



Full wwPDB EM Validation Report ⓘ

Oct 13, 2024 – 10:00 am BST

PDB ID : 7PAT
EMDB ID : EMD-13285
Title : free 50S in untreated Mycoplasma pneumoniae cells
Authors : Xue, L.; Lenz, S.; Rappsilber, J.; Mahamid, J.
Deposited on : 2021-07-30
Resolution : 9.20 Å(reported)
Based on initial model : 7OOD

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.dev113
MolProbity : 4.02b-467
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.39

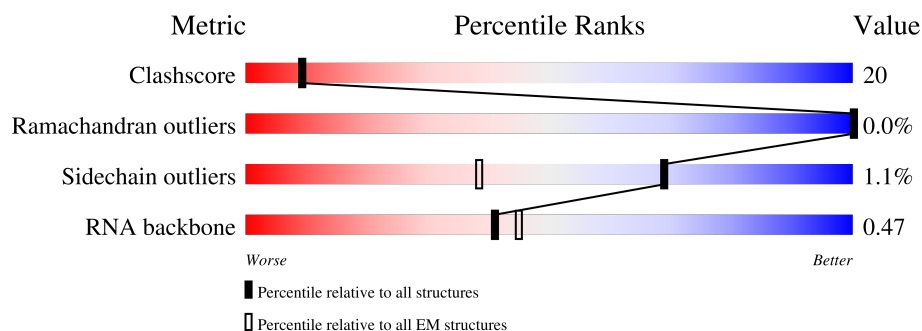
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY




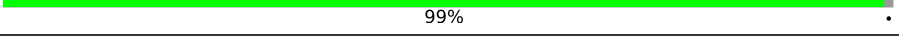
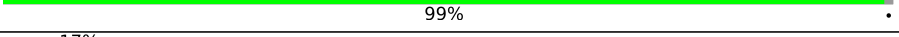
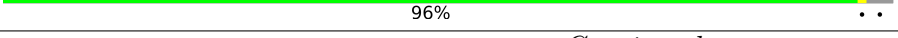
The reported resolution of this entry is 9.20 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

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

Mol	Chain	Length	Quality of chain
1	0	48	
2	1	59	
3	2	37	
4	a	287	
5	b	287	
6	c	212	
7	d	180	

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Mol	Chain	Length	Quality of chain
8	e	184	
9	f	149	
10	g	161	
11	h	137	
12	i	146	
13	j	122	
14	k	151	
15	l	139	
16	m	124	
17	n	116	
18	o	119	
19	p	127	
20	q	100	
21	r	159	
22	s	237	
23	t	111	
24	u	104	
25	v	65	
26	w	111	
27	x	97	
28	y	57	
29	z	53	
30	3	2907	
31	4	108	

2 Entry composition

There are 31 unique types of molecules in this entry. The entry contains 91293 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 50S ribosomal protein L2.

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

- Molecule 5 is a protein called 50S ribosomal protein L3.

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

- Molecule 6 is a protein called 50S ribosomal protein L4.

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

- Molecule 7 is a protein called 50S ribosomal protein L5.

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

- Molecule 8 is a protein called 50S ribosomal protein L6.

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

- Molecule 9 is a protein called 50S ribosomal protein L9.

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

- Molecule 10 is a protein called 50S ribosomal protein L10.

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

- Molecule 11 is a protein called 50S ribosomal protein L11.

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

- Molecule 12 is a protein called 50S ribosomal protein L13.

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

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

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

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

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

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

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

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

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

- Molecule 17 is a protein called 50S ribosomal protein L18.

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

- Molecule 18 is a protein called 50S ribosomal protein L19.

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

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

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

- Molecule 20 is a protein called 50S ribosomal protein L21.

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

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

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

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

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

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

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

- Molecule 24 is a protein called 50S ribosomal protein L27.

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

- Molecule 25 is a protein called 50S ribosomal protein L28.

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

- Molecule 26 is a protein called 50S ribosomal protein L29.

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

- Molecule 27 is a protein called 50S ribosomal protein L31.

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

- Molecule 28 is a protein called 50S ribosomal protein L32.

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

- Molecule 29 is a protein called 50S ribosomal protein L33 1.

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

- Molecule 30 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	3	2878	Total	C	N	O	P	0	0
			61664	27558	11236	19995	2875		

- Molecule 31 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	4	105	Total	C	N	O	P	0	0
			2239	1003	409	724	103		

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

Chain 0: 



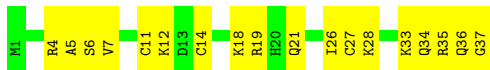
- Molecule 2: 50S ribosomal protein L35

Chain 1: 



- Molecule 3: 50S ribosomal protein L36

Chain 2: 




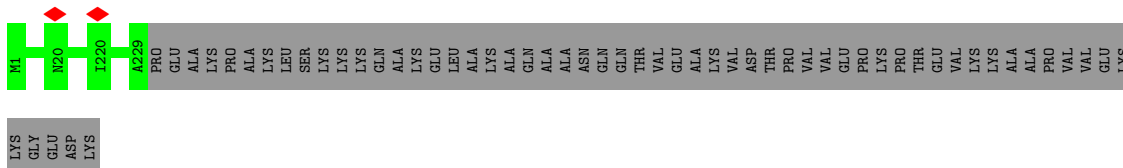
- Molecule 4: 50S ribosomal protein L2

Chain a: 

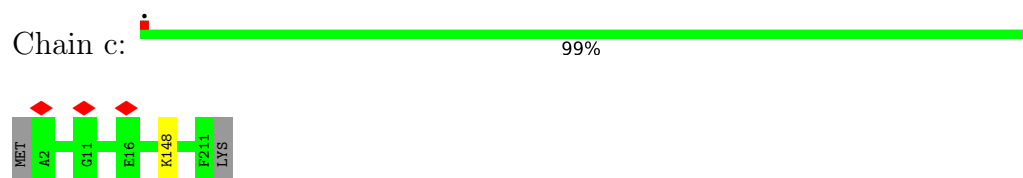


- Molecule 5: 50S ribosomal protein L3

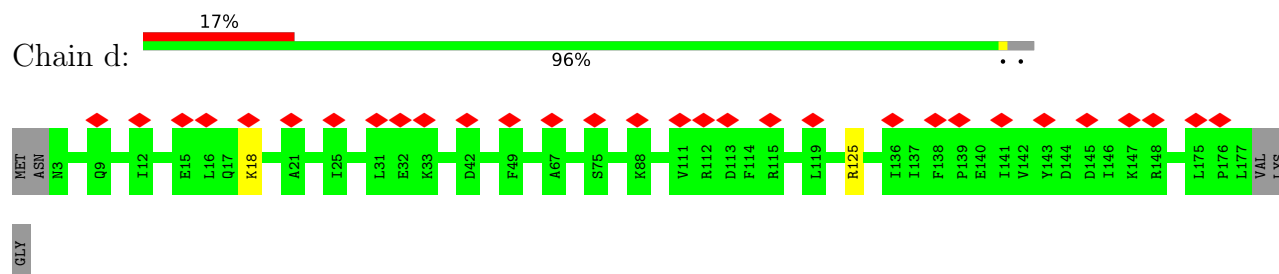
Chain b: 



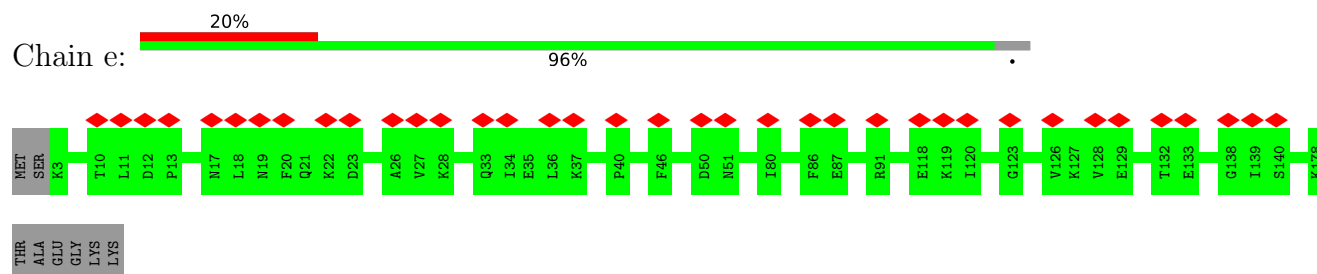
- Molecule 6: 50S ribosomal protein L4



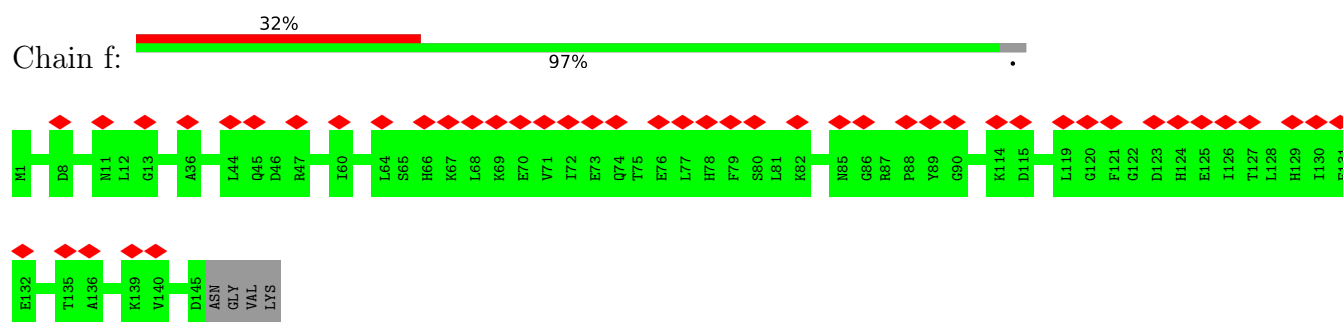
- Molecule 7: 50S ribosomal protein L5



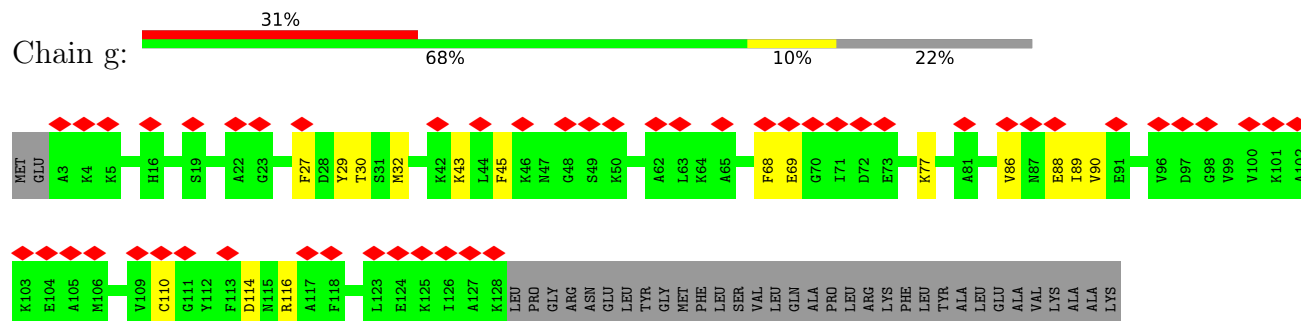
- Molecule 8: 50S ribosomal protein L6



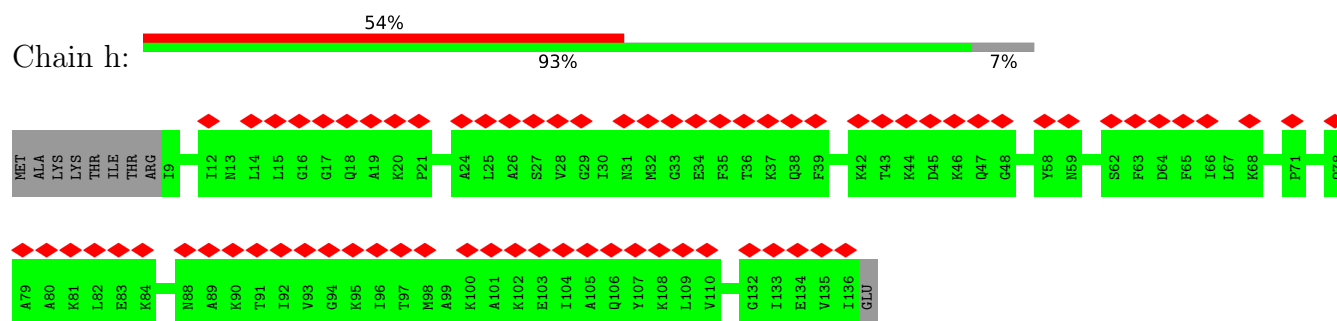
- Molecule 9: 50S ribosomal protein L9



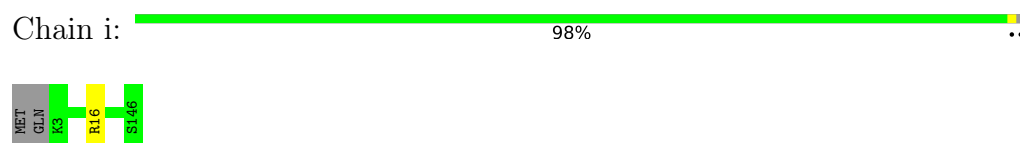
- Molecule 10: 50S ribosomal protein L10



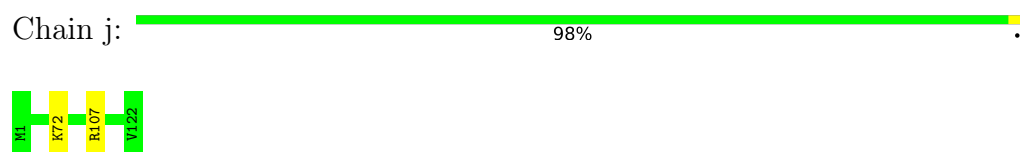
- Molecule 11: 50S ribosomal protein L11



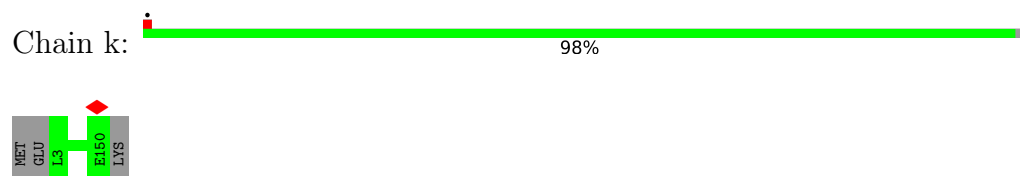
- Molecule 12: 50S ribosomal protein L13



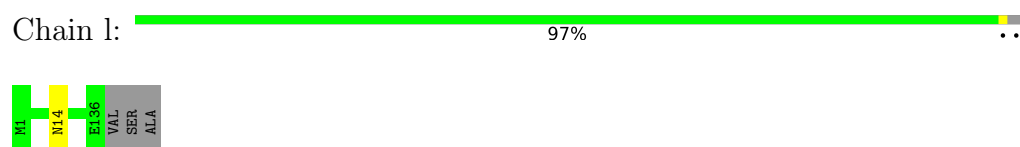
- Molecule 13: 50S ribosomal protein L14



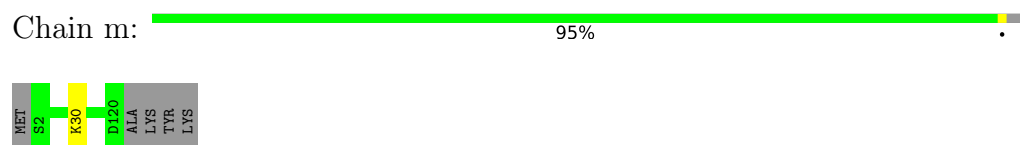
- Molecule 14: 50S ribosomal protein L15



- Molecule 15: 50S ribosomal protein L16

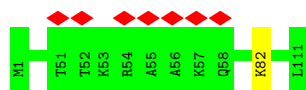


- Molecule 16: 50S ribosomal protein L17

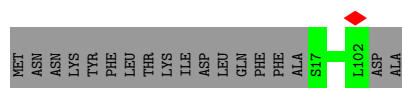
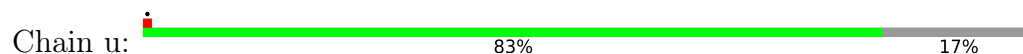


- Molecule 17: 50S ribosomal protein L18

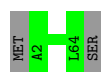




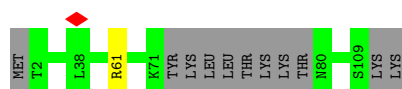
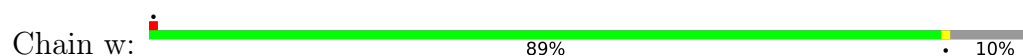
- Molecule 24: 50S ribosomal protein L27



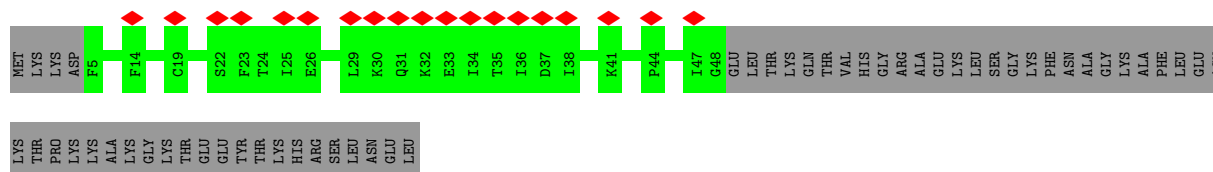
- Molecule 25: 50S ribosomal protein L28



- Molecule 26: 50S ribosomal protein L29



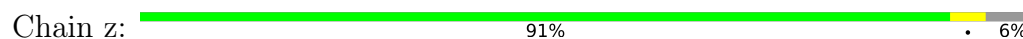
- Molecule 27: 50S ribosomal protein L31



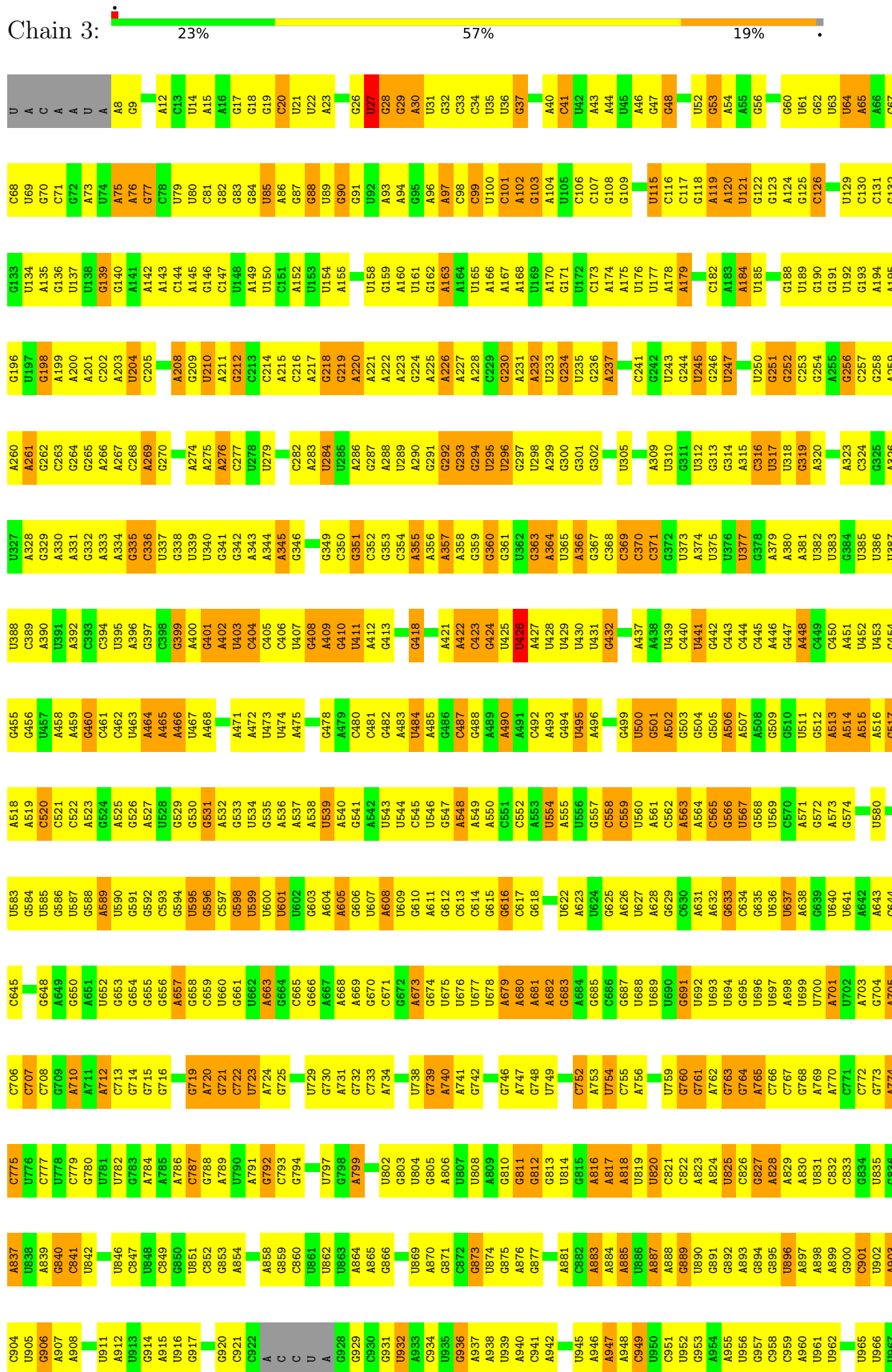
- Molecule 28: 50S ribosomal protein L32



- Molecule 29: 50S ribosomal protein L33 1

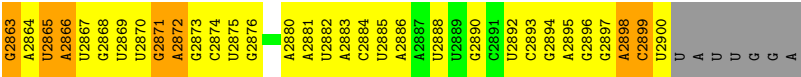


● Molecule 30: 23S ribosomal RNA

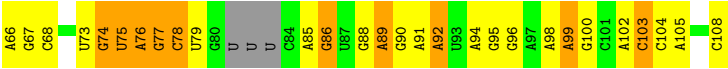


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A1871	U1744	C1809	U1876	G1906	A1421	C1358	G1296	G1236	A1169	A1036	A1037	
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A1873	U1746	C1813	G1677	G1908	A1423	U1360	U1298	A1238	A1238	G1102	A1037	C975
G1884	G1747	C1814	U1678	G1909	U1424	U1361	A1299	G1239	A1104	A1104	C976	
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A1897	C1759	C1826	U1629	G1921	A1444	U1374	G1311	G1251	A1186	A1055	G991	
G1898	G1760	C1827	A1694	G1922	G1445	U1375	A1312	C1252	C1187	A1056	A992	
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G1904	A1762	C1829	G1696	G1924	A1447	U1379	A1314	U1254	G1189	G1057	A994	
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A1907	G1765	C1832	U1699	G1927	A1450	A1382	G1317	G1257	U1192	G1060	A997	
A1908	A1766	C1833	G1634	G1928	U1451	A1383	U1318	C1258	U1193	A1061	G997	
C1909	U1767	C1834	G1635	G1929	A1452	U1384	G1319	A1259	U1194	A1062	C998	
G1910	G1768	C1835	U1636	G1930	U1453	G1385	C1320	U1260	A1195	A1063	U999	
G1911	C1769	C1836	A1637	G1931	A1454	C1386	C1321	U1261	U1196	A1064	U1000	
C1912	U1770	C1837	G1638	G1932	G1455	U1387	A1322	G1262	G1197	G1065	C1001	
G1913	A1771	C1838	G1639	G1933	A1456	G1388	A1323	G1263	G1198	G1066	U1002	
G1914	C1772	C1839	A1641	G1934	U1457	U1389	A1324	U1264	A1199	G1067	U1003	
C1915	G1776	C1840	G1642	G1935	A1458	G1390	G1325	G1265	U1200	U1068	U1004	
G1916	U1777	C1841	A1643	G1936	A1459	U1391	C1326	G1266	A1201	G1069	U1005	
G1917	G1778	C1842	C1645	G1937	A1460	G1392	A1328	U1268	U1206	U1070	U1006	
A1920	G1779	C1843	G1646	G1938	G1461	A1393	U1329	C1269	U1207	G1075	A1008	
C1921	U1780	C1844	A1647	G1939	A1462	U1394	U1330	C1270	A1208	U1076	A1009	
U1922	G1783	C1845	A1648	G1940	A1463	A1395	U1334	A1271	U1209	G1077	G1010	
A1923	U1784	C1846	C1649	G1941	G1464	C1398	A1335	U1272	A1210	G1078	A1011	
G1926	U1785	C1847	A1650	G1942	U1465	G1399	G1337	A1273	U1143	U1079	G1012	
C1927	U1786	C1848	C1651	G1943	U1466	U1400	G1338	C1275	G1145	A1080		
G1928	U1787	C1849	A1652	G1944	U1467	A1401	G1339	A1276	A1146	A1081	G1015	
U1929	A1788	C1850	G1653	G1945	U1468	G1402	U1340	A1277	G1215	A1082	A1016	
G1930	C1788	C1851	U1654	G1946	C1469	G1403	U1341	G1278	U1216	A1083	A1017	
C1931	U1790	C1852	G1655	G1947	C1470	C1404	C1342	G1280	G1217	G1084	G1018	
C1932	A1791	C1853	U1656	G1948	A1471	G1405	C1343	A1281	G1218	A1085	A1019	
U1933	U1792	C1854	U1593	G1949	C1472	A1406	G1344	G1282	U1219	G1086	G1020	
A1934	G1793	C1855	A1594	G1950	C1473	U1407	U1345	A1283	A1220	G1087	C1022	
G1935	U1794	C1856	U1595	G1951	C1474	G1408	G1346	A1285	G1221	A1088	C1023	
G1936	A1798	C1857	A1596	G1952	C1475	U1409	A1347	U1286	G1222	G1090	A1024	
U1938	C1800	C1858	A1600	G1953	C1476	A1410	G1348	G1287	C1158	G1091	G1025	
A1939	U1801	C1859	G1665	G1954	U1477	U1413	C1349	C1287	C1159	A1092	A1026	
G1940	G1667	C1860	A1666	G1955	U1478	C1414	A1350	C1288	G1228	U1093	C1027	
C1941	G1668	C1861	A1667	G1956	U1479	A1415	G1351	G1289	A1161	U1095	A1029	
G1942	U1803	C1862	A1668	G1957	A1480	G1416	G1352	G1290	A1162	U1096	U1030	
A1943	U1805	C1863	A1669	G1958	U1481	G1417	G1353	C1291	G1163	G1097	U1031	
		C1864	U1670	G1959	U1482	G1417	U1354	A1292	U1232	G1098	A1032	





● Molecule 31: 5S ribosomal RNA



4 Experimental information

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of subtomograms used	15954	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	3.2	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	3750	Depositor
Magnification	81000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	1.419	Depositor
Minimum map value	-0.423	Depositor
Average map value	0.016	Depositor
Map value standard deviation	0.100	Depositor
Recommended contour level	0.41	Depositor
Map size (Å)	480.00003, 480.00003, 480.00003	wwPDB
Map dimensions	200, 200, 200	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	2.4, 2.4, 2.4	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	0.23	0/383	0.42	0/504
2	1	0.23	0/484	0.42	0/637
3	2	0.21	0/306	0.45	0/401
4	a	0.24	0/2267	0.46	0/3044
5	b	0.25	0/1795	0.47	0/2412
6	c	0.24	0/1671	0.43	0/2246
7	d	0.25	0/1409	0.48	0/1894
8	e	0.25	0/1420	0.48	0/1912
9	f	0.24	0/1183	0.46	0/1587
10	g	0.38	0/969	0.57	0/1295
11	h	0.25	0/968	0.47	0/1298
12	i	0.23	0/1186	0.43	0/1592
13	j	0.24	0/953	0.47	0/1275
14	k	0.24	0/1170	0.46	0/1559
15	l	0.25	0/1104	0.46	0/1481
16	m	0.23	0/973	0.43	0/1309
17	n	0.23	0/897	0.45	0/1198
18	o	0.25	0/948	0.49	0/1262
19	p	0.24	0/961	0.40	0/1278
20	q	0.25	0/828	0.49	0/1111
21	r	0.24	0/1077	0.43	0/1441
22	s	0.24	0/732	0.47	0/988
23	t	0.23	0/879	0.44	0/1165
24	u	0.25	0/665	0.49	0/884
25	v	0.22	0/519	0.50	0/695
26	w	0.23	0/826	0.43	0/1104
27	x	0.26	0/353	0.42	0/474
28	y	0.30	0/457	0.55	0/601
29	z	0.23	0/412	0.43	0/547
30	3	0.20	0/69073	0.81	56/107710 (0.1%)
31	4	0.20	0/2505	0.82	3/3902 (0.1%)
All	All	0.21	0/99373	0.74	59/148806 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if

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

Mol	Chain	#Chirality outliers	#Planarity outliers
15	1	0	1

There are no bond length outliers.

