



Full wwPDB EM Validation Report ⓘ

Mar 10, 2026 – 09:09 AM UTC

PDB ID : 7OE1 / pdb_00007oe1
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 types of validation reports are described at

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

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

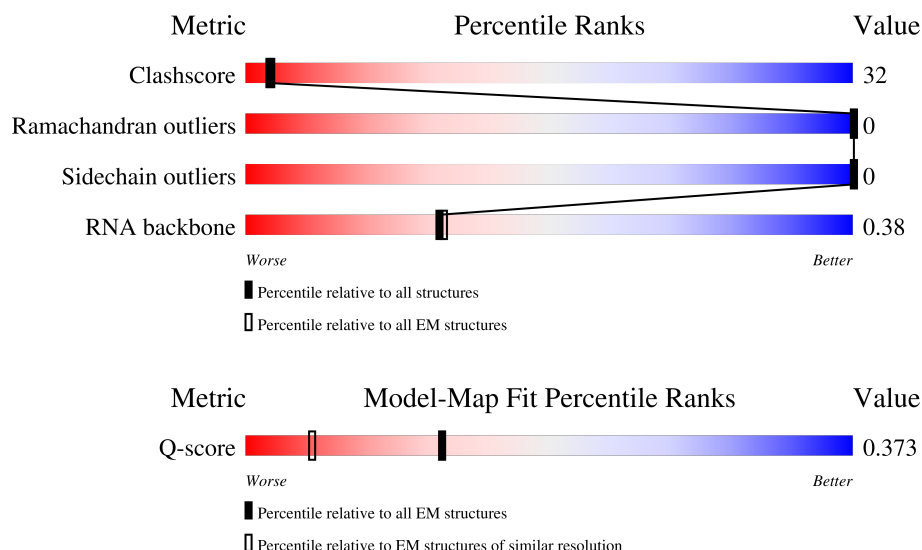
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh &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

1 Overall quality at a glance i

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

The reported resolution of this entry is 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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	13971 (2.55 - 3.55)

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	

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Mol	Chain	Length	Quality of chain
4	F	135	
5	H	129	
6	K	128	
7	L	123	
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

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
1	A	1530	Total	C	N	O	P	0	0
			32831	14642	6024	10635	1530		

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- 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		

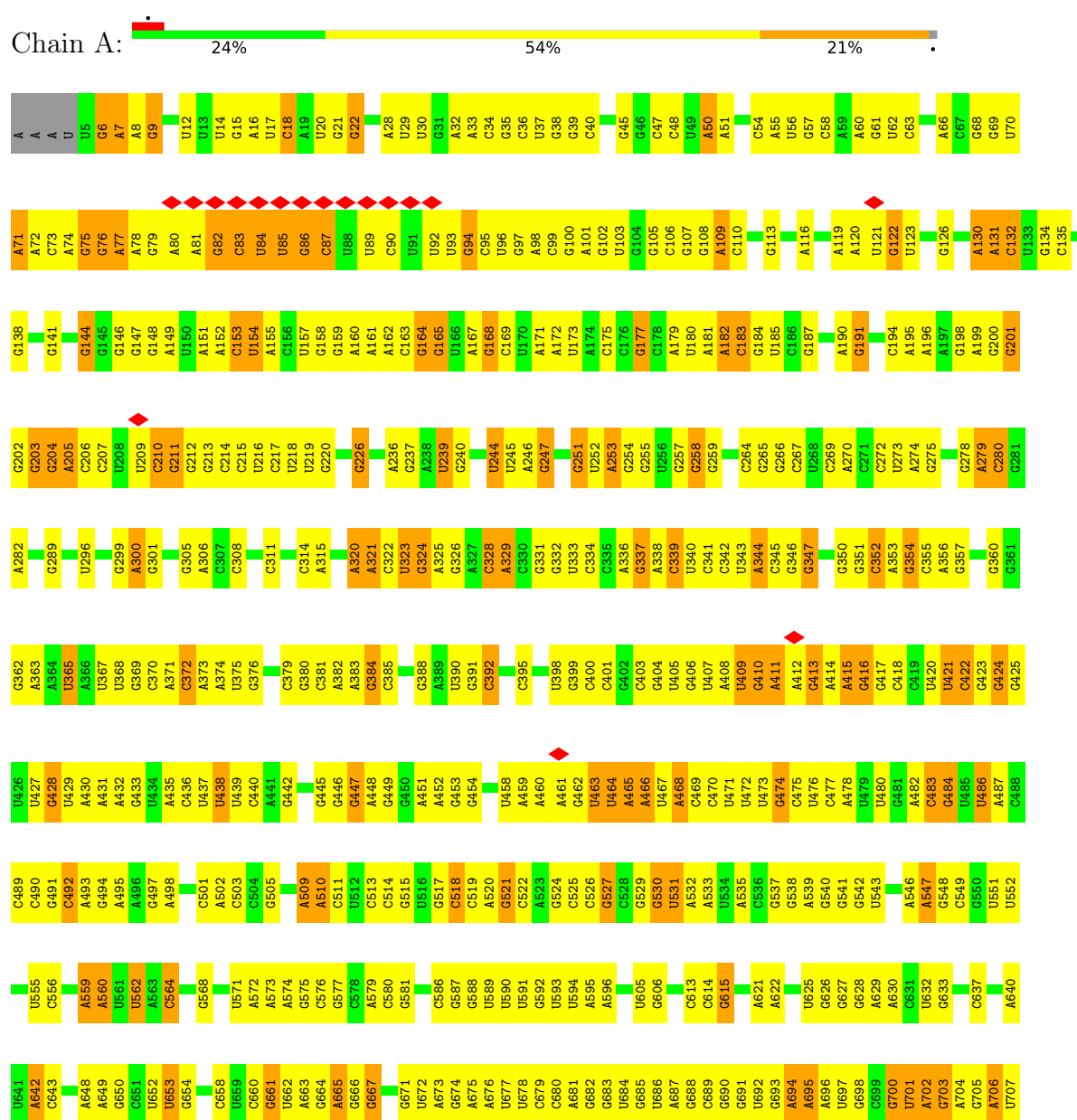
- Molecule 21 is a protein called 30S ribosomal protein S19.

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

3 Residue-property plots

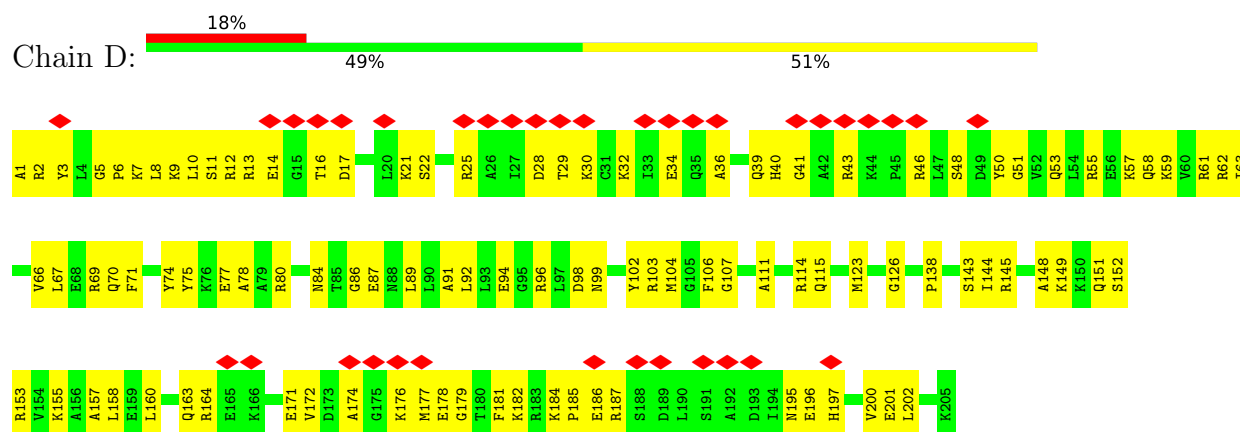
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

