



Full wwPDB EM Validation Report ⓘ

Jul 7, 2021 – 11:16 am BST

PDB ID : 7OE1
EMDB ID : EMD-12857
Title : 30S ribosomal subunit from E. coli
Authors : Maksimova, E.; Korepanov, A.; Baymukhametov, T.; Kravchenko, O.; Stoboushkina, E.
Deposited on : 2021-04-30
Resolution : 3.05 Å(reported)
Based on initial model : 4V4Q

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

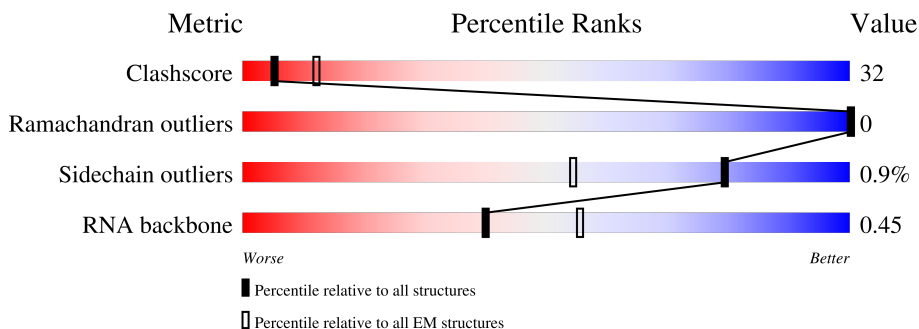
EMDB validation analysis : 0.0.0.dev84
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.22

1 Overall quality at a glance i

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

The reported resolution of this entry is 3.05 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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	A	1542	
2	D	205	
3	E	166	
4	F	135	
5	H	129	
6	K	128	
7	L	123	

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Mol	Chain	Length	Quality of chain
8	O	89	
9	P	82	
10	Q	83	
11	R	74	
12	T	86	
13	B	240	
14	U	71	
15	C	232	
16	G	178	
17	I	129	
18	J	103	
19	M	117	
20	N	100	
21	S	91	

2 Entry composition [i](#)

There are 21 unique types of molecules in this entry. The entry contains 51092 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 16S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	A	1530	32831	14642	6024	10635	1530	0	0

- Molecule 2 is a protein called 30S ribosomal protein S4.

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

- Molecule 3 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	E	150	1105	687	211	201	6	0	0

- Molecule 4 is a protein called 30S ribosomal protein S6, fully modified isoform.

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

- Molecule 5 is a protein called 30S ribosomal protein S8.

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

- Molecule 6 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	K	117	877	540	174	160	3	0	0

- Molecule 7 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	L	123	955	590	196	165	4	0	0

- Molecule 8 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	O	88	716	440	146	129	1	0	0

- Molecule 9 is a protein called 30S ribosomal protein S16.

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

- Molecule 10 is a protein called 30S ribosomal protein S17.

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

- Molecule 11 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
11	R	55	455	288	86	81	0	0

- Molecule 12 is a protein called 30S ribosomal protein S20.

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

- Molecule 13 is a protein called 30S ribosomal protein S2.

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

- Molecule 14 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	U	18	Total	C	N	O	0	0
			148	94	28	26		

- Molecule 15 is a protein called 30S ribosomal protein S3.

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

- Molecule 16 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	G	150	Total	C	N	O	S	0	0
			1174	730	226	214	4		

- Molecule 17 is a protein called 30S ribosomal protein S9.

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

- Molecule 18 is a protein called 30S ribosomal protein S10.

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

- Molecule 19 is a protein called 30S ribosomal protein S13.

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

- Molecule 20 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	N	96	Total	C	N	O	S	0	0
			774	483	160	128	3		

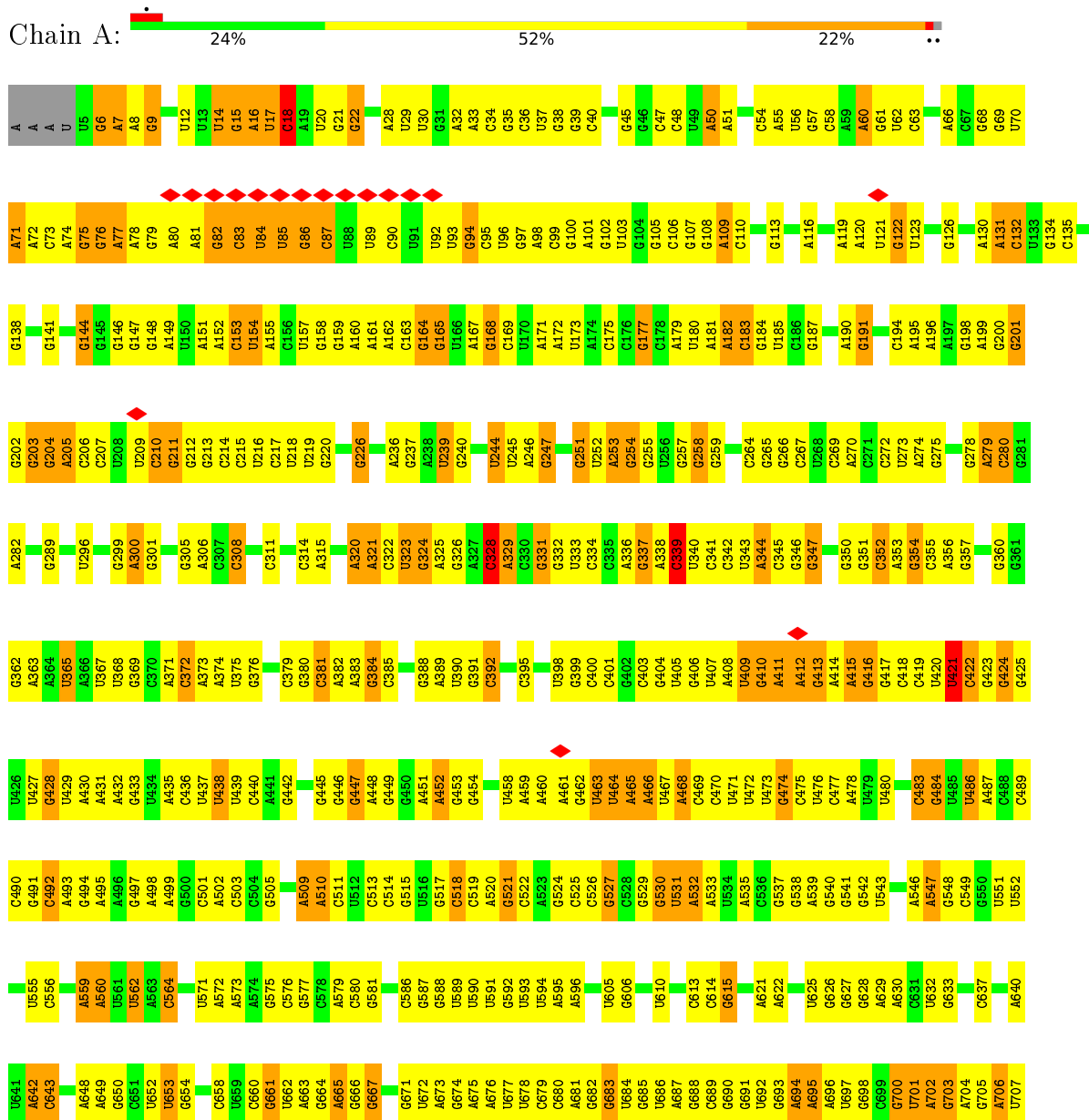
- Molecule 21 is a protein called 30S ribosomal protein S19.

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

3 Residue-property plots [i](#)

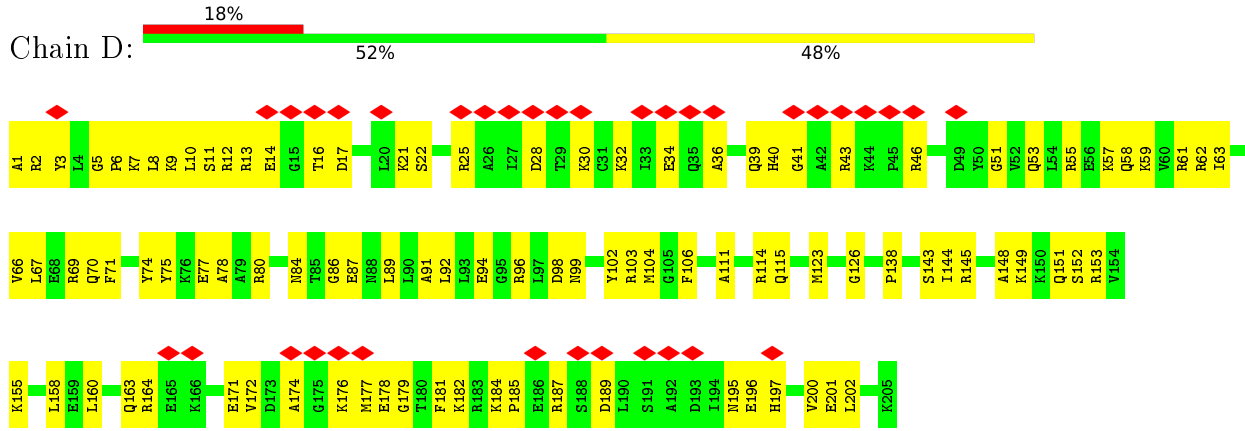
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: 16S rRNA

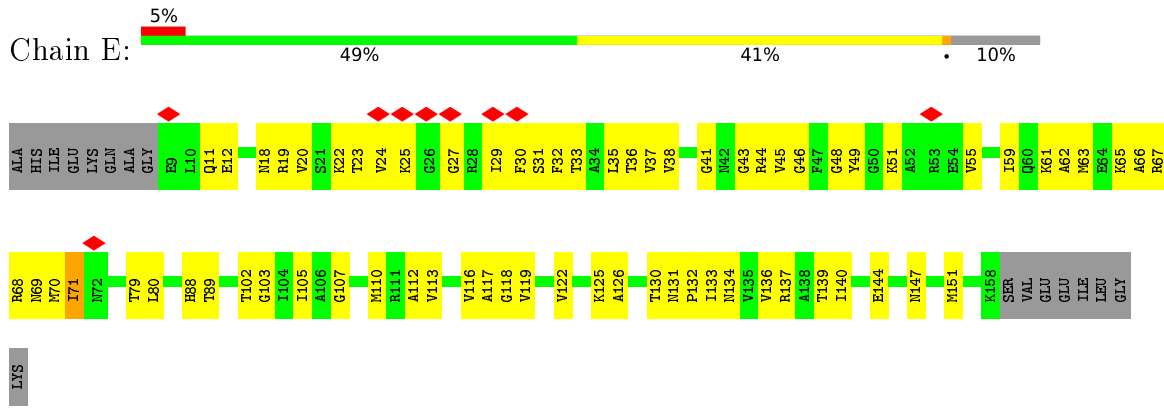


U	G1473	A1410	A1350	G1290	A1229	A1169	C1109	G1047	U986	G926	G849	G774	G709
A	U1474	U1361	U1352	U1291	C1230	A1170	A1110	G1048	G987	G927	U850	G775	U709
	A1476	G1352	G1292	G1293	G1231	A1171	C1111	U1049	G988	G928	G851	A776	G710
	U1477	G1353	G1294	G1295	U1232	U1172	C1112	G1052	U991	C930	C857	G778	G713
	U1478	U1354	G1294	U1295	G1233	U1173	C1113	G1053	U992	C931	C858	C779	G714
	C1479	G1355	G1294	U1296	G1234	G1174	C1114	U1054	G993	C932	C859	A780	A715
	A1480	G1356	G1297	G1296	G1235	G1175	C1115	C1054	G994	C933	A860	A781	A716
	U1481	A1387	G1297	G1297	A1236	A1176	C1116	A1055	G995	C934	A782	U717	U717
	G1482	U1388	U1298	G1298	G1237	G1177	C1117	U1056	C995	C935	A864	A718	A718
	U1485	C1359	A1299	A1299	A1238	G1178	C1118	G1057	A996	C936	A865	C719	C719
	G1486	A1360	A1421	A1421	A1239	A1179	C1119	G1058	U997	C937	A866	G720	G720
	G1487	G1361	G1422	G1422	A1240	A1180	C1120	U1059	G998	C938	A787	G721	G721
		A1362	C1302	C1302	G1241	G1181	C1121	U1060	G999	C939	A792	G722	G722
		U1363	G1303	G1303	G1242	G1182	C1122	G1061	C999	C940	A793	U723	U723
		U1364	G1304	G1304	C1243	U1183	C1123	U1062	A1000	C941	A873	G724	G724
		G1365	G1305	G1305	G1244	G1184	C1124	C1063	C1001	C942	G874	U794	U794
		C1366	A1306	A1306	C1245	G1185	C1125	G1064	G1002	C943	U875	C795	C795
		C1367	U1307	U1307	A1246	G1186	C1126	U1065	G1003	C944	G877	C796	C796
		A1368	U1308	U1308	U1247	G1187	C1127	C1066	A1004	G944	A878	C797	C797
		C1369	U1309	U1309	U1248	A1188	C1128	U1067	A1005	G945	G800	A728	A728
		G1371	G1310	G1310	A1249	U1189	C1129	U1070	G1006	A946	U801	A729	A729
		U1372	A1311	A1311	A1250	A1190	C1130	G1071	U1007	A947	C882	G730	G730
		G1373	U1312	U1312	A1251	A1191	C1131	U1072	U1008	C948	C883	G731	G731
		A1374	G1313	G1313	A1252	C1192	C1132	U1073	U1009	A949	U884	C732	C732
		U1375	C1314	C1314	G1253	G1193	C1133	G1074	U1010	U950	C805	G733	G733
		U1376	U1315	U1315	A1254	U1194	C1134	U1075	U1011	U951	C806	C735	C735
		A1377	G1316	G1316	G1255	U1195	C1135	U1076	U1012	U952	A807	C736	C736
		C1378	A1317	A1317	A1256	A1196	C1136	G1077	A900	U953	G812	U740	U740
		G1379	A1318	A1318	A1257	A1197	C1137	U1078	A901	U954	U813	C739	C739
		U1380	A1319	A1319	G1258	A1198	C1138	U1079	A902	U955	A814	U741	U741
		U1381	G1320	G1320	C1259	U1199	C1139	U1080	G903	U956	A815	G742	G742
		C1382	U1321	U1321	G1260	A1201	C1140	A1081	G904	U957	A816	A743	A743
		G1383	C1322	C1322	A1261	U1202	C1141	U1082	A905	U958	G818	C744	C744
		C1384	G1323	G1323	U1264	U1203	C1142	G1083	U960	U959	A819	G745	G745
		G1385	A1324	A1324	G1265	A1204	C1143	U1084	U861	U961	A820	A746	A746
		C1386	C1325	C1325	U1266	U1205	C1144	U1085	C962	U962	G821	A747	A747
		G1387	U1326	U1326	G1267	G1206	C1145	U1086	G903	U963	C826	G748	G748
		C1388	C1327	C1327	C1267	G1207	C1146	U1087	U904	U964	U827	U751	U751
		C1389	U1328	U1328	G1268	C1208	C1147	G1088	A906	U965	U828	G752	G752
		U1390	A1329	A1329	A1269	C1209	C1148	U1089	A909	G966	G829	C754	C754
		C1391	G1331	G1331	G1270	U1210	C1149	U1090	C910	C970	U835	U757	U757
		U1392	A1332	A1332	U1271	U1211	C1150	U1091	C911	C971	U836	G758	G758
		C1393	G1333	G1333	G1272	U1212	C1151	A1092	C912	C972	U837	A759	A759
		U1394	A1334	A1334	A1273	U1213	C1152	A1093	C913	C973	U838	G760	G760
		C1395	G1335	G1335	U1274	C1214	C1153	G1094	U911	C974	C839	U761	U761
		G1396	C1336	C1336	G1275	G1215	C1154	U1095	C914	C975	C840	G763	G763
		C1397	G1337	G1337	C1276	A1216	C1155	C1096	C915	C976	U841	C764	C764
		A1398	U1338	U1338	G1277	A1217	C1156	U1097	C916	C977	U842	G765	G765
		C1399	G1339	G1339	G1278	C1218	C1157	G1099	U917	C978	U843	G769	G769
		G1400	A1340	A1340	U1279	A1219	C1158	A1035	A918	C979	U844	C770	C770
		C1401	U1341	U1341	C1281	U1220	C1159	A1036	A919	C980	U845	G771	G771
		C1402	C1342	C1342	C1282	G1221	C1160	U1037	U822	C981	U846	G772	G772
		C1403	G1343	G1343	U1283	G1222	C1161	A1038	U823	C982	U847	G773	G773
		G1404	C1344	C1344	C1284	C1223	C1162	U1039	U824	C983	C948		
		C1405	U1345	U1345	A1285	U1224	C1163	U1040	U825	C984	C949		
		U1406	A1346	A1346	A1286	A1225	C1164	G1105	U826	C985	C950		
		C1407	G1347	G1347	U1287	A1226	C1165	G1106	U827	C986	C951		
		A1408	U1348	U1348	A1288	A1227	C1166	G1107	U828	C987	C952		
		C1409	A1349	A1349	A1289	C1228	C1167	G1108	U829	C988	C953		

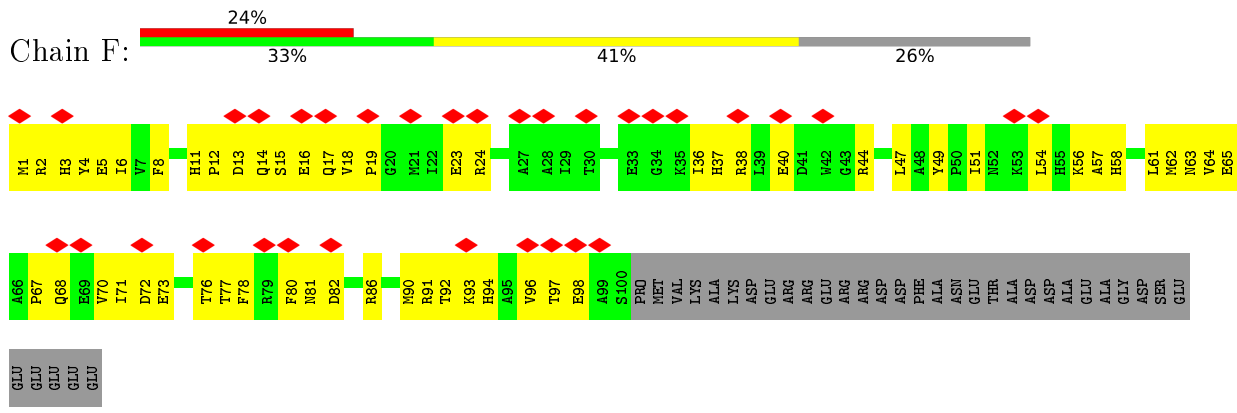
• Molecule 2: 30S ribosomal protein S4



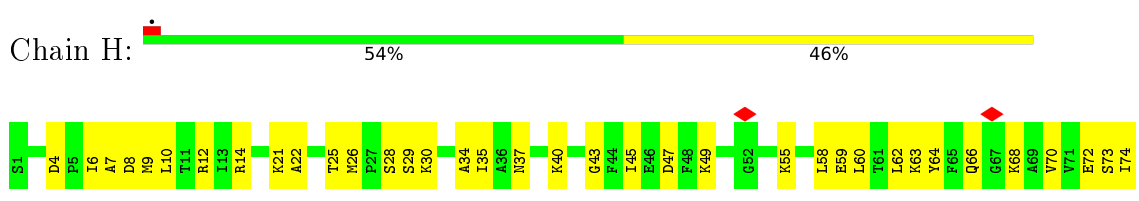
• Molecule 3: 30S ribosomal protein S5



• Molecule 4: 30S ribosomal protein S6, fully modified isoform

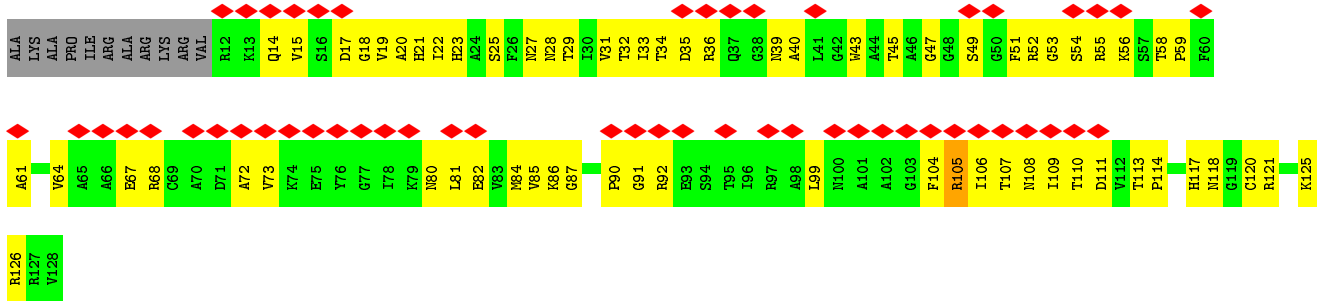


• Molecule 5: 30S ribosomal protein S8

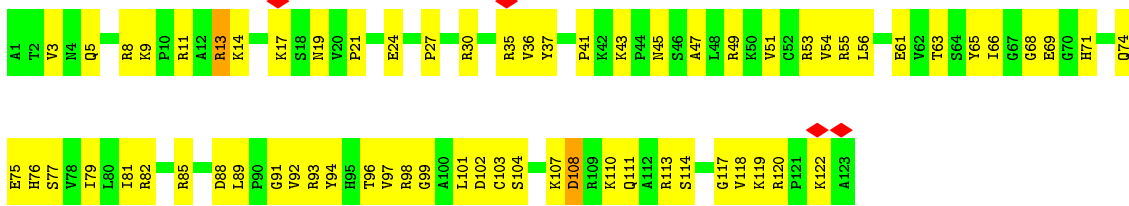




• Molecule 6: 30S ribosomal protein S11



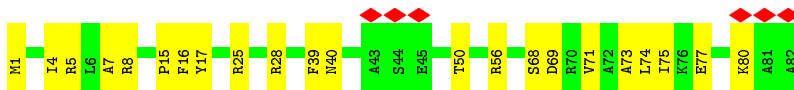
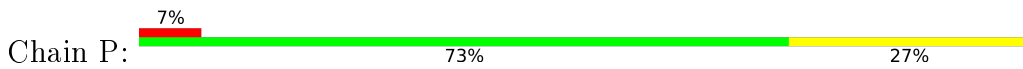
• Molecule 7: 30S ribosomal protein S12



• Molecule 8: 30S ribosomal protein S15



• Molecule 9: 30S ribosomal protein S16

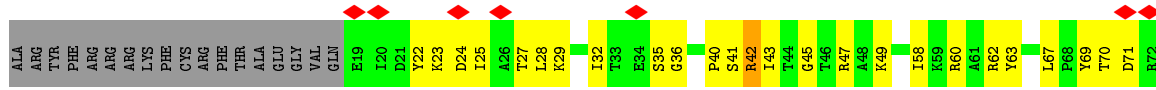


• Molecule 10: 30S ribosomal protein S17



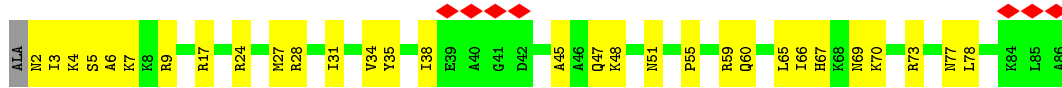
W62 LEU

Molecule 11: 30S ribosomal protein S18

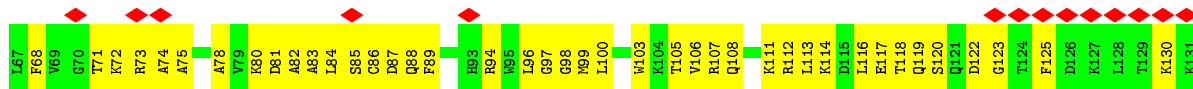
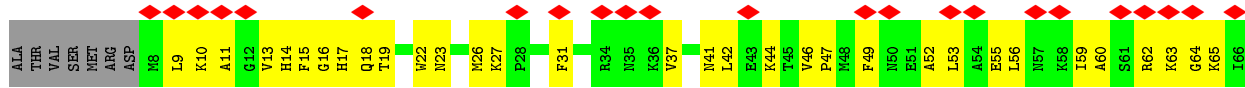


H73 GLN

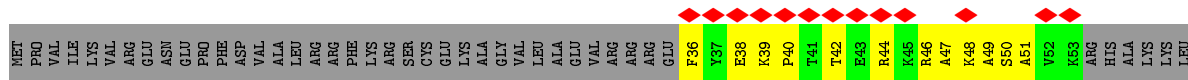
Molecule 12: 30S ribosomal protein S20



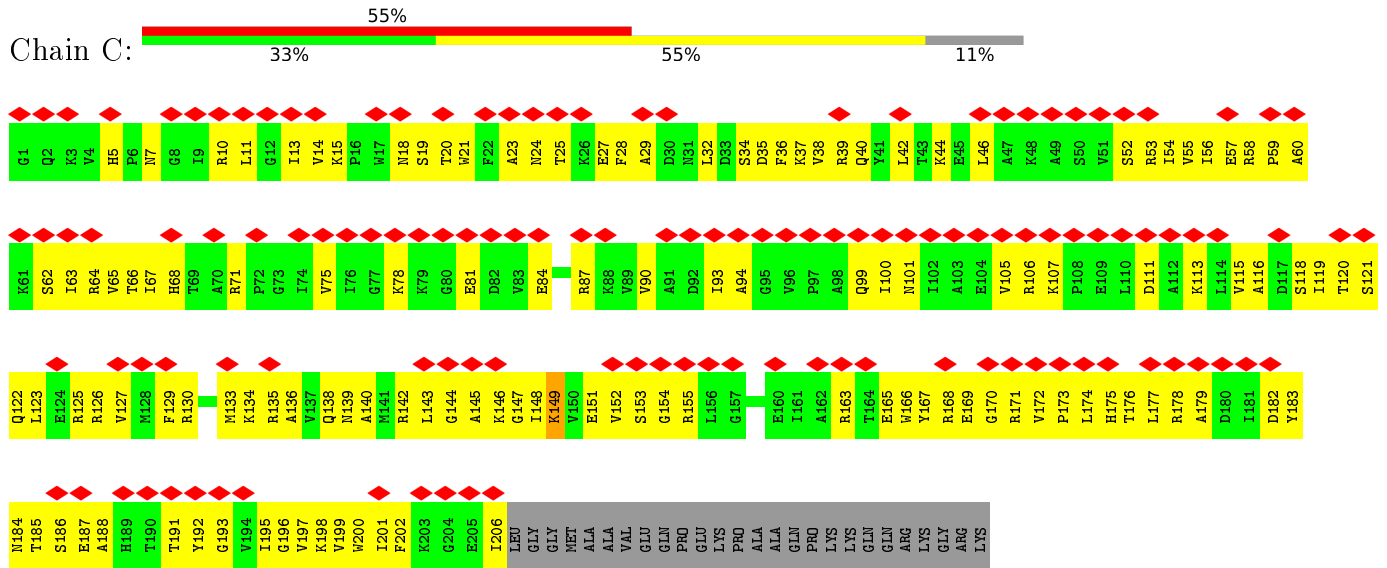
Molecule 13: 30S ribosomal protein S2



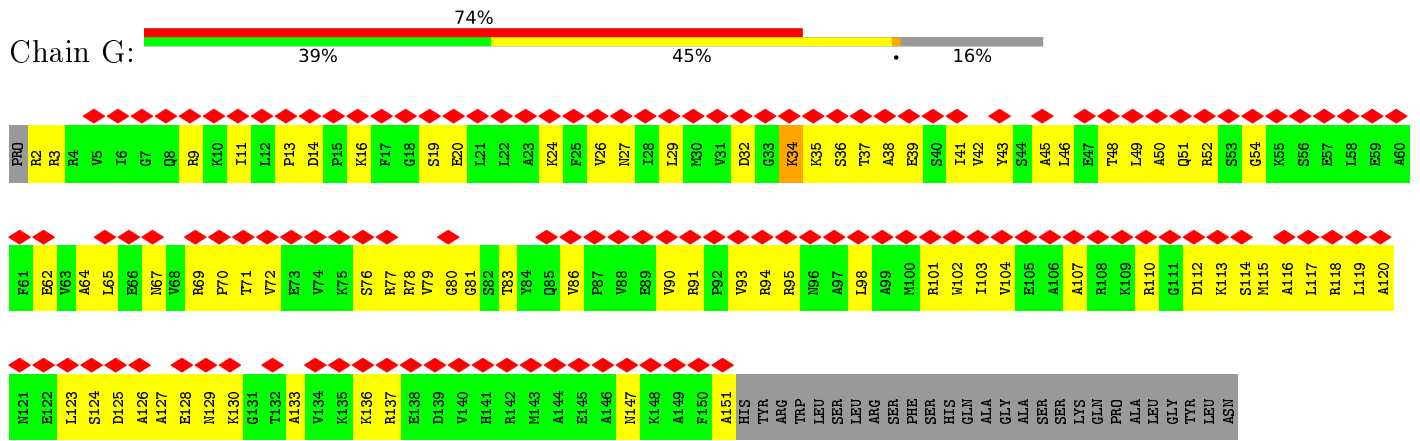
Molecule 14: 30S ribosomal protein S21



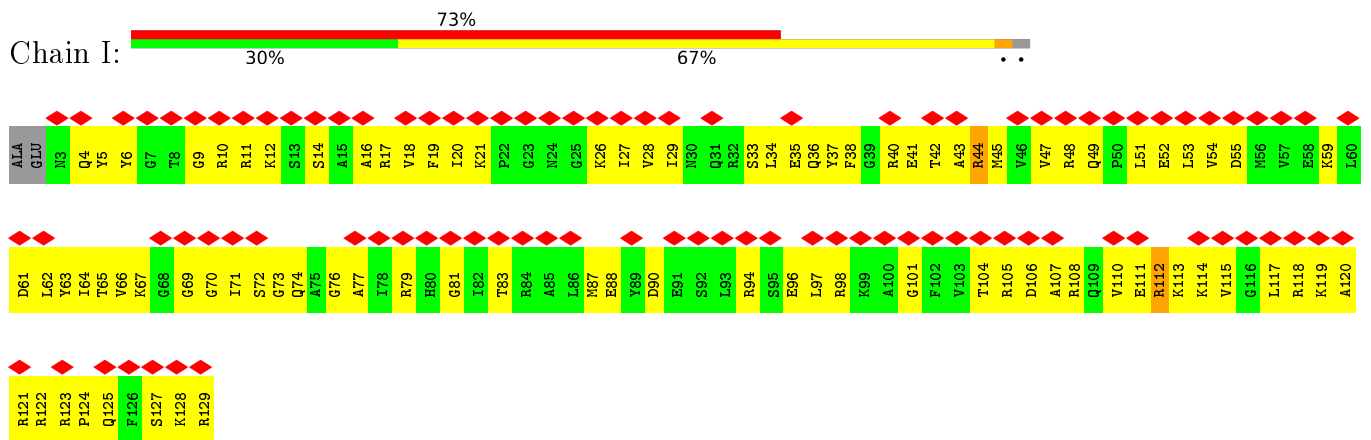
• Molecule 15: 30S ribosomal protein S3



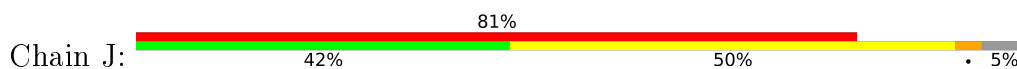
• Molecule 16: 30S ribosomal protein S7

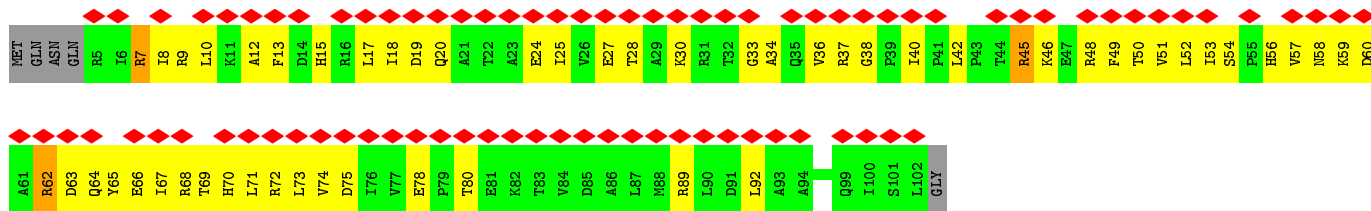


• Molecule 17: 30S ribosomal protein S9

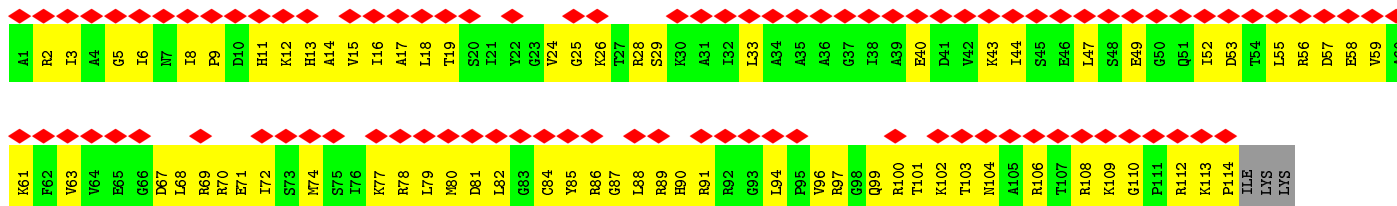
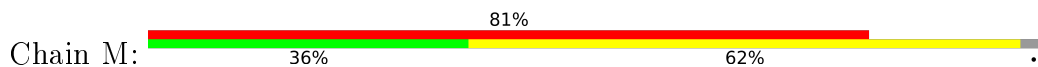


• Molecule 18: 30S ribosomal protein S10





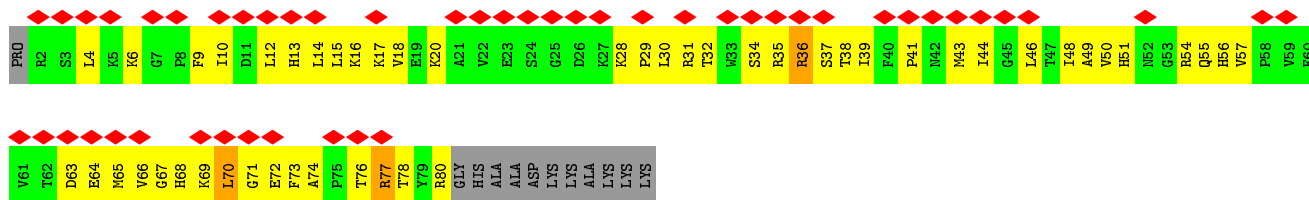
• Molecule 19: 30S ribosomal protein S13



• Molecule 20: 30S ribosomal protein S14



• Molecule 21: 30S ribosomal protein S19



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	169371	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	2	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	FEI FALCON II (4k x 4k)	Depositor
Maximum map value	8.320	Depositor
Minimum map value	-4.514	Depositor
Average map value	0.012	Depositor
Map value standard deviation	0.094	Depositor
Recommended contour level	0.428	Depositor
Map size (\AA)	344.0, 344.0, 344.0	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	0.86, 0.86, 0.86	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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	A	1.03	47/36762 (0.1%)	1.07	136/57350 (0.2%)
2	D	0.46	0/1665	0.63	0/2227
3	E	0.59	0/1118	0.71	1/1504 (0.1%)
4	F	0.41	0/835	0.57	0/1128
5	H	0.56	0/989	0.65	0/1326
6	K	0.34	0/893	0.60	0/1205
7	L	0.52	0/969	0.74	1/1300 (0.1%)
8	O	0.49	0/724	0.65	0/966
9	P	0.59	0/659	0.71	0/884
10	Q	0.53	0/657	0.58	0/881
11	R	0.46	0/462	0.70	0/621
12	T	0.38	0/671	0.59	0/888
13	B	0.38	0/1735	0.60	0/2338
14	U	0.34	0/150	0.57	0/198
15	C	0.28	0/1651	0.52	0/2225
16	G	0.27	0/1187	0.50	0/1591
17	I	0.30	0/1034	0.54	0/1375
18	J	0.26	0/796	0.54	0/1077
19	M	0.26	0/892	0.55	0/1193
20	N	0.29	0/785	0.56	0/1043
21	S	0.30	0/652	0.58	1/877 (0.1%)
All	All	0.88	47/55286 (0.1%)	0.95	139/82197 (0.2%)

All (47) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	918	A	C6-N1	-14.72	1.25	1.35
1	A	17	U	C2-N3	-11.04	1.30	1.37
1	A	18	C	N1-C6	-10.28	1.30	1.37
1	A	1401	G	N7-C5	-9.99	1.33	1.39
1	A	17	U	C4-O4	-8.87	1.16	1.23
1	A	1507	A	N9-C4	-8.46	1.32	1.37
1	A	919	A	C5-C4	-7.94	1.33	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1501	C	C2-N3	-7.92	1.29	1.35
1	A	1079	G	N9-C4	-7.69	1.31	1.38
1	A	16	A	C5-C4	-7.50	1.33	1.38
1	A	1501	C	N3-C4	-7.43	1.28	1.33
1	A	16	A	C6-N1	-7.33	1.30	1.35
1	A	1401	G	C5-C6	-6.94	1.35	1.42
1	A	919	A	N3-C4	-6.89	1.30	1.34
1	A	919	A	C6-N1	-6.82	1.30	1.35
1	A	16	A	N7-C5	-6.78	1.35	1.39
1	A	1501	C	N1-C6	-6.75	1.33	1.37
1	A	1401	G	C6-N1	-6.65	1.34	1.39
1	A	16	A	N9-C4	-6.48	1.33	1.37
1	A	918	A	C6-N6	-6.30	1.28	1.33
1	A	1501	C	N1-C2	-6.25	1.33	1.40
1	A	17	U	N1-C2	-6.25	1.32	1.38
1	A	16	A	N9-C8	-6.15	1.32	1.37
1	A	919	A	C5-C6	-6.10	1.35	1.41
1	A	1399	C	N1-C2	-6.09	1.34	1.40
1	A	859	G	N9-C4	6.08	1.42	1.38
1	A	1505	G	N9-C8	-6.02	1.33	1.37
1	A	919	A	N9-C4	-5.96	1.34	1.37
1	A	1505	G	N7-C5	-5.75	1.35	1.39
1	A	18	C	C5-C6	-5.75	1.29	1.34
1	A	918	A	C5-C4	-5.74	1.34	1.38
1	A	918	A	C5-C6	-5.71	1.35	1.41
1	A	499	A	N3-C4	-5.55	1.31	1.34
1	A	919	A	N1-C2	-5.51	1.29	1.34
1	A	331	G	C5-C4	-5.44	1.34	1.38
1	A	1102	A	N7-C5	-5.41	1.36	1.39
1	A	16	A	C6-N6	-5.34	1.29	1.33
1	A	1501	C	C5-C6	-5.31	1.30	1.34
1	A	1080	A	N9-C4	-5.26	1.34	1.37
1	A	1401	G	N3-C4	-5.25	1.31	1.35
1	A	15	G	N7-C5	-5.25	1.36	1.39
1	A	1078	U	C2-N3	-5.22	1.34	1.37
1	A	18	C	C4-C5	-5.18	1.38	1.43
1	A	1507	A	C5-C4	-5.16	1.35	1.38
1	A	17	U	C2-O2	-5.13	1.17	1.22
1	A	1399	C	C4-C5	-5.10	1.38	1.43
1	A	859	G	N7-C5	-5.03	1.36	1.39