All (59) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
30	3	370	C	N3-C2-O2	-10.97	114.22	121.90
30	3	559	C	N3-C2-O2	-9.31	115.38	121.90
30	3	99	C	N3-C2-O2	-9.23	115.44	121.90
30	3	371	C	N3-C2-O2	-8.74	115.78	121.90
30	3	1159	C	N3-C2-O2	-8.15	116.19	121.90
30	3	1341	U	C2-N1-C1'	7.85	127.12	117.70
30	3	545	C	N1-C2-O2	7.43	123.36	118.90
30	3	1341	U	N1-C2-O2	7.30	127.91	122.80
30	3	370	C	N1-C2-O2	7.23	123.24	118.90
30	3	98	C	N1-C2-O2	7.18	123.21	118.90
30	3	426	U	C2-N1-C1'	7.04	126.15	117.70
30	3	1697	C	N3-C2-O2	-7.04	116.97	121.90
30	3	1718	C	N3-C2-O2	-6.79	117.15	121.90
30	3	1341	U	N3-C2-O2	-6.78	117.45	122.20
30	3	1099	C	N3-C2-O2	-6.73	117.19	121.90
30	3	1099	C	N1-C2-O2	6.58	122.85	118.90
30	3	545	C	N3-C2-O2	-6.58	117.29	121.90
30	3	2739	C	N3-C2-O2	-6.47	117.37	121.90
30	3	1893	C	N1-C2-O2	6.46	122.77	118.90
30	3	99	C	N1-C2-O2	6.45	122.77	118.90
30	3	426	U	N3-C2-O2	-6.42	117.70	122.20
30	3	559	C	N1-C2-O2	6.39	122.73	118.90
30	3	2114	C	N3-C2-O2	-6.24	117.53	121.90
31	4	58	C	N3-C2-O2	-6.09	117.64	121.90
30	3	2874	C	N3-C2-O2	-5.97	117.72	121.90
30	3	426	U	N1-C2-O2	5.89	126.92	122.80
30	3	1321	C	N3-C2-O2	-5.86	117.80	121.90
30	3	98	C	N3-C2-O2	-5.83	117.82	121.90
30	3	2321	C	N3-C2-O2	-5.79	117.85	121.90
30	3	370	C	C6-N1-C2	-5.72	118.01	120.30
30	3	99	C	C6-N1-C2	-5.71	118.02	120.30
30	3	1321	C	C6-N1-C2	-5.63	118.05	120.30
30	3	371	C	C6-N1-C2	-5.61	118.05	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
30	3	1893	C	N3-C2-O2	-5.61	117.97	121.90
30	3	2114	C	N1-C2-O2	5.58	122.25	118.90
30	3	360	G	C5-C6-O6	5.54	131.93	128.60
30	3	2005	G	C5-C6-O6	5.52	131.91	128.60
30	3	88	G	N1-C6-O6	-5.46	116.63	119.90
30	3	2739	C	N1-C2-O2	5.42	122.16	118.90
30	3	1697	C	N1-C2-O2	5.41	122.15	118.90
31	4	58	C	N1-C2-O2	5.40	122.14	118.90
30	3	360	G	N1-C6-O6	-5.39	116.67	119.90
30	3	88	G	N1-C2-N2	-5.34	111.40	116.20
30	3	2691	C	N1-C2-O2	5.33	122.10	118.90
30	3	1718	C	C6-N1-C2	-5.31	118.18	120.30
30	3	2005	G	N1-C6-O6	-5.28	116.73	119.90
30	3	360	G	N1-C2-N2	-5.27	111.45	116.20
30	3	27	U	N1-C2-O2	5.25	126.48	122.80
30	3	1713	U	C2-N1-C1'	5.24	123.99	117.70
30	3	1159	C	C6-N1-C2	-5.20	118.22	120.30
30	3	1717	C	N1-C2-O2	5.18	122.01	118.90
30	3	88	G	C5-C6-O6	5.17	131.70	128.60
30	3	520	C	C2-N1-C1'	5.12	124.43	118.80
30	3	27	U	C2-N1-C1'	5.11	123.83	117.70
30	3	1713	U	N1-C2-O2	5.11	126.38	122.80
30	3	1341	U	C6-N1-C1'	-5.05	114.12	121.20
30	3	371	C	N1-C2-O2	5.03	121.92	118.90
31	4	78	C	O4'-C1'-N1	5.02	112.21	108.20
30	3	27	U	N3-C2-O2	-5.01	118.69	122.20

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
15	1	14	ASN	Peptide

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	380	0	429	24	0
2	1	477	0	530	21	0
3	2	304	0	350	19	0
4	a	2225	0	2301	0	0
5	b	1762	0	1808	0	0
6	c	1644	0	1731	0	0
7	d	1388	0	1469	0	0
8	e	1396	0	1481	0	0
9	f	1160	0	1172	0	0
10	g	960	0	1014	0	0
11	h	959	0	1039	0	0
12	i	1164	0	1192	0	0
13	j	944	0	1019	0	0
14	k	1153	0	1256	0	0
15	l	1079	0	1134	0	0
16	m	958	0	1011	0	0
17	n	889	0	952	0	0
18	o	938	0	1008	0	0
19	p	947	0	1028	0	0
20	q	811	0	858	0	0
21	r	1068	0	1150	0	0
22	s	720	0	803	0	0
23	t	872	0	972	0	0
24	u	657	0	695	0	0
25	v	513	0	560	0	0
26	w	818	0	870	0	0
27	x	344	0	333	0	0
28	y	452	0	472	0	0
29	z	408	0	440	0	0
30	3	61664	0	30954	1849	0
31	4	2239	0	1137	51	0
All	All	91293	0	61168	1930	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 20.

All (1930) 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)
30:3:535:G:C2	30:3:540:A:N6	2.14	1.15
30:3:341:G:N2	30:3:364:A:H61	1.44	1.13
30:3:341:G:H21	30:3:364:A:N6	1.51	1.08

