



Full wwPDB EM Validation Report ⓘ

Mar 20, 2026 – 04:56 PM UTC

PDB ID : 7PAT / pdb_00007pat
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.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

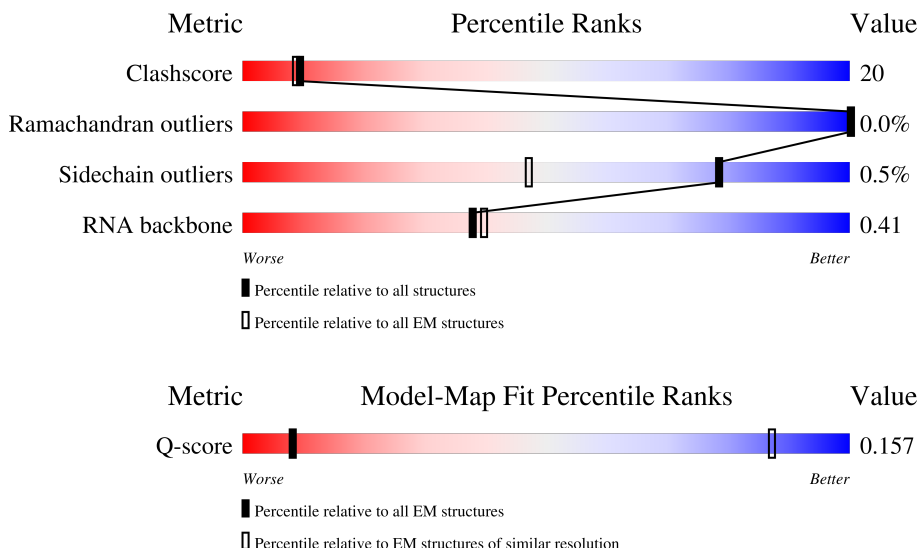
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

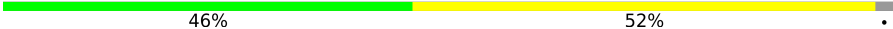
The reported resolution of this entry is 9.20 Å.

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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	239 (8.70 - 9.70)

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

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

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Mol	Chain	Length	Quality of chain
4	a	287	
5	b	287	
6	c	212	
7	d	180	
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	

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Mol	Chain	Length	Quality of chain
29	z	53	68%26%6%
30	3	2907	21%58%19%
31	4	108	27%47%23%

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		
			1153	731	226	196	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
15	l	136	Total	C	N	O	S		
			1079	694	196	182	7	0	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		
			958	609	175	171	3	0	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		
			889	557	175	155	2	0	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		
			938	592	180	165	1	0	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		
			947	603	188	154	2	0	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		
			811	525	148	134	4	0	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		

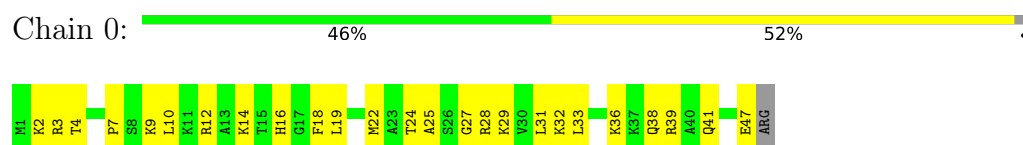
- Molecule 31 is a RNA chain called 5S ribosomal RNA.

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

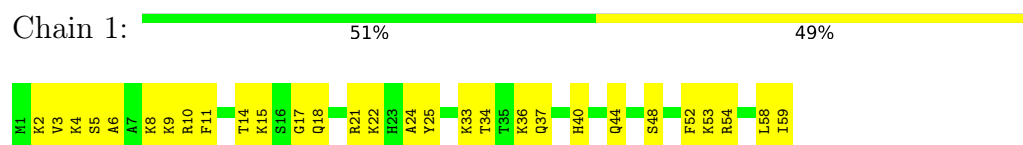
3 Residue-property plots [i](#)

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.

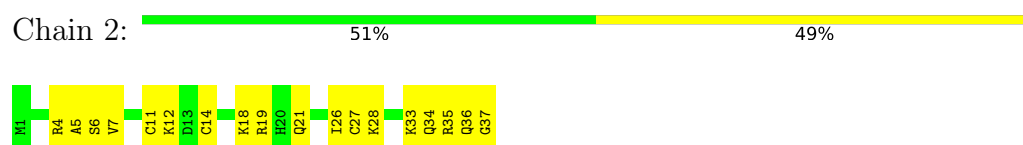
- Molecule 1: 50S ribosomal protein L34



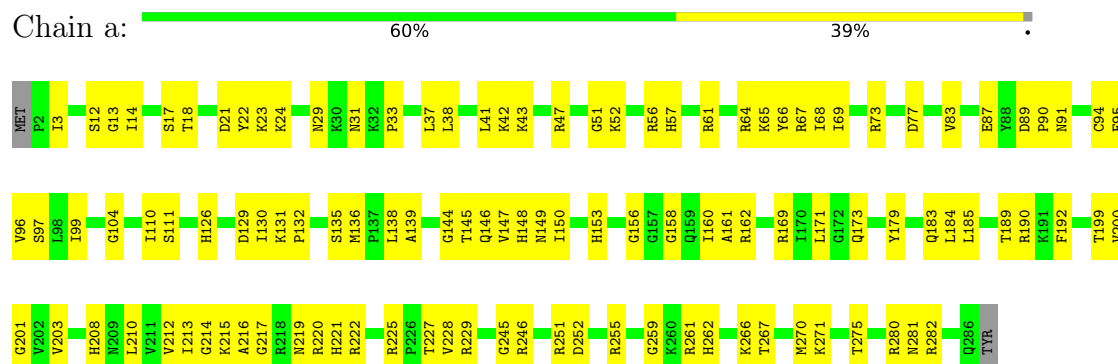
- Molecule 2: 50S ribosomal protein L35



- Molecule 3: 50S ribosomal protein L36

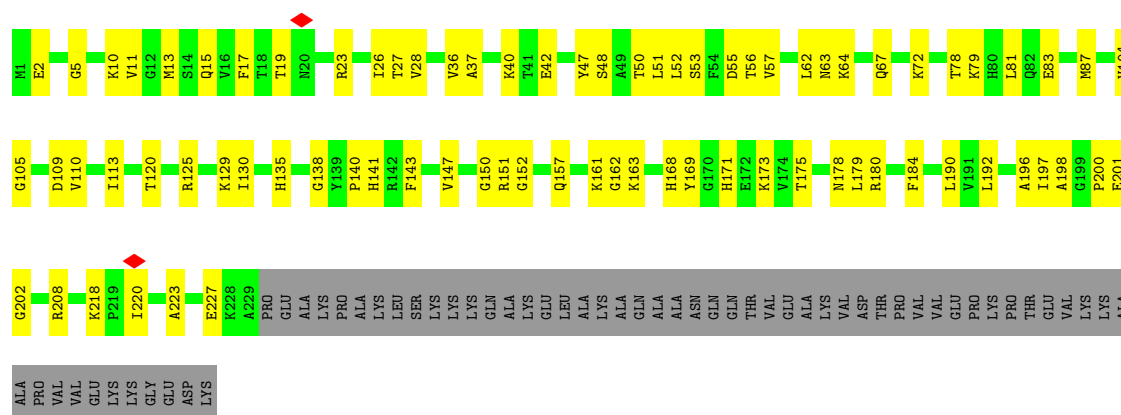


- Molecule 4: 50S ribosomal protein L2

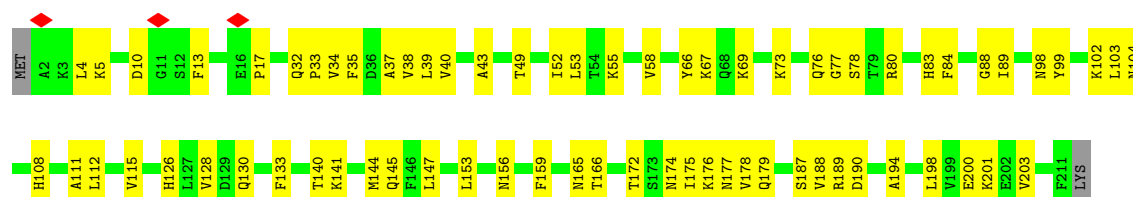


- Molecule 5: 50S ribosomal protein L3

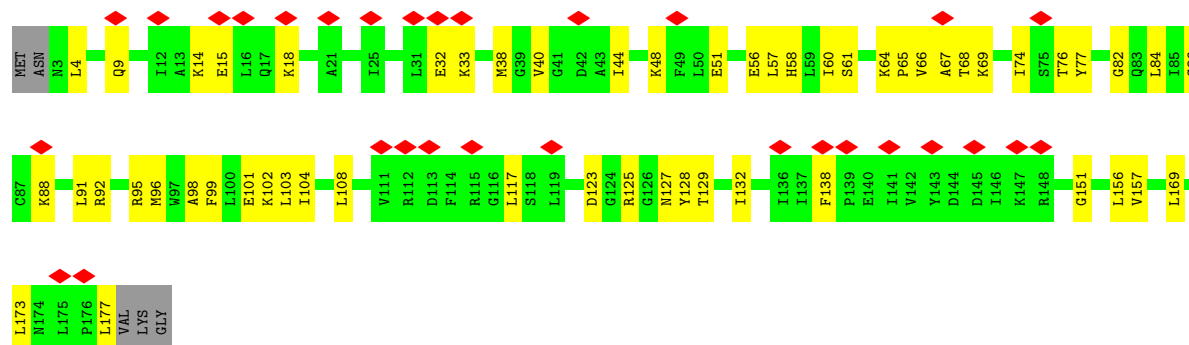




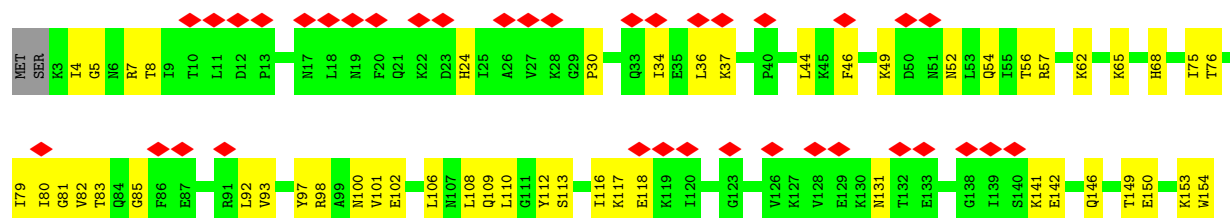
• Molecule 6: 50S ribosomal protein L4



• Molecule 7: 50S ribosomal protein L5

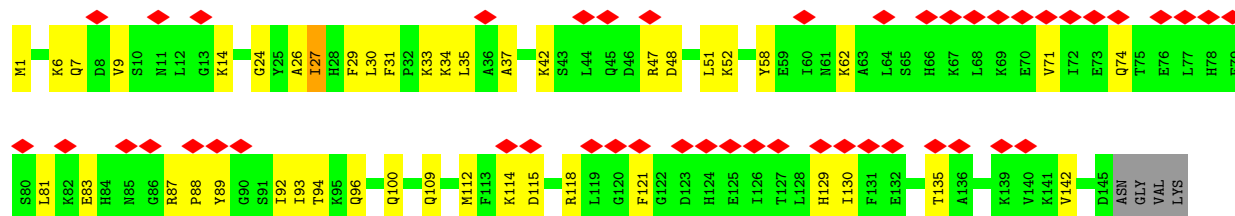


• Molecule 8: 50S ribosomal protein L6

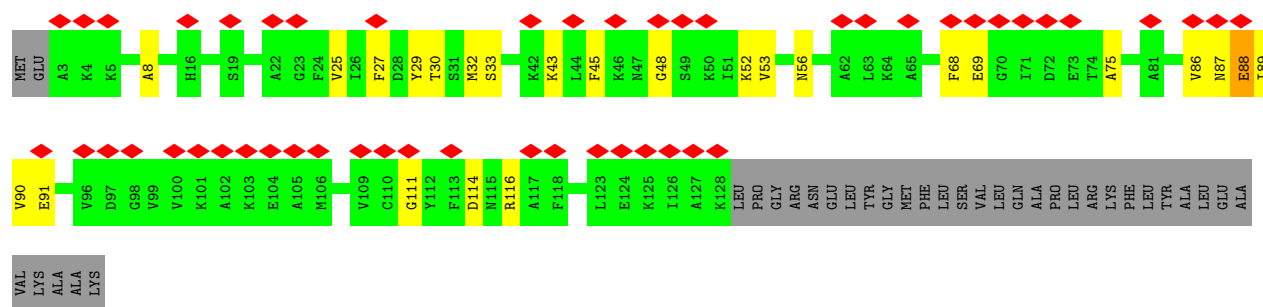




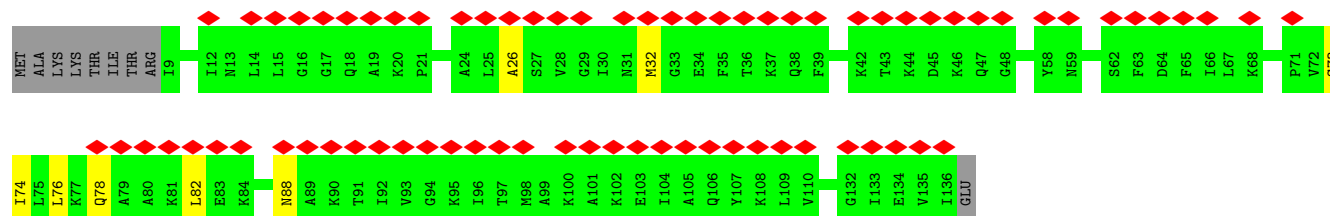
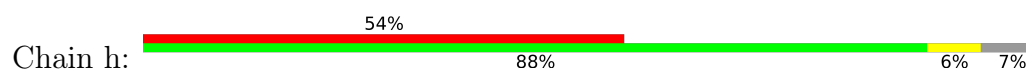
• Molecule 9: 50S ribosomal protein L9



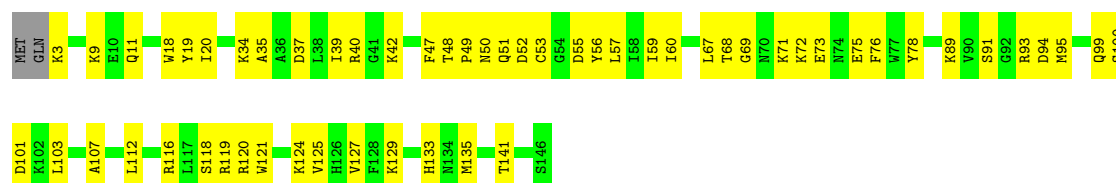
• Molecule 10: 50S ribosomal protein L10



• Molecule 11: 50S ribosomal protein L11

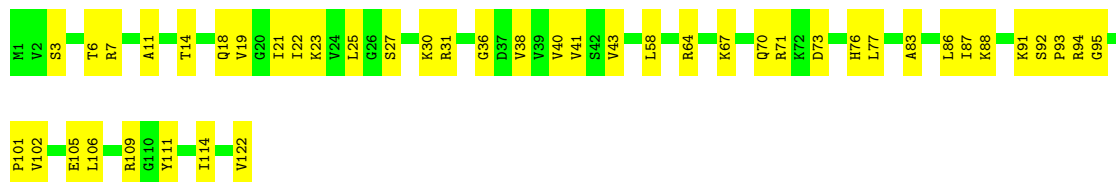


• Molecule 12: 50S ribosomal protein L13



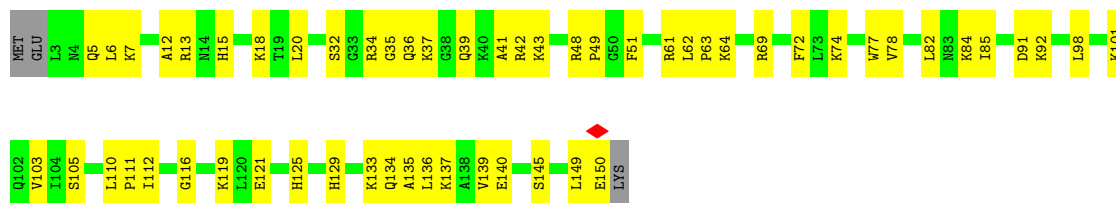
• Molecule 13: 50S ribosomal protein L14

Chain j:  64% 36%



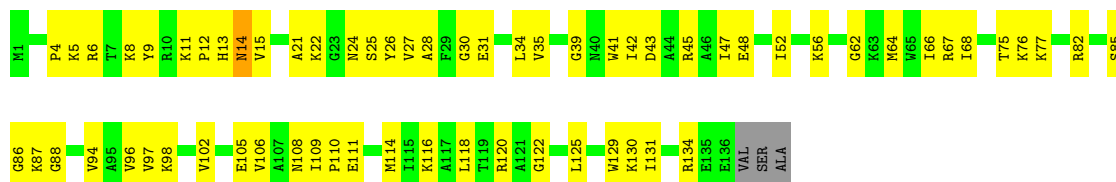
- Molecule 14: 50S ribosomal protein L15

Chain k:  61% 37%



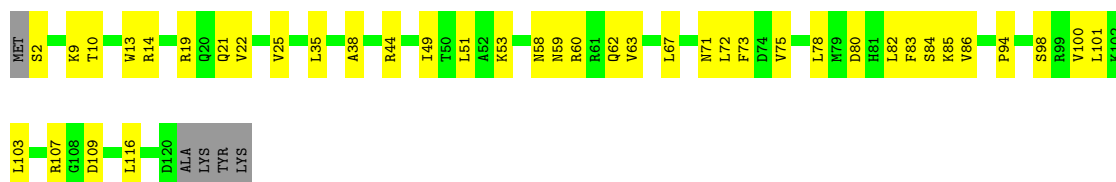
- Molecule 15: 50S ribosomal protein L16

Chain l:  52% 45%



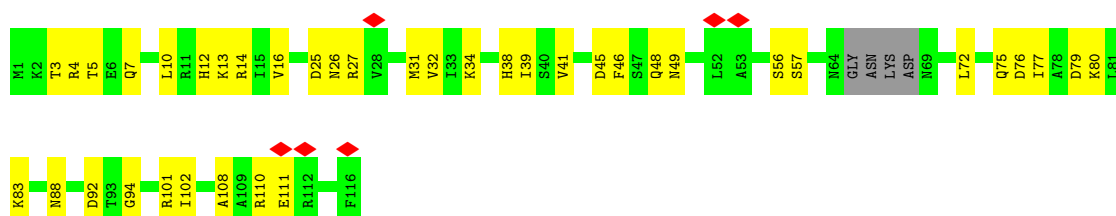
- Molecule 16: 50S ribosomal protein L17

Chain m:  64% 32%

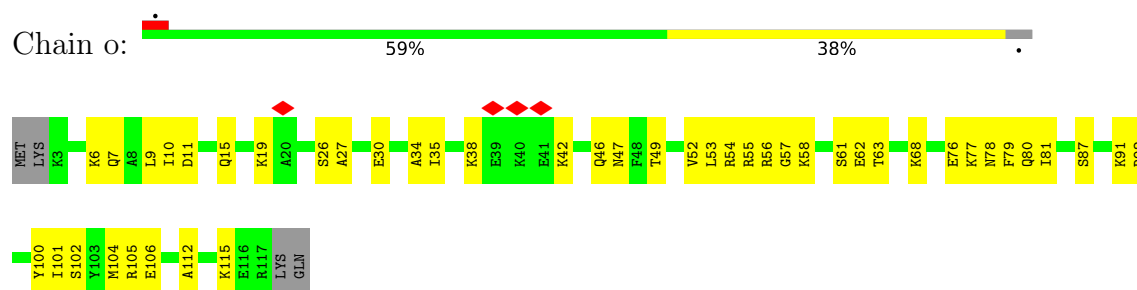


- Molecule 17: 50S ribosomal protein L18

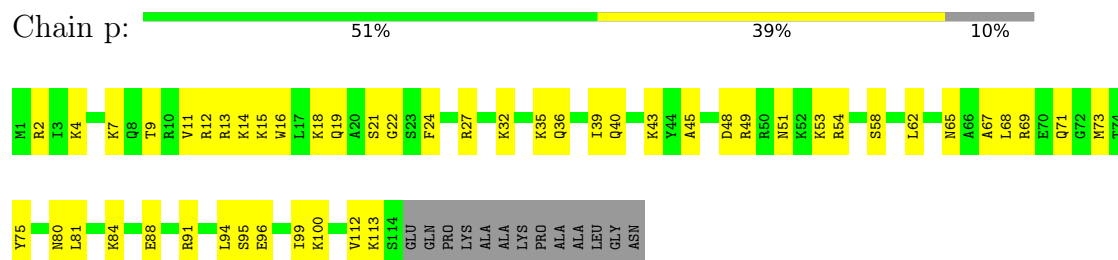
Chain n:  5% 62% 34%



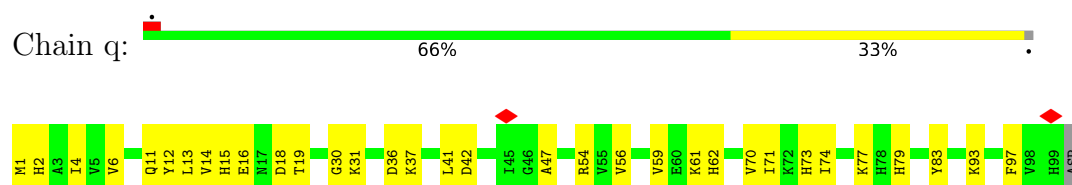
- Molecule 18: 50S ribosomal protein L19



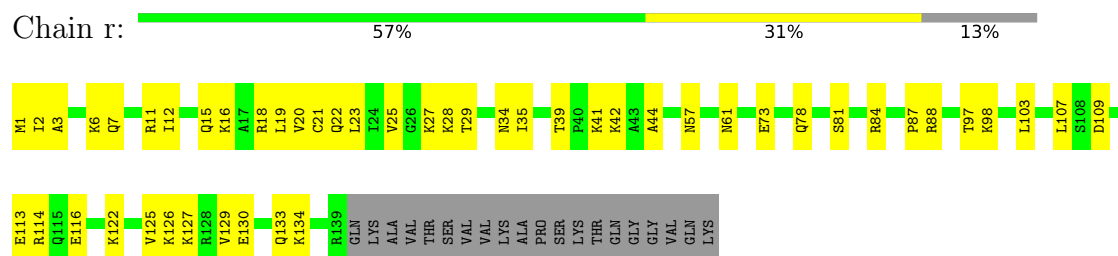
- Molecule 19: 50S ribosomal protein L20