All (139) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	860	A	O5'-P-OP1	-16.03	91.27	105.70
1	A	859	G	N3-C4-C5	-14.60	121.30	128.60
1	A	17	U	N3-C4-C5	12.56	122.14	114.60
1	A	1401	G	C6-C5-N7	-12.11	123.13	130.40
1	A	17	U	C2-N3-C4	-11.84	119.89	127.00
1	A	859	G	N3-C4-N9	11.38	132.83	126.00
1	A	1389	C	N3-C2-O2	-10.90	114.27	121.90
1	A	1401	G	C8-N9-C4	-10.78	102.09	106.40
1	A	1395	C	C6-N1-C2	10.59	124.53	120.30
1	A	1392	G	O4'-C1'-N9	10.21	116.37	108.20
1	A	859	G	C8-N9-C4	-10.11	102.36	106.40
1	A	18	C	N1-C2-O2	9.89	124.84	118.90
1	A	1399	C	C4-C5-C6	-9.49	112.65	117.40
1	A	16	A	N1-C6-N6	-9.32	113.01	118.60
1	A	859	G	C4-N9-C1'	9.22	138.48	126.50
1	A	1501	C	N3-C4-C5	9.01	125.50	121.90
1	A	1399	C	C2-N3-C4	8.96	124.38	119.90
1	A	1401	G	C4-C5-C6	8.84	124.11	118.80
1	A	1399	C	N1-C2-N3	-8.42	113.31	119.20
1	A	765	G	N7-C8-N9	8.23	117.21	113.10
1	A	1401	G	C4-N9-C1'	8.12	137.05	126.50
1	A	1389	C	N1-C2-O2	8.02	123.71	118.90
1	A	765	G	C5-N7-C8	-7.98	100.31	104.30
1	A	1505	G	O4'-C1'-N9	-7.86	101.92	108.20
1	A	859	G	OP1-P-O3'	7.45	121.59	105.20
1	A	918	A	C8-N9-C4	7.41	108.77	105.80
1	A	918	A	N9-C4-C5	-7.41	102.84	105.80
1	A	1392	G	C4-N9-C1'	7.35	136.05	126.50
1	A	1399	C	C6-N1-C2	7.30	123.22	120.30
1	A	1395	C	N1-C2-O2	7.27	123.26	118.90
1	A	925	G	C8-N9-C4	7.25	109.30	106.40
1	A	1507	A	C8-N9-C4	7.15	108.66	105.80
1	A	927	G	O4'-C1'-N9	7.11	113.89	108.20
1	A	765	G	C4-C5-N7	7.04	113.62	110.80
1	A	1395	C	N3-C4-C5	6.99	124.69	121.90
1	A	1401	G	N3-C4-C5	-6.98	125.11	128.60
1	A	919	A	C5-C6-N1	6.96	121.18	117.70
1	A	1079	G	N3-C4-C5	6.93	132.06	128.60
1	A	18	C	N3-C2-O2	-6.92	117.06	121.90
1	A	859	G	C4-C5-C6	6.91	122.94	118.80
1	A	17	U	N3-C4-O4	-6.89	114.58	119.40
1	A	859	G	N7-C8-N9	6.89	116.54	113.10
1	A	1401	G	N7-C8-N9	6.86	116.53	113.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1389	C	C6-N1-C2	-6.79	117.59	120.30
1	A	708	C	N3-C2-O2	-6.77	117.16	121.90
1	A	866	C	C6-N1-C2	-6.76	117.60	120.30
1	A	859	G	C6-C5-N7	-6.70	126.38	130.40
1	A	1399	C	C5-C6-N1	6.56	124.28	121.00
1	A	813	U	C5-C6-N1	6.48	125.94	122.70
1	A	610	U	N3-C2-O2	-6.47	117.67	122.20
1	A	927	G	C4-C5-N7	6.44	113.38	110.80
1	A	17	U	N1-C2-N3	6.42	118.75	114.90
1	A	929	G	C2-N3-C4	-6.39	108.71	111.90
1	A	419	C	N3-C2-O2	-6.38	117.44	121.90
1	A	1388	C	N1-C2-O2	6.37	122.72	118.90
1	A	15	G	C2-N3-C4	-6.37	108.72	111.90
1	A	18	C	C6-N1-C1'	-6.32	113.21	120.80
1	A	1141	C	N3-C2-O2	-6.30	117.49	121.90
1	A	1097	C	N3-C2-O2	-6.21	117.56	121.90
1	A	765	G	C8-N9-C4	-6.20	103.92	106.40
1	A	859	G	C2-N3-C4	6.19	115.00	111.90
1	A	532	A	C8-N9-C4	6.13	108.25	105.80
1	A	1395	C	N1-C2-N3	-6.10	114.93	119.20
1	A	1504	G	O4'-C1'-N9	-6.09	103.33	108.20
1	A	859	G	C8-N9-C1'	-6.07	119.11	127.00
1	A	381	C	N1-C2-O2	6.06	122.54	118.90
1	A	1209	C	N1-C2-O2	6.06	122.53	118.90
1	A	1392	G	C8-N9-C1'	-6.04	119.14	127.00
1	A	1396	A	C8-N9-C4	-6.04	103.39	105.80
1	A	1504	G	N1-C6-O6	-5.99	116.31	119.90
1	A	1501	C	OP1-P-OP2	5.96	128.54	119.60
1	A	328	C	C2-N1-C1'	5.95	125.35	118.80
1	A	812	G	N3-C4-N9	5.94	129.56	126.00
1	A	727	G	N3-C4-C5	5.87	131.53	128.60
1	A	15	G	C6-C5-N7	-5.84	126.89	130.40
1	A	1209	C	C2-N1-C1'	5.80	125.19	118.80
1	A	1383	C	C2-N1-C1'	5.80	125.18	118.80
1	A	1209	C	C6-N1-C1'	-5.77	113.88	120.80
1	A	328	C	N1-C2-O2	5.77	122.36	118.90
1	A	1395	C	C4-C5-C6	-5.75	114.52	117.40
1	A	1077	G	C8-N9-C4	5.75	108.70	106.40
1	A	452	A	C2-N3-C4	-5.73	107.73	110.60
1	A	812	G	C2-N3-C4	5.73	114.77	111.90
1	A	17	U	C4-C5-C6	-5.70	116.28	119.70
1	A	18	C	C6-N1-C2	5.69	122.58	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	328	C	C6-N1-C2	-5.63	118.05	120.30
1	A	254	G	O5'-P-OP1	-5.59	100.67	105.70
1	A	1148	U	C2-N1-C1'	5.59	124.41	117.70
7	L	108	ASP	CB-CG-OD1	5.57	123.31	118.30
1	A	1504	G	C5-C6-O6	5.55	131.93	128.60
1	A	927	G	C5-N7-C8	-5.55	101.53	104.30
1	A	813	U	C6-N1-C2	-5.54	117.68	121.00
1	A	860	A	O5'-P-OP2	5.54	117.34	110.70
1	A	421	U	C6-N1-C1'	-5.51	113.49	121.20
1	A	308	C	C6-N1-C2	-5.50	118.10	120.30
1	A	1079	G	C2-N3-C4	-5.50	109.15	111.90
1	A	859	G	N1-C2-N2	-5.50	111.25	116.20
21	S	70	LEU	CA-CB-CG	5.48	127.90	115.30
1	A	925	G	N7-C8-N9	-5.46	110.37	113.10
1	A	683	G	C2-N3-C4	-5.45	109.17	111.90
1	A	765	G	N9-C1'-C2'	-5.45	106.00	112.00
1	A	1401	G	N1-C2-N3	5.44	127.16	123.90
1	A	643	C	C6-N1-C2	-5.44	118.12	120.30
1	A	857	C	C2-N1-C1'	5.42	124.76	118.80
1	A	1383	C	N1-C2-O2	5.41	122.15	118.90
1	A	859	G	C6-N1-C2	-5.40	121.86	125.10
1	A	727	G	N3-C4-N9	-5.38	122.77	126.00
1	A	812	G	N3-C4-C5	-5.36	125.92	128.60
1	A	1501	C	C4-C5-C6	-5.34	114.73	117.40
1	A	727	G	C4-N9-C1'	-5.34	119.56	126.50
1	A	1507	A	N3-C4-C5	5.33	130.53	126.80
1	A	733	G	N3-C4-C5	5.32	131.26	128.60
1	A	1088	G	N1-C6-O6	-5.32	116.71	119.90
1	A	610	U	C2-N1-C1'	5.30	124.06	117.70
1	A	1392	G	C8-N9-C4	-5.26	104.29	106.40
1	A	1396	A	N7-C8-N9	5.24	116.42	113.80
1	A	859	G	N3-C2-N2	5.23	123.56	119.90
1	A	1530	G	O4'-C1'-N9	5.22	112.38	108.20
1	A	836	G	N3-C4-N9	5.21	129.13	126.00
1	A	961	U	N3-C2-O2	-5.21	118.56	122.20
1	A	1392	G	C6-C5-N7	-5.20	127.28	130.40
1	A	339	C	C2-N1-C1'	5.19	124.51	118.80
1	A	610	U	N1-C2-O2	5.18	126.42	122.80
1	A	389	A	O5'-P-OP2	-5.17	101.05	105.70
1	A	929	G	N3-C4-C5	5.16	131.18	128.60
1	A	743	A	N9-C4-C5	-5.15	103.74	105.80
1	A	1392	G	N3-C4-N9	5.14	129.08	126.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	328	C	N3-C2-O2	-5.13	118.31	121.90
3	E	71	ILE	CG1-CB-CG2	-5.13	100.11	111.40
1	A	60	A	P-O3'-C3'	5.10	125.82	119.70
1	A	14	U	N1-C2-O2	5.09	126.36	122.80
1	A	1401	G	N3-C4-N9	5.06	129.04	126.00
1	A	1507	A	C4-C5-C6	-5.06	114.47	117.00
1	A	1391	U	C2-N1-C1'	5.02	123.73	117.70
1	A	1048	G	N3-C2-N2	5.02	123.41	119.90
1	A	1097	C	C6-N1-C2	-5.02	118.29	120.30
1	A	328	C	P-O3'-C3'	5.01	125.72	119.70
1	A	17	U	C5-C6-N1	-5.01	120.19	122.70
1	A	15	G	C4-C5-N7	5.01	112.80	110.80

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	32831	0	16519	1541	0
2	D	1643	0	1710	126	0
3	E	1105	0	1148	66	0
4	F	817	0	808	64	0
5	H	979	0	1034	51	0
6	K	877	0	887	86	0
7	L	955	0	1019	74	0
8	O	716	0	742	35	0
9	P	649	0	666	19	0
10	Q	648	0	691	38	0
11	R	455	0	478	43	0
12	T	665	0	714	25	0
13	B	1704	0	1732	133	0
14	U	148	0	157	13	0
15	C	1624	0	1699	145	0
16	G	1174	0	1230	106	0
17	I	1022	0	1070	106	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
18	J	786	0	828	88	0
19	M	883	0	944	95	0
20	N	774	0	827	88	0
21	S	637	0	665	97	0
All	All	51092	0	35568	2694	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 32.