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:1807:C:H42	30:3:1824:G:N2	1.49	1.07
30:3:2108:C:N4	30:3:2109:A:N6	2.01	1.06
30:3:1807:C:N4	30:3:1824:G:H22	1.52	1.05
30:3:2534:G:H1	30:3:2545:U:H3	1.04	1.03
30:3:17:G:H1	30:3:560:U:H3	1.04	0.98
30:3:1932:C:N4	30:3:1936:G:H22	1.61	0.98
30:3:1101:U:O4	30:3:1105:A:N7	1.98	0.96
30:3:275:A:H62	30:3:294:G:H21	0.99	0.96
30:3:742:G:H1	30:3:759:U:H3	1.03	0.96
30:3:1093:U:H3	30:3:1115:G:H1	1.04	0.95
30:3:1200:U:H3	30:3:1215:G:H1	1.14	0.95
30:3:275:A:H62	30:3:294:G:N2	1.64	0.94
30:3:2143:G:H1	30:3:2162:U:H3	0.96	0.94
30:3:535:G:N2	30:3:540:A:C6	2.35	0.94
30:3:629:G:H1	30:3:696:U:H3	1.02	0.94
30:3:1762:A:H61	30:3:2702:G:H21	1.10	0.94
30:3:137:U:H3	30:3:146:G:H1	1.01	0.94
30:3:535:G:N2	30:3:540:A:N6	2.16	0.93
30:3:986:G:H1	30:3:1003:U:H3	0.97	0.92
30:3:2108:C:N4	30:3:2109:A:H62	1.65	0.91
30:3:1310:U:H3	30:3:1314:A:N6	1.68	0.91
30:3:1246:U:H3	30:3:1263:G:H1	1.08	0.91
30:3:2108:C:C4	30:3:2109:A:N6	2.35	0.91
30:3:329:G:H1	30:3:377:U:H3	0.94	0.91
30:3:730:G:H1	30:3:802:U:H3	1.14	0.91
30:3:1027:U:H3	30:3:1198:G:H1	1.10	0.91
30:3:990:G:H1	30:3:999:U:H3	0.94	0.90
30:3:1932:C:H42	30:3:1936:G:H22	1.19	0.90
30:3:2090:G:H1	30:3:2244:U:H3	1.12	0.89
30:3:250:U:H3	30:3:256:G:H1	0.93	0.89
30:3:675:U:H3	30:3:685:G:H1	1.19	0.89
30:3:1807:C:H42	30:3:1824:G:H22	0.90	0.88
30:3:534:U:H3	30:3:538:A:H62	1.16	0.88
30:3:569:U:H3	30:3:592:G:H1	1.19	0.87
30:3:89:U:H5''	30:3:90:G:H5''	1.56	0.86
30:3:1762:A:H61	30:3:2702:G:N2	1.73	0.85
30:3:1932:C:H42	30:3:1936:G:N2	1.74	0.84
30:3:2156:G:H2'	30:3:2157:A:H8	1.41	0.84
30:3:1053:C:O2'	30:3:1155:G:N2	2.11	0.83
30:3:2455:G:H1	30:3:2459:A:H62	1.26	0.83
30:3:2108:C:H42	30:3:2109:A:N6	1.71	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:1762:A:N6	30:3:2702:G:H21	1.77	0.83
30:3:2551:G:H21	30:3:2654:U:H5''	1.44	0.82
30:3:1940:G:H1	30:3:1974:U:H3	1.27	0.82
30:3:2736:U:HO2'	30:3:2737:G:H8	1.29	0.81
31:4:58:C:H2'	31:4:59:A:H8	1.45	0.81
30:3:2704:U:H2'	30:3:2705:G:C8	2.16	0.80
30:3:2539:A:H61	30:3:2670:A:H61	1.29	0.80
30:3:2828:C:H3'	30:3:2829:G:H21	1.47	0.80
30:3:2195:U:O4	30:3:2196:G:O6	2.00	0.80
3:2:14:CYS:HA	3:2:26:ILE:O	1.81	0.80
30:3:225:A:H62	30:3:463:U:H3	1.29	0.79
30:3:535:G:C2	30:3:540:A:C6	2.71	0.79
30:3:1807:C:N3	30:3:1824:G:N1	2.28	0.78
30:3:1261:U:H2'	30:3:1262:G:H8	1.48	0.78
30:3:1252:C:N3	30:3:1257:G:N1	2.32	0.77
30:3:2409:U:H3	30:3:2423:G:H1	1.33	0.77
30:3:305:U:H3	30:3:399:G:H1	1.32	0.77
30:3:2757:A:OP2	30:3:2760:C:N4	2.14	0.76
30:3:811:G:H8	30:3:2249:A:H5''	1.51	0.76
30:3:1252:C:O2	30:3:1257:G:N2	2.15	0.76
30:3:2108:C:H42	30:3:2109:A:H61	1.32	0.76
30:3:637:U:O2	30:3:661:G:N2	2.18	0.76
30:3:641:U:O2	30:3:657:A:N7	2.19	0.76
30:3:2305:C:N4	30:3:2327:U:O2	2.19	0.75
30:3:585:U:H2'	30:3:586:G:H8	1.51	0.75
30:3:2101:A:H1'	30:3:2206:A:H61	1.52	0.75
30:3:2570:U:O2	30:3:2574:A:N7	2.19	0.75
30:3:572:G:N2	30:3:588:G:O2'	2.20	0.75
30:3:47:G:N2	30:3:184:A:H61	1.85	0.74
30:3:453:U:H2'	30:3:454:G:H8	1.53	0.74
30:3:2299:U:H1'	30:3:2382:A:H1'	1.68	0.74
30:3:31:U:H2'	30:3:32:G:H8	1.52	0.74
30:3:1011:A:H62	30:3:1025:G:H21	1.34	0.74
30:3:2400:A:N6	30:3:2432:C:O2	2.19	0.74
30:3:341:G:H21	30:3:364:A:H61	0.78	0.74
30:3:2291:U:O2	30:3:2333:G:O6	2.05	0.74
30:3:1137:C:H2'	30:3:1138:A:H8	1.51	0.73
30:3:2684:G:H2'	30:3:2685:A:C8	2.24	0.73
30:3:1310:U:H3	30:3:1314:A:H62	0.83	0.73
30:3:2716:U:H2'	30:3:2717:G:H8	1.53	0.73
30:3:353:G:H22	30:3:357:A:H62	1.36	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:29:G:O2'	30:3:30:A:N7	2.21	0.72
30:3:275:A:N6	30:3:294:G:H21	1.81	0.72
30:3:2824:A:H3'	30:3:2825:A:H8	1.54	0.72
30:3:2700:C:H1'	30:3:2851:U:H1'	1.71	0.72
30:3:1114:C:N4	30:3:1123:A:OP2	2.22	0.72
30:3:1321:C:H2'	30:3:1322:A:H8	1.55	0.72
30:3:2299:U:O2'	30:3:2382:A:N3	2.21	0.72
30:3:1444:C:H5''	30:3:1619:A:H61	1.54	0.72
30:3:2603:G:N2	30:3:2606:A:OP2	2.23	0.72
2:1:36:LYS:O	2:1:40:HIS:ND1	2.22	0.71
30:3:1233:A:N6	30:3:1274:A:N1	2.33	0.71
30:3:2353:G:H4'	30:3:2354:A:H3'	1.71	0.71
30:3:2137:A:H5''	30:3:2138:U:H5'	1.71	0.71
30:3:1387:A:OP2	30:3:1399:G:N2	2.21	0.71
30:3:901:C:N4	30:3:946:A:N7	2.39	0.71
30:3:1748:U:O2	30:3:1750:A:N7	2.24	0.71
30:3:1558:A:H5''	30:3:1570:A:H61	1.54	0.70
30:3:2094:A:N6	30:3:2095:A:N6	2.39	0.70
30:3:2747:U:O2	30:3:2772:A:N7	2.24	0.70
30:3:2807:G:O2'	30:3:2809:A:N6	2.24	0.70
30:3:537:A:H3'	30:3:540:A:H62	1.57	0.70
30:3:2274:A:N6	30:3:2281:A:OP2	2.25	0.70
30:3:1418:U:H3	30:3:1423:A:H62	1.38	0.70
30:3:2129:U:H2'	30:3:2130:A:H8	1.55	0.70
30:3:2299:U:H3	30:3:2349:G:H1	1.40	0.70
30:3:2696:G:OP1	30:3:2721:C:N4	2.24	0.70
3:2:6:SER:OG	30:3:1065:G:O2'	2.07	0.70
30:3:643:A:H62	30:3:655:G:H21	1.39	0.70
30:3:2108:C:N3	30:3:2109:A:N6	2.40	0.70
30:3:2092:U:O2	30:3:2242:G:O6	2.09	0.70
30:3:2700:C:H2'	30:3:2701:A:H8	1.57	0.70
30:3:1310:U:O4	30:3:1314:A:N7	2.23	0.70
30:3:1555:G:H22	30:3:1576:G:H1'	1.56	0.70
30:3:1315:A:N6	30:3:1683:G:O2'	2.23	0.70
30:3:1841:U:H5''	30:3:1842:G:H5'	1.72	0.70
30:3:906:G:H22	30:3:945:U:H3	1.39	0.70
30:3:1067:A:N1	30:3:1157:G:O6	2.25	0.69
30:3:300:G:H2'	30:3:301:G:H8	1.56	0.69
30:3:1089:A:H2'	30:3:1090:G:C8	2.27	0.69
30:3:1027:U:O4	30:3:1198:G:O6	2.11	0.69
30:3:1023:C:O2'	30:3:1036:A:N3	2.25	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:2693:U:H2'	30:3:2694:A:H8	1.56	0.69
30:3:499:G:N2	30:3:502:A:OP2	2.25	0.69
30:3:342:G:N2	30:3:513:A:C6	2.61	0.69
30:3:1414:C:H2'	30:3:1415:A:C8	2.27	0.69
30:3:177:U:H2'	30:3:178:A:C8	2.27	0.69
30:3:220:A:N7	30:3:467:U:C2	2.62	0.68
30:3:947:A:N3	30:3:2272:C:O2'	2.26	0.68
30:3:580:U:OP1	30:3:1249:A:O2'	2.09	0.68
30:3:2175:U:O2	30:3:2179:A:N7	2.26	0.68
30:3:1011:A:H62	30:3:1025:G:N2	1.91	0.68
30:3:1305:G:H2'	30:3:1306:G:C8	2.28	0.68
30:3:1999:G:N2	30:3:2003:C:O2'	2.27	0.68
30:3:80:U:H3	30:3:109:G:H1	0.80	0.68
30:3:274:A:OP2	30:3:294:G:N1	2.27	0.68
30:3:355:A:O2'	30:3:374:A:N3	2.24	0.68
30:3:1743:U:O2'	30:3:2863:G:N3	2.25	0.68
30:3:2339:G:O2'	30:3:2344:A:N6	2.27	0.68
1:0:16:HIS:NE2	30:3:500:U:O2	2.26	0.68
30:3:47:G:H5''	30:3:48:G:H5'	1.74	0.68
30:3:513:A:N6	30:3:536:A:OP1	2.26	0.68
30:3:733:C:O2'	30:3:769:A:N6	2.26	0.68
30:3:432:G:N2	30:3:2239:U:O2'	2.25	0.68
30:3:912:A:H61	30:3:939:U:H3	1.42	0.68
30:3:2122:G:H21	30:3:2179:A:H61	1.40	0.68
31:4:12:U:OP2	31:4:68:C:O2'	2.12	0.68
30:3:411:U:O2'	30:3:458:A:N1	2.26	0.68
30:3:1061:A:H2'	30:3:1062:A:H8	1.58	0.68
30:3:703:A:H2'	30:3:705:A:H62	1.59	0.68
30:3:2521:A:H2'	30:3:2522:U:C6	2.29	0.68
30:3:595:U:H2'	30:3:605:A:H1'	1.74	0.67
2:1:22:LYS:HG2	2:1:44:GLN:HE22	1.60	0.67
30:3:1814:G:H2'	30:3:1815:U:H2'	1.76	0.67
30:3:515:A:H4'	30:3:516:A:H5'	1.77	0.67
30:3:2330:A:H2'	30:3:2331:G:C8	2.29	0.67
3:2:11:CYS:SG	3:2:28:LYS:NZ	2.68	0.67
30:3:1853:G:N2	30:3:1854:A:N1	2.42	0.67
30:3:1803:U:H2'	30:3:1804:A:C8	2.30	0.67
31:4:58:C:H2'	31:4:59:A:C8	2.28	0.67
30:3:1246:U:O2	30:3:1263:G:N2	2.27	0.66
30:3:1093:U:O2	30:3:1115:G:N2	2.23	0.66
30:3:2680:C:H2'	30:3:2681:G:H4'	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:177:U:H2'	30:3:178:A:H8	1.60	0.66
30:3:1671:C:H5'	30:3:1767:A:H1'	1.78	0.66
30:3:534:U:O4	30:3:538:A:N7	2.29	0.66
30:3:992:G:H1	30:3:994:U:HO2'	1.42	0.66
30:3:1803:U:H2'	30:3:1804:A:H8	1.60	0.66
30:3:2589:G:OP2	30:3:2589:G:N2	2.19	0.66
31:4:11:A:O3'	31:4:13:G:N2	2.29	0.66
30:3:2050:G:OP1	30:3:2785:G:O2'	2.12	0.66
30:3:2548:G:O2'	30:3:2748:A:N3	2.27	0.66
30:3:80:U:O4	30:3:109:G:O6	2.13	0.66
30:3:241:C:O2	30:3:643:A:O2'	2.13	0.66
30:3:1786:U:OP2	30:3:1791:A:N6	2.28	0.66
30:3:2638:G:H21	30:3:2895:A:H4'	1.61	0.66
3:2:11:CYS:SG	3:2:12:LYS:N	2.69	0.65
30:3:30:A:H2'	30:3:31:U:C6	2.31	0.65
30:3:300:G:H2'	30:3:301:G:C8	2.31	0.65
30:3:341:G:O2'	30:3:1240:U:O2'	2.14	0.65
30:3:345:A:H61	30:3:363:G:H5''	1.61	0.65
30:3:632:A:H2'	30:3:633:G:H8	1.61	0.65
31:4:60:C:H2'	31:4:61:A:C8	2.31	0.65
30:3:1065:G:H2'	30:3:1066:G:C8	2.32	0.65
30:3:2190:G:H2'	30:3:2191:G:C8	2.30	0.65
30:3:2758:A:O2'	30:3:2760:C:N4	2.29	0.65
30:3:1509:U:H3	30:3:1530:G:H1	1.41	0.65
30:3:421:A:N6	30:3:424:G:OP2	2.27	0.65
30:3:535:G:N1	30:3:538:A:OP2	2.28	0.65
30:3:2141:A:N6	30:3:2164:G:O2'	2.29	0.65
30:3:2169:G:H4'	30:3:2170:A:H3'	1.79	0.65
30:3:2568:G:H2'	30:3:2569:A:H8	1.61	0.65
30:3:450:C:O2'	30:3:1871:U:O2	2.15	0.65
30:3:227:A:O2'	30:3:456:G:N3	2.26	0.64
30:3:604:A:OP2	30:3:2037:A:N6	2.28	0.64
30:3:608:A:H4'	30:3:2508:U:H4'	1.80	0.64
2:1:37:GLN:NE2	30:3:2371:U:OP2	2.31	0.64
30:3:294:G:O2'	30:3:295:U:O4'	2.10	0.64
30:3:774:A:N3	30:3:775:C:N4	2.45	0.64
30:3:1813:C:N4	30:3:1814:G:O6	2.30	0.64
30:3:2849:G:H22	30:3:2875:U:H3	1.45	0.64
30:3:495:U:O2	30:3:507:A:N6	2.31	0.64
30:3:1414:C:H2'	30:3:1415:A:H8	1.62	0.64
30:3:1160:G:OP2	30:3:1161:A:O2'	2.16	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:2:35:ARG:HG2	3:2:36:GLN:H	1.62	0.64
30:3:534:U:H3	30:3:538:A:N6	1.93	0.64
30:3:597:C:H2'	30:3:598:G:H8	1.62	0.64
30:3:853:G:N1	30:3:1219:U:OP2	2.24	0.64
30:3:2299:U:H2'	30:3:2300:A:C8	2.33	0.64
30:3:1164:A:N3	30:3:2577:G:N2	2.43	0.64
30:3:713:C:H2'	30:3:714:G:H8	1.63	0.64
30:3:1294:G:N2	30:3:2023:U:O4	2.31	0.64
30:3:2308:U:H2'	30:3:2309:A:H8	1.62	0.64
30:3:2849:G:H2'	30:3:2850:G:C8	2.33	0.64
30:3:597:C:H2'	30:3:598:G:C8	2.33	0.63
30:3:784:A:H61	30:3:788:G:H21	1.45	0.63
30:3:1776:G:H2'	30:3:1777:G:H8	1.63	0.63
30:3:2054:C:H2'	30:3:2055:A:H8	1.64	0.63
30:3:1120:A:O2'	30:3:1139:C:O2	2.16	0.63
30:3:1470:C:H2'	30:3:1471:A:H8	1.63	0.63
30:3:2195:U:C4	30:3:2196:G:O6	2.52	0.63
30:3:1010:G:N2	30:3:1026:A:C8	2.66	0.63
30:3:2054:C:H2'	30:3:2055:A:C8	2.34	0.63
31:4:12:U:H2'	31:4:13:G:H21	1.62	0.63
30:3:1475:C:O2'	30:3:1577:A:N3	2.30	0.63
30:3:1949:C:OP2	30:3:1950:U:O2'	2.15	0.63
30:3:2062:C:H2'	30:3:2512:U:H4'	1.79	0.63
30:3:643:A:H62	30:3:655:G:N2	1.95	0.63
31:4:60:C:H2'	31:4:61:A:H8	1.64	0.63
30:3:421:A:N6	30:3:423:C:H2'	2.13	0.63
30:3:1400:U:H2'	30:3:1401:A:H8	1.64	0.63
30:3:410:G:H4'	30:3:411:U:O5'	1.98	0.62
30:3:2745:G:H2'	30:3:2746:A:H8	1.62	0.62
30:3:276:A:N6	30:3:293:G:O2'	2.32	0.62
1:0:22:MET:O	1:0:28:ARG:NH1	2.32	0.62
1:0:7:PRO:HA	30:3:721:G:H21	1.65	0.62
30:3:1032:A:H2'	30:3:1033:A:C8	2.35	0.62
30:3:334:A:O2'	30:3:352:C:O2	2.16	0.62
30:3:519:A:OP2	30:3:520:C:N4	2.32	0.62
30:3:739:G:H22	30:3:761:G:H1'	1.65	0.62
30:3:1355:C:N4	30:3:1681:G:O2'	2.33	0.62
30:3:746:G:H2'	30:3:747:A:H8	1.65	0.62
30:3:900:G:H21	30:3:903:A:H61	1.47	0.62
30:3:252:G:H5'	30:3:254:G:N1	2.14	0.62
30:3:788:G:H2'	30:3:789:A:H8	1.65	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:2088:U:H2'	30:3:2089:A:H8	1.65	0.62
3:2:4:ARG:NE	30:3:2474:C:OP1	2.20	0.62
30:3:2669:G:H2'	30:3:2670:A:C8	2.35	0.62
30:3:915:A:OP2	30:3:936:G:N2	2.22	0.62
30:3:522:C:H2'	30:3:523:A:H8	1.63	0.61
30:3:892:G:H2'	30:3:893:A:H8	1.64	0.61
30:3:1460:G:H2'	30:3:1461:A:C8	2.34	0.61
30:3:2303:U:H3	30:3:2345:G:H1	1.46	0.61
30:3:2847:C:H2'	30:3:2848:A:H8	1.65	0.61
30:3:192:U:H3	30:3:212:G:H1	1.46	0.61
30:3:513:A:H2'	30:3:514:A:C8	2.35	0.61
30:3:632:A:H2'	30:3:633:G:C8	2.35	0.61
30:3:1240:U:N3	30:3:1267:A:N7	2.48	0.61
30:3:1715:A:H4'	30:3:1733:G:H22	1.65	0.61
30:3:293:G:H2'	30:3:294:G:C5	2.36	0.61
30:3:1629:U:H2'	30:3:1630:A:C8	2.36	0.61
30:3:2297:G:H2'	30:3:2298:G:H8	1.64	0.61
30:3:1496:A:N6	30:3:1547:G:O2'	2.33	0.61
30:3:108:G:N2	30:3:380:A:N1	2.48	0.61
30:3:876:A:H2'	30:3:877:G:H8	1.64	0.61
30:3:2383:G:N2	30:3:2385:A:H3'	2.15	0.61
30:3:2465:U:O2	30:3:2502:G:O6	2.18	0.61
30:3:2796:C:O2'	30:3:2813:A:N7	2.31	0.61
30:3:609:U:N3	30:3:610:G:O6	2.32	0.61
30:3:1389:G:O2'	30:3:2223:C:O2'	2.16	0.61
30:3:1458:A:H61	30:3:1597:U:H3	1.47	0.61
30:3:326:A:N6	30:3:383:U:O2	2.32	0.61
30:3:2828:C:OP2	30:3:2829:G:N2	2.33	0.61
30:3:988:G:O6	30:3:1002:A:N6	2.34	0.61
30:3:1748:U:C2	30:3:1750:A:N7	2.68	0.61
30:3:2684:G:H2'	30:3:2685:A:H8	1.66	0.61
30:3:535:G:N3	30:3:540:A:C6	2.68	0.61
30:3:2736:U:O2'	30:3:2737:G:H8	1.82	0.61
30:3:1056:A:H2'	30:3:1057:G:H4'	1.83	0.61
30:3:1418:U:H3	30:3:1423:A:N6	1.99	0.61
30:3:2289:C:H4'	30:3:2397:G:H21	1.66	0.61
30:3:2552:G:H2'	30:3:2553:G:C8	2.36	0.61
30:3:2789:A:H5''	30:3:2790:A:H5'	1.82	0.61
30:3:522:C:H2'	30:3:523:A:C8	2.36	0.60
30:3:677:U:H2'	30:3:678:U:C2	2.36	0.60
30:3:824:A:N6	30:3:1648:A:OP2	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:1125:U:C4	30:3:1137:C:N3	2.69	0.60
30:3:2058:G:N2	30:3:2059:G:N7	2.47	0.60
30:3:2696:G:N2	30:3:2728:U:OP2	2.32	0.60
30:3:900:G:N2	30:3:903:A:H61	1.99	0.60
30:3:2599:C:H2'	30:3:2600:G:H8	1.65	0.60
31:4:23:A:OP2	31:4:25:A:N6	2.33	0.60
30:3:2568:G:H2'	30:3:2569:A:C8	2.35	0.60
30:3:1916:C:H2'	30:3:1917:G:H8	1.65	0.60
30:3:1297:U:H2'	30:3:1298:A:C8	2.35	0.60
30:3:1511:C:H2'	30:3:1512:A:H8	1.67	0.60
30:3:2094:A:C6	30:3:2095:A:N6	2.69	0.60
30:3:2521:A:H2'	30:3:2522:U:H6	1.65	0.60
30:3:1054:U:O2'	30:3:1056:A:N7	2.29	0.60
30:3:1111:C:H2'	30:3:1112:A:C8	2.36	0.60
30:3:1125:U:N3	30:3:1137:C:C2	2.70	0.60
30:3:1807:C:O2	30:3:1824:G:O6	2.19	0.60
1:0:19:LEU:HB2	30:3:126:C:H5'	1.83	0.60
2:1:9:LYS:NZ	30:3:253:C:O2	2.34	0.60
30:3:418:G:H1	30:3:430:U:H3	1.50	0.60
30:3:1932:C:N3	30:3:1936:G:N1	2.41	0.60
30:3:334:A:N3	30:3:367:G:N2	2.49	0.60
30:3:2045:C:H2'	30:3:2046:G:H8	1.66	0.60
30:3:2376:C:H2'	30:3:2377:A:H8	1.66	0.60
30:3:2645:U:H3'	30:3:2646:G:C8	2.37	0.60
30:3:640:U:O2	30:3:658:G:O6	2.19	0.60
30:3:1723:A:OP2	30:3:1732:A:N6	2.34	0.60
30:3:1851:U:H2'	30:3:1852:G:H8	1.66	0.60
30:3:2668:A:O2'	30:3:2669:G:H8	1.85	0.60
30:3:225:A:N7	30:3:463:U:O4	2.35	0.60
30:3:1067:A:H2	30:3:1157:G:H1	1.47	0.60
30:3:1431:A:HO2'	30:3:1497:A:HO2'	1.50	0.60
30:3:474:U:H2'	30:3:475:A:C8	2.37	0.59
30:3:1240:U:O2	30:3:1267:A:N6	2.32	0.59
30:3:1866:G:N1	30:3:1891:A:N7	2.50	0.59
30:3:2083:U:OP2	30:3:2246:G:N2	2.34	0.59
30:3:1008:A:H5''	30:3:1009:A:H5''	1.83	0.59
30:3:1543:U:H2'	30:3:1544:G:H8	1.66	0.59
30:3:1932:C:N4	30:3:1936:G:N2	2.36	0.59
30:3:2400:A:N7	30:3:2432:C:N3	2.50	0.59
30:3:515:A:H1'	30:3:517:G:H5''	1.84	0.59
30:3:787:C:OP2	30:3:1788:A:N6	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:32:G:O2'	30:3:1244:A:N3	2.33	0.59
30:3:1820:U:O2'	30:3:1821:G:OP1	2.20	0.59
30:3:27:U:H3'	30:3:28:G:C8	2.37	0.59
30:3:1062:A:H2'	30:3:1063:A:H8	1.67	0.59
30:3:359:G:H2'	30:3:360:G:C8	2.36	0.59
30:3:2156:G:H2'	30:3:2157:A:C8	2.31	0.59
30:3:69:U:H2'	30:3:70:G:C8	2.37	0.59
30:3:561:A:O2'	30:3:2050:G:N3	2.30	0.59
30:3:921:C:H2'	30:3:929:G:H1	1.68	0.59
30:3:2081:U:H2'	30:3:2082:U:H6	1.68	0.59
30:3:84:G:H21	30:3:106:C:H42	1.50	0.59
30:3:341:G:N2	30:3:364:A:N6	2.26	0.59
30:3:892:G:H2'	30:3:893:A:C8	2.38	0.59
30:3:2808:A:OP2	30:3:2811:G:N1	2.35	0.59
2:1:15:LYS:HG2	30:3:687:G:H5''	1.85	0.59
30:3:849:C:O2'	30:3:1255:G:N2	2.34	0.59
30:3:1020:G:OP2	30:3:1020:G:N2	2.32	0.59
1:0:39:ARG:NH2	30:3:504:G:O6	2.35	0.59
30:3:221:A:N7	30:3:467:U:O2	2.35	0.59
30:3:369:C:H2'	30:3:370:C:C6	2.38	0.59
30:3:641:U:H3'	30:3:655:G:H1	1.67	0.59
30:3:1335:A:OP2	30:3:1640:G:N2	2.35	0.59
30:3:1790:U:O2'	30:3:2615:G:N3	2.36	0.59
30:3:2213:A:H2'	30:3:2214:A:H8	1.68	0.59
30:3:29:G:N2	30:3:548:A:OP2	2.36	0.58
30:3:595:U:H3	30:3:2040:A:H2	1.50	0.58
30:3:1766:A:N6	30:3:2704:U:O2'	2.36	0.58
30:3:2359:G:O2'	30:3:2374:A:N6	2.36	0.58
30:3:2531:C:O2	30:3:2772:A:O2'	2.21	0.58
30:3:2700:C:H2'	30:3:2701:A:C8	2.36	0.58
30:3:337:U:H2'	30:3:338:G:H8	1.68	0.58
30:3:474:U:H2'	30:3:475:A:H8	1.68	0.58
30:3:339:U:H2'	30:3:340:U:C6	2.38	0.58
30:3:564:A:H5''	30:3:2049:A:H61	1.68	0.58
31:4:48:A:HO2'	31:4:49:G:H8	1.50	0.58
31:4:59:A:O2'	31:4:60:C:OP1	2.19	0.58
30:3:1546:U:H3'	30:3:1547:G:C8	2.38	0.58
30:3:1698:A:C6	30:3:2734:C:C2	2.91	0.58
30:3:2701:A:H2'	30:3:2702:G:C8	2.39	0.58
30:3:1861:A:O2'	30:3:2240:U:O2'	2.21	0.58
31:4:104:C:H2'	31:4:105:A:C8	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:823:A:H5''	30:3:825:U:H5	1.68	0.58
30:3:1485:A:O2'	30:3:1487:U:OP2	2.20	0.58
30:3:1500:A:N6	30:3:1544:G:O6	2.37	0.58
30:3:2191:G:H2'	30:3:2192:U:O4'	2.03	0.58
30:3:2856:G:O6	30:3:2869:U:O2	2.22	0.58
1:0:9:LYS:HG2	30:3:1337:G:H5''	1.84	0.58
30:3:26:G:H2'	30:3:27:U:H6	1.69	0.58
30:3:67:C:O2'	30:3:492:C:N3	2.28	0.58
30:3:1176:U:O2	30:3:1177:A:N6	2.37	0.58
30:3:1754:U:H2'	30:3:1755:A:C8	2.39	0.58
30:3:1760:G:N2	30:3:1763:G:OP2	2.31	0.58
30:3:234:G:H2'	30:3:235:U:C6	2.38	0.58
30:3:829:A:H2'	30:3:830:A:C8	2.39	0.58
30:3:1400:U:H2'	30:3:1401:A:C8	2.39	0.58
30:3:282:C:N3	30:3:286:A:O2'	2.34	0.58
30:3:334:A:H2	30:3:353:G:H21	1.50	0.58
30:3:590:U:H2'	30:3:591:G:H8	1.67	0.58
30:3:618:G:H3'	30:3:1281:A:H61	1.67	0.58
30:3:1337:G:H21	30:3:1645:C:H5'	1.69	0.58
30:3:1501:U:H3	30:3:1542:G:H1	1.50	0.58
30:3:341:G:N1	30:3:344:A:OP2	2.35	0.58
30:3:1125:U:O4	30:3:1137:C:N3	2.36	0.58
30:3:453:U:H2'	30:3:454:G:C8	2.36	0.57
30:3:548:A:H2'	30:3:549:A:C8	2.38	0.57
30:3:2299:U:O2	30:3:2382:A:O2'	2.21	0.57
30:3:43:A:H2'	30:3:44:A:H8	1.69	0.57
30:3:159:G:H2'	30:3:160:A:C8	2.39	0.57
30:3:1592:A:H4'	30:3:1593:U:H3'	1.86	0.57
30:3:1641:A:H4'	30:3:1642:G:C8	2.40	0.57
30:3:1766:A:H2'	30:3:1767:A:C8	2.39	0.57
30:3:2239:U:C4	30:3:2240:U:O4	2.56	0.57
31:4:23:A:H3'	31:4:24:A:H8	1.69	0.57
30:3:189:U:H4'	30:3:222:A:H4'	1.85	0.57
30:3:1070:U:O2	30:3:1155:G:O6	2.21	0.57
30:3:2143:G:O6	30:3:2162:U:O4	2.20	0.57
30:3:1639:C:O2	30:3:1642:G:N2	2.37	0.57
30:3:1831:G:H2'	30:3:1832:G:H8	1.69	0.57
30:3:2145:A:H2'	30:3:2146:A:C8	2.40	0.57
30:3:2299:U:H2'	30:3:2300:A:H8	1.69	0.57
30:3:2451:C:H2'	30:3:2452:G:H8	1.70	0.57
30:3:2454:G:N2	30:3:2457:U:O2	2.30	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:2829:G:N2	30:3:2829:G:OP2	2.37	0.57
30:3:101:C:H5''	30:3:102:A:H2'	1.87	0.57
30:3:394:C:H2'	30:3:395:U:O4'	2.04	0.57
30:3:1761:C:N3	30:3:2724:U:O2'	2.34	0.57
30:3:1793:A:O2'	30:3:1945:A:N6	2.36	0.57
30:3:1932:C:H2'	30:3:1933:U:C6	2.38	0.57
30:3:2068:G:O2'	30:3:2071:C:N4	2.37	0.57
30:3:47:G:H21	30:3:184:A:N6	2.02	0.57
30:3:874:U:H2'	30:3:875:G:H8	1.70	0.57
30:3:1116:U:H2'	30:3:1117:U:C6	2.40	0.57
30:3:1495:A:OP2	30:3:1548:A:N6	2.36	0.57
30:3:1848:U:H2'	30:3:1849:G:H8	1.69	0.57
30:3:2700:C:O2'	30:3:2851:U:O2	2.16	0.57
30:3:2885:U:H2'	30:3:2886:A:C8	2.40	0.57
30:3:337:U:H2'	30:3:338:G:C8	2.40	0.57
30:3:618:G:H21	30:3:1284:A:H62	1.52	0.57
30:3:740:A:N6	30:3:760:G:O2'	2.38	0.57
30:3:1979:G:H2'	30:3:1980:G:C8	2.40	0.57
30:3:2025:C:H2'	30:3:2026:A:C8	2.40	0.57
30:3:2701:A:H2'	30:3:2702:G:H8	1.68	0.57
3:2:33:LYS:HZ3	30:3:2535:C:H5'	1.69	0.57
30:3:534:U:H2'	30:3:535:G:O4'	2.04	0.57
30:3:1097:G:H2'	30:3:1098:G:H8	1.70	0.57
30:3:2475:C:H2'	30:3:2476:A:C8	2.39	0.57
1:0:2:LYS:NZ	30:3:722:C:O3'	2.38	0.57
30:3:343:A:N3	30:3:363:G:O2'	2.37	0.57
30:3:627:U:H2'	30:3:628:A:H8	1.70	0.57
30:3:1746:U:H3	30:3:1753:G:H1	1.52	0.57
30:3:2451:C:H2'	30:3:2452:G:C8	2.40	0.57
30:3:2819:C:H2'	30:3:2820:G:H8	1.70	0.57
30:3:563:A:N6	30:3:2050:G:OP2	2.33	0.56
30:3:957:G:H21	30:3:2277:A:H8	1.52	0.56
30:3:1441:A:H2'	30:3:1442:G:C8	2.40	0.56
30:3:1504:G:H2'	30:3:1505:G:H8	1.70	0.56
30:3:1697:C:N4	30:3:1999:G:O2'	2.36	0.56
30:3:1798:A:N6	30:3:1835:G:H1'	2.20	0.56
30:3:2381:G:H2'	30:3:2382:A:H8	1.70	0.56
30:3:69:U:H2'	30:3:70:G:H8	1.69	0.56
30:3:1012:G:HO2'	30:3:1190:A:HO2'	1.52	0.56
30:3:1520:A:H2'	30:3:1521:A:C8	2.40	0.56
30:3:1698:A:C5	30:3:2734:C:N3	2.73	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:1866:G:O6	30:3:1891:A:N6	2.38	0.56
30:3:2013:C:H2'	30:3:2014:U:C6	2.40	0.56
30:3:2200:U:H2'	30:3:2201:G:H8	1.70	0.56
30:3:2522:U:H2'	30:3:2523:C:C6	2.40	0.56
30:3:87:G:H2'	30:3:88:G:C8	2.39	0.56
30:3:450:C:O3'	30:3:1885:G:N2	2.38	0.56
30:3:1356:G:N2	30:3:1681:G:O6	2.39	0.56
30:3:1691:U:H2'	30:3:1692:A:C8	2.40	0.56
30:3:2045:C:H2'	30:3:2046:G:C8	2.39	0.56
30:3:2151:G:O2'	30:3:2154:A:N1	2.34	0.56
30:3:2278:G:H3'	30:3:2279:G:H8	1.69	0.56
30:3:2522:U:H2'	30:3:2523:C:H6	1.69	0.56
30:3:2539:A:N6	30:3:2670:A:H61	2.01	0.56
30:3:2663:G:N2	30:3:2673:A:OP2	2.32	0.56
30:3:805:G:H2'	30:3:806:A:C8	2.41	0.56
30:3:1490:G:H2'	30:3:1491:G:C8	2.41	0.56
30:3:2359:G:N2	30:3:2374:A:OP2	2.38	0.56
30:3:2825:A:H2	30:3:2830:A:H61	1.53	0.56
30:3:29:G:N7	30:3:547:G:N2	2.53	0.56
30:3:1182:U:H2'	30:3:1183:A:H8	1.69	0.56
30:3:2142:U:OP2	30:3:2144:C:N4	2.38	0.56
30:3:219:G:H21	30:3:468:A:H61	1.54	0.56
30:3:1143:U:H2'	30:3:1144:C:H5	1.71	0.56
30:3:1301:G:H2'	30:3:1651:C:H4'	1.87	0.56
30:3:1954:C:H2'	30:3:1955:G:C8	2.41	0.56
30:3:2088:U:H2'	30:3:2089:A:C8	2.41	0.56
30:3:195:A:H2'	30:3:196:G:C8	2.41	0.56
30:3:1253:G:N1	30:3:1256:A:OP2	2.30	0.56
30:3:1509:U:O4	30:3:1510:A:N6	2.38	0.56
30:3:1645:C:H2'	30:3:1646:G:C8	2.40	0.56
30:3:2022:A:HO2'	30:3:2064:G:HO2'	1.45	0.56
30:3:2097:A:N6	30:3:2238:G:O6	2.39	0.56
30:3:54:A:N1	30:3:182:C:H1'	2.21	0.56
30:3:631:A:H2'	30:3:632:A:C8	2.41	0.56
30:3:881:A:N7	30:3:968:U:N3	2.53	0.56
30:3:1296:G:N2	30:3:2020:A:OP2	2.39	0.56
30:3:1699:A:H2'	30:3:1700:G:C8	2.40	0.56
30:3:2380:U:H2'	30:3:2381:G:C8	2.41	0.56
30:3:9:G:O6	30:3:2899:C:N4	2.39	0.56
30:3:788:G:H2'	30:3:789:A:C8	2.41	0.56
30:3:1345:G:H2'	30:3:1346:G:H8	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:1914:G:H1	30:3:1930:U:H3	1.53	0.56
30:3:2533:A:H2'	30:3:2534:G:H8	1.71	0.56
30:3:1321:C:H2'	30:3:1322:A:C8	2.39	0.55
30:3:1692:A:H2'	30:3:1693:U:C6	2.41	0.55
30:3:2099:U:N3	30:3:2234:C:OP2	2.39	0.55
30:3:2175:U:C2	30:3:2179:A:N7	2.74	0.55
30:3:2315:G:H5'	30:3:2316:G:C8	2.40	0.55
30:3:37:G:O2'	30:3:490:A:O5'	2.24	0.55
30:3:107:C:H2'	30:3:108:G:H8	1.71	0.55
30:3:563:A:O2'	30:3:565:C:N4	2.38	0.55
30:3:869:U:H2'	30:3:870:A:C8	2.41	0.55
30:3:1406:A:O2'	30:3:1408:G:OP2	2.24	0.55
30:3:1691:U:H2'	30:3:1692:A:H8	1.69	0.55
30:3:1979:G:H2'	30:3:1980:G:H8	1.72	0.55
31:4:12:U:H2'	31:4:13:G:N2	2.21	0.55
30:3:192:U:H1'	30:3:1393:A:N6	2.21	0.55
30:3:713:C:H2'	30:3:714:G:C8	2.42	0.55
30:3:812:G:H2'	30:3:813:G:H8	1.72	0.55
30:3:1449:G:H2'	30:3:1450:G:H8	1.72	0.55
30:3:2421:U:H2'	30:3:2422:G:H8	1.72	0.55
31:4:61:A:H2'	31:4:62:G:C8	2.40	0.55
1:0:7:PRO:HB2	1:0:9:LYS:NZ	2.21	0.55
30:3:1511:C:H2'	30:3:1512:A:C8	2.42	0.55
30:3:2308:U:H2'	30:3:2309:A:C8	2.42	0.55
30:3:2447:A:H1'	30:3:2595:A:H4'	1.87	0.55
30:3:2483:C:H42	30:3:2537:G:N2	2.04	0.55
31:4:104:C:H2'	31:4:105:A:H8	1.72	0.55
30:3:117:C:H2'	30:3:118:G:O4'	2.05	0.55
30:3:454:G:H2'	30:3:455:G:H8	1.70	0.55
30:3:768:G:N2	30:3:769:A:N7	2.55	0.55
30:3:1431:A:O2'	30:3:1497:A:O2'	2.21	0.55
30:3:2072:C:H5'	30:3:2259:G:H21	1.71	0.55
30:3:2078:A:H2'	30:3:2079:G:H8	1.72	0.55
30:3:2393:C:H2'	30:3:2394:A:C8	2.42	0.55
1:0:24:THR:HG23	1:0:27:GLY:H	1.70	0.55
30:3:47:G:H21	30:3:184:A:H61	1.54	0.55
30:3:224:G:N2	30:3:465:A:H61	2.05	0.55
30:3:764:G:H8	30:3:799:A:H5''	1.70	0.55
30:3:1182:U:H2'	30:3:1183:A:C8	2.41	0.55
30:3:1931:C:H2'	30:3:1932:C:C6	2.42	0.55
30:3:2892:U:H2'	30:3:2893:C:C6	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:1117:U:H2'	30:3:1118:U:O4'	2.06	0.55
30:3:2129:U:H2'	30:3:2130:A:C8	2.38	0.55
3:2:5:ALA:HB3	30:3:2474:C:H5'	1.88	0.55
30:3:225:A:N6	30:3:463:U:H3	2.02	0.55
30:3:422:A:OP1	30:3:423:C:N4	2.28	0.55
30:3:451:A:O2'	30:3:1873:A:OP2	2.24	0.55
30:3:700:U:H2'	30:3:701:A:C8	2.42	0.55
30:3:1687:G:N1	30:3:2009:U:OP2	2.39	0.55
30:3:1934:A:H2'	30:3:1935:A:C8	2.41	0.55
30:3:2650:A:H2'	30:3:2651:G:C8	2.41	0.55
1:0:10:LEU:HD22	30:3:805:G:H5''	1.88	0.55
30:3:730:G:H2'	30:3:731:A:C8	2.41	0.55
30:3:2693:U:H2'	30:3:2694:A:C8	2.40	0.55
30:3:2764:U:H1'	30:3:2765:A:H5''	1.87	0.55
2:1:6:ALA:O	2:1:10:ARG:NH1	2.40	0.55
30:3:134:U:H2'	30:3:135:A:H8	1.71	0.55
30:3:990:G:O6	30:3:999:U:O4	2.24	0.55
30:3:1320:C:H2'	30:3:1321:C:C6	2.42	0.55
30:3:1476:C:H2'	30:3:1477:A:C8	2.42	0.55
30:3:2483:C:N4	30:3:2537:G:N2	2.54	0.55
30:3:2572:A:C2	30:3:2656:G:H5'	2.42	0.55
30:3:2744:A:H61	30:3:2776:U:H3	1.55	0.55
30:3:533:G:H2'	30:3:534:U:H6	1.72	0.54
30:3:567:U:N3	30:3:2027:G:O2'	2.38	0.54
30:3:714:G:H2'	30:3:715:G:H8	1.72	0.54
30:3:947:A:H1'	30:3:2272:C:O2'	2.07	0.54
30:3:1213:U:H2'	30:3:1214:U:C6	2.43	0.54
30:3:2667:G:N2	30:3:2670:A:OP2	2.39	0.54
30:3:2745:G:H2'	30:3:2746:A:C8	2.41	0.54
1:0:41:GLN:HG3	1:0:47:GLU:HG2	1.89	0.54
30:3:697:U:H2'	30:3:698:A:C8	2.42	0.54
30:3:1298:A:H2'	30:3:1299:A:O4'	2.07	0.54
30:3:1334:U:H2'	30:3:1335:A:H8	1.71	0.54
30:3:2077:A:H2'	30:3:2078:A:H8	1.71	0.54
30:3:26:G:O6	30:3:552:C:N4	2.41	0.54
30:3:675:U:H2'	30:3:676:U:C5	2.42	0.54
30:3:1544:G:H2'	30:3:1545:A:H8	1.72	0.54
30:3:1778:G:H2'	30:3:1779:G:C8	2.43	0.54
30:3:2005:G:HO2'	30:3:2732:A:HO2'	1.50	0.54
30:3:2471:U:H2'	30:3:2472:G:C8	2.42	0.54
30:3:2474:C:N4	30:3:2475:C:H41	2.04	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:4:38:U:HO2'	31:4:40:U:HO2'	1.48	0.54
30:3:464:A:H5''	30:3:465:A:N7	2.22	0.54
30:3:505:G:HO2'	30:3:506:A:H8	1.55	0.54
30:3:604:A:N6	30:3:2508:U:OP1	2.40	0.54
30:3:631:A:H2'	30:3:632:A:H8	1.72	0.54
30:3:775:C:H5''	30:3:1791:A:P	2.48	0.54
30:3:1348:C:O2'	30:3:1358:C:N4	2.34	0.54
30:3:1798:A:H61	30:3:1835:G:H1'	1.73	0.54
30:3:2481:U:OP1	30:3:2483:C:N4	2.40	0.54
30:3:2504:C:OP2	30:3:2505:A:N6	2.40	0.54
30:3:17:G:O6	30:3:560:U:O4	2.26	0.54
30:3:223:A:N6	30:3:464:A:OP2	2.41	0.54
30:3:243:U:H2'	30:3:244:G:O4'	2.07	0.54
30:3:358:A:N6	30:3:373:U:O4'	2.40	0.54
30:3:465:A:H2'	30:3:466:A:C8	2.42	0.54
30:3:899:A:H2'	30:3:900:G:C4	2.42	0.54
30:3:1042:C:H2'	30:3:1043:C:C6	2.43	0.54
30:3:1588:A:H2'	30:3:1589:A:C8	2.42	0.54
30:3:2885:U:H2'	30:3:2886:A:H8	1.73	0.54
30:3:1543:U:H2'	30:3:1544:G:C8	2.42	0.54
30:3:1837:C:H2'	30:3:1838:A:C8	2.43	0.54
30:3:2436:G:H4'	30:3:2437:G:C5	2.42	0.54
30:3:772:C:H2'	30:3:773:G:C8	2.43	0.54
30:3:894:G:N3	30:3:2276:A:H2'	2.23	0.54
30:3:1063:A:OP2	30:3:1161:A:N6	2.39	0.54
30:3:2791:U:H2'	30:3:2792:C:C6	2.43	0.54
30:3:488:G:H21	30:3:493:A:H1'	1.72	0.54
30:3:1867:G:H2'	30:3:1868:A:H8	1.73	0.54
30:3:2667:G:H2'	30:3:2668:A:H2'	1.88	0.54
3:2:27:CYS:SG	3:2:28:LYS:N	2.81	0.54
30:3:1273:U:H2'	30:3:1274:A:C8	2.43	0.54
30:3:2108:C:N4	30:3:2109:A:H61	1.92	0.54
30:3:2664:U:H2'	30:3:2665:A:H8	1.73	0.54
30:3:614:C:H2'	30:3:615:G:H8	1.72	0.54
30:3:1244:A:H4'	30:3:1269:C:H4'	1.90	0.54
30:3:1549:U:H3'	30:3:1550:G:H8	1.72	0.54
30:3:2421:U:H2'	30:3:2422:G:C8	2.42	0.54
30:3:341:G:H2'	30:3:343:A:N7	2.22	0.53
30:3:590:U:H2'	30:3:591:G:C8	2.43	0.53
30:3:1200:U:H2'	30:3:1201:A:C8	2.42	0.53
30:3:1229:U:H2'	30:3:1230:U:C6	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:1473:C:O2	30:3:1580:G:N2	2.40	0.53
30:3:2146:A:H2'	30:3:2147:G:C8	2.43	0.53
31:4:11:A:OP1	31:4:13:G:N1	2.41	0.53
30:3:251:G:OP2	30:3:253:C:N4	2.42	0.53
30:3:461:C:H2'	30:3:462:C:C6	2.43	0.53
30:3:526:G:H2'	30:3:527:A:C8	2.44	0.53
30:3:612:G:H4'	30:3:2024:C:H2'	1.89	0.53
30:3:1136:U:H2'	30:3:1137:C:C6	2.43	0.53
30:3:1546:U:H3'	30:3:1547:G:H8	1.71	0.53
30:3:1723:A:H61	30:3:1731:G:H2'	1.74	0.53
30:3:1840:C:O2'	30:3:1976:A:N6	2.41	0.53
30:3:360:G:H2'	30:3:361:G:C8	2.42	0.53
30:3:587:U:H2'	30:3:588:G:C8	2.44	0.53
30:3:720:A:H1'	30:3:724:A:N6	2.22	0.53
30:3:729:U:H3	30:3:803:G:H1	1.56	0.53
30:3:811:G:C8	30:3:2249:A:H5''	2.39	0.53
30:3:1667:G:N7	30:3:1669:A:N6	2.55	0.53
30:3:1828:A:H2'	30:3:1829:U:C6	2.44	0.53
30:3:2552:G:H1'	30:3:2654:U:H4'	1.91	0.53
30:3:1065:G:O6	30:3:1160:G:N2	2.41	0.53
30:3:1415:A:H2'	30:3:1416:G:C8	2.44	0.53
30:3:1589:A:H2'	30:3:1590:U:C6	2.44	0.53
30:3:1645:C:H2'	30:3:1646:G:H8	1.72	0.53
30:3:2176:G:N1	30:3:2179:A:OP2	2.42	0.53
30:3:739:G:H21	30:3:762:A:H62	1.56	0.53
30:3:897:A:H2	31:4:76:A:H2	1.57	0.53
30:3:1659:C:H3'	30:3:1660:A:H8	1.74	0.53
30:3:535:G:N3	30:3:540:A:N1	2.57	0.53
30:3:1125:U:C4	30:3:1137:C:C2	2.95	0.53
30:3:2386:A:O2'	30:3:2387:U:OP1	2.25	0.53
30:3:454:G:H2'	30:3:455:G:C8	2.44	0.53
30:3:500:U:O4	30:3:823:A:N6	2.42	0.53
30:3:566:G:OP1	30:3:594:G:N2	2.42	0.53
30:3:1084:C:H41	30:3:1145:G:H21	1.57	0.53
30:3:1536:C:H2'	30:3:1537:A:C8	2.44	0.53
30:3:2093:U:H2'	30:3:2094:A:C8	2.44	0.53
30:3:2209:U:H2'	30:3:2210:G:C8	2.43	0.53
30:3:2382:A:H2'	30:3:2383:G:C8	2.44	0.53
30:3:2670:A:H3'	30:3:2671:G:H8	1.73	0.53
30:3:2870:U:H4'	30:3:2871:G:H4'	1.89	0.53
30:3:134:U:H2'	30:3:135:A:C8	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:535:G:N2	30:3:540:A:C5	2.75	0.53
30:3:694:U:H2'	30:3:695:G:H8	1.73	0.53
30:3:1462:A:O2'	30:3:1463:G:O5'	2.25	0.53
30:3:1097:G:C8	30:3:1123:A:C8	2.97	0.53
30:3:1239:G:H4'	30:3:1242:G:H4'	1.91	0.53
30:3:2117:G:O2'	30:3:2127:G:H5'	2.08	0.53
30:3:2146:A:H2'	30:3:2147:G:H8	1.73	0.53
30:3:85:U:O4	30:3:103:G:O2'	2.26	0.53
30:3:558:C:H2'	30:3:559:C:C6	2.43	0.53
30:3:1227:C:H2'	30:3:1228:G:C8	2.44	0.53
30:3:1288:C:H2'	30:3:1289:G:C8	2.44	0.53
30:3:2655:U:HO2'	30:3:2656:G:H8	1.57	0.53
31:4:85:A:H2'	31:4:86:G:H8	1.73	0.53
3:2:35:ARG:NH1	30:3:2750:A:OP1	2.41	0.52
30:3:338:G:H2'	30:3:339:U:C6	2.43	0.52
30:3:596:G:H2'	30:3:597:C:C6	2.43	0.52
30:3:1248:A:H2'	30:3:1249:A:C8	2.44	0.52
30:3:1381:A:OP2	30:3:1405:G:N1	2.33	0.52
30:3:2126:A:H2	30:3:2178:A:H2'	1.74	0.52
30:3:2446:U:O2'	30:3:2448:C:OP1	2.26	0.52
30:3:18:G:H2'	30:3:19:G:C8	2.44	0.52
30:3:47:G:H2'	30:3:219:G:C5	2.44	0.52
30:3:70:G:N2	30:3:76:A:O4'	2.43	0.52
30:3:840:G:OP2	30:3:841:C:N4	2.42	0.52
30:3:1007:C:H1'	30:3:1019:A:H2	1.74	0.52
30:3:1463:G:H2'	30:3:1464:G:C8	2.43	0.52
30:3:178:A:C6	30:3:179:A:C6	2.98	0.52
30:3:214:C:H2'	30:3:215:A:C8	2.45	0.52
30:3:851:U:H2'	30:3:852:C:C6	2.44	0.52
30:3:911:U:H3	30:3:940:A:H61	1.57	0.52
30:3:1036:A:H2'	30:3:1037:A:C8	2.45	0.52
30:3:1044:C:H1'	30:3:1045:A:N7	2.24	0.52
30:3:1200:U:O4	30:3:1215:G:O6	2.28	0.52
30:3:1381:A:H2'	30:3:1382:A:C5	2.44	0.52
30:3:2297:G:H2'	30:3:2298:G:C8	2.43	0.52
31:4:42:G:H1'	31:4:45:C:H42	1.74	0.52
30:3:189:U:H2'	30:3:190:G:C8	2.44	0.52
30:3:1328:A:P	30:3:1661:A:H62	2.33	0.52
30:3:2224:A:H2'	30:3:2225:G:H8	1.74	0.52
30:3:2320:U:H2'	30:3:2321:C:C6	2.44	0.52
30:3:2383:G:N2	30:3:2386:A:OP2	2.30	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:2652:U:H2'	30:3:2653:G:C4	2.44	0.52
30:3:351:G:H2'	30:3:352:C:C6	2.43	0.52
30:3:697:U:H2'	30:3:698:A:H8	1.74	0.52
30:3:1001:C:H2'	30:3:1002:A:H8	1.75	0.52
30:3:2358:U:H2'	30:3:2359:G:O4'	2.09	0.52
30:3:2713:A:H2'	30:3:2714:G:O4'	2.10	0.52
30:3:204:U:O2	30:3:424:G:N2	2.32	0.52
30:3:293:G:H2'	30:3:294:G:C6	2.45	0.52
30:3:338:G:H2'	30:3:339:U:H6	1.74	0.52
30:3:1227:C:H2'	30:3:1228:G:H8	1.73	0.52
30:3:1768:G:H2'	30:3:1769:A:C4	2.44	0.52
30:3:2738:U:O2'	30:3:2739:C:H5'	2.09	0.52
30:3:17:G:N2	30:3:560:U:O2	2.35	0.52
30:3:60:G:O2'	30:3:75:A:N1	2.36	0.52
30:3:279:U:N3	30:3:291:G:O6	2.43	0.52
30:3:342:G:C2	30:3:513:A:C6	2.98	0.52
30:3:1228:G:N2	30:3:1279:U:O2	2.35	0.52
30:3:1383:G:H2'	30:3:1384:C:H6	1.74	0.52
30:3:1385:U:H2'	30:3:1386:G:O4'	2.10	0.52
30:3:2060:G:OP2	30:3:2585:A:N6	2.43	0.52
30:3:2106:G:N2	30:3:2199:C:N3	2.57	0.52
30:3:2387:U:H2'	30:3:2388:C:H6	1.74	0.52
31:4:31:G:O6	31:4:48:A:N6	2.42	0.52
30:3:144:C:H2'	30:3:145:A:H8	1.75	0.52
30:3:389:C:H2'	30:3:390:A:C8	2.45	0.52
30:3:682:A:C2	30:3:683:G:H1'	2.44	0.52
30:3:730:G:H2'	30:3:731:A:H8	1.75	0.52
30:3:1200:U:H2'	30:3:1201:A:H8	1.73	0.52
30:3:1288:C:H2'	30:3:1289:G:H8	1.75	0.52
30:3:633:G:H1	30:3:692:U:H3	1.57	0.52
30:3:1441:A:H2'	30:3:1442:G:H8	1.74	0.52
30:3:2341:G:H5''	30:3:2343:A:N3	2.25	0.52
2:1:14:THR:OG1	2:1:17:GLY:O	2.27	0.52
30:3:517:G:O2'	30:3:518:A:OP2	2.27	0.52
30:3:585:U:H2'	30:3:586:G:C8	2.40	0.52
30:3:1801:U:H2'	30:3:1802:C:C6	2.45	0.52
30:3:1927:C:H2'	30:3:1928:G:C8	2.45	0.52
30:3:2078:A:H2'	30:3:2079:G:C8	2.45	0.52
30:3:2388:C:H2'	30:3:2389:A:H8	1.75	0.52
30:3:2475:C:N4	30:3:2492:G:O6	2.43	0.52
30:3:2651:G:N1	30:3:2780:U:C2	2.77	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:17:G:H2'	30:3:18:G:C8	2.44	0.51
30:3:201:A:H62	30:3:2438:A:H2'	1.75	0.51
30:3:666:G:N2	30:3:668:A:H3'	2.25	0.51
30:3:749:U:H1'	30:3:752:C:H5	1.75	0.51
30:3:1345:G:H2'	30:3:1346:G:C8	2.46	0.51
30:3:1995:G:H2'	30:3:1996:A:C8	2.45	0.51
30:3:2205:U:O2	30:3:2206:A:O2'	2.25	0.51
30:3:17:G:H2'	30:3:18:G:H8	1.76	0.51
30:3:293:G:H2'	30:3:294:G:C4	2.44	0.51
30:3:627:U:H2'	30:3:628:A:C8	2.46	0.51
30:3:1208:A:H2'	30:3:1209:U:H4'	1.92	0.51
30:3:1628:G:H2'	30:3:1629:U:C6	2.45	0.51
30:3:1959:A:N3	30:3:2568:G:O2'	2.38	0.51
30:3:107:C:O2	30:3:328:A:O2'	2.22	0.51
30:3:1097:G:H2'	30:3:1098:G:C8	2.44	0.51
31:4:61:A:H2'	31:4:62:G:H8	1.75	0.51
30:3:340:U:H2'	30:3:341:G:O4'	2.11	0.51
30:3:638:A:N6	30:3:661:G:O6	2.44	0.51
30:3:769:A:H3'	30:3:770:A:H8	1.75	0.51
30:3:2197:U:H2'	30:3:2198:G:C8	2.45	0.51
30:3:173:C:H2'	30:3:174:A:C8	2.46	0.51
30:3:533:G:H2'	30:3:534:U:C6	2.44	0.51
30:3:712:A:H61	30:3:835:U:H3	1.58	0.51
30:3:1087:C:H2'	30:3:1088:A:H8	1.76	0.51
30:3:1383:G:H2'	30:3:1384:C:C6	2.45	0.51
30:3:1443:A:H2'	30:3:1444:C:H3'	1.92	0.51
30:3:2121:A:H3'	30:3:2122:G:H8	1.74	0.51
30:3:2200:U:H2'	30:3:2201:G:C8	2.45	0.51
30:3:2332:U:H1'	30:3:2345:G:H5''	1.93	0.51
30:3:2614:U:H2'	30:3:2615:G:C8	2.46	0.51
30:3:2624:C:H2'	30:3:2625:U:H6	1.76	0.51
30:3:2781:C:H2'	30:3:2782:A:C8	2.46	0.51
30:3:2859:U:H2'	30:3:2860:A:C8	2.45	0.51
30:3:483:A:N1	30:3:490:A:O2'	2.31	0.51
30:3:513:A:O2'	30:3:514:A:O4'	2.28	0.51
30:3:546:U:H4'	30:3:1265:G:H4'	1.91	0.51
30:3:764:G:C8	30:3:799:A:H5''	2.45	0.51
30:3:890:U:H2'	30:3:891:G:H8	1.75	0.51
30:3:1005:G:H2'	30:3:1006:U:C6	2.46	0.51
30:3:2249:A:H2'	30:3:2250:G:C8	2.46	0.51
30:3:2555:U:OP2	30:3:2574:A:O2'	2.29	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:251:G:H2'	30:3:254:G:N7	2.26	0.51
30:3:1852:G:O6	30:3:1903:A:N6	2.43	0.51
30:3:2148:U:H2'	30:3:2149:U:H6	1.75	0.51
30:3:2213:A:H2'	30:3:2214:A:C8	2.46	0.51
30:3:2567:C:H2'	30:3:2568:G:H8	1.76	0.51
30:3:2585:A:H5'	30:3:2620:C:N4	2.25	0.51
30:3:2748:A:OP2	30:3:2771:G:N1	2.41	0.51
3:2:37:GLY:HA3	30:3:1066:G:H21	1.76	0.51
30:3:34:C:H2'	30:3:35:U:C6	2.45	0.51
30:3:263:C:H2'	30:3:264:G:H8	1.75	0.51
30:3:316:C:H1'	30:3:392:A:H61	1.74	0.51
30:3:389:C:H2'	30:3:390:A:H8	1.75	0.51
30:3:720:A:H1'	30:3:724:A:H61	1.75	0.51
30:3:1195:A:H2'	30:3:1196:U:C6	2.46	0.51
30:3:1910:G:H2'	30:3:1911:G:C8	2.45	0.51
30:3:342:G:N2	30:3:513:A:N1	2.59	0.51
30:3:517:G:N2	30:3:541:G:O4'	2.44	0.51
30:3:720:A:O2'	30:3:808:U:O4	2.24	0.51
30:3:959:C:H2'	30:3:960:A:H8	1.75	0.51
30:3:1010:G:O4'	30:3:1026:A:N6	2.44	0.51
30:3:2122:G:H21	30:3:2179:A:N6	2.08	0.51
30:3:2387:U:H2'	30:3:2388:C:C6	2.45	0.51
30:3:96:A:H3'	30:3:97:A:H8	1.76	0.51
30:3:178:A:C6	30:3:179:A:N6	2.79	0.51
30:3:530:G:H2'	30:3:531:G:C8	2.46	0.51
30:3:599:U:H2'	30:3:600:U:C6	2.45	0.51
30:3:860:C:H4'	30:3:2436:G:N7	2.26	0.51
30:3:1289:G:H2'	30:3:1290:G:C8	2.46	0.51
30:3:1446:G:H2'	30:3:1612:U:C5	2.46	0.51
30:3:1501:U:O2	30:3:1542:G:N2	2.39	0.51
30:3:1960:A:O2'	30:3:2567:C:O2	2.25	0.51
30:3:2258:G:O2'	30:3:2504:C:OP1	2.24	0.51
30:3:2309:A:H2'	30:3:2310:C:C6	2.46	0.51
30:3:2651:G:N1	30:3:2780:U:N3	2.59	0.51
30:3:2815:G:O6	30:3:2894:G:N2	2.44	0.51
30:3:2893:C:H2'	30:3:2894:G:O4'	2.10	0.51
3:2:35:ARG:HH12	30:3:2750:A:P	2.35	0.50
30:3:159:G:H2'	30:3:160:A:H8	1.74	0.50
30:3:235:U:H2'	30:3:236:G:C8	2.47	0.50
30:3:1230:U:H2'	30:3:1231:G:C8	2.46	0.50
30:3:1342:C:H5'	30:3:1644:A:N1	2.26	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:1867:G:H2'	30:3:1868:A:C8	2.46	0.50
30:3:2624:C:H2'	30:3:2625:U:C6	2.46	0.50
30:3:2796:C:H2'	30:3:2797:C:C6	2.46	0.50
30:3:178:A:N6	30:3:179:A:N6	2.60	0.50
30:3:1297:U:H2'	30:3:1298:A:H8	1.75	0.50
30:3:1627:U:H2'	30:3:1628:G:C8	2.45	0.50
30:3:1815:U:O2'	30:3:1816:A:H8	1.94	0.50
30:3:2524:U:H2'	30:3:2525:C:C6	2.45	0.50
30:3:512:G:N2	30:3:514:A:H3'	2.26	0.50
30:3:1627:U:H2'	30:3:1628:G:H8	1.76	0.50
30:3:1916:C:H2'	30:3:1917:G:C8	2.46	0.50
30:3:2828:C:H3'	30:3:2829:G:N2	2.23	0.50
30:3:90:G:H2'	30:3:91:G:H8	1.77	0.50
30:3:332:G:N2	30:3:375:U:O4	2.45	0.50
30:3:707:C:H2'	30:3:708:C:C6	2.45	0.50
30:3:1079:U:O2'	30:3:1146:A:N1	2.33	0.50
30:3:1260:U:H2'	30:3:1261:U:C6	2.47	0.50
30:3:1381:A:H2'	30:3:1382:A:C4	2.46	0.50
30:3:2148:U:H2'	30:3:2149:U:C6	2.46	0.50
30:3:2328:A:O2'	30:3:2330:A:N6	2.30	0.50
30:3:2388:C:H2'	30:3:2389:A:C8	2.46	0.50
30:3:2483:C:N4	30:3:2537:G:H22	2.09	0.50
30:3:349:G:H2'	30:3:350:C:C6	2.47	0.50
30:3:1257:G:H2'	30:3:1258:C:C6	2.46	0.50
30:3:1662:G:H2'	30:3:1663:G:H8	1.76	0.50
30:3:1722:U:O2'	30:3:1734:A:N7	2.37	0.50
30:3:2385:A:H2'	30:3:2386:A:C4	2.46	0.50
30:3:2740:U:H5''	30:3:2741:A:O4'	2.11	0.50
30:3:163:A:N3	30:3:2216:U:O2'	2.40	0.50
30:3:292:G:H3'	30:3:293:G:C8	2.47	0.50
30:3:487:C:H41	30:3:490:A:P	2.34	0.50
30:3:512:G:H2'	30:3:513:A:H3'	1.93	0.50
30:3:548:A:H2	30:3:615:G:H4'	1.74	0.50
30:3:762:A:H3'	30:3:763:G:H8	1.76	0.50
30:3:1436:C:H2'	30:3:1437:A:C8	2.47	0.50
30:3:1461:A:H2'	30:3:1462:A:C8	2.47	0.50
30:3:2806:A:OP2	30:3:2898:A:O2'	2.28	0.50
30:3:154:U:H2'	30:3:155:A:H8	1.76	0.50
30:3:500:U:O2'	30:3:501:G:OP1	2.25	0.50
30:3:852:C:H2'	30:3:853:G:O4'	2.12	0.50
30:3:897:A:O2'	31:4:77:G:H4'	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:958:C:H2'	30:3:959:C:C6	2.47	0.50
30:3:1054:U:OP1	30:3:1070:U:O2'	2.23	0.50
30:3:1137:C:H2'	30:3:1138:A:C8	2.40	0.50
30:3:1252:C:N4	30:3:1257:G:O6	2.35	0.50
30:3:2471:U:H2'	30:3:2472:G:H8	1.77	0.50
30:3:2650:A:H2'	30:3:2651:G:H8	1.76	0.50
30:3:20:C:O2'	30:3:587:U:H5''	2.11	0.50
30:3:571:A:H2'	30:3:572:G:O4'	2.12	0.50
30:3:990:G:H2'	30:3:991:G:C8	2.47	0.50
30:3:1237:G:H2'	30:3:1238:A:C8	2.47	0.50
30:3:2216:U:H2'	30:3:2217:G:C8	2.46	0.50
30:3:160:A:H2'	30:3:161:U:H6	1.77	0.50
30:3:167:A:H8	30:3:168:A:C8	2.30	0.50
30:3:791:A:H2'	30:3:792:G:O4'	2.12	0.50
30:3:1003:U:H2'	30:3:1004:U:C6	2.47	0.50
30:3:1165:U:C2	30:3:2032:G:H5''	2.46	0.50
30:3:1391:U:O2'	30:3:1816:A:N3	2.42	0.50
30:3:2065:A:H2'	30:3:2066:A:C8	2.47	0.50
30:3:2354:A:H5'	30:3:2391:G:H1'	1.94	0.50
30:3:2630:U:H2'	30:3:2631:G:C8	2.46	0.50
30:3:2802:C:O5'	30:3:2807:G:N2	2.41	0.50
30:3:40:A:H2'	30:3:41:C:O4'	2.12	0.49
30:3:140:G:N2	30:3:143:A:OP2	2.32	0.49
30:3:721:G:H3'	30:3:722:C:H5'	1.94	0.49
30:3:887:A:H2'	30:3:888:A:C8	2.47	0.49
30:3:1308:A:H2'	30:3:1309:G:H8	1.77	0.49
30:3:1315:A:O2'	30:3:1316:U:O5'	2.28	0.49
30:3:1363:C:H2'	30:3:1364:A:C8	2.47	0.49
30:3:1987:C:O2'	30:3:1989:U:OP2	2.24	0.49
30:3:2254:G:H2'	30:3:2255:A:C8	2.47	0.49
30:3:2567:C:H2'	30:3:2568:G:C8	2.46	0.49
30:3:2641:A:H2'	30:3:2642:G:C8	2.47	0.49
30:3:387:U:H2'	30:3:388:U:C6	2.47	0.49
30:3:1011:A:N6	30:3:1025:G:H21	2.08	0.49
30:3:1521:A:H2'	30:3:1523:C:N4	2.26	0.49
30:3:2038:A:O2'	30:3:2462:G:N2	2.39	0.49
30:3:2406:U:H2'	30:3:2407:G:C8	2.47	0.49
30:3:629:G:O6	30:3:696:U:O4	2.30	0.49
30:3:1261:U:H2'	30:3:1262:G:C8	2.37	0.49
30:3:1287:C:H2'	30:3:1288:C:C6	2.47	0.49
30:3:1451:A:H2'	30:3:1452:G:H8	1.76	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:1809:A:P	30:3:1822:A:H61	2.33	0.49
30:3:2852:G:O2'	30:3:2872:A:N6	2.37	0.49
30:3:990:G:H2'	30:3:991:G:H8	1.77	0.49
30:3:1008:A:C8	30:3:1009:A:H2'	2.48	0.49
30:3:1504:G:H2'	30:3:1505:G:C8	2.47	0.49
30:3:1684:A:H2'	30:3:1685:G:C8	2.47	0.49
30:3:1841:U:C2	30:3:1979:G:C2	2.99	0.49
30:3:2018:U:H2'	30:3:2019:G:O4'	2.11	0.49
30:3:2073:C:H2'	30:3:2074:G:C8	2.48	0.49
30:3:43:A:H2'	30:3:44:A:C8	2.46	0.49
30:3:408:G:O2'	30:3:459:A:H3'	2.12	0.49
30:3:580:U:H5	30:3:1249:A:H2'	1.76	0.49
30:3:1063:A:H61	30:3:1160:G:H2'	1.78	0.49
30:3:1287:C:H2'	30:3:1288:C:H6	1.77	0.49
30:3:1449:G:H2'	30:3:1450:G:C8	2.47	0.49
30:3:1524:C:H2'	30:3:1525:G:C8	2.48	0.49
30:3:2598:C:H2'	30:3:2599:C:C6	2.48	0.49
3:2:7:VAL:HG12	3:2:34:GLN:HE21	1.77	0.49
30:3:763:G:O2'	30:3:765:A:O4'	2.30	0.49
30:3:1097:G:O6	30:3:1112:A:N6	2.45	0.49
30:3:1176:U:H4'	30:3:1177:A:O4'	2.11	0.49
30:3:1672:C:O3'	30:3:2717:G:N2	2.45	0.49
30:3:2231:A:H3'	30:3:2232:G:H8	1.76	0.49
30:3:2678:A:H2'	30:3:2679:G:C8	2.48	0.49
31:4:75:U:O2	31:4:89:A:N6	2.41	0.49
30:3:116:C:H2'	30:3:117:C:C6	2.48	0.49
30:3:227:A:H1'	30:3:456:G:H21	1.78	0.49
30:3:334:A:H1'	30:3:353:G:H1'	1.95	0.49
30:3:652:U:H2'	30:3:653:G:H8	1.78	0.49
30:3:1418:U:O4	30:3:1423:A:N7	2.46	0.49
30:3:1738:G:H2'	30:3:1739:G:C8	2.47	0.49
30:3:1820:U:HO2'	30:3:1821:G:P	2.35	0.49
30:3:2090:G:O6	30:3:2244:U:O4	2.30	0.49
30:3:2378:G:H2'	30:3:2379:G:C8	2.47	0.49
30:3:2496:G:H21	30:3:2526:A:N6	2.10	0.49
30:3:2865:U:H2'	30:3:2866:A:C8	2.47	0.49
30:3:79:U:H2'	30:3:80:U:H6	1.78	0.49
30:3:612:G:H5'	30:3:2024:C:C6	2.48	0.49
30:3:755:C:H2'	30:3:756:A:H8	1.78	0.49
30:3:773:G:N1	30:3:794:G:C6	2.81	0.49
30:3:812:G:H2'	30:3:813:G:C8	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:976:C:O2'	30:3:1222:A:OP1	2.30	0.49
30:3:2464:C:H2'	30:3:2465:U:O4'	2.13	0.49
30:3:2678:A:H2'	30:3:2679:G:H8	1.78	0.49
30:3:2800:U:OP2	30:3:2896:G:N2	2.45	0.49
30:3:2831:U:H2'	30:3:2832:G:C8	2.47	0.49
30:3:130:C:H2'	30:3:131:C:C6	2.48	0.49
30:3:234:G:H2'	30:3:235:U:H6	1.77	0.49
30:3:851:U:H2'	30:3:852:C:H6	1.77	0.49
30:3:975:G:H2'	30:3:976:C:C6	2.48	0.49
30:3:1414:C:H1'	30:3:1495:A:H2	1.78	0.49
30:3:1630:A:H2'	30:3:1631:A:C8	2.47	0.49
30:3:2237:U:H2'	30:3:2238:G:C8	2.48	0.49
1:0:7:PRO:HB2	1:0:9:LYS:HZ1	1.78	0.49
30:3:161:U:H3	30:3:171:G:H1	1.61	0.49
30:3:674:G:H2'	30:3:675:U:C6	2.47	0.49
30:3:851:U:OP1	30:3:1216:U:O2'	2.30	0.49
30:3:1789:C:O2	30:3:2616:G:O2'	2.31	0.49
30:3:1851:U:H2'	30:3:1852:G:C8	2.48	0.49
30:3:1973:U:O2	30:3:2600:G:O2'	2.25	0.49
30:3:2484:A:O2'	30:3:2488:C:N4	2.46	0.49
30:3:2861:G:N1	30:3:2864:A:OP2	2.44	0.49
30:3:760:G:H2'	30:3:761:G:C2	2.48	0.48
30:3:832:C:H2'	30:3:833:C:C6	2.48	0.48
30:3:1085:A:N6	30:3:1144:C:H42	2.11	0.48
30:3:1123:A:H4'	30:3:1124:G:H8	1.77	0.48
30:3:1264:U:C4	30:3:1265:G:C6	3.00	0.48
30:3:1488:U:H2'	30:3:1489:G:C8	2.48	0.48
30:3:1588:A:O2'	30:3:1589:A:OP1	2.28	0.48
30:3:1778:G:H2'	30:3:1779:G:H8	1.78	0.48
30:3:2374:A:H3'	30:3:2375:A:H8	1.78	0.48
30:3:2523:C:H2'	30:3:2524:U:C6	2.47	0.48
30:3:107:C:H2'	30:3:108:G:C8	2.48	0.48
30:3:305:U:O4	30:3:399:G:O6	2.31	0.48
30:3:406:C:H2'	30:3:407:U:C6	2.48	0.48
30:3:546:U:H3'	30:3:547:G:C8	2.48	0.48
30:3:1080:A:H5''	30:3:1146:A:H61	1.77	0.48
30:3:1545:A:H2'	30:3:1546:U:C6	2.48	0.48
30:3:1927:C:H2'	30:3:1928:G:H8	1.76	0.48
