K:110:ILE:HD11	1.87	0.57
18:N:30:THR:HG22	18:N:60:ARG:HH21	1.70	0.57
27:c:26:ALA:HB2	27:c:113:HIS:CD2	2.39	0.57
28:d:39:GLY:O	28:d:150:ARG:NH1	2.31	0.57
33:i:119:ARG:O	33:i:123:THR:HG23	2.04	0.57
34:j:8:LEU:HD22	34:j:82:ASN:HB2	1.85	0.57
36:l:43:ASP:OD1	36:l:44:ALA:N	2.36	0.57
51:3:812:G:H2'	51:3:813:G:C8	2.39	0.57
51:3:1137:C:H2'	51:3:1138:A:H8	1.69	0.57
51:3:2483:C:H42	51:3:2537:G:N2	2.02	0.57
52:4:60:C:H2'	52:4:61:A:C8	2.39	0.57
53:5:712:A:H2'	53:5:713:A:C8	2.40	0.57
53:5:1402:U:O2	53:5:1449:G:N2	2.24	0.57
54:6:16:G:N2	54:6:60:U:O2	2.38	0.57
8:D:69:ARG:HB2	8:D:172:LEU:HD11	1.86	0.57
9:E:67:GLN:O	9:E:70:LYS:NZ	2.37	0.57
27:c:101:LEU:HD22	51:3:695:G:H5''	1.86	0.57
43:s:2:ASP:OD2	43:s:39:ARG:NH1	2.37	0.57
51:3:1478:U:H2'	51:3:1479:A:C8	2.39	0.57
53:5:308:C:H2'	53:5:309:A:C8	2.39	0.57
53:5:1383:A:N1	53:5:1384:A:N6	2.53	0.57
6:B:4:LYS:NZ	53:5:1167:C:OP2	2.32	0.57
15:K:27:ASN:OD1	15:K:36:THR:OG1	2.23	0.57
20:P:41:ARG:NH1	53:5:233:C:OP1	2.37	0.57
22:R:37:ARG:NH1	53:5:1291:C:O2'	2.37	0.57
27:c:77:GLY:HA2	51:3:709:G:H5'	1.85	0.57
39:o:6:LYS:HD3	51:3:2880:A:H4'	1.85	0.57
51:3:1208:A:H2'	51:3:1209:U:H4'	1.86	0.57
51:3:1954:C:H2'	51:3:1955:G:C8	2.40	0.57
51:3:2164:G:O2'	51:3:2165:A:O4'	2.22	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2705:G:H2'	51:3:2706:U:H6	1.69	0.57
51:3:2764:U:H1'	51:3:2765:A:H5''	1.86	0.57
47:w:49:ARG:NE	51:3:78:C:OP1	2.34	0.57
51:3:1869:G:N1	51:3:1888:U:O4	2.38	0.57
53:5:663:G:C6	53:5:737:U:N3	2.73	0.57
4:9:330:GLN:HA	4:9:339:THR:HA	1.87	0.57
10:F:34:LYS:HD3	10:F:36:GLY:H	1.70	0.57
30:f:81:LEU:HD21	30:f:92:ILE:HG23	1.86	0.57
51:3:984:C:H1'	51:3:1020:G:H8	1.70	0.57
51:3:1756:A:H2'	51:3:1757:G:C8	2.40	0.57
52:4:16:G:H1	52:4:63:U:H3	1.31	0.57
25:a:280:ARG:HA	25:a:286:GLN:H	1.68	0.57
49:y:4:GLN:NE2	51:3:1293:U:O2	2.38	0.57
51:3:1003:U:H2'	51:3:1004:U:C6	2.40	0.57
51:3:2299:U:H3	51:3:2349:G:H1	1.51	0.57
54:7:16:G:N2	54:7:60:U:O2	2.38	0.57
2:1:10:ARG:HD3	35:k:59:TYR:HB2	1.86	0.56
28:d:98:ALA:O	28:d:102:LYS:HG3	2.05	0.56
40:p:91:ARG:HD3	51:3:1033:A:H5'	1.86	0.56
51:3:1114:C:H2'	51:3:1115:G:C8	2.40	0.56
51:3:1232:U:H2'	51:3:1233:A:C8	2.39	0.56
51:3:1619:A:H2'	51:3:1620:A:H8	1.69	0.56
51:3:2552:G:H2'	51:3:2553:G:H8	1.70	0.56
53:5:304:U:H2'	53:5:305:A:C8	2.39	0.56
53:5:407:A:C6	53:5:426:U:C4	2.93	0.56
51:3:1521:A:O2'	51:3:1611:C:O2'	2.23	0.56
51:3:1662:G:H2'	51:3:1663:G:C8	2.40	0.56
51:3:1851:U:H2'	51:3:1852:G:H8	1.70	0.56
51:3:2123:A:H5'	51:3:2124:A:N7	2.19	0.56
51:3:2372:C:H2'	51:3:2373:G:O4'	2.05	0.56
53:5:399:C:H2'	53:5:400:G:H8	1.69	0.56
7:C:97:LEU:HD23	7:C:136:LEU:HD21	1.86	0.56
8:D:139:GLU:HA	8:D:151:LEU:O	2.06	0.56
8:D:185:ARG:HE	8:D:186:ASN:H	1.52	0.56
9:E:147:GLU:HB3	11:G:59:VAL:HG13	1.85	0.56
12:H:20:TYR:HB2	12:H:66:ASN:HB3	1.88	0.56
29:e:156:LYS:NZ	51:3:2534:G:OP1	2.37	0.56
34:j:66:LYS:N	34:j:82:ASN:OD1	2.37	0.56
51:3:614:C:H2'	51:3:615:G:C8	2.40	0.56
51:3:632:A:H2'	51:3:633:G:H8	1.71	0.56
51:3:869:U:H2'	51:3:870:A:C8	2.41	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2335:A:H2'	51:3:2336:A:C8	2.39	0.56
51:3:2473:C:H2'	51:3:2474:C:H6	1.70	0.56
51:3:2753:C:H2'	51:3:2754:U:C6	2.39	0.56
53:5:200:G:H2'	53:5:201:G:H8	1.69	0.56
53:5:305:A:H2'	53:5:306:G:C8	2.41	0.56
53:5:656:U:H2'	53:5:657:G:H8	1.69	0.56
53:5:1056:U:H5''	53:5:1165:G:H22	1.70	0.56
53:5:1271:U:H4'	53:5:1272:C:H5'	1.87	0.56
4:9:35:VAL:HG13	4:9:190:HIS:CE1	2.40	0.56
4:9:309:ILE:HD13	4:9:387:GLY:HA3	1.87	0.56
51:3:246:G:N1	51:3:259:A:OP2	2.34	0.56
51:3:1237:G:H2'	51:3:1238:A:H8	1.69	0.56
51:3:1321:C:H2'	51:3:1322:A:H8	1.70	0.56
51:3:1737:G:H2'	51:3:1738:G:H8	1.69	0.56
51:3:2587:U:H2'	51:3:2588:U:C6	2.40	0.56
53:5:926:C:O2	53:5:1361:G:N2	2.31	0.56
53:5:1432:A:H2'	53:5:1433:G:C8	2.41	0.56
4:9:8:ARG:HH12	4:9:12:HIS:HB3	1.71	0.56
25:a:219:ASN:OD1	25:a:222:ARG:NH1	2.38	0.56
49:y:12:ARG:NH1	51:3:2029:U:OP2	2.38	0.56
51:3:847:C:O2'	51:3:1256:A:O2'	2.23	0.56
51:3:1848:U:C2	51:3:1849:G:C8	2.93	0.56
51:3:1954:C:H2'	51:3:1955:G:H8	1.70	0.56
51:3:2094:A:H2'	51:3:2095:A:C8	2.41	0.56
53:5:152:U:O4	53:5:153:A:N6	2.39	0.56
53:5:445:A:H3'	53:5:446:A:H8	1.69	0.56
53:5:599:G:N2	53:5:634:U:O2	2.29	0.56
1:0:3:ARG:O	1:0:6:GLN:NE2	2.39	0.56
51:3:154:U:H2'	51:3:155:A:C8	2.40	0.56
51:3:715:G:OP1	51:3:811:G:N2	2.39	0.56
51:3:980:C:H5''	51:3:981:A:H5''	1.88	0.56
51:3:1746:U:O2	51:3:1753:G:N2	2.37	0.56
51:3:2071:C:H1'	51:3:2458:A:H2	1.70	0.56
53:5:305:A:H1'	53:5:605:A:H61	1.71	0.56
53:5:566:G:O2'	53:5:567:C:H5'	2.06	0.56
53:5:726:A:H2'	53:5:727:G:H8	1.70	0.56
53:5:1113:U:H2'	53:5:1114:A:C8	2.41	0.56
53:5:1432:A:H2'	53:5:1433:G:H8	1.71	0.56
10:F:113:LYS:HB2	53:5:1272:C:C4	2.41	0.56
31:g:32:MET:HB2	51:3:1119:A:H61	1.71	0.56
39:o:97:ARG:NH2	51:3:2853:U:OP1	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:90:G:H2'	51:3:91:G:H8	1.71	0.56
51:3:820:U:H2'	51:3:821:C:C6	2.41	0.56
51:3:2297:G:H1	51:3:2351:U:H3	1.52	0.56
51:3:2707:A:H2'	51:3:2708:G:C8	2.40	0.56
53:5:343:G:H2'	53:5:344:G:C8	2.41	0.56
53:5:513:G:H2'	53:5:514:U:C6	2.41	0.56
53:5:660:A:N1	53:5:739:G:N2	2.44	0.56
53:5:885:U:N3	53:5:901:A:C8	2.74	0.56
54:7:53:A:H2'	54:7:54:G:C8	2.39	0.56
4:9:134:PHE:HB2	4:9:192:LEU:HD13	1.88	0.56
8:D:111:VAL:O	8:D:115:ILE:HG13	2.06	0.56
26:b:51:LEU:HB2	26:b:83:GLU:HG2	1.88	0.56
36:l:37:THR:HG1	36:l:128:THR:HG1	1.46	0.56
51:3:577:C:N4	51:3:584:G:O6	2.32	0.56
51:3:1436:C:H42	51:3:1628:G:H1	1.53	0.56
51:3:1665:G:H21	51:3:1669:A:H62	1.54	0.56
53:5:137:A:N7	53:5:156:U:O4	2.38	0.56
53:5:1330:A:H2'	53:5:1331:A:C8	2.40	0.56
1:0:24:THR:HG23	1:0:27:GLY:H	1.70	0.56
4:9:252:ARG:NH2	4:9:253:LYS:O	2.39	0.56
13:I:17:GLU:OE1	13:I:77:LYS:NZ	2.39	0.56
15:K:113:GLY:HA2	15:K:118:VAL:CA	2.35	0.56
16:L:115:THR:HB	53:5:1203:A:H4'	1.87	0.56
18:N:46:ASP:O	18:N:49:SER:OG	2.22	0.56
29:e:152:ARG:NH1	29:e:165:VAL:O	2.39	0.56
38:n:8:ARG:HG2	38:n:95:GLY:HA3	1.88	0.56
50:z:38:CYS:O	50:z:42:ARG:N	2.39	0.56
51:3:78:C:H2'	51:3:79:U:H6	1.71	0.56
51:3:379:A:N3	51:3:381:A:N6	2.53	0.56
51:3:513:A:H2'	51:3:514:A:C8	2.41	0.56
51:3:614:C:H2'	51:3:615:G:H8	1.71	0.56
51:3:889:G:H1	51:3:961:U:H3	1.52	0.56
51:3:1422:U:H2'	51:3:1423:A:O4'	2.05	0.56
51:3:2399:G:O2'	51:3:2432:C:N4	2.38	0.56
53:5:706:U:H2'	53:5:707:G:H8	1.71	0.56
11:G:21:LYS:HB3	11:G:33:VAL:HG11	1.88	0.56
12:H:7:TYR:OH	53:5:1124:U:OP1	2.21	0.56
20:P:5:GLN:HE22	53:5:112:U:H4'	1.71	0.56
51:3:345:A:N6	51:3:363:G:OP1	2.39	0.56
51:3:2531:C:H2'	51:3:2532:G:C8	2.41	0.56
53:5:164:C:H2'	53:5:165:A:H8	1.72	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:403:A:H2'	53:5:404:A:C8	2.41	0.56
21:Q:92:ARG:NH1	53:5:733:A:OP1	2.39	0.55
28:d:37:ASN:OD1	28:d:38:MET:N	2.40	0.55
29:e:55:ILE:O	29:e:68:HIS:NE2	2.39	0.55
47:w:39:ASP:O	47:w:40:LYS:NZ	2.33	0.55
51:3:278:U:H3	51:3:291:G:H1	1.54	0.55
51:3:529:G:H2'	51:3:530:G:C8	2.41	0.55
51:3:1446:G:N2	51:3:1613:A:OP2	2.38	0.55
51:3:2054:C:H2'	51:3:2055:A:H8	1.71	0.55
51:3:2104:A:H2'	51:3:2105:G:C8	2.41	0.55
53:5:89:G:H2'	53:5:90:G:C8	2.41	0.55
53:5:205:U:H3	53:5:210:G:H1	1.54	0.55
5:A:73:LYS:HE2	5:A:238:GLU:HB3	1.87	0.55
9:E:49:ILE:HG23	9:E:50:LYS:H	1.71	0.55
38:n:9:ARG:NH1	52:4:5:G:OP1	2.30	0.55
51:3:619:A:OP2	51:3:1281:A:N6	2.38	0.55
51:3:806:A:H2'	51:3:807:U:H6	1.70	0.55
51:3:883:A:H61	51:3:967:U:H3	1.54	0.55
51:3:993:A:H61	51:3:2502:G:H21	1.54	0.55
51:3:2705:G:H2'	51:3:2706:U:C6	2.40	0.55
53:5:644:U:H2'	53:5:645:A:H8	1.72	0.55
53:5:939:G:N2	53:5:1313:A:OP2	2.39	0.55
2:1:30:ALA:O	2:1:38:LYS:NZ	2.39	0.55
5:A:42:GLY:HA2	5:A:45:ILE:HG12	1.88	0.55
11:G:116:ILE:HG13	11:G:137:ILE:HA	1.89	0.55
51:3:627:U:H2'	51:3:628:A:C8	2.41	0.55
51:3:2823:A:O2'	51:3:2825:A:N7	2.34	0.55
51:3:2861:G:O2'	51:3:2863:G:O6	2.18	0.55
14:J:21:ASN:ND2	53:5:688:G:OP2	2.32	0.55
19:O:68:SER:HG	19:O:73:TRP:CD1	2.25	0.55
25:a:3:ILE:HD11	25:a:207:ASP:HB3	1.88	0.55
27:c:35:PHE:O	27:c:39:LEU:HG	2.07	0.55
51:3:710:A:N3	51:3:2451:C:O2'	2.39	0.55
51:3:914:G:N2	51:3:937:A:OP2	2.33	0.55
42:r:128:ARG:NH2	51:3:580:U:OP2	2.39	0.55
47:w:33:LEU:HD13	47:w:38:LEU:HD23	1.87	0.55
51:3:2668:A:O2'	51:3:2669:G:O5'	2.24	0.55
51:3:2812:U:O2'	51:3:2814:A:N7	2.40	0.55
52:4:76:A:H62	52:4:88:G:H21	1.53	0.55
53:5:1068:G:N2	53:5:1071:A:OP2	2.34	0.55
4:9:122:LEU:HA	4:9:125:GLN:HE21	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:E:103:LYS:NZ	53:5:837:G:O6	2.40	0.55
20:P:10:ILE:HA	20:P:62:GLN:HA	1.87	0.55
25:a:226:PRO:HB3	51:3:1796:A:O3'	2.06	0.55
42:r:20:VAL:O	42:r:24:ILE:HG12	2.07	0.55
51:3:138:U:H2'	51:3:139:G:C8	2.42	0.55
51:3:340:U:H2'	51:3:341:G:O4'	2.07	0.55
51:3:410:G:H4'	51:3:411:U:O5'	2.06	0.55
51:3:2454:G:H2'	51:3:2509:C:H41	1.70	0.55
51:3:2589:G:H8	51:3:2590:G:O6	1.89	0.55
4:9:299:ILE:HD11	4:9:368:ALA:HB1	1.89	0.55
6:B:88:ILE:O	6:B:92:ILE:HG12	2.07	0.55
7:C:184:ARG:NE	7:C:193:GLU:OE2	2.40	0.55
14:J:54:TYR:O	14:J:58:ILE:HG12	2.07	0.55
26:b:2:GLU:OE1	26:b:4:ARG:NH1	2.39	0.55
34:j:2:VAL:HG13	34:j:6:THR:HG21	1.89	0.55
40:p:75:TYR:HE2	51:3:1188:C:H5'	1.70	0.55
51:3:1829:U:H2'	51:3:1830:G:H8	1.70	0.55
53:5:591:A:H2'	53:5:592:A:C8	2.42	0.55
53:5:1058:A:N6	53:5:1099:G:O2'	2.39	0.55
7:C:70:GLN:HA	7:C:73:ARG:HG2	1.88	0.55
10:F:104:ALA:O	10:F:108:ARG:HG2	2.07	0.55
19:O:51:GLU:O	19:O:55:LYS:HG2	2.07	0.55
39:o:25:PHE:H	39:o:55:ARG:HH12	1.54	0.55
42:r:115:GLN:HA	42:r:118:ILE:HD12	1.89	0.55
51:3:684:A:H2'	51:3:685:G:H8	1.70	0.55
52:4:38:U:H1'	52:4:43:A:H62	1.72	0.55
53:5:365:U:O2	53:5:388:G:N2	2.25	0.55
53:5:369:A:H4'	53:5:477:U:O2'	2.07	0.55
53:5:711:G:H2'	53:5:712:A:C8	2.42	0.55
34:j:60:ALA:HB2	34:j:86:LEU:HD12	1.89	0.55
51:3:246:G:N2	51:3:247:U:O4	2.37	0.55
51:3:1093:U:O2	51:3:1115:G:N2	2.29	0.55
51:3:1665:G:N2	51:3:1668:G:OP2	2.34	0.55
53:5:442:G:H2'	53:5:443:G:H8	1.71	0.55
53:5:1224:C:N4	53:5:1262:A:OP2	2.38	0.55
6:B:42:ASN:O	6:B:46:VAL:HG12	2.07	0.55
25:a:138:LEU:HA	25:a:141:ILE:HD12	1.88	0.55
51:3:2308:U:H2'	51:3:2309:A:C8	2.42	0.55
51:3:2455:G:C6	51:3:2458:A:N6	2.74	0.55
51:3:2458:A:OP1	51:3:2505:A:O2'	2.21	0.55
51:3:2603:G:N1	51:3:2605:G:OP2	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:887:C:H2'	53:5:888:A:H8	1.72	0.55
53:5:1241:G:N1	53:5:1245:A:C6	2.75	0.55
14:J:43:MET:O	14:J:46:LYS:NZ	2.39	0.54
18:N:29:LEU:HD11	18:N:59:LYS:HE3	1.90	0.54
39:o:30:GLU:HG3	39:o:91:LYS:HB2	1.87	0.54
40:p:30:SER:OG	51:3:614:C:OP1	2.24	0.54
51:3:683:G:H2'	51:3:684:A:H8	1.71	0.54
51:3:1319:C:H2'	51:3:1320:C:H6	1.70	0.54
51:3:2394:A:H2'	51:3:2395:U:C6	2.42	0.54
53:5:370:A:N1	53:5:386:U:O2'	2.34	0.54
4:9:63:ILE:O	4:9:91:ASN:ND2	2.40	0.54
12:H:19:VAL:HG21	12:H:84:GLY:HA3	1.88	0.54
34:j:43:VAL:HG13	34:j:54:LYS:HA	1.90	0.54
37:m:21:GLN:NE2	37:m:37:LYS:HD3	2.23	0.54
51:3:353:G:H2'	51:3:354:C:C6	2.43	0.54
51:3:2269:C:H1'	51:3:2396:A:H1'	1.89	0.54
53:5:169:G:H1	53:5:196:G:H1	1.54	0.54
53:5:518:A:H2	53:5:531:A:H61	1.55	0.54
53:5:566:G:H2'	53:5:567:C:C6	2.41	0.54
4:9:319:ARG:NH2	4:9:322:GLY:O	2.40	0.54
7:C:67:THR:HG23	7:C:70:GLN:H	1.73	0.54
38:n:34:LYS:HD2	38:n:101:ARG:HD2	1.89	0.54
51:3:1207:U:O2	51:3:1208:A:N6	2.40	0.54
51:3:1341:U:H4'	51:3:1360:U:H4'	1.88	0.54
51:3:1533:U:H3'	51:3:1534:A:C8	2.42	0.54
51:3:2217:G:H3'	51:3:2218:U:H2'	1.89	0.54
53:5:874:C:N4	53:5:875:G:O6	2.39	0.54
7:C:194:SER:O	7:C:198:GLU:HG2	2.07	0.54
10:F:24:ARG:NH2	53:5:1350:A:OP1	2.41	0.54
10:F:37:LEU:O	10:F:41:ILE:HG12	2.08	0.54
11:G:12:PHE:HZ	53:5:752:G:H21	1.55	0.54
42:r:124:LEU:O	42:r:127:LYS:HG2	2.06	0.54
51:3:1214:U:C2	51:3:1215:G:H1'	2.42	0.54
53:5:124:U:O4	53:5:125:A:N6	2.41	0.54
4:9:101:GLY:HA3	4:9:200:ILE:HD13	1.90	0.54
37:m:55:ASP:HB3	37:m:83:PHE:CE2	2.41	0.54
44:t:78:ASP:HB3	44:t:84:GLN:HA	1.90	0.54
50:z:11:CYS:SG	50:z:12:ASN:N	2.81	0.54
51:3:891:G:H2'	51:3:892:G:C8	2.42	0.54
51:3:1062:A:H2'	51:3:1063:A:H8	1.73	0.54
51:3:1477:A:N6	51:3:1489:G:O6	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2831:U:H2'	51:3:2832:G:H8	1.72	0.54
53:5:401:U:O2'	53:5:497:A:OP2	2.19	0.54
53:5:611:A:H2'	53:5:612:G:H8	1.73	0.54
3:2:24:ARG:HG2	3:2:35:ARG:HA	1.89	0.54
22:R:25:GLN:HA	22:R:25:GLN:OE1	2.06	0.54
30:f:88:PRO:HB3	30:f:121:PHE:HB3	1.90	0.54
33:i:23:ALA:O	33:i:64:GLN:NE2	2.38	0.54
49:y:47:MET:C	49:y:47:MET:SD	2.90	0.54
51:3:453:U:H2'	51:3:454:G:C8	2.42	0.54
51:3:831:U:H2'	51:3:832:C:C6	2.42	0.54
51:3:1446:G:H22	51:3:1612:U:H3'	1.71	0.54
51:3:1540:G:H4'	51:3:1591:C:H4'	1.89	0.54
51:3:1861:A:H4'	51:3:2241:A:H4'	1.88	0.54
51:3:1888:U:H2'	51:3:1889:U:C6	2.43	0.54
51:3:2704:U:H2'	51:3:2705:G:C8	2.42	0.54
53:5:563:U:OP2	53:5:564:G:O2'	2.22	0.54
53:5:598:U:H2'	53:5:599:G:C8	2.42	0.54
53:5:861:A:O2'	53:5:867:A:N1	2.35	0.54
4:9:261:MET:N	4:9:264:LYS:O	2.34	0.54
15:K:15:LYS:NZ	53:5:878:U:O5'	2.33	0.54
26:b:148:GLN:HG2	51:3:2583:U:H4'	1.89	0.54
51:3:109:G:OP1	51:3:327:U:O2'	2.26	0.54
51:3:179:A:O2'	51:3:180:A:O5'	2.26	0.54
51:3:755:C:H2'	51:3:756:A:C8	2.42	0.54
51:3:863:U:H4'	51:3:866:G:N1	2.23	0.54
51:3:1798:A:C2	51:3:1836:A:H4'	2.42	0.54
53:5:68:C:H2'	53:5:69:G:C8	2.43	0.54
53:5:392:A:O2'	53:5:394:U:OP1	2.24	0.54
25:a:150:ILE:HB	25:a:160:ILE:HB	1.90	0.54
30:f:109:GLN:H	30:f:112:MET:HE1	1.71	0.54
36:l:71:HIS:HB3	36:l:72:MET:HE2	1.89	0.54
40:p:93:VAL:HG13	40:p:94:LEU:HD12	1.89	0.54
51:3:866:G:H2'	51:3:867:G:H8	1.72	0.54
51:3:1076:U:O2	51:3:1149:G:N2	2.40	0.54
51:3:1451:A:H2'	51:3:1452:G:C8	2.43	0.54
51:3:1906:G:H22	51:3:1909:C:H41	1.55	0.54
53:5:601:U:H2'	53:5:602:G:H8	1.73	0.54
9:E:38:GLU:HG3	9:E:59:ARG:HB3	1.88	0.54
22:R:32:LYS:HA	22:R:50:ALA:HB3	1.90	0.54
27:c:174:ASN:ND2	51:3:356:A:OP2	2.41	0.54
36:l:120:ARG:NH1	51:3:2477:A:OP1	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:t:90:LYS:HB2	44:t:103:VAL:HG13	1.90	0.54
51:3:485:A:H3'	51:3:486:G:H8	1.72	0.54
51:3:1006:U:H2'	51:3:1007:C:C6	2.43	0.54
51:3:1822:A:H4'	51:3:1823:U:H5'	1.89	0.54
51:3:1846:A:H1'	51:3:1934:A:C8	2.43	0.54
51:3:1865:A:H62	51:3:1891:A:H8	1.55	0.54
51:3:1927:C:H5'	53:5:1492:G:N1	2.23	0.54
51:3:2350:C:H2'	51:3:2351:U:O4'	2.08	0.54
51:3:2547:C:H2'	51:3:2548:G:C8	2.42	0.54
53:5:95:C:H3'	53:5:96:G:H8	1.73	0.54
53:5:369:A:N3	53:5:479:A:N6	2.56	0.54
53:5:649:U:O4	53:5:749:G:O2'	2.20	0.54
53:5:918:A:H61	53:5:1368:U:H3	1.55	0.54
7:C:55:GLN:O	7:C:59:ARG:HG3	2.08	0.54
10:F:68:VAL:HG21	10:F:103:ILE:HD11	1.89	0.54
15:K:69:ARG:NH2	15:K:70:LEU:O	2.41	0.54
26:b:56:THR:HA	26:b:78:THR:HA	1.89	0.54
49:y:16:ARG:NH2	51:3:1296:G:OP2	2.32	0.54
51:3:569:U:O4	51:3:592:G:O6	2.26	0.54
51:3:631:A:H2'	51:3:632:A:C8	2.43	0.54
51:3:694:U:H2'	51:3:695:G:C8	2.42	0.54
51:3:759:U:H3'	51:3:760:G:H8	1.73	0.54
51:3:1400:U:H2'	51:3:1401:A:C8	2.42	0.54
53:5:599:G:O6	53:5:634:U:O4	2.26	0.54
53:5:1046:A:H8	53:5:1175:C:H42	1.54	0.54
25:a:255:ARG:HG3	25:a:261:ARG:HA	1.88	0.53
36:l:13:HIS:NE2	51:3:990:G:OP1	2.41	0.53
42:r:2:ILE:HG22	42:r:4:PHE:HB3	1.90	0.53
49:y:7:ARG:NH2	51:3:2027:G:OP2	2.40	0.53
51:3:53:G:H21	51:3:119:A:H62	1.56	0.53
51:3:622:U:H2'	51:3:623:A:H8	1.73	0.53
51:3:683:G:H2'	51:3:684:A:C8	2.43	0.53
51:3:1001:C:H2'	51:3:1002:A:H8	1.72	0.53
51:3:2013:C:O2'	51:3:2827:A:N3	2.39	0.53
51:3:2072:C:H2'	51:3:2073:C:H6	1.73	0.53
51:3:2455:G:H4'	51:3:2456:A:H5''	1.89	0.53
53:5:442:G:H2'	53:5:443:G:C8	2.43	0.53
53:5:1193:U:H2'	53:5:1194:A:C8	2.37	0.53
10:F:155:TRP:HE1	53:5:1356:U:H1'	1.72	0.53
12:H:113:LYS:NZ	53:5:1346:G:OP2	2.39	0.53
25:a:250:GLY:HA3	51:3:2605:G:H5'	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:474:U:H2'	51:3:475:A:C8	2.43	0.53
51:3:861:U:H3	51:3:866:G:H1	1.57	0.53
51:3:1201:A:H2'	51:3:1202:A:C8	2.43	0.53
51:3:1583:G:O2'	51:3:1584:U:OP1	2.26	0.53
53:5:72:A:H2'	53:5:73:G:C8	2.42	0.53
53:5:1220:A:N6	53:5:1267:G:O6	2.41	0.53
3:2:35:ARG:NE	51:3:2750:A:OP1	2.41	0.53
10:F:65:VAL:O	10:F:69:MET:HG3	2.08	0.53
27:c:55:LYS:HD3	27:c:82:PRO:HD3	1.88	0.53
49:y:16:ARG:NH1	51:3:1294:G:OP1	2.42	0.53
51:3:633:G:H1	51:3:692:U:H3	1.56	0.53
51:3:1930:U:O2'	54:7:13:U:O2'	2.23	0.53
51:3:2071:C:H2'	51:3:2072:C:C6	2.43	0.53
53:5:240:U:O4	53:5:887:C:N3	2.41	0.53
53:5:441:U:H2'	53:5:442:G:H8	1.73	0.53
53:5:534:C:H2'	53:5:535:A:H8	1.73	0.53
53:5:963:U:O4'	53:5:1052:G:O2'	2.26	0.53
53:5:1499:G:H2'	53:5:1500:G:H8	1.73	0.53
54:7:69:A:H2'	54:7:70:G:H8	1.73	0.53
4:9:184:LYS:O	4:9:188:LYS:HG2	2.09	0.53
4:9:192:LEU:O	4:9:196:VAL:HG23	2.09	0.53
8:D:123:HIS:HA	8:D:126:LEU:HD21	1.91	0.53
11:G:24:ASN:ND2	53:5:823:C:O2	2.35	0.53
15:K:61:ALA:HB2	53:5:527:G:H22	1.74	0.53
19:O:38:LYS:HB2	53:5:449:A:C8	2.43	0.53
27:c:128:VAL:N	27:c:199:VAL:O	2.38	0.53
51:3:24:U:H2'	51:3:25:G:H8	1.73	0.53
51:3:306:G:H2'	51:3:307:C:C6	2.44	0.53
51:3:322:A:H2'	51:3:323:A:C8	2.43	0.53
51:3:672:G:H4'	51:3:674:G:H4'	1.90	0.53
51:3:847:C:HO2'	51:3:1256:A:HO2'	1.56	0.53
51:3:919:C:H2'	51:3:920:G:C8	2.44	0.53
51:3:1295:A:H61	51:3:2020:A:H3'	1.72	0.53
51:3:2454:G:H2'	51:3:2509:C:N4	2.23	0.53
51:3:2867:U:H2'	51:3:2868:G:C8	2.43	0.53
53:5:94:A:C8	53:5:322:G:H2'	2.44	0.53
53:5:137:A:N7	53:5:156:U:C4	2.76	0.53
53:5:380:G:H2'	53:5:381:C:C6	2.44	0.53
53:5:1405:U:O4	53:5:1445:G:O6	2.26	0.53
9:E:144:SER:C	11:G:60:LEU:HD12	2.33	0.53
27:c:65:PRO:HG2	27:c:76:GLN:HG3	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:c:193:LEU:HD11	51:3:1234:U:H4'	1.89	0.53
28:d:122:PHE:CZ	28:d:167:LEU:HG	2.44	0.53
33:i:4:THR:HB	51:3:1031:U:H6	1.74	0.53
47:w:11:SER:HA	47:w:15:LEU:HD23	1.90	0.53
51:3:513:A:N6	51:3:536:A:OP1	2.40	0.53
51:3:861:U:O2	51:3:866:G:N2	2.34	0.53
51:3:1248:A:H2'	51:3:1249:A:C8	2.43	0.53
51:3:1270:C:H2'	51:3:1271:A:H8	1.71	0.53
51:3:2346:G:H2'	51:3:2347:G:C8	2.44	0.53
51:3:2376:C:H2'	51:3:2377:A:C8	2.38	0.53
53:5:33:A:H2'	53:5:34:A:H8	1.74	0.53
53:5:117:U:H2'	53:5:118:C:H6	1.74	0.53
53:5:1098:C:O2'	53:5:1166:A:O2'	2.25	0.53
53:5:1229:A:H2'	53:5:1230:G:C8	2.44	0.53
8:D:204:SER:HB3	8:D:207:ARG:HB2	1.90	0.53
10:F:94:ARG:NH1	53:5:933:A:O2'	2.32	0.53
16:L:34:LEU:HD12	16:L:39:ILE:HD12	1.91	0.53
20:P:13:VAL:HG22	20:P:24:VAL:HG22	1.89	0.53
26:b:4:ARG:O	26:b:209:THR:N	2.42	0.53
35:k:39:GLN:OE1	51:3:866:G:O2'	2.26	0.53
36:l:103:MET:N	36:l:103:MET:SD	2.82	0.53
51:3:677:U:H3	51:3:683:G:H1	1.56	0.53
51:3:770:A:N6	51:3:796:A:O2'	2.41	0.53
51:3:1001:C:H2'	51:3:1002:A:C8	2.44	0.53
51:3:1069:G:H2'	51:3:1070:U:O4'	2.09	0.53
51:3:1480:A:H3'	51:3:1481:U:H5''	1.90	0.53
53:5:1287:G:H2'	53:5:1288:C:C6	2.44	0.53
5:A:111:ARG:NH1	5:A:184:GLU:OE2	2.41	0.53
13:I:26:LEU:O	13:I:30:LYS:HG3	2.08	0.53
23:S:28:LEU:O	23:S:32:VAL:HG23	2.08	0.53
34:j:58:LEU:HB2	34:j:86:LEU:HD11	1.90	0.53
40:p:86:ASN:ND2	40:p:111:LYS:O	2.42	0.53
41:q:31:LYS:NZ	41:q:32:GLU:O	2.41	0.53
51:3:204:U:O4	51:3:254:G:N2	2.42	0.53
51:3:703:A:H2'	51:3:705:A:H62	1.74	0.53
51:3:1316:U:O2'	51:3:1681:G:N2	2.40	0.53
51:3:1760:G:N2	51:3:1763:G:O5'	2.41	0.53
51:3:2530:U:O4	51:3:2773:A:N6	2.42	0.53
51:3:2801:U:O2'	51:3:2802:C:O5'	2.27	0.53
53:5:663:G:N1	53:5:737:U:N3	2.57	0.53
53:5:1055:G:H21	53:5:1165:G:H1'	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1245:A:H2'	53:5:1246:A:H8	1.74	0.53
4:9:94:THR:O	4:9:97:ALA:HB3	2.08	0.53
8:D:212:ARG:NH2	11:G:51:GLU:HB3	2.23	0.53
17:M:4:LYS:NZ	53:5:1038:G:OP1	2.42	0.53
26:b:14:SER:N	26:b:26:ILE:O	2.35	0.53
41:q:24:LYS:HA	41:q:90:THR:HG23	1.91	0.53
51:3:746:G:H2'	51:3:747:A:H8	1.74	0.53
51:3:854:A:N1	51:3:978:G:O2'	2.38	0.53
51:3:1262:G:H2'	51:3:1263:G:C8	2.43	0.53
51:3:1318:U:H2'	51:3:1319:C:C6	2.44	0.53
51:3:1449:G:H2'	51:3:1450:G:H8	1.74	0.53
51:3:1536:C:H2'	51:3:1537:A:C8	2.44	0.53
51:3:2146:A:H2'	51:3:2147:G:C8	2.43	0.53
53:5:453:C:H2'	53:5:454:U:C6	2.43	0.53
53:5:1220:A:H2'	53:5:1221:A:C8	2.44	0.53
2:1:19:ILE:H	2:1:19:ILE:HD12	1.73	0.53
9:E:45:LEU:HD12	21:Q:97:ALA:HB3	1.91	0.53
11:G:39:LYS:NZ	53:5:588:U:OP1	2.42	0.53
15:K:32:ASN:OD1	15:K:33:LYS:N	2.42	0.53
27:c:184:ASP:O	51:3:651:A:N6	2.33	0.53
35:k:102:GLN:OE1	51:3:656:G:O2'	2.26	0.53
39:o:32:ASN:HA	39:o:49:THR:HA	1.91	0.53
51:3:711:A:H62	51:3:837:A:H61	1.57	0.53
51:3:1369:U:C2	51:3:1426:C:H5'	2.44	0.53
51:3:1656:A:H2'	51:3:1657:G:O4'	2.09	0.53
26:b:146:SER:HB2	51:3:2586:G:C8	2.43	0.53
27:c:182:HIS:HB3	27:c:185:LYS:HG2	1.91	0.53
51:3:1016:A:H2'	51:3:1017:A:C8	2.44	0.53
51:3:2530:U:C4	51:3:2773:A:N6	2.75	0.53
51:3:2685:A:H2'	51:3:2686:C:C6	2.43	0.53
53:5:305:A:H2'	53:5:306:G:H8	1.74	0.53
3:2:4:ARG:NH1	3:2:6:SER:OG	2.42	0.52
8:D:93:VAL:HG21	8:D:169:ILE:HG22	1.91	0.52
14:J:39:SER:O	14:J:42:THR:OG1	2.25	0.52
22:R:33:THR:HG21	22:R:49:PHE:HD2	1.74	0.52
25:a:83:VAL:HA	25:a:99:ILE:HG22	1.92	0.52
30:f:110:LYS:NZ	51:3:2227:U:OP1	2.41	0.52
33:i:109:LYS:HB2	33:i:122:ILE:HD12	1.90	0.52
35:k:115:ILE:HD11	51:3:663:A:C6	2.43	0.52
51:3:279:U:H2'	51:3:280:A:C8	2.44	0.52
51:3:337:U:H2'	51:3:338:G:C8	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:720:A:O4'	51:3:809:A:N6	2.42	0.52
51:3:844:G:H2'	51:3:845:U:C6	2.43	0.52
51:3:1459:A:H2'	51:3:1460:G:C8	2.44	0.52
51:3:1699:A:H2'	51:3:1700:G:H8	1.74	0.52
51:3:1798:A:N1	51:3:1836:A:H4'	2.24	0.52
51:3:2523:C:H2'	51:3:2524:U:C6	2.44	0.52
51:3:2591:G:H2'	51:3:2592:U:C2	2.44	0.52
52:4:6:U:H2'	52:4:7:G:C8	2.44	0.52
53:5:85:U:O2'	53:5:86:A:N7	2.36	0.52
53:5:434:U:C2	53:5:493:A:N7	2.77	0.52
53:5:670:G:H2'	53:5:671:G:H8	1.73	0.52
53:5:1224:C:O2	53:5:1262:A:N6	2.42	0.52
12:H:42:PRO:HB2	12:H:44:LYS:HD3	1.92	0.52
15:K:7:LEU:HB3	20:P:35:TYR:CZ	2.44	0.52
25:a:146:GLN:HE21	25:a:167:TYR:HB2	1.73	0.52
30:f:19:VAL:O	30:f:19:VAL:HG12	2.08	0.52
39:o:33:VAL:HG23	39:o:88:ILE:HG13	1.91	0.52
40:p:49:ARG:HE	51:3:1029:A:H5''	1.72	0.52
41:q:77:LYS:NZ	51:3:1009:A:H5''	2.24	0.52
51:3:348:A:H2'	51:3:349:G:C8	2.45	0.52
51:3:371:C:H2'	51:3:372:G:O4'	2.10	0.52
51:3:1260:U:H2'	51:3:1261:U:C6	2.44	0.52
53:5:167:A:N1	53:5:197:A:H5'	2.24	0.52
53:5:957:C:H2'	53:5:958:G:C8	2.44	0.52
53:5:1110:C:H2'	53:5:1111:G:C8	2.41	0.52
53:5:1397:G:H2'	53:5:1398:G:C8	2.43	0.52
28:d:170:LEU:HG	28:d:175:LEU:HB2	1.90	0.52
33:i:21:VAL:HG22	33:i:57:LEU:HD11	1.91	0.52
34:j:88:LYS:HZ3	34:j:94:ARG:HG2	1.75	0.52
42:r:62:HIS:HB3	42:r:64:MET:HE3	1.91	0.52
51:3:192:U:H3	51:3:212:G:H1	1.56	0.52
51:3:858:A:H2'	51:3:859:G:H8	1.73	0.52
51:3:878:A:N1	51:3:972:C:N4	2.56	0.52
51:3:1005:G:H2'	51:3:1006:U:C6	2.44	0.52
51:3:1323:A:H2'	51:3:1324:A:C8	2.45	0.52
51:3:1451:A:H2'	51:3:1452:G:H8	1.74	0.52
51:3:2701:A:H2'	51:3:2702:G:C8	2.44	0.52
51:3:2706:U:O4	51:3:2707:A:N6	2.42	0.52
51:3:2849:G:N2	51:3:2875:U:O2	2.40	0.52
53:5:434:U:O2	53:5:493:A:N7	2.42	0.52
53:5:735:C:H2'	53:5:736:U:C6	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1314:A:H2'	53:5:1315:U:O4'	2.10	0.52
10:F:148:LYS:HD3	10:F:151:ALA:HB3	1.91	0.52
36:l:113:GLN:OE1	36:l:113:GLN:N	2.32	0.52
53:5:80:U:H2'	53:5:81:A:C8	2.45	0.52
53:5:147:A:H2'	53:5:148:A:C4	2.44	0.52
53:5:708:A:H2'	53:5:709:A:H8	1.74	0.52
53:5:1328:C:H2'	53:5:1329:G:C8	2.42	0.52
3:2:36:GLN:NE2	51:3:1159:C:O2'	2.28	0.52
15:K:90:HIS:CG	15:K:90:HIS:O	2.62	0.52
22:R:39:THR:HG22	22:R:70:LYS:HD2	1.92	0.52
28:d:35:VAL:HG23	28:d:90:THR:HG22	1.91	0.52
37:m:30:LYS:HA	37:m:116:LEU:O	2.09	0.52
51:3:1381:A:OP2	51:3:1405:G:N1	2.36	0.52
51:3:1641:A:H61	51:3:1656:A:H5'	1.75	0.52
51:3:1815:U:O2'	51:3:1816:A:H8	1.92	0.52
51:3:2054:C:O2'	51:3:2827:A:N1	2.43	0.52
53:5:127:A:N1	53:5:218:U:N3	2.58	0.52
53:5:297:A:H2'	53:5:298:G:H8	1.75	0.52
53:5:1156:G:H4'	53:5:1157:G:H5'	1.91	0.52
26:b:40:LYS:HB2	26:b:49:ALA:HB3	1.90	0.52
51:3:389:C:H2'	51:3:390:A:H8	1.72	0.52
51:3:710:A:N7	51:3:838:U:O4	2.42	0.52
51:3:1474:C:H2'	51:3:1475:C:C6	2.44	0.52
51:3:1535:A:H2'	51:3:1536:C:O4'	2.10	0.52
51:3:2337:U:H2'	51:3:2338:G:C8	2.43	0.52
51:3:2589:G:N2	51:3:2618:C:H2'	2.24	0.52
53:5:454:U:H3	53:5:474:G:H22	1.56	0.52
53:5:459:C:H2'	53:5:460:A:C8	2.44	0.52
53:5:556:G:C8	53:5:557:A:H2'	2.45	0.52
53:5:671:G:O6	53:5:713:A:C6	2.62	0.52
53:5:1261:A:H2'	53:5:1262:A:H8	1.73	0.52
53:5:1266:U:H2'	53:5:1267:G:C8	2.40	0.52
54:6:69:A:H2'	54:6:70:G:H8	1.73	0.52
13:I:47:PRO:HA	13:I:78:ARG:HG2	1.91	0.52
18:N:64:LEU:HD23	18:N:67:LEU:HD21	1.92	0.52
25:a:229:ARG:NH2	51:3:1835:G:OP2	2.40	0.52
46:v:6:GLN:HG2	46:v:49:LEU:HB2	1.90	0.52
47:w:85:ASN:O	47:w:89:GLN:HG2	2.08	0.52
51:3:515:A:N3	51:3:517:G:H5''	2.25	0.52
51:3:1603:A:H2'	51:3:1604:A:C8	2.44	0.52
51:3:2070:C:O2'	54:7:77:A:OP1	2.20	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2623:U:H2'	51:3:2624:C:C6	2.43	0.52
51:3:2819:C:H2'	51:3:2820:G:H8	1.75	0.52
52:4:31:G:O6	52:4:48:A:N6	2.42	0.52
53:5:211:G:H2'	53:5:212:G:H8	1.74	0.52
53:5:1163:A:H2'	53:5:1164:U:C6	2.44	0.52
53:5:1322:U:C2	53:5:1349:A:N7	2.78	0.52
20:P:13:VAL:HA	20:P:24:VAL:HA	1.92	0.52
23:S:53:ARG:NH1	53:5:197:A:OP2	2.43	0.52
25:a:151:GLU:HB3	25:a:158:GLY:HA2	1.91	0.52
27:c:140:THR:O	27:c:144:MET:N	2.34	0.52
35:k:82:LEU:HD23	35:k:118:THR:H	1.74	0.52
51:3:638:A:N1	51:3:661:G:N1	2.57	0.52
51:3:1010:G:P	51:3:1217:G:H21	2.33	0.52
51:3:1588:A:H2'	51:3:1589:A:C8	2.45	0.52
51:3:2299:U:H2'	51:3:2300:A:H8	1.75	0.52
53:5:621:C:H2'	53:5:622:A:H8	1.75	0.52
53:5:668:U:H2'	53:5:669:U:C6	2.44	0.52
4:9:223:GLY:HA3	53:5:56:A:C5	2.45	0.52
7:C:112:SER:O	7:C:116:LEU:HG	2.09	0.52
20:P:2:LYS:HB2	53:5:115:A:C6	2.45	0.52
25:a:268:ARG:HH22	51:3:1806:G:H3'	1.74	0.52
51:3:453:U:H2'	51:3:454:G:H8	1.74	0.52
51:3:756:A:H2'	51:3:757:A:H8	1.75	0.52
51:3:890:U:H2'	51:3:891:G:C8	2.45	0.52
51:3:1231:G:H2'	51:3:1232:U:C6	2.44	0.52
51:3:1443:A:O2'	51:3:1445:U:OP2	2.22	0.52
51:3:1554:A:OP2	51:3:1576:G:N2	2.42	0.52
51:3:1785:U:H3	51:3:1792:A:N6	2.01	0.52
51:3:2380:U:H2'	51:3:2381:G:C8	2.44	0.52
52:4:59:A:H2'	52:4:60:C:C6	2.44	0.52
53:5:421:G:H2'	53:5:422:A:C8	2.45	0.52
53:5:663:G:H22	53:5:737:U:H2'	1.75	0.52
53:5:1141:U:O2'	53:5:1142:G:H8	1.92	0.52
4:9:171:ILE:HG21	4:9:192:LEU:HB2	1.92	0.52
12:H:109:ASP:OD2	12:H:111:ARG:NE	2.37	0.52
27:c:105:LYS:NZ	51:3:641:U:OP2	2.39	0.52
44:t:36:VAL:HG23	44:t:69:ILE:HD13	1.91	0.52
44:t:90:LYS:N	44:t:103:VAL:O	2.36	0.52
51:3:401:G:O2'	51:3:402:A:OP1	2.28	0.52
51:3:2063:G:H2'	51:3:2064:G:H8	1.74	0.52
51:3:2872:A:H2'	51:3:2873:G:C8	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1088:C:O2'	53:5:1144:A:N3	2.34	0.52
9:E:108:ALA:O	9:E:111:LYS:HB2	2.09	0.51
11:G:98:TYR:CD2	53:5:596:U:H4'	2.45	0.51
12:H:13:LYS:HB2	12:H:76:GLY:HA3	1.90	0.51
27:c:164:LEU:HD11	27:c:182:HIS:HB2	1.92	0.51
51:3:2264:G:H2'	51:3:2265:U:C6	2.45	0.51
51:3:2473:C:H2'	51:3:2474:C:C6	2.45	0.51
53:5:986:U:H1'	53:5:988:G:H8	1.75	0.51
53:5:1231:U:OP2	53:5:1254:A:N6	2.43	0.51
13:I:44:GLY:HA3	53:5:1114:A:H4'	1.90	0.51
30:f:87:ARG:HG3	30:f:88:PRO:HD2	1.92	0.51
32:h:126:GLY:HA3	51:3:1115:G:H1'	1.92	0.51
39:o:36:LYS:HB2	39:o:85:ASN:HB3	1.91	0.51
51:3:425:U:H4'	51:3:426:U:OP2	2.10	0.51
51:3:1162:A:H2'	51:3:2526:A:H2	1.74	0.51
51:3:1295:A:N6	51:3:2021:A:OP2	2.37	0.51
53:5:766:G:H2'	53:5:767:U:C6	2.45	0.51
5:A:72:VAL:HA	5:A:75:VAL:HG22	1.92	0.51
8:D:68:GLU:HA	8:D:94:VAL:HG22	1.92	0.51
20:P:4:ASN:O	20:P:6:ARG:NH1	2.42	0.51
28:d:101:GLU:HA	28:d:104:ILE:HG12	1.92	0.51
39:o:34:ALA:N	39:o:87:SER:O	2.36	0.51
51:3:83:G:H3'	51:3:84:G:H8	1.74	0.51
51:3:893:A:H2'	51:3:894:G:C8	2.46	0.51
51:3:1082:A:O2'	51:3:1146:A:N6	2.43	0.51
51:3:1307:G:H2'	51:3:1308:A:C8	2.45	0.51
51:3:2097:A:N6	51:3:2238:G:O6	2.43	0.51
51:3:2483:C:N4	51:3:2537:G:H22	2.08	0.51
53:5:768:G:O6	53:5:806:A:N6	2.42	0.51
54:6:56:U:H3	54:6:58:G:H5''	1.76	0.51
4:9:44:ALA:H	4:9:46:ARG:HH11	1.57	0.51
14:J:10:SER:HA	14:J:72:MET:HA	1.91	0.51
27:c:46:ARG:HH21	51:3:479:A:H2'	1.75	0.51
51:3:705:A:H4'	51:3:706:C:H5'	1.91	0.51
51:3:1470:C:H2'	51:3:1471:A:C8	2.45	0.51
51:3:1730:C:H2'	51:3:1731:G:O4'	2.10	0.51
51:3:2480:G:H21	51:3:2486:A:N6	1.99	0.51
51:3:2531:C:H2'	51:3:2532:G:H8	1.73	0.51
51:3:2843:G:C6	51:3:2882:U:O2	2.63	0.51
53:5:1001:A:OP2	53:5:1019:G:N1	2.25	0.51
53:5:1065:G:H2'	53:5:1066:U:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:C:9:LYS:HD3	53:5:425:G:H5''	1.93	0.51
7:C:37:GLN:NE2	53:5:414:U:O2	2.43	0.51
14:J:15:HIS:CE1	53:5:704:U:H4'	2.46	0.51
16:L:90:ARG:HD2	16:L:95:LEU:HB2	1.91	0.51
18:N:25:GLN:HE21	53:5:654:U:H1'	1.74	0.51
20:P:74:ARG:NH2	53:5:230:G:O3'	2.43	0.51
27:c:160:VAL:HG22	27:c:203:VAL:HG11	1.93	0.51
28:d:36:ILE:HD11	28:d:152:PHE:HB3	1.93	0.51
36:l:39:GLY:HA2	36:l:97:VAL:O	2.11	0.51
51:3:45:U:H3'	51:3:46:A:C8	2.46	0.51
51:3:1363:C:H2'	51:3:1364:A:C8	2.44	0.51
53:5:644:U:H2'	53:5:645:A:C8	2.45	0.51
53:5:1138:U:O4	53:5:1149:G:O6	2.29	0.51
1:0:42:LEU:HD22	51:3:127:A:H61	1.75	0.51
5:A:91:TYR:HE1	5:A:226:CYS:HB3	1.76	0.51
5:A:133:LEU:HB2	5:A:156:ILE:HD11	1.92	0.51
14:J:75:VAL:HG12	14:J:98:LEU:HD11	1.91	0.51
15:K:94:LEU:HD23	15:K:111:VAL:HG21	1.92	0.51
25:a:101:TYR:N	25:a:105:ALA:O	2.43	0.51
26:b:51:LEU:HA	26:b:83:GLU:HA	1.93	0.51
26:b:110:VAL:HG21	26:b:197:ILE:HD12	1.93	0.51
42:r:58:ALA:HA	42:r:62:HIS:HD1	1.75	0.51
51:3:193:G:H21	51:3:211:A:H62	1.59	0.51
51:3:263:C:H2'	51:3:264:G:C8	2.46	0.51
51:3:622:U:H2'	51:3:623:A:C8	2.45	0.51
51:3:1128:G:H2'	51:3:1129:U:O4'	2.10	0.51
51:3:1400:U:H2'	51:3:1401:A:H8	1.76	0.51
51:3:1862:A:H2'	51:3:1863:G:H8	1.76	0.51
51:3:2081:U:O2'	51:3:2605:G:O2'	2.17	0.51
51:3:2358:U:H2'	51:3:2359:G:O4'	2.10	0.51
53:5:11:A:H2'	53:5:12:G:C8	2.45	0.51
53:5:576:A:O2'	53:5:725:A:N3	2.36	0.51
53:5:1331:A:C2	53:5:1340:G:N1	2.76	0.51
3:2:4:ARG:HH22	3:2:8:LYS:NZ	2.08	0.51
4:9:132:VAL:HA	4:9:168:THR:HG21	1.91	0.51
11:G:67:LYS:HG2	53:5:650:A:C5	2.45	0.51
26:b:13:MET:HA	26:b:27:THR:HA	1.92	0.51
29:e:71:TYR:O	29:e:75:ILE:HG12	2.10	0.51
33:i:59:ILE:HD12	33:i:127:VAL:HG22	1.93	0.51
35:k:78:VAL:HG13	35:k:112:ILE:HG23	1.93	0.51
38:n:14:ARG:HA	38:n:17:LYS:HE2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:p:30:SER:OG	40:p:31:TYR:N	2.44	0.51
51:3:521:C:H2'	51:3:522:C:C6	2.45	0.51
51:3:1114:C:H2'	51:3:1115:G:H8	1.74	0.51
51:3:1442:G:H2'	51:3:1443:A:C8	2.45	0.51
51:3:1815:U:O2'	51:3:1816:A:O5'	2.25	0.51
51:3:1937:G:N2	51:3:1938:U:O4	2.36	0.51
51:3:2718:C:H2'	51:3:2719:A:C8	2.46	0.51
53:5:10:G:H2'	53:5:11:A:H8	1.75	0.51
53:5:337:C:H2'	53:5:338:C:C6	2.46	0.51
53:5:906:C:H2'	53:5:907:A:C8	2.46	0.51
2:1:5:SER:OG	51:3:250:U:O4	2.24	0.51
8:D:96:ASN:O	8:D:98:LYS:NZ	2.43	0.51
13:I:51:LYS:HB2	13:I:75:ARG:HE	1.76	0.51
33:i:115:ASN:O	33:i:118:SER:OG	2.29	0.51
34:j:19:VAL:HG22	34:j:43:VAL:HG23	1.92	0.51
36:l:13:HIS:HB2	51:3:947:A:N7	2.25	0.51
46:v:46:THR:OG1	51:3:2225:G:OP1	2.27	0.51
47:w:63:LEU:HB3	47:w:66:GLN:HB2	1.92	0.51
51:3:87:G:N1	51:3:100:U:C2	2.79	0.51
51:3:697:U:H2'	51:3:698:A:C8	2.45	0.51
51:3:2072:C:H2'	51:3:2073:C:C6	2.46	0.51
51:3:2189:U:H2'	51:3:2190:G:C8	2.46	0.51
51:3:2743:U:H2'	51:3:2744:A:C8	2.46	0.51
53:5:673:A:H2'	53:5:674:U:H6	1.75	0.51
53:5:877:C:H2'	53:5:878:U:C6	2.46	0.51
53:5:905:U:H2'	53:5:906:C:C6	2.45	0.51
53:5:957:C:H2'	53:5:958:G:H8	1.76	0.51
1:0:29:LYS:O	1:0:33:LEU:HG	2.10	0.51
4:9:70:TYR:CE1	4:9:77:TYR:HB2	2.46	0.51
7:C:57:LYS:HZ1	7:C:199:TRP:CG	2.29	0.51
16:L:19:LEU:HD22	16:L:30:SER:HB3	1.92	0.51
30:f:29:PHE:HZ	46:v:64:LEU:HA	1.76	0.51
51:3:117:C:H2'	51:3:118:G:O4'	2.11	0.51
51:3:595:U:H2'	51:3:605:A:H1'	1.93	0.51
51:3:627:U:H2'	51:3:628:A:H8	1.76	0.51
51:3:674:G:H2'	51:3:675:U:C6	2.46	0.51
51:3:677:U:O4	51:3:683:G:O6	2.29	0.51
51:3:1151:U:H2'	51:3:1152:U:C6	2.46	0.51
51:3:1696:C:O2'	51:3:2695:U:OP1	2.29	0.51
51:3:2082:U:H1'	51:3:2605:G:H21	1.76	0.51
53:5:21:U:HO2'	53:5:571:A:N6	2.02	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:503:G:H2'	53:5:504:A:C8	2.46	0.51
53:5:582:G:H2'	53:5:583:G:C8	2.45	0.51
53:5:706:U:H2'	53:5:707:G:C8	2.46	0.51
53:5:1444:G:H2'	53:5:1445:G:H8	1.76	0.51
3:2:11:CYS:HB2	3:2:32:HIS:CE1	2.46	0.51
14:J:22:ASN:HB2	14:J:50:LYS:HD3	1.93	0.51
36:l:86:GLY:N	51:3:2284:G:OP2	2.44	0.51
51:3:87:G:C2	51:3:100:U:C2	2.99	0.51
51:3:739:G:HO2'	51:3:761:G:H1	1.59	0.51
51:3:2840:U:H2'	51:3:2841:A:C8	2.46	0.51
51:3:2853:U:O4'	51:3:2871:G:N2	2.44	0.51
53:5:1220:A:H2'	53:5:1221:A:H8	1.75	0.51
53:5:1225:A:O2'	53:5:1226:A:O4'	2.28	0.51
54:7:56:U:H3	54:7:58:G:H5''	1.76	0.51
25:a:82:THR:HA	25:a:120:LYS:HA	1.93	0.50
51:3:590:U:H2'	51:3:591:G:C8	2.46	0.50
51:3:693:U:H2'	51:3:694:U:C6	2.46	0.50
51:3:899:A:H2'	51:3:900:G:C8	2.47	0.50
51:3:2054:C:H2'	51:3:2055:A:C8	2.46	0.50
51:3:2380:U:H2'	51:3:2381:G:H8	1.75	0.50
53:5:726:A:H2'	53:5:727:G:C8	2.46	0.50
8:D:192:ILE:O	8:D:196:MET:HG2	2.11	0.50
12:H:126:ALA:HB3	53:5:1317:A:H4'	1.93	0.50
25:a:148:HIS:ND1	25:a:201:GLY:O	2.45	0.50
26:b:63:ASN:HB3	26:b:66:GLN:HG2	1.92	0.50
37:m:3:TYR:HH	51:3:784:A:H62	1.57	0.50
51:3:129:U:H2'	51:3:130:C:C6	2.46	0.50
51:3:714:G:H2'	51:3:715:G:H8	1.76	0.50
51:3:892:G:H2'	51:3:893:A:C8	2.45	0.50
51:3:1374:U:H3	51:3:1634:A:H61	1.60	0.50
51:3:1914:G:O6	51:3:1930:U:O2	2.30	0.50
51:3:2115:A:H4'	51:3:2157:A:C2	2.46	0.50
51:3:2700:C:H2'	51:3:2701:A:C8	2.46	0.50
53:5:97:G:H21	53:5:350:G:H5'	1.76	0.50
53:5:198:A:H2'	53:5:199:A:H2'	1.93	0.50
53:5:831:C:H2'	53:5:832:G:H8	1.76	0.50
53:5:977:U:O2	53:5:1197:G:N2	2.43	0.50
53:5:1012:A:H5''	53:5:1013:C:C5	2.47	0.50
53:5:1390:G:H1	53:5:1460:U:H3	1.58	0.50
3:2:19:ARG:HB2	3:2:24:ARG:HD2	1.93	0.50
4:9:245:ILE:O	4:9:251:ILE:HA	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:C:28:GLY:HA3	53:5:408:U:H5'	1.94	0.50
8:D:188:PRO:O	8:D:192:ILE:HG12	2.11	0.50
11:G:36:ILE:HA	11:G:69:ILE:HG22	1.94	0.50
11:G:118:THR:HA	11:G:135:GLY:HA3	1.92	0.50
15:K:81:PRO:HD2	15:K:110:ILE:HG22	1.92	0.50
35:k:39:GLN:HG3	51:3:840:G:H4'	1.92	0.50
50:z:12:ASN:ND2	50:z:46:VAL:O	2.44	0.50
51:3:263:C:H2'	51:3:264:G:H8	1.76	0.50
51:3:533:G:H2'	51:3:534:U:C6	2.46	0.50
51:3:1415:A:H5'	51:3:1495:A:H1'	1.94	0.50
51:3:1778:G:H2'	51:3:1779:G:C8	2.46	0.50
51:3:1850:C:H2'	51:3:1851:U:C6	2.47	0.50
51:3:2307:G:O6	51:3:2325:U:O4	2.29	0.50
52:4:16:G:O6	52:4:63:U:O4	2.30	0.50
53:5:169:G:N2	53:5:219:A:O3'	2.44	0.50
53:5:590:G:H2'	53:5:591:A:H8	1.76	0.50
3:2:27:CYS:SG	3:2:28:LYS:N	2.84	0.50
18:N:39:HIS:O	18:N:43:ASN:N	2.39	0.50
21:Q:58:GLU:O	21:Q:62:ARG:HG2	2.12	0.50
25:a:17:SER:HA	25:a:212:VAL:HB	1.93	0.50
51:3:1350:A:H61	51:3:1361:U:H1'	1.76	0.50
51:3:1803:U:O4	51:3:1830:G:O6	2.29	0.50
51:3:1914:G:O6	51:3:1930:U:C2	2.63	0.50
51:3:1972:C:H2'	51:3:1973:U:C6	2.47	0.50
53:5:10:G:H2'	53:5:11:A:C8	2.47	0.50
53:5:491:U:H2'	53:5:492:G:O4'	2.12	0.50
53:5:518:A:N6	53:5:527:G:C2	2.79	0.50
53:5:1214:A:C6	53:5:1271:U:N3	2.80	0.50
3:2:19:ARG:NH2	51:3:2762:U:O3'	2.45	0.50
5:A:104:ASP:OD1	5:A:104:ASP:N	2.45	0.50
7:C:37:GLN:HG2	53:5:423:U:H1'	1.93	0.50
26:b:7:PHE:CE1	26:b:206:LEU:HD13	2.47	0.50
26:b:83:GLU:OE2	51:3:2643:A:O2'	2.26	0.50
29:e:94:GLY:HA3	29:e:97:TYR:HB2	1.92	0.50
40:p:65:ASN:ND2	51:3:1046:A:H5''	2.26	0.50
51:3:18:G:H2'	51:3:19:G:H8	1.75	0.50
51:3:402:A:O2'	51:3:403:U:O4'	2.30	0.50
51:3:789:A:H2'	51:3:790:U:C6	2.46	0.50
51:3:849:C:H2'	51:3:850:G:H8	1.77	0.50
51:3:1209:U:H4'	51:3:1210:A:OP2	2.12	0.50
51:3:1346:G:H2'	51:3:1347:A:H8	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1534:A:O2'	51:3:1535:A:H8	1.94	0.50
51:3:1942:G:N2	51:3:1971:G:O4'	2.44	0.50
51:3:2134:G:H2'	51:3:2135:C:C6	2.46	0.50
51:3:2413:G:H1'	51:3:2420:A:H61	1.76	0.50
51:3:2528:C:C4	51:3:2575:G:N7	2.79	0.50
53:5:18:U:H2'	53:5:19:C:H6	1.76	0.50
53:5:169:G:H22	53:5:196:G:N2	2.08	0.50
53:5:601:U:H2'	53:5:602:G:C8	2.47	0.50
53:5:766:G:H2'	53:5:767:U:H6	1.77	0.50
53:5:943:C:H2'	53:5:944:A:H8	1.75	0.50
53:5:1150:G:H2'	53:5:1151:A:C8	2.46	0.50
4:9:8:ARG:HH21	4:9:261:MET:HE1	1.76	0.50