All (2694) 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)
1:A:1117:A:C2	1:A:1156:G:N1	2.10	1.19
1:A:945:G:H1	1:A:1236:A:N6	1.37	1.19
1:A:1156:G:N2	1:A:1179:A:C2	2.11	1.18
21:S:39:ILE:HG23	21:S:43:MET:HE3	1.30	1.13
2:D:104:MET:HG2	2:D:106:PHE:CE2	1.91	1.06
21:S:39:ILE:HG23	21:S:43:MET:CE	1.84	1.06
3:E:55:VAL:O	3:E:59:ILE:HG13	1.58	1.04
16:G:26:VAL:HG11	16:G:43:TYR:CE1	1.93	1.03
1:A:203:G:H21	1:A:205:A:N6	1.57	1.02
18:J:67:ILE:CD1	20:N:95:LEU:HD11	1.93	0.99
2:D:16:THR:HG21	2:D:59:LYS:HE3	1.46	0.98
18:J:67:ILE:HD11	20:N:95:LEU:HD11	1.45	0.98
1:A:1401:G:N1	1:A:1501:C:N3	2.10	0.97
1:A:203:G:N2	1:A:205:A:H61	1.61	0.97
1:A:1026:G:H1	1:A:1035:A:H61	1.05	0.97
1:A:1156:G:N2	1:A:1179:A:N1	2.11	0.97
8:O:70:LYS:HD3	8:O:77:TYR:CE2	2.00	0.96
11:R:62:ARG:HD2	11:R:69:TYR:HA	1.47	0.96
16:G:104:VAL:HG22	16:G:119:LEU:HD11	1.46	0.95
1:A:1162:C:N3	1:A:1174:G:N1	2.14	0.95
1:A:6:G:H22	3:E:102:THR:HG21	1.32	0.94
1:A:942:G:H1	1:A:1341:U:H3	1.04	0.94
1:A:1357:A:H61	1:A:1365:G:H1	0.99	0.94
2:D:13:ARG:HH22	2:D:43:ARG:HH22	1.10	0.93
1:A:940:C:N3	1:A:1343:G:N1	2.17	0.93
1:A:1440:U:H3	1:A:1461:G:H1	1.17	0.93
1:A:1422:G:H1	1:A:1478:U:H3	1.17	0.92
2:D:10:LEU:HD11	2:D:62:ARG:HD2	1.49	0.92
1:A:924:C:N3	1:A:1392:G:N2	2.18	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1421:G:N2	1:A:1479:C:O2	2.02	0.92
1:A:940:C:O2	1:A:1343:G:N2	2.03	0.91
2:D:144:ILE:HD13	2:D:177:MET:HE2	1.53	0.91
16:G:26:VAL:HG11	16:G:43:TYR:HE1	1.36	0.90
21:S:12:LEU:HD23	21:S:15:LEU:HB3	1.52	0.90
1:A:1145:A:H1'	1:A:1147:C:H41	1.34	0.90
1:A:342:C:N3	1:A:347:G:N1	2.19	0.90
1:A:342:C:O2	1:A:347:G:N2	2.05	0.89
1:A:1351:U:O2	1:A:1371:G:N2	2.04	0.89
1:A:1405:G:N2	1:A:1496:C:O2	2.04	0.89
1:A:1414:U:H3	1:A:1486:G:H1	1.00	0.89
1:A:1243:C:O2	1:A:1294:G:N2	2.06	0.89
13:B:103:TRP:HE1	13:B:107:ARG:HH21	1.21	0.89
7:L:53:ARG:HH21	7:L:61:GLU:HB3	1.36	0.89
1:A:1357:A:N6	1:A:1365:G:H1	1.70	0.88
8:O:70:LYS:HD3	8:O:77:TYR:HE2	1.36	0.88
1:A:950:U:H3	1:A:1231:G:H1	1.16	0.88
21:S:68:HIS:CE1	21:S:72:GLU:OE1	2.27	0.88
1:A:1117:A:H2	1:A:1156:G:N1	1.71	0.88
15:C:36:PHE:HD2	20:N:64:ARG:NH1	1.72	0.87
1:A:978:A:OP1	1:A:980:C:N4	2.06	0.87
1:A:1026:G:H1	1:A:1035:A:N6	1.70	0.87
1:A:1162:C:O2	1:A:1174:G:N2	2.08	0.87
6:K:125:LYS:HG2	6:K:126:ARG:HD3	1.55	0.87
15:C:36:PHE:CD2	20:N:64:ARG:NH1	2.42	0.87
1:A:840:C:N3	1:A:846:G:N1	2.23	0.86
1:A:1401:G:O6	1:A:1501:C:N4	2.08	0.86
1:A:79:G:N2	1:A:90:C:O2	2.06	0.86
21:S:12:LEU:HB3	21:S:16:LYS:HG3	1.56	0.86
1:A:927:G:O6	1:A:1390:U:N3	2.08	0.86
1:A:1401:G:N2	1:A:1501:C:O2	2.09	0.86
1:A:922:G:H2'	1:A:923:A:H5'	1.58	0.86
1:A:686:U:O2	1:A:704:A:N6	2.08	0.85
5:H:68:LYS:HE2	5:H:72:GLU:OE1	1.76	0.85
1:A:1009:U:H3	1:A:1020:G:H1	0.88	0.85
1:A:1422:G:N2	1:A:1478:U:O2	2.10	0.85
7:L:113:ARG:HG3	7:L:118:VAL:HG13	1.59	0.85
1:A:157:U:O2	1:A:164:G:O6	1.95	0.85
1:A:1278:G:N3	1:A:1279:G:N2	2.24	0.85
1:A:1131:G:O6	1:A:1143:G:N2	2.08	0.85
1:A:1381:U:H1'	16:G:79:VAL:HA	1.57	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1405:G:N1	1:A:1496:C:N3	2.24	0.84
1:A:1421:G:N1	1:A:1479:C:N3	2.23	0.84
1:A:1247:U:H3	1:A:1290:G:H1	0.84	0.83
1:A:279:A:H5''	1:A:280:C:H3'	1.60	0.83
1:A:1251:A:N3	1:A:1369:C:O2'	2.12	0.83
13:B:49:PHE:HZ	13:B:212:TYR:CE1	1.96	0.83
1:A:404:G:O2'	1:A:498:A:N1	2.12	0.83
1:A:654:G:N1	1:A:754:C:N3	2.26	0.83
1:A:36:C:H5''	7:L:119:LYS:HB3	1.60	0.82
1:A:1399:C:N3	1:A:1401:G:C4	2.47	0.82
12:T:45:ALA:HA	12:T:48:LYS:NZ	1.94	0.82
1:A:927:G:O2'	1:A:1503:A:N7	2.12	0.82
21:S:50:VAL:HG21	21:S:74:ALA:CB	2.09	0.82
1:A:1127:G:N2	1:A:1148:U:O4	2.12	0.82
20:N:78:LEU:HD21	20:N:82:LYS:HB2	1.60	0.82
1:A:203:G:H21	1:A:205:A:H61	1.18	0.82
1:A:1115:U:H3	1:A:1185:G:H1	0.86	0.82
1:A:203:G:N2	1:A:205:A:N6	2.25	0.82
1:A:1156:G:C2	1:A:1179:A:N1	2.48	0.82
1:A:1419:G:H1	1:A:1481:U:H3	0.84	0.81
21:S:12:LEU:HD23	21:S:15:LEU:CB	2.10	0.81
1:A:1255:G:H5'	20:N:74:ARG:HH12	1.45	0.81
1:A:415:A:N1	1:A:428:G:O6	2.13	0.81
1:A:464:U:H2'	1:A:465:A:H3'	1.63	0.81
12:T:66:ILE:HG23	12:T:70:LYS:HB3	1.61	0.81
1:A:939:G:N1	1:A:1344:C:N3	2.27	0.80
1:A:1055:A:N3	15:C:155:ARG:NH1	2.28	0.80
7:L:122:LYS:HE2	7:L:122:LYS:HA	1.63	0.80
21:S:12:LEU:CD2	21:S:15:LEU:HD23	2.11	0.80
1:A:682:G:H2'	1:A:683:G:C8	2.16	0.80
1:A:1250:A:H4'	17:I:69:GLY:H	1.46	0.80
21:S:39:ILE:HB	21:S:65:MET:HE2	1.64	0.80
1:A:918:A:H2'	1:A:919:A:O4'	1.82	0.80
1:A:1209:C:C4	1:A:1210:C:N4	2.50	0.80
1:A:1060:U:H5'	18:J:53:ILE:HG21	1.64	0.79
1:A:1347:G:H1	1:A:1373:G:H3'	1.46	0.79
2:D:104:MET:HE3	2:D:172:VAL:HG13	1.62	0.79
3:E:36:THR:N	3:E:48:GLY:O	2.10	0.79
21:S:12:LEU:HD23	21:S:15:LEU:CG	2.12	0.79
1:A:1247:U:O2	1:A:1290:G:N2	2.13	0.79
20:N:78:LEU:HD22	20:N:83:VAL:HG13	1.63	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:939:G:N2	1:A:1344:C:O2	2.14	0.79
1:A:945:G:N2	1:A:1334:G:O2'	2.15	0.79
11:R:69:TYR:HB2	11:R:73:HIS:CG	2.18	0.79
1:A:159:G:N2	1:A:162:A:OP2	2.16	0.78
1:A:1166:G:N2	1:A:1169:A:OP2	2.16	0.78
13:B:65:LYS:HB2	13:B:158:ASP:H	1.48	0.78
21:S:50:VAL:HG21	21:S:74:ALA:HB2	1.63	0.78
1:A:79:G:N1	1:A:90:C:N3	2.24	0.78
2:D:151:GLN:HG3	2:D:152:SER:H	1.46	0.78
11:R:40:PRO:HB3	11:R:42:ARG:NH1	1.98	0.78
1:A:1096:C:H2'	1:A:1097:C:C6	2.17	0.78
1:A:1115:U:O2	1:A:1185:G:N2	2.11	0.78
15:C:116:ALA:O	15:C:120:THR:HG23	1.84	0.78
1:A:1029:U:O2'	1:A:1032:G:N2	2.17	0.78
1:A:1285:A:H62	1:A:1355:G:H4'	1.48	0.78
1:A:458:U:O2	1:A:474:G:N2	2.15	0.78
20:N:94:GLY:C	20:N:95:LEU:HD22	2.04	0.78
1:A:1088:G:H21	1:A:1167:A:H61	1.29	0.77
1:A:1199:U:H1'	18:J:56:HIS:HE2	1.49	0.77
1:A:1301:U:OP2	1:A:1303:C:N4	2.12	0.77
15:C:53:ARG:HE	15:C:54:ILE:H	1.32	0.77
1:A:1063:C:O2	1:A:1193:G:N2	2.14	0.77
1:A:1139:G:H1'	1:A:1140:C:H5	1.49	0.77
2:D:102:TYR:HE2	2:D:103:ARG:HE	1.29	0.77
1:A:664:G:H22	1:A:741:G:H1	1.30	0.77
1:A:1064:G:O6	1:A:1192:C:N4	2.17	0.77
18:J:51:VAL:O	18:J:63:ASP:N	2.17	0.77
1:A:1157:A:N6	1:A:1181:G:OP2	2.18	0.77
1:A:792:A:O2'	1:A:794:A:N7	2.19	0.76
1:A:1148:U:OP2	1:A:1149:C:N4	2.15	0.76
17:I:17:ARG:HB3	17:I:65:THR:HB	1.66	0.76
2:D:21:LYS:HB3	2:D:25:ARG:HE	1.50	0.76
1:A:380:G:N2	1:A:383:A:OP2	2.16	0.76
10:Q:4:ILE:HG13	10:Q:5:ARG:H	1.49	0.76
1:A:797:C:OP1	6:K:126:ARG:CD	2.33	0.76
1:A:1187:G:H4'	17:I:114:LYS:HD2	1.66	0.76
15:C:59:PRO:HD2	15:C:63:ILE:HA	1.67	0.76
16:G:125:ASP:HB3	16:G:130:LYS:HG3	1.67	0.76
1:A:1160:G:N7	1:A:1182:G:N1	2.33	0.76
2:D:13:ARG:NH2	2:D:43:ARG:HH22	1.82	0.76
14:U:36:PHE:HB2	14:U:40:PRO:HD3	1.68	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:71:A:N6	1:A:99:C:O2	2.19	0.76
1:A:1127:G:O6	1:A:1145:A:N1	2.18	0.76
6:K:20:ALA:N	6:K:82:GLU:O	2.15	0.76
17:I:119:LYS:HG3	17:I:122:ARG:HH21	1.50	0.76
1:A:797:C:OP1	6:K:126:ARG:HD2	1.86	0.76
1:A:1295:U:O2'	19:M:13:HIS:NE2	2.18	0.76
1:A:663:A:H5''	11:R:49:LYS:NZ	2.01	0.76
16:G:102:TRP:HB3	16:G:136:LYS:HG3	1.68	0.76
11:R:69:TYR:HB2	11:R:73:HIS:CD2	2.20	0.75
1:A:890:G:O2'	1:A:906:A:N6	2.18	0.75
13:B:49:PHE:HZ	13:B:212:TYR:HE1	1.32	0.75
1:A:28:A:O2'	1:A:296:U:OP1	2.05	0.75
1:A:509:A:N3	1:A:543:U:O2'	2.18	0.75
10:Q:60:ILE:HA	10:Q:74:LEU:HA	1.68	0.75
1:A:1135:U:O2	1:A:1140:C:N4	2.20	0.75
19:M:44:ILE:HA	19:M:47:LEU:HD13	1.68	0.75
21:S:50:VAL:HG23	21:S:57:VAL:CG2	2.16	0.75
1:A:1237:C:O2'	1:A:1300:G:N2	2.17	0.75
13:B:26:MET:HB3	13:B:192:PRO:HG3	1.69	0.75
1:A:951:G:N3	1:A:970:C:O2'	2.18	0.75
1:A:1157:A:N7	1:A:1177:G:N2	2.34	0.75
1:A:1160:G:N1	1:A:1176:A:C2	2.53	0.75
1:A:1323:G:H4'	1:A:1362:A:C6	2.22	0.75
3:E:63:MET:HB3	3:E:67:ARG:HH12	1.52	0.75
1:A:923:A:N3	1:A:1392:G:N2	2.35	0.75
1:A:934:C:O2'	1:A:1344:C:OP2	2.04	0.75
1:A:937:A:H4'	16:G:76:SER:HB3	1.67	0.75
1:A:962:C:H2'	1:A:963:G:H8	1.52	0.75
1:A:1096:C:O2	1:A:1170:A:O2'	2.03	0.75
1:A:1162:C:N4	1:A:1174:G:O6	2.13	0.75
15:C:20:THR:HA	20:N:93:PRO:HB3	1.68	0.75
21:S:12:LEU:HA	21:S:15:LEU:HB3	1.68	0.75
1:A:452:A:H62	1:A:480:U:H3	1.35	0.74
1:A:970:C:H2'	1:A:1231:G:H1'	1.68	0.74
13:B:132:GLU:OE2	13:B:136:ARG:NH1	2.21	0.74
21:S:50:VAL:HG23	21:S:57:VAL:HG22	1.69	0.74
1:A:840:C:O2	1:A:846:G:N2	2.14	0.74
1:A:1160:G:O6	1:A:1182:G:O6	2.05	0.74
1:A:1239:A:O2'	1:A:1297:G:N2	2.19	0.74
16:G:52:ARG:NH1	16:G:120:ALA:O	2.21	0.74
1:A:424:G:H2'	1:A:425:G:C8	2.22	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1218:C:H2'	1:A:1219:A:H8	1.53	0.74
1:A:1258:G:H2'	1:A:1259:C:C6	2.21	0.74
1:A:1368:A:H5''	17:I:112:ARG:HH22	1.51	0.74
1:A:1230:C:H2'	1:A:1231:G:H8	1.52	0.74
1:A:1117:A:N1	1:A:1156:G:O6	2.20	0.74
15:C:187:GLU:HA	15:C:196:GLY:HA2	1.70	0.74
15:C:90:VAL:HA	15:C:93:ILE:HG22	1.70	0.74
1:A:1261:A:N6	1:A:1274:A:O2'	2.21	0.73
16:G:125:ASP:O	16:G:130:LYS:N	2.19	0.73
1:A:1087:G:O6	1:A:1088:G:O6	2.05	0.73
1:A:579:A:O2'	8:O:53:ARG:NH1	2.20	0.73
1:A:945:G:N2	1:A:1236:A:N1	2.33	0.73
1:A:1060:U:O2'	18:J:58:ASN:ND2	2.21	0.73
1:A:1328:C:H2'	1:A:1329:A:H8	1.51	0.73
4:F:11:HIS:HB3	4:F:14:GLN:HE22	1.53	0.73
12:T:73:ARG:O	12:T:77:ASN:ND2	2.21	0.73
7:L:85:ARG:HA	7:L:93:ARG:HA	1.69	0.73
18:J:49:PHE:HB2	18:J:65:TYR:HB2	1.70	0.73
1:A:449:G:O6	1:A:484:G:N1	2.19	0.73
10:Q:68:LYS:O	10:Q:69:THR:OG1	2.07	0.73
12:T:35:TYR:HE1	12:T:78:LEU:HD21	1.52	0.73
1:A:216:U:H2'	1:A:217:C:H6	1.54	0.73
1:A:538:G:H5''	7:L:110:LYS:HG2	1.69	0.73
1:A:1006:G:N1	1:A:1024:G:O2'	2.21	0.73
1:A:1225:A:OP2	19:M:100:ARG:NH1	2.20	0.73
1:A:1380:U:H4'	1:A:1381:U:H5''	1.71	0.73
1:A:1398:A:N6	3:E:25:LYS:O	2.22	0.73
1:A:931:C:H3'	16:G:3:ARG:HH21	1.51	0.73
6:K:21:HIS:O	6:K:31:VAL:HG23	1.87	0.73
12:T:45:ALA:HA	12:T:48:LYS:HZ2	1.52	0.72
13:B:125:PHE:O	13:B:130:LYS:NZ	2.21	0.72
19:M:12:LYS:HB3	19:M:17:ALA:HB2	1.71	0.72
1:A:421:U:O2'	1:A:422:C:OP1	2.07	0.72
1:A:923:A:H1'	1:A:924:C:C4	2.25	0.72
4:F:92:THR:HG23	4:F:94:HIS:H	1.54	0.72
1:A:1342:C:H2'	1:A:1343:G:H8	1.53	0.72
13:B:82:ALA:O	13:B:86:CYS:N	2.23	0.72
1:A:1063:C:N3	1:A:1193:G:N1	2.30	0.72
1:A:1187:G:H21	20:N:99:SER:HB2	1.52	0.72
13:B:23:ASN:ND2	13:B:191:ASP:OD1	2.22	0.72
15:C:153:SER:HB2	15:C:196:GLY:H	1.54	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:98:ASP:OD1	2:D:114:ARG:HA	1.88	0.72
17:I:105:ARG:HH11	17:I:107:ALA:HA	1.55	0.72
18:J:46:LYS:HD2	18:J:66:GLU:HB2	1.71	0.72
20:N:25:GLU:HG2	20:N:26:LEU:HD12	1.70	0.72
1:A:1440:U:O2	1:A:1461:G:N2	2.21	0.72
7:L:99:GLY:HA3	7:L:117:GLY:HA3	1.71	0.72
17:I:118:ARG:HH11	17:I:122:ARG:HH12	1.35	0.72
1:A:673:A:H2'	1:A:674:G:C8	2.25	0.72
1:A:1382:C:H1'	16:G:78:ARG:HB3	1.72	0.72
1:A:1309:G:H2'	1:A:1310:G:H8	1.54	0.72
1:A:1079:G:H8	1:A:1079:G:O5'	1.73	0.71
15:C:5:HIS:NE2	15:C:7:ASN:OD1	2.23	0.71
21:S:39:ILE:HG23	21:S:43:MET:HE2	1.72	0.71
21:S:50:VAL:CG2	21:S:57:VAL:HG23	2.19	0.71
1:A:654:G:O6	1:A:754:C:N4	2.17	0.71
2:D:3:TYR:HE2	2:D:67:LEU:HG	1.55	0.71
1:A:1399:C:C2	1:A:1401:G:C8	2.79	0.71
13:B:206:ILE:H	13:B:206:ILE:HD12	1.54	0.71
1:A:972:C:OP2	18:J:59:LYS:NZ	2.21	0.71
19:M:13:HIS:HB2	19:M:16:ILE:HB	1.73	0.71
1:A:935:A:H61	16:G:2:ARG:HD2	1.56	0.71
13:B:18:GLN:NE2	13:B:188:THR:O	2.23	0.71
1:A:1117:A:N1	1:A:1156:G:C6	2.59	0.71
2:D:187:ARG:NE	2:D:196:GLU:OE2	2.22	0.71
18:J:67:ILE:HG12	20:N:95:LEU:HD21	1.72	0.71
13:B:83:ALA:HA	13:B:86:CYS:HB2	1.73	0.70
15:C:10:ARG:NH2	15:C:174:LEU:O	2.24	0.70
1:A:564:C:OP2	7:L:11:ARG:NH2	2.24	0.70
1:A:812:G:HO2'	1:A:813:U:H6	1.39	0.70
1:A:1084:G:H1'	1:A:1102:A:N7	2.06	0.70
1:A:1009:U:O4	1:A:1020:G:O6	2.09	0.70
11:R:40:PRO:HD2	11:R:43:ILE:HD12	1.73	0.70
16:G:38:ALA:HA	16:G:41:ILE:HB	1.73	0.70
1:A:1179:A:H5''	17:I:98:ARG:HH21	1.55	0.70
1:A:1271:A:H2'	1:A:1272:G:H8	1.55	0.70
1:A:1347:G:N7	17:I:12:LYS:NZ	2.32	0.70
6:K:87:GLY:N	6:K:113:THR:OG1	2.24	0.70
16:G:62:GLU:HA	16:G:65:LEU:HD13	1.72	0.70
19:M:52:ILE:HA	19:M:55:LEU:HD13	1.74	0.70
16:G:104:VAL:O	16:G:104:VAL:HG12	1.90	0.70
19:M:11:HIS:HA	19:M:43:LYS:HB3	1.73	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:527:G:O2'	1:A:535:A:N1	2.23	0.70
1:A:689:C:OP1	6:K:28:ASN:ND2	2.25	0.70
1:A:934:C:N3	1:A:938:A:N1	2.40	0.70
5:H:10:LEU:HD22	5:H:74:ILE:HG21	1.74	0.70
1:A:1414:U:H2'	1:A:1415:G:H8	1.57	0.70
13:B:165:ALA:HB3	13:B:190:SER:HB3	1.72	0.70
15:C:87:ARG:HA	15:C:90:VAL:HG12	1.74	0.70
1:A:924:C:C2	1:A:1392:G:N2	2.59	0.70
1:A:1128:C:N4	1:A:1145:A:N1	2.40	0.70
13:B:113:LEU:HD23	13:B:116:LEU:HD12	1.73	0.70
21:S:12:LEU:HD23	21:S:15:LEU:HD23	1.73	0.70
16:G:49:LEU:HD13	16:G:123:LEU:HD13	1.72	0.70
18:J:67:ILE:HG13	20:N:95:LEU:CD1	2.21	0.70
1:A:682:G:H2'	1:A:683:G:H8	1.57	0.69
20:N:52:ARG:O	20:N:58:ARG:NH2	2.25	0.69
1:A:958:A:N6	21:S:76:THR:O	2.25	0.69
1:A:1088:G:C6	1:A:1089:G:C6	2.80	0.69
1:A:1384:C:H2'	1:A:1385:G:H8	1.58	0.69
2:D:75:TYR:HA	2:D:89:LEU:HD21	1.74	0.69
1:A:1237:C:H3'	1:A:1336:C:H41	1.57	0.69
1:A:1347:G:N1	1:A:1373:G:H3'	2.07	0.69
13:B:16:GLY:O	13:B:202:ASN:ND2	2.26	0.69
21:S:39:ILE:HG13	21:S:70:LEU:CD1	2.22	0.69
1:A:463:U:H2'	1:A:464:U:C2	2.27	0.69
1:A:1286:U:H2'	1:A:1287:A:H4'	1.73	0.69
1:A:940:C:N4	1:A:1343:G:O6	2.20	0.69
2:D:6:PRO:HG2	2:D:10:LEU:HD13	1.75	0.69
7:L:82:ARG:HD3	7:L:97:VAL:HG22	1.73	0.69
10:Q:57:VAL:HG23	10:Q:78:VAL:HG23	1.74	0.69
14:U:36:PHE:HB3	14:U:39:LYS:HE2	1.73	0.69
19:M:67:ASP:O	19:M:70:ARG:HG3	1.93	0.69
20:N:73:LEU:H	20:N:77:GLY:HA2	1.57	0.69
21:S:50:VAL:HG22	21:S:57:VAL:O	1.91	0.69
1:A:486:U:H2'	1:A:487:A:C8	2.27	0.69
1:A:1066:C:O2	1:A:1191:A:N6	2.25	0.69
1:A:1307:U:H4'	19:M:108:ARG:HD3	1.75	0.69
15:C:13:ILE:HG22	15:C:14:VAL:H	1.56	0.69
1:A:1005:A:OP2	1:A:1024:G:N2	2.22	0.69
20:N:2:LYS:HB3	20:N:5:MET:HB3	1.75	0.69
1:A:76:G:H2'	1:A:77:A:H8	1.57	0.69
1:A:1006:G:O6	1:A:1023:U:O4	2.10	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:16:THR:CG2	2:D:59:LYS:HE3	2.20	0.69
2:D:28:ASP:OD1	2:D:32:LYS:N	2.26	0.69
20:N:23:ARG:HH22	20:N:50:LEU:HB2	1.57	0.69
12:T:35:TYR:CE1	12:T:78:LEU:HD21	2.28	0.69
17:I:41:GLU:HG2	17:I:43:ALA:H	1.57	0.69
1:A:1090:U:HO2'	1:A:1171:A:HO2'	1.42	0.68
1:A:1320:C:H42	21:S:35:ARG:HG3	1.56	0.68
1:A:103:U:H1'	1:A:171:A:H61	1.58	0.68
1:A:376:G:H5''	9:P:5:ARG:HB2	1.74	0.68
1:A:1112:C:N3	15:C:177:LEU:N	2.38	0.68
1:A:654:G:N2	1:A:754:C:O2	2.18	0.68
2:D:104:MET:SD	2:D:179:GLY:HA3	2.33	0.68
4:F:38:ARG:HD3	4:F:98:GLU:HA	1.75	0.68
1:A:816:A:OP1	1:A:1526:G:O2'	2.11	0.68
8:O:67:ASP:OD1	8:O:87:ARG:NH2	2.26	0.68
1:A:1173:U:H2'	1:A:1174:G:H8	1.59	0.68
2:D:158:LEU:HD21	2:D:174:ALA:HB1	1.74	0.68
15:C:56:ILE:HA	15:C:65:VAL:HG22	1.74	0.68
1:A:1401:G:H2'	1:A:1402:C:O4'	1.94	0.68
1:A:1413:A:H61	1:A:1487:G:H1	1.41	0.68
6:K:52:ARG:H	6:K:56:LYS:NZ	1.92	0.68
13:B:119:GLN:O	13:B:123:GLY:N	2.27	0.68
1:A:1502:A:H5'	1:A:1504:G:N7	2.09	0.68
13:B:113:LEU:HD21	13:B:143:LEU:HG	1.75	0.68
1:A:1308:U:OP2	19:M:97:ARG:NE	2.23	0.67
1:A:1374:A:H2'	1:A:1375:A:C8	2.28	0.67
1:A:701:U:H5''	1:A:702:A:H2'	1.77	0.67
1:A:956:U:H3	1:A:960:U:H3	1.42	0.67
1:A:1218:C:H2'	1:A:1219:A:C8	2.29	0.67
1:A:1305:G:N1	1:A:1331:G:N3	2.42	0.67
1:A:1388:C:O2'	1:A:1389:C:H5'	1.95	0.67
1:A:1414:U:O2	1:A:1486:G:N2	2.21	0.67
7:L:37:TYR:HB2	7:L:51:VAL:HG23	1.76	0.67
16:G:90:VAL:HG23	16:G:95:ARG:HE	1.59	0.67
1:A:984:C:N3	1:A:1222:G:N2	2.42	0.67
1:A:1088:G:H2'	1:A:1089:G:C8	2.29	0.67
1:A:1210:C:O2'	1:A:1211:U:OP1	2.10	0.67
1:A:1260:G:N2	1:A:1275:A:OP2	2.24	0.67
6:K:84:MET:HG2	6:K:86:LYS:HZ1	1.59	0.67
7:L:49:ARG:HB3	7:L:65:TYR:HE1	1.58	0.67
1:A:1124:G:H1'	1:A:1125:U:H5	1.59	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:L:108:ASP:HB2	7:L:110:LYS:HZ3	1.59	0.67
13:B:220:VAL:O	13:B:224:ARG:NH1	2.27	0.67
1:A:613:C:H2'	1:A:614:C:C6	2.30	0.67
15:C:120:THR:HG21	15:C:186:SER:HB3	1.76	0.67
19:M:106:ARG:NE	19:M:110:GLY:O	2.28	0.67
1:A:691:G:H8	6:K:27:ASN:HD22	1.41	0.67
1:A:944:G:N1	1:A:1338:G:OP2	2.21	0.67
1:A:1342:C:H2'	1:A:1343:G:C8	2.30	0.67
1:A:1382:C:O2'	16:G:78:ARG:NH1	2.25	0.67
1:A:1436:U:OP1	12:T:17:ARG:NH2	2.28	0.67
19:M:77:LYS:HA	19:M:81:ASP:HB2	1.77	0.67
20:N:12:ARG:HG2	20:N:53:ASP:HB3	1.76	0.67
3:E:80:LEU:HD13	3:E:122:VAL:HG11	1.77	0.67
13:B:65:LYS:O	13:B:158:ASP:N	2.28	0.67
13:B:163:ILE:HD11	13:B:209:VAL:HB	1.76	0.67
1:A:878:A:OP1	5:H:79:ARG:NH1	2.26	0.66
1:A:1291:U:H2'	1:A:1292:G:C8	2.30	0.66
6:K:81:LEU:N	6:K:105:ARG:O	2.28	0.66
1:A:1126:U:C5	18:J:7:ARG:HG2	2.29	0.66
1:A:1507:A:N1	1:A:1530:G:H1'	2.09	0.66
2:D:39:GLN:HG3	2:D:40:HIS:ND1	2.09	0.66
1:A:713:G:H2'	1:A:714:G:C8	2.30	0.66
13:B:23:ASN:ND2	13:B:190:SER:O	2.27	0.66
1:A:1419:G:O6	1:A:1481:U:O4	2.14	0.66
20:N:23:ARG:HH12	20:N:50:LEU:HD12	1.61	0.66
1:A:840:C:N4	1:A:846:G:O6	2.21	0.66
1:A:927:G:N2	1:A:1392:G:O6	2.28	0.66
1:A:973:G:H3'	1:A:974:A:H2'	1.76	0.66
4:F:51:ILE:HD12	4:F:86:ARG:HH12	1.60	0.66
7:L:41:PRO:HB3	7:L:88:ASP:HB3	1.77	0.66
1:A:539:A:OP2	7:L:111:GLN:NE2	2.28	0.66
1:A:660:C:O2	1:A:745:G:N2	2.29	0.66
1:A:1239:A:H4'	1:A:1240:U:H5'	1.76	0.66
6:K:19:VAL:N	6:K:34:THR:O	2.28	0.66
15:C:120:THR:HG21	15:C:186:SER:CB	2.26	0.66
19:M:9:PRO:HB2	19:M:44:ILE:HG13	1.76	0.66
1:A:552:U:H5'	7:L:82:ARG:NH1	2.11	0.66
1:A:1328:C:H2'	1:A:1329:A:C8	2.29	0.66
16:G:115:MET:HA	16:G:118:ARG:HB2	1.78	0.66
17:I:47:VAL:HG12	17:I:79:ARG:HB3	1.78	0.66
16:G:77:ARG:HB3	16:G:79:VAL:HG13	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:O:7:THR:HG22	8:O:30:LEU:HD11	1.78	0.66
1:A:85:U:OP2	1:A:86:G:N2	2.29	0.66
1:A:1118:U:H2'	1:A:1119:C:C6	2.31	0.66
1:A:1358:U:OP1	20:N:74:ARG:N	2.19	0.66
1:A:707:U:H2'	1:A:708:C:C6	2.31	0.65
1:A:1040:U:H2'	1:A:1041:G:C8	2.31	0.65
1:A:1270:G:H2'	1:A:1271:A:C8	2.31	0.65
17:I:90:ASP:O	17:I:94:ARG:NH1	2.29	0.65
4:F:37:HIS:CE1	4:F:65:GLU:HG2	2.32	0.65
1:A:462:G:N1	1:A:471:U:N3	2.44	0.65
2:D:104:MET:CG	2:D:106:PHE:CE2	2.75	0.65
17:I:117:LEU:HD22	17:I:123:ARG:HA	1.78	0.65
1:A:275:G:H4'	10:Q:15:LYS:HD2	1.77	0.65
1:A:1309:G:OP2	19:M:97:ARG:NH2	2.28	0.65
4:F:49:TYR:CZ	11:R:73:HIS:HE1	2.15	0.65
11:R:25:ILE:HG22	11:R:29:LYS:NZ	2.11	0.65
1:A:1071:C:H2'	1:A:1072:G:H8	1.60	0.65
1:A:1165:U:H3'	1:A:1166:G:H8	1.62	0.65
1:A:1279:G:H5'	18:J:9:ARG:HE	1.62	0.65
2:D:3:TYR:HE2	2:D:67:LEU:CG	2.09	0.65
6:K:29:THR:HG21	6:K:91:GLY:HA3	1.78	0.65
16:G:65:LEU:HB3	16:G:69:ARG:HH12	1.59	0.65
21:S:35:ARG:NH2	21:S:74:ALA:O	2.29	0.65
15:C:52:SER:OG	15:C:105:VAL:HG21	1.97	0.65
18:J:40:ILE:HB	18:J:73:LEU:HB3	1.79	0.65
1:A:462:G:N1	1:A:471:U:C2	2.64	0.65
1:A:934:C:O2	1:A:938:A:N6	2.28	0.65
2:D:98:ASP:OD1	2:D:114:ARG:CA	2.43	0.65
7:L:122:LYS:HA	7:L:122:LYS:CE	2.22	0.65
7:L:101:LEU:HG	7:L:102:ASP:H	1.61	0.65
20:N:9:GLU:O	20:N:13:VAL:HG22	1.97	0.65
1:A:746:A:H2'	1:A:747:A:C8	2.31	0.65
1:A:925:G:N1	1:A:1502:A:O3'	2.30	0.65
1:A:1090:U:O2'	1:A:1171:A:O2'	2.13	0.65
2:D:14:GLU:OE2	2:D:62:ARG:NH2	2.30	0.65
1:A:17:U:C2	1:A:18:C:C5	2.84	0.65
1:A:299:G:H2'	1:A:300:A:C8	2.32	0.65
1:A:689:C:OP2	6:K:52:ARG:NH1	2.30	0.65
1:A:966:G:H2'	1:A:967:C:C6	2.32	0.65
1:A:1060:U:N3	1:A:1198:G:N1	2.45	0.65
6:K:106:ILE:HG12	6:K:109:ILE:HD11	1.79	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:B:71:THR:O	13:B:94:ARG:NH2	2.29	0.65
1:A:246:A:N1	1:A:278:G:O2'	2.29	0.64
1:A:1230:C:H2'	1:A:1231:G:C8	2.31	0.64
1:A:1384:C:H2'	1:A:1385:G:C8	2.31	0.64
15:C:106:ARG:HE	15:C:107:LYS:H	1.44	0.64
1:A:76:G:H2'	1:A:77:A:C8	2.31	0.64
10:Q:27:PHE:HE1	10:Q:38:LYS:HE3	1.62	0.64
1:A:331:G:O2'	12:T:2:ASN:ND2	2.20	0.64
1:A:415:A:H3'	1:A:416:G:H8	1.62	0.64
1:A:486:U:H2'	1:A:487:A:H8	1.60	0.64
1:A:1013:G:N2	1:A:1015:G:H3'	2.11	0.64
1:A:1381:U:H2'	1:A:1382:C:C6	2.32	0.64
5:H:25:THR:HG22	5:H:59:GLU:HB3	1.79	0.64
7:L:53:ARG:HD2	7:L:63:THR:HG22	1.78	0.64
1:A:113:G:H21	1:A:353:A:H8	1.44	0.64
2:D:104:MET:CE	2:D:179:GLY:HA3	2.27	0.64
21:S:51:HIS:HB2	21:S:56:HIS:CE1	2.32	0.64
3:E:133:ILE:O	3:E:137:ARG:NH2	2.31	0.64
13:B:65:LYS:N	13:B:158:ASP:OD2	2.30	0.64
13:B:72:LYS:HD3	13:B:74:ALA:H	1.62	0.64
15:C:37:LYS:HB3	15:C:93:ILE:HG12	1.78	0.64
17:I:118:ARG:HG3	17:I:124:PRO:HG3	1.77	0.64
2:D:104:MET:HE1	2:D:172:VAL:HA	1.78	0.64
2:D:151:GLN:HG3	2:D:152:SER:N	2.13	0.64
2:D:176:LYS:O	2:D:177:MET:HG3	1.97	0.64
3:E:67:ARG:HG3	3:E:67:ARG:HH11	1.63	0.64
15:C:25:THR:HA	15:C:28:PHE:HD2	1.63	0.64
16:G:38:ALA:HB1	16:G:42:VAL:HG12	1.78	0.64
21:S:39:ILE:HG13	21:S:70:LEU:HD12	1.80	0.64
1:A:84:U:O2'	1:A:87:C:O2	2.16	0.64
1:A:477:C:H2'	1:A:478:A:C8	2.33	0.64
1:A:1046:A:H61	1:A:1213:A:H2	1.45	0.64
13:B:63:LYS:HG3	13:B:65:LYS:HE3	1.78	0.64
1:A:77:A:H2'	1:A:78:A:H8	1.63	0.64
1:A:797:C:OP1	6:K:126:ARG:HD3	1.97	0.64
2:D:16:THR:HG21	2:D:59:LYS:CE	2.26	0.64
13:B:49:PHE:CZ	13:B:212:TYR:HE1	2.15	0.64
19:M:67:ASP:O	19:M:70:ARG:N	2.25	0.64
1:A:184:G:H2'	1:A:185:U:C6	2.33	0.63
1:A:692:U:H5''	6:K:126:ARG:NH1	2.12	0.63
5:H:49:LYS:HG2	5:H:59:GLU:OE1	1.98	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1040:U:H2'	1:A:1041:G:H8	1.62	0.63
1:A:1233:G:H2'	1:A:1234:C:C6	2.32	0.63
17:I:29:ILE:HD12	17:I:37:TYR:HD2	1.62	0.63
1:A:501:C:OP1	7:L:113:ARG:NH2	2.31	0.63
1:A:1014:A:H2'	1:A:1015:G:C8	2.33	0.63
1:A:1485:U:H2'	1:A:1486:G:H8	1.63	0.63
21:S:12:LEU:HD23	21:S:15:LEU:CD2	2.27	0.63
1:A:413:G:O3'	1:A:428:G:N2	2.30	0.63
1:A:865:A:H2'	1:A:866:C:C6	2.33	0.63
1:A:858:G:N2	1:A:859:G:O6	2.31	0.63
1:A:947:G:H4'	1:A:1332:A:H2	1.62	0.63
1:A:950:U:O4	19:M:104:ASN:ND2	2.31	0.63
1:A:1228:C:OP2	19:M:112:ARG:NH2	2.32	0.63
1:A:1323:G:H2'	1:A:1324:A:C8	2.34	0.63
2:D:144:ILE:HB	2:D:177:MET:CE	2.28	0.63
11:R:40:PRO:HB3	11:R:42:ARG:HH11	1.59	0.63
13:B:49:PHE:CZ	13:B:212:TYR:CE1	2.84	0.63
15:C:182:ASP:HB3	15:C:201:ILE:HB	1.80	0.63
16:G:77:ARG:HB2	16:G:86:VAL:HG21	1.79	0.63
18:J:62:ARG:NH1	18:J:64:GLN:HG3	2.14	0.63
1:A:1222:G:O2'	1:A:1223:C:O4'	2.08	0.63
1:A:1287:A:H2'	1:A:1288:A:C8	2.33	0.63
1:A:160:A:N6	1:A:346:G:N7	2.40	0.63
1:A:1234:C:H2'	1:A:1235:U:C6	2.33	0.63
5:H:73:SER:H	5:H:129:ALA:C	2.02	0.63
8:O:46:LYS:HA	8:O:52:ARG:HH22	1.64	0.63
13:B:60:ALA:HA	13:B:64:GLY:H	1.64	0.63
1:A:1281:C:H42	18:J:7:ARG:HB2	1.62	0.63
1:A:1347:G:N1	1:A:1374:A:OP2	2.31	0.63
2:D:12:ARG:NH1	2:D:36:ALA:O	2.30	0.63
13:B:83:ALA:O	13:B:87:ASP:N	2.31	0.63
20:N:55:SER:HB3	20:N:58:ARG:HB2	1.80	0.63
1:A:1351:U:O2'	16:G:32:ASP:O	2.17	0.63
13:B:88:GLN:HG3	13:B:89:PHE:H	1.63	0.63
1:A:867:G:O2'	1:A:873:A:N1	2.29	0.62
1:A:974:A:OP2	20:N:80:ARG:NH1	2.31	0.62
1:A:1041:G:H2'	1:A:1042:A:H8	1.64	0.62
1:A:1374:A:H2'	1:A:1375:A:H8	1.64	0.62
8:O:70:LYS:HD3	8:O:77:TYR:CD2	2.33	0.62
15:C:35:ASP:OD1	15:C:58:ARG:NH2	2.28	0.62
1:A:447:G:N2	1:A:486:U:OP2	2.31	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:I:9:GLY:HA3	17:I:81:GLY:HA2	1.81	0.62
1:A:1351:U:O4	1:A:1371:G:O6	2.17	0.62
7:L:107:LYS:HE3	7:L:107:LYS:HA	1.81	0.62
1:A:1173:U:H2'	1:A:1174:G:C8	2.34	0.62
1:A:1250:A:H2'	1:A:1251:A:C8	2.35	0.62
1:A:1414:U:H2'	1:A:1415:G:C8	2.34	0.62
4:F:3:HIS:ND1	4:F:65:GLU:OE2	2.31	0.62
13:B:75:ALA:HA	13:B:78:ALA:HB3	1.80	0.62
13:B:172:ILE:HG22	13:B:182:VAL:HG11	1.81	0.62
1:A:77:A:H2'	1:A:78:A:C8	2.34	0.62
1:A:680:C:H2'	1:A:681:A:H8	1.65	0.62
1:A:1011:C:H2'	1:A:1012:A:H8	1.65	0.62
1:A:1170:A:H2'	1:A:1171:A:O4'	1.99	0.62
1:A:1249:C:N4	1:A:1288:A:OP2	2.32	0.62
7:L:35:ARG:HD3	7:L:36:VAL:N	2.14	0.62
1:A:147:G:H2'	1:A:148:G:C8	2.33	0.62
1:A:642:A:N3	5:H:104:SER:OG	2.28	0.62
1:A:1399:C:C4	1:A:1401:G:H1'	2.34	0.62
15:C:147:GLY:HA2	15:C:170:GLY:HA3	1.81	0.62
18:J:50:THR:HG22	18:J:62:ARG:NH2	2.15	0.62
1:A:1507:A:C6	1:A:1530:G:C4	2.87	0.62
3:E:36:THR:O	3:E:48:GLY:N	2.25	0.62
17:I:44:ARG:HH12	17:I:45:MET:CE	2.12	0.62
20:N:68:ARG:HE	20:N:70:HIS:HB2	1.64	0.62
1:A:1308:U:H6	19:M:97:ARG:HH21	1.47	0.62
1:A:1349:A:H3'	1:A:1350:A:H8	1.63	0.62
6:K:39:ASN:OD1	6:K:39:ASN:O	2.17	0.62
16:G:50:ALA:O	16:G:54:GLY:N	2.31	0.62
1:A:195:A:N6	1:A:196:A:N1	2.48	0.62
1:A:1006:G:O6	1:A:1023:U:C4	2.53	0.62
14:U:39:LYS:O	14:U:42:THR:N	2.29	0.62
1:A:15:G:H2'	1:A:16:A:O4'	2.00	0.61
1:A:356:A:O4'	1:A:388:G:N2	2.33	0.61
1:A:552:U:O2'	7:L:82:ARG:O	2.18	0.61
1:A:1055:A:N6	1:A:1200:C:O2	2.33	0.61
1:A:1058:G:H2'	1:A:1059:C:O4'	2.00	0.61
1:A:1346:A:H1'	17:I:108:ARG:HH21	1.65	0.61
5:H:6:ILE:HD11	5:H:35:ILE:HD11	1.82	0.61
7:L:35:ARG:NH1	7:L:36:VAL:O	2.33	0.61
18:J:67:ILE:CG1	20:N:95:LEU:HD21	2.30	0.61
1:A:893:C:N4	1:A:894:G:O6	2.32	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:955:U:O2'	21:S:80:ARG:NH2	2.29	0.61
1:A:239:U:H4'	1:A:239:U:OP1	1.99	0.61
1:A:939:G:O6	1:A:1344:C:N4	2.28	0.61
1:A:1117:A:C2	1:A:1156:G:C6	2.88	0.61
4:F:37:HIS:HD2	4:F:38:ARG:HG2	1.64	0.61
1:A:1092:A:H2'	1:A:1093:A:C4	2.35	0.61
1:A:1309:G:P	19:M:86:ARG:HH21	2.22	0.61
16:G:125:ASP:O	16:G:129:ASN:N	2.34	0.61
18:J:67:ILE:CG1	20:N:95:LEU:HD11	2.29	0.61
1:A:216:U:H2'	1:A:217:C:C6	2.35	0.61
1:A:938:A:H2'	1:A:939:G:C8	2.35	0.61
1:A:1419:G:N2	1:A:1481:U:O2	2.23	0.61
8:O:29:ALA:HA	8:O:32:THR:HG22	1.83	0.61
13:B:107:ARG:NH2	13:B:154:GLY:O	2.34	0.61
15:C:130:ARG:NH2	15:C:133:MET:SD	2.68	0.61
1:A:15:G:O4'	1:A:1396:A:O2'	2.17	0.61
1:A:1026:G:N2	1:A:1035:A:N1	2.45	0.61
1:A:1118:U:OP2	17:I:10:ARG:NH2	2.33	0.61
1:A:1199:U:H1'	18:J:56:HIS:NE2	2.15	0.61
1:A:1381:U:O2'	16:G:80:GLY:N	2.31	0.61
18:J:42:LEU:HG	18:J:73:LEU:HB2	1.81	0.61
19:M:2:ARG:NE	19:M:5:GLY:O	2.34	0.61
1:A:56:U:H2'	1:A:57:G:C8	2.35	0.61
1:A:187:G:N2	1:A:190:A:OP2	2.25	0.61
1:A:653:U:C2	5:H:55:LYS:HE3	2.36	0.61
21:S:39:ILE:CD1	21:S:70:LEU:HD12	2.30	0.61
1:A:842:U:H1'	1:A:846:G:C6	2.35	0.61
10:Q:22:VAL:O	10:Q:43:LEU:HD23	2.00	0.61
13:B:161:PHE:CG	13:B:161:PHE:O	2.53	0.61
1:A:529:G:H22	7:L:47:ALA:HB2	1.66	0.61
1:A:1156:G:N3	1:A:1179:A:N1	2.48	0.61
1:A:1157:A:C4	1:A:1181:G:C2	2.89	0.61
2:D:160:LEU:HA	2:D:163:GLN:HE22	1.65	0.61
13:B:114:LYS:HA	13:B:117:GLU:HG3	1.83	0.61
1:A:1014:A:H5'	21:S:13:HIS:HA	1.82	0.61
4:F:15:SER:OG	4:F:44:ARG:NH2	2.33	0.61
1:A:718:A:H5'	6:K:118:ASN:ND2	2.16	0.60
1:A:982:U:C4	1:A:1223:C:C4	2.88	0.60
1:A:1093:A:H2'	1:A:1095:U:H5''	1.83	0.60
1:A:1223:C:H5''	1:A:1224:U:H5''	1.83	0.60
17:I:34:LEU:HD11	17:I:48:ARG:NH2	2.15	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:447:G:O2'	1:A:487:A:N6	2.34	0.60
1:A:615:G:O6	1:A:625:U:O2	2.19	0.60
1:A:928:G:H2'	1:A:929:G:C8	2.37	0.60
3:E:88:HIS:CE1	3:E:137:ARG:HH11	2.19	0.60
1:A:838:G:H2'	1:A:839:C:C6	2.35	0.60
1:A:1067:A:N1	1:A:1108:G:O2'	2.31	0.60
1:A:1380:U:H2'	16:G:3:ARG:HH12	1.66	0.60
1:A:1517:G:H2'	1:A:1518:A:C8	2.36	0.60
2:D:102:TYR:HE2	2:D:103:ARG:NE	1.98	0.60
13:B:116:LEU:HD13	13:B:140:LEU:HB3	1.83	0.60
17:I:55:ASP:HB2	17:I:59:LYS:HD2	1.83	0.60
1:A:701:U:H3'	1:A:702:A:H8	1.67	0.60
1:A:946:A:O2'	1:A:1333:A:N3	2.27	0.60
1:A:1074:G:H2'	1:A:1075:U:C6	2.35	0.60
1:A:1164:G:H2'	1:A:1165:U:C6	2.37	0.60
3:E:147:ASN:HA	3:E:151:MET:HE3	1.84	0.60
5:H:68:LYS:CE	5:H:72:GLU:OE1	2.48	0.60
7:L:74:GLN:HG2	7:L:77:SER:HB3	1.83	0.60
15:C:59:PRO:HG3	15:C:64:ARG:HE	1.67	0.60
15:C:134:LYS:NZ	15:C:169:GLU:OE2	2.33	0.60
1:A:680:C:H2'	1:A:681:A:C8	2.36	0.60
1:A:693:G:O3'	6:K:55:ARG:NH1	2.30	0.60
1:A:974:A:O5'	20:N:68:ARG:NH2	2.35	0.60
1:A:1117:A:C2	1:A:1156:G:C2	2.89	0.60
5:H:7:ALA:HB2	5:H:76:ARG:HG2	1.82	0.60
13:B:142:LYS:HA	13:B:145:ASN:HD22	1.66	0.60
1:A:1209:C:N4	1:A:1210:C:N4	2.49	0.60
1:A:1271:A:H2'	1:A:1272:G:C8	2.35	0.60
1:A:1405:G:O6	1:A:1496:C:N4	2.34	0.60
13:B:163:ILE:HA	13:B:185:ILE:HG22	1.84	0.60
16:G:71:THR:HG23	16:G:72:VAL:HG22	1.82	0.60
21:S:50:VAL:CG2	21:S:57:VAL:CG2	2.77	0.60
1:A:999:C:H2'	1:A:1000:A:H8	1.66	0.60
1:A:1165:U:H2'	1:A:1166:G:O4'	2.02	0.60
1:A:1296:C:H5	1:A:1297:G:C6	2.20	0.60
3:E:88:HIS:CE1	3:E:137:ARG:HD2	2.36	0.60
10:Q:6:THR:HB	10:Q:59:GLU:HG2	1.83	0.60
15:C:155:ARG:HH21	15:C:192:TYR:HB2	1.67	0.60
16:G:64:ALA:HB2	16:G:127:ALA:HB2	1.83	0.60
17:I:45:MET:HG2	17:I:48:ARG:HH11	1.67	0.60
19:M:74:MET:O	19:M:78:ARG:N	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:212:G:H2'	1:A:213:G:H8	1.65	0.60
1:A:1064:G:O2'	1:A:1190:G:N2	2.34	0.60
6:K:84:MET:HG2	6:K:86:LYS:NZ	2.17	0.60
7:L:13:ARG:HE	7:L:14:LYS:H	1.48	0.60
7:L:122:LYS:O	7:L:122:LYS:HD3	2.02	0.60
1:A:982:U:C4	1:A:1223:C:N3	2.70	0.60
1:A:1077:G:N2	1:A:1080:A:OP2	2.32	0.60
1:A:1098:C:H2'	1:A:1099:G:C8	2.37	0.60
18:J:10:LEU:HD22	18:J:72:ARG:HB2	1.82	0.60
1:A:254:G:O3'	10:Q:70:LYS:NZ	2.35	0.59
1:A:424:G:H2'	1:A:425:G:H8	1.67	0.59
1:A:1124:G:O2'	1:A:1127:G:O6	2.19	0.59
1:A:1485:U:H2'	1:A:1486:G:C8	2.36	0.59
4:F:54:LEU:HG	4:F:56:LYS:H	1.67	0.59
15:C:151:GLU:HB3	15:C:198:LYS:HB2	1.82	0.59
17:I:83:THR:O	17:I:87:MET:HG3	2.01	0.59
19:M:103:THR:HG22	19:M:104:ASN:H	1.66	0.59
1:A:492:C:C4	1:A:493:A:N6	2.70	0.59
7:L:120:ARG:HH11	7:L:120:ARG:HG3	1.67	0.59
1:A:207:C:O2	1:A:212:G:N2	2.19	0.59
1:A:1048:G:O3'	20:N:2:LYS:NZ	2.34	0.59
10:Q:46:HIS:HB3	10:Q:73:THR:HG22	1.84	0.59
13:B:80:LYS:HD3	13:B:84:LEU:HD23	1.84	0.59
1:A:122:G:H1	1:A:239:U:H3	1.50	0.59
1:A:403:C:OP2	2:D:70:GLN:NE2	2.36	0.59
1:A:875:U:O2'	5:H:14:ARG:NH1	2.35	0.59
1:A:1054:C:OP1	1:A:1196:A:O2'	2.18	0.59
1:A:1271:A:H5'	1:A:1314:C:H5'	1.84	0.59
3:E:46:GLY:HA3	3:E:66:ALA:O	2.02	0.59
4:F:5:GLU:HA	4:F:63:ASN:HA	1.85	0.59
5:H:89:ASP:OD1	5:H:90:GLU:N	2.35	0.59
8:O:42:PHE:CD2	8:O:55:LEU:HD22	2.37	0.59
10:Q:75:VAL:HG13	10:Q:76:ARG:HG2	1.84	0.59
13:B:105:THR:O	13:B:108:GLN:HG3	2.01	0.59
1:A:1137:C:H4'	1:A:1138:G:C4	2.37	0.59
1:A:1147:C:H4'	17:I:6:TYR:CZ	2.37	0.59