30:3:2085:C:H2'	30:3:2086:U:C6	2.48	0.48
30:3:2229:C:H2'	30:3:2230:A:C8	2.48	0.48
30:3:2551:G:H2'	30:3:2552:G:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:22:U:H2'	30:3:23:A:C8	2.48	0.48
30:3:622:U:H2'	30:3:623:A:C8	2.47	0.48
30:3:694:U:H2'	30:3:695:G:C8	2.47	0.48
31:4:76:A:C8	31:4:89:A:C8	3.01	0.48
30:3:160:A:H2'	30:3:161:U:C6	2.48	0.48
30:3:1723:A:H2'	30:3:1724:A:C8	2.49	0.48
30:3:1922:U:H3'	30:3:1923:A:H8	1.77	0.48
30:3:1954:C:H2'	30:3:1955:G:H8	1.77	0.48
30:3:2010:A:C2	30:3:2011:G:H1'	2.49	0.48
30:3:2149:U:OP2	30:3:2150:C:N4	2.45	0.48
30:3:2336:A:H2'	30:3:2337:U:C6	2.48	0.48
30:3:2376:C:H2'	30:3:2377:A:C8	2.47	0.48
30:3:2380:U:H2'	30:3:2381:G:H8	1.78	0.48
30:3:2754:U:H2'	30:3:2755:G:O4'	2.13	0.48
31:4:16:G:H2'	31:4:17:C:C6	2.48	0.48
31:4:90:G:C4	31:4:91:A:C8	3.01	0.48
30:3:90:G:H2'	30:3:91:G:C8	2.48	0.48
30:3:329:G:O6	30:3:377:U:O4	2.30	0.48
30:3:992:G:O2'	30:3:995:A:N6	2.46	0.48
30:3:1305:G:H2'	30:3:1306:G:H8	1.77	0.48
30:3:1380:U:O2	30:3:1406:A:N7	2.46	0.48
30:3:1392:G:N2	30:3:1395:A:OP2	2.28	0.48
30:3:1442:G:H1	30:3:1622:C:H42	1.61	0.48
30:3:2081:U:H2'	30:3:2082:U:C6	2.48	0.48
30:3:2505:A:H2	30:3:2506:C:H41	1.60	0.48
30:3:2753:C:H2'	30:3:2754:U:C6	2.48	0.48
31:4:22:G:N7	31:4:54:U:O2'	2.47	0.48
30:3:71:C:H4'	30:3:77:G:C5	2.49	0.48
30:3:161:U:H2'	30:3:162:G:O4'	2.13	0.48
30:3:755:C:H2'	30:3:756:A:C8	2.49	0.48
30:3:1080:A:H5''	30:3:1146:A:N6	2.28	0.48
30:3:1317:C:H2'	30:3:1318:U:C6	2.49	0.48
30:3:2556:C:H2'	30:3:2557:G:H8	1.79	0.48
30:3:84:G:H21	30:3:106:C:N4	2.11	0.48
30:3:431:U:O2'	30:3:432:G:N7	2.34	0.48
30:3:947:A:H2'	30:3:948:A:C8	2.49	0.48
30:3:1228:G:H1	30:3:1279:U:H3	1.62	0.48
30:3:1363:C:H2'	30:3:1364:A:H8	1.78	0.48
30:3:2473:C:H2'	30:3:2474:C:H6	1.78	0.48
30:3:2516:G:H2'	30:3:2517:A:H8	1.78	0.48
2:1:11:PHE:HD1	2:1:21:ARG:HB3	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:512:G:N2	30:3:514:A:H8	2.11	0.48
30:3:518:A:O2'	30:3:532:A:N1	2.47	0.48
30:3:696:U:H2'	30:3:697:U:C6	2.49	0.48
30:3:1046:A:O2'	30:3:1187:C:O2	2.25	0.48
30:3:1087:C:H2'	30:3:1088:A:C8	2.49	0.48
30:3:1125:U:H2'	30:3:1126:G:O4'	2.13	0.48
30:3:1210:A:H2'	30:3:1211:U:H6	1.78	0.48
30:3:1530:G:H2'	30:3:1531:C:C6	2.49	0.48
30:3:1555:G:N2	30:3:1576:G:H1'	2.27	0.48
30:3:2004:G:H2'	30:3:2005:G:C8	2.48	0.48
30:3:2305:C:H2'	30:3:2306:A:H8	1.79	0.48
30:3:2534:G:O6	30:3:2545:U:O4	2.32	0.48
2:1:25:TYR:CD1	30:3:2400:A:H5''	2.49	0.48
30:3:202:C:O2'	30:3:203:A:H5'	2.13	0.48
30:3:412:A:C2	30:3:413:G:H1'	2.49	0.48
30:3:462:C:H2'	30:3:463:U:C6	2.49	0.48
30:3:562:C:C4	30:3:2787:U:H2'	2.49	0.48
30:3:612:G:H2'	30:3:613:C:H6	1.79	0.48
30:3:731:A:H2'	30:3:732:G:C8	2.49	0.48
30:3:1175:C:O2'	30:3:1178:A:O2'	2.23	0.48
30:3:1947:U:H3	30:3:1971:G:H5'	1.79	0.48
30:3:1962:U:H5'	30:3:2559:C:O2'	2.14	0.48
30:3:2104:A:H2'	30:3:2105:G:C8	2.49	0.48
30:3:2336:A:H2'	30:3:2337:U:H6	1.78	0.48
30:3:2719:A:H5''	30:3:2720:C:H5''	1.94	0.48
30:3:2842:G:H2'	30:3:2843:G:H8	1.79	0.48
30:3:158:U:H2'	30:3:159:G:C8	2.49	0.48
30:3:1057:G:O2'	30:3:1059:G:O6	2.29	0.48
30:3:1572:U:H2'	30:3:1573:A:H8	1.79	0.48
30:3:1604:A:H2'	30:3:1605:A:C8	2.49	0.48
30:3:1816:A:H2'	30:3:1817:A:C8	2.49	0.48
30:3:2052:C:H2'	30:3:2053:G:O4'	2.14	0.48
30:3:2706:U:H2'	30:3:2707:A:C8	2.49	0.48
30:3:103:G:H4'	30:3:104:A:H5'	1.96	0.47
30:3:208:A:H4'	30:3:209:G:H4'	1.96	0.47
30:3:243:U:H3	30:3:262:G:H1	1.62	0.47
30:3:410:G:N2	30:3:411:U:O4	2.34	0.47
30:3:626:A:H2'	30:3:627:U:C6	2.49	0.47
30:3:1005:G:H2'	30:3:1006:U:H6	1.79	0.47
30:3:1284:A:C5	30:3:1286:G:H1'	2.49	0.47
30:3:1542:G:H2'	30:3:1543:U:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:1848:U:C2	30:3:1849:G:C8	3.02	0.47
30:3:1937:G:H22	30:3:1976:A:P	2.37	0.47
30:3:2208:U:O4	30:3:2232:G:N2	2.47	0.47
30:3:2497:U:H2'	30:3:2498:G:C8	2.49	0.47
30:3:2506:C:O2'	30:3:2507:C:O5'	2.28	0.47
1:0:29:LYS:O	1:0:33:LEU:HG	2.14	0.47
30:3:31:U:H2'	30:3:32:G:C8	2.42	0.47
30:3:81:C:H2'	30:3:82:G:C8	2.49	0.47
30:3:83:G:H2'	30:3:84:G:O4'	2.14	0.47
30:3:859:G:N3	30:3:2366:A:N6	2.62	0.47
30:3:870:A:H2'	30:3:871:G:O4'	2.14	0.47
30:3:982:G:H2'	30:3:983:A:C8	2.49	0.47
30:3:1001:C:H2'	30:3:1002:A:C8	2.49	0.47
30:3:1836:A:H3'	30:3:1837:C:H6	1.80	0.47
30:3:2106:G:H22	30:3:2198:G:H1	1.61	0.47
30:3:2264:G:H2'	30:3:2265:U:C6	2.48	0.47
30:3:250:U:O2	30:3:256:G:N2	2.37	0.47
30:3:403:U:O2	30:3:441:U:N3	2.47	0.47
30:3:610:G:H2'	30:3:611:A:C8	2.49	0.47
30:3:740:A:H2'	30:3:741:A:C8	2.49	0.47
30:3:907:A:H3'	30:3:908:A:H8	1.79	0.47
30:3:1300:C:H5''	30:3:1301:G:H5'	1.96	0.47
30:3:1861:A:OP2	30:3:1895:G:N2	2.47	0.47
30:3:1995:G:H2'	30:3:1996:A:H8	1.79	0.47
31:4:29:C:H1'	31:4:51:A:H61	1.79	0.47
2:1:5:SER:HA	2:1:8:LYS:HG2	1.96	0.47
30:3:342:G:O2'	30:3:363:G:N2	2.48	0.47
30:3:840:G:N2	30:3:866:G:N3	2.63	0.47
30:3:912:A:N6	30:3:939:U:H3	2.10	0.47
30:3:1698:A:C6	30:3:2734:C:N3	2.82	0.47
30:3:2022:A:O2'	30:3:2064:G:O2'	2.17	0.47
30:3:2050:G:H2'	30:3:2051:G:C8	2.50	0.47
30:3:2651:G:C6	30:3:2780:U:N3	2.82	0.47
31:4:85:A:H2'	31:4:86:G:C8	2.49	0.47
30:3:46:A:H2'	30:3:47:G:C8	2.49	0.47
30:3:381:A:H2'	30:3:382:U:C6	2.49	0.47
30:3:426:U:O2	30:3:426:U:H2'	2.14	0.47
30:3:525:A:H2'	30:3:526:G:C8	2.50	0.47
30:3:633:G:O6	30:3:692:U:O4	2.31	0.47
30:3:883:A:H2'	30:3:884:A:C8	2.50	0.47
30:3:1604:A:H2'	30:3:1605:A:H8	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:1841:U:C2	30:3:1979:G:N1	2.82	0.47
30:3:2208:U:H2'	30:3:2209:U:C6	2.49	0.47
30:3:2528:C:H2'	30:3:2529:C:C6	2.49	0.47
30:3:2808:A:N3	30:3:2808:A:H2'	2.29	0.47
30:3:2867:U:H2'	30:3:2868:G:C8	2.50	0.47
2:1:25:TYR:HB3	2:1:33:LYS:HE3	1.96	0.47
30:3:330:A:H2'	30:3:331:A:H8	1.79	0.47
30:3:401:G:O2'	30:3:402:A:OP1	2.28	0.47
30:3:665:C:O2	30:3:675:U:O2'	2.33	0.47
30:3:1340:U:H3	30:3:1368:U:H3	1.61	0.47
30:3:1605:A:H2'	30:3:1606:A:H8	1.78	0.47
30:3:2463:G:H2'	30:3:2464:C:C6	2.50	0.47
30:3:2552:G:H2'	30:3:2553:G:H8	1.80	0.47
30:3:26:G:C2	30:3:27:U:C5	3.03	0.47
30:3:63:U:N3	30:3:97:A:N3	2.61	0.47
30:3:199:A:H2'	30:3:202:C:N4	2.29	0.47
30:3:612:G:H2'	30:3:613:C:C6	2.50	0.47
30:3:817:A:H4'	30:3:818:A:H5'	1.95	0.47
30:3:920:G:O6	30:3:931:G:N1	2.48	0.47
30:3:1126:G:C2	30:3:1136:U:C2	3.03	0.47
30:3:1192:U:H2'	30:3:1193:U:C6	2.49	0.47
30:3:1265:G:H2'	30:3:1266:G:C4	2.50	0.47
30:3:1398:C:H2'	30:3:1399:G:O4'	2.15	0.47
30:3:1747:G:N1	30:3:1751:A:H5''	2.30	0.47
30:3:2050:G:H2'	30:3:2051:G:H8	1.80	0.47
30:3:2096:U:H2'	30:3:2097:A:C8	2.50	0.47
30:3:2348:U:H2'	30:3:2349:G:H8	1.80	0.47
30:3:2379:G:H2'	30:3:2380:U:O4'	2.15	0.47
30:3:2556:C:H2'	30:3:2557:G:C8	2.48	0.47
30:3:2629:G:H2'	30:3:2630:U:O4'	2.14	0.47
30:3:2794:U:H2'	30:3:2795:C:C6	2.49	0.47
3:2:36:GLN:OE1	30:3:1159:C:O2'	2.24	0.47
30:3:282:C:H3'	30:3:284:U:H5''	1.95	0.47
30:3:452:U:H2'	30:3:453:U:O4'	2.15	0.47
30:3:716:G:O6	30:3:832:C:N4	2.47	0.47
30:3:1016:A:N1	30:3:2033:G:N2	2.63	0.47
30:3:1327:G:H1	30:3:1673:U:H3'	1.80	0.47
30:3:1455:A:N6	30:3:1605:A:OP2	2.40	0.47
30:3:1640:G:H4'	30:3:1642:G:N3	2.30	0.47
30:3:2291:U:C2	30:3:2292:A:C8	3.02	0.47
30:3:2702:G:H2'	30:3:2703:U:O4'	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:296:U:O2	30:3:300:G:O2'	2.28	0.47
30:3:450:C:H2'	30:3:451:A:H8	1.80	0.47
30:3:869:U:H2'	30:3:870:A:H8	1.78	0.47
30:3:955:A:H1'	31:4:77:G:H21	1.79	0.47
30:3:1490:G:H2'	30:3:1491:G:H8	1.78	0.47
30:3:2705:G:H2'	30:3:2706:U:O4'	2.15	0.47
30:3:386:U:H2'	30:3:387:U:C6	2.50	0.47
30:3:409:A:O2'	30:3:410:G:OP2	2.30	0.47
30:3:670:G:H2'	30:3:671:C:C6	2.50	0.47
30:3:766:C:H2'	30:3:767:C:H6	1.80	0.47
30:3:974:C:H2'	30:3:975:G:C8	2.49	0.47
30:3:1079:U:O2	30:3:1147:G:C6	2.68	0.47
30:3:1163:G:O6	30:3:2497:U:O2'	2.31	0.47
30:3:1199:A:H2'	30:3:1200:U:H6	1.80	0.47
30:3:1275:C:H2'	30:3:1276:A:C8	2.50	0.47
30:3:1469:C:H2'	30:3:1470:C:O4'	2.13	0.47
30:3:1692:A:H2'	30:3:1693:U:H6	1.80	0.47
30:3:2645:U:H3'	30:3:2646:G:H8	1.80	0.47
30:3:2870:U:H5'	30:3:2872:A:O5'	2.15	0.47
30:3:137:U:O4	30:3:146:G:O6	2.33	0.46
30:3:663:A:H61	30:3:673:A:P	2.38	0.46
30:3:1340:U:O2	30:3:1367:G:N2	2.32	0.46
30:3:1613:A:H3'	30:3:1614:G:H8	1.80	0.46
30:3:1664:A:H2'	30:3:1665:G:O4'	2.15	0.46
30:3:2175:U:N3	30:3:2179:A:C8	2.78	0.46
30:3:2636:U:H1'	30:3:2789:A:C4	2.50	0.46
30:3:196:G:O2'	30:3:837:A:N3	2.48	0.46
30:3:205:C:O2'	30:3:424:G:O6	2.24	0.46
30:3:641:U:O2	30:3:657:A:C5	2.68	0.46
30:3:668:A:H2'	30:3:669:A:C8	2.50	0.46
30:3:983:A:H2	30:3:1020:G:H8	1.63	0.46
30:3:1037:A:H3'	30:3:1038:G:H8	1.80	0.46
30:3:1537:A:H2'	30:3:1538:U:O4'	2.14	0.46
30:3:2237:U:H2'	30:3:2238:G:H8	1.80	0.46
30:3:2547:C:H2'	30:3:2548:G:C8	2.50	0.46
30:3:2643:A:H2'	30:3:2644:U:O4'	2.15	0.46
30:3:198:G:H2'	30:3:199:A:C8	2.51	0.46
30:3:484:U:N3	30:3:616:G:O2'	2.47	0.46
30:3:1152:U:H2'	30:3:1153:U:C6	2.51	0.46
30:3:1210:A:H2'	30:3:1211:U:C6	2.50	0.46
30:3:1489:G:H2'	30:3:1490:G:H8	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:1507:G:H1'	30:3:1508:G:P	2.55	0.46
30:3:2309:A:H2'	30:3:2310:C:H6	1.80	0.46
30:3:27:U:H3	30:3:550:A:N6	2.12	0.46
30:3:224:G:H1	30:3:463:U:H3'	1.81	0.46
30:3:804:U:H2'	30:3:805:G:C8	2.51	0.46
30:3:1126:G:N1	30:3:1136:U:C2	2.84	0.46
30:3:1416:G:H2'	30:3:1417:G:C8	2.50	0.46
30:3:1759:C:H2'	30:3:1760:G:C8	2.50	0.46
30:3:1761:C:H2'	30:3:1762:A:C8	2.51	0.46
30:3:1777:G:H2'	30:3:1778:G:H8	1.80	0.46
30:3:2223:C:H2'	30:3:2224:A:C8	2.49	0.46
30:3:2425:C:H2'	30:3:2426:A:C8	2.50	0.46
30:3:2851:U:N3	30:3:2873:G:C6	2.83	0.46
1:0:28:ARG:O	1:0:32:LYS:HG2	2.16	0.46
30:3:193:G:H1	30:3:209:G:HO2'	1.60	0.46
30:3:243:U:O2'	30:3:658:G:O2'	2.19	0.46
30:3:644:C:H2'	30:3:645:C:C6	2.50	0.46
30:3:748:G:N2	30:3:754:U:O4	2.49	0.46
30:3:1738:G:C6	30:3:1739:G:C6	3.03	0.46
30:3:1860:A:H61	30:3:2094:A:H1'	1.80	0.46
30:3:2229:C:H2'	30:3:2230:A:H8	1.79	0.46
31:4:6:U:H2'	31:4:7:G:H8	1.79	0.46
30:3:344:A:H4'	30:3:345:A:C8	2.50	0.46
30:3:351:G:H2'	30:3:352:C:H6	1.81	0.46
30:3:893:A:H2'	30:3:894:G:C8	2.51	0.46
30:3:989:G:O6	30:3:1001:C:N4	2.49	0.46
30:3:1323:A:H2'	30:3:1324:A:C8	2.51	0.46
30:3:1384:C:H2'	30:3:1385:U:C6	2.50	0.46
30:3:1514:U:O4	30:3:1525:G:O6	2.32	0.46
30:3:1544:G:C2	30:3:1545:A:C5	3.04	0.46
30:3:1755:A:H2'	30:3:1756:A:H8	1.80	0.46
31:4:31:G:H2'	31:4:32:G:C8	2.50	0.46
30:3:201:A:N3	30:3:2252:U:H5''	2.31	0.46
30:3:259:A:H3'	30:3:260:A:H8	1.79	0.46
30:3:365:U:OP1	30:3:1267:A:O2'	2.27	0.46
30:3:382:U:H2'	30:3:383:U:O4'	2.15	0.46
30:3:443:C:H2'	30:3:444:C:C6	2.50	0.46
30:3:669:A:O2'	30:3:2412:A:OP1	2.33	0.46
30:3:762:A:OP1	30:3:1459:A:O2'	2.29	0.46
30:3:799:A:N7	30:3:1783:G:H1'	2.31	0.46
30:3:1489:G:H2'	30:3:1490:G:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:1806:G:O5'	30:3:1826:A:N6	2.49	0.46
30:3:2716:U:O2'	30:3:2717:G:H5'	2.16	0.46
1:0:12:ARG:HB2	30:3:721:G:H1	1.80	0.46
30:3:317:U:H2'	30:3:318:U:C6	2.51	0.46
30:3:342:G:N2	30:3:513:A:C2	2.84	0.46
30:3:485:A:N6	30:3:490:A:H62	2.14	0.46
30:3:786:A:N7	30:3:824:A:N6	2.63	0.46
30:3:1221:G:H2'	30:3:1222:A:H8	1.80	0.46
30:3:1344:U:H2'	30:3:1345:G:C8	2.51	0.46
30:3:1603:A:H2'	30:3:1604:A:C8	2.51	0.46
30:3:1821:G:H3'	30:3:1822:A:H8	1.81	0.46
30:3:2852:G:N3	30:3:2872:A:N6	2.63	0.46
30:3:143:A:H3'	30:3:144:C:H6	1.81	0.46
30:3:225:A:C4	30:3:237:A:H1'	2.51	0.46
30:3:318:U:H2'	30:3:319:G:C8	2.50	0.46
30:3:335:G:H2'	30:3:368:C:H2'	1.97	0.46
30:3:339:U:O4	30:3:346:G:O6	2.33	0.46
30:3:441:U:H3'	30:3:442:G:H8	1.81	0.46
30:3:625:G:O6	30:3:701:A:N6	2.49	0.46
30:3:1006:U:H2'	30:3:1007:C:C6	2.51	0.46
30:3:1815:U:O2'	30:3:1816:A:O5'	2.30	0.46
30:3:2141:A:N1	30:3:2166:U:H1'	2.30	0.46
30:3:2403:C:H2'	30:3:2404:G:C8	2.51	0.46
30:3:2549:A:H5'	30:3:2772:A:H2	1.81	0.46
30:3:2642:G:H2'	30:3:2643:A:C8	2.50	0.46
30:3:2737:G:H2'	30:3:2738:U:C6	2.51	0.46
30:3:33:C:H2'	30:3:34:C:C6	2.51	0.46
30:3:464:A:H2'	30:3:464:A:N3	2.29	0.46
30:3:1019:A:N3	30:3:1019:A:H2'	2.31	0.46
30:3:1063:A:H2'	30:3:1064:A:C8	2.51	0.46
30:3:1126:G:N1	30:3:1136:U:N3	2.63	0.46
30:3:1440:U:H2'	30:3:1441:A:C8	2.51	0.46
30:3:2160:U:H2'	30:3:2161:G:H8	1.81	0.46
30:3:2772:A:N7	30:3:2774:A:N6	2.64	0.46
30:3:2787:U:H5''	30:3:2788:U:H2'	1.97	0.46
2:1:5:SER:O	2:1:9:LYS:HG3	2.16	0.45
30:3:450:C:H2'	30:3:451:A:C8	2.50	0.45
30:3:988:G:H2'	30:3:989:G:O4'	2.16	0.45
30:3:1721:G:H21	30:3:1735:A:H62	1.64	0.45
30:3:1765:G:O2'	30:3:2722:G:N2	2.47	0.45
30:3:2750:A:H2'	30:3:2751:C:C6	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:2820:G:H2'	30:3:2821:U:C6	2.51	0.45
2:1:4:LYS:HD2	2:1:58:LEU:HG	1.98	0.45
30:3:82:G:O2'	30:3:328:A:N1	2.44	0.45
30:3:82:G:H21	30:3:328:A:H1'	1.82	0.45
30:3:253:C:OP2	30:3:2402:C:O2'	2.31	0.45
30:3:461:C:H2'	30:3:462:C:H6	1.81	0.45
30:3:680:A:H4'	30:3:681:A:C5	2.51	0.45
30:3:874:U:H2'	30:3:875:G:C8	2.49	0.45
30:3:985:A:N6	30:3:1005:G:O6	2.49	0.45
30:3:1539:U:H2'	30:3:1540:G:C8	2.52	0.45
30:3:1777:G:H1	30:3:1989:U:H3	1.64	0.45
30:3:1807:C:N4	30:3:1824:G:N2	2.28	0.45
30:3:2278:G:C2	30:3:2279:G:H1'	2.50	0.45
31:4:21:G:N7	31:4:54:U:O2'	2.45	0.45
30:3:230:G:OP1	30:3:261:A:H4'	2.16	0.45
30:3:277:C:H1'	30:3:302:G:O2'	2.17	0.45
30:3:610:G:H5''	30:3:1285:U:H1'	1.97	0.45
30:3:829:A:H2'	30:3:830:A:H8	1.79	0.45
30:3:1001:C:H1'	30:3:2281:A:C2	2.51	0.45
30:3:1142:G:H2'	30:3:1143:U:C6	2.51	0.45
30:3:1980:G:H2'	30:3:1981:U:C6	2.50	0.45
30:3:2208:U:H2'	30:3:2209:U:H6	1.80	0.45
30:3:8:A:H2'	30:3:9:G:C8	2.52	0.45
30:3:176:U:H2'	30:3:177:U:H6	1.82	0.45
30:3:188:G:H2'	30:3:189:U:H6	1.80	0.45
30:3:601:U:N3	30:3:604:A:OP2	2.28	0.45
30:3:1623:U:H2'	30:3:1624:A:C8	2.51	0.45
30:3:1723:A:H2'	30:3:1724:A:H8	1.81	0.45
30:3:1943:A:C8	30:3:1952:G:C8	3.04	0.45
30:3:1961:A:O2'	30:3:1963:U:O4	2.31	0.45
30:3:2007:U:H2'	30:3:2008:A:C8	2.51	0.45
30:3:2473:C:H2'	30:3:2474:C:C6	2.52	0.45
30:3:2689:C:N3	30:3:2733:A:N7	2.65	0.45
1:0:4:THR:HG21	30:3:824:A:H5'	1.98	0.45
30:3:28:G:H1'	30:3:549:A:N6	2.32	0.45
30:3:116:C:H2'	30:3:117:C:H6	1.81	0.45
30:3:142:A:H2'	30:3:143:A:C8	2.52	0.45
30:3:174:A:H2'	30:3:175:A:H8	1.81	0.45
30:3:562:C:N3	30:3:2787:U:H2'	2.31	0.45
30:3:658:G:H2'	30:3:659:C:C6	2.51	0.45
30:3:722:C:H2'	30:3:723:U:C6	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:1447:A:O2'	30:3:1448:U:H5''	2.16	0.45
30:3:2132:G:H21	30:3:2182:C:N4	2.14	0.45
30:3:2269:C:H2'	30:3:2270:U:H6	1.82	0.45
30:3:2403:C:H2'	30:3:2404:G:H8	1.82	0.45
30:3:2598:C:H2'	30:3:2599:C:H6	1.81	0.45
31:4:91:A:C2'	31:4:92:A:H5'	2.46	0.45
30:3:1320:C:H2'	30:3:1321:C:O4'	2.17	0.45
30:3:1338:G:OP2	30:3:1339:U:N3	2.31	0.45
30:3:2136:A:N6	30:3:2167:G:O6	2.50	0.45
30:3:2288:G:H2'	30:3:2289:C:C6	2.52	0.45
30:3:2350:C:H2'	30:3:2351:U:C6	2.51	0.45
30:3:86:A:HO2'	30:3:101:C:N4	2.15	0.45
30:3:232:A:C6	30:3:234:G:C6	3.05	0.45
30:3:496:A:N3	30:3:506:A:N6	2.65	0.45
30:3:853:G:OP2	30:3:1218:G:N1	2.38	0.45
30:3:1488:U:H2'	30:3:1489:G:H8	1.82	0.45
30:3:2498:G:O3'	30:3:2499:U:H2'	2.16	0.45
30:3:79:U:H2'	30:3:80:U:C6	2.52	0.45
30:3:292:G:H3'	30:3:293:G:N7	2.31	0.45
30:3:332:G:O2'	30:3:356:A:N1	2.48	0.45
30:3:333:A:P	30:3:333:A:H8	2.40	0.45
30:3:341:G:C2	30:3:364:A:N6	2.81	0.45
30:3:451:A:N6	30:3:2417:G:C6	2.85	0.45
30:3:612:G:C4	30:3:1292:A:C6	3.05	0.45
30:3:663:A:N6	30:3:673:A:OP2	2.50	0.45
30:3:675:U:O4	30:3:685:G:O6	2.35	0.45
30:3:714:G:H2'	30:3:715:G:C8	2.50	0.45
30:3:767:C:H2'	30:3:768:G:O4'	2.17	0.45
30:3:896:U:C2	30:3:897:A:C8	3.04	0.45
30:3:1007:C:H2'	30:3:1008:A:C8	2.52	0.45
30:3:1063:A:N6	30:3:1160:G:H2'	2.32	0.45
30:3:1094:G:C5	30:3:1095:U:C4	3.05	0.45
30:3:1246:U:H2'	30:3:1247:C:C6	2.52	0.45
30:3:1346:G:H2'	30:3:1347:A:C8	2.52	0.45
30:3:1414:C:OP2	30:3:1424:U:N3	2.49	0.45
30:3:2238:G:H2'	30:3:2239:U:C6	2.51	0.45
30:3:2639:G:H2'	30:3:2640:A:H8	1.82	0.45
30:3:2737:G:C2	30:3:2738:U:C4	3.05	0.45
30:3:318:U:H2'	30:3:319:G:H8	1.82	0.45
30:3:370:C:H2'	30:3:371:C:C6	2.52	0.45
30:3:961:U:O2	30:3:962:U:H5	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:1456:C:H41	30:3:1603:A:H3'	1.82	0.45
30:3:1628:G:H2'	30:3:1629:U:H6	1.81	0.45
30:3:1676:G:H2'	30:3:1677:G:C8	2.52	0.45
30:3:1698:A:H2'	30:3:1698:A:N3	2.31	0.45
30:3:1698:A:H3'	30:3:1699:A:H8	1.81	0.45
30:3:1836:A:H3'	30:3:1837:C:C6	2.52	0.45
30:3:1951:A:N6	30:3:2565:G:O2'	2.50	0.45
30:3:2516:G:H2'	30:3:2517:A:C8	2.52	0.45
1:0:38:GLN:HB2	30:3:494:G:H5''	1.99	0.45
30:3:67:C:H2'	30:3:68:C:C6	2.52	0.45
30:3:118:G:OP2	30:3:120:A:O2'	2.23	0.45
30:3:196:G:H4'	30:3:712:A:H2	1.81	0.45
30:3:330:A:H2'	30:3:331:A:C8	2.52	0.45
30:3:353:G:H2'	30:3:354:C:C6	2.52	0.45
30:3:408:G:C6	30:3:460:G:N7	2.85	0.45
30:3:480:C:H2'	30:3:481:C:C6	2.52	0.45
30:3:707:C:H2'	30:3:708:C:H6	1.81	0.45
30:3:986:G:O6	30:3:1003:U:O4	2.35	0.45
30:3:1258:C:H2'	30:3:1259:A:O4'	2.17	0.45
30:3:1434:U:H2'	30:3:1435:A:H8	1.82	0.45
30:3:2689:C:O2	30:3:2733:A:N6	2.50	0.45
30:3:2739:C:H2'	30:3:2740:U:C6	2.52	0.45
31:4:103:C:H2'	31:4:104:C:H6	1.82	0.45
30:3:124:A:H2'	30:3:125:G:C8	2.53	0.44
30:3:1046:A:H1'	30:3:1188:C:H1'	1.99	0.44
30:3:1239:G:O2'	30:3:1267:A:N1	2.44	0.44
30:3:1416:G:H2'	30:3:1417:G:H8	1.83	0.44
30:3:2001:C:H2'	30:3:2002:U:C6	2.53	0.44
30:3:2260:G:H2'	30:3:2261:G:C8	2.52	0.44
30:3:2694:A:H2'	30:3:2695:U:H6	1.82	0.44
31:4:53:U:H2'	31:4:54:U:C6	2.53	0.44
30:3:53:G:H1'	30:3:119:A:H61	1.82	0.44
30:3:250:U:O4	30:3:256:G:O6	2.36	0.44
30:3:739:G:HO2'	30:3:740:A:P	2.39	0.44
30:3:892:G:C2	30:3:893:A:C5	3.05	0.44
30:3:1115:G:C6	30:3:1116:U:C4	3.06	0.44
30:3:1432:C:H2'	30:3:1433:U:C6	2.52	0.44
30:3:1449:G:H1'	30:3:1519:A:N6	2.32	0.44
30:3:1526:U:H2'	30:3:1527:U:C6	2.52	0.44
30:3:1818:G:H2'	30:3:1819:G:H8	1.82	0.44
30:3:1841:U:O2	30:3:1979:G:C2	2.70	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:2021:A:H2'	30:3:2022:A:C4	2.52	0.44
30:3:2551:G:H2'	30:3:2552:G:H8	1.82	0.44
30:3:2769:G:H2'	30:3:2770:U:C6	2.52	0.44
30:3:139:G:O6	30:3:145:A:N6	2.50	0.44
30:3:622:U:H2'	30:3:623:A:H8	1.81	0.44
30:3:1290:G:H2'	30:3:1291:C:C6	2.53	0.44
30:3:1838:A:H2'	30:3:1839:C:C6	2.53	0.44
30:3:2184:A:N1	30:3:2185:C:N4	2.64	0.44
30:3:2321:C:H2'	30:3:2322:G:C8	2.53	0.44
30:3:47:G:N2	30:3:184:A:N6	2.56	0.44
30:3:82:G:N2	30:3:328:A:H1'	2.31	0.44
30:3:217:A:H2'	30:3:218:G:C8	2.52	0.44
30:3:313:G:N2	30:3:394:C:N3	2.65	0.44
30:3:1077:G:H2'	30:3:1078:C:C6	2.52	0.44
30:3:1217:G:H2'	30:3:1218:G:O4'	2.17	0.44
30:3:1248:A:H2'	30:3:1249:A:H8	1.81	0.44
30:3:1508:G:H2'	30:3:1509:U:C6	2.53	0.44
30:3:1544:G:H2'	30:3:1545:A:C8	2.51	0.44
30:3:1575:C:H2'	30:3:1576:G:O4'	2.18	0.44
30:3:1626:C:H2'	30:3:1627:U:C6	2.52	0.44
30:3:1956:G:C6	30:3:1957:G:C6	3.06	0.44
30:3:2746:A:C2	30:3:2747:U:H1'	2.52	0.44
30:3:2747:U:H3'	30:3:2771:G:H1	1.82	0.44
30:3:2796:C:H4'	30:3:2813:A:H8	1.82	0.44
30:3:86:A:O2'	30:3:101:C:N4	2.50	0.44
30:3:352:C:H2'	30:3:353:G:C8	2.52	0.44
30:3:557:G:C2'	30:3:558:C:H5'	2.48	0.44
30:3:678:U:H2'	30:3:679:A:H3'	2.00	0.44
30:3:1007:C:H1'	30:3:1019:A:C2	2.52	0.44
30:3:1069:G:C6	30:3:1157:G:C5	3.06	0.44
30:3:1104:A:H4'	30:3:1105:A:H2'	2.00	0.44
30:3:1213:U:H2'	30:3:1214:U:H6	1.81	0.44
30:3:1303:U:O4	30:3:1678:U:O2'	2.26	0.44
30:3:1691:U:O2'	30:3:1692:A:H5'	2.17	0.44
31:4:6:U:H2'	31:4:7:G:C8	2.52	0.44
30:3:167:A:C8	30:3:168:A:C8	3.05	0.44
30:3:246:G:H1'	30:3:247:U:H5	1.83	0.44
30:3:1004:U:H2'	30:3:1005:G:C8	2.53	0.44
30:3:1974:U:H2'	30:3:1975:G:O4'	2.17	0.44
30:3:2331:G:H2'	30:3:2332:U:C6	2.53	0.44
30:3:2332:U:H3'	30:3:2333:G:H5'	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:2394:A:H2'	30:3:2395:U:C6	2.53	0.44
30:3:2395:U:H3'	30:3:2396:A:H5''	2.00	0.44
30:3:2733:A:C4	30:3:2735:G:N7	2.86	0.44
31:4:21:G:O2'	31:4:22:G:O4'	2.33	0.44
1:0:10:LEU:HD23	1:0:14:LYS:HD2	1.99	0.44
2:1:5:SER:OG	30:3:251:G:O6	2.34	0.44
30:3:261:A:H3'	30:3:262:G:H8	1.83	0.44
30:3:485:A:H61	30:3:490:A:H62	1.66	0.44
30:3:992:G:H2'	30:3:993:A:H2'	1.99	0.44
30:3:1487:U:H2'	30:3:1488:U:C6	2.53	0.44
30:3:1622:C:H2'	30:3:1623:U:C6	2.53	0.44
30:3:2239:U:O4	30:3:2240:U:O4	2.36	0.44
31:4:91:A:H3'	31:4:92:A:H8	1.82	0.44
30:3:323:A:H2'	30:3:324:C:C6	2.52	0.44
30:3:659:C:H2'	30:3:660:U:C6	2.53	0.44
30:3:704:G:N3	30:3:704:G:H2'	2.33	0.44
30:3:1025:G:H5''	30:3:1192:U:H4'	1.99	0.44
30:3:1062:A:H2'	30:3:1063:A:C8	2.50	0.44
30:3:1138:A:OP2	30:3:1139:C:N4	2.46	0.44
30:3:1187:C:H2'	30:3:1188:C:H6	1.82	0.44
30:3:1308:A:H2'	30:3:1309:G:C8	2.52	0.44
30:3:1399:G:N2	30:3:1400:U:O4	2.50	0.44
30:3:1551:U:H2'	30:3:1552:C:O4'	2.18	0.44
30:3:291:G:C2	30:3:292:G:C8	3.06	0.44
30:3:822:C:H3'	30:3:826:C:N4	2.33	0.44
30:3:965:U:H2'	30:3:966:U:C6	2.53	0.44
30:3:1464:G:H2'	30:3:1465:U:C6	2.53	0.44
30:3:1684:A:H2'	30:3:1685:G:H8	1.82	0.44
30:3:1687:G:H1	30:3:2009:U:H5''	1.82	0.44
30:3:2011:G:C5	30:3:2012:A:C8	3.06	0.44
31:4:95:G:H2'	31:4:96:G:H8	1.82	0.44
30:3:99:C:H2'	30:3:100:U:O4'	2.17	0.43
30:3:166:A:H2'	30:3:167:A:C8	2.53	0.43
30:3:176:U:C2	30:3:177:U:C5	3.05	0.43
30:3:529:G:H2'	30:3:530:G:H8	1.82	0.43
30:3:1058:U:O2'	30:3:1157:G:H5'	2.18	0.43
30:3:1075:G:H2'	30:3:1076:U:O4'	2.17	0.43
30:3:1325:C:OP1	30:3:2718:C:H4'	2.18	0.43
30:3:2303:U:H2'	30:3:2304:U:H6	1.83	0.43
30:3:427:A:N3	30:3:427:A:H2'	2.32	0.43
30:3:448:A:H62	30:3:2420:A:H1'	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:569:U:O4	30:3:592:G:O6	2.35	0.43
30:3:1270:C:H2'	30:3:1271:A:H8	1.83	0.43
30:3:1944:A:H62	30:3:1947:U:H5	1.65	0.43
30:3:2044:C:H2'	30:3:2045:C:H6	1.83	0.43
30:3:2071:C:H2'	30:3:2072:C:H6	1.83	0.43
30:3:2108:C:N3	30:3:2109:A:C6	2.86	0.43
30:3:2670:A:C8	30:3:2671:G:C8	3.06	0.43
30:3:2679:G:H2'	30:3:2680:C:C6	2.53	0.43
30:3:2729:A:H2'	30:3:2730:G:O4'	2.17	0.43
31:4:66:A:H3'	31:4:67:G:H8	1.83	0.43
2:1:2:LYS:HG2	30:3:246:G:N7	2.33	0.43
30:3:143:A:H1'	30:3:1436:C:H4'	1.99	0.43
30:3:188:G:H2'	30:3:189:U:C6	2.53	0.43
30:3:245:U:H5	30:3:260:A:H62	1.66	0.43
30:3:366:A:O2'	30:3:368:C:OP1	2.27	0.43
30:3:386:U:H2'	30:3:387:U:H6	1.82	0.43
30:3:699:U:H2'	30:3:700:U:O4'	2.17	0.43
30:3:802:U:H2'	30:3:803:G:H8	1.83	0.43
30:3:900:G:H2'	30:3:901:C:C6	2.52	0.43
30:3:1057:G:H1'	30:3:1058:U:H5	1.82	0.43
30:3:1200:U:O2'	30:3:1201:A:H5'	2.19	0.43
30:3:1451:A:H2'	30:3:1452:G:C8	2.52	0.43
30:3:1826:A:H1'	30:3:1828:A:C6	2.52	0.43
30:3:1871:U:O2'	30:3:2417:G:N2	2.51	0.43
30:3:1995:G:C2	30:3:1996:A:C5	3.05	0.43
30:3:2106:G:N2	30:3:2198:G:H1	2.16	0.43
30:3:2316:G:N3	30:3:2316:G:H2'	2.34	0.43
30:3:2683:G:H2'	30:3:2684:G:C8	2.53	0.43
30:3:191:G:H21	30:3:1393:A:H61	1.67	0.43
30:3:1309:G:H2'	30:3:1310:U:H6	1.83	0.43
30:3:1641:A:H8	30:3:1655:U:H2'	1.83	0.43
30:3:1903:A:H2'	30:3:1904:G:C8	2.53	0.43
30:3:1938:U:H2'	30:3:1939:A:C8	2.53	0.43
30:3:2060:G:N7	30:3:2585:A:N6	2.65	0.43
30:3:2109:A:N1	30:3:2196:G:C6	2.86	0.43
30:3:2291:U:N3	30:3:2292:A:N7	2.66	0.43
30:3:2850:G:H2'	30:3:2851:U:C6	2.53	0.43
30:3:129:U:H2'	30:3:130:C:C6	2.54	0.43
30:3:210:U:C2	30:3:211:A:C8	3.07	0.43
30:3:274:A:C6	30:3:408:G:C6	3.06	0.43
30:3:634:C:H2'	30:3:635:G:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:730:G:N2	30:3:802:U:O2	2.37	0.43
30:3:1257:G:OP1	30:3:1280:G:N2	2.49	0.43
30:3:1415:A:H2'	30:3:1416:G:H8	1.84	0.43
30:3:1476:C:H1'	30:3:1554:A:H2	1.83	0.43
30:3:1677:G:H8	30:3:1677:G:OP2	2.01	0.43
30:3:1757:G:H2'	30:3:1758:C:C6	2.53	0.43
30:3:1818:G:H2'	30:3:1819:G:C8	2.53	0.43
30:3:2076:G:H2'	30:3:2077:A:H8	1.83	0.43
30:3:2463:G:H2'	30:3:2464:C:H6	1.83	0.43
30:3:2493:G:H2'	30:3:2494:C:C6	2.54	0.43
3:2:35:ARG:HH22	30:3:2750:A:P	2.41	0.43
30:3:525:A:H2'	30:3:526:G:N9	2.33	0.43
30:3:762:A:H3'	30:3:763:G:C8	2.52	0.43
30:3:779:C:H2'	30:3:780:G:H8	1.82	0.43
30:3:1091:G:H5''	30:3:1092:A:O4'	2.18	0.43
30:3:1199:A:H2'	30:3:1200:U:C6	2.53	0.43
30:3:1235:U:H3'	30:3:1236:G:H5''	2.01	0.43
30:3:1262:G:C2	30:3:1263:G:C8	3.07	0.43
30:3:1494:U:O3'	30:3:1495:A:H8	2.02	0.43
30:3:1534:A:H1'	30:3:1535:A:C8	2.53	0.43
30:3:1947:U:H4'	30:3:1972:C:H41	1.84	0.43
30:3:176:U:H2'	30:3:177:U:C6	2.53	0.43
30:3:257:C:H2'	30:3:258:G:O4'	2.18	0.43
30:3:275:A:O2'	30:3:406:C:H4'	2.18	0.43
30:3:464:A:H3'	30:3:465:A:N7	2.34	0.43
30:3:596:G:H2'	30:3:597:C:H6	1.83	0.43
30:3:1187:C:H2'	30:3:1188:C:C6	2.53	0.43
30:3:1612:U:H2'	30:3:1613:A:H8	1.84	0.43
30:3:1815:U:O2'	30:3:1816:A:C8	2.72	0.43
30:3:2381:G:H2'	30:3:2382:A:C8	2.51	0.43
31:4:94:A:H3'	31:4:95:G:H8	1.83	0.43
2:1:14:THR:OG1	2:1:18:GLN:O	2.27	0.43
30:3:263:C:H2'	30:3:264:G:C8	2.52	0.43
30:3:816:A:H2'	30:3:1784:U:H1'	2.01	0.43
30:3:1036:A:OP2	30:3:1189:G:N1	2.44	0.43
30:3:1158:C:H2'	30:3:1159:C:C6	2.54	0.43
30:3:1307:G:H2'	30:3:1308:A:H8	1.83	0.43
30:3:1699:A:H2'	30:3:1700:G:H8	1.80	0.43
30:3:2405:G:H1	30:3:2427:U:H3	1.67	0.43
30:3:2502:G:H2'	30:3:2503:G:C8	2.54	0.43
30:3:2580:A:OP1	30:3:2582:G:O2'	2.22	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:2795:C:H2'	30:3:2796:C:C6	2.53	0.43
30:3:2869:U:H2'	30:3:2870:U:C5	2.54	0.43
30:3:291:G:C2	30:3:292:G:N7	2.86	0.43
30:3:691:G:H2'	30:3:692:U:C6	2.54	0.43
30:3:805:G:H2'	30:3:806:A:H8	1.80	0.43
30:3:905:U:C4	30:3:949:C:H1'	2.54	0.43
30:3:1010:G:N7	30:3:1217:G:N2	2.67	0.43
30:3:1119:A:N6	30:3:1120:A:N1	2.67	0.43
30:3:1273:U:H2'	30:3:1274:A:H8	1.82	0.43
30:3:1755:A:H2'	30:3:1756:A:C8	2.54	0.43
30:3:1830:G:H2'	30:3:1831:G:C8	2.53	0.43
30:3:1844:C:O2'	30:3:1934:A:H1'	2.19	0.43
30:3:1846:A:C8	30:3:1934:A:C5	3.07	0.43
30:3:2236:G:H2'	30:3:2237:U:C6	2.54	0.43
30:3:2584:G:O2'	30:3:2587:U:OP2	2.21	0.43
30:3:220:A:N7	30:3:467:U:O2	2.51	0.43
30:3:385:U:H2'	30:3:386:U:H6	1.84	0.43
30:3:495:U:H2'	30:3:496:A:C8	2.54	0.43
30:3:1033:A:H2'	30:3:1034:A:C8	2.53	0.43
30:3:1176:U:H1'	30:3:1177:A:C5	2.53	0.43
30:3:1343:C:H2'	30:3:1344:U:C6	2.54	0.43
30:3:1609:U:H2'	30:3:1610:U:C6	2.53	0.43
30:3:2840:U:H2'	30:3:2841:A:C8	2.53	0.43
30:3:2862:U:O2'	30:3:2863:G:OP1	2.33	0.43
3:2:18:LYS:O	30:3:2764:U:H5''	2.19	0.42
30:3:444:C:H2'	30:3:445:C:C6	2.54	0.42
30:3:603:G:H1	30:3:2507:C:P	2.42	0.42
30:3:615:G:H2'	30:3:616:G:C8	2.55	0.42
30:3:947:A:O2'	30:3:948:A:O4'	2.21	0.42
30:3:1473:C:H2'	30:3:1474:C:H6	1.83	0.42
30:3:1497:A:N6	30:3:1547:G:H21	2.17	0.42
30:3:1750:A:H8	30:3:1750:A:O5'	2.01	0.42
30:3:1777:G:H2'	30:3:1778:G:C8	2.53	0.42
30:3:1865:A:H2'	30:3:1866:G:O4'	2.19	0.42
30:3:2022:A:H8	30:3:2023:U:C5	2.37	0.42
30:3:2177:G:H8	30:3:2177:G:OP1	2.02	0.42
30:3:2279:G:H2'	30:3:2280:U:C6	2.54	0.42
30:3:2372:C:H2'	30:3:2373:G:O4'	2.19	0.42
30:3:2399:G:N1	30:3:2432:C:H3'	2.34	0.42
30:3:2495:A:H2'	30:3:2496:G:C8	2.54	0.42
30:3:219:G:H21	30:3:468:A:N6	2.16	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:546:U:H3'	30:3:547:G:H8	1.84	0.42
30:3:626:A:H2'	30:3:627:U:H6	1.84	0.42
30:3:793:C:H2'	30:3:794:G:C8	2.54	0.42
30:3:1305:G:C6	30:3:1322:A:C6	3.07	0.42
30:3:1445:U:H2'	30:3:1446:G:C8	2.53	0.42
30:3:1713:U:N3	30:3:1996:A:H2	2.17	0.42
30:3:1941:C:H2'	30:3:1942:G:C8	2.53	0.42
30:3:2537:G:H5''	30:3:2538:A:H5''	2.01	0.42
30:3:2803:G:H21	30:3:2804:C:H3'	1.84	0.42
30:3:101:C:H3'	30:3:102:A:H8	1.83	0.42
30:3:539:U:O2'	30:3:1265:G:OP1	2.32	0.42
30:3:761:G:H3'	30:3:1460:G:H4'	2.02	0.42
30:3:1015:G:H2'	30:3:1018:G:N7	2.35	0.42
30:3:1212:C:C2	30:3:1213:U:C5	3.07	0.42
30:3:1286:G:H2'	30:3:1286:G:N3	2.35	0.42
30:3:1856:G:H2'	30:3:1857:G:C8	2.54	0.42
30:3:2153:U:O2	30:3:2154:A:N6	2.51	0.42
30:3:2344:A:O2'	30:3:2345:G:H5'	2.19	0.42
30:3:2540:G:N2	30:3:2672:G:O4'	2.51	0.42
30:3:2685:A:H61	30:3:2739:C:H42	1.68	0.42
30:3:2880:A:H2'	30:3:2881:A:C8	2.54	0.42
31:4:73:U:H2'	31:4:74:G:C8	2.53	0.42
1:0:25:ALA:HA	1:0:28:ARG:HE	1.84	0.42
30:3:874:U:H3	30:3:975:G:H1	1.68	0.42
30:3:897:A:C4	30:3:898:A:C8	3.07	0.42
30:3:1362:C:H2'	30:3:1363:C:C6	2.55	0.42
30:3:1673:U:H1'	30:3:2707:A:H5'	2.01	0.42
30:3:1701:G:N1	30:3:1999:G:OP2	2.51	0.42
30:3:1841:U:O2'	30:3:1976:A:H3'	2.20	0.42
30:3:2177:G:H2'	30:3:2178:A:C8	2.54	0.42
30:3:2750:A:H2'	30:3:2751:C:H6	1.83	0.42
30:3:2764:U:H4'	30:3:2765:A:OP1	2.18	0.42
30:3:2839:A:H61	30:3:2882:U:H3'	1.84	0.42
30:3:65:A:H62	30:3:93:A:N6	2.17	0.42
30:3:252:G:C4	30:3:254:G:N2	2.86	0.42
30:3:379:A:H1'	30:3:381:A:H62	1.85	0.42
30:3:654:G:H2'	30:3:655:G:O4'	2.18	0.42
30:3:1445:U:H2'	30:3:1446:G:N9	2.34	0.42
30:3:1754:U:H2'	30:3:1755:A:H8	1.81	0.42
30:3:1990:C:H2'	30:3:1991:U:C6	2.55	0.42
30:3:2044:C:H2'	30:3:2045:C:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:2061:A:H62	30:3:2585:A:H2	1.68	0.42
30:3:2218:U:H4'	30:3:2219:U:C6	2.53	0.42
30:3:2488:C:H2'	30:3:2489:G:O4'	2.19	0.42
30:3:2501:U:H3'	30:3:2502:G:H5''	2.01	0.42
30:3:189:U:H2'	30:3:190:G:H8	1.84	0.42
30:3:194:A:N6	30:3:211:A:H1'	2.35	0.42
30:3:487:C:N4	30:3:490:A:OP2	2.51	0.42
30:3:550:A:H2	30:3:1290:G:H21	1.66	0.42
30:3:554:U:H2'	30:3:555:A:C8	2.54	0.42
30:3:643:A:N6	30:3:655:G:H21	2.10	0.42
30:3:1100:U:H2'	30:3:1101:U:C2	2.54	0.42
30:3:1443:A:H2	30:3:1621:U:H3	1.67	0.42
30:3:1638:C:H2'	30:3:1639:C:C6	2.55	0.42
30:3:2026:A:H2'	30:3:2027:G:O4'	2.19	0.42
30:3:2110:U:H2'	30:3:2194:G:N2	2.34	0.42
30:3:2142:U:O2	30:3:2166:U:O2'	2.37	0.42
30:3:289:U:H2'	30:3:290:A:C8	2.54	0.42
30:3:613:C:H2'	30:3:614:C:H6	1.85	0.42
30:3:615:G:H2'	30:3:616:G:H8	1.85	0.42
30:3:723:U:H2'	30:3:724:A:H8	1.84	0.42
30:3:820:U:H2'	30:3:821:C:C6	2.54	0.42
30:3:1010:G:H1	30:3:1025:G:H1'	1.83	0.42
30:3:1382:A:C8	30:3:1383:G:C8	3.07	0.42
30:3:1936:G:H4'	30:3:1937:G:OP1	2.20	0.42
30:3:2455:G:H1	30:3:2459:A:N6	2.05	0.42
30:3:2468:U:H2'	30:3:2469:A:H8	1.85	0.42
1:0:18:PHE:O	1:0:22:MET:N	2.53	0.42
2:1:48:SER:O	2:1:52:PHE:N	2.40	0.42
30:3:142:A:N3	30:3:1437:A:H1'	2.34	0.42
30:3:154:U:H2'	30:3:155:A:C8	2.53	0.42
30:3:201:A:H2	30:3:2442:A:H62	1.68	0.42
30:3:402:A:HO2'	30:3:404:C:H5	1.63	0.42
30:3:512:G:H22	30:3:514:A:H3'	1.84	0.42
30:3:525:A:C6	30:3:1312:A:N1	2.88	0.42
30:3:802:U:H2'	30:3:803:G:C8	2.54	0.42
30:3:1138:A:H3'	30:3:1139:C:C6	2.55	0.42
30:3:1206:U:O2'	30:3:1208:A:N6	2.52	0.42
30:3:1249:A:O3'	30:3:1250:A:H2'	2.20	0.42
30:3:1294:G:H3'	30:3:1295:A:C8	2.54	0.42
30:3:1798:A:H2'	30:3:1799:A:O4'	2.19	0.42
30:3:1884:A:H2'	30:3:1885:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:2160:U:H2'	30:3:2161:G:C8	2.55	0.42
30:3:2382:A:H2'	30:3:2383:G:H8	1.85	0.42
30:3:2623:U:H2'	30:3:2624:C:H6	1.84	0.42
30:3:115:U:H2'	30:3:116:C:C6	2.55	0.42
30:3:158:U:H2'	30:3:159:G:H8	1.84	0.42
30:3:295:U:H4'	30:3:296:U:OP2	2.17	0.42
30:3:895:G:H4'	30:3:896:U:H5'	2.02	0.42
30:3:1048:A:H2'	30:3:1049:U:C6	2.55	0.42
30:3:1493:A:N7	30:3:1579:G:H2'	2.35	0.42
30:3:1621:U:O2'	30:3:1622:C:H5'	2.19	0.42
30:3:1694:A:H2'	30:3:1695:G:C8	2.54	0.42
30:3:1856:G:H2'	30:3:1857:G:H8	1.85	0.42
30:3:1939:A:H2'	30:3:1940:G:O4'	2.20	0.42
30:3:2021:A:H2'	30:3:2022:A:C8	2.55	0.42
30:3:2079:G:H2'	30:3:2080:C:C6	2.55	0.42
30:3:2527:U:O4'	30:3:2550:A:N6	2.51	0.42
3:2:19:ARG:HD3	30:3:2763:C:C4	2.55	0.42
30:3:149:A:H2'	30:3:150:U:C6	2.55	0.42
30:3:217:A:H2	30:3:221:A:H4'	1.84	0.42
30:3:225:A:N3	30:3:237:A:H1'	2.34	0.42
30:3:676:U:C4	30:3:677:U:O4	2.73	0.42
30:3:897:A:C5	30:3:898:A:C8	3.08	0.42
30:3:956:U:C2	30:3:957:G:C8	3.08	0.42
30:3:1065:G:C6	30:3:1160:G:N2	2.88	0.42
30:3:1462:A:O2'	30:3:1463:G:H8	2.03	0.42
30:3:2006:C:H5''	30:3:2731:U:O2'	2.20	0.42
30:3:2100:G:N7	30:3:2233:A:H2'	2.35	0.42
30:3:2244:U:H2'	30:3:2245:G:O4'	2.20	0.42
30:3:2470:C:H2'	30:3:2471:U:C6	2.55	0.42
31:4:8:C:H2'	31:4:9:C:O4'	2.19	0.42
30:3:421:A:H62	30:3:423:C:H2'	1.82	0.41
30:3:696:U:H2'	30:3:697:U:H6	1.83	0.41
30:3:853:G:H4'	30:3:873:G:O3'	2.20	0.41
30:3:941:C:C2	30:3:942:A:C8	3.08	0.41
30:3:1521:A:H2'	30:3:1523:C:H41	1.85	0.41
30:3:1544:G:C2	30:3:1545:A:N7	2.88	0.41
30:3:2784:A:HO2'	30:3:2789:A:HO2'	1.50	0.41
30:3:231:A:H62	30:3:446:A:H1'	1.84	0.41
30:3:312:U:H2'	30:3:313:G:C8	2.55	0.41
30:3:381:A:H2'	30:3:382:U:H6	1.85	0.41
30:3:430:U:H2'	30:3:431:U:C6	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:666:G:H22	30:3:668:A:H3'	1.83	0.41
30:3:793:C:O2'	30:3:1988:A:N3	2.47	0.41
30:3:831:U:H2'	30:3:832:C:C6	2.55	0.41
30:3:899:A:H2'	30:3:900:G:C5	2.55	0.41
30:3:931:G:H2'	30:3:932:U:O4'	2.20	0.41
30:3:1041:C:H2'	30:3:1042:C:C6	2.55	0.41
30:3:1305:G:O6	30:3:1322:A:N6	2.53	0.41
30:3:1409:G:H2'	30:3:1410:A:C8	2.55	0.41
30:3:1442:G:H2'	30:3:1443:A:O4'	2.20	0.41
30:3:1748:U:O2	30:3:1750:A:C5	2.73	0.41
30:3:1958:U:O2'	30:3:1960:A:N7	2.44	0.41
30:3:2710:G:H2'	30:3:2711:C:C6	2.55	0.41
30:3:2744:A:H2'	30:3:2745:G:C8	2.55	0.41
31:4:76:A:N3	31:4:76:A:H2'	2.35	0.41
30:3:223:A:H2'	30:3:224:G:C8	2.55	0.41
30:3:267:A:H1'	30:3:466:A:N3	2.35	0.41
30:3:539:U:O2	30:3:1264:U:O2'	2.31	0.41
30:3:614:C:H2'	30:3:615:G:C8	2.54	0.41
30:3:616:G:H2'	30:3:617:C:H6	1.84	0.41
30:3:822:C:H3'	30:3:826:C:H41	1.85	0.41
30:3:1166:G:H1	30:3:2046:G:H21	1.67	0.41
30:3:1669:A:H2'	30:3:1670:U:O4'	2.19	0.41
30:3:1717:C:H2'	30:3:1718:C:C6	2.54	0.41
30:3:2076:G:H2'	30:3:2077:A:C8	2.55	0.41
30:3:2147:G:C2	30:3:2148:U:C4	3.09	0.41
30:3:2332:U:H3'	30:3:2333:G:C5'	2.50	0.41
30:3:2467:A:H2'	30:3:2468:U:O4'	2.20	0.41
30:3:961:U:O2	30:3:962:U:C5	2.73	0.41
30:3:1010:G:HO2'	30:3:1011:A:P	2.43	0.41
30:3:1284:A:OP2	30:3:1286:G:H5''	2.21	0.41
30:3:1294:G:H3'	30:3:1295:A:H8	1.85	0.41
30:3:1799:A:H2'	30:3:1800:C:H6	1.86	0.41
30:3:2055:A:C6	30:3:2056:A:C8	3.08	0.41
30:3:2514:U:OP2	30:3:2584:G:N1	2.42	0.41
30:3:2646:G:H1'	30:3:2786:A:N6	2.34	0.41
30:3:2812:U:O2'	30:3:2814:A:N7	2.46	0.41
30:3:2846:A:H2'	30:3:2847:C:H6	1.84	0.41
2:1:37:GLN:OE1	2:1:37:GLN:N	2.52	0.41
3:2:21:GLN:NE2	30:3:2765:A:OP2	2.54	0.41
30:3:225:A:N1	30:3:269:A:O2'	2.53	0.41
30:3:500:U:H3'	30:3:501:G:N7	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:937:A:H3'	30:3:938:A:H8	1.85	0.41
30:3:1054:U:C2	30:3:1179:G:N1	2.89	0.41
30:3:1227:C:C2	30:3:1228:G:C8	3.08	0.41
30:3:1444:C:O2'	30:3:1445:U:OP2	2.39	0.41
30:3:1910:G:H2'	30:3:1911:G:H8	1.84	0.41
30:3:2179:A:H1'	30:3:2180:U:C6	2.55	0.41
30:3:2685:A:H2'	30:3:2686:C:C6	2.56	0.41
30:3:34:C:H2'	30:3:35:U:H6	1.86	0.41
30:3:81:C:H2'	30:3:82:G:H8	1.85	0.41
30:3:428:U:C2	30:3:429:U:C5	3.09	0.41
30:3:625:G:H2'	30:3:626:A:H8	1.84	0.41
30:3:759:U:C2'	30:3:760:G:H5'	2.51	0.41
30:3:1475:C:H2'	30:3:1476:C:H6	1.85	0.41
30:3:1523:C:H2'	30:3:1524:C:C6	2.55	0.41
30:3:1605:A:H2'	30:3:1606:A:C8	2.54	0.41
30:3:1634:A:H2'	30:3:1635:G:C8	2.56	0.41
30:3:1776:G:H2'	30:3:1777:G:C8	2.50	0.41
30:3:1953:U:H2'	30:3:1954:C:C6	2.56	0.41
30:3:2034:G:H2'	30:3:2035:U:O4'	2.21	0.41
30:3:2087:G:C6	30:3:2249:A:N6	2.88	0.41
30:3:2274:A:H5'	30:3:2275:A:C4	2.56	0.41
30:3:2802:C:H5''	30:3:2806:A:N6	2.35	0.41
30:3:21:U:H2'	30:3:22:U:C6	2.56	0.41
30:3:245:U:H4'	30:3:246:G:H4'	2.01	0.41
30:3:573:A:H2'	30:3:574:G:O4'	2.20	0.41
30:3:670:G:H2'	30:3:671:C:H6	1.86	0.41
30:3:682:A:N3	30:3:682:A:H2'	2.36	0.41
30:3:1183:A:H2'	30:3:1184:U:C6	2.55	0.41
30:3:1943:A:OP2	30:3:1969:C:N4	2.54	0.41
30:3:2081:U:H1'	30:3:2606:A:N3	2.36	0.41
30:3:2273:U:O2'	30:3:2282:A:N6	2.54	0.41
30:3:2460:C:N4	30:3:2512:U:O4	2.52	0.41
30:3:2480:G:N2	30:3:2486:A:H62	2.18	0.41
30:3:2651:G:C5	30:3:2652:U:C4	3.09	0.41
30:3:2662:A:H4'	30:3:2663:G:H4'	2.02	0.41
30:3:2670:A:H3'	30:3:2671:G:C8	2.54	0.41
30:3:2820:G:H2'	30:3:2821:U:H6	1.86	0.41
3:2:4:ARG:H	3:2:36:GLN:HB3	1.85	0.41
30:3:216:C:H2'	30:3:217:A:O4'	2.21	0.41
30:3:220:A:C8	30:3:467:U:N3	2.89	0.41
30:3:601:U:H2'	30:3:603:G:N7	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:739:G:N2	30:3:761:G:N3	2.69	0.41
30:3:998:C:O2'	30:3:2505:A:OP1	2.22	0.41
30:3:1029:A:O2'	30:3:1030:U:H5'	2.20	0.41
30:3:1045:A:O2'	30:3:1188:C:O2'	2.36	0.41
30:3:1056:A:O2'	30:3:1058:U:O4'	2.37	0.41
30:3:1375:G:C6	30:3:1634:A:C6	3.09	0.41
30:3:1552:C:H2'	30:3:1553:G:C8	2.56	0.41
30:3:1702:A:H2	30:3:1709:C:H41	1.69	0.41
30:3:1844:C:O2'	30:3:1934:A:N3	2.45	0.41
30:3:2094:A:H2'	30:3:2095:A:C8	2.56	0.41
2:1:3:VAL:HG13	2:1:59:ILE:HG23	2.01	0.41
2:1:53:LYS:HE3	2:1:53:LYS:HB3	1.85	0.41
30:3:62:G:H1'	30:3:64:U:C4	2.55	0.41
30:3:275:A:H3'	30:3:276:A:H5''	2.03	0.41
30:3:335:G:O2'	30:3:336:C:O5'	2.35	0.41
30:3:593:C:H2'	30:3:594:G:O4'	2.20	0.41
30:3:724:A:H2	30:3:814:U:H4'	1.85	0.41
30:3:1006:U:H5'	30:3:1024:A:H61	1.86	0.41
30:3:1084:C:H41	30:3:1145:G:N2	2.17	0.41
30:3:1510:A:N6	30:3:1530:G:O6	2.53	0.41
30:3:1529:U:H2'	30:3:1530:G:C8	2.56	0.41
30:3:1613:A:H3'	30:3:1614:G:C8	2.56	0.41
30:3:1653:C:H2'	30:3:1654:G:C8	2.55	0.41
30:3:1667:G:O2'	30:3:1668:G:OP1	2.38	0.41
30:3:1682:C:N4	30:3:2017:G:O6	2.54	0.41
30:3:1744:U:H4'	30:3:2862:U:O4	2.21	0.41
30:3:1747:G:H1	30:3:1751:A:H5''	1.85	0.41
30:3:1762:A:N1	30:3:2724:U:H1'	2.36	0.41
30:3:1849:G:C2'	30:3:1850:C:H5'	2.51	0.41
30:3:1922:U:H3'	30:3:1923:A:C8	2.56	0.41
30:3:2110:U:H2'	30:3:2194:G:H21	1.86	0.41
30:3:2223:C:H2'	30:3:2224:A:H8	1.85	0.41
30:3:2359:G:N2	30:3:2373:G:H2'	2.36	0.41
30:3:2397:G:H5''	30:3:2398:U:H5'	2.03	0.41
30:3:2470:C:H1'	30:3:2499:U:H3	1.86	0.41
30:3:2652:U:H2'	30:3:2653:G:N9	2.36	0.41
30:3:2659:U:H2'	30:3:2660:C:C6	2.56	0.41
30:3:2792:C:H2'	30:3:2793:U:C6	2.56	0.41
30:3:2795:C:O2'	30:3:2814:A:H4'	2.21	0.41
30:3:2828:C:H2'	30:3:2829:G:O4'	2.20	0.41
30:3:225:A:H4'	30:3:226:A:N3	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:518:A:H1'	30:3:541:G:C6	2.56	0.41
30:3:779:C:H2'	30:3:780:G:C8	2.56	0.41
30:3:884:A:H2'	30:3:885:A:C8	2.55	0.41
30:3:889:G:H2'	30:3:890:U:H6	1.86	0.41
30:3:1481:U:H1'	30:3:1482:U:H3'	2.03	0.41
30:3:1768:G:H2'	30:3:1769:A:N9	2.36	0.41
30:3:2022:A:H3'	30:3:2023:U:C6	2.56	0.41
30:3:2062:C:O2	30:3:2580:A:N6	2.54	0.41
30:3:2190:G:C6	30:3:2191:G:C6	3.09	0.41
30:3:2355:C:OP2	30:3:2390:G:H4'	2.21	0.41
30:3:2386:A:HO2'	30:3:2387:U:P	2.42	0.41
30:3:2506:C:H4'	30:3:2507:C:OP1	2.21	0.41
30:3:2631:G:N3	30:3:2631:G:H2'	2.36	0.41
30:3:2831:U:H2'	30:3:2832:G:H8	1.85	0.41
31:4:89:A:N3	31:4:90:G:C8	2.89	0.41
30:3:484:U:H3	30:3:616:G:H1'	1.87	0.40
30:3:501:G:H21	30:3:719:G:H4'	1.85	0.40
30:3:710:A:N6	30:3:839:A:H1'	2.36	0.40
30:3:1263:G:H2'	30:3:1264:U:H6	1.85	0.40
30:3:1622:C:H2'	30:3:1623:U:H6	1.85	0.40
30:3:1701:G:O2'	30:3:1998:U:O4	2.34	0.40
30:3:1724:A:H3'	30:3:1725:G:H8	1.86	0.40
30:3:1949:C:H2'	30:3:1950:U:C5	2.56	0.40
30:3:1994:U:H2'	30:3:1995:G:C8	2.56	0.40
30:3:2260:G:H2'	30:3:2261:G:H8	1.87	0.40
30:3:2582:G:H2'	30:3:2583:U:O4'	2.21	0.40
30:3:2639:G:H2'	30:3:2640:A:C8	2.54	0.40
30:3:2770:U:H2'	30:3:2771:G:O4'	2.21	0.40
30:3:178:A:H2'	30:3:179:A:C8	2.56	0.40
30:3:246:G:H22	30:3:259:A:P	2.44	0.40
30:3:292:G:H2'	30:3:292:G:N3	2.37	0.40
30:3:353:G:H22	30:3:357:A:N6	2.12	0.40
30:3:427:A:H4'	30:3:448:A:O3'	2.22	0.40
30:3:597:C:O2'	30:3:1283:A:N1	2.38	0.40
30:3:603:G:O4'	30:3:1019:A:N6	2.54	0.40
30:3:766:C:H2'	30:3:767:C:C6	2.56	0.40
30:3:827:G:H4'	30:3:828:A:O4'	2.22	0.40
30:3:945:U:H2'	30:3:946:A:C8	2.56	0.40
30:3:1186:A:H2'	30:3:1187:C:C6	2.56	0.40
30:3:1422:U:H5''	30:3:1637:A:H4'	2.03	0.40
30:3:1520:A:H2'	30:3:1521:A:H8	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:1745:A:H2'	30:3:1746:U:C6	2.57	0.40
30:3:1957:G:OP2	30:3:1957:G:H8	2.04	0.40
30:3:2029:U:O2'	30:3:2624:C:O2'	2.37	0.40
30:3:2407:G:C6	30:3:2426:A:N1	2.90	0.40
1:0:3:ARG:NH2	30:3:1647:A:O2'	2.55	0.40
2:1:34:THR:HG22	2:1:36:LYS:H	1.85	0.40
30:3:121:U:H5''	30:3:123:G:OP2	2.22	0.40
30:3:1252:C:H2'	30:3:1253:G:O4'	2.21	0.40
30:3:1819:G:H2'	30:3:1820:U:H6	1.87	0.40
30:3:2098:U:H3'	30:3:2099:U:H2'	2.04	0.40
30:3:2130:A:H2'	30:3:2131:G:C8	2.57	0.40
30:3:2579:U:H5''	30:3:2580:A:H5''	2.03	0.40
31:4:99:A:H2'	31:4:100:G:O4'	2.22	0.40
31:4:103:C:H2'	31:4:104:C:C6	2.56	0.40
1:0:9:LYS:HE2	30:3:1338:G:OP1	2.21	0.40
1:0:36:LYS:HD3	30:3:185:U:C4	2.56	0.40
30:3:8:A:H2'	30:3:9:G:H8	1.84	0.40
30:3:291:G:N3	30:3:292:G:C8	2.90	0.40
30:3:343:A:H1'	30:3:363:G:N3	2.36	0.40
30:3:589:A:H2'	30:3:590:U:O4'	2.21	0.40
30:3:1364:A:H2'	30:3:1365:G:C8	2.56	0.40
30:3:2533:A:H2'	30:3:2534:G:C8	2.54	0.40
30:3:2806:A:H2'	30:3:2807:G:O4'	2.21	0.40
31:4:24:A:C2	31:4:25:A:H1'	2.56	0.40
31:4:34:U:H2'	31:4:35:C:C6	2.56	0.40
1:0:27:GLY:O	1:0:31:LEU:HD13	2.22	0.40
30:3:129:U:H2'	30:3:130:C:H6	1.85	0.40
30:3:237:A:N6	30:3:268:C:O2'	2.54	0.40
30:3:385:U:H2'	30:3:386:U:C6	2.56	0.40
30:3:598:G:H2'	30:3:599:U:C6	2.56	0.40
30:3:603:G:N2	30:3:2037:A:O4'	2.55	0.40
30:3:832:C:H2'	30:3:833:C:H6	1.86	0.40
30:3:858:A:H2'	30:3:859:G:H8	1.87	0.40
30:3:1061:A:H2'	30:3:1062:A:C8	2.46	0.40
30:3:1098:G:C6	30:3:1099:C:N4	2.90	0.40
30:3:1588:A:O2'	30:3:1589:A:P	2.79	0.40
30:3:1683:G:H2'	30:3:1684:A:C8	2.56	0.40
30:3:1821:G:OP2	30:3:1822:A:H3'	2.21	0.40
30:3:1859:U:O2	30:3:1897:A:N6	2.41	0.40
30:3:1896:A:H1'	30:3:2094:A:H4'	2.02	0.40
30:3:2824:A:H3'	30:3:2825:A:C8	2.44	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%)	45 (100%)	0	0	100	100
2	1	57/59 (97%)	54 (95%)	3 (5%)	0	100	100
3	2	35/37 (95%)	35 (100%)	0	0	100	100
4	a	283/287 (99%)	260 (92%)	23 (8%)	0	100	100
5	b	227/287 (79%)	213 (94%)	14 (6%)	0	100	100
6	c	208/212 (98%)	199 (96%)	9 (4%)	0	100	100
7	d	173/180 (96%)	161 (93%)	12 (7%)	0	100	100
8	e	174/184 (95%)	164 (94%)	10 (6%)	0	100	100
9	f	143/149 (96%)	130 (91%)	13 (9%)	0	100	100
10	g	124/161 (77%)	114 (92%)	9 (7%)	1 (1%)	16	55
11	h	126/137 (92%)	121 (96%)	5 (4%)	0	100	100
12	i	142/146 (97%)	130 (92%)	12 (8%)	0	100	100
13	j	120/122 (98%)	117 (98%)	3 (2%)	0	100	100
14	k	146/151 (97%)	137 (94%)	9 (6%)	0	100	100
15	l	134/139 (96%)	122 (91%)	12 (9%)	0	100	100
16	m	117/124 (94%)	112 (96%)	5 (4%)	0	100	100
17	n	108/116 (93%)	102 (94%)	6 (6%)	0	100	100
18	o	113/119 (95%)	104 (92%)	9 (8%)	0	100	100
19	p	112/127 (88%)	109 (97%)	3 (3%)	0	100	100
20	q	97/100 (97%)	83 (86%)	14 (14%)	0	100	100
21	r	137/159 (86%)	128 (93%)	9 (7%)	0	100	100
22	s	90/237 (38%)	85 (94%)	5 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
23	t	109/111 (98%)	102 (94%)	7 (6%)	0	100	100
24	u	84/104 (81%)	77 (92%)	7 (8%)	0	100	100
25	v	61/65 (94%)	58 (95%)	3 (5%)	0	100	100
26	w	96/111 (86%)	88 (92%)	8 (8%)	0	100	100
27	x	42/97 (43%)	38 (90%)	4 (10%)	0	100	100
28	y	54/57 (95%)	50 (93%)	4 (7%)	0	100	100
29	z	48/53 (91%)	45 (94%)	3 (6%)	0	100	100
All	All	3405/3879 (88%)	3183 (94%)	221 (6%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
10	g	32	MET