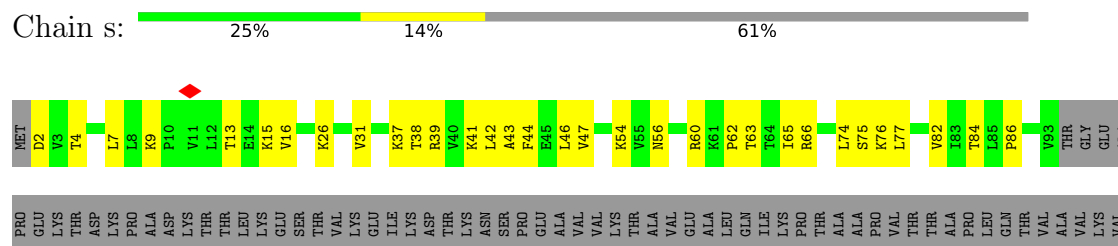
- Molecule 20: 50S ribosomal protein L21

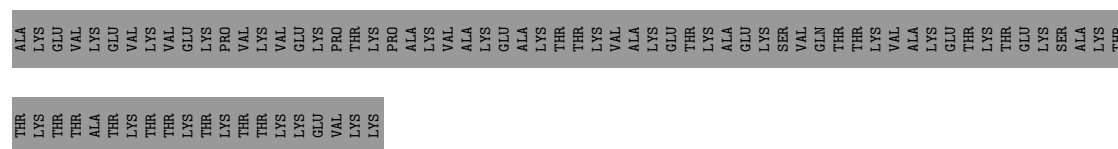


- Molecule 21: 50S ribosomal protein L22

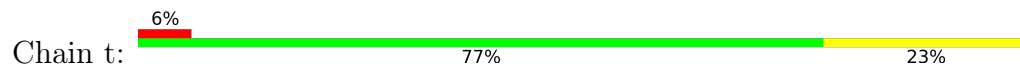


- Molecule 22: 50S ribosomal protein L23

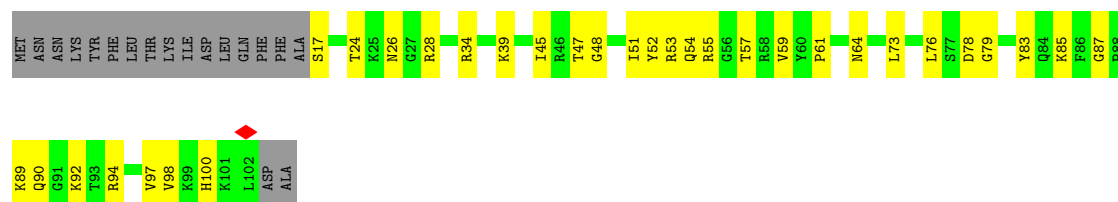




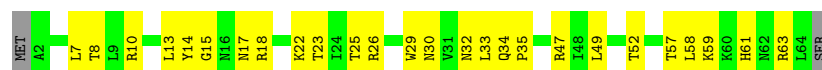
• Molecule 23: 50S ribosomal protein L24



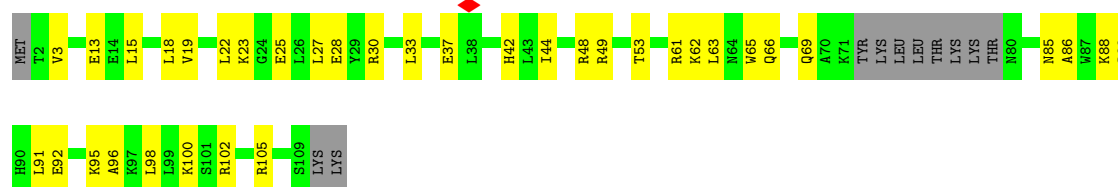
• Molecule 24: 50S ribosomal protein L27



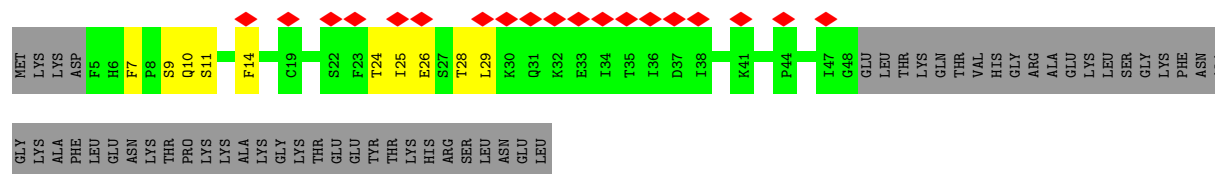
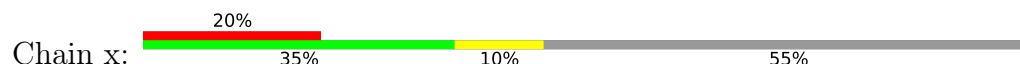
• Molecule 25: 50S ribosomal protein L28



• Molecule 26: 50S ribosomal protein L29

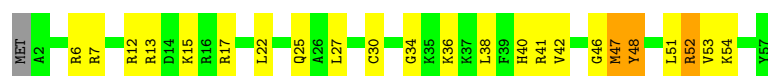


• Molecule 27: 50S ribosomal protein L31



- Molecule 28: 50S ribosomal protein L32

Chain y: 

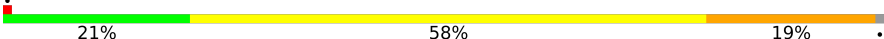


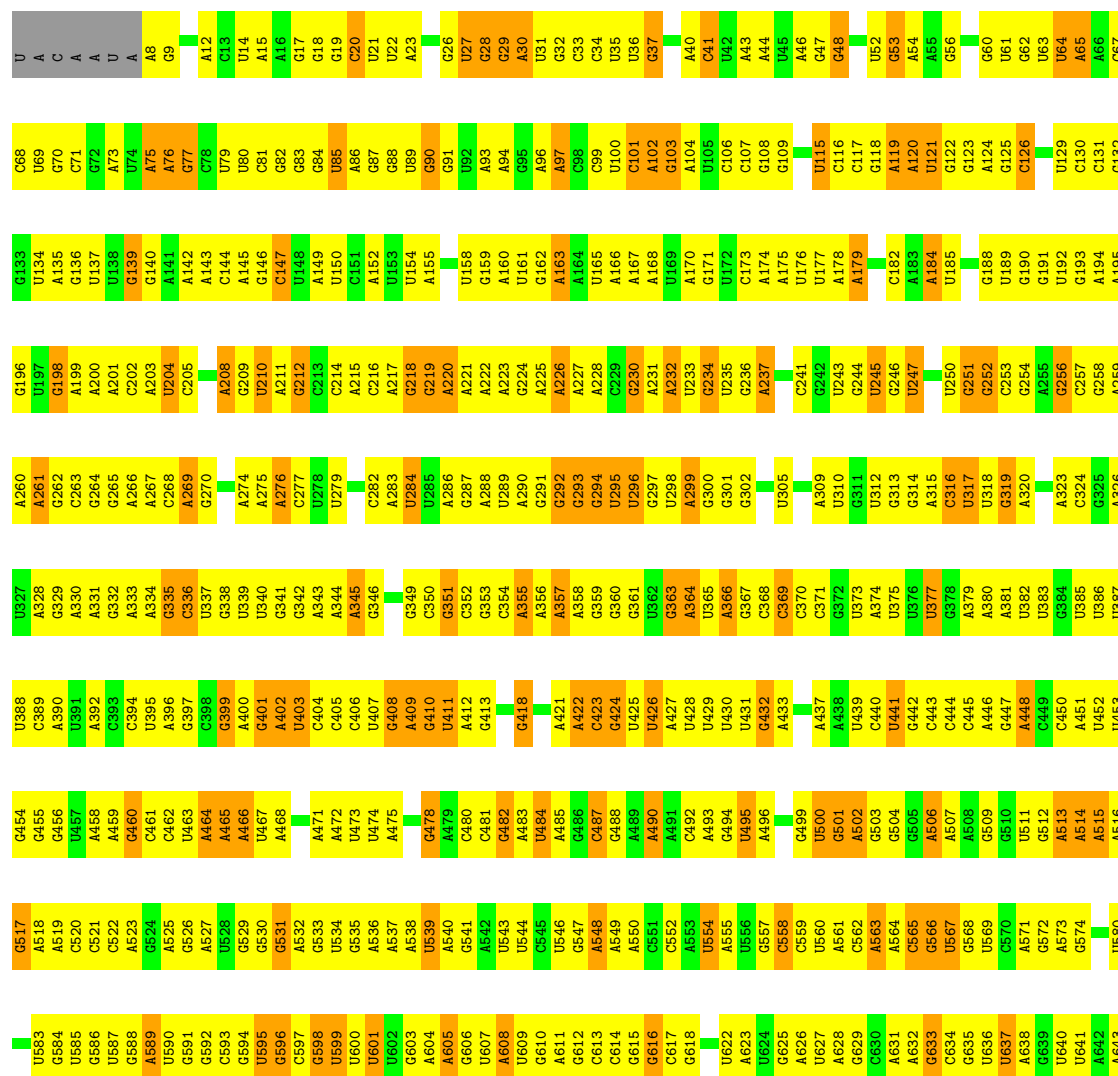
- Molecule 29: 50S ribosomal protein L33 1

Chain z: 



- Molecule 30: 23S ribosomal RNA

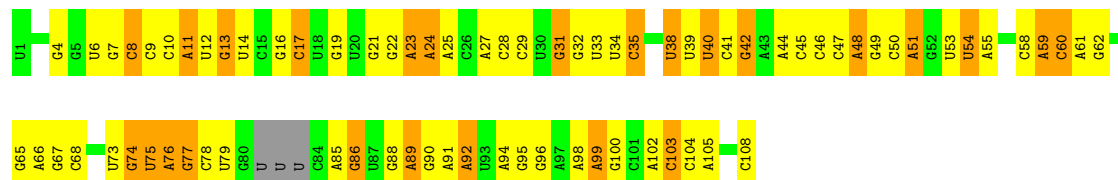
Chain 3: 



A1537	C1475	A1413	A1350	C1288	G1228	A1162	U1095	A1029	U965	U902	G836	A774	A705	C644
U1538	C1476	C1414	G1351	G1289	U1229	G1163	U1096	U1030	U966	A903	A837	C775	C706	C645
U1539	A1477	A1415	G1352	G1290	U1230	A1164	U1097	U1031	U967	C904	U838	U776	C707	G648
G1540	U1478	G1416	G1353	C1291	U1231	U1165	G1098	A1032	U968	U905	A839	C777	G708	G649
A1541	A1479	G1417	U1354	U1292	U1232	U1166	C1099	A1033	G840	G906	G840	U778	G709	G650
G1542	A1480	U1418	C1355	U1293	U1233	U1167	U1100	A1034	U971	A907	G841	U779	A710	A651
U1543	U1481	U1419	G1356	G1294	U1234	A1168	U1101	U1035	U842	A908	U842	G780	A711	A652
G1544	U1482	A1420	U1357	U1295	U1235	A1169	U1102	A1036	C974	U911	U846	U781	A712	U652
U1545	G1483	A1421	C1358	G1296	U1236	C1170	G1103	A1037	G975	U912	U847	U782	G713	G653
U1546	G1484	U1422	G1359	U1297	G1237	G1171	A1104	G1038	G976	U913	U848	U783	G714	G654
G1547	A1485	A1423	U1360	A1298	U1238	G1172	U1105	G914	A977	U914	G849	U784	G715	G655
U1548	U1486	U1424	U1361	A1299	G1239	G1173	G1106	A1046	G978	G915	G850	A785	G716	G656
A1549	U1487	G1425	C1362	C1300	U1240	G1174	G1107	C1041	U843	G920	G851	A786	A724	A657
G1550	U1488	C1426	C1363	G1301	U1241	C1175	A1108	C1042	A881	G921	U851	A787	G725	G658
U1551	U1489	A1427	G1364	C1302	G1242	U1176	C1109	C1043	G982	G922	U852	C787	G719	G659
C1552	G1490	U1428	A1365	U1303	A1243	A1177	G1110	C1044	G983	A	C852	G788	A720	U660
U1553	G1491	G1429	G1366	U1304	U1244	A1178	C1111	A1045	U984	C	U861	A789	G721	U661
A1554	U1430	G1367	G1305	G1305	G1245	G1179	U1112	U1046	C984	U	U862	U790	C722	G661
G1555	A1431	U1368	G1306	U1306	U1246	U1180	U1113	A1047	A985	G923	A858	G791	C723	U662
U1556	U1432	U1369	G1307	G1311	C1247	U1181	U1114	U1048	U987	G924	C860	G792	A724	A663
G1557	U1433	A1370	A1308	U1115	C1248	U1182	C1114	U1049	G988	A	C859	G793	G725	G664
A1558	U1434	G1371	G1309	U1116	A1249	U1183	G1115	C1053	G989	C	C860	U794	A734	C665
U1559	A1435	U1372	U1310	U1117	U1250	U1184	U1116	U1054	G990	C	U861	U797	G730	G666
C	C1436	C1373	G1311	U1118	G1251	U1185	U1117	A1055	U991	U	U863	U798	A731	A668
G	A1437	U1374	U1312	C1252	C1252	C1187	U1118	A1056	G992	A	U864	A799	G732	A669
A	U1500	G1375	G1313	G1283	G1283	C1188	A1120	G1057	A993	G925	A865	U802	C733	G670
G	U1501	C1378	A1314	U1254	U1254	G1189	U1121	U1058	U994	C926	C866	U803	A734	C671
U	A1502	A1441	A1315	G1285	G1285	A1190	G1122	G1059	A995	C927	G867	U804	G738	G672
A	G1504	G1442	U1316	A1256	A1256	U1191	U1123	G1060	A996	U932	C868	U805	G739	A673
G	U1505	A1443	C1317	G1257	G1257	U1192	U1124	A1061	G997	A933	U869	G806	G740	G674
U	U1506	U1444	U1318	C1258	C1258	U1193	U1125	A1062	C998	C934	A870	A806	A740	U675
C	G1507	U1445	G1319	A1259	A1259	U1194	U1126	A1063	U999	U935	C871	U807	A741	U676
A	G1508	G1446	C1320	U1260	U1260	U1195	G1126	A1064	U1000	G936	C872	U808	G742	U677
U1509	U1509	A1447	A1321	U1261	U1261	U1196	A1130	G1065	C1001	A937	U873	A809	U678	U678
C1511	A1510	U1448	C1322	G1262	G1262	G1197	U1131	A1066	A1002	A938	U874	G810	G746	A679
A1512	U1512	G1449	A1323	G1263	G1263	G1198	U1132	A1067	U1003	U939	C875	G811	A747	A680
G1513	A1513	U1450	A1324	U1264	U1264	U1199	U1133	U1068	U1004	A940	A876	G812	G748	A681
U1514	U1514	A1451	C1325	G1265	G1265	U1200	U1136	G1069	G1005	C941	G877	G813	U749	A682
G1575	G1576	G1452	G1326	G1266	G1266	A1201	C1137	U1070	U1006	A942	A881	U814	C752	G683
A1577	A1577	C1455	G1327	A1267	A1267	U1206	U1138	G1075	C1007	A943	C882	G815	C752	A684
G1579	C1579	A1456	A1328	U1268	U1268	U1207	U1139	U1076	A1008	U944	A883	A816	A753	G685
G1580	U1580	A1457	C1329	C1269	C1269	U1208	A1140	U1077	A1009	U945	A884	A817	U754	C686
U1581	A1521	A1458	U1330	A1270	A1270	U1209	G1142	G1078	G1010	A946	A885	U818	C755	G687
C1522	U1522	A1459	U1334	A1272	A1272	A1210	U1143	U1079	G1011	A947	U886	U819	A756	U688
G1583	C1523	G1460	A1335	A1273	A1273	U1211	G1144	U1080	G1012	A948	U887	U820	C756	U689
U1584	C1524	A1461	A1336	A1274	A1274	C1212	U1145	A1081	U950	C949	A888	C821	U759	U690
A1585	G1525	G1337	G1337	C1275	C1275	U1213	A1146	A1082	A889	U951	U889	C822	G760	G691
U1586	U1526	U1339	U1339	A1276	A1276	U1214	G1147	A1083	G952	U952	U890	A823	G761	U692
U1587	U1527	A1401	U1340	A1277	A1277	G1215	U1151	C1084	G953	U953	G891	U825	A762	U693
A1588	G1528	G1402	U1341	G1278	G1278	U1216	U1152	A1085	A954	A954	C892	C826	G763	U694
U1589	U1529	C1403	U1342	U1279	U1279	G1217	U1153	G1086	A955	A955	C893	C827	G764	G695
U1590	G1530	G1404	C1343	A1280	A1280	U1218	U1154	C1087	A894	U956	U893	C828	G765	U696
C1591	C1591	U1468	G1344	A1281	A1281	U1219	U1155	A1088	G895	G957	U894	A829	C766	U697
A1592	U1592	A1406	U1345	G1282	G1282	U1220	C1156	A1089	U896	C958	U896	A830	C767	A698
U1593	A1532	U1407	G1346	A1283	A1283	G1221	G1157	G1090	A1024	C959	A897	U831	G768	U699
G1594	U1594	G1408	A1347	A1284	A1284	A1222	U1158	G1091	A1025	A960	A898	U832	A769	U700
U1597	C1536	A1410	A1348	U1285	U1285	G1226	A1092	U1092	A1026	U962	A899	C833	A770	A701
			C1349	G1286	G1286	U1227	G1159	U1093	U1027	U962	G900	U834	C771	U702
				C1287	C1287		A1161	G1094	C1028		C901	U835	G773	G704