6:B:86:GLN:HA	6:B:89:THR:HG22	1.94	0.50
6:B:117:ARG:HH11	6:B:190:GLU:HG2	1.76	0.50
7:C:68:ASP:O	7:C:72:ARG:HG3	2.12	0.50
31:g:26:ILE:O	31:g:109:VAL:HB	2.12	0.50
44:t:42:VAL:HG13	44:t:44:ARG:H	1.75	0.50
51:3:13:C:H2'	51:3:14:U:H4'	1.93	0.50
51:3:140:G:N2	51:3:143:A:OP2	2.40	0.50
51:3:1077:G:O6	51:3:1148:U:O4	2.30	0.50
51:3:1464:G:H2'	51:3:1465:U:C6	2.47	0.50
51:3:1619:A:H2'	51:3:1620:A:C8	2.46	0.50
51:3:1923:A:N1	53:5:1383:A:O2'	2.43	0.50
51:3:2195:U:H2'	51:3:2196:G:C8	2.47	0.50
51:3:2547:C:H2'	51:3:2548:G:H8	1.76	0.50
51:3:2796:C:H2'	51:3:2797:C:C6	2.46	0.50
53:5:26:C:H2'	53:5:27:A:H8	1.77	0.50
53:5:474:G:O2'	53:5:475:U:O4'	2.24	0.50
53:5:537:A:H2'	53:5:538:G:H8	1.76	0.50
53:5:807:C:O2'	53:5:808:C:O4'	2.23	0.50
53:5:882:U:H3'	53:5:883:A:H8	1.76	0.50
53:5:1172:A:H2'	53:5:1173:A:H8	1.76	0.50
53:5:1200:G:HO2'	53:5:1201:C:C5'	2.24	0.50
53:5:1241:G:C2	53:5:1245:A:C6	2.99	0.50
54:6:10:A:H5''	54:6:22:A:H61	1.76	0.50
12:H:97:LYS:NZ	53:5:1154:A:OP2	2.34	0.50
51:3:626:A:H2'	51:3:627:U:C6	2.47	0.50
51:3:1814:G:N2	51:3:1817:A:OP2	2.43	0.50
51:3:2065:A:H2'	51:3:2066:A:C8	2.47	0.50
52:4:42:G:N2	52:4:45:C:N3	2.37	0.50
53:5:373:A:H2'	53:5:374:G:C8	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:975:C:O2'	53:5:976:U:OP1	2.29	0.50
53:5:1471:C:H2'	53:5:1472:G:C8	2.47	0.50
1:0:23:ALA:O	1:0:28:ARG:NH2	2.45	0.50
8:D:197:ASP:O	8:D:201:LYS:HG2	2.12	0.50
16:L:5:LEU:O	16:L:57:ARG:NH1	2.45	0.50
29:e:152:ARG:HD2	29:e:167:TYR:CE1	2.45	0.50
35:k:24:HIS:N	51:3:848:U:OP2	2.33	0.50
51:3:192:U:H2'	51:3:193:G:O4'	2.12	0.50
51:3:394:C:H2'	51:3:395:U:C6	2.47	0.50
51:3:853:G:H21	51:3:1220:A:H62	1.60	0.50
51:3:1672:C:H2'	51:3:1673:U:C6	2.47	0.50
51:3:2336:A:H2'	51:3:2337:U:H6	1.76	0.50
53:5:145:G:O2'	53:5:147:A:N7	2.41	0.50
53:5:407:A:C6	53:5:426:U:N3	2.80	0.50
53:5:616:C:N4	53:5:619:A:OP2	2.44	0.50
53:5:1361:G:H2'	53:5:1362:G:H8	1.77	0.50
7:C:145:LYS:HG3	7:C:147:LYS:H	1.77	0.50
10:F:114:THR:O	10:F:118:LYS:HG2	2.12	0.50
26:b:159:VAL:O	51:3:2626:A:O2'	2.30	0.50
31:g:87:ASN:O	31:g:89:ILE:N	2.44	0.50
38:n:31:MET:HE2	38:n:42:GLN:HE21	1.77	0.50
42:r:3:ALA:HB3	42:r:107:LEU:HB2	1.92	0.50
49:y:33:CYS:SG	49:y:34:GLY:N	2.78	0.50
51:3:223:A:H2'	51:3:224:G:C8	2.47	0.50
51:3:2141:A:N6	51:3:2163:U:O2'	2.45	0.50
51:3:2145:A:H2'	51:3:2146:A:O4'	2.12	0.50
5:A:117:LEU:HB3	5:A:194:LEU:HD11	1.93	0.49
11:G:17:ASP:O	11:G:21:LYS:HG2	2.13	0.49
16:L:119:LYS:NZ	16:L:120:LYS:O	2.38	0.49
51:3:48:G:H2'	51:3:49:C:C6	2.47	0.49
51:3:1257:G:H2'	51:3:1258:C:C6	2.46	0.49
51:3:1354:U:O4'	51:3:2017:G:N2	2.36	0.49
51:3:2122:G:H1'	51:3:2179:A:H61	1.77	0.49
51:3:2795:C:H2'	51:3:2796:C:C6	2.47	0.49
52:4:19:G:H2'	52:4:20:U:C6	2.47	0.49
53:5:488:U:N3	53:5:490:U:OP1	2.45	0.49
53:5:1389:U:H2'	53:5:1390:G:C8	2.43	0.49
5:A:96:VAL:HA	5:A:99:ILE:HG12	1.94	0.49
6:B:159:ARG:HG2	6:B:165:ILE:HG13	1.94	0.49
12:H:21:LEU:HD11	12:H:63:PHE:HB3	1.94	0.49
13:I:20:ASP:OD1	13:I:21:SER:N	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:S:43:ASN:O	23:S:47:VAL:HG23	2.12	0.49
26:b:180:ARG:NH1	51:3:2738:U:OP1	2.43	0.49
37:m:13:TRP:HD1	37:m:16:MET:HE2	1.77	0.49
42:r:47:ILE:HD13	42:r:103:LEU:HD11	1.93	0.49
51:3:274:A:N7	51:3:295:U:O4	2.45	0.49
51:3:615:G:H2'	51:3:616:G:H8	1.75	0.49
51:3:746:G:H2'	51:3:747:A:C8	2.46	0.49
51:3:909:U:H2'	51:3:910:G:C8	2.47	0.49
51:3:1054:U:O2'	51:3:1056:A:N7	2.33	0.49
51:3:1066:G:H2'	51:3:1067:A:C8	2.47	0.49
51:3:1436:C:H2'	51:3:1437:A:H8	1.77	0.49
51:3:1754:U:H2'	51:3:1755:A:H8	1.76	0.49
51:3:1766:A:H2'	51:3:1767:A:C8	2.47	0.49
51:3:1828:A:H2'	51:3:1829:U:H6	1.77	0.49
51:3:2103:C:H2'	51:3:2104:A:C8	2.46	0.49
51:3:2189:U:H2'	51:3:2190:G:H8	1.77	0.49
51:3:2495:A:H2'	51:3:2496:G:C8	2.48	0.49
51:3:2658:U:H2'	51:3:2659:U:C6	2.47	0.49
51:3:2840:U:H2'	51:3:2841:A:H8	1.77	0.49
53:5:117:U:H2'	53:5:118:C:C6	2.46	0.49
53:5:412:G:H2'	53:5:413:G:H8	1.77	0.49
53:5:501:A:O2'	53:5:508:A:N1	2.37	0.49
53:5:1245:A:H2'	53:5:1246:A:C8	2.47	0.49
54:6:49:C:O2'	54:6:60:U:O4'	2.30	0.49
34:j:23:LYS:NZ	51:3:2569:A:N3	2.42	0.49
34:j:31:ARG:HH12	51:3:2683:G:H5''	1.78	0.49
41:q:59:VAL:HG11	41:q:62:HIS:CE1	2.46	0.49
51:3:353:G:H2'	51:3:354:C:H6	1.77	0.49
51:3:411:U:H2'	51:3:412:A:H8	1.76	0.49
51:3:759:U:H3'	51:3:760:G:C8	2.47	0.49
51:3:821:C:H2'	51:3:822:C:C6	2.48	0.49
51:3:1052:A:C6	51:3:1053:C:N4	2.80	0.49
51:3:2530:U:O2'	51:3:2655:U:OP1	2.19	0.49
51:3:2843:G:O6	51:3:2882:U:C2	2.65	0.49
53:5:657:G:O6	53:5:743:A:N6	2.44	0.49
53:5:752:G:H2'	53:5:753:C:C6	2.47	0.49
5:A:27:ARG:NH1	5:A:223:GLN:HB3	2.28	0.49
5:A:130:LEU:O	5:A:134:VAL:HG23	2.12	0.49
11:G:11:HIS:CG	11:G:12:PHE:N	2.80	0.49
11:G:66:THR:O	53:5:650:A:N6	2.46	0.49
33:i:93:ARG:HH12	51:3:2746:A:H4'	1.75	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:l:34:LEU:HD23	36:l:104:PHE:HD2	1.78	0.49
37:m:103:LEU:HB2	37:m:113:MET:HB2	1.93	0.49
40:p:2:ARG:HB2	51:3:1278:G:C5	2.47	0.49
51:3:57:G:H2'	51:3:58:A:C8	2.48	0.49
51:3:336:C:H2'	51:3:337:U:C6	2.48	0.49
51:3:500:U:H2'	51:3:501:G:C2	2.48	0.49
51:3:1328:A:H2'	51:3:1668:G:H1'	1.93	0.49
51:3:1599:C:O2	51:3:1600:A:O2'	2.25	0.49
51:3:1834:U:H2'	51:3:1835:G:O4'	2.13	0.49
51:3:2529:C:O2	51:3:2553:G:C2	2.66	0.49
51:3:2575:G:H2'	51:3:2576:A:H8	1.71	0.49
51:3:2657:C:H2'	51:3:2658:U:C6	2.47	0.49
51:3:2796:C:H2'	51:3:2797:C:H6	1.76	0.49
53:5:922:G:O3'	53:5:1478:A:N6	2.45	0.49
53:5:1008:G:O6	53:5:1014:A:N6	2.46	0.49
53:5:1231:U:H5'	53:5:1233:G:C2	2.47	0.49
54:7:10:A:H5''	54:7:22:A:H61	1.76	0.49
2:1:23:HIS:HB2	2:1:41:LEU:O	2.13	0.49
11:G:100:PRO:HD2	11:G:103:LYS:HB2	1.93	0.49
31:g:31:SER:O	31:g:33:SER:N	2.45	0.49
35:k:110:LEU:HD12	35:k:111:PRO:HD2	1.93	0.49
51:3:615:G:H1	51:3:1288:C:H42	1.60	0.49
51:3:993:A:H61	51:3:2502:G:N2	2.10	0.49
51:3:1536:C:C4	51:3:1537:A:N6	2.78	0.49
51:3:2130:A:O2'	51:3:2131:G:H5'	2.12	0.49
51:3:2829:G:H3'	51:3:2830:A:C8	2.45	0.49
53:5:297:A:H2'	53:5:298:G:C8	2.48	0.49
53:5:682:G:N2	53:5:703:A:C6	2.80	0.49
53:5:826:G:H22	53:5:851:U:H3	1.60	0.49
53:5:887:C:H2'	53:5:888:A:C8	2.46	0.49
53:5:936:G:H4'	53:5:1324:A:H4'	1.95	0.49
53:5:939:G:N2	53:5:1312:G:H8	2.11	0.49
5:A:154:ARG:NH2	5:A:158:ARG:HB2	2.28	0.49
8:D:89:SER:OG	8:D:106:ALA:O	2.28	0.49
11:G:44:ILE:O	11:G:48:LEU:HG	2.12	0.49
15:K:53:MET:HB3	15:K:65:TYR:HE2	1.78	0.49
25:a:103:ASN:O	51:3:1525:G:N2	2.45	0.49
28:d:87:CYS:SG	28:d:88:LYS:N	2.86	0.49
34:j:97:ARG:NH1	53:5:334:A:OP1	2.46	0.49
41:q:72:LYS:HG2	41:q:81:LYS:HB2	1.94	0.49
41:q:82:LYS:HD2	51:3:1255:G:H4'	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:23:A:H2'	51:3:24:U:C6	2.48	0.49
51:3:306:G:H2'	51:3:307:C:H6	1.77	0.49
51:3:1293:U:H2'	51:3:1294:G:O4'	2.12	0.49
51:3:1754:U:H2'	51:3:1755:A:C8	2.47	0.49
51:3:2304:U:O2'	51:3:2342:U:OP2	2.23	0.49
51:3:2328:A:O2'	51:3:2341:G:N1	2.43	0.49
51:3:2393:C:H2'	51:3:2394:A:C8	2.48	0.49
51:3:2608:A:H2'	51:3:2609:C:C6	2.48	0.49
51:3:2624:C:H2'	51:3:2625:U:C6	2.47	0.49
51:3:2659:U:H2'	51:3:2660:C:C6	2.47	0.49
52:4:76:A:C2	52:4:77:G:H1'	2.48	0.49
53:5:503:G:H2'	53:5:504:A:H8	1.78	0.49
53:5:580:C:N3	53:5:756:A:N7	2.60	0.49
53:5:1072:G:H2'	53:5:1073:A:H8	1.76	0.49
54:7:49:C:O2'	54:7:60:U:O4'	2.30	0.49
6:B:83:LYS:NZ	6:B:84:ASN:OD1	2.45	0.49
18:N:53:LEU:O	18:N:57:VAL:HG23	2.12	0.49
24:T:37:ARG:HB2	24:T:40:MET:HG3	1.93	0.49
38:n:76:ASP:N	38:n:76:ASP:OD1	2.44	0.49
39:o:95:LYS:HE3	39:o:116:GLU:HA	1.94	0.49
51:3:329:G:N2	51:3:377:U:O2	2.39	0.49
51:3:747:A:H2'	51:3:748:G:O4'	2.13	0.49
51:3:863:U:H2'	51:3:864:A:C5	2.48	0.49
51:3:1104:A:H2	51:3:1129:U:C5	2.31	0.49
51:3:1213:U:H2'	51:3:1214:U:C6	2.47	0.49
51:3:1597:U:H2'	51:3:1598:U:H6	1.78	0.49
51:3:2660:C:H2'	51:3:2661:U:O4'	2.13	0.49
53:5:1104:C:H2'	53:5:1105:C:C6	2.48	0.49
53:5:1209:C:H2'	53:5:1210:U:C6	2.48	0.49
53:5:1412:C:H2'	53:5:1413:G:C8	2.47	0.49
53:5:1452:C:H2'	53:5:1453:C:C6	2.47	0.49
16:L:63:TYR:HH	53:5:1302:C:HO2'	1.45	0.49
27:c:141:LYS:O	27:c:145:GLN:HG2	2.12	0.49
32:h:130:GLN:HA	51:3:1112:A:N1	2.28	0.49
34:j:3:SER:O	34:j:6:THR:OG1	2.26	0.49
42:r:18:ARG:HG2	42:r:22:GLN:OE1	2.13	0.49
46:v:60:LYS:HD3	51:3:410:G:C8	2.48	0.49
51:3:990:G:H1	51:3:999:U:H3	1.60	0.49
51:3:1508:G:H2'	51:3:1509:U:C6	2.48	0.49
53:5:117:U:O2'	53:5:258:A:O2'	2.27	0.49
53:5:200:G:H2'	53:5:201:G:C8	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:501:A:H2'	53:5:502:C:C6	2.48	0.49
53:5:1241:G:N2	53:5:1244:A:OP2	2.41	0.49
53:5:1261:A:H2	53:5:1327:G:H1'	1.78	0.49
7:C:184:ARG:NH2	7:C:188:PRO:O	2.45	0.49
25:a:138:LEU:HD12	25:a:141:ILE:HB	1.95	0.49
35:k:48:ARG:HG2	35:k:51:PHE:H	1.78	0.49
47:w:27:LEU:HG	47:w:31:PHE:CE2	2.48	0.49
47:w:101:SER:O	47:w:105:ARG:HG2	2.11	0.49
51:3:158:U:H2'	51:3:159:G:C8	2.47	0.49
51:3:610:G:H2'	51:3:611:A:C8	2.47	0.49
51:3:1201:A:H2'	51:3:1202:A:H8	1.78	0.49
51:3:1341:U:H2'	51:3:1644:A:C6	2.48	0.49
51:3:1508:G:OP2	51:3:1508:G:H4'	2.12	0.49
51:3:1938:U:H2'	51:3:1939:A:C8	2.47	0.49
51:3:2130:A:C6	51:3:2184:A:N6	2.81	0.49
51:3:2336:A:H2'	51:3:2337:U:C6	2.48	0.49
51:3:2567:C:H2'	51:3:2568:G:H8	1.78	0.49
53:5:290:G:N2	53:5:299:U:O2	2.26	0.49
53:5:961:G:N2	54:7:35:G:H5'	2.27	0.49
33:i:63:ASP:OD1	33:i:63:ASP:N	2.44	0.49
51:3:342:G:H21	51:3:363:G:N2	2.09	0.49
51:3:758:C:H2'	51:3:759:U:H6	1.78	0.49
51:3:1072:A:H2'	51:3:1073:A:C8	2.48	0.49
51:3:1106:G:N2	51:3:1124:G:H2'	2.27	0.49
51:3:1158:C:H2'	51:3:1159:C:C6	2.48	0.49
51:3:1826:A:H4'	51:3:1828:A:C8	2.48	0.49
51:3:2154:A:H2'	51:3:2155:G:O4'	2.13	0.49
51:3:2657:C:H2'	51:3:2658:U:H6	1.77	0.49
53:5:334:A:H2'	53:5:335:C:C6	2.48	0.49
53:5:534:C:H2'	53:5:535:A:C8	2.47	0.49
53:5:733:A:N6	53:5:734:A:H62	2.11	0.49
53:5:1096:A:H2'	53:5:1097:G:H8	1.78	0.49
4:9:104:LEU:HB2	4:9:133:VAL:HA	1.95	0.48
5:A:90:ASP:OD1	5:A:90:ASP:N	2.46	0.48
9:E:35:LEU:HD11	9:E:60:TRP:HD1	1.78	0.48
11:G:94:GLY:H	11:G:96:ARG:HH22	1.60	0.48
21:Q:56:ASP:OD1	21:Q:56:ASP:N	2.44	0.48
25:a:55:VAL:HG21	51:3:1821:G:H5'	1.94	0.48
35:k:77:TRP:CD1	35:k:111:PRO:HB2	2.48	0.48
36:l:54:ILE:HD11	36:l:121:ALA:HB2	1.95	0.48
38:n:28:VAL:HG13	38:n:89:VAL:HG12	1.93	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:130:C:H2'	51:3:131:C:C6	2.48	0.48
51:3:986:G:N2	51:3:1003:U:O2	2.33	0.48
51:3:1544:G:O6	51:3:1545:A:N6	2.46	0.48
51:3:1873:A:H62	51:3:1882:G:N2	2.11	0.48
51:3:2255:A:H2'	51:3:2256:C:C6	2.48	0.48
51:3:2455:G:N1	51:3:2458:A:C6	2.73	0.48
51:3:2533:A:H2'	51:3:2534:G:H8	1.78	0.48
51:3:2754:U:H2'	51:3:2755:G:O4'	2.13	0.48
51:3:2850:G:H2'	51:3:2851:U:C6	2.48	0.48
53:5:778:A:OP2	53:5:797:G:N1	2.33	0.48
53:5:804:A:H2'	53:5:805:C:C6	2.47	0.48
53:5:980:C:H2'	53:5:981:U:C6	2.48	0.48
54:7:29:C:H2'	54:7:30:G:H8	1.77	0.48
4:9:210:PRO:HB2	4:9:295:LYS:HB3	1.96	0.48
5:A:87:THR:HG21	5:A:111:ARG:HE	1.78	0.48
12:H:89:LEU:HD11	12:H:96:LEU:HG	1.95	0.48
13:I:16:LEU:HD12	13:I:102:VAL:HG11	1.93	0.48
30:f:56:GLU:O	30:f:60:ILE:HG12	2.13	0.48
38:n:110:ARG:HG3	38:n:116:PHE:CZ	2.48	0.48
47:w:102:ARG:NH1	51:3:1626:C:H5''	2.29	0.48
51:3:57:G:H2'	51:3:58:A:H8	1.78	0.48
51:3:421:A:N6	51:3:424:G:OP2	2.31	0.48
51:3:1597:U:H2'	51:3:1598:U:C6	2.47	0.48
51:3:1698:A:H61	51:3:2003:C:H42	1.59	0.48
51:3:2071:C:H2'	51:3:2072:C:H6	1.78	0.48
51:3:2303:U:O2	51:3:2345:G:N2	2.38	0.48
51:3:2481:U:OP1	51:3:2483:C:N4	2.44	0.48
53:5:394:U:H2'	53:5:395:G:H8	1.77	0.48
53:5:441:U:H2'	53:5:442:G:C8	2.48	0.48
53:5:503:G:H5'	53:5:532:U:H2'	1.95	0.48
53:5:1002:A:H61	53:5:1019:G:H1'	1.78	0.48
53:5:1158:A:O2'	53:5:1159:A:OP1	2.24	0.48
53:5:1198:C:H5''	53:5:1199:U:H5''	1.95	0.48
4:9:310:TYR:N	4:9:386:ALA:O	2.45	0.48
4:9:364:ILE:HD13	54:6:67:C:H5''	1.94	0.48
10:F:113:LYS:NZ	53:5:1271:U:O2'	2.44	0.48
14:J:21:ASN:ND2	53:5:688:G:N7	2.57	0.48
15:K:113:GLY:HA2	15:K:118:VAL:N	2.28	0.48
15:K:121:GLU:C	15:K:123:ARG:H	2.21	0.48
26:b:57:VAL:HG12	26:b:58:GLU:H	1.78	0.48
35:k:133:LYS:NZ	51:3:672:G:OP1	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:p:106:ASN:HA	40:p:109:VAL:HG12	1.93	0.48
41:q:93:LYS:NZ	41:q:94:VAL:O	2.46	0.48
51:3:230:G:H1'	51:3:232:A:H61	1.78	0.48
51:3:506:A:H2'	51:3:507:A:C8	2.48	0.48
51:3:739:G:N2	51:3:761:G:O2'	2.46	0.48
51:3:866:G:H2'	51:3:867:G:C8	2.48	0.48
51:3:1094:G:H2'	51:3:1095:U:C5	2.48	0.48
51:3:2147:G:H2'	51:3:2148:U:C6	2.48	0.48
51:3:2202:U:H2'	51:3:2203:U:C6	2.48	0.48
51:3:2490:A:H2'	51:3:2491:C:O4'	2.14	0.48
51:3:2707:A:N6	51:3:2717:G:O6	2.46	0.48
53:5:350:G:N2	53:5:384:G:O2'	2.40	0.48
53:5:513:G:H2'	53:5:514:U:H6	1.79	0.48
53:5:1225:A:H1'	53:5:1345:G:O2'	2.13	0.48
53:5:1439:G:H2'	53:5:1440:U:C6	2.48	0.48
53:5:1496:G:H2'	53:5:1497:U:C6	2.48	0.48
7:C:97:LEU:HD12	7:C:132:PRO:HA	1.94	0.48
8:D:176:SER:OG	8:D:177:ASP:N	2.46	0.48
9:E:26:GLN:HA	9:E:29:LEU:HD13	1.95	0.48
11:G:98:TYR:CD1	11:G:136:GLU:HB2	2.47	0.48
26:b:4:ARG:HB3	26:b:101:LEU:HD13	1.94	0.48
30:f:58:TYR:O	30:f:62:LYS:HG2	2.13	0.48
33:i:13:ASN:HB3	33:i:15:ARG:HH12	1.77	0.48
33:i:131:ASP:N	33:i:131:ASP:OD1	2.46	0.48
34:j:104:ARG:HE	34:j:121:VAL:HG11	1.77	0.48
40:p:22:GLY:HA2	51:3:20:C:O3'	2.14	0.48
40:p:80:ASN:ND2	51:3:1186:A:O3'	2.46	0.48
50:z:36:LYS:NZ	51:3:2353:G:OP2	2.45	0.48
51:3:145:A:H2'	51:3:146:G:H8	1.79	0.48
51:3:668:A:O2'	51:3:669:A:O4'	2.23	0.48
51:3:1305:G:H2'	51:3:1306:G:H8	1.78	0.48
51:3:1737:G:H2'	51:3:1738:G:C8	2.47	0.48
51:3:2534:G:N2	51:3:2545:U:O2	2.28	0.48
53:5:378:A:O2'	53:5:379:A:O4'	2.25	0.48
53:5:659:U:H4'	53:5:833:G:H5''	1.95	0.48
53:5:722:G:H2'	53:5:723:C:C6	2.48	0.48
54:6:29:C:H2'	54:6:30:G:H8	1.77	0.48
2:1:55:ILE:HD11	35:k:58:LEU:HD22	1.96	0.48
4:9:86:ALA:O	4:9:87:ASP:HB2	2.13	0.48
4:9:203:PRO:O	4:9:205:ARG:NH1	2.46	0.48
26:b:202:GLY:HA3	51:3:2824:A:H2	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:e:110:LEU:HB3	29:e:155:ARG:HH21	1.78	0.48
51:3:793:C:H2'	51:3:794:G:C8	2.47	0.48
51:3:974:C:H2'	51:3:975:G:H8	1.79	0.48
51:3:1375:G:C5	51:3:1634:A:N6	2.82	0.48
51:3:2056:A:H2'	51:3:2057:C:C6	2.48	0.48
53:5:59:C:H2'	53:5:60:A:H8	1.78	0.48
9:E:14:SER:OG	9:E:15:LEU:N	2.47	0.48
23:S:31:ASN:HB3	23:S:47:VAL:HG22	1.95	0.48
51:3:698:A:H2'	51:3:699:U:C6	2.49	0.48
51:3:1307:G:H2'	51:3:1308:A:H8	1.77	0.48
51:3:1490:G:H2'	51:3:1491:G:C8	2.47	0.48
51:3:2343:A:N6	51:3:2345:G:N3	2.62	0.48
51:3:2364:A:H2'	51:3:2365:U:C6	2.49	0.48
51:3:2849:G:H2'	51:3:2850:G:C8	2.46	0.48
53:5:300:A:H2'	53:5:301:G:O4'	2.14	0.48
53:5:368:C:N4	53:5:384:G:H5'	2.27	0.48
53:5:776:C:H2'	53:5:777:A:O4'	2.13	0.48
53:5:1138:U:H2'	53:5:1139:A:C8	2.48	0.48
5:A:53:ASN:HB2	5:A:55:HIS:CE1	2.49	0.48
10:F:36:GLY:HA2	12:H:44:LYS:HG2	1.96	0.48
13:I:61:PRO:HA	17:M:41:ARG:HH12	1.79	0.48
29:e:65:LYS:HG2	51:3:2757:A:H4'	1.95	0.48
29:e:124:LEU:HB2	29:e:143:LEU:HD13	1.95	0.48
40:p:65:ASN:O	40:p:69:ARG:HG2	2.13	0.48
51:3:199:A:H2'	51:3:202:C:H41	1.79	0.48
51:3:421:A:N6	51:3:423:C:H2'	2.28	0.48
51:3:788:G:H2'	51:3:789:A:H8	1.77	0.48
51:3:1288:C:H2'	51:3:1289:G:C8	2.48	0.48
51:3:1351:G:H2'	51:3:1352:G:C8	2.48	0.48
51:3:2845:U:H2'	51:3:2846:A:C8	2.49	0.48
53:5:736:U:H2'	53:5:737:U:C6	2.48	0.48
53:5:1331:A:N1	53:5:1340:G:C6	2.81	0.48
53:5:1376:G:H2'	53:5:1377:C:C6	2.49	0.48
4:9:260:GLU:HA	4:9:265:GLU:HA	1.95	0.48
13:I:65:LYS:O	13:I:68:ARG:HG3	2.13	0.48
16:L:29:ARG:CG	16:L:63:TYR:CE2	2.97	0.48
19:O:38:LYS:HD2	53:5:449:A:H2'	1.95	0.48
22:R:26:GLU:HB3	22:R:28:LYS:HD3	1.95	0.48
25:a:104:GLY:HA3	51:3:1525:G:H21	1.78	0.48
27:c:143:MET:O	27:c:147:LEU:HG	2.13	0.48
28:d:57:LEU:HA	28:d:60:ILE:HG22	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:y:13:ARG:NH1	51:3:552:C:OP1	2.47	0.48
51:3:121:U:H4'	51:3:122:G:H5''	1.96	0.48
51:3:294:G:H2'	51:3:295:U:C6	2.49	0.48
51:3:1309:G:H2'	51:3:1310:U:C6	2.49	0.48
51:3:1485:A:H2	51:3:2710:G:H22	1.61	0.48
51:3:2333:G:H2'	51:3:2333:G:N3	2.28	0.48
51:3:2794:U:H2'	51:3:2795:C:C6	2.48	0.48
53:5:117:U:HO2'	53:5:258:A:HO2'	1.61	0.48
53:5:682:G:H22	53:5:703:A:N6	2.11	0.48
53:5:1283:G:H2'	53:5:1284:A:H8	1.78	0.48
8:D:96:ASN:HD21	8:D:100:LYS:HG3	1.79	0.48
8:D:101:ILE:HD11	8:D:173:ALA:HB2	1.94	0.48
8:D:115:ILE:O	8:D:119:ILE:HG13	2.14	0.48
9:E:142:ARG:H	11:G:3:THR:HA	1.78	0.48
16:L:64:LYS:HG3	16:L:65:ILE:H	1.79	0.48
19:O:39:GLU:HB2	53:5:449:A:C5	2.49	0.48
25:a:151:GLU:OE1	25:a:151:GLU:N	2.46	0.48
33:i:107:ALA:O	33:i:111:MET:HG3	2.14	0.48
51:3:140:G:N2	51:3:142:A:H3'	2.29	0.48
51:3:1507:G:O2'	51:3:1508:G:P	2.72	0.48
53:5:309:A:H2'	53:5:310:C:C6	2.49	0.48
53:5:622:A:H2'	53:5:623:G:H8	1.78	0.48
53:5:1394:G:N2	53:5:1456:U:O2	2.33	0.48
53:5:1405:U:O2	53:5:1445:G:N2	2.31	0.48
53:5:1428:A:C6	53:5:1429:G:H1'	2.49	0.48
53:5:1499:G:H2'	53:5:1500:G:C8	2.48	0.48
15:K:62:LEU:N	53:5:518:A:OP2	2.42	0.48
27:c:143:MET:HG2	27:c:171:SER:HB2	1.95	0.48
37:m:106:ARG:NH2	37:m:111:THR:OG1	2.47	0.48
41:q:64:LEU:HD22	41:q:86:ARG:HB3	1.96	0.48
43:s:65:ILE:HB	43:s:75:SER:HB3	1.96	0.48
51:3:418:G:N2	51:3:430:U:O2	2.38	0.48
51:3:1160:G:OP2	51:3:1161:A:O2'	2.19	0.48
51:3:2007:U:H2'	51:3:2008:A:C8	2.49	0.48
51:3:2143:G:O6	51:3:2162:U:O2	2.31	0.48
52:4:104:C:H2'	52:4:105:A:C8	2.49	0.48
53:5:136:U:H2'	53:5:137:A:H8	1.78	0.48
53:5:590:G:H2'	53:5:591:A:C8	2.49	0.48
53:5:835:G:H2'	53:5:836:C:C6	2.48	0.48
53:5:978:A:N6	53:5:1198:C:O2	2.47	0.48
53:5:1139:A:H2'	53:5:1140:A:H8	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1232:C:H4'	53:5:1233:G:C8	2.49	0.48
53:5:1236:A:H3'	53:5:1237:G:H8	1.78	0.48
54:7:22:A:N6	54:7:47:G:H1'	2.29	0.48
3:2:4:ARG:HH22	3:2:8:LYS:HZ3	1.61	0.47
4:9:185:TRP:O	4:9:189:ILE:HG12	2.14	0.47
4:9:344:LEU:HD13	4:9:348:THR:HB	1.96	0.47
20:P:41:ARG:HH12	53:5:233:C:H5''	1.79	0.47
26:b:211:LYS:NZ	51:3:2780:U:OP1	2.46	0.47
27:c:105:LYS:O	27:c:109:THR:HG23	2.14	0.47
29:e:126:VAL:HG12	29:e:136:ILE:HG23	1.96	0.47
42:r:71:VAL:HG23	42:r:105:VAL:HG13	1.96	0.47
51:3:82:G:N2	51:3:328:A:O2'	2.47	0.47
51:3:714:G:H2'	51:3:715:G:C8	2.49	0.47
51:3:2644:U:H2'	51:3:2645:U:C6	2.49	0.47
53:5:823:C:H2'	53:5:824:U:C6	2.49	0.47
53:5:1079:G:H2'	53:5:1080:G:H8	1.79	0.47
4:9:215:ILE:HD13	4:9:291:GLN:HB2	1.96	0.47
7:C:77:LEU:O	7:C:80:LYS:HB2	2.14	0.47
7:C:122:VAL:HG13	7:C:129:VAL:HG23	1.96	0.47
8:D:166:ILE:HG21	8:D:180:THR:HG21	1.95	0.47
10:F:24:ARG:NH1	53:5:1350:A:O3'	2.47	0.47
22:R:44:PHE:HB3	22:R:47:ASN:HD21	1.79	0.47
23:S:70:SER:HA	23:S:73:VAL:HG22	1.97	0.47
38:n:39:ILE:HD11	38:n:101:ARG:HH11	1.78	0.47
40:p:68:LEU:HA	40:p:71:GLN:HG2	1.96	0.47
43:s:66:ARG:NH1	51:3:1365:G:OP2	2.42	0.47
51:3:387:U:H2'	51:3:388:U:C6	2.49	0.47
51:3:748:G:N2	51:3:754:U:O4	2.47	0.47
51:3:807:U:O2'	51:3:808:U:H5'	2.13	0.47
51:3:1295:A:N6	51:3:2020:A:H3'	2.29	0.47
51:3:1396:A:H2'	51:3:1397:G:H8	1.79	0.47
51:3:1444:C:N4	51:3:1616:G:O6	2.47	0.47
51:3:1671:C:H2'	51:3:1672:C:C6	2.48	0.47
51:3:1829:U:H2'	51:3:1830:G:C8	2.49	0.47
51:3:2701:A:H2'	51:3:2702:G:H8	1.79	0.47
51:3:2845:U:H2'	51:3:2846:A:H8	1.77	0.47
52:4:74:G:H1	52:4:91:A:N6	2.12	0.47
53:5:90:G:H2'	53:5:91:C:H6	1.78	0.47
53:5:723:C:H2'	53:5:724:G:C8	2.49	0.47
53:5:860:C:C4	53:5:861:A:H1'	2.49	0.47
53:5:988:G:H2'	53:5:990:C:H41	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1060:C:H41	53:5:1085:G:H21	1.62	0.47
53:5:1224:C:N3	53:5:1262:A:N7	2.62	0.47
53:5:1228:C:H2'	53:5:1229:A:H8	1.78	0.47
53:5:1385:A:H2'	53:5:1386:C:C6	2.49	0.47
54:6:22:A:N6	54:6:47:G:H1'	2.29	0.47
4:9:121:LEU:HD21	4:9:312:LEU:HD13	1.96	0.47
7:C:50:TYR:CZ	7:C:54:LEU:HD11	2.49	0.47
7:C:94:GLU:N	7:C:94:GLU:OE1	2.47	0.47
9:E:1:MET:HE2	9:E:90:LEU:H	1.79	0.47
15:K:122:LYS:C	15:K:124:ARG:N	2.72	0.47
28:d:163:ASP:N	28:d:163:ASP:OD1	2.43	0.47
35:k:58:LEU:HD12	35:k:58:LEU:H	1.78	0.47
45:u:86:PHE:CE1	45:u:94:ARG:HB2	2.49	0.47
49:y:48:TYR:HB3	49:y:51:LEU:HD23	1.96	0.47
51:3:59:C:H2'	51:3:60:G:O4'	2.14	0.47
51:3:256:G:N2	51:3:424:G:O6	2.47	0.47
51:3:299:A:H2'	51:3:300:G:C8	2.49	0.47
51:3:320:A:H2'	51:3:321:A:C8	2.49	0.47
51:3:337:U:H2'	51:3:338:G:H8	1.79	0.47
51:3:1342:C:H5'	51:3:1644:A:H61	1.79	0.47
51:3:1436:C:H2'	51:3:1437:A:C8	2.50	0.47
51:3:1867:G:H2'	51:3:1868:A:C8	2.49	0.47
51:3:2115:A:C2	51:3:2190:G:C2	3.01	0.47
51:3:2589:G:H22	51:3:2618:C:H2'	1.79	0.47
51:3:2633:C:H2'	51:3:2634:C:C6	2.49	0.47
53:5:97:G:H22	53:5:311:A:H2	1.61	0.47
53:5:141:A:H2'	53:5:142:G:O4'	2.13	0.47
53:5:202:A:H2'	53:5:203:C:C6	2.49	0.47
53:5:577:G:H2'	53:5:578:C:C6	2.49	0.47
53:5:768:G:H2'	53:5:769:U:C6	2.49	0.47
53:5:822:A:H2'	53:5:823:C:C6	2.49	0.47
53:5:945:U:H2'	53:5:946:G:H8	1.79	0.47
53:5:971:A:C8	53:5:1332:U:H2'	2.50	0.47
53:5:1112:U:O2	53:5:1128:G:N2	2.33	0.47
53:5:1119:C:H4'	53:5:1124:U:H3	1.79	0.47
53:5:1241:G:N1	53:5:1245:A:N6	2.62	0.47
53:5:1312:G:N3	54:7:42:C:O2'	2.47	0.47
53:5:1388:A:N1	53:5:1462:G:N2	2.59	0.47
5:A:67:THR:HA	5:A:70:ASN:ND2	2.28	0.47
5:A:116:THR:H	5:A:190:GLU:CD	2.21	0.47
15:K:89:GLU:O	15:K:90:HIS:HB3	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:L:10:PRO:HD2	16:L:18:ALA:HB1	1.96	0.47
28:d:38:MET:HG3	28:d:86:GLY:HA2	1.95	0.47
35:k:36:GLN:NE2	51:3:600:U:OP1	2.48	0.47
35:k:57:PRO:HG2	35:k:60:ARG:HG3	1.94	0.47
43:s:2:ASP:OD1	43:s:3:VAL:N	2.45	0.47
51:3:1090:G:N1	51:3:1140:U:O4	2.48	0.47
51:3:1231:G:H2'	51:3:1232:U:H6	1.79	0.47
51:3:1836:A:H3'	51:3:1837:C:C6	2.50	0.47
51:3:2231:A:H3'	51:3:2232:G:H8	1.80	0.47
51:3:2578:A:H2'	51:3:2579:U:C6	2.48	0.47
51:3:2588:U:H2'	51:3:2589:G:N3	2.30	0.47
52:4:4:G:H2'	52:4:5:G:H8	1.80	0.47
53:5:261:G:H2'	53:5:263:C:H5	1.80	0.47
53:5:302:A:H3'	53:5:303:A:H8	1.79	0.47
53:5:974:C:H41	53:5:1334:A:H62	1.63	0.47
53:5:1304:U:H2'	53:5:1305:G:O4'	2.14	0.47
9:E:9:VAL:HG22	9:E:56:HIS:H	1.79	0.47
16:L:79:HIS:NE2	22:R:65:ASP:HB3	2.29	0.47
19:O:51:GLU:OE2	19:O:51:GLU:N	2.43	0.47
26:b:20:ASN:O	34:j:72:LYS:NZ	2.48	0.47
33:i:40:ARG:HD2	33:i:112:LEU:HG	1.95	0.47
33:i:59:ILE:HB	33:i:127:VAL:HA	1.95	0.47
51:3:730:G:O6	51:3:802:U:O2	2.33	0.47
51:3:823:A:OP1	51:3:826:C:N4	2.41	0.47
51:3:988:G:O6	51:3:1002:A:N6	2.48	0.47
51:3:1501:U:O2	51:3:1542:G:C6	2.68	0.47
51:3:1931:C:H2'	51:3:1932:C:C6	2.50	0.47
51:3:1934:A:H2'	51:3:1935:A:C8	2.50	0.47
51:3:2112:A:N1	51:3:2192:U:O2'	2.47	0.47
53:5:233:C:H2'	53:5:234:G:C5	2.49	0.47
53:5:747:C:H2'	53:5:748:U:C6	2.48	0.47
53:5:778:A:H62	53:5:798:U:H3	1.63	0.47
53:5:1119:C:H4'	53:5:1124:U:N3	2.30	0.47
53:5:1278:G:N2	53:5:1308:G:O6	2.47	0.47
27:c:128:VAL:HG23	27:c:132:LEU:HD21	1.96	0.47
28:d:14:LYS:NZ	28:d:17:GLN:OE1	2.44	0.47
30:f:51:LEU:O	30:f:54:GLN:HG2	2.14	0.47
43:s:24:THR:HG23	43:s:26:LYS:HG3	1.95	0.47
47:w:88:LYS:O	47:w:92:GLU:HG2	2.14	0.47
51:3:85:U:C2	51:3:104:A:N7	2.83	0.47
51:3:90:G:H2'	51:3:91:G:C8	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:134:U:O2'	51:3:135:A:H5'	2.14	0.47
51:3:393:C:H2'	51:3:394:C:C6	2.50	0.47
51:3:585:U:H2'	51:3:586:G:C8	2.44	0.47
51:3:587:U:H2'	51:3:588:G:O4'	2.14	0.47
51:3:652:U:H2'	51:3:653:G:C8	2.49	0.47
51:3:986:G:O6	51:3:1003:U:O4	2.32	0.47
51:3:1124:G:N2	51:3:1125:U:O4	2.47	0.47
51:3:1396:A:H2'	51:3:1397:G:C8	2.49	0.47
51:3:1927:C:C4'	53:5:1492:G:H22	2.28	0.47
51:3:2096:U:H2'	51:3:2097:A:C8	2.49	0.47
51:3:2469:A:N1	51:3:2498:G:N2	2.62	0.47
51:3:2494:C:H2'	51:3:2495:A:C8	2.49	0.47
6:B:136:ALA:HA	6:B:139:GLN:NE2	2.30	0.47
7:C:48:SER:H	7:C:51:ALA:HB3	1.79	0.47
7:C:100:ILE:O	7:C:104:MET:HG2	2.15	0.47
9:E:71:ASP:OD1	9:E:72:PHE:N	2.47	0.47
9:E:86:LEU:HD13	21:Q:95:TYR:CE2	2.50	0.47
10:F:113:LYS:HB2	53:5:1272:C:C5	2.50	0.47
13:I:56:THR:O	13:I:68:ARG:NH1	2.32	0.47
15:K:99:ARG:O	53:5:522:G:H5''	2.15	0.47
16:L:63:TYR:CD1	16:L:63:TYR:CB	2.81	0.47
23:S:73:VAL:HA	23:S:76:LEU:HB3	1.97	0.47
26:b:143:PHE:HD2	26:b:145:GLY:H	1.62	0.47
27:c:34:VAL:HG13	27:c:188:VAL:HG21	1.97	0.47
27:c:197:LEU:HD22	27:c:199:VAL:HG12	1.95	0.47
29:e:44:LEU:HG	29:e:71:TYR:HD2	1.80	0.47
29:e:166:LEU:HD21	29:e:169:ASP:HA	1.95	0.47
36:l:103:MET:HG2	36:l:104:PHE:CD2	2.48	0.47
40:p:63:ARG:HB3	40:p:96:GLU:OE1	2.14	0.47
41:q:3:ALA:HB3	41:q:14:VAL:HG23	1.97	0.47
44:t:8:ASP:OD1	44:t:8:ASP:N	2.44	0.47
45:u:53:ARG:NH1	45:u:72:THR:OG1	2.48	0.47
51:3:313:G:H2'	51:3:314:G:C8	2.49	0.47
51:3:366:A:O2'	51:3:368:C:OP2	2.32	0.47
51:3:385:U:H2'	51:3:386:U:C6	2.50	0.47
51:3:625:G:C6	51:3:701:A:C6	3.02	0.47
51:3:724:A:H2	51:3:814:U:H4'	1.79	0.47
51:3:984:C:H2'	51:3:985:A:C8	2.49	0.47
51:3:1093:U:H2'	51:3:1094:G:C8	2.49	0.47
51:3:1366:G:H2'	51:3:1367:G:C8	2.50	0.47
51:3:1670:U:H2'	51:3:1671:C:C6	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1828:A:H2'	51:3:1829:U:C6	2.49	0.47
51:3:2484:A:H3'	51:3:2485:U:C6	2.49	0.47
51:3:2669:G:O2'	51:3:2670:A:O4'	2.22	0.47
51:3:2812:U:H1'	51:3:2813:A:H2'	1.97	0.47
53:5:405:C:H2'	53:5:406:G:O4'	2.14	0.47
53:5:450:U:C2	53:5:451:G:C8	3.03	0.47
53:5:502:C:H2'	53:5:509:C:C5	2.50	0.47
53:5:523:U:H2'	53:5:524:C:C6	2.50	0.47
53:5:762:G:N1	53:5:809:G:O2'	2.20	0.47
53:5:943:C:H2'	53:5:944:A:C8	2.50	0.47
4:9:196:VAL:HG13	4:9:200:ILE:HD12	1.97	0.47
11:G:109:ASN:C	11:G:111:LEU:N	2.73	0.47
16:L:15:ILE:H	16:L:15:ILE:HD12	1.80	0.47
20:P:21:THR:HG22	20:P:73:LYS:HZ3	1.79	0.47
20:P:73:LYS:NZ	53:5:251:G:OP1	2.38	0.47
28:d:76:THR:OG1	51:3:2318:A:N6	2.47	0.47
36:l:13:HIS:HE2	51:3:990:G:H5''	1.79	0.47
51:3:269:A:N6	51:3:315:A:O4'	2.47	0.47
51:3:826:C:N4	51:3:829:A:H1'	2.29	0.47
51:3:881:A:H4'	51:3:882:C:H5	1.80	0.47
51:3:1119:A:O2'	51:3:1120:A:O4'	2.21	0.47
51:3:1556:U:H2'	51:3:1557:G:C8	2.50	0.47
51:3:2294:A:H1'	51:3:2295:A:C2	2.49	0.47
51:3:2578:A:O2'	51:3:2579:U:O4'	2.29	0.47
51:3:2797:C:H2'	51:3:2798:A:C8	2.50	0.47
51:3:2892:U:H2'	51:3:2893:C:C6	2.50	0.47
53:5:1225:A:H2	53:5:1327:G:H21	1.63	0.47
9:E:2:GLN:OE1	9:E:4:ASN:ND2	2.46	0.47
21:Q:65:SER:OG	21:Q:69:LYS:N	2.46	0.47
25:a:167:TYR:HB3	25:a:202:VAL:HG12	1.96	0.47
25:a:261:ARG:HD3	51:3:1850:C:H5''	1.97	0.47
26:b:144:GLN:HG3	26:b:165:MET:HE1	1.96	0.47
34:j:29:ARG:O	34:j:31:ARG:NH1	2.48	0.47
35:k:77:TRP:HD1	35:k:111:PRO:HB2	1.80	0.47
37:m:19:ARG:NH2	37:m:67:LEU:O	2.47	0.47
38:n:28:VAL:HG23	38:n:44:TRP:C	2.40	0.47
51:3:42:U:H2'	51:3:43:A:C8	2.50	0.47
51:3:270:G:H2'	51:3:271:G:O4'	2.15	0.47
51:3:279:U:H2'	51:3:280:A:H8	1.79	0.47
51:3:369:C:H2'	51:3:370:C:C6	2.49	0.47
51:3:422:A:H3'	51:3:423:C:C5	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:767:C:H2'	51:3:768:G:O4'	2.14	0.47
51:3:1014:G:H2'	51:3:1015:G:C8	2.50	0.47
51:3:1380:U:H2'	51:3:1381:A:H8	1.80	0.47
53:5:1313:A:H2'	54:7:32:U:O2'	2.14	0.47
54:7:15:A:C6	54:7:16:G:H1'	2.50	0.47
7:C:60:MET:HE3	7:C:60:MET:HB3	1.75	0.47
7:C:198:GLU:OE1	8:D:159:GLY:HA3	2.15	0.47
8:D:111:VAL:HB	8:D:112:PRO:HD3	1.97	0.47
9:E:109:LEU:O	9:E:112:ARG:HB3	2.15	0.47
10:F:120:ALA:O	10:F:124:ILE:HG12	2.15	0.47
13:I:62:HIS:CG	13:I:63:VAL:H	2.33	0.47
37:m:17:THR:HG22	37:m:21:GLN:NE2	2.23	0.47
51:3:81:C:H2'	51:3:82:G:H8	1.80	0.47
51:3:247:U:O2	51:3:259:A:C5	2.68	0.47
51:3:523:A:H2'	51:3:524:G:C8	2.49	0.47
51:3:745:U:H2'	51:3:746:G:C8	2.50	0.47
51:3:867:G:H2'	51:3:868:C:C6	2.50	0.47
51:3:1777:G:O6	51:3:1990:C:N4	2.48	0.47
51:3:2646:G:H22	51:3:2783:A:H2'	1.80	0.47
53:5:11:A:H2'	53:5:12:G:H8	1.80	0.47
53:5:22:G:N2	53:5:908:A:H62	2.13	0.47
53:5:421:G:H2'	53:5:422:A:H8	1.79	0.47
53:5:512:U:C2	53:5:513:G:C8	3.03	0.47
53:5:1178:C:H2'	53:5:1179:A:C8	2.50	0.47
53:5:1233:G:H2'	53:5:1234:C:C6	2.50	0.47
54:7:71:A:O2'	54:7:72:C:OP1	2.30	0.47
1:0:42:LEU:HD22	51:3:127:A:N6	2.30	0.46
15:K:43:LYS:HA	53:5:359:A:OP1	2.15	0.46
15:K:122:LYS:O	15:K:124:ARG:N	2.46	0.46
16:L:29:ARG:NH1	16:L:63:TYR:CE2	2.83	0.46
25:a:165:GLY:HA3	51:3:1827:U:C4	2.50	0.46
35:k:115:ILE:HD12	51:3:672:G:C2	2.50	0.46
47:w:24:GLY:O	47:w:28:GLU:HG3	2.14	0.46
51:3:330:A:H2'	51:3:331:A:C8	2.49	0.46
51:3:422:A:H3'	51:3:423:C:H5	1.80	0.46
51:3:515:A:H1'	51:3:516:A:H5''	1.97	0.46
51:3:874:U:H2'	51:3:875:G:C8	2.49	0.46
51:3:963:U:H2'	51:3:964:A:C8	2.51	0.46
51:3:998:C:H2'	51:3:999:U:C6	2.50	0.46
51:3:1321:C:H2'	51:3:1322:A:C8	2.49	0.46
51:3:1709:C:H2'	51:3:1710:A:O4'	2.14	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1995:G:C6	51:3:1996:A:C6	3.02	0.46
51:3:2102:U:H2'	51:3:2103:C:C6	2.50	0.46
51:3:2567:C:H2'	51:3:2568:G:C8	2.49	0.46
51:3:2784:A:O2'	51:3:2790:A:N7	2.43	0.46
53:5:514:U:H2'	53:5:515:G:O4'	2.15	0.46
53:5:1428:A:C5	53:5:1429:G:H1'	2.50	0.46
1:0:5:TYR:CD2	51:3:1646:G:H4'	2.50	0.46
7:C:82:ARG:NH2	53:5:611:A:H4'	2.30	0.46
10:F:45:ALA:O	10:F:49:ILE:HG13	2.15	0.46
23:S:11:LEU:O	23:S:15:ILE:HG12	2.15	0.46
25:a:271:LYS:NZ	51:3:2093:U:OP1	2.39	0.46
27:c:184:ASP:OD1	27:c:210:LYS:NZ	2.46	0.46
39:o:46:GLN:NE2	53:5:342:G:OP2	2.48	0.46
41:q:67:LYS:HA	41:q:85:HIS:O	2.15	0.46
51:3:35:U:C2	51:3:509:G:N1	2.83	0.46
51:3:155:A:H2'	51:3:156:A:H8	1.81	0.46
51:3:513:A:H61	51:3:536:A:P	2.38	0.46
51:3:1037:A:H3'	51:3:1038:G:H8	1.79	0.46
51:3:1052:A:N6	51:3:1181:A:N6	2.62	0.46
51:3:1326:C:H2'	51:3:1327:G:C8	2.50	0.46
51:3:1354:U:H2'	51:3:1355:C:C6	2.50	0.46
51:3:1355:C:H2'	51:3:1356:G:O4'	2.16	0.46
51:3:1467:U:H3	51:3:1587:U:H3	1.62	0.46
51:3:1489:G:H2'	51:3:1490:G:H8	1.81	0.46
51:3:1820:U:HO2'	51:3:1821:G:P	2.39	0.46
51:3:1876:G:H2'	51:3:1878:A:OP2	2.15	0.46
51:3:1890:U:O2'	51:3:1891:A:O5'	2.33	0.46
51:3:2738:U:H2'	51:3:2739:C:C6	2.50	0.46
53:5:52:A:H61	53:5:310:C:H1'	1.78	0.46
53:5:140:U:H2'	53:5:141:A:H8	1.78	0.46
53:5:250:G:H2'	53:5:251:G:C8	2.50	0.46
53:5:522:G:H2'	53:5:523:U:H6	1.77	0.46
53:5:1288:C:H2'	53:5:1289:U:C6	2.51	0.46
4:9:122:LEU:HA	4:9:125:GLN:HG2	1.97	0.46
6:B:67:VAL:HG23	6:B:104:LEU:HA	1.97	0.46
25:a:268:ARG:NH2	51:3:1807:C:OP1	2.48	0.46
41:q:42:ASP:N	41:q:42:ASP:OD1	2.48	0.46
46:v:18:ARG:NH1	46:v:22:LYS:O	2.48	0.46
51:3:756:A:H2'	51:3:757:A:C8	2.49	0.46
51:3:810:G:C6	51:3:829:A:C8	3.04	0.46
51:3:1102:A:H3'	54:6:57:C:N3	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1119:A:O2'	51:3:1140:U:O4'	2.32	0.46
51:3:2502:G:H2'	51:3:2503:G:C8	2.50	0.46
51:3:2540:G:N2	51:3:2671:G:O2'	2.48	0.46
51:3:2838:G:H2'	51:3:2883:A:H62	1.79	0.46
53:5:448:A:C6	53:5:477:U:H2'	2.50	0.46
53:5:808:C:O2'	53:5:895:A:N1	2.48	0.46
53:5:849:A:H2'	53:5:850:G:H8	1.81	0.46
53:5:1479:G:N3	53:5:1480:G:N2	2.63	0.46
1:0:31:LEU:HD11	1:0:42:LEU:HG	1.96	0.46
4:9:202:THR:HG1	4:9:205:ARG:HH12	1.62	0.46
4:9:371:LYS:HE3	4:9:392:VAL:HG12	1.98	0.46
10:F:114:THR:O	10:F:117:GLU:HG2	2.15	0.46
12:H:115:ARG:HA	53:5:1344:C:OP1	2.16	0.46
19:O:63:VAL:HG23	19:O:66:LEU:HD12	1.97	0.46
28:d:58:HIS:NE2	48:x:7:PHE:HB2	2.31	0.46
29:e:146:GLN:O	29:e:150:GLU:HG2	2.15	0.46
35:k:81:ASN:OD1	35:k:82:LEU:N	2.49	0.46
36:l:31:GLU:N	36:l:106:VAL:O	2.37	0.46
37:m:22:VAL:HG23	37:m:45:LEU:HD13	1.97	0.46
39:o:63:THR:HG22	39:o:80:GLN:HG2	1.97	0.46
45:u:29:ASP:OD1	45:u:30:SER:N	2.42	0.46
51:3:222:A:O2'	51:3:223:A:OP1	2.29	0.46
51:3:265:G:C2	51:3:266:A:N7	2.84	0.46
51:3:632:A:H2'	51:3:633:G:C8	2.49	0.46
51:3:851:U:H2'	51:3:852:C:C6	2.50	0.46
51:3:1166:G:O6	51:3:2031:C:O2'	2.33	0.46
51:3:1244:A:H62	51:3:1265:G:H21	1.63	0.46
51:3:1349:C:N3	51:3:1350:A:C8	2.84	0.46
51:3:1507:G:N1	51:3:1537:A:N6	2.63	0.46
51:3:1536:C:H42	51:3:1537:A:N6	2.12	0.46
51:3:1780:A:C6	51:3:1836:A:H1'	2.50	0.46
51:3:1836:A:H3'	51:3:1837:C:H6	1.80	0.46
51:3:2346:G:C6	51:3:2347:G:C6	3.03	0.46
53:5:871:U:H2'	53:5:872:C:C6	2.51	0.46
53:5:1293:A:O2'	53:5:1297:G:N7	2.44	0.46
53:5:1463:A:H2'	53:5:1464:G:C8	2.51	0.46
10:F:103:ILE:HG23	10:F:122:GLU:OE2	2.15	0.46
15:K:41:PRO:HD2	53:5:359:A:C6	2.50	0.46
24:T:15:LEU:HA	24:T:18:PHE:HB3	1.96	0.46
25:a:188:GLU:OE1	25:a:188:GLU:N	2.48	0.46
27:c:30:LYS:NZ	27:c:114:THR:OG1	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:d:26:MET:HE1	52:4:52:G:H21	1.81	0.46
33:i:78:TYR:CZ	33:i:89:LYS:HD3	2.51	0.46
34:j:2:VAL:HB	34:j:33:ALA:HB2	1.97	0.46
51:3:1010:G:H1'	51:3:1025:G:N2	2.31	0.46
51:3:1091:G:H5''	51:3:1092:A:H5'	1.96	0.46
51:3:1450:G:H2'	51:3:1451:A:H8	1.81	0.46
51:3:1758:C:H2'	51:3:1759:C:C6	2.51	0.46
51:3:2424:C:H2'	51:3:2425:C:C6	2.51	0.46
51:3:2635:G:N2	51:3:2785:G:OP2	2.49	0.46
53:5:153:A:N6	53:5:154:G:O6	2.49	0.46
53:5:663:G:C2	53:5:737:U:C2	3.03	0.46
53:5:847:G:H2'	53:5:848:U:C6	2.50	0.46
53:5:1411:A:H2'	53:5:1412:C:C6	2.50	0.46
53:5:1461:G:H2'	53:5:1462:G:C8	2.50	0.46
53:5:1485:C:H2'	53:5:1486:C:C6	2.50	0.46
1:0:22:MET:HE3	1:0:28:ARG:HH11	1.79	0.46
4:9:98:GLN:HE22	4:9:216:GLU:HG3	1.79	0.46
10:F:34:LYS:HD2	10:F:37:LEU:HD13	1.98	0.46
16:L:69:LEU:O	16:L:73:ILE:HG12	2.16	0.46
23:S:50:GLN:O	23:S:54:LEU:HG	2.15	0.46
28:d:122:PHE:HE1	28:d:128:TYR:HB2	1.80	0.46
51:3:116:C:H2'	51:3:117:C:C6	2.51	0.46
51:3:452:U:H3	51:3:2415:A:H61	1.64	0.46
51:3:752:C:H3'	51:3:753:A:H8	1.81	0.46
51:3:844:G:H2'	51:3:845:U:H6	1.81	0.46
51:3:2076:G:H2'	51:3:2077:A:H8	1.81	0.46
51:3:2546:U:H2'	51:3:2547:C:C6	2.51	0.46
52:4:74:G:H1	52:4:91:A:H61	1.64	0.46
53:5:1132:G:O2'	53:5:1155:A:N6	2.29	0.46
53:5:1197:G:OP1	53:5:1295:U:O2'	2.28	0.46
53:5:1197:G:H2'	53:5:1198:C:C6	2.51	0.46
53:5:1397:G:H2'	53:5:1398:G:H8	1.81	0.46
1:0:5:TYR:HD2	51:3:1646:G:H4'	1.81	0.46
6:B:20:SER:HB2	6:B:58:ILE:HB	1.98	0.46
6:B:40:ILE:H	6:B:40:ILE:HD12	1.80	0.46
6:B:119:ILE:HD12	6:B:143:LYS:HE2	1.98	0.46
9:E:111:LYS:O	9:E:115:TYR:N	2.49	0.46
17:M:16:PHE:H	17:M:19:ARG:HD3	1.81	0.46
25:a:206:LEU:HA	51:3:1827:U:H3	1.79	0.46
27:c:6:LEU:HD23	27:c:14:GLU:HG3	1.98	0.46
29:e:3:LYS:HA	51:3:2759:G:C4	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:o:12:LEU:HD23	39:o:15:GLN:HE22	1.80	0.46
40:p:87:ILE:H	40:p:87:ILE:HD12	1.81	0.46
42:r:84:ARG:O	42:r:96:ILE:N	2.43	0.46
43:s:3:VAL:O	43:s:4:THR:OG1	2.25	0.46
51:3:9:G:H2'	51:3:10:U:C6	2.51	0.46
51:3:18:G:H2'	51:3:19:G:C8	2.50	0.46
51:3:163:A:N6	51:3:170:A:N3	2.64	0.46
51:3:1470:C:H2'	51:3:1471:A:H8	1.81	0.46
51:3:1686:U:H3'	51:3:1687:G:H8	1.81	0.46
51:3:1748:U:H2'	51:3:1749:A:C8	2.51	0.46
51:3:1751:A:H2'	51:3:1752:A:C8	2.51	0.46
51:3:1764:U:O4	51:3:1769:A:N7	2.49	0.46
51:3:2341:G:H5''	51:3:2343:A:H1'	1.98	0.46
51:3:2455:G:H4'	51:3:2456:A:C5'	2.45	0.46
51:3:2551:G:C6	51:3:2773:A:C5	3.04	0.46
51:3:2699:C:H2'	51:3:2700:C:C6	2.50	0.46
51:3:2706:U:O4	51:3:2717:G:O6	2.34	0.46
51:3:2709:C:O5'	51:3:2710:G:H5''	2.16	0.46
53:5:8:G:H5'	53:5:294:A:N7	2.30	0.46
53:5:483:U:C2	53:5:484:A:C8	3.04	0.46
53:5:1046:A:C8	53:5:1175:C:N4	2.73	0.46
53:5:1324:A:H2'	53:5:1325:U:O4'	2.16	0.46
29:e:152:ARG:HD2	29:e:167:TYR:CZ	2.51	0.46
33:i:39:ILE:HD11	33:i:57:LEU:HB3	1.97	0.46
35:k:39:GLN:OE1	51:3:867:G:H5'	2.16	0.46
44:t:91:TYR:HB2	51:3:331:A:H5''	1.98	0.46
47:w:5:LYS:O	47:w:9:GLN:NE2	2.37	0.46
51:3:73:A:H5''	51:3:75:A:C8	2.51	0.46
51:3:161:U:H2'	51:3:162:G:O4'	2.16	0.46
51:3:679:A:N1	51:3:2377:A:O2'	2.46	0.46
51:3:694:U:H2'	51:3:695:G:H8	1.79	0.46
51:3:1002:A:H1'	51:3:2275:A:N7	2.31	0.46
51:3:1227:C:H2'	51:3:1228:G:H8	1.80	0.46
51:3:2349:G:H2'	51:3:2350:C:C6	2.51	0.46
53:5:164:C:H2'	53:5:165:A:C8	2.50	0.46
53:5:234:G:H2'	53:5:235:C:C6	2.51	0.46
53:5:356:G:H2'	53:5:357:G:C8	2.51	0.46
53:5:490:U:H2'	53:5:491:U:C6	2.50	0.46
53:5:621:C:H2'	53:5:622:A:C8	2.51	0.46
53:5:733:A:H2'	53:5:734:A:C8	2.50	0.46
53:5:825:A:H3'	53:5:826:G:H8	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1078:G:H2'	53:5:1079:G:H8	1.81	0.46
54:6:15:A:C6	54:6:16:G:H1'	2.50	0.46
7:C:97:LEU:HD11	7:C:134:ILE:HD12	1.96	0.46
16:L:64:LYS:HB2	16:L:64:LYS:HE2	1.69	0.46
18:N:39:HIS:HE1	53:5:736:U:O2	1.99	0.46
20:P:13:VAL:O	20:P:57:ASP:HA	2.16	0.46
25:a:150:ILE:HD13	25:a:182:LEU:HD23	1.96	0.46
27:c:5:LYS:HE2	27:c:5:LYS:HB3	1.77	0.46
28:d:127:ASN:ND2	51:3:2323:U:O4'	2.49	0.46
36:l:76:LYS:HB3	36:l:91:GLU:HG3	1.98	0.46
37:m:22:VAL:HA	37:m:25:VAL:HG22	1.98	0.46
42:r:28:LYS:NZ	42:r:68:ALA:O	2.46	0.46