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	40/41 (98%)	40 (100%)	0	100	100
2	1	51/51 (100%)	51 (100%)	0	100	100
3	2	35/35 (100%)	35 (100%)	0	100	100
4	a	241/243 (99%)	241 (100%)	0	100	100
5	b	186/233 (80%)	186 (100%)	0	100	100
6	c	182/184 (99%)	181 (100%)	1 (0%)	86	89
7	d	150/154 (97%)	148 (99%)	2 (1%)	65	77
8	e	153/159 (96%)	153 (100%)	0	100	100
9	f	123/134 (92%)	123 (100%)	0	100	100
10	g	101/129 (78%)	86 (85%)	15 (15%)	2	11
11	h	102/110 (93%)	102 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
12	i	126/128 (98%)	125 (99%)	1 (1%)	79	85
13	j	103/103 (100%)	101 (98%)	2 (2%)	52	69
14	k	123/126 (98%)	123 (100%)	0	100	100
15	l	113/115 (98%)	113 (100%)	0	100	100
16	m	105/109 (96%)	104 (99%)	1 (1%)	73	82
17	n	96/99 (97%)	95 (99%)	1 (1%)	73	82
18	o	101/105 (96%)	101 (100%)	0	100	100
19	p	100/108 (93%)	100 (100%)	0	100	100
20	q	90/91 (99%)	89 (99%)	1 (1%)	70	80
21	r	116/132 (88%)	115 (99%)	1 (1%)	75	83
22	s	82/208 (39%)	82 (100%)	0	100	100
23	t	96/96 (100%)	95 (99%)	1 (1%)	73	82
24	u	69/85 (81%)	69 (100%)	0	100	100
25	v	58/60 (97%)	58 (100%)	0	100	100
26	w	87/98 (89%)	86 (99%)	1 (1%)	70	80
27	x	41/86 (48%)	41 (100%)	0	100	100
28	y	48/49 (98%)	44 (92%)	4 (8%)	9	27
29	z	47/50 (94%)	45 (96%)	2 (4%)	25	46
All	All	2965/3321 (89%)	2932 (99%)	33 (1%)	69	80