• Molecule 1: 16S rRNA

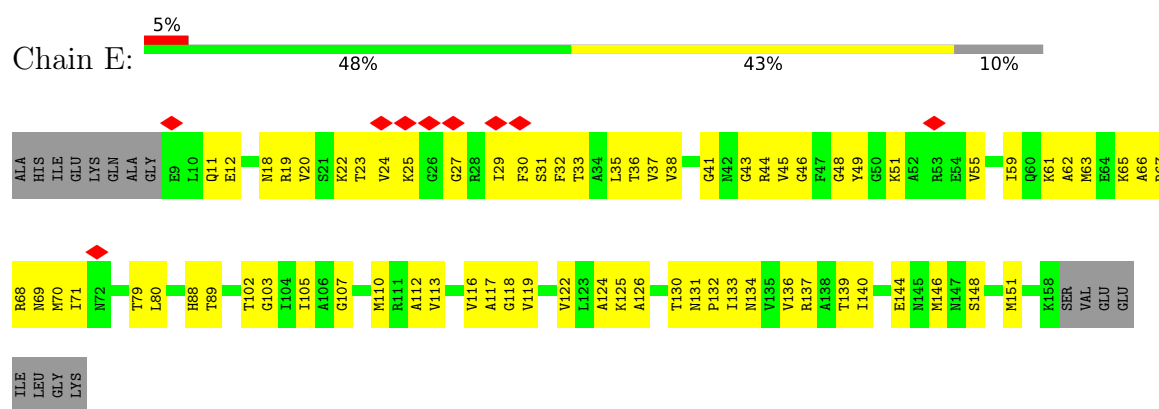


U	G1475	A1413	C1352	G1292	G1231	A1171	U1049	G988	G928	U850	G775	C708
A	A1476	U1414	G1363	C1293	U1232	C1172	U1052	U991	G929	G851	G776	U709
	U1477	G1415	U1354	G1294	G1233	C1113	U1053	U992	C930	G858	A777	G710
	U1478	G1416	U1295	G1295	G1234	C1114	U1054	G993	C931	G859	G778	G713
	C1479	G1417	G1356	G1296	U1235	U1115	A1055	A994	C932	A860	C779	G714
	A1480	G1418	G1357	G1297	U1236	U1116	U1056	A995	G933	A864	A781	A715
	U1481	U1358	U1298	C1237	G1237	A1117	G1057	A996	C934	A865	A782	A716
	A1482	C1359	A1299	A1238	A1238	U1118	G1058	U997	A935	A866	A783	U717
	U1420	A1360	G1300	A1239	U1240	C1119	U1059	U998	C936	A867	A786	A718
	G1421	U1301	U1301	U1241	G1241	U1120	U1060	G999	A937	A868	A787	C719
	G1423	A1362	C1302	G1242	U1242	U1121	G1061	C999	A938	A869	A788	G720
	U1425	A1363	C1303	G1243	U1243	U1122	U1062	A1000	G939	A870	A792	G721
	G1426	U1364	G1304	C1244	G1244	G1124	C1063	C1001	C940	A871	U793	G722
	C1427	G1365	G1305	G1245	U1245	U1125	G1064	G1002	G941	G874	U794	U723
	A1428	C1366	A1306	G1246	G1246	U1126	U1065	G1003	G942	C875	A794	G724
	A1429	U1307	U1307	U1247	G1247	U1127	U1066	A1004	U943	G876	C796	G725
	A1430	U1308	U1308	A1248	U1248	G1127	C1067	A1005	G944	G877	C797	G726
	G1431	G1309	G1309	U1249	U1249	C1128	U1067	A1006	G945	A878	C797	C726
	G1432	G1310	G1310	G1190	G1190	U1129	U1070	G1007	A946	G881	G800	A729
	A1433	A1311	A1311	A1250	A1250	A1130	C1071	U1007	C947	G882	U801	G730
	U1434	G1312	G1312	A1251	A1251	A1131	G1072	U1008	C948	A802	A802	C731
	G1435	U1313	U1313	G1252	G1252	G1132	G1073	U1009	A949	G883	G732	C732
	A1436	C1314	C1314	G1253	G1253	G1133	U1074	U1010	U950	C805	C805	G733
	U1437	U1315	U1315	A1254	A1254	G1134	G1075	C1011	U951	C806	C806	G734
	G1438	G1316	G1316	A1255	A1255	U1135	U1076	A1012	U952	A807	A807	C735
	G1439	C1317	C1317	A1256	A1256	G1136	G1077	A1013	U953	G812	G812	C736
	U1440	A1318	A1318	A1257	A1257	C1137	U1078	A1014	U954	U813	U813	C739
	U1444	G1319	G1319	U1258	G1258	G1138	U1079	A1015	U955	U814	U814	U740
	U1445	C1320	C1320	C1259	C1259	G1139	U1080	A1016	U956	U815	U815	G741
	A1446	U1321	U1321	A1260	A1260	C1140	A1081	U1017	U957	A816	A816	G742
	U1447	G1322	G1322	A1261	A1261	C1141	U1082	G1020	A959	A817	A817	G743
	C1448	C1323	C1323	U1262	U1262	G1142	U1083	A1021	U960	G818	G818	C744
	G1449	A1324	A1324	A1264	A1264	G1143	G1084	A1022	U961	A819	A819	G745
	C1450	G1325	G1325	C1265	C1265	G1144	U1085	U1023	C962	G902	G902	A746
	U1451	U1326	U1326	G1266	G1266	C1145	U1086	G1024	U963	G903	G903	U820
	G1452	C1327	C1327	C1267	C1267	A1146	G1087	U1025	U964	U904	U904	A747
	C1453	A1328	A1328	G1268	G1268	U1147	G1088	U1026	U965	C826	C826	G748
	U1454	C1329	C1329	A1269	A1269	C1148	G1089	C1027	C967	C827	C827	U751
	G1455	G1330	G1330	G1270	G1270	U1149	U1090	U1028	A968	U828	U828	A752
	A1456	A1331	A1331	A1271	A1271	C1150	U1091	U1029	A969	G829	G829	A753
	U1457	G1332	G1332	G1272	G1272	A1151	A1092	U1030	A970	C910	C910	C754
	G1458	C1333	C1333	A1273	A1273	A1152	G1093	C1031	C971	U911	U911	G755
	C1459	U1335	U1335	G1275	G1275	G1153	G1094	G1032	C972	C912	C912	C756
	G1459	G1336	G1336	G1276	G1276	U1154	C1095	G1033	C973	U835	U835	U757
	C1460	C1337	C1337	C1277	C1277	G1155	C1096	A913	G836	U836	U836	C758
	A1461	G1338	G1338	G1278	G1278	A1156	C1097	A914	U837	U837	U837	A759
	U1462	A1339	A1339	C1279	C1279	G1157	U1098	U1036	A974	G838	G838	G760
	U1463	U1340	U1340	A1280	A1280	A1158	G1099	A1035	A975	C939	C939	C761
	U1464	U1341	U1341	G1281	G1281	U1159	C1100	C1037	A976	A918	A918	G763
	A1465	C1342	C1342	G1282	G1282	A1160	A1101	C1038	A977	A919	A919	C764
	G1466	G1343	G1343	U1283	U1283	G1161	A1102	U1039	A978	U842	U842	G765
	C1467	C1344	C1344	C1284	C1284	U1162	C1103	G1040	C979	U843	U843	C766
	A1468	A1345	A1345	A1285	A1285	C1163	G1104	U1041	U981	G844	G844	G769
	C1469	U1346	U1346	U1286	U1286	A1164	A1105	G1042	U982	A845	A845	C770
	U1470	G1347	G1347	U1287	U1287	U1165	G1106	A1043	U983	C924	C924	G771
	U1471	A1348	A1348	A1288	A1288	G1166	C1107	G1044	C984	G925	G925	U772
	C1472	U1349	U1349	U1289	U1289	U1167	G1108	A1045	C985	G926	G926	G773
	U1473	A1350	A1350	A1290	A1290	A1168	C1109	C1046	U986	C927	C927	G774
	A1474	U1351	U1351	U1291	U1291	A1169	A1110	G1047	G987	G849	G849	
						A1170		G1048				

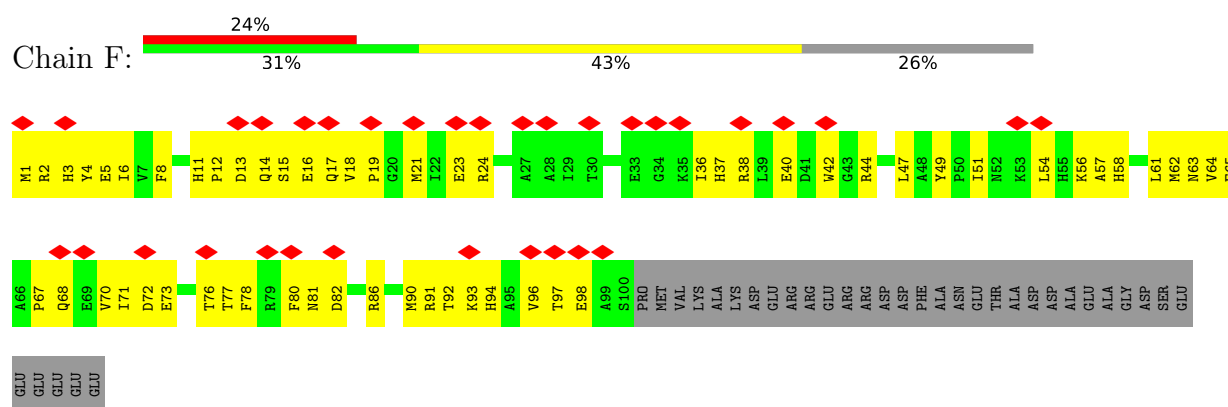
- Molecule 2: 30S ribosomal protein S4



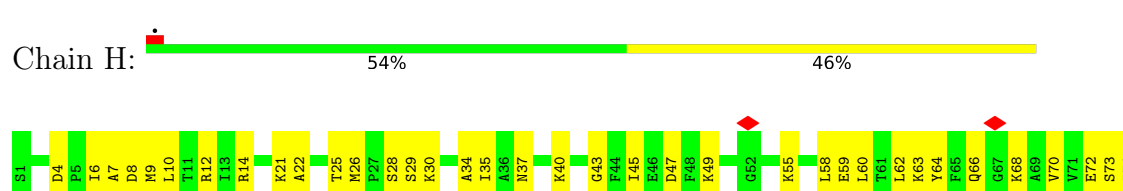
- Molecule 3: 30S ribosomal protein S5



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

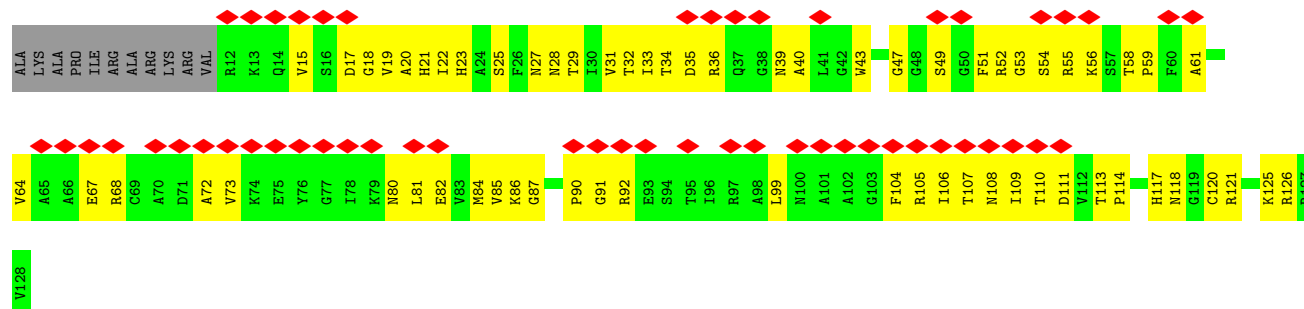


- Molecule 5: 30S ribosomal protein S8

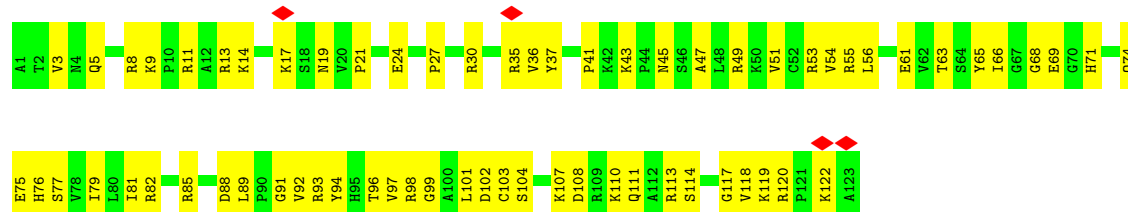




• Molecule 6: 30S ribosomal protein S11



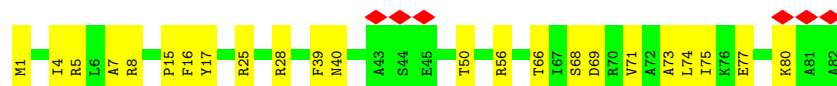
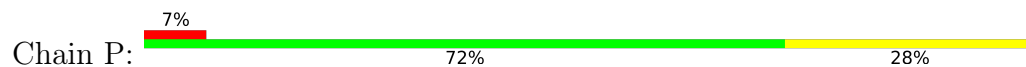
• Molecule 7: 30S ribosomal protein S12