42:r:69:LEU:HA	42:r:108:SER:O	2.15	0.46
51:3:85:U:O4	51:3:103:G:O2'	2.28	0.46
51:3:711:A:H3'	51:3:712:A:H5''	1.96	0.46
51:3:892:G:H2'	51:3:893:A:H8	1.81	0.46
51:3:984:C:H2'	51:3:985:A:H8	1.80	0.46
51:3:1437:A:H2'	51:3:1438:G:H8	1.81	0.46
51:3:1551:U:H2'	51:3:1552:C:H6	1.80	0.46
51:3:1877:C:H3'	51:3:1878:A:C2	2.51	0.46
51:3:2651:G:C5	51:3:2652:U:N3	2.84	0.46
53:5:217:U:H2'	53:5:218:U:C6	2.51	0.46
53:5:401:U:H1'	53:5:496:A:H2'	1.96	0.46
53:5:683:G:O2'	53:5:684:A:N7	2.49	0.46
53:5:1228:C:H2'	53:5:1229:A:C8	2.51	0.46
1:0:9:LYS:H	51:3:1337:G:H5''	1.81	0.46
6:B:80:SER:O	6:B:81:GLU:HG2	2.16	0.46
11:G:11:HIS:CG	11:G:12:PHE:H	2.34	0.46
19:O:30:ILE:HG22	19:O:44:ILE:HB	1.98	0.46
25:a:162:ARG:NE	51:3:1825:U:OP2	2.49	0.46
35:k:95:ARG:O	35:k:99:ILE:HG13	2.16	0.46
38:n:11:ARG:O	38:n:14:ARG:HG2	2.16	0.46
38:n:31:MET:HA	38:n:92:ASP:HB3	1.98	0.46
40:p:35:LYS:O	40:p:39:ILE:HG12	2.15	0.46
45:u:37:ALA:HB2	45:u:52:TYR:HD1	1.81	0.46
49:y:39:PHE:HD2	51:3:2819:C:H1'	1.80	0.46
51:3:645:C:H2'	51:3:646:A:H8	1.81	0.46
51:3:1187:C:H2'	51:3:1188:C:C6	2.50	0.46
51:3:1227:C:C2	51:3:1228:G:C8	3.04	0.46
51:3:2176:G:N2	51:3:2178:A:H3'	2.30	0.46
53:5:218:U:H2'	53:5:219:A:H8	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:902:A:H2'	53:5:903:A:C8	2.51	0.46
53:5:1007:U:H2'	53:5:1008:G:C8	2.51	0.46
53:5:1490:G:H2'	53:5:1491:A:C8	2.50	0.46
24:T:44:GLU:O	24:T:48:ILE:HG13	2.16	0.45
33:i:56:TYR:HD1	33:i:124:LYS:HB3	1.80	0.45
49:y:6:ARG:NH2	51:3:2026:A:OP2	2.42	0.45
51:3:1229:U:H2'	51:3:1230:U:H6	1.81	0.45
51:3:2122:G:O2'	51:3:2175:U:O2	2.28	0.45
51:3:2151:G:H4'	51:3:2152:C:C5	2.51	0.45
51:3:2416:U:H2'	51:3:2417:G:C8	2.52	0.45
51:3:2523:C:N3	51:3:2578:A:H2	2.14	0.45
51:3:2695:U:H2'	51:3:2696:G:O4'	2.16	0.45
51:3:2851:U:H3'	51:3:2852:G:C8	2.51	0.45
52:4:59:A:HO2'	52:4:60:C:P	2.38	0.45
53:5:169:G:H1	53:5:196:G:H22	1.63	0.45
53:5:460:A:N1	53:5:467:G:O6	2.49	0.45
53:5:655:G:C6	53:5:746:A:C6	3.04	0.45
53:5:684:A:C6	53:5:700:G:C2	2.87	0.45
53:5:936:G:H1	53:5:1316:C:H42	1.64	0.45
53:5:1269:U:H2'	53:5:1270:C:C6	2.51	0.45
53:5:1331:A:OP2	53:5:1333:C:N4	2.49	0.45
54:6:22:A:N7	54:6:47:G:O2'	2.32	0.45
3:2:19:ARG:NE	51:3:2764:U:OP2	2.45	0.45
4:9:329:PRO:HB3	4:9:379:GLU:HB2	1.98	0.45
27:c:75:ARG:NH2	51:3:2452:G:H5''	2.31	0.45
36:l:116:LYS:HZ3	36:l:120:ARG:HE	1.62	0.45
47:w:38:LEU:HG	47:w:40:LYS:H	1.81	0.45
51:3:1064:A:N1	51:3:1160:G:O2'	2.49	0.45
51:3:1851:U:H2'	51:3:1852:G:C8	2.51	0.45
51:3:2063:G:H2'	51:3:2064:G:C8	2.51	0.45
51:3:2387:U:H2'	51:3:2388:C:C6	2.51	0.45
51:3:2604:U:HO2'	51:3:2605:G:P	2.40	0.45
51:3:2644:U:H2'	51:3:2645:U:H6	1.80	0.45
51:3:2729:A:H2'	51:3:2730:G:O4'	2.16	0.45
53:5:154:G:H2'	53:5:155:C:C6	2.52	0.45
53:5:212:G:H2'	53:5:213:U:C6	2.51	0.45
53:5:625:U:H2'	53:5:626:G:C8	2.50	0.45
53:5:810:U:P	53:5:813:A:H61	2.38	0.45
53:5:1057:C:H2'	53:5:1058:A:C4	2.51	0.45
53:5:1061:U:H2'	53:5:1062:C:C6	2.51	0.45
53:5:1072:G:H2'	53:5:1073:A:C8	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1413:G:N2	53:5:1438:U:O2	2.40	0.45
7:C:53:GLN:HG2	7:C:57:LYS:NZ	2.31	0.45
7:C:54:LEU:O	7:C:58:GLN:HG2	2.16	0.45
17:M:34:LEU:O	17:M:38:GLY:N	2.47	0.45
33:i:119:ARG:HA	33:i:122:ILE:HG22	1.98	0.45
35:k:52:GLU:OE1	35:k:52:GLU:N	2.50	0.45
35:k:131:VAL:HG22	35:k:148:LEU:HD13	1.98	0.45
51:3:644:C:H2'	51:3:645:C:C6	2.52	0.45
51:3:704:G:N3	51:3:704:G:H2'	2.32	0.45
51:3:724:A:H2'	51:3:725:G:C8	2.52	0.45
51:3:887:A:H2'	51:3:888:A:H8	1.82	0.45
51:3:1265:G:H2'	51:3:1266:G:C4	2.52	0.45
51:3:1473:C:H2'	51:3:1474:C:C6	2.51	0.45
51:3:1589:A:H2'	51:3:1590:U:C6	2.52	0.45
51:3:2455:G:O6	51:3:2458:A:N6	2.49	0.45
51:3:2563:U:H2'	51:3:2564:C:O4'	2.17	0.45
51:3:2645:U:H2'	51:3:2646:G:O4'	2.15	0.45
51:3:2732:A:H2'	51:3:2733:A:C8	2.52	0.45
10:F:19:ASN:HB2	10:F:22:VAL:HG23	1.98	0.45
11:G:101:PHE:HA	11:G:104:LEU:HD12	1.98	0.45
12:H:116:LYS:HE2	12:H:116:LYS:HB2	1.74	0.45
13:I:58:ILE:HA	13:I:68:ARG:HG2	1.99	0.45
23:S:66:ARG:HD3	23:S:69:LYS:NZ	2.31	0.45
25:a:43:LYS:NZ	51:3:727:C:OP1	2.49	0.45
26:b:48:SER:OG	26:b:88:THR:HG23	2.16	0.45
26:b:59:ASN:HD21	26:b:67:GLN:HB2	1.82	0.45
33:i:99:GLN:OE1	33:i:102:LYS:HB2	2.15	0.45
39:o:35:ILE:HA	39:o:86:ILE:HD13	1.98	0.45
40:p:60:TRP:HZ2	51:3:1031:U:HO2'	1.63	0.45
40:p:107:LEU:O	40:p:110:GLN:HG2	2.16	0.45
42:r:36:LEU:HD21	42:r:47:ILE:HG23	1.97	0.45
44:t:9:LYS:HD2	44:t:9:LYS:HA	1.80	0.45
51:3:39:C:H2'	51:3:40:A:C8	2.51	0.45
51:3:161:U:O4	51:3:171:G:O6	2.33	0.45
51:3:1118:U:H2'	51:3:1120:A:OP2	2.16	0.45
51:3:1140:U:H2'	51:3:1141:U:H6	1.82	0.45
51:3:1468:U:H2'	51:3:1469:C:O4'	2.16	0.45
51:3:1714:U:H3'	51:3:1715:A:H8	1.81	0.45
51:3:2134:G:O2'	51:3:2181:A:N1	2.50	0.45
51:3:2176:G:N1	51:3:2179:A:OP2	2.49	0.45
51:3:2391:G:O2'	51:3:2392:U:O5'	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2656:G:H2'	51:3:2657:C:H6	1.81	0.45
51:3:2735:G:H2'	51:3:2736:U:H6	1.80	0.45
53:5:201:G:H2'	53:5:202:A:H8	1.82	0.45
53:5:588:U:H2'	53:5:589:U:H6	1.80	0.45
53:5:622:A:H2'	53:5:623:G:C8	2.51	0.45
53:5:1133:A:OP1	53:5:1134:C:N4	2.50	0.45
53:5:1293:A:C8	53:5:1297:G:C5	3.04	0.45
53:5:1323:A:H1'	53:5:1349:A:C6	2.52	0.45
6:B:132:PRO:HB2	6:B:135:THR:HG22	1.98	0.45
7:C:145:LYS:HG3	7:C:147:LYS:N	2.31	0.45
9:E:110:GLN:HE22	53:5:838:A:H1'	1.81	0.45
10:F:56:LYS:O	10:F:59:THR:OG1	2.31	0.45
10:F:112:GLU:HG3	10:F:117:GLU:HG3	1.98	0.45
12:H:18:LYS:O	12:H:67:VAL:HA	2.17	0.45
14:J:16:VAL:HG23	14:J:79:VAL:HA	1.99	0.45
21:Q:94:ARG:HB3	21:Q:101:PHE:CE1	2.51	0.45
24:T:17:LYS:O	24:T:21:VAL:HG23	2.16	0.45
27:c:189:ARG:NH1	51:3:1233:A:O2'	2.49	0.45
28:d:99:PHE:CE2	28:d:154:VAL:HG11	2.51	0.45
51:3:264:G:C5	51:3:265:G:C8	3.05	0.45
51:3:574:G:O6	51:3:587:U:O4	2.34	0.45
51:3:645:C:H2'	51:3:646:A:C8	2.51	0.45
51:3:802:U:H2'	51:3:803:G:C8	2.49	0.45
51:3:851:U:H2'	51:3:852:C:H6	1.82	0.45
51:3:1130:A:C2	54:6:56:U:C3'	3.00	0.45
51:3:1194:U:H2'	51:3:1195:A:C8	2.51	0.45
51:3:1346:G:H2'	51:3:1347:A:C8	2.52	0.45
51:3:1477:A:C6	51:3:1489:G:C6	3.05	0.45
51:3:1925:A:HO2'	51:3:1927:C:N4	2.15	0.45
51:3:1994:U:H2'	51:3:1995:G:H8	1.82	0.45
51:3:2638:G:H2'	51:3:2639:G:H8	1.80	0.45
52:4:4:G:H2'	52:4:5:G:C8	2.51	0.45
52:4:61:A:H2'	52:4:62:G:C8	2.52	0.45
53:5:451:G:H2'	53:5:452:A:H8	1.82	0.45
53:5:461:G:H2'	53:5:461:G:N3	2.32	0.45
53:5:624:U:H2'	53:5:625:U:C6	2.51	0.45
53:5:1196:G:H2'	53:5:1197:G:C8	2.51	0.45
53:5:1287:G:H2'	53:5:1288:C:H6	1.82	0.45
54:7:22:A:H62	54:7:47:G:H1'	1.81	0.45
54:7:69:A:H2'	54:7:70:G:C8	2.50	0.45
4:9:182:ASP:HB2	4:9:185:TRP:HD1	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:9:213:LEU:HD21	4:9:230:GLY:HA3	1.98	0.45
4:9:248:LEU:HA	4:9:365:ALA:HB1	1.99	0.45
4:9:331:PHE:CD2	4:9:377:ILE:HG12	2.51	0.45
10:F:62:GLU:HA	10:F:65:VAL:HG12	1.99	0.45
26:b:139:TYR:N	51:3:779:C:OP1	2.50	0.45
30:f:94:THR:HA	30:f:118:ARG:HH12	1.81	0.45
37:m:71:ASN:OD1	37:m:72:LEU:N	2.50	0.45
51:3:123:G:H2'	51:3:124:A:O4'	2.16	0.45
51:3:251:G:O2'	51:3:424:G:N1	2.50	0.45
51:3:1862:A:H2'	51:3:1863:G:C8	2.52	0.45
51:3:2797:C:H2'	51:3:2798:A:H8	1.82	0.45
51:3:2865:U:O4	51:3:2866:A:N6	2.50	0.45
53:5:82:C:H2'	53:5:83:U:C6	2.51	0.45
53:5:132:G:H2'	53:5:133:G:C8	2.52	0.45
53:5:161:C:H2'	53:5:162:C:C6	2.52	0.45
53:5:218:U:H2'	53:5:219:A:C8	2.52	0.45
53:5:329:C:H2'	53:5:330:C:C6	2.52	0.45
53:5:1467:A:H5'	53:5:1468:A:N7	2.32	0.45
54:6:69:A:H2'	54:6:70:G:C8	2.50	0.45
4:9:283:ASP:OD1	4:9:284:ARG:N	2.49	0.45
5:A:228:LEU:O	5:A:232:LEU:HG	2.16	0.45
16:L:63:TYR:OH	53:5:1302:C:O2'	2.18	0.45
16:L:65:ILE:O	16:L:69:LEU:N	2.46	0.45
16:L:101:ARG:HH11	16:L:103:ARG:HB2	1.82	0.45
28:d:102:LYS:HZ3	28:d:139:PRO:HG2	1.80	0.45
28:d:127:ASN:ND2	51:3:2322:G:O2'	2.49	0.45
30:f:3:VAL:O	30:f:3:VAL:CG1	2.62	0.45
40:p:68:LEU:HD23	40:p:75:TYR:HA	1.99	0.45
40:p:94:LEU:HD21	41:q:11:GLN:HB3	1.99	0.45
43:s:16:VAL:O	43:s:20:GLN:HB3	2.16	0.45
45:u:43:GLN:OE1	51:3:960:A:O2'	2.35	0.45
49:y:48:TYR:HE1	51:3:2888:U:O4	2.00	0.45
51:3:78:C:H2'	51:3:79:U:C6	2.50	0.45
51:3:293:G:O2'	51:3:294:G:H5'	2.17	0.45
51:3:1098:G:H2'	51:3:1099:C:C6	2.52	0.45
51:3:2248:C:H2'	51:3:2249:A:C8	2.45	0.45
51:3:2770:U:H2'	51:3:2771:G:O4'	2.17	0.45
51:3:2800:U:H2'	51:3:2801:U:C4	2.52	0.45
53:5:54:A:H2'	53:5:55:C:O4'	2.17	0.45
53:5:367:A:H2'	53:5:368:C:O4'	2.16	0.45
53:5:668:U:H2'	53:5:669:U:H6	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:6:62:C:H2'	54:6:63:U:O4'	2.16	0.45
54:7:22:A:N7	54:7:47:G:O2'	2.32	0.45
4:9:14:ASN:HB2	4:9:99:MET:HA	1.99	0.45
10:F:99:ALA:O	10:F:103:ILE:HG12	2.16	0.45
12:H:65:ILE:HG23	12:H:67:VAL:HG23	1.99	0.45
14:J:62:LYS:O	14:J:66:THR:HG23	2.17	0.45
25:a:242:GLY:HA3	51:3:2606:A:H5''	1.98	0.45
49:y:40:HIS:NE2	51:3:2887:A:H4'	2.32	0.45
51:3:173:C:H2'	51:3:174:A:C8	2.51	0.45
51:3:411:U:H2'	51:3:412:A:C8	2.52	0.45
51:3:787:C:OP2	51:3:1788:A:N6	2.50	0.45
51:3:894:G:N2	51:3:2277:A:OP2	2.42	0.45
51:3:1488:U:H2'	51:3:1489:G:H8	1.82	0.45
51:3:1502:A:H2'	51:3:1540:G:N2	2.31	0.45
51:3:2530:U:C2	51:3:2773:A:N7	2.85	0.45
51:3:2552:G:H5'	51:3:2653:G:H21	1.81	0.45
53:5:55:C:N4	53:5:349:A:OP2	2.48	0.45
53:5:216:G:H2'	53:5:217:U:C6	2.52	0.45
53:5:380:G:H2'	53:5:381:C:H6	1.80	0.45
4:9:150:VAL:O	4:9:153:GLU:HG2	2.17	0.45
4:9:301:PRO:HB2	4:9:366:PRO:HB2	1.99	0.45
5:A:180:ASP:OD2	5:A:183:TYR:N	2.45	0.45
6:B:168:ASP:N	6:B:168:ASP:OD1	2.48	0.45
10:F:141:HIS:HA	10:F:144:ALA:HB3	1.98	0.45
11:G:22:ILE:HG22	11:G:26:ARG:HH11	1.80	0.45
15:K:40:SER:OG	53:5:359:A:N6	2.50	0.45
17:M:3:LYS:HG3	53:5:1040:U:OP1	2.16	0.45
21:Q:80:GLN:OE1	21:Q:84:ARG:NH1	2.49	0.45
28:d:98:ALA:O	28:d:101:GLU:HG3	2.17	0.45
34:j:19:VAL:HG12	34:j:41:VAL:HB	1.98	0.45
51:3:881:A:N7	51:3:968:U:N3	2.64	0.45
51:3:1070:U:H2'	51:3:1071:G:H8	1.77	0.45
51:3:1077:G:O6	51:3:1148:U:C4	2.70	0.45
51:3:1118:U:HO2'	51:3:1119:A:H8	1.59	0.45
51:3:1130:A:O2'	51:3:1131:A:H5'	2.17	0.45
51:3:1194:U:H2'	51:3:1195:A:H8	1.81	0.45
51:3:1537:A:H2'	51:3:1538:U:O4'	2.17	0.45
51:3:1582:G:H2'	51:3:1583:G:C8	2.52	0.45
51:3:1887:U:H2'	51:3:1888:U:C5	2.51	0.45
51:3:1927:C:H4'	53:5:1492:G:H22	1.82	0.45
51:3:1955:G:H2'	51:3:1956:G:O4'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2134:G:H2'	51:3:2135:C:H6	1.81	0.45
51:3:2140:G:O2'	51:3:2165:A:N1	2.50	0.45
51:3:2150:C:N3	51:3:2155:G:N1	2.47	0.45
51:3:2371:U:H2'	51:3:2372:C:C6	2.52	0.45
53:5:223:G:H2'	53:5:224:A:C8	2.52	0.45
53:5:587:A:H2'	53:5:588:U:C6	2.52	0.45
53:5:858:A:O2'	53:5:1069:U:O4	2.31	0.45
53:5:1265:U:H2'	53:5:1266:U:C6	2.52	0.45
53:5:1290:G:H1'	53:5:1334:A:C2	2.52	0.45
53:5:1300:C:H2'	53:5:1301:U:C6	2.52	0.45
6:B:30:THR:O	6:B:34:LEU:HG	2.16	0.45
6:B:92:ILE:HB	6:B:102:LEU:HD11	1.99	0.45
7:C:98:ASP:OD1	7:C:99:ASN:N	2.49	0.45
15:K:24:LEU:O	15:K:43:LYS:NZ	2.43	0.45
23:S:20:ASN:O	23:S:24:GLN:HG2	2.16	0.45
28:d:102:LYS:NZ	28:d:139:PRO:HG2	2.31	0.45
36:l:124:LYS:HA	36:l:124:LYS:HD3	1.78	0.45
51:3:26:G:H2'	51:3:27:U:C6	2.51	0.45
51:3:335:G:O2'	51:3:336:C:O5'	2.34	0.45
51:3:500:U:C4	51:3:823:A:C6	3.05	0.45
51:3:712:A:HO2'	51:3:2077:A:HO2'	1.62	0.45
51:3:1187:C:H2'	51:3:1188:C:H6	1.82	0.45
51:3:1843:C:H2'	51:3:1844:C:C6	2.52	0.45
51:3:1952:G:H2'	51:3:1953:U:O4'	2.17	0.45
53:5:372:G:H2'	53:5:373:A:C8	2.52	0.45
7:C:15:GLY:O	7:C:59:ARG:NH1	2.51	0.44
15:K:120:VAL:HB	15:K:121:GLU:H	1.68	0.44
21:Q:64:LEU:HD13	21:Q:90:LEU:HD13	1.98	0.44
27:c:97:ARG:HD3	27:c:99:TYR:HE1	1.82	0.44
28:d:57:LEU:O	28:d:61:SER:OG	2.22	0.44
37:m:101:LEU:HD13	49:y:51:LEU:HD21	1.99	0.44
51:3:187:C:H3'	51:3:188:G:H8	1.83	0.44
51:3:300:G:H2'	51:3:301:G:H8	1.81	0.44
51:3:1269:C:H2'	51:3:1270:C:C6	2.52	0.44
51:3:1503:A:N6	51:3:1540:G:O2'	2.49	0.44
51:3:1741:G:H2'	51:3:1742:C:C6	2.52	0.44
51:3:1807:C:O2	51:3:1824:G:O6	2.34	0.44
51:3:1906:G:N2	51:3:1909:C:H41	2.15	0.44
51:3:2289:C:H2'	51:3:2290:G:C8	2.52	0.44
51:3:2643:A:H2'	51:3:2644:U:O4'	2.18	0.44
51:3:2722:G:H2'	51:3:2723:C:C6	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:187:A:O2'	53:5:188:U:O4'	2.22	0.44
53:5:540:U:H2'	53:5:541:C:C6	2.51	0.44
53:5:1220:A:C6	53:5:1267:G:C6	3.05	0.44
53:5:1267:G:H2'	53:5:1268:G:H8	1.81	0.44
54:6:71:A:O2'	54:6:72:C:OP1	2.30	0.44
7:C:90:PHE:HA	7:C:93:LEU:HG	1.97	0.44
8:D:177:ASP:N	8:D:177:ASP:OD1	2.49	0.44
12:H:6:TYR:CZ	12:H:92:PHE:HA	2.52	0.44
21:Q:53:LEU:HD11	21:Q:92:ARG:HB2	1.99	0.44
25:a:182:LEU:HD13	25:a:192:PHE:HB2	2.00	0.44
26:b:151:ARG:N	51:3:2580:A:OP2	2.35	0.44
33:i:113:PRO:HD3	51:3:1043:C:H4'	2.00	0.44
34:j:88:LYS:NZ	34:j:94:ARG:HG2	2.31	0.44
35:k:69:ARG:HG2	35:k:72:PHE:HB2	1.99	0.44
36:l:35:VAL:HB	36:l:130:LYS:HB3	1.99	0.44
44:t:41:LYS:HA	44:t:66:GLU:HA	1.99	0.44
51:3:10:U:H2'	51:3:11:U:O4'	2.17	0.44
51:3:194:A:N7	51:3:210:U:O4	2.51	0.44
51:3:400:A:H2'	51:3:401:G:C8	2.52	0.44
51:3:1069:G:N2	51:3:1157:G:H1'	2.31	0.44
51:3:1388:G:H5'	51:3:1389:G:OP2	2.16	0.44
51:3:1937:G:O2'	51:3:1975:G:O6	2.29	0.44
51:3:2551:G:C4	51:3:2773:A:H2'	2.52	0.44
51:3:2703:U:H2'	51:3:2704:U:C6	2.52	0.44
53:5:448:A:H4'	53:5:449:A:OP1	2.17	0.44
53:5:456:U:H2'	53:5:457:A:C8	2.52	0.44
53:5:890:U:H2'	53:5:891:C:C6	2.52	0.44
53:5:1315:U:H2'	53:5:1316:C:C5	2.51	0.44
54:7:62:C:H2'	54:7:63:U:O4'	2.16	0.44
1:0:26:SER:O	1:0:30:VAL:HG12	2.17	0.44
2:1:51:ASP:O	2:1:55:ILE:HG12	2.17	0.44
6:B:34:LEU:O	6:B:38:GLU:HG2	2.17	0.44
7:C:70:GLN:O	7:C:74:LEU:HD23	2.16	0.44
7:C:88:ASN:O	7:C:92:VAL:HG23	2.16	0.44
7:C:93:LEU:O	7:C:99:ASN:ND2	2.50	0.44
26:b:158:ARG:HA	51:3:2059:G:N2	2.32	0.44
33:i:37:ASP:HB3	33:i:42:LYS:HB2	1.99	0.44
36:l:15:VAL:HG11	36:l:96:VAL:HG21	1.99	0.44
36:l:70:PRO:HA	36:l:95:ALA:HB2	1.99	0.44
40:p:89:ILE:O	40:p:91:ARG:NE	2.44	0.44
41:q:79:HIS:CD2	41:q:81:LYS:HG3	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:s:63:THR:O	43:s:75:SER:OG	2.32	0.44
51:3:806:A:H2'	51:3:807:U:C6	2.50	0.44
51:3:1104:A:C8	51:3:1108:A:H8	2.35	0.44
51:3:1104:A:C2	51:3:1108:A:H5''	2.53	0.44
51:3:1748:U:H2'	51:3:1749:A:H8	1.81	0.44
51:3:1761:C:N4	51:3:2724:U:O2'	2.42	0.44
52:4:58:C:H2'	52:4:59:A:H8	1.77	0.44
52:4:69:C:H2'	52:4:70:G:O4'	2.18	0.44
53:5:500:G:H2'	53:5:501:A:C8	2.53	0.44
53:5:582:G:H2'	53:5:583:G:H8	1.80	0.44
53:5:673:A:H2'	53:5:674:U:C6	2.52	0.44
53:5:1227:A:H2'	53:5:1228:C:C6	2.53	0.44
4:9:124:ARG:HD3	4:9:162:GLY:HA3	1.99	0.44
6:B:140:SER:HA	6:B:143:LYS:HG2	1.98	0.44
11:G:80:ARG:HA	11:G:80:ARG:HD3	1.79	0.44
15:K:67:LYS:HD3	15:K:77:LEU:HG	1.99	0.44
26:b:158:ARG:HH22	51:3:2032:G:H5''	1.82	0.44
27:c:112:LEU:HA	27:c:115:VAL:HG22	2.00	0.44
33:i:46:ASP:OD1	33:i:46:ASP:N	2.47	0.44
39:o:9:LEU:H	39:o:9:LEU:HD12	1.82	0.44
51:3:33:C:H2'	51:3:34:C:C6	2.53	0.44
51:3:73:A:H4'	51:3:74:U:H5''	2.00	0.44
51:3:626:A:H2'	51:3:627:U:H6	1.82	0.44
51:3:788:G:H2'	51:3:789:A:C8	2.52	0.44
51:3:1578:A:H2'	51:3:1579:G:O4'	2.17	0.44
51:3:1931:C:H2'	51:3:1932:C:H6	1.83	0.44
51:3:2133:A:N3	51:3:2171:A:O2'	2.51	0.44
53:5:331:C:H2'	53:5:332:A:C8	2.52	0.44
53:5:1482:A:H2'	53:5:1483:C:H6	1.83	0.44
4:9:20:HIS:HB3	4:9:23:HIS:CE1	2.53	0.44
4:9:125:GLN:HE22	4:9:383:THR:HG21	1.82	0.44
6:B:17:ASN:OD1	6:B:18:TRP:N	2.51	0.44
6:B:192:ALA:HB3	6:B:199:ILE:HB	1.99	0.44
11:G:67:LYS:HG2	53:5:650:A:C4	2.53	0.44
12:H:47:ILE:HG23	12:H:48:GLN:HG2	1.99	0.44
15:K:42:LEU:HD22	15:K:95:LEU:O	2.18	0.44
16:L:112:PRO:O	16:L:114:LYS:NZ	2.48	0.44
20:P:66:THR:HG22	20:P:67:ARG:N	2.29	0.44
23:S:41:LEU:HD23	23:S:41:LEU:H	1.83	0.44
24:T:28:LEU:O	24:T:31:ARG:HG2	2.18	0.44
26:b:139:TYR:CD2	26:b:140:PRO:HD3	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:f:78:HIS:HE2	30:f:143:THR:HG1	1.66	0.44
31:g:86:VAL:O	31:g:88:GLU:N	2.50	0.44
37:m:56:ASN:O	37:m:60:ARG:HG3	2.17	0.44
40:p:48:ASP:HA	40:p:51:ASN:HB2	1.98	0.44
40:p:57:ARG:HA	40:p:60:TRP:CE3	2.53	0.44
51:3:245:U:H4'	51:3:246:G:H4'	1.98	0.44
51:3:612:G:C2	51:3:1292:A:C8	3.06	0.44
51:3:1013:G:H2'	51:3:1014:G:C8	2.53	0.44
51:3:1335:A:C5	51:3:1656:A:C6	3.05	0.44
51:3:1437:A:H2'	51:3:1438:G:C8	2.52	0.44
51:3:1477:A:H61	51:3:1488:U:H3	1.65	0.44
51:3:2850:G:H2'	51:3:2851:U:H6	1.83	0.44
53:5:20:C:H2'	53:5:21:U:H6	1.82	0.44
53:5:46:U:H2'	53:5:47:G:C8	2.52	0.44
53:5:90:G:H2'	53:5:91:C:C6	2.53	0.44
53:5:457:A:H2'	53:5:458:G:H8	1.82	0.44
53:5:674:U:H3	53:5:710:G:N2	2.10	0.44
53:5:905:U:H2'	53:5:906:C:H6	1.82	0.44
53:5:961:G:H2'	53:5:962:G:C4	2.53	0.44
53:5:1115:G:N2	53:5:1116:U:O4	2.42	0.44
53:5:1256:U:H2'	53:5:1257:C:H5	1.83	0.44
7:C:3:TYR:CD2	7:C:111:ARG:HD3	2.53	0.44
11:G:13:ASP:OD1	11:G:16:ALA:HB3	2.18	0.44
12:H:11:ARG:NH2	53:5:1108:A:OP1	2.51	0.44
14:J:110:PRO:HB2	24:T:32:HIS:CD2	2.53	0.44
17:M:27:CYS:HB2	17:M:43:CYS:HB2	1.99	0.44
20:P:68:PRO:HA	20:P:74:ARG:HA	2.00	0.44
25:a:146:GLN:HE22	25:a:169:ARG:HD2	1.83	0.44
27:c:139:LYS:HD2	51:3:354:C:OP1	2.18	0.44
29:e:43:PRO:O	29:e:58:ASN:ND2	2.51	0.44
30:f:4:ILE:HG22	30:f:5:LEU:O	2.17	0.44
33:i:78:TYR:HB2	51:3:1167:U:C5	2.52	0.44
38:n:110:ARG:NH2	51:3:2384:A:H1'	2.33	0.44
46:v:37:LYS:HE3	46:v:37:LYS:HB3	1.90	0.44
51:3:224:G:H22	51:3:463:U:H2'	1.83	0.44
51:3:338:G:H2'	51:3:339:U:C6	2.52	0.44
51:3:531:G:C4	51:3:532:A:C8	3.06	0.44
51:3:1292:A:H61	51:3:2024:C:H42	1.66	0.44
51:3:1445:U:H2'	51:3:1446:G:O4'	2.18	0.44
51:3:1665:G:H21	51:3:1669:A:N6	2.15	0.44
51:3:1670:U:H2'	51:3:1671:C:C5	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1700:G:H3'	51:3:1701:G:C8	2.52	0.44
51:3:2307:G:H2'	51:3:2308:U:H6	1.82	0.44
51:3:2794:U:H2'	51:3:2795:C:H6	1.81	0.44
53:5:225:U:H2'	53:5:226:G:C8	2.53	0.44
53:5:1347:U:H2'	53:5:1348:G:O4'	2.18	0.44
54:6:22:A:H62	54:6:47:G:H1'	1.81	0.44
5:A:91:TYR:O	5:A:95:LEU:HG	2.18	0.44
6:B:191:LYS:NZ	53:5:1179:A:N3	2.66	0.44
7:C:50:TYR:CE1	7:C:54:LEU:HD21	2.53	0.44
25:a:161:ALA:N	51:3:1825:U:O2'	2.50	0.44
33:i:3:LYS:N	41:q:23:GLU:OE2	2.50	0.44
51:3:142:A:H2'	51:3:143:A:N9	2.32	0.44
51:3:553:A:H2'	51:3:554:U:C6	2.53	0.44
51:3:1492:G:H4'	51:3:1493:A:H5''	2.00	0.44
51:3:1635:G:H2'	51:3:1636:U:C6	2.53	0.44
51:3:1743:U:H2'	51:3:1744:U:C6	2.52	0.44
51:3:1747:G:N1	51:3:1748:U:O4	2.50	0.44
51:3:1845:C:H4'	51:3:1846:A:H5'	1.99	0.44
51:3:2121:A:H2'	51:3:2122:G:O4'	2.18	0.44
51:3:2478:G:H2'	51:3:2479:A:H8	1.82	0.44
53:5:420:A:H2'	53:5:421:G:O4'	2.18	0.44
53:5:500:G:H2'	53:5:501:A:H8	1.83	0.44
53:5:512:U:H2'	53:5:513:G:H8	1.82	0.44
53:5:849:A:H2'	53:5:850:G:C8	2.52	0.44
53:5:935:U:H2'	53:5:936:G:C8	2.52	0.44
53:5:1065:G:H2'	53:5:1066:U:H6	1.81	0.44
53:5:1139:A:H2'	53:5:1140:A:C8	2.53	0.44
54:6:39:A:C4	54:6:40:A:C8	3.06	0.44
5:A:88:LYS:HE3	5:A:219:ASN:HB3	1.99	0.44
6:B:134:ARG:HH11	8:D:110:GLU:CB	2.29	0.44
8:D:91:LEU:HD13	8:D:105:ILE:HG22	2.00	0.44
9:E:44:GLU:HA	9:E:54:SER:HA	2.00	0.44
12:H:106:THR:HG23	53:5:1154:A:H5''	1.99	0.44
23:S:10:ARG:HD3	23:S:10:ARG:HA	1.84	0.44
25:a:92:ARG:NH2	51:3:1825:U:OP2	2.51	0.44
25:a:280:ARG:HA	25:a:285:GLU:HA	1.99	0.44
26:b:57:VAL:HG12	26:b:58:GLU:N	2.32	0.44
26:b:59:ASN:OD1	26:b:67:GLN:NE2	2.51	0.44
26:b:158:ARG:HA	51:3:2059:G:H21	1.81	0.44
28:d:64:LYS:HB3	52:4:40:U:H4'	1.98	0.44
36:l:116:LYS:NZ	36:l:120:ARG:HE	2.16	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:r:4:PHE:HD2	42:r:104:VAL:HG21	1.83	0.44
47:w:53:THR:O	47:w:57:ILE:HG13	2.18	0.44
51:3:82:G:H2'	51:3:83:G:C8	2.53	0.44
51:3:133:G:H2'	51:3:134:U:H6	1.83	0.44
51:3:159:G:H2'	51:3:160:A:C8	2.52	0.44
51:3:229:C:H3'	51:3:230:G:H8	1.83	0.44
51:3:499:G:H21	51:3:501:G:H8	1.66	0.44
51:3:533:G:H2'	51:3:534:U:H6	1.81	0.44
51:3:1245:G:H1	51:3:1264:U:H3	1.65	0.44
51:3:1869:G:H2'	51:3:1870:G:H8	1.83	0.44
51:3:1906:G:H22	51:3:1909:C:N4	2.15	0.44
51:3:2101:A:H2'	51:3:2102:U:O4'	2.17	0.44
51:3:2403:C:H2'	51:3:2404:G:C8	2.52	0.44
51:3:2833:A:H2'	51:3:2834:C:C6	2.53	0.44
53:5:72:A:H2'	53:5:73:G:H8	1.81	0.44
53:5:516:C:N4	53:5:528:G:OP2	2.49	0.44
53:5:561:A:H4'	53:5:564:G:O2'	2.17	0.44
53:5:851:U:H2'	53:5:852:G:O4'	2.17	0.44
4:9:143:ASP:HA	4:9:146:VAL:HG22	2.00	0.44
9:E:7:LEU:HA	9:E:84:ARG:O	2.18	0.44
10:F:137:LYS:HE2	10:F:141:HIS:HE1	1.83	0.44
11:G:9:LYS:HD2	53:5:651:G:H5'	2.00	0.44
20:P:14:LYS:HE2	20:P:14:LYS:HB3	1.83	0.44
21:Q:101:PHE:HD2	53:5:715:A:H61	1.65	0.44
27:c:202:GLU:OE1	27:c:202:GLU:N	2.49	0.44
35:k:13:ARG:NH2	51:3:1275:C:OP1	2.50	0.44
36:l:40:ASN:CG	36:l:41:TRP:H	2.25	0.44
40:p:13:ARG:HH22	51:3:1282:G:H5'	1.82	0.44
45:u:82:LYS:HD3	45:u:82:LYS:HA	1.70	0.44
51:3:35:U:C2	51:3:509:G:C2	3.06	0.44
51:3:338:G:H2'	51:3:339:U:H6	1.83	0.44
51:3:989:G:N2	51:3:1000:U:O2	2.40	0.44
51:3:1130:A:H2	54:6:58:G:N7	2.16	0.44
51:3:1168:A:O2'	51:3:2033:G:O2'	2.22	0.44
51:3:1305:G:H2'	51:3:1306:G:C8	2.53	0.44
51:3:1507:G:O2'	51:3:1508:G:OP1	2.31	0.44
51:3:2249:A:H2'	51:3:2250:G:C8	2.53	0.44
51:3:2604:U:O2'	51:3:2605:G:P	2.76	0.44
53:5:169:G:N2	53:5:196:G:H22	2.13	0.44
53:5:219:A:H2'	53:5:220:U:O4'	2.18	0.44
53:5:262:G:H1'	53:5:264:C:OP2	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:351:C:H1'	53:5:384:G:H1'	1.99	0.44
53:5:373:A:H2'	53:5:374:G:H8	1.83	0.44
53:5:501:A:H2'	53:5:502:C:H6	1.83	0.44
53:5:706:U:C2	53:5:707:G:C8	3.05	0.44
53:5:1229:A:H2'	53:5:1230:G:H8	1.83	0.44
53:5:1359:C:H2'	53:5:1360:G:C8	2.53	0.44
53:5:1443:A:C2	53:5:1444:G:H1'	2.53	0.44
54:7:44:U:OP1	54:7:44:U:H4'	2.17	0.44
54:7:55:U:H1'	54:7:59:A:N6	2.33	0.44
4:9:21:ILE:HG21	4:9:85:HIS:CD2	2.53	0.43
4:9:333:PHE:O	4:9:334:ARG:C	2.61	0.43
5:A:61:GLN:O	5:A:65:LEU:HD23	2.18	0.43
5:A:135:GLU:OE1	5:A:136:LYS:NZ	2.51	0.43
5:A:230:ASN:HB3	5:A:246:PHE:CE2	2.53	0.43
7:C:50:TYR:O	7:C:54:LEU:HG	2.18	0.43
12:H:18:LYS:NZ	53:5:1124:U:O2	2.42	0.43
13:I:59:ARG:HE	13:I:69:GLU:HB3	1.83	0.43
16:L:106:ALA:HA	53:5:943:C:OP1	2.18	0.43
22:R:44:PHE:O	22:R:47:ASN:ND2	2.51	0.43
26:b:123:ILE:HA	26:b:128:PHE:HB2	1.99	0.43
27:c:64:LYS:NZ	51:3:710:A:H5'	2.33	0.43
40:p:89:ILE:C	40:p:91:ARG:HH21	2.26	0.43
41:q:24:LYS:HB2	41:q:88:PRO:HB2	2.00	0.43
51:3:116:C:H2'	51:3:117:C:H6	1.83	0.43
51:3:333:A:H2'	51:3:334:A:C4	2.53	0.43
51:3:844:G:H4'	51:3:1283:A:O2'	2.18	0.43
51:3:869:U:O2'	51:3:2366:A:H1'	2.18	0.43
51:3:1212:C:C2	51:3:1213:U:C5	3.06	0.43
51:3:1237:G:H2'	51:3:1238:A:C8	2.52	0.43
51:3:1338:G:H2'	51:3:1339:U:C2	2.52	0.43
51:3:1416:G:H2'	51:3:1417:G:H8	1.83	0.43
51:3:1555:G:H2'	51:3:1556:U:C6	2.53	0.43
51:3:1884:A:H2'	51:3:1885:G:H8	1.83	0.43
51:3:2171:A:H3'	51:3:2172:A:H8	1.83	0.43
51:3:2264:G:H2'	51:3:2265:U:H6	1.83	0.43
51:3:2297:G:O6	51:3:2351:U:O4	2.36	0.43
51:3:2451:C:H2'	51:3:2452:G:C8	2.52	0.43
51:3:2513:G:HO2'	51:3:2514:U:P	2.40	0.43
51:3:2844:U:H2'	51:3:2845:U:C6	2.53	0.43
53:5:166:U:H2'	53:5:167:A:C8	2.53	0.43
53:5:761:U:H2'	53:5:762:G:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1109:U:H2'	53:5:1110:C:C6	2.53	0.43
1:0:42:LEU:HB3	51:3:127:A:H61	1.83	0.43
4:9:68:VAL:HG23	4:9:79:HIS:HB3	1.99	0.43
5:A:86:GLY:HA2	5:A:92:VAL:HG12	2.00	0.43
6:B:64:THR:OG1	6:B:101:ASN:OD1	2.33	0.43
6:B:116:ALA:HB1	6:B:203:VAL:HG13	2.00	0.43
8:D:206:ARG:H	8:D:206:ARG:HD3	1.83	0.43
10:F:24:ARG:HH22	53:5:1350:A:H5''	1.82	0.43
11:G:47:ILE:O	11:G:51:GLU:HG2	2.18	0.43
15:K:22:PRO:HA	15:K:25:HIS:HD2	1.83	0.43
15:K:113:GLY:HA2	15:K:118:VAL:HA	1.99	0.43
16:L:90:ARG:HG2	16:L:97:VAL:HA	2.00	0.43
18:N:30:THR:HG22	18:N:60:ARG:NH2	2.32	0.43
21:Q:91:LYS:HG2	21:Q:94:ARG:HH21	1.83	0.43
25:a:148:HIS:ND1	25:a:199:THR:O	2.51	0.43
26:b:186:GLU:OE1	26:b:186:GLU:N	2.27	0.43
28:d:36:ILE:CG2	28:d:89:VAL:HB	2.48	0.43
31:g:23:GLY:HA2	31:g:112:TYR:O	2.18	0.43
31:g:27:PHE:O	31:g:29:TYR:N	2.51	0.43
44:t:31:ARG:HG3	44:t:33:GLN:HG2	2.00	0.43
46:v:30:ASN:HB2	51:3:2238:G:H5''	2.01	0.43
51:3:203:A:N6	51:3:2442:A:OP2	2.35	0.43
51:3:759:U:C2'	51:3:760:G:H5'	2.48	0.43
51:3:827:G:O2'	51:3:2448:C:N3	2.36	0.43
51:3:1489:G:H2'	51:3:1490:G:C8	2.54	0.43
51:3:1759:C:H2'	51:3:1760:G:C8	2.53	0.43
52:4:2:U:H2'	52:4:3:U:C6	2.53	0.43
53:5:91:C:H2'	53:5:92:G:C8	2.53	0.43
53:5:201:G:H2'	53:5:202:A:C8	2.54	0.43
53:5:846:G:H2'	53:5:847:G:C8	2.52	0.43
53:5:1083:A:O4'	53:5:1158:A:N6	2.51	0.43
53:5:1254:A:O2'	53:5:1257:C:N4	2.51	0.43
53:5:1283:G:O6	53:5:1303:A:N6	2.51	0.43
5:A:83:LEU:HD22	5:A:176:LEU:HB2	2.00	0.43
6:B:61:THR:HG22	13:I:100:VAL:HA	1.99	0.43
16:L:118:ASN:OD1	16:L:120:LYS:NZ	2.44	0.43
19:O:61:ASP:OD1	19:O:62:THR:HG23	2.18	0.43
25:a:44:HIS:CD2	51:3:1820:U:H5''	2.54	0.43
27:c:182:HIS:CG	27:c:183:LEU:N	2.86	0.43
41:q:81:LYS:NZ	51:3:1218:G:OP1	2.47	0.43
42:r:57:ASN:CG	51:3:529:G:H21	2.26	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:r:88:ARG:HB3	42:r:92:SER:O	2.18	0.43
43:s:8:LEU:HB2	43:s:30:VAL:HG13	1.99	0.43
49:y:38:LEU:HB2	49:y:41:ARG:HB2	1.99	0.43
51:3:97:A:H2'	51:3:98:C:O4'	2.19	0.43
51:3:199:A:H2'	51:3:202:C:N4	2.34	0.43
51:3:755:C:H2'	51:3:756:A:H8	1.83	0.43
51:3:901:C:O2'	51:3:902:U:O5'	2.33	0.43
51:3:1583:G:HO2'	51:3:1584:U:P	2.41	0.43
51:3:2671:G:H2'	51:3:2672:G:O4'	2.18	0.43
51:3:2764:U:H4'	51:3:2765:A:OP1	2.18	0.43
51:3:2789:A:H5''	51:3:2790:A:H5'	1.99	0.43
53:5:715:A:H5''	53:5:716:C:C5	2.52	0.43
53:5:733:A:H2'	53:5:734:A:H8	1.81	0.43
53:5:962:G:O5'	53:5:963:U:H2'	2.18	0.43
53:5:1329:G:C2	53:5:1330:A:C5	3.07	0.43
54:6:63:U:H2'	54:6:64:G:C8	2.53	0.43
54:7:39:A:C4	54:7:40:A:C8	3.06	0.43
54:7:53:A:C2	54:7:54:G:C5	3.06	0.43
4:9:107:SER:OG	4:9:110:ASP:HB2	2.18	0.43
5:A:111:ARG:HG3	53:5:1091:C:OP2	2.18	0.43
7:C:2:LYS:HB2	7:C:3:TYR:HD1	1.83	0.43
9:E:43:LYS:HE3	9:E:43:LYS:HB2	1.84	0.43
14:J:100:ILE:HG22	14:J:102:GLU:H	1.83	0.43
15:K:79:TYR:CD1	15:K:103:LEU:HD21	2.54	0.43
26:b:79:LYS:NZ	51:3:2833:A:H5''	2.33	0.43
29:e:3:LYS:N	29:e:6:ASN:OD1	2.52	0.43
29:e:99:ALA:HB1	29:e:106:LEU:HD11	2.01	0.43
35:k:48:ARG:NH2	51:3:200:A:OP2	2.51	0.43
38:n:11:ARG:HA	38:n:14:ARG:NE	2.33	0.43
44:t:9:LYS:NZ	44:t:21:SER:HB3	2.29	0.43
49:y:12:ARG:HA	49:y:15:LYS:HE3	1.99	0.43
51:3:703:A:H2'	51:3:705:A:N6	2.33	0.43
51:3:848:U:H2'	51:3:849:C:C6	2.53	0.43
51:3:963:U:H2'	51:3:964:A:H8	1.83	0.43
51:3:984:C:H1'	51:3:1020:G:C8	2.53	0.43
51:3:1456:C:N4	51:3:1604:A:OP2	2.34	0.43
51:3:1513:A:OP2	51:3:1513:A:H8	2.01	0.43
51:3:1853:G:H2'	51:3:1854:A:C4	2.52	0.43
51:3:2324:A:H2'	51:3:2325:U:C6	2.53	0.43
51:3:2586:G:C2	51:3:2587:U:C5	3.06	0.43
51:3:2717:G:H2'	51:3:2718:C:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:546:G:H2'	53:5:547:C:C6	2.53	0.43
53:5:759:C:H2'	53:5:760:U:H6	1.83	0.43
53:5:1408:A:H2'	53:5:1409:A:H8	1.83	0.43
10:F:101:ARG:NH1	53:5:934:G:OP1	2.51	0.43
12:H:47:ILE:HA	12:H:50:MET:HE2	2.00	0.43
15:K:40:SER:HB3	15:K:43:LYS:NZ	2.34	0.43
24:T:28:LEU:HG	24:T:31:ARG:NH2	2.33	0.43
25:a:20:ILE:H	25:a:20:ILE:HD12	1.84	0.43
30:f:19:VAL:O	30:f:19:VAL:CG1	2.66	0.43
34:j:17:LYS:HE3	34:j:45:ASP:HB3	2.00	0.43
51:3:54:A:OP2	51:3:118:G:N1	2.44	0.43
51:3:488:G:H2'	51:3:488:G:N3	2.33	0.43
51:3:741:A:H2'	51:3:742:G:O4'	2.18	0.43
51:3:807:U:H2'	51:3:808:U:C6	2.53	0.43
51:3:994:U:H5''	51:3:995:A:OP1	2.18	0.43
51:3:1077:G:H2'	51:3:1078:C:C6	2.53	0.43
51:3:1176:U:O2	51:3:1177:A:N6	2.51	0.43
51:3:1385:U:H3	51:3:1402:G:H1	1.65	0.43
51:3:1524:C:C2	51:3:1525:G:C8	3.06	0.43
51:3:2073:C:H2'	51:3:2074:G:C8	2.53	0.43
51:3:2082:U:O2'	51:3:2605:G:N2	2.51	0.43
51:3:2571:U:N3	51:3:2574:A:OP2	2.34	0.43
53:5:18:U:H2'	53:5:19:C:C6	2.54	0.43
53:5:434:U:H2'	53:5:435:U:C6	2.54	0.43
53:5:575:A:H2'	53:5:576:A:H8	1.83	0.43
53:5:577:G:H2'	53:5:578:C:H6	1.81	0.43
53:5:709:A:H2'	53:5:710:G:C8	2.52	0.43
53:5:787:A:H2'	53:5:787:A:N3	2.32	0.43
53:5:843:C:H2'	53:5:844:U:C6	2.53	0.43
53:5:971:A:N7	53:5:1336:C:N4	2.66	0.43
53:5:1200:G:O2'	53:5:1201:C:O5'	2.32	0.43
54:6:29:C:H2'	54:6:30:G:C8	2.53	0.43
54:6:53:A:C2	54:6:54:G:C5	3.06	0.43
6:B:26:SER:O	6:B:27:HIS:ND1	2.51	0.43
12:H:109:ASP:OD1	12:H:109:ASP:N	2.51	0.43
26:b:75:LEU:HD11	26:b:92:MET:HE1	1.99	0.43
34:j:22:ILE:HG22	34:j:40:VAL:HG13	2.00	0.43
36:l:29:PHE:H	36:l:105:GLU:CD	2.27	0.43
36:l:50:ALA:O	36:l:54:ILE:HG12	2.19	0.43
37:m:109:ASP:HB3	37:m:111:THR:HG23	2.00	0.43
38:n:98:TYR:HB2	51:3:2384:A:N6	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:p:12:ARG:HH12	51:3:1281:A:H3'	1.84	0.43
51:3:388:U:H2'	51:3:389:C:C6	2.53	0.43
51:3:881:A:H4'	51:3:882:C:C5	2.54	0.43
51:3:1043:C:OP2	51:3:1044:C:O2'	2.32	0.43
51:3:1932:C:N3	51:3:1936:G:N1	2.57	0.43
51:3:2288:G:N3	51:3:2396:A:H2	2.17	0.43
51:3:2537:G:H5''	51:3:2538:A:H5''	2.01	0.43
51:3:2575:G:C2	51:3:2576:A:C5	3.07	0.43
52:4:49:G:H2'	52:4:50:C:C6	2.53	0.43
52:4:56:A:C4	52:4:57:G:C8	3.07	0.43
53:5:9:A:O2'	53:5:10:G:O4'	2.32	0.43
53:5:47:G:H1	53:5:391:C:H42	1.65	0.43
53:5:140:U:H2'	53:5:141:A:C8	2.52	0.43
53:5:513:G:O2'	53:5:514:U:H5'	2.18	0.43
53:5:951:U:O2'	53:5:952:U:O4'	2.28	0.43
53:5:1383:A:H2'	53:5:1384:A:C8	2.53	0.43
53:5:1444:G:H2'	53:5:1445:G:C8	2.53	0.43
53:5:1482:A:H2'	53:5:1483:C:C6	2.54	0.43
53:5:1502:G:H2'	53:5:1503:U:C6	2.53	0.43
54:6:44:U:H4'	54:6:44:U:OP1	2.17	0.43
54:6:45:G:H2'	54:6:46:U:C6	2.54	0.43
54:6:56:U:H3	54:6:58:G:C5'	2.31	0.43
54:7:29:C:H2'	54:7:30:G:C8	2.53	0.43
9:E:8:LEU:HG	9:E:84:ARG:HB2	2.00	0.43
13:I:90:ILE:HD12	13:I:93:LEU:HB3	2.00	0.43
16:L:23:PHE:O	16:L:66:GLU:HB2	2.19	0.43
19:O:38:LYS:HB2	53:5:449:A:H8	1.83	0.43
26:b:109:ASP:HA	26:b:177:GLN:HA	2.00	0.43
39:o:31:VAL:HG13	39:o:90:LEU:HA	2.00	0.43
44:t:42:VAL:HG22	44:t:43:THR:H	1.84	0.43
51:3:1041:C:H2'	51:3:1042:C:C6	2.54	0.43
51:3:1138:A:H2'	51:3:1139:C:O4'	2.18	0.43
51:3:1319:C:H2'	51:3:1320:C:C6	2.53	0.43
51:3:1343:C:H2'	51:3:1344:U:C6	2.53	0.43
51:3:1415:A:C6	51:3:1429:G:N1	2.86	0.43
51:3:1649:C:OP2	51:3:1651:C:N4	2.44	0.43
51:3:1688:A:H2'	51:3:1689:A:C8	2.54	0.43
51:3:1846:A:C4	51:3:1847:G:C8	3.06	0.43
51:3:2346:G:N1	51:3:2347:G:C6	2.86	0.43
53:5:58:G:H2'	53:5:59:C:C6	2.53	0.43
53:5:320:G:N2	53:5:323:A:OP2	2.46	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:747:C:H2'	53:5:748:U:H6	1.82	0.43
53:5:1052:G:H2'	53:5:1053:U:C6	2.54	0.43
53:5:1140:A:C2'	53:5:1141:U:H5'	2.49	0.43
53:5:1406:U:O2	53:5:1444:G:N2	2.45	0.43
53:5:1414:U:H2'	53:5:1415:G:C8	2.54	0.43
54:6:55:U:H1'	54:6:59:A:N6	2.33	0.43
54:7:56:U:H3	54:7:58:G:C5'	2.31	0.43
1:0:30:VAL:O	1:0:34:ARG:HG3	2.19	0.43
2:1:9:LYS:NZ	51:3:251:G:O6	2.44	0.43
7:C:55:GLN:HG2	7:C:59:ARG:HD2	2.01	0.43
9:E:92:ARG:HH11	21:Q:88:LYS:HB3	1.83	0.43
10:F:147:ASN:HB3	10:F:150:PHE:HD2	1.84	0.43
15:K:61:ALA:HB3	15:K:63:ARG:NH2	2.33	0.43
20:P:68:PRO:HB3	20:P:74:ARG:HG3	2.00	0.43
27:c:115:VAL:HA	27:c:118:GLU:HG2	1.99	0.43
38:n:79:ASP:O	38:n:83:LYS:HD3	2.18	0.43
40:p:15:LYS:O	40:p:19:GLN:NE2	2.51	0.43
42:r:43:ALA:O	42:r:47:ILE:HG22	2.19	0.43
45:u:64:ASN:HB2	45:u:97:VAL:HB	2.01	0.43
47:w:13:GLU:O	47:w:16:VAL:HG22	2.19	0.43
51:3:165:U:H1'	51:3:167:A:H62	1.84	0.43
51:3:353:G:H1	51:3:357:A:H62	1.67	0.43
51:3:526:G:H2'	51:3:527:A:C8	2.54	0.43
51:3:639:G:H2'	51:3:640:U:C6	2.54	0.43
51:3:1264:U:H2'	51:3:1265:G:O4'	2.19	0.43
51:3:1311:G:H1'	51:3:1357:U:H3	1.83	0.43
51:3:1669:A:H2'	51:3:1669:A:N3	2.34	0.43
51:3:1684:A:H2'	51:3:1685:G:H8	1.83	0.43
51:3:1766:A:H62	51:3:2704:U:HO2'	1.58	0.43
51:3:1916:C:H2'	51:3:1917:G:C8	2.54	0.43
51:3:2676:G:H2'	51:3:2677:A:H8	1.84	0.43
53:5:704:U:N3	53:5:705:A:N7	2.67	0.43
53:5:722:G:H2'	53:5:723:C:H6	1.84	0.43
53:5:1008:G:H2'	53:5:1009:G:O4'	2.19	0.43
53:5:1061:U:H2'	53:5:1062:C:H6	1.84	0.43
4:9:41:LYS:HD2	4:9:41:LYS:HA	1.94	0.43
4:9:323:PHE:HB2	4:9:327:TYR:HB2	2.00	0.43
5:A:175:LEU:HD23	5:A:175:LEU:HA	1.95	0.43
6:B:115:SER:O	6:B:119:ILE:HG12	2.19	0.43
12:H:87:ARG:O	12:H:91:GLN:HG2	2.19	0.43
15:K:22:PRO:HA	15:K:25:HIS:CD2	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:e:140:SER:O	29:e:144:VAL:HG12	2.19	0.43
30:f:47:ARG:HE	30:f:51:LEU:HG	1.84	0.43
34:j:111:TYR:HB3	34:j:114:ILE:HD12	2.01	0.43
42:r:22:GLN:O	42:r:25:VAL:HG12	2.19	0.43
42:r:95:MET:HE3	42:r:95:MET:HB3	1.90	0.43
42:r:124:LEU:HA	42:r:127:LYS:HD3	2.01	0.43
46:v:2:ALA:HB2	51:3:1394:A:P	2.58	0.43
46:v:18:ARG:HD2	46:v:22:LYS:C	2.44	0.43
51:3:17:G:H2'	51:3:18:G:C8	2.54	0.43
51:3:420:A:H62	51:3:425:U:H3	1.67	0.43
51:3:589:A:H2'	51:3:590:U:O4'	2.18	0.43
51:3:675:U:H2'	51:3:676:U:C6	2.54	0.43
51:3:698:A:H2'	51:3:699:U:H6	1.84	0.43
51:3:771:C:H2'	51:3:772:C:C6	2.53	0.43
51:3:1458:A:H2'	51:3:1459:A:C8	2.54	0.43
51:3:1507:G:H1'	51:3:1508:G:OP2	2.18	0.43
51:3:1527:U:C2	51:3:1528:G:C8	3.07	0.43
51:3:2480:G:H2'	51:3:2537:G:N2	2.33	0.43
51:3:2481:U:O2	51:3:2481:U:H2'	2.19	0.43
52:4:1:U:H2'	52:4:2:U:C6	2.54	0.43
53:5:255:G:H2'	53:5:256:G:C8	2.53	0.43
53:5:515:G:N1	53:5:531:A:OP2	2.35	0.43
53:5:826:G:H2'	53:5:827:C:C6	2.54	0.43
54:7:63:U:H2'	54:7:64:G:C8	2.53	0.43
7:C:111:ARG:NH2	53:5:403:A:OP1	2.43	0.43
7:C:147:LYS:HG3	7:C:150:LYS:NZ	2.34	0.43
8:D:76:ILE:HG22	53:5:17:A:H4'	2.00	0.43
10:F:144:ALA:C	10:F:146:ALA:H	2.26	0.43
15:K:107:ARG:NH1	53:5:905:U:OP1	2.43	0.43
18:N:33:ILE:O	18:N:37:THR:HG23	2.19	0.43
18:N:47:PHE:CG	53:5:761:U:H5''	2.53	0.43
24:T:38:LYS:HE3	24:T:38:LYS:HB2	1.88	0.43
29:e:79:ILE:HA	29:e:82:VAL:HG12	2.01	0.43
36:l:30:GLY:HA2	36:l:107:ALA:HB2	2.00	0.43
36:l:118:LEU:HD13	36:l:131:ILE:HG13	2.01	0.43
37:m:50:THR:HB	51:3:2844:U:H5''	2.01	0.43
39:o:32:ASN:CG	39:o:49:THR:HG22	2.44	0.43
43:s:19:ASN:HB3	43:s:26:LYS:HD3	1.99	0.43
45:u:99:LYS:HD3	45:u:100:HIS:N	2.34	0.43
51:3:28:G:H8	51:3:28:G:OP2	2.02	0.43
51:3:42:U:O4	51:3:43:A:N6	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:158:U:H2'	51:3:159:G:H8	1.83	0.43
51:3:278:U:H2'	51:3:279:U:H6	1.84	0.43
51:3:768:G:H3'	51:3:796:A:H61	1.84	0.43
51:3:1052:A:H61	51:3:1181:A:H61	1.63	0.43
51:3:2122:G:N1	51:3:2126:A:OP1	2.50	0.43
51:3:2385:A:H2'	51:3:2386:A:O4'	2.19	0.43
51:3:2494:C:H2'	51:3:2495:A:H8	1.84	0.43
51:3:2638:G:H2'	51:3:2639:G:C8	2.54	0.43
51:3:2656:G:C6	51:3:2681:G:C6	3.06	0.43
53:5:20:C:H2'	53:5:21:U:C6	2.54	0.43
53:5:127:A:N6	53:5:218:U:O4	2.52	0.43
53:5:438:A:H1'	53:5:495:U:C2	2.54	0.43
53:5:565:G:N2	53:5:878:U:H3	2.16	0.43
53:5:707:G:H2'	53:5:708:A:H8	1.84	0.43
53:5:832:G:H2'	53:5:833:G:H8	1.84	0.43
53:5:858:A:H2'	53:5:859:A:C8	2.54	0.43
53:5:872:C:H2'	53:5:873:U:C6	2.54	0.43
53:5:940:G:H1'	53:5:1311:G:H1'	2.01	0.43
53:5:1209:C:H2'	53:5:1210:U:H6	1.83	0.43
54:7:67:C:H2'	54:7:68:G:H8	1.84	0.43
6:B:56:VAL:HG12	6:B:69:VAL:HG22	2.01	0.42
7:C:60:MET:HG2	7:C:64:TYR:CE2	2.54	0.42
14:J:34:VAL:HG12	53:5:681:U:O2	2.19	0.42
17:M:4:LYS:O	17:M:8:VAL:HG23	2.18	0.42
26:b:53:SER:HB3	26:b:78:THR:OG1	2.19	0.42
28:d:17:GLN:HE22	28:d:25:ILE:HG22	1.84	0.42
28:d:122:PHE:CE2	28:d:163:ASP:HB2	2.54	0.42
40:p:3:ILE:HG12	51:3:1230:U:H1'	2.01	0.42
41:q:66:ARG:HH12	51:3:1251:G:P	2.42	0.42
46:v:51:SER:O	46:v:55:LEU:N	2.51	0.42
47:w:15:LEU:HD12	47:w:54:ILE:HG23	2.02	0.42
51:3:67:C:H2'	51:3:68:C:C6	2.54	0.42
51:3:122:G:H2'	51:3:123:G:C8	2.54	0.42
51:3:386:U:H2'	51:3:387:U:C6	2.53	0.42
51:3:889:G:H2'	51:3:890:U:C6	2.54	0.42
51:3:1229:U:H2'	51:3:1230:U:C6	2.53	0.42
51:3:1499:C:H2'	51:3:1500:A:C8	2.53	0.42
51:3:2541:C:H2'	51:3:2542:A:O4'	2.19	0.42
51:3:2722:G:H2'	51:3:2723:C:H6	1.84	0.42
51:3:2835:G:N2	51:3:2887:A:O2'	2.50	0.42
52:4:103:C:H2'	52:4:104:C:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:40:G:H2'	53:5:41:C:O4'	2.19	0.42
53:5:92:G:OP1	53:5:321:A:N6	2.52	0.42
53:5:366:C:H2'	53:5:367:A:H8	1.84	0.42
53:5:498:G:H2'	53:5:499:U:C6	2.54	0.42
53:5:670:G:H2'	53:5:671:G:C8	2.52	0.42
4:9:12:HIS:CD2	4:9:205:ARG:HH21	2.37	0.42
13:I:58:ILE:HG22	13:I:68:ARG:HG2	1.99	0.42
15:K:41:PRO:HD2	53:5:359:A:N6	2.34	0.42
19:O:44:ILE:HG12	19:O:70:THR:HG21	2.01	0.42
26:b:31:CYS:SG	26:b:191:VAL:HG13	2.59	0.42
26:b:62:LEU:HD12	26:b:62:LEU:HA	1.91	0.42
33:i:120:ARG:NH1	51:3:562:C:O2'	2.52	0.42
34:j:30:LYS:HD3	51:3:2682:A:H4'	2.01	0.42
35:k:113:LYS:NZ	51:3:671:C:H41	2.17	0.42