A2438 U2439	A2442	A2446 A2447 A2448 A2449	A2450 A2451 A2452 A2453 A2454 A2455	A2377 G2378 G2379 U2380 U2381 A2382 G2383 A2384 A2385 A2386 G2387 G2388 G2389 G2390 G2391 G2392 G2393 G2394 G2395 A2396 A2400 A2401 G2402 G2403 G2404 G2405 G2406 G2407 G2408 G2409 G2410 G2411 G2412 G2413 G2414 G2415 G2416 G2417 G2418 G2419 G2420 G2421 G2422 G2423 G2424 G2425 G2426 G2427 G2428 G2429 G2430 G2431 G2432 G2433 G2434 G2435 G2436 G2437 G2438 G2439 G2440 G2441 G2442 G2443 G2444 G2445 G2446 G2447 G2448 G2449 G2450 G2451 G2452 G2453 G2454 G2455 G2456 G2457 G2458 G2459 G2460 G2461 G2462 G2463 G2464 G2465 G2466 G2467 G2468 G2469 G2470 G2471 G2472 G2473 G2474 G2475 G2476 G2477	A2311 G2312 G2313 G2314 G2315 G2316 G2317 G2318 G2319 G2320 G2321 G2322 G2323 G2324 G2325 G2326 G2327 G2328 G2329 G2330 G2331 G2332 G2333 G2334 G2335 G2336 G2337 G2338 G2339 G2340 G2341 G2342 G2343 G2344 G2345 G2346 G2347 G2348 G2349 G2350 G2351 G2352 G2353 G2354 G2355 G2356 G2357 G2358 G2359 G2360 G2361 G2362 G2363 G2364 G2365 G2366 G2367 G2368 G2369 G2370 G2371 G2372 G2373 G2374 G2375 G2376 G2377 G2378 G2379 G2380 G2381 G2382 G2383 G2384 G2385 G2386 G2387 G2388 G2389 G2390 G2391 G2392 G2393 G2394 G2395 G2396 G2397 G2398 G2399 G2400 G2401 G2402 G2403 G2404 G2405 G2406 G2407 G2408 G2409 G2410 G2411 G2412 G2413 G2414 G2415 G2416 G2417 G2418 G2419 G2420 G2421 G2422 G2423 G2424 G2425 G2426 G2427 G2428 G2429 G2430 G2431 G2432 G2433 G2434 G2435 G2436 G2437 G2438 G2439 G2440 G2441 G2442 G2443 G2444 G2445 G2446 G2447 G2448 G2449 G2450 G2451 G2452 G2453 G2454 G2455 G2456 G2457 G2458 G2459 G2460 G2461 G2462 G2463 G2464 G2465 G2466 G2467 G2468 G2469 G2470 G2471 G2472 G2473 G2474 G2475 G2476 G2477	A2249 G2250 U2251 U2252 U2253 U2254 A2255 G2256 G2257 G2258 G2259 G2260 G2261 G2262 G2263 G2264 G2265 G2266 G2267 G2268 G2269 G2270 G2271 G2272 G2273 G2274 G2275 G2276 G2277 G2278 G2279 G2280 G2281 G2282 G2283 G2284 G2285 G2286 G2287 G2288 G2289 G2290 G2291 G2292 G2293 G2294 G2295 G2296 G2297 G2298 G2299 G2300 G2301 G2302 G2303 G2304 G2305 G2306 G2307 G2308 G2309 G2310 G2311 G2312 G2313 G2314 G2315 G2316 G2317 G2318 G2319 G2320 G2321 G2322 G2323 G2324 G2325 G2326 G2327 G2328 G2329 G2330 G2331 G2332 G2333 G2334 G2335 G2336 G2337 G2338 G2339 G2340 G2341 G2342 G2343 G2344 G2345 G2346 G2347 G2348 G2349 G2350 G2351 G2352 G2353 G2354 G2355 G2356 G2357 G2358 G2359 G2360 G2361 G2362 G2363 G2364 G2365 G2366 G2367 G2368 G2369 G2370 G2371 G2372 G2373 G2374 G2375 G2376 G2377 G2378 G2379 G2380 G2381 G2382 G2383 G2384 G2385 G2386 G2387 G2388 G2389 G2390 G2391 G2392 G2393 G2394 G2395 G2396 G2397 G2398 G2399 G2400 G2401 G2402 G2403 G2404 G2405 G2406 G2407 G2408 G2409 G2410 G2411 G2412 G2413 G2414 G2415 G2416 G2417 G2418 G2419 G2420 G2421 G2422 G2423 G2424 G2425 G2426 G2427 G2428 G2429 G2430 G2431 G2432 G2433 G2434 G2435 G2436 G2437 G2438 G2439 G2440 G2441 G2442 G2443 G2444 G2445 G2446 G2447 G2448 G2449 G2450 G2451 G2452 G2453 G2454 G2455 G2456 G2457 G2458 G2459 G2460 G2461 G2462 G2463 G2464 G2465 G2466 G2467 G2468 G2469 G2470 G2471 G2472 G2473 G2474 G2475 G2476 G2477	A2183 A2184 G2185 G2186 G2187 G2188 G2189 G2190 G2191 G2192 G2193 G2194 G2195 G2196 G2197 G2198 G2199 G2200 G2201 G2202 G2203 G2204 G2205 G2206 G2207 G2208 G2209 G2210 G2211 G2212 G2213 G2214 G2215 G2216 G2217 G2218 G2219 G2220 G2221 G2222 G2223 G2224 G2225 G2226 G2227 G2228 G2229 G2230 G2231 G2232 G2233 G2234 G2235 G2236 G2237 G2238 G2239 G2240 G2241 G2242 G2243 G2244 G2245 G2246 G2247 G2248 G2249 G2250 G2251 G2252 G2253 G2254 G2255 G2256 G2257 G2258 G2259 G2260 G2261 G2262 G2263 G2264 G2265 G2266 G2267 G2268 G2269 G2270 G2271 G2272 G2273 G2274 G2275 G2276 G2277 G2278 G2279 G2280 G2281 G2282 G2283 G2284 G2285 G2286 G2287 G2288 G2289 G2290 G2291 G2292 G2293 G2294 G2295 G2296 G2297 G2298 G2299 G2300 G2301 G2302 G2303 G2304 G2305 G2306 G2307 G2308 G2309 G2310 G2311 G2312 G2313 G2314 G2315 G2316 G2317 G2318 G2319 G2320 G2321 G2322 G2323 G2324 G2325 G2326 G2327 G2328 G2329 G2330 G2331 G2332 G2333 G2334 G2335 G2336 G2337 G2338 G2339 G2340 G2341 G2342 G2343 G2344 G2345 G2346 G2347 G2348 G2349 G2350 G2351 G2352 G2353 G2354 G2355 G2356 G2357 G2358 G2359 G2360 G2361 G2362 G2363 G2364 G2365 G2366 G2367 G2368 G2369 G2370 G2371 G2372 G2373 G2374 G2375 G2376 G2377 G2378 G2379 G2380 G2381 G2382 G2383 G2384 G2385 G2386 G2387 G2388 G2389 G2390 G2391 G2392 G2393 G2394 G2395 G2396 G2397 G2398 G2399 G2400 G2401 G2402 G2403 G2404 G2405 G2406 G2407 G2408 G2409 G2410 G2411 G2412 G2413 G2414 G2415 G2416 G2417 G2418 G2419 G2420 G2421 G2422 G2423 G2424 G2425 G2426 G2427 G2428 G2429 G2430 G2431 G2432 G2433 G2434 G2435 G2436 G2437 G2438 G2439 G2440 G2441 G2442 G2443 G2444 G2445 G2446 G2447 G2448 G2449 G2450 G2451 G2452 G2453 G2454 G2455 G2456 G2457 G2458 G2459 G2460 G2461 G2462 G2463 G2464 G2465 G2466 G2467 G2468 G2469 G2470 G2471 G2472 G2473 G2474 G2475 G2476 G2477	G2120 A2121 G2122 A2123 A2124 U2125 A2126 G2127 G2128 U2129 A2130 G2131 G2132 A2133 A2134 G2135 A2136 A2137 U2138 G2139 G2140 A2141 U2142 G2143 G2144 A2145 A2146 G2147 G2148 U2149 G2150 G2151 G2152 A2153 A2154 G2155 G2156 A2157 U2160 G2161 U2162 G2163 G2164 A2165 G2166 G2167 G2168 G2169 A2170 G2171 U2175 G2176 G2177 A2178 G2179 A2180 A2181 G2182	G2068 G2069 G2070 G2071 G2072 G2073 G2074 G2075 G2076 G2077 G2078 G2079 G2080 G2081 G2082 G2083 G2084 G2085 G2086 G2087 G2088 G2089 G2090 G2091 G2092 G2093 G2094 G2095 G2096 G2097 G2098 G2099 G2100 A2101 A2102 A2103 A2104 G2105 G2106 A2107 G2108 A2109 U2110 A2111 A2112 G2113 G2114 G2115 G2116 G2117 U2118 A2119	C1997 U1998 G1999 U2000 G2001 U2002 G2003 G2004 G2005 G2006 G2007 G2008 G2009 A2010 G2011 A2012 G2013 U2014 G2015 G2016 G2017 G2018 G2019 G2020 A2021 G2022 G2023 G2024 G2025 G2026 G2027 G2028 G2029 G2030 G2031 G2032 G2033 G2034 G2035 G2036 G2037 G2038 G2039 G2040 G2041 G2042 G2043 G2044 G2045 G2046 G2047 G2048 G2049 G2050 G2051 G2052 G2053 G2054 G2055 G2056 G2057	G1928 U1929 G1930 G1931 G1932 G1933 G1934 G1935 G1936 G1937 G1938 G1939 G1940 G1941 G1942 G1943 G1944 G1945 G1946 G1947 G1948 G1949 G1950 G1951 G1952 G1953 G1954 G1955 G1956 G1957 G1958 G1959 G1960 G1961 G1962 G1963 G1964 G1965 G1966 G1967 G1968 G1969 G1970 G1971 G1972 G1973 G1974 G1975 G1976 G1977 G1978 G1979 G1980 G1981 G1982 G1983 G1984 G1985 G1986 G1987 G1988 G1989 G1990 G1991 G1992 G1993 G1994 G1995 G1996	G1852 G1853 A1854 G1855 G1856 G1857 U1858 G1859 G1860 G1861 G1862 G1863 G1864 G1865 G1866 G1867 G1868 G1869 G1870 G1871 G1872 A1873 G1874 G1875 G1876 G1877 G1878 G1879 G1880 G1881 G1882 G1883 G1884 G1885 G1886 G1887 G1888 G1889 G1890 G1891 G1892 G1893 G1894 G1895 G1896 G1897 G1898 G1899 G1900 G1901 G1902 G1903 G1904 G1905 G1906 G1907 G1908 G1909 G1910 G1911 G1912 G1913 G1914 G1915 G1916 G1917 G1918 G1919 G1920 G1921 G1922 G1923 G1924 G1925 G1926 G1927 G1928	U1790 A1791 A1792 G1793 G1794 G1795 G1796 G1797 G1798 G1799 G1800 G1801 G1802 G1803 G1804 G1805 G1806 G1807 G1808 G1809 G1810 G1811 G1812 G1813 G1814 G1815 G1816 G1817 G1818 G1819 G1820 G1821 G1822 G1823 G1824 G1825 G1826 G1827 G1828 G1829 G1830 G1831 G1832 G1833 G1834 G1835 G1836 G1837 G1838 G1839 G1840 G1841 G1842 G1843 G1844 G1845 G1846 G1847 G1848 G1849 G1850 G1851	A1724 G1725 U1726 U1727 A1728 G1729 G1730 G1731 G1732 G1733 G1734 A1735 G1736 G1737 G1738 G1739 G1740 G1741 G1742 G1743 U1744 A1745 G1746 G1747 G1748 G1749 A1750 G1751 G1752 G1753 G1754 G1755 A1756 G1757 G1758 G1759 G1760 G1761 A1762 G1763 G1764 G1765 G1766 A1767 G1768 G1769 A1770 G1771 G1772 G1773 G1774 G1775 G1776 G1777 G1778 G1779 G1780 G1781 G1782 G1783 G1784 G1785 G1786 G1787 G1788 G1789	A1661 G1662 G1663 A1664 G1665 G1666 G1667 G1668 G1669 G1670 G1671 G1672 G1673 G1674 G1675 G1676 G1677 G1678 G1679 G1680 G1681 G1682 G1683 A1684 G1685 G1686 G1687 G1688 G1689 G1690 G1691 G1692 G1693 G1694 G1695 G1696 G1697 G1698 G1699 G1700 G1701 G1702 G1703 G1704 G1705 G1706 G1707 G1708 G1709 G1710 G1711 G1712 G1713 G1714 G1715 G1716 G1717 G1718 G1719 G1720 G1721 G1722 A1723	U1598 C1599 A1600 A1601 G1602 A1603 A1604 A1605 A1606 U1607 U1608 C1609 C1610 C1611 U1612 G1613 G1614 G1615 U1616 U1617 U1618 A1619 A1620 U1621 A1622 U1623 A1624 G1625 G1626 U1627 G1628 U1629 A1630 A1631 C1632 C1633 A1634 G1635 U1636 A1637 G1638 C1639 G1640 A1641 G1642 A1643 A1644 G1645 G1646 A1647 A1648 C1649 A1650 C1651 A1652 C1653 G1654 U1655 A1656 C1657 C1658 C1659 C1660
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- 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	0.12	0/383	0.40	0/504
2	1	0.12	0/484	0.39	0/637
3	2	0.12	0/306	0.42	0/401
4	a	0.15	0/2267	0.41	0/3044
5	b	0.14	0/1795	0.42	0/2412
6	c	0.13	0/1671	0.38	0/2246
7	d	0.15	0/1409	0.43	0/1894
8	e	0.14	0/1420	0.39	0/1912
9	f	0.15	0/1183	0.47	1/1587 (0.1%)
10	g	0.51	0/969	0.78	0/1295
11	h	0.14	0/968	0.43	1/1298 (0.1%)
12	i	0.12	0/1186	0.40	0/1592
13	j	0.13	0/953	0.39	0/1275
14	k	0.15	0/1170	0.42	0/1559
15	l	0.15	0/1104	0.42	0/1481
16	m	0.12	0/973	0.41	0/1309
17	n	0.13	0/897	0.44	0/1198
18	o	0.15	0/948	0.42	0/1262
19	p	0.16	0/961	0.41	0/1278
20	q	0.15	0/828	0.42	0/1111
21	r	0.13	0/1077	0.37	0/1441
22	s	0.12	0/732	0.40	0/988
23	t	0.14	0/879	0.39	0/1165
24	u	0.15	0/665	0.47	0/884
25	v	0.14	0/519	0.41	0/695
26	w	0.14	0/826	0.40	0/1104
27	x	0.11	0/353	0.37	0/474
28	y	0.32	0/457	0.68	1/601 (0.2%)
29	z	0.13	0/412	0.38	0/547
30	3	0.10	0/69073	0.25	0/107710
31	4	0.10	0/2505	0.27	0/3902
All	All	0.12	0/99373	0.31	3/148806 (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	l	0	1

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
28	y	48	TYR	N-CA-C	-5.89	104.78	111.14
11	h	74	ILE	N-CA-C	-5.52	107.43	111.90
9	f	27	ILE	N-CA-C	-5.10	108.30	113.20