• Molecule 8: 30S ribosomal protein S15

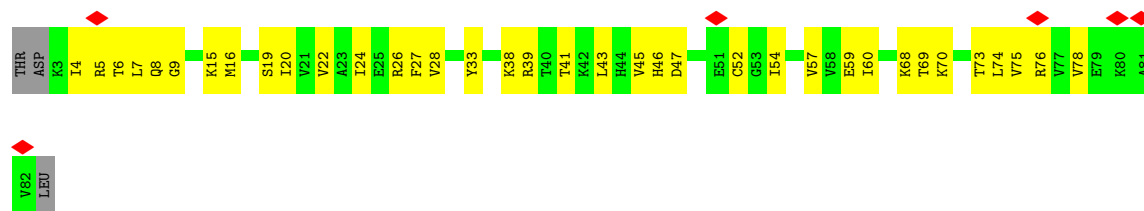


• Molecule 9: 30S ribosomal protein S16

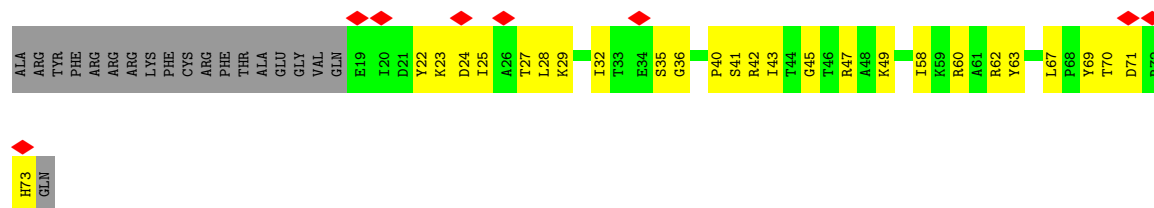


• Molecule 10: 30S ribosomal protein S17

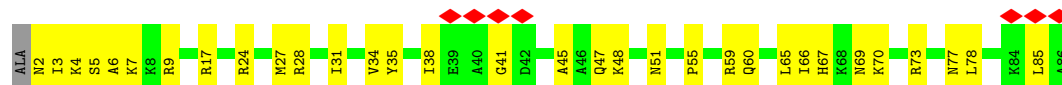




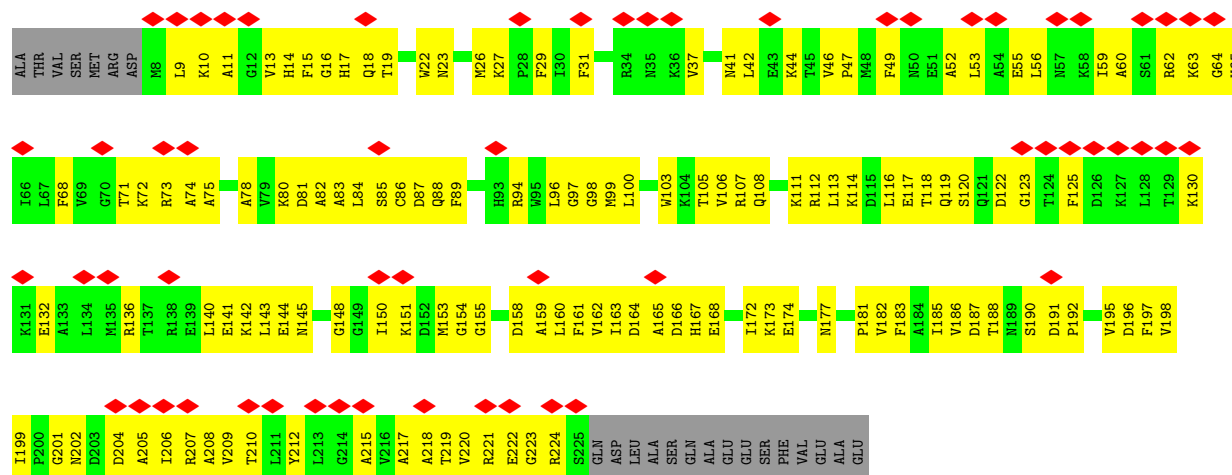
• Molecule 11: 30S ribosomal protein S18



• Molecule 12: 30S ribosomal protein S20

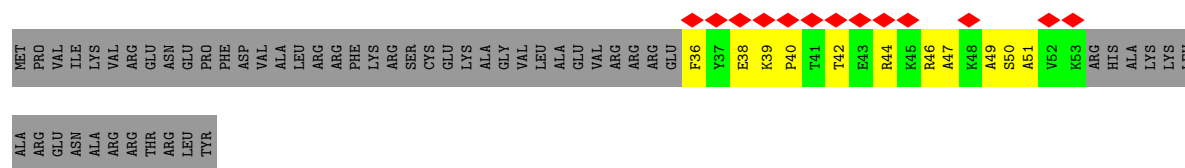


• Molecule 13: 30S ribosomal protein S2

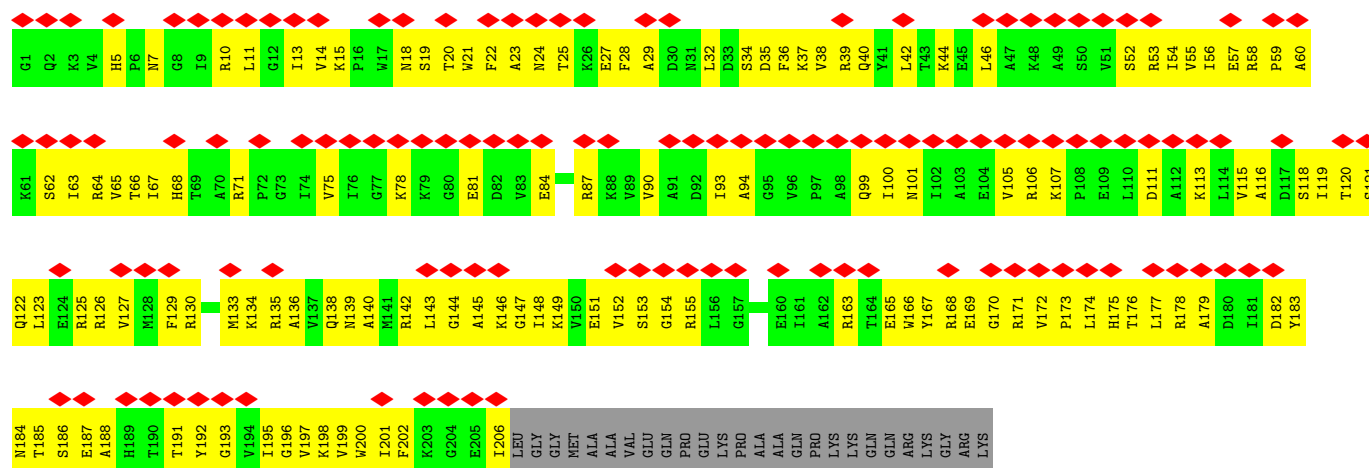


• Molecule 14: 30S ribosomal protein S21

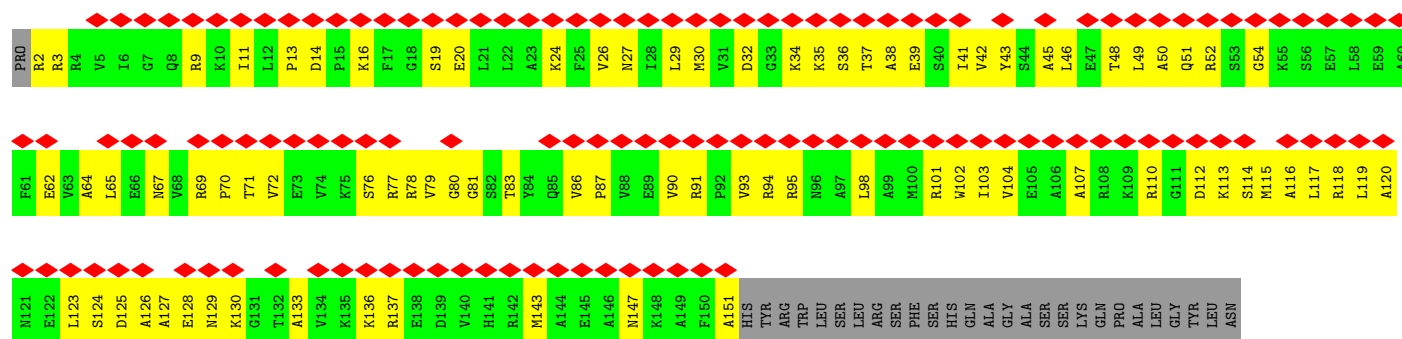
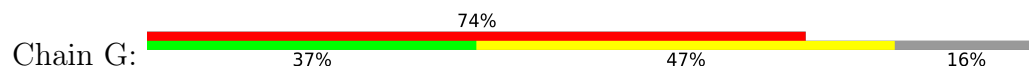




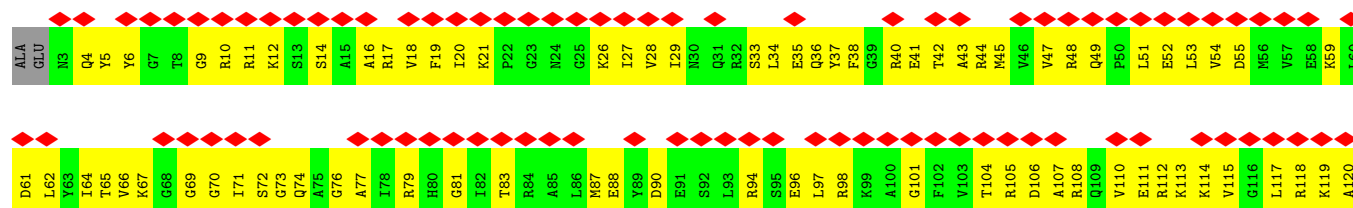
• Molecule 15: 30S ribosomal protein S3

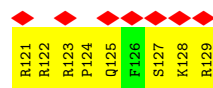


• Molecule 16: 30S ribosomal protein S7

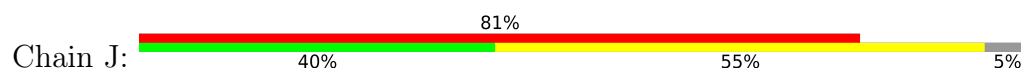


• Molecule 17: 30S ribosomal protein S9

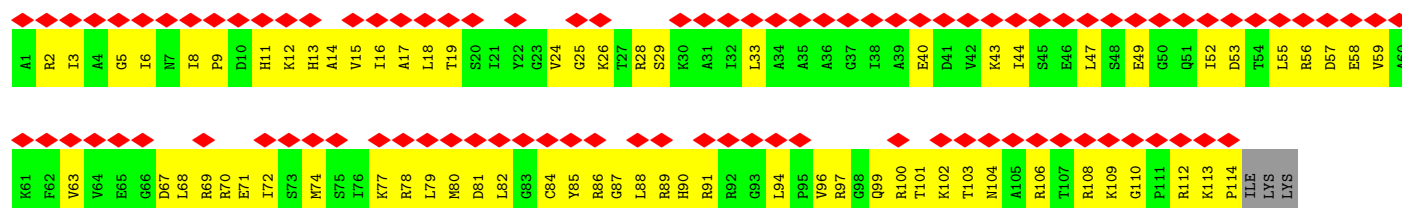
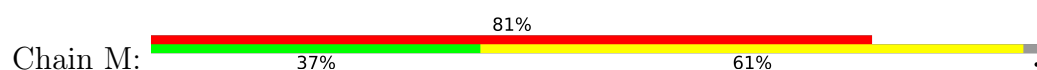




• Molecule 18: 30S ribosomal protein S10



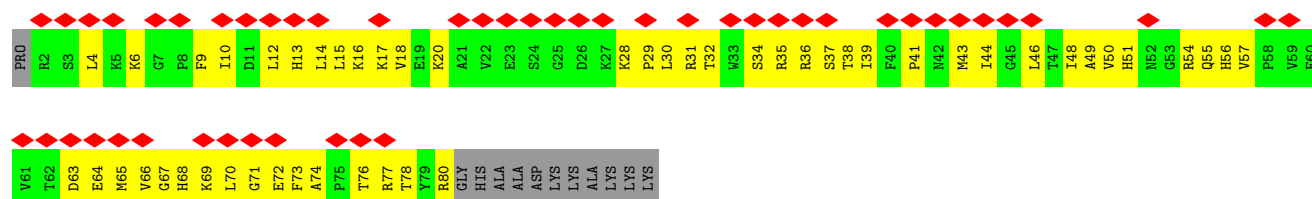
• Molecule 19: 30S ribosomal protein S13