37:m:75:VAL:O	37:m:78:LEU:HG	2.19	0.42
38:n:110:ARG:HH22	51:3:2384:A:H1'	1.85	0.42
40:p:107:LEU:HD22	41:q:43:GLU:HG2	2.00	0.42
42:r:58:ALA:HA	42:r:62:HIS:ND1	2.34	0.42
49:y:17:ARG:NH2	51:3:1296:G:OP2	2.51	0.42
51:3:388:U:H2'	51:3:389:C:H6	1.84	0.42
51:3:450:C:H2'	51:3:451:A:C8	2.54	0.42
51:3:534:U:H2'	51:3:535:G:O4'	2.20	0.42
51:3:670:G:H2'	51:3:671:C:C6	2.55	0.42
51:3:1417:G:H2'	51:3:1418:U:H6	1.84	0.42
51:3:2048:U:H2'	51:3:2049:A:C8	2.54	0.42
51:3:2092:U:H2'	51:3:2093:U:C6	2.54	0.42
51:3:2228:U:H2'	51:3:2229:C:H6	1.84	0.42
51:3:2377:A:H2'	51:3:2378:G:C8	2.54	0.42
51:3:2496:G:C6	51:3:2497:U:C4	3.07	0.42
51:3:2565:G:H2'	51:3:2566:C:C6	2.54	0.42
51:3:2676:G:H2'	51:3:2677:A:C8	2.54	0.42
53:5:285:G:H2'	53:5:286:C:C6	2.54	0.42
53:5:369:A:H61	53:5:387:G:H1'	1.84	0.42
53:5:1321:G:N2	53:5:1322:U:O4	2.39	0.42
2:1:2:LYS:HG2	51:3:246:G:C8	2.54	0.42
4:9:91:ASN:O	4:9:94:THR:HB	2.18	0.42
10:F:35:LYS:HG3	53:5:1348:G:H5''	2.00	0.42
10:F:125:ASP:HB3	10:F:130:THR:HB	2.00	0.42
23:S:49:SER:O	23:S:53:ARG:HG2	2.18	0.42
25:a:26:LEU:HD11	25:a:87:GLU:HA	2.01	0.42
25:a:253:ALA:O	25:a:255:ARG:HD3	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:f:71:VAL:HA	30:f:74:GLN:HG2	2.02	0.42
33:i:71:LYS:HE2	51:3:1057:G:N7	2.34	0.42
34:j:76:HIS:H	39:o:78:ASN:HB3	1.84	0.42
35:k:114:LEU:HB2	35:k:128:VAL:HG21	2.01	0.42
38:n:39:ILE:HD11	38:n:101:ARG:HD3	2.00	0.42
43:s:54:LYS:HE3	43:s:54:LYS:HB2	1.66	0.42
49:y:6:ARG:HD2	49:y:6:ARG:HA	1.86	0.42
51:3:30:A:H2'	51:3:31:U:H6	1.83	0.42
51:3:228:A:H2'	51:3:229:C:O4'	2.19	0.42
51:3:331:A:H2'	51:3:332:G:O4'	2.19	0.42
51:3:965:U:H2'	51:3:966:U:C6	2.55	0.42
51:3:1298:A:H1'	51:3:2020:A:H61	1.83	0.42
51:3:1803:U:H2'	51:3:1804:A:C8	2.54	0.42
51:3:2297:G:H2'	51:3:2298:G:C8	2.53	0.42
51:3:2312:G:N2	51:3:2320:U:H3	2.15	0.42
51:3:2402:C:H3'	51:3:2403:C:H6	1.84	0.42
51:3:2465:U:H2'	51:3:2466:G:C8	2.55	0.42
51:3:2502:G:C2	51:3:2503:G:C5	3.08	0.42
51:3:2709:C:P	51:3:2710:G:H5''	2.58	0.42
53:5:36:G:H1	53:5:547:C:H42	1.67	0.42
53:5:109:G:H2'	53:5:110:U:C6	2.53	0.42
53:5:378:A:H2'	53:5:379:A:C8	2.54	0.42
53:5:662:G:H21	53:5:729:C:H3'	1.84	0.42
53:5:1077:U:H3	53:5:1090:G:N2	2.03	0.42
53:5:1225:A:H1'	53:5:1345:G:HO2'	1.84	0.42
54:6:7:U:H2'	54:6:8:G:C8	2.55	0.42
27:c:54:THR:HG22	27:c:57:GLU:OE1	2.18	0.42
27:c:128:VAL:HG12	27:c:199:VAL:O	2.20	0.42
28:d:108:LEU:HD23	28:d:108:LEU:HA	1.94	0.42
29:e:3:LYS:NZ	51:3:2758:A:OP2	2.52	0.42
33:i:3:LYS:O	51:3:1030:U:O2'	2.36	0.42
33:i:116:ARG:NE	51:3:564:A:OP1	2.52	0.42
34:j:22:ILE:HG12	51:3:1959:A:N7	2.34	0.42
35:k:19:THR:O	35:k:28:LEU:HB3	2.19	0.42
38:n:5:THR:O	38:n:9:ARG:HG3	2.19	0.42
47:w:91:LEU:HB3	47:w:95:LYS:HZ3	1.83	0.42
51:3:72:G:H3'	51:3:114:U:H4'	2.00	0.42
51:3:122:G:H2'	51:3:123:G:H8	1.84	0.42
51:3:514:A:N6	51:3:535:G:O2'	2.53	0.42
51:3:664:G:C6	51:3:672:G:C2	3.07	0.42
51:3:990:G:H2'	51:3:991:G:H8	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1097:G:H2'	51:3:1098:G:C8	2.54	0.42
51:3:1137:C:H2'	51:3:1138:A:C8	2.51	0.42
51:3:1242:G:O2'	51:3:1243:A:OP2	2.35	0.42
53:5:612:G:O6	53:5:624:U:O4	2.37	0.42
53:5:787:A:OP1	54:7:40:A:H5'	2.19	0.42
53:5:982:A:C6	53:5:1194:A:N6	2.87	0.42
53:5:1318:C:O2'	53:5:1322:U:O2'	2.38	0.42
53:5:1411:A:H2'	53:5:1412:C:H6	1.84	0.42
54:7:45:G:H2'	54:7:46:U:C6	2.54	0.42
3:2:2:LYS:HD2	51:3:2486:A:OP2	2.19	0.42
4:9:177:LYS:HD3	4:9:185:TRP:CE2	2.54	0.42
4:9:308:GLU:HA	4:9:358:SER:HA	2.01	0.42
7:C:96:ARG:HB2	7:C:99:ASN:HD22	1.84	0.42
13:I:63:VAL:HG13	53:5:967:C:H1'	2.02	0.42
22:R:29:ARG:HD2	22:R:47:ASN:HA	2.01	0.42
25:a:125:GLU:HG3	25:a:197:ARG:HH21	1.84	0.42
27:c:97:ARG:HD3	27:c:99:TYR:CE1	2.54	0.42
27:c:158:LEU:HG	27:c:179:GLN:HE21	1.84	0.42
30:f:41:LYS:HG3	30:f:42:LYS:HG2	2.00	0.42
42:r:115:GLN:CD	42:r:115:GLN:H	2.28	0.42
51:3:391:U:H2'	51:3:392:A:H8	1.84	0.42
51:3:454:G:H2'	51:3:455:G:H8	1.85	0.42
51:3:956:U:H2'	51:3:957:G:O4'	2.19	0.42
51:3:965:U:H2'	51:3:966:U:H6	1.84	0.42
51:3:1242:G:N2	51:3:1266:G:O2'	2.38	0.42
51:3:1663:G:N2	51:3:2706:U:H4'	2.33	0.42
51:3:1989:U:H2'	51:3:1990:C:C6	2.54	0.42
51:3:2161:G:C6	51:3:2162:U:C4	3.07	0.42
51:3:2474:C:C2	51:3:2493:G:N2	2.87	0.42
51:3:2655:U:H2'	51:3:2656:G:H8	1.84	0.42
51:3:2878:G:N1	51:3:2879:U:C4	2.87	0.42
53:5:312:A:O5'	53:5:349:A:N6	2.53	0.42
53:5:610:C:H2'	53:5:611:A:C8	2.55	0.42
53:5:855:G:H2'	53:5:856:U:C6	2.54	0.42
53:5:1086:U:P	53:5:1099:G:H1	2.43	0.42
53:5:1244:A:C8	53:5:1245:A:H1'	2.55	0.42
53:5:1267:G:C2	53:5:1268:G:C5	3.08	0.42
54:7:70:G:H2'	54:7:71:A:C8	2.55	0.42
10:F:34:LYS:HD3	10:F:36:GLY:N	2.33	0.42
15:K:15:LYS:HD3	15:K:15:LYS:HA	1.85	0.42
20:P:41:ARG:NH1	53:5:233:C:H5''	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:P:52:GLU:HB2	20:P:83:ARG:HH12	1.85	0.42
29:e:143:LEU:HD12	29:e:144:VAL:N	2.35	0.42
35:k:95:ARG:NH1	35:k:110:LEU:H	2.15	0.42
42:r:5:ALA:C	42:r:104:VAL:HG23	2.45	0.42
44:t:94:ASP:OD1	44:t:94:ASP:N	2.47	0.42
51:3:35:U:N3	51:3:509:G:N1	2.68	0.42
51:3:127:A:O2'	51:3:128:A:O4'	2.26	0.42
51:3:155:A:H2'	51:3:156:A:C8	2.55	0.42
51:3:164:A:H62	51:3:168:A:H61	1.68	0.42
51:3:172:U:H2'	51:3:173:C:C6	2.54	0.42
51:3:427:A:H4'	51:3:448:A:H4'	2.02	0.42
51:3:571:A:H3'	51:3:572:G:H8	1.85	0.42
51:3:691:G:H2'	51:3:692:U:H6	1.85	0.42
51:3:1065:G:H2'	51:3:1066:G:C8	2.55	0.42
51:3:1102:A:N7	54:6:58:G:H4'	2.35	0.42
51:3:1298:A:H1'	51:3:2020:A:N6	2.34	0.42
51:3:1320:C:H2'	51:3:1321:C:C6	2.55	0.42
51:3:1802:C:H2'	51:3:1803:U:C6	2.55	0.42
51:3:1815:U:O2'	51:3:1816:A:C8	2.71	0.42
51:3:2806:A:H2'	51:3:2807:G:O4'	2.20	0.42
53:5:22:G:H2'	53:5:23:G:C8	2.53	0.42
53:5:255:G:H2'	53:5:256:G:H8	1.85	0.42
53:5:641:U:H2'	53:5:642:A:H8	1.85	0.42
53:5:827:C:H2'	53:5:828:U:C6	2.54	0.42
53:5:1096:A:H2'	53:5:1097:G:C8	2.53	0.42
54:6:59:A:C5	54:6:62:C:C4	3.08	0.42
54:7:7:U:H2'	54:7:8:G:C8	2.55	0.42
5:A:237:ALA:O	5:A:242:MET:N	2.48	0.42
6:B:169:LYS:HA	6:B:169:LYS:HD3	1.80	0.42
7:C:1:MET:HB2	53:5:544:A:C2	2.55	0.42
7:C:1:MET:N	53:5:545:A:OP2	2.49	0.42
7:C:80:LYS:HD2	53:5:611:A:P	2.60	0.42
9:E:7:LEU:HG	9:E:82:VAL:HG13	2.02	0.42
14:J:29:ASP:N	14:J:33:ASN:O	2.43	0.42
14:J:104:ASN:OD1	14:J:105:GLU:N	2.53	0.42
15:K:130:TYR:OH	53:5:520:C:H5''	2.20	0.42
16:L:13:LYS:HA	16:L:44:ARG:HA	2.01	0.42
22:R:34:TRP:CD1	53:5:1010:A:C8	3.07	0.42
25:a:80:GLU:O	25:a:102:ALA:N	2.48	0.42
25:a:166:SER:H	25:a:203:VAL:HB	1.85	0.42
38:n:2:LYS:HE3	51:3:2304:U:OP1	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:n:29:VAL:HG12	38:n:44:TRP:O	2.19	0.42
51:3:680:A:C4	51:3:682:A:C8	3.08	0.42
51:3:1008:A:H8	51:3:1008:A:OP2	2.02	0.42
51:3:1013:G:H2'	51:3:1014:G:H8	1.85	0.42
51:3:1077:G:N2	51:3:1148:U:O2	2.50	0.42
51:3:1226:G:H2'	51:3:1227:C:H6	1.85	0.42
51:3:1504:G:H2'	51:3:1505:G:C8	2.54	0.42
51:3:1741:G:H2'	51:3:1742:C:H6	1.84	0.42
51:3:2656:G:H2'	51:3:2657:C:C6	2.54	0.42
52:4:3:U:N3	52:4:4:G:N7	2.68	0.42
52:4:29:C:O2'	52:4:51:A:N1	2.53	0.42
53:5:22:G:H2'	53:5:23:G:H8	1.84	0.42
53:5:744:U:H4'	53:5:745:U:C5	2.54	0.42
53:5:975:C:H3'	53:5:976:U:C5	2.55	0.42
54:6:67:C:H2'	54:6:68:G:H8	1.84	0.42
1:0:35:ARG:HE	1:0:42:LEU:HD11	1.85	0.42
1:0:36:LYS:HE3	1:0:36:LYS:HB3	1.84	0.42
10:F:54:LYS:O	10:F:55:GLU:HG3	2.20	0.42
14:J:35:LEU:HD23	14:J:36:CYS:SG	2.59	0.42
14:J:115:LYS:HD3	14:J:116:PRO:HD2	2.01	0.42
14:J:121:ARG:NE	53:5:1481:U:O2	2.47	0.42
19:O:73:TRP:CZ3	53:5:469:C:H5''	2.55	0.42
25:a:169:ARG:HB2	25:a:183:GLN:HB3	2.00	0.42
28:d:27:GLN:HG2	52:4:55:A:H1'	2.01	0.42
30:f:68:LEU:HA	30:f:71:VAL:HG22	2.02	0.42
34:j:5:MET:N	34:j:21:ILE:O	2.38	0.42
39:o:19:LYS:HZ2	39:o:23:PRO:HD2	1.84	0.42
42:r:128:ARG:NH1	51:3:1249:A:H1'	2.35	0.42
51:3:73:A:OP1	51:3:113:U:O2'	2.29	0.42
51:3:335:G:C6	51:3:351:G:C5	3.07	0.42
51:3:941:C:H2'	51:3:942:A:C8	2.55	0.42
51:3:1004:U:H2'	51:3:1005:G:H8	1.85	0.42
51:3:1114:C:C5	51:3:1123:A:H5''	2.51	0.42
51:3:1889:U:H4'	51:3:1890:U:OP1	2.19	0.42
51:3:1896:A:H2'	51:3:1897:A:C8	2.54	0.42
51:3:2599:C:H2'	51:3:2600:G:C8	2.54	0.42
51:3:2683:G:H2'	51:3:2684:G:C8	2.54	0.42
51:3:2699:C:H2'	51:3:2700:C:H6	1.84	0.42
52:4:54:U:H1'	52:4:55:A:OP2	2.19	0.42
53:5:372:G:H2'	53:5:373:A:H8	1.85	0.42
53:5:396:C:H2'	53:5:397:C:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:573:G:C6	53:5:875:G:N1	2.88	0.42
53:5:631:C:H2'	53:5:632:A:H8	1.85	0.42
53:5:636:G:H2'	53:5:637:A:H8	1.84	0.42
53:5:1066:U:H2'	53:5:1067:C:C6	2.55	0.42
53:5:1223:A:H2'	53:5:1224:C:C6	2.54	0.42
53:5:1285:G:H2'	53:5:1286:G:H8	1.85	0.42
53:5:1294:U:H2'	53:5:1295:U:C6	2.55	0.42
54:6:70:G:H2'	54:6:71:A:C8	2.55	0.42
4:9:30:ALA:HB2	4:9:47:TYR:HB2	2.02	0.42
6:B:32:LYS:HA	6:B:35:ILE:HG12	2.01	0.42
6:B:109:ILE:HG23	6:B:112:PRO:HB3	2.01	0.42
9:E:110:GLN:NE2	53:5:838:A:H1'	2.35	0.42
11:G:55:ALA:N	11:G:73:ASN:O	2.51	0.42
13:I:24:LEU:HG	13:I:78:ARG:HH21	1.85	0.42
14:J:77:LEU:HD22	14:J:90:ILE:HD11	2.02	0.42
15:K:18:LYS:NZ	53:5:903:A:OP1	2.51	0.42
25:a:258:TRP:NE1	51:3:1813:C:OP1	2.52	0.42
27:c:130:GLN:HA	27:c:133:PHE:HD2	1.84	0.42
30:f:84:HIS:HB3	30:f:87:ARG:HB3	2.01	0.42
35:k:20:LEU:HA	35:k:28:LEU:HD22	2.01	0.42
35:k:117:HIS:HB2	51:3:673:A:H5''	2.01	0.42
38:n:75:GLN:O	38:n:79:ASP:N	2.38	0.42
51:3:246:G:N2	51:3:258:G:H2'	2.35	0.42
51:3:335:G:C6	51:3:351:G:C6	3.08	0.42
51:3:877:G:H2'	51:3:878:A:C8	2.55	0.42
51:3:1067:A:H2	51:3:1157:G:H1	1.68	0.42
51:3:1193:U:H2'	51:3:1194:U:H6	1.85	0.42
51:3:1245:G:O6	51:3:1265:G:C2	2.73	0.42
51:3:1391:U:H2'	51:3:1392:G:C8	2.55	0.42
51:3:1550:G:H2'	51:3:1551:U:C6	2.55	0.42
51:3:1614:G:C5	51:3:1615:G:C8	3.08	0.42
51:3:2234:C:H2'	51:3:2235:A:H8	1.84	0.42
51:3:2308:U:H2'	51:3:2309:A:H8	1.85	0.42
51:3:2322:G:H2'	51:3:2323:U:C6	2.55	0.42
51:3:2623:U:H2'	51:3:2624:C:H6	1.84	0.42
53:5:64:C:O2'	53:5:376:G:H4'	2.20	0.42
53:5:281:U:H2'	53:5:282:G:C8	2.55	0.42
53:5:573:G:C5	53:5:818:A:C8	3.08	0.42
53:5:1151:A:H2'	53:5:1152:G:H8	1.85	0.42
53:5:1438:U:H2'	53:5:1439:G:C8	2.55	0.42
53:5:1447:U:O4	53:5:1448:A:N6	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:C:139:GLY:CA	7:C:178:TYR:O	2.68	0.42
8:D:100:LYS:HE3	8:D:100:LYS:HB3	1.87	0.42
11:G:94:GLY:H	11:G:96:ARG:NH2	2.17	0.42
14:J:43:MET:HE1	14:J:58:ILE:HG22	2.02	0.42
15:K:27:ASN:HA	15:K:72:ASN:HD22	1.85	0.42
19:O:31:GLY:HA3	19:O:44:ILE:HA	2.02	0.42
22:R:46:GLY:HA2	22:R:61:TYR:HE1	1.84	0.42
25:a:56:ARG:NE	51:3:1831:G:OP1	2.53	0.42
28:d:74:ILE:HG22	28:d:77:TYR:H	1.84	0.42
33:i:97:LYS:HE3	33:i:97:LYS:HB3	1.79	0.42
33:i:101:ASP:N	33:i:101:ASP:OD1	2.51	0.42
40:p:75:TYR:CE2	51:3:1188:C:H5'	2.53	0.42
51:3:132:G:C2	51:3:133:G:N7	2.88	0.42
51:3:141:A:N7	51:3:142:A:N6	2.68	0.42
51:3:194:A:H2'	51:3:195:A:O4'	2.20	0.42
51:3:566:G:H4'	51:3:567:U:O2	2.20	0.42
51:3:618:G:H3'	51:3:1281:A:N6	2.32	0.42
51:3:1620:A:H2'	51:3:1621:U:O4'	2.20	0.42
51:3:1697:C:C4	51:3:1999:G:C8	3.08	0.42
51:3:2095:A:H2'	51:3:2096:U:O4'	2.20	0.42
51:3:2122:G:H1	51:3:2124:A:HO2'	1.65	0.42
51:3:2160:U:H2'	51:3:2161:G:C8	2.54	0.42
51:3:2314:U:OP2	51:3:2315:G:O2'	2.38	0.42
51:3:2697:C:OP2	51:3:2727:G:N2	2.30	0.42
53:5:214:U:H2'	53:5:215:C:C6	2.55	0.42
53:5:457:A:H2'	53:5:458:G:C8	2.54	0.42
53:5:822:A:H2'	53:5:823:C:H6	1.84	0.42
53:5:1390:G:H2'	53:5:1391:A:C8	2.55	0.42
53:5:1446:A:H2'	53:5:1447:U:C6	2.55	0.42
53:5:1495:C:H2'	53:5:1496:G:C8	2.55	0.42
2:1:47:VAL:HG22	2:1:48:SER:H	1.85	0.41
4:9:218:THR:HB	4:9:228:VAL:HG12	2.02	0.41
11:G:38:SER:OG	11:G:41:LYS:HG3	2.20	0.41
11:G:128:ALA:O	11:G:132:LYS:N	2.52	0.41
14:J:61:ASP:HB2	14:J:92:SER:HB2	2.01	0.41
15:K:96:ARG:NH2	15:K:97:GLY:O	2.53	0.41
17:M:42:LEU:HD12	17:M:42:LEU:HA	1.87	0.41
26:b:198:ALA:HB2	51:3:2687:A:H4'	2.02	0.41
29:e:4:ILE:HG13	51:3:2756:A:H5'	2.01	0.41
40:p:68:LEU:O	40:p:72:GLY:N	2.49	0.41
43:s:36:SER:O	43:s:40:VAL:HG23	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:v:37:LYS:NZ	46:v:45:THR:O	2.53	0.41
47:w:95:LYS:HB2	47:w:95:LYS:HE2	1.83	0.41
47:w:105:ARG:HH11	51:3:1432:C:P	2.43	0.41
51:3:307:C:H2'	51:3:308:A:O4'	2.20	0.41
51:3:432:G:O6	51:3:433:A:N6	2.53	0.41
51:3:442:G:O6	51:3:457:U:C4	2.73	0.41
51:3:485:A:H3'	51:3:486:G:C8	2.54	0.41
51:3:590:U:H2'	51:3:591:G:H8	1.85	0.41
51:3:601:U:H5'	51:3:981:A:C6	2.55	0.41
51:3:628:A:H2'	51:3:629:G:H8	1.84	0.41
51:3:1450:G:C2	51:3:1451:A:C5	3.08	0.41
51:3:1699:A:H2'	51:3:1700:G:C8	2.54	0.41
51:3:1772:G:H2'	51:3:1773:A:H8	1.84	0.41
51:3:2325:U:H2'	51:3:2326:G:O4'	2.19	0.41
53:5:381:C:H2'	53:5:382:U:C6	2.54	0.41
53:5:444:G:N2	53:5:483:U:OP2	2.48	0.41
53:5:593:A:C8	53:5:638:A:C6	3.08	0.41
53:5:631:C:H2'	53:5:632:A:C8	2.54	0.41
53:5:896:G:H2'	53:5:897:A:H8	1.85	0.41
53:5:966:A:H5''	53:5:1206:G:H21	1.85	0.41
53:5:971:A:O2'	53:5:1336:C:O2	2.29	0.41
53:5:1454:G:H2'	53:5:1455:G:H8	1.84	0.41
53:5:1493:A:O2'	53:5:1494:A:O4'	2.19	0.41
54:7:49:C:H5''	54:7:50:G:H5''	2.02	0.41
54:7:59:A:C5	54:7:62:C:C4	3.08	0.41
6:B:20:SER:OG	6:B:20:SER:O	2.38	0.41
12:H:99:ILE:O	12:H:102:SER:OG	2.34	0.41
13:I:25:ASP:O	13:I:29:LYS:HG2	2.20	0.41
25:a:219:ASN:ND2	51:3:1798:A:OP1	2.46	0.41
26:b:124:LYS:HZ3	26:b:124:LYS:HG3	1.68	0.41
28:d:37:ASN:ND2	51:3:2320:U:O2'	2.53	0.41
34:j:91:LYS:HG3	34:j:111:TYR:H	1.85	0.41
41:q:64:LEU:HB3	41:q:86:ARG:HE	1.85	0.41
51:3:499:G:N2	51:3:502:A:OP2	2.53	0.41
51:3:701:A:H2'	51:3:702:U:C6	2.55	0.41
51:3:1177:A:O2'	51:3:1179:G:N7	2.44	0.41
51:3:1257:G:H2'	51:3:1258:C:H6	1.84	0.41
51:3:1462:A:O2'	51:3:1463:G:H8	2.03	0.41
51:3:1850:C:H2'	51:3:1851:U:H6	1.83	0.41
51:3:1999:G:H5'	51:3:2001:C:H41	1.86	0.41
51:3:2008:A:H2'	51:3:2009:U:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:103:C:H2'	52:4:104:C:H6	1.85	0.41
53:5:41:C:H2'	53:5:42:G:C8	2.52	0.41
53:5:371:U:H2'	53:5:372:G:H8	1.84	0.41
53:5:385:A:H3'	53:5:386:U:H6	1.86	0.41
53:5:747:C:C2	53:5:748:U:C5	3.08	0.41
53:5:896:G:H2'	53:5:897:A:C8	2.55	0.41
53:5:953:A:H2'	53:5:954:A:C4	2.54	0.41
7:C:75:PHE:CZ	7:C:79:LEU:HD11	2.55	0.41
8:D:144:SER:OG	8:D:194:ALA:HB2	2.19	0.41
26:b:139:TYR:CG	26:b:140:PRO:HD3	2.55	0.41
26:b:153:GLY:HA2	26:b:157:GLN:HG3	2.02	0.41
30:f:34:LYS:HA	30:f:34:LYS:HD3	1.87	0.41
33:i:89:LYS:HB3	33:i:89:LYS:HE2	1.84	0.41
40:p:10:ARG:HH22	51:3:549:A:H5'	1.84	0.41
51:3:155:A:C6	51:3:178:A:N1	2.87	0.41
51:3:304:U:H2'	51:3:305:U:O4'	2.19	0.41
51:3:598:G:C6	51:3:610:G:C6	3.09	0.41
51:3:1529:U:C2	51:3:1530:G:C8	3.08	0.41
51:3:1654:G:O2'	51:3:1655:U:O5'	2.30	0.41
51:3:1922:U:H3'	51:3:1923:A:H8	1.84	0.41
51:3:2102:U:H2'	51:3:2103:C:H6	1.86	0.41
53:5:35:C:H2'	53:5:36:G:C8	2.55	0.41
53:5:368:C:N4	53:5:384:G:OP2	2.53	0.41
53:5:950:C:H2'	53:5:951:U:C6	2.55	0.41
53:5:1070:G:O2'	53:5:1071:A:O4'	2.23	0.41
53:5:1403:A:C6	53:5:1448:A:N1	2.88	0.41
2:1:8:LYS:HD2	2:1:9:LYS:HG3	2.01	0.41
6:B:38:GLU:OE2	6:B:41:ARG:NE	2.41	0.41
6:B:141:LEU:HD21	6:B:171:TYR:HB3	2.03	0.41
14:J:35:LEU:HD21	14:J:70:MET:SD	2.60	0.41
19:O:16:VAL:HG12	19:O:17:ASP:N	2.35	0.41
24:T:41:ARG:O	24:T:45:LYS:HG2	2.20	0.41
26:b:105:GLY:C	26:b:217:VAL:HG23	2.46	0.41
28:d:38:MET:HG3	28:d:39:GLY:N	2.36	0.41
29:e:70:THR:HG21	51:3:2765:A:N1	2.35	0.41
43:s:68:GLY:HA2	43:s:72:PRO:HB3	2.01	0.41
51:3:214:C:H2'	51:3:215:A:H8	1.85	0.41
51:3:401:G:H3'	51:3:402:A:H5''	2.02	0.41
51:3:956:U:C2	51:3:957:G:C8	3.08	0.41
51:3:1121:A:O2'	51:3:1122:G:N7	2.52	0.41
51:3:1351:G:H2'	51:3:1352:G:H8	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1384:C:H2'	51:3:1385:U:C6	2.55	0.41
51:3:1659:C:H2'	51:3:1660:A:O4'	2.21	0.41
51:3:2151:G:O2'	51:3:2154:A:N1	2.46	0.41
51:3:2736:U:O2'	51:3:2737:G:O4'	2.38	0.41
51:3:2831:U:H2'	51:3:2832:G:C8	2.53	0.41
53:5:215:C:N4	53:5:216:G:O6	2.53	0.41
53:5:253:G:C6	53:5:266:A:C6	3.07	0.41
53:5:548:G:H2'	53:5:549:U:C6	2.54	0.41
53:5:578:C:H2'	53:5:579:G:O4'	2.20	0.41
53:5:1256:U:H2'	53:5:1257:C:C5	2.55	0.41
53:5:1312:G:O2'	53:5:1313:A:O4'	2.36	0.41
54:7:38:G:C2	54:7:39:A:C8	3.08	0.41
4:9:5:LYS:NZ	4:9:6:PHE:O	2.37	0.41
4:9:171:ILE:HD12	4:9:171:ILE:H	1.86	0.41
7:C:117:VAL:HG21	7:C:132:PRO:HB3	2.02	0.41
8:D:108:ALA:HB3	8:D:114:ALA:HB2	2.03	0.41
9:E:7:LEU:HD21	9:E:82:VAL:HG22	2.02	0.41
13:I:18:SER:O	13:I:76:HIS:N	2.45	0.41
20:P:56:LYS:HG2	20:P:57:ASP:H	1.85	0.41
26:b:79:LYS:HZ1	51:3:2833:A:H5''	1.86	0.41
28:d:50:LEU:HD22	28:d:84:LEU:HD12	2.02	0.41
30:f:52:LYS:HB2	30:f:52:LYS:HE2	1.88	0.41
39:o:34:ALA:HA	39:o:47:ASN:HA	2.02	0.41
41:q:79:HIS:NE2	41:q:81:LYS:HG3	2.36	0.41
51:3:625:G:N1	51:3:701:A:C6	2.88	0.41
51:3:692:U:H2'	51:3:693:U:C6	2.55	0.41
51:3:793:C:H2'	51:3:794:G:H8	1.85	0.41
51:3:1001:C:H1'	51:3:2281:A:C2	2.55	0.41
51:3:1097:G:H2'	51:3:1098:G:H8	1.85	0.41
51:3:1290:G:H2'	51:3:1291:C:C6	2.56	0.41
51:3:1294:G:C2'	51:3:2021:A:H62	2.32	0.41
51:3:1449:G:N2	51:3:1612:U:O2	2.53	0.41
51:3:1697:C:O2'	51:3:2694:A:H4'	2.20	0.41
51:3:2513:G:H2'	51:3:2584:G:H1	1.84	0.41
53:5:110:U:O4	53:5:111:A:N6	2.54	0.41
53:5:253:G:O6	53:5:266:A:N6	2.54	0.41
53:5:315:G:H2'	53:5:316:G:C8	2.55	0.41
53:5:359:A:OP1	53:5:359:A:H8	2.04	0.41
53:5:587:A:H2'	53:5:588:U:H6	1.85	0.41
53:5:1278:G:N2	53:5:1308:G:C6	2.89	0.41
53:5:1327:G:H2'	53:5:1328:C:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1430:G:C2	53:5:1431:A:C8	3.08	0.41
7:C:166:PHE:HB3	7:C:186:GLU:OE1	2.21	0.41
11:G:31:MET:SD	11:G:73:ASN:ND2	2.93	0.41
15:K:102:ASP:OD2	53:5:520:C:N4	2.53	0.41
29:e:167:TYR:O	29:e:170:GLU:HG2	2.20	0.41
37:m:107:ARG:O	37:m:107:ARG:NH1	2.53	0.41
38:n:108:ALA:O	38:n:111:GLU:HG2	2.20	0.41
39:o:5:ASN:O	39:o:7:GLN:NE2	2.53	0.41
40:p:69:ARG:NH2	51:3:1047:A:OP2	2.53	0.41
44:t:89:ILE:HD12	44:t:102:ARG:HB3	2.01	0.41
50:z:14:CYS:HB2	50:z:40:ARG:CZ	2.50	0.41
51:3:188:G:C2	51:3:217:A:C2	3.08	0.41
51:3:291:G:H2'	51:3:292:G:H8	1.85	0.41
51:3:513:A:O2'	51:3:514:A:OP1	2.34	0.41
51:3:792:G:H2'	51:3:793:C:H5'	2.01	0.41
51:3:800:C:H2'	51:3:801:U:C6	2.56	0.41
51:3:1205:U:H2'	51:3:1206:U:O4'	2.21	0.41
51:3:1414:C:H5''	51:3:1424:U:N3	2.34	0.41
51:3:1552:C:H2'	51:3:1553:G:O4'	2.21	0.41
51:3:1596:U:H2'	51:3:1597:U:H6	1.86	0.41
51:3:1683:G:O6	51:3:1684:A:N6	2.53	0.41
51:3:1947:U:H5''	51:3:1972:C:H41	1.85	0.41
51:3:1989:U:H2'	51:3:1990:C:H6	1.85	0.41
51:3:2055:A:N6	51:3:2056:A:C6	2.89	0.41
51:3:2576:A:C6	51:3:2577:G:C6	3.08	0.41
51:3:2609:C:H2'	51:3:2611:G:C8	2.55	0.41
51:3:2631:G:H2'	51:3:2632:C:C6	2.55	0.41
51:3:2865:U:H2'	51:3:2866:A:C8	2.55	0.41
51:3:2893:C:H2'	51:3:2894:G:O4'	2.21	0.41
53:5:98:G:H2'	53:5:99:U:C6	2.56	0.41
53:5:318:C:H2'	53:5:319:U:C6	2.55	0.41
53:5:400:G:O2'	53:5:496:A:N1	2.45	0.41
53:5:557:A:H5'	53:5:557:A:N3	2.35	0.41
53:5:1240:U:H2'	53:5:1241:G:O4'	2.21	0.41
53:5:1379:C:N4	53:5:1380:G:O6	2.54	0.41
53:5:1464:G:H2'	53:5:1465:U:C6	2.55	0.41
54:6:23:G:N7	54:6:47:G:N2	2.69	0.41
54:7:23:G:N7	54:7:47:G:N2	2.69	0.41
15:K:62:LEU:HB3	53:5:518:A:OP1	2.20	0.41
25:a:37:LEU:O	25:a:68:ILE:HG13	2.20	0.41
26:b:168:HIS:CE1	26:b:171:HIS:HB3	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:c:139:LYS:NZ	51:3:355:A:OP1	2.43	0.41
36:l:6:ARG:HD3	51:3:907:A:OP1	2.21	0.41
51:3:133:G:O6	51:3:150:U:O4	2.39	0.41
51:3:301:G:H2'	51:3:302:G:H8	1.86	0.41
51:3:535:G:N2	51:3:537:A:H3'	2.36	0.41
51:3:1005:G:H2'	51:3:1006:U:H6	1.84	0.41
51:3:1337:G:H21	51:3:1645:C:H5'	1.85	0.41
51:3:2223:C:H2'	51:3:2224:A:C8	2.40	0.41
51:3:2407:G:H2'	51:3:2408:G:C8	2.55	0.41
51:3:2420:A:H2'	51:3:2421:U:O4'	2.20	0.41
53:5:422:A:H2'	53:5:423:U:C6	2.56	0.41
53:5:694:U:H3'	53:5:695:G:H8	1.85	0.41
53:5:760:U:H2'	53:5:761:U:H6	1.85	0.41
53:5:768:G:O6	53:5:806:A:C6	2.73	0.41
53:5:989:A:N9	53:5:1191:U:H4'	2.36	0.41
53:5:1041:G:H2'	53:5:1042:G:C8	2.55	0.41
53:5:1124:U:OP2	53:5:1125:C:N4	2.52	0.41
53:5:1278:G:H1'	53:5:1307:A:H61	1.85	0.41
53:5:1390:G:C6	53:5:1461:G:C6	3.09	0.41
4:9:224:ARG:HB3	4:9:278:LEU:HD22	2.03	0.41
5:A:86:GLY:O	5:A:93:LYS:HG2	2.21	0.41
6:B:52:GLN:HA	6:B:118:ILE:HD12	2.02	0.41
10:F:26:ILE:HD11	10:F:42:LEU:HD22	2.03	0.41
11:G:37:ALA:HB2	11:G:70:VAL:HG23	2.02	0.41
12:H:110:LYS:HZ3	53:5:1159:A:H2	1.68	0.41
16:L:113:ARG:NH1	53:5:942:G:OP2	2.50	0.41
18:N:36:LEU:O	18:N:36:LEU:HD23	2.21	0.41
20:P:6:ARG:H	20:P:6:ARG:HG2	1.76	0.41
27:c:73:LYS:HA	51:3:1285:U:H2'	2.02	0.41
27:c:160:VAL:HG12	27:c:199:VAL:HA	2.03	0.41
30:f:1:MET:CE	30:f:1:MET:HA	2.51	0.41
34:j:6:THR:HG23	51:3:1700:G:H4'	2.03	0.41
38:n:81:LEU:HD12	38:n:114:LEU:HD13	2.02	0.41
42:r:75:VAL:HG21	42:r:104:VAL:HG12	2.02	0.41
45:u:54:GLN:OE1	45:u:58:ARG:N	2.43	0.41
49:y:39:PHE:CD2	51:3:2819:C:H1'	2.55	0.41
51:3:615:G:H2'	51:3:616:G:C8	2.53	0.41
51:3:680:A:N1	51:3:2377:A:H1'	2.35	0.41
51:3:708:C:H2'	51:3:709:G:O4'	2.20	0.41
51:3:776:U:H2'	51:3:777:C:H6	1.86	0.41
51:3:817:A:OP2	51:3:1784:U:O2'	2.29	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:868:C:H2'	51:3:869:U:C6	2.55	0.41
51:3:1019:A:H3'	51:3:1020:G:C2	2.55	0.41
51:3:1841:U:H5''	51:3:1842:G:H5''	2.03	0.41
51:3:2260:G:H22	54:7:75:C:H5''	1.86	0.41
51:3:2292:A:H2'	51:3:2293:C:C6	2.55	0.41
53:5:518:A:N6	53:5:527:G:N3	2.68	0.41
53:5:1112:U:C2	53:5:1113:U:C5	3.08	0.41
53:5:1500:G:H2'	53:5:1501:G:H8	1.85	0.41
54:6:38:G:C2	54:6:39:A:C8	3.08	0.41
54:6:49:C:H5''	54:6:50:G:H5''	2.02	0.41
3:2:7:VAL:HG12	51:3:1066:G:O2'	2.20	0.41
3:2:8:LYS:HA	3:2:9:PRO:HD3	1.96	0.41
4:9:184:LYS:HE3	4:9:184:LYS:HB3	1.98	0.41
6:B:31:ALA:O	6:B:35:ILE:HG23	2.19	0.41
6:B:43:LEU:HG	6:B:47:ASN:OD1	2.21	0.41
7:C:60:MET:HG2	7:C:64:TYR:HE2	1.86	0.41
7:C:122:VAL:HA	7:C:144:LEU:HA	2.03	0.41
10:F:36:GLY:HA3	12:H:44:LYS:HE2	2.02	0.41
11:G:11:HIS:CD2	11:G:12:PHE:H	2.39	0.41
11:G:137:ILE:H	11:G:137:ILE:HD12	1.86	0.41
12:H:75:THR:OG1	53:5:1348:G:OP2	2.33	0.41
14:J:14:ILE:HG12	14:J:75:VAL:HG21	2.02	0.41
16:L:64:LYS:HG2	16:L:69:LEU:HG	2.03	0.41
17:M:41:ARG:HG3	17:M:42:LEU:N	2.36	0.41
18:N:16:ASP:OD1	18:N:17:LYS:N	2.53	0.41
18:N:36:LEU:CD2	18:N:53:LEU:HB2	2.43	0.41
20:P:65:GLU:OE1	20:P:65:GLU:N	2.53	0.41
26:b:177:GLN:NE2	51:3:2739:C:H4'	2.35	0.41
29:e:94:GLY:HA2	29:e:163:LYS:HD2	2.03	0.41
29:e:113:SER:N	51:3:2675:C:O2	2.53	0.41
30:f:1:MET:HA	30:f:1:MET:HE2	2.03	0.41
30:f:35:LEU:HD22	30:f:50:PHE:CE1	2.56	0.41
30:f:65:SER:O	30:f:69:LYS:HG3	2.21	0.41
33:i:23:ALA:HB3	33:i:62:SER:HA	2.02	0.41
35:k:48:ARG:HH22	51:3:199:A:H4'	1.85	0.41
35:k:134:GLN:H	35:k:134:GLN:HG2	1.72	0.41
36:l:37:THR:HA	36:l:99:GLN:HG3	2.02	0.41
37:m:14:ARG:O	37:m:18:VAL:HG23	2.21	0.41
37:m:106:ARG:HG2	37:m:108:GLY:H	1.86	0.41
41:q:74:ILE:HB	41:q:77:LYS:HD3	2.02	0.41
46:v:60:LYS:HD3	51:3:410:G:N7	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:122:G:C4	51:3:132:G:C2	3.09	0.41
51:3:133:G:N2	51:3:150:U:O2	2.49	0.41
51:3:160:A:H2'	51:3:161:U:C6	2.56	0.41
51:3:173:C:H2'	51:3:174:A:H8	1.85	0.41
51:3:224:G:N1	51:3:464:A:OP2	2.54	0.41
51:3:267:A:H2'	51:3:268:C:O4'	2.21	0.41
51:3:282:C:N3	51:3:286:A:O2'	2.51	0.41
51:3:370:C:H2'	51:3:371:C:C6	2.55	0.41
51:3:501:G:N2	51:3:823:A:H62	2.18	0.41
51:3:513:A:H2'	51:3:514:A:H8	1.83	0.41
51:3:764:G:H2'	51:3:1782:U:H1'	2.02	0.41
51:3:988:G:H2'	51:3:989:G:O4'	2.20	0.41
51:3:1140:U:H2'	51:3:1141:U:C6	2.56	0.41
51:3:1180:U:H2'	51:3:1181:A:C8	2.56	0.41
51:3:1321:C:C2	51:3:1322:A:C8	3.08	0.41
51:3:1371:G:H1'	51:3:1631:A:H2'	2.03	0.41
51:3:1463:G:C6	51:3:1464:G:C6	3.09	0.41
51:3:1551:U:H2'	51:3:1552:C:C6	2.54	0.41
51:3:1687:G:H4'	51:3:1688:A:H5''	2.03	0.41
51:3:1701:G:N1	51:3:1998:U:H3'	2.35	0.41
51:3:2124:A:C6	51:3:2170:A:H5'	2.56	0.41
51:3:2297:G:H2'	51:3:2298:G:H8	1.84	0.41
51:3:2434:A:O2'	51:3:2435:C:OP1	2.38	0.41
51:3:2460:C:H2'	51:3:2461:A:O4'	2.21	0.41
52:4:46:C:H2'	52:4:47:C:C6	2.56	0.41
53:5:256:G:N1	53:5:263:C:N3	2.68	0.41
53:5:451:G:H2'	53:5:452:A:C8	2.55	0.41
53:5:769:U:H2'	53:5:770:G:C8	2.56	0.41
53:5:772:G:H2'	53:5:773:G:O4'	2.21	0.41
53:5:826:G:H2'	53:5:827:C:H6	1.85	0.41
53:5:966:A:OP1	53:5:967:C:H5''	2.21	0.41
53:5:989:A:C4	53:5:1191:U:H4'	2.56	0.41
53:5:1246:A:H2'	53:5:1247:G:H8	1.85	0.41
53:5:1398:G:N1	53:5:1453:C:C2	2.85	0.41
4:9:209:LYS:HB2	4:9:234:ARG:HB2	2.03	0.41
5:A:73:LYS:O	5:A:77:GLN:HG2	2.21	0.41
8:D:134:GLY:O	8:D:176:SER:N	2.37	0.41
10:F:52:ARG:HH22	10:F:124:ILE:HG13	1.85	0.41
13:I:23:LEU:O	13:I:27:THR:HG23	2.20	0.41
13:I:52:LYS:HE2	13:I:74:ASN:OD1	2.21	0.41
24:T:9:ASP:HB3	24:T:13:LEU:HD23	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:a:63:LYS:HE3	25:a:63:LYS:HB2	1.76	0.41
28:d:68:THR:HG21	51:3:2320:U:H4'	2.02	0.41
29:e:142:GLU:HG3	29:e:146:GLN:OE1	2.21	0.41
37:m:75:VAL:O	37:m:79:MET:HG3	2.21	0.41
44:t:14:THR:HA	44:t:18:LYS:HE3	2.03	0.41
51:3:53:G:N2	51:3:119:A:H62	2.19	0.41
51:3:172:U:H2'	51:3:173:C:H6	1.86	0.41
51:3:214:C:H2'	51:3:215:A:C8	2.57	0.41
51:3:444:C:H2'	51:3:445:C:H6	1.86	0.41
51:3:480:C:H2'	51:3:481:C:C6	2.56	0.41
51:3:525:A:C6	51:3:1312:A:C6	3.09	0.41
51:3:562:C:N3	51:3:2787:U:H2'	2.35	0.41
51:3:716:G:H2'	51:3:717:U:C6	2.56	0.41
51:3:947:A:H2'	51:3:948:A:C8	2.56	0.41
51:3:1088:A:N1	51:3:1142:G:C6	2.89	0.41
51:3:1344:U:H2'	51:3:1345:G:C8	2.56	0.41
51:3:1361:U:H2'	51:3:1362:C:C6	2.56	0.41
51:3:1507:G:N1	51:3:1537:A:C6	2.89	0.41
51:3:2100:G:H2'	51:3:2101:A:H8	1.85	0.41
51:3:2239:U:H2'	51:3:2240:U:C6	2.56	0.41
53:5:129:U:O2'	53:5:200:G:OP2	2.27	0.41
53:5:148:A:C8	53:5:149:G:H1'	2.56	0.41
53:5:394:U:H2'	53:5:395:G:C8	2.54	0.41
53:5:760:U:H2'	53:5:761:U:C6	2.56	0.41
53:5:879:G:H2'	53:5:880:G:H8	1.85	0.41
53:5:884:G:H1'	53:5:885:U:H5	1.86	0.41
53:5:1156:G:H1'	53:5:1157:G:C4	2.56	0.41
53:5:1352:A:H4'	53:5:1353:C:C5	2.56	0.41
53:5:1385:A:O2'	53:5:1386:C:H5'	2.21	0.41
53:5:1489:C:H2'	53:5:1490:G:O4'	2.21	0.41
3:2:8:LYS:HE3	51:3:2476:A:OP1	2.20	0.40
4:9:259:ILE:HD12	4:9:276:GLY:O	2.21	0.40
5:A:118:THR:HB	5:A:193:ILE:HD11	2.04	0.40
7:C:80:LYS:HE3	7:C:80:LYS:HB3	1.83	0.40
9:E:42:LEU:HB2	9:E:56:HIS:CE1	2.56	0.40
10:F:120:ALA:O	10:F:123:ILE:HG22	2.21	0.40
15:K:70:LEU:HG	15:K:71:THR:H	1.86	0.40
18:N:20:GLY:N	53:5:747:C:H1'	2.36	0.40
22:R:66:MET:H	22:R:66:MET:HG3	1.68	0.40
27:c:73:LYS:HE2	27:c:73:LYS:HB2	1.88	0.40
30:f:64:LEU:HA	30:f:67:LYS:HE3	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:i:81:SER:OG	33:i:82:GLN:N	2.52	0.40
36:l:4:PRO:HD3	36:l:69:PHE:CZ	2.57	0.40
40:p:12:ARG:O	40:p:15:LYS:HG2	2.21	0.40
44:t:86:ILE:O	44:t:88:LYS:HG2	2.20	0.40
46:v:2:ALA:HB3	46:v:4:LYS:NZ	2.36	0.40
50:z:39:SER:O	50:z:42:ARG:HG2	2.20	0.40
51:3:65:A:H2'	51:3:66:A:O4'	2.22	0.40
51:3:254:G:H2'	51:3:255:A:C8	2.57	0.40
51:3:423:C:O2'	51:3:424:G:O5'	2.39	0.40
51:3:475:A:H2'	51:3:476:G:C8	2.56	0.40
51:3:1045:A:O2'	51:3:1046:A:O4'	2.26	0.40
51:3:1337:G:H2'	51:3:1338:G:C8	2.56	0.40
51:3:1391:U:H2'	51:3:1392:G:H8	1.85	0.40
51:3:1775:G:H1	51:3:1991:U:H3	1.67	0.40
51:3:1780:A:H2'	51:3:1781:C:O4'	2.21	0.40
51:3:1842:G:H2'	51:3:1843:C:C6	2.56	0.40
51:3:2224:A:H2'	51:3:2225:G:C8	2.56	0.40
51:3:2321:C:H2'	51:3:2322:G:C8	2.50	0.40
51:3:2381:G:H2'	51:3:2382:A:C8	2.55	0.40
51:3:2463:G:H2'	51:3:2464:C:H6	1.86	0.40
51:3:2495:A:C2	51:3:2496:G:C5	3.09	0.40
51:3:2502:G:H2'	51:3:2503:G:H8	1.86	0.40
53:5:28:G:H2'	53:5:29:G:O4'	2.21	0.40
53:5:132:G:H2'	53:5:133:G:H8	1.87	0.40
53:5:157:A:H2'	53:5:158:A:C8	2.55	0.40
53:5:249:U:N3	53:5:250:G:N7	2.69	0.40
53:5:409:G:H4'	53:5:410:A:H5''	2.03	0.40
53:5:672:A:H2'	53:5:673:A:O4'	2.20	0.40
53:5:787:A:H61	53:5:1472:G:H5''	1.86	0.40
53:5:1280:A:H2'	53:5:1281:U:O4'	2.21	0.40
54:6:56:U:O2	54:6:56:U:H2'	2.21	0.40
1:0:39:ARG:NE	51:3:494:G:O2'	2.54	0.40
4:9:116:THR:O	4:9:120:ILE:HG13	2.21	0.40
10:F:110:ARG:HG2	10:F:112:GLU:OE1	2.21	0.40
12:H:65:ILE:HD11	12:H:85:ILE:HD12	2.03	0.40
29:e:28:LYS:HE3	29:e:28:LYS:HB3	1.76	0.40
34:j:15:GLY:HA3	34:j:50:GLY:HA2	2.03	0.40
34:j:97:ARG:HH12	53:5:334:A:H5''	1.85	0.40
41:q:42:ASP:O	41:q:44:LYS:HG2	2.22	0.40
43:s:51:LYS:HB3	47:w:87:TRP:HE1	1.87	0.40
51:3:740:A:H2'	51:3:741:A:O4'	2.20	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:889:G:H2'	51:3:890:U:H6	1.86	0.40
51:3:988:G:C6	51:3:1002:A:N6	2.89	0.40
51:3:1690:C:H2'	51:3:1691:U:H6	1.86	0.40
51:3:1785:U:H2'	51:3:1791:A:N6	2.36	0.40
51:3:1932:C:H2'	51:3:1933:U:C6	2.55	0.40
51:3:1997:C:H2'	51:3:1998:U:N1	2.36	0.40
51:3:2147:G:H2'	51:3:2148:U:H6	1.86	0.40
51:3:2592:U:O2'	54:7:77:A:N6	2.54	0.40
51:3:2645:U:H3'	51:3:2646:G:C8	2.55	0.40
53:5:8:G:H5'	53:5:294:A:C8	2.56	0.40
53:5:161:C:H2'	53:5:162:C:H6	1.86	0.40
53:5:165:A:H2'	53:5:166:U:O4'	2.21	0.40
53:5:365:U:O4	53:5:388:G:O6	2.38	0.40
54:6:10:A:N6	54:6:24:A:N7	2.70	0.40
4:9:72:SER:OG	4:9:75:ARG:O	2.33	0.40
7:C:8:PHE:CD1	53:5:426:U:H3'	2.56	0.40
9:E:9:VAL:HG11	9:E:18:ALA:HB1	2.02	0.40
9:E:81:GLN:OE1	9:E:81:GLN:N	2.54	0.40
14:J:33:ASN:HA	53:5:680:G:H21	1.86	0.40
17:M:14:PRO:HG3	17:M:20:ALA:HB2	2.04	0.40
23:S:4:ILE:HG22	23:S:6:SER:H	1.85	0.40
25:a:3:ILE:HG22	25:a:18:THR:HB	2.03	0.40
26:b:37:ALA:HB3	26:b:51:LEU:HD23	2.04	0.40
29:e:22:LYS:HB3	29:e:22:LYS:HE3	1.87	0.40
30:f:80:SER:O	30:f:81:LEU:HD23	2.21	0.40
49:y:40:HIS:ND1	51:3:2819:C:O2'	2.51	0.40
51:3:314:G:O3'	51:3:315:A:H3'	2.22	0.40
51:3:333:A:C6	51:3:356:A:C4	3.09	0.40
51:3:499:G:N2	51:3:501:G:H3'	2.36	0.40
51:3:501:G:H2'	51:3:502:A:C4	2.56	0.40
51:3:760:G:H8	51:3:760:G:OP2	2.05	0.40
51:3:985:A:H2'	51:3:986:G:H8	1.86	0.40
51:3:1450:G:H2'	51:3:1451:A:C8	2.56	0.40
51:3:2312:G:H1	51:3:2320:U:H3	1.68	0.40
51:3:2399:G:H22	51:3:2432:C:H2'	1.87	0.40
51:3:2892:U:H2'	51:3:2893:C:H6	1.84	0.40
52:4:11:A:O2'	52:4:13:G:N3	2.52	0.40
53:5:92:G:H3'	53:5:93:A:C2	2.56	0.40
53:5:372:G:N2	53:5:383:U:O2	2.38	0.40
53:5:412:G:H2'	53:5:413:G:C8	2.55	0.40
53:5:436:U:H2'	53:5:437:U:O4'	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:575:A:H2'	53:5:576:A:C8	2.56	0.40
53:5:908:A:H2'	53:5:909:A:C8	2.56	0.40
53:5:997:G:N3	53:5:997:G:H2'	2.37	0.40
53:5:1345:G:C2	53:5:1346:G:C8	3.09	0.40
53:5:1416:U:H2'	53:5:1417:U:C6	2.56	0.40
54:7:10:A:N6	54:7:24:A:N7	2.70	0.40
1:0:9:LYS:HD2	51:3:1338:G:OP2	2.21	0.40
8:D:191:MET:O	8:D:195:THR:HG23	2.22	0.40
10:F:24:ARG:NH2	53:5:1350:A:H5''	2.37	0.40
30:f:6:LYS:HD2	30:f:34:LYS:C	2.46	0.40
30:f:7:GLN:HG2	30:f:58:TYR:CE1	2.56	0.40
39:o:67:ARG:HH12	39:o:105:ARG:HA	1.86	0.40
42:r:57:ASN:OD1	51:3:529:G:N2	2.53	0.40
51:3:69:U:H2'	51:3:70:G:H8	1.86	0.40
51:3:383:U:H2'	51:3:384:G:C8	2.48	0.40
51:3:497:C:H2'	51:3:498:C:C6	2.57	0.40
51:3:697:U:H2'	51:3:698:A:H8	1.86	0.40
51:3:710:A:H2'	51:3:711:A:C8	2.56	0.40
51:3:745:U:H2'	51:3:746:G:H8	1.85	0.40
51:3:774:A:H1'	51:3:775:C:H5	1.86	0.40
51:3:903:A:H1'	51:3:951:C:O4'	2.21	0.40
51:3:1130:A:C6	54:6:57:C:C4'	3.05	0.40
51:3:1130:A:N1	54:6:56:U:C3'	2.74	0.40
51:3:1192:U:H2'	51:3:1193:U:C6	2.57	0.40
51:3:1317:C:H2'	51:3:1318:U:C6	2.57	0.40
51:3:1331:G:O2'	51:3:1676:G:O2'	2.35	0.40
51:3:1335:A:C5	51:3:1336:A:C8	3.09	0.40
51:3:1777:G:H2'	51:3:1778:G:C8	2.57	0.40
51:3:1934:A:H2'	51:3:1935:A:H8	1.85	0.40
51:3:2291:U:O2	51:3:2333:G:C6	2.75	0.40
51:3:2402:C:H3'	51:3:2403:C:C6	2.57	0.40
51:3:2416:U:H2'	51:3:2417:G:H8	1.85	0.40
51:3:2795:C:H2'	51:3:2796:C:H6	1.85	0.40
53:5:146:A:OP1	53:5:147:A:N6	2.54	0.40
53:5:303:A:O2'	53:5:304:U:OP1	2.38	0.40
53:5:428:A:C4	53:5:429:A:C8	3.09	0.40
53:5:579:G:N1	53:5:756:A:OP2	2.42	0.40
53:5:807:C:H2'	53:5:808:C:C6	2.56	0.40
53:5:1038:G:H2'	53:5:1039:G:C8	2.56	0.40
53:5:1152:G:H2'	53:5:1153:G:O4'	2.20	0.40
53:5:1214:A:C8	53:5:1272:C:C5	3.09	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1408:A:H2'	53:5:1409:A:C8	2.57	0.40
54:7:67:C:H2'	54:7:68:G:C8	2.57	0.40
4:9:221:ILE:HD13	4:9:221:ILE:HA	1.94	0.40
5:A:38:ASN:OD1	5:A:40:LYS:HG2	2.22	0.40
5:A:179:ASP:N	5:A:179:ASP:OD1	2.52	0.40
11:G:8:ILE:HD11	11:G:69:ILE:HG21	2.04	0.40
13:I:9:TYR:HA	13:I:10:PRO:HD3	1.90	0.40
17:M:24:CYS:HB2	17:M:39:VAL:HA	2.03	0.40
30:f:71:VAL:HG21	30:f:106:MET:SD	2.62	0.40
35:k:43:LYS:HG3	51:3:707:C:OP2	2.20	0.40
37:m:61:ARG:NH2	51:3:1483:G:H8	2.20	0.40
44:t:88:LYS:NZ	51:3:369:C:OP2	2.46	0.40
49:y:6:ARG:NH1	51:3:2024:C:O3'	2.53	0.40
51:3:87:G:N1	51:3:100:U:N3	2.69	0.40
51:3:529:G:C6	51:3:530:G:C6	3.09	0.40
51:3:569:U:H2'	51:3:570:C:C6	2.56	0.40
51:3:629:G:H1	51:3:696:U:H3	1.68	0.40
51:3:629:G:H2'	51:3:630:C:H6	1.87	0.40
51:3:663:A:O3'	51:3:664:G:H8	2.05	0.40
51:3:887:A:H2'	51:3:888:A:C8	2.57	0.40
51:3:1089:A:N6	51:3:1090:G:O6	2.54	0.40
51:3:1182:U:C2	51:3:1183:A:N7	2.89	0.40
51:3:1226:G:H2'	51:3:1227:C:C6	2.56	0.40
51:3:1287:C:C2	51:3:1288:C:C5	3.09	0.40
51:3:1342:C:H2'	51:3:1343:C:C6	2.56	0.40
51:3:1497:A:H2'	51:3:1498:U:H6	1.86	0.40
51:3:1716:A:H2'	51:3:1717:C:H6	1.87	0.40
51:3:1765:G:C2	51:3:2704:U:H5''	2.56	0.40
51:3:2091:C:H2'	51:3:2092:U:O4'	2.22	0.40
51:3:2181:A:N3	51:3:2181:A:H2'	2.35	0.40
51:3:2290:G:H4'	51:3:2291:U:O5'	2.21	0.40
51:3:2782:A:H2'	51:3:2783:A:O4'	2.21	0.40
53:5:81:A:H2'	53:5:82:C:C6	2.56	0.40
53:5:215:C:H2'	53:5:216:G:C8	2.56	0.40
53:5:305:A:C2	53:5:306:G:C5	3.09	0.40
53:5:443:G:H2'	53:5:444:G:O4'	2.21	0.40
53:5:778:A:N7	53:5:798:U:O4	2.55	0.40
53:5:854:A:H2'	53:5:855:G:O4'	2.21	0.40
53:5:952:U:H2'	53:5:953:A:H8	1.86	0.40
53:5:1298:U:H2'	53:5:1299:C:C6	2.57	0.40
54:7:36:A:H2'	54:7:37:A:H8	1.85	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	0	45/48 (94%)	44 (98%)	1 (2%)	0	100	100
2	1	57/59 (97%)	55 (96%)	2 (4%)	0	100	100
3	2	35/37 (95%)	34 (97%)	1 (3%)	0	100	100
4	9	391/394 (99%)	366 (94%)	25 (6%)	0	100	100
5	A	238/294 (81%)	223 (94%)	15 (6%)	0	100	100
6	B	213/273 (78%)	202 (95%)	11 (5%)	0	100	100
7	C	201/205 (98%)	193 (96%)	8 (4%)	0	100	100
8	D	151/219 (69%)	146 (97%)	5 (3%)	0	100	100
9	E	165/215 (77%)	149 (90%)	16 (10%)	0	100	100
10	F	152/155 (98%)	147 (97%)	5 (3%)	0	100	100
11	G	139/142 (98%)	128 (92%)	10 (7%)	1 (1%)	18	56
12	H	126/132 (96%)	115 (91%)	11 (9%)	0	100	100
13	I	99/108 (92%)	84 (85%)	15 (15%)	0	100	100
14	J	112/121 (93%)	109 (97%)	3 (3%)	0	100	100
15	K	134/139 (96%)	114 (85%)	19 (14%)	1 (1%)	18	56
16	L	116/124 (94%)	106 (91%)	10 (9%)	0	100	100
17	M	58/61 (95%)	56 (97%)	2 (3%)	0	100	100
18	N	81/86 (94%)	79 (98%)	2 (2%)	0	100	100
19	O	78/94 (83%)	72 (92%)	6 (8%)	0	100	100
20	P	81/85 (95%)	78 (96%)	3 (4%)	0	100	100
21	Q	63/104 (61%)	57 (90%)	6 (10%)	0	100	100
22	R	82/87 (94%)	72 (88%)	10 (12%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
23	S	75/87 (86%)	73 (97%)	2 (3%)	0	100	100
24	T	51/60 (85%)	48 (94%)	3 (6%)	0	100	100
25	a	283/287 (99%)	264 (93%)	19 (7%)	0	100	100
26	b	227/287 (79%)	214 (94%)	13 (6%)	0	100	100
27	c	208/212 (98%)	197 (95%)	11 (5%)	0	100	100
28	d	173/180 (96%)	161 (93%)	12 (7%)	0	100	100
29	e	174/184 (95%)	165 (95%)	9 (5%)	0	100	100
30	f	143/149 (96%)	131 (92%)	12 (8%)	0	100	100
31	g	124/161 (77%)	109 (88%)	11 (9%)	4 (3%)	3	21
32	h	126/137 (92%)	117 (93%)	9 (7%)	0	100	100
33	i	142/146 (97%)	132 (93%)	10 (7%)	0	100	100
34	j	120/122 (98%)	113 (94%)	7 (6%)	0	100	100
35	k	146/151 (97%)	137 (94%)	9 (6%)	0	100	100
36	l	134/139 (96%)	125 (93%)	9 (7%)	0	100	100
37	m	117/124 (94%)	108 (92%)	9 (8%)	0	100	100
38	n	108/116 (93%)	101 (94%)	7 (6%)	0	100	100
39	o	113/119 (95%)	107 (95%)	6 (5%)	0	100	100
40	p	112/127 (88%)	109 (97%)	3 (3%)	0	100	100
41	q	97/100 (97%)	83 (86%)	14 (14%)	0	100	100
42	r	137/159 (86%)	130 (95%)	7 (5%)	0	100	100
43	s	90/237 (38%)	82 (91%)	8 (9%)	0	100	100
44	t	109/111 (98%)	104 (95%)	5 (5%)	0	100	100
45	u	84/104 (81%)	81 (96%)	3 (4%)	0	100	100
46	v	61/65 (94%)	58 (95%)	3 (5%)	0	100	100
47	w	96/111 (86%)	91 (95%)	5 (5%)	0	100	100
48	x	42/97 (43%)	39 (93%)	3 (7%)	0	100	100
49	y	54/57 (95%)	50 (93%)	4 (7%)	0	100	100
50	z	48/53 (91%)	45 (94%)	3 (6%)	0	100	100
All	All	6211/7064 (88%)	5803 (93%)	402 (6%)	6 (0%)	49	83