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
15	l	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	27	0
3	2	304	0	350	19	0
4	a	2225	0	2301	104	0
5	b	1762	0	1808	67	0
6	c	1644	0	1731	56	0
7	d	1388	0	1469	41	0
8	e	1396	0	1481	42	0
9	f	1160	0	1172	31	0
10	g	960	0	1014	9	0
11	h	959	0	1039	4	0
12	i	1164	0	1192	43	0
13	j	944	0	1019	36	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
14	k	1153	0	1256	55	0
15	l	1079	0	1134	49	0
16	m	958	0	1011	34	0
17	n	889	0	952	28	0
18	o	938	0	1008	45	0
19	p	947	0	1028	44	0
20	q	811	0	858	26	0
21	r	1068	0	1150	48	0
22	s	720	0	803	28	0
23	t	872	0	972	19	0
24	u	657	0	695	28	0
25	v	513	0	560	24	0
26	w	818	0	870	28	0
27	x	344	0	333	7	0
28	y	452	0	472	24	0
29	z	408	0	440	13	0
30	3	61664	0	30954	2141	0
31	4	2239	0	1137	54	0
All	All	91293	0	61168	2838	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 (2838) 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
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
7:d:132:ILE:O	7:d:151:GLY:HA3	1.55	1.05
24:u:79:GLY:HA3	24:u:98:VAL:O	1.58	1.04
28:y:30:CYS:O	28:y:34:GLY:HA2	1.58	1.03
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
25:v:32:ASN:HB2	30:3:433:A:H5''	1.56	0.86
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
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
21:r:114:ARG:HH12	30:3:555:A:H4'	1.45	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
7:d:4:LEU:HB2	7:d:101:GLU:HB3	1.64	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
4:a:104:GLY:HA3	30:3:1525:G:H21	1.47	0.78
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
15:l:118:LEU:HB3	15:l:131:ILE:HD12	1.67	0.77
12:i:59:ILE:HD12	12:i:127:VAL:HG12	1.67	0.76
30:3:2757:A:OP2	30:3:2760:C:N4	2.14	0.76
28:y:42:VAL:HG12	28:y:48:TYR:HB2	1.66	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
14:k:64:LYS:NZ	30:3:253:C:O2'	2.19	0.76
5:b:196:ALA:HB1	30:3:2688:C:H1'	1.69	0.75
12:i:3:LYS:N	20:q:12:TYR:HH	1.85	0.75
25:v:33:LEU:HB3	25:v:49:LEU:HD12	1.68	0.75
26:w:105:ARG:HH22	30:3:1431:A:H5'	1.49	0.75
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
17:n:49:ASN:ND2	31:4:7:G:O2'	2.20	0.74
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
13:j:71:ARG:HH21	13:j:77:LEU:HD22	1.52	0.74
21:r:19:LEU:HB3	28:y:22:LEU:HD11	1.69	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:2291:U:O2	30:3:2333:G:O6	2.05	0.74
9:f:96:GLN:O	9:f:100:GLN:NE2	2.21	0.73
30:3:1137:C:H2'	30:3:1138:A:H8	1.51	0.73
4:a:271:LYS:NZ	30:3:2093:U:OP1	2.20	0.73
18:o:62:GLU:HG2	18:o:81:ILE:HD12	1.68	0.73
30:3:2684:G:H2'	30:3:2685:A:C8	2.24	0.73
21:r:11:ARG:HH22	30:3:2018:U:H5''	1.54	0.73
30:3:1310:U:H3	30:3:1314:A:H62	0.83	0.73
7:d:92:ARG:HA	7:d:96:MET:HE3	1.71	0.73
23:t:72:SER:OG	30:3:369:C:O2	2.07	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
25:v:35:PRO:HB2	25:v:47:ARG:HD3	1.69	0.72
2:1:22:LYS:HE2	14:k:63:PRO:HB2	1.71	0.72
16:m:2:SER:N	30:3:1692:A:N3	2.36	0.72
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
21:r:15:GLN:HG3	28:y:17:ARG:HH12	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
18:o:57:GLY:HA2	18:o:62:GLU:HG3	1.70	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
13:j:7:ARG:HD2	13:j:18:GLN:HB3	1.71	0.71
16:m:21:GLN:HE21	30:3:1306:G:H5'	1.55	0.71
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
16:m:94:PRO:O	30:3:2843:G:N2	2.23	0.71
30:3:2353:G:H4'	30:3:2354:A:H3'	1.71	0.71
25:v:34:GLN:NE2	25:v:52:THR:OG1	2.22	0.71
30:3:2137:A:H5''	30:3:2138:U:H5'	1.71	0.71
5:b:53:SER:HG	5:b:78:THR:HG1	1.35	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
13:j:27:SER:HB2	30:3:2682:A:H1'	1.72	0.70
16:m:44:ARG:NH1	30:3:2876:G:OP1	2.25	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
5:b:140:PRO:HA	30:3:1691:U:H5''	1.71	0.70
15:l:82:ARG:NH1	30:3:2504:C:OP2	2.24	0.70
21:r:87:PRO:HB2	30:3:1301:G:H22	1.55	0.70
29:z:21:THR:HG21	30:3:2294:A:H61	1.55	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
8:e:175:LYS:NZ	30:3:2538:A:N7	2.39	0.70
20:q:74:ILE:H	20:q:79:HIS:HB3	1.54	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
18:o:49:THR:OG1	18:o:91:LYS:NZ	2.25	0.70
23:t:38:GLY:HA2	23:t:41:LYS:HE2	1.74	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
4:a:179:TYR:HA	4:a:192:PHE:O	1.92	0.70
30:3:906:G:H22	30:3:945:U:H3	1.39	0.70
19:p:49:ARG:HD2	30:3:1029:A:H5''	1.72	0.69
24:u:54:GLN:HE22	24:u:59:VAL:H	1.38	0.69
25:v:14:TYR:HB3	25:v:26:ARG:HH12	1.57	0.69
30:3:1067:A:N1	30:3:1157:G:O6	2.25	0.69
9:f:37:ALA:HB3	9:f:42:LYS:HD2	1.74	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
20:q:73:HIS:ND1	20:q:79:HIS:O	2.25	0.69
30:3:1023:C:O2'	30:3:1036:A:N3	2.25	0.69
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
21:r:81:SER:HG	21:r:97:THR:HG1	1.40	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
4:a:21:ASP:OD2	4:a:24:LYS:NZ	2.25	0.69
30:3:177:U:H2'	30:3:178:A:C8	2.27	0.69
15:l:14:ASN:O	15:l:15:VAL:HG23	1.93	0.68
15:l:24:ASN:HA	15:l:67:ARG:HH11	1.58	0.68
17:n:80:LYS:HA	17:n:83:LYS:HD3	1.75	0.68
25:v:17:ASN:HB3	25:v:25:THR:HB	1.75	0.68
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
13:j:87:ILE:HA	13:j:93:PRO:HA	1.74	0.68
18:o:104:MET:HE1	18:o:112:ALA:HA	1.74	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
14:k:7:LYS:HA	30:3:1273:U:H1'	1.75	0.68
15:l:43:ASP:OD2	15:l:45:ARG:NH1	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
14:k:36:GLN:HG3	14:k:37:LYS:HG2	1.76	0.68
25:v:23:THR:HG1	30:3:2086:U:HO2'	1.40	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
10:g:33:SER:HA	30:3:1090:G:H4'	1.75	0.68
12:i:3:LYS:N	20:q:12:TYR:OH	2.26	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
26:w:3:VAL:HG21	30:3:79:U:H5''	1.74	0.68
30:3:703:A:H2'	30:3:705:A:H62	1.59	0.68
28:y:13:ARG:NH1	30:3:552:C:OP1	2.26	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:2521:A:H2'	30:3:2522:U:C6	2.29	0.68
6:c:80:ARG:NH2	30:3:506:A:OP1	2.27	0.67
30:3:595:U:H2'	30:3:605:A:H1'	1.74	0.67
20:q:6:VAL:HB	20:q:37:LYS:HG2	1.76	0.67
22:s:62:PRO:HD3	22:s:77:LEU:HD12	1.76	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
8:e:141:LYS:HE3	30:3:2754:U:H5''	1.76	0.67
17:n:75:GLN:NE2	17:n:111:GLU:OE2	2.28	0.67
4:a:64:ARG:HG2	4:a:90:PRO:HB2	1.77	0.67
13:j:30:LYS:HD3	30:3:2682:A:H4'	1.76	0.67
30:3:515:A:H4'	30:3:516:A:H5'	1.77	0.67
5:b:120:THR:HA	30:3:1689:A:H4'	1.76	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
16:m:109:ASP:OD2	30:3:1315:A:N6	2.26	0.67
30:3:1853:G:N2	30:3:1854:A:N1	2.42	0.67
6:c:187:SER:OG	30:3:650:G:N2	2.28	0.67
7:d:117:LEU:HB3	7:d:177:LEU:HB3	1.77	0.67
12:i:56:TYR:HD2	12:i:124:LYS:HB3	1.59	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
18:o:53:LEU:HD21	18:o:104:MET:HB2	1.76	0.66
18:o:56:ARG:HG2	18:o:56:ARG:HH11	1.60	0.66
18:o:101:ILE:O	18:o:105:ARG:NH1	2.29	0.66
30:3:1246:U:O2	30:3:1263:G:N2	2.27	0.66
4:a:153:HIS:NE2	30:3:1808:C:OP2	2.28	0.66
25:v:58:LEU:HB2	25:v:63:ARG:HB2	1.76	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
4:a:23:LYS:HE2	4:a:29:ASN:HB2	1.76	0.66
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
16:m:107:ARG:NH2	30:3:1316:U:OP2	2.29	0.66
19:p:67:ALA:O	19:p:71:GLN:NE2	2.29	0.66
23:t:88:LYS:NZ	30:3:368:C:O2'	2.22	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
19:p:13:ARG:NH1	30:3:615:G:OP2	2.29	0.66
22:s:54:LYS:NZ	30:3:1426:C:OP1	2.29	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
6:c:83:HIS:O	30:3:1286:G:N2	2.29	0.65
24:u:55:ARG:NH2	30:3:2270:U:OP1	2.28	0.65
25:v:10:ARG:NH1	30:3:432:G:OP2	2.29	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
30:3:1670:U:O2'	30:3:1767:A:N3	2.29	0.65
6:c:156:ASN:HB2	6:c:194:ALA:HA	1.76	0.65
8:e:24:HIS:HD2	8:e:37:LYS:HA	1.61	0.65
21:r:57:ASN:OD1	21:r:61:ASN:ND2	2.28	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
14:k:42:ARG:NH2	30:3:842:U:OP2	2.29	0.65
24:u:61:PRO:O	24:u:94:ARG:NH2	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
7:d:98:ALA:HB1	27:x:26:GLU:HB2	1.79	0.65
24:u:17:SER:N	30:3:2503:G:OP1	2.30	0.65
30:3:2568:G:H2'	30:3:2569:A:H8	1.61	0.65
5:b:17:PHE:HZ	18:o:80:GLN:HG3	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
19:p:96:GLU:O	19:p:100:LYS:NZ	2.30	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
3:2:11:CYS:SG	3:2:12:LYS:N	2.69	0.64
12:i:120:ARG:NH1	30:3:562:C:O2'	2.31	0.64
14:k:6:LEU:HD13	30:3:1235:U:H1'	1.79	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
3:2:35:ARG:HG2	3:2:36:GLN:H	1.62	0.64
4:a:56:ARG:NH2	4:a:227:THR:OG1	2.28	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
6:c:77:GLY:H	30:3:709:G:H5''	1.61	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
13:j:11:ALA:HB2	13:j:83:ALA:HB1	1.80	0.64
21:r:73:GLU:OE1	30:3:554:U:O2'	2.15	0.64
30:3:1164:A:N3	30:3:2577:G:N2	2.43	0.64
22:s:2:ASP:HB3	22:s:47:VAL:HB	1.80	0.64
22:s:4:THR:HB	26:w:27:LEU:HD22	1.80	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
12:i:119:ARG:NH1	30:3:562:C:O3'	2.28	0.63
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
6:c:126:HIS:HB2	6:c:198:LEU:HG	1.79	0.63
28:y:42:VAL:HA	28:y:48:TYR:HA	1.80	0.63
30:3:1776:G:H2'	30:3:1777:G:H8	1.63	0.63
10:g:53:VAL:N	30:3:1119:A:OP1	2.32	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
8:e:93:VAL:HG13	8:e:163:LYS:HA	1.80	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:a:246:ARG:NH1	30:3:2598:C:O3'	2.31	0.63
8:e:97:TYR:HA	8:e:109:GLN:O	1.97	0.63
7:d:68:THR:HG21	30:3:2321:C:H5'	1.78	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
12:i:95:MET:HG3	12:i:100:SER:HA	1.79	0.63
24:u:39:LYS:HB2	24:u:51:ILE:HG23	1.80	0.63
28:y:38:LEU:HG	28:y:41:ARG:HB2	1.79	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
15:l:4:PRO:HB3	30:3:907:A:H4'	1.79	0.62
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
27:x:10:GLN:H	27:x:29:LEU:HB2	1.64	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
4:a:17:SER:HB2	4:a:214:GLY:HA3	1.82	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
30:3:67:C:O2'	30:3:492:C:N3	2.28	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
6:c:102:LYS:NZ	30:3:693:U:O2'	2.33	0.62
8:e:5:GLY:O	8:e:57:ARG:NH1	2.32	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
8:e:118:GLU:OE2	8:e:154:TRP:NE1	2.31	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
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
7:d:123:ASP:O	7:d:125:ARG:NH1	2.33	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
4:a:259:GLY:O	4:a:261:ARG:NH1	2.33	0.61
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
13:j:76:HIS:HB3	18:o:78:ASN:HB3	1.81	0.61
30:3:1496:A:N6	30:3:1547:G:O2'	2.33	0.61
18:o:34:ALA:HB3	18:o:87:SER:HB3	1.81	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
4:a:171:LEU:HD11	4:a:183:GLN:HB2	1.81	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
5:b:50:THR:OG1	5:b:87:MET:O	2.16	0.61
22:s:60:ARG:O	22:s:77:LEU:HA	2.01	0.61
23:t:2:GLN:O	23:t:102:ARG:NH1	2.33	0.61
23:t:29:PRO:O	23:t:32:GLN:NE2	2.34	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
17:n:38:HIS:HE1	17:n:56:SER:HB2	1.66	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
8:e:8:THR:HG22	8:e:54:GLN:HB3	1.82	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
4:a:148:HIS:ND1	4:a:201:GLY:O	2.33	0.61
15:l:15:VAL:HG21	15:l:96:VAL:HG21	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
4:a:83:VAL:HA	4:a:99:ILE:HG22	1.81	0.60
16:m:109:ASP:OD1	30:3:2016:G:N2	2.34	0.60
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
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
5:b:51:LEU:HD21	5:b:81:LEU:HB3	1.83	0.60
12:i:95:MET:HG2	12:i:103:LEU:HB2	1.83	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
14:k:82:LEU:HB3	14:k:116:GLY:HA3	1.82	0.60
30:3:2568:G:H2'	30:3:2569:A:C8	2.35	0.60
4:a:64:ARG:HH22	4:a:222:ARG:HA	1.66	0.60
6:c:33:PRO:HB2	6:c:111:ALA:HB2	1.83	0.60
19:p:4:LYS:NZ	30:3:482:G:OP1	2.32	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
9:f:121:PHE:HA	9:f:142:VAL:HB	1.83	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
22:s:39:ARG:HH11	30:3:146:G:H5'	1.66	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
5:b:11:VAL:HG21	18:o:9:LEU:HD11	1.83	0.60
10:g:8:ALA:HB2	30:3:1081:A:H61	1.66	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:t:45:HIS:N	30:3:517:G:OP2	2.20	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
9:f:6:LYS:HG3	9:f:7:GLN:HG2	1.84	0.60
13:j:14:THR:HG22	13:j:95:GLY:HA2	1.83	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
30:3:474: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
12:i:37:ASP:OD1	12:i:40:ARG:NH2	2.35	0.59
15:l:41:TRP:HB3	15:l:94:VAL:HG21	1.83	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
5:b:57:VAL:HG21	5:b:62:LEU:HD13	1.83	0.59
8:e:4:ILE:HG12	8:e:7:ARG:HE	1.68	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
6:c:159:PHE:HD1	6:c:198:LEU:HB2	1.68	0.59
7:d:132:ILE:O	7:d:151:GLY:CA	2.43	0.59
16:m:14:ARG:NH1	30:3:2009:U:OP1	2.29	0.59
30:3:1820:U:O2'	30:3:1821:G:OP1	2.20	0.59
20:q:6:VAL:HG22	20:q:11:GLN:HG2	1.84	0.59
21:r:23:LEU:O	21:r:27:LYS:NZ	2.32	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
4:a:246:ARG:NH2	30:3:1794:A:OP1	2.32	0.59
21:r:61:ASN:OD1	30:3:530:G:N2	2.25	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
4:a:136:MET:N	4:a:136:MET:SD	2.76	0.59
4:a:179:TYR:CA	4:a:192:PHE:O	2.50	0.59
5:b:138:GLY:HA3	30:3:2587:U:H4'	1.83	0.59
6:c:176:LYS:NZ	30:3:357:A:N3	2.51	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
16:m:51:LEU:O	16:m:59:ASN:ND2	2.35	0.59
29:z:42:ARG:NH1	30:3:2356:U:O2	2.36	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
15:l:42:ILE:HD12	15:l:47:ILE:HD11	1.83	0.59
21:r:15:GLN:NE2	30:3:1296:G:OP2	2.35	0.59
26:w:13:GLU:OE2	26:w:69:GLN:NE2	2.36	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
4:a:126:HIS:NE2	9:f:88:PRO:O	2.34	0.59
16:m:101:LEU:HD22	28:y:53:VAL:HG21	1.84	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
4:a:145:THR:O	4:a:169:ARG:NH2	2.36	0.58
25:v:18:ARG:HH12	30:3:204:U:H4'	1.68	0.58
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
30:3:2151:G:O2'	30:3:2154:A:N1	2.34	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
9:f:6:LYS:HG2	9:f:35:LEU:HB2	1.84	0.58
21:r:78:GLN:OE1	30:3:26:G:N2	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
4:a:94:CYS:SG	4:a:95:PHE:N	2.77	0.58
14:k:39:GLN:HB3	30:3:867:G:H5'	1.85	0.58
21:r:88:ARG:H	30:3:1648:A:H61	1.51	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:4:59:A:O2'	31:4:60:C:OP1	2.19	0.58
5:b:150:GLY:O	30:3:2059:G:O2'	2.22	0.58
15:l:76:LYS:HA	30:3:993:A:H5'	1.84	0.58
24:u:28:ARG:NH2	30:3:2288:G:N7	2.51	0.58
24:u:64:ASN:HB2	24:u:97:VAL:HB	1.84	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
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
12:i:47:PHE:HD1	12:i:53:CYS:HB2	1.69	0.58
17:n:26:ASN:O	17:n:88:ASN:ND2	2.37	0.58
21:r:81:SER:HA	21:r:98:LYS:O	2.04	0.58
22:s:15:LYS:HE2	30:3:1367:G:H5''	1.86	0.58
30:3:26:G:H2'	30:3:27:U:H6	1.69	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
14:k:74:LYS:NZ	30:3:670:G:O6	2.33	0.58
15:l:75:THR:HG21	15:l:87:LYS:HE2	1.85	0.58
24:u:24:THR:HG21	30:3:2284:G:H5'	1.86	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
5:b:227:GLU:HG2	18:o:19:LYS:HE3	1.85	0.58
12:i:101:ASP:HB2	12:i:127:VAL:HB	1.86	0.58
19:p:48:ASP:OD2	30:3:569:U:O2'	2.19	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:a:77:ASP:HB2	9:f:89:TYR:HE1	1.69	0.57
5:b:130:ILE:HD11	5:b:143:PHE:H	1.69	0.57
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
9:f:29:PHE:HE2	25:v:59:LYS:HG2	1.68	0.57
17:n:32:VAL:HG12	17:n:41:VAL:HG22	1.86	0.57
24:u:28:ARG:O	30:3:2286:A:N6	2.37	0.57
30:3:107:C:O2	30:3:328:A:O2'	2.22	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
4:a:43:LYS:HD3	4:a:61:ARG:HB3	1.86	0.57
4:a:73:ARG:NH1	4:a:135:SER:OG	2.37	0.57
4:a:183:GLN:NE2	4:a:184:LEU:O	2.37	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
30:3:2829:G:N2	30:3:2829:G:OP2	2.37	0.57
15:l:122:GLY:HA3	15:l:129:TRP:HB3	1.86	0.57
25:v:13:LEU:HB3	25:v:29:TRP:HE3	1.70	0.57
25:v:32:ASN:O	25:v:34:GLN:NE2	2.36	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
15:l:15:VAL:HB	15:l:41:TRP:HE1	1.69	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
9:f:83:GLU:HA	9:f:89:TYR:HB3	1.86	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
15:l:5:LYS:NZ	30:3:908:A:OP2	2.35	0.57
23:t:92:VAL:HA	30:3:331:A:H4'	1.86	0.57
24:u:79:GLY:CA	24:u:98:VAL:O	2.43	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
30:3:2005:G:O2'	30:3:2732:A:O2'	2.23	0.56
30:3:2381:G:H2'	30:3:2382:A:H8	1.70	0.56
8:e:160:TYR:HB3	8:e:177:GLY:HA3	1.87	0.56
12:i:95:MET:O	12:i:100:SER:OG	2.23	0.56
15:l:56:LYS:NZ	30:3:2477:A:O2'	2.38	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
4:a:245:GLY:N	30:3:2598:C:OP2	2.38	0.56
5:b:56:THR:HA	5:b:78:THR:HA	1.86	0.56
7:d:56:GLU:O	7:d:60:ILE:HD12	2.05	0.56
7:d:58:HIS:NE2	27:x:7:PHE:O	2.38	0.56
13:j:64:ARG:HH21	13:j:101:PRO:HD2	1.69	0.56
15:l:85:SER:HA	30:3:2283:C:H1'	1.88	0.56
18:o:47:ASN:O	18:o:68:LYS:NZ	2.38	0.56
19:p:7:LYS:HE3	30:3:1245:G:H5''	1.88	0.56
26:w:102:ARG:NH1	30:3:1626:C:OP1	2.36	0.56
30:3:32:G:O2'	30:3:1244:A:N3	2.33	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
30:3:2278: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
4:a:217:GLY:O	4:a:221:HIS:ND1	2.39	0.56
4:a:225:ARG:HG2	4:a:225:ARG:HH11	1.70	0.56
11:h:26:ALA:HB2	11:h:32:MET:HB2	1.87	0.56
18:o:26:SER:HA	18:o:55:ARG:HD2	1.88	0.56
19:p:58:SER:HB2	30:3:1045:A:H5'	1.86	0.56
30:3:432:G:H21	30:3:2239:U:HO2'	1.53	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
5:b:129:LYS:NZ	30:3:2002:U:OP1	2.38	0.56
6:c:49:THR:HB	30:3:478:G:H21	1.70	0.56
6:c:76:GLN:HG2	6:c:84:PHE:CZ	2.40	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
4:a:251:ARG:NH2	30:3:2082:U:OP1	2.39	0.56
19:p:16:TRP:HA	19:p:19:GLN:HG2	1.87	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
16:m:75:VAL:HA	16:m:78:LEU:HD12	1.88	0.56
19:p:51:ASN:OD1	19:p:54:ARG:NH1	2.39	0.56
22:s:26:LYS:HD3	22:s:84:THR:HG22	1.87	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
4:a:267:THR:OG1	30:3:1804:A:O2'	2.23	0.56
6:c:115:VAL:HG11	6:c:188:VAL:HG22	1.88	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
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
5:b:11:VAL:HG23	18:o:10:ILE:HD11	1.87	0.55
7:d:69:LYS:HB3	7:d:82:GLY:HA2	1.86	0.55
10:g:56:ASN:HB2	10:g:75:ALA:HA	1.88	0.55
14:k:150:GLU:OE1	14:k:150:GLU:N	2.38	0.55
22:s:65:ILE:HG23	22:s:66:ARG:HG2	1.88	0.55
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
9:f:6:LYS:HB3	9:f:35:LEU:H	1.69	0.55
17:n:14:ARG:NH1	30:3:2342:U:O2	2.38	0.55
26:w:49:ARG:O	26:w:53:THR:HG23	2.05	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
4:a:266:LYS:HE2	4:a:270:MET:HE1	1.88	0.55
25:v:57:THR:O	25:v:61:HIS:ND1	2.39	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
8:e:98:ARG:HB2	8:e:131:ASN:HB3	1.88	0.55
12:i:76:PHE:CZ	12:i:91:SER:HB2	2.42	0.55
13:j:70:GLN:NE2	30:3:2691:C:O2	2.40	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
30:3:2328:A:HO2'	30:3:2330:A:H62	1.51	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
5:b:105:GLY:HA2	5:b:220:ILE:HD12	1.88	0.55
5:b:198:ALA:HB2	30:3:2687:A:H4'	1.89	0.55
21:r:12:ILE:HG21	21:r:103:LEU:HD11	1.89	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
30:3:431:U:O2'	30:3:432:G:N7	2.34	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)
4:a:213:ILE:HG21	4:a:219:ASN:HB2	1.89	0.55
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
5:b:13:MET:SD	30:3:2688:C:O2'	2.65	0.55
9:f:114:LYS:NZ	9:f:129:HIS:O	2.40	0.55
14:k:5:GLN:HB3	30:3:1234:U:H1'	1.87	0.55
29:z:4:LYS:NZ	30:3:2428:C:O3'	2.40	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
4:a:216:ALA:HB2	30:3:1797:C:H4'	1.88	0.55
5:b:26:ILE:HD12	5:b:192:LEU:HB3	1.89	0.55
13:j:88:LYS:HB3	13:j:94:ARG:HG2	1.88	0.55
19:p:53:LYS:HB3	30:3:1031:U:OP2	2.07	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
4:a:220:ARG:HH11	30:3:799:A:H1'	1.71	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
12:i:9:LYS:HG2	12:i:48:THR:HG22	1.90	0.54
21:r:7:GLN:HB3	21:r:103:LEU:HB2	1.89	0.54
22:s:13:THR:H	22:s:16:VAL:HB	1.71	0.54
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
30:3:2784:A:O2'	30:3:2789:A:O2'	2.23	0.54
4:a:281:ASN:O	4:a:282:ARG:HG2	2.07	0.54
5:b:62:LEU:HB3	5:b:67:GLN:HB3	1.88	0.54
8:e:161:LYS:NZ	30:3:2666:C:OP1	2.37	0.54
24:u:83:TYR:HB2	30:3:892:G:H4'	1.88	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
30:3:2471: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
31:4:38:U:HO2'	31:4:40:U:HO2'	1.48	0.54
4:a:162:ARG:HG2	30:3:1825:U:H2'	1.88	0.54
13:j:88:LYS:NZ	13:j:92:SER:OG	2.31	0.54
15:l:14:ASN:ND2	30:3:991:G:OP2	2.40	0.54
30:3:464:A:H5''	30:3:465:A:N7	2.22	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
12:i:67:LEU:HB3	12:i:72:LYS:HG2	1.88	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
30:3:1475:C:O2'	30:3:1577:A:N3	2.30	0.54
30:3:2791:U:H2'	30:3:2792:C:C6	2.43	0.54
4:a:215:LYS:NZ	30:3:799:A:OP1	2.36	0.54
15:l:11:LYS:HD3	15:l:87:LYS:HD3	1.88	0.54
17:n:12:HIS:HD2	17:n:94:GLY:HA2	1.73	0.54
20:q:2:HIS:HA	20:q:15:HIS:HA	1.89	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
6:c:5:LYS:HG3	6:c:13:PHE:HD1	1.73	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
17:n:101:ARG:NE	31:4:47:C:OP1	2.40	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
8:e:161:LYS:NZ	30:3:2667:G:OP2	2.37	0.53
21:r:6:LYS:NZ	30:3:530:G:OP1	2.41	0.53
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
30:3:1431:A:HO2'	30:3:1497:A:HO2'	1.55	0.53
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
4:a:162:ARG:NE	30:3:1825:U:OP2	2.39	0.53
10:g:25:VAL:HA	10:g:111:GLY:HA2	1.90	0.53
12:i:42:LYS:HE2	19:p:62:LEU:HD11	1.90	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
23:t:91:TYR:N	30:3:332:G:OP1	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
26:w:30:ARG:HA	26:w:33:LEU:HD12	1.90	0.53
29:z:9:LEU:O	29:z:19:TYR:HB2	2.07	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
18:o:6:LYS:O	30:3:2879:U:O2'	2.25	0.53
18:o:35:ILE:HB	18:o:46:GLN:HB3	1.90	0.53
20:q:2:HIS:HB3	20:q:15:HIS:CE1	2.43	0.53
22:s:2:ASP:N	22:s:46:LEU:HB2	2.24	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
4:a:153:HIS:HB2	4:a:156:GLY:HA3	1.90	0.53
4:a:160:ILE:HG23	30:3:1806:G:C2	2.43	0.53
6:c:53:LEU:HD23	6:c:58:VAL:HA	1.91	0.53
9:f:58:TYR:CZ	9:f:62:LYS:HE3	2.43	0.53
13:j:6:THR:HG23	30:3:1700:G:H4'	1.91	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
4:a:208:HIS:NE2	30:3:1828:A:OP1	2.37	0.53
17:n:25:ASP:HB2	17:n:27:ARG:NH2	2.24	0.53
17:n:110:ARG:NH1	30:3:2384:A:N3	2.50	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
4:a:73:ARG:NH1	4:a:199:THR:OG1	2.42	0.53
12:i:48:THR:N	12:i:53:CYS:SG	2.71	0.53
26:w:42:HIS:ND1	30:3:97:A:O2'	2.41	0.53
30:3:134:U:H2'	30:3:135:A:C8	2.44	0.53
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
22:s:62:PRO:HG3	22:s:77:LEU:HB2	1.90	0.53
24:u:52:TYR:CE2	24:u:54:GLN:HB3	2.44	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
2:l:14:THR:OG1	2:l:18:GLN:O	2.27	0.53
5:b:36:VAL:HG12	5:b:52:LEU:HG	1.90	0.53
16:m:14:ARG:NH2	30:3:1687:G:O6	2.42	0.53
18:o:102:SER:HA	18:o:105:ARG:HH11	1.74	0.53
28:y:46:GLY:HA2	28:y:54:LYS:HB3	1.91	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
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
5:b:104:VAL:HA	5:b:184:PHE:HE2	1.74	0.52
19:p:95:SER:O	19:p:99:ILE:HG13	2.08	0.52
25:v:7:LEU:HD12	25:v:8:THR:HG23	1.91	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
30:3:2292:A:O2'	30:3:2296:A:N1	2.37	0.52
30:3:2446:U:O2'	30:3:2448:C:OP1	2.26	0.52
7:d:64:LYS:HD2	7:d:65:PRO:HD2	1.89	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:e:76:THR:O	8:e:80:ILE:HG12	2.10	0.52
24:u:78:ASP:HB3	24:u:100:HIS:CE1	2.45	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
5:b:2:GLU:HG3	5:b:87:MET:HA	1.91	0.52
6:c:38:VAL:HA	6:c:189:ARG:HB2	1.91	0.52
8:e:62:LYS:NZ	30:3:1070:U:OP1	2.37	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
7:d:129:THR:OG1	30:3:2311:G:O2'	2.21	0.52
21:r:129:VAL:HG12	30:3:580:U:H5''	1.91	0.52
26:w:49:ARG:NH2	30:3:77:G:O2'	2.43	0.52
26:w:88:LYS:O	26:w:92:GLU:HG2	2.09	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
30:3:2652:U:H2'	30:3:2653:G:C4	2.44	0.52
6:c:103:LEU:HD11	6:c:108:HIS:HB2	1.91	0.52
6:c:130:GLN:HE22	6:c:165:ASN:HD22	1.58	0.52
9:f:47:ARG:HH22	9:f:51:LEU:HB2	1.74	0.52
13:j:71:ARG:HG2	13:j:73:ASP:H	1.74	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
18:o:54:ARG:HH12	18:o:63:THR:HB	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:s:63:THR:HG1	22:s:75:SER:HG	1.41	0.52
23:t:3:ARG:HE	23:t:76:LEU:HD11	1.73	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
4:a:3:ILE:HB	4:a:18:THR:HB	1.91	0.52
5:b:147:VAL:HG23	30:3:2059:G:H5''	1.91	0.52
12:i:71:LYS:HB2	12:i:75:GLU:HB2	1.92	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
4:a:146:GLN:OE1	4:a:169:ARG:NH2	2.41	0.52
14:k:20:LEU:HD23	14:k:32:SER:HB3	1.92	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
10:g:48:GLY:HA3	10:g:87:ASN:HB2	1.92	0.52
14:k:133:LYS:N	30:3:672:G:OP1	2.41	0.52
18:o:6:LYS:NZ	30:3:2880:A:O3'	2.43	0.52
18:o:7:GLN:HG2	30:3:2879:U:H4'	1.92	0.52
23:t:73:LYS:NZ	30:3:363:G:N7	2.39	0.52
25:v:30:ASN:HD22	30:3:2238:G:H5''	1.74	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
15:l:13:HIS:N	30:3:947:A:H62	2.07	0.52
15:l:27:VAL:HB	15:l:102:VAL:HG11	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:l:35:VAL:HB	15:l:130:LYS:HB3	1.91	0.52
19:p:91:ARG:HD3	30:3:1032:A:H4'	1.91	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
5:b:173:LYS:NZ	30:3:2781:C:OP1	2.28	0.51
9:f:115:ASP:OD2	9:f:118:ARG:NE	2.26	0.51
14:k:34:ARG:HG2	14:k:41:ALA:HA	1.92	0.51
14:k:125:HIS:ND1	14:k:145:SER:OG	2.43	0.51
21:r:113:GLU:HA	21:r:116:GLU:HB2	1.92	0.51
22:s:2:ASP:HB2	22:s:43:ALA:HB1	1.90	0.51
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
4:a:97:SER:OG	4:a:111:SER:OG	2.26	0.51
7:d:40:VAL:HG22	7:d:86:GLY:H	1.76	0.51
7:d:101:GLU:HA	7:d:104:ILE:HG12	1.91	0.51
15:l:30:GLY:HA3	15:l:105:GLU:HB2	1.92	0.51
30:3:1097:G:H2'	30:3:1098:G:C8	2.44	0.51
30:3:1960:A:O2'	30:3:2567:C:O2	2.25	0.51
31:4:61:A:H2'	31:4:62:G:H8	1.75	0.51
6:c:144:MET:HE2	6:c:175:ILE:HG12	1.92	0.51
8:e:30:PRO:HD2	8:e:83:THR:HA	1.92	0.51
14:k:69:ARG:HG3	14:k:72:PHE:HB2	1.93	0.51
16:m:82:LEU:HA	16:m:86:VAL:HB	1.92	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
2:1:54:ARG:NH2	14:k:51:PHE:O	2.43	0.51
13:j:21:ILE:HD13	13:j:41:VAL:HG12	1.93	0.51
13:j:86:LEU:HB3	13:j:94:ARG:HD2	1.91	0.51
21:r:41:LYS:NZ	30:3:2017:G:OP2	2.43	0.51
23:t:100:LYS:HE3	30:3:330:A:H4'	1.93	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
5:b:168:HIS:HB2	30:3:2629:G:O2'	2.10	0.51
7:d:77:TYR:OH	30:3:2316:G:O6	2.17	0.51
15:l:27:VAL:HG23	15:l:67:ARG:HD2	1.92	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
5:b:19:THR:HA	5:b:223:ALA:HB2	1.92	0.51
9:f:129:HIS:HA	9:f:135:THR:HG23	1.91	0.51
22:s:4:THR:OG1	26:w:23:LYS:HB3	2.11	0.51
24:u:87:GLY:HA3	24:u:92:LYS:HD3	1.91	0.51
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:a:267:THR:HG1	30:3:1804:A:HO2'	1.57	0.51
15:l:26:TYR:OH	30:3:943:A:OP1	2.20	0.51
19:p:69:ARG:NH1	30:3:1048:A:OP1	2.44	0.51
21:r:28:LYS:HG2	21:r:29:THR:H	1.76	0.51
25:v:15:GLY:O	25:v:26:ARG:NH2	2.44	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
5:b:10:LYS:HE3	5:b:27:THR:HB	1.92	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
30:3:1973:U:O2	30:3:2600:G:O2'	2.25	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
6:c:32:GLN:HE22	14:k:13:ARG:HH12	1.59	0.51
6:c:189:ARG:NH2	6:c:190:ASP:OD1	2.44	0.51
7:d:102:LYS:HG2	7:d:138:PHE:CE1	2.46	0.51
21:r:18:ARG:HH22	28:y:17:ARG:NH1	2.08	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
30:3:2258: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
6:c:130:GLN:HA	6:c:133:PHE:HB2	1.92	0.50
12:i:35:ALA:O	12:i:39:ILE:HG12	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:l:77:LYS:HG2	15:l:88:GLY:HA2	1.93	0.50
17:n:31:MET:HA	17:n:92:ASP:HB3	1.93	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
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
4:a:22:TYR:O	4:a:23:LYS:NZ	2.33	0.50
18:o:77:LYS:HB3	18:o:79:PHE:CE1	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
4:a:89:ASP:OD1	4:a:91:ASN:ND2	2.44	0.50
4:a:130:ILE:O	4:a:131:LYS:NZ	2.38	0.50
4:a:229:ARG:N	30:3:1796:A:OP1	2.41	0.50
12:i:20:ILE:HG23	12:i:60:ILE:HD12	1.91	0.50
21:r:42:LYS:N	30:3:2017:G:OP1	2.33	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
8:e:110:LEU:HD13	8:e:155:ARG:HG3	1.93	0.50
9:f:109:GLN:H	9:f:112:MET:HE3	1.76	0.50
12:i:107:ALA:O	30:3:1173:G:O2'	2.28	0.50
19:p:99:ILE:HB	19:p:100:LYS:HZ2	1.76	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
30:3:1260: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
4:a:42:LYS:NZ	30:3:1383:G:OP2	2.38	0.50
19:p:112:VAL:HG23	19:p:113:LYS:HE2	1.92	0.50
30:3:349:G:H2'	30:3:350:C:C6	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
11:h:73:SER:H	11:h:76:LEU:HB2	1.76	0.50
14:k:110:LEU:HD12	14:k:111:PRO:HD2	1.94	0.50
15:l:6:ARG:NH2	30:3:907:A:OP1	2.38	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
14:k:61:ARG:HH12	30:3:2368:A:H1'	1.76	0.50
19:p:88:GLU:HG2	20:q:47:ALA:HA	1.94	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
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
4:a:138:LEU:O	4:a:173:GLN:NE2	2.43	0.50
8:e:149:THR:HG21	30:3:2753:C:H5'	1.93	0.50
16:m:35:LEU:HA	16:m:38:ALA:HB3	1.94	0.50
18:o:27:ALA:HB1	18:o:101:ILE:HG12	1.94	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
4:a:77:ASP:HB2	9:f:89:TYR:CE1	2.47	0.50
13:j:93:PRO:HD3	13:j:114:ILE:HG12	1.93	0.50
24:u:26:ASN:CG	30:3:2286:A:H5'	2.36	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:x:14:PHE:HB3	27:x:24:THR:HB	1.94	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
4:a:12:SER:O	30:3:764:G:N2	2.44	0.49
12:i:112:LEU:HD13	12:i:118:SER:HB3	1.94	0.49
25:v:23:THR:OG1	30:3:2086:U:O2'	2.20	0.49
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
30:3:252:G:N3	30:3:2439:U:O2'	2.39	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
4:a:150:ILE:HG23	4:a:160:ILE:HB	1.94	0.49