16:G:35:LYS:HA	16:G:38:ALA:HB3	1.84	0.59
1:A:1015:G:H2'	1:A:1016:A:O4'	2.03	0.59
1:A:1238:A:H5'	1:A:1336:C:H41	1.67	0.59
2:D:91:ALA:HB1	2:D:184:LYS:HE3	1.84	0.59
5:H:29:SER:OG	5:H:30:LYS:N	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:R:62:ARG:HA	11:R:67:LEU:O	2.02	0.59
13:B:221:ARG:O	13:B:224:ARG:NH2	2.36	0.59
15:C:107:LYS:HE3	15:C:143:LEU:HD12	1.84	0.59
18:J:34:ALA:HA	18:J:78:GLU:HB2	1.84	0.59
20:N:94:GLY:O	20:N:95:LEU:HD22	2.01	0.59
1:A:62:U:O2'	1:A:379:C:O2	2.20	0.59
1:A:252:U:H2'	1:A:253:A:C8	2.37	0.59
1:A:962:C:H2'	1:A:963:G:C8	2.36	0.59
1:A:1056:U:N3	1:A:1205:U:O2	2.36	0.59
1:A:1125:U:H2'	1:A:1126:U:H5''	1.84	0.59
1:A:1320:C:N4	21:S:35:ARG:HG3	2.18	0.59
10:Q:4:ILE:HG13	10:Q:5:ARG:N	2.15	0.59
17:I:33:SER:HB3	17:I:36:GLN:HG3	1.85	0.59
1:A:1037:C:H2'	1:A:1038:C:C6	2.37	0.59
19:M:18:LEU:HB3	19:M:29:SER:HB2	1.83	0.59
21:S:50:VAL:O	21:S:57:VAL:N	2.26	0.59
1:A:454:G:H22	1:A:478:A:H2	1.49	0.59
1:A:967:C:H5''	1:A:968:A:H2'	1.85	0.59
1:A:1290:G:OP1	16:G:37:THR:OG1	2.21	0.59
13:B:81:ASP:OD1	13:B:82:ALA:N	2.36	0.59
16:G:124:SER:O	16:G:128:GLU:N	2.36	0.59
18:J:62:ARG:HH12	18:J:64:GLN:HG3	1.68	0.59
1:A:1156:G:O2'	1:A:1179:A:N6	2.36	0.59
4:F:70:VAL:O	4:F:73:GLU:HG3	2.02	0.59
1:A:462:G:C2	1:A:471:U:C2	2.91	0.58
1:A:1143:G:N1	1:A:1144:G:O6	2.35	0.58
1:A:1307:U:H2'	1:A:1308:U:C2	2.37	0.58
1:A:1413:A:N6	1:A:1487:G:H1	1.99	0.58
16:G:43:TYR:HA	16:G:46:LEU:HG	1.84	0.58
18:J:9:ARG:HD2	18:J:71:LEU:HD12	1.83	0.58
1:A:6:G:H22	3:E:102:THR:CG2	2.11	0.58
6:K:49:SER:HA	6:K:68:ARG:NH1	2.18	0.58
6:K:64:VAL:O	6:K:68:ARG:HG3	2.02	0.58
1:A:942:G:N2	1:A:1341:U:O2	2.29	0.58
1:A:1376:U:O3'	16:G:94:ARG:NH2	2.36	0.58
1:A:1526:G:P	14:U:38:GLU:HB3	2.43	0.58
2:D:36:ALA:HB2	2:D:41:GLY:HA2	1.84	0.58
13:B:96:LEU:O	13:B:99:MET:HG2	2.04	0.58
15:C:135:ARG:HA	15:C:138:GLN:HE22	1.68	0.58
15:C:178:ARG:HH11	15:C:178:ARG:HA	1.67	0.58
20:N:9:GLU:HA	20:N:12:ARG:HB2	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:475:C:H2'	1:A:476:U:H6	1.67	0.58
1:A:1348:U:H2'	1:A:1349:A:H8	1.68	0.58
13:B:71:THR:HG23	13:B:167:HIS:CE1	2.38	0.58
13:B:103:TRP:HE1	13:B:107:ARG:NH2	1.95	0.58
19:M:86:ARG:HG2	19:M:96:VAL:HB	1.86	0.58
1:A:413:G:C6	2:D:32:LYS:HE3	2.38	0.58
1:A:722:G:H5''	14:U:44:ARG:NH2	2.18	0.58
1:A:1013:G:N2	1:A:1016:A:OP2	2.32	0.58
1:A:1348:U:H2'	1:A:1349:A:C8	2.38	0.58
1:A:1467:C:H2'	1:A:1468:A:C8	2.39	0.58
15:C:119:ILE:HG23	15:C:122:GLN:HE21	1.67	0.58
1:A:1256:A:H5''	1:A:1258:G:C2	2.39	0.58
19:M:18:LEU:HD23	19:M:29:SER:HA	1.86	0.58
1:A:207:C:N3	1:A:212:G:N1	2.41	0.58
1:A:219:U:H2'	1:A:220:G:H8	1.68	0.58
1:A:1216:A:H2'	1:A:1217:C:C6	2.39	0.58
21:S:12:LEU:CD2	21:S:15:LEU:CD2	2.81	0.58
1:A:390:U:H2'	1:A:391:G:C8	2.39	0.58
1:A:472:U:H2'	1:A:473:U:C6	2.38	0.58
1:A:739:C:HO2'	8:O:41:HIS:HD1	1.52	0.58
1:A:1308:U:N3	1:A:1329:A:N1	2.52	0.58
7:L:51:VAL:HG11	7:L:92:VAL:HG21	1.86	0.58
15:C:183:TYR:HD1	15:C:199:VAL:O	1.86	0.58
16:G:90:VAL:O	16:G:95:ARG:NH2	2.32	0.58
8:O:24:THR:O	8:O:28:VAL:HG23	2.04	0.58
15:C:125:ARG:HH21	15:C:127:VAL:HG11	1.69	0.58
1:A:675:A:H1'	6:K:117:HIS:ND1	2.19	0.58
1:A:944:G:N2	1:A:1338:G:N7	2.51	0.58
2:D:21:LYS:O	2:D:25:ARG:NH2	2.37	0.58
4:F:12:PRO:O	4:F:44:ARG:NH2	2.37	0.58
1:A:98:A:H2'	1:A:99:C:C6	2.39	0.57
1:A:1198:G:H2'	1:A:1199:U:C6	2.39	0.57
1:A:1222:G:OP2	1:A:1222:G:H8	1.87	0.57
1:A:1309:G:H2'	1:A:1310:G:C8	2.36	0.57
2:D:13:ARG:HH22	2:D:43:ARG:NH2	1.92	0.57
2:D:152:SER:O	2:D:155:LYS:NZ	2.37	0.57
6:K:19:VAL:HG12	6:K:82:GLU:HG2	1.85	0.57
1:A:1011:C:H2'	1:A:1012:A:C8	2.39	0.57
1:A:1309:G:O5'	19:M:86:ARG:NH2	2.37	0.57
1:A:1343:G:H5''	17:I:123:ARG:HE	1.69	0.57
2:D:3:TYR:CE2	2:D:67:LEU:HG	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:B:46:VAL:HA	13:B:49:PHE:HB2	1.85	0.57
13:B:62:ARG:HD2	13:B:62:ARG:O	2.04	0.57
1:A:503:C:O2'	1:A:510:A:N1	2.32	0.57
1:A:781:A:OP2	1:A:800:G:N2	2.34	0.57
1:A:981:U:OP1	20:N:8:ARG:NH1	2.37	0.57
1:A:1003:G:H21	1:A:1005:A:P	2.27	0.57
2:D:104:MET:HG2	2:D:106:PHE:CZ	2.38	0.57
7:L:98:ARG:NH2	7:L:104:SER:O	2.35	0.57
16:G:113:LYS:HB2	16:G:117:LEU:HD21	1.85	0.57
1:A:407:U:H2'	1:A:408:A:H8	1.69	0.57
1:A:945:G:N1	1:A:1236:A:N6	2.16	0.57
2:D:94:GLU:HA	2:D:99:ASN:HD22	1.69	0.57
15:C:11:LEU:HA	15:C:15:LYS:HB2	1.86	0.57
1:A:1105:A:H2'	1:A:1106:G:H8	1.67	0.57
1:A:1203:C:OP1	20:N:1:ALA:N	2.37	0.57
5:H:64:TYR:HA	5:H:70:VAL:HG13	1.86	0.57
13:B:62:ARG:HH22	13:B:158:ASP:CG	2.08	0.57
13:B:168:GLU:OE1	13:B:168:GLU:N	2.38	0.57
15:C:138:GLN:HB2	15:C:142:ARG:NH1	2.19	0.57
20:N:76:PHE:HE2	20:N:78:LEU:HD12	1.69	0.57
1:A:126:G:OP1	1:A:605:U:O2'	2.13	0.57
1:A:490:C:H2'	1:A:491:G:H8	1.69	0.57
1:A:931:C:O5'	16:G:3:ARG:NH2	2.38	0.57
1:A:1039:G:H2'	1:A:1040:U:C6	2.39	0.57
1:A:1233:G:H2'	1:A:1234:C:H6	1.70	0.57
1:A:1427:C:H2'	1:A:1428:A:C8	2.39	0.57
3:E:44:ARG:HG3	3:E:44:ARG:HH11	1.69	0.57
13:B:116:LEU:O	13:B:120:SER:HB2	2.05	0.57
13:B:89:PHE:CD2	13:B:150:ILE:HD12	2.39	0.57
16:G:11:ILE:HG13	16:G:24:LYS:HD3	1.87	0.57
16:G:104:VAL:HG22	16:G:119:LEU:CD1	2.29	0.57
17:I:4:GLN:HG2	17:I:21:LYS:HD2	1.85	0.57
17:I:125:GLN:OE1	17:I:127:SER:OG	2.20	0.57
1:A:215:C:H2'	1:A:216:U:O4'	2.05	0.57
1:A:252:U:H2'	1:A:253:A:H8	1.70	0.57
1:A:642:A:H2'	1:A:643:C:C6	2.40	0.57
1:A:773:G:C2	1:A:807:A:C2	2.93	0.57
1:A:795:C:H4'	1:A:1506:U:O2	2.05	0.57
1:A:1012:A:H2'	1:A:1013:G:C8	2.39	0.57
1:A:1187:G:N2	20:N:99:SER:HB2	2.20	0.57
1:A:1242:G:H2'	1:A:1243:C:H6	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1392:G:H4'	1:A:1392:G:OP1	2.04	0.57
1:A:1425:U:H2'	1:A:1426:G:H8	1.70	0.57
7:L:49:ARG:HB3	7:L:65:TYR:CE1	2.38	0.57
7:L:122:LYS:HE2	7:L:122:LYS:CA	2.29	0.57
1:A:409:U:OP2	2:D:21:LYS:NZ	2.33	0.57
1:A:492:C:H2'	1:A:493:A:N3	2.19	0.57
4:F:11:HIS:HB3	4:F:14:GLN:NE2	2.18	0.57
9:P:8:ARG:HB3	9:P:28:ARG:HH12	1.69	0.57
16:G:29:LEU:HD13	16:G:104:VAL:HG21	1.86	0.57
18:J:42:LEU:HD11	18:J:73:LEU:HD13	1.85	0.57
1:A:76:G:H1	1:A:93:U:H3	1.52	0.57
1:A:154:U:H2'	1:A:155:A:C8	2.40	0.57
1:A:392:C:OP1	9:P:8:ARG:NH2	2.38	0.57
1:A:427:U:O2'	1:A:541:G:OP1	2.20	0.57
1:A:960:U:H4'	1:A:961:U:H5'	1.87	0.57
15:C:40:GLN:HG3	15:C:44:LYS:HE2	1.87	0.57
1:A:74:A:H2'	1:A:75:G:C8	2.41	0.56
1:A:148:G:O2'	1:A:1446:A:N3	2.30	0.56
1:A:691:G:O6	6:K:52:ARG:NH2	2.38	0.56
1:A:1168:U:HO2'	1:A:1169:A:H8	1.53	0.56
3:E:140:ILE:O	3:E:144:GLU:HG2	2.05	0.56
4:F:36:ILE:O	4:F:36:ILE:HG13	2.05	0.56
4:F:96:VAL:HG12	4:F:97:THR:H	1.70	0.56
1:A:501:C:H2'	1:A:502:A:C8	2.40	0.56
1:A:722:G:H21	14:U:44:ARG:HH12	1.54	0.56
1:A:1142:G:H3'	1:A:1143:G:H8	1.70	0.56
1:A:1248:A:H2'	1:A:1249:C:O4'	2.05	0.56
1:A:1388:C:H3'	1:A:1389:C:C6	2.39	0.56
1:A:157:U:O2	1:A:164:G:C6	2.58	0.56
1:A:413:G:O2'	1:A:428:G:N2	2.38	0.56
1:A:812:G:O2'	1:A:813:U:O4'	2.21	0.56
1:A:982:U:N3	1:A:1223:C:C2	2.72	0.56
1:A:984:C:C4	1:A:1222:G:N2	2.73	0.56
1:A:1343:G:OP1	17:I:123:ARG:NH2	2.37	0.56
1:A:1347:G:H22	1:A:1374:A:P	2.28	0.56
1:A:1399:C:N4	1:A:1401:G:N3	2.54	0.56
6:K:51:PHE:HD2	6:K:61:ALA:HB2	1.70	0.56
12:T:55:PRO:O	12:T:59:ARG:N	2.34	0.56
13:B:10:LYS:O	13:B:14:HIS:ND1	2.37	0.56
16:G:147:ASN:O	16:G:151:ALA:N	2.36	0.56
19:M:25:GLY:H	19:M:28:ARG:HB2	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:N:3:GLN:O	20:N:7:ALA:N	2.38	0.56
1:A:845:A:O3'	11:R:47:ARG:NH2	2.36	0.56
1:A:982:U:O2	1:A:983:A:N6	2.39	0.56
1:A:1060:U:C2	1:A:1198:G:N1	2.74	0.56
1:A:1242:G:H2'	1:A:1243:C:C6	2.40	0.56
4:F:2:ARG:HD2	4:F:91:ARG:HE	1.71	0.56
17:I:72:SER:O	17:I:76:GLY:N	2.38	0.56
19:M:55:LEU:HA	19:M:58:GLU:HG2	1.87	0.56
1:A:864:A:H2'	1:A:865:A:C8	2.41	0.56
1:A:1290:G:H2'	1:A:1291:U:C6	2.39	0.56
13:B:44:LYS:O	13:B:47:PRO:HD2	2.06	0.56
19:M:63:VAL:CG2	19:M:68:LEU:HD12	2.34	0.56
1:A:985:C:H2'	1:A:986:U:H6	1.71	0.56
2:D:53:GLN:HG3	2:D:202:LEU:HB2	1.87	0.56
1:A:363:A:OP2	7:L:30:ARG:NH1	2.37	0.56
1:A:473:U:H2'	1:A:474:G:C8	2.41	0.56
1:A:909:A:OP1	7:L:17:LYS:HD3	2.06	0.56
1:A:949:A:HO2'	1:A:971:G:H1	1.53	0.56
2:D:22:SER:HB2	2:D:164:ARG:NH2	2.19	0.56
17:I:97:LEU:O	17:I:101:GLY:N	2.39	0.56
19:M:18:LEU:HG	19:M:24:VAL:HG21	1.88	0.56
1:A:751:U:H2'	1:A:752:G:O4'	2.06	0.56
1:A:1110:A:N6	1:A:1111:A:H62	2.04	0.56
1:A:1250:A:N3	1:A:1370:G:O2'	2.31	0.56
1:A:1313:U:OP2	21:S:6:LYS:NZ	2.38	0.56
1:A:1346:A:O2'	16:G:9:ARG:NH1	2.39	0.56
1:A:1479:C:H2'	1:A:1480:A:C8	2.40	0.56
19:M:81:ASP:O	19:M:91:ARG:NH2	2.38	0.56
21:S:50:VAL:N	21:S:57:VAL:O	2.36	0.56
1:A:18:C:C2	1:A:918:A:C2	2.94	0.56
1:A:328:C:H4'	1:A:329:A:H5'	1.88	0.56
1:A:773:G:C2	1:A:807:A:N1	2.74	0.56
1:A:1305:G:H1	1:A:1331:G:H1'	1.71	0.56
1:A:1381:U:H2'	1:A:1382:C:H6	1.68	0.56
8:O:6:ALA:HA	8:O:9:LYS:NZ	2.21	0.56
1:A:674:G:H4'	11:R:73:HIS:NE2	2.21	0.56
1:A:938:A:H2'	1:A:939:G:H8	1.69	0.56
1:A:1125:U:H1'	18:J:73:LEU:HD21	1.87	0.56
1:A:1166:G:H22	1:A:1169:A:P	2.29	0.56
1:A:1332:A:H2'	1:A:1333:A:C8	2.41	0.56
4:F:91:ARG:HG2	4:F:91:ARG:HH11	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:K:22:ILE:HD12	6:K:85:VAL:HG22	1.86	0.56
19:M:74:MET:HA	19:M:77:LYS:HG2	1.88	0.56
1:A:182:A:H2	1:A:194:C:H42	1.54	0.55
1:A:706:A:H5''	6:K:23:HIS:ND1	2.20	0.55
10:Q:8:GLN:OE1	10:Q:8:GLN:HA	2.05	0.55
13:B:148:GLY:O	13:B:151:LYS:HE3	2.06	0.55
18:J:67:ILE:CG1	20:N:95:LEU:CD2	2.84	0.55
21:S:10:ILE:HG22	21:S:37:SER:HB2	1.88	0.55
1:A:838:G:H2'	1:A:839:C:H6	1.69	0.55
1:A:979:C:O2	20:N:58:ARG:NH1	2.39	0.55
1:A:1391:U:H3'	1:A:1392:G:H5''	1.88	0.55
1:A:204:G:H3'	1:A:205:A:H8	1.72	0.55
1:A:522:C:OP1	7:L:68:GLY:N	2.39	0.55
1:A:1359:C:OP1	20:N:61:ASN:ND2	2.39	0.55
1:A:1369:C:OP2	17:I:113:LYS:HE2	2.06	0.55
1:A:1430:A:H2'	1:A:1431:A:C8	2.41	0.55
13:B:89:PHE:CZ	13:B:153:MET:HG3	2.42	0.55
16:G:35:LYS:O	16:G:39:GLU:N	2.40	0.55
17:I:44:ARG:O	17:I:48:ARG:NH1	2.39	0.55
21:S:50:VAL:HG21	21:S:74:ALA:HB1	1.87	0.55
1:A:354:G:N2	1:A:388:G:O2'	2.23	0.55
1:A:510:A:H5''	2:D:13:ARG:HH2	1.71	0.55
1:A:1074:G:H2'	1:A:1075:U:H6	1.70	0.55
1:A:1202:U:H2'	1:A:1203:C:O4'	2.07	0.55
2:D:102:TYR:CE2	2:D:103:ARG:HD3	2.42	0.55
10:Q:15:LYS:C	10:Q:15:LYS:HD3	2.27	0.55
15:C:78:LYS:HE2	15:C:81:GLU:HG3	1.87	0.55
15:C:183:TYR:CZ	15:C:200:TRP:CZ2	2.95	0.55
19:M:13:HIS:O	19:M:17:ALA:N	2.27	0.55
1:A:392:C:O2'	1:A:483:C:O2'	2.11	0.55
1:A:663:A:C5'	11:R:49:LYS:HZ3	2.19	0.55
1:A:1240:U:OP1	16:G:114:SER:HB2	2.06	0.55
1:A:1317:C:H42	20:N:52:ARG:HE	1.55	0.55
2:D:7:LYS:HD2	2:D:7:LYS:H	1.70	0.55
2:D:144:ILE:HB	2:D:177:MET:HE2	1.88	0.55
12:T:45:ALA:HA	12:T:48:LYS:HZ3	1.69	0.55
13:B:89:PHE:HZ	13:B:153:MET:H	1.53	0.55
18:J:56:HIS:HB2	18:J:58:ASN:OD1	2.07	0.55
1:A:18:C:H4'	1:A:1078:U:O2	2.06	0.55
1:A:510:A:OP2	1:A:510:A:H8	1.89	0.55
1:A:779:C:H5'	6:K:121:ARG:O	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1220:G:OP1	21:S:36:ARG:NH1	2.40	0.55
1:A:371:A:H2'	1:A:372:C:O4'	2.07	0.55
5:H:76:ARG:NH1	5:H:125:ILE:O	2.40	0.55
8:O:66:LEU:HB2	8:O:87:ARG:HH21	1.72	0.55
1:A:146:G:H2'	1:A:147:G:H8	1.70	0.55
1:A:1107:C:C4	1:A:1108:G:C8	2.95	0.55
1:A:1333:A:H3'	1:A:1334:G:H8	1.71	0.55
1:A:1339:A:C5	1:A:1340:A:H1'	2.42	0.55
1:A:1399:C:N3	1:A:1401:G:N9	2.55	0.55
2:D:94:GLU:HA	2:D:99:ASN:ND2	2.22	0.55
15:C:53:ARG:HH21	15:C:54:ILE:HG22	1.71	0.55
15:C:166:TRP:H	15:C:166:TRP:HE3	1.54	0.55
1:A:925:G:C2	1:A:1502:A:H1'	2.41	0.55
1:A:985:C:H2'	1:A:986:U:C6	2.42	0.55
1:A:1210:C:HO2'	1:A:1211:U:P	2.29	0.55
1:A:1390:U:O2'	1:A:1391:U:OP1	2.23	0.55
1:A:1449:C:H2'	1:A:1450:U:O4'	2.07	0.55
2:D:104:MET:CG	2:D:106:PHE:CZ	2.90	0.55
10:Q:28:VAL:HG11	10:Q:39:ARG:HD2	1.89	0.55
1:A:1071:C:H2'	1:A:1072:G:C8	2.41	0.55
1:A:1395:C:H42	1:A:1396:A:H62	1.53	0.55
1:A:1399:C:C4	1:A:1401:G:C4	2.95	0.55
5:H:105:THR:OG1	5:H:110:MET:CE	2.55	0.55
9:P:68:SER:OG	9:P:69:ASP:N	2.39	0.55
13:B:160:LEU:HD23	13:B:162:VAL:H	1.72	0.55
16:G:46:LEU:HA	16:G:49:LEU:HD12	1.89	0.55
1:A:203:G:C2	1:A:205:A:N6	2.73	0.54
1:A:416:G:C4	1:A:417:G:C8	2.96	0.54
1:A:462:G:C6	1:A:471:U:N3	2.75	0.54
1:A:1165:U:H3'	1:A:1166:G:C8	2.41	0.54
1:A:1282:C:H2'	1:A:1283:U:C6	2.41	0.54
6:K:51:PHE:HA	6:K:56:LYS:HZ2	1.71	0.54
10:Q:19:SER:OG	10:Q:70:LYS:NZ	2.32	0.54
13:B:183:PHE:CE1	13:B:197:PHE:CD2	2.95	0.54
19:M:85:TYR:N	21:S:72:GLU:O	2.39	0.54
1:A:1129:C:OP1	17:I:67:LYS:NZ	2.27	0.54
1:A:1266:G:N1	1:A:1269:A:OP2	2.32	0.54
1:A:1281:C:O2	18:J:7:ARG:NH2	2.40	0.54
5:H:28:SER:HB3	5:H:58:LEU:HB2	1.88	0.54
15:C:21:TRP:HZ3	15:C:23:ALA:HB2	1.72	0.54
15:C:186:SER:O	15:C:197:VAL:N	2.38	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:15:HIS:HD2	18:J:19:ASP:HB2	1.72	0.54
1:A:1319:A:C6	1:A:1323:G:H1'	2.43	0.54
2:D:144:ILE:CD1	2:D:177:MET:HE2	2.32	0.54
13:B:55:GLU:O	13:B:59:ILE:HG13	2.07	0.54
15:C:25:THR:HA	15:C:28:PHE:CD2	2.42	0.54
1:A:201:G:H2'	1:A:202:G:C8	2.43	0.54
1:A:895:G:H2'	1:A:896:C:C6	2.42	0.54
1:A:935:A:N6	16:G:2:ARG:HD2	2.22	0.54
1:A:1162:C:H2'	1:A:1163:A:O4'	2.08	0.54
1:A:1302:C:O4'	19:M:16:ILE:HG23	2.08	0.54
6:K:47:GLY:O	6:K:52:ARG:NH1	2.40	0.54
11:R:23:LYS:HG2	11:R:23:LYS:O	2.08	0.54
20:N:64:ARG:HH21	20:N:76:PHE:HZ	1.54	0.54
1:A:411:A:C8	2:D:30:LYS:HG2	2.43	0.54
1:A:465:A:H4'	1:A:466:A:C6	2.43	0.54
1:A:637:C:OP2	10:Q:5:ARG:NH1	2.41	0.54
1:A:693:G:H2'	1:A:694:A:C8	2.42	0.54
1:A:952:U:H5''	1:A:964:A:H61	1.70	0.54
1:A:958:A:N3	21:S:54:ARG:NH2	2.56	0.54
1:A:1087:G:N1	1:A:1088:G:C5	2.76	0.54
1:A:1164:G:H2'	1:A:1165:U:H6	1.72	0.54
10:Q:8:GLN:HE22	10:Q:59:GLU:HG3	1.73	0.54
15:C:142:ARG:HG2	15:C:142:ARG:HH11	1.73	0.54
19:M:89:ARG:HD2	19:M:94:LEU:HB2	1.89	0.54
20:N:19:TYR:CD2	20:N:51:PRO:HB3	2.42	0.54
20:N:76:PHE:CE2	20:N:78:LEU:HB2	2.41	0.54
1:A:547:A:OP2	2:D:3:TYR:OH	2.20	0.54
1:A:663:A:H5''	11:R:49:LYS:HZ1	1.73	0.54
1:A:692:U:H5''	6:K:126:ARG:HH11	1.72	0.54
1:A:1270:G:H2'	1:A:1271:A:H8	1.71	0.54
1:A:1372:U:H2'	1:A:1373:G:O4'	2.08	0.54
20:N:46:LYS:HG3	21:S:15:LEU:HD21	1.90	0.54
1:A:8:A:N6	2:D:201:GLU:O	2.41	0.54
1:A:949:A:H2'	1:A:950:U:C6	2.42	0.54
1:A:957:U:H4'	21:S:78:THR:HB	1.89	0.54
1:A:1278:G:H4'	1:A:1279:G:O4'	2.07	0.54
1:A:1283:U:H2'	1:A:1284:C:C6	2.42	0.54
1:A:1303:C:H2'	1:A:1304:G:O4'	2.07	0.54
6:K:81:LEU:O	6:K:107:THR:N	2.40	0.54
1:A:1088:G:H21	1:A:1167:A:N6	2.04	0.54
1:A:1142:G:H3'	1:A:1143:G:C8	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1502:A:H5''	1:A:1504:G:O6	2.07	0.54
3:E:133:ILE:HG22	3:E:137:ARG:HH22	1.73	0.54
5:H:105:THR:HB	5:H:120:LEU:HD22	1.90	0.54
10:Q:60:ILE:HG22	10:Q:74:LEU:HB3	1.90	0.54
18:J:52:LEU:HB2	20:N:80:ARG:HG3	1.90	0.54
1:A:458:U:H3	1:A:474:G:H1	1.56	0.54
1:A:542:G:OP1	2:D:9:LYS:NZ	2.39	0.54
1:A:769:G:H4'	1:A:1513:A:H4'	1.89	0.54
1:A:1234:C:H2'	1:A:1235:U:H6	1.73	0.54
1:A:1367:C:H4'	18:J:62:ARG:HE	1.72	0.54
12:T:4:LYS:HA	12:T:7:LYS:NZ	2.22	0.54
13:B:18:GLN:NE2	13:B:22:TRP:HA	2.22	0.54
18:J:27:GLU:HG3	18:J:28:THR:HG23	1.88	0.54
1:A:83:C:O2	1:A:86:G:N2	2.41	0.54
1:A:216:U:H1'	1:A:465:A:C2	2.42	0.54
1:A:334:C:O2	1:A:1434:A:O2'	2.25	0.54
1:A:925:G:C6	1:A:1502:A:H1'	2.43	0.54
1:A:1238:A:N7	1:A:1301:U:O2	2.41	0.54
3:E:37:VAL:HG21	3:E:112:ALA:HB1	1.90	0.54
15:C:19:SER:HA	15:C:56:ILE:HB	1.89	0.54
16:G:67:ASN:O	16:G:137:ARG:HG3	2.08	0.54
17:I:49:GLN:HA	17:I:52:GLU:OE1	2.08	0.54
1:A:151:A:OP2	1:A:169:C:N4	2.41	0.53
1:A:1130:A:OP1	17:I:65:THR:OG1	2.26	0.53
1:A:415:A:C8	1:A:416:G:C8	2.96	0.53
1:A:1088:G:N1	1:A:1089:G:C6	2.76	0.53
1:A:1376:U:O4	1:A:1377:A:N6	2.38	0.53
4:F:4:TYR:HE2	4:F:68:GLN:HA	1.74	0.53
15:C:29:ALA:HA	20:N:76:PHE:HD1	1.73	0.53
1:A:688:G:C6	1:A:700:G:C2	2.96	0.53
1:A:923:A:C2	1:A:1392:G:N3	2.76	0.53
1:A:1054:C:H5'	1:A:1196:A:H1'	1.90	0.53
1:A:1176:A:H2'	1:A:1177:G:C8	2.43	0.53
1:A:1240:U:P	16:G:114:SER:HB2	2.48	0.53
6:K:52:ARG:HG3	6:K:53:GLY:H	1.74	0.53
1:A:219:U:H2'	1:A:220:G:C8	2.43	0.53
1:A:352:C:O2	1:A:355:C:N4	2.38	0.53
1:A:933:G:OP2	16:G:2:ARG:HD3	2.07	0.53
1:A:982:U:N3	1:A:1223:C:N3	2.56	0.53
1:A:1004:A:N7	1:A:1025:U:H4'	2.23	0.53
1:A:1057:G:O2'	15:C:187:GLU:OE2	2.26	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1119:C:H2'	1:A:1120:C:H6	1.74	0.53
1:A:1228:C:H5''	19:M:112:ARG:NH2	2.22	0.53
1:A:1280:A:C8	18:J:42:LEU:HD23	2.44	0.53
6:K:81:LEU:HD21	6:K:104:PHE:CD1	2.43	0.53
7:L:5:GLN:HA	7:L:8:ARG:NH1	2.23	0.53
16:G:16:LYS:HE3	17:I:44:ARG:NH1	2.23	0.53
16:G:70:PRO:HA	16:G:137:ARG:NH1	2.23	0.53
17:I:35:GLU:OE2	17:I:40:ARG:NH1	2.41	0.53
21:S:39:ILE:HG13	21:S:70:LEU:HD11	1.90	0.53
1:A:79:G:H2'	1:A:80:A:C8	2.43	0.53
1:A:666:G:H5'	1:A:726:C:H1'	1.88	0.53
1:A:677:U:H3	1:A:713:G:H22	1.55	0.53
1:A:850:U:H2'	1:A:851:G:H5''	1.90	0.53
1:A:978:A:H4'	1:A:1322:C:C6	2.44	0.53
1:A:1175:G:H2'	1:A:1176:A:H8	1.73	0.53
11:R:58:ILE:O	11:R:62:ARG:HG3	2.09	0.53
13:B:68:PHE:HE2	13:B:86:CYS:SG	2.31	0.53
16:G:38:ALA:O	16:G:42:VAL:N	2.41	0.53
18:J:28:THR:HG21	18:J:89:ARG:HH21	1.73	0.53
1:A:979:C:OP2	1:A:981:U:N3	2.42	0.53
1:A:1225:A:P	19:M:101:THR:H	2.31	0.53
1:A:1291:U:H2'	1:A:1292:G:H8	1.72	0.53
2:D:77:GLU:HA	2:D:80:ARG:HG2	1.89	0.53
13:B:205:ALA:O	13:B:208:ALA:N	2.38	0.53
1:A:460:A:H2'	1:A:462:G:N7	2.23	0.53
1:A:564:C:P	7:L:11:ARG:HH21	2.31	0.53
1:A:1159:U:H4'	1:A:1160:G:H5'	1.90	0.53
1:A:1169:A:H2'	1:A:1170:A:C8	2.44	0.53
1:A:1459:G:H2'	1:A:1460:C:H6	1.73	0.53
3:E:130:THR:HG22	3:E:130:THR:O	2.08	0.53
6:K:105:ARG:NH1	6:K:106:ILE:O	2.42	0.53
11:R:35:SER:HA	11:R:71:ASP:HB3	1.91	0.53
16:G:52:ARG:NE	16:G:124:SER:OG	2.42	0.53
1:A:218:U:H2'	1:A:219:U:C6	2.43	0.53
1:A:663:A:H5''	11:R:49:LYS:HZ3	1.72	0.53
1:A:1222:G:H5''	21:S:77:ARG:HH11	1.74	0.53
1:A:1259:C:O2'	1:A:1283:U:O2	2.21	0.53
1:A:211:G:N1	1:A:212:G:N3	2.57	0.53
1:A:350:G:H2'	1:A:351:G:C8	2.44	0.53
1:A:477:C:H2'	1:A:478:A:H8	1.74	0.53
14:U:47:ALA:O	14:U:51:ALA:N	2.38	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:C:115:VAL:O	15:C:119:ILE:HD12	2.09	0.53
21:S:31:ARG:HD2	21:S:56:HIS:CD2	2.44	0.53
1:A:940:C:H2'	1:A:941:G:C8	2.45	0.53
1:A:1341:U:H2'	1:A:1342:C:C6	2.44	0.53
2:D:195:ASN:HD21	2:D:197:HIS:CE1	2.27	0.53
3:E:43:GLY:N	3:E:117:ALA:O	2.39	0.53
13:B:167:HIS:HB3	13:B:168:GLU:OE1	2.09	0.53
17:I:41:GLU:O	17:I:44:ARG:HD2	2.10	0.53
19:M:49:GLU:HA	19:M:52:ILE:HG12	1.91	0.53
20:N:73:LEU:O	20:N:77:GLY:N	2.42	0.53
21:S:13:HIS:CD2	21:S:34:SER:HB3	2.43	0.53
1:A:204:G:H1'	1:A:465:A:H1'	1.90	0.52
1:A:686:U:O4	1:A:703:G:O2'	2.24	0.52
1:A:1309:G:H1'	19:M:72:ILE:HD11	1.91	0.52
1:A:1349:A:C2	1:A:1350:A:H1'	2.44	0.52
1:A:1351:U:H3	1:A:1371:G:H1	0.66	0.52
1:A:1374:A:O3'	16:G:24:LYS:NZ	2.40	0.52
13:B:119:GLN:HA	13:B:122:ASP:HB2	1.90	0.52
16:G:13:PRO:HA	16:G:20:GLU:HA	1.92	0.52
17:I:70:GLY:H	17:I:73:GLY:HA3	1.74	0.52
1:A:1241:G:H1	1:A:1296:C:N4	2.07	0.52
6:K:15:VAL:HG12	6:K:17:ASP:OD1	2.10	0.52
10:Q:9:GLY:O	10:Q:57:VAL:HA	2.09	0.52
16:G:110:ARG:NE	16:G:118:ARG:HB3	2.23	0.52
1:A:676:A:H5''	6:K:114:PRO:HB3	1.90	0.52
1:A:1329:A:OP1	19:M:26:LYS:N	2.42	0.52
1:A:1356:G:N2	1:A:1367:C:H1'	2.25	0.52
14:U:42:THR:O	14:U:46:ARG:N	2.42	0.52
15:C:52:SER:N	15:C:68:HIS:O	2.38	0.52
18:J:67:ILE:HG13	20:N:95:LEU:CD2	2.39	0.52
1:A:113:G:N2	1:A:353:A:H8	2.07	0.52
1:A:421:U:OP1	1:A:421:U:H6	1.93	0.52
1:A:696:A:N3	1:A:786:G:O2'	2.39	0.52
1:A:925:G:O6	1:A:1392:G:O2'	2.12	0.52
1:A:1313:U:H2'	1:A:1314:C:C6	2.45	0.52
15:C:168:ARG:NH2	15:C:171:ARG:HA	2.25	0.52
16:G:41:ILE:HA	16:G:116:ALA:HA	1.91	0.52
1:A:949:A:H2'	1:A:950:U:H6	1.74	0.52
1:A:1012:A:H2'	1:A:1013:G:H8	1.73	0.52
1:A:1343:G:H5''	17:I:123:ARG:NE	2.24	0.52
13:B:68:PHE:CE2	13:B:86:CYS:SG	3.01	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:G:39:GLU:HA	16:G:43:TYR:HB2	1.91	0.52
19:M:63:VAL:HG23	19:M:68:LEU:HD12	1.91	0.52
20:N:68:ARG:NE	20:N:70:HIS:HB2	2.25	0.52
1:A:38:G:H8	1:A:38:G:O5'	1.92	0.52
1:A:430:A:OP2	2:D:7:LYS:HB3	2.09	0.52
1:A:999:C:H2'	1:A:1000:A:C8	2.45	0.52
1:A:1186:G:N2	20:N:100:TRP:OXT	2.42	0.52
2:D:84:ASN:HD22	2:D:87:GLU:HB2	1.74	0.52
2:D:145:ARG:O	2:D:149:LYS:HG3	2.09	0.52
7:L:75:GLU:OE1	7:L:76:HIS:ND1	2.43	0.52
16:G:43:TYR:CD1	16:G:46:LEU:HD21	2.44	0.52
17:I:65:THR:HG23	17:I:67:LYS:HZ3	1.74	0.52
1:A:201:G:H2'	1:A:202:G:H8	1.74	0.52
1:A:695:A:O2'	1:A:696:A:O4'	2.21	0.52
1:A:782:A:H4'	1:A:1514:G:O2'	2.09	0.52
1:A:1031:C:H4'	1:A:1032:G:H21	1.75	0.52
1:A:1078:U:H1'	3:E:134:ASN:OD1	2.10	0.52
1:A:1131:G:P	17:I:4:GLN:HE22	2.32	0.52
1:A:1227:A:OP2	19:M:109:LYS:NZ	2.34	0.52
1:A:1237:C:HO2'	1:A:1300:G:H22	1.50	0.52
1:A:1368:A:C8	17:I:113:LYS:NZ	2.76	0.52
1:A:1391:U:H3'	1:A:1392:G:C5'	2.39	0.52
5:H:110:MET:SD	5:H:115:ALA:HB2	2.50	0.52
9:P:4:ILE:O	9:P:71:VAL:HG11	2.09	0.52
13:B:31:PHE:CE2	13:B:41:ASN:HA	2.45	0.52
20:N:9:GLU:HB2	20:N:60:ARG:HD3	1.92	0.52
1:A:35:G:O2'	7:L:114:SER:O	2.24	0.52
1:A:356:A:N3	1:A:368:U:O2'	2.39	0.52
1:A:430:A:P	2:D:7:LYS:HB3	2.49	0.52
1:A:1243:C:N3	1:A:1294:G:N1	2.58	0.52
1:A:1295:U:H4'	19:M:13:HIS:HE1	1.75	0.52
1:A:1395:C:N4	1:A:1396:A:H62	2.06	0.52
4:F:1:MET:N	4:F:67:PRO:HA	2.24	0.52
17:I:76:GLY:HA2	17:I:79:ARG:HG2	1.91	0.52
1:A:182:A:H1'	1:A:183:C:C5	2.44	0.52
1:A:814:A:H5'	1:A:1511:G:H4'	1.92	0.52
1:A:1179:A:C5'	17:I:98:ARG:HH21	2.23	0.52
1:A:1395:C:H1'	1:A:1399:C:H41	1.74	0.52
13:B:14:HIS:NE2	13:B:212:TYR:OH	2.42	0.52
16:G:98:LEU:HD13	16:G:101:ARG:HD2	1.92	0.52
21:S:39:ILE:CG1	21:S:70:LEU:HD12	2.40	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:160:A:H1'	1:A:344:A:C5	2.45	0.52
1:A:1001:C:H2'	1:A:1002:G:C8	2.45	0.52
1:A:1014:A:P	1:A:1014:A:H8	2.33	0.52
1:A:1111:A:HO2'	1:A:1112:C:H6	1.57	0.52
4:F:11:HIS:CE1	4:F:13:ASP:HB2	2.45	0.52
17:I:115:VAL:HG11	18:J:62:ARG:NE	2.25	0.52
1:A:606:G:N2	1:A:632:U:OP1	2.37	0.51
1:A:744:C:H2'	1:A:745:G:C8	2.44	0.51
1:A:1083:U:H3'	1:A:1084:G:C8	2.45	0.51
1:A:1096:C:C4	1:A:1097:C:N4	2.79	0.51
1:A:1188:A:H2'	1:A:1189:U:C6	2.45	0.51
1:A:1250:A:C5	1:A:1287:A:C5	2.98	0.51
1:A:1295:U:H2'	1:A:1296:C:C4	2.45	0.51
2:D:123:MET:HE1	2:D:126:GLY:HA2	1.91	0.51
13:B:122:ASP:HA	13:B:125:PHE:CD2	2.45	0.51
15:C:7:ASN:OD1	15:C:183:TYR:HB3	2.09	0.51
15:C:148:ILE:N	15:C:169:GLU:O	2.39	0.51
16:G:125:ASP:HB3	16:G:130:LYS:CG	2.40	0.51
1:A:21:G:H2'	1:A:22:G:C8	2.45	0.51
1:A:320:A:O2'	1:A:1435:G:H1'	2.11	0.51
1:A:1005:A:H3'	1:A:1006:G:H8	1.75	0.51
1:A:1087:G:N1	1:A:1088:G:C6	2.78	0.51
1:A:1092:A:N6	1:A:1183:U:O4'	2.44	0.51
1:A:1426:G:C6	1:A:1475:G:C6	2.98	0.51
1:A:1464:U:H2'	1:A:1465:A:H8	1.74	0.51
7:L:54:VAL:HG21	7:L:81:ILE:HD11	1.91	0.51
15:C:138:GLN:O	15:C:142:ARG:HG2	2.11	0.51
15:C:166:TRP:CG	15:C:167:TYR:N	2.78	0.51
1:A:6:G:HO2'	1:A:7:A:H8	1.56	0.51
1:A:73:C:C2	1:A:74:A:C8	2.98	0.51
1:A:211:G:H21	1:A:211:G:P	2.32	0.51
1:A:939:G:H2'	1:A:940:C:C6	2.44	0.51
2:D:197:HIS:HA	2:D:200:VAL:HG22	1.91	0.51
15:C:151:GLU:HA	15:C:165:GLU:O	2.10	0.51
1:A:1087:G:OP1	1:A:1389:C:H5''	2.09	0.51
1:A:1099:G:H2'	1:A:1100:C:O4'	2.10	0.51
1:A:1240:U:H5''	16:G:115:MET:SD	2.51	0.51
1:A:1332:A:H2'	1:A:1333:A:H8	1.74	0.51
1:A:1480:A:H2'	1:A:1481:U:H6	1.74	0.51
4:F:51:ILE:CD1	4:F:86:ARG:HH12	2.24	0.51
8:O:38:LEU:HD12	8:O:58:MET:HE1	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:B:53:LEU:HG	13:B:219:THR:HG21	1.93	0.51
1:A:204:G:C4	1:A:205:A:C8	2.99	0.51
1:A:212:G:H2'	1:A:213:G:C8	2.44	0.51
1:A:217:C:H2'	1:A:218:U:C6	2.46	0.51
1:A:835:U:OP1	11:R:49:LYS:HB2	2.10	0.51
1:A:949:A:H1'	1:A:971:G:O6	2.10	0.51
1:A:1005:A:N6	1:A:1025:U:H5'	2.25	0.51
1:A:1065:U:H4'	1:A:1066:C:O5'	2.11	0.51
1:A:1087:G:C2	1:A:1099:G:C2	2.99	0.51
1:A:1113:C:H2'	1:A:1114:C:C6	2.45	0.51
1:A:1351:U:H2'	1:A:1352:C:C6	2.46	0.51
5:H:26:MET:O	5:H:58:LEU:N	2.43	0.51
19:M:80:MET:CE	19:M:90:HIS:CE1	2.92	0.51
20:N:24:ALA:O	20:N:28:ALA:N	2.42	0.51
20:N:45:LEU:HD22	21:S:9:PHE:CG	2.46	0.51
21:S:39:ILE:CG2	21:S:43:MET:CE	2.75	0.51
1:A:1013:G:OP1	21:S:20:LYS:NZ	2.38	0.51
2:D:177:MET:O	2:D:177:MET:SD	2.69	0.51
6:K:82:GLU:OE2	6:K:108:ASN:HB3	2.10	0.51
12:T:3:ILE:HG22	12:T:5:SER:H	1.75	0.51
14:U:46:ARG:C	14:U:46:ARG:HD3	2.31	0.51
15:C:7:ASN:HA	15:C:15:LYS:HZ2	1.76	0.51
17:I:18:VAL:HA	17:I:64:ILE:HD12	1.93	0.51
17:I:20:ILE:HA	17:I:61:ASP:O	2.11	0.51
18:J:18:ILE:HG12	18:J:70:HIS:HD2	1.75	0.51
18:J:49:PHE:N	18:J:65:TYR:O	2.44	0.51
19:M:109:LYS:HE2	19:M:113:LYS:NZ	2.25	0.51
1:A:146:G:H2'	1:A:147:G:C8	2.46	0.51
1:A:662:U:O2'	1:A:836:G:O5'	2.28	0.51
1:A:704:A:C4	1:A:705:G:C8	2.98	0.51
1:A:925:G:N1	1:A:1502:A:H1'	2.26	0.51
1:A:1010:U:C4	1:A:1020:G:C6	2.99	0.51
1:A:1502:A:H2'	1:A:1504:G:N7	2.26	0.51
3:E:11:GLN:O	3:E:38:VAL:HG13	2.11	0.51
3:E:19:ARG:HD2	3:E:30:PHE:HD2	1.75	0.51
20:N:27:LYS:HD2	20:N:47:LEU:HD22	1.92	0.51
1:A:829:G:OP1	13:B:27:LYS:NZ	2.38	0.51
1:A:982:U:O4	1:A:1223:C:C4	2.64	0.51
1:A:1088:G:N2	1:A:1167:A:H61	2.04	0.51
1:A:1250:A:H2'	1:A:1251:A:H8	1.74	0.51
1:A:1416:G:H2'	1:A:1417:G:O4'	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:B:160:LEU:HD21	13:B:162:VAL:HB	1.93	0.51
1:A:551:U:O2'	7:L:82:ARG:NH1	2.43	0.51
1:A:559:A:H4'	1:A:560:A:H3'	1.93	0.51
1:A:948:C:H2'	1:A:949:A:H8	1.75	0.51
1:A:1014:A:H2'	1:A:1015:G:N9	2.26	0.51
1:A:1492:A:OP1	7:L:43:LYS:HG3	2.11	0.51
2:D:144:ILE:HB	2:D:177:MET:HE1	1.93	0.51
3:E:67:ARG:HG3	3:E:67:ARG:NH1	2.22	0.51
4:F:23:GLU:OE2	4:F:24:ARG:NH1	2.44	0.51
5:H:73:SER:N	5:H:129:ALA:OXT	2.44	0.51
10:Q:54:ILE:HD12	10:Q:54:ILE:H	1.76	0.51
1:A:465:A:H4'	1:A:466:A:N1	2.26	0.51
1:A:1326:U:H2'	1:A:1327:C:C6	2.46	0.51
3:E:18:ASN:O	3:E:32:PHE:HA	2.11	0.51
4:F:5:GLU:HG2	4:F:5:GLU:O	2.09	0.51
6:K:49:SER:HA	6:K:68:ARG:CZ	2.41	0.51
7:L:113:ARG:CG	7:L:118:VAL:HG13	2.37	0.51
13:B:98:GLY:HA2	13:B:174:GLU:OE2	2.11	0.51
15:C:129:PHE:CD1	15:C:130:ARG:HG2	2.45	0.51
16:G:65:LEU:O	16:G:69:ARG:NH1	2.44	0.51
17:I:45:MET:O	17:I:49:GLN:NE2	2.44	0.51
1:A:110:C:O2'	9:P:25:ARG:O	2.27	0.50
1:A:134:G:H1'	1:A:325:A:C5	2.46	0.50
1:A:676:A:H5''	6:K:114:PRO:CB	2.42	0.50
1:A:679:C:H2'	1:A:680:C:H6	1.76	0.50
1:A:757:U:H2'	1:A:758:C:O4'	2.11	0.50
1:A:978:A:N7	1:A:979:C:H5	2.09	0.50
1:A:1048:G:OP1	20:N:2:LYS:N	2.43	0.50
1:A:1124:G:N7	1:A:1145:A:O2'	2.38	0.50
1:A:1191:A:H2'	1:A:1192:C:C6	2.46	0.50
1:A:1390:U:H2'	1:A:1391:U:O2	2.11	0.50
5:H:106:SER:H	5:H:120:LEU:HD21	1.76	0.50
6:K:58:THR:HB	6:K:59:PRO:CD	2.41	0.50
9:P:71:VAL:HA	9:P:74:LEU:HB2	1.93	0.50
15:C:152:VAL:HB	15:C:165:GLU:HG3	1.93	0.50
1:A:594:U:H2'	1:A:595:A:O4'	2.12	0.50
1:A:735:C:H2'	1:A:736:C:C6	2.46	0.50
1:A:1057:G:H2'	1:A:1058:G:O4'	2.11	0.50
1:A:1072:G:C2	1:A:1073:U:C2	2.99	0.50
5:H:63:LYS:HD2	5:H:70:VAL:HG11	1.91	0.50
7:L:55:ARG:NH1	7:L:61:GLU:OE2	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:C:18:ASN:HB3	15:C:53:ARG:HD3	1.93	0.50
15:C:133:MET:HE1	15:C:165:GLU:HB3	1.94	0.50
16:G:104:VAL:O	16:G:104:VAL:CG1	2.59	0.50
16:G:112:ASP:HB3	16:G:118:ARG:HG2	1.93	0.50
1:A:122:G:O6	1:A:239:U:O4	2.29	0.50
1:A:205:A:H2'	1:A:206:C:H6	1.75	0.50
1:A:399:G:H2'	1:A:400:C:C6	2.46	0.50
1:A:491:G:C6	1:A:492:C:N4	2.79	0.50
1:A:1004:A:O2'	1:A:1036:A:N1	2.39	0.50
1:A:1043:G:H2'	1:A:1044:A:H8	1.76	0.50
1:A:1059:C:H2'	1:A:1060:U:C6	2.47	0.50
1:A:1197:A:N1	1:A:1198:G:C6	2.80	0.50
1:A:1333:A:H3'	1:A:1334:G:C8	2.47	0.50
1:A:184:G:H2'	1:A:185:U:H6	1.75	0.50
1:A:382:A:H2'	1:A:383:A:C8	2.46	0.50
1:A:383:A:C5	1:A:384:G:H1'	2.46	0.50
1:A:707:U:H4'	6:K:21:HIS:CE1	2.46	0.50
1:A:1020:G:H2'	1:A:1021:A:C8	2.47	0.50
1:A:1057:G:H2'	1:A:1058:G:C8	2.46	0.50
1:A:1072:G:H2'	1:A:1073:U:C6	2.46	0.50
1:A:1399:C:H4'	1:A:1400:C:OP1	2.10	0.50
13:B:10:LYS:HE3	13:B:49:PHE:CZ	2.47	0.50
16:G:26:VAL:CG1	16:G:43:TYR:HE1	2.16	0.50
1:A:972:C:H2'	1:A:973:G:C8	2.47	0.50
1:A:1087:G:C6	1:A:1088:G:O6	2.63	0.50
1:A:1117:A:H2	1:A:1156:G:C2	2.26	0.50
1:A:1149:C:H2'	1:A:1150:A:C8	2.46	0.50
1:A:1157:A:N6	1:A:1178:G:H1	2.09	0.50
1:A:1347:G:H5''	17:I:108:ARG:HB3	1.93	0.50
2:D:12:ARG:HG3	2:D:34:GLU:H	1.76	0.50
3:E:80:LEU:CD1	3:E:122:VAL:HG11	2.40	0.50
6:K:19:VAL:HG23	6:K:34:THR:HG23	1.94	0.50
10:Q:24:ILE:HB	10:Q:41:THR:HB	1.93	0.50
17:I:27:ILE:HG22	17:I:29:ILE:HG23	1.92	0.50
1:A:17:U:HO2'	1:A:18:C:H6	1.50	0.50
1:A:79:G:O6	1:A:90:C:N4	2.35	0.50
1:A:204:G:H3'	1:A:205:A:C8	2.47	0.50
1:A:274:A:H4'	10:Q:15:LYS:HE3	1.93	0.50
1:A:652:U:O4	1:A:752:G:O2'	2.29	0.50
1:A:675:A:H1'	6:K:117:HIS:CE1	2.46	0.50
1:A:945:G:H1	1:A:1236:A:H61	0.62	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1245:C:H2'	1:A:1246:A:C8	2.47	0.50
1:A:1480:A:H2'	1:A:1481:U:C6	2.46	0.50
2:D:10:LEU:CD1	2:D:62:ARG:HD2	2.32	0.50
2:D:104:MET:CE	2:D:179:GLY:CA	2.89	0.50
8:O:32:THR:O	8:O:36:ASN:OD1	2.29	0.50
13:B:199:ILE:O	13:B:201:GLY:N	2.45	0.50
15:C:135:ARG:HH11	15:C:138:GLN:NE2	2.09	0.50
18:J:15:HIS:CD2	18:J:19:ASP:HB2	2.46	0.50
1:A:442:G:N2	1:A:493:A:N7	2.60	0.50
1:A:448:A:N7	1:A:486:U:O2	2.45	0.50
13:B:11:ALA:HA	13:B:14:HIS:CE1	2.46	0.50
15:C:145:ALA:O	15:C:147:GLY:N	2.41	0.50
18:J:12:ALA:HB3	18:J:18:ILE:HD13	1.94	0.50
1:A:68:G:N2	1:A:152:A:O2'	2.45	0.50
1:A:96:U:H2'	1:A:97:G:C8	2.47	0.50
1:A:328:C:H4'	1:A:329:A:C5'	2.42	0.50
1:A:795:C:H4'	1:A:1506:U:C2	2.47	0.50
1:A:1247:U:O4	1:A:1290:G:O6	2.30	0.50
1:A:1399:C:N3	1:A:1401:G:C5	2.80	0.50
2:D:7:LYS:HD2	2:D:7:LYS:N	2.27	0.50
2:D:78:ALA:HB2	2:D:92:LEU:HD21	1.92	0.50
13:B:65:LYS:HB2	13:B:158:ASP:N	2.23	0.50
1:A:735:C:H2'	1:A:736:C:H6	1.76	0.50
1:A:1041:G:H2'	1:A:1042:A:C8	2.44	0.50
1:A:1126:U:H5	18:J:7:ARG:HG2	1.73	0.50