• 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 ($\text{\AA}$)	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 ($\text{\AA}$)	0.86, 0.86, 0.86	Depositor

5 Model quality

5.1 Standard geometry

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.47	1/36762 (0.0%)	0.43	2/57350 (0.0%)
2	D	0.41	0/1665	0.65	0/2227
3	E	0.56	0/1118	0.70	0/1504
4	F	0.31	0/835	0.56	0/1128
5	H	0.52	0/989	0.65	0/1326
6	K	0.28	0/893	0.57	0/1205
7	L	0.51	0/969	0.75	0/1300
8	O	0.44	0/724	0.61	0/966
9	P	0.51	0/659	0.68	0/884
10	Q	0.50	0/657	0.63	0/881
11	R	0.42	0/462	0.66	0/621
12	T	0.38	0/671	0.65	0/888
13	B	0.32	0/1735	0.60	0/2338
14	U	0.24	0/150	0.67	0/198
15	C	0.19	0/1651	0.47	0/2225
16	G	0.17	0/1187	0.46	0/1591
17	I	0.20	0/1034	0.54	0/1375
18	J	0.16	0/796	0.45	0/1077
19	M	0.16	0/892	0.51	0/1193
20	N	0.25	0/785	0.61	0/1043
21	S	0.21	0/652	0.56	0/877
All	All	0.44	1/55286 (0.0%)	0.49	2/82197 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	918	A	C6-N1	-5.15	1.25	1.35

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	860	A	O5'-P-OP1	-5.58	91.27	108.00
1	A	1392	G	O4'-C1'-N9	5.45	116.37	108.20

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	32831	0	16519	1548	0
2	D	1643	0	1710	129	0
3	E	1105	0	1148	67	0
4	F	817	0	808	68	0
5	H	979	0	1034	52	0
6	K	877	0	887	89	0
7	L	955	0	1019	75	0
8	O	716	0	742	35	0
9	P	649	0	666	20	0
10	Q	648	0	691	39	0
11	R	455	0	478	45	0
12	T	665	0	714	30	0
13	B	1704	0	1732	140	0
14	U	148	0	157	13	0
15	C	1624	0	1699	146	0
16	G	1174	0	1230	109	0
17	I	1022	0	1070	107	0
18	J	786	0	828	90	0
19	M	883	0	944	94	0
20	N	774	0	827	93	0
21	S	637	0	665	96	0
All	All	51092	0	35568	2735	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 (2735) 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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1156:G:N2	1:A:1179:A:C2	2.11	1.18
2:D:104:MET:HG2	2:D:106:PHE:CE2	1.91	1.06
21:S:39:ILE:CG2	21:S:43:MET:HE3	1.85	1.06
2:D:144:ILE:HB	2:D:177:MET:HE1	1.37	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
21:S:39:ILE:HG23	21:S:43:MET:HE3	0.98	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
19:M:80:MET:HE1	19:M:90:HIS:CE1	2.02	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
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
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
2:D:104:MET:HE3	2:D:172:VAL:HG13	1.53	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
19:M:80:MET:HE1	19:M:90:HIS:HE1	1.37	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
20:N:94:GLY:C	20:N:95:LEU:HD22	2.04	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
5:H:95:MET:HE3	5:H:129:ALA:HB1	1.62	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
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
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
5:H:105:THR:OG1	5:H:110:MET:HE1	1.83	0.79
1:A:1239:A:H5''	16:G:115:MET:HE1	1.65	0.79
20:N:78:LEU:HD22	20:N:83:VAL:HG13	1.63	0.79
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:A:1088:G:H21	1:A:1167:A:H61	1.29	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
12:T:24:ARG:HB2	12:T:27:MET:HE2	1.64	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:663:A:H5''	11:R:49:LYS:HZ1	1.50	0.75
1:A:890:G:O2'	1:A:906:A:N6	2.18	0.75
3:E:80:LEU:HG	3:E:146:MET:HE1	1.67	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
1:A:1218:C:H2'	1:A:1219:A:H8	1.53	0.74
6:K:84:MET:HG2	6:K:86:LYS:HZ1	1.52	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
6:K:19:VAL:HB	6:K:84:MET:HE1	1.69	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
17:I:44:ARG:HH12	17:I:45:MET:HE2	1.53	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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:1084:G:H1'	1:A:1102:A:N7	2.06	0.70
13:B:26:MET:HE3	13:B:29:PHE:HD2	1.55	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
4:F:90:MET:HE1	11:R:60:ARG:NE	2.06	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:812:G:HO2'	1:A:813:U:H6	1.41	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
2:D:123:MET:HE1	2:D:126:GLY:HA2	1.73	0.69
12:T:24:ARG:CB	12:T:27:MET:HE2	2.23	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:5:MET:HE3	20:N:60:ARG:NH2	2.08	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
2:D:16:THR:CG2	2:D:59:LYS:HE3	2.20	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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
1:A:1129:C:OP1	17:I:67:LYS:NZ	2.27	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
5:H:73:SER:H	5:H:129:ALA:C	2.02	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
7:L:108:ASP:HB2	7:L:110:LYS:HZ3	1.59	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
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)
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
21:S:39:ILE:HB	21:S:65:MET:HE2	1.75	0.67
1:A:1382:C:HO2'	16:G:78:ARG:HH11	1.42	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
12:T:45:ALA:HA	12:T:48:LYS:HZ3	1.56	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:946:A:O2'	1:A:1333:A:N3	2.27	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
2:D:144:ILE:HD13	2:D:177:MET:HE2	1.78	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
6:K:52:ARG:H	6:K:56:LYS:HZ2	1.46	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
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:447:G:N2	1:A:486:U:OP2	2.31	0.62
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
13:B:62:ARG:HH22	13:B:158:ASP:CG	2.08	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
12:T:45:ALA:HA	12:T:48:LYS:HZ2	1.65	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
3:E:148:SER:H	3:E:151:MET:HE2	1.64	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
8:O:34:GLN:HG3	8:O:58:MET:HE1	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:718:A:H5'	6:K:118:ASN:ND2	2.16	0.60
1:A:925:G:O6	1:A:1392:G:O2'	2.12	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
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: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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:Q:15:LYS:C	10:Q:15:LYS:HD3	2.27	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
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
1:A:1259:C:O2'	1:A:1283:U:O2	2.21	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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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:938:A:N3	1:A:1376:U:O2'	2.30	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
15:C:166:TRP:CG	15:C:167:TYR:H	2.20	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
4:F:42:TRP:CD1	11:R:23:LYS:HZ1	2.19	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
1:A:1382:C:HO2'	16:G:78:ARG:NH1	2.02	0.57
5:H:64:TYR:HA	5:H:70:VAL:HG13	1.86	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
1:A:1231:G:OP1	17:I:128:LYS:NZ	2.35	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
3:E:140:ILE:O	3:E:144:GLU:HG2	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:829:G:OP1	13:B:27:LYS:NZ	2.38	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
4:F:61:LEU:HD11	11:R:23:LYS:HZ3	1.70	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
13:B:96:LEU:HB3	13:B:99:MET:HE3	1.88	0.56
1:A:62:U:OP1	1:A:385:C:O2'	2.19	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
4:F:36:ILE:O	4:F:36:ILE:HG13	2.05	0.56
8:O:6:ALA:HA	8:O:9:LYS:NZ	2.21	0.56
14:U:46:ARG:C	14:U:46:ARG:HD3	2.31	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
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:HH22	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
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
16:G:30:MET:HE2	16:G:35:LYS:HB2	1.89	0.55
1:A:37:U:O2'	1:A:547:A:N1	2.37	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: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
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
21:S:16:LYS:HB2	21:S:17:LYS:HZ3	1.72	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
4:F:93:LYS:HZ1	11:R:60:ARG:NH2	2.06	0.54
10:Q:19:SER:OG	10:Q:70:LYS:NZ	2.32	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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
18:J:15:HIS:HD2	18:J:19:ASP:HB2	1.72	0.54
21:S:65:MET:HE1	21:S:68:HIS:HB3	1.89	0.54
1:A:1319:A:C6	1:A:1323:G:H1'	2.43	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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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:696:A:N3	1:A:786:G:O2'	2.39	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
5:H:105:THR:OG1	5:H:110:MET:CE	2.55	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1222:G:H5''	21:S:77:ARG:HH11	1.74	0.53
21:S:69:LYS:HB2	21:S:72:GLU:CD	2.33	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
13:B:64:GLY:C	13:B:65:LYS:HD3	2.33	0.53
14:U:47:ALA:O	14:U:51:ALA:N	2.38	0.53
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:1210:C:HO2'	1:A:1211:U:P	2.31	0.53
1:A:1229:A:N7	19:M:102:LYS:NZ	2.48	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
15:C:118:SER:O	15:C:121:SER:OG	2.25	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:421:U:OP1	1:A:421:U:H6	1.93	0.52
1:A:1090:U:O2'	1:A:1171:A:O2'	2.13	0.52
1:A:1313:U:H2'	1:A:1314:C:C6	2.45	0.52
12:T:24:ARG:HA	12:T:27:MET:HE2	1.90	0.52
13:B:118:THR:OG1	13:B:119:GLN:OE1	2.27	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
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1395:C:N4	1:A:1396:A:H62	2.06	0.52
3:E:110:MET:HE1	3:E:124:ALA:HB1	1.91	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:404:G:N7	2:D:1:ALA:N	2.54	0.52
1:A:814:A:H5'	1:A:1511:G:H4'	1.92	0.52
1:A:945:G:N2	1:A:1334:G:HO2'	2.07	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
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
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
20:N:5:MET:HE3	20:N:60:ARG:HH22	1.74	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
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:133:MET:HE1	15:C:165:GLU:HB3	1.92	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:675:A:H1'	6:K:117:HIS:HD1	1.76	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
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
17:I:26:LYS:HZ1	17:I:33:SER:HA	1.76	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
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
17:I:69:GLY:C	17:I:74:GLN:HG3	2.36	0.51
20:N:27:LYS:HD2	20:N:47:LEU:HD22	1.92	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
6:K:51:PHE:HA	6:K:56:LYS:HZ2	1.75	0.51
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
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
11:R:25:ILE:HG22	11:R:29:LYS:HZ3	1.76	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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:715:A:OP1	1:A:805:C:O2'	2.29	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
15:C:18:ASN:HB3	15:C:53:ARG:HD3	1.93	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:827:U:H5''	5:H:21:LYS:HZ1	1.76	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:1054:C:OP1	1:A:1196:A:O2'	2.18	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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
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
9:P:68:SER:OG	9:P:69:ASP:N	2.39	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
20:N:84:ARG:HD2	20:N:88:MET:HE1	1.93	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
2:D:104:MET:HE1	2:D:172:VAL:HA	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:104:MET:HE1	2:D:179:GLY:CA	2.42	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
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
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
13:B:65:LYS:H	13:B:158:ASP:CG	2.19	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
20:N:7:ALA:HB1	20:N:11:LYS:HZ1	1.76	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
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:14:U:O2'	1:A:16:A:N7	2.41	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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:H1'	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:H1'	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
4:F:90:MET:HE1	11:R:60:ARG:HE	1.78	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
12:T:24:ARG:CA	12:T:27:MET:HE2	2.42	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
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
2:D:123:MET:HE1	2:D:126:GLY:CA	2.40	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:931:C:O2'	1:A:932:C:OP1	2.26	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
3:E:66:ALA:C	3:E:68:ARG:H	2.21	0.48
17:I:44:ARG:NH1	17:I:45:MET:HE2	2.25	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
1:A:1388:C:O2'	1:A:1389:C:OP1	2.31	0.48
2:D:181:PHE:CZ	2:D:185:PRO:HD3	2.49	0.48
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: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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:112:ARG:NH1	17:I:113:LYS:O	2.47	0.47
19:M:82:LEU:C	19:M:84:CYS:H	2.20	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
19:M:67:ASP:O	19:M:68:LEU:C	2.56	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:663:A:C5'	11:R:49:LYS:HZ1	2.24	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
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
6:K:52:ARG:N	6:K:56:LYS:HZ2	2.13	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: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:3:TYR:C	2:D:5:GLY:H	2.23	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:128:LYS:C	17:I:129:ARG:HD2	2.40	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
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
13:B:62:ARG:NH2	13:B:158:ASP:CG	2.73	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
17:I:49:GLN:O	17:I:52:GLU:CD	2.57	0.47
18:J:18:ILE:HG12	18:J:70:HIS:CD2	2.50	0.47
1:A:370:C:O2'	1:A:482:A:O2'	2.31	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:115:GLN:CD	2:D:153:ARG:HH22	2.22	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:26:MET:HE3	13:B:29:PHE:CD2	2.43	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
17:I:19:PHE:HB3	17:I:21:LYS:HZ3	1.80	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
2:D:123:MET:HE1	2:D:126:GLY:C	2.40	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
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
13:B:166:ASP:CG	13:B:190:SER:HA	2.40	0.46
15:C:182:ASP:O	15:C:201:ILE:N	2.48	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:568:G:O2'	1:A:574:A:N1	2.45	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:950:U:H2'	1:A:951:G:C8	2.51	0.46
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
3:E:66:ALA:C	3:E:68:ARG:N	2.74	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
12:T:4:LYS:HA	12:T:7:LYS:HZ3	1.78	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
15:C:7:ASN:HA	15:C:15:LYS:NZ	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:1126:U:HO2'	1:A:1280:A:HO2'	1.64	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
9:P:1:MET:HE1	9:P:66:THR:CB	2.47	0.45
13:B:103:TRP:CZ2	13:B:155:GLY:HA3	2.52	0.45
15:C:60:ALA:C	15:C:62:SER:H	2.24	0.45
17:I:11:ARG:NH1	17:I:12:LYS:HD3	2.32	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
4:F:17:GLN:OE1	4:F:21:MET:HE3	2.15	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
1:A:210:C:O3'	1:A:211:G:N2	2.36	0.45
1:A:949:A:O2'	1:A:971:G:N1	2.50	0.45
1:A:1317:C:H3'	1:A:1318:A:H8	1.82	0.45
2:D:57:LYS:HD3	2:D:61:ARG:HD2	1.99	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
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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
4:F:1:MET:HA	4:F:1:MET:HE2	1.99	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:663:A:C5'	11:R:49:LYS:NZ	2.75	0.44
1:A:1023:U:C4	1:A:1024:G:H1'	2.52	0.44
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:1096:C:C4	1:A:1097:C:C4	3.06	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1111:A:HO2'	1:A:1112:C:H6	1.64	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
6:K:49:SER:C	6:K:51:PHE:H	2.25	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
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
1:A:1305:G:HO2'	1:A:1306:A:H8	1.65	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:N:82:LYS:O	20:N:85:GLU:OE2	2.36	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:41:THR:HG22	10:Q:41:THR:O	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
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:107:ARG:HG3	13:B:111:LYS:HZ2	1.83	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
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:26:MET:HE2	13:B:188:THR:HG23	1.98	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:B:217:ALA:O	13:B:221:ARG:HG3	2.18	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:107:GLY:C	2:D:157:ALA:HB1	2.43	0.43
2:D:148:ALA:HA	2:D:151:GLN:HB3	2.00	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
17:I:66:VAL:C	17:I:67:LYS:HD3	2.43	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:815:A:N7	1:A:1509:C:O2'	2.42	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
18:J:44:THR:HG1	18:J:69:THR:C	2.24	0.43
18:J:89:ARG:HD2	18:J:89:ARG:C	2.42	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:87:PRO:HB3	16:G:143:MET:HE1	2.01	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
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
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
2:D:186:GLU:CD	2:D:187:ARG:H	2.27	0.43
3:E:132:PRO:O	3:E:136:VAL:HG12	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:K:33:ILE:HD11	6:K:81:LEU:HD12	2.00	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:973:G:OP2	1:A:974:A:O2'	2.34	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:113:G:N3	1:A:353:A:O2'	2.42	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
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: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
15:C:22:PHE:HB3	18:J:11:LYS:HZ2	1.84	0.43
17:I:53:LEU:HD23	17:I:96:GLU:HG3	2.00	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:778:G:O2'	6:K:121:ARG:O	2.27	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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
12:T:41:GLY:C	12:T:85:LEU:HD21	2.44	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
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: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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
13:B:207:ARG:O	13:B:210:THR:OG1	2.36	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: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
7:L:122:LYS:HD3	7:L:122:LYS:C	2.43	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
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
20:N:42:ASN:C	20:N:46:LYS:HZ2	2.27	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
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
20:N:95:LEU:HD22	20:N:95:LEU:N	2.31	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
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
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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
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:1:MET:HE1	4:F:67:PRO:HD3	2.01	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
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
15:C:138:GLN:H	15:C:138:GLN:CD	2.28	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:652:U:O4	1:A:752:G:O2'	2.29	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
2:D:48:SER:C	2:D:50:TYR:N	2.77	0.41
5:H:101:ALA:HB3	5:H:112:ASP:OD2	2.21	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
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: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:1097:C:P	13:B:142:LYS:HZ1	2.43	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:130:A:O2'	1:A:131:A:O5'	2.36	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
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
8:O:45:HIS:C	8:O:47:LYS:H	2.29	0.41
10:Q:68:LYS:C	10:Q:69:THR:HG1	2.16	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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:1074:G:O2'	1:A:1101:A:N1	2.38	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: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
4:F:40:GLU:OE2	4:F:61:LEU:HD22	2.21	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
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
1:A:1393:U:O2'	1:A:1394:A:O5'	2.36	0.40
2:D:176:LYS:HZ3	2:D:178:GLU:HB2	1.86	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:1013:G:P	21:S:20:LYS:HZ1	2.40	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
2:D:176:LYS:C	2:D:177:MET:HG3	2.45	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:936:C:O4'	1:A:1383:C:N4	2.54	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
2:D:28:ASP:O	2:D:29:THR:C	2.64	0.40
4:F:3:HIS:HB3	4:F:92:THR:CB	2.51	0.40
5:H:47:ASP:OD1	5:H:47:ASP:N	2.54	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:1148:U:H5'	17:I:6:TYR:HH	1.85	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
2:D:144:ILE:HB	2:D:177:MET:CE	2.28	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 ⓘ