6:c:34:VAL:O	6:c:38:VAL:HG23	2.11	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
7:d:9:GLN:O	7:d:14:LYS:NZ	2.46	0.49
9:f:26:ALA:O	30:3:2100:G:O2'	2.30	0.49
13:j:87:ILE:O	13:j:94:ARG:NH1	2.46	0.49
15:l:8:LYS:HG2	15:l:9:TYR:HD2	1.78	0.49
16:m:103:LEU:HA	28:y:42:VAL:HG22	1.94	0.49
21:r:41:LYS:HB2	21:r:44:ALA:HB2	1.93	0.49
24:u:85:LYS:NZ	30:3:893:A:OP1	2.28	0.49
30:3:629:G:O6	30:3:696:U:O4	2.30	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
30:3:1303:U:O4	30:3:1678:U:O2'	2.26	0.49
30:3:1451:A:H2'	30:3:1452:G:H8	1.76	0.49
30:3:1809:A:P	30:3:1822:A:H61	2.33	0.49
30:3:1959:A:N3	30:3:2568:G:O2'	2.38	0.49
30:3:2852:G:O2'	30:3:2872:A:N6	2.37	0.49
4:a:212:VAL:HG13	30:3:1799:A:H5'	1.95	0.49
7:d:67:ALA:HB3	7:d:84:LEU:HD13	1.94	0.49
14:k:43:LYS:HD2	30:3:706:C:H5''	1.94	0.49
18:o:106:GLU:OE2	30:3:1761:C:O2'	2.24	0.49
23:t:78:ASP:HB2	23:t:85:THR:H	1.77	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
12:i:93:ARG:NH2	12:i:94:ASP:OD1	2.45	0.49
13:j:23:LYS:HB3	13:j:40:VAL:HB	1.93	0.49
15:l:39:GLY:CA	15:l:97:VAL:O	2.61	0.49
15:l:64:MET:HB3	15:l:106:VAL:HG12	1.93	0.49
25:v:30:ASN:HB2	30:3:2238:G:H4'	1.94	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
6:c:52:ILE:HD13	6:c:89:ILE:HG12	1.94	0.49
18:o:58:LYS:HG3	18:o:61:SER:HB2	1.95	0.49
27:x:9:SER:HB3	27:x:28:THR:HA	1.94	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
4:a:66:TYR:HA	4:a:91:ASN:ND2	2.27	0.49
16:m:71:ASN:OD1	16:m:72:LEU:N	2.44	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
30:3:513:A:O2'	30:3:514:A:O4'	2.28	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
3:2:33:LYS:NZ	30:3:2534:G:O2'	2.40	0.49
16:m:58:ASN:O	16:m:62:GLN:HG2	2.13	0.49
24:u:47:THR:HG23	30:3:2360:A:H2	1.77	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
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
7:d:38:MET:HE1	7:d:57:LEU:HD22	1.94	0.49
14:k:133:LYS:O	14:k:136:LEU:HG	2.13	0.49
21:r:127:LYS:O	21:r:130:GLU:HG2	2.13	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
8:e:113:SER:OG	30:3:2675:C:N3	2.36	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:l:12:PRO:C	30:3:947:A:H62	2.21	0.49
19:p:11:VAL:O	19:p:15:LYS:HG2	2.13	0.49
19:p:15:LYS:O	19:p:19:GLN:NE2	2.42	0.49
29:z:19:TYR:CE2	29:z:36:LYS:HE3	2.48	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
30:3:2484: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
15:l:116:LYS:NZ	15:l:120:ARG:HH12	2.11	0.48
19:p:12:ARG:HH22	30:3:847:C:H4'	1.78	0.48
22:s:9:LYS:HE2	26:w:30:ARG:HG3	1.94	0.48
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
6:c:4:LEU:HD11	6:c:126:HIS:HA	1.95	0.48
12:i:9:LYS:HE3	12:i:49:PRO:HD2	1.94	0.48
12:i:133:HIS:ND1	12:i:135:MET:HB2	2.28	0.48
16:m:100:VAL:HG22	16:m:116:LEU:HD13	1.95	0.48
18:o:30:GLU:OE1	18:o:92:ARG:HD2	2.12	0.48
18:o:56:ARG:NH1	18:o:61:SER:O	2.44	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
30:3:682:A:N1	30:3:2358:U:O2'	2.43	0.48
30:3:1043:C:OP2	30:3:1044:C:O2'	2.26	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:2551:G:H2'	30:3:2552:G:C8	2.48	0.48
5:b:79:LYS:HZ3	30:3:2833:A:H5'	1.79	0.48
6:c:76:GLN:NE2	6:c:78:SER:OG	2.47	0.48
8:e:44:LEU:HD13	8:e:57:ARG:HB3	1.94	0.48
11:h:78:GLN:HA	11:h:82:LEU:O	2.12	0.48
13:j:22:ILE:HD11	30:3:1959:A:H62	1.79	0.48
18:o:49:THR:HG22	18:o:68:LYS:HE3	1.95	0.48
19:p:32:LYS:O	19:p:35:LYS:HG2	2.13	0.48
20:q:41:LEU:HG	20:q:42:ASP:OD2	2.13	0.48
21:r:34:ASN:HB2	28:y:36:LYS:HB2	1.93	0.48
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
4:a:66:TYR:HA	4:a:91:ASN:HD21	1.78	0.48
9:f:81:LEU:HD11	9:f:92:ILE:HG12	1.95	0.48
13:j:77:LEU:HD13	18:o:77:LYS:HE2	1.94	0.48
14:k:18:LYS:HE3	30:3:698:A:H4'	1.95	0.48
14:k:69:ARG:NH2	30:3:2412:A:O3'	2.47	0.48
20:q:70:VAL:HG23	20:q:83:TYR:HB3	1.94	0.48
30:3:160:A:H2'	30:3:161:U:C6	2.48	0.48
30:3:1175:C:O2'	30:3:1178:A:O2'	2.23	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
4:a:57:HIS:HB3	4:a:227:THR:HB	1.95	0.48
20:q:30:GLY:H	20:q:59:VAL:HG13	1.77	0.48
22:s:42:LEU:HD22	30:3:145:A:O2'	2.13	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
6:c:147:LEU:HD21	6:c:178:VAL:HG11	1.94	0.48
24:u:34:ARG:HG2	30:3:2364:A:H4'	1.95	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
5:b:5:GLY:HA2	5:b:208:ARG:HA	1.96	0.48
6:c:174:ASN:HB3	30:3:354:C:C2	2.47	0.48
12:i:116:ARG:NE	30:3:564:A:OP1	2.46	0.48
30:3:84:G:H21	30:3:106:C:N4	2.11	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
6:c:5:LYS:HG3	6:c:13:PHE:CD1	2.49	0.48
7:d:129:THR:HG1	30:3:2311:G:HO2'	1.54	0.48
19:p:36:GLN:O	19:p:40:GLN:HG2	2.14	0.48
20:q:14:VAL:HG13	20:q:18:ASP:HB2	1.96	0.48
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:a:29:ASN:O	30:3:1599:C:N4	2.43	0.48
4:a:33:PRO:HB2	4:a:38:LEU:HD11	1.95	0.48
4:a:179:TYR:N	4:a:192:PHE:O	2.47	0.48
5:b:10:LYS:HB3	5:b:201:GLU:HA	1.94	0.48
5:b:37:ALA:HB3	5:b:51:LEU:HD22	1.95	0.48
5:b:179:LEU:HD22	5:b:197:ILE:HD11	1.96	0.48
13:j:67:LYS:HA	13:j:67:LYS:HD2	1.71	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
30:3:1947: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
20:q:56:VAL:H	20:q:97:PHE:HA	1.79	0.48
26:w:65:TRP:CD2	30:3:147:C:H4'	2.49	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
8:e:108:LEU:HB2	8:e:116:ILE:HB	1.96	0.47
9:f:87:ARG:HG2	9:f:88:PRO:HD2	1.96	0.47
12:i:39:ILE:HD11	12:i:57:LEU:HB2	1.96	0.47
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
30:3:1447:A:O2'	30:3:1449:G:N7	2.46	0.47
30:3:1542:G:H2'	30:3:1543:U:C6	2.49	0.47
30:3:1848:U:C2	30:3:1849:G:C8	3.02	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
6:c:140:THR:O	6:c:144:MET:N	2.46	0.47
7:d:104:ILE:HA	7:d:108:LEU:HD13	1.96	0.47
9:f:1:MET:HG2	9:f:24:GLY:HA3	1.97	0.47
13:j:3:SER:OG	30:3:1700:G:N3	2.40	0.47
13:j:19:VAL:HG13	13:j:43:VAL:HA	1.96	0.47
23:t:14:THR:HG23	23:t:73:LYS:HE2	1.95	0.47
23:t:43:THR:O	30:3:516:A:O2'	2.28	0.47
28:y:12:ARG:HA	28:y:15:LYS:HE2	1.97	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
30:3:1045:A:O2'	30:3:1046:A:O4'	2.27	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
9:f:48:ASP:O	9:f:52:LYS:HG2	2.14	0.47
29:z:31:LYS:HE2	29:z:48:LYS:HB3	1.95	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
5:b:42:GLU:HG2	5:b:48:SER:HB2	1.96	0.47
7:d:66:VAL:HB	31:4:40:U:H5'	1.97	0.47
7:d:128:TYR:HD2	7:d:156:LEU:HD12	1.79	0.47
8:e:34:ILE:HD12	8:e:82:VAL:HB	1.96	0.47
9:f:114:LYS:HE3	9:f:129:HIS:HB2	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:p:94:LEU:HD11	20:q:11:GLN:HB3	1.96	0.47
30:3:193:G:H1	30:3:209:G:HO2'	1.59	0.47
30:3:342:G:O2'	30:3:363:G:N2	2.48	0.47
30:3:483:A:N1	30:3:490:A:O2'	2.31	0.47
30:3:762:A:OP1	30:3:1459:A:O2'	2.29	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
12:i:50:ASN:OD1	12:i:51:GLN:N	2.46	0.47
14:k:6:LEU:HD23	14:k:6:LEU:H	1.79	0.47
26:w:63:LEU:O	26:w:66:GLN:NE2	2.39	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
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
5:b:151:ARG:HG3	30:3:2580:A:H8	1.78	0.47
12:i:99:GLN:HG3	12:i:101:ASP:OD1	2.14	0.47
13:j:67:LYS:HD3	30:3:1698:A:H2'	1.96	0.47
16:m:60:ARG:HD2	16:m:83:PHE:CE1	2.50	0.47
18:o:54:ARG:HG3	18:o:100:TYR:CE2	2.48	0.47
28:y:12:ARG:NH2	30:3:2624:C:O3'	2.48	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:a:252:ASP:HB3	30:3:1909:C:H1'	1.95	0.47
8:e:24:HIS:CD2	8:e:37:LYS:HA	2.46	0.47
14:k:92:LYS:HA	14:k:125:HIS:HB2	1.96	0.47
17:n:72:LEU:H	17:n:72:LEU:HD12	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
12:i:11:GLN:HA	30:3:573:A:H4'	1.97	0.47
12:i:78:TYR:CE1	12:i:89:LYS:HG3	2.50	0.47
15:l:15:VAL:HB	15:l:41:TRP:NE1	2.30	0.47
19:p:68:LEU:HD22	19:p:73:MET:HG3	1.96	0.47
29:z:6:SER:OG	29:z:21:THR:O	2.26	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
4:a:67:ARG:O	4:a:69:ILE:HG13	2.15	0.47
14:k:135:ALA:O	14:k:139:VAL:HG23	2.15	0.47
17:n:46:PHE:C	17:n:48:GLN:H	2.23	0.47
30:3:450:C:H2'	30:3:451:A:H8	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
4:a:41:LEU:HD12	4:a:66:TYR:HB2	1.96	0.47
6:c:35:PHE:O	6:c:39:LEU:HG	2.14	0.47
17:n:38:HIS:CE1	17:n:57:SER:H	2.33	0.47
20:q:36:ASP:HA	20:q:54:ARG:HG3	1.97	0.47
21:r:129:VAL:O	21:r:133:GLN:HG3	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
6:c:5:LYS:HD3	6:c:17:PRO:HG3	1.96	0.46
13:j:105:GLU:OE1	13:j:105:GLU:N	2.48	0.46
14:k:13:ARG:NE	30:3:695:G:N3	2.63	0.46
15:l:39:GLY:HA3	15:l:97:VAL:O	2.15	0.46
19:p:22:GLY:HA2	30:3:20:C:O3'	2.15	0.46
21:r:126:LYS:HA	21:r:129:VAL:HG22	1.97	0.46
23:t:41:LYS:HD3	23:t:66:GLU:HG3	1.97	0.46
29:z:34:LEU:O	29:z:47:HIS:N	2.47	0.46
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
4:a:161:ALA:N	30:3:1825:U:O2'	2.49	0.46
12:i:73:GLU:HG3	12:i:93:ARG:HD2	1.97	0.46
13:j:31:ARG:NH1	30:3:2683:G:H5''	2.31	0.46
16:m:60:ARG:HG3	30:3:1482:U:O4'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:p:32:LYS:HB3	30:3:1282:G:H21	1.81	0.46
23:t:104:PHE:CD1	23:t:109:ASN:HB2	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
30:3:597:C:O2'	30:3:1283:A:N1	2.38	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
4:a:139:ALA:HA	4:a:173:GLN:HE22	1.80	0.46
4:a:184:LEU:HD11	4:a:190:ARG:HE	1.80	0.46
6:c:55:LYS:HB3	30:3:836:G:C8	2.50	0.46
6:c:165:ASN:OD1	6:c:166:THR:N	2.48	0.46
8:e:44:LEU:HB3	8:e:46:PHE:CE1	2.49	0.46
22:s:62:PRO:HA	22:s:75:SER:O	2.14	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
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
15:l:22:LYS:H	15:l:98:LYS:HD2	1.80	0.46
17:n:13:LYS:HA	17:n:16:VAL:HG12	1.97	0.46
19:p:81:LEU:HA	19:p:84:LYS:HE2	1.98	0.46
21:r:18:ARG:HA	21:r:21:CYS:HB3	1.98	0.46
26:w:25:GLU:O	26:w:28:GLU:HG2	2.15	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
6:c:128:VAL:HB	6:c:198:LEU:HD23	1.96	0.46
15:l:41:TRP:CH2	30:3:994:U:H5''	2.51	0.46
15:l:111:GLU:HA	15:l:114:MET:HE3	1.98	0.46
17:n:76:ASP:O	17:n:79:ASP:HB2	2.15	0.46
21:r:42:LYS:HE2	30:3:2017:G:H4'	1.97	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
2:1:54:ARG:NE	14:k:49:PRO:O	2.45	0.46
4:a:132:PRO:HA	4:a:200:VAL:HG23	1.97	0.46
6:c:153:LEU:O	6:c:177:ASN:ND2	2.35	0.46
7:d:69:LYS:HA	7:d:84:LEU:HA	1.98	0.46
14:k:35:GLY:N	30:3:978:G:H5''	2.30	0.46
16:m:109:ASP:HB3	30:3:1683:G:H21	1.81	0.46
18:o:76:GLU:OE1	18:o:76:GLU:N	2.37	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
4:a:185:LEU:O	30:3:1826:A:O2'	2.27	0.46
7:d:123:ASP:CG	7:d:127:ASN:HB2	2.41	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
30:3:799: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
5:b:110:VAL:O	5:b:175:THR:HA	2.16	0.46
7:d:99:PHE:CZ	7:d:103:LEU:HD11	2.51	0.46
8:e:36:LEU:HD22	8:e:75:ILE:HD13	1.97	0.46
8:e:49:LYS:HB2	8:e:52:ASN:HB3	1.97	0.46
9:f:112:MET:HA	9:f:130:ILE:HD13	1.97	0.46
15:l:86:GLY:HA2	24:u:24:THR:HG23	1.97	0.46
21:r:16:LYS:HE3	30:3:1296:G:C6	2.50	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
4:a:147:VAL:HA	4:a:200:VAL:HA	1.98	0.46
5:b:36:VAL:HA	5:b:52:LEU:HA	1.96	0.46
6:c:172:THR:HB	6:c:179:GLN:HA	1.96	0.46
16:m:84:SER:OG	16:m:85:LYS:NZ	2.29	0.46
20:q:59:VAL:HG21	20:q:62:HIS:HE1	1.80	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
4:a:129:ASP:OD1	4:a:130:ILE:N	2.49	0.46
6:c:98:ASN:OD1	6:c:99:TYR:N	2.47	0.46
6:c:102:LYS:HD3	30:3:694:U:O5'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:e:146:GLN:O	8:e:150:GLU:HG2	2.16	0.46
14:k:134:GLN:HA	14:k:137:LYS:HE2	1.97	0.46
25:v:18:ARG:NH1	25:v:22:LYS:O	2.49	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
30:3:2814:A:N1	30:3:2894:G:O2'	2.42	0.46
2:1:5:SER:O	2:1:9:LYS:HG3	2.16	0.45
4:a:87:GLU:HB3	4:a:96:VAL:HG23	1.98	0.45
8:e:142:GLU:O	30:3:2753:C:O2'	2.33	0.45
9:f:30:LEU:HD22	30:3:2206:A:N3	2.30	0.45
18:o:27:ALA:HA	18:o:52:VAL:HB	1.97	0.45
26:w:18:LEU:O	26:w:22:LEU:HG	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
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
5:b:180:ARG:NH2	30:3:2737:G:O3'	2.48	0.45
12:i:100:SER:H	12:i:129:LYS:NZ	2.14	0.45
16:m:10:THR:H	16:m:13:TRP:HB3	1.82	0.45
22:s:7:LEU:HD13	22:s:31:VAL:HG12	1.98	0.45
30:3:82:G:H21	30:3:328:A:H1'	1.82	0.45
30:3:82:G:O2'	30:3:328:A:N1	2.44	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:4:21:G:N7	31:4:54:U:O2'	2.45	0.45
4:a:65:LYS:NZ	30:3:1603:A:O3'	2.48	0.45
5:b:109:ASP:OD1	5:b:109:ASP:N	2.48	0.45
7:d:32:GLU:HB2	7:d:157:VAL:HG13	1.97	0.45
8:e:65:LYS:NZ	30:3:2757:A:O3'	2.44	0.45
8:e:161:LYS:HA	8:e:174:ARG:HH12	1.81	0.45
12:i:51:GLN:NE2	30:3:573:A:H1'	2.32	0.45
14:k:48:ARG:NH2	30:3:199:A:H5''	2.31	0.45
22:s:38:THR:O	22:s:41:LYS:HG2	2.17	0.45
28:y:7:ARG:HB3	30:3:2024:C:O2	2.16	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
6:c:34:VAL:HG13	6:c:188:VAL:HG11	1.98	0.45
14:k:84:LYS:HE3	30:3:689:U:O4	2.16	0.45
16:m:22:VAL:HA	16:m:25:VAL:HG12	1.99	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
5:b:40:LYS:NZ	5:b:51:LEU:HB2	2.31	0.45
18:o:56:ARG:NH2	30:3:2691:C:OP1	2.50	0.45
22:s:37:LYS:HB2	30:3:1632:C:H5''	1.98	0.45
26:w:98:LEU:HD11	26:w:102:ARG:HH21	1.81	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
30:3:865:A:N1	30:3:2453:G:O2'	2.47	0.45
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
16:m:73:PHE:HE2	16:m:78:LEU:HA	1.82	0.45
19:p:39:ILE:HG22	19:p:43:LYS:HE2	1.98	0.45
20:q:59:VAL:HG21	20:q:62:HIS:CE1	2.52	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
14:k:134:GLN:HB2	30:3:673:A:OP1	2.17	0.45
15:l:66:ILE:HG22	15:l:68:ILE:H	1.81	0.45
19:p:75:TYR:HE1	30:3:1188:C:H5'	1.82	0.45
22:s:62:PRO:HB3	22:s:74:LEU:HD21	1.99	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
4:a:31:ASN:ND2	30:3:1602:G:OP2	2.50	0.45
8:e:153:LYS:NZ	30:3:2770:U:O2'	2.50	0.45
13:j:30:LYS:O	13:j:31:ARG:HG2	2.16	0.45
19:p:9:THR:OG1	30:3:1281:A:OP2	2.28	0.45
21:r:34:ASN:OD1	21:r:35:ILE:N	2.49	0.45
24:u:57:THR:HG22	30:3:2344:A:H61	1.82	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
30:3:296:U:O2'	30:3:299:A:N3	2.48	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
6:c:174:ASN:CG	30:3:354:C:H2'	2.41	0.45
10:g:88:GLU:HB3	10:g:91:GLU:HB3	1.99	0.45
19:p:24:PHE:HD1	30:3:19:G:H4'	1.82	0.45
21:r:1:MET:HG2	21:r:109:ASP:H	1.82	0.45
25:v:29:TRP:HB3	30:3:2239:U:H5''	1.97	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
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
5:b:55:ASP:HB2	5:b:79:LYS:HB3	1.99	0.45
13:j:36:GLY:O	13:j:109:ARG:NH1	2.49	0.45
14:k:15:HIS:HE1	30:3:695:G:N2	2.14	0.45
14:k:137:LYS:O	14:k:140:GLU:HG2	2.17	0.45
17:n:10:LEU:HA	17:n:13:LYS:HG2	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
4:a:255:ARG:HG2	4:a:261:ARG:HH11	1.81	0.44
5:b:51:LEU:HA	5:b:83:GLU:HA	1.98	0.44
5:b:180:ARG:HH12	30:3:2737:G:H4'	1.82	0.44
7:d:74:ILE:HG22	7:d:77:TYR:H	1.82	0.44
12:i:52:ASP:OD1	12:i:53:CYS:N	2.51	0.44
30:3:124:A:H2'	30:3:125:G:C8	2.53	0.44
30:3:485:A:HO2'	30:3:1278:G:H1	1.62	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
5:b:198:ALA:HA	30:3:2688:C:H5'	2.00	0.44
6:c:67:LYS:HG3	6:c:69:LYS:O	2.17	0.44
7:d:33:LYS:HB3	7:d:92:ARG:NH2	2.32	0.44
13:j:91:LYS:HD2	13:j:111:TYR:H	1.82	0.44
14:k:101:LYS:HD3	14:k:101:LYS:HA	1.81	0.44
19:p:2:ARG:H	30:3:481:C:H5''	1.83	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
30:3:296:U:O2	30:3:300:G:O2'	2.28	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:2769:G:H2'	30:3:2770:U:C6	2.52	0.44
8:e:65:LYS:HE3	30:3:2757:A:H4'	2.00	0.44
9:f:33:LYS:C	9:f:34:LYS:HD2	2.41	0.44
12:i:19:TYR:HE2	12:i:55:ASP:HB3	1.82	0.44
13:j:58:LEU:HB3	13:j:94:ARG:CZ	2.46	0.44
13:j:106:LEU:HD23	13:j:106:LEU:H	1.82	0.44
15:l:62:GLY:HA2	15:l:108:ASN:HB2	1.99	0.44
21:r:84:ARG:HH21	30:3:1351:G:P	2.40	0.44
25:v:33:LEU:HD22	25:v:49:LEU:HB3	2.00	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
4:a:89:ASP:HB2	4:a:96:VAL:HG13	1.99	0.44
4:a:228:VAL:HG21	30:3:817:A:C8	2.53	0.44
12:i:57:LEU:HD23	12:i:125:VAL:HG22	1.99	0.44
17:n:79:ASP:HA	17:n:82:VAL:HG22	2.00	0.44
22:s:86:PRO:HB2	26:w:86:ALA:HB1	1.99	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
6:c:104:ASN:HA	30:3:640:U:H5''	1.99	0.44
10:g:8:ALA:HB2	30:3:1081:A:N6	2.33	0.44
18:o:115:LYS:HA	18:o:115:LYS:HD3	1.66	0.44
26:w:61:ARG:HG2	26:w:62:LYS:HG3	2.00	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
30:3:1691: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
5:b:151:ARG:HG3	30:3:2580:A:C8	2.51	0.44
14:k:13:ARG:CZ	30:3:695:G:H1'	2.48	0.44
15:l:48:GLU:O	15:l:52:ILE:HG12	2.18	0.44
15:l:88:GLY:N	30:3:992:G:OP1	2.37	0.44
17:n:34:LYS:HD3	17:n:102:ILE:HD11	1.99	0.44
20:q:1:MET:HE2	20:q:15:HIS:HB3	1.99	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
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
4:a:57:HIS:HB2	4:a:225:ARG:O	2.17	0.44
7:d:15:GLU:O	7:d:18:LYS:HG3	2.18	0.44
7:d:76:THR:HG23	7:d:77:TYR:CD2	2.53	0.44
21:r:114:ARG:NH2	30:3:555:A:O3'	2.49	0.44
27:x:10:GLN:N	27:x:29:LEU:HB2	2.33	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
6:c:200:GLU:HB2	6:c:203:VAL:HG22	1.99	0.44
7:d:44:ILE:HD12	7:d:77:TYR:HD1	1.83	0.44
7:d:123:ASP:HA	30:3:2310:C:O2'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:l:109:ILE:HG12	15:l:110:PRO:HD2	1.99	0.44
20:q:31:LYS:O	20:q:59:VAL:HG12	2.18	0.44
24:u:52:TYR:HE2	24:u:54:GLN:HB3	1.83	0.44
28:y:15:LYS:HD2	30:3:2052:C:H5''	2.00	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
4:a:160:ILE:HD12	30:3:1806:G:N3	2.33	0.44
7:d:102:LYS:HG2	7:d:138:PHE:HE1	1.82	0.44
14:k:82:LEU:HA	14:k:85:ILE:HG22	1.99	0.44
20:q:1:MET:HE3	20:q:16:GLU:HB3	2.00	0.44
30:3:291:G:C2	30:3:292:G:C8	3.06	0.44
30:3:596:G:OP2	30:3:605:A:O2'	2.34	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
4:a:227:THR:O	30:3:1796:A:H5''	2.17	0.43
4:a:255:ARG:HD3	4:a:259:GLY:HA2	1.99	0.43
6:c:32:GLN:NE2	14:k:13:ARG:HH12	2.16	0.43
12:i:69:GLY:HA3	30:3:1176:U:C5	2.53	0.43
18:o:54:ARG:NH2	18:o:63:THR:OG1	2.51	0.43
20:q:4:ILE:HG13	20:q:13:LEU:HD13	2.00	0.43
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:f:9:VAL:HG13	9:f:14:LYS:HG2	2.00	0.43
12:i:68:THR:O	12:i:71:LYS:HG2	2.18	0.43
24:u:52:TYR:HB3	24:u:73:LEU:HB2	2.00	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
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
5:b:152:GLY:O	5:b:157:GLN:HG3	2.18	0.43
18:o:6:LYS:HA	18:o:6:LYS:HD3	1.91	0.43
18:o:11:ASP:O	18:o:15:GLN:HG3	2.18	0.43
21:r:41:LYS:HZ2	30:3:2017:G:P	2.40	0.43
26:w:15:LEU:O	26:w:19:VAL:HG23	2.18	0.43
27:x:11:SER:HB2	27:x:25:ILE:O	2.18	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
6:c:66:TYR:CZ	6:c:73:LYS:HD3	2.53	0.43
18:o:34:ALA:HA	18:o:46:GLN:O	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:o:56:ARG:HH21	30:3:2692:U:P	2.41	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
2:l:24:ALA:HB2	14:k:62:LEU:HD23	1.99	0.43
4:a:169:ARG:HB2	4:a:183:GLN:HB3	2.00	0.43
13:j:27:SER:OG	30:3:2681:G:N2	2.49	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
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
5:b:47:TYR:OH	30:3:2644:U:O2'	2.25	0.43
7:d:57:LEU:O	7:d:61:SER:OG	2.26	0.43
17:n:12:HIS:CD2	17:n:94:GLY:HA2	2.53	0.43
19:p:43:LYS:HG3	20:q:71:ILE:HD13	2.00	0.43
20:q:61:LYS:HB2	20:q:61:LYS:HE3	1.73	0.43
30:3:201:A:O2'	30:3:2252:U:OP1	2.34	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:3:1354:U:O2'	30:3:2017:G:O2'	2.21	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
4:a:183:GLN:OE1	4:a:189:THR:OG1	2.35	0.43
14:k:98:LEU:HB3	14:k:103:VAL:HB	1.99	0.43
17:n:3:THR:C	17:n:5:THR:H	2.26	0.43
19:p:45:ALA:O	19:p:49:ARG:HG3	2.18	0.43
21:r:18:ARG:HH22	28:y:17:ARG:HH11	1.67	0.43
23:t:15:GLY:HA2	30:3:343:A:O2'	2.18	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
5:b:113:ILE:HD11	5:b:171:HIS:ND1	2.34	0.43
6:c:37:ALA:HA	6:c:40:VAL:HG12	2.01	0.43
8:e:81:GLY:HA2	8:e:85:GLY:HA2	2.01	0.43
13:j:31:ARG:HH12	30:3:2683:G:H5''	1.84	0.43
21:r:39:THR:HB	28:y:25:GLN:HE21	1.83	0.43
22:s:44:PHE:HA	22:s:47:VAL:HG12	2.01	0.43
30:3:30:A:O2'	30:3:31:U:O4'	2.29	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
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
4:a:270:MET:HB3	4:a:275:THR:HG21	1.99	0.43
5:b:10:LYS:O	5:b:202:GLY:N	2.52	0.43
5:b:64:LYS:HG2	30:3:2814:A:H5''	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:c:112:LEU:O	6:c:115:VAL:HG12	2.18	0.43
9:f:93:ILE:HG22	9:f:94:THR:H	1.84	0.43
14:k:78:VAL:HG13	14:k:112:ILE:HG23	2.01	0.43
15:l:31:GLU:OE1	15:l:31:GLU:N	2.52	0.43
28:y:47:MET:HE2	28:y:47:MET:HB2	1.75	0.43
30:3:291:G:C2	30:3:292:G:N7	2.86	0.43
30:3:450:C:O2	30:3:1871:U:O2'	2.35	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
4:a:262:HIS:NE2	30:3:1832:G:O4'	2.51	0.43
5:b:26:ILE:HG23	5:b:192:LEU:HB3	2.00	0.43
18:o:56:ARG:HG2	18:o:56:ARG:NH1	2.32	0.43
19:p:80:ASN:ND2	30:3:1186:A:H4'	2.34	0.43
21:r:2:ILE:O	21:r:107:LEU:N	2.43	0.43
26:w:63:LEU:C	26:w:66:GLN:HE22	2.26	0.43
28:y:30:CYS:O	28:y:34:GLY:CA	2.49	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
17:n:45:ASP:O	17:n:49:ASN:N	2.50	0.42
26:w:37:GLU:OE1	26:w:37:GLU:N	2.52	0.42
28:y:6:ARG:HD2	28:y:6:ARG:HA	1.89	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
30:3:2516:G:O2'	30:3:2562:U:O2'	2.27	0.42
6:c:39:LEU:O	6:c:43:ALA:N	2.51	0.42
6:c:76:GLN:HE22	30:3:708:C:H4'	1.84	0.42
19:p:27:ARG:NH2	30:3:2026:A:N3	2.62	0.42
21:r:35:ILE:HB	28:y:27:LEU:HD11	2.01	0.42
29:z:23:LYS:HB2	30:3:2294:A:C2	2.54	0.42
30:3:219:G:H21	30:3:468:A:N6	2.16	0.42
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
8:e:92:LEU:HD13	8:e:165:VAL:HG22	2.02	0.42
8:e:100:ASN:ND2	8:e:102:GLU:OE1	2.52	0.42
19:p:14:LYS:O	19:p:18:LYS:HG2	2.19	0.42
24:u:53:ARG:NH2	30:3:2363:C:O2	2.52	0.42
25:v:30:ASN:HB2	30:3:2238:G:H5''	2.02	0.42
29:z:2:ALA:N	30:3:2429:G:H5''	2.34	0.42
30:3:101:C:H3'	30:3:102:A:H8	1.83	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
2:1:58:LEU:HD12	14:k:49:PRO:HB2	2.02	0.42
4:a:42:LYS:HD3	30:3:1382:A:H5''	2.01	0.42
5:b:175:THR:HB	30:3:2780:U:H4'	2.01	0.42
12:i:120:ARG:HH12	30:3:562:C:HO2'	1.66	0.42
21:r:20:VAL:HA	21:r:23:LEU:HB2	2.00	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
30:3:2812:U:O2'	30:3:2814:A:N7	2.46	0.42
30:3:2839:A:H61	30:3:2882:U:H3'	1.84	0.42
6:c:10:ASP:OD1	6:c:10:ASP:N	2.53	0.42
16:m:59:ASN:O	16:m:63:VAL:HG23	2.19	0.42
16:m:80:ASP:O	16:m:84:SER:HB3	2.19	0.42
28:y:40:HIS:NE2	30:3:2887:A:H4'	2.35	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
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
4:a:148:HIS:CD2	4:a:203:VAL:HG22	2.55	0.42
5:b:162:GLY:N	30:3:2628:U:OP1	2.45	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:f:52:LYS:HB3	9:f:52:LYS:HE3	1.95	0.42
15:l:42:ILE:HG21	15:l:125:LEU:HD23	2.01	0.42
17:n:77:ILE:HA	17:n:80:LYS:HD3	2.01	0.42
21:r:22:GLN:O	21:r:25:VAL:HG22	2.20	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
5:b:105:GLY:HA3	5:b:218:LYS:O	2.19	0.42
7:d:66:VAL:O	7:d:88:LYS:N	2.35	0.42
7:d:98:ALA:O	7:d:101:GLU:HG3	2.20	0.42
8:e:75:ILE:O	8:e:79:ILE:HG12	2.18	0.42
16:m:71:ASN:HB3	30:3:1320:C:O2	2.20	0.42
18:o:92:ARG:HB3	18:o:115:LYS:HD2	2.01	0.42
26:w:44:ILE:O	26:w:48:ARG:HG3	2.20	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
4:a:52:LYS:HG2	30:3:808:U:H4'	2.01	0.42
10:g:52:LYS:HA	30:3:1119:A:OP2	2.19	0.42
14:k:129:HIS:CE1	14:k:149:LEU:HD22	2.55	0.42
17:n:34:LYS:HA	17:n:39:ILE:HG13	2.02	0.42
19:p:36:GLN:HG3	30:3:1282:G:H22	1.85	0.42
20:q:74:ILE:HG21	20:q:77:LYS:HD3	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:u:89:LYS:O	24:u:90:GLN:HG2	2.19	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
30:3:512: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
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
5:b:141:HIS:HE1	30:3:1691:U:H3'	1.84	0.42
13:j:25:LEU:HB2	13:j:38:VAL:O	2.20	0.42
21:r:81:SER:OG	21:r:97:THR:OG1	2.15	0.42
24:u:39:LYS:HG3	24:u:45:ILE:HD13	2.01	0.42
29:z:38:CYS:HB2	29:z:47:HIS:NE2	2.34	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
5:b:63:ASN:ND2	30:3:2815:G:H5''	2.35	0.42
17:n:4:ARG:HG3	31:4:44:A:H5''	2.02	0.42
19:p:2:ARG:HB2	30:3:1278:G:C6	2.55	0.42
21:r:122:LYS:HA	21:r:125:VAL:HG12	2.01	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
4:a:104:GLY:HA2	30:3:1526:U:H1'	2.02	0.41
4:a:282:ARG:HH21	30:3:1805:U:P	2.43	0.41
5:b:200:PRO:HB2	30:3:2824:A:N3	2.35	0.41
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
12:i:121:TRP:HA	12:i:124:LYS:HE2	2.00	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
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
30:3:2710: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
2:1:14:THR:OG1	2:1:17:GLY:O	2.27	0.41
4:a:149:ASN:ND2	4:a:158:GLY:HA3	2.36	0.41
5:b:15:GLN:OE1	5:b:23:ARG:NH2	2.47	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:b:125:ARG:HG3	5:b:169:TYR:CD1	2.55	0.41
5:b:129:LYS:O	30:3:2519:U:H4'	2.19	0.41
5:b:163:LYS:HD2	5:b:163:LYS:HA	1.77	0.41
5:b:178:ASN:HD22	30:3:2739:C:H5''	1.85	0.41
14:k:91:ASP:O	14:k:92:LYS:HG2	2.20	0.41
16:m:19:ARG:HA	16:m:22:VAL:HG22	2.02	0.41
16:m:63:VAL:HG12	16:m:67:LEU:HD11	2.01	0.41
18:o:38:LYS:HA	18:o:42:LYS:O	2.20	0.41
18:o:49:THR:H	18:o:68:LYS:HZ2	1.67	0.41
20:q:19:THR:HG22	20:q:93:LYS:HD2	2.02	0.41
28:y:47:MET:HG3	28:y:52:ARG:HA	2.01	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
4:a:280:ARG:HE	4:a:282:ARG:HA	1.85	0.41
5:b:72:LYS:HB2	5:b:72:LYS:HE3	1.84	0.41
12:i:18:TRP:O	12:i:141:THR:N	2.54	0.41
12:i:34:LYS:HA	12:i:34:LYS:HD3	1.85	0.41
19:p:65:ASN:O	19:p:69:ARG:HG2	2.19	0.41
21:r:39:THR:OG1	21:r:41:LYS:HG2	2.20	0.41
21:r:88:ARG:NH1	30:3:2020:A:N3	2.68	0.41
30:3:961:U:O2	30:3:962:U:C5	2.73	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
30:3:2846: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:f:27:ILE:O	9:f:31:PHE:HB2	2.20	0.41
14:k:77:TRP:CE3	14:k:111:PRO:HB2	2.55	0.41
16:m:98:SER:OG	16:m:116:LEU:HD11	2.20	0.41
21:r:130:GLU:O	21:r:134:LYS:CB	2.69	0.41
29:z:34:LEU:HD13	30:3:2352:U:H2'	2.02	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
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
4:a:3:ILE:HD13	4:a:210:LEU:HB3	2.03	0.41
4:a:37:LEU:HA	4:a:68:ILE:HD12	2.03	0.41
6:c:52:ILE:HG12	6:c:88:GLY:HA2	2.02	0.41
6:c:76:GLN:HG2	6:c:84:PHE:HZ	1.86	0.41
14:k:105:SER:OG	30:3:657:A:OP2	2.33	0.41
26:w:85:ASN:O	26:w:89:GLN:HG2	2.21	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
30:3:1079:U:O2'	30:3:1146:A:N1	2.33	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
4:a:47:ARG:HD2	4:a:51:GLY:O	2.21	0.41
5:b:135:HIS:CE1	30:3:1705:U:H1'	2.56	0.41
8:e:142:GLU:CD	30:3:2767:G:H21	2.28	0.41
14:k:12:ALA:O	14:k:13:ARG:HG2	2.21	0.41
15:l:21:ALA:O	15:l:25:SER:OG	2.39	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:n:7:GLN:O	17:n:7:GLN:NE2	2.52	0.41
17:n:108:ALA:O	17:n:111:GLU:HG2	2.20	0.41
23:t:31:ARG:NE	23:t:33:GLN:HG3	2.36	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
4:a:14:ILE:O	30:3:1780:A:N6	2.25	0.41
5:b:161:LYS:HD3	5:b:162:GLY:H	1.84	0.41
8:e:56:THR:HA	8:e:68:HIS:HE1	1.86	0.41
8:e:101:VAL:HG23	8:e:106:LEU:HD22	2.02	0.41
19:p:32:LYS:HB3	30:3:1282:G:N2	2.36	0.41
24:u:48:GLY:O	30:3:2361:G:N2	2.34	0.41
24:u:64:ASN:HA	24:u:76:LEU:HD23	2.03	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
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
30:3:1375: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
4:a:110:ILE:H	4:a:110:ILE:HD12	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:a:144:GLY:HA2	4:a:169:ARG:HH12	1.85	0.41
7:d:91:LEU:HB2	7:d:95:ARG:HG3	2.03	0.41
14:k:119:LYS:HE2	14:k:121:GLU:HG2	2.01	0.41
15:l:82:ARG:HD3	30:3:2503:G:H5''	2.03	0.41
22:s:2:ASP:CG	22:s:4:THR:H	2.28	0.41
22:s:76:LYS:HD2	22:s:76:LYS:H	1.86	0.41
23:t:27:ILE:O	30:3:87:G:H5'	2.21	0.41
26:w:33:LEU:HD11	26:w:44:ILE:HG13	2.03	0.41
29:z:34:LEU:HD22	30:3:2352:U:P	2.61	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
30:3:1174:G:O2'	30:3:1178:A:N1	2.51	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
30:3:1682: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
2:1:10:ARG:HG2	14:k:64:LYS:HA	2.03	0.41
4:a:12:SER:OG	30:3:765:A:OP1	2.31	0.41
13:j:102:VAL:O	13:j:122:VAL:N	2.45	0.41
16:m:9:LYS:NZ	30:3:1685:G:OP2	2.32	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:m:14:ARG:HH12	30:3:2009:U:P	2.40	0.41
18:o:62:GLU:HB3	18:o:81:ILE:HB	2.03	0.41
25:v:22:LYS:HA	25:v:22:LYS:HD3	1.80	0.41
30:3:225:A:H4'	30:3:226:A:N3	2.35	0.41
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
4:a:190:ARG:NH1	30:3:1806:G:O2'	2.54	0.40
4:a:228:VAL:HG23	30:3:816:A:H5''	2.03	0.40
5:b:28:VAL:HG13	5:b:190:LEU:HD21	2.03	0.40
6:c:102:LYS:NZ	30:3:640:U:H4'	2.36	0.40
6:c:141:LYS:O	6:c:145:GLN:HG2	2.21	0.40
7:d:169:LEU:O	7:d:173:LEU:HG	2.21	0.40
8:e:146:GLN:O	8:e:149:THR:OG1	2.38	0.40
14:k:61:ARG:HG2	30:3:2400:A:N3	2.36	0.40
26:w:91:LEU:HG	26:w:95:LYS:HE3	2.03	0.40
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
30:3:1724: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
4:a:90:PRO:HB3	30:3:1601:A:H2'	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:d:48:LYS:O	7:d:51:GLU:HG2	2.21	0.40
8:e:112:TYR:CD2	30:3:2675:C:H1'	2.56	0.40
15:l:28:ALA:HA	15:l:134:ARG:CZ	2.51	0.40
15:l:35:VAL:O	15:l:130:LYS:N	2.55	0.40
21:r:3:ALA:HB3	21:r:107:LEU:HB2	2.03	0.40
22:s:13:THR:HB	30:3:1366:G:H5''	2.03	0.40
26:w:100:LYS:HD3	26:w:100:LYS:HA	1.83	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
30:3:603: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
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
6:c:201:LYS:HE3	6:c:201:LYS:HB3	1.91	0.40
14:k:43:LYS:HE3	14:k:43:LYS:HB3	1.88	0.40
18:o:100:TYR:CG	30:3:2726:G:H4'	2.55	0.40
26:w:96:ALA:O	26:w:100:LYS:HG2	2.22	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
30:3:1430:U:O2'	30:3:1496:A:N1	2.52	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
4:a:13:GLY:HA3	30:3:1781:C:H1'	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:e:116:ILE:C	8:e:117:LYS:HD2	2.47	0.40
9:f:71:VAL:O	9:f:74:GLN:HG3	2.20	0.40
15:l:34:LEU:HB2	15:l:118:LEU:HG	2.03	0.40
19:p:21:SER:OG	30:3:21:U:OP1	2.39	0.40
19:p:54:ARG:HH21	30:3:1191:A:P	2.44	0.40
22:s:56:ASN:HB2	22:s:82:VAL:CG1	2.51	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
11:h:88:ASN:HA	30:3:1111:C:O2'	2.22	0.40
14:k:61:ARG:CZ	30:3:2436:G:H21	2.35	0.40
14:k:74:LYS:HG3	30:3:669:A:OP1	2.21	0.40
16:m:49:ILE:O	16:m:53:LYS:HG3	2.21	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	54
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
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