1:A:1249:C:H2'	1:A:1288:A:H62	1.77	0.50
1:A:1264:U:H2'	1:A:1265:C:C6	2.47	0.50
1:A:1353:G:C2	1:A:1370:G:C2	3.00	0.50
15:C:119:ILE:HG23	15:C:122:GLN:NE2	2.27	0.50
18:J:33:GLY:HA3	18:J:80:THR:HG21	1.94	0.50
20:N:82:LYS:HA	20:N:85:GLU:OE2	2.12	0.50
1:A:74:A:H2'	1:A:75:G:H8	1.77	0.49
1:A:421:U:HO2'	1:A:422:C:P	2.30	0.49
1:A:948:C:H2'	1:A:949:A:C8	2.47	0.49
1:A:1056:U:H2'	1:A:1057:G:C8	2.47	0.49
1:A:1106:G:H5''	15:C:171:ARG:NE	2.26	0.49
1:A:1130:A:N6	1:A:1144:G:H1'	2.27	0.49
1:A:1133:G:O6	1:A:1142:G:C6	2.65	0.49
1:A:1143:G:H2'	1:A:1144:G:C8	2.47	0.49
1:A:1329:A:H2'	19:M:69:ARG:NH2	2.27	0.49
2:D:86:GLY:HA3	2:D:196:GLU:HB3	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:B:60:ALA:HB3	13:B:223:GLY:HA3	1.94	0.49
15:C:18:ASN:HA	15:C:55:VAL:HG13	1.94	0.49
21:S:48:ILE:HG21	21:S:70:LEU:HD21	1.94	0.49
1:A:269:C:H2'	1:A:270:A:C8	2.47	0.49
1:A:362:G:N2	1:A:365:U:OP2	2.44	0.49
1:A:436:C:H2'	1:A:437:U:C6	2.46	0.49
1:A:519:C:H2'	1:A:520:A:C8	2.46	0.49
1:A:613:C:P	2:D:80:ARG:HH21	2.35	0.49
1:A:903:G:H2'	1:A:904:U:C6	2.47	0.49
1:A:1399:C:C4	1:A:1401:G:C1'	2.94	0.49
1:A:1406:U:H2'	1:A:1407:C:C6	2.48	0.49
1:A:1512:U:H2'	1:A:1513:A:C8	2.47	0.49
7:L:120:ARG:HG3	7:L:120:ARG:NH1	2.27	0.49
13:B:118:THR:OG1	13:B:119:GLN:OE1	2.27	0.49
15:C:57:GLU:HB2	15:C:64:ARG:HG3	1.95	0.49
15:C:147:GLY:HA3	15:C:171:ARG:H	1.77	0.49
17:I:66:VAL:O	17:I:67:LYS:HD3	2.13	0.49
21:S:38:THR:HA	21:S:69:LYS:HA	1.93	0.49
1:A:676:A:H2	1:A:714:G:H22	1.59	0.49
1:A:953:G:C6	1:A:1229:A:C6	3.00	0.49
2:D:67:LEU:O	2:D:71:PHE:N	2.39	0.49
4:F:1:MET:H2	4:F:67:PRO:HA	1.75	0.49
1:A:514:C:H2'	1:A:515:G:C8	2.47	0.49
1:A:1006:G:H2'	1:A:1007:U:O4'	2.12	0.49
1:A:1298:U:H1'	1:A:1299:A:C5	2.48	0.49
1:A:1328:C:O3'	19:M:28:ARG:HG2	2.13	0.49
1:A:1438:G:H2'	1:A:1439:G:H8	1.76	0.49
7:L:65:TYR:O	7:L:96:THR:HG22	2.12	0.49
12:T:28:ARG:HA	12:T:31:ILE:HG12	1.93	0.49
15:C:34:SER:HB2	15:C:94:ALA:HA	1.94	0.49
19:M:90:HIS:HE2	19:M:96:VAL:HG11	1.77	0.49
1:A:752:G:H4'	8:O:68:TYR:OH	2.12	0.49
1:A:1060:U:O2	1:A:1198:G:C2	2.65	0.49
1:A:1096:C:H2'	1:A:1097:C:H6	1.73	0.49
1:A:1124:G:H5'	18:J:37:ARG:HB3	1.95	0.49
1:A:1128:C:H2'	1:A:1129:C:O4'	2.11	0.49
1:A:1137:C:H4'	1:A:1138:G:C5	2.48	0.49
1:A:1320:C:H1'	21:S:72:GLU:CG	2.42	0.49
1:A:1341:U:O2'	17:I:127:SER:HB3	2.13	0.49
1:A:1428:A:H2'	1:A:1429:A:H8	1.78	0.49
6:K:92:ARG:HH21	6:K:111:ASP:HB2	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:Q:24:ILE:O	10:Q:41:THR:N	2.37	0.49
15:C:185:THR:OG1	15:C:197:VAL:O	2.20	0.49
1:A:269:C:H2'	1:A:270:A:H8	1.77	0.49
1:A:911:U:H2'	1:A:912:C:C6	2.48	0.49
1:A:1013:G:H22	1:A:1015:G:H3'	1.77	0.49
1:A:1059:C:O2'	18:J:54:SER:HB3	2.13	0.49
7:L:53:ARG:NH2	7:L:61:GLU:HB3	2.17	0.49
10:Q:45:VAL:HG21	10:Q:60:ILE:HG21	1.94	0.49
13:B:99:MET:SD	13:B:106:VAL:HG21	2.53	0.49
15:C:5:HIS:CG	20:N:88:MET:HG3	2.48	0.49
15:C:18:ASN:O	15:C:39:ARG:NH2	2.46	0.49
15:C:122:GLN:HB2	15:C:125:ARG:CZ	2.42	0.49
17:I:37:TYR:CE2	17:I:38:PHE:CE1	3.01	0.49
1:A:244:U:C4	1:A:894:G:N1	2.81	0.49
1:A:489:C:H2'	1:A:490:C:C6	2.46	0.49
1:A:1320:C:H1'	21:S:72:GLU:HG3	1.94	0.49
1:A:1347:G:O4'	17:I:108:ARG:NH2	2.45	0.49
8:O:35:ILE:O	8:O:39:GLN:HG2	2.13	0.49
16:G:64:ALA:HB1	16:G:126:ALA:HB3	1.95	0.49
21:S:69:LYS:HB2	21:S:72:GLU:CD	2.33	0.49
1:A:613:C:H2'	1:A:614:C:H6	1.78	0.49
1:A:1002:G:H2'	1:A:1003:G:C8	2.48	0.49
1:A:1088:G:C6	1:A:1089:G:O6	2.64	0.49
1:A:1399:C:C4	1:A:1401:G:N9	2.81	0.49
4:F:16:GLU:O	4:F:19:PRO:HD2	2.13	0.49
4:F:37:HIS:CD2	4:F:38:ARG:HG2	2.45	0.49
7:L:19:ASN:O	7:L:21:PRO:HD3	2.13	0.49
1:A:995:C:H2'	1:A:996:A:C8	2.48	0.49
1:A:1046:A:H2'	1:A:1047:G:O4'	2.13	0.49
1:A:1148:U:H5'	17:I:6:TYR:OH	2.13	0.49
2:D:66:VAL:HG22	2:D:96:ARG:NH1	2.28	0.49
5:H:4:ASP:OD2	5:H:80:PRO:HD2	2.12	0.49
17:I:42:THR:HG22	17:I:71:ILE:HG21	1.95	0.49
18:J:62:ARG:O	18:J:62:ARG:HD3	2.12	0.49
20:N:48:GLN:O	20:N:51:PRO:HD2	2.13	0.49
1:A:1309:G:O6	1:A:1329:A:N6	2.46	0.49
1:A:1408:A:H2'	1:A:1408:A:N3	2.28	0.49
6:K:17:ASP:HA	6:K:80:ASN:O	2.13	0.49
21:S:12:LEU:HD21	21:S:15:LEU:HD23	1.91	0.49
1:A:81:A:H2'	1:A:82:G:C8	2.48	0.48
1:A:160:A:H8	1:A:160:A:OP1	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:320:A:H5''	1:A:321:A:OP2	2.13	0.48
1:A:462:G:C2	1:A:471:U:O2	2.66	0.48
1:A:994:A:N7	1:A:1216:A:HI'	2.27	0.48
1:A:1060:U:H2'	1:A:1061:G:C8	2.48	0.48
1:A:1206:G:H2'	1:A:1207:G:O4'	2.13	0.48
17:I:11:ARG:NH2	17:I:106:ASP:OD2	2.45	0.48
1:A:844:G:N7	1:A:846:G:HI'	2.28	0.48
1:A:1420:U:H2'	1:A:1421:G:C8	2.48	0.48
9:P:16:PHE:CE1	9:P:40:ASN:HB2	2.48	0.48
15:C:21:TRP:HZ2	15:C:32:LEU:HD23	1.77	0.48
15:C:130:ARG:NH1	15:C:163:ARG:HH22	2.11	0.48
17:I:16:ALA:HB2	17:I:66:VAL:HG23	1.95	0.48
20:N:15:LEU:HD23	20:N:15:LEU:H	1.77	0.48
1:A:416:G:H2'	1:A:417:G:H8	1.78	0.48
1:A:1003:G:N2	1:A:1004:A:O2'	2.46	0.48
1:A:1038:C:N4	1:A:1039:G:O6	2.46	0.48
1:A:1180:A:OP2	17:I:98:ARG:NH2	2.46	0.48
4:F:3:HIS:HD2	4:F:92:THR:HA	1.79	0.48
5:H:113:ARG:O	5:H:117:GLN:HG3	2.13	0.48
6:K:17:ASP:HB3	6:K:80:ASN:OD1	2.13	0.48
6:K:34:THR:HB	6:K:40:ALA:HA	1.95	0.48
11:R:27:THR:O	11:R:28:LEU:HD22	2.13	0.48
1:A:688:G:H2'	1:A:689:C:H6	1.77	0.48
1:A:1247:U:H2'	1:A:1248:A:C8	2.49	0.48
1:A:1287:A:C6	1:A:1288:A:C2	3.01	0.48
2:D:59:LYS:O	2:D:63:ILE:HG13	2.13	0.48
3:E:35:LEU:HG	3:E:48:GLY:O	2.13	0.48
3:E:45:VAL:O	3:E:69:ASN:O	2.32	0.48
3:E:79:THR:HA	3:E:119:VAL:HG13	1.95	0.48
6:K:92:ARG:HE	6:K:111:ASP:HB2	1.77	0.48
13:B:64:GLY:C	13:B:65:LYS:HD3	2.33	0.48
16:G:98:LEU:HA	16:G:101:ARG:HB2	1.95	0.48
21:S:12:LEU:CD2	21:S:15:LEU:CG	2.86	0.48
1:A:50:A:O2'	1:A:360:G:N2	2.47	0.48
1:A:105:G:H2'	1:A:106:C:O4'	2.13	0.48
1:A:463:U:H2'	1:A:464:U:N1	2.29	0.48
1:A:571:U:H5''	1:A:819:A:C5	2.48	0.48
1:A:674:G:H2'	1:A:675:A:H8	1.79	0.48
1:A:1168:U:O2'	1:A:1169:A:H5'	2.14	0.48
1:A:1216:A:H2'	1:A:1217:C:H6	1.77	0.48
1:A:1251:A:H2'	1:A:1252:A:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1289:A:H2'	1:A:1290:G:H5'	1.95	0.48
1:A:1461:G:H2'	1:A:1462:C:C6	2.49	0.48
1:A:1507:A:N6	1:A:1530:G:C5	2.82	0.48
2:D:21:LYS:HD3	2:D:25:ARG:HG3	1.95	0.48
3:E:35:LEU:HA	3:E:49:TYR:HA	1.94	0.48
4:F:73:GLU:O	4:F:76:THR:OG1	2.25	0.48
6:K:126:ARG:HD3	6:K:126:ARG:H	1.79	0.48
7:L:54:VAL:HG12	7:L:56:LEU:HD12	1.95	0.48
14:U:46:ARG:O	14:U:49:ALA:N	2.23	0.48
15:C:5:HIS:CD2	20:N:88:MET:HG3	2.48	0.48
15:C:18:ASN:ND2	15:C:39:ARG:HH12	2.12	0.48
1:A:714:G:H2'	1:A:715:A:C8	2.48	0.48
1:A:843:U:H5''	1:A:844:G:C2	2.48	0.48
1:A:986:U:H2'	1:A:987:G:C8	2.47	0.48
1:A:1250:A:C2	1:A:1370:G:H1'	2.48	0.48
1:A:1351:U:N3	1:A:1371:G:N1	2.17	0.48
1:A:1357:A:N1	1:A:1365:G:N2	2.54	0.48
1:A:1367:C:H5''	18:J:62:ARG:HE	1.78	0.48
1:A:1395:C:H1'	1:A:1399:C:N4	2.28	0.48
1:A:1428:A:H2'	1:A:1429:A:C8	2.49	0.48
2:D:115:GLN:OE1	2:D:153:ARG:NH2	2.43	0.48
4:F:38:ARG:O	4:F:38:ARG:HG3	2.13	0.48
13:B:215:ALA:O	13:B:219:THR:HG23	2.12	0.48
1:A:29:U:O2'	1:A:30:U:H5'	2.14	0.48
1:A:33:A:H2'	1:A:34:C:C6	2.48	0.48
1:A:205:A:H2'	1:A:206:C:C6	2.48	0.48
1:A:254:G:H2'	1:A:255:G:H8	1.79	0.48
1:A:555:U:H2'	1:A:556:C:C6	2.48	0.48
1:A:693:G:C2	1:A:694:A:C5	3.01	0.48
1:A:951:G:C6	1:A:1231:G:C6	3.01	0.48
1:A:984:C:H2'	1:A:985:C:C6	2.48	0.48
1:A:1156:G:C2'	1:A:1179:A:H61	2.26	0.48
1:A:1172:C:H2'	1:A:1173:U:H6	1.79	0.48
1:A:1306:A:C6	1:A:1332:A:C8	3.02	0.48
18:J:51:VAL:HB	18:J:63:ASP:HB3	1.94	0.48
19:M:53:ASP:HA	19:M:56:ARG:CZ	2.44	0.48
1:A:514:C:H2'	1:A:515:G:H8	1.77	0.48
1:A:950:U:H2'	1:A:951:G:H8	1.78	0.48
1:A:978:A:H4'	1:A:1322:C:H6	1.78	0.48
1:A:1016:A:O2'	1:A:1217:C:O2	2.32	0.48
2:D:181:PHE:CZ	2:D:185:PRO:HD3	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:M:89:ARG:HB3	19:M:94:LEU:O	2.14	0.48
21:S:51:HIS:HA	21:S:56:HIS:HA	1.96	0.48
1:A:1478:U:H2'	1:A:1479:C:C6	2.49	0.48
3:E:24:VAL:HG23	3:E:27:GLY:H	1.79	0.48
5:H:105:THR:HB	5:H:120:LEU:CD2	2.44	0.48
17:I:114:LYS:H	17:I:120:ALA:HB1	1.78	0.48
18:J:63:ASP:OD1	18:J:64:GLN:N	2.46	0.48
21:S:34:SER:O	21:S:70:LEU:HD22	2.13	0.48
1:A:476:U:H2'	1:A:477:C:H6	1.79	0.48
1:A:945:G:C2	1:A:946:A:C8	3.01	0.48
1:A:1014:A:OP2	21:S:17:LYS:NZ	2.39	0.48
1:A:1256:A:O4'	1:A:1278:G:N2	2.47	0.48
1:A:1258:G:H1	1:A:1278:G:H22	1.61	0.48
3:E:19:ARG:HD2	3:E:30:PHE:CD2	2.49	0.48
7:L:35:ARG:HD3	7:L:36:VAL:H	1.79	0.48
13:B:52:ALA:HA	13:B:55:GLU:HG3	1.96	0.48
15:C:118:SER:O	15:C:121:SER:OG	2.25	0.48
15:C:135:ARG:HH11	15:C:138:GLN:HE21	1.61	0.48
20:N:73:LEU:HD23	20:N:75:LYS:HE3	1.96	0.48
1:A:355:C:O2'	1:A:388:G:N3	2.32	0.47
1:A:458:U:O2	1:A:474:G:C2	2.67	0.47
1:A:581:G:N2	1:A:759:A:OP2	2.38	0.47
1:A:1317:C:H3'	1:A:1318:A:C8	2.49	0.47
1:A:1329:A:C2'	19:M:69:ARG:NH2	2.77	0.47
1:A:1339:A:N6	1:A:1340:A:N3	2.62	0.47
2:D:102:TYR:CE2	2:D:103:ARG:NE	2.81	0.47
5:H:85:TYR:CE1	5:H:123:GLU:HG3	2.49	0.47
13:B:94:ARG:HH22	13:B:167:HIS:CE1	2.32	0.47
15:C:113:LYS:HB2	15:C:184:ASN:HD22	1.79	0.47
15:C:188:ALA:N	15:C:195:ILE:O	2.42	0.47
16:G:70:PRO:HB3	16:G:102:TRP:CH2	2.48	0.47
17:I:26:LYS:HZ3	17:I:34:LEU:H	1.62	0.47
17:I:112:ARG:NH1	17:I:113:LYS:O	2.47	0.47
1:A:79:G:H2'	1:A:80:A:H8	1.79	0.47
1:A:157:U:H1'	1:A:165:G:C2	2.49	0.47
1:A:202:G:H2'	1:A:203:G:O4'	2.14	0.47
1:A:1177:G:H3'	1:A:1178:G:C8	2.49	0.47
1:A:1243:C:H42	1:A:1295:U:H3	1.61	0.47
1:A:1250:A:H2	1:A:1370:G:H1'	1.79	0.47
1:A:1456:A:H2'	1:A:1457:G:O4'	2.14	0.47
4:F:47:LEU:HD11	4:F:57:ALA:CB	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:I:44:ARG:HH12	17:I:45:MET:HE3	1.79	0.47
21:S:65:MET:CE	21:S:68:HIS:HB3	2.44	0.47
1:A:983:A:H3'	1:A:983:A:N3	2.29	0.47
1:A:1127:G:C6	1:A:1145:A:N1	2.82	0.47
1:A:1237:C:H5''	1:A:1238:A:H8	1.80	0.47
1:A:1306:A:N6	1:A:1332:A:C8	2.82	0.47
1:A:1319:A:H61	1:A:1360:A:H2	1.61	0.47
4:F:8:PHE:CZ	4:F:78:PHE:HZ	2.31	0.47
5:H:63:LYS:HG2	5:H:64:TYR:N	2.28	0.47
10:Q:47:ASP:OD2	10:Q:74:LEU:HD21	2.15	0.47
21:S:39:ILE:CG2	21:S:43:MET:HE2	2.42	0.47
1:A:204:G:N3	1:A:204:G:H2'	2.28	0.47
1:A:925:G:N7	1:A:1392:G:C6	2.82	0.47
1:A:1360:A:C2	1:A:1361:G:H1'	2.49	0.47
1:A:1386:G:H2'	1:A:1387:G:H8	1.79	0.47
1:A:1420:U:H2'	1:A:1421:G:H8	1.78	0.47
15:C:126:ARG:O	15:C:126:ARG:HD3	2.14	0.47
15:C:182:ASP:N	15:C:201:ILE:O	2.38	0.47
16:G:45:ALA:O	16:G:49:LEU:HG	2.14	0.47
21:S:14:LEU:O	21:S:18:VAL:N	2.47	0.47
21:S:44:ILE:HB	21:S:63:ASP:OD1	2.15	0.47
1:A:17:U:HO2'	1:A:18:C:H5	1.54	0.47
1:A:236:A:H2'	1:A:237:G:C8	2.49	0.47
1:A:1060:U:C2	1:A:1198:G:C2	3.02	0.47
1:A:1066:C:N3	1:A:1191:A:N7	2.63	0.47
1:A:1221:G:H5'	21:S:35:ARG:HD3	1.96	0.47
1:A:1299:A:C6	1:A:1301:U:C2	3.03	0.47
1:A:1367:C:O3'	18:J:62:ARG:NH2	2.44	0.47
1:A:1422:G:H2'	1:A:1423:G:C8	2.50	0.47
1:A:1452:C:O2	1:A:1453:G:N1	2.48	0.47
1:A:1507:A:C2	1:A:1530:G:H1'	2.49	0.47
4:F:81:ASN:OD1	4:F:82:ASP:N	2.47	0.47
12:T:24:ARG:HA	12:T:27:MET:HG2	1.95	0.47
12:T:67:HIS:O	12:T:69:ASN:N	2.48	0.47
15:C:119:ILE:O	15:C:123:LEU:HG	2.15	0.47
18:J:52:LEU:H	20:N:80:ARG:HG3	1.78	0.47
18:J:60:ASP:N	18:J:60:ASP:OD1	2.45	0.47
1:A:247:G:C6	1:A:278:G:C2	3.02	0.47
1:A:649:A:H2'	1:A:650:G:O4'	2.14	0.47
1:A:661:G:C2	1:A:745:G:C2	3.03	0.47
1:A:693:G:O2'	6:K:55:ARG:NH2	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:941:G:H2'	1:A:942:G:O4'	2.14	0.47
1:A:1080:A:H8	1:A:1080:A:O5'	1.97	0.47
1:A:1140:C:H2'	1:A:1141:C:C6	2.49	0.47
1:A:1380:U:C5	16:G:2:ARG:HG2	2.50	0.47
13:B:116:LEU:HA	13:B:120:SER:OG	2.14	0.47
1:A:148:G:N2	1:A:175:C:O2	2.48	0.47
1:A:384:G:H2'	1:A:385:C:C6	2.49	0.47
1:A:414:A:P	1:A:428:G:H22	2.38	0.47
1:A:503:C:O2	1:A:510:A:H2	1.98	0.47
1:A:820:U:H4'	1:A:821:G:OP2	2.14	0.47
1:A:827:U:H5''	5:H:21:LYS:HZ1	1.80	0.47
1:A:837:U:H2'	1:A:838:G:H8	1.80	0.47
1:A:939:G:H2'	1:A:940:C:H6	1.79	0.47
1:A:978:A:C8	1:A:979:C:H5	2.33	0.47
1:A:1095:U:H2'	1:A:1096:C:C6	2.50	0.47
1:A:1114:C:H2'	1:A:1115:U:C6	2.49	0.47
1:A:1130:A:N6	1:A:1144:G:C4	2.83	0.47
1:A:1266:G:N2	1:A:1268:G:H8	2.12	0.47
1:A:1298:U:H5	16:G:118:ARG:HH22	1.61	0.47
2:D:17:ASP:N	2:D:17:ASP:OD1	2.47	0.47
2:D:102:TYR:CE2	2:D:103:ARG:CD	2.97	0.47
4:F:6:ILE:HD11	4:F:62:MET:HB3	1.96	0.47
6:K:58:THR:HB	6:K:59:PRO:HD2	1.96	0.47
8:O:66:LEU:CB	8:O:87:ARG:HH21	2.27	0.47
11:R:70:THR:H	11:R:73:HIS:CB	2.27	0.47
11:R:70:THR:H	11:R:73:HIS:HB2	1.80	0.47
13:B:88:GLN:CG	13:B:89:PHE:H	2.28	0.47
13:B:112:ARG:O	13:B:116:LEU:HG	2.14	0.47
13:B:182:VAL:N	13:B:196:ASP:OD2	2.38	0.47
15:C:120:THR:HG21	15:C:186:SER:HB2	1.95	0.47
15:C:142:ARG:NH1	15:C:142:ARG:HG2	2.29	0.47
17:I:14:SER:HB3	17:I:77:ALA:HB2	1.95	0.47
17:I:44:ARG:HH12	17:I:45:MET:HE2	1.79	0.47
19:M:78:ARG:NH1	19:M:79:LEU:HD12	2.29	0.47
21:S:35:ARG:HB2	21:S:71:GLY:CA	2.44	0.47
1:A:107:G:O6	12:T:9:ARG:NH1	2.45	0.47
1:A:123:U:OP1	1:A:311:C:O2'	2.27	0.47
1:A:413:G:O6	2:D:30:LYS:HA	2.15	0.47
1:A:682:G:N1	1:A:683:G:C6	2.83	0.47
1:A:685:G:O2'	1:A:686:U:H5'	2.15	0.47
1:A:693:G:H2'	1:A:694:A:H8	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1164:G:C2	1:A:1173:U:C2	3.03	0.47
1:A:1167:A:H2'	1:A:1169:A:C8	2.50	0.47
1:A:1383:C:H5'	16:G:78:ARG:HH12	1.80	0.47
1:A:1492:A:P	7:L:43:LYS:HE2	2.55	0.47
6:K:52:ARG:H	6:K:56:LYS:HZ1	1.61	0.47
14:U:36:PHE:CB	14:U:39:LYS:HB2	2.45	0.47
15:C:168:ARG:HH22	15:C:171:ARG:HA	1.79	0.47
15:C:173:PRO:HB2	15:C:176:THR:HB	1.97	0.47
18:J:18:ILE:HG12	18:J:70:HIS:CD2	2.50	0.47
1:A:407:U:H2'	1:A:408:A:C8	2.49	0.47
1:A:424:G:N1	1:A:425:G:C6	2.83	0.47
1:A:945:G:N3	1:A:946:A:C8	2.83	0.47
1:A:1004:A:C5	1:A:1005:A:H1'	2.50	0.47
1:A:1206:G:C4	1:A:1207:G:C8	3.03	0.47
1:A:1223:C:H5''	1:A:1224:U:C5'	2.44	0.47
3:E:20:VAL:O	3:E:31:SER:N	2.38	0.47
4:F:49:TYR:CZ	11:R:73:HIS:CE1	3.00	0.47
4:F:54:LEU:HD11	4:F:56:LYS:HE2	1.96	0.47
12:T:47:GLN:HE22	12:T:51:ASN:HD22	1.63	0.47
1:A:518:C:H2'	1:A:530:G:N7	2.30	0.47
1:A:1246:A:N6	1:A:1292:G:O6	2.48	0.47
1:A:1347:G:HO2'	1:A:1373:G:H1	1.62	0.47
2:D:176:LYS:NZ	2:D:178:GLU:HB2	2.30	0.47
6:K:85:VAL:HG11	6:K:92:ARG:HG3	1.96	0.47
9:P:56:ARG:HA	9:P:56:ARG:HD2	1.61	0.47
10:Q:20:ILE:HG13	10:Q:45:VAL:HB	1.97	0.47
13:B:217:ALA:HA	13:B:220:VAL:HG22	1.97	0.47
19:M:2:ARG:HH11	19:M:3:ILE:H	1.62	0.47
21:S:15:LEU:O	21:S:18:VAL:HG12	2.15	0.47
1:A:144:G:C6	1:A:179:A:N1	2.83	0.46
1:A:411:A:H2'	2:D:30:LYS:HE2	1.97	0.46
1:A:476:U:H2'	1:A:477:C:C6	2.50	0.46
1:A:628:G:H2'	1:A:629:A:O4'	2.15	0.46
1:A:719:C:N3	11:R:62:ARG:NH2	2.59	0.46
1:A:975:A:O3'	1:A:1358:U:O2'	2.34	0.46
1:A:1080:A:OP1	3:E:51:LYS:HD2	2.15	0.46
1:A:1139:G:N2	1:A:1141:C:H41	2.13	0.46
1:A:1143:G:H2'	1:A:1144:G:H8	1.80	0.46
1:A:1269:A:C4	1:A:1313:U:H1'	2.50	0.46
1:A:1349:A:H1'	1:A:1374:A:N6	2.30	0.46
1:A:1481:U:H2'	1:A:1482:G:O4'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:66:ALA:O	3:E:68:ARG:N	2.48	0.46
4:F:47:LEU:HD11	4:F:57:ALA:HB2	1.96	0.46
10:Q:20:ILE:HG21	10:Q:52:CYS:SG	2.55	0.46
11:R:62:ARG:HD2	11:R:69:TYR:CA	2.32	0.46
15:C:23:ALA:O	15:C:28:PHE:CZ	2.68	0.46
19:M:103:THR:HG22	19:M:104:ASN:N	2.29	0.46
1:A:211:G:C5	1:A:212:G:H1'	2.51	0.46
1:A:410:G:H21	1:A:432:A:H62	1.63	0.46
1:A:546:A:OP2	2:D:67:LEU:HD12	2.15	0.46
1:A:845:A:O2'	11:R:47:ARG:NH2	2.49	0.46
1:A:1007:U:H2'	1:A:1008:U:C6	2.50	0.46
1:A:1018:G:O6	1:A:1019:A:N6	2.48	0.46
1:A:1087:G:C6	1:A:1088:G:C6	3.03	0.46
1:A:1459:G:H2'	1:A:1460:C:C6	2.50	0.46
1:A:1516:G:H2'	1:A:1518:A:OP2	2.15	0.46
2:D:46:ARG:NH1	2:D:46:ARG:O	2.49	0.46
2:D:94:GLU:OE2	2:D:103:ARG:HG3	2.15	0.46
5:H:72:GLU:N	5:H:129:ALA:O	2.49	0.46
7:L:66:ILE:O	7:L:66:ILE:HG22	2.16	0.46
1:A:202:G:N3	1:A:465:A:N6	2.64	0.46
1:A:877:G:O2'	1:A:878:A:H5'	2.16	0.46
1:A:1015:G:H8	1:A:1015:G:O5'	1.97	0.46
1:A:1147:C:H4'	17:I:6:TYR:CE2	2.51	0.46
1:A:1295:U:H4'	19:M:13:HIS:CE1	2.50	0.46
1:A:1477:U:H2'	1:A:1478:U:C6	2.51	0.46
3:E:103:GLY:O	3:E:105:ILE:HD12	2.15	0.46
5:H:45:ILE:HD11	5:H:60:LEU:HB3	1.98	0.46
9:P:39:PHE:HD1	9:P:50:THR:HG22	1.80	0.46
9:P:80:LYS:HE2	9:P:80:LYS:HA	1.95	0.46
12:T:65:LEU:H	12:T:65:LEU:HD12	1.79	0.46
13:B:185:ILE:HG23	13:B:185:ILE:O	2.14	0.46
13:B:186:VAL:HG22	13:B:187:ASP:O	2.14	0.46
18:J:13:PHE:O	18:J:68:ARG:NH1	2.48	0.46
18:J:67:ILE:HG13	20:N:95:LEU:HD13	1.94	0.46
20:N:19:TYR:HB3	20:N:51:PRO:HG3	1.97	0.46
21:S:35:ARG:NH2	21:S:71:GLY:O	2.47	0.46
21:S:50:VAL:HG22	21:S:57:VAL:HG23	1.95	0.46
1:A:14:U:N3	1:A:17:U:OP2	2.34	0.46
1:A:17:U:H3	1:A:918:A:N6	2.14	0.46
1:A:414:A:N6	1:A:431:A:H1'	2.30	0.46
1:A:736:C:OP1	11:R:60:ARG:NH2	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:938:A:N3	1:A:1376:U:O2'	2.30	0.46
1:A:1027:C:H2'	1:A:1028:C:C6	2.50	0.46
1:A:1175:G:H2'	1:A:1176:A:C8	2.49	0.46
1:A:1184:G:C6	1:A:1185:G:N7	2.84	0.46
1:A:1234:C:OP1	17:I:118:ARG:NH2	2.49	0.46
1:A:1390:U:HO2'	1:A:1391:U:P	2.38	0.46
1:A:1486:G:H2'	1:A:1487:G:C8	2.50	0.46
1:A:1507:A:H61	1:A:1528:U:H3	1.63	0.46
13:B:9:LEU:O	13:B:13:VAL:HG23	2.15	0.46
15:C:182:ASP:O	15:C:201:ILE:N	2.48	0.46
17:I:69:GLY:C	17:I:74:GLN:HG3	2.36	0.46
18:J:30:LYS:HD2	18:J:36:VAL:HB	1.96	0.46
1:A:513:C:H2'	1:A:514:C:C6	2.51	0.46
1:A:982:U:O2	1:A:983:A:C6	2.68	0.46
1:A:1056:U:O2'	1:A:1057:G:H5'	2.15	0.46
1:A:1231:G:OP1	17:I:128:LYS:NZ	2.35	0.46
1:A:1461:G:H2'	1:A:1462:C:H6	1.81	0.46
1:A:1478:U:H2'	1:A:1479:C:H6	1.81	0.46
5:H:8:ASP:O	5:H:12:ARG:HG2	2.15	0.46
8:O:34:GLN:HA	8:O:34:GLN:OE1	2.13	0.46
11:R:41:SER:O	11:R:45:GLY:N	2.41	0.46
17:I:17:ARG:N	17:I:65:THR:O	2.49	0.46
18:J:17:LEU:HA	18:J:20:GLN:HE22	1.80	0.46
19:M:2:ARG:HD3	19:M:8:ILE:HB	1.97	0.46
1:A:615:G:O6	1:A:625:U:C2	2.69	0.46
1:A:859:G:O2'	1:A:860:A:H5'	2.16	0.46
1:A:1124:G:C5'	18:J:37:ARG:HB3	2.46	0.46
1:A:1310:G:H2'	1:A:1311:A:H8	1.81	0.46
1:A:1323:G:H4'	1:A:1362:A:C5	2.51	0.46
1:A:1350:A:O2'	16:G:32:ASP:N	2.48	0.46
4:F:77:THR:HA	4:F:80:PHE:CE1	2.51	0.46
6:K:59:PRO:HD3	6:K:90:PRO:HB2	1.98	0.46
13:B:181:PRO:HA	13:B:196:ASP:OD2	2.16	0.46
15:C:54:ILE:HG13	15:C:67:ILE:HG12	1.96	0.46
15:C:87:ARG:HD3	15:C:100:ILE:H	1.80	0.46
18:J:50:THR:HG22	18:J:62:ARG:CZ	2.45	0.46
1:A:409:U:H2'	1:A:410:G:C8	2.51	0.46
1:A:866:C:C4	1:A:867:G:H1'	2.50	0.46
1:A:931:C:O2'	1:A:932:C:OP1	2.26	0.46
1:A:950:U:H2'	1:A:951:G:C8	2.51	0.46
1:A:1229:A:N7	19:M:102:LYS:NZ	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1238:A:H5'	1:A:1336:C:N4	2.31	0.46
1:A:1349:A:H2'	1:A:1350:A:O4'	2.16	0.46
2:D:163:GLN:N	2:D:163:GLN:OE1	2.48	0.46
18:J:25:ILE:HG22	18:J:74:VAL:HG11	1.96	0.46
1:A:9:G:H5'	3:E:107:GLY:HA3	1.97	0.46
1:A:571:U:H5''	1:A:819:A:C4	2.50	0.46
1:A:679:C:H2'	1:A:680:C:C6	2.50	0.46
1:A:838:G:C6	1:A:849:G:C6	3.03	0.46
1:A:1005:A:H2'	1:A:1006:G:O4'	2.16	0.46
1:A:1237:C:H2'	1:A:1336:C:C5	2.51	0.46
1:A:1261:A:H62	1:A:1274:A:H1'	1.79	0.46
1:A:1329:A:O2'	19:M:69:ARG:NH2	2.49	0.46
5:H:95:MET:CE	5:H:129:ALA:HB1	2.46	0.46
16:G:41:ILE:HD13	16:G:116:ALA:HB2	1.97	0.46
18:J:45:ARG:HD3	18:J:69:THR:O	2.16	0.46
19:M:89:ARG:HB2	19:M:96:VAL:HG12	1.98	0.46
20:N:23:ARG:NH2	20:N:50:LEU:HB2	2.29	0.46
21:S:51:HIS:HA	21:S:55:GLN:O	2.16	0.46
1:A:203:G:O2'	1:A:204:G:O5'	2.33	0.46
1:A:405:U:OP2	2:D:2:ARG:HD3	2.16	0.46
1:A:700:G:N2	1:A:701:U:O4	2.49	0.46
1:A:745:G:H8	1:A:745:G:O5'	1.99	0.46
1:A:986:U:H2'	1:A:987:G:H8	1.81	0.46
1:A:994:A:C8	1:A:1216:A:O2'	2.67	0.46
1:A:1103:C:C4	1:A:1104:G:N7	2.83	0.46
1:A:1375:A:H2'	1:A:1376:U:C6	2.51	0.46
3:E:62:ALA:O	3:E:66:ALA:HB2	2.16	0.46
4:F:15:SER:HA	4:F:18:VAL:HG23	1.98	0.46
8:O:44:GLU:HG3	8:O:45:HIS:CD2	2.51	0.46
16:G:48:THR:HA	16:G:51:GLN:NE2	2.31	0.46
1:A:658:C:H1'	8:O:21:THR:HG21	1.97	0.46
1:A:1005:A:H8	1:A:1024:G:N2	2.13	0.46
1:A:1056:U:H2'	1:A:1057:G:H8	1.81	0.46
1:A:1057:G:H5''	15:C:154:GLY:H	1.81	0.46
1:A:1108:G:H5'	15:C:175:HIS:ND1	2.30	0.46
1:A:1243:C:H2'	1:A:1244:G:C8	2.50	0.46
1:A:1355:G:C2	1:A:1356:G:C8	3.03	0.46
1:A:1386:G:H2'	1:A:1387:G:C8	2.51	0.46
3:E:18:ASN:N	3:E:33:THR:OG1	2.49	0.46
3:E:69:ASN:O	3:E:71:ILE:HG13	2.15	0.46
13:B:72:LYS:HD3	13:B:73:ARG:N	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:B:222:GLU:HG3	13:B:222:GLU:O	2.15	0.46
15:C:168:ARG:HH12	15:C:172:VAL:H	1.63	0.46
16:G:103:ILE:HD13	16:G:133:ALA:HB2	1.98	0.46
1:A:62:U:H2'	1:A:63:C:C6	2.51	0.45
1:A:71:A:C5	1:A:100:G:C5	3.05	0.45
1:A:337:G:H2'	1:A:338:A:C8	2.50	0.45
1:A:381:C:O2'	1:A:381:C:O2	2.34	0.45
1:A:775:G:H2'	1:A:776:G:O4'	2.16	0.45
1:A:937:A:H2'	1:A:937:A:N3	2.30	0.45
1:A:1206:G:H4'	15:C:191:THR:O	2.16	0.45
1:A:1371:G:H2'	1:A:1372:U:H6	1.81	0.45
1:A:1419:G:C6	1:A:1482:G:C2	3.04	0.45
1:A:1530:G:H4'	1:A:1530:G:OP1	2.16	0.45
3:E:65:LYS:NZ	3:E:69:ASN:HD21	2.13	0.45
5:H:105:THR:OG1	5:H:110:MET:SD	2.73	0.45
15:C:99:GLN:NE2	15:C:100:ILE:O	2.49	0.45
21:S:30:LEU:O	21:S:49:ALA:HB3	2.16	0.45
1:A:102:G:O2'	1:A:151:A:N3	2.43	0.45
1:A:473:U:H2'	1:A:474:G:H8	1.80	0.45
1:A:547:A:H4'	1:A:548:G:O5'	2.17	0.45
1:A:984:C:C2	1:A:1222:G:N2	2.83	0.45
1:A:1005:A:H3'	1:A:1006:G:C8	2.50	0.45
1:A:1052:U:O2	1:A:1206:G:O6	2.35	0.45
3:E:131:ASN:OD1	3:E:132:PRO:HD2	2.17	0.45
10:Q:8:GLN:NE2	10:Q:59:GLU:HG3	2.31	0.45
19:M:67:ASP:HA	19:M:70:ARG:HG3	1.99	0.45
19:M:80:MET:SD	19:M:80:MET:O	2.75	0.45
1:A:73:C:H2'	1:A:74:A:O4'	2.15	0.45
1:A:490:C:H2'	1:A:491:G:C8	2.49	0.45
1:A:694:A:P	6:K:55:ARG:HH12	2.39	0.45
1:A:722:G:H21	14:U:44:ARG:NH1	2.15	0.45
1:A:765:G:C5	1:A:812:G:C6	3.04	0.45
1:A:1002:G:OP2	1:A:1033:G:H5'	2.17	0.45
1:A:1061:G:C6	1:A:1062:U:C4	3.04	0.45
1:A:1127:G:N1	1:A:1145:A:C2	2.81	0.45
1:A:1374:A:H1'	16:G:27:ASN:O	2.17	0.45
1:A:1395:C:O2'	1:A:1399:C:N4	2.47	0.45
1:A:1467:C:H2'	1:A:1468:A:H8	1.78	0.45
10:Q:26:ARG:NE	10:Q:41:THR:OG1	2.47	0.45
13:B:164:ASP:OD1	13:B:165:ALA:N	2.46	0.45
15:C:146:LYS:HG3	15:C:202:PHE:CD2	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:N:73:LEU:HG	20:N:75:LYS:HG3	1.99	0.45
20:N:75:LYS:HD2	20:N:76:PHE:N	2.31	0.45
1:A:86:G:H1'	1:A:87:C:C6	2.52	0.45
1:A:211:G:C4	1:A:212:G:H1'	2.50	0.45
1:A:343:U:O3'	1:A:344:A:H8	1.98	0.45
1:A:438:U:O2'	1:A:439:U:OP2	2.32	0.45
1:A:475:C:H2'	1:A:476:U:C6	2.48	0.45
1:A:539:A:H2'	1:A:540:G:C8	2.51	0.45
1:A:931:C:N3	1:A:1387:G:N1	2.65	0.45
1:A:999:C:O2'	1:A:1000:A:H5'	2.17	0.45
1:A:1089:G:C5	1:A:1090:U:C4	3.05	0.45
1:A:1096:C:N3	1:A:1097:C:C4	2.84	0.45
1:A:1225:A:P	19:M:101:THR:HG22	2.57	0.45
1:A:1399:C:P	1:A:1399:C:H6	2.39	0.45
1:A:1507:A:N6	1:A:1530:G:C4	2.85	0.45
2:D:51:GLY:O	2:D:55:ARG:HG2	2.17	0.45
3:E:68:ARG:O	3:E:70:MET:N	2.41	0.45
7:L:66:ILE:HD13	7:L:71:HIS:HE1	1.80	0.45
1:A:254:G:H2'	1:A:255:G:C8	2.52	0.45
1:A:328:C:O2	1:A:328:C:H2'	2.16	0.45
1:A:1125:U:H3'	1:A:1125:U:OP2	2.16	0.45
1:A:1154:G:H2'	1:A:1155:A:C8	2.52	0.45
1:A:1225:A:H4'	21:S:77:ARG:NH2	2.32	0.45
1:A:1258:G:O2'	1:A:1259:C:O5'	2.33	0.45
1:A:1320:C:H3'	1:A:1321:U:C6	2.52	0.45
2:D:46:ARG:HH11	2:D:46:ARG:HG3	1.81	0.45
8:O:77:TYR:HE1	8:O:81:ILE:HG21	1.80	0.45
10:Q:27:PHE:CE1	10:Q:38:LYS:HE3	2.48	0.45
13:B:162:VAL:HG21	13:B:168:GLU:HG3	1.99	0.45
15:C:125:ARG:HE	15:C:127:VAL:HG11	1.81	0.45
15:C:135:ARG:NH2	15:C:139:ASN:HD21	2.15	0.45
21:S:12:LEU:CD2	21:S:15:LEU:HG	2.47	0.45
1:A:182:A:H2'	1:A:184:G:N7	2.31	0.45
1:A:430:A:OP1	2:D:8:LEU:HD23	2.17	0.45
1:A:462:G:C5	1:A:463:U:C4	3.05	0.45
1:A:676:A:H2	6:K:120:CYS:SG	2.40	0.45
1:A:1114:C:H2'	1:A:1115:U:H6	1.81	0.45
1:A:1115:U:H2'	1:A:1116:U:C6	2.51	0.45
1:A:1125:U:N3	1:A:1280:A:N7	2.64	0.45
1:A:1371:G:H2'	1:A:1372:U:C6	2.52	0.45
1:A:1479:C:H2'	1:A:1480:A:H8	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:P:8:ARG:CZ	9:P:15:PRO:HB3	2.46	0.45
12:T:5:SER:OG	12:T:6:ALA:N	2.50	0.45
13:B:206:ILE:O	13:B:210:THR:HG23	2.17	0.45
15:C:135:ARG:O	15:C:138:GLN:NE2	2.50	0.45
19:M:97:ARG:HB2	19:M:99:GLN:OE1	2.16	0.45
1:A:82:G:N2	1:A:84:U:O2'	2.49	0.45
1:A:153:C:H2'	1:A:154:U:H6	1.81	0.45
1:A:216:U:H1'	1:A:465:A:H2	1.82	0.45
1:A:217:C:H2'	1:A:218:U:H6	1.81	0.45
1:A:546:A:C6	2:D:3:TYR:HB3	2.52	0.45
1:A:827:U:H5''	5:H:21:LYS:NZ	2.31	0.45
1:A:929:G:H2'	1:A:930:C:O4'	2.16	0.45
1:A:974:A:H4'	1:A:975:A:H5'	1.99	0.45
1:A:1029:U:H2'	1:A:1031:C:H1'	1.98	0.45
1:A:1113:C:H2'	1:A:1114:C:H6	1.81	0.45
1:A:1253:G:N1	1:A:1285:A:N1	2.65	0.45
1:A:1325:C:H2'	1:A:1326:U:H6	1.81	0.45
1:A:1379:G:H2'	1:A:1380:U:C5	2.52	0.45
1:A:1406:U:H2'	1:A:1407:C:H6	1.81	0.45
4:F:2:ARG:HD2	4:F:91:ARG:NE	2.32	0.45
5:H:45:ILE:CD1	5:H:60:LEU:HB3	2.46	0.45
7:L:54:VAL:CG2	7:L:79:ILE:HD11	2.47	0.45
8:O:86:LEU:HA	8:O:88:ARG:NH1	2.31	0.45
13:B:103:TRP:CZ2	13:B:155:GLY:HA3	2.52	0.45
15:C:7:ASN:HA	15:C:15:LYS:NZ	2.31	0.45
17:I:11:ARG:NH1	17:I:12:LYS:HD3	2.32	0.45
17:I:21:LYS:HZ1	17:I:63:TYR:HB3	1.81	0.45
18:J:51:VAL:HG21	18:J:65:TYR:HD2	1.82	0.45
1:A:718:A:C5	6:K:117:HIS:HD2	2.35	0.45
1:A:801:U:H2'	1:A:802:A:H8	1.82	0.45
1:A:945:G:C2	1:A:1337:G:C2	3.05	0.45
1:A:1047:G:H2'	1:A:1048:G:C8	2.52	0.45
1:A:1101:A:N6	13:B:174:GLU:OE2	2.50	0.45
1:A:1152:A:H4'	18:J:15:HIS:CD2	2.52	0.45
1:A:1305:G:H1	1:A:1331:G:C1'	2.30	0.45
4:F:3:HIS:CD2	4:F:92:THR:HA	2.52	0.45
6:K:125:LYS:HG2	6:K:126:ARG:H	1.81	0.45
7:L:24:GLU:O	7:L:24:GLU:HG2	2.16	0.45
10:Q:41:THR:HG22	10:Q:41:THR:O	2.17	0.45
1:A:210:C:O3'	1:A:211:G:N2	2.36	0.45
1:A:1317:C:H3'	1:A:1318:A:H8	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:57:LYS:HD3	2:D:61:ARG:HD2	1.99	0.45
2:D:176:LYS:HZ3	2:D:178:GLU:HB2	1.82	0.45
5:H:103:VAL:HG23	5:H:105:THR:HG23	1.99	0.45
7:L:37:TYR:HB2	7:L:51:VAL:CG2	2.45	0.45
8:O:86:LEU:HA	8:O:88:ARG:HH11	1.82	0.45
11:R:25:ILE:HG22	11:R:29:LYS:HZ3	1.81	0.45
13:B:165:ALA:HB3	13:B:190:SER:CB	2.45	0.45
14:U:46:ARG:NH1	14:U:50:SER:HB2	2.32	0.45
16:G:91:ARG:HG3	16:G:93:VAL:HG22	1.99	0.45
16:G:125:ASP:HA	16:G:128:GLU:HB3	1.98	0.45
21:S:12:LEU:HD23	21:S:15:LEU:HG	1.97	0.45
1:A:62:U:OP1	1:A:385:C:O2'	2.19	0.45
1:A:255:G:OP1	10:Q:70:LYS:NZ	2.50	0.45
1:A:513:C:H2'	1:A:514:C:H6	1.80	0.45
1:A:1102:A:O2'	13:B:97:GLY:HA3	2.16	0.45
1:A:1105:A:H2'	1:A:1106:G:C8	2.50	0.45
1:A:1347:G:N2	1:A:1348:U:O4	2.24	0.45
1:A:1382:C:HO2'	16:G:78:ARG:HH11	1.59	0.45
1:A:1416:G:H3'	1:A:1417:G:H8	1.82	0.45
6:K:68:ARG:O	6:K:72:ALA:N	2.46	0.45
12:T:27:MET:HB3	12:T:60:GLN:HE22	1.81	0.45
13:B:65:LYS:H	13:B:158:ASP:CG	2.19	0.45
15:C:146:LYS:HG3	15:C:202:PHE:HD2	1.82	0.45
19:M:56:ARG:HA	19:M:59:VAL:HG12	1.99	0.45
1:A:80:A:H2'	1:A:81:A:O4'	2.17	0.44
1:A:96:U:H2'	1:A:97:G:H8	1.82	0.44
1:A:778:G:OP2	1:A:778:G:H8	2.00	0.44
1:A:842:U:OP1	1:A:843:U:H4'	2.17	0.44
1:A:946:A:H2'	1:A:947:G:C8	2.52	0.44
1:A:951:G:N1	1:A:1231:G:C6	2.85	0.44
1:A:953:G:C6	1:A:954:G:C5	3.06	0.44
1:A:1004:A:C8	1:A:1025:U:H4'	2.52	0.44
6:K:45:THR:O	6:K:49:SER:OG	2.23	0.44
6:K:52:ARG:H	6:K:56:LYS:HZ2	1.62	0.44
13:B:141:GLU:HA	13:B:144:GLU:HG3	1.97	0.44
16:G:36:SER:O	16:G:39:GLU:HB3	2.17	0.44
17:I:27:ILE:HG23	17:I:62:LEU:HB2	1.99	0.44
20:N:45:LEU:HD22	21:S:9:PHE:CD1	2.52	0.44
1:A:591:U:OP2	5:H:30:LYS:NZ	2.50	0.44
1:A:642:A:H2'	1:A:643:C:H6	1.81	0.44
1:A:1023:U:C4	1:A:1024:G:H1'	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1126:U:O2'	1:A:1280:A:O2'	2.33	0.44
1:A:1157:A:H2'	1:A:1180:A:H2	1.82	0.44
1:A:1162:C:C2	1:A:1163:A:C8	3.05	0.44
1:A:1179:A:H5''	17:I:98:ARG:NH2	2.26	0.44
3:E:110:MET:HG2	3:E:139:THR:OG1	2.16	0.44
4:F:8:PHE:CE1	4:F:78:PHE:CZ	3.06	0.44
6:K:49:SER:HA	6:K:68:ARG:NH2	2.32	0.44
7:L:45:ASN:ND2	7:L:88:ASP:OD1	2.50	0.44
7:L:66:ILE:HG21	7:L:71:HIS:CE1	2.52	0.44
8:O:66:LEU:HD11	8:O:86:LEU:HD21	1.98	0.44
13:B:141:GLU:O	13:B:144:GLU:HG3	2.18	0.44
15:C:21:TRP:HB2	15:C:58:ARG:HB2	1.99	0.44
15:C:148:ILE:HD11	15:C:199:VAL:HB	1.99	0.44
16:G:114:SER:O	16:G:117:LEU:HD23	2.17	0.44
17:I:118:ARG:NH1	17:I:122:ARG:HH22	2.15	0.44
19:M:14:ALA:HB3	19:M:40:GLU:HA	1.98	0.44
1:A:122:G:O6	1:A:239:U:C4	2.70	0.44
1:A:390:U:H2'	1:A:391:G:H8	1.82	0.44
1:A:715:A:OP1	1:A:805:C:O2'	2.29	0.44
1:A:1096:C:C4	1:A:1097:C:C4	3.06	0.44
1:A:1256:A:N3	1:A:1256:A:H5'	2.31	0.44
1:A:1345:U:C2	1:A:1377:A:C6	3.05	0.44
1:A:1427:C:H2'	1:A:1428:A:H8	1.82	0.44
1:A:1433:A:H2'	1:A:1434:A:C8	2.51	0.44
2:D:21:LYS:HB3	2:D:25:ARG:NE	2.24	0.44
6:K:23:HIS:HA	6:K:86:LYS:HB2	1.98	0.44
15:C:122:GLN:HA	15:C:125:ARG:HB2	1.98	0.44
15:C:198:LYS:HB3	15:C:200:TRP:CH2	2.52	0.44
18:J:40:ILE:HG21	18:J:73:LEU:HD23	1.99	0.44
1:A:580:C:H2'	1:A:581:G:C8	2.52	0.44
1:A:1004:A:H2'	1:A:1005:A:O4'	2.18	0.44
1:A:1015:G:H2'	1:A:1016:A:C8	2.53	0.44
1:A:1166:G:O2'	1:A:1170:A:N6	2.51	0.44
4:F:6:ILE:HG21	4:F:71:ILE:HD11	1.99	0.44
11:R:62:ARG:CD	11:R:69:TYR:HA	2.33	0.44
1:A:135:C:O2	9:P:1:MET:HG2	2.18	0.44
1:A:663:A:H5'	1:A:836:G:OP1	2.17	0.44
1:A:672:U:H2'	1:A:673:A:C8	2.51	0.44
1:A:1061:G:C5	1:A:1062:U:C4	3.05	0.44
1:A:1229:A:H62	19:M:102:LYS:NZ	2.16	0.44
1:A:1305:G:N2	1:A:1306:A:H62	2.14	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1315:U:H3'	1:A:1316:G:C8	2.53	0.44
1:A:1505:G:H5'	1:A:1507:A:OP2	2.17	0.44
2:D:7:LYS:O	2:D:8:LEU:HD22	2.17	0.44
7:L:3:VAL:HG23	10:Q:33:TYR:HB3	1.99	0.44
13:B:84:LEU:HD12	13:B:85:SER:N	2.32	0.44
15:C:184:ASN:OD1	15:C:185:THR:N	2.50	0.44
16:G:16:LYS:HE3	17:I:44:ARG:CZ	2.47	0.44
19:M:70:ARG:HD2	19:M:71:GLU:N	2.32	0.44
1:A:1048:G:H5''	20:N:2:LYS:HD3	2.00	0.44
1:A:1072:G:C5	1:A:1073:U:C4	3.05	0.44
1:A:1107:C:P	15:C:171:ARG:HH21	2.40	0.44
1:A:1149:C:H2'	1:A:1150:A:O4'	2.17	0.44
3:E:113:VAL:HG21	3:E:139:THR:HG21	1.99	0.44
7:L:53:ARG:NH1	7:L:63:THR:HG23	2.33	0.44