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
15	K	120	VAL
11	G	108	LEU
31	g	28	ASP
31	g	87	ASN
31	g	32	MET
31	g	30	THR

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	40/41 (98%)	40 (100%)	0	100	100
2	1	51/51 (100%)	51 (100%)	0	100	100
3	2	35/35 (100%)	35 (100%)	0	100	100
4	9	324/325 (100%)	324 (100%)	0	100	100
5	A	212/262 (81%)	212 (100%)	0	100	100
6	B	180/232 (78%)	180 (100%)	0	100	100
7	C	181/183 (99%)	181 (100%)	0	100	100
8	D	123/178 (69%)	123 (100%)	0	100	100
9	E	150/196 (76%)	150 (100%)	0	100	100
10	F	131/132 (99%)	131 (100%)	0	100	100
11	G	123/124 (99%)	122 (99%)	1 (1%)	73	80
12	H	111/115 (96%)	111 (100%)	0	100	100
13	I	95/99 (96%)	95 (100%)	0	100	100
14	J	91/97 (94%)	91 (100%)	0	100	100
15	K	117/120 (98%)	114 (97%)	3 (3%)	40	61
16	L	100/105 (95%)	100 (100%)	0	100	100
17	M	47/48 (98%)	47 (100%)	0	100	100
18	N	76/78 (97%)	76 (100%)	0	100	100
19	O	69/82 (84%)	69 (100%)	0	100	100
20	P	73/75 (97%)	73 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
21	Q	56/94 (60%)	56 (100%)	0	100	100
22	R	74/77 (96%)	72 (97%)	2 (3%)	39	60
23	S	70/77 (91%)	70 (100%)	0	100	100
24	T	49/56 (88%)	49 (100%)	0	100	100
25	a	241/243 (99%)	241 (100%)	0	100	100
26	b	186/233 (80%)	186 (100%)	0	100	100
27	c	182/184 (99%)	182 (100%)	0	100	100
28	d	150/154 (97%)	150 (100%)	0	100	100
29	e	153/159 (96%)	153 (100%)	0	100	100
30	f	131/134 (98%)	129 (98%)	2 (2%)	57	72
31	g	101/129 (78%)	92 (91%)	9 (9%)	9	28
32	h	102/110 (93%)	102 (100%)	0	100	100
33	i	126/128 (98%)	126 (100%)	0	100	100
34	j	103/103 (100%)	103 (100%)	0	100	100
35	k	123/126 (98%)	123 (100%)	0	100	100
36	l	113/115 (98%)	113 (100%)	0	100	100
37	m	105/109 (96%)	104 (99%)	1 (1%)	68	78
38	n	96/99 (97%)	96 (100%)	0	100	100
39	o	101/105 (96%)	101 (100%)	0	100	100
40	p	100/108 (93%)	100 (100%)	0	100	100
41	q	90/91 (99%)	90 (100%)	0	100	100
42	r	116/132 (88%)	116 (100%)	0	100	100
43	s	82/208 (39%)	82 (100%)	0	100	100
44	t	96/96 (100%)	96 (100%)	0	100	100
45	u	69/85 (81%)	69 (100%)	0	100	100
46	v	58/60 (97%)	58 (100%)	0	100	100
47	w	87/98 (89%)	87 (100%)	0	100	100
48	x	41/86 (48%)	41 (100%)	0	100	100
49	y	48/49 (98%)	44 (92%)	4 (8%)	10	30
50	z	47/50 (94%)	47 (100%)	0	100	100
All	All	5425/6076 (89%)	5403 (100%)	22 (0%)	81	84