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
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%)	182 (100%)	0	100	100
7	d	150/154 (97%)	150 (100%)	0	100	100
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%)	88 (87%)	13 (13%)	4	15
11	h	102/110 (93%)	102 (100%)	0	100	100
12	i	126/128 (98%)	126 (100%)	0	100	100
13	j	103/103 (100%)	103 (100%)	0	100	100
14	k	123/126 (98%)	123 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
15	l	113/115 (98%)	113 (100%)	0	100	100
16	m	105/109 (96%)	105 (100%)	0	100	100
17	n	96/99 (97%)	96 (100%)	0	100	100
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%)	90 (100%)	0	100	100
21	r	116/132 (88%)	116 (100%)	0	100	100
22	s	82/208 (39%)	82 (100%)	0	100	100
23	t	96/96 (100%)	96 (100%)	0	100	100
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%)	87 (100%)	0	100	100
27	x	41/86 (48%)	41 (100%)	0	100	100
28	y	48/49 (98%)	45 (94%)	3 (6%)	16	37
29	z	47/50 (94%)	47 (100%)	0	100	100
All	All	2965/3321 (89%)	2949 (100%)	16 (0%)	78	83

All (16) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
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	86	VAL
10	g	88	GLU
10	g	89	ILE
10	g	90	VAL
10	g	114	ASP
10	g	116	ARG
28	y	47	MET
28	y	51	LEU
28	y	52	ARG