9:P:71:VAL:O	9:P:75:ILE:HG12	2.17	0.44
15:C:155:ARG:NE	15:C:193:GLY:HA3	2.33	0.44
18:J:24:GLU:OE1	18:J:92:LEU:HD11	2.18	0.44
20:N:82:LYS:O	20:N:85:GLU:OE2	2.36	0.44
1:A:411:A:HO2'	1:A:412:A:C1'	2.30	0.44
1:A:721:G:H4'	1:A:722:G:O4'	2.18	0.44
1:A:980:C:H3'	1:A:981:U:C6	2.51	0.44
1:A:1119:C:H2'	1:A:1120:C:C6	2.53	0.44
1:A:1186:G:H2'	1:A:1187:G:C8	2.53	0.44
1:A:1237:C:H3'	1:A:1238:A:H5'	2.00	0.44
6:K:33:ILE:HG21	6:K:73:VAL:HG11	2.00	0.44
7:L:9:LYS:O	7:L:9:LYS:HG3	2.17	0.44
10:Q:59:GLU:O	10:Q:75:VAL:HG12	2.18	0.44
17:I:105:ARG:NH1	17:I:107:ALA:HA	2.26	0.44
18:J:10:LEU:O	18:J:71:LEU:HA	2.17	0.44
19:M:112:ARG:HG3	19:M:114:PRO:HD3	1.98	0.44
1:A:689:C:H2'	1:A:690:G:O4'	2.17	0.44
1:A:826:C:H4'	5:H:12:ARG:HD3	2.00	0.44
1:A:864:A:H2'	1:A:865:A:O4'	2.18	0.44
1:A:900:A:H2'	1:A:901:A:C8	2.53	0.44
1:A:972:C:H1'	18:J:57:VAL:HG23	1.99	0.44
1:A:1026:G:H2'	1:A:1027:C:C6	2.53	0.44
1:A:1028:C:H2'	1:A:1029:U:O4'	2.18	0.44
1:A:1219:A:H2'	1:A:1220:G:H8	1.82	0.44
1:A:1280:A:H5'	18:J:42:LEU:HD22	2.00	0.44
1:A:1358:U:OP2	1:A:1359:C:H5	2.01	0.44
4:F:49:TYR:CE1	11:R:73:HIS:CE1	3.06	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:P:8:ARG:HB3	9:P:28:ARG:NH1	2.32	0.44
9:P:73:ALA:O	9:P:77:GLU:HG3	2.18	0.44
13:B:204:ASP:OD1	13:B:205:ALA:N	2.47	0.44
20:N:7:ALA:HB1	20:N:11:LYS:NZ	2.32	0.44
20:N:95:LEU:HD22	20:N:95:LEU:N	2.31	0.44
1:A:109:A:C6	1:A:326:G:C6	3.06	0.44
1:A:179:A:H2'	1:A:180:U:O4'	2.18	0.44
1:A:1104:G:O2'	13:B:108:GLN:NE2	2.50	0.44
1:A:1116:U:C2	1:A:1117:A:N7	2.86	0.44
1:A:1265:C:H2'	1:A:1266:G:C8	2.53	0.44
1:A:1273:C:H2'	1:A:1274:A:O4'	2.17	0.44
1:A:1345:U:H3'	17:I:121:ARG:HH22	1.83	0.44
8:O:35:ILE:HD13	8:O:59:VAL:HG22	2.00	0.44
11:R:22:TYR:CB	11:R:60:ARG:HD2	2.48	0.44
13:B:153:MET:SD	13:B:155:GLY:N	2.79	0.44
13:B:206:ILE:HA	13:B:209:VAL:HG22	2.00	0.44
13:B:217:ALA:O	13:B:221:ARG:HG3	2.18	0.44
15:C:19:SER:HG	15:C:21:TRP:HE1	1.65	0.44
15:C:106:ARG:HE	15:C:107:LYS:N	2.14	0.44
15:C:135:ARG:HD2	15:C:138:GLN:NE2	2.33	0.44
17:I:10:ARG:O	17:I:105:ARG:NE	2.48	0.44
1:A:264:C:H2'	1:A:265:G:O4'	2.18	0.43
1:A:694:A:C8	1:A:694:A:OP2	2.71	0.43
1:A:709:U:H2'	1:A:710:G:O4'	2.18	0.43
1:A:946:A:O2'	1:A:1334:G:O4'	2.36	0.43
1:A:1005:A:C8	1:A:1024:G:N2	2.86	0.43
1:A:1113:C:C4	1:A:1188:A:N1	2.86	0.43
1:A:1329:A:O5'	19:M:25:GLY:HA3	2.18	0.43
1:A:1368:A:H5''	17:I:112:ARG:NH2	2.27	0.43
1:A:1425:U:H2'	1:A:1426:G:C8	2.53	0.43
7:L:110:LYS:HD3	7:L:110:LYS:N	2.32	0.43
13:B:9:LEU:H	13:B:9:LEU:HD23	1.82	0.43
13:B:56:LEU:HD21	13:B:183:PHE:CD2	2.53	0.43
16:G:34:LYS:HD2	16:G:38:ALA:HB2	2.00	0.43
17:I:52:GLU:HG2	17:I:53:LEU:HD12	1.99	0.43
1:A:15:G:C4	1:A:16:A:C8	3.06	0.43
1:A:339:C:C2	1:A:340:U:C5	3.06	0.43
1:A:1121:U:C4	1:A:1122:U:C4	3.06	0.43
1:A:1346:A:N1	1:A:1374:A:H5''	2.32	0.43
1:A:1532:U:H3'	1:A:1533:C:H3'	1.99	0.43
2:D:148:ALA:HA	2:D:151:GLN:HB3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:66:ALA:C	3:E:68:ARG:H	2.21	0.43
9:P:17:TYR:O	9:P:39:PHE:N	2.41	0.43
13:B:159:ALA:CB	13:B:181:PRO:HG2	2.47	0.43
15:C:183:TYR:CE1	15:C:200:TRP:CE2	3.05	0.43
16:G:37:THR:O	16:G:41:ILE:HG12	2.19	0.43
20:N:3:GLN:HA	20:N:6:LYS:HB2	1.99	0.43
20:N:40:ARG:NH1	21:S:6:LYS:HG3	2.33	0.43
20:N:85:GLU:HA	20:N:88:MET:SD	2.57	0.43
21:S:29:PRO:HB2	21:S:49:ALA:HB2	2.01	0.43
1:A:977:A:H1'	1:A:982:U:O4	2.18	0.43
1:A:1166:G:H2'	1:A:1168:U:OP2	2.18	0.43
1:A:1177:G:H3'	1:A:1178:G:H8	1.83	0.43
1:A:1241:G:H1	1:A:1296:C:H42	1.66	0.43
1:A:1319:A:H2'	1:A:1323:G:H8	1.82	0.43
3:E:59:ILE:O	3:E:63:MET:HG2	2.18	0.43
6:K:85:VAL:HB	6:K:111:ASP:HA	2.01	0.43
7:L:37:TYR:N	7:L:51:VAL:O	2.41	0.43
16:G:64:ALA:HB1	16:G:126:ALA:CB	2.47	0.43
1:A:530:G:O3'	1:A:531:U:H4'	2.18	0.43
1:A:865:A:H2'	1:A:866:C:O4'	2.19	0.43
1:A:1064:G:N2	1:A:1190:G:O2'	2.49	0.43
1:A:1197:A:H2'	1:A:1198:G:C8	2.53	0.43
4:F:93:LYS:NZ	11:R:60:ARG:NH2	2.66	0.43
7:L:113:ARG:HG2	7:L:118:VAL:O	2.18	0.43
16:G:110:ARG:HG2	16:G:118:ARG:HD3	1.99	0.43
18:J:17:LEU:HA	18:J:20:GLN:NE2	2.34	0.43
20:N:4:SER:O	20:N:8:ARG:N	2.51	0.43
20:N:98:ALA:HB1	20:N:100:TRP:CZ3	2.53	0.43
1:A:70:U:N3	1:A:94:G:C5	2.87	0.43
1:A:182:A:C4	1:A:184:G:N7	2.87	0.43
1:A:629:A:H2'	1:A:630:A:O4'	2.18	0.43
1:A:689:C:N4	1:A:690:G:O6	2.51	0.43
1:A:941:G:H4'	1:A:1350:A:H4'	2.00	0.43
1:A:961:U:C4	1:A:962:C:C5	3.06	0.43
1:A:984:C:C2	1:A:985:C:C5	3.06	0.43
1:A:1000:A:C6	1:A:1041:G:C6	3.06	0.43
1:A:1160:G:C6	1:A:1176:A:N1	2.87	0.43
1:A:1238:A:H2	1:A:1241:G:N3	2.17	0.43
1:A:1382:C:O2'	16:G:81:GLY:HA2	2.19	0.43
1:A:1421:G:C6	1:A:1480:A:C6	3.07	0.43
2:D:98:ASP:OD1	2:D:114:ARG:N	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:O:77:TYR:CE1	8:O:81:ILE:HG21	2.54	0.43
11:R:24:ASP:OD1	11:R:24:ASP:N	2.50	0.43
15:C:134:LYS:NZ	15:C:167:TYR:HB3	2.34	0.43
19:M:80:MET:HE1	19:M:90:HIS:CE1	2.53	0.43
1:A:537:G:H5'	7:L:69:GLU:OE1	2.18	0.43
1:A:846:G:H2'	1:A:847:G:C8	2.54	0.43
1:A:1201:A:H4'	1:A:1202:U:O5'	2.19	0.43
1:A:1244:G:N1	1:A:1294:G:C6	2.86	0.43
1:A:1349:A:H5''	17:I:122:ARG:HD3	2.00	0.43
1:A:1380:U:H2'	16:G:3:ARG:NH1	2.32	0.43
2:D:58:GLN:O	2:D:62:ARG:NE	2.32	0.43
3:E:132:PRO:O	3:E:136:VAL:HG12	2.18	0.43
6:K:33:ILE:HD11	6:K:81:LEU:HD12	2.00	0.43
8:O:6:ALA:HA	8:O:9:LYS:HZ3	1.82	0.43
13:B:19:THR:HG22	13:B:37:VAL:HG12	2.00	0.43
13:B:195:VAL:HG21	13:B:198:VAL:HB	2.00	0.43
21:S:15:LEU:HD12	21:S:18:VAL:HG11	1.99	0.43
21:S:30:LEU:HD11	21:S:46:LEU:HD21	2.00	0.43
1:A:98:A:H2'	1:A:99:C:H6	1.84	0.43
1:A:621:A:H2'	1:A:622:A:C8	2.54	0.43
1:A:1020:G:H2'	1:A:1021:A:H8	1.82	0.43
1:A:1043:G:H2'	1:A:1044:A:C8	2.53	0.43
1:A:1250:A:C4	1:A:1287:A:C6	3.07	0.43
1:A:1294:G:O2'	1:A:1295:U:H5'	2.18	0.43
1:A:1297:G:O2'	16:G:113:LYS:HE2	2.18	0.43
1:A:1404:C:H2'	1:A:1405:G:C8	2.54	0.43
6:K:32:THR:HG22	6:K:43:TRP:HB3	2.01	0.43
11:R:32:ILE:HD12	11:R:36:GLY:HA2	2.01	0.43
18:J:67:ILE:CG1	20:N:95:LEU:CD1	2.88	0.43
19:M:103:THR:CG2	19:M:104:ASN:H	2.32	0.43
20:N:76:PHE:CD2	20:N:78:LEU:HB2	2.54	0.43
1:A:157:U:H1'	1:A:165:G:N2	2.33	0.43
1:A:323:U:H2'	1:A:324:G:O4'	2.19	0.43
1:A:431:A:C4	1:A:432:A:C8	3.07	0.43
1:A:689:C:N4	1:A:690:G:C6	2.87	0.43
1:A:1003:G:H2'	1:A:1004:A:H4'	2.01	0.43
1:A:1091:U:H2'	1:A:1093:A:OP2	2.18	0.43
1:A:1157:A:H2'	1:A:1180:A:C2	2.54	0.43
1:A:1169:A:H2'	1:A:1170:A:O4'	2.18	0.43
1:A:1201:A:H1'	1:A:1202:U:OP2	2.18	0.43
1:A:1292:G:C6	1:A:1293:C:C4	3.06	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1369:C:C5	17:I:113:LYS:NZ	2.86	0.43
3:E:46:GLY:HA2	3:E:69:ASN:O	2.18	0.43
3:E:63:MET:HB3	3:E:67:ARG:NH1	2.29	0.43
4:F:91:ARG:HG2	4:F:91:ARG:NH1	2.33	0.43
4:F:93:LYS:HZ1	11:R:60:ARG:NH2	2.17	0.43
4:F:96:VAL:HG12	4:F:97:THR:N	2.33	0.43
12:T:24:ARG:HB3	12:T:65:LEU:HD23	2.01	0.43
13:B:107:ARG:HG3	13:B:111:LYS:HZ2	1.82	0.43
17:I:53:LEU:HD23	17:I:96:GLU:HG3	2.00	0.43
19:M:67:ASP:O	19:M:68:LEU:C	2.56	0.43
19:M:69:ARG:HD3	19:M:69:ARG:HA	1.73	0.43
21:S:35:ARG:HB2	21:S:71:GLY:HA2	2.00	0.43
1:A:838:G:C5	1:A:849:G:C2	3.06	0.43
1:A:878:A:OP1	5:H:79:ARG:HB3	2.18	0.43
1:A:1165:U:C4	1:A:1166:G:C5	3.07	0.43
1:A:1249:C:H4'	17:I:74:GLN:HE22	1.83	0.43
3:E:11:GLN:O	3:E:12:GLU:HG3	2.18	0.43
3:E:65:LYS:HZ2	3:E:69:ASN:HD21	1.67	0.43
5:H:6:ILE:O	5:H:9:MET:HG2	2.18	0.43
5:H:34:ALA:HA	5:H:37:ASN:ND2	2.34	0.43
11:R:22:TYR:HB3	11:R:60:ARG:HD2	2.00	0.43
12:T:24:ARG:HB2	12:T:27:MET:CE	2.49	0.43
12:T:45:ALA:O	12:T:48:LYS:HG2	2.18	0.43
13:B:17:HIS:CG	13:B:18:GLN:N	2.87	0.43
19:M:84:CYS:SG	19:M:87:GLY:HA3	2.59	0.43
20:N:89:ARG:HB3	20:N:91:GLU:OE1	2.19	0.43
1:A:342:C:H2'	1:A:343:U:O4'	2.19	0.43
1:A:765:G:C2	1:A:812:G:O6	2.72	0.43
1:A:1169:A:C6	1:A:1170:A:C6	3.07	0.43
1:A:1249:C:H2'	1:A:1288:A:N6	2.34	0.43
1:A:1395:C:O2	1:A:1395:C:H2'	2.18	0.43
1:A:1512:U:H2'	1:A:1513:A:H8	1.84	0.43
2:D:3:TYR:HE2	2:D:67:LEU:CD1	2.32	0.43
13:B:89:PHE:CE2	13:B:153:MET:HG3	2.53	0.43
15:C:84:GLU:OE1	15:C:87:ARG:NH2	2.52	0.43
17:I:49:GLN:O	17:I:52:GLU:OE1	2.37	0.43
18:J:58:ASN:HB2	18:J:60:ASP:OD1	2.19	0.43
1:A:177:G:OP2	1:A:177:G:N2	2.39	0.42
1:A:686:U:O2'	1:A:703:G:N2	2.52	0.42
1:A:944:G:O6	1:A:1337:G:H8	2.02	0.42
1:A:945:G:H2'	1:A:946:A:H8	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1048:G:P	20:N:1:ALA:HB1	2.58	0.42
1:A:1251:A:O2'	1:A:1369:C:O3'	2.36	0.42
1:A:1382:C:HO2'	16:G:78:ARG:NH1	2.14	0.42
1:A:1391:U:C5	1:A:1392:G:C8	3.07	0.42
2:D:21:LYS:H	2:D:25:ARG:HH21	1.66	0.42
9:P:8:ARG:HB2	9:P:17:TYR:HE1	1.84	0.42
15:C:53:ARG:HE	15:C:54:ILE:N	2.08	0.42
19:M:57:ASP:OD1	19:M:58:GLU:N	2.52	0.42
19:M:82:LEU:C	19:M:84:CYS:H	2.20	0.42
19:M:84:CYS:HA	21:S:73:PHE:HA	2.00	0.42
20:N:96:LYS:NZ	20:N:99:SER:OG	2.52	0.42
1:A:653:U:O2'	1:A:654:G:H8	2.02	0.42
1:A:694:A:N1	1:A:787:A:O2'	2.52	0.42
1:A:846:G:C2	1:A:847:G:C5	3.07	0.42
1:A:1060:U:N3	1:A:1198:G:C6	2.86	0.42
1:A:1128:C:O2'	17:I:17:ARG:NH1	2.52	0.42
1:A:1267:C:N4	19:M:28:ARG:HH21	2.17	0.42
1:A:1315:U:H3'	1:A:1316:G:H8	1.82	0.42
1:A:1383:C:H5'	16:G:78:ARG:NH1	2.33	0.42
6:K:54:SER:O	6:K:58:THR:HG23	2.19	0.42
8:O:38:LEU:HD23	8:O:38:LEU:HA	1.89	0.42
12:T:78:LEU:HD23	12:T:78:LEU:HA	1.70	0.42
13:B:59:ILE:HG22	13:B:64:GLY:CA	2.49	0.42
18:J:7:ARG:HG3	18:J:75:ASP:OD1	2.18	0.42
18:J:8:ILE:HB	18:J:75:ASP:H	1.84	0.42
1:A:37:U:O2'	1:A:547:A:N1	2.37	0.42
1:A:153:C:H2'	1:A:154:U:C6	2.54	0.42
1:A:191:G:H8	1:A:191:G:OP2	2.03	0.42
1:A:562:U:H1'	7:L:11:ARG:HG3	2.00	0.42
1:A:701:U:H3'	1:A:702:A:C8	2.51	0.42
1:A:763:G:H2'	1:A:764:C:C6	2.54	0.42
1:A:986:U:C4'	21:S:54:ARG:HH21	2.32	0.42
1:A:1037:C:H2'	1:A:1038:C:H6	1.82	0.42
3:E:125:LYS:HG3	3:E:126:ALA:N	2.35	0.42
4:F:8:PHE:CE1	4:F:78:PHE:HZ	2.36	0.42
6:K:25:SER:HB2	6:K:28:ASN:O	2.19	0.42
6:K:36:ARG:HG3	6:K:36:ARG:HH11	1.85	0.42
15:C:53:ARG:N	15:C:68:HIS:HB2	2.33	0.42
15:C:57:GLU:O	15:C:63:ILE:HB	2.18	0.42
16:G:78:ARG:HA	16:G:83:THR:HA	2.01	0.42
16:G:104:VAL:HG13	16:G:107:ALA:HB3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:67:ILE:HG12	20:N:95:LEU:CD2	2.45	0.42
1:A:445:G:C4	1:A:446:G:C8	3.08	0.42
1:A:693:G:C2	1:A:694:A:N7	2.87	0.42
1:A:1209:C:N3	1:A:1210:C:N4	2.67	0.42
1:A:1399:C:C5	1:A:1401:G:H1'	2.53	0.42
1:A:1439:G:H2'	1:A:1440:U:O4'	2.19	0.42
7:L:65:TYR:HB2	7:L:92:VAL:HG11	2.00	0.42
15:C:38:VAL:HG11	15:C:90:VAL:HG23	2.00	0.42
18:J:18:ILE:HD11	18:J:72:ARG:HG2	2.01	0.42
21:S:51:HIS:HB2	21:S:56:HIS:ND1	2.33	0.42
1:A:12:U:H4'	1:A:526:C:H4'	2.01	0.42
1:A:131:A:H2'	1:A:132:C:C6	2.54	0.42
1:A:160:A:H2'	1:A:161:A:O4'	2.19	0.42
1:A:613:C:C2	1:A:628:G:N2	2.88	0.42
1:A:665:A:H2'	1:A:732:C:O2	2.19	0.42
1:A:682:G:C2	1:A:683:G:C5	3.08	0.42
1:A:692:U:C4	6:K:54:SER:HB3	2.55	0.42
1:A:779:C:H2'	1:A:780:A:O4'	2.19	0.42
1:A:1072:G:C6	1:A:1073:U:C4	3.07	0.42
1:A:1275:A:H3'	1:A:1276:G:C8	2.54	0.42
1:A:1391:U:H5	1:A:1392:G:C8	2.37	0.42
1:A:1450:U:H2'	1:A:1452:C:C4	2.54	0.42
2:D:3:TYR:C	2:D:5:GLY:H	2.23	0.42
3:E:19:ARG:HE	3:E:32:PHE:HE1	1.67	0.42
10:Q:15:LYS:HD3	10:Q:16:MET:N	2.34	0.42
13:B:15:PHE:HA	13:B:42:LEU:HD11	2.01	0.42
13:B:59:ILE:HG22	13:B:64:GLY:HA2	2.02	0.42
13:B:209:VAL:HA	13:B:212:TYR:HD2	1.84	0.42
15:C:18:ASN:HA	15:C:55:VAL:HA	2.01	0.42
17:I:49:GLN:O	17:I:52:GLU:CD	2.57	0.42
18:J:10:LEU:HD21	18:J:25:ILE:HD12	2.01	0.42
19:M:88:LEU:HD23	19:M:91:ARG:HH11	1.85	0.42
1:A:33:A:H2'	1:A:34:C:H6	1.83	0.42
1:A:92:U:H2'	1:A:93:U:C6	2.55	0.42
1:A:417:G:C4	1:A:418:C:C5	3.07	0.42
1:A:502:A:H2'	1:A:503:C:O4'	2.19	0.42
1:A:1115:U:C4	1:A:1116:U:C4	3.08	0.42
1:A:1317:C:H2'	1:A:1318:A:O4'	2.19	0.42
1:A:1455:G:H2'	1:A:1456:A:C8	2.55	0.42
5:H:66:GLN:OE1	5:H:66:GLN:N	2.53	0.42
6:K:49:SER:HA	6:K:68:ARG:HH12	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:O:1:SER:N	8:O:34:GLN:HE22	2.18	0.42
15:C:111:ASP:O	15:C:115:VAL:HG22	2.19	0.42
16:G:46:LEU:HA	16:G:49:LEU:CD1	2.50	0.42
17:I:128:LYS:C	17:I:129:ARG:HD2	2.40	0.42
1:A:198:G:C6	1:A:199:A:C5	3.07	0.42
1:A:329:A:H8	1:A:329:A:OP2	2.02	0.42
1:A:401:C:P	2:D:69:ARG:HH21	2.43	0.42
1:A:404:G:N7	2:D:1:ALA:N	2.54	0.42
1:A:589:U:H2'	1:A:590:U:C6	2.54	0.42
1:A:770:C:O2'	1:A:771:G:H5'	2.20	0.42
1:A:881:G:H2'	1:A:882:C:O4'	2.19	0.42
1:A:1077:G:H2'	1:A:1079:G:N7	2.35	0.42
1:A:1250:A:C8	1:A:1287:A:N7	2.87	0.42
1:A:1312:G:C2	1:A:1326:U:C2	3.07	0.42
1:A:1321:U:H3'	1:A:1322:C:H2'	2.01	0.42
1:A:1360:A:C5	1:A:1361:G:C8	3.08	0.42
1:A:1392:G:H3'	1:A:1393:U:C5	2.54	0.42
1:A:1428:A:C6	1:A:1473:G:C6	3.08	0.42
1:A:1463:U:H2'	1:A:1464:U:C6	2.55	0.42
2:D:181:PHE:HZ	2:D:185:PRO:HD3	1.85	0.42
5:H:43:GLY:O	5:H:63:LYS:HE3	2.20	0.42
8:O:66:LEU:HB2	8:O:87:ARG:NH2	2.35	0.42
10:Q:43:LEU:HG	10:Q:43:LEU:O	2.18	0.42
13:B:13:VAL:HG12	13:B:207:ARG:NH2	2.35	0.42
15:C:18:ASN:HB2	15:C:54:ILE:O	2.20	0.42
15:C:24:ASN:OD1	15:C:27:GLU:HG3	2.20	0.42
15:C:42:LEU:HA	15:C:46:LEU:HD13	2.02	0.42
15:C:136:ALA:HA	15:C:139:ASN:OD1	2.19	0.42
17:I:51:LEU:HA	17:I:54:VAL:HG22	2.01	0.42
17:I:117:LEU:HD22	17:I:123:ARG:CA	2.47	0.42
19:M:106:ARG:HH22	19:M:109:LYS:HD3	1.84	0.42
21:S:32:THR:HG22	21:S:34:SER:H	1.85	0.42
1:A:83:C:O2'	1:A:85:U:N3	2.52	0.42
1:A:341:C:C2	1:A:342:C:C5	3.08	0.42
1:A:414:A:OP2	1:A:428:G:N1	2.44	0.42
1:A:706:A:H1'	6:K:32:THR:HG21	2.01	0.42
1:A:960:U:N3	1:A:1225:A:C5	2.87	0.42
1:A:1004:A:C4	1:A:1005:A:H1'	2.54	0.42
1:A:1063:C:N4	1:A:1193:G:O6	2.34	0.42
1:A:1256:A:H4'	1:A:1258:G:C5	2.55	0.42
1:A:1336:C:H1'	1:A:1337:G:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1342:C:H1'	17:I:125:GLN:OE1	2.20	0.42
1:A:1367:C:C5'	18:J:62:ARG:HE	2.32	0.42
2:D:11:SER:OG	2:D:16:THR:O	2.38	0.42
2:D:74:TYR:CD1	2:D:92:LEU:HD13	2.54	0.42
2:D:115:GLN:CD	2:D:153:ARG:HH22	2.22	0.42
4:F:4:TYR:CE2	4:F:71:ILE:HG21	2.54	0.42
11:R:69:TYR:CB	11:R:73:HIS:CD2	2.99	0.42
11:R:69:TYR:CD1	11:R:73:HIS:CE1	3.08	0.42
13:B:218:ALA:HA	13:B:221:ARG:HH21	1.85	0.42
20:N:17:ASP:HB2	20:N:22:LYS:NZ	2.34	0.42
1:A:56:U:H2'	1:A:57:G:H8	1.82	0.42
1:A:71:A:C4	1:A:100:G:C4	3.08	0.42
1:A:483:C:H2'	1:A:484:G:C8	2.55	0.42
1:A:662:U:P	4:F:94:HIS:HE1	2.42	0.42
1:A:686:U:H1'	6:K:43:TRP:CZ2	2.55	0.42
1:A:877:G:C2'	1:A:878:A:H5'	2.50	0.42
1:A:929:G:C5	1:A:930:C:C5	3.07	0.42
1:A:1112:C:H42	15:C:176:THR:HA	1.84	0.42
1:A:1172:C:H2'	1:A:1173:U:C6	2.55	0.42
1:A:1415:G:H2'	1:A:1416:G:O4'	2.19	0.42
1:A:1422:G:H2'	1:A:1423:G:H8	1.85	0.42
3:E:22:LYS:HB3	3:E:29:ILE:HG23	2.01	0.42
3:E:112:ALA:O	3:E:116:VAL:HG22	2.20	0.42
13:B:14:HIS:CE1	13:B:212:TYR:HH	2.37	0.42
1:A:432:A:H2'	1:A:433:G:O4'	2.19	0.42
1:A:492:C:C4	1:A:493:A:C6	3.08	0.42
1:A:521:G:N7	7:L:49:ARG:NH1	2.65	0.42
1:A:924:C:O2'	1:A:925:G:H8	2.03	0.42
1:A:1024:G:H3'	1:A:1025:U:C6	2.55	0.42
1:A:1130:A:H3'	1:A:1131:G:H8	1.85	0.42
1:A:1223:C:P	1:A:1224:U:H2'	2.60	0.42
1:A:1239:A:N3	1:A:1297:G:N2	2.68	0.42
1:A:1276:G:H2'	1:A:1277:C:C6	2.55	0.42
1:A:1288:A:H2	1:A:1370:G:H21	1.68	0.42
1:A:1473:G:H2'	1:A:1474:U:O4'	2.20	0.42
2:D:1:ALA:N	2:D:3:TYR:CE1	2.88	0.42
4:F:2:ARG:HE	4:F:68:GLN:HB3	1.85	0.42
7:L:74:GLN:HG3	7:L:76:HIS:H	1.85	0.42
15:C:178:ARG:HH22	15:C:206:ILE:H	1.68	0.42
19:M:2:ARG:NH2	19:M:6:ILE:O	2.35	0.42
1:A:160:A:H1'	1:A:344:A:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:510:A:H5''	2:D:13:ARG:HH12	1.86	0.41
1:A:1005:A:C2	1:A:1006:G:H1'	2.55	0.41
1:A:1122:U:H3	1:A:1152:A:N6	2.18	0.41
1:A:1157:A:N7	1:A:1178:G:N2	2.67	0.41
1:A:1215:G:H2'	1:A:1216:A:O4'	2.20	0.41
1:A:1347:G:H2'	17:I:110:VAL:HG22	2.02	0.41
1:A:1410:A:C6	1:A:1491:G:N1	2.88	0.41
1:A:1413:A:N1	1:A:1487:G:N2	2.62	0.41
1:A:1481:U:C4	1:A:1482:G:C5	3.08	0.41
1:A:1499:A:O2'	1:A:1520:C:H5'	2.20	0.41
3:E:113:VAL:CG2	3:E:139:THR:HG21	2.50	0.41
4:F:72:ASP:O	4:F:76:THR:HG23	2.20	0.41
5:H:22:ALA:O	5:H:62:LEU:N	2.53	0.41
5:H:40:LYS:HE2	5:H:40:LYS:HB2	1.88	0.41
13:B:173:LYS:O	13:B:177:ASN:OD1	2.38	0.41
17:I:28:VAL:N	17:I:62:LEU:O	2.49	0.41
17:I:34:LEU:HD11	17:I:48:ARG:HH21	1.85	0.41
19:M:71:GLU:HA	19:M:74:MET:SD	2.60	0.41
1:A:258:G:C6	1:A:259:G:C5	3.08	0.41
1:A:430:A:P	2:D:8:LEU:HD23	2.60	0.41
1:A:592:G:C6	1:A:648:A:C6	3.07	0.41
1:A:847:G:H2'	1:A:848:C:O4'	2.20	0.41
1:A:921:U:O2	3:E:23:THR:OG1	2.38	0.41
1:A:1006:G:N1	1:A:1023:U:N3	2.67	0.41
1:A:1053:G:O6	1:A:1200:C:H5'	2.20	0.41
1:A:1087:G:C6	1:A:1099:G:N1	2.88	0.41
1:A:1295:U:HO2'	19:M:13:HIS:CE1	2.35	0.41
1:A:1352:C:N3	1:A:1371:G:C6	2.88	0.41
1:A:1367:C:C4'	18:J:62:ARG:HE	2.33	0.41
1:A:1368:A:H4'	18:J:48:ARG:NE	2.35	0.41
1:A:1471:U:H2'	1:A:1472:U:C6	2.55	0.41
2:D:143:SER:OG	2:D:178:GLU:HG3	2.20	0.41
3:E:41:GLY:HA2	3:E:118:GLY:HA2	2.01	0.41
13:B:166:ASP:CG	13:B:190:SER:HA	2.40	0.41
15:C:71:ARG:O	15:C:75:VAL:HG23	2.20	0.41
15:C:122:GLN:OE1	15:C:127:VAL:HG21	2.20	0.41
15:C:140:ALA:O	15:C:144:GLY:N	2.53	0.41
16:G:43:TYR:HD1	16:G:46:LEU:HD21	1.85	0.41
16:G:70:PRO:HB3	16:G:102:TRP:HH2	1.84	0.41
17:I:45:MET:HG2	17:I:48:ARG:NH1	2.33	0.41
17:I:111:GLU:OE2	17:I:121:ARG:HD3	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:218:U:H2'	1:A:219:U:H6	1.83	0.41
1:A:524:G:H2'	1:A:525:C:C6	2.55	0.41
1:A:1013:G:H2'	1:A:1015:G:N7	2.35	0.41
1:A:1072:G:H2'	1:A:1073:U:H6	1.85	0.41
1:A:1104:G:H2'	1:A:1105:A:H8	1.85	0.41
1:A:1117:A:C8	1:A:1184:G:N1	2.88	0.41
1:A:1231:G:C6	1:A:1232:U:C4	3.07	0.41
1:A:1271:A:H5'	1:A:1314:C:C5'	2.49	0.41
1:A:1300:G:H4'	1:A:1301:U:H6	1.83	0.41
1:A:1308:U:H2'	1:A:1309:G:C8	2.56	0.41
1:A:1395:C:H42	1:A:1396:A:N6	2.16	0.41
4:F:90:MET:HE1	11:R:60:ARG:NE	2.36	0.41
6:K:18:GLY:HA2	6:K:35:ASP:HA	2.02	0.41
8:O:70:LYS:CD	8:O:77:TYR:CD2	3.04	0.41
12:T:34:VAL:O	12:T:38:ILE:HG12	2.20	0.41
13:B:166:ASP:OD2	13:B:190:SER:HA	2.20	0.41
15:C:53:ARG:H	15:C:68:HIS:HB2	1.84	0.41
15:C:116:ALA:O	15:C:120:THR:CG2	2.61	0.41
15:C:165:GLU:OE1	15:C:167:TYR:HE2	2.03	0.41
19:M:15:VAL:O	19:M:19:THR:HG23	2.20	0.41
19:M:80:MET:CE	19:M:90:HIS:HE1	2.32	0.41
1:A:18:C:H4'	1:A:1078:U:C2	2.56	0.41
1:A:50:A:H2	1:A:360:G:N3	2.18	0.41
1:A:424:G:C6	1:A:425:G:C6	3.07	0.41
1:A:592:G:H2'	1:A:593:U:C6	2.56	0.41
1:A:925:G:C5	1:A:1392:G:C5	3.09	0.41
1:A:975:A:H3'	20:N:71:GLY:H	1.86	0.41
1:A:1087:G:N1	1:A:1099:G:C6	2.89	0.41
1:A:1187:G:H2'	1:A:1187:G:N3	2.36	0.41
1:A:1188:A:H2	15:C:177:LEU:HD11	1.85	0.41
1:A:1225:A:OP2	19:M:101:THR:HG22	2.21	0.41
1:A:1422:G:C2	1:A:1478:U:O2	2.73	0.41
1:A:1446:A:H2'	1:A:1447:A:C8	2.56	0.41
6:K:85:VAL:N	6:K:110:THR:O	2.48	0.41
10:Q:7:LEU:HB3	10:Q:24:ILE:HD13	2.03	0.41
13:B:23:ASN:ND2	13:B:191:ASP:HA	2.35	0.41
18:J:15:HIS:HA	18:J:18:ILE:HG22	2.02	0.41
19:M:84:CYS:HB3	21:S:73:PHE:CE1	2.56	0.41
1:A:102:G:H2'	1:A:103:U:C6	2.55	0.41
1:A:155:A:C6	1:A:167:A:N1	2.89	0.41
1:A:168:G:C6	1:A:169:C:C4	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:436:C:H4'	2:D:152:SER:OG	2.21	0.41
1:A:667:G:OP1	1:A:732:C:O2'	2.30	0.41
1:A:963:G:C4	1:A:973:G:N2	2.88	0.41
1:A:984:C:H2'	1:A:985:C:H6	1.84	0.41
1:A:1099:G:C6	1:A:1100:C:N3	2.89	0.41
1:A:1163:A:C2	1:A:1174:G:C6	3.08	0.41
1:A:1166:G:N2	1:A:1171:A:N6	2.68	0.41
1:A:1174:G:C6	1:A:1175:G:C5	3.08	0.41
1:A:1368:A:H3'	17:I:113:LYS:HE2	2.03	0.41
2:D:58:GLN:HB3	2:D:62:ARG:NE	2.36	0.41
7:L:101:LEU:O	7:L:103:CYS:N	2.45	0.41
13:B:113:LEU:HD23	13:B:113:LEU:HA	1.91	0.41
15:C:10:ARG:CZ	15:C:179:ALA:HB3	2.51	0.41
16:G:14:ASP:HB3	16:G:19:SER:H	1.85	0.41
1:A:55:A:OP2	1:A:352:C:N4	2.42	0.41
1:A:363:A:C6	7:L:27:PRO:HD2	2.56	0.41
1:A:484:G:O4'	1:A:486:U:H5'	2.21	0.41
1:A:626:G:C6	1:A:627:G:C6	3.08	0.41
1:A:683:G:H2'	1:A:684:U:C6	2.55	0.41
1:A:999:C:C2'	1:A:1000:A:H5'	2.51	0.41
1:A:1097:C:H2'	1:A:1098:C:C6	2.55	0.41
1:A:1150:A:N1	1:A:1151:A:N6	2.69	0.41
2:D:2:ARG:HH22	2:D:111:ALA:HB1	1.85	0.41
3:E:66:ALA:C	3:E:68:ARG:N	2.74	0.41
5:H:101:ALA:HB3	5:H:112:ASP:OD2	2.21	0.41
15:C:60:ALA:C	15:C:62:SER:H	2.24	0.41
15:C:66:THR:HA	15:C:101:ASN:HB2	2.02	0.41
21:S:41:PRO:HB3	21:S:66:VAL:HG12	2.02	0.41
1:A:78:A:C4	1:A:79:G:C8	3.08	0.41
1:A:932:C:H5''	16:G:2:ARG:NH1	2.36	0.41
1:A:941:G:N1	1:A:1343:G:C6	2.89	0.41
1:A:979:C:H3'	1:A:980:C:H6	1.85	0.41
1:A:1088:G:N1	1:A:1098:C:N3	2.69	0.41
1:A:1246:A:C6	1:A:1292:G:C6	3.09	0.41
1:A:1387:G:C6	1:A:1388:C:C4	3.08	0.41
1:A:1390:U:O2'	1:A:1391:U:P	2.78	0.41
3:E:44:ARG:HG3	3:E:44:ARG:NH1	2.34	0.41
4:F:38:ARG:NH2	4:F:97:THR:HA	2.34	0.41
5:H:105:THR:OG1	5:H:108:GLY:O	2.36	0.41
5:H:110:MET:HG2	5:H:111:THR:O	2.20	0.41
6:K:125:LYS:HG2	6:K:126:ARG:CD	2.39	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:B:114:LYS:HA	13:B:117:GLU:CG	2.48	0.41
17:I:5:TYR:CD1	17:I:88:GLU:HG2	2.56	0.41
18:J:64:GLN:HB3	20:N:98:ALA:HB3	2.03	0.41
1:A:465:A:N7	1:A:468:A:C4	2.88	0.41
1:A:491:G:C2'	1:A:492:C:H5'	2.50	0.41
1:A:552:U:H5'	7:L:82:ARG:HH12	1.82	0.41
1:A:692:U:O4'	1:A:695:A:N6	2.53	0.41
1:A:949:A:O2'	1:A:971:G:N1	2.50	0.41
1:A:963:G:H21	18:J:57:VAL:HB	1.86	0.41
1:A:987:G:H2'	1:A:988:G:C8	2.55	0.41
1:A:1072:G:H2'	1:A:1073:U:O4'	2.21	0.41
1:A:1310:G:H2'	1:A:1311:A:C8	2.56	0.41
1:A:1318:A:H5''	21:S:4:LEU:HD11	2.02	0.41
1:A:1340:A:H2'	1:A:1341:U:O4'	2.21	0.41
1:A:1380:U:C4	16:G:2:ARG:HG2	2.56	0.41
1:A:1444:U:H2'	1:A:1445:U:C6	2.55	0.41
2:D:195:ASN:OD1	2:D:197:HIS:CD2	2.73	0.41
16:G:34:LYS:O	16:G:38:ALA:N	2.36	0.41
19:M:14:ALA:N	19:M:40:GLU:O	2.51	0.41
21:S:29:PRO:CB	21:S:49:ALA:HB2	2.50	0.41
21:S:50:VAL:O	21:S:57:VAL:HG22	2.19	0.41
1:A:55:A:H5'	1:A:56:U:OP2	2.21	0.41
1:A:58:C:O2	1:A:58:C:H2'	2.20	0.41
1:A:204:G:O6	1:A:215:C:H1'	2.21	0.41
1:A:246:A:C2	1:A:282:A:C5	3.08	0.41
1:A:253:A:N6	1:A:274:A:N1	2.68	0.41
1:A:403:C:C5	2:D:1:ALA:HB2	2.56	0.41
1:A:431:A:C6	1:A:432:A:C5	3.09	0.41
1:A:773:G:N2	1:A:774:G:C4	2.89	0.41
1:A:942:G:H2'	1:A:943:U:C6	2.56	0.41
1:A:958:A:O2'	1:A:959:A:O4'	2.21	0.41
1:A:1049:U:H3'	20:N:2:LYS:NZ	2.36	0.41
1:A:1049:U:OP1	20:N:1:ALA:HB3	2.21	0.41
1:A:1093:A:H2'	1:A:1095:U:C5'	2.49	0.41
1:A:1130:A:C6	1:A:1131:G:C5	3.09	0.41
1:A:1298:U:H5	16:G:118:ARG:NH2	2.18	0.41
1:A:1304:G:H1	1:A:1332:A:P	2.44	0.41
1:A:1331:G:H4'	1:A:1332:A:H8	1.86	0.41
1:A:1368:A:H3'	17:I:113:LYS:CE	2.51	0.41
1:A:1431:A:H2'	1:A:1432:G:O4'	2.21	0.41
1:A:1502:A:C4	1:A:1504:G:N1	2.89	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1517:G:C6	1:A:1518:A:C6	3.08	0.41
2:D:104:MET:HG3	2:D:106:PHE:CZ	2.56	0.41
4:F:18:VAL:HG21	4:F:58:HIS:NE2	2.36	0.41
4:F:64:VAL:HG12	4:F:65:GLU:N	2.36	0.41
4:F:86:ARG:HD2	11:R:63:TYR:CE1	2.56	0.41
6:K:99:LEU:O	6:K:104:PHE:HB2	2.21	0.41
13:B:17:HIS:CG	13:B:18:GLN:H	2.39	0.41
16:G:90:VAL:HB	16:G:95:ARG:HB3	2.02	0.41
18:J:10:LEU:HB2	18:J:72:ARG:H	1.86	0.41
18:J:18:ILE:HG13	18:J:72:ARG:HE	1.85	0.41
19:M:18:LEU:HD22	19:M:33:LEU:HG	2.03	0.41
19:M:78:ARG:CZ	21:S:64:GLU:HB2	2.51	0.41
19:M:109:LYS:HE2	19:M:113:LYS:CE	2.50	0.41
20:N:78:LEU:HD23	20:N:79:SER:N	2.36	0.41
21:S:30:LEU:HD12	21:S:48:ILE:HG13	2.03	0.41
1:A:138:G:C6	1:A:226:G:C6	3.09	0.41
1:A:177:G:H5'	1:A:177:G:N3	2.35	0.41
1:A:273:U:O4	1:A:274:A:N6	2.54	0.41
1:A:299:G:O2'	1:A:300:A:O5'	2.37	0.41
1:A:575:G:O2'	1:A:821:G:H5'	2.21	0.41
1:A:677:U:C4	1:A:678:U:C5	3.09	0.41
1:A:688:G:C4	1:A:689:C:C5	3.09	0.41
1:A:1004:A:N3	1:A:1036:A:H2	2.19	0.41
1:A:1012:A:C6	1:A:1018:G:C6	3.08	0.41
1:A:1104:G:H2'	1:A:1105:A:C8	2.56	0.41
1:A:1208:C:H2'	1:A:1209:C:O4'	2.21	0.41
1:A:1276:G:N3	1:A:1282:C:H1'	2.36	0.41
1:A:1296:C:O2'	19:M:12:LYS:NZ	2.54	0.41
1:A:1305:G:HO2'	1:A:1306:A:H8	1.69	0.41
1:A:1312:G:N2	1:A:1326:U:C2	2.88	0.41
1:A:1370:G:C2	1:A:1371:G:C8	3.09	0.41
1:A:1399:C:O5'	1:A:1399:C:C6	2.73	0.41
2:D:138:PRO:HA	2:D:181:PHE:HD1	1.85	0.41
2:D:171:GLU:OE1	2:D:182:LYS:HB3	2.21	0.41
2:D:189:ASP:N	2:D:189:ASP:OD1	2.52	0.41
4:F:40:GLU:OE2	4:F:61:LEU:HD22	2.21	0.41
5:H:47:ASP:OD1	5:H:47:ASP:N	2.54	0.41
9:P:7:ALA:O	9:P:17:TYR:HA	2.21	0.41
18:J:70:HIS:CG	18:J:71:LEU:N	2.89	0.41
21:S:39:ILE:HD11	21:S:70:LEU:HD12	2.02	0.41
1:A:213:G:C6	1:A:214:C:C2	3.08	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:420:U:H6	1:A:420:U:O5'	2.04	0.40
1:A:422:C:H1'	1:A:423:G:N1	2.36	0.40
1:A:972:C:O2	18:J:57:VAL:HG23	2.21	0.40
1:A:973:G:C6	1:A:974:A:C6	3.10	0.40
1:A:1073:U:OP1	3:E:61:LYS:NZ	2.44	0.40
1:A:1074:G:N3	1:A:1101:A:C2	2.89	0.40
1:A:1080:A:H4'	3:E:20:VAL:CG1	2.51	0.40
1:A:1084:G:H4'	1:A:1102:A:H5''	2.03	0.40
1:A:1179:A:H4'	17:I:104:THR:HA	2.02	0.40
1:A:1310:G:C4	1:A:1311:A:C8	3.09	0.40
1:A:1385:G:C4	1:A:1386:G:C8	3.09	0.40
3:E:66:ALA:O	3:E:70:MET:HE2	2.21	0.40
3:E:113:VAL:CG1	3:E:136:VAL:HG23	2.51	0.40
4:F:14:GLN:O	4:F:17:GLN:HG3	2.22	0.40
6:K:32:THR:HG22	6:K:43:TRP:CB	2.50	0.40
7:L:89:LEU:O	7:L:91:GLY:N	2.53	0.40
11:R:47:ARG:O	11:R:49:LYS:N	2.55	0.40
15:C:138:GLN:HB2	15:C:142:ARG:HH11	1.85	0.40
21:S:41:PRO:HD3	21:S:66:VAL:O	2.21	0.40
1:A:78:A:H2'	1:A:79:G:C8	2.56	0.40
1:A:201:G:C2	1:A:202:G:C5	3.09	0.40
1:A:204:G:C8	1:A:465:A:C4	3.09	0.40
1:A:538:G:H2'	1:A:539:A:H8	1.86	0.40
1:A:718:A:C4	6:K:117:HIS:CD2	3.08	0.40
1:A:1089:G:C5	1:A:1090:U:C5	3.10	0.40
1:A:1118:U:P	17:I:10:ARG:HH21	2.43	0.40
1:A:1221:G:O3'	21:S:76:THR:HG21	2.21	0.40
1:A:1402:C:H2'	1:A:1403:C:C1'	2.52	0.40
2:D:151:GLN:CG	2:D:152:SER:H	2.26	0.40
6:K:64:VAL:O	6:K:67:GLU:HG3	2.21	0.40
8:O:17:ASP:OD1	8:O:20:ASP:HB2	2.21	0.40
13:B:100:LEU:HD12	13:B:174:GLU:HB2	2.02	0.40
15:C:120:THR:HA	15:C:123:LEU:HD12	2.02	0.40
18:J:36:VAL:HG12	18:J:38:GLY:H	1.85	0.40
1:A:73:C:H2'	1:A:74:A:C8	2.56	0.40
1:A:251:G:O6	1:A:272:C:N4	2.54	0.40
1:A:333:U:H2'	1:A:334:C:C6	2.56	0.40
1:A:470:C:H2'	1:A:471:U:C6	2.57	0.40
1:A:689:C:C4	1:A:690:G:C5	3.10	0.40
1:A:752:G:H5''	8:O:72:LYS:NZ	2.36	0.40
1:A:932:C:C2	1:A:1386:G:C2	3.09	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1055:A:N1	1:A:1206:G:C8	2.90	0.40
1:A:1078:U:C2	3:E:89:THR:HG21	2.56	0.40
1:A:1113:C:H42	1:A:1188:A:N6	2.20	0.40
1:A:1147:C:O2	17:I:17:ARG:NH1	2.55	0.40
1:A:1253:G:H2'	1:A:1254:A:C8	2.55	0.40
1:A:1320:C:C4	21:S:71:GLY:HA3	2.57	0.40
1:A:1325:C:H2'	1:A:1326:U:C6	2.56	0.40
1:A:1374:A:O2'	16:G:24:LYS:NZ	2.42	0.40
4:F:97:THR:OG1	4:F:98:GLU:N	2.53	0.40
15:C:53:ARG:HB3	15:C:68:HIS:CD2	2.56	0.40
15:C:149:LYS:O	15:C:200:TRP:HE3	2.03	0.40
17:I:17:ARG:HE	17:I:19:PHE:HE2	1.70	0.40
21:S:28:LYS:HA	21:S:28:LYS:HD3	1.96	0.40
1:A:333:U:H2'	1:A:334:C:H6	1.87	0.40
1:A:697:U:C6	1:A:698:G:C8	3.09	0.40
1:A:936:C:O4'	1:A:1383:C:N4	2.54	0.40
1:A:945:G:N2	1:A:1334:G:HO2'	2.17	0.40
1:A:945:G:H1'	1:A:1337:G:H1'	2.03	0.40
1:A:1060:U:H2'	1:A:1061:G:H8	1.86	0.40
1:A:1310:G:N1	1:A:1328:C:N3	2.69	0.40
1:A:1502:A:C4	1:A:1504:G:C6	3.09	0.40
4:F:3:HIS:HB3	4:F:92:THR:CB	2.51	0.40
6:K:49:SER:CA	6:K:68:ARG:NH1	2.84	0.40
7:L:81:ILE:HG23	7:L:94:TYR:HB3	2.03	0.40
15:C:13:ILE:O	15:C:15:LYS:N	2.54	0.40
19:M:68:LEU:HA	19:M:71:GLU:OE2	2.22	0.40
21:S:39:ILE:HD11	21:S:70:LEU:HG	2.04	0.40
1:A:76:G:C2	1:A:77:A:C5	3.10	0.40
1:A:436:C:H4'	2:D:152:SER:CB	2.51	0.40
1:A:718:A:C5	6:K:117:HIS:CD2	3.09	0.40
1:A:920:U:H2'	1:A:921:U:C6	2.57	0.40
1:A:924:C:HO2'	1:A:925:G:H8	1.69	0.40
1:A:941:G:C6	1:A:1343:G:C6	3.09	0.40
1:A:951:G:H2'	1:A:952:U:C6	2.57	0.40
1:A:1455:G:H2'	1:A:1456:A:H8	1.87	0.40
1:A:1468:A:H2'	1:A:1469:C:O4'	2.21	0.40
4:F:3:HIS:HE1	4:F:37:HIS:HE2	1.70	0.40
4:F:61:LEU:HD11	11:R:23:LYS:NZ	2.36	0.40
8:O:81:ILE:HD12	8:O:87:ARG:HB2	2.03	0.40
19:M:90:HIS:NE2	19:M:96:VAL:HG11	2.36	0.40
21:S:66:VAL:HG23	21:S:67:GLY:N	2.36	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	D	203/205 (99%)	174 (86%)	29 (14%)	0	100	100
3	E	148/166 (89%)	119 (80%)	29 (20%)	0	100	100
4	F	98/135 (73%)	80 (82%)	18 (18%)	0	100	100
5	H	127/129 (98%)	113 (89%)	14 (11%)	0	100	100
6	K	115/128 (90%)	94 (82%)	21 (18%)	0	100	100
7	L	121/123 (98%)	96 (79%)	25 (21%)	0	100	100
8	O	86/89 (97%)	82 (95%)	4 (5%)	0	100	100
9	P	80/82 (98%)	69 (86%)	11 (14%)	0	100	100
10	Q	78/83 (94%)	66 (85%)	12 (15%)	0	100	100
11	R	53/74 (72%)	45 (85%)	8 (15%)	0	100	100
12	T	83/86 (96%)	77 (93%)	6 (7%)	0	100	100
13	B	216/240 (90%)	172 (80%)	44 (20%)	0	100	100
14	U	16/71 (22%)	10 (62%)	6 (38%)	0	100	100
15	C	204/232 (88%)	176 (86%)	28 (14%)	0	100	100
16	G	148/178 (83%)	129 (87%)	19 (13%)	0	100	100
17	I	125/129 (97%)	107 (86%)	18 (14%)	0	100	100
18	J	96/103 (93%)	78 (81%)	18 (19%)	0	100	100
19	M	112/117 (96%)	98 (88%)	14 (12%)	0	100	100
20	N	92/100 (92%)	86 (94%)	6 (6%)	0	100	100
21	S	77/91 (85%)	64 (83%)	13 (17%)	0	100	100
All	All	2278/2561 (89%)	1935 (85%)	343 (15%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	D	172/172 (100%)	172 (100%)	0	100	100
3	E	113/125 (90%)	113 (100%)	0	100	100
4	F	87/116 (75%)	87 (100%)	0	100	100
5	H	104/104 (100%)	104 (100%)	0	100	100
6	K	90/98 (92%)	88 (98%)	2 (2%)	52	76
7	L	103/103 (100%)	102 (99%)	1 (1%)	76	89
8	O	76/77 (99%)	76 (100%)	0	100	100
9	P	65/65 (100%)	65 (100%)	0	100	100
10	Q	74/77 (96%)	74 (100%)	0	100	100
11	R	48/64 (75%)	47 (98%)	1 (2%)	53	77
12	T	65/65 (100%)	65 (100%)	0	100	100
13	B	180/198 (91%)	180 (100%)	0	100	100
14	U	15/61 (25%)	14 (93%)	1 (7%)	16	43
15	C	170/189 (90%)	169 (99%)	1 (1%)	86	93
16	G	123/146 (84%)	122 (99%)	1 (1%)	81	91
17	I	105/106 (99%)	103 (98%)	2 (2%)	57	79
18	J	86/90 (96%)	83 (96%)	3 (4%)	36	66
19	M	92/95 (97%)	91 (99%)	1 (1%)	73	88
20	N	79/83 (95%)	77 (98%)	2 (2%)	47	74
21	S	70/78 (90%)	68 (97%)	2 (3%)	42	70
All	All	1917/2112 (91%)	1900 (99%)	17 (1%)	79	90