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

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
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%)	90 (100%)	0	100	100
7	L	103/103 (100%)	103 (100%)	0	100	100
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%)	48 (100%)	0	100	100
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%)	15 (100%)	0	100	100
15	C	170/189 (90%)	170 (100%)	0	100	100
16	G	123/146 (84%)	123 (100%)	0	100	100
17	I	105/106 (99%)	105 (100%)	0	100	100
18	J	86/90 (96%)	86 (100%)	0	100	100
19	M	92/95 (97%)	92 (100%)	0	100	100
20	N	79/83 (95%)	79 (100%)	0	100	100
21	S	70/78 (90%)	70 (100%)	0	100	100
All	All	1917/2112 (91%)	1917 (100%)	0	100	100

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

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (29) 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
3	E	96	GLN
4	F	94	HIS
5	H	17	GLN
5	H	37	ASN
6	K	21	HIS

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Mol	Chain	Res	Type
6	K	117	HIS
7	L	71	HIS
8	O	34	GLN
9	P	79	ASN
11	R	51	GLN
11	R	73	HIS
12	T	47	GLN
12	T	60	GLN
12	T	77	ASN
12	T	83	ASN
13	B	18	GLN
13	B	108	GLN
13	B	145	ASN
15	C	2	GLN
15	C	101	ASN
15	C	138	GLN
16	G	8	GLN
19	M	7	ASN
20	N	3	GLN
20	N	61	ASN

5.3.3 RNA ⓘ

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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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 oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

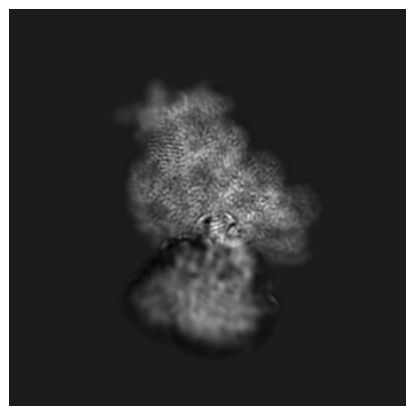
6 Map visualisation [i](#)

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

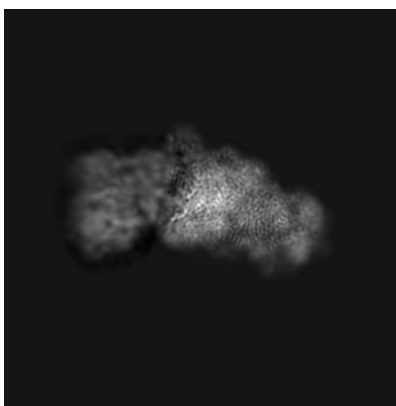
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