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

Mol	Chain	Res	Type
2	1	18	GLN
2	1	28	HIS
3	2	34	GLN
4	a	91	ASN
4	a	149	ASN
5	b	34	ASN
5	b	80	HIS
5	b	95	GLN
6	c	81	ASN
6	c	130	GLN
7	d	55	ASN
8	e	6	ASN
8	e	21	GLN
8	e	24	HIS
8	e	107	ASN
9	f	78	HIS
9	f	100	GLN
12	i	17	GLN
12	i	43	ASN
13	j	76	HIS
17	n	38	HIS
17	n	42	GLN
17	n	49	ASN
18	o	80	GLN
21	r	94	ASN
21	r	112	ASN
21	r	115	GLN
21	r	132	GLN
23	t	17	ASN
24	u	54	GLN
24	u	84	GLN
25	v	6	GLN
25	v	34	GLN
26	w	89	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%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
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
30	3	136	G

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Mol	Chain	Res	Type
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
30	3	294	G

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Mol	Chain	Res	Type
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
30	3	426	U

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Mol	Chain	Res	Type
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
30	3	567	U

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Mol	Chain	Res	Type
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
30	3	723	U

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Mol	Chain	Res	Type
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
30	3	873	G

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Mol	Chain	Res	Type
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
30	3	1031	U

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Mol	Chain	Res	Type
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
30	3	1154	U

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Mol	Chain	Res	Type
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
30	3	1274	A

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Mol	Chain	Res	Type
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
30	3	1423	A

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Mol	Chain	Res	Type
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
30	3	1571	G

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Mol	Chain	Res	Type
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
30	3	1702	A

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Mol	Chain	Res	Type
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
30	3	1823	U

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Mol	Chain	Res	Type
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
30	3	1982	G

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Mol	Chain	Res	Type
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
30	3	2119	A

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Mol	Chain	Res	Type
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
30	3	2274	A

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Mol	Chain	Res	Type
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
30	3	2431	U

Continued on next page...

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Mol	Chain	Res	Type
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
30	3	2584	G

Continued on next page...

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Mol	Chain	Res	Type
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
30	3	2739	C

Continued on next page...

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Mol	Chain	Res	Type
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
30	3	2872	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
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
31	4	79	U

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Mol	Chain	Res	Type
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
30	3	2506	C

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Mol	Chain	Res	Type
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.

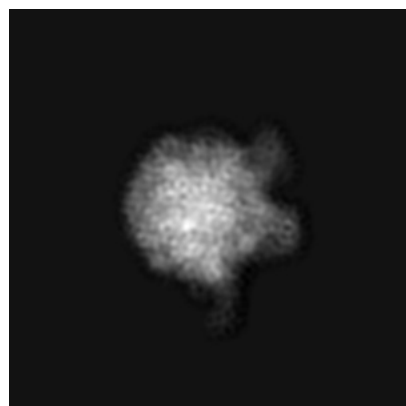
6 Map visualisation [i](#)

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.

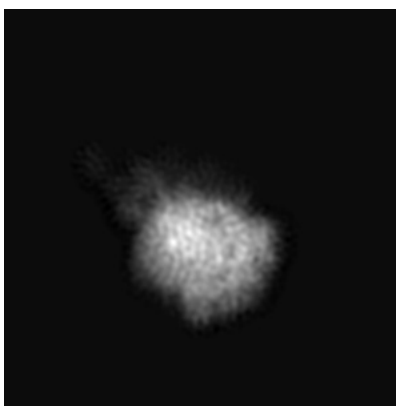
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

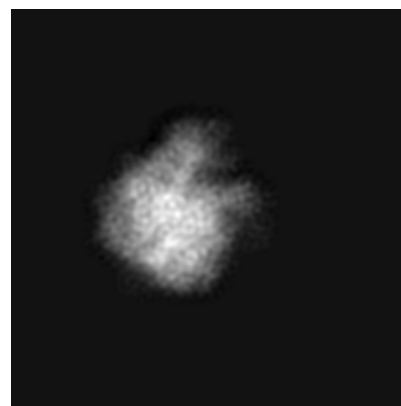
6.1.1 Primary map



X

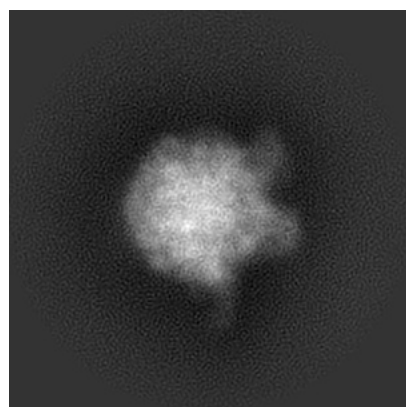


Y

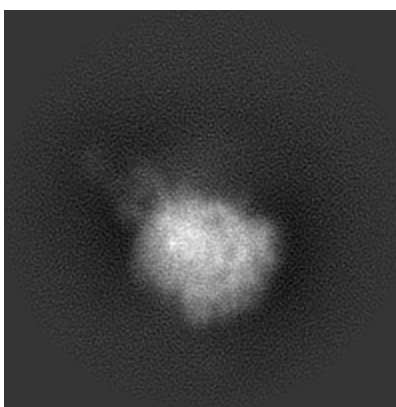


Z

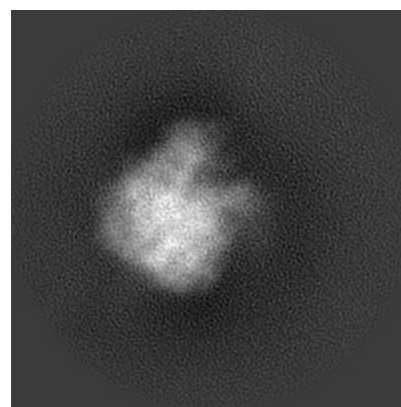
6.1.2 Raw map



X



Y

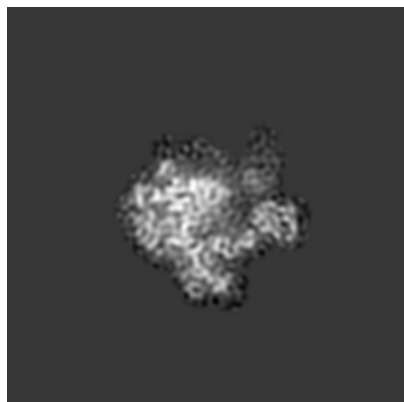


Z

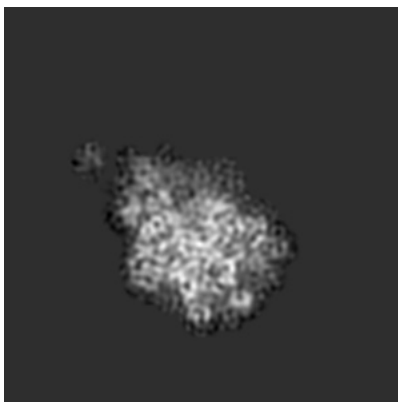
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

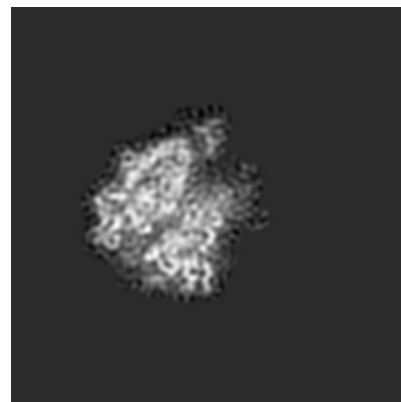
6.2.1 Primary map



X Index: 100

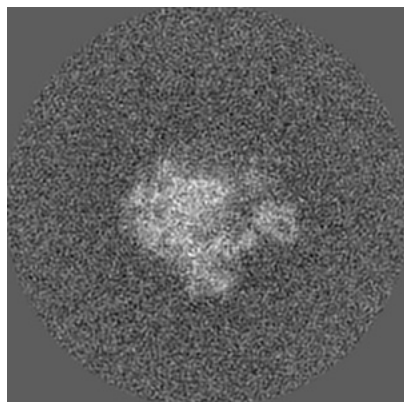


Y Index: 100

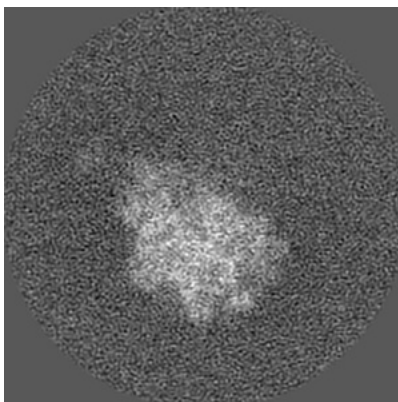


Z Index: 100

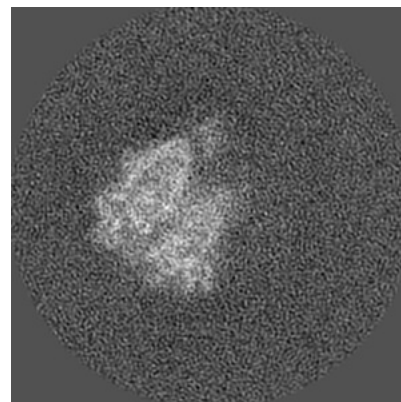
6.2.2 Raw map



X Index: 100



Y Index: 100

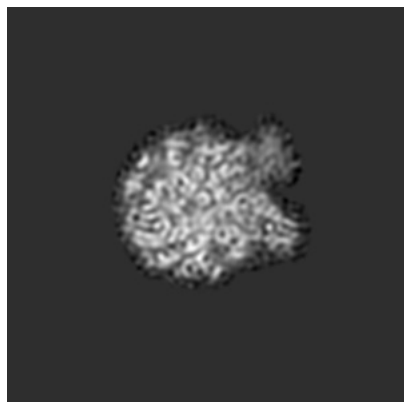


Z Index: 100

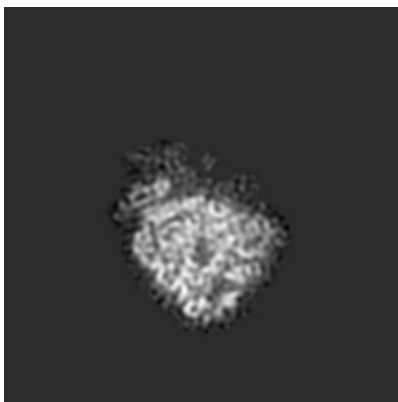
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

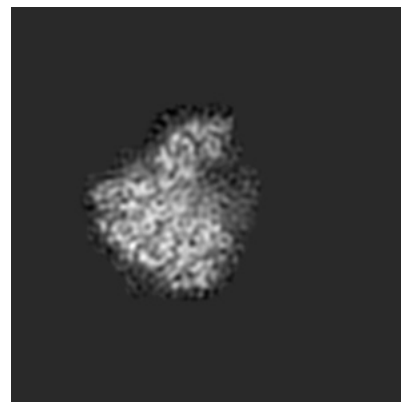
6.3.1 Primary map



X Index: 83

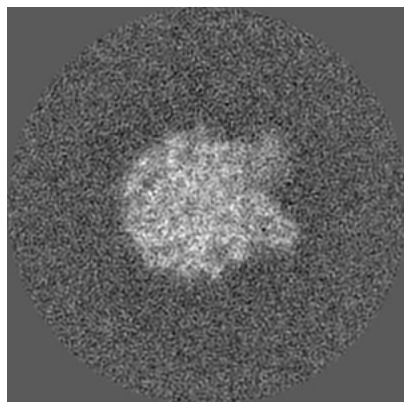


Y Index: 89

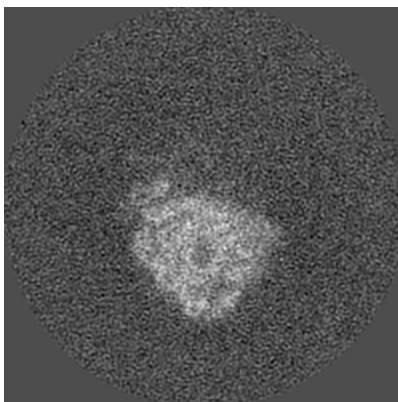


Z Index: 94

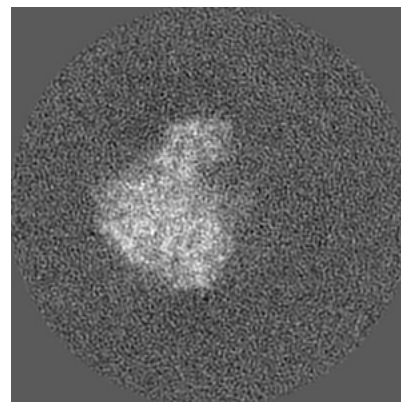
6.3.2 Raw map



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

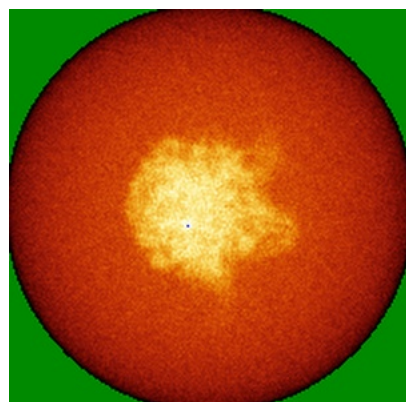


Y

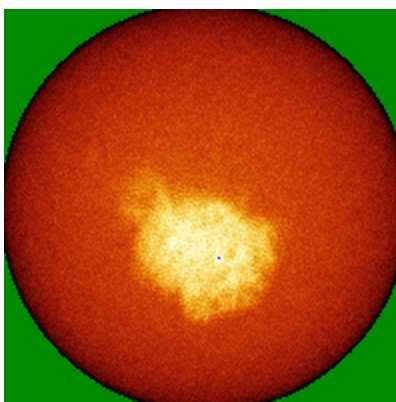


Z

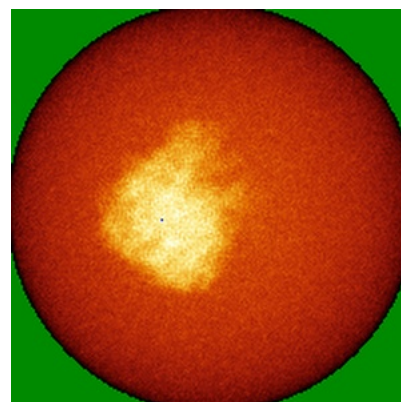
6.4.2 Raw map



X



Y

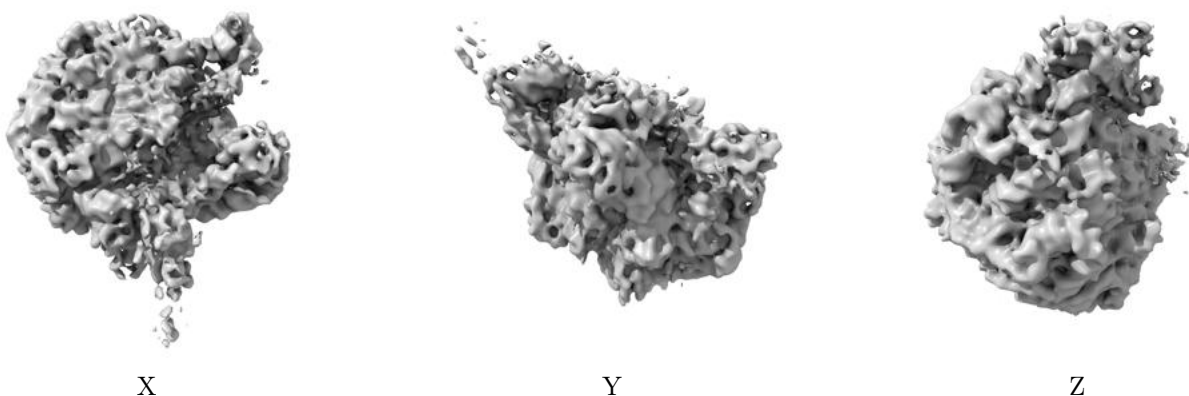


Z

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.

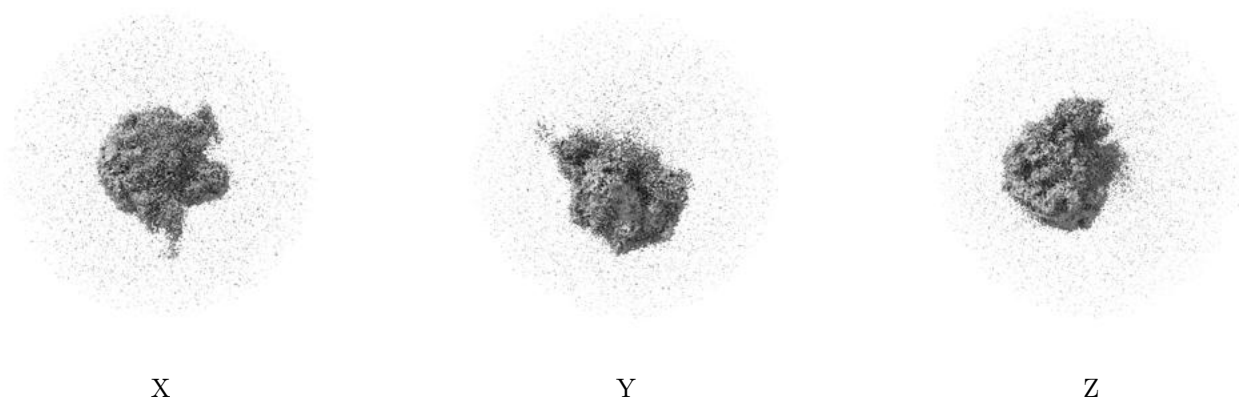
6.5 Orthogonal surface views [i](#)

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.