All (22) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
11	G	108	LEU
15	K	120	VAL
15	K	121	GLU
15	K	123	ARG
22	R	25	GLN
22	R	26	GLU
30	f	1	MET
30	f	2	LYS
31	g	25	VAL
31	g	26	ILE
31	g	32	MET
31	g	33	SER
31	g	44	LEU
31	g	46	LYS
31	g	84	VAL
31	g	89	ILE
31	g	90	VAL
37	m	117	GLN
49	y	47	MET
49	y	50	ASP
49	y	51	LEU
49	y	52	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (76) such sidechains are listed below:

Mol	Chain	Res	Type
2	1	18	GLN
2	1	40	HIS
2	1	44	GLN
4	9	20	HIS
4	9	23	HIS
4	9	98	GLN
4	9	147	GLN
4	9	291	GLN
4	9	330	GLN
5	A	29	HIS
5	A	66	GLN
5	A	131	ASN
5	A	140	ASN
5	A	205	ASN
6	B	29	GLN

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Mol	Chain	Res	Type
6	B	73	GLN
6	B	150	ASN
7	C	37	GLN
9	E	17	GLN
9	E	26	GLN
9	E	27	GLN
9	E	110	GLN
10	F	147	ASN
12	H	66	ASN
13	I	62	HIS
14	J	15	HIS
14	J	95	ASN
15	K	29	ASN
16	L	38	ASN
18	N	25	GLN
20	P	42	HIS
20	P	48	HIS
20	P	49	ASN
21	Q	48	GLN
22	R	47	ASN
23	S	3	ASN
23	S	21	ASN
25	a	146	GLN
25	a	159	GLN
25	a	173	GLN
25	a	276	ASN
26	b	59	ASN
26	b	66	GLN
26	b	67	GLN
26	b	74	ASN
26	b	148	GLN
27	c	32	GLN
27	c	76	GLN
27	c	113	HIS
27	c	130	GLN
27	c	179	GLN
27	c	195	ASN
28	d	27	GLN
28	d	55	ASN
30	f	45	GLN
30	f	96	GLN
33	i	82	GLN