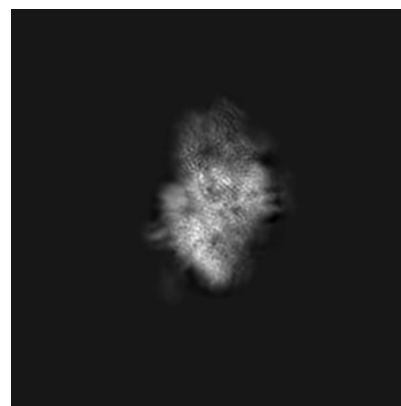
6.1.1 Primary map



X

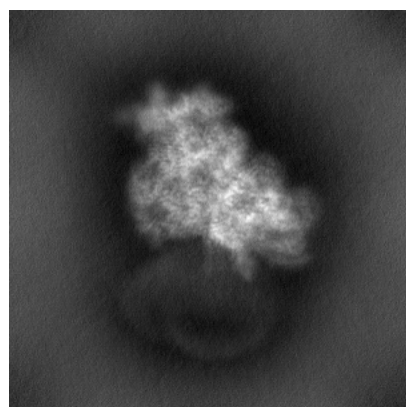


Y

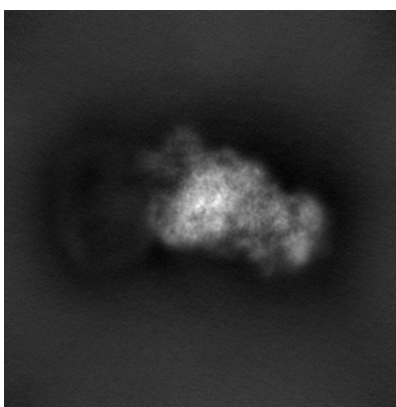


Z

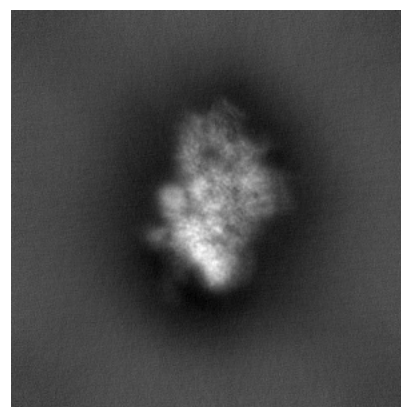
6.1.2 Raw map



X



Y

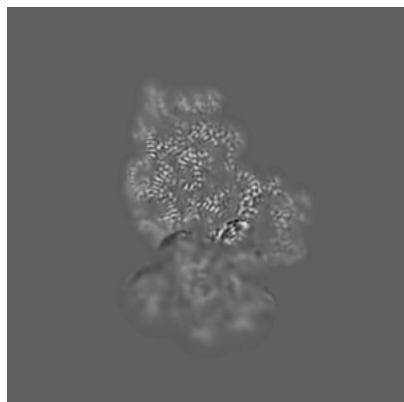


Z

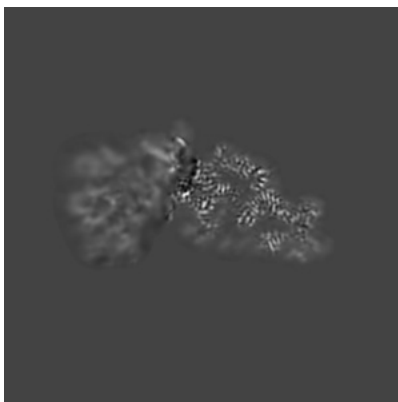
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

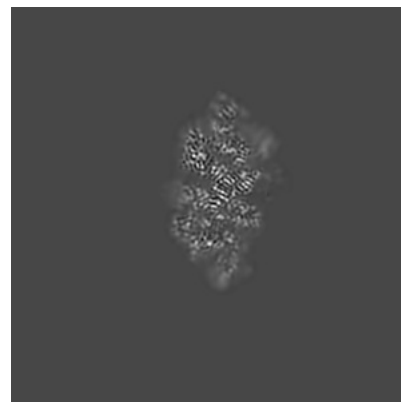
6.2.1 Primary map



X Index: 200

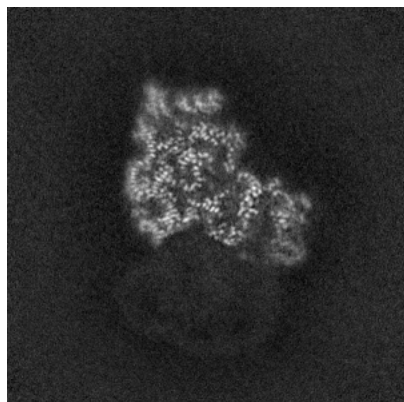


Y Index: 200

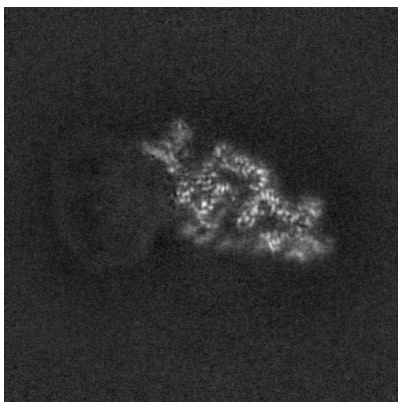


Z Index: 200

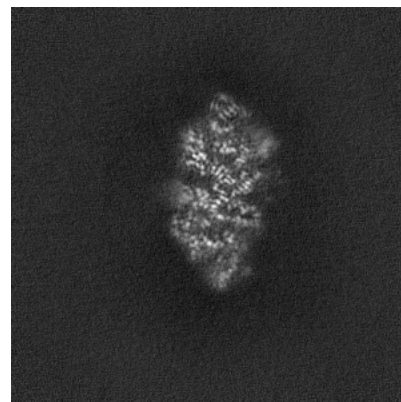
6.2.2 Raw map



X Index: 200



Y Index: 200

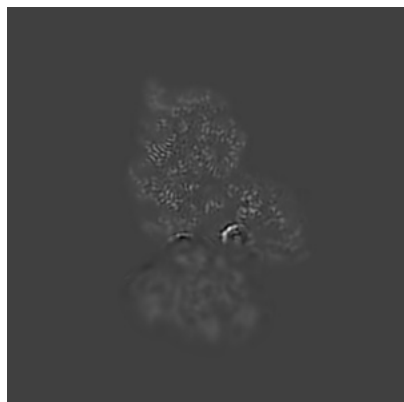


Z Index: 200

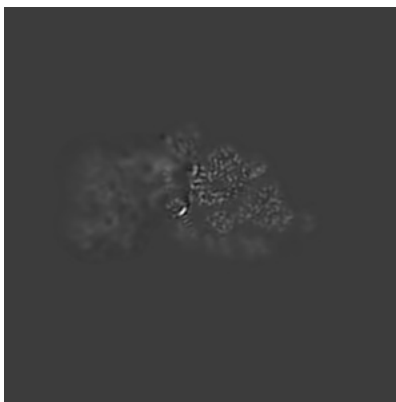
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

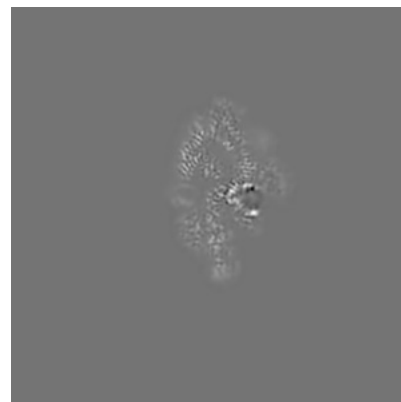
6.3.1 Primary map



X Index: 194

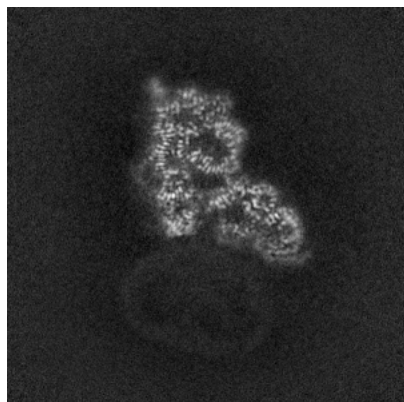


Y Index: 222

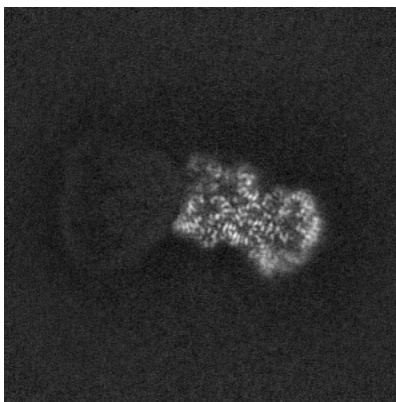


Z Index: 191

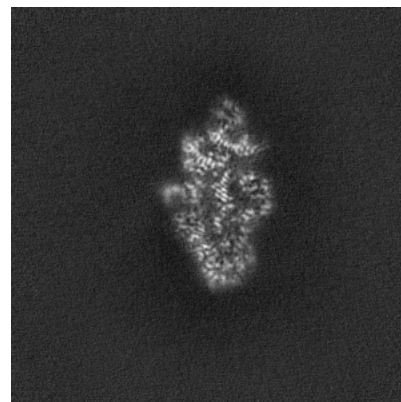
6.3.2 Raw map



X Index: 187



Y Index: 177

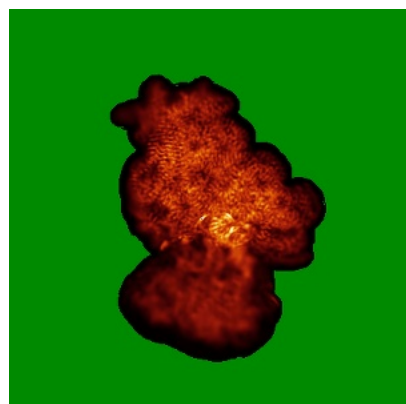


Z Index: 214

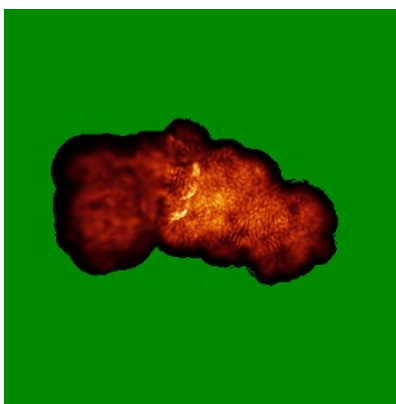
The images above show the largest variance slices of the map in three orthogonal directions.