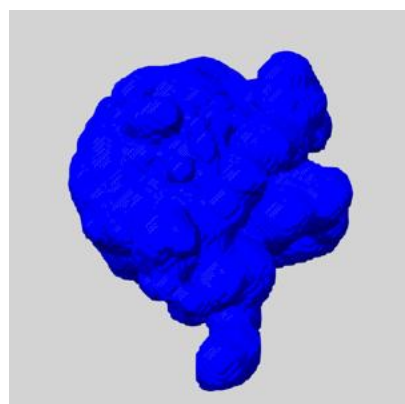
6.6 Mask visualisation [i](#)

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

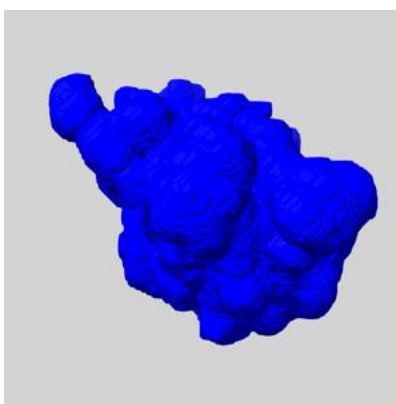
A mask typically either:

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

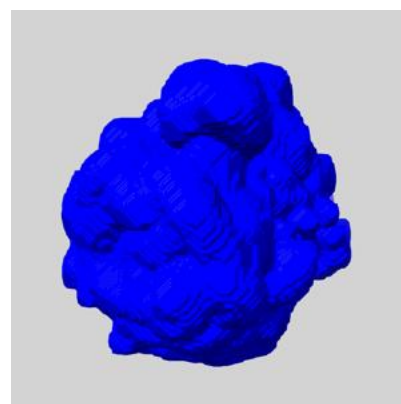
6.6.1 emd_13285_msk_1.map [i](#)



X



Y

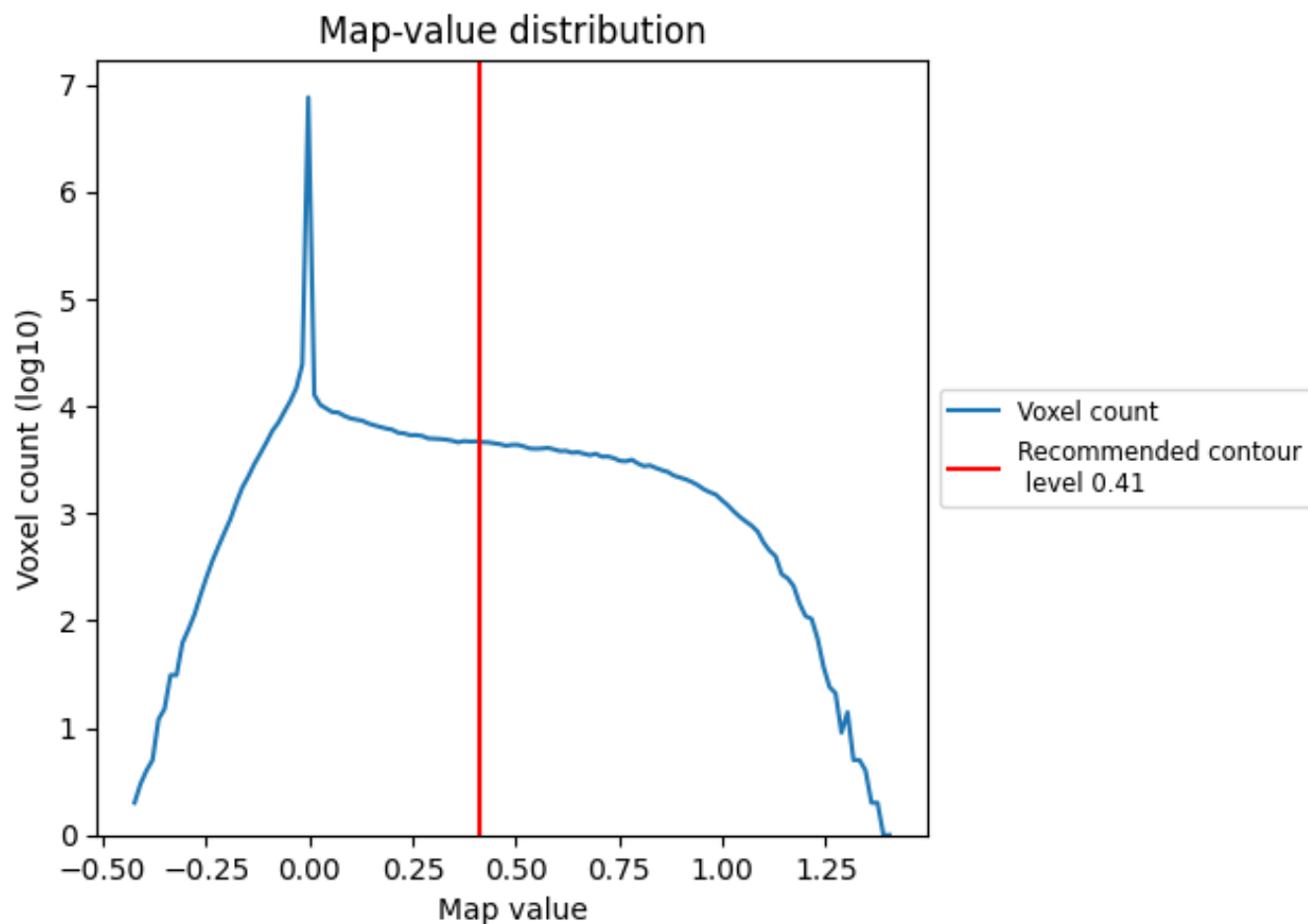


Z

7 Map analysis [i](#)

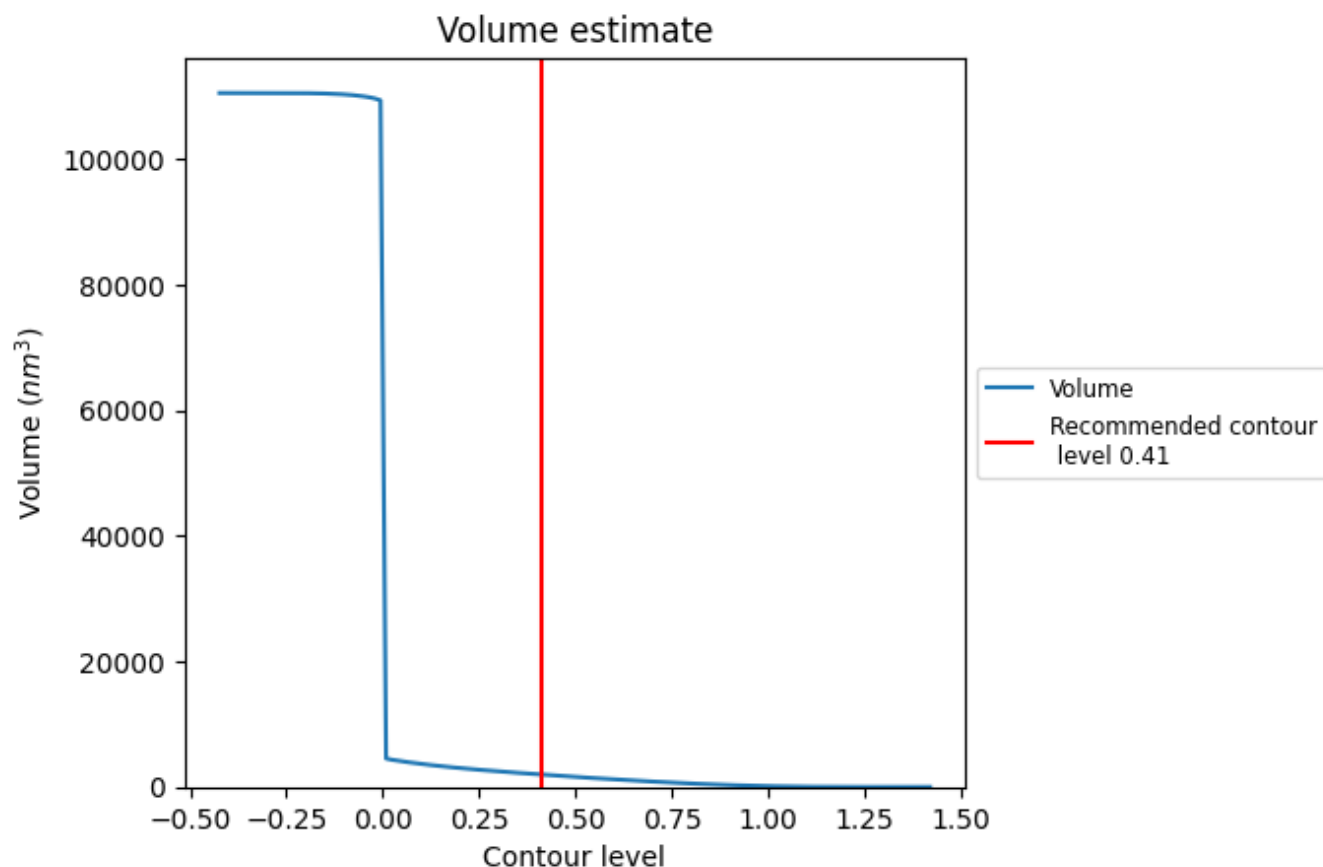
This section contains the results of statistical analysis of the map.

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.

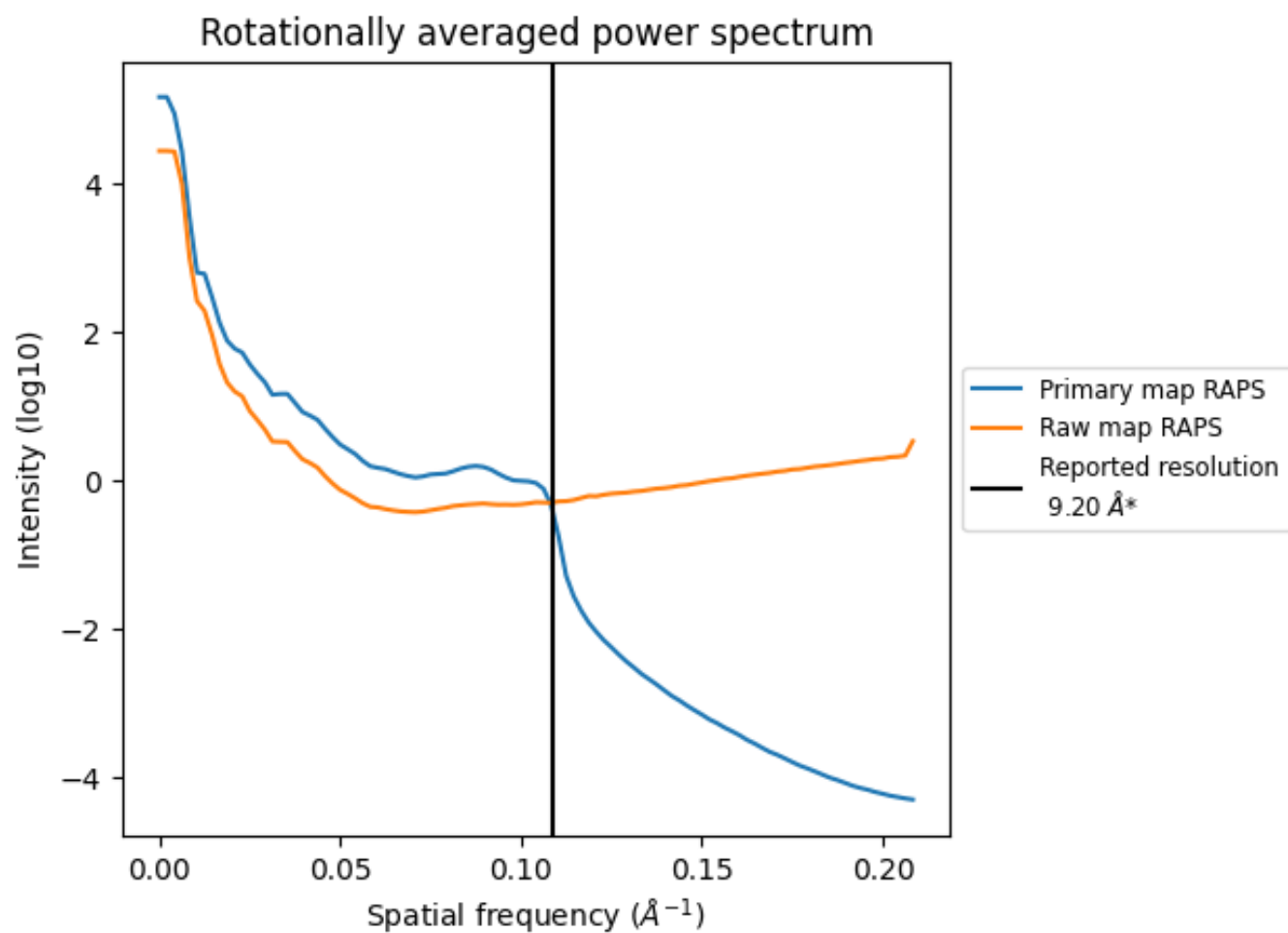
7.2 Volume estimate [i](#)



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 ⓘ

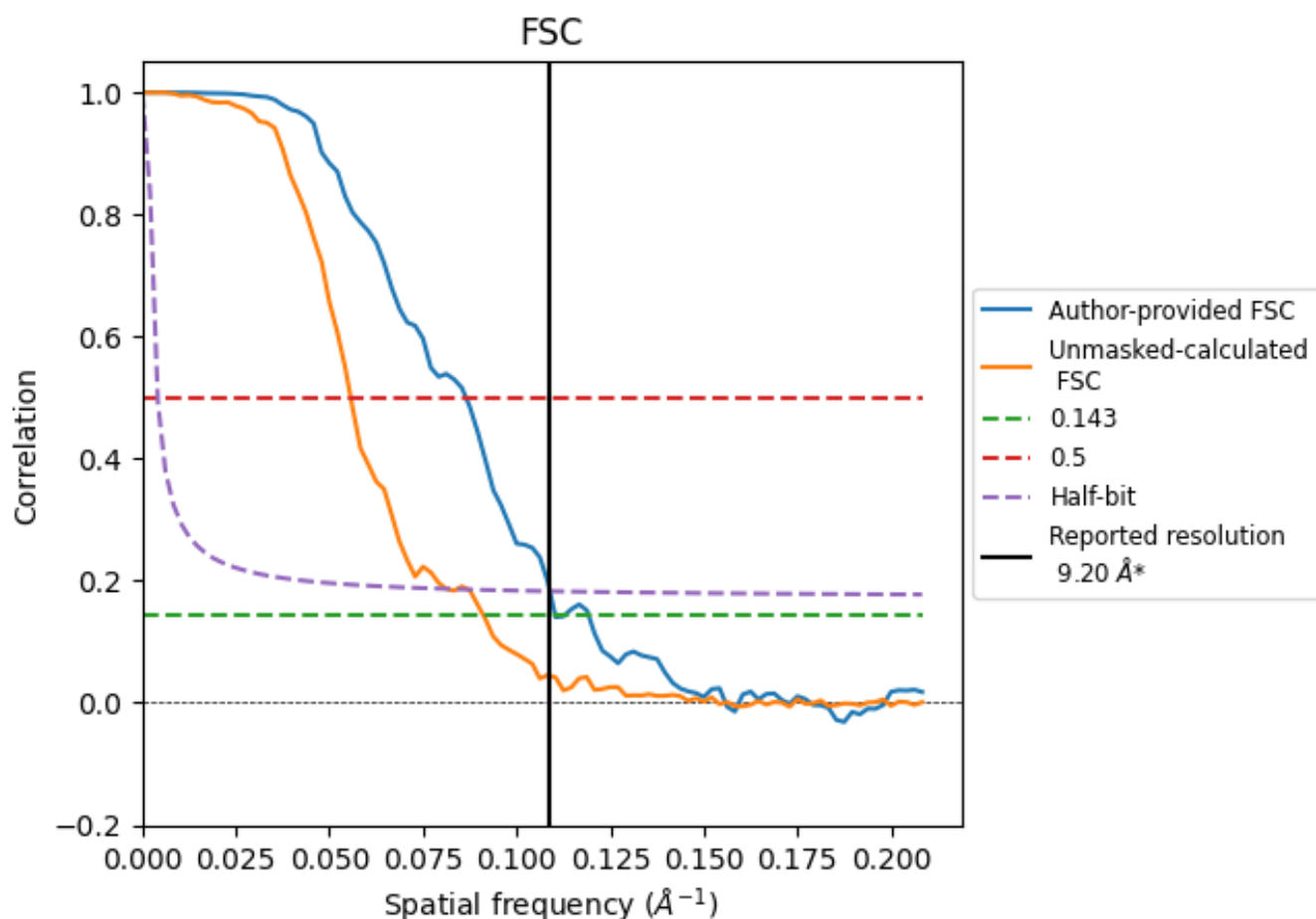


*Reported resolution corresponds to spatial frequency of 0.109 $\text{\AA}^{-1}$

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



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

8.2 Resolution estimates [i](#)

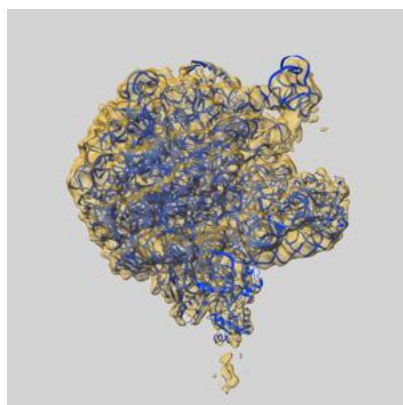
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	9.20	-	-
Author-provided FSC curve	9.07	11.56	9.18
Unmasked-calculated*	10.98	17.95	12.29

*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 %

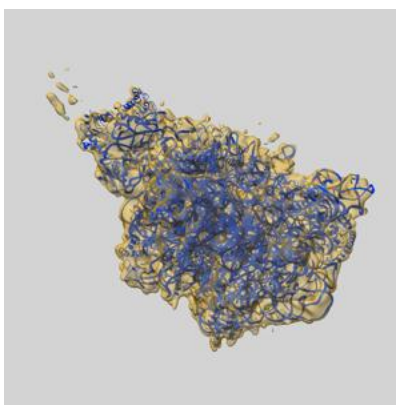
9 Map-model fit [i](#)

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 [10](#).

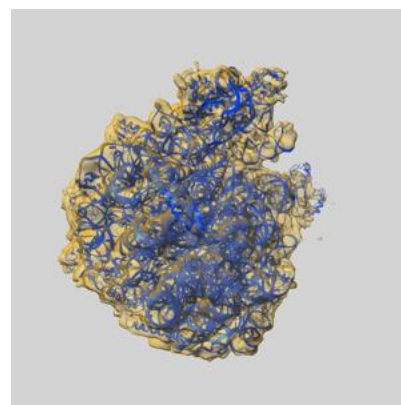
9.1 Map-model overlay [i](#)



X



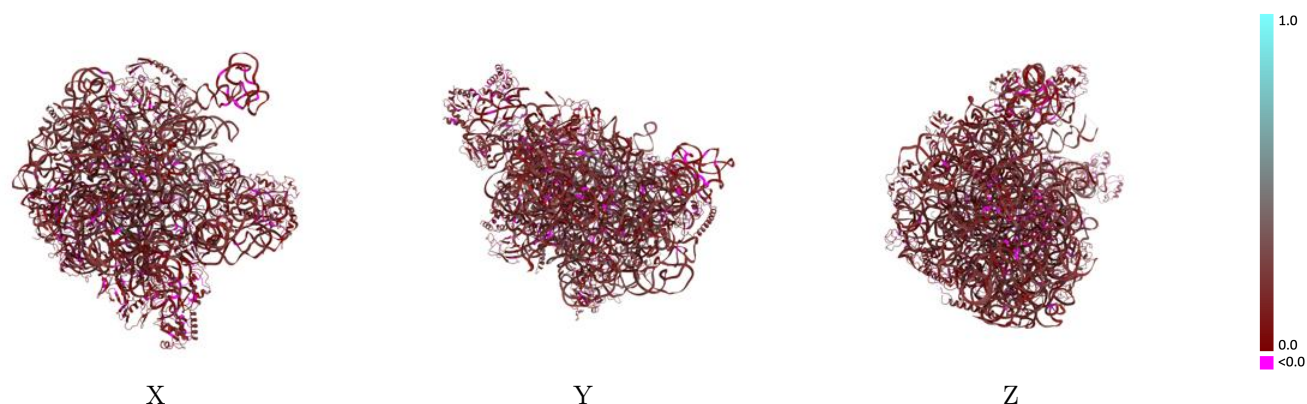
Y



Z

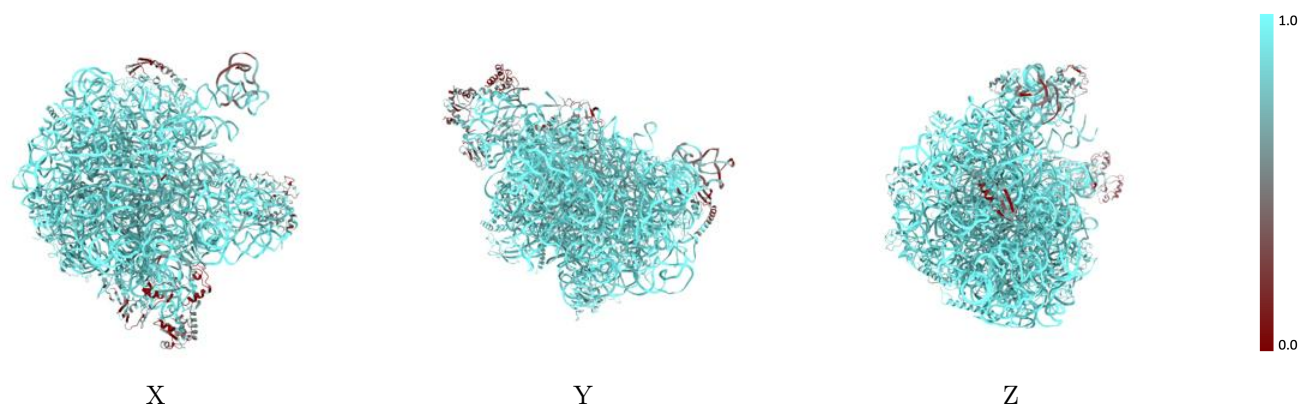
The images above show the 3D surface view of the map at the recommended contour level 0.41 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



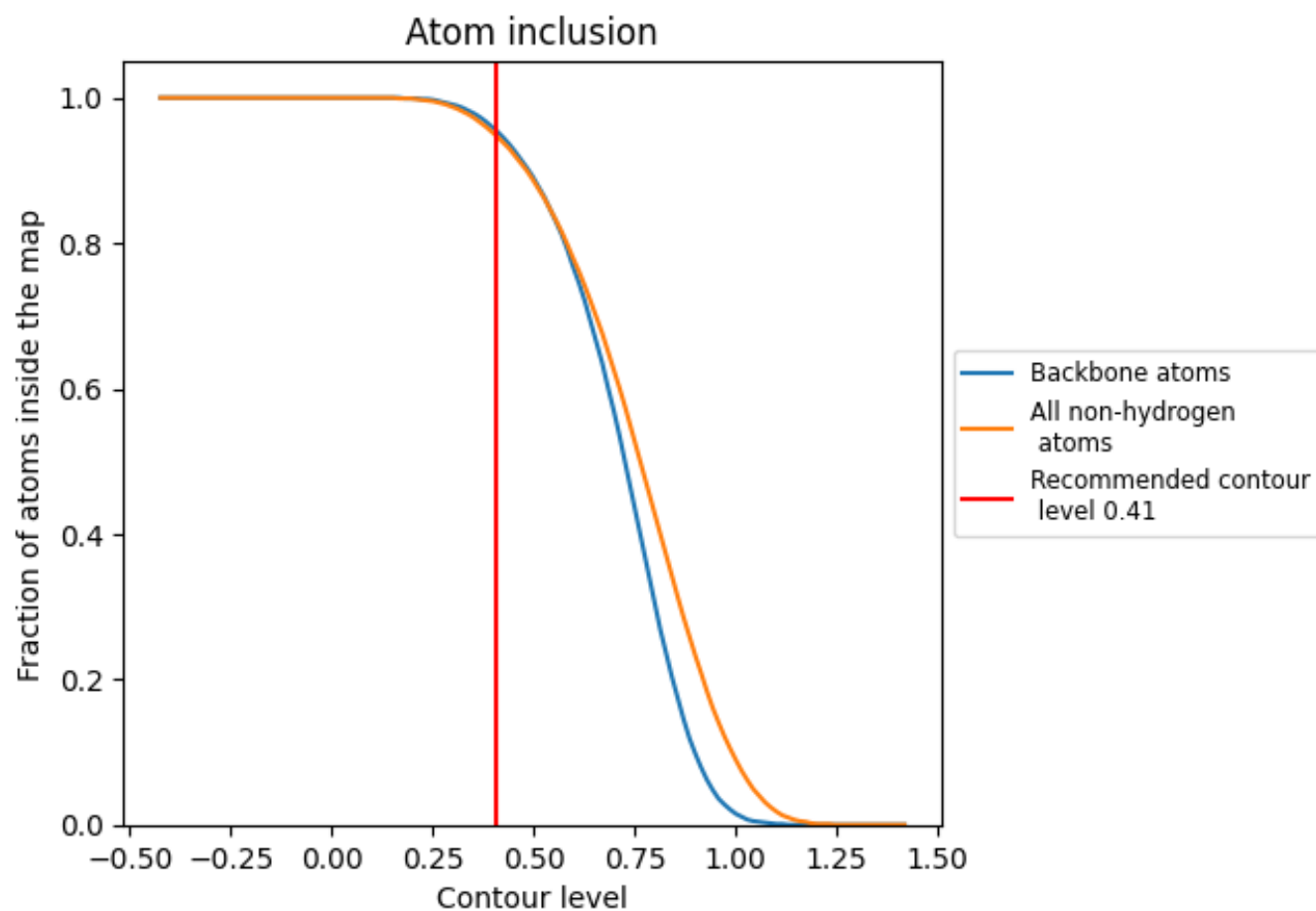
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