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Mol	Chain	Res	Type
33	i	138	GLN
34	j	69	GLN
34	j	76	HIS
35	k	75	GLN
37	m	5	ASN
37	m	59	ASN
37	m	62	GLN
38	n	42	GLN
38	n	49	ASN
39	o	5	ASN
39	o	7	GLN
39	o	15	GLN
40	p	110	GLN
42	r	38	ASN
42	r	121	GLN
44	t	2	GLN
44	t	64	GLN
47	w	89	GLN
47	w	94	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
51	3	2875/2907 (98%)	779 (27%)	32 (1%)
52	4	103/108 (95%)	29 (28%)	4 (3%)
53	5	1490/1520 (98%)	341 (22%)	7 (0%)
54	6	75/76 (98%)	28 (37%)	5 (6%)
54	7	75/76 (98%)	28 (37%)	5 (6%)
All	All	4618/4687 (98%)	1205 (26%)	53 (1%)

All (1205) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
51	3	14	U
51	3	27	U
51	3	28	G
51	3	29	G
51	3	30	A
51	3	37	G
51	3	38	G
51	3	41	C

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Mol	Chain	Res	Type
51	3	44	A
51	3	48	G
51	3	60	G
51	3	61	U
51	3	64	U
51	3	65	A
51	3	73	A
51	3	76	A
51	3	77	G
51	3	81	C
51	3	87	G
51	3	95	G
51	3	98	C
51	3	102	A
51	3	103	G
51	3	104	A
51	3	109	G
51	3	120	A
51	3	121	U
51	3	126	C
51	3	132	G
51	3	135	A
51	3	137	U
51	3	147	C
51	3	163	A
51	3	164	A
51	3	165	U
51	3	166	A
51	3	178	A
51	3	179	A
51	3	180	A
51	3	181	G
51	3	184	A
51	3	185	U
51	3	186	A
51	3	187	C
51	3	188	G
51	3	200	A
51	3	203	A
51	3	208	A
51	3	210	U
51	3	219	G

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Mol	Chain	Res	Type
51	3	220	A
51	3	223	A
51	3	226	A
51	3	227	A
51	3	229	C
51	3	232	A
51	3	233	U
51	3	234	G
51	3	237	A
51	3	242	G
51	3	248	A
51	3	251	G
51	3	252	G
51	3	265	G
51	3	268	C
51	3	269	A
51	3	270	G
51	3	274	A
51	3	276	A
51	3	277	C
51	3	284	U
51	3	285	U
51	3	287	G
51	3	288	A
51	3	294	G
51	3	295	U
51	3	296	U
51	3	297	G
51	3	298	U
51	3	299	A
51	3	309	A
51	3	310	U
51	3	311	G
51	3	312	U
51	3	315	A
51	3	316	C
51	3	324	C
51	3	336	C
51	3	345	A
51	3	347	C
51	3	351	G
51	3	355	A

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Mol	Chain	Res	Type
51	3	356	A
51	3	357	A
51	3	363	G
51	3	364	A
51	3	369	C
51	3	377	U
51	3	393	C
51	3	396	A
51	3	397	G
51	3	399	G
51	3	402	A
51	3	403	U
51	3	409	A
51	3	410	G
51	3	411	U
51	3	413	G
51	3	418	G
51	3	422	A
51	3	423	C
51	3	424	G
51	3	425	U
51	3	426	U
51	3	432	G
51	3	439	U
51	3	440	C
51	3	442	G
51	3	447	G
51	3	448	A
51	3	460	G
51	3	466	A
51	3	470	U
51	3	471	A
51	3	484	U
51	3	485	A
51	3	487	C
51	3	488	G
51	3	490	A
51	3	491	A
51	3	498	C
51	3	500	U
51	3	501	G
51	3	502	A

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Mol	Chain	Res	Type
51	3	503	G
51	3	509	G
51	3	514	A
51	3	515	A
51	3	516	A
51	3	517	G
51	3	530	G
51	3	533	G
51	3	539	U
51	3	540	A
51	3	543	U
51	3	544	U
51	3	547	G
51	3	562	C
51	3	563	A
51	3	566	G
51	3	567	U
51	3	572	G
51	3	573	A
51	3	577	C
51	3	579	U
51	3	580	U
51	3	581	A
51	3	582	A
51	3	583	U
51	3	584	G
51	3	595	U
51	3	596	G
51	3	605	A
51	3	606	G
51	3	610	G
51	3	620	G
51	3	636	U
51	3	637	U
51	3	638	A
51	3	641	U
51	3	648	G
51	3	659	C
51	3	663	A
51	3	668	A
51	3	670	G
51	3	673	A

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Mol	Chain	Res	Type
51	3	681	A
51	3	682	A
51	3	687	G
51	3	689	U
51	3	691	G
51	3	704	G
51	3	705	A
51	3	706	C
51	3	712	A
51	3	719	G
51	3	720	A
51	3	721	G
51	3	722	C
51	3	737	U
51	3	752	C
51	3	760	G
51	3	761	G
51	3	762	A
51	3	765	A
51	3	782	U
51	3	792	G
51	3	798	G
51	3	808	U
51	3	810	G
51	3	811	G
51	3	812	G
51	3	816	A
51	3	817	A
51	3	819	U
51	3	820	U
51	3	823	A
51	3	824	A
51	3	825	U
51	3	827	G
51	3	828	A
51	3	829	A
51	3	835	U
51	3	840	G
51	3	841	C
51	3	846	U
51	3	847	C
51	3	854	A

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Mol	Chain	Res	Type
51	3	862	U
51	3	863	U
51	3	864	A
51	3	866	G
51	3	873	G
51	3	875	G
51	3	881	A
51	3	883	A
51	3	892	G
51	3	902	U
51	3	904	C
51	3	914	G
51	3	917	G
51	3	932	U
51	3	933	A
51	3	934	C
51	3	947	A
51	3	949	C
51	3	952	U
51	3	953	G
51	3	970	U
51	3	971	U
51	3	981	A
51	3	982	G
51	3	989	G
51	3	994	U
51	3	995	A
51	3	997	G
51	3	998	C
51	3	1000	U
51	3	1001	C
51	3	1008	A
51	3	1009	A
51	3	1014	G
51	3	1016	A
51	3	1026	A
51	3	1027	U
51	3	1031	U
51	3	1032	A
51	3	1040	U
51	3	1045	A
51	3	1047	A

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Mol	Chain	Res	Type
51	3	1049	U
51	3	1052	A
51	3	1055	A
51	3	1057	G
51	3	1061	A
51	3	1063	A
51	3	1068	U
51	3	1073	A
51	3	1075	G
51	3	1080	A
51	3	1081	A
51	3	1082	A
51	3	1084	C
51	3	1089	A
51	3	1092	A
51	3	1095	U
51	3	1096	U
51	3	1097	G
51	3	1101	U
51	3	1102	A
51	3	1103	G
51	3	1105	A
51	3	1106	G
51	3	1107	C
51	3	1108	A
51	3	1109	G
51	3	1113	U
51	3	1119	A
51	3	1122	G
51	3	1123	A
51	3	1124	G
51	3	1126	G
51	3	1130	A
51	3	1132	C
51	3	1143	U
51	3	1144	C
51	3	1145	G
51	3	1147	G
51	3	1150	U
51	3	1151	U
51	3	1154	U
51	3	1157	G

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Mol	Chain	Res	Type
51	3	1162	A
51	3	1163	G
51	3	1164	A
51	3	1167	U
51	3	1168	A
51	3	1169	A
51	3	1170	C
51	3	1171	G
51	3	1174	G
51	3	1176	U
51	3	1177	A
51	3	1178	A
51	3	1179	G
51	3	1186	A
51	3	1190	A
51	3	1191	A
51	3	1198	G
51	3	1207	U
51	3	1208	A
51	3	1209	U
51	3	1210	A
51	3	1212	C
51	3	1213	U
51	3	1215	G
51	3	1216	U
51	3	1226	G
51	3	1234	U
51	3	1250	A
51	3	1251	G
51	3	1253	G
51	3	1255	G
51	3	1256	A
51	3	1257	G
51	3	1259	A
51	3	1260	U
51	3	1266	G
51	3	1268	U
51	3	1283	A
51	3	1284	A
51	3	1286	G
51	3	1292	A
51	3	1293	U

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Mol	Chain	Res	Type
51	3	1295	A
51	3	1298	A
51	3	1301	G
51	3	1302	C
51	3	1303	U
51	3	1304	U
51	3	1309	G
51	3	1321	C
51	3	1323	A
51	3	1326	C
51	3	1328	A
51	3	1329	U
51	3	1330	U
51	3	1340	U
51	3	1342	C
51	3	1343	C
51	3	1348	C
51	3	1349	C
51	3	1353	G
51	3	1358	C
51	3	1361	U
51	3	1367	G
51	3	1369	U
51	3	1371	G
51	3	1372	U
51	3	1373	C
51	3	1378	C
51	3	1384	C
51	3	1388	G
51	3	1389	G
51	3	1393	A
51	3	1396	A
51	3	1406	A
51	3	1407	U
51	3	1408	G
51	3	1412	A
51	3	1420	A
51	3	1422	U
51	3	1423	A
51	3	1424	U
51	3	1426	C
51	3	1431	A

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Mol	Chain	Res	Type
51	3	1435	A
51	3	1444	C
51	3	1445	U
51	3	1448	U
51	3	1455	A
51	3	1456	C
51	3	1463	G
51	3	1466	U
51	3	1467	U
51	3	1480	A
51	3	1481	U
51	3	1483	G
51	3	1486	U
51	3	1487	U
51	3	1493	A
51	3	1504	G
51	3	1505	G
51	3	1508	G
51	3	1510	A
51	3	1513	A
51	3	1514	U
51	3	1515	A
51	3	1522	U
51	3	1523	C
51	3	1532	A
51	3	1533	U
51	3	1534	A
51	3	1535	A
51	3	1541	A
51	3	1548	A
51	3	1549	U
51	3	1550	G
51	3	1557	G
51	3	1571	G
51	3	1576	G
51	3	1580	G
51	3	1584	U
51	3	1585	A
51	3	1588	A
51	3	1589	A
51	3	1592	A
51	3	1600	A

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Mol	Chain	Res	Type
51	3	1601	A
51	3	1603	A
51	3	1612	U
51	3	1615	G
51	3	1617	U
51	3	1618	U
51	3	1619	A
51	3	1637	A
51	3	1640	G
51	3	1641	A
51	3	1643	A
51	3	1644	A
51	3	1645	C
51	3	1651	C
51	3	1652	A
51	3	1655	U
51	3	1656	A
51	3	1661	A
51	3	1663	G
51	3	1665	G
51	3	1668	G
51	3	1673	U
51	3	1681	G
51	3	1682	C
51	3	1694	A
51	3	1702	A
51	3	1706	C
51	3	1708	G
51	3	1716	A
51	3	1733	G
51	3	1737	G
51	3	1747	G
51	3	1748	U
51	3	1757	G
51	3	1763	G
51	3	1764	U
51	3	1765	G
51	3	1766	A
51	3	1767	A
51	3	1768	G
51	3	1769	A
51	3	1770	A

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Mol	Chain	Res	Type
51	3	1771	C
51	3	1772	G
51	3	1780	A
51	3	1781	C
51	3	1785	U
51	3	1791	A
51	3	1792	A
51	3	1806	G
51	3	1807	C
51	3	1810	A
51	3	1816	A
51	3	1821	G
51	3	1822	A
51	3	1823	U
51	3	1824	G
51	3	1826	A
51	3	1827	U
51	3	1836	A
51	3	1842	G
51	3	1850	C
51	3	1865	A
51	3	1870	G
51	3	1873	A
51	3	1876	G
51	3	1880	G
51	3	1888	U
51	3	1890	U
51	3	1891	A
51	3	1907	A
51	3	1908	A
51	3	1910	G
51	3	1913	G
51	3	1914	G
51	3	1920	A
51	3	1921	C
51	3	1927	C
51	3	1934	A
51	3	1936	G
51	3	1937	G
51	3	1938	U
51	3	1942	G
51	3	1943	A

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Mol	Chain	Res	Type
51	3	1944	A
51	3	1945	A
51	3	1947	U
51	3	1951	A
51	3	1952	G
51	3	1960	A
51	3	1962	U
51	3	1964	C
51	3	1966	G
51	3	1971	G
51	3	1974	U
51	3	1977	A
51	3	1978	U
51	3	1979	G
51	3	1989	U
51	3	1998	U
51	3	1999	G
51	3	2000	U
51	3	2009	U
51	3	2011	G
51	3	2027	G
51	3	2028	G
51	3	2030	A
51	3	2034	G
51	3	2037	A
51	3	2038	A
51	3	2041	C
51	3	2050	G
51	3	2056	A
51	3	2059	G
51	3	2062	C
51	3	2063	G
51	3	2065	A
51	3	2067	A
51	3	2068	G
51	3	2069	A
51	3	2075	U
51	3	2076	G
51	3	2099	U
51	3	2100	G
51	3	2103	C
51	3	2107	A

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Mol	Chain	Res	Type
51	3	2108	C
51	3	2110	U
51	3	2111	U
51	3	2112	A
51	3	2114	C
51	3	2117	G
51	3	2121	A
51	3	2123	A
51	3	2124	A
51	3	2127	G
51	3	2131	G
51	3	2132	G
51	3	2133	A
51	3	2138	U
51	3	2139	C
51	3	2140	G
51	3	2144	C
51	3	2146	A
51	3	2152	C
51	3	2153	U
51	3	2155	G
51	3	2164	G
51	3	2165	A
51	3	2167	G
51	3	2171	A
51	3	2173	G
51	3	2180	U
51	3	2182	C
51	3	2183	U
51	3	2191	G
51	3	2193	U
51	3	2195	U
51	3	2197	U
51	3	2198	G
51	3	2201	G
51	3	2202	U
51	3	2203	U
51	3	2206	A
51	3	2207	A
51	3	2211	G
51	3	2212	U
51	3	2220	A

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Mol	Chain	Res	Type
51	3	2221	U
51	3	2222	C
51	3	2233	A
51	3	2246	G
51	3	2247	G
51	3	2251	U
51	3	2254	G
51	3	2257	U
51	3	2259	G
51	3	2274	A
51	3	2275	A
51	3	2276	A
51	3	2286	A
51	3	2287	G
51	3	2290	G
51	3	2291	U
51	3	2294	A
51	3	2295	A
51	3	2306	A
51	3	2311	G
51	3	2313	U
51	3	2316	G
51	3	2317	A
51	3	2324	A
51	3	2327	U
51	3	2330	A
51	3	2333	G
51	3	2335	A
51	3	2341	G
51	3	2342	U
51	3	2343	A
51	3	2344	A
51	3	2351	U
51	3	2353	G
51	3	2355	C
51	3	2358	U
51	3	2362	A
51	3	2366	A
51	3	2369	G
51	3	2379	G
51	3	2387	U
51	3	2391	G

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Mol	Chain	Res	Type
51	3	2392	U
51	3	2393	C
51	3	2398	U
51	3	2399	G
51	3	2410	C
51	3	2416	U
51	3	2418	G
51	3	2422	G
51	3	2431	U
51	3	2433	A
51	3	2434	A
51	3	2435	C
51	3	2436	G
51	3	2437	G
51	3	2438	A
51	3	2440	A
51	3	2442	A
51	3	2443	A
51	3	2445	C
51	3	2449	U
51	3	2454	G
51	3	2456	A
51	3	2460	C
51	3	2475	C
51	3	2484	A
51	3	2486	A
51	3	2488	C
51	3	2492	G
51	3	2498	G
51	3	2499	U
51	3	2502	G
51	3	2503	G
51	3	2505	A
51	3	2507	C
51	3	2509	C
51	3	2510	G
51	3	2511	A
51	3	2513	G
51	3	2514	U
51	3	2516	G
51	3	2521	A
51	3	2526	A

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Mol	Chain	Res	Type
51	3	2531	C
51	3	2539	A
51	3	2543	G
51	3	2558	G
51	3	2562	U
51	3	2569	A
51	3	2574	A
51	3	2575	G
51	3	2577	G
51	3	2578	A
51	3	2580	A
51	3	2581	C
51	3	2584	G
51	3	2585	A
51	3	2586	G
51	3	2588	U
51	3	2590	G
51	3	2591	G
51	3	2593	U
51	3	2596	A
51	3	2604	U
51	3	2605	G
51	3	2608	A
51	3	2610	A
51	3	2618	C
51	3	2619	C
51	3	2621	U
51	3	2622	A
51	3	2631	G
51	3	2633	C
51	3	2637	A
51	3	2638	G
51	3	2642	G
51	3	2644	U
51	3	2645	U
51	3	2649	G
51	3	2652	U
51	3	2654	U
51	3	2659	U
51	3	2662	A
51	3	2664	U
51	3	2668	A

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Mol	Chain	Res	Type
51	3	2669	G
51	3	2681	G
51	3	2689	C
51	3	2690	U
51	3	2697	C
51	3	2698	U
51	3	2704	U
51	3	2713	A
51	3	2714	G
51	3	2720	C
51	3	2722	G
51	3	2727	G
51	3	2737	G
51	3	2739	C
51	3	2741	A
51	3	2752	G
51	3	2756	A
51	3	2760	C
51	3	2765	A
51	3	2773	A
51	3	2775	C
51	3	2777	A
51	3	2779	C
51	3	2786	A
51	3	2788	U
51	3	2797	C
51	3	2799	U
51	3	2800	U
51	3	2801	U
51	3	2802	C
51	3	2804	C
51	3	2805	A
51	3	2808	A
51	3	2809	A
51	3	2810	A
51	3	2811	G
51	3	2812	U
51	3	2813	A
51	3	2822	C
51	3	2824	A
51	3	2829	G
51	3	2830	A

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Mol	Chain	Res	Type
51	3	2837	U
51	3	2838	G
51	3	2839	A
51	3	2853	U
51	3	2862	U
51	3	2863	G
51	3	2865	U
51	3	2871	G
51	3	2876	G
51	3	2888	U
51	3	2889	U
51	3	2890	G
51	3	2895	A
51	3	2897	G
51	3	2898	A
52	4	9	C
52	4	10	C
52	4	11	A
52	4	22	G
52	4	23	A
52	4	28	C
52	4	31	G
52	4	33	U
52	4	38	U
52	4	39	U
52	4	40	U
52	4	41	C
52	4	42	G
52	4	47	C
52	4	48	A
52	4	49	G
52	4	51	A
52	4	54	U
52	4	55	A
52	4	58	C
52	4	60	C
52	4	78	C
52	4	85	A
52	4	88	G
52	4	89	A
52	4	95	G
52	4	98	A

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Mol	Chain	Res	Type
52	4	99	A
52	4	108	C
53	5	9	A
53	5	10	G
53	5	15	U
53	5	33	A
53	5	39	G
53	5	40	G
53	5	48	C
53	5	49	C
53	5	52	A
53	5	53	U
53	5	65	G
53	5	67	U
53	5	86	A
53	5	95	C
53	5	100	G
53	5	101	A
53	5	105	A
53	5	106	C
53	5	107	A
53	5	112	U
53	5	114	C
53	5	115	A
53	5	116	A
53	5	117	U
53	5	120	A
53	5	128	A
53	5	129	U
53	5	130	G
53	5	135	A
53	5	136	U
53	5	137	A
53	5	142	G
53	5	146	A
53	5	147	A
53	5	148	A
53	5	149	G
53	5	152	U
53	5	159	U
53	5	163	G
53	5	169	G

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Mol	Chain	Res	Type
53	5	173	U
53	5	187	A
53	5	197	A
53	5	217	U
53	5	219	A
53	5	220	U
53	5	232	G
53	5	236	C
53	5	240	U
53	5	241	C
53	5	243	G
53	5	247	G
53	5	258	A
53	5	259	A
53	5	260	C
53	5	262	G
53	5	263	C
53	5	285	G
53	5	302	A
53	5	304	U
53	5	311	A
53	5	312	A
53	5	318	C
53	5	323	A
53	5	324	C
53	5	325	A
53	5	326	C
53	5	328	G
53	5	340	A
53	5	342	G
53	5	344	G
53	5	345	A
53	5	347	G
53	5	348	C
53	5	352	A
53	5	363	U
53	5	368	C
53	5	369	A
53	5	372	G
53	5	377	A
53	5	378	A
53	5	381	C

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Mol	Chain	Res	Type
53	5	385	A
53	5	393	A
53	5	401	U
53	5	402	G
53	5	408	U
53	5	409	G
53	5	410	A
53	5	411	A
53	5	417	U
53	5	419	A
53	5	420	A
53	5	425	G
53	5	426	U
53	5	430	G
53	5	449	A
53	5	450	U
53	5	452	A
53	5	453	C
53	5	455	U
53	5	456	U
53	5	457	A
53	5	461	G
53	5	462	G
53	5	464	A
53	5	465	A
53	5	468	G
53	5	471	A
53	5	473	A
53	5	477	U
53	5	478	G
53	5	481	U
53	5	483	U
53	5	488	U
53	5	489	U
53	5	493	A
53	5	495	U
53	5	497	A
53	5	507	A
53	5	509	C
53	5	514	U
53	5	516	C
53	5	525	G

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Mol	Chain	Res	Type
53	5	527	G
53	5	529	U
53	5	530	A
53	5	531	A
53	5	532	U
53	5	533	A
53	5	543	C
53	5	545	A
53	5	548	G
53	5	553	C
53	5	557	A
53	5	558	U
53	5	560	U
53	5	562	U
53	5	567	C
53	5	569	U
53	5	570	A
53	5	571	A
53	5	573	G
53	5	574	C
53	5	575	A
53	5	586	G
53	5	594	A
53	5	609	G
53	5	616	C
53	5	617	U
53	5	619	A
53	5	628	A
53	5	646	A
53	5	649	U
53	5	662	G
53	5	683	G
53	5	684	A
53	5	685	G
53	5	695	G
53	5	698	U
53	5	701	A
53	5	715	A
53	5	716	C
53	5	718	A
53	5	719	G
53	5	720	U

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Mol	Chain	Res	Type
53	5	721	G
53	5	722	G
53	5	728	G
53	5	731	A
53	5	745	U
53	5	748	U
53	5	750	A
53	5	752	G
53	5	774	A
53	5	778	A
53	5	786	U
53	5	787	A
53	5	788	G
53	5	789	A
53	5	790	U
53	5	791	A
53	5	793	C
53	5	802	C
53	5	809	G
53	5	812	A
53	5	814	C
53	5	817	U
53	5	818	A
53	5	825	A
53	5	829	G
53	5	838	A
53	5	840	C
53	5	841	C
53	5	844	U
53	5	846	G
53	5	849	A
53	5	866	A
53	5	870	A
53	5	871	U
53	5	883	A
53	5	885	U
53	5	894	A
53	5	896	G
53	5	908	A
53	5	910	C
53	5	913	A
53	5	921	G

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Mol	Chain	Res	Type
53	5	922	G
53	5	929	C
53	5	934	G
53	5	941	A
53	5	950	C
53	5	953	A
53	5	954	A
53	5	955	U
53	5	956	U
53	5	963	U
53	5	964	A
53	5	966	A
53	5	971	A
53	5	972	A
53	5	976	U
53	5	984	A
53	5	987	U
53	5	988	G
53	5	989	A
53	5	999	C
53	5	1000	A
53	5	1002	A
53	5	1003	G
53	5	1004	U
53	5	1012	A
53	5	1013	C
53	5	1014	A
53	5	1015	U
53	5	1033	U
53	5	1040	U
53	5	1041	G
53	5	1044	G
53	5	1046	A
53	5	1047	U
53	5	1055	G
53	5	1056	U
53	5	1058	A
53	5	1070	G
53	5	1072	G
53	5	1075	G
53	5	1082	U
53	5	1089	C

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Mol	Chain	Res	Type
53	5	1092	A
53	5	1109	U
53	5	1115	G
53	5	1118	A
53	5	1119	C
53	5	1121	U
53	5	1122	U
53	5	1123	G
53	5	1128	G
53	5	1134	C
53	5	1135	U
53	5	1141	U
53	5	1142	G
53	5	1146	A
53	5	1158	A
53	5	1159	A
53	5	1162	G
53	5	1163	A
53	5	1170	C
53	5	1171	A
53	5	1172	A
53	5	1176	A
53	5	1187	U
53	5	1188	A
53	5	1197	G
53	5	1199	U
53	5	1200	G
53	5	1201	C
53	5	1202	A
53	5	1211	A
53	5	1215	U
53	5	1225	A
53	5	1232	C
53	5	1233	G
53	5	1235	C
53	5	1242	U
53	5	1245	A
53	5	1254	A
53	5	1255	A
53	5	1257	C
53	5	1260	U
53	5	1261	A

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Mol	Chain	Res	Type
53	5	1271	U
53	5	1274	G
53	5	1276	U
53	5	1279	G
53	5	1294	U
53	5	1296	C
53	5	1297	G
53	5	1310	C
53	5	1311	G
53	5	1312	G
53	5	1315	U
53	5	1322	U
53	5	1326	C
53	5	1333	C
53	5	1334	A
53	5	1337	U
53	5	1338	A
53	5	1339	U
53	5	1340	G
53	5	1343	G
53	5	1353	C
53	5	1354	G
53	5	1356	U
53	5	1369	A
53	5	1370	C
53	5	1373	A
53	5	1376	G
53	5	1379	C
53	5	1386	C
53	5	1394	G
53	5	1400	A
53	5	1404	U
53	5	1411	A
53	5	1417	U
53	5	1418	G
53	5	1426	U
53	5	1429	G
53	5	1442	A
53	5	1446	A
53	5	1466	U
53	5	1467	A
53	5	1472	G

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Mol	Chain	Res	Type
53	5	1474	A
53	5	1480	G
53	5	1481	U
53	5	1490	G
53	5	1496	G
53	5	1504	G
53	5	1505	G
54	6	3	G
54	6	17	U
54	6	18	C
54	6	19	G
54	6	20	G
54	6	21	U
54	6	22	A
54	6	23	G
54	6	31	G
54	6	43	G
54	6	44	U
54	6	48	U
54	6	49	C
54	6	50	G
54	6	53	A
54	6	54	G
54	6	55	U
54	6	57	C
54	6	58	G
54	6	59	A
54	6	62	C
54	6	66	C
54	6	71	A
54	6	72	C
54	6	73	C
54	6	74	A
54	6	75	C
54	6	77	A
54	7	3	G
54	7	17	U
54	7	18	C
54	7	19	G
54	7	20	G
54	7	21	U
54	7	22	A

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Mol	Chain	Res	Type
54	7	23	G
54	7	31	G
54	7	43	G
54	7	44	U
54	7	48	U
54	7	49	C
54	7	50	G
54	7	53	A
54	7	54	G
54	7	55	U
54	7	57	C
54	7	58	G
54	7	59	A
54	7	62	C
54	7	66	C
54	7	71	A
54	7	72	C
54	7	73	C
54	7	74	A
54	7	75	C
54	7	77	A

All (53) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
51	3	222	A
51	3	315	A
51	3	410	G
51	3	423	C
51	3	425	U
51	3	465	A
51	3	500	U
51	3	513	A
51	3	515	A
51	3	605	A
51	3	688	U
51	3	811	G
51	3	826	C
51	3	901	C
51	3	1048	A
51	3	1209	U
51	3	1507	G

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Mol	Chain	Res	Type
51	3	1532	A
51	3	1583	G
51	3	1588	A
51	3	1767	A
51	3	1820	U
51	3	1889	U
51	3	1906	G
51	3	2391	G
51	3	2504	C
51	3	2506	C
51	3	2513	G
51	3	2604	U
51	3	2668	A
51	3	2764	U
51	3	2801	U
52	4	10	C
52	4	50	C
52	4	54	U
52	4	59	A
53	5	146	A
53	5	303	A
53	5	419	A
53	5	448	A
53	5	727	G
53	5	975	C
53	5	1158	A
54	6	16	G
54	6	18	C
54	6	58	G
54	6	71	A
54	6	74	A
54	7	16	G
54	7	18	C
54	7	58	G
54	7	71	A
54	7	74	A

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

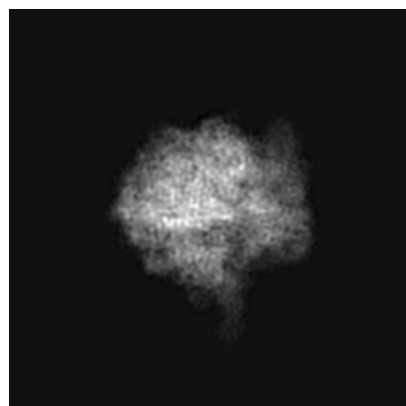
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-13433. These allow visual inspection of the internal detail of the map and identification of artifacts.