All (33) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
6	c	148	LYS
7	d	18	LYS
7	d	125	ARG
10	g	27	PHE
10	g	29	TYR
10	g	30	THR
10	g	43	LYS
10	g	45	PHE
10	g	68	PHE
10	g	69	GLU
10	g	77	LYS
10	g	86	VAL
10	g	88	GLU

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Mol	Chain	Res	Type
10	g	89	ILE
10	g	90	VAL
10	g	110	CYS
10	g	114	ASP
10	g	116	ARG
12	i	16	ARG
13	j	72	LYS
13	j	107	ARG
16	m	30	LYS
17	n	17	LYS
20	q	52	LYS
21	r	11	ARG
23	t	82	LYS
26	w	61	ARG
28	y	37	LYS
28	y	47	MET
28	y	51	LEU
28	y	52	ARG
29	z	8	ARG
29	z	26	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (13) such sidechains are listed below:

Mol	Chain	Res	Type
4	a	91	ASN
4	a	149	ASN
5	b	34	ASN
5	b	80	HIS
6	c	81	ASN
6	c	130	GLN
8	e	24	HIS
9	f	100	GLN
16	m	59	ASN
17	n	49	ASN
23	t	32	GLN
24	u	54	GLN
25	v	34	GLN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
30	3	2875/2907 (98%)	844 (29%)	34 (1%)
31	4	103/108 (95%)	42 (40%)	3 (2%)
All	All	2978/3015 (98%)	886 (29%)	37 (1%)