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

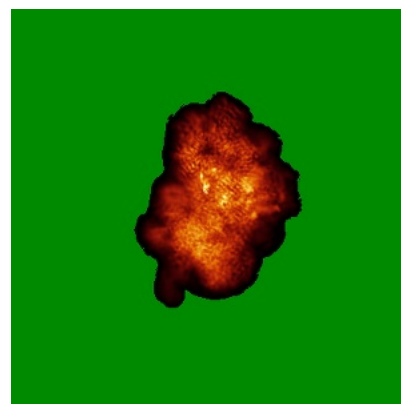
6.4.1 Primary map



X

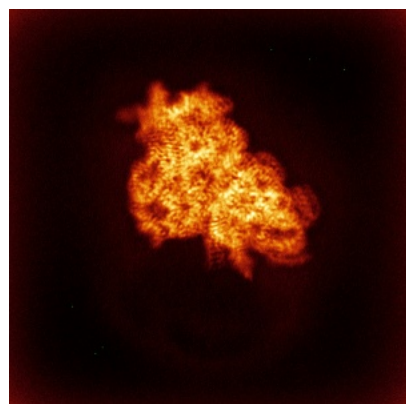


Y

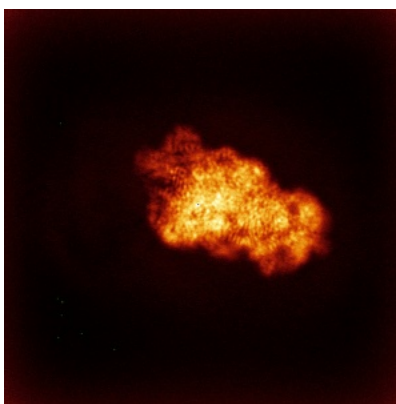


Z

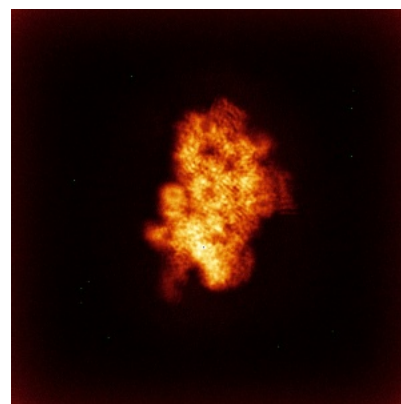
6.4.2 Raw map



X



Y

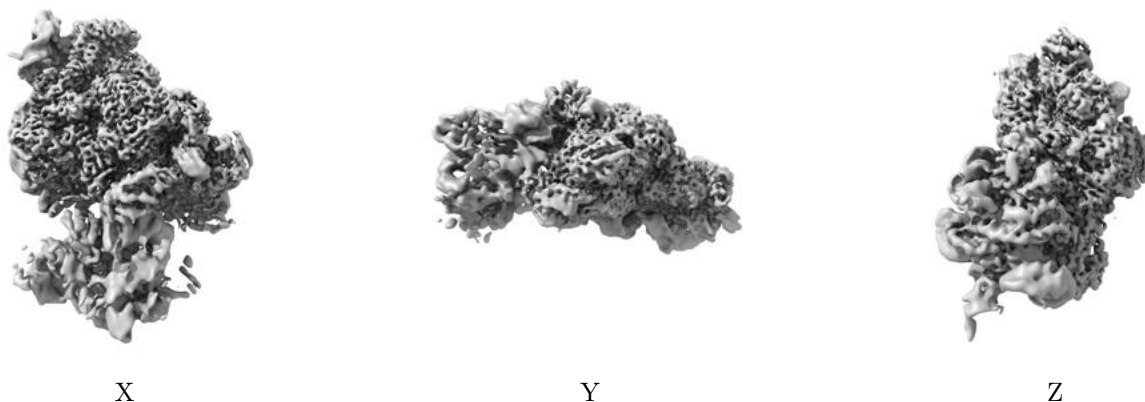


Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



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

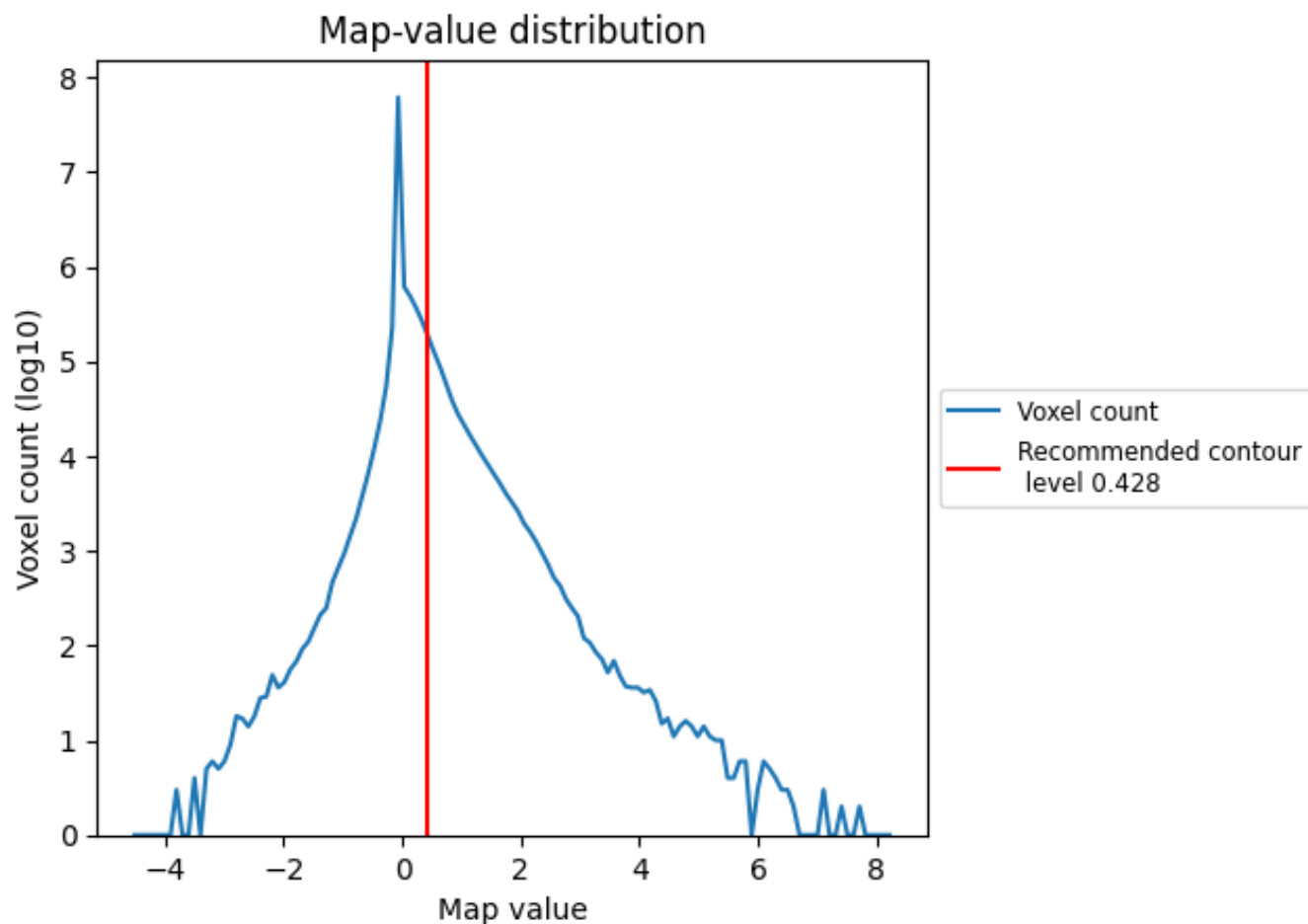
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

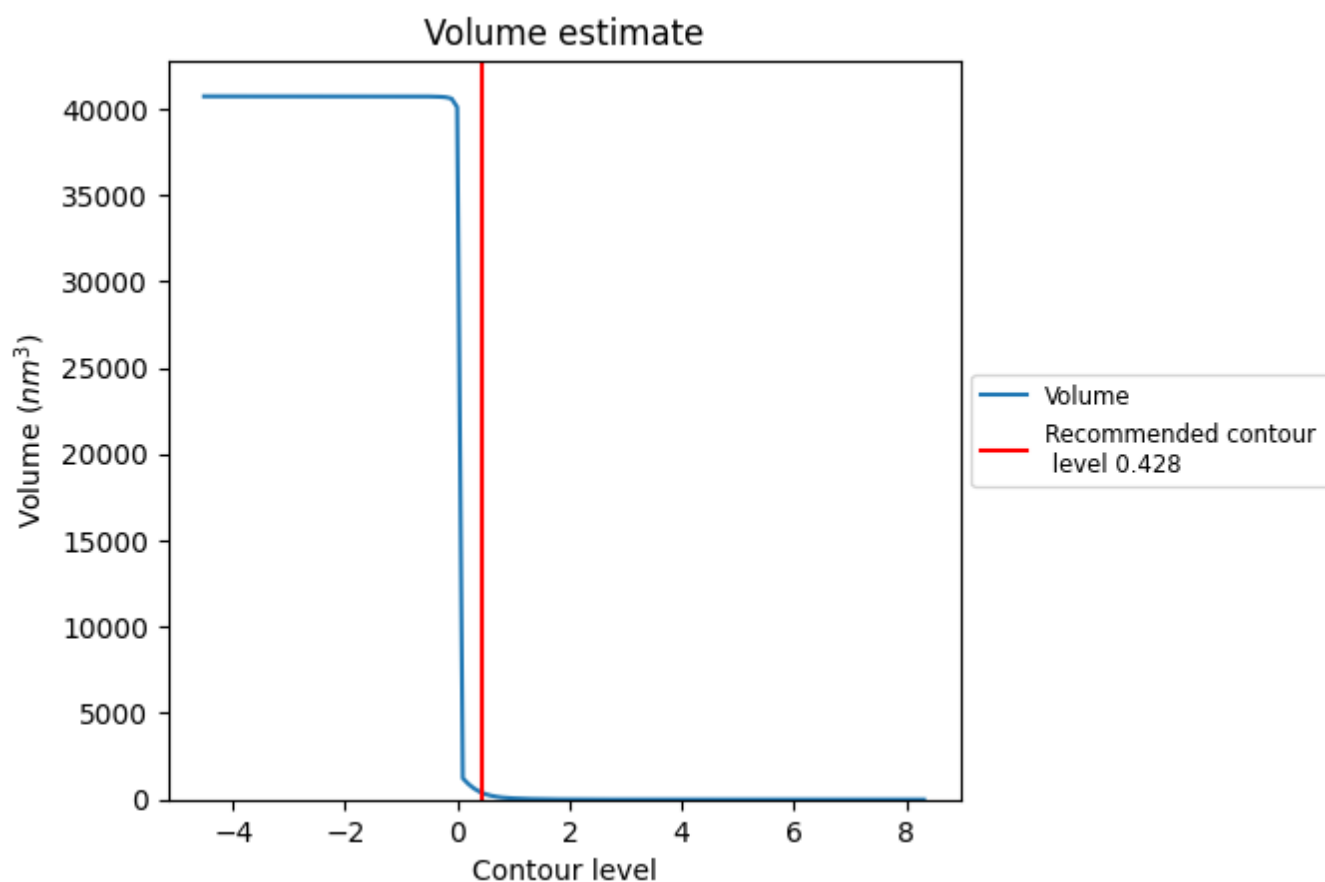
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