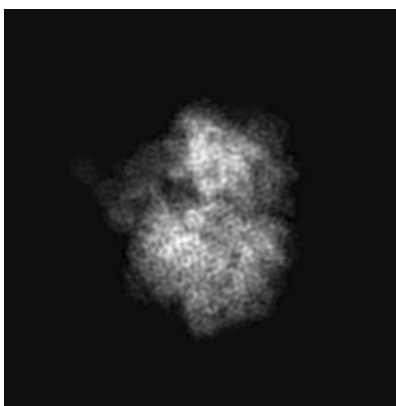
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

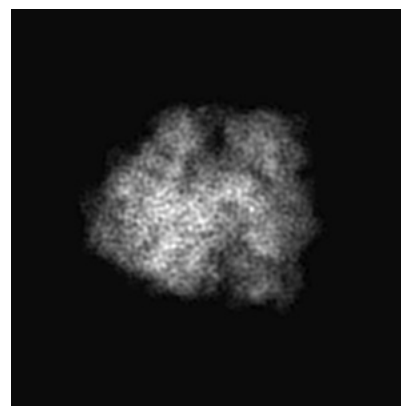
6.1.1 Primary map



X

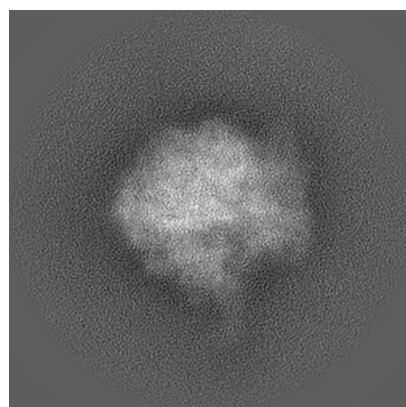


Y

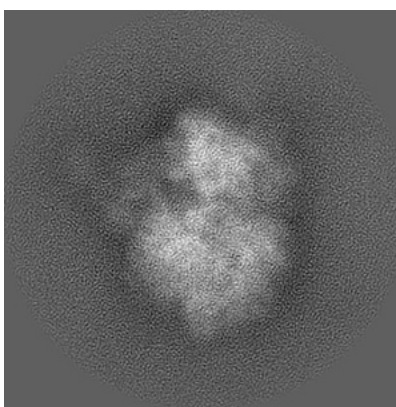


Z

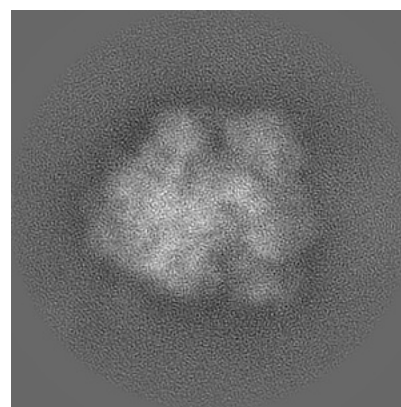
6.1.2 Raw map



X



Y

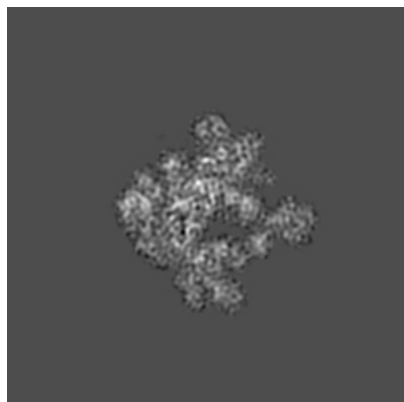


Z

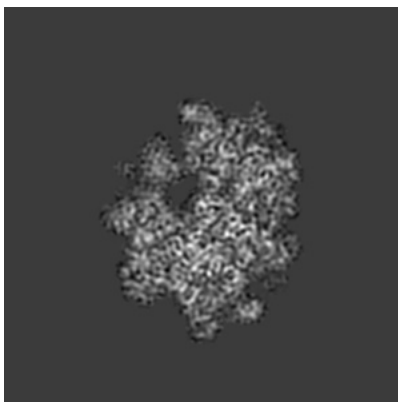
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

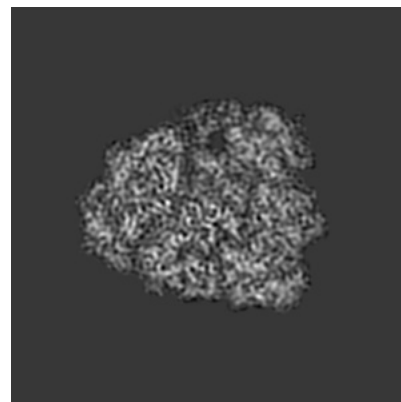
6.2.1 Primary map



X Index: 128

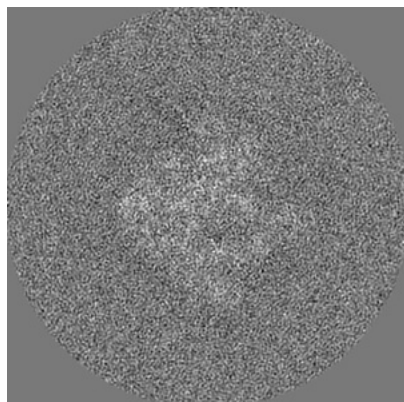


Y Index: 128

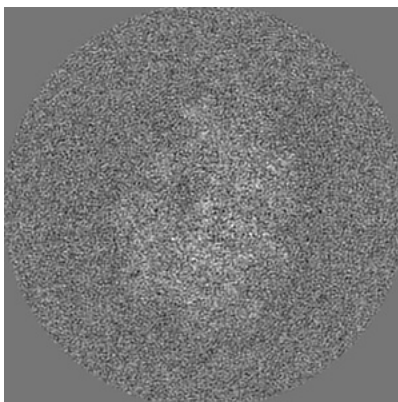


Z Index: 128

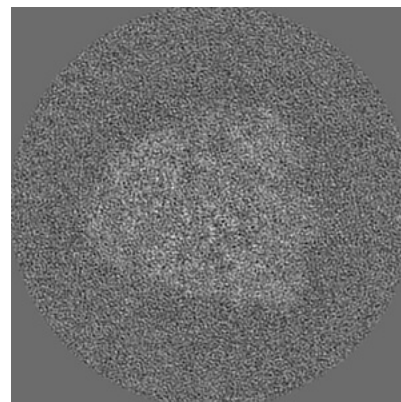
6.2.2 Raw map



X Index: 128



Y Index: 128

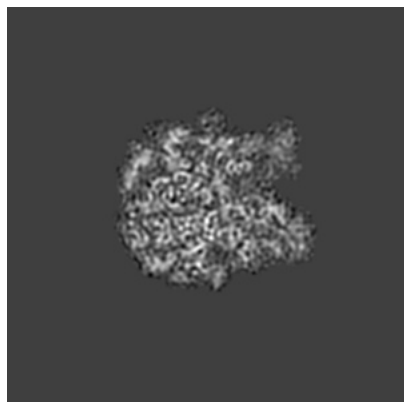


Z Index: 128

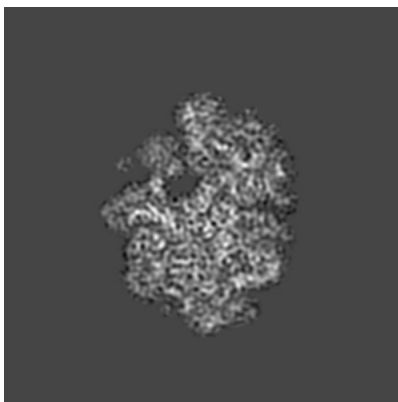
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

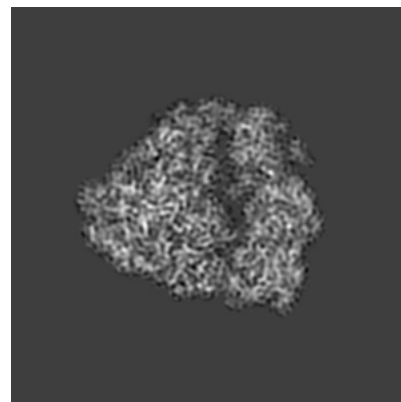
6.3.1 Primary map



X Index: 103

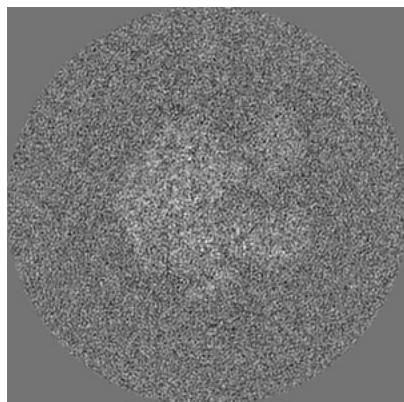


Y Index: 120

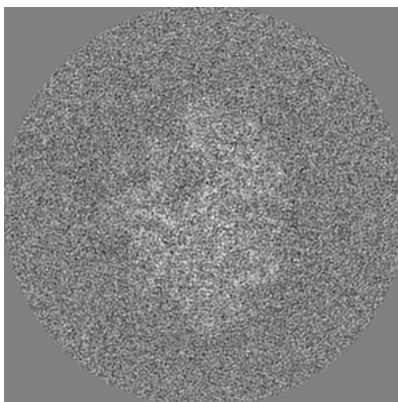


Z Index: 122

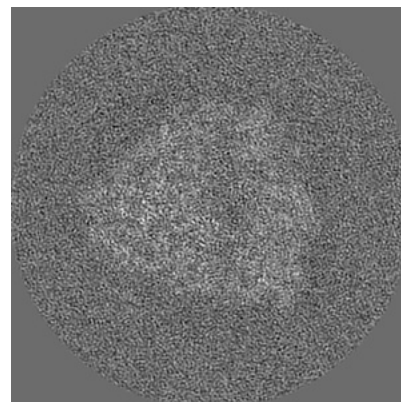
6.3.2 Raw map



X Index: 114



Y Index: 120

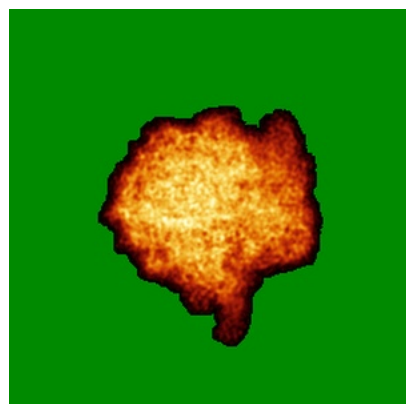


Z Index: 122

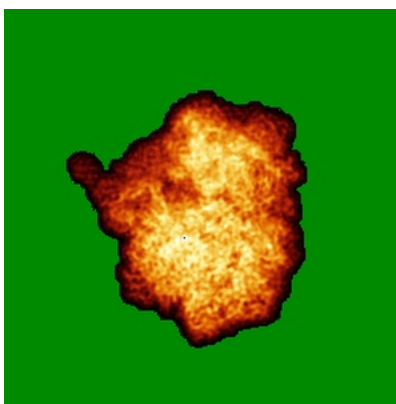
The images above show the largest variance slices of the map in three orthogonal directions.

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

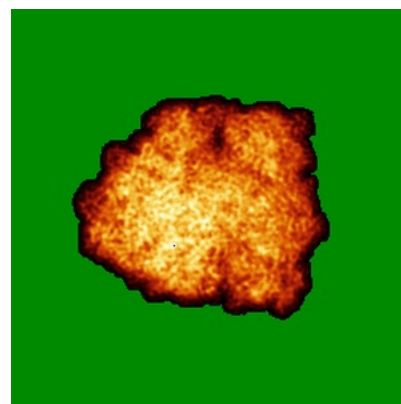
6.4.1 Primary map



X

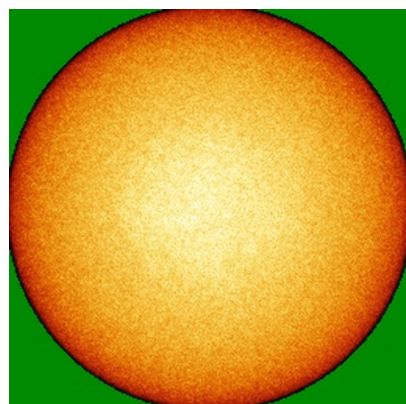


Y

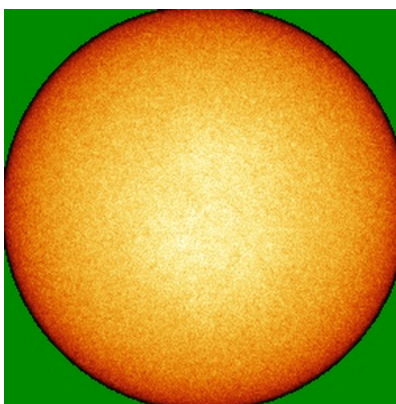


Z

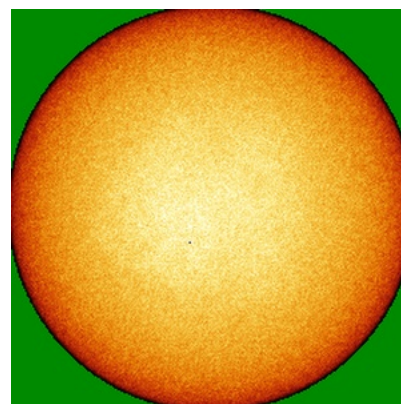
6.4.2 Raw map



X



Y



Z

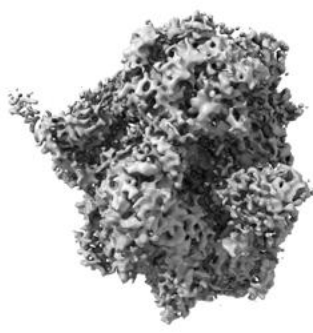
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

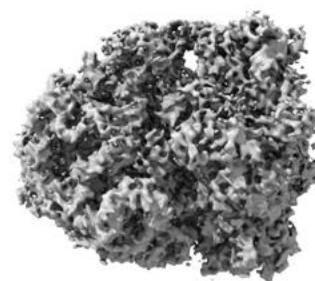
6.5.1 Primary map



X



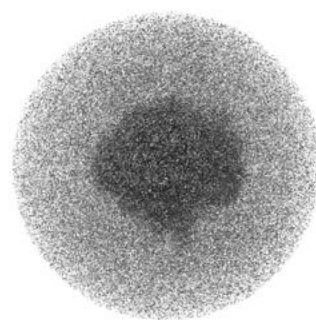
Y



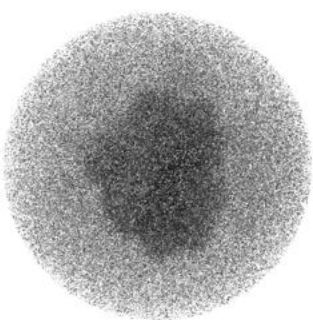
Z

The images above show the 3D surface view of the map at the recommended contour level 0.5. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

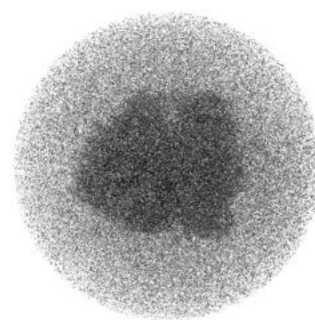
6.5.2 Raw map



X



Y



Z

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

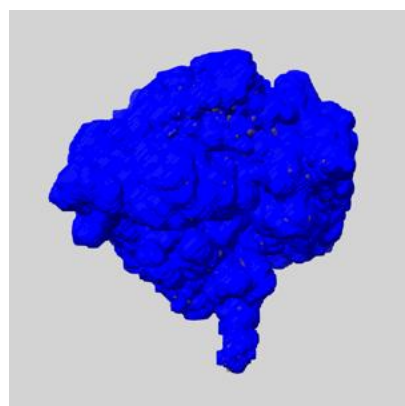
6.6 Mask visualisation [i](#)

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

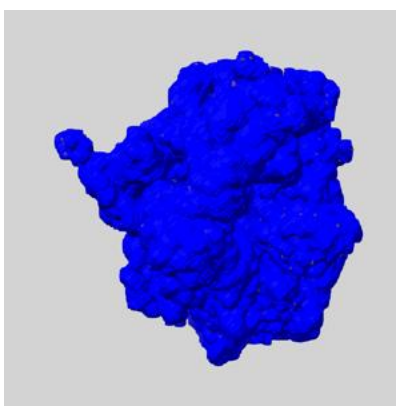
A mask typically either:

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

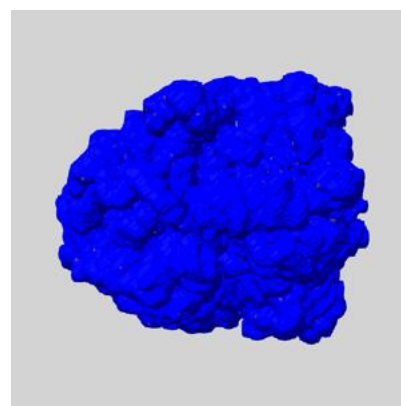
6.6.1 emd_13433_msk_1.map [i](#)



X



Y

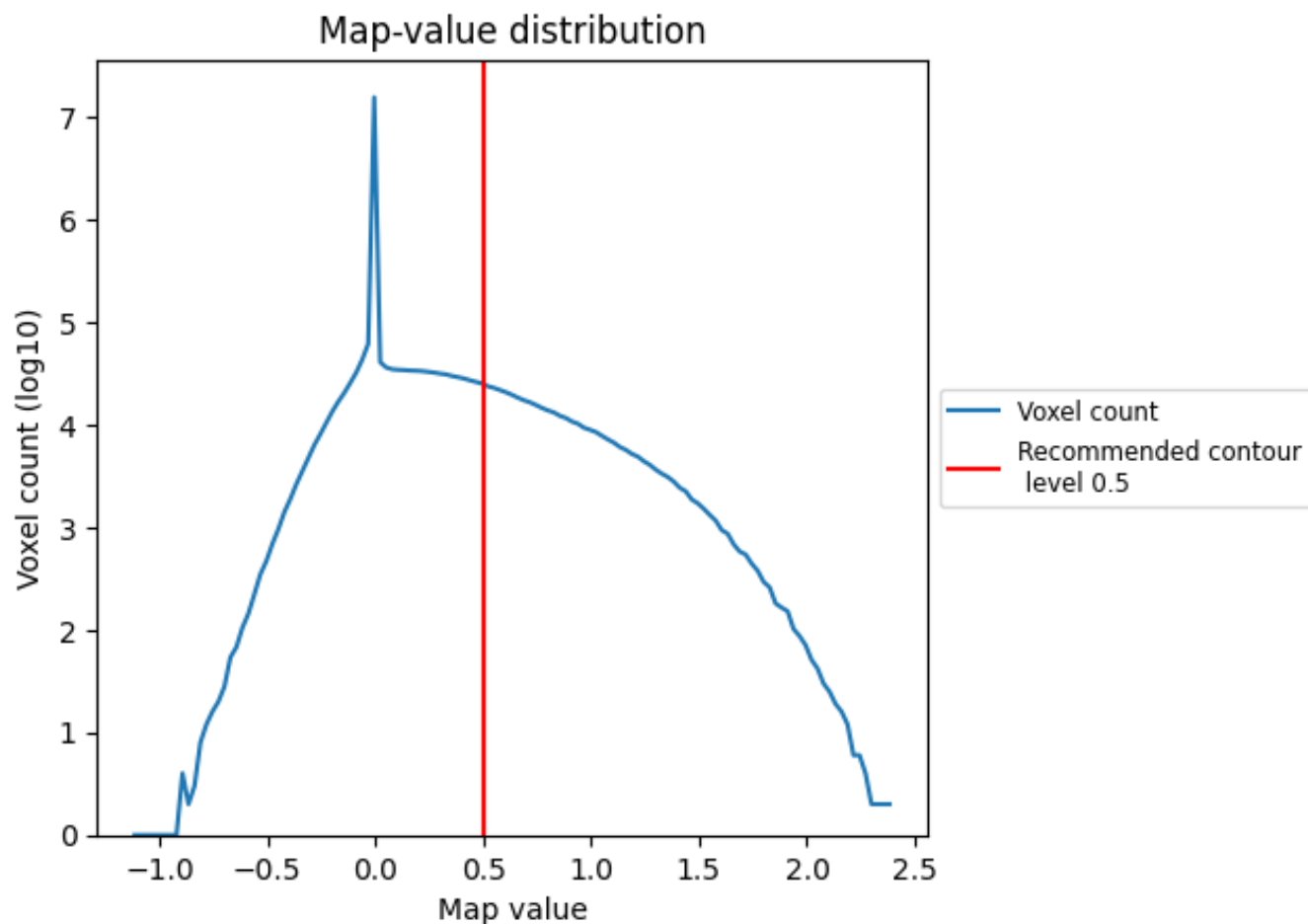


Z

7 Map analysis [i](#)

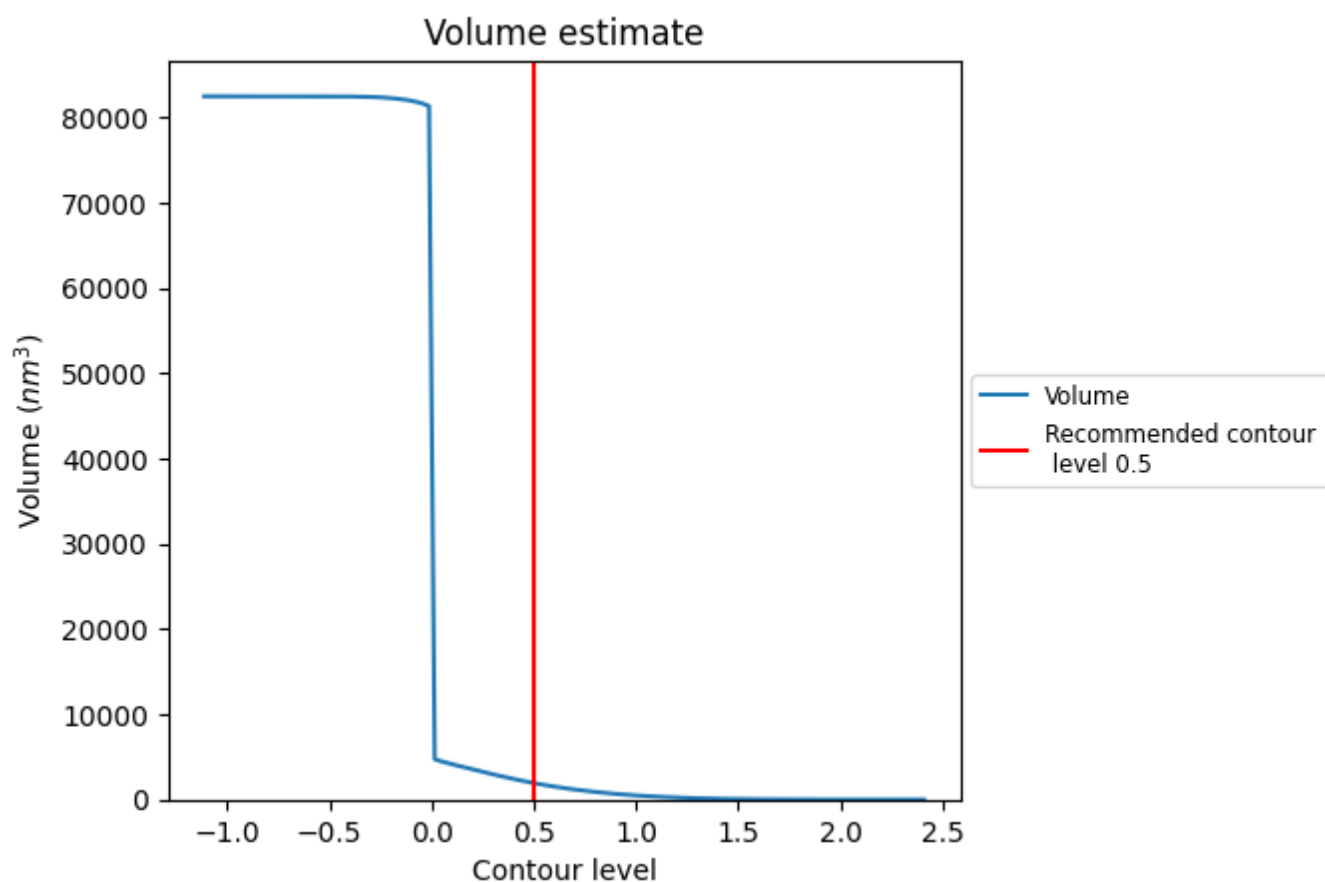
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

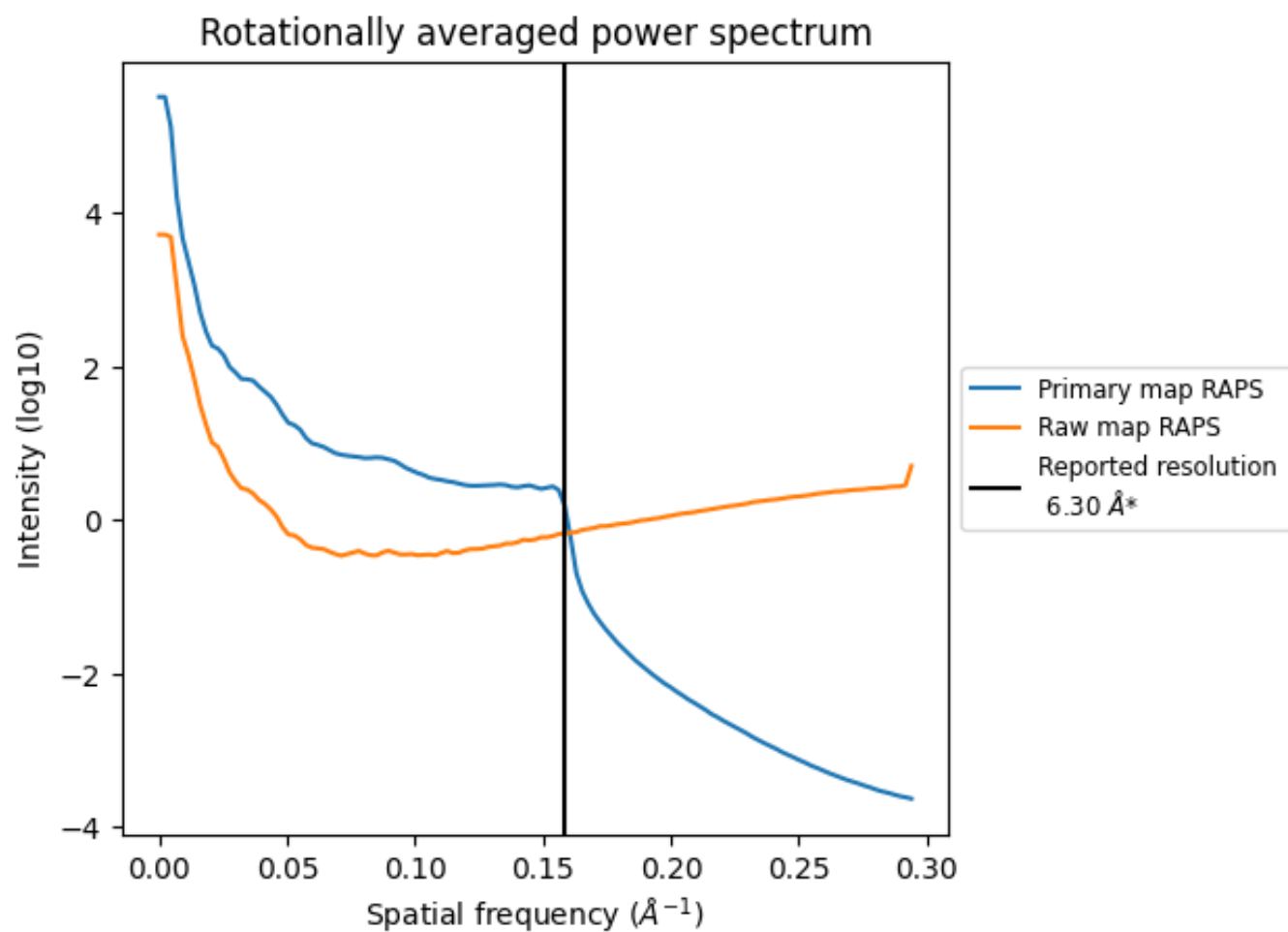
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1935 nm³; this corresponds to an approximate mass of 1748 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum ⓘ

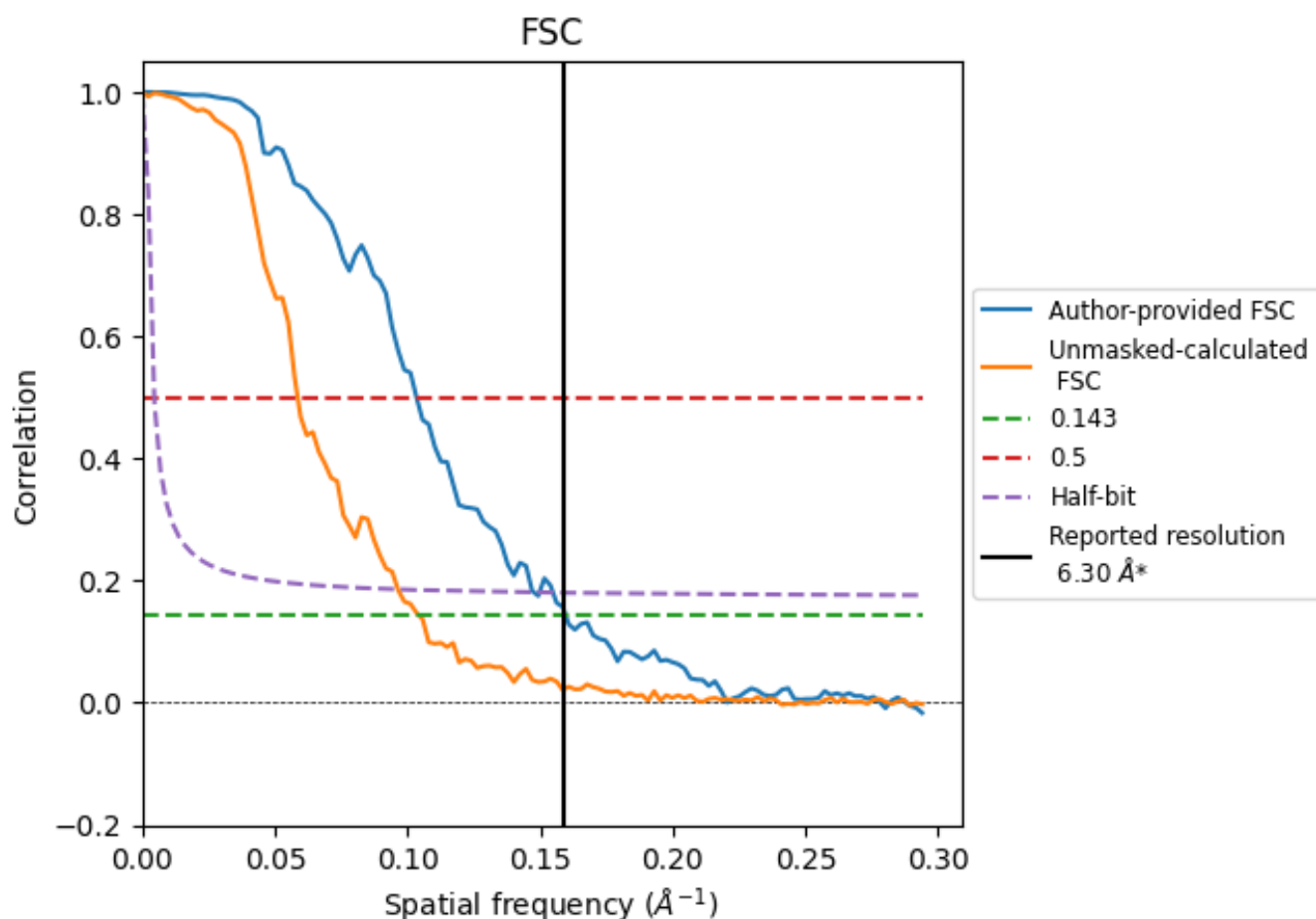


*Reported resolution corresponds to spatial frequency of 0.159 $\text{\AA}^{-1}$

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.159 Å⁻¹

8.2 Resolution estimates [i](#)

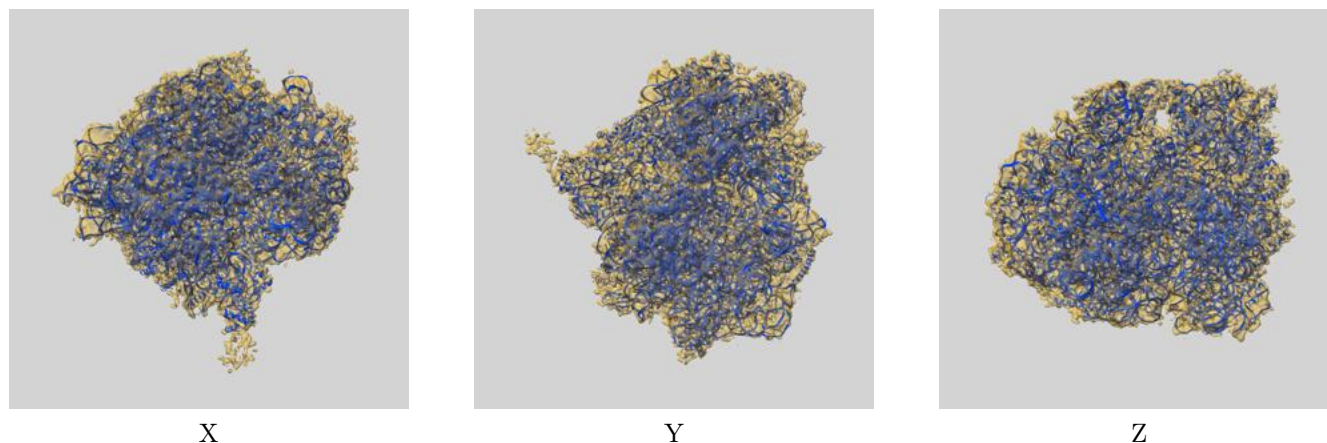
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	6.30	-	-
Author-provided FSC curve	6.27	9.67	6.77
Unmasked-calculated*	9.59	17.06	10.37

*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 9.59 differs from the reported value 6.3 by more than 10 %

9 Map-model fit [i](#)

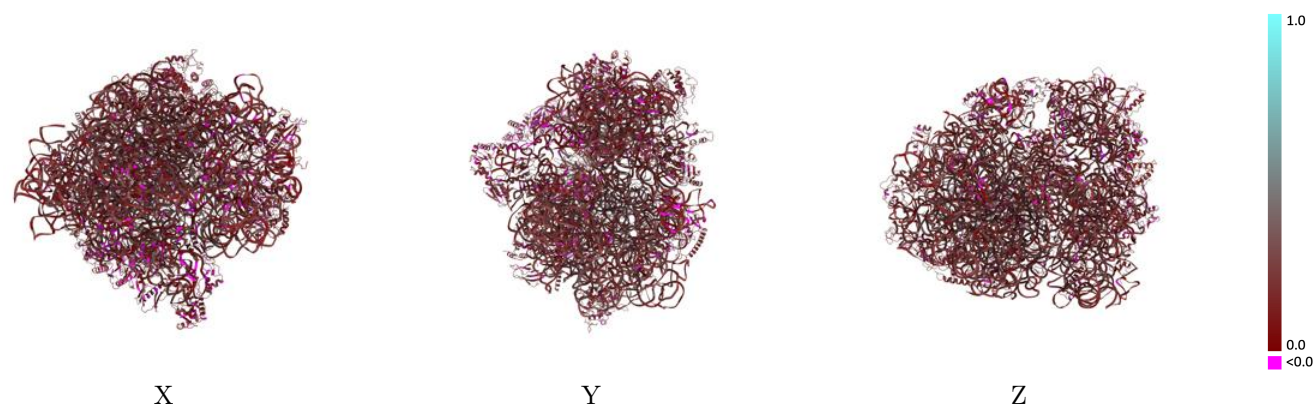
This section contains information regarding the fit between EMDB map EMD-13433 and PDB model 7PI9. Per-residue inclusion information can be found in section 3 on page 14.

9.1 Map-model overlay [i](#)



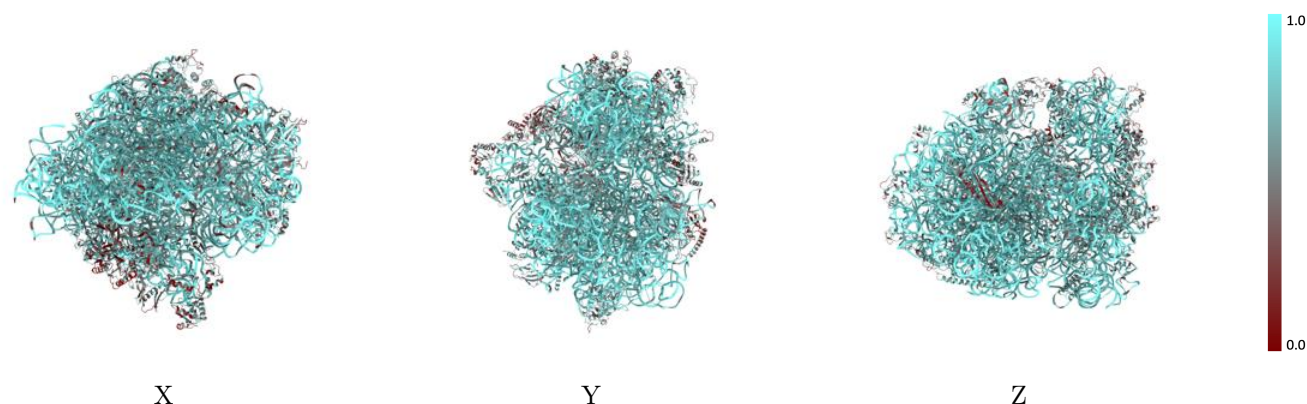
The images above show the 3D surface view of the map at the recommended contour level 0.5 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



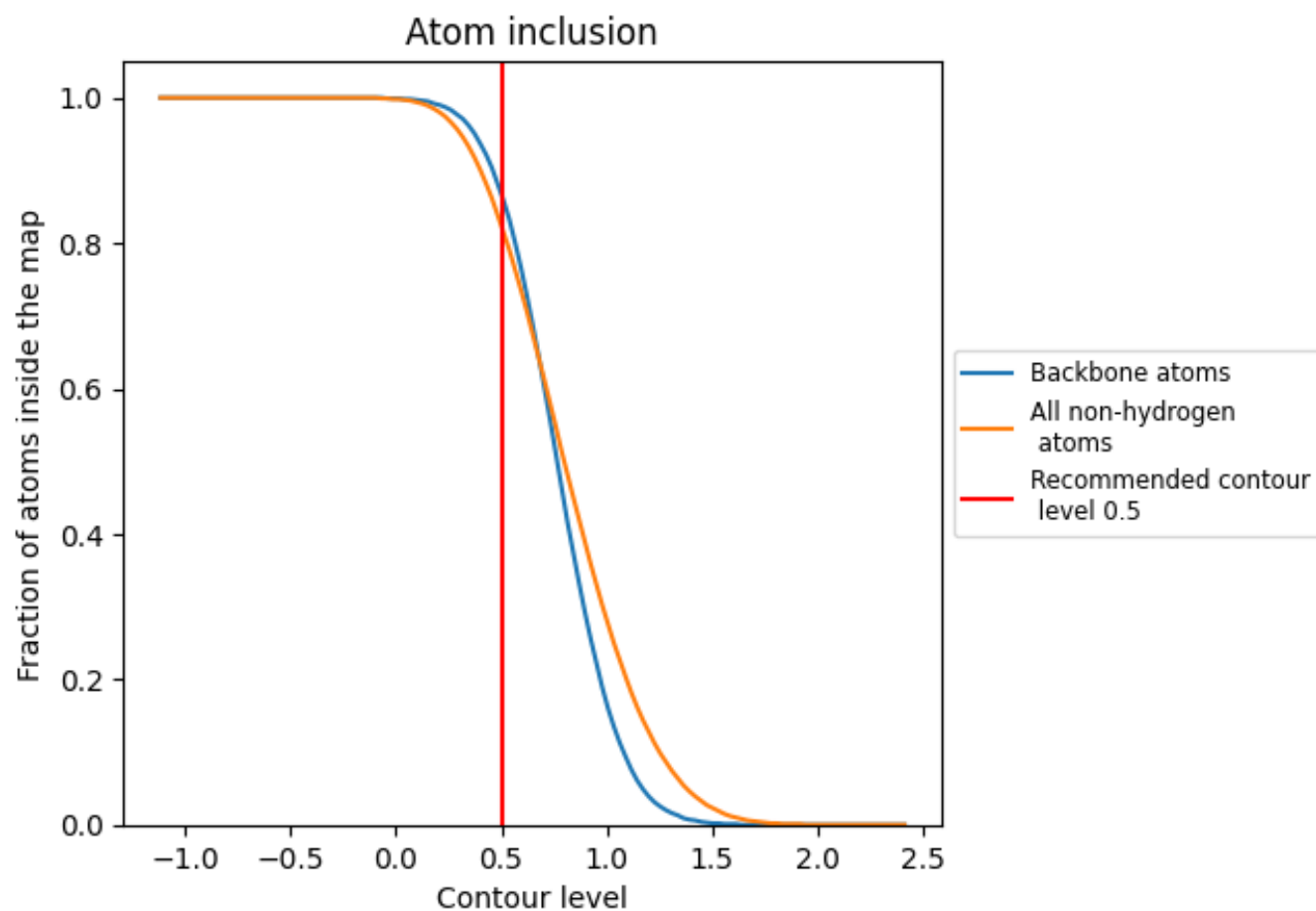
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.5).

9.4 Atom inclusion [i](#)



At the recommended contour level, 87% of all backbone atoms, 82% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.5) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8240	 0.2080
0	 0.7430	 0.1890
1	 0.7790	 0.2090
2	 0.7230	 0.2040
3	 0.9270	 0.2200
4	 0.9300	 0.2240
5	 0.9270	 0.2140
6	 0.5980	 0.0730
7	 0.8510	 0.1790
9	 0.3290	 0.1580
A	 0.5830	 0.1990
B	 0.6140	 0.1880
C	 0.6450	 0.1760
D	 0.6100	 0.1960
E	 0.5580	 0.2050
F	 0.6340	 0.1920
G	 0.6460	 0.1960
H	 0.6640	 0.1920
I	 0.5580	 0.1630
J	 0.6250	 0.1930
K	 0.6890	 0.1950
L	 0.6260	 0.1870
M	 0.6900	 0.1760
N	 0.6510	 0.2100
O	 0.7010	 0.1840
P	 0.6420	 0.2130
Q	 0.6720	 0.2110
R	 0.6390	 0.1570
S	 0.7230	 0.1790
T	 0.6740	 0.2060
a	 0.7280	 0.2080
b	 0.6880	 0.2020
c	 0.6670	 0.2000
d	 0.6470	 0.1920
e	 0.5760	 0.2020



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Chain	Atom inclusion	Q-score
f	 0.3440	 0.1760
g	 0.4950	 0.1680
h	 0.4340	 0.1800
i	 0.7390	 0.2140
j	 0.6590	 0.2150
k	 0.7080	 0.2230
l	 0.7280	 0.2160
m	 0.7210	 0.1910
n	 0.7090	 0.1950
o	 0.6640	 0.2180
p	 0.7060	 0.1790
q	 0.6810	 0.2150
r	 0.7420	 0.1890
s	 0.7380	 0.2160
t	 0.5900	 0.2030
u	 0.7470	 0.2150
v	 0.7150	 0.2090
w	 0.6800	 0.2080
x	 0.5390	 0.1930
y	 0.7510	 0.2000
z	 0.7050	 0.2020