All (886) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
30	3	12	A
30	3	14	U
30	3	15	A
30	3	20	C
30	3	27	U
30	3	28	G
30	3	29	G
30	3	30	A
30	3	36	U
30	3	37	G
30	3	41	C
30	3	48	G
30	3	52	U
30	3	53	G
30	3	56	G
30	3	61	U
30	3	64	U
30	3	65	A
30	3	73	A
30	3	75	A
30	3	76	A
30	3	77	G
30	3	85	U
30	3	90	G
30	3	94	A
30	3	97	A
30	3	101	C
30	3	102	A
30	3	103	G
30	3	115	U
30	3	119	A
30	3	120	A
30	3	121	U
30	3	122	G
30	3	126	C
30	3	132	G

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Mol	Chain	Res	Type
30	3	136	G
30	3	139	G
30	3	147	C
30	3	152	A
30	3	163	A
30	3	165	U
30	3	170	A
30	3	179	A
30	3	184	A
30	3	198	G
30	3	200	A
30	3	204	U
30	3	208	A
30	3	210	U
30	3	212	G
30	3	218	G
30	3	219	G
30	3	220	A
30	3	226	A
30	3	228	A
30	3	230	G
30	3	232	A
30	3	233	U
30	3	234	G
30	3	237	A
30	3	245	U
30	3	247	U
30	3	251	G
30	3	252	G
30	3	256	G
30	3	261	A
30	3	265	G
30	3	266	A
30	3	269	A
30	3	270	G
30	3	276	A
30	3	283	A
30	3	284	U
30	3	287	G
30	3	288	A
30	3	292	G
30	3	293	G

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Mol	Chain	Res	Type
30	3	294	G
30	3	295	U
30	3	296	U
30	3	297	G
30	3	298	U
30	3	299	A
30	3	309	A
30	3	310	U
30	3	314	G
30	3	315	A
30	3	316	C
30	3	317	U
30	3	319	G
30	3	320	A
30	3	335	G
30	3	336	C
30	3	345	A
30	3	351	G
30	3	355	A
30	3	357	A
30	3	363	G
30	3	364	A
30	3	366	A
30	3	369	C
30	3	377	U
30	3	396	A
30	3	397	G
30	3	399	G
30	3	400	A
30	3	401	G
30	3	402	A
30	3	403	U
30	3	404	C
30	3	405	C
30	3	408	G
30	3	409	A
30	3	410	G
30	3	411	U
30	3	418	G
30	3	422	A
30	3	423	C
30	3	424	G

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Mol	Chain	Res	Type
30	3	426	U
30	3	432	G
30	3	437	A
30	3	439	U
30	3	440	C
30	3	441	U
30	3	447	G
30	3	448	A
30	3	460	G
30	3	464	A
30	3	465	A
30	3	466	A
30	3	471	A
30	3	472	A
30	3	473	U
30	3	478	G
30	3	482	G
30	3	484	U
30	3	487	C
30	3	490	A
30	3	495	U
30	3	500	U
30	3	501	G
30	3	502	A
30	3	503	G
30	3	506	A
30	3	509	G
30	3	511	U
30	3	514	A
30	3	515	A
30	3	517	G
30	3	521	C
30	3	531	G
30	3	539	U
30	3	543	U
30	3	544	U
30	3	548	A
30	3	554	U
30	3	558	C
30	3	563	A
30	3	565	C
30	3	566	G

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Mol	Chain	Res	Type
30	3	567	U
30	3	568	G
30	3	583	U
30	3	584	G
30	3	589	A
30	3	595	U
30	3	596	G
30	3	598	G
30	3	599	U
30	3	601	U
30	3	605	A
30	3	606	G
30	3	607	U
30	3	608	A
30	3	616	G
30	3	633	G
30	3	636	U
30	3	637	U
30	3	648	G
30	3	650	G
30	3	656	G
30	3	657	A
30	3	663	A
30	3	673	A
30	3	679	A
30	3	680	A
30	3	681	A
30	3	682	A
30	3	683	G
30	3	689	U
30	3	691	G
30	3	693	U
30	3	701	A
30	3	705	A
30	3	706	C
30	3	707	C
30	3	710	A
30	3	712	A
30	3	719	G
30	3	720	A
30	3	721	G
30	3	722	C

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Mol	Chain	Res	Type
30	3	723	U
30	3	725	G
30	3	734	A
30	3	738	U
30	3	739	G
30	3	740	A
30	3	752	C
30	3	754	U
30	3	760	G
30	3	761	G
30	3	763	G
30	3	764	G
30	3	765	A
30	3	774	A
30	3	775	C
30	3	777	C
30	3	782	U
30	3	787	C
30	3	792	G
30	3	797	U
30	3	799	A
30	3	810	G
30	3	811	G
30	3	812	G
30	3	816	A
30	3	817	A
30	3	818	A
30	3	819	U
30	3	820	U
30	3	825	U
30	3	827	G
30	3	828	A
30	3	837	A
30	3	840	G
30	3	841	C
30	3	842	U
30	3	846	U
30	3	847	C
30	3	854	A
30	3	862	U
30	3	864	A
30	3	865	A

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Mol	Chain	Res	Type
30	3	873	G
30	3	883	A
30	3	885	A
30	3	887	A
30	3	889	G
30	3	896	U
30	3	902	U
30	3	903	A
30	3	904	C
30	3	906	G
30	3	914	G
30	3	916	U
30	3	917	G
30	3	932	U
30	3	934	C
30	3	936	G
30	3	947	A
30	3	949	C
30	3	951	C
30	3	952	U
30	3	953	G
30	3	968	U
30	3	971	U
30	3	977	A
30	3	981	A
30	3	982	G
30	3	989	G
30	3	991	G
30	3	993	A
30	3	994	U
30	3	997	G
30	3	1001	C
30	3	1008	A
30	3	1009	A
30	3	1010	G
30	3	1016	A
30	3	1017	A
30	3	1018	G
30	3	1019	A
30	3	1021	C
30	3	1026	A
30	3	1027	U

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Mol	Chain	Res	Type
30	3	1031	U
30	3	1032	A
30	3	1035	U
30	3	1041	C
30	3	1045	A
30	3	1049	U
30	3	1055	A
30	3	1057	G
30	3	1061	A
30	3	1067	A
30	3	1068	U
30	3	1069	G
30	3	1075	G
30	3	1081	A
30	3	1082	A
30	3	1083	A
30	3	1092	A
30	3	1095	U
30	3	1096	U
30	3	1100	U
30	3	1101	U
30	3	1102	A
30	3	1103	G
30	3	1104	A
30	3	1105	A
30	3	1106	G
30	3	1107	C
30	3	1109	G
30	3	1112	A
30	3	1119	A
30	3	1122	G
30	3	1123	A
30	3	1124	G
30	3	1125	U
30	3	1130	A
30	3	1132	C
30	3	1139	C
30	3	1144	C
30	3	1145	G
30	3	1146	A
30	3	1147	G
30	3	1151	U

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Mol	Chain	Res	Type
30	3	1154	U
30	3	1155	G
30	3	1162	A
30	3	1165	U
30	3	1167	U
30	3	1168	A
30	3	1170	C
30	3	1171	G
30	3	1174	G
30	3	1176	U
30	3	1177	A
30	3	1178	A
30	3	1179	G
30	3	1186	A
30	3	1189	G
30	3	1191	A
30	3	1195	A
30	3	1201	A
30	3	1207	U
30	3	1208	A
30	3	1209	U
30	3	1210	A
30	3	1212	C
30	3	1213	U
30	3	1215	G
30	3	1217	G
30	3	1226	G
30	3	1227	C
30	3	1229	U
30	3	1233	A
30	3	1235	U
30	3	1236	G
30	3	1240	U
30	3	1250	A
30	3	1251	G
30	3	1253	G
30	3	1255	G
30	3	1256	A
30	3	1257	G
30	3	1265	G
30	3	1266	G
30	3	1268	U

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Mol	Chain	Res	Type
30	3	1274	A
30	3	1277	A
30	3	1278	G
30	3	1279	U
30	3	1281	A
30	3	1283	A
30	3	1286	G
30	3	1292	A
30	3	1295	A
30	3	1296	G
30	3	1297	U
30	3	1298	A
30	3	1301	G
30	3	1303	U
30	3	1314	A
30	3	1317	C
30	3	1322	A
30	3	1325	C
30	3	1328	A
30	3	1329	U
30	3	1330	U
30	3	1334	U
30	3	1340	U
30	3	1342	C
30	3	1349	C
30	3	1351	G
30	3	1353	G
30	3	1356	G
30	3	1360	U
30	3	1370	A
30	3	1371	G
30	3	1372	U
30	3	1373	C
30	3	1378	C
30	3	1393	A
30	3	1403	G
30	3	1406	A
30	3	1407	U
30	3	1408	G
30	3	1413	A
30	3	1420	A
30	3	1422	U

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Mol	Chain	Res	Type
30	3	1423	A
30	3	1424	U
30	3	1428	U
30	3	1432	C
30	3	1437	A
30	3	1444	C
30	3	1447	A
30	3	1448	U
30	3	1449	G
30	3	1456	C
30	3	1457	A
30	3	1463	G
30	3	1466	U
30	3	1467	U
30	3	1479	A
30	3	1480	A
30	3	1481	U
30	3	1482	U
30	3	1483	G
30	3	1487	U
30	3	1495	A
30	3	1502	A
30	3	1503	A
30	3	1506	U
30	3	1507	G
30	3	1508	G
30	3	1510	A
30	3	1515	A
30	3	1518	C
30	3	1520	A
30	3	1528	G
30	3	1532	A
30	3	1534	A
30	3	1535	A
30	3	1541	A
30	3	1542	G
30	3	1546	U
30	3	1548	A
30	3	1550	G
30	3	1555	G
30	3	1557	G
30	3	1559	A

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Mol	Chain	Res	Type
30	3	1571	G
30	3	1582	G
30	3	1584	U
30	3	1585	A
30	3	1586	U
30	3	1587	U
30	3	1588	A
30	3	1589	A
30	3	1593	U
30	3	1594	G
30	3	1600	A
30	3	1603	A
30	3	1612	U
30	3	1615	G
30	3	1618	U
30	3	1619	A
30	3	1622	C
30	3	1632	C
30	3	1636	U
30	3	1641	A
30	3	1642	G
30	3	1643	A
30	3	1644	A
30	3	1648	A
30	3	1649	C
30	3	1650	A
30	3	1651	C
30	3	1656	A
30	3	1661	A
30	3	1668	G
30	3	1677	G
30	3	1679	U
30	3	1681	G
30	3	1682	C
30	3	1683	G
30	3	1685	G
30	3	1692	A
30	3	1694	A
30	3	1697	C
30	3	1698	A
30	3	1699	A
30	3	1701	G

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Mol	Chain	Res	Type
30	3	1702	A
30	3	1704	C
30	3	1706	C
30	3	1707	U
30	3	1708	G
30	3	1709	C
30	3	1710	A
30	3	1714	U
30	3	1715	A
30	3	1716	A
30	3	1727	U
30	3	1728	A
30	3	1732	A
30	3	1735	A
30	3	1747	G
30	3	1748	U
30	3	1751	A
30	3	1755	A
30	3	1758	C
30	3	1761	C
30	3	1762	A
30	3	1763	G
30	3	1764	U
30	3	1766	A
30	3	1768	G
30	3	1769	A
30	3	1770	A
30	3	1771	C
30	3	1772	G
30	3	1780	A
30	3	1784	U
30	3	1788	A
30	3	1789	C
30	3	1791	A
30	3	1792	A
30	3	1807	C
30	3	1808	C
30	3	1809	A
30	3	1812	C
30	3	1816	A
30	3	1821	G
30	3	1822	A

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Mol	Chain	Res	Type
30	3	1823	U
30	3	1827	U
30	3	1828	A
30	3	1836	A
30	3	1843	C
30	3	1850	C
30	3	1858	U
30	3	1863	G
30	3	1869	G
30	3	1871	U
30	3	1873	A
30	3	1887	U
30	3	1888	U
30	3	1891	A
30	3	1892	A
30	3	1906	G
30	3	1907	A
30	3	1908	A
30	3	1910	G
30	3	1913	G
30	3	1920	A
30	3	1922	U
30	3	1923	A
30	3	1926	A
30	3	1934	A
30	3	1937	G
30	3	1938	U
30	3	1943	A
30	3	1944	A
30	3	1945	A
30	3	1950	U
30	3	1952	G
30	3	1957	G
30	3	1959	A
30	3	1961	A
30	3	1962	U
30	3	1971	G
30	3	1972	C
30	3	1974	U
30	3	1977	A
30	3	1978	U
30	3	1979	G

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Mol	Chain	Res	Type
30	3	1982	G
30	3	1995	G
30	3	1997	C
30	3	1998	U
30	3	1999	G
30	3	2000	U
30	3	2009	U
30	3	2011	G
30	3	2020	A
30	3	2025	C
30	3	2028	G
30	3	2030	A
30	3	2037	A
30	3	2038	A
30	3	2040	A
30	3	2041	C
30	3	2043	C
30	3	2050	G
30	3	2053	G
30	3	2056	A
30	3	2059	G
30	3	2062	C
30	3	2063	G
30	3	2065	A
30	3	2067	A
30	3	2068	G
30	3	2069	A
30	3	2071	C
30	3	2075	U
30	3	2076	G
30	3	2083	U
30	3	2084	A
30	3	2087	G
30	3	2099	U
30	3	2100	G
30	3	2106	G
30	3	2107	A
30	3	2109	A
30	3	2111	U
30	3	2112	A
30	3	2114	C
30	3	2118	U

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Mol	Chain	Res	Type
30	3	2119	A
30	3	2123	A
30	3	2124	A
30	3	2125	U
30	3	2126	A
30	3	2131	G
30	3	2133	A
30	3	2139	C
30	3	2140	G
30	3	2141	A
30	3	2143	G
30	3	2150	C
30	3	2151	G
30	3	2153	U
30	3	2166	U
30	3	2171	A
30	3	2177	G
30	3	2178	A
30	3	2179	A
30	3	2180	U
30	3	2182	C
30	3	2193	U
30	3	2194	G
30	3	2195	U
30	3	2196	G
30	3	2198	G
30	3	2202	U
30	3	2206	A
30	3	2212	U
30	3	2219	U
30	3	2220	A
30	3	2222	C
30	3	2231	A
30	3	2233	A
30	3	2234	C
30	3	2242	G
30	3	2243	G
30	3	2246	G
30	3	2252	U
30	3	2254	G
30	3	2263	G
30	3	2267	G

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Mol	Chain	Res	Type
30	3	2274	A
30	3	2276	A
30	3	2277	A
30	3	2280	U
30	3	2286	A
30	3	2290	G
30	3	2291	U
30	3	2294	A
30	3	2295	A
30	3	2305	C
30	3	2309	A
30	3	2313	U
30	3	2316	G
30	3	2317	A
30	3	2327	U
30	3	2329	G
30	3	2330	A
30	3	2331	G
30	3	2333	G
30	3	2335	A
30	3	2341	G
30	3	2342	U
30	3	2343	A
30	3	2345	G
30	3	2352	U
30	3	2355	C
30	3	2358	U
30	3	2362	A
30	3	2365	U
30	3	2366	A
30	3	2380	U
30	3	2382	A
30	3	2387	U
30	3	2391	G
30	3	2393	C
30	3	2396	A
30	3	2400	A
30	3	2410	C
30	3	2414	U
30	3	2415	A
30	3	2418	G
30	3	2425	C

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Mol	Chain	Res	Type
30	3	2431	U
30	3	2433	A
30	3	2436	G
30	3	2437	G
30	3	2438	A
30	3	2439	U
30	3	2449	U
30	3	2456	A
30	3	2457	U
30	3	2469	A
30	3	2477	A
30	3	2481	U
30	3	2483	C
30	3	2484	A
30	3	2486	A
30	3	2492	G
30	3	2495	A
30	3	2499	U
30	3	2502	G
30	3	2505	A
30	3	2506	C
30	3	2507	C
30	3	2509	C
30	3	2511	A
30	3	2513	G
30	3	2514	U
30	3	2521	A
30	3	2526	A
30	3	2527	U
30	3	2528	C
30	3	2538	A
30	3	2539	A
30	3	2543	G
30	3	2544	G
30	3	2545	U
30	3	2555	U
30	3	2560	U
30	3	2574	A
30	3	2575	G
30	3	2577	G
30	3	2580	A
30	3	2581	C

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Mol	Chain	Res	Type
30	3	2584	G
30	3	2586	G
30	3	2590	G
30	3	2591	G
30	3	2593	U
30	3	2594	C
30	3	2596	A
30	3	2604	U
30	3	2605	G
30	3	2607	G
30	3	2610	A
30	3	2611	G
30	3	2617	U
30	3	2618	C
30	3	2619	C
30	3	2621	U
30	3	2622	A
30	3	2631	G
30	3	2637	A
30	3	2638	G
30	3	2643	A
30	3	2644	U
30	3	2647	A
30	3	2649	G
30	3	2653	G
30	3	2654	U
30	3	2664	U
30	3	2668	A
30	3	2669	G
30	3	2681	G
30	3	2695	U
30	3	2697	C
30	3	2698	U
30	3	2707	A
30	3	2710	G
30	3	2712	C
30	3	2715	C
30	3	2717	G
30	3	2722	G
30	3	2732	A
30	3	2734	C
30	3	2737	G

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Mol	Chain	Res	Type
30	3	2739	C
30	3	2740	U
30	3	2741	A
30	3	2747	U
30	3	2752	G
30	3	2756	A
30	3	2759	G
30	3	2760	C
30	3	2765	A
30	3	2772	A
30	3	2773	A
30	3	2774	A
30	3	2777	A
30	3	2786	A
30	3	2788	U
30	3	2790	A
30	3	2795	C
30	3	2796	C
30	3	2799	U
30	3	2801	U
30	3	2805	A
30	3	2809	A
30	3	2811	G
30	3	2812	U
30	3	2813	A
30	3	2822	C
30	3	2823	A
30	3	2824	A
30	3	2825	A
30	3	2828	C
30	3	2837	U
30	3	2838	G
30	3	2839	A
30	3	2840	U
30	3	2844	U
30	3	2852	G
30	3	2854	A
30	3	2862	U
30	3	2863	G
30	3	2865	U
30	3	2866	A
30	3	2871	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
30	3	2872	A
30	3	2876	G
30	3	2883	A
30	3	2884	C
30	3	2888	U
30	3	2890	G
30	3	2897	G
30	3	2898	A
30	3	2899	C
30	3	2900	U
31	4	4	G
31	4	8	C
31	4	10	C
31	4	11	A
31	4	13	G
31	4	14	U
31	4	17	C
31	4	19	G
31	4	23	A
31	4	24	A
31	4	27	A
31	4	28	C
31	4	31	G
31	4	33	U
31	4	35	C
31	4	38	U
31	4	39	U
31	4	40	U
31	4	41	C
31	4	42	G
31	4	46	C
31	4	48	A
31	4	49	G
31	4	51	A
31	4	55	A
31	4	60	C
31	4	65	G
31	4	74	G
31	4	75	U
31	4	76	A
31	4	77	G
31	4	78	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
31	4	79	U
31	4	86	G
31	4	88	G
31	4	89	A
31	4	92	A
31	4	98	A
31	4	99	A
31	4	102	A
31	4	103	C
31	4	108	C

All (37) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
30	3	295	U
30	3	315	A
30	3	409	A
30	3	410	G
30	3	425	U
30	3	500	U
30	3	513	A
30	3	688	U
30	3	753	A
30	3	901	C
30	3	903	A
30	3	952	U
30	3	1048	A
30	3	1209	U
30	3	1211	U
30	3	1234	U
30	3	1297	U
30	3	1371	G
30	3	1507	G
30	3	1583	G
30	3	1588	A
30	3	1667	G
30	3	1820	U
30	3	1886	C
30	3	2064	G
30	3	2342	U
30	3	2386	A
30	3	2504	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
30	3	2506	C
30	3	2668	A
30	3	2764	U
30	3	2823	A
30	3	2862	U
30	3	2897	G
31	4	50	C
31	4	54	U
31	4	59	A

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

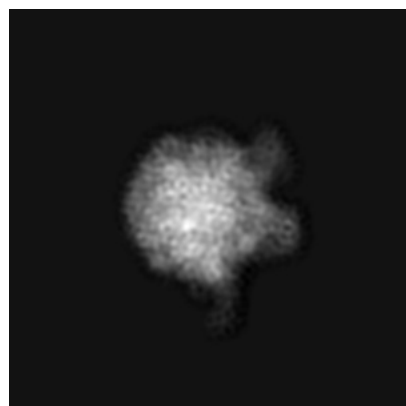
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-13285. These allow visual inspection of the internal detail of the map and identification of artifacts.

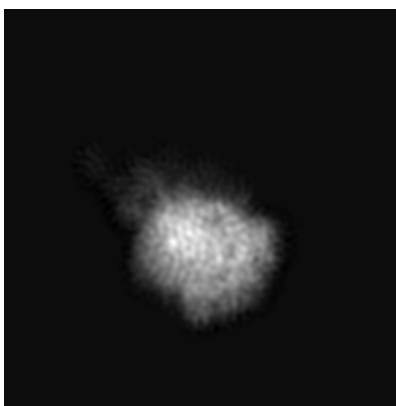
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

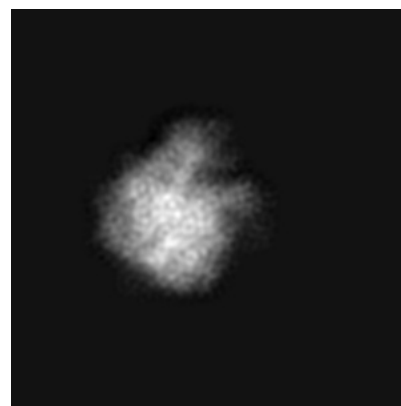
6.1.1 Primary map



X

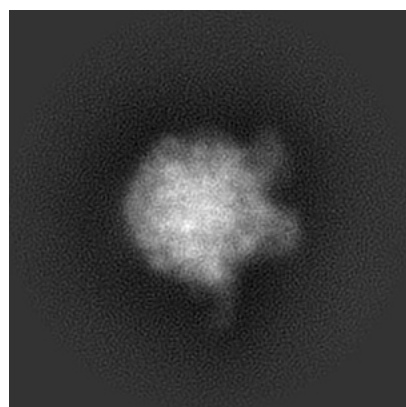


Y

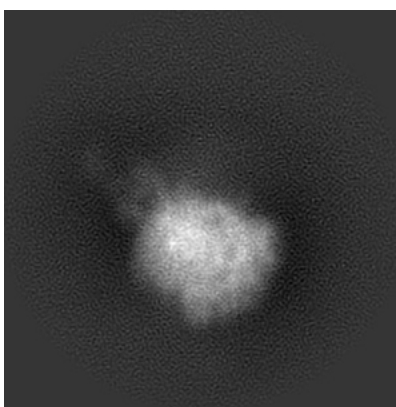


Z

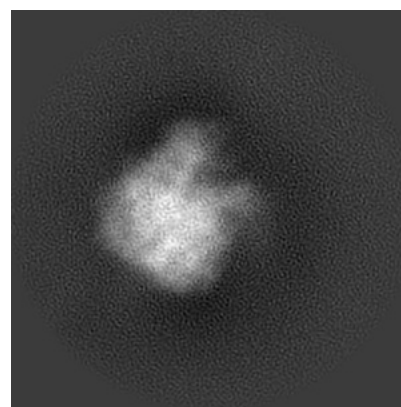
6.1.2 Raw map



X



Y

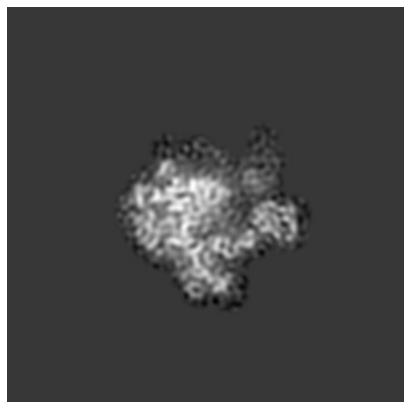


Z

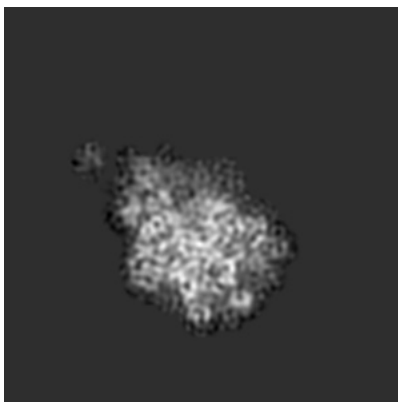
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

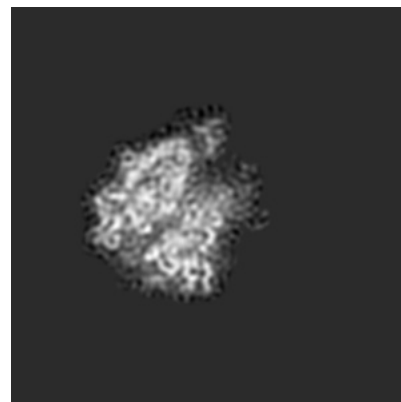
6.2.1 Primary map



X Index: 100

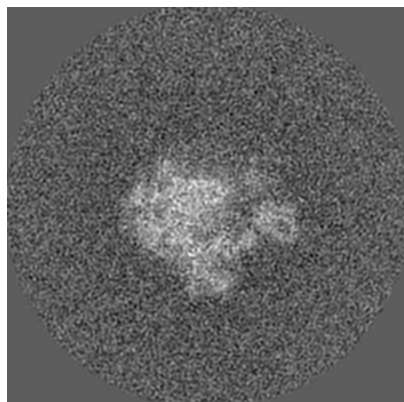


Y Index: 100

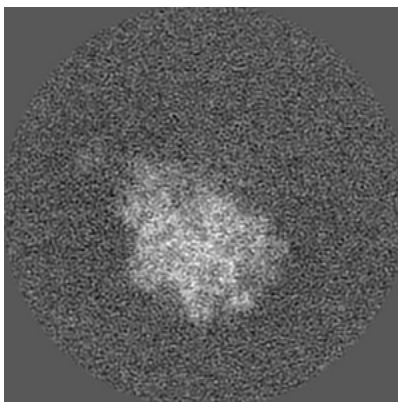


Z Index: 100

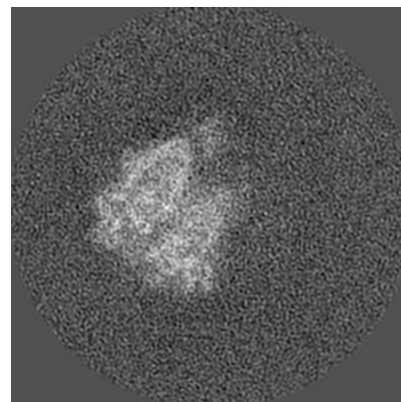
6.2.2 Raw map



X Index: 100



Y Index: 100

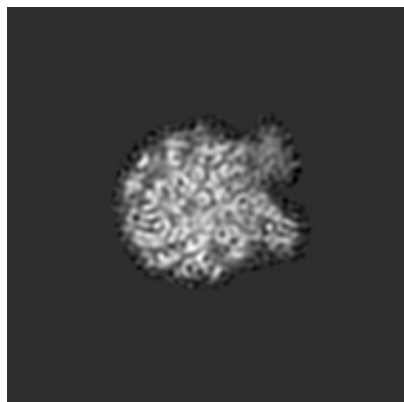


Z Index: 100

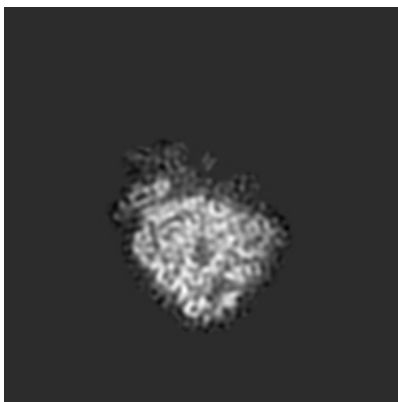
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