All (17) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
6	K	14	GLN
6	K	105	ARG
7	L	13	ARG

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Mol	Chain	Res	Type
11	R	42	ARG
14	U	48	LYS
15	C	149	LYS
16	G	34	LYS
17	I	44	ARG
17	I	112	ARG
18	J	7	ARG
18	J	45	ARG
18	J	62	ARG
19	M	61	LYS
20	N	75	LYS
20	N	80	ARG
21	S	36	ARG
21	S	77	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (18) such sidechains are listed below:

Mol	Chain	Res	Type
2	D	58	GLN
2	D	197	HIS
3	E	69	ASN
3	E	88	HIS
4	F	94	HIS
5	H	37	ASN
6	K	21	HIS
6	K	117	HIS
6	K	118	ASN
7	L	71	HIS
8	O	34	GLN
11	R	73	HIS
12	T	47	GLN
12	T	77	ASN
13	B	108	GLN
13	B	145	ASN
15	C	101	ASN
15	C	138	GLN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1529/1542 (99%)	468 (30%)	15 (0%)

All (468) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	6	G
1	A	7	A
1	A	9	G
1	A	18	C
1	A	20	U
1	A	22	G
1	A	32	A
1	A	39	G
1	A	40	C
1	A	45	G
1	A	47	C
1	A	48	C
1	A	50	A
1	A	51	A
1	A	54	C
1	A	61	G
1	A	66	A
1	A	69	G
1	A	71	A
1	A	72	A
1	A	75	G
1	A	76	G
1	A	77	A
1	A	82	G
1	A	83	C
1	A	84	U
1	A	85	U
1	A	86	G
1	A	87	C
1	A	89	U
1	A	94	G
1	A	95	C
1	A	101	A
1	A	108	G
1	A	109	A
1	A	116	A
1	A	119	A
1	A	120	A

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Mol	Chain	Res	Type
1	A	121	U
1	A	122	G
1	A	130	A
1	A	131	A
1	A	132	C
1	A	141	G
1	A	144	G
1	A	149	A
1	A	153	C
1	A	154	U
1	A	158	G
1	A	163	C
1	A	164	G
1	A	165	G
1	A	168	G
1	A	172	A
1	A	173	U
1	A	177	G
1	A	181	A
1	A	182	A
1	A	183	C
1	A	191	G
1	A	200	G
1	A	201	G
1	A	203	G
1	A	204	G
1	A	205	A
1	A	209	U
1	A	210	C
1	A	211	G
1	A	226	G
1	A	239	U
1	A	240	G
1	A	244	U
1	A	245	U
1	A	247	G
1	A	251	G
1	A	253	A
1	A	257	G
1	A	258	G
1	A	266	G
1	A	267	C

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Mol	Chain	Res	Type
1	A	279	A
1	A	280	C
1	A	289	G
1	A	300	A
1	A	301	G
1	A	305	G
1	A	306	A
1	A	308	C
1	A	314	C
1	A	315	A
1	A	320	A
1	A	321	A
1	A	322	C
1	A	323	U
1	A	324	G
1	A	328	C
1	A	329	A
1	A	332	G
1	A	336	A
1	A	337	G
1	A	339	C
1	A	344	A
1	A	345	C
1	A	347	G
1	A	352	C
1	A	354	G
1	A	357	G
1	A	365	U
1	A	367	U
1	A	369	G
1	A	372	C
1	A	373	A
1	A	374	A
1	A	375	U
1	A	384	G
1	A	392	C
1	A	395	C
1	A	398	U
1	A	406	G
1	A	409	U
1	A	410	G
1	A	411	A

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Mol	Chain	Res	Type
1	A	412	A
1	A	413	G
1	A	415	A
1	A	416	G
1	A	421	U
1	A	422	C
1	A	424	G
1	A	429	U
1	A	435	A
1	A	438	U
1	A	440	C
1	A	447	G
1	A	451	A
1	A	453	G
1	A	459	A
1	A	461	A
1	A	463	U
1	A	464	U
1	A	465	A
1	A	466	A
1	A	467	U
1	A	468	A
1	A	469	C
1	A	474	G
1	A	483	C
1	A	484	G
1	A	486	U
1	A	492	C
1	A	494	G
1	A	495	A
1	A	497	G
1	A	505	G
1	A	509	A
1	A	510	A
1	A	511	C
1	A	517	G
1	A	518	C
1	A	521	G
1	A	527	G
1	A	530	G
1	A	531	U
1	A	532	A

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Mol	Chain	Res	Type
1	A	533	A
1	A	547	A
1	A	549	C
1	A	559	A
1	A	560	A
1	A	562	U
1	A	564	C
1	A	572	A
1	A	573	A
1	A	576	C
1	A	577	G
1	A	586	C
1	A	587	G
1	A	588	G
1	A	596	A
1	A	615	G
1	A	633	G
1	A	640	A
1	A	642	A
1	A	653	U
1	A	661	G
1	A	665	A
1	A	667	G
1	A	671	G
1	A	687	A
1	A	694	A
1	A	695	A
1	A	700	G
1	A	701	U
1	A	702	A
1	A	703	G
1	A	706	A
1	A	716	A
1	A	718	A
1	A	721	G
1	A	724	G
1	A	729	A
1	A	731	G
1	A	733	G
1	A	734	G
1	A	741	G
1	A	742	G

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Mol	Chain	Res	Type
1	A	747	A
1	A	748	G
1	A	753	A
1	A	755	G
1	A	758	C
1	A	759	A
1	A	760	G
1	A	764	C
1	A	777	A
1	A	781	A
1	A	787	A
1	A	793	U
1	A	794	A
1	A	797	C
1	A	805	C
1	A	812	G
1	A	815	A
1	A	817	C
1	A	820	U
1	A	821	G
1	A	832	G
1	A	836	G
1	A	841	C
1	A	842	U
1	A	843	U
1	A	844	G
1	A	845	A
1	A	849	G
1	A	851	G
1	A	864	A
1	A	874	G
1	A	875	U
1	A	878	A
1	A	884	U
1	A	889	A
1	A	891	U
1	A	901	A
1	A	902	G
1	A	914	A
1	A	916	U
1	A	923	A
1	A	924	C

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Mol	Chain	Res	Type
1	A	925	G
1	A	926	G
1	A	927	G
1	A	931	C
1	A	932	C
1	A	934	C
1	A	935	A
1	A	938	A
1	A	946	A
1	A	948	C
1	A	958	A
1	A	960	U
1	A	961	U
1	A	966	G
1	A	967	C
1	A	968	A
1	A	969	A
1	A	971	G
1	A	974	A
1	A	975	A
1	A	976	G
1	A	977	A
1	A	978	A
1	A	982	U
1	A	991	U
1	A	992	U
1	A	993	G
1	A	994	A
1	A	1000	A
1	A	1001	C
1	A	1002	G
1	A	1004	A
1	A	1010	U
1	A	1011	C
1	A	1017	U
1	A	1020	G
1	A	1022	A
1	A	1024	G
1	A	1026	G
1	A	1028	C
1	A	1030	U
1	A	1031	C

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Mol	Chain	Res	Type
1	A	1032	G
1	A	1033	G
1	A	1036	A
1	A	1045	C
1	A	1049	U
1	A	1052	U
1	A	1054	C
1	A	1055	A
1	A	1057	G
1	A	1065	U
1	A	1066	C
1	A	1067	A
1	A	1070	U
1	A	1081	A
1	A	1085	U
1	A	1088	G
1	A	1097	C
1	A	1101	A
1	A	1103	C
1	A	1108	G
1	A	1111	A
1	A	1112	C
1	A	1124	G
1	A	1125	U
1	A	1126	U
1	A	1129	C
1	A	1134	G
1	A	1135	U
1	A	1136	C
1	A	1137	C
1	A	1138	G
1	A	1139	G
1	A	1140	C
1	A	1142	G
1	A	1145	A
1	A	1146	A
1	A	1147	C
1	A	1151	A
1	A	1152	A
1	A	1157	A
1	A	1158	C
1	A	1159	U

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Mol	Chain	Res	Type
1	A	1167	A
1	A	1168	U
1	A	1169	A
1	A	1178	G
1	A	1181	G
1	A	1183	U
1	A	1184	G
1	A	1187	G
1	A	1188	A
1	A	1190	G
1	A	1191	A
1	A	1193	G
1	A	1195	C
1	A	1196	A
1	A	1197	A
1	A	1198	G
1	A	1201	A
1	A	1202	U
1	A	1209	C
1	A	1211	U
1	A	1212	U
1	A	1213	A
1	A	1214	C
1	A	1215	G
1	A	1222	G
1	A	1224	U
1	A	1225	A
1	A	1226	C
1	A	1227	A
1	A	1228	C
1	A	1240	U
1	A	1241	G
1	A	1249	C
1	A	1250	A
1	A	1256	A
1	A	1258	G
1	A	1259	C
1	A	1260	G
1	A	1267	C
1	A	1268	G
1	A	1276	G
1	A	1278	G

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Mol	Chain	Res	Type
1	A	1279	G
1	A	1280	A
1	A	1281	C
1	A	1282	C
1	A	1285	A
1	A	1286	U
1	A	1287	A
1	A	1290	G
1	A	1291	U
1	A	1292	G
1	A	1296	C
1	A	1297	G
1	A	1298	U
1	A	1300	G
1	A	1301	U
1	A	1302	C
1	A	1303	C
1	A	1305	G
1	A	1312	G
1	A	1313	U
1	A	1316	G
1	A	1317	C
1	A	1320	C
1	A	1322	C
1	A	1323	G
1	A	1328	C
1	A	1329	A
1	A	1331	G
1	A	1336	C
1	A	1337	G
1	A	1340	A
1	A	1345	U
1	A	1347	G
1	A	1348	U
1	A	1351	U
1	A	1353	G
1	A	1355	G
1	A	1359	C
1	A	1360	A
1	A	1362	A
1	A	1363	A
1	A	1370	G

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Mol	Chain	Res	Type
1	A	1371	G
1	A	1373	G
1	A	1374	A
1	A	1377	A
1	A	1378	C
1	A	1380	U
1	A	1381	U
1	A	1384	C
1	A	1388	C
1	A	1389	C
1	A	1390	U
1	A	1391	U
1	A	1392	G
1	A	1393	U
1	A	1394	A
1	A	1398	A
1	A	1399	C
1	A	1401	G
1	A	1402	C
1	A	1403	C
1	A	1405	G
1	A	1409	C
1	A	1413	A
1	A	1418	A
1	A	1419	G
1	A	1428	A
1	A	1429	A
1	A	1440	U
1	A	1446	A
1	A	1451	U
1	A	1452	C
1	A	1475	G
1	A	1487	G
1	A	1491	G
1	A	1493	A
1	A	1497	G
1	A	1499	A
1	A	1502	A
1	A	1503	A
1	A	1504	G
1	A	1505	G
1	A	1506	U

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Mol	Chain	Res	Type
1	A	1507	A
1	A	1517	G
1	A	1519	A
1	A	1520	C
1	A	1524	C
1	A	1529	G
1	A	1530	G
1	A	1531	A
1	A	1533	C
1	A	1534	A

All (15) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	60	A
1	A	120	A
1	A	203	G
1	A	328	C
1	A	428	G
1	A	531	U
1	A	532	A
1	A	923	A
1	A	931	C
1	A	1065	U
1	A	1201	A
1	A	1210	C
1	A	1300	G
1	A	1388	C
1	A	1390	U

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 monosaccharides 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.