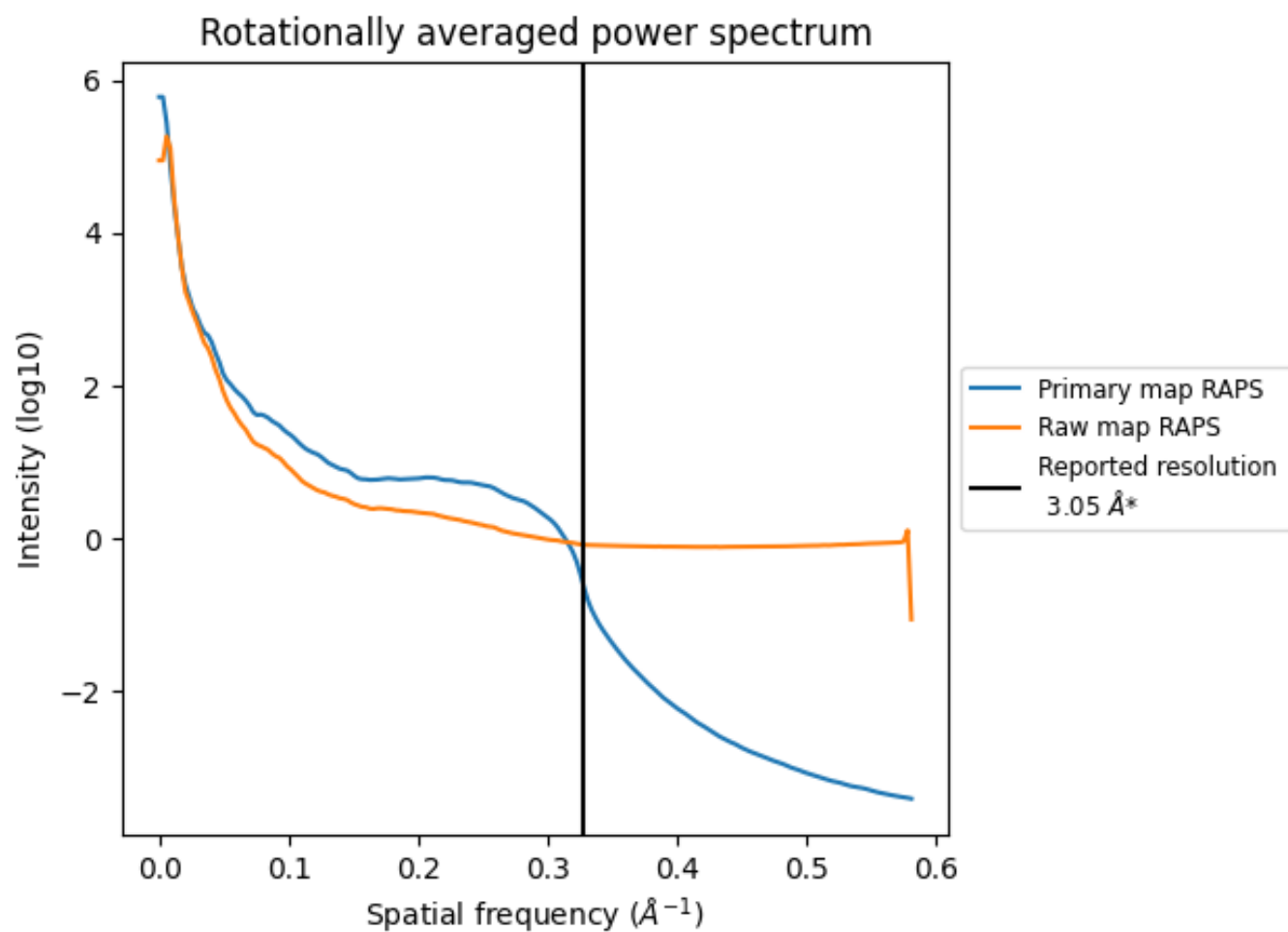
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 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 ⓘ

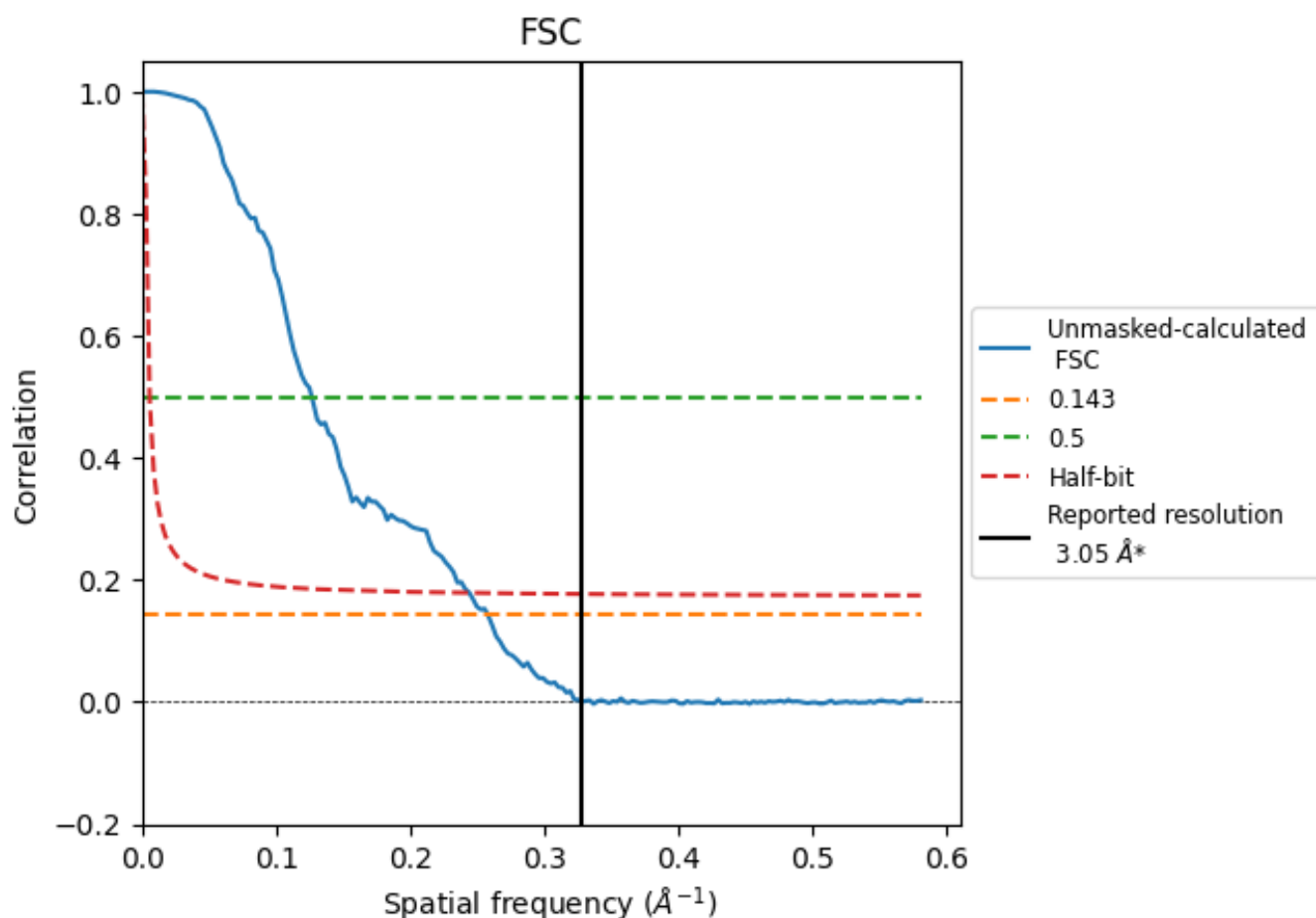


*Reported resolution corresponds to spatial frequency of $0.328 \text{ \AA}^{-1}$

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of $0.328 \text{ \AA}^{-1}$

8.2 Resolution estimates [i](#)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.05	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.87	7.89	4.09

*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 3.87 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](#)

This section was not generated.

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

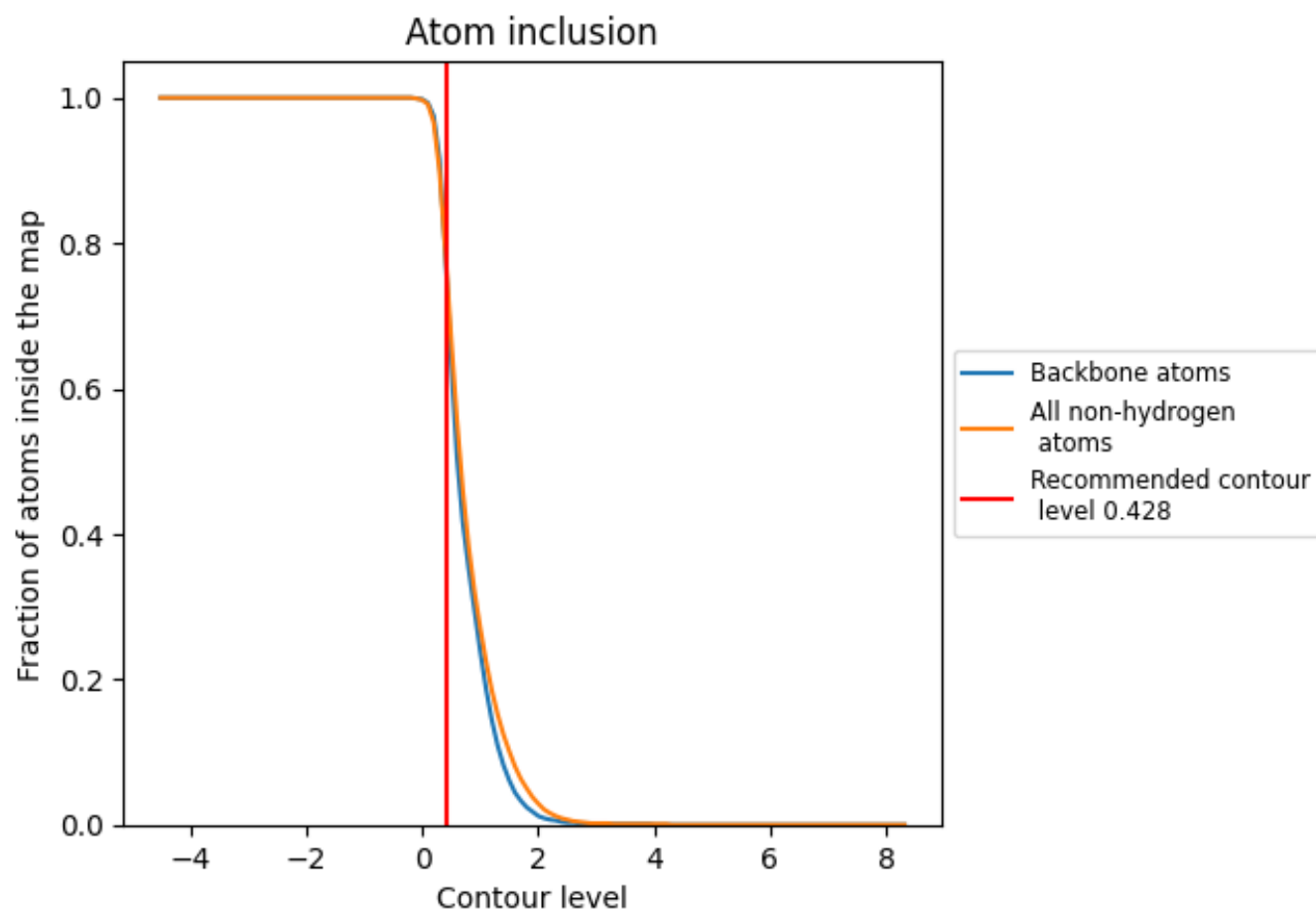


The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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

This section was not generated.

9.4 Atom inclusion ⓘ



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

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.428) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7560	 0.3730
A	 0.8750	 0.4040
B	 0.6050	 0.2910
C	 0.3320	 0.1720
D	 0.6910	 0.4170
E	 0.8230	 0.4900
F	 0.5510	 0.3490
G	 0.1390	 0.1240
H	 0.8530	 0.5140
I	 0.2340	 0.1370
J	 0.1580	 0.1120
K	 0.4530	 0.3110
L	 0.8180	 0.4880
M	 0.1610	 0.1170
N	 0.3660	 0.1580
O	 0.7940	 0.4790
P	 0.8610	 0.5250
Q	 0.8100	 0.4950
R	 0.7500	 0.4740
S	 0.3240	 0.1270
T	 0.7940	 0.4650
U	 0.1820	 0.2380