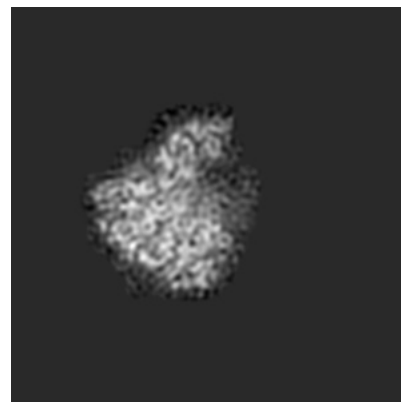
6.3.1 Primary map



X Index: 83

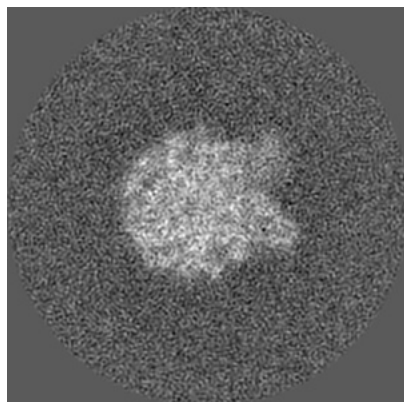


Y Index: 89

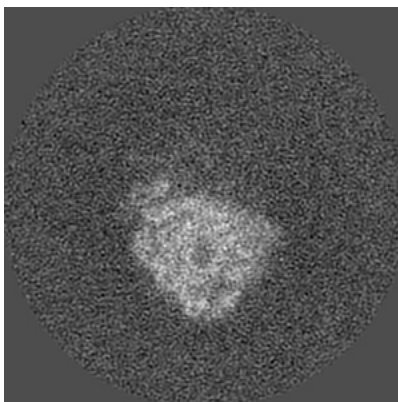


Z Index: 94

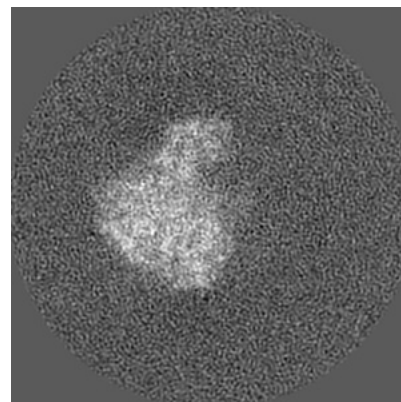
6.3.2 Raw map



X Index: 83



Y Index: 89

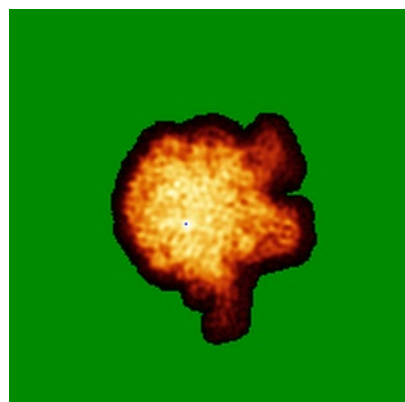


Z Index: 93

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

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

6.4.1 Primary map



X

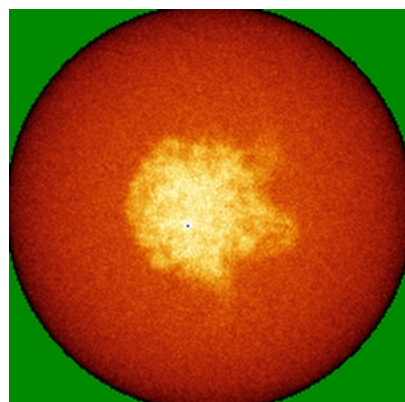


Y

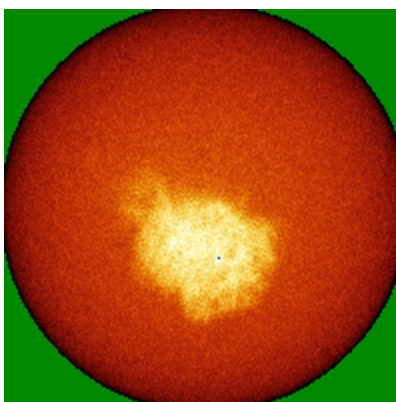


Z

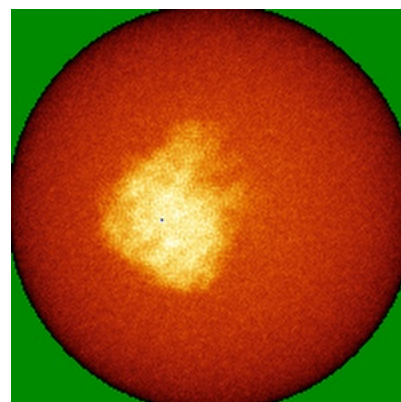
6.4.2 Raw map



X



Y

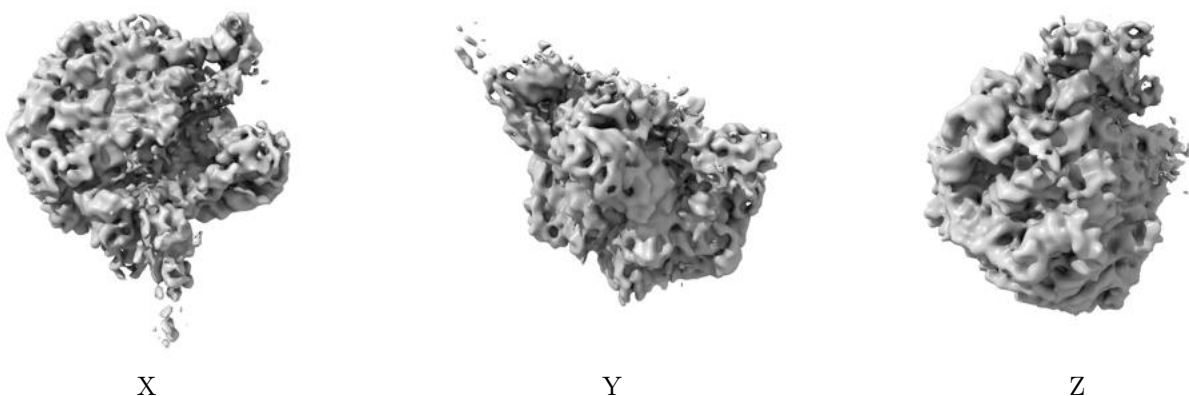


Z

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

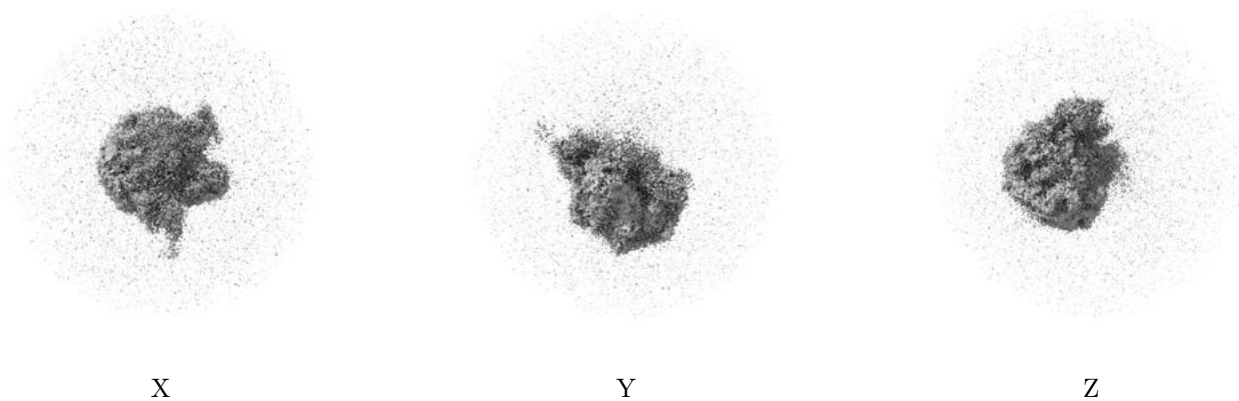
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.41. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

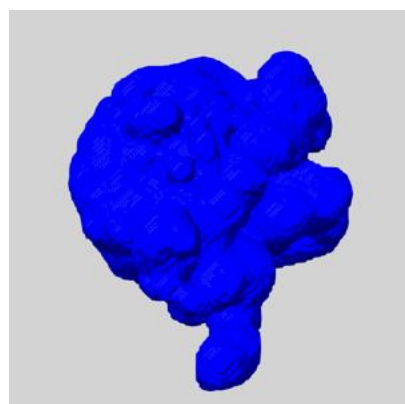
6.6 Mask visualisation [i](#)

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

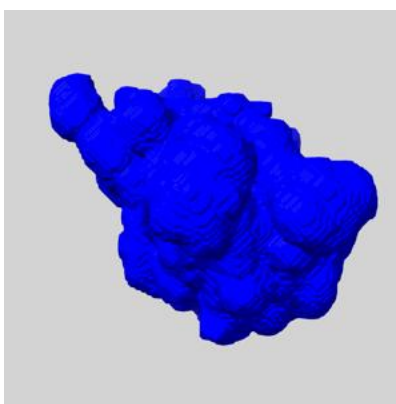
A mask typically either:

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

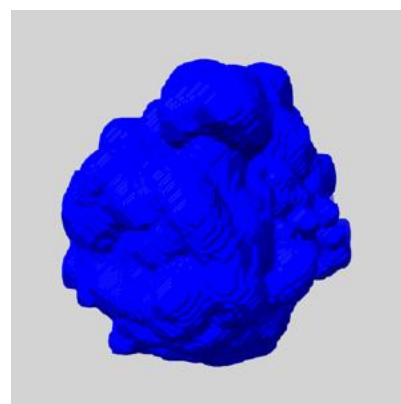
6.6.1 emd_13285_msk_1.map [i](#)



X



Y

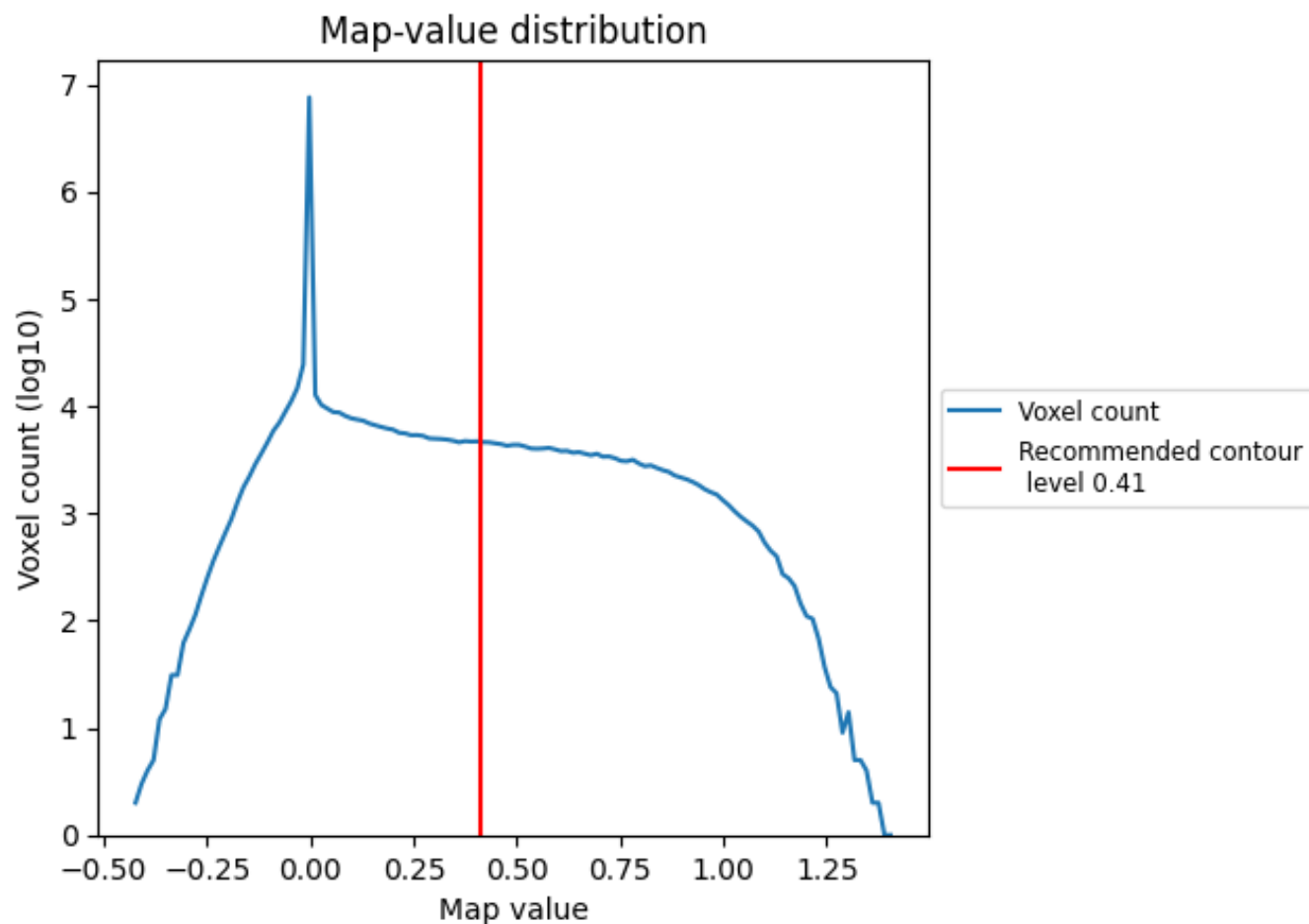


Z

7 Map analysis [i](#)

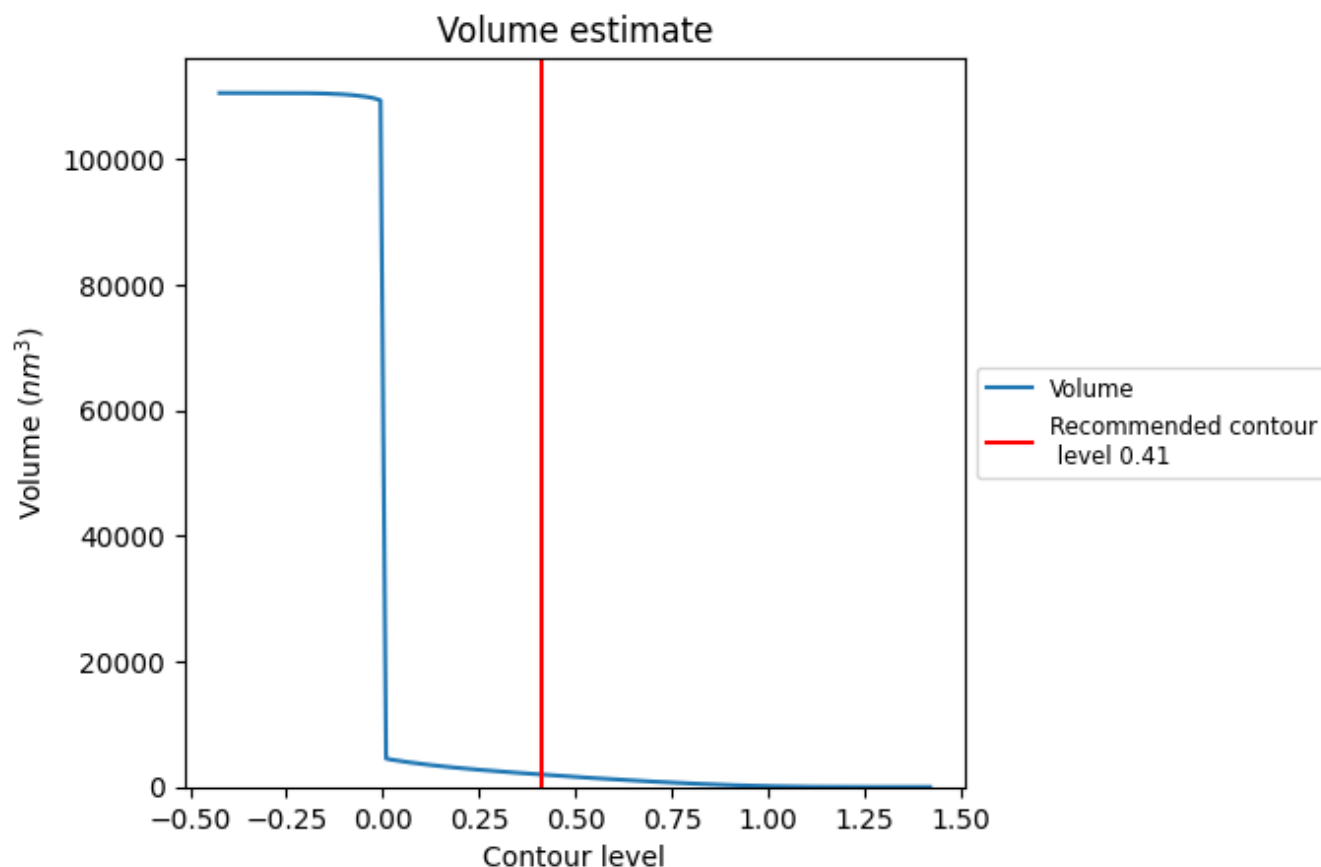
This section contains the results of statistical analysis of the map.

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.

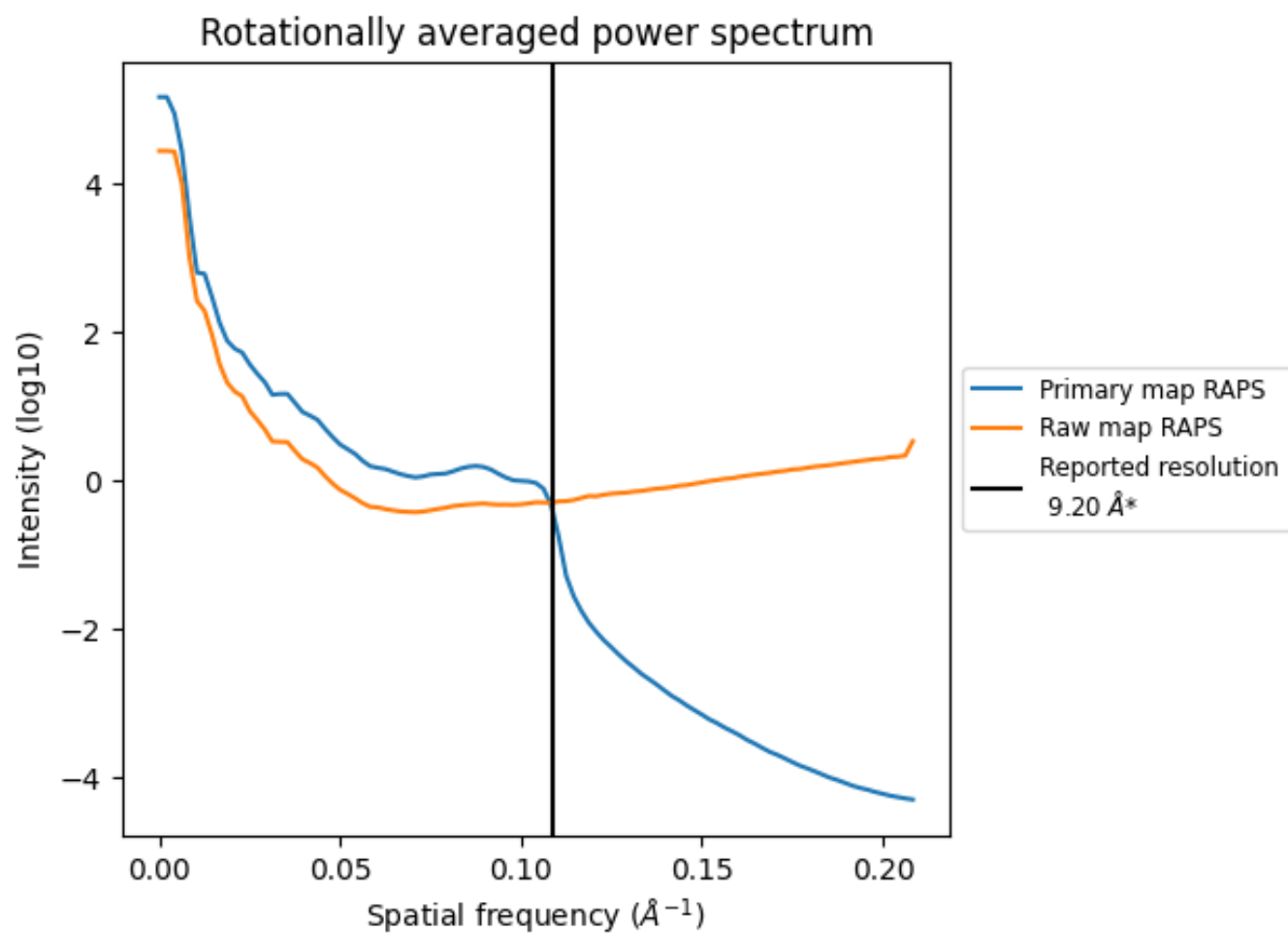
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1985 nm^3 ; this corresponds to an approximate mass of 1793 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 ⓘ

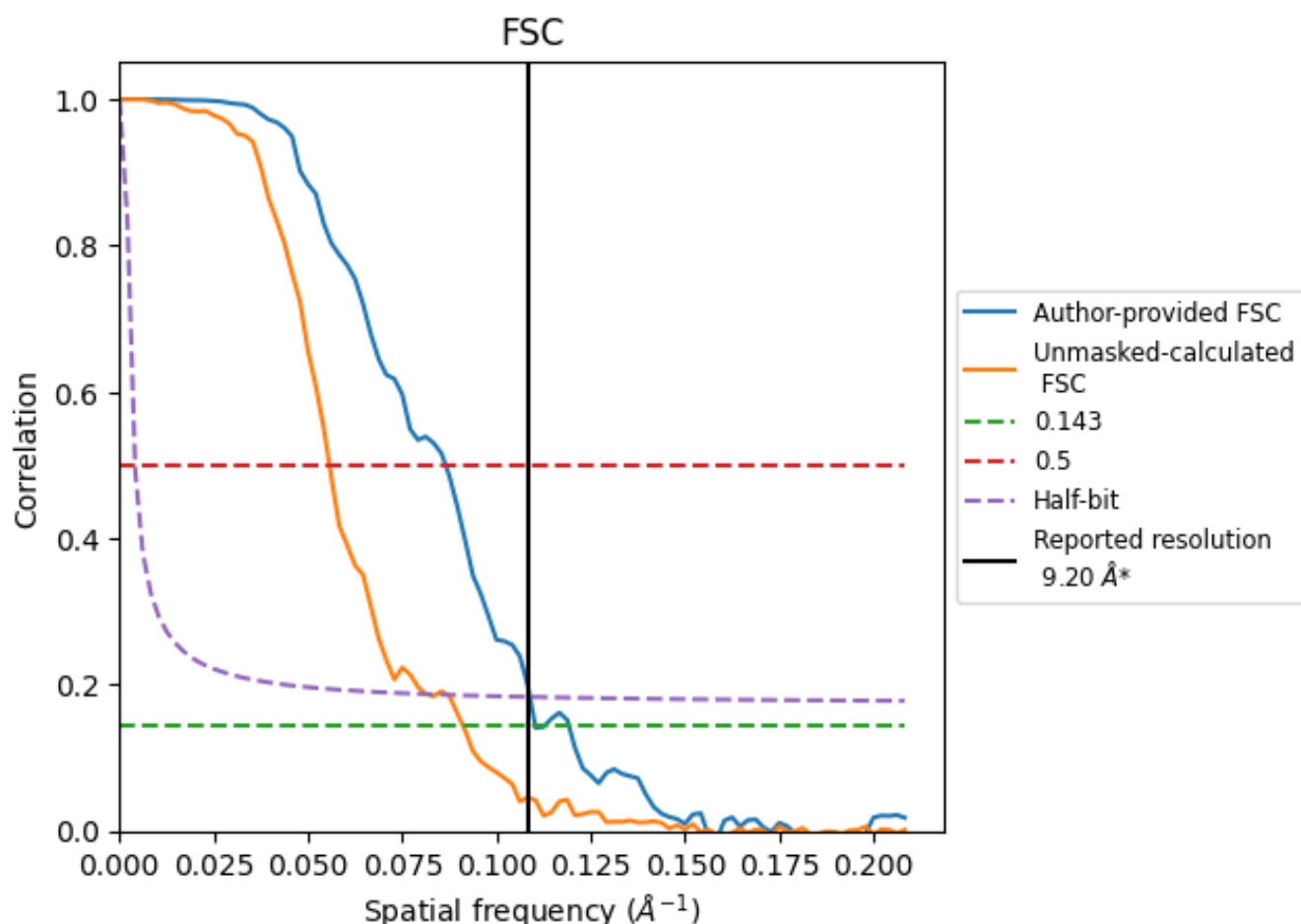


*Reported resolution corresponds to spatial frequency of 0.109 \AA^{-1}

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 0.109 Å⁻¹

8.2 Resolution estimates [i](#)

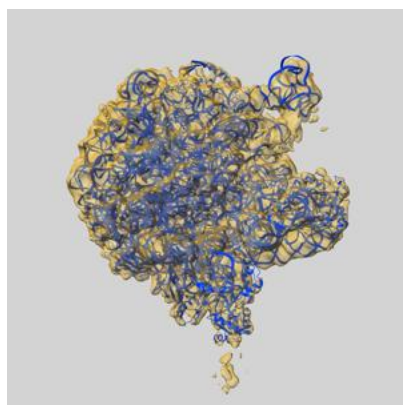
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	9.20	-	-
Author-provided FSC curve	9.07	11.56	9.18
Unmasked-calculated*	10.98	17.95	12.29

*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 10.98 differs from the reported value 9.2 by more than 10 %

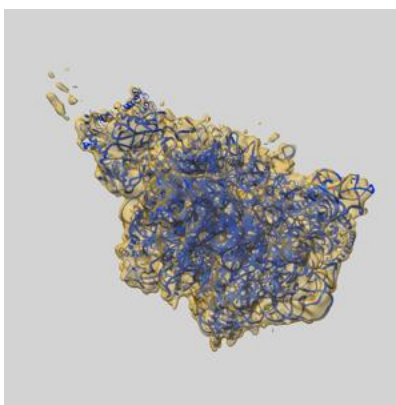
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-13285 and PDB model 7PAT. Per-residue inclusion information can be found in section [3](#) on page [9](#).

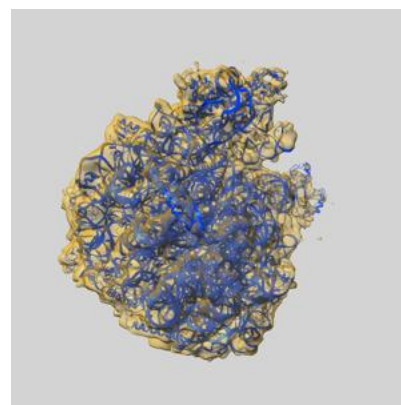
9.1 Map-model overlay [i](#)



X



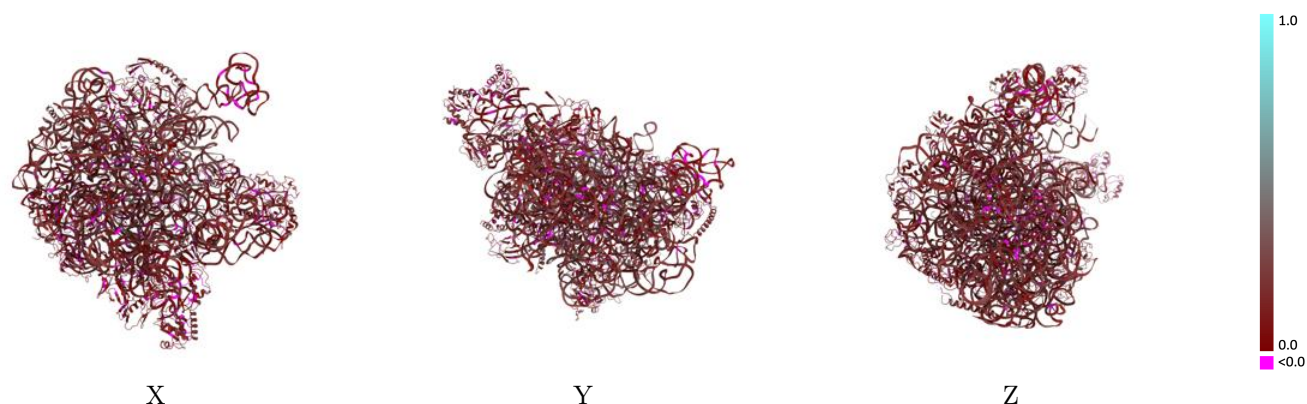
Y



Z

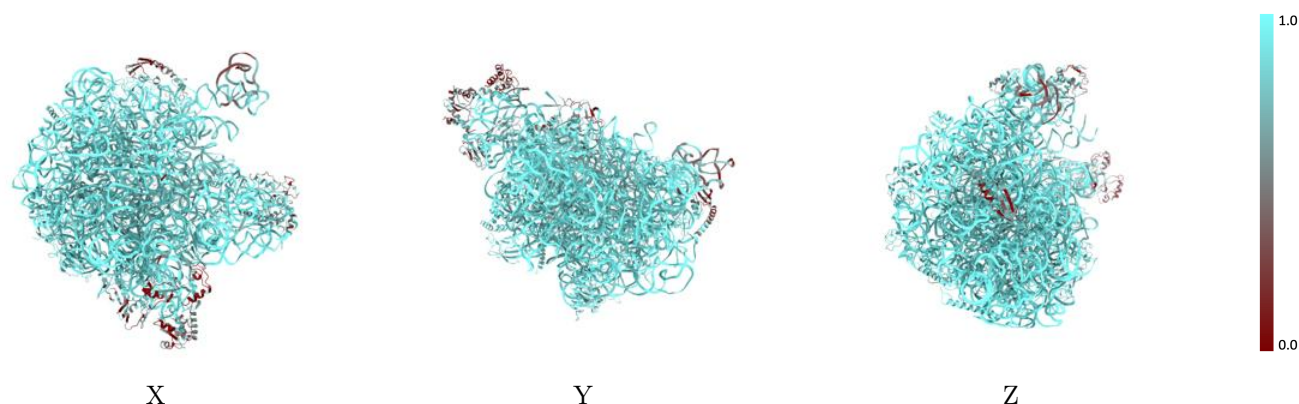
The images above show the 3D surface view of the map at the recommended contour level 0.41 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



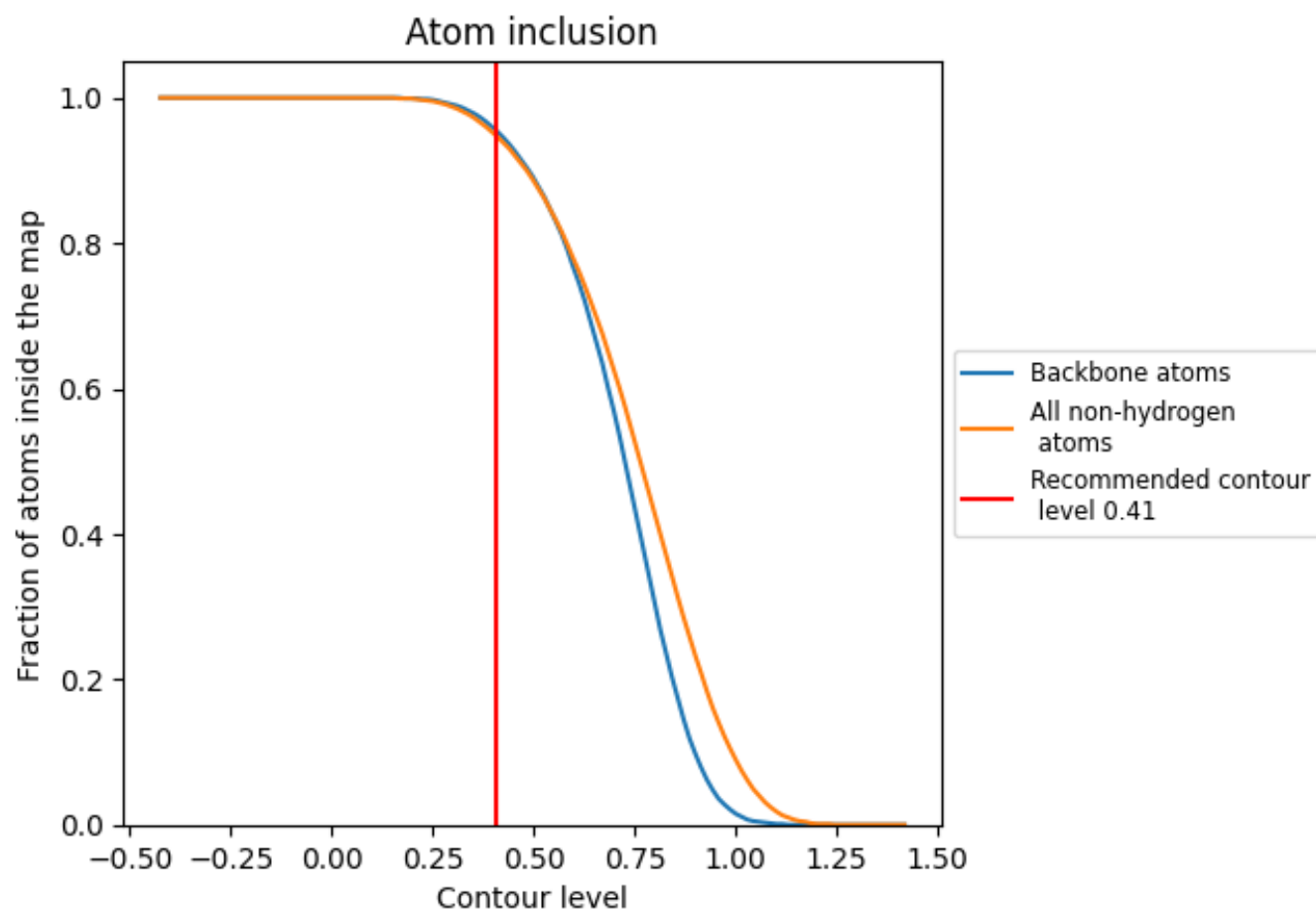
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.41).

































































9.4 Atom inclusion [i](#)



At the recommended contour level, 95% of all backbone atoms, 95% 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 (0.41) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9470	 0.1570
0	 0.9950	 0.1330
1	 0.9850	 0.1160
2	 0.9560	 0.0860
3	 0.9830	 0.1680
4	 0.9640	 0.1800
a	 0.9840	 0.1170
b	 0.9490	 0.1070
c	 0.9320	 0.1350
d	 0.7000	 0.1380
e	 0.6600	 0.1340
f	 0.5750	 0.1350
g	 0.4890	 0.1510
h	 0.3630	 0.1220
i	 0.9740	 0.1400
j	 0.9460	 0.1300
k	 0.9580	 0.1280
l	 0.9370	 0.1280
m	 0.9750	 0.1290
n	 0.8130	 0.1410
o	 0.9000	 0.1440
p	 0.9650	 0.1200
q	 0.9260	 0.1390
r	 0.9890	 0.1490
s	 0.9790	 0.1430
t	 0.8750	 0.1210
u	 0.9560	 0.1070
v	 0.9980	 0.1150
w	 0.9300	 0.1780
x	 0.4900	 0.1520
y	 0.9860	 0.1100
z	 0.9850	 0.1180