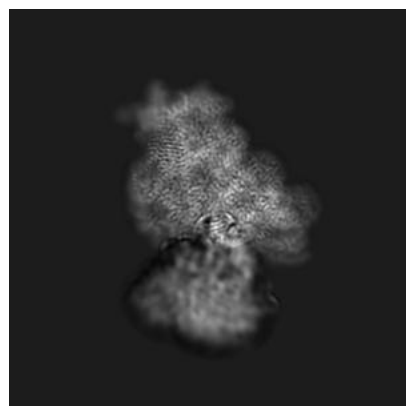
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-12857. These allow visual inspection of the internal detail of the map and identification of artifacts.

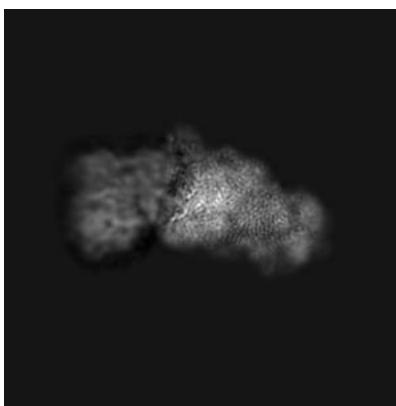
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

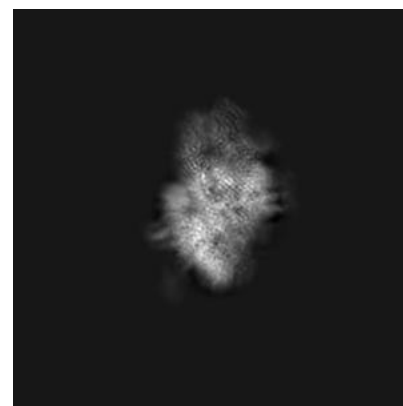
6.1.1 Primary map



X

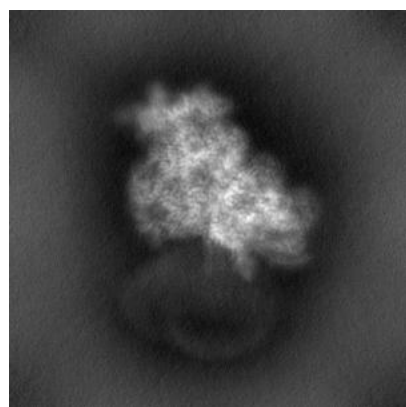


Y

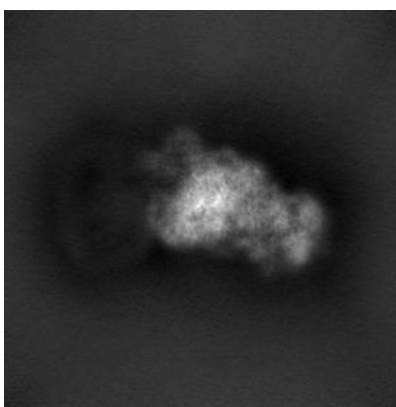


Z

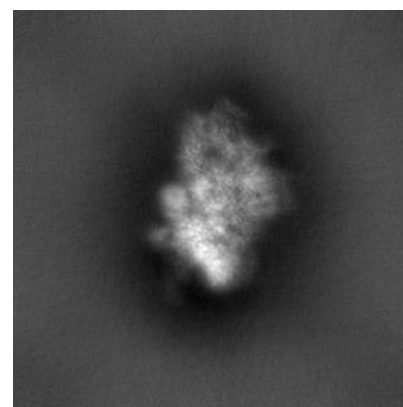
6.1.2 Raw map



X



Y

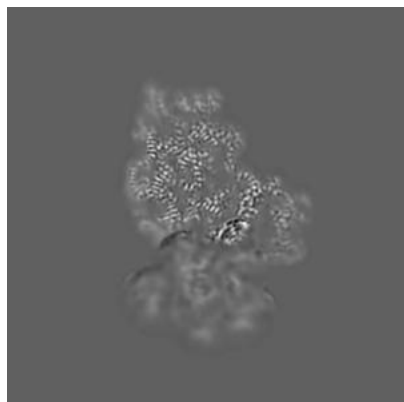


Z

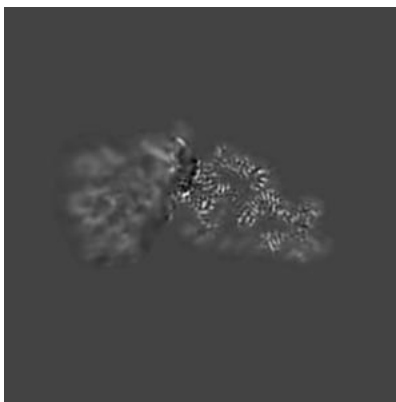
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

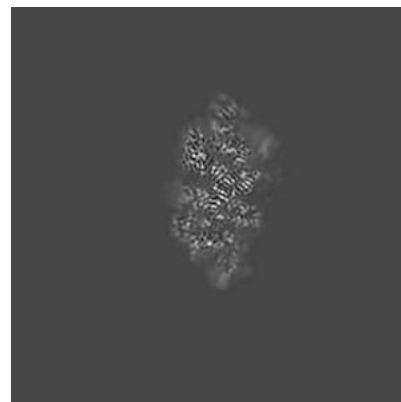
6.2.1 Primary map



X Index: 200

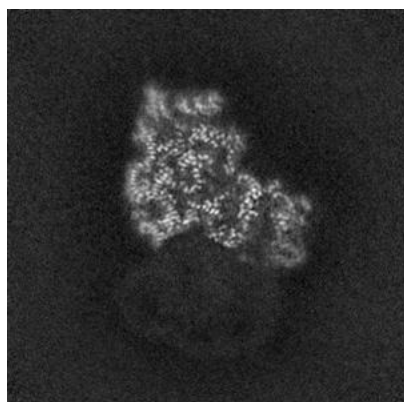


Y Index: 200

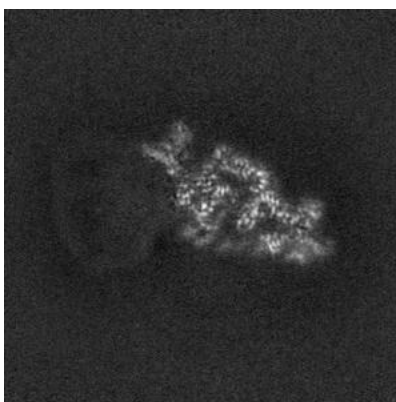


Z Index: 200

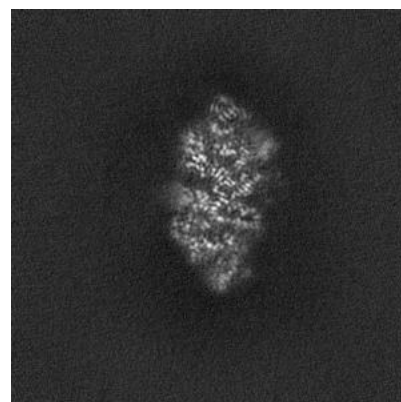
6.2.2 Raw map



X Index: 200



Y Index: 200

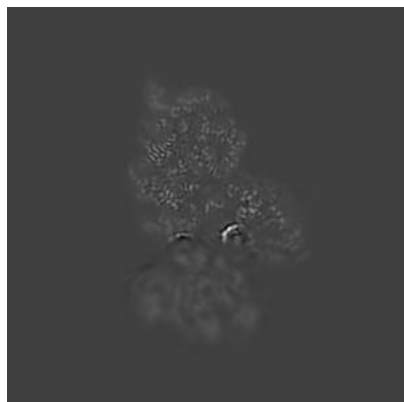


Z Index: 200

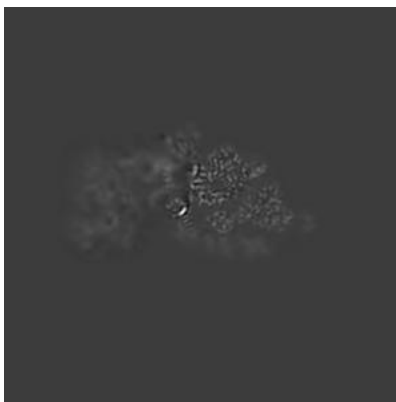
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

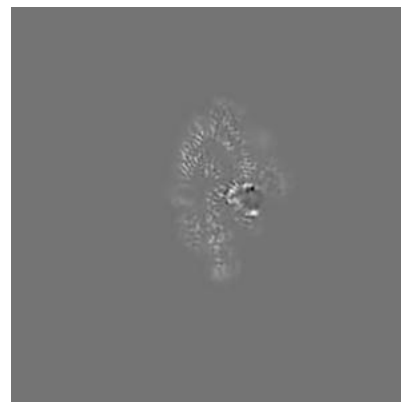
6.3.1 Primary map



X Index: 194

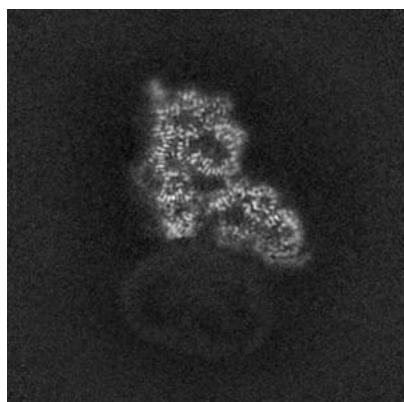


Y Index: 222

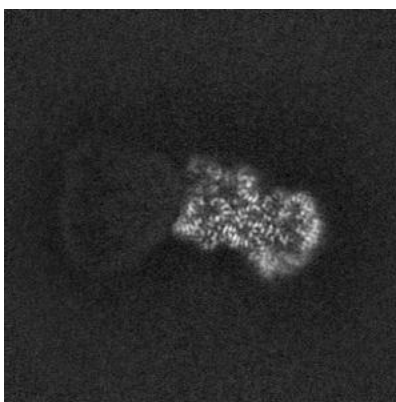


Z Index: 191

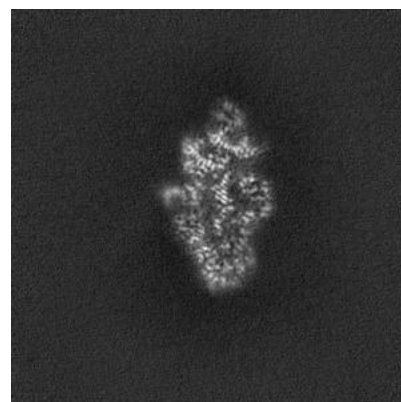
6.3.2 Raw map



X Index: 187



Y Index: 177

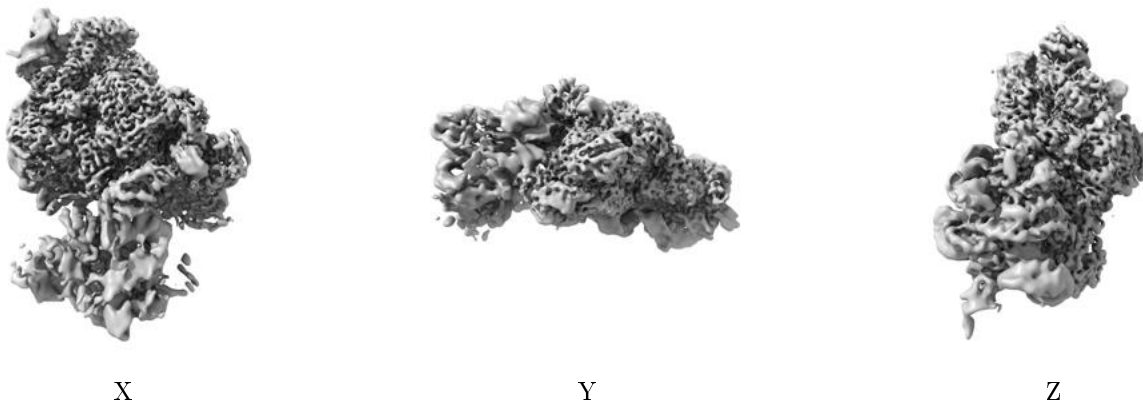


Z Index: 214

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

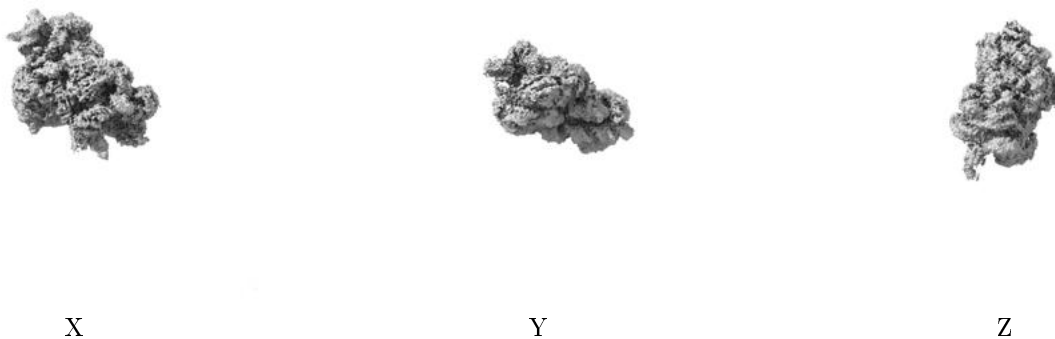
6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.428. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.4.2 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.

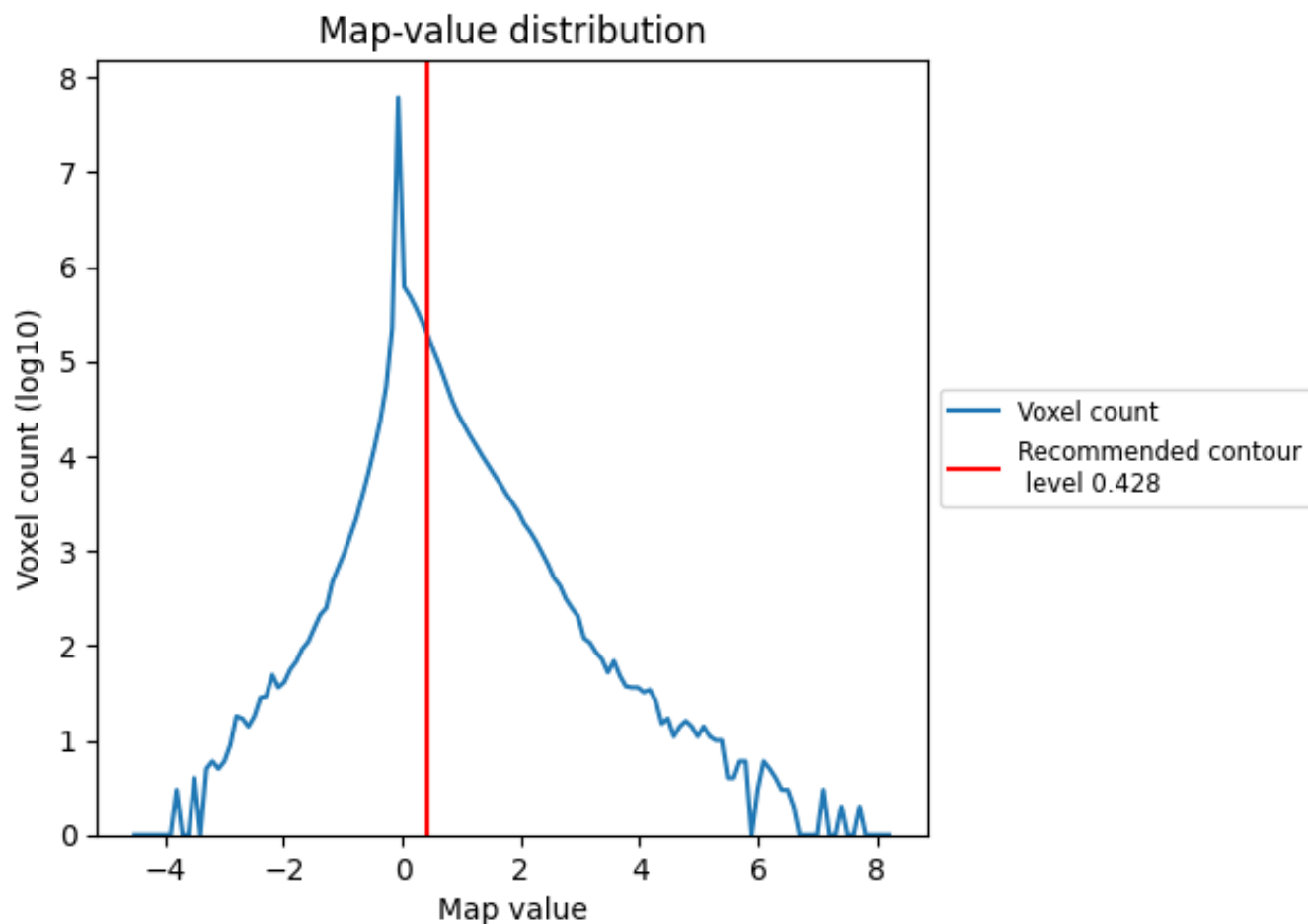
6.5 Mask visualisation [i](#)

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

7 Map analysis [i](#)

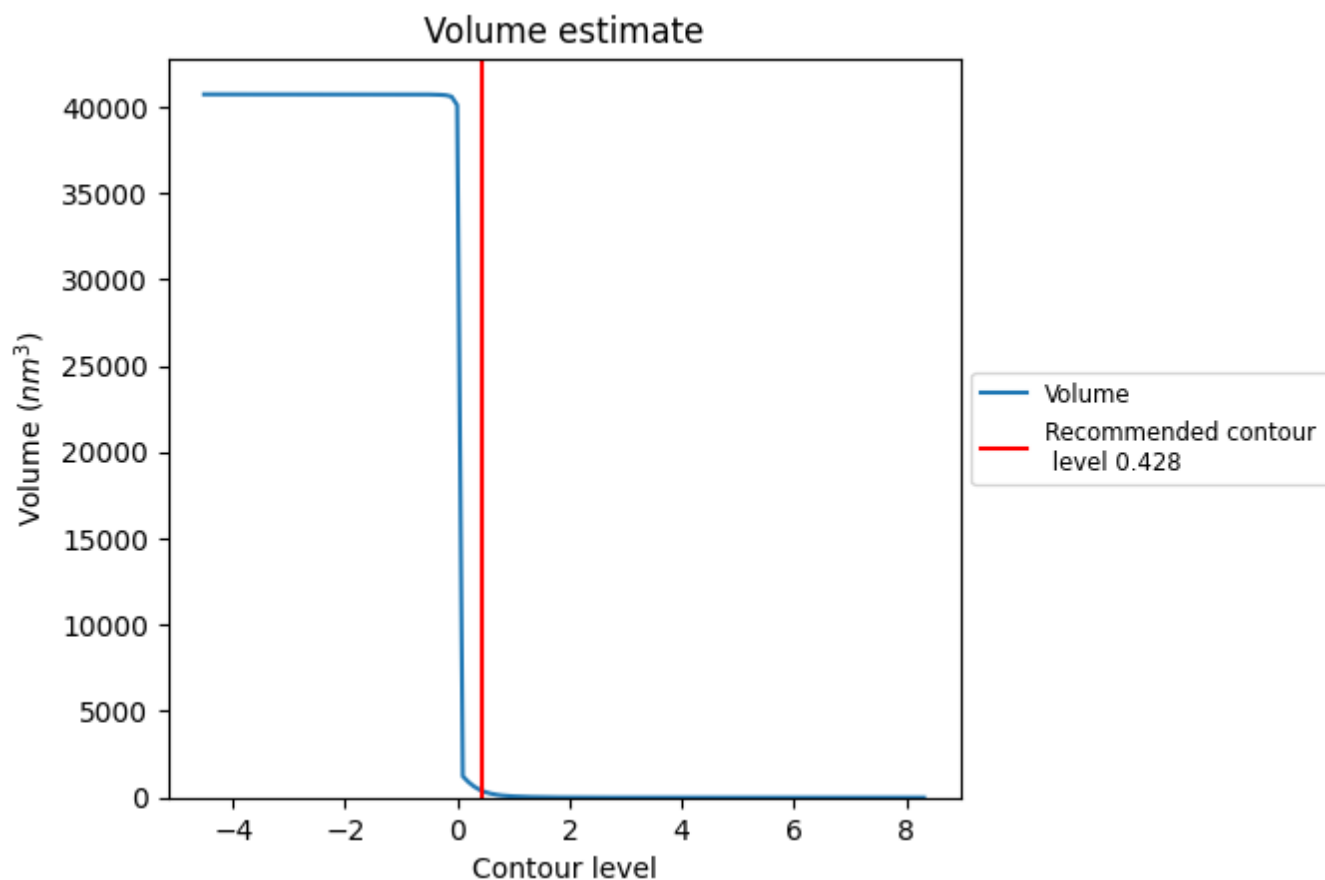
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

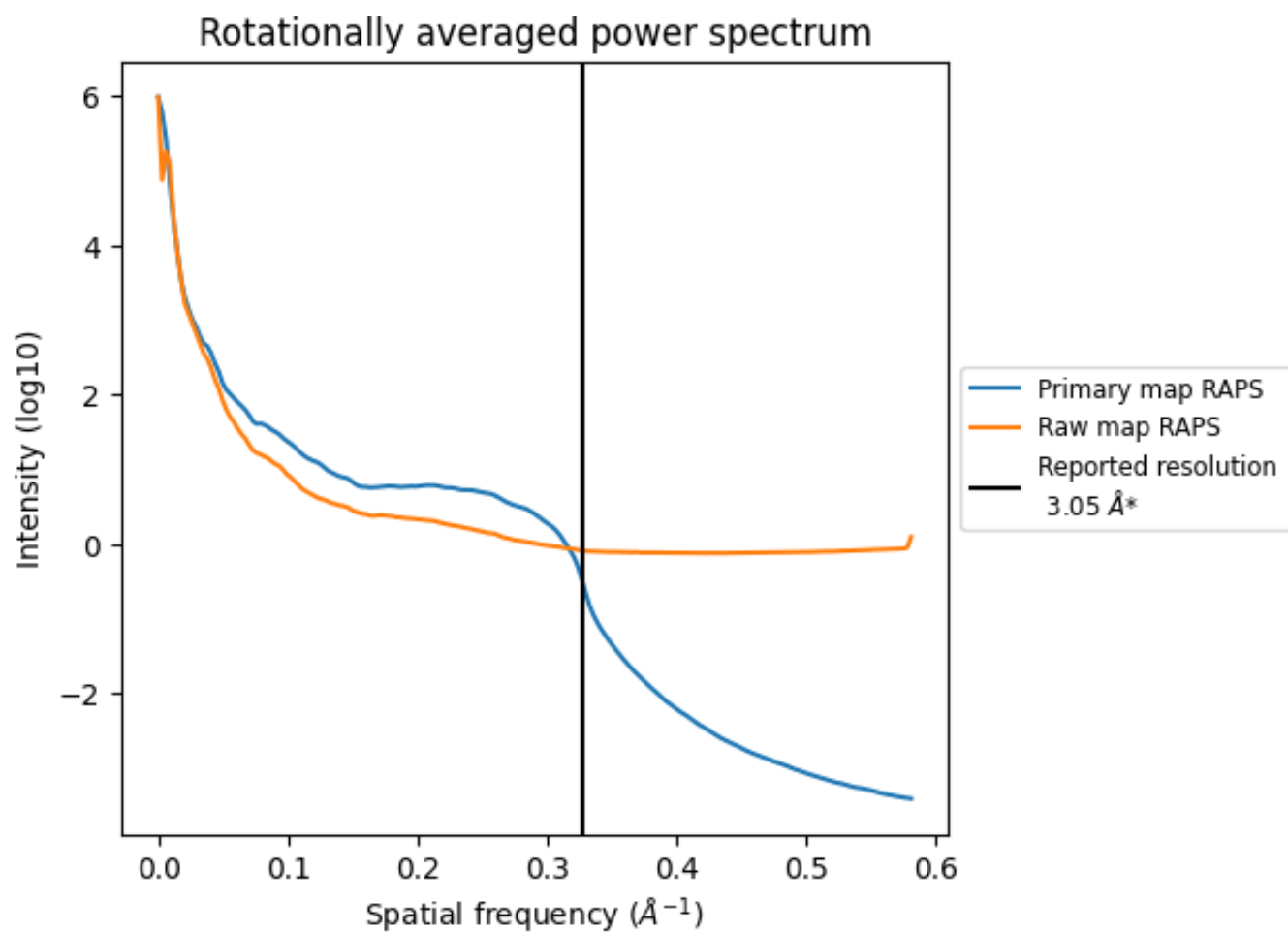
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 412 nm^3 ; this corresponds to an approximate mass of 373 kDa.

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

7.3 Rotationally averaged power spectrum [\(i\)](#)

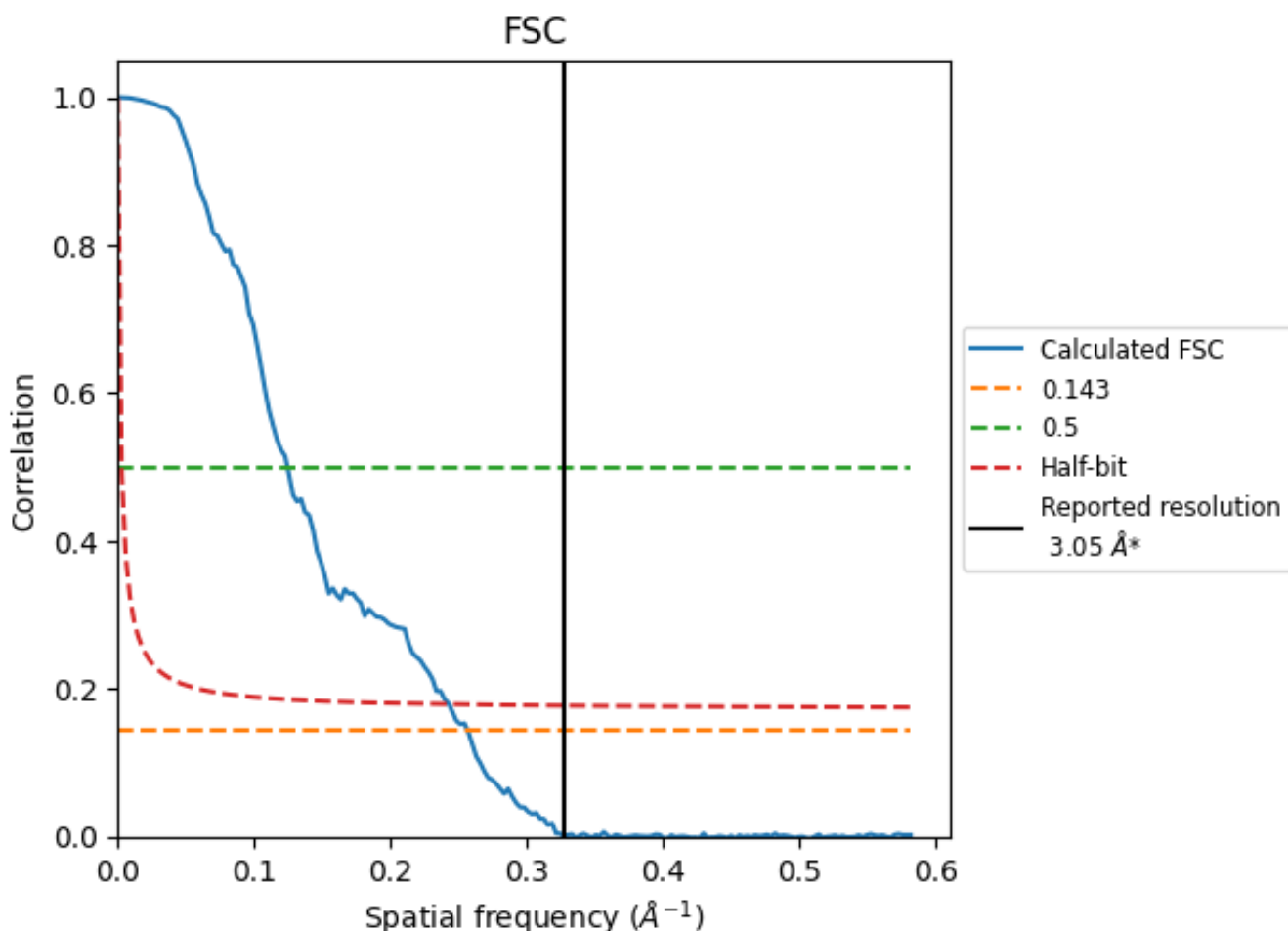


*Reported resolution corresponds to spatial frequency of 0.328 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.328 Å⁻¹

8.2 Resolution estimates [i](#)

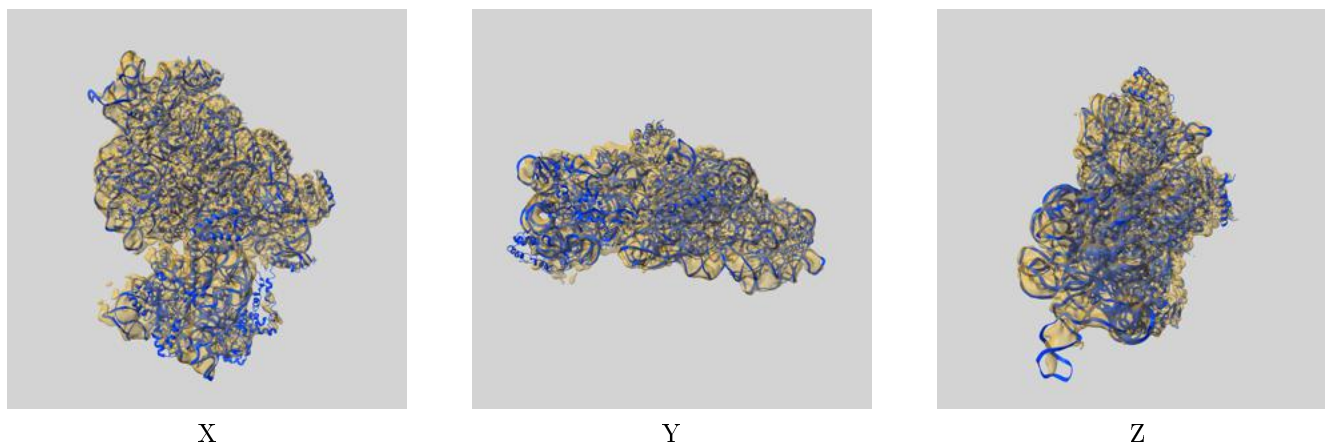
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.05	-	-
Author-provided FSC curve	-	-	-
Calculated*	3.90	8.04	4.12

*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 3.90 differs from the reported value 3.05 by more than 10 %

9 Map-model fit [i](#)

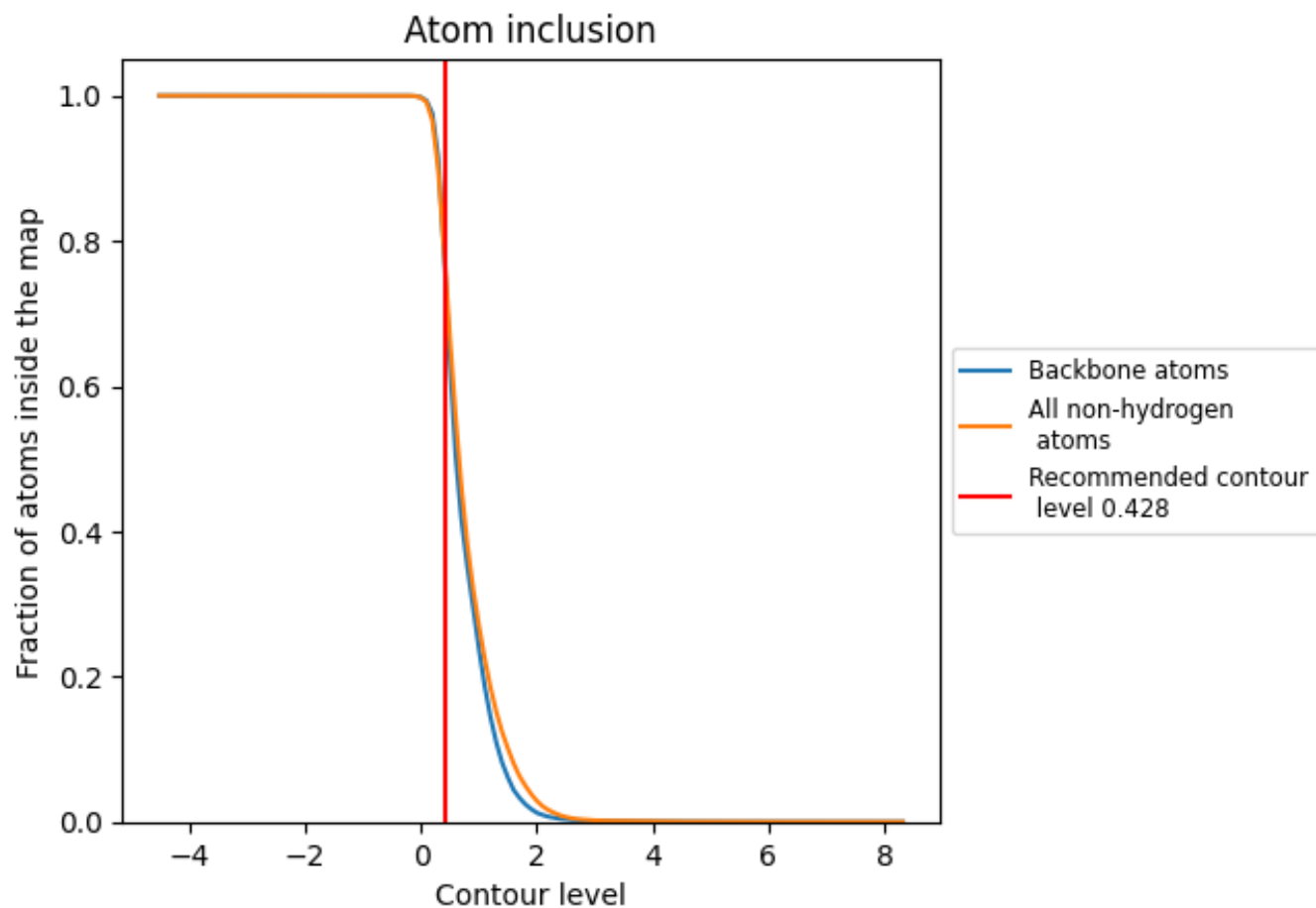
This section contains information regarding the fit between EMDB map EMD-12857 and PDB model 7OE1. Per-residue inclusion information can be found in section 3 on page 8.

9.1 Map-model overlay [i](#)



The images above show the 3D surface view of the map at the recommended contour level 0.428 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 Atom inclusion [i](#)



At the recommended contour level, 75% of all backbone atoms, 76% of all non-hydrogen atoms, are inside the map